

Browning®

Helical and Worm Gearmotors and Speed Reducers



CbN 3000
Helical Inline



OtN 3000
Helical Bevel
Right Angle



IRA
Worm and
Worm Helical

EMERSON™
Industrial Automation

EMERSON. CONSIDER IT SOLVED.™

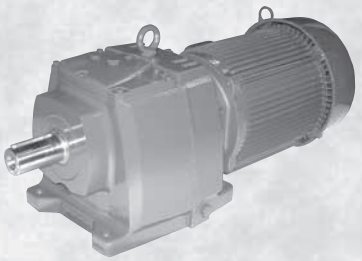
Browning®

CbN

OtN

IRA

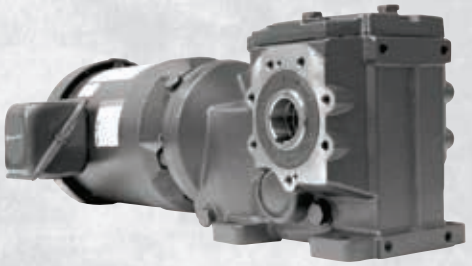
Technical



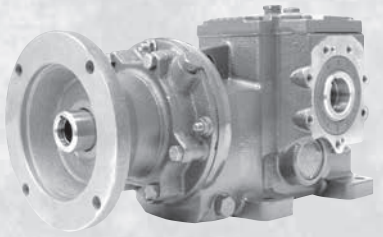
Series 3000 Gearmotors
Pages A1 – A112



Series 3000 Reducers
Pages A113 – A226



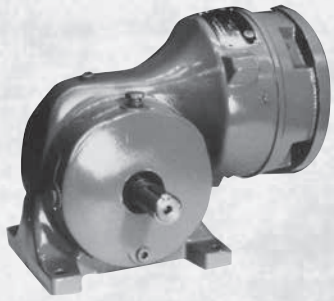
Series 3000 Gearmotors
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Series 3000 Reducers
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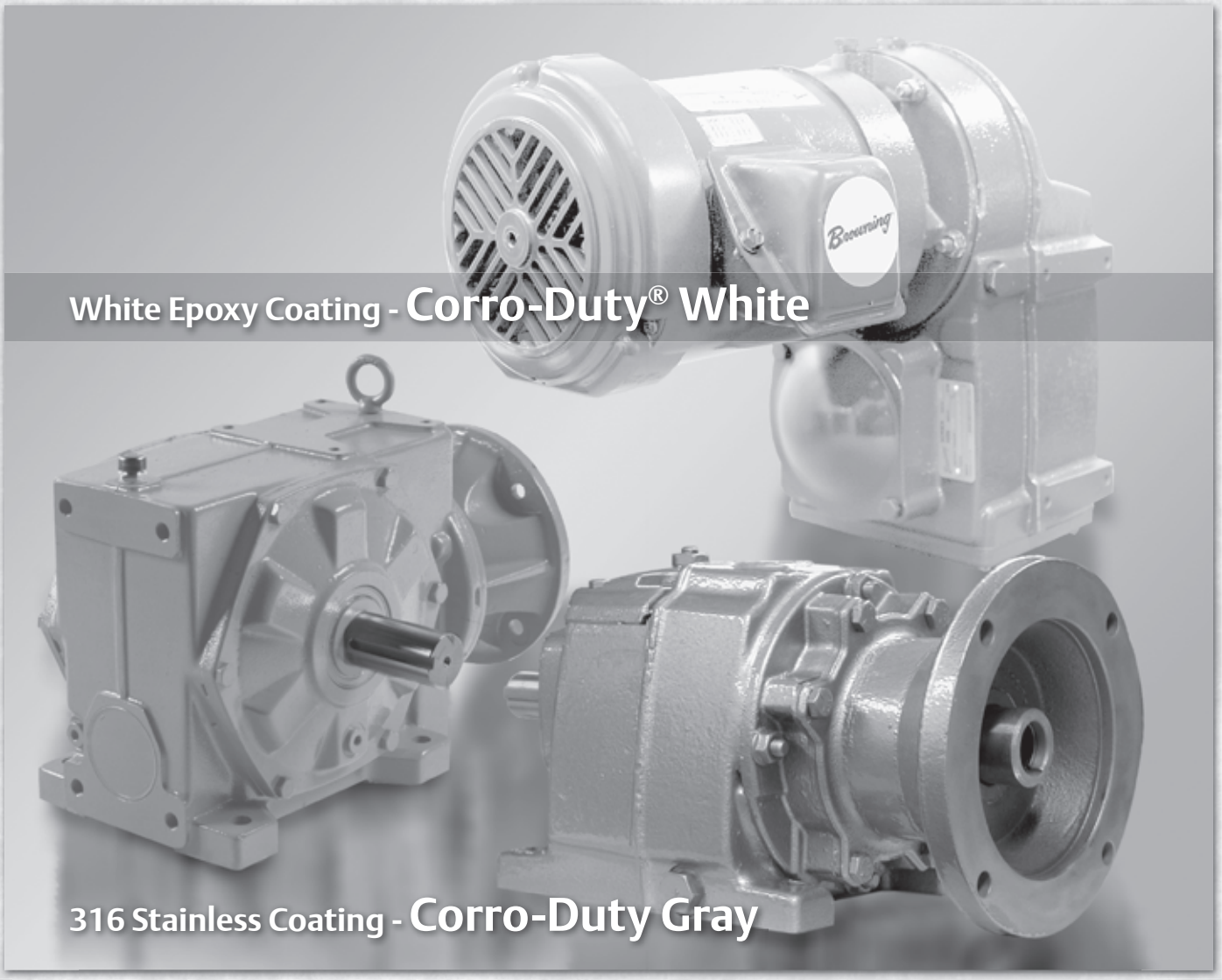
IRA C-Face
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Browning®

CRES
Coatings *USDA and FDA Accepted*

These corrosion-resistant coating options are available today in all sizes for the complete line of Browning® and Morse® speed reducers and gearmotors. They complement our premium corrosionresistant engineered solutions, including all the stainless steel Morse Raider® Plus offerings for the ultimate in corrosion resistance.



Browning®

CbN Helical In-line Gearmotors and Speed Reducers

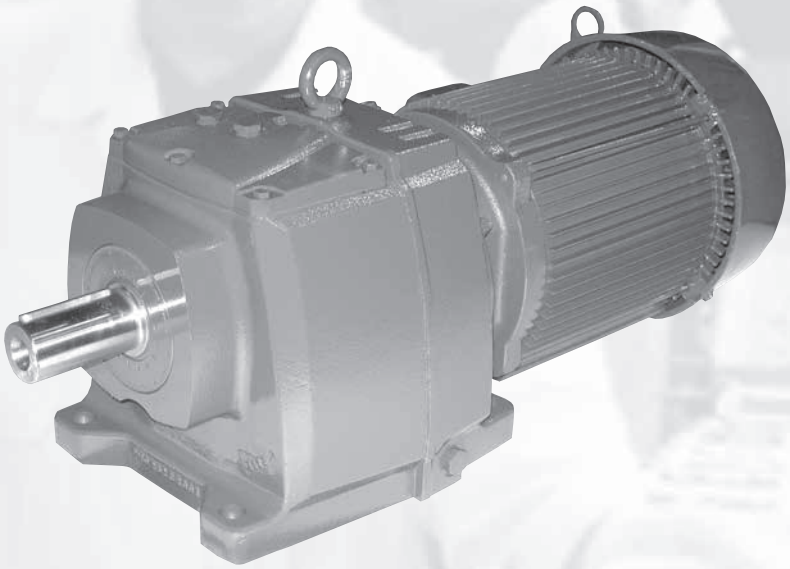
CbN Series

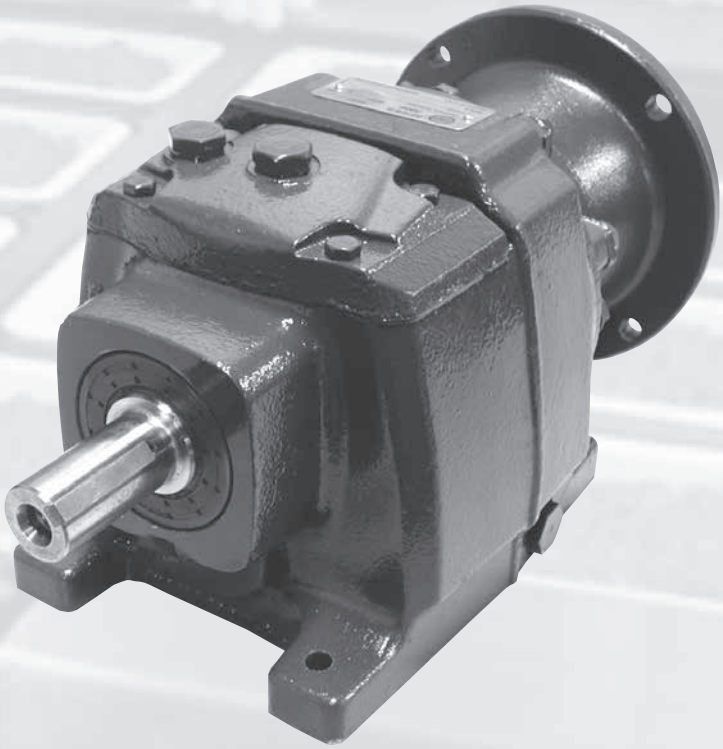
Industries

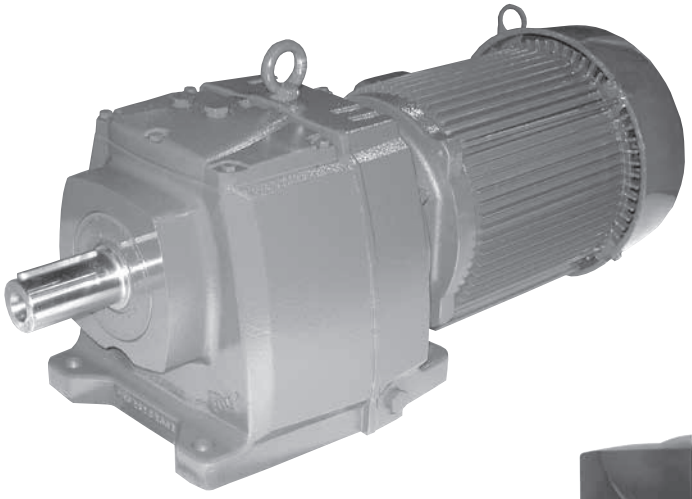
- ❑ Food Processing
- ❑ Warehousing
- ❑ Parcel and Package Sortation
- ❑ Water/Wastewater Treatment

Applications

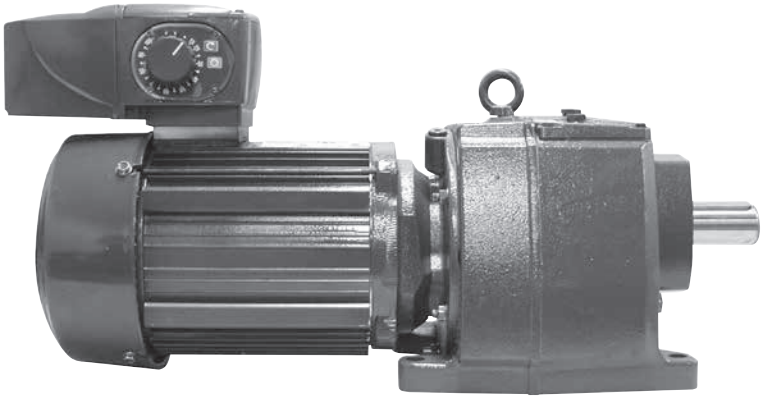
- ❑ Positive Displacement Pumps
- ❑ Unit Handling Conveyors
- ❑ Oven Conveyors
- ❑ Low Speed Fans
- ❑ Industrial Door Openers





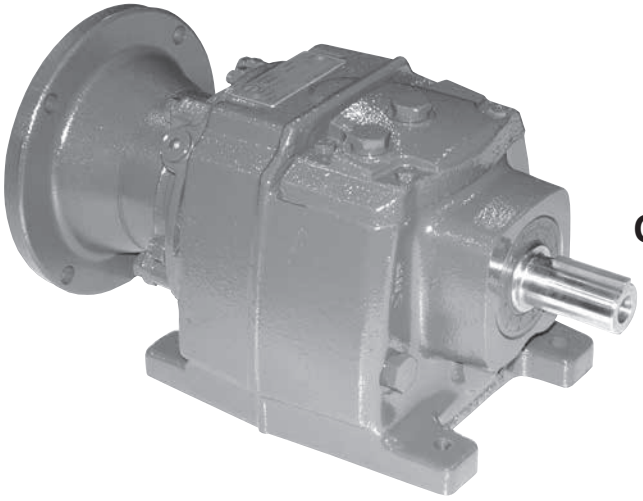


TEFC Three and Single Phase



IntelliGear®

Gearmotor Section .....Page A-3 - A-112



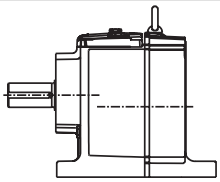
C-Face Reducer

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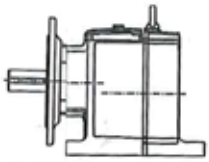
Browning®

Mounting Versatility and Size Range

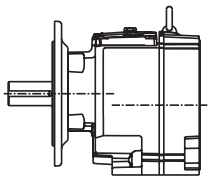
CbN SERIES 3000



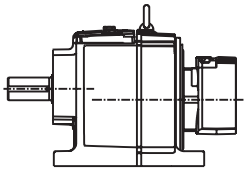
Foot Mount
1, 2, 3 stages
Frames 0 – 8
Max. 134,000 in. lbs.



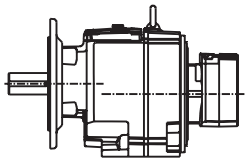
Footed with Flange
1, 2, 3 stages
Frames 1 – 5
Max. 27,000 in. lbs.



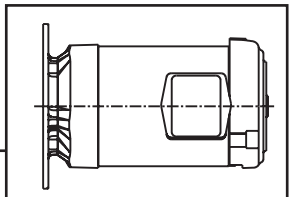
Flange and Face Mount
1, 2, 3 stages
Frames 0 – 8
Max. 134,000 in. lbs.



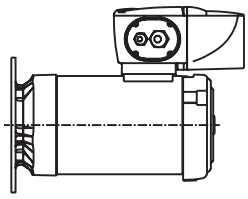
Foot Mount
4, 5, 6 stages
Frames 2 – 8
Max. 134,000 in. lbs.



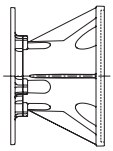
Flange Mount
4, 5, 6 stages
Frames 2 – 8
Max. 134,000 in. lbs.



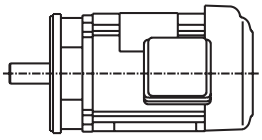
Gearmotors
1/3 - 50 HP



Variable Speed
IntelliGear®
1/3 - 10 HP



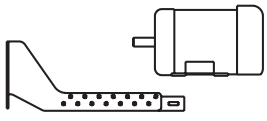
NEMA C-Face
56C to 365 TC
Frames 0 – 8



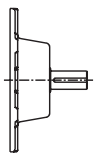
C-Face Motors
Frames 56 C - 365 TC

Backstop Option **

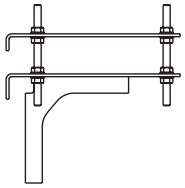




Scoop Mount
Frames 2 - 8*
56 to 326T



Input Shaft
Frames 0 – 8



Top Mount
Frames 2 - 8*
56 to 326T

* Refer to page A-122 for availability of this style reducer for single and combined stage product.
** Excluding Frame 0 all stages and Frame 2-3 : 4,5 and 6 stage

Selection Information

General

CbN 3000 helical gearmotors and speed reducers incorporate the latest in design and manufacturing technologies to deliver an energy efficient, helical, gear train combined with either a constant or variable speed motor. This latest generation of CbN inline gearing is 98 percent efficient per gear stage and boasts total efficiency improvements over previous designs by delivering up to 40 percent more total speed reduction without added gear stages.

Gearmotors

Three phase CbN gearmotors are available with HE type high efficiency motors in non-hazardous enclosures starting 1/3 HP at standard lead-times. These motors comply with requirements in the US and Canada for energy efficiency to deliver superior operating cost savings, reduced motor temperature rise and 5:1 minimum constant torque output (60-11Hz) from PWM power supplies for the End User. There are several motor enclosure options within the HE umbrella including Corro-Duty® cast iron exterior construction for most hostile environments. These features are complimented by the standard use of inverter duty winding materials that comply with NEMA MG1 Part 31. Emerson also offers gearmotors with 1 phase TEFC motors to 5 HP and Explosionproof 3 phase gearmotors to 10 HP.

Housing

One-piece housings replace the classical two-piece designs to improve alignment and overhung load integrity in the most demanding applications. Extremely compact envelopes provide low profiles and the footprint to directly interchange with older CbN products for simple aftermarket replacements. All housings are cast, with frames made with high strength cast iron (frame 0 is aluminum). Motor interfaces are generally shorter than previous CbN designs.

Performance

These CbN designs deliver up to 35 percent more capacity than previous CbN products in equivalent frames. For replacements, this means longer life. For new applications, this means cost savings through possible downsizing. Each CbN unit is factory filled with synthetic hydrocarbon lubricant, ready to operate in a wide band of ambient temperatures with minimal in-service maintenance.

Flexibility

Improvements in CbN designs begin with the expansion of flange mounting options available. Three phase motor designs now incorporate an upgraded wire and varnish treatment called Allguard®, making many of them suitable for inverter applications. C-Face inputs utilize a compact quill design with a non-metallic liner and metal key to eliminate fretting corrosion while delivering a compact length. Each housing can be oriented in different mounting positions by a minor adjustment in oil volume and relocation of breather/drain locations. Varidyne® inverter duty motor designs deliver up to 10:1 constant torque speed range gearmotors off-the-shelf.

Reliability

Gear housings 1 to 5 are fitted with normally closed breathers, excluding outside contaminants and preserving low internal operating pressure. Gear housings 6 to 8 are fitted with a combination breather and dipsticks. The dipstick makes periodic maintenance of proper oil volume easy and accurate. All oil seals operate on plunge ground shaft surfaces to deliver extended life. Enhanced insulating materials and other standard features of our Varidyne Inverter duty motors carry a 3 year warranty when operating with PWM inverter power up to 575 VAC.

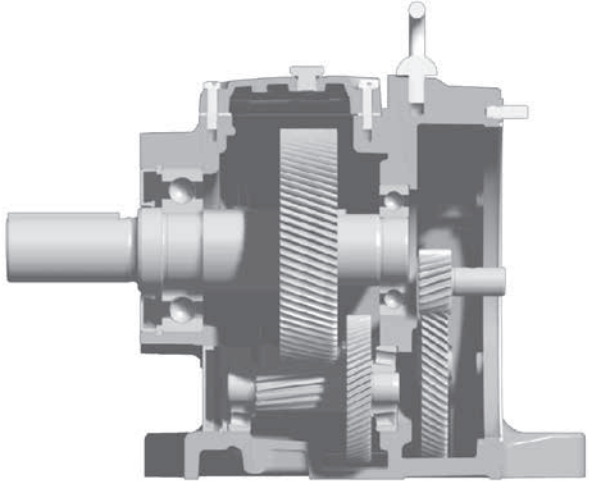


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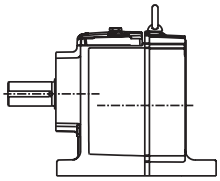
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Browning®

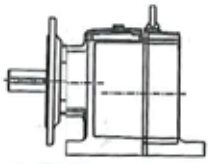
Gearmotors

CbN SERIES 3000

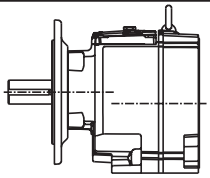
Mounting Versatility and Size Range



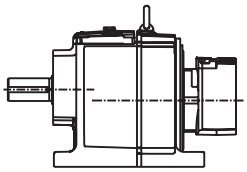
Foot Mount
1,2,3 stages
Frames 0 – 8
Max. 134,000 in. lbs.



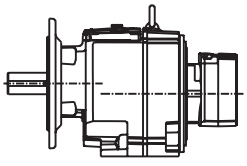
Footed with Flange
1,2,3 stages
Frames 1 – 5
Max. 27,000 in. lbs.



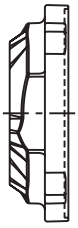
Flange and FaceMount
1,2,3 stages
Frames 0 – 8
Max. 134,000 in. lbs.



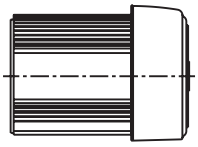
Foot Mount
4,5,6 stages
Frames 2 – 8
Max. 134,000 in. lbs.



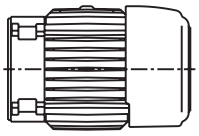
Flange Mount
4,5,6 stages
Frames 2 – 8
Max. 134,000 in. lbs.



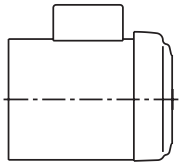
Gearmotor Bracket



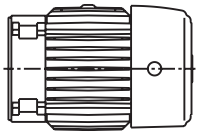
Three Phase TEFC
1/3 – 50 HP



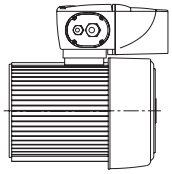
Corro-Duty®
1/3 – 50 HP



Single Phase TEFC
1/3 – 5 HP



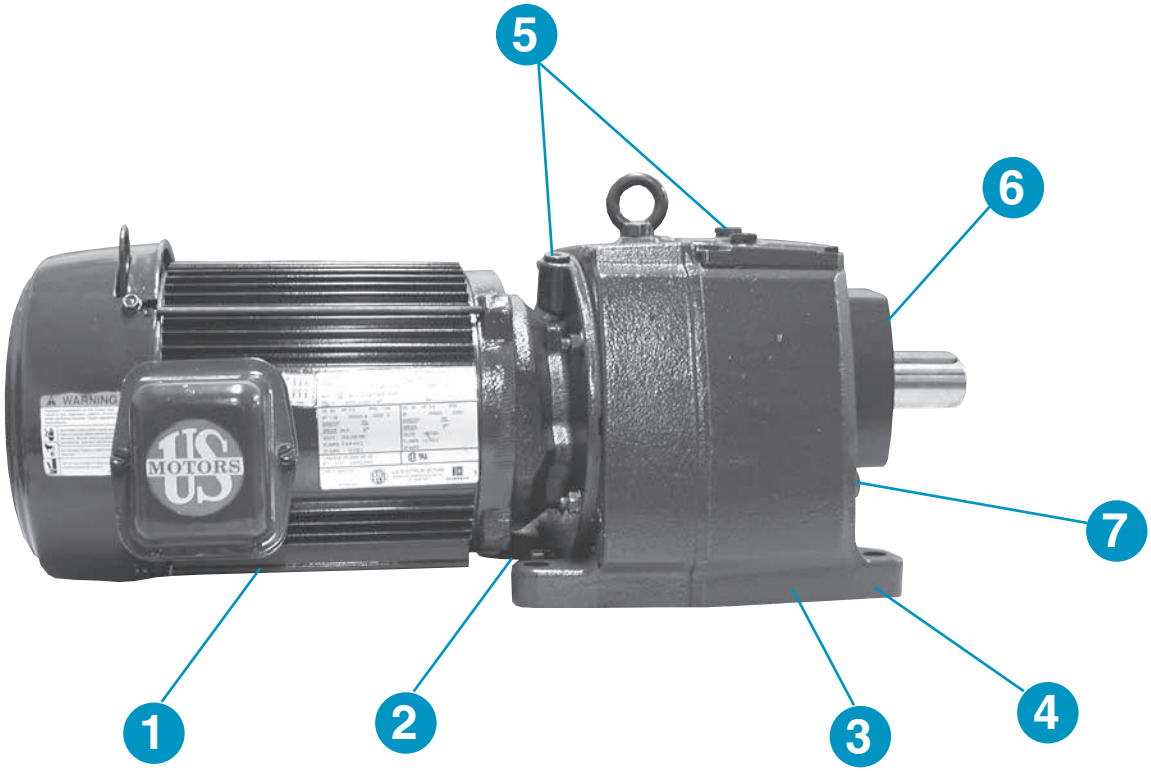
Explosionproof
1/3 – 10 HP*



IntelliGear®
1/3 – 10 HP

* 1/3 - 3/4 HP for 575 V designs

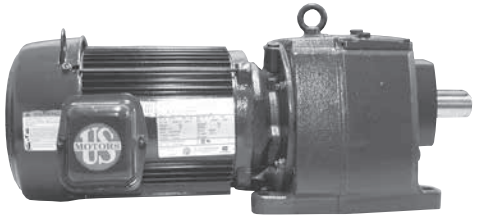
Type CbN In-line Helical Series 3000 Gearmotors Features...



Design Features

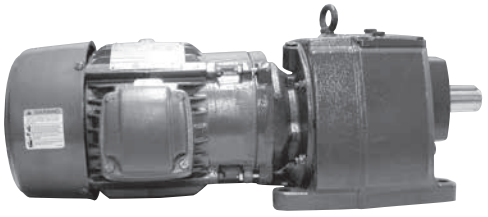
1. High Efficiency Motor Design Available
   - Any non-XP 3 phase gearmotor
2. Innovative, self-locking, taper shaft connection (motor to gear) allows on-site replacement without removing oil, primary pinion, or disconnecting the load.
3. Gearbox is delivered filled with synthetic oil, ready to use.
4. Corrosion resistant, cast iron housings are one piece and ribbed for extra strength. (Size 0 housings are cast aluminum housings.)
5. Gears are made of 8620, heat treated, nickel chromium, molybdenum steel. Helical gearing is skived, superfinished, or ground after case hardening to 58-62 Rc.
6. Multiple breather locations. Breathers are normally closed during construction to exclude contaminants.
7. Double lip seals are installed on plunge ground shafts.
8. Magnetic drain plug is supplied as standard.

Motor Options



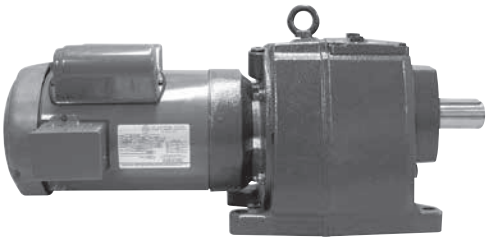
TEFC – Three Phase

- Suitable for general purpose industrial applications
- High Energy efficient design standard
- Premium efficiency design available > 2 HP
- 1.25 service factor through 5 HP; 1.15 service factor above 5 HP
- Premium class F Allguard® insulation standard
- 40°C ambient, NEMA B design, continuous duty
- Inverter duty motor per NEMA MG1 part 31 stocked
- Washdown gearmotors available to 2 HP



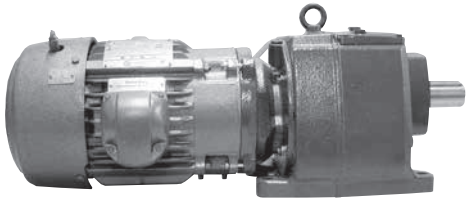
Corro-Duty®

- Designed for wet, corrosive applications and industries including waste treatment, mining and lumber.
- All cast iron construction (56 and 140 frames are rolled steel)
- High efficiency standard 1/3 HP and larger
- Premium efficiency option 3 HP and larger
- 1.15 service factor, class F Allguard® insulation
- Condensation drains in motor and conduit box
- 40°C ambient, NEMA design B, continuous duty
- Inverter duty version per NEMA MG1 part 31 stocked to 50 HP



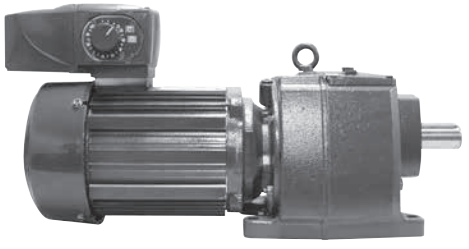
TEFC – Single Phase

- For agricultural, light material handling, textile, and light pumping applications
- 1.25 service factor
  (1.0 service factor, 2 HP)
  (1.15 service factor, 3-5 HP)
- Capacitor start
  (capacitor run above 1/2 HP)
- Class B insulation, continuous duty, reversible



Explosionproof

- Ideal for the petro-chemical, grain, mining, and chemical industries
- Class I, group D, class II, groups F and G
- All cast iron construction (plastic fan cover)
- 1.0 service factor, class B insulation
- 40°C ambient, NEMA B design, continuous duty
- UL approved Inverter duty per NEMA MG1 part 31 available



IntelliGear®

- Variable speed gearmotor with NEMA 4/12 enclosure
- "Onboard" push button and remote speed changing options
- Pre-programmed 6:1 constant torque speed range
- Versions for 3/460V input power supplies from 1/3 to 10 HP
- 1/230V to 2 HP, 3/230V to 5 HP
- 1/115 V through 3/4 HP
- UL, CUL and CE
- Optional 10:1 and 15:1 speed ranges

Selection Information

1. Input HP
   - Based on application data.

2. Speed / ratio
   - Obtain either desired output speed (rpm) or gearbox ratio based on application.

3. Mechanical service factors - gears
   - There are three standard classifications for gearmotor applications:

     Class I - Uniform loading, 3-10 hours per day, service factor 1.0 (minimum).

     Class II - Uniform loading over 10 hours per day or moderate shock loading up to 10 hours per day; service factor 1.4 (minimum).

     Class III - Moderate shock loading over 10 hours per day or heavy shock loading up to 10 hours per day; service factor 2.0 (minimum).

   - The tables on pages A-21 through A-23 are based on past operating experience within the industries listed and information gathered by AGMA. If the user has data reflecting greater severity than normal industry usage, then the AGMA class should be increased.

   - Choose the AGMA class for your given application based on this criteria. If your application cannot be found, use the following table to determine the service factor.

Duty Cycle	Hours Operation	Uniform Load **U**	Moderate Shock Load **M**	Heavy Shock Load **V**
Continuous	0 - 3	0.80	1.00	1.50
	3 - 10	1.00	1.25	1.75
	10 - 24	1.25	1.50	2.00
Frequent Starts/Stops*	0 - 3	1.00	1.25	1.75
	3 - 10	1.25	1.50	2.00
	10 - 24	1.50	1.75	2.25

*Greater than 10 per hour.

Size Selection

Step 1 - Locate gearmotor selection tables (pages A-24 - A-67) based on input HP.

Step 2 - Choose the appropriate nominal speed required.

Step 3 - Select the correct gearmotor based on AGMA class or service factor determined in selection information.

Step 4 - Verify overhung load ratings where required (see below).

Overhung Load

When a sprocket, sheave, pulley, or pinion is mounted on the take-off shaft of a gearmotor, it is necessary to calculate the overhung load. This calculated load must be compared with the gearbox capacity listed to make sure the gearbox will not be overloaded. To calculate the overhung load you need to know the torque or horsepower at the take-off shaft and the location along the shaft at which the load is applied.

A. If torque is known:

$$OHL = \frac{T \times K \times LLF}{r}$$

B. If horsepower is known:

$$OHL = \frac{63025 \times HP \times K \times LLF}{rpm \times r}$$

Where:
OHL = Overhung load (pounds)
T = Torque (in. lbs.)
r = Radius of driving member (in.)
HP = Horsepower
K = Drive type factor
LLF = Load location factor

Driving Member	Value of K
Chain Drive	1.00
Pinion	1.25
V-Belt	1.50
Timing Belts	1.25

Load Location	Value of LLF
End of shaft extension	1.20
Center of shaft extension	1.00
Shaft extension shoulder	0.80

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Constant Speed Gearmotor Selection

CbN SERIES 3000

Example

A horizontal, foot mounted gearmotor is required to operate a uniformly loaded, assembly conveyor at 44 rpm, 24 hours per day. An 8" diameter sprocket is mounted at the end of the shaft and drives the conveyor with a chain. The load is 3 HP and the customer requests a 230/460 volt, High Efficiency TEFC motor end.

Step 1...

The AGMA service classification table on page A-21 indicates that this is a Class II application.

Step 2...

The CbN gearmotor table on page A-44 indicates that a gear frame 3363 will do the job.

Output rpm	AGMA Class	Service Factor	Output Torque in-lb	OHL Δ lb	Nominal Ratio	Frame Size Gear	Frame Size Motor	Std. Motor Types ◊
44	I,II	1.4	4099	2305	40	3363	182T	T,S,C,X, IG

Step 3...

To check overhung load for the example:

$$r = \frac{\text{Sprocket Diameter}}{2} = \frac{8}{2} = 4$$

K = 1.0 (chain drive)

LLF = 1.2 (sprocket on end of shaft)

HP = 3

Torque formula:

$$OHL = \frac{63025 \times HP \times K \times LLF}{rpm \times r}$$

$$OHL = \frac{63025 \times 3 \times 1.0 \times 1.2}{44 \times 4} = 1289 \text{ lbs.}$$

The overhung load capacity of 2305 lbs. listed is greater than the calculated overhung load value of 1289 lbs.

Step 4...

Confirm that no modification is required.

Step 5...

Catalog designation (see "Ordering" page A-13):

CbN • 3363 • S • B3 • 40 • HT24 • 182T • 3

Gearmotor Selection

Selection Information

1. Determine installation environment
   - Control enclosure is NEMA 4/12
2. Input HP
   - For constant torque loads this is at maximum speed of range
3. Speed range
   - Confirm maximum and minimum of needed range.
4. Determine control power supply
   - Phase and voltage

Power Supply	Input HP's
1 ph / 115 v	.33 to .75
1 ph / 230 v	.33 to 2
3 ph / 230 v	.33 to 5
3 ph / 460 v	.33 to 10
3 ph / special	R. O.

5. Mechanical service factoring of gear
   - Refer to page A-9 for this procedure.

   Note: IntelliGear application for 1 phase power supply is limited to 10 starts per hour.

6. Determine speed adjustment (see Section D)
   - Select from:

   PD = Digital keypad with forward/reverse/stop/ speed up/speed down/speed display on IntelliGear enclosure*
   P1 = Run/stop/speed pot. mounted on IntelliGear enclosure
   P2 = Forward/reverse/stop/speed pot. mounted on IntelliGear enclosure
   P3 - Speed pot. (only) mounted on IntelliGear enclosure (start/stop by others)
   P4 = Speed pot. (only) mounted inside IntelliGear enclosure (start/stop by others)
   R = Remote signal following (0-10VDC or 4-20mA supplied by others)

Size Selection

Step 1 - Determine the maximum motor rpm from the following table based on the whether the application requires a speed range of 6:1, 10:1 or 15:1.

$$\text{Speed Range} = \frac{\text{Maximum Output Speed Required}}{\text{Minimum Output Speed Required}}$$

HP	IntelliGear Motor Speed Range		
	6:1 Speed Range	10:1 Speed Range	15:1 Speed Range
1/3 - 3/4 HP	1760 - 293 rpm	1760 - 176 rpm	2625 - 175 rpm
1 - 1 1/2 HP	1750 - 291 rpm	1750 - 175 rpm	2620 - 175 rpm
2 HP	1750 - 291 rpm	2585 - 255 rpm	N. A.
3 HP	1750 - 291 rpm	2630 - 263 rpm	N. A.
5 HP	2150 - 358 rpm	2605 - 260 rpm	N. A.
7.5 HP	2150 - 358 rpm	2670 - 267 rpm	N. A.
10 HP	2100 - 350 rpm	2600 - 260 rpm	N. A.

Step 2 - Determine the gear ratio required. Use the maximum motor rpm from the table above.

$$\text{Gear Ratio} = \frac{\text{Maximum Motor Speed}}{\text{Maximum Output Speed Req'd}}$$

Step 3 - Locate gearmotor selection tables based on the input HP required at the ratio calculated in Step 2. Select the nominal gear ratio closest to the one calculated.

Step 4 - Select correct gearmotor that meets or exceeds the AGMA class or service factor determined in the selection information.

Step 5 - Verify overhung load rating where applicable per formulas on Page A-9.

Step 6 - Confirm input power supply is compatible with HP of selection and record speed adjustment option desired for the application.

Step 7 - Referring to Page A-17, determine if an alternate controller location is required for the application. Default location is "FO" (at 12 o'clock).

* PD option not available at 3/4 HP with 1 ph, 115v power supply and 1.5 or 2 HP with 1 ph; 230V power supply

Gearmotor Selection

Selection Example

A foot mounted gearmotor is required to operate a positive displacement pump from 220 to 40 rpm, 16 hours a day in a waste treatment plant. The output shaft will be coupled to the pump. The customer required approximately 4.7 HP at the maximum rpm. The job site power supply is 3 phase and 460 VAC. The control of speed requires the IntelliGear to follow a 4-20 mA signal supplied by a process control system.

Step 1...

The closest gearmotor HP to meet this application is a 5 HP design.

Step 2...

Determine the specific selection output rpm and ratio for 5 HP IntelliGear

Maximum Speed / 1.2 = "selection table" rpm

220 / 1.2 = approx. 183 rpm

Step 3...

The AGMA service classification indicates this is an AGMA Class II (1.4 minimum S.F.) application. From this information, on page A-66 a CbN 3242 and motor frame 184T with 10:1 nominal ratio is the correct gearmotor.

Output rpm	AGMA Class	Service Factor	Output Torque in-lb	OHL Δ lb	Nominal Ratio	Frame Size Gear	Frame Size Motor	Std. Motor Types ◊
181	I	1.3*	1804	782	10	3242	184T	T,S,C,X,IG

* The catalog "service factor" is @ 60 Hz. The 5 HP IntelliGear maximum rpm is @ 74 Hz. Adjust the "service factor" by (x 1.2) to calculate the service factor @ 74 Hz.

Step 4...

This application does not involve any OHL calculations due to coupling connection.

Step 5...

The power supply of 3 phase / 460 VAC is ok for 5 HP IntelliGear and the speed changing option will be "R" per table on the preceding page.

Step 6...

Catalog designation (see also "Ordering" on page A-13) will be

CbN • 3242 • S • B3 • 10 • IG4 • 184T • 5 w/"R" speed option

Catalog Nomenclature

CbN • 3122 • S • B3 • 40 • HT5 • 145T • 1.5

See Table Below Prior to Ordering

See Page A-16 Prior to Ordering

Series	Gear Frame	Number of Reductions	Mounting Configuration For Gear (Housing and Shaft Extension)	Mounting Plane	Nom. Gear Ratio	Motor Design	Motor Frame	Motor HP
3 = 3000	0 1 2 3 4 5 6 7 8	1 = 1 stage 2 = 2 stages 3 = 3 stages 4 = 4 stages 5 = 5 stages 6 = 6 stages	Refer to the illustrations below of the basic mounting options based on gear frame and stages of reduction. For Flanged gear mounting, refer to details for options that are available based on frame size, flange dimensions, and thrust loads for the application on page A-14.	See Page A-15	Determine from selection pages	Select motor based on enclosure, power supply, and the poles required	56 B56 143T 145T 182T 184T 213T 215T 254T 256T 284T 286T 324T 326T	1/3 1/2 3/4 1 1 1/2 2 3 5 7 1/2 10 15 20 25 30 40 50



Gear Output	Foot Mounted	Foot Mount w/ Flange	Flange Mount (footless)		Face Mount (footless)
			Std. Thrust	High Thrust	
Configuration Code (inches)	**S**[1]	See Page A-14	See Page A-14	See Page A-14	**B14**
Frame(s) Available	All	See Page A-14	All	See Page A-14	30 - 35

[1] Inch output shaft. For output with metric shaft, insert "M" following last alpha character (i.e. metric footmount, S becomes SM).

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Flange Mounted Gearing and Availability Guide

CbN SERIES 3000

Flange - No Feet

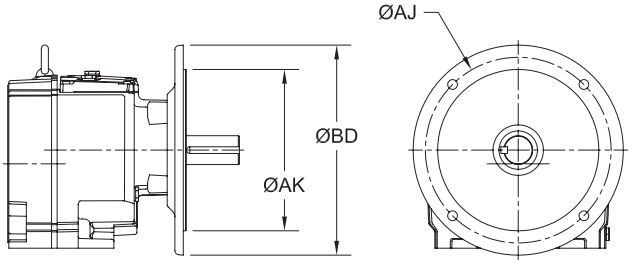
		Output Flange Dimensions Available												
			Inches	MM										
	Reduction Stages	BD	6.50	120	140	160	200	250	300	350	400	450	550	650
		AK	4.50	80	95	110	130	180	230	250	300	350	450	550
		AJ	5.875	100	115	130	165	215	254	300	350	400	500	600
		Gear Frame												
Normal Thrust	Single	30	56C	BD1	BS	BD2	BD3							
		31			BD2	BS								
		32				BD2	BS							
		33					BD2	BS						
		34						BD2	BS					
		35							BD2	BS				
	Multiple	30	56C	BD1	BS	BD2	BD3							
		31		BD3	BD2	BD1	BS							
		32				BD2	BD1	BS						
		33					BD2	BD1	BS					
		34						BD2	BD1	BS				
		35							BD2	BD1	BS			
		36										BD1	BS	
		37										BD1	BS	
		38											BD1	BS
High Thrust	Multiple	33						BR						
		34							BR					
		35								BR				

Footed - with Flange

		Output Flange Dimensions Available												
			Inches	MM										
	Reduction Stages	BD	6.50	120	140	160	200	250	300	350	400	450	550	650
		AK	4.50	80	95	110	130	180	230	250	300	350	450	550
		AJ	5.875	100	115	130	165	215	254	300	350	400	500	600
		Gear Frame												
Normal Thrust	Single	31			SBD2	SBS								
		32				SBD2	SBS							
		33					SBD2	SBS						
		34						SBD2	SBS					
		35							SBD2	SBS				
	Multiple	30A		SBD1	SBS									
		31		SBD3	SBD2	SBD1								
		32					SBD1	SBS						
		33						SBD1	SBS					
		34							SBD1	SBS				
		35								SBD1	SBS			
		36										SBD1	SBS	
		37										SBD1	SBS	
		38											SBD1	SBS

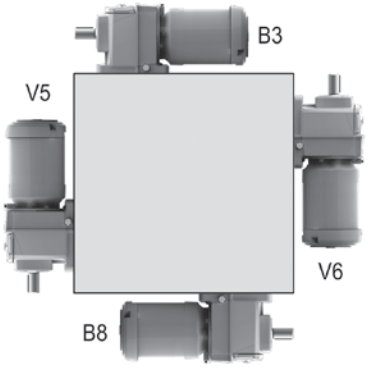
Shaded fields indicate factory lead-time applies

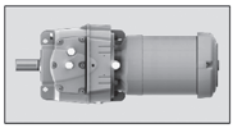
Note: For metric output shaft on any output nomenclature above, add "M" before any numeric designator. (i.e. metric shaft with BD1 flange = BDM1)

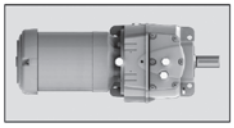


Mounting Positions

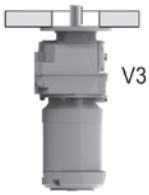
Foot Mounted (with/without flange) Any Reduction

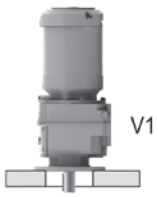


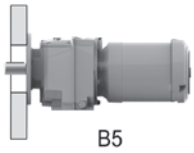




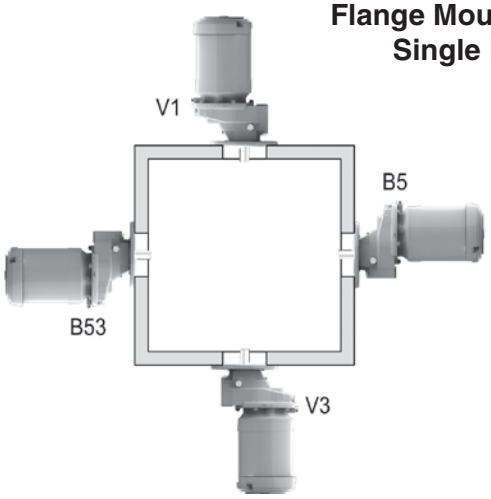
Flange Mounted (footless) Multiple Reductions

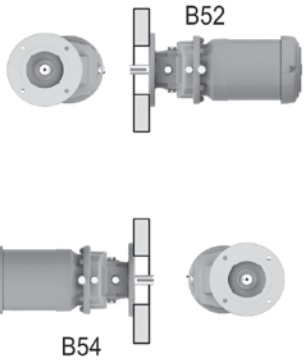






Flange Mounted (footless) Single Reduction





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Standard Motor Input Types

CbN SERIES 3000

Example: High Efficiency, TEFC, 3 phase 60 Hz, 575V, with Fail-safe Brake

H	T	5	B
1	2	3	4

1 Efficiency
- **"blank"** Normal
- **H** High
- **I** Inverter Duty
- **P** Premium

2 Enclosure, pole
- **T** TEFC, 4 pole
- **C** Corro-Duty, 4 pole
- **W** Washdown, 4 pole
- **WP** Washdown Plus, 4 pole
- **X** Explosionproof, 4 pole
- **G** IntelliGear, 4 pole

3 Phase, Hz, Voltage
- **S1** 1 Phase, 60, 115V
- **S12** 1 Phase, 60, 115/230V
- **S2** 1 Phase, 60, 230V
- **2** 3 Phase, 60, 230V
- **24** 3 Phase, 60, 230/460V
- **53** 3 Phase, 50, 380V
- **4** 3 Phase, 60, 460V
- **54** 3 Phase, 50, 400/415V
- **5** 3 Phase, 60, 575V

4 Accessories
- **"blank"** No Brake
- **B** Fail-safe Brake

Base Design	Input Code	Motor HP															
		0.33	0.50	0.75	1	1.5	2	3	5	7.5	10	15	20	25	30	40	50
S Single Phase TEFC	TS12	Y	Y	Y	Y	Y	Y	-	-	-	-	-	-	-	-	-	-
	TS12B	Y	Y	Y	Y	Y	Y	-	-	-	-	-	-	-	-	-	-
	TS2	-	-	-	-	-	-	Y	Y	-	-	-	-	-	-	-	-
	TS2B	-	-	-	-	-	-	Y	Y	-	-	-	-	-	-	-	-
T 3 Phase TEFC	HT24	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	HT24B	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	-	-	-	-	-	-
	HT5	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	HT5B	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	-	-	-	-	-	-
	T24	Y	Y	Y	Y[1]	Y	Y	Y	Y	Y	Y	-	-	-	-	-	-
	T24B	Y	Y	Y	Y[1]	Y	Y	Y	Y	Y	Y	-	-	-	-	-	-
	T5	Y	Y	Y	Y[1]	-	-	-	-	-	-	-	-	-	-	-	-
	T5B	Y	Y	Y	Y[1]	Y	Y	Y	Y	Y	Y	-	-	-	-	-	-
	● T53	Y	Y	Y	Y[1]	Y	Y	Y	Y	P	P	P	P	P	P	P	P
	● T53B	Y	Y	Y	Y[1]	Y	Y	Y	Y	-	-	-	-	-	-	-	-
	T54	Y	Y	Y	Y	Y	Y	Y	Y	P	P	P	P	P	P	P	P
	IT24	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	IT24B	Y	Y	Y	Y	Y	Y	Y	Y	-	-	-	-	-	-	-	-
	IT5	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	IT5B	Y	Y	Y	Y	Y	Y	Y	Y	-	-	-	-	-	-	-	-
	PT24	-	-	-	-	-	-	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	PT5	-	-	-	-	-	-	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	W24	Y	Y	Y	Y[1]	Y	Y	-	-	-	-	-	-	-	-	-	-
	W5	Y	Y	Y	Y[1]	Y	Y	-	-	-	-	-	-	-	-	-	-
	WP24	Y	Y	Y	Y[1]	Y	Y	-	-	-	-	-	-	-	-	-	-
	WP5	Y	Y	Y	Y[1]	Y	Y	-	-	-	-	-	-	-	-	-	-
C 3 Phase Corro-Duty	HC24	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	HC5	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	IC24	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	IC5	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	PC24	-	-	-	-	-	-	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	PC5	-	-	-	-	-	-	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
X 3 Phase Explosionproof	X24	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	-	-	-	-	-	-
	X5	Y	Y	Y	-	-	-	-	-	-	-	-	-	-	-	-	-
	IX24	P	P	P	P	P	P	P	P	P	P	-	-	-	-	-	-
IG IntelliGear®	IGS1	Y	Y	Y	-	-	-	-	-	-	-	-	-	-	-	-	-
	IGS2	Y	Y	Y	Y	Y	Y	-	-	-	-	-	-	-	-	-	-
	IG2	Y	Y	Y	Y	Y	Y	Y	Y	-	-	-	-	-	-	-	-
	IG4	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	-	-	-	-	-	-

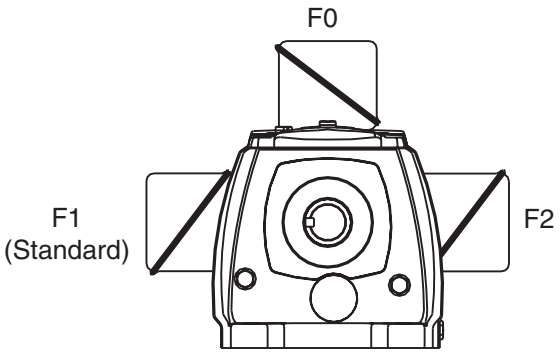
P = Production lead-time Y = Available from stock Y[1] = Motor frame is B56 - = not available

● Refer to page A-19 if CCC motor certification is required on gearmotor

Electrical Connection Options

Conduit Box Location

When ordering a conventional CbN gearmotor, specify the desired conduit box location when viewing unit output shaft in B3 or B5 position. If no option is specified, the "F1" location will be supplied.

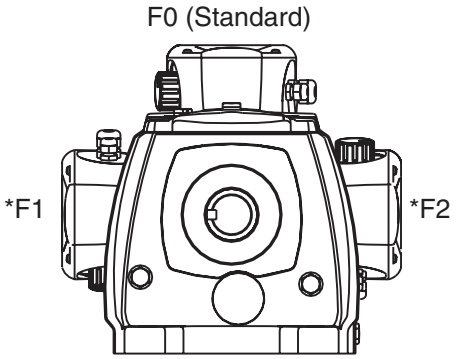


Conduit Box

IntelliGear Controller Location

When ordering an IntelliGear® CbN gearmotor, you can specify the controller location and conduit entry location when viewing the unit output shaft in B3 or B5 position. If no options are specified, the "F0" controller location will be supplied.

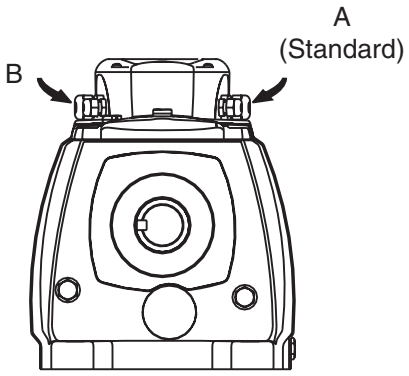
* Refer to Application Engineering for de-rating guidance.



IntelliGear® Controller

Cable Entry

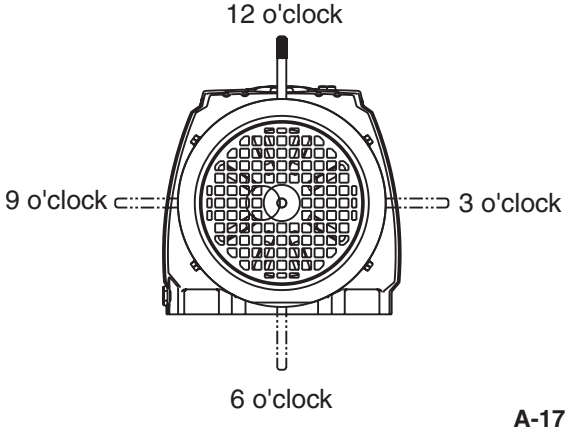
IntelliGear cable entry can be from either side of the enclosure. If no option is specified, "A" will be supplied.



Cable Entry

FCR DC Brake Manual Release Lever Location

Unit Type	Default Location	Optional Location(s)
CbN less IntelliGear	12 o'clock	3, 6, or 9 o'clock
CbN with IntelliGear	9 o'clock	3, 6, or 12 o'clock (lever can not be in same position as IntelliGear)



Modifications, Options and Accessories

Inverter Duty Gearmotors

Improvements in the motors for CbN gearmotors include an upgrade in the wire and varnish treatment used in all non-explosionproof three phase motors called Allguard. This makes the three phase gearmotor suitable for use with PWM inverters in many applications. A one year warranty will be extended for standard efficiency motors on constant torque applications over 3:1 range from 60-20 Hz. The same warranty is extended for high efficiency design motors on constant torque applications over 5:1 range from 60-12 Hz providing the following conditions are met:

- Motor is non-hazardous 3 phase > 48 frame
- Cable length to controller < 100 feet
- Line voltage is < 480 VAC
- Thermal protectors are not required

For all other conditions of operation (including 575 VAC) that exceed these parameters and all hazardous motor applications, select the inverter duty motor design under the motor Type required by the application. These designs include winding thermostats and will be covered by a three (3) year limited warranty of the motor as covered in the Standard Terms and Conditions, and full compliance with NEMA MG1 Part 31.

Motor Modifications

M1 Brakes

Design
These motor mounted brakes have a direct acting, spring set, electromagnetically released disc design. When power to the brake is interrupted, the brake will immediately set and hold. When power is restored to the brake then the brake will be released automatically.

Brake Enclosures
IP23 – suitable for indoors with relatively dry, clean and non-hazardous applications

IP55 – suitable for outdoor or indoor where gearmotor can be exposed to splashing liquids, dusts, and chemicals that are non-hazardous. Not suitable for washdown applications

Non-Hazardous Motor Types	Motor Frame Size(s)	
	56-180T	210T
S	IP23	N/A
T	IP55	IP23
IG	IP55	N/A

Motor Modifications Continued

Operating Voltage
Brakemotors for fixed frequency operation will be arranged for operating with motor power as standard. If another lower voltage like 115 VAC is to be used for the brake on a 3 phase motor, state this voltage at order entry

Brakes for inverter duty brakemotors require a separate fixed frequency AC power source for the brake, but interlocked with starting of the motor. The standard brake design for inverter duty gearmotors will be arranged for single phase 115/230 VAC.

Mounting
Brakes for CbN gearmotors are suitable for the mounting ordered for the gearmotor. The standard brake will have a manual release included. Refer to the table on A-17 for the manual release mounting options available on the FCR type IP 55 brake design.

Ordering
Refer to page A-16. Motor Input Types with a "B" suffix denote a brake mounted at the factory to the end. Define the voltage that will be powering the brake to release it.

M2 Premium Efficiency Motors

High efficiency motor design is a standard option for three phase motors on 56 frames and larger motors in types "T" and "C" to meet the energy legislation in Canada and most end user specifications.

Premium efficiency motors are also optional starting at 3 HP.

M3 Washdown Duty Motors

See GM1 under Gearmotor Modifications

M4 Canopy Cap/Drip Cover

A canopy cap can be supplied for protection from dripping liquids entering the fan end of a gearmotor. It is recommended but not standard when gearmotor mounting is ordered to be "V"

M5 Frequency – 50 Hz

Motors for operation at 50 Hz are available. Refer all 3 phase requirements for 50 Hz to motor code T53 (380V) or T54 (400/415V). The published output speed in catalogs are based on 60 Hz. When operating or selecting a 50 Hz gearmotor, catalog output speed must be reduced by 5/6 for a given ratio. The service factor must also be reduced by 5/6 if the HP is maintained.

For all other 50 Hz voltages, refer to application engineering.

Modifications, Options and Accessories

Motor Modifications Continued

M6 Voltage (3 phase only)

Standard voltages are listed in the table below. 200 VAC will be handled by 208-230/460V motors up to 10 HP. Refer all other voltages to the Pricing Group to confirm availability.

Frequency	3 Phase Voltages Thru 30 HP
60 Hz	200, 230, 460, 575
50 Hz	380, 400/415

M7 Motor Insulation

Emerson's 3 phase motors are built with a premium Class F insulation system for "T", "C" and "IG" types. All "S" and "X" type motors use a Class B insulation.

Tropical insulation treatment is available as a modification on any motor designs noted above

Class H insulation systems require production lead-times and are not available on explosions proof "X" designs.

M8 Space Heaters

Space heaters are recommended for gearmotors installed in very damp locations to prevent condensation from forming on the motor windings when the motor is not operating. Leads will be brought out to the standard motor conduit box. Space heater voltages (115, 230, and 460V) must be specified when an order is entered. This is available on motors > ¾ hp.

M9 Thermal Protection – Thermostats

This protection uses a bi-metallic disc thermostat embedded each phase of the motor winding and then connected by others into the holding circuit of the motor starter or VFD drive. The sensor is normally closed, and opens the control circuit to shut the motor down if the motor achieves over-temperature conditions based on the motor insulation class or design code. Thermostats give protection for running overloads, abnormally high ambient, voltage imbalance, high or low voltage, and ventilation failure. Thermostats do not give protection for locked rotor, starting overloads or single phasing.

Thermostats are standard in inverter duty motor designs (including IG) as well as explosionproof dual label motors type "X".

Motor Options

Certification or Approvals For Gearmotors

Hertz	Phase	Motor Voltage	Approvals [1]	
			Standard	Optional
60 Hz	1	115/230V	UL, CSA	-
	3	230/460	UL, CSA	-
		575	UL, CSA	-
50 Hz	3	380	CE	CCC [2]
		415	CE	-

[1] Corresponding logo(s) will be displayed on motor nameplate

[2] CCC is available for TEFC 3 phase gearmotors 1/3 to 1.5hp, 50/380V for export to China. Motor nameplate will be in Chinese, with metric performance values (i.e motor power=kW). To order with CCC, add "C" to either T38 or T38B input codes i.e. T38C or T38BC will have CCC

Gear Modifications

G11 Corro-Duty®

Corro-Duty treatment can be applied to a gearmotor or reducer when corrosive chemicals are present or unit will be operated outside in adverse environmental conditions. For gearmotors, the unit should start with specification of the Corro-Duty® type "C" motor design. Other special features of this treatment include:

- Normally closed breather design
- Corro-Duty exterior paint treatment (entire unit)
  - o Grey Option
    - ▪ 316 stainless steel paint (2 step)
    - ▪ Light grey semigloss finish
    - ▪ USDA and FDA approved
  - o White Option
    - ▪ Two step epoxy paint system
    - ▪ White gloss finish
    - ▪ USDA and FDA approved

For washdown application for gearmotors, refer to GM1 Washdown Duty Gearmotors and/or Washdown Duty Gearmotor PLUS.

G12a Foodgrade Synthetic Lubricant

When this modification is specified, the CbN oil sump is filled with the required volume of an FDA approved H1 rated synthetic lubricant for helical gearing (refer to page A-224).

G15 Export Boxing

Export boxing can be provided for "under-deck" transport. When the quantity of CbN gearmotors or reducers exceeds five (5) units, refer to international sales for most economical accommodations.

Modifications, Options and Accessories

Gear Modifications Continued

G16 Extra or Special Nameplate

Units can be provided with limited additional special information on the standard product nameplate. When required, an extra nameplate may be provided, stamped with custom markings.

Gearmotor Modifications

GM1 Washdown Duty Gearmotors

This three phase gearmotor design combines special features of the gear and motor required for washdown duty. These include:

- Special treatment of motor interior and windings
- Drains at low point(s) of the motor frame
- Labyrinth seal at motor SE bracket/shaft extension
- Special “protected” breather for gearcase
- Corro-Duty exterior multi-application paint treatment (see Corro-Duty® Reducer for color options).

Motor types “W24” or “W5” are used to order this design based on motor voltage. This is available from 1/3 to 2 HP.

GM2 Washdown Duty Gearmotor PLUS

This three phase gearmotor design includes all the special features noted under GM1 above plus the oil sump of the reducer will be filled before shipment with a FDA approved H1 rated synthetic lubricant as shown on page A-224 for helical gearing. Volume of the oil will be dictated by the mounting position specified on the order.

Motor types “WP24” or “WP5” are used to order this design based on motor voltage. This is available from 1/3 to 2 HP.

Accessories

The following accessories can be ordered along with gearmotors and will be supplied loose for mounting by others

Description	Gear Frames	Part #
NPT Adapter (1/4” NPFT)	31 to 35	0436216
NPT Adapter (3/4” NPFT)	36 to 38	0436218
Oil Level View Port	31 to 35	0435936
	36 to 38	0435938

AGMA Application Classifications

U: Uniform load **M: Moderate shock load** **V: Heavy shock load**

Application	Load	Class Up to 10 hrs/day	Class Over 10 hrs/day
Agitators			
Paper Mills	M	II	II
Pure Liquids	U	I	II
Liquids & Solids	M	II	II
Liquids - Variable Density	M	II	II
Apron Conveyors			
Uniformly Loaded or Fed	U	I	II
Heavy Duty	M	II	II
Apron Feeders	M	II	II
Assembly Conveyors			
Uniformly Loaded or Fed	U	I	II
Heavy Duty	M	II	II
Ball Mills	V	III	III
Barking			
Drums	V	-	III
Hydraulic Auxiliaries	V	-	III
Mechanical	V	-	III
Barscreens (Sewage)	U	I	II
Batchers (Textile)	M	II	II
Beaters and Pulpers (Paper)	U	-	II
Belt Conveyors			
Uniformly Loaded or Fed	U	I	II
Heavy Duty	M	II	II
Belt Feeders	M	II	II
Bending Rolls (Machine)	M	II	II
Bleachers (Paper)	M	-	II
Blowers			
Centrifugal	U	I	II
Lobe	M	II	II
Vane	U	I	II
Bottling Machinery	U	I	II
Brewing and Distilling			
Bottling Machinery	U	I	II
Brew Kettles, Cont. Duty	U	-	II
Can Filling Machines	U	I	II
Cookers - Cont. Duty	U	-	II
Mash Tubs - Cont. Duty	U	-	II
Scale Hoppers - Frequent Starts	M	II	II
Brick Press (Clay Working)	V	III	III
Briquette Machines (Clay Working)	V	III	III
Bucket			
Conveyors, Uniform	U	I	II
Conveyors, Heavy Duty	M	II	II
Elevators Cont.	U	I	II
Elevators Uniform	U	I	II
Elevators, Heavy Duty	M	II	II
Calenders			
Paper	U	-	II
Super (Paper)	U	-	II
Rubber	M	II	II
Textile	M	II	II
Cane Knives	M	II	II
Can Filling Machines	U	I	II
Card Machines (Textile)	M	II	II
Car Dumpers	V	III	-
Car Pullers	M	II	-
Cement Kilns	Refer to Application Engr.		
Centrifugal			
Blowers, Compressors, Discharge Elevators or Pumps	U	I	II
Chain Conveyors			
Uniformly Loaded or Fed	U	I	II
Heavy Duty	M	II	II
Chemical Feeders (Sewage)	U	I	II
Clarifiers	U	I	II
Classifiers	M	II	II
Clay Working Industry			
Brick Press	V	III	III
Briquette Machine	V	III	III
Clay Working Machinery	M	II	II
Pug Mill	M	II	II
Collectors (Sewage)	U	I	II
Compressors			
Centrifugal	U	I	II
Lobe	M	II	II
Reciprocating,			
Multi - Cylinder	M	II	II
Single - Cylinder	V	III	III
Concrete Mixers			
Continuous	M	II	II
Intermittent	U	I	-
Converting Machines (Paper)	M	-	II
Conveyors - Uniformly Loaded or Fed: Apron, Assembly, Belt, Bucket, Chain, Flight, Oven, Screw	U	I	II
Conveyors - Heavy Duty Not Uniformly Fed: Apron, Assembly, Belt, Bucket, Chain, Flight, Oven, Screw	M	II	II
Live Roll (Package)	U	I	II
Reciprocating, shaker	V	III	III
Cookers (Brewing & Distilling) (Food)	U	I	II
Cooling Tower Fans			
Induced Draft	M	II	II
Forced Draft	Refer to Application Engr.		
Couch (Paper)	M	-	II
Cranes and Hoists			
Main Hoists			
Heavy Duty	V	III	III
Medium Duty	M	II	II
Reversing	V	II	II
Skip Hoists	M	II	II
Trolley Drive	M	II	II
Bridge Drive	M	II	II
Crushers			
Ore or Stone	V	III	III
Cutters (Paper)	V	-	III
Cylinders (Paper)	M	-	II
Dewatering Screens (Sewage)	M	II	II
Disc Feeders	U	I	II
Distilling	(See Brewing)		
Double Acting Pumps			
2 or more Cylinders	M	II	II
Single Cylinder	Refer to Application Engr.		
Dough Mixer (Food)	M	II	II
Draw Bench (Metal Mills)			
Carriage & Main Drive	V	III	III
Dredges			
Cable Reels	M	II	-
Conveyors	M	II	II
Cutter Head Drives	V	III	III
Jig Drives	V	III	III
Maneuvering Winches	M	II	-
Pumps	M	II	II
Screen Drives	V	III	III
Stackers	M	II	II
Utility Winches	M	II	-

Browning

Gearmotors

CbN SERIES 3000

AGMA Application Classifications

U: Uniform load **M: Moderate shock load** **V: Heavy shock load**

Application	Load	Class Up to 10 hrs/day	Class Over 10 hrs/day
Dryers (Paper)	U	-	II
Dryers and Coolers (Mills, Rotary)	M	II	II
Dyeing Machinery (Textile)	M	II	II
Elevators			
Bucket - Uniform Load	U	I	II
Bucket - Heavy Duty	M	II	II
Bucket - Continuous	U	I	II
Centrifugal Discharge	U	I	II
Escalators	U	I	II
Freight	M	II	II
Gravity Discharge	U	I	II
Man Lifts, Passenger	Refer to Application Engr.		
Escalators	U	I	II
Fans			
Centrifugal	M	II	II
Cooling Towers			
Induced Draft	M	II	II
Forced Draft	Refer to Application Engineering		
Induced Draft	M	II	II
Large (Mine, etc.)	M	II	II
Large Industrial	M	II	II
Light (Small Diameter)	U	I	II
Feeders			
Apron, belt	M	II	II
Disc	U	I	II
Reciprocating	V	III	III
Screw	M	II	II
Felt			
Stretchers (Paper)	U	-	II
Whippers (Paper)	U	-	II
Flight			
Conveyors, Uniform	U	I	II
Conveyors, Heavy	M	II	II
Food Industry			
Beet Slicers	M	II	II
Bottling, Can Filling Mach.	U	I	II
Cereal Cookers	U	I	II
Dough Mixers	M	II	II
Meat Grinders	M	II	II
Forming Machines (Metal Mills)	V	III	III
Generators (Not welding)	U	I	II
Gravity Discharge Elevators	U	I	II
Grit Collectors (Sewage)	U	I	II
Hammer Mills	V	III	III
Induced Draft Fans	M	II	II
Jordans (Paper)	U	-	II
Kilns (Mills, Rotary)	M	II	II
Cement	Refer to Application Engr.		
Laundry Washers and Tumblers	M	II	II
Line Shafts			
Heavy Shock Load	V	III	III
Moderate Shock Load	M	II	II
Uniform Load	U	I	II
Live Roll Conveyors			
Package	U	I	II
Lobe Blower or Compressors	M	II	II
Log Hauls (Paper and Lumber)	V	III	III
Looms (Textile)	M	II	II
Lumber Industry			
Barkers - Spindle Feed	V	II	III
Barkers - Main Drive	V	III	III
Carriage Drive	Refer to Application Engr.		
Conveyors			
Burner	V	II	III
Main or Heavy Duty	V	II	III
Main Log	V	III	III
Re-Saw Merry-Go-Round	V	II	III
Slab	V	III	III
Transfer	V	II	III
Chains - Floor	V	II	III
Chains - Green	V	II	III
Cut-Off Saws-Chain	V	II	III
Cut-Off Saws-Drag	V	II	III
Debarking Drums	V	III	III
Feeds - Edger	V	II	III
Feeds - Gang	V	III	III
Feeds - Trimmer	V	II	III
Log Deck	V	III	III
Log Hauls - Incline, Well Type	V	III	III
Log Turning Devices	V	III	III
Planer Feed	V	II	III
Planer Tilting Hoists	V	II	III
Rolls - Live-Off Bearing Roll Cases	V	III	III
Sorting Table	V	II	III
Tipple Hoist	V	II	III
Transfers - Chain	V	II	III
Transfers - Craneway	V	II	III
Tray Drives	V	II	III
Machine Tools			
Auxiliary Drives	U	I	II
Bending Rolls	M	II	II
Main Drives	M	II	II
Notching Press (Belted)	Refer to Application Engr.		
Plate Planers	V	III	III
Punch Press (Geared)	V	III	III
Tapping Machines	V	III	III
Mangle (Textile)	M	II	II
Mash Tubs (Brewing and Distilling)	U	-	II
Meat Grinder (Food)	M	II	II
Metal Mills			
Draw Bench Carriages & Main Drives	V	III	III
Forming Machines	V	III	III
Pinch, Dryer & Scrubber Rolls Reversing	Refer to Application Engr.		
Slitters	M	II	II
Table Conveyors, Non-Reversing	M	II	III
Reversing	V	-	III
Wire Drawing & Flattening Machines	M	II	III
Wire Winding Machines	M	II	II
Mills, Rotary Type			
Ball, Pebble, Rod	V	III	III
Cement Kilns	Refer to Application Engr.		
Coolers, Dryers, Kilns	V	II	II
Tumbling Barrels	V	III	III
Mixers (Also see Agitators)			
Concrete - Continuous	M	II	II
Concrete - Intermittent	M	I	-
Constant Density	U	I	II
Variable Density	M	II	II
Nappers (Textile)	M	II	II
Oil Industry			
Chillers	M	II	II
Oil Well Pumping	Refer to Application Engr.		
Paraffin Filter Press	M	II	II
Rotary Kilns	M	II	II
Ore Crushers	V	III	III
Oven Conveyors			
Uniform	U	I	II
Heavy Duty	M	II	II

AGMA Application Classifications

U: Uniform load **M: Moderate shock load** **V: Heavy shock load**

Application	Load	Class Up to 10 hrs/day	Class Over 10 hrs/day
Paper Mills			
Agitator (Mixers)	M	II	II
Barker - Auxiliaries - Hyd.	V	-	III
Barker, Mechanical	V	-	III
Barking Drum	V	-	III
Beater & Pulper	M	-	II
Bleacher	M	-	II
Calenders	M	-	II
Calenders - Super	M	-	II
Converting Mach.- Except Cutters - Platers	M	-	II
Conveyors	M	-	II
Couch	M	-	II
Cutters, Platers	V	-	III
Cylinders	U	-	II
Dryers	U	-	II
Felt Stretchers	U	-	II
Felt Whippers	V	-	III
Jordans	M	-	II
Log Haul	V	-	III
Presses	M	-	II
Pulp Machine Reels	M	-	II
Stock Chests	M	-	II
Suction Rolls	M	-	II
Washers & Thickeners	M	-	II
Winders	M	-	II
Passenger Elevators	Refer to Application Engr.		
Pebble Mills	V	III	III
Plate Planers	V	III	III
Presses (Paper)	V	-	III
Proportioning Pumps	M	II	II
Pub Mills (Clay)	M	II	II
Pullers (Barge Haul)	V	III	III
Pulp Machine Reels	U	-	II
Pumps			
Centrifugal	U	I	II
Proportioning	M	II	II
Reciprocating			
Single Act., 3 or more cyl.	M	II	II
Double Act., 2 or more cyl.	M	II	II
Single Act., 1 or 2 cyl.	Refer to Application Engr.		
Rotary: Gear, Lobe, Vane	U	I	II
Punch Press (Gear Driven)	V	III	III
Reciprocating			
Conveyors, Feeders	V	III	III
Reciprocating Compressors			
Multi-Cylinder	M	II	II
Single cylinder	V	III	III
Rod Mills	V	III	III
Rotary			
Pumps, Gear, Lobe, Vane	U	I	II
Screens (Sand or Gravel)	V	II	II
Rubber Industry			
Mixer	V	III	III
Rubber Calender	M	II	II
Rubber Mill (2 or more)	M	II	II
Sheeter	M	II	II
Tire Building Machines	Refer to Application Engr.		
Tire, Tube Press Openers	Refer to Application Engr.		
Tubers & Strainers	M	II	II
Sand Mullers	Refer to Application Engr.		
Screens			
Air Washing	U	I	II
Rotary - Sand or Gravel	M	II	II
Traveling Water Intake	U	I	II
Screw Conveyors			
Uniform	U	I	II
Heavy Duty or Feeder	M	II	II
Scum Breakers (Sewage)	M	II	II
Sewage Disposal			
Aerators	Refer to Application Engr.		
Bar Screens	U	I	II
Chemical Feeders	U	I	II
Collectors	U	I	II
Dewatering Screens	M	II	II
Grit Collectors	U	I	II
Scum Breakers	M	II	II
Slow or Rapid Mixers	M	II	II
Sludge Collectors	U	I	II
Thickeners	M	II	II
Vacuum Filters	M	II	II
Shaker Conveyors	V	III	III
Sheeters (Rubber)	M	II	II
Single Acting Pump			
1 or 2 Cylinders	Refer to Application Engr.		
3 or more Cylinders	M	II	II
Skip Hoist	M	II	II
Slab Pushers	M	II	II
Slitters (Metal)	M	II	II
Sludge Collectors (Sewage)	U	I	II
Soapers (Textile)	M	II	II
Spinners (Textile)	M	II	II
Steering Gears	M	II	II
Stock Chests (Paper)	U	-	II
Stokers	U	I	II
Stone Crushers	V	III	III
Suction Rolls (Paper)	U	-	II
Table Conveyors (Metal Mills) Non-Reversing	V	II	III
Reversing	V	-	III
Tenter Frames (Textile)	M	II	II
Textile Industry			
Batchers	M	II	II
Calenders	M	II	II
Card Machines	M	II	II
Cloth Finishing Mach. (Calenders, Dryers, Pads, Tenters, Washers)	M	II	II
Dry Cans	M	II	II
Dyeing Machinery	M	II	II
Knitting Machinery	Refer to Application Engr.		
Looms, Mangles, Nappers	M	II	II
Range Drives	Refer to Application Engr.		
Soapers, Spinners	M	II	II
Tenter Frames	M	II	II
Winders	M	II	II
Yarn Preparatory Mach. (Cards, Spinners, Slashers)	M	II	II
Thickeners (Sewage)	M	II	II
Tumbling Barrels	V	III	III
Vacuum Filters (sewage)	M	II	II
Vane Blowers	U	I	II
Winches (Dredges)	M	II	-
Winders			
(Paper)	U	-	II
(Textile)	M	II	II
Windlass	M	II	II
Wire			
Drawing Machines	M	II	III
Winding Machines	M	II	II

Applications not listed in this table, or where the user has data indicating the severity of this usage to be greater than average, should be referred to Application Engineering.

Browning®

Gearmotors

CbN SERIES 3000

1/3 HP

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	AGMA Class	Service Factor	Output Torque in-lb	OHL Δ lb	Nominal Ratio	Frame Size Gear	Frame Size Motor	Std. Motor Types ◊
1411	I, II, III	3+	14	172	1.25	3001	56	T,S,C,X°,IG
1199	I, II, III	3+	17	181	1.4	3001	56	T,S,C,X°,IG
1136	I, II, III	3+	18	184	1.6	3001	56	T,S,C,X°,IG
956	I, II, III	3+	21	193	1.8	3001	56	T,S,C,X°,IG
893	I, II, III	3+	23	197	2	3001	56	T,S,C,X°,IG
799	I, II, III	3+	26	204	2.24	3001	56	T,S,C,X°,IG
686	I, II, III	3+	30	213	2.5	3001	56	T,S,C,X°,IG
636	I, II, III	3+	32	217	2.8	3001	56	T,S,C,X°,IG
540	I, II, III	3+	38	227	3.15	3001	56	T,S,C,X°,IG
482	I, II, III	3+	42	234	3.55	3001	56	T,S,C,X°,IG
429	I, II, III	3+	47	241	4	3001	56	T,S,C,X°,IG
382	I, II, III	3+	53	248	4.5	3001	56	T,S,C,X°,IG
338	I, II, III	3.0	60	255	5	3001	56	T,S,C,X°,IG
338	I, II, III	3.0	68	262	5.6	3001	56	T,S,C,X°,IG
273	I, II, III	3.0	75	267	6.3	3001	56	T,S,C,X°,IG
242	I, II, III	3.0	84	274	7.1	3001	56	T,S,C,X°,IG
215	I, II, III	2.7	95	280	8	3001	56	T,S,C,X°,IG
204	I, II, III	3+	98	522	9	3012	56	T,S,C,X°,IG
172	I, II, III	3+	116	550	10	3012	56	T,S,C,X°,IG
160	I, II, III	3+	125	562	11.2	3012	56	T,S,C,X°,IG
143	I, II, III	3+	140	582	12.5	3012	56	T,S,C,X°,IG
123	I, II, III	3+	162	600	14	3012	56	T,S,C,X°,IG
114	I, II, III	3+	175	600	16	3012	56	T,S,C,X°,IG
97	I, II, III	3+	206	600	18	3012	56	T,S,C,X°,IG
86	I, II, III	3+	231	600	20	3012	56	T,S,C,X°,IG
77	I, II, III	3.0	260	600	22.4	3012	56	T,S,C,X°,IG
68	I, II, III	2.7	292	600	25	3012	56	T,S,C,X°,IG
61	I, II, III	2.4	329	600	28	3012	56	T,S,C,X°,IG
52	I, II, III	2.1	371	600	31.5	3012	56	T,S,C,X°,IG
49	I, II	1.9	408	1211	35.5	3012	56	T,S,C,X°,IG
43	I, II	1.7	460	600	40	3012	56	T,S,C,X°,IG
45	III	3+	443	1211	40	3132	56	T,S,C,X, IG
39	I, II	1.5	517	600	45	3012	56	T,S,C,X°,IG
39	III	3.0	508	1260	45	3132	56	T,S,C,X,IG
36	I, II	1.6	549	600	50	3013	56	T,S,C,X°,IG
36	III	3.0	561	1296	50	3132	56	T,S,C,X,IG
32	I, II	1.4	615	600	56	3013	56	T,S,C,X°,IG
30	III	2.1	646	1345	56	3133	56	T,S,C,X,IG
27	I	1.2	716	600	63	3013	56	T,S,C,X°,IG
27	II	1.9	729	1345	63	3133	56	T,S,C,X,IG

◊ **Standard Motor Types** (see page A-16 for product codes)
- T TEFC, three phase, 230/460 or 575 volts
- S TEFC, single phase, 115/230 volts
- C Corro-Duty®, three phase, 230/460 or 575V
- X° Explosionproof, CL1 group D, three phase, 230/460 or 575V
- X Explosionproof, Cl 1 group D, Cl 2 groups F&G, three phase, 230/460 or 575V
- IG IntelliGear® variable speed for 1/115V, 1/230VAC, 3/230V, or 3/460V power supplies

1/3 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	AGMA Class	Service Factor	Output Torque in-lb	OHL Δ lb	Nominal Ratio	Frame Size Gear	Frame Size Motor	Std. Motor Types ◊
25	I	1.1	772	600	71	3013	56	T,S,C,X°,IG
25	II	1.8	774	1345	71	3133	56	T,S,C,X,IG
25	III	3+	766	1610	71	3253	56	T,S,C,X,IG
22	I	1.0	908	600	80	3013	56	T,S,C,X°,IG
22	II	1.6	919	1345	80	3133	56	T,S,C,X,IG
22	III	3+	870	1610	80	3253	56	T,S,C,X,IG
20	I, II	1.6	919	1345	90	3133	56	T,S,C,X,IG
20	III	3+	966	1610	90	3253	56	T,S,C,X,IG
18	I, II	1.5	1110	1345	100	3133	56	T,S,C,X,IG
18	III	3+	1097	1610	100	3253	56	T,S,C,X,IG
16	I, II	1.4	1239	1345	112	3133	56	T,S,C,X,IG
16	III	3+	1221	1610	112	3253	56	T,S,C,X,IG
14	I	1.2	1390	1345	125	3133	56	T,S,C,X,IG
14	II, III	2.9	1374	1610	125	3253	56	T,S,C,X,IG
12	I	1.1	1609	1345	140	3133	56	T,S,C,X,IG
12	II, III	2.5	1610	1610	140	3253	56	T,S,C,X,IG
11	I	1.0	1767	1345	160	3133	56	T,S,C,X,IG
11	II, III	2.3	1777	1610	160	3253	56	T,S,C,X,IG
10	I, II, III	2.1	1949	1610	180	3253	56	T,S,C,X,IG
8.6	I, II	1.8	2276	1610	200	3253	56	T,S,C,X,IG
8.6	III	2.7	2239	2305	200	3363	56	T,S,C,X,IG
7.9	I, II	1.8	2416	1610	224	3254	56	T,S,C,X°,IG
7.9	III	3+	2416	2905	224	3374	56	T,S,C,X°,IG
7.1	I, II	1.5	2701	1610	250	3254	56	T,S,C,X°,IG
7.1	III	2.6	2701	2905	250	3374	56	T,S,C,X°,IG
6.7	I, II	1.4	2843	1610	280	3254	56	T,S,C,X°,IG
6.7	III	2.5	2843	2905	280	3374	56	T,S,C,X°,IG
5.7	I	1.2	3368	1610	315	3254	56	T,S,C,X°,IG
5.7	II, III	2.1	3368	2905	315	3374	56	T,S,C,X°,IG
5.3	I	1.1	3619	1610	355	3254	56	T,S,C,X°,IG
5.3	II, III	2.0	3619	2905	355	3374	56	T,S,C,X°,IG
4.7	I	1.0	4046	1610	400	3254	56	T,S,C,X°,IG
4.7	II	1.7	4046	2905	400	3374	56	T,S,C,X°,IG
4.4	III	3+	4241	4340	400	3484	56	T,S,C,X,IG
4.1	I, II	1.5	4713	2905	450	3374	56	T,S,C,X°,IG
3.9	III	2.9	4845	4340	450	3484	56	T,S,C,X,IG
3.8	I, II	1.4	5073	2905	500	3374	56	T,S,C,X°,IG
3.4	III	2.6	5470	4340	500	3484	56	T,S,C,X,IG
3.2	I	1.2	5970	2905	560	3374	56	T,S,C,X°,IG
3.2	II, III	2.4	5804	4340	560	3484	56	T,S,C,X,IG

◊ **Standard Motor Types** (see page A-16 for product codes)
- T TEFC, three phase, 230/460 or 575 volts
- S TEFC, single phase, 115/230 volts
- C Corro-Duty®, three phase, 230/460 or 575V
- X° Explosionproof, CL1 group D, three phase, 230/460 or 575V
- X Explosionproof, Cl 1 group D, Cl 2 groups F&G, three phase, 230/460 or 575V
- IG IntelliGear® variable speed for 1/115VAC, 1/230VAC, 3/230V, or 3/460V power supplies

1/3 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	AGMA Class	Service Factor	Output Torque in-lb	OHL Δ lb	Nominal Ratio	Frame Size Gear	Frame Size Motor	Std. Motor Types ◊
2.9	I	1.1	6692	2905	630	3374	56	T,S,C,X°,IG
2.7	II, III	2.1	6893	4340	630	3484	56	T,S,C,X,IG
2.6	I, II	1.9	7288	4340	710	3484	56	T,S,C,X,IG
2.4	III	3+	7869	4580	710	3594	56	T,S,C,X,IG
2.2	I, II	1.7	8329	4340	800	3484	56	T,S,C,X,IG
2.1	III	3+	8785	4580	800	3594	56	T,S,C,X,IG
2.0	I, II	1.5	9298	4340	900	3484	56	T,S,C,X,IG
1.9	III	2.7	9849	4580	900	3594	56	T,S,C,X,IG
1.8	I, II	1.4	10423	4340	1000	3484	56	T,S,C,X,IG
1.6	II, III	2.4	11403	4580	1000	3594	56	T,S,C,X,IG
1.6	I	1.2	12069	4340	1120	3484	56	T,S,C,X,IG
1.5	II, III	2.1	12521	4580	1120	3594	56	T,S,C,X,IG
1.4	I	1.1	13253	4340	1250	3484	56	T,S,C,X,IG
1.3	II	1.9	14359	4580	1250	3594	56	T,S,C,X,IG
1.2	I, II	1.7	15845	4580	1400	3594	56	T,S,C,X,IG
1.1	I, II	1.7	16064	4580	1600	3595	56	T,S,C,X,IG
1.0	I, II	1.5	18177	4580	1800	3595	56	T,S,C,X,IG
.89	I	1.3	20421	4580	2000	3595	56	T,S,C,X,IG
.78	I	1.1	23594	4580	2240	3595	56	T,S,C,X,IG
.69	I	1.0	26638	4580	2500	3595	56	T,S,C,X,IG
.65	-	.97	28259	4580	2800	3595	56	T,S,C,X,IG

◊ **Standard Motor Types** (see page A-16 for product codes)
- T TEFC, three phase, 230/460 or 575 volts
- S TEFC, single phase, 115/230 volts
- C Corro-Duty®, three phase, 230/460 or 575V
- X Explosionproof, Cl 1 group D, Cl 2 groups F&G, three phase, 230/460 or 575V
- IG IntelliGear® variable speed for 1/115VAC, 1/230VAC, 3/230V, or 3/460V power supplies

1/2 HP

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	AGMA Class	Service Factor	Output Torque in-lb	OHL lb	Nominal Ratio	Frame Size Gear	Frame Size Motor	Std. Motor Types ◊
1411	I, II, III	3+	22	163	1.25	3001	56	T,S,C,X°,IG
1199	I, II, III	3+	26	171	1.4	3001	56	T,S,C,X°,IG
1136	I, II, III	3+	27	173	1.6	3001	56	T,S,C,X°,IG
956	I, II, III	3+	32	182	1.8	3001	56	T,S,C,X°,IG
893	I, II, III	3+	35	185	2	3001	56	T,S,C,X°,IG
799	I, II, III	3+	39	191	2.24	3001	56	T,S,C,X°,IG
686	I, II, III	3+	45	198	2.5	3001	56	T,S,C,X°,IG
636	I, II, III	3+	49	202	2.8	3001	56	T,S,C,X°,IG
540	I, II, III	3+	57	209	3.15	3001	56	T,S,C,X°,IG
482	I, II, III	3+	64	214	3.55	3001	56	T,S,C,X°,IG
429	I, II, III	3+	72	220	4	3001	56	T,S,C,X°,IG
382	I, II, III	3+	81	224	4.5	3001	56	T,S,C,X°,IG
338	I, II, III	2.0	91	229	5	3001	56	T,S,C,X°,IG
338	I, II, III	2.0	103	233	5.6	3001	56	T,S,C,X°,IG
273	I, II, III	2.0	113	236	6.3	3001	56	T,S,C,X°,IG
242	I, II, III	2.0	127	239	7.1	3001	56	T,S,C,X°,IG
215	I, II	1.8	143	241	8	3001	56	T,S,C,X°,IG
214	III	3+	141	505	8	3012	56	T,S,C,X°,IG
204	I, II, III	3+	148	513	9	3012	56	T,S,C,X°,IG
172	I, II, III	3+	176	540	10	3012	56	T,S,C,X°,IG
160	I, II, III	3+	189	551	11.2	3012	56	T,S,C,X°,IG
143	I, II, III	3+	211	569	12.5	3012	56	T,S,C,X°,IG
123	I, II, III	3+	246	584	14	3012	56	T,S,C,X°,IG
114	I, II, III	2.9	265	590	16	3012	56	T,S,C,X°,IG
97	I, II, III	2.5	312	600	18	3012	56	T,S,C,X°,IG
86	I, II, III	2.2	350	600	20	3012	56	T,S,C,X°,IG
77	I, II, III	2.0	393	600	22.4	3012	56	T,S,C,X°,IG
68	I, II	1.8	442	600	25	3012	56	T,S,C,X°,IG
69	III	2.0	439	1027	25	3122	56	T,S,C,X,IG
64	III	3+	471	1062	28	3132	56	T,S,C,X,IG
61	I, II	1.6	499	600	28	3012	56	T,S,C,X°,IG
57	I, II, III	3+	528	1097	31.5	3132	56	T,S,C,X,IG
52	I, II	1.4	562	600	31.5	3012	56	T,S,C,X°,IG
49	I	1.3	618	600	35.5	3012	56	T,S,C,X°,IG
49	II, III	2.9	611	1141	35.5	3132	56	T,S,C,X,IG
45	I, II, III	2.7	671	1170	40	3132	56	T,S,C,X,IG
43	I	1.1	697	589	40	3012	56	T,S,C,X°,IG
39	I	1.0	784	572	45	3012	56	T,S,C,X°,IG
39	II, III	2.0	770	1212	45	3132	56	T,S,C,X,IG

◊ **Standard Motor Types** (see page A-16 for product codes)
- T TEFC, three phase, 230/460 or 575 volts
- S TEFC, single phase, 115/230 volts
- C Corro-Duty®, three phase, 230/460 or 575V
- X° Explosionproof, CL1 group D, three phase, 230/460 or 575V
- X Explosionproof, Cl 1 group D, Cl 2 groups F&G, three phase, 230/460 or 575V
- IG IntelliGear® variable speed for 1/115V, 1/230VAC, 3/230V, or 3/460V power supplies

Browning®

Gearmotors

CbN SERIES 3000

1/2 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	AGMA Class	Service Factor	Output Torque in-lb	OHL lb	Nominal Ratio	Frame Size Gear	Frame Size Motor	Std. Motor Types ◊
36	I	1.1	832	600	50	3013	56	T,S,C,X°,IG
36	II, III	2.0	850	1243	50	3132	56	T,S,C,X, IG
30	I, II	1.4	979	1297	56	3133	56	T,S,C,X, IG
30	III	3+	943	1610	56	3253	56	T,S,C,X,IG
27	I	1.3	1104	1335	63	3133	56	T,S,C,X,IG
27	II, III	3+	1087	1610	63	3253	56	T,S,C,X,IG
25	I	1.2	1172	1345	71	3133	56	T,S,C,X,IG
25	II, III	3.5	1161	1610	71	3253	56	T,S,C,X,IG
22	I	1.1	1392	1345	80	3133	56	T,S,C,X,IG
22	II, III	3+	1318	1610	80	3253	56	T,S,C,X,IG
20	I	1.0	1472	1345	90	3133	56	T,S,C,X,IG
20	II, III	2.7	1464	1610	90	3253	56	T,S,C,X,IG
18	I	1.0	1682	1345	100	3133	56	T,S,C,X,IG
18	II, III	2.4	1663	1610	100	3253	56	T,S,C,X,IG
16	I, II, III	2.2	1850	1610	112	3253	56	T,S,C,X,IG
14.2	I, II	1.9	2081	1610	125	3253	56	T,S,C,X,IG
14.1	III	2.9	2125	2305	125	3363	56	T,S,C,X,IG
12.1	I, II	1.6	2440	1610	140	3253	56	T,S,C,X,IG
12.4	III	2.6	2375	2305	140	3363	56	T,S,C,X,IG
11.0	I, II	1.5	2693	1610	160	3253	56	T,S,C,X,IG
10.8	III	2.2	2743	2305	160	3363	56	T,S,C,X,IG
10.0	I, II	1.4	2953	1610	180	3253	56	T,S,C,X,IG
9.7	III	2.0	3065	2305	180	3363	56	T,S,C,X,IG
8.7	I	1.2	3448	1610	200	3253	56	T,S,C,X,IG
8.7	II	1.8	3393	2305	200	3363	56	T,S,C,X,IG
8.7	III	2.2	3393	2905	200	3373	56	T,S,C,X,IG
7.9	I, II	1.2	3661	1610	224	3254	56	T,S,C,X°,IG
7.9	III	2.1	3661	2905	224	3374	56	T,S,C,X°,IG
7.2	III	3+	3914	4340	250	3484	56	T,S,C,X,IG
7.1	I, II	1.7	4092	2905	250	3374	56	T,S,C,X°,IG
6.7	I, II	1.7	4307	2905	280	3374	56	T,S,C,X°,IG
6.4	III	3+	4431	4340	280	3484	56	T,S,C,X,IG
5.7	I, II	1.4	5103	2905	315	3374	56	T,S,C,X°,IG
5.7	III	2.8	5000	4340	315	3484	56	T,S,C,X,IG
5.3	I	1.3	5467	2905	355	3374	56	T,S,C,X°,IG
5.0	II, III	2.5	5656	4340	355	3484	56	T,S,C,X,IG
4.7	I	1.2	6130	2905	400	3374	56	T,S,C,X°,IG
4.4	II, III	2.2	6426	4340	400	3484	56	T,S,C,X,IG
4.1	I	1.0	7140	2905	450	3374	56	T,S,C,X°,IG

◊ **Standard Motor Types** (see page A-16 for product codes)
- T TEFC, three phase, 230/460 or 575 volts
- S TEFC, single phase, 115/230 volts
- C Corro-Duty®, three phase, 230/460 or 575V
- X° Explosionproof, CL1 group D, three phase, 230/460 or 575V
- X Explosionproof, Cl 1 group D, Cl 2 groups F&G, three phase, 230/460 or 575V
- IG IntelliGear® variable speed for 1/115V, 1/230VAC, 3/230V, or 3/460V power supplies

1/2 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	AGMA Class	Service Factor	Output Torque in-lb	OHL lb	Nominal Ratio	Frame Size Gear	Frame Size Motor	Std. Motor Types ◊
3.9	I,II	1.9	7342	4340	450	3484	56	T,S,C,X,IG
3.4	I,II	1.7	8288	4340	500	3484	56	T,S,C,X,IG
3.4	III	3+	8309	4580	500	3594	56	T,S,C,X,IG
3.2	I,II	1.6	8794	4340	560	3484	56	T,S,C,X,IG
2.9	III	2.7	9866	4580	560	3594	56	T,S,C,X,IG
2.7	I,II	1.4	10443	4340	630	3484	56	T,S,C,X,IG
2.7	III	2.6	10434	4580	630	3594	56	T,S,C,X,IG
2.6	I	1.3	11043	4340	710	3484	56	T,S,C,X,IG
2.4	III	2.3	11923	4580	710	3594	56	T,S,C,X,IG
2.2	I	1.1	12620	4340	800	3484	56	T,S,C,X,IG
2.1	II,III	2.0	13310	4580	800	3594	56	T,S,C,X,IG
2.0	I	1.0	14088	4340	900	3484	56	T,S,C,X,IG
1.9	II	1.8	14923	4580	900	3594	56	T,S,C,X,IG
1.97	III	2.6	14755	13617	900	3604	56	T,S,C,X,IG
1.78	III	2.4	16047	13617	1000	3605	56	T,S,C,X,IG
1.6	I,II	1.6	17278	4580	1000	3594	56	T,S,C,X,IG
1.5	III	2.1	18496	13617	1120	3605	56	T,S,C,X,IG
1.5	I,II	1.4	18971	4580	1120	3594	56	T,S,C,X,IG
1.4	II,III	2.0	19767	13617	1250	3605	56	T,S,C,X,IG
1.3	I	1.2	21756	4580	1250	3594	56	T,S,C,X,IG
1.3	II	1.7	22432	13617	1400	3605	56	T,S,C,X,IG
1.2	III	3.5	23617	18558	1400	3735	56	T,S,C,X,IG
1.2	I	1.1	24008	4580	1400	3594	56	T,S,C,X,IG
1.1	II	1.5	24915	13617	1600	3605	56	T,S,C,X,IG
1.1	III	3.3	25239	18558	1600	3735	56	T,S,C,X,IG
1.1	I	1.1	24340	4580	1600	3595	56	T,S,C,X,IG
1.0	II	1.4	28303	13617	1800	3605	56	T,S,C,X,IG
1	I	1.0	27541	4580	1800	3595	56	T,S,C,X,IG
0.99	III	2.9	28642	18558	1800	3735	56	T,S,C,X,IG
0.90	I	1.2	31490	13617	2000	3605	56	T,S,C,X,IG
0.90	II,III	2.6	31813	18558	2000	3735	56	T,S,C,X,IG
0.79	I,II,III	2.3	36139	18558	2240	3735	56	T,S,C,X,IG
0.71	I,II,III	2.1	40207	18558	2500	3735	56	T,S,C,X,IG
0.64	III	2.7	44535	22000	2800	3845	56	T,S,C,X,IG
0.63	I,II	1.8	45232	18558	2800	3735	56	T,S,C,X,IG
0.58	III	2.5	49191	22000	3150	3845	56	T,S,C,X,IG
0.54	I,II	1.6	53020	18558	3150	3735	56	T,S,C,X,IG
0.52	III	2.2	54622	22000	3550	3845	56	T,S,C,X,IG
0.49	I,II	1.4	58527	18558	3550	3735	56	T,S,C,X,IG
0.44	I	1.3	64177	18558	4000	3735	56	T,S,C,X,IG
0.44	II	1.9	64747	22000	4000	3845	56	T,S,C,X,IG
0.38	I, II	1.8	73118	22000	4500	3846	56	T,S,C,X,IG
0.34	I, II	1.6	81616	22000	5000	3846	56	T,S,C,X,IG
0.30	I, II	1.5	91646	22000	5600	3846	56	T,S,C,X,IG
0.27	I	1.3	103690	22000	6300	3846	56	T,S,C,X,IG
0.24	I	1.1	118421	22000	7100	3846	56	T,S,C,X,IG
0.22	I	1.1	127079	22000	8000	3846	56	T,S,C,X,IG

◊ **Standard Motor Types** (see page A-16 for product codes)
- T TEFC, three phase, 230/460 or 575 volts
- S TEFC, single phase, 115/230 volts
- C Corro-Duty®, three phase, 230/460 or 575V
- X Explosionproof, Cl 1 group D, Cl 2 groups F&G, three phase, 230/460 or 575V
- IG IntelliGear® variable speed for 1/115V, 1/230VAC, 3/230V, or 3/460V power supplies

Browning®

Gearmotors

CbN SERIES 3000

3/4 HP

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	AGMA Class	Service Factor	Output Torque in-lb	OHL lb	Nominal Ratio	Frame Size Gear	Frame Size Motor	Std. Motor Types ◊
1411	I, II, III	3+	33	150	1.25	3001	56	T,S,C,X°,IG
1199	I, II, III	3+	39	156	1.4	3001	56	T,S,C,X°,IG
1136	I, II, III	3+	41	158	1.6	3001	56	T,S,C,X°,IG
956	I, II, III	3+	48	165	1.8	3001	56	T,S,C,X°,IG
893	I, II, III	3+	52	167	2	3001	56	T,S,C,X°,IG
799	I, II, III	3+	58	171	2.24	3001	56	T,S,C,X°,IG
686	I, II, III	3+	67	176	2.5	3001	56	T,S,C,X°,IG
636	I, II, III	3+	73	179	2.8	3001	56	T,S,C,X°,IG
540	I, II, III	3+	86	183	3.15	3001	56	T,S,C,X°,IG
482	I, II, III	3+	96	186	3.55	3001	56	T,S,C,X°,IG
429	I, II, III	3+	108	188	4	3001	56	T,S,C,X°,IG
382	I, II, III	3.0	121	190	4.5	3001	56	T,S,C,X°,IG
338	I, II	1.4	137	191	5	3001	56	T,S,C,X°,IG
356	III	3+	130	427	5	3101	56	T,S,C,X,IG
301	I, II	1.4	154	191	5.6	3001	56	T,S,C,X°,IG
308	III	2.9	151	447	5.6	3101	56	T,S,C,X,IG
273	I, II	1.4	169	190	6.3	3001	56	T,S,C,X°,IG
280	III	2.7	165	459	6.3	3101	56	T,S,C,X,IG
242	I	1.3	191	188	7.1	3001	56	T,S,C,X°,IG
237	II, III	3+	180	469	7.1	3012	56	T,S,C,X°,IG
215	I	1.2	215	185	8	3001	56	T,S,C,X°,IG
214	II, III	3+	212	481	8	3012	56	T,S,C,X°,IG
204	I, III, III	3+	223	484	9	3012	56	T,S,C,X°,IG
172	I, III, III	2.9	264	493	10	3012	56	T,S,C,X°,IG
160	I, III, III	2.7	283	495	11.2	3012	56	T,S,C,X°,IG
143	I, III, III	2.4	317	499	12.5	3012	56	T,S,C,X°,IG
123	I, III, III	2.1	369	500	14	3012	56	T,S,C,X°,IG
114	I, II	1.9	398	500	16	3012	56	T,S,C,X°,IG
111	III	3.1	409	869	16	3122	56	T,S,C,X,IG
97	I, II	1.7	468	495	18	3012	56	T,S,C,X°,IG
96	III	2.6	474	903	18	3122	56	T,S,C,X,IG
87	I, II	1.5	525	488	20	3012	56	T,S,C,X°,IG
87	III	2.4	520	925	20	3122	56	T,S,C,X,IG
82	II, III	3.2	520	933	22.4	3132	56	T,S,C,X,IG
77	I	1.3	590	477	22.4	3012	56	T,S,C,X°,IG
69	I	1.2	664	462	25	3012	56	T,S,C,X°,IG
69	II	1.4	597	957	25	3122	56	T,S,C,X,IG
69	III	2.8	658	980	25	3132	56	T,S,C,X,IG
64	II, III	2.5	707	1020	28	3132	56	T,S,C,X,IG

◊ **Standard Motor Types** (see page A-16 for product codes)
- T TEFC, three phase, 230/460 or 575 volts
- S TEFC, single phase, 115/230 volts
- C Corro-Duty®, three phase, 230/460 or 575V
- X° Explosionproof, CL1 group D, three phase, 230/460 or 575V
- X Explosionproof, Cl 1 group D, Cl 2 groups F&G, three phase, 230/460 or 575V
- IG IntelliGear® variable speed for 1/115VAC, 1/230VAC, 3/230V, or 3/460V power supplies

3/4 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	AGMA Class	Service Factor	Output Torque in-lb	OHL lb	Nominal Ratio	Frame Size Gear	Frame Size Motor	Std. Motor Types ◊
61	I	1.1	748	442	28	3012	56	T,S,C,X°,IG
57	I, II, III	2.2	792	1049	31.5	3132	56	T,S,C,X,IG
49	I, II	1.9	917	1086	35.5	3132	56	T,S,C,X,IG
49	III	3+	921	1500	35.5	3252	56	T,S,C,X,IG
45	I, II	1.8	1007	1109	40	3132	56	T,S,C,X,IG
45	III	3+	1016	1541	40	3252	56	T,S,C,X,IG
41	II, III	3+	1115	1580	45	3252	56	T,S,C,X,IG
39	I	1.3	1155	1142	45	3132	56	T,S,C,X,IG
36	I	1.3	1274	1166	50	3132	56	T,S,C,X,IG
35	II, III	3+	1302	1610	50	3252	56	T,S,C,X,IG
31	I, II, III	2.8	1414	1610	56	3253	56	T,S,C,X,IG
27	I, II, III	2.5	1630	1610	63	3253	56	T,S,C,X,IG
26	I, II, III	2.3	1742	1610	71	3253	56	T,S,C,X,IG
22	I, II, III	2.0	1977	1610	80	3253	56	T,S,C,X,IG
20	I, II	1.8	2196	1610	90	3253	56	T,S,C,X,IG
19	III	2.7	2335	2305	90	3363	56	T,S,C,X,IG
18	I, II	1.6	2494	1610	100	3253	56	T,S,C,X,IG
17	III	2.4	2450	2305	100	3363	56	T,S,C,X,IG
16	I, II	1.5	2775	1610	112	3253	56	T,S,C,X,IG
15	III	2.1	2769	2305	112	3363	56	T,S,C,X,IG
14	I	1.3	3122	1610	125	3253	56	T,S,C,X,IG
14	II	1.9	3188	2305	125	3363	56	T,S,C,X,IG
14	III	2.4	3188	2905	125	3373	56	T,S,C,X,IG
12	I	1.1	3659	1610	140	3253	56	T,S,C,X,IG
12	II	1.9	3563	2305	140	3363	56	T,S,C,X,IG
12	III	2.1	3563	2905	140	3373	56	T,S,C,X,IG
11.3	III	3+	3768	4340	160	3483	56	T,S,C,X,IG
11.0	I	1.0	4039	1610	160	3253	56	T,S,C,X,IG
10.8	II	1.5	3943	2305	160	3363	56	T,S,C,X,IG
10.8	II	1.9	3940	2905	160	3373	56	T,S,C,X,IG
10.2	II, III	3+	4183	4340	180	3483	56	T,S,C,X,IG
9.7	I	1.3	4598	2305	180	3363	56	T,S,C,X,IG
9.7	II	1.7	4598	2905	180	3373	56	T,S,C,X,IG
8.7	I	1.2	5089	2305	200	3363	56	T,S,C,X,IG
8.7	II	1.5	5089	2905	200	3373	56	T,S,C,X,IG
8.6	III	2.9	4959	4340	200	3483	56	T,S,C,X,IG
7.9	I, II	1.4	5492	2905	224	3374	56	T,S,C,X°,IG
7.6	III	2.5	5574	4340	224	3484	56	T,S,C,X,IG
7.2	II, III	2.4	5871	4340	250	3484	56	T,S,C,X,IG
7.1	I	1.2	6138	2905	250	3374	56	T,S,C,X°,IG
6.5	I	1.1	6685	2905	280	3374	56	T,S,C,X°,IG
6.4	II, III	2.1	6646	4340	280	3484	56	T,S,C,X,IG

◊ **Standard Motor Types** (see page A-16 for product codes)
- T TEFC, three phase, 230/460 or 575 volts
- S TEFC, single phase, 115/230 volts
- C Corro-Duty®, three phase, 230/460 or 575V
- X° Explosionproof, CL1 group D, three phase, 230/460 or 575V
- X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 or 575V
- IG IntelliGear® variable speed for 1/115VAC, 1/230VAC, 3/230V, or 3/460V power supplies

Browning®

Gearmotors

CbN SERIES 3000

3/4 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	AGMA Class	Service Factor	Output Torque in-lb	OHL lb	Nominal Ratio	Frame Size Gear	Frame Size Motor	Std. Motor Types ◊
5.7	I,II	1.9	7500	4340	315	3484	56	T,S,C,X,IG
5.3	III	3+	8015	4580	315	3594	56	T,S,C,X,IG
5.0	I,II	1.7	8484	4340	355	3484	56	T,S,C,X,IG
4.7	III	3.0	9104	4580	355	3594	56	T,S,C,X,IG
4.4	I,II	1.5	9639	4340	400	3484	56	T,S,C,X,IG
4.1	III	2.6	10405	4580	400	3594	56	T,S,C,X,IG
3.9	I	1.3	11012	4340	450	3484	56	T,S,C,X,IG
3.6	II,III	2.3	11744	4580	450	3594	56	T,S,C,X,IG
3.4	I	1.1	12432	4340	500	3484	56	T,S,C,X,IG
3.4	II,III	2.2	12464	4580	500	3594	56	T,S,C,X,IG
3.3	III	2.9	13357	13617	560	3604	56	T,S,C,X,IG
3.2	I	1.1	13190	4340	560	3484	56	T,S,C,X,IG
2.9	II	1.8	14800	4580	560	3594	56	T,S,C,X,IG
2.8	III	2.5	15659	13617	630	3604	56	T,S,C,X,IG
2.7	I,II	1.7	15651	4580	630	3594	56	T,S,C,X,IG
2.5	III	2.2	17286	13617	710	3604	56	T,S,C,X,IG
2.4	I,II	1.5	18282	4580	710	3594	56	T,S,C,X,IG
2.3	II,III	2.0	18953	13617	800	3604	56	T,S,C,X,IG
2.1	I	1.3	20407	4580	800	3594	56	T,S,C,X,IG
2.0	III	3.7	22072	18558	900	3734	56	T,S,C,X,IG
2.0	II	1.7	22133	13617	900	3604	56	T,S,C,X,IG
1.9	I	1.2	22882	4580	900	3594	56	T,S,C,X,IG
1.8	III	3.4	24200	18558	1000	3734	56	T,S,C,X,IG
1.8	II	1.6	24562	13617	1000	3604	56	T,S,C,X,IG
1.6	I	1.0	26492	4580	1000	3594	56	T,S,C,X,IG
1.5	III	2.9	28260	18558	1120	3734	56	T,S,C,X,IG
1.5	I,II	1.4	27744	13617	1120	3605	56	T,S,C,X,IG
1.4	I	1.3	29650	13617	1250	3605	56	T,S,C,X,IG
1.4	II,III	2.7	30735	18558	1250	3735	56	T,S,C,X,IG
1.3	I	1.1	33648	13617	1400	3605	56	T,S,C,X,IG
1.2	II,III	2.3	35425	18558	1400	3735	56	T,S,C,X,IG
1.1	I	1.0	37373	13617	1600	3605	56	T,S,C,X,IG
1.1	II,III	2.2	37858	18558	1600	3735	56	T,S,C,X,IG
0.99	II	1.9	42962	18558	1800	3735	56	T,S,C,X,IG
0.99	III	2.8	43167	22000	1800	3845	56	T,S,C,X,IG
0.90	I,II	1.7	47719	18558	2000	3735	56	T,S,C,X,IG
0.87	III	2.5	49296	22000	2000	3845	56	T,S,C,X,IG
0.81	III	2.3	52900	22000	2240	3845	56	T,S,C,X,IG
0.79	I,II	1.5	54208	18558	2240	3735	56	T,S,C,X,IG
0.71	I,II	1.4	60311	18558	2500	3735	56	T,S,C,X,IG
0.69	III	2.0	61551	22000	2500	3845	56	T,S,C,X,IG
0.64	II	1.8	66802	22000	2800	3845	56	T,S,C,X,IG
0.63	I	1.2	67848	18558	2800	3735	56	T,S,C,X,IG
0.58	II	1.7	73786	22000	3150	3845	56	T,S,C,X,IG
0.54	I	1.0	79530	18558	3150	3735	56	T,S,C,X,IG
0.52	II	1.5	81933	22000	3550	3845	56	T,S,C,X,IG
0.44	I	1.3	97120	22000	4000	3845	56	T,S,C,X,IG
0.38	I	1.2	109677	22000	4500	3846	56	T,S,C,X,IG
0.34	I	1.1	122424	22000	5000	3846	56	T,S,C,X,IG

◊ **Standard Motor Types** (see page A-16 for product codes)
- T TEFC, three phase, 230/460 or 575 volts
- S TEFC, single phase, 115/230 volts
- C Corro-Duty®, three phase, 230/460 or 575V
- X Explosionproof, Cl 1 group D, Cl 2 groups F&G, three phase, 230/460 or 575V
- IG IntelliGear® variable speed for 1/115VAC, 1/230VAC, 3/230V, or 3/460V power supplies

1 HP

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	AGMA Class	Service Factor	Output Torque in-lb	OHL lb	Nominal Ratio	Frame Size Gear	Frame Size Motor	Std. Motor Types ◊
1411	I, II, III	3.1	44	137	1.25	3001	143T	T,S,C,X°,IG
1199	I, II, III	3.1	52	142	1.4	3001	143T	T,S,C,X°,IG
1136	I, II, III	3.1	54	143	1.6	3001	143T	T,S,C,X°,IG
956	I, II, III	3.1	64	148	1.8	3001	143T	T,S,C,X°,IG
893	I, II, III	3.1	69	150	2	3001	143T	T,S,C,X°,IG
799	I, II, III	3.1	77	152	2.24	3001	143T	T,S,C,X°,IG
686	I, II, III	3.1	90	155	2.5	3001	143T	T,S,C,X°,IG
636	I, II, III	3.1	97	156	2.8	3001	143T	T,S,C,X°,IG
540	I, II, III	3.0	114	158	3.15	3001	143T	T,S,C,X°,IG
482	I, II, III	2.7	128	158	3.55	3001	143T	T,S,C,X°,IG
429	I, II, III	2.6	144	157	4	3001	143T	T,S,C,X°,IG
382	I, II, III	2.2	162	156	4.5	3001	143T	T,S,C,X°,IG
338	I	1.0	182	153	5	3001	143T	T,S,C,X°,IG
356	I, II, III	2.6	174	419	5	3101	143T	T,S,C,X,IG
308	I, II, III	2.2	201	437	5.6	3101	143T	T,S,C,X,IG
301	I, II, III	1.0	205	149	5.6	3001	143T	T,S,C,X°,IG
273	I	1.0	226	145	6.3	3001	143T	T,S,C,X°,IG
280	I, II, III	2.0	221	448	6.3	3101	143T	T,S,C,X,IG
242	I	1.0	255	137	7.1	3001	143T	T,S,C,X°,IG
237	I, II, III	2.7	240	428	7.1	3012	143T	T,S,C,X°,IG
214	I, II, III	2.7	282	432	8	3012	143T	T,S,C,X°,IG
204	I, II, III	2.6	297	433	9	3012	143T	T,S,C,X°,IG
172	I, II, III	2.2	353	433	10	3012	143T	T,S,C,X°,IG
160	I, II, III	2.0	378	431	11.2	3012	143T	T,S,C,X°,IG
143	I, II	1.8	423	427	12.5	3012	143T	T,S,C,X°,IG
139	III	2.9	436	794	12.5	3122	143T	T,S,C,X,IG
124	I, II	1.6	492	416	14	3012	143T	T,S,C,X°,IG
124	III	2.6	487	816	14	3122	143T	T,S,C,X,IG
114	I, II	1.5	531	409	16	3012	143T	T,S,C,X°,IG
111	III	2.3	546	839	16	3122	143T	T,S,C,X,IG
97	I	1.3	625	388	18	3012	143T	T,S,C,X°,IG
96	II, III	2.0	632	869	18	3122	143T	T,S,C,X,IG
86	I	1.1	700	368	20	3012	143T	T,S,C,X,IG
87	II	1.8	694	887	20	3122	143T	T,S,C,X,IG
87	III	2.5	878	932	20	3132	143T	T,S,C,X,IG
82	II, III	2.4	739	924	22.4	3132	143T	T,S,C,X,IG
77	I	1.0	787	343	22.4	3012	143T	T,S,C,X°,IG
72	II, III	2.1	844	953	25	3132	143T	T,S,C,X,IG
69	I	1.0	795	914	25	3122	143T	T,S,C,X,IG
64	I, II	1.9	942	977	28	3132	143T	T,S,C,X,IG
58	I, II	1.7	1056	1001	31.5	3132	143T	T,S,C,X,IG

◊ **Standard Motor Types** (see page A-16 for product codes)
- T TEFC, three phase, 230/460 or 575 volts
- S TEFC, single phase, 115/230 volts
- C Corro-Duty®, three phase, 230/460 or 575V
- X° Explosionproof, CL1 group D, three phase, 230/460V
- X Explosionproof, Cl 1 group D, Cl 2 groups F&G, three phase, 230/460V
- IG IntelliGear® variable speed for 1/230VAC, 3/230V, or 3/460V power supplies

1 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	AGMA Class	Service Factor	Output Torque in-lb	OHL lb	Nominal Ratio	Frame Size Gear	Frame Size Motor	Std. Motor Types ◊
58	III	3.8	1047	1398	31.5	3252	143T	T,S,C,X,IG
49	I, II	1.5	1223	1030	35.5	3132	143T	T,S,C,X,IG
49	III	3.3	1228	1456	35.5	3252	143T	T,S,C,X,IG
45	I	1.3	1343	1048	40	3132	143T	T,S,C,X,IG
45	II, III	3.0	1355	1493	40	3252	143T	T,S,C,X,IG
41	II, III	2.7	1486	1526	45	3252	143T	T,S,C,X,IG
39	I	1.0	1540	1072	45	3132	143T	T,S,C,X,IG
36	I	1.0	1699	1089	50	3132	143T	T,S,C,X,IG
35	II, III	2.3	1735	1583	50	3252	143T	T,S,C,X,IG
31	I, II, III	2.1	1886	1610	56	3253	143T	T,S,C,X,IG
27	I, II	1.9	2173	1610	63	3253	143T	T,S,C,X,IG
26	III	2.7	2238	2305	63	3363	143T	T,S,C,X,IG
26	I, II	1.7	2323	1610	71	3253	143T	T,S,C,X,IG
24	III	2.4	2364	2305	71	3363	143T	T,S,C,X,IG
22	I, II	1.5	2636	1610	80	3253	143T	T,S,C,X,IG
22	III	2.2	2653	2305	80	3363	143T	T,S,C,X,IG
20	I, II	1.4	2928	1610	90	3253	143T	T,S,C,X,IG
19	III	2.0	3003	2305	90	3363	143T	T,S,C,X,IG
18	I	1.2	3326	1610	100	3253	143T	T,S,C,X,IG
17	II	1.8	3266	2305	100	3363	143T	T,S,C,X,IG
17	III	2.2	3246	2905	100	3373	143T	T,S,C,X,IG
16	I	1.1	3700	1610	112	3253	143T	T,S,C,X,IG
15	II	1.6	3652	2305	112	3363	143T	T,S,C,X,IG
15	III	2.0	3632	2905	112	3373	143T	T,S,C,X,IG
14	I	1.0	4163	1610	125	3253	143T	T,S,C,X,IG
14	II	1.5	4251	2305	125	3363	143T	T,S,C,X,IG
14	II	1.8	4216	2905	125	3373	143T	T,S,C,X,IG
14	III	3+	4377	4340	125	3483	143T	T,S,C,X,IG
12.5	III	3.0	4750	4340	140	3483	143T	T,S,C,X,IG
12.4	I	1.3	4750	2305	140	3363	143T	T,S,C,X,IG
12.4	II	1.6	4720	2905	140	3373	143T	T,S,C,X,IG
11.3	III	2.7	5247	4340	160	3483	143T	T,S,C,X,IG
10.8	I	1.1	5258	2305	160	3363	143T	T,S,C,X,IG
10.8	II	1.4	5238	2905	160	3373	143T	T,S,C,X,IG
10.2	III	2.5	5826	4340	180	3483	143T	T,S,C,X,IG
9.7	I	1.0	6130	2305	180	3363	143T	T,S,C,X,IG
9.7	I	1.2	6105	2905	180	3373	143T	T,S,C,X,IG
8.7	I	1.1	6786	2905	200	3373	143T	T,S,C,X,IG
8.6	II, III	2.1	6906	4340	200	3483	143T	T,S,C,X,IG
7.9	I	1.0	6786	2905	224	3374	143T	T,S,C,X°,IG
7.7	II	1.9	7530	4340	224	3484	143T	T,S,C,X,IG

◊ **Standard Motor Types** (see page A-16 for product codes)
- T TEFC, three phase, 230/460 or 575 volts
- S TEFC, single phase, 115/230 volts
- C Corro-Duty®, three phase, 230/460 or 575V
- X° Explosionproof, CL1 group D, three phase, 230/460V
- X Explosionproof, Cl 1 group D, Cl 2 groups F&G, three phase, 230/460V
- IG IntelliGear® variable speed for 1/230VAC, 3/230V, or 3/460V power supplies

1 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	AGMA Class	Service Factor	Output Torque in-lb	OHL lb	Nominal Ratio	Frame Size Gear	Frame Size Motor	Std. Motor Types ◊
7.7	III	3+	7561	4580	224	3594	143T	T,S,C,X,IG
7.2	I,II	1.8	8002	4340	250	3484	143T	T,S,C,X,IG
6.8	III	3+	8558	4580	250	3594	143T	T,S,C,X,IG
6.4	I,II	1.6	9059	4340	280	3484	143T	T,S,C,X,IG
6.0	III	2.8	9658	4580	280	3594	143T	T,S,C,X,IG
5.7	I,II	1.4	10222	4340	315	3484	143T	T,S,C,X,IG
5.3	III	2.5	10924	4580	315	3594	143T	T,S,C,X,IG
5.0	I	1.2	11563	4340	355	3484	143T	T,S,C,X,IG
4.7	I,II,III	2.2	12408	4580	355	3594	143T	T,S,C,X,IG
4.4	I	1.1	13137	4340	400	3484	143T	T,S,C,X,IG
4.1	II	1.9	14181	4580	400	3594	143T	T,S,C,X,IG
4.1	III	2.7	14229	13617	450	3604	143T	T,S,C,X,IG
3.9	-	0.95	15009	4340	450	3484	143T	T,S,C,X,IG
3.7	III	2.4	15834	13617	500	3604	143T	T,S,C,X,IG
3.6	I,II	1.7	16003	4580	450	3594	143T	T,S,C,X,IG
3.4	I,II	1.6	16987	4580	500	3594	143T	T,S,C,X,IG
3.3	III	2.2	17809	13617	560	3604	143T	T,S,C,X,IG
2.9	I	1.3	20105	4580	560	3594	143T	T,S,C,X,IG
2.9	III	4.1	20217	18558	630	3734	143T	T,S,C,X,IG
2.8	II	1.8	20879	13617	630	3604	143T	T,S,C,X,IG
2.7	I	1.3	21331	4580	630	3594	143T	T,S,C,X,IG
2.6	III	3.6	22740	18558	710	3734	143T	T,S,C,X,IG
2.5	II,III	1.7	23048	13617	710	3604	143T	T,S,C,X,IG
2.4	I	1.1	24376	4580	710	3594	143T	T,S,C,X,IG
2.3	I,III	1.5	25271	13617	800	3604	143T	T,S,C,X,IG
2.2	III	3.1	26659	18558	800	3734	143T	T,S,C,X,IG
2.1	-	0.99	27212	4580	800	3594	143T	T,S,C,X,IG
2.0	II,III	2.8	29429	18558	900	3734	143T	T,S,C,X,IG
2.0	I	1.3	29510	13617	900	3604	143T	T,S,C,X,IG
1.8	II,III	2.6	32267	18558	1000	3734	143T	T,S,C,X,IG
1.8	I	1.2	32750	13617	1000	3605	143T	T,S,C,X,IG
1.5	II,III	2.2	37679	18558	1120	3734	143T	T,S,C,X,IG
1.5	I	1.0	36992	13617	1120	3605	143T	T,S,C,X,IG
1.4	I	1.0	39534	13617	1250	3605	143T	T,S,C,X,IG
1.4	II,III	2.0	40980	18558	1250	3735	143T	T,S,C,X,IG
1.2	I,II	1.7	47233	18558	1400	3735	143T	T,S,C,X,IG
1.1	I,II	1.6	50478	18558	1600	3735	143T	T,S,C,X,IG
1.1	III	2.4	50849	22000	1600	3845	143T	T,S,C,X,IG
0.99	I,II	1.4	57283	18558	1800	3735	143T	T,S,C,X,IG
0.99	III	2.1	57551	22000	1800	3845	143T	T,S,C,X,IG
0.90	I	1.3	63625	18558	2000	3735	143T	T,S,C,X,IG
0.87	II	1.9	65728	22000	2000	3845	143T	T,S,C,X,IG
0.81	II	1.7	70533	22000	2240	3845	143T	T,S,C,X,IG
0.79	I	1.1	72277	18558	2240	3735	143T	T,S,C,X,IG
0.71	I	1.0	80414	18558	2500	3735	143T	T,S,C,X,IG
0.69	I, II	1.5	82067	22000	2500	3845	143T	T,S,C,X,IG
0.64	I, II	1.4	89069	22000	2800	3845	143T	T,S,C,X,IG
0.58	I	1.2	98382	22000	3150	3845	143T	T,S,C,X,IG
0.52	I	1.1	109243	22000	3550	3845	143T	T,S,C,X,IG

◊ **Standard Motor Types** (see page A-16 for product codes)
- T TEFC, three phase, 230/460 or 575 volts
- S TEFC, single phase, 115/230 volts
- C Corro-Duty®, three phase, 230/460 or 575V
- X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460V
- IG IntelliGear® variable speed for 1/230VAC, 3/230V, or 3/460V power supplies

Browning®

Gearmotors

CbN SERIES 3000

1 1/2 HP

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	AGMA Class	Service Factor	Output Torque in-lb	OHL lb	Nominal Ratio	Frame Size Gear	Frame Size Motor	Std. Motor Types ◊
1411	I, II, III	2.0	66	110	1.25	3001	145T	T,S,C,X°,IG
1199	I, II, III	2.0	77	112	1.4	3001	145T	T,S,C,X°,IG
1136	I, II, III	2.0	81	113	1.6	3001	145T	T,S,C,X°,IG
956	I, II, III	2.0	97	114	1.8	3001	145T	T,S,C,X°,IG
893	I, II, III	2.0	104	114	2	3001	145T	T,S,C,X°,IG
799	I, II, III	2.0	116	114	2.24	3001	145T	T,S,C,X°,IG
686	I, II, III	2.0	135	112	2.5	3001	145T	T,S,C,X°,IG
636	I, II, III	2.0	146	111	2.8	3001	145T	T,S,C,X°,IG
540	I, II, III	2.0	171	106	3.15	3001	145T	T,S,C,X°,IG
509	I, II, III	2.4	182	364	3.55	3101	145T	T,S,C,X,IG
482	I, II	1.8	192	101	3.55	3001	145T	T,S,C,X°,IG
445	I, II, III	2.1	208	377	4	3101	145T	T,S,C,X,IG
429	I, II	1.7	216	95	4	3001	145T	T,S,C,X°,IG
401	I, II	1.9	232	389	4.5	3101	145T	T,S,C,X,IG
382	I, II	1.5	243	87	4.5	3001	145T	T,S,C,X°,IG
356	I, II	1.7	260	401	5	3101	145T	T,S,C,X,IG
351	III	4.1	259	596	5	3122	145T	T,S,C,X,IG
310	I, II, III	3+	293	616	5.6	3122	145T	T,S,C,X,IG
308	I, II	1.5	301	417	5.6	3101	145T	T,S,C,X,IG
280	I	1.3	331	426	6.3	3101	145T	T,S,C,X,IG
273	II, III	3+	333	637	6.3	3122	145T	T,S,C,X,IG
238	I, II	1.8	359	347	7.1	3012	145T	T,S,C,X°,IG
238	III	3+	365	652	7.1	3122	145T	T,S,C,X,IG
214	I, II	1.8	423	336	8	3012	145T	T,S,C,X°,IG
211	III	2.9	381	659	8	3122	145T	T,S,C,X,IG
204	I, II	1.7	445	332	9	3012	145T	T,S,C,X°,IG
199	III	2.7	456	689	9	3122	145T	T,S,C,X,IG
172	I,II	1.4	529	312	10	3012	145T	T,S,C,X°,IG
168	III	2.3	541	679	10	3122	145T	T,S,C,X,IG
160	I, II	1.4	567	302	11.2	3012	145T	T,S,C,X°,IG
159	III	2.2	572	726	11.2	3122	145T	T,S,C,X,IG
143	I	1.2	634	282	12.5	3012	145T	T,S,C,X°,IG
140	II	1.9	654	689	12.5	3122	145T	T,S,C,X,IG
140	III	2.5	645	781	12.5	3132	145T	T,S,C,X,IG
123	I	1.0	738	248	14	3012	145T	T,S,C,X°,IG
123	II	1.7	730	717	14	3122	145T	T,S,C,X,IG
123	III	2.3	737	801	14	3132	145T	T,S,C,X,IG
114	I	1.0	796	228	16	3012	145T	T,S,C,X°,IG
111	II	1.5	819	726	16	3122	145T	T,S,C,X,IG
109	III	2.1	831	813	16	3132	145T	T,S,C,X,IG
103	II, III	2.0	882	821	18	3132	145T	T,S,C,X,IG

◊ **Standard Motor Types** (see page A-16 for product codes)

- T TEFC, three phase, 230/460 or 575 volts
- S TEFC, single phase frame, 115/230 volts, 145TY frame
- C Corro-Duty®, three phase, 230/460 or 575V
- X° Explosionproof, CL1 group D, three phase, 230/460V
- X Explosionproof, Cl 1 group D, Cl 2 groups F&G, three phase, 230/460V
- IG IntelliGear® variable speed for 1/230V, 3/230V, or 3/460V power supplies

1 1/2 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	AGMA Class	Service Factor	Output Torque in-lb	OHL lb	Nominal Ratio	Frame Size Gear	Frame Size Motor	Std. Motor Types ◊
96	I	1.3	948	747	18	3122	145T	T,S,C,X,IG
88	I	1.2	1041	764	20	3122	145T	T,S,C,X,IG
88	II	1.7	1047	849	20	3132	145T	T,S,C,X,IG
88	III	2.1	1041	1175	20	3242	145T	T,S,C,X,IG
82	I, II	1.6	1108	857	22.4	3132	145T	T,S,C,X,IG
80	III	2.0	1193	1212	22.4	3242	145T	T,S,C,X,IG
72	I, II	1.4	1266	877	25	3132	145T	T,S,C,X,IG
72	III	3.1	1255	1256	25	3252	145T	T,S,C,X,IG
69	I, II	1.7	1317	1238	25	3242	145T	T,S,C,X,IG
65	I	1.3	1413	891	28	3132	145T	T,S,C,X,IG
65	II, III	2.8	1397	1288	28	3252	145T	T,S,C,X,IG
57	I	1.1	1585	905	31.5	3132	145T	T,S,C,X,IG
58	II, III	2.5	1571	1323	31.5	3252	145T	T,S,C,X,IG
49	I	1.0	1834	919	35.5	3132	145T	T,S,C,X,IG
49	II, III	2.2	1842	1368	35.5	3252	145T	T,S,C,X,IG
45	I, II, III	2.0	2033	1396	40	3252	145T	T,S,C,X,IG
41	I, II	1.8	2229	1420	45	3252	145T	T,S,C,X,IG
39	III	2.6	2265	2305	45	3363	145T	T,S,C,X,IG
35	I, II	1.5	2603	1459	50	3252	145T	T,S,C,X,IG
34	III	2.3	2601	2305	50	3363	145T	T,S,C,X,IG
31	I, II	1.4	2828	1492	56	3253	145T	T,S,C,X,IG
30	III	2.1	2929	2305	56	3363	145T	T,S,C,X,IG
27	I	1.2	3260	1511	63	3253	145T	T,S,C,X,IG
26	II	1.8	3181	2305	63	3363	145T	T,S,C,X,IG
26	III	2.2	3417	2905	63	3373	145T	T,S,C,X,IG
26	I	1.2	3484	1534	71	3253	145T	T,S,C,X,IG
24	II	1.6	3704	2305	71	3363	145T	T,S,C,X,IG
24	III	2.0	3699	2905	71	3373	145T	T,S,C,X,IG
22	I	1.0	3954	1555	80	3253	145T	T,S,C,X,IG
22	II	1.5	3979	2305	80	3363	145T	T,S,C,X,IG
22	II	1.9	4039	2905	80	3373	145T	T,S,C,X,IG
22	III	3+	4069	4340	80	3483	145T	T,S,C,X,IG
19	I	1.3	4504	2305	90	3363	145T	T,S,C,X,IG
19	II	1.7	4576	2905	90	3373	145T	T,S,C,X,IG
19	III	3+	4604	4340	90	3483	145T	T,S,C,X,IG
17	I	1.2	5136	2305	100	3363	145T	T,S,C,X,IG
17	II	1.5	5116	2905	100	3373	145T	T,S,C,X,IG
17	III	2.7	5258	4340	100	3483	145T	T,S,C,X,IG
16	II, III	2.5	5642	4340	112	3483	145T	T,S,C,X,IG
15	I	1.0	5813	2305	112	3363	145T	T,S,C,X,IG
15	I	1.3	5798	2905	112	3373	145T	T,S,C,X,IG
14	I	1.2	6324	2905	125	3373	145T	T,S,C,X,IG
14	II, III	2.2	6565	4340	125	3483	145T	T,S,C,X,IG

◊ **Standard Motor Types** (see page A-16 for product codes)
- T TEFC, three phase, 230/460 or 575 volts
- S TEFC, single phase frame, 115/230 volts, 145TY frame
- C Corro-Duty®, three phase, 230/460 or 575V
- X Explosionproof, Cl 1 group D, Cl 2 groups F&G, three phase, 230/460V
- IG IntelliGear® variable speed for 1/230V, 3/230V, or 3/460V power supplies

Browning®

Gearmotors

CbN SERIES 3000

1 1/2 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	AGMA Class	Service Factor	Output Torque in-lb	OHL lb	Nominal Ratio	Frame Size Gear	Frame Size Motor	Std. Motor Types ◊
12.5	II,III	2.0	7125	4340	140	3483	145T	T,S,C,X,IG
12	I	1.1	7125	2905	140	3373	145T	T,S,C,X,IG
11.3	I,II	1.8	7870	4340	160	3483	145T	T,S,C,X,IG
11	III	3+	8067	4580	160	3593	145T	T,S,C,X,IG
10.2	I,II	1.6	8739	4340	180	3483	145T	T,S,C,X,IG
10.1	III	3+	8776	4580	180	3593	145T	T,S,C,X,IG
8.6	I,II	1.4	10359	4340	200	3483	145T	T,S,C,X,IG
8.6	III	2.6	10333	4580	200	3593	145T	T,S,C,X,IG
7.7	I	1.3	11295	4340	224	3484	145T	T,S,C,X,IG
7.7	II,III	2.4	11341	4580	224	3594	145T	T,S,C,X,IG
7.2	I	1.2	12002	4580	250	3484	145T	T,S,C,X,IG
6.8	I,II,III	2.1	12837	4580	250	3594	145T	T,S,C,X,IG
6.4	I	1.1	13588	4580	280	3484	145T	T,S,C,X,IG
6.2	III	2.8	13952	13617	280	3604	145T	T,S,C,X,IG
6.0	II	1.9	14487	4580	280	3594	145T	T,S,C,X,IG
5.9	III	2.6	14905	13617	315	3604	145T	T,S,C,X,IG
5.3	I,II	1.6	16386	4580	315	3594	145T	T,S,C,X,IG
5.2	III	2.3	16916	13617	355	3604	145T	T,S,C,X,IG
4.7	I,II	1.4	18613	4580	355	3594	145T	T,S,C,X,IG
4.6	II,III	2.1	18794	13617	400	3604	145T	T,S,C,X,IG
4.1	I	1.3	21271	4580	400	3594	145T	T,S,C,X,IG
4.1	I,II	1.8	21343	13617	450	3604	145T	T,S,C,X,IG
4.0	III	3.8	21599	18558	450	3734	145T	T,S,C,X,IG
3.7	I,II	1.6	23751	13617	500	3604	145T	T,S,C,X,IG
3.6	III	3.4	23997	18558	500	3734	145T	T,S,C,X,IG
3.6	I	1.1	24010	4580	450	3594	145T	T,S,C,X,IG
3.4	I	1.1	25481	4580	500	3594	145T	T,S,C,X,IG
3.3	II	1.4	26714	13617	560	3604	145T	T,S,C,X,IG
3.2	III	3.0	27252	18558	560	3734	145T	T,S,C,X,IG
2.9	II,III	2.7	30326	18558	630	3734	145T	T,S,C,X,IG
2.8	I	1.2	31318	13617	630	3604	145T	T,S,C,X,IG
2.6	II,III	2.4	34110	18558	710	3734	145T	T,S,C,X,IG
2.5	I	1.1	34572	13617	710	3604	145T	T,S,C,X,IG
2.3	I	1.0	37906	13617	800	3604	145T	T,S,C,X,IG
2.2	II,III	2.1	39988	18558	800	3734	145T	T,S,C,X,IG
2.1	III	3.0	41256	22000	900	3844	145T	T,S,C,X,IG
2.0	I,II	1.9	44143	18558	900	3734	145T	T,S,C,X,IG
1.8	I,II	1.7	48400	18558	1000	3734	145T	T,S,C,X,IG
1.8	III	2.5	48912	22000	1000	3844	145T	T,S,C,X,IG
1.6	III	2.3	52095	22000	1120	3845	145T	T,S,C,X,IG
1.5	I,II	1.5	56519	18558	1120	3734	145T	T,S,C,X,IG
1.4	I	1.3	61470	18558	1250	3735	145T	T,S,C,X,IG
1.4	II, III	2.0	60875	22000	1250	3845	145T	T,S,C,X,IG
1.3	II	1.8	67949	22000	1400	3845	145T	T,S,C,X,IG
1.2	I	1.2	70850	18558	1400	3735	145T	T,S,C,X,IG
1.1	I	1.1	75717	18558	1600	3735	145T	T,S,C,X,IG
1.1	II	1.6	76300	22000	1600	3845	145T	T,S,C,X,IG
0.99		0.96	85925	18558	1800	3735	145T	T,S,C,X,IG
0.99	I, II	1.4	86327	22000	1800	3845	145T	T,S,C,X,IG
0.87	I	1.2	98591	22000	2000	3845	145T	T,S,C,X,IG
0.81	I	1.2	105800	22000	2240	3845	145T	T,S,C,X,IG

◊ **Standard Motor Types** (see page A-16 for product codes)

- T TEFC, three phase, 230/460 or 575 volts
- S TEFC, single phase frame, 115/230 volts, 145TY frame
- C Corro-Duty®, three phase, 230/460 or 575V
- X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460V
- IG IntelliGear® variable speed for 1/230V, 3/230V, or 3/460V power supplies

2 HP

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	AGMA Class	Service Factor	Output Torque in-lb	OHL lb	Nominal Ratio	Frame Size Gear	Frame Size Motor	Std. Motor Types ◊
1434	I, II, III	3+	86	260	1.25	3101	145T	T,S,C,X,IG
1411	I, II, III	1.5	88	84	1.25	3001	145T	T,S,C,X°,IG
1268	I, II, III	3+	97	270	1.4	3101	145T	T,S,C,X,IG
1199	I, II	1.5	103	83	1.4	3001	145T	T,S,C,X°,IG
1136	I, II	1.5	109	83	1.6	3001	145T	T,S,C,X°,IG
1122	III	3+	110	280	1.6	3101	145T	T,S,C,X,IG
994	II, III	3.0	124	291	1.8	3101	145T	T,S,C,X,IG
956	I, II	1.5	129	80	1.8	3001	145T	T,S,C,X°,IG
893	I, II	1.5	138	79	2	3001	145T	T,S,C,X°,IG
875	III	2.8	141	302	2	3101	145T	T,S,C,X,IG
799	I, II	1.5	155	75	2.24	3001	145T	T,S,C,X°,IG
764	III	2.7	161	313	2.24	3101	145T	T,S,C,X,IG
686	I, II	1.5	180	69	2.5	3001	145T	T,S,C,X°,IG
678	III	2.4	182	324	2.5	3101	145T	T,S,C,X,IG
637	I, II	1.5	194	65	2.8	3001	145T	T,S,C,X°,IG
637	III	2.3	193	330	2.8	3101	145T	T,S,C,X,IG
540	I, II	1.5	228	54	3.15	3001	145T	T,S,C,X°,IG
538	II	1.9	229	345	3.15	3101	145T	T,S,C,X,IG
510	I, II	1.8	243	351	3.55	3101	145T	T,S,C,X,IG
510	III	2.9	245	456	3.55	3201	145T	T,S,C,X,IG
482	I, II	1.4	256	45	3.55	3001	145T	T,S,C,X°,IG
446	I, II	1.6	277	363	4	3101	145T	T,S,C,X,IG
446	III	3+	271	543	4	3122	145T	T,S,C,X,IG
429	I	1.3	288	33	4	3001	145T	T,S,C,X°,IG
401	I, II	1.4	310	373	4.5	3101	145T	T,S,C,X,IG
395	III	3+	306	561	4.5	3122	145T	T,S,C,X,IG
356	I	1.3	347	383	5	3101	145T	T,S,C,X,IG
351	II, III	3.1	345	578	5	3122	145T	T,S,C,X,IG
309	I	1.1	402	397	5.6	3101	145T	T,S,C,X,IG
309	II, III	3.0	391	595	5.6	3122	145T	T,S,C,X,IG
280	I	1.0	441	405	6.3	3101	145T	T,S,C,X,IG
273	II, III	2.8	444	613	6.3	3122	145T	T,S,C,X,IG
238	I	1.3	479	265	7.1	3012	145T	T,S,C,X°,IG
238	II, III	2.5	507	632	7.1	3122	145T	T,S,C,X,IG
214	I	1.3	564	240	8	3012	145T	T,S,C,X°,IG
211	II, III	2.2	573	648	8	3122	145T	T,S,C,X,IG
204	I	1.3	594	230	9	3012	145T	T,S,C,X°,IG
199	II, III	2.1	608	656	9	3122	145T	T,S,C,X,IG
181	I, II, III	2.2	668	691	10	3132	145T	T,S,C,X,IG
172	I	1.1	705	192	10	3012	145T	T,S,C,X°,IG

◊ **Standard Motor Types** (see page A-16 for product codes)

- T TEFC, three phase, 230/460 or 575 volts
- S TEFC, single phase frame, 115/230 volts, 145TY frame
- C Corro-Duty®, three phase, 230/460 or 575V
- X° Explosionproof, CL1 group D, three phase, 230/460V
- X Explosionproof, Cl 1 group D, Cl 2 groups F&G, three phase, 230/460V
- IG IntelliGear® variable speed for 1/230V, 3/230V, or 3/460V power supplies.

Browning®

Gearmotors

CbN SERIES 3000

2 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	AGMA Class	Service Factor	Output Torque in-lb	OHL lb	Nominal Ratio	Frame Size Gear	Frame Size Motor	Std. Motor Types ◊
168	II	1.7	721	678	10	3122	145T	T,S,C,X,IG
160	I	1.0	755	173	11.2	3012	145T	T,S,C,X°,IG
160	II	1.6	763	685	11.2	3122	145T	T,S,C,X,IG
160	III	2.0	756	709	11.2	3132	145T	T,S,C,X,IG
141	I, II	1.9	859	727	12.5	3132	145T	T,S,C,X,IG
139	I, II	1.4	872	700	12.5	3122	145T	T,S,C,X,IG
128	II, II	2.3	973	1035	14	3242	145T	T,S,C,X,IG
124	I	1.3	973	711	14	3122	145T	T,S,C,X,IG
123	II	1.7	982	745	14	3132	145T	T,S,C,X,IG
111	I	1.1	1091	722	16	3122	145T	T,S,C,X,IG
114	II, III	2.1	1091	1062	16	3242	145T	T,S,C,X,IG
109	I, II	1.6	1108	760	16	3132	145T	T,S,C,X,IG
103	I, II	1.5	1176	767	18	3132	145T	T,S,C,X,IG
97	II	1.8	1264	1096	18	3242	145T	T,S,C,X,IG
96	I	1.0	1264	733	18	3122	145T	T,S,C,X,IG
91	III	2.8	1326	1139	20	3252	145T	T,S,C,X,IG
88	I	1.3	1397	785	20	3132	145T	T,S,C,X,IG
88	II	1.6	1387	1116	20	3242	145T	T,S,C,X,IG
82	I	1.2	1477	790	22.4	3132	145T	T,S,C,X,IG
82	II, III	2.6	1473	1166	22.4	3252	145T	T,S,C,X,IG
80	I, II	1.5	1591	1145	22.4	3242	145T	T,S,C,X,IG
72	I	1.0	1688	800	25	3132	145T	T,S,C,X,IG
72	II, III	2.4	1674	1197	25	3252	145T	T,S,C,X,IG
69	I	1.3	1756	1165	25	3242	145T	T,S,C,X,IG
65	I, II, III	2.1	1862	1222	28	3252	145T	T,S,C,X,IG
58	I, II	1.9	2095	1248	31.5	3252	145T	T,S,C,X,IG
54	III	2.7	2156	2305	31.5	3363	145T	T,S,C,X,IG
49	I, II	1.6	2455	1281	35.5	3252	145T	T,S,C,X,IG
47	III	2.4	2382	2305	35.5	3363	145T	T,S,C,X,IG
45	I, II	1.5	2710	1299	40	3252	145T	T,S,C,X,IG
43	III	2.2	2733	2305	40	3363	145T	T,S,C,X,IG
41	I	1.3	2972	1314	45	3252	145T	T,S,C,X,IG
39	II, III	2.0	3020	2305	45	3363	145T	T,S,C,X,IG
36	III	2.1	3366	2905	50	3372	145T	T,S,C,X,IG
35	I	1.2	3471	1335	50	3252	145T	T,S,C,X,IG
34	II	1.7	3468	2305	50	3363	145T	T,S,C,X,IG
32	III	3+	3704	4340	56	3483	145T	T,S,C,X,IG
31	I	1.1	3771	1357	56	3253	145T	T,S,C,X,IG
30	II	1.6	3905	2305	56	3363	145T	T,S,C,X,IG
30	II	1.9	3889	2905	56	3373	145T	T,S,C,X,IG

◊ **Standard Motor Types** (see page A-16 for product codes)
- T TEFC, three phase, 230/460 or 575 volts
- S TEFC, single phase frame, 115/230 volts, 145TY frame
- C Corro-Duty®, three phase, 230/460 or 575V
- X° Explosionproof, CL1 group D, three phase, 230/460V
- X Explosionproof, Cl 1 group D, Cl 2 groups F&G, three phase, 230/460V
- IG IntelliGear® variable speed for 1/230V, 3/230V, or 3/460V power supplies.

2 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	AGMA Class	Service Factor	Output Torque in-lb	OHL lb	Nominal Ratio	Frame Size Gear	Frame Size Motor	Std. Motor Types ◊
27	III	3+	4328	4340	63	3483	145T	T,S,C,X,IG
26	I,II	1.4	4242	2305	63	3363	145T	T,S,C,X,IG
26	III	1.7	4215	2905	63	3373	145T	T,S,C,X,IG
25	III	2.9	4831	4340	71	3483	145T	T,S,C,X,IG
24	I	1.2	4728	2305	71	3363	145T	T,S,C,X,IG
24	I,II	1.5	4702	2905	71	3373	145T	T,S,C,X,IG
22	I	1.1	5306	2305	80	3363	145T	T,S,C,X,IG
22	III	1.4	5295	2905	80	3373	145T	T,S,C,X,IG
22	III	2.6	5425	4340	80	3483	145T	T,S,C,X,IG
19	I	1.0	6005	2305	90	3363	145T	T,S,C,X,IG
19	I	1.3	6101	2905	90	3373	145T	T,S,C,X,IG
19	II,III	2.3	6136	4340	90	3483	145T	T,S,C,X,IG
17	I	1.1	6847	2905	100	3373	145T	T,S,C,X,IG
17	II,III	2.0	7010	4340	100	3483	145T	T,S,C,X,IG
16	II	1.9	7523	4340	112	3483	145T	T,S,C,X,IG
16	III	3+	7418	4580	112	3593	145T	T,S,C,X,IG
15	I	1.0	7751	2905	112	3373	145T	T,S,C,X,IG
14	I,II	1.6	8753	4340	125	3483	145T	T,S,C,X,IG
14	III	3+	8265	4580	125	3593	145T	T,S,C,X,IG
13	III	2.9	9372	4580	140	3593	145T	T,S,C,X,IG
12	I,II	1.5	9500	4340	140	3483	145T	T,S,C,X,IG
11.3	I,II	1.4	10493	4340	160	3483	145T	T,S,C,X,IG
11	III	2.5	10757	4580	160	3593	145T	T,S,C,X,IG
10.2	I	1.2	11652	4340	180	3483	145T	T,S,C,X,IG
10.1	II,III	2.3	11701	4580	180	3593	145T	T,S,C,X,IG
8.7	I	1.1	13619	4340	200	3483	145T	T,S,C,X,IG
8.7	II,III	2.0	13632	4580	200	3593	145T	T,S,C,X,IG
8.1	III	2.7	14625	13617	224	3603	145T	T,S,C,X,IG
7.6	-	.94	15175	4340	224	3484	145T	T,S,C,X,IG
7.6	I,II	1.8	15122	4580	224	3594	145T	T,S,C,X,IG
6.9	III	2.3	17062	13617	250	3603	145T	T,S,C,X,IG
6.8	I,II	1.6	17117	4580	250	3594	145T	T,S,C,X,IG
6.2	III	2.1	18603	13617	280	3604	145T	T,S,C,X,IG
6.0	II	1.4	19317	4580	280	3594	145T	T,S,C,X,IG
5.9	II	1.9	19873	13617	315	3604	145T	T,S,C,X,IG
5.6	III	3+	20600	18558	315	3734	145T	T,S,C,X,IG
5.3	I	1.2	21848	4580	315	3594	145T	T,S,C,X,IG

◊ **Standard Motor Types** (see page A-16 for product codes)
- T TEFC, three phase, 230/460 or 575V
- S TEFC, single phase frame, 115/230V, 145TY frame
- C Corro-Duty®, three phase, 230/460 or 575V
- X Explosionproof, Cl 1 group D, Cl 2 groups F&G, three phase,230/460V
- IG IntelliGear® variable speed for 1/230V, 3/230V, or 3/460V power supplies.

Browning®

Gearmotors

CbN SERIES 3000

2 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	AGMA Class	Service Factor	Output Torque in-lb	OHL lb	Nominal Ratio	Frame Size Gear	Frame Size Motor	Std. Motor Types ◊
5.2	II	1.7	22554	13617	355	3604	145T	T,S,C,X,IG
4.9	III	3.5	23753	18558	355	3734	145T	T,S,C,X,IG
4.7	I	1.1	24817	4580	355	3594	145T	T,S,C,X,IG
4.6	I,II	1.5	25059	13617	400	3604	145T	T,S,C,X,IG
4.6	III	3.3	25375	18558	400	3734	145T	T,S,C,X,IG
4.1	I,II	1.4	28458	13617	450	3604	145T	T,S,C,X,IG
4.0	III	2.9	28798	18558	450	3734	145T	T,S,C,X,IG
3.7	I	1.2	31668	13617	500	3604	145T	T,S,C,X,IG
3.6	II,III	2.6	31996	18558	500	3734	145T	T,S,C,X,IG
3.3	I	1.1	35619	13617	560	3604	145T	T,S,C,X,IG
3.2	II,III	2.3	36336	18558	560	3734	145T	T,S,C,X,IG
2.9	I,II,III	2.0	40435	18558	630	3734	145T	T,S,C,X,IG
2.8	III	3.0	41327	22000	630	3844	145T	T,S,C,X,IG
2.6	I,II	1.8	45480	18558	710	3734	145T	T,S,C,X,IG
2.6	III	2.7	44851	22000	710	3844	145T	T,S,C,X,IG
2.3	III	2.5	49541	22000	800	3844	145T	T,S,C,X,IG
2.2	I,II	1.5	53317	18558	800	3734	145T	T,S,C,X,IG
2.1	III	2.2	55008	22000	900	3844	145T	T,S,C,X,IG
2.0	I,II	1.4	58858	18558	900	3734	145T	T,S,C,X,IG
1.8	I	1.3	64533	18558	1000	3734	145T	T,S,C,X,IG
1.8	II	1.9	65216	22000	1000	3844	145T	T,S,C,X,IG
1.6	II	1.8	69460	22000	1120	3845	145T	T,S,C,X,IG
1.5	I	1.1	75359	18558	1120	3734	145T	T,S,C,X,IG
1.4	II	1.5	81166	22000	1250	3845	145T	T,S,C,X,IG
1.4	I	1.0	81959	18558	1250	3735	145T	T,S,C,X,IG
1.3	II	1.4	90599	22000	1400	3845	145T	T,S,C,X,IG
1.1	I	1.2	101734	22000	1600	3845	145T	T,S,C,X,IG
1.0	I	1.1	115103	22000	1800	3845	145T	T,S,C,X,IG

◊ **Standard Motor Types** (see page A-16 for product codes)
- T TEFC, three phase, 230/460 or 575V
- S TEFC, single phase frame, 115/230V, 145TY frame
- C Corro-Duty®, three phase, 230/460 or 575V
- X Explosionproof, Cl 1 group D, Cl 2 Grps F&G, three phase,230/460V
- IG IntelliGear® variable speed for 1/230V, 3/230V, or 3/460V power supplies.

3 HP

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	AGMA Class	Service Factor	Output Torque in-lb	OHL lb	Nominal Ratio	Frame Size Gear	Frame Size Motor	Std. Motor Types ◊
1434	I, II, III	2.3	129	248	1.25	3101	182T	T,S,C,X,IG
1268	I, II, III	2.1	146	257	1.4	3101	182T	T,S,C,X,IG
1122	I, II, III	2.1	165	265	1.6	3101	182T	T,S,C,X,IG
994	I, II, III	2.0	186	275	1.8	3101	182T	T,S,C,X,IG
902	I, II, III	3+	205	370	2	3201	182T	T,S,C,X,IG
875	I, II	1.9	212	284	2	3101	182T	T,S,C,X,IG
792	I, II, III	3.0	234	382	2.24	3201	182T	T,S,C,X,IG
764	I, II	1.8	242	294	2.24	3101	182T	T,S,C,X,IG
686	I, II, III	2.6	270	397	2.5	3201	182T	T,S,C,X,IG
678	I, II	1.6	273	303	2.5	3101	182T	T,S,C,X,IG
639	I, II	1.5	290	308	2.8	3101	182T	T,S,C,X,IG
632	III	2.5	288	403	2.8	3201	182T	T,S,C,X,IG
566	I, II, III	2.2	327	415	3.15	3201	182T	T,S,C,X,IG
538	I	1.3	344	320	3.15	3101	182T	T,S,C,X,IG
510	I	1.2	364	324	3.55	3101	182T	T,S,C,X,IG
510	II, III	2.0	363	425	3.55	3201	182T	T,S,C,X,IG
450	II	1.7	412	437	4	3201	182T	T,S,C,X,IG
446	I	1.1	416	334	4	3101	182T	T,S,C,X,IG
446	III	2.3	406	514	4	3122	182T	T,S,C,X,IG
404	II	1.5	459	447	4.5	3201	182T	T,S,C,X,IG
401	I	1.0	464	341	4.5	3101	182T	T,S,C,X,IG
395	I, II, III	2.1	459	528	4.5	3122	182T	T,S,C,X,IG
391	III	2.8	473	1081	4.5	3301	182T	T,S,C,X,IG
359	I, II	1.4	516	457	5	3201	182T	T,S,C,X,IG
359	III	2.6	516	1108	5	3301	182T	T,S,C,X,IG
351	III	2.0	518	541	5	3122	182T	T,S,C,X,IG
318	III	3+	586	786	5.6	3242	182T	T,S,C,X,IG
318	III	2.3	582	1147	5.6	3301	182T	T,S,C,X,IG
314	III	3+	590	1778	5.6	3401	182T	T,S,C,X,IG
310	II, III	2.0	586	553	5.6	3122	182T	T,S,C,X,IG
306	I	1.2	605	470	5.6	3201	182T	T,S,C,X,IG
287	III	3+	666	811	6.3	3242	182T	T,S,C,X,IG
276	III	2.0	670	1193	6.3	3301	182T	T,S,C,X,IG
273	I,II	1.9	666	566	6.3	3122	182T	T,S,C,X,IG
251	I, II, III	3+	761	837	7.1	3242	182T	T,S,C,X,IG
238	I, II	1.6	761	577	7.1	3122	182T	T,S,C,X,IG
231	I, II	1.7	786	606	8	3132	182T	T,S,C,X,IG
218	III	2.7	859	860	8	3242	182T	T,S,C,X,IG
211	I, II	1.5	859	587	8	3122	182T	T,S,C,X,IG
199	I, II	1.4	911	591	9	3122	182T	T,S,C,X,IG

◊ **Standard Motor Types** (see page A-16 for product codes)
- T TEFC, three phase, 230/460 or 575 volts
- S TEFC, single phase, 230 volts, 184T frame
- C Corro-Duty®, three phase, 230/460 or 575V
- X Explosionproof, Cl 1 group D, Cl 2 groups F&G, three phase, 230/460V
- IG IntelliGear® variable speed for 3/230V, 3/460V power supplies

Browning®

Gearmotors

CbN SERIES 3000

3 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	AGMA Class	Service Factor	Output Torque in-lb	OHL lb	Nominal Ratio	Frame Size Gear	Frame Size Motor	Std. Motor Types ◊
204	II	1.6	889	619	9	3132	182T	T,S,C,X,IG
204	III	2.5	911	872	9	3242	182T	T,S,C,X,IG
181	I, II	1.5	1003	630	10	3132	182T	T,S,C,X,IG
180	III	2.2	1082	903	10	3242	182T	T,S,C,X,IG
168	I	1.2	1082	601	10	3122	182T	T,S,C,X,IG
161	I	1.1	1145	603	11.2	3122	182T	T,S,C,X,IG
161	II	1.4	1134	614	11.2	3132	182T	T,S,C,X,IG
161	III	2.0	1145	913	11.2	3242	182T	T,S,C,X,IG
142	I	1.2	1289	649	12.5	3132	182T	T,S,C,X,IG
142	II	1.7	1308	936	12.5	3242	182T	T,S,C,X,IG
142	III	2.5	1249	959	12.5	3252	182T	T,S,C,X,IG
128	II	1.6	1460	954	14	3242	182T	T,S,C,X,IG
128	III	2.3	1423	985	14	3252	182T	T,S,C,X,IG
123	I	1.1	1473	656	14	3132	182T	T,S,C,X,IG
114	II	1.4	1637	971	16	3242	182T	T,S,C,X,IG
110	I	1.1	1662	660	16	3132	182T	T,S,C,X,IG
110	III	2.1	1641	1012	16	3252	182T	T,S,C,X,IG
103	I	1.0	1764	660	18	3132	182T	T,S,C,X,IG
103	III	2.0	1753	1023	18	3252	182T	T,S,C,X,IG
97	I	1.2	1898	990	18	3242	182T	T,S,C,X,IG
91	I, II	1.9	1990	1044	20	3252	182T	T,S,C,X,IG
88	I	1.1	2081	1000	20	3242	182T	T,S,C,X,IG
88	III	3+	2037	2620	20	3372	182T	T,S,C,X,IG
81	I	1.0	2384	1012	22.4	3242	182T	T,S,C,X,IG
81	II	1.7	2210	1060	22.4	3252	182T	T,S,C,X,IG
81	III	3+	2270	2699	22.4	3372	182T	T,S,C,X,IG
72	I, II	1.6	2510	1077	25	3252	182T	T,S,C,X,IG
70	III	2.1	2543	2305	25	3372	182T	T,S,C,X,IG
65	I, II	1.4	2793	1089	28	3252	182T	T,S,C,X,IG
63	III	2.5	2548	2784	28	3372	182T	T,S,C,X,IG
58	I	1.3	3142	1098	31.5	3252	182T	T,S,C,X,IG
58	II, III	2.3	2884	2878	31.5	3372	182T	T,S,C,X,IG
54	I, II	1.8	3234	2305	31.5	3363	182T	T,S,C,X,IG
51	III	2.0	3137	2905	35.5	3372	182T	T,S,C,X,IG
49	I	1.1	3683	1105	35.5	3252	182T	T,S,C,X,IG
47	I, II	1.6	3781	2305	35.5	3363	182T	T,S,C,X,IG
46	III	3+	3966	4340	40	3482	182T	T,S,C,X,IG
45	I	1.0	4066	1105	40	3252	182T	T,S,C,X,IG
44	I, II	1.4	4099	2305	40	3363	182T	T,S,C,X,IG
44	I, II	1.7	3545	2905	40	3372	182T	T,S,C,X,IG

◊ **Standard Motor Types** (see page A-16 for product codes)
- T TEFC, three phase, 230/460 or 575 volts
- S TEFC, single phase, 230 volts, 184T frame
- C Corro-Duty®, three phase, 230/460 or 575V
- X Explosionproof, Cl 1 group D, Cl 2 groups F&G, three phase, 230/460V
- IG IntelliGear® variable speed for 3/230V, 3/460V power supplies

3 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	AGMA Class	Service Factor	Output Torque in-lb	OHL lb	Nominal Ratio	Frame Size Gear	Frame Size Motor	Std. Motor Types ◊
41	III	3+	4404	4340	45	3482	182T	T,S,C,X,IG
39	I	1.3	4557	2305	45	3363	182T	T,S,C,X,IG
39	II	1.6	4531	2905	45	3372	182T	T,S,C,X,IG
35	I	1.2	5202	2305	50	3363	182T	T,S,C,X,IG
35	II	1.4	4961	2905	50	3372	182T	T,S,C,X,IG
35	III	2.6	5221	4340	50	3482	182T	T,S,C,X,IG
32	II,III	2.5	5556	4340	56	3483	182T	T,S,C,X,IG
30	I	1.0	5858	2305	56	3363	182T	T,S,C,X,IG
30	I	1.3	5836	2905	56	3373	182T	T,S,C,X,IG
27	II,III	2.2	6493	4340	63	3483	182T	T,S,C,X,IG
26	I	1.1	6835	2905	63	3373	182T	T,S,C,X,IG
25	II	1.9	7247	4340	71	3483	182T	T,S,C,X,IG
25	III	3+	7091	4580	71	3593	182T	T,S,C,X,IG
24	I	1.0	7405	2305	71	3373	182T	T,S,C,X,IG
23	III	3+	7845	4580	80	3593	182T	T,S,C,X,IG
22	I,II	1.7	8138	4340	80	3483	182T	T,S,C,X,IG
20	III	2.9	9207	4580	90	3593	182T	T,S,C,X,IG
19.0	I,II	1.5	9207	4340	90	3483	182T	T,S,C,X,IG
18.0	III	2.7	9905	4580	100	3593	182T	T,S,C,X,IG
17.0	I,II	1.4	10516	4340	100	3483	182T	T,S,C,X,IG
16.0	I	1.3	11284	4340	112	3483	182T	T,S,C,X,IG
16.0	II,III	2.4	11126	4580	112	3593	182T	T,S,C,X,IG
14.3	II,III	2.2	12390	4580	125	3593	182T	T,S,C,X,IG
13.6	I	1.1	13101	4340	125	3483	182T	T,S,C,X,IG
13.0	II	1.9	14058	4580	140	3593	182T	T,S,C,X,IG
12.8	III	2.8	13914	13617	140	3603	182T	T,S,C,X,IG
12.0	I	1.0	14250	4340	140	3483	182T	T,S,C,X,IG
11.4	III	2.5	15539	13617	160	3603	182T	T,S,C,X,IG
11.0	I,II	1.7	16135	4580	160	3593	182T	T,S,C,X,IG
10.1	III	2.2	17570	13617	180	3603	182T	T,S,C,X,IG
10.0	I,II	1.6	17552	4580	180	3593	182T	T,S,C,X,IG
9.0	I	1.3	20448	4580	200	3593	182T	T,S,C,X,IG
8.8	III	4.4	20109	18558	200	3733	182T	T,S,C,X,IG
8.8	II	1.9	20210	13617	200	3603	182T	T,S,C,X,IG
8.1	II	1.8	21937	13617	224	3603	182T	T,S,C,X,IG
8.1	III	4.1	22039	18558	224	3733	182T	T,S,C,X,IG
8.0	I	1.2	23257	4580	224	3594	182T	T,S,C,X,IG
7.2	III	3.6	24781	18558	250	3733	182T	T,S,C,X,IG
7.0	I	1.0	26233	4580	250	3594	182T	T,S,C,X,IG
6.9	II	1.5	25593	13617	250	3603	182T	T,S,C,X,IG
6.4	III	3.0	27117	18558	280	3734	182T	T,S,C,X,IG
6.2	I,II	1.4	27905	13617	280	3604	182T	T,S,C,X,IG

◊ **Standard Motor Types** (see page A-16 for product codes)
- T TEFC, three phase, 230/460 or 575 volts
- S TEFC, single phase, 230 volts, 184T frame
- C Corro-Duty®, three phase, 230/460 or 575V
- X Explosionproof, Cl 1 group D, Cl 2 groups F&G, three phase, 230/460V
- IG IntelliGear® variable speed for 3/230V, 3/460V power supplies

Browning®

Gearmotors

CbN SERIES 3000

3 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	AGMA Class	Service Factor	Output Torque in-lb	OHL lb	Nominal Ratio	Frame Size Gear	Frame Size Motor	Std. Motor Types ◊
5.9	I	1.3	29810	13617	315	3604	182T	T,S,C,X,IG
5.6	II,III	2.7	30900	18558	315	3734	182T	T,S,C,X,IG
5.2	I	1.1	33832	13617	355	3604	182T	T,S,C,X,IG
4.9	II,III	2.3	35630	18558	355	3734	182T	T,S,C,X,IG
4.5	III	3+	38419	22000	400	3844	182T	T,S,C,X,IG
4.0	I,II	1.9	43197	18558	450	3734	182T	T,S,C,X,IG
4.0	III	2.8	43471	22000	450	3844	182T	T,S,C,X,IG
3.6	I,II	1.7	47995	18558	500	3734	182T	T,S,C,X,IG
3.5	III	2.5	49651	22000	500	3844	182T	T,S,C,X,IG
3.3	III	2.3	53285	22000	560	3844	182T	T,S,C,X,IG
3.2	I,II	1.5	54503	18558	560	3734	182T	T,S,C,X,IG
2.9	I,II	1.4	60652	18558	630	3734	182T	T,S,C,X,IG
2.8	III	2.0	61991	22000	630	3844	182T	T,S,C,X,IG
2.6	I	1.2	68219	18558	710	3734	182T	T,S,C,X,IG
2.6	II	1.8	67276	22000	710	3844	182T	T,S,C,X,IG
2.3	II	1.6	74311	22000	800	3844	182T	T,S,C,X,IG
2.2	I	1.0	79976	18558	800	3734	182T	T,S,C,X,IG
2.1	II	1.5	82512	22000	900	3844	182T	T,S,C,X,IG
1.8	I	1.3	97825	22000	1000	3844	182T	T,S,C,X,IG
1.6	I	1.2	104190	22000	1120	3845	182T	T,S,C,X,IG
1.4	I	1.0	121749	22000	1250	3845	182T	T,S,C,X,IG

◊ **Standard Motor Types** (see page A-16 for product codes)
- T TEFC, three phase, 230/460 or 575 volts
- S TEFC, single phase, 230 volts, 184T frame
- C Corro-Duty®, three phase, 230/460 or 575V
- X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460V
- IG IntelliGear® variable speed for 3/230V, 3/460V power supplies

5 HP

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	AGMA Class	Service Factor	Output Torque in-lb	OHL lb	Nominal Ratio	Frame Size Gear	Frame Size Motor	Std. Motor Types ◊
1434	I, II	1.4	215	222	1.25	3101	184T	T,S,C,X,IG
1423	III	2.4	217	298	1.25	3201	184T	T,S,C,X,IG
1268	I	1.3	243	229	1.4	3101	184T	T,S,C,X,IG
1207	II, III	2.2	256	311	1.4	3201	184T	T,S,C,X,IG
1129	II, III	2.3	273	316	1.6	3201	184T	T,S,C,X,IG
1122	I	1.2	275	236	1.6	3101	184T	T,S,C,X,IG
1000	II, III	2.1	309	324	1.8	3201	184T	T,S,C,X,IG
994	I	1.2	311	229	1.8	3101	184T	T,S,C,X,IG
902	II, III	2.1	342	332	2	3201	184T	T,S,C,X,IG
875	I	1.1	353	217	2	3101	184T	T,S,C,X,IG
792	II	1.8	390	340	2.24	3201	184T	T,S,C,X,IG
778	III	2.7	397	848	2.24	3301	184T	T,S,C,X,IG
764	I	1.1	403	200	2.24	3101	184T	T,S,C,X,IG
686	II	1.6	449	349	2.5	3201	184T	T,S,C,X,IG
678	I	1.0	455	179	2.5	3101	184T	T,S,C,X,IG
678	III	2.8	456	883	2.5	3301	184T	T,S,C,X,IG
632	I, II	1.5	480	353	2.8	3201	184T	T,S,C,X,IG
601	III	2.4	513	913	2.8	3301	184T	T,S,C,X,IG
566	I	1.3	545	360	3.15	3201	184T	T,S,C,X,IG
554	II, III	2.0	558	934	3.15	3301	184T	T,S,C,X,IG
510	I	1.2	605	365	3.55	3201	184T	T,S,C,X,IG
497	II, III	2.0	621	962	3.55	3301	184T	T,S,C,X,IG
450	II	1.4	676	455	4	3122	184T	T,S,C,X,IG
450	I	1.0	687	370	4	3201	184T	T,S,C,X,IG
450	III	3+	676	669	4	3242	184T	T,S,C,X,IG
443	I, II	1.9	697	993	4	3301	184T	T,S,C,X,IG
426	I, II, III	3+	725	1566	4	3401	184T	T,S,C,X,IG
395	I	1.3	766	462	4.5	3122	184T	T,S,C,X,IG
391	I, II, III	3+	789	1025	4.5	3301	184T	T,S,C,X,IG
383	II, III	2.8	790	687	4.5	3242	184T	T,S,C,X,IG
359	I, II	1.5	859	1045	5	3301	184T	T,S,C,X,IG
359	II, III	2.6	844	704	5	3242	184T	T,S,C,X,IG
351	I	1.2	863	466	5	3122	184T	T,S,C,X,IG
341	I, II, III	3+	906	1666	5	3401	184T	T,S,C,X,IG
318	I, II	1.4	971	1052	5.6	3301	184T	T,S,C,X,IG
318	II, III	2.3	953	720	5.6	3242	184T	T,S,C,X,IG
314	I, II, III	3.0	983	1726	5.6	3401	184T	T,S,C,X,IG
310	I	1.2	977	469	5.6	3122	184T	T,S,C,X,IG
287	II, III	2.1	1054	737	6.3	3242	184T	T,S,C,X,IG
276	I	1.2	1117	1055	6.3	3301	184T	T,S,C,X,IG

◊ **Standard Motor Types** (see page A-16 for product codes)
- T TEFC, three phase, 230/460 or 575 volts
- S TEFC, single phase, 230 volts
- C Corro-Duty®, three phase, 230/460 or 575V
- X Explosionproof, Cl 1 group D, Cl 2 groups F&G, three phase, 230/460V
- IG IntelliGear® variable speed for 3/230V, 3/460V power supplies

Browning®

Gearmotors

CbN SERIES 3000

5 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	AGMA Class	Service Factor	Output Torque in-lb	OHL lb	Nominal Ratio	Frame Size Gear	Frame Size Motor	Std. Motor Types ◊
284	I, II, III	2.7	1086	1798	6.3	3401	184T	T,S,C,X,IG
273	I	1.1	1110	470	6.3	3122	184T	T,S,C,X,IG
256	I, II, III	2.3	1206	1855	7.1	3401	184T	T,S,C,X,IG
251	II	1.8	1203	752	7.1	3242	184T	T,S,C,X,IG
247	III	2.9	1225	1893	7.1	3362	184T	T,S,C,X,IG
238	I	1.0	1269	468	7.1	3122	184T	T,S,C,X,IG
231	I	1.0	1309	511	8	3132	184T	T,S,C,X,IG
229	III	2.1	1320	789	8	3252	184T	T,S,C,X,IG
218	II	1.6	1431	764	8	3242	184T	T,S,C,X,IG
204	I, II	1.5	1519	770	9	3242	184T	T,S,C,X,IG
194	II	1.9	1559	810	9	3252	184T	T,S,C,X,IG
191	III	2.3	1584	2031	9	3362	184T	T,S,C,X,IG
181	I	1.3	1804	782	10	3242	184T	T,S,C,X,IG
181	II	1.8	1663	818	10	3252	184T	T,S,C,X,IG
176	III	2.1	1721	2076	10	3362	184T	T,S,C,X,IG
162	I	1.2	1908	785	11.2	3242	184T	T,S,C,X,IG
161	II	1.6	1880	831	11.2	3252	184T	T,S,C,X,IG
158	II	1.9	1918	2136	11.2	3362	184T	T,S,C,X,IG
158	III	3.3	1906	2137	11.2	3372	184T	T,S,C,X,IG
145	I	1.5	2081	840	12.5	3252	184T	T,S,C,X,IG
143	I	1.0	2180	790	12.5	3242	184T	T,S,C,X,IG
141	II	1.7	2152	2200	12.5	3362	184T	T,S,C,X,IG
138	III	3.1	2187	2216	12.5	3372	184T	T,S,C,X,IG
128	I, II	1.4	2372	849	14	3252	184T	T,S,C,X,IG
125	III	2.8	2417	2273	14	3372	184T	T,S,C,X,IG
124	I, II	1.5	2436	2268	14	3362	184T	T,S,C,X,IG
114	II	1.4	2650	2315	16	3362	184T	T,S,C,X,IG
111	I	1.3	2734	855	16	3252	184T	T,S,C,X,IG
109	III	2.5	2775	2354	16	3372	184T	T,S,C,X,IG
104	I	1.2	2922	856	18	3252	184T	T,S,C,X,IG
97	II, III	2.3	3125	2422	18	3372	184T	T,S,C,X,IG
91	I	1.1	3316	855	20	3252	184T	T,S,C,X,IG
89	II, III	2.1	3395	2470	20	3372	184T	T,S,C,X,IG
82	I	1.0	3683	850	22.4	3252	184T	T,S,C,X,IG
80	II	1.9	3783	2532	22.4	3372	184T	T,S,C,X,IG
70	I	1.2	4239	2305	25	3362	184T	T,S,C,X,IG
70	II	1.7	4246	2596	25	3372	184T	T,S,C,X,IG
68	III	3+	4416	3733	25	3482	184T	T,S,C,X,IG
64	III	2.9	4739	3800	28	3482	184T	T,S,C,X,IG
63	I, II	1.5	4806	2663	28	3372	184T	T,S,C,X,IG

◊ **Standard Motor Types** (see page A-16 for product codes)
- T TEFC, three phase, 230/460 or 575 volts
- S TEFC, single phase, 230 volts
- C Corro-Duty®, three phase, 230/460 or 575V
- X Explosionproof, Cl 1 group D, Cl 2 groups F&G, three phase, 230/460V
- IG IntelliGear® variable speed for 3/230V, 3/460V power supplies

5 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	AGMA Class	Service Factor	Output Torque in-lb	OHL lb	Nominal Ratio	Frame Size Gear	Frame Size Motor	Std. Motor Types ◊
58	II	1.4	5228	2708	31.5	3372	184T	T,S,C,X,IG
55	III	2.5	5515	3944	31.5	3482	184T	T,S,C,X,IG
54	I	1.1	5480	2305	31.5	3363	184T	T,S,C,X,IG
51	I	1.2	5908	2704	35.5	3372	184T	T,S,C,X,IG
51	II,III	2.3	5985	4021	35.5	3482	184T	T,S,C,X,IG
46	II,III	2.1	6611	4115	40	3482	184T	T,S,C,X,IG
44	I	1.0	6804	2749	40	3372	184T	T,S,C,X,IG
41	I,II	1.9	7340	4211	45	3482	184T	T,S,C,X,IG
41	III	3+	7376	4580	45	3592	184T	T,S,C,X,IG
35	I,II	1.6	8702	4340	50	3482	184T	T,S,C,X,IG
35	III	3+	8593	4580	50	3592	184T	T,S,C,X,IG
32	I,II	1.5	9261	4340	56	3483	184T	T,S,C,X,IG
31	III	2.3	9586	4580	56	3593	184T	T,S,C,X,IG
28	II,III	2.2	10400	4580	63	3593	184T	T,S,C,X,IG
27	I	1.3	10821	4340	63	3483	184T	T,S,C,X,IG
25	I	1.2	12079	4340	71	3483	184T	T,S,C,X,IG
25	II,III	2.1	11818	4580	71	3593	184T	T,S,C,X,IG
23	II,III	2.0	13074	4580	80	3593	184T	T,S,C,X,IG
22	I	1.0	13563	4340	80	3483	184T	T,S,C,X,IG
20	I,II	1.8	15124	4580	90	3593	184T	T,S,C,X,IG
20	III	2.6	14777	13617	90	3603	184T	T,S,C,X,IG
18	III	2.3	16351	13617	100	3603	184T	T,S,C,X,IG
18	I,II	1.6	16509	4580	100	3593	184T	T,S,C,X,IG
16	I,II	1.5	18543	4580	112	3593	184T	T,S,C,X,IG
16	III	2.0	18958	13617	112	3603	184T	T,S,C,X,IG
14	I	1.3	20661	4580	125	3593	184T	T,S,C,X,IG
14.3	II	1.9	20651	13617	125	3603	184T	T,S,C,X,IG
13.7	III	4.1	21666	18558	125	3733	184T	T,S,C,X,IG
12.8	II	1.7	23190	13617	140	3603	184T	T,S,C,X,IG
12.4	III	3.7	23867	18558	140	3733	184T	T,S,C,X,IG
12.0	I	1.0	23750	4580	140	3593	184T	T,S,C,X,IG
11.4	I,II	1.5	25898	13617	160	3603	184T	T,S,C,X,IG
11.1	III	3.3	26744	18558	160	3733	184T	T,S,C,X,IG
10.1	I	1.3	29283	13617	180	3603	184T	T,S,C,X,IG
10.0	II,III	3.0	29622	18558	180	3733	184T	T,S,C,X,IG
8.8	I	1.2	33684	13617	200	3603	184T	T,S,C,X,IG
8.8	II,III	2.7	33515	18558	200	3733	184T	T,S,C,X,IG
8.1	I	1.1	36562	13617	224	3603	184T	T,S,C,X,IG
8.1	II,III	2.4	36731	18558	224	3733	184T	T,S,C,X,IG
7.2	I,II,III	2.2	41301	18558	250	3733	184T	T,S,C,X,IG

◊ **Standard Motor Types** (see page A-16 for product codes)
- T TEFC, three phase, 230/460 or 575 volts
- S TEFC, single phase, 230 volts
- C Corro-Duty®, three phase, 230/460 or 575V
- X Explosionproof, Cl 1 group D, Cl 2 groups F&G, three phase, 230/460V
- IG IntelliGear® variable speed for 3/230V, 3/460V power supplies

5 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	AGMA Class	Service Factor	Output Torque in-lb	OHL lb	Nominal Ratio	Frame Size Gear	Frame Size Motor	Std. Motor Types ◊
6.6	III	2.8	43724	22000	280	3844	184T	T,S,C,X,IG
6.4	I,II	1.8	45194	18558	280	3734	184T	T,S,C,X,IG
5.7	III	2.4	51076	22000	315	3844	184T	T,S,C,X,IG
5.6	I,II	1.6	51501	18558	315	3734	184T	T,S,C,X,IG
5.1	III	2.1	57035	22000	355	3844	184T	T,S,C,X,IG
4.9	I,II	1.4	59383	18558	355	3734	184T	T,S,C,X,IG
4.6	I	1.3	63437	18558	400	3734	184T	T,S,C,X,IG
4.5	II	1.9	64031	22000	400	3844	184T	T,S,C,X,IG
4.0	I	1.1	71996	18558	450	3734	184T	T,S,C,X,IG
4.0	II	1.7	72452	22000	450	3844	184T	T,S,C,X,IG
3.6	I	1.0	79991	18558	500	3734	184T	T,S,C,X,IG
3.5	II	1.5	82751	22000	500	3844	184T	T,S,C,X,IG
3.3	1, II	1.4	88808	22000	560	3844	184T	T,S,C,X,IG
2.8	I	1.2	103318	22000	630	3844	184T	T,S,C,X,IG
2.6	I	1.1	112127	22000	710	3844	184T	T,S,C,X,IG

◊ **Standard Motor Types** (see page A-16 for product codes)
- T TEFC, three phase, 230/460 or 575 volts
- S TEFC, single phase, 230 volts
- C Corro-Duty®, three phase, 230/460 or 575V
- X Explosionproof, Cl 1 group D, Cl 2 groups F&G, three phase, 230/460V
- IG IntelliGear® variable speed for 3/230V, 3/460V power supplies

7 1/2 HP

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	AGMA Class	Service Factor	Output Torque in-lb	OHL lb	Nominal Ratio	Frame Size Gear	Frame Size Motor	Std. Motor Types ◊
1423	I, II	1.6	325	264	1.25	3201	213T	T,C,X,IG
1413	III	3+	328	1078	1.25	3401	213T	T,C,X,IG
1389	II	1.9	334	688	1.25	3301	213T	T,C,X,IG
1264	III	3+	367	1127	1.4	3401	213T	T,C,X,IG
1207	I, II	1.5	384	272	1.4	3201	213T	T,C,X,IG
1199	II	1.8	386	717	1.4	3301	213T	T,C,X,IG
1129	I, II	1.5	410	275	1.6	3201	213T	T,C,X,IG
1125	III	3+	412	1162	1.6	3401	213T	T,C,X,IG
1087	I, II	1.8	425	738	1.6	3301	213T	T,C,X,IG
1008	III	3+	459	1198	1.8	3401	213T	T,C,X,IG
1000	I, II	1.4	463	280	1.8	3201	213T	T,C,X,IG
989	I, II	1.9	470	759	1.8	3301	213T	T,C,X,IG
902	I, II	1.4	513	284	2	3201	213T	T,C,X,IG
889	I, II, III	3+	521	1249	2	3401	213T	T,C,X,IG
836	I, II	1.9	539	778	2	3301	213T	T,C,X,IG
806	III	3+	575	1288	2.24	3401	213T	T,C,X,IG
792	I	1.2	585	288	2.24	3201	213T	T,C,X,IG
778	II	1.8	596	788	2.24	3301	213T	T,C,X,IG
689	II, III	3+	672	1342	2.5	3401	213T	T,C,X,IG
686	I	1.1	674	291	2.5	3201	213T	T,C,X,IG
678	II	1.9	684	800	2.5	3301	213T	T,C,X,IG
618	II, III	3+	750	1390	2.8	3401	213T	T,C,X,IG
601	I, II	1.6	770	807	2.8	3301	213T	T,C,X,IG
554	I	1.3	836	809	3.15	3301	213T	T,C,X,IG
550	II, III	3+	842	1424	3.15	3401	213T	T,C,X,IG
497	I	1.3	908	258	3.55	3301	213T	T,C,X,IG
486	II, III	3.0	953	1469	3.55	3401	213T	T,C,X,IG
452	I, II, III	2.1	1015	612	4	3242	213T	T,C,X,IG
443	I	1.3	1046	806	4	3301	213T	T,C,X,IG
426	I, II, III	2.7	1088	1518	4	3401	213T	T,C,X,IG
383	II	1.9	1148	623	4.5	3242	213T	T,C,X,IG
391	I	1.1	932	810	4.5	3301	213T	T,C,X,IG
381	III	3.0	1190	1621	4.5	3362	213T	T,C,X,IG
359	II	1.7	1295	631	5	3242	213T	T,C,X,IG
359	I	1.0	1264	806	5	3301	213T	T,C,X,IG
346	III	2.8	1312	1665	5	3362	213T	T,C,X,IG
341	III	2.1	1359	1608	5	3401	213T	T,C,X,IG
318	I, II	1.5	1465	639	5.6	3242	213T	T,C,X,IG
313	III	2.5	1449	1709	5.6	3362	213T	T,C,X,IG
287	I, II	1.4	1665	644	6.3	3242	213T	T,C,X,IG
284	I, II	1.8	1629	1724	6.3	3401	213T	T,C,X,IG
273	III	2.2	1663	1771	6.3	3362	213T	T,C,X,IG

◊ **Standard Motor Types** (see page A-16 for product codes)
- T TEFC, three phase, 230/460 or 575 volts
- C Corro-Duty®, three phase, 230/460 or 575V
- X Explosionproof, Cl 1 group D, Cl 2 groups F&G, three phase, 230/460V
- IG IntelliGear® variable speed for 3/460V power supplies

Browning®

Gearmotors

CbN SERIES 3000

7 1/2 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	AGMA Class	Service Factor	Output Torque in-lb	OHL lb	Nominal Ratio	Frame Size Gear	Frame Size Motor	Std. Motor Types ◊
256	I, II	1.5	1809	1774	7.1	3401	213T	T,C,X,IG
251	I	1.2	1903	646	7.1	3242	213T	T,C,X,IG
247	II, III	2.0	1838	1816	7.1	3362	213T	T,C,X,IG
229	II	1.4	1980	695	8	3252	213T	T,C,X,IG
218	I	1.1	2147	644	8	3242	213T	T,C,X,IG
223	III	2.8	2035	1871	8	3372	213T	T,C,X,IG
215	II	1.7	2110	1879	8	3362	213T	T,C,X,IG
204	I	1.0	2278	643	9	3242	213T	T,C,X,IG
194	I	1.2	2339	699	9	3252	213T	T,C,X,IG
192	II	1.5	2376	1932	9	3362	213T	T,C,X,IG
192	III	2.6	2348	1639	9	3372	213T	T,C,X,IG
182	I	1.2	2495	699	10	3252	213T	T,C,X,IG
176	II	1.4	2581	1969	10	3362	213T	T,C,X,IG
175	III	2.4	2588	1984	10	3372	213T	T,C,X,IG
161	I	1.1	2820	697	11.2	3252	213T	T,C,X,IG
159	I	1.3	2877	2016	11.2	3362	213T	T,C,X,IG
159	II, III	2.2	2859	2031	11.2	3372	213T	T,C,X,IG
145	I	1.0	3122	692	12.5	3252	213T	T,C,X,IG
141	I	1.1	3228	2066	12.5	3362	213T	T,C,X,IG
138	II, III	2.1	3280	2095	12.5	3372	213T	T,C,X,IG
130	I, II, III	3+	3501	3025	14	3482	213T	T,C,X,IG
125	I	1.0	3654	2117	14	3362	213T	T,C,X,IG
125	II, III	1.9	3626	2140	14	3372	213T	T,C,X,IG
111	III	3+	4090	3146	16	3482	213T	T,C,X,IG
109	I, II	1.7	4163	2200	16	3372	213T	T,C,X,IG
99	III	3.0	4566	3231	18	3482	213T	T,C,X,IG
97	I, II	1.5	4688	2230	18	3372	213T	T,C,X,IG
89	I, II	1.4	5092	2164	20	3372	213T	T,C,X,IG
89	III	2.6	5127	3320	20	3482	213T	T,C,X,IG
80	I	1.3	5675	2059	22.4	3372	213T	T,C,X,IG
78	II, III	2.4	5801	3414	22.4	3482	213T	T,C,X,IG
71	I	1.1	6369	1919	25	3372	213T	T,C,X,IG
68	II, III	2.1	6625	3513	25	3482	213T	T,C,X,IG
65	III	3+	7014	4580	28	3592	213T	T,C,X,IG
64	I, II	1.9	7109	3564	28	3482	213T	T,C,X,IG
63	I	1.0	7209	1733	28	3372	213T	T,C,X,IG
58	I, II, III	3+	7815	4580	31.5	3592	213T	T,C,X,IG
55	I, II	1.6	8272	3669	31.5	3482	213T	T,C,X,IG
51	III	2.9	8863	4580	35.5	3592	213T	T,C,X,IG
51	I, II	1.5	8978	3723	35.5	3482	213T	T,C,X,IG
46	I, II	1.4	9916	3785	40	3482	213T	T,C,X,IG
45	III	2.5	10172	4580	40	3592	213T	T,C,X,IG
41	I	1.2	11011	3845	45	3482	213T	T,C,X,IG
41	II, III	2.3	11065	4580	45	3592	213T	T,C,X,IG
35	I	1.1	13052	3930	50	3482	213T	T,C,X,IG

◊ **Standard Motor Types** (see page A-16 for product codes)
- T TEFC, three phase, 208-230/460 or 575 volts
- C Corro-Duty®, three phase, 230/460 or 575V
- X Explosionproof, Cl 1 group D, Cl 2 groups F&G, three phase, 230/460V
- IG IntelliGear® variable speed for 3/460V power supplies

7 1/2 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	AGMA Class	Service Factor	Output Torque in-lb	OHL lb	Nominal Ratio	Frame Size Gear	Frame Size Motor	Std. Motor Types ◊
35	II,III	2.0	12891	4580	50	3592	213T	T,C,X,IG
34	II	1.6	14378	4580	56	3593	213T	T,C,X,IG
32	I	1.0	13891	3994	56	3483	213T	T,C,X,IG
31	III	2.7	14269	13617	56	3603	213T	T,C,X,IG
28	I,II	1.5	15599	4580	63	3593	213T	T,C,X,IG
28	III	2.4	15996	13617	63	3603	213T	T,C,X,IG
25	I,II	1.4	17727	4580	71	3593	213T	T,C,X,IG
25	III	2.1	17976	13617	71	3603	213T	T,C,X,IG
23	I	1.3	19611	4580	80	3593	213T	T,C,X,IG
23	II,III	2.0	19525	13617	80	3603	213T	T,C,X,IG
20	II	1.7	22166	13617	90	3603	213T	T,C,X,IG
20	I	1.2	22685	4580	90	3593	213T	T,C,X,IG
19.5	III	3.7	22826	18558	90	3733	213T	T,C,X,IG
18.1	II	1.5	24527	13617	100	3603	213T	T,C,X,IG
18.0	I	1.1	24762	4580	100	3593	213T	T,C,X,IG
17.2	III	3.4	25898	18558	100	3733	213T	T,C,X,IG
15.8	III	3.1	28183	18558	112	3733	213T	T,C,X,IG
15.6	I,II	1.4	28437	13617	112	3603	213T	T,C,X,IG
14.3	I	1.2	30976	13617	125	3603	213T	T,C,X,IG
13.7	II,III	2.7	32499	18558	125	3733	213T	T,C,X,IG
12.8	I	1.1	34784	13617	140	3603	213T	T,C,X,IG
12.4	II,III	2.5	35800	18558	140	3733	213T	T,C,X,IG
11.4	I	1.0	38847	13617	160	3603	213T	T,C,X,IG
11.1	II,III	2.2	40116	18558	160	3733	213T	T,C,X,IG
10.0	I,II,III	2.0	44433	18558	180	3733	213T	T,C,X,IG
8.9	III	2.7	50018	22000	200	3843	213T	T,C,X,IG
8.8	I,II	1.8	50272	18558	200	3733	213T	T,C,X,IG
8.1	I,II	1.6	55096	18558	224	3733	213T	T,C,X,IG
7.9	III	2.4	56112	22000	224	3843	213T	T,C,X,IG
7.3	III	2.1	59416	22000	250	3844	213T	T,C,X,IG
7.2	I,II	1.4	61952	18558	250	3733	213T	T,C,X,IG
6.6	II	1.9	65586	22000	280	3844	213T	T,C,X,IG
6.4	I	1.2	67791	18558	280	3734	213T	T,C,X,IG
5.7	II	1.6	76614	22000	315	3844	213T	T,C,X,IG
5.6	I	1.1	77251	18558	315	3734	213T	T,C,X,IG
5.1	I, II	1.4	85553	22000	355	3844	213T	T,C,X,IG
4.5	I	1.3	96047	22000	400	3844	213T	T,C,X,IG
4.0	I	1.1	108678	22000	450	3844	213T	T,C,X,IG

◊ **Standard Motor Types** (see page A-16 for product codes)
- T TEFC, three phase, 230/460 or 575 volts
- C Corro-Duty®, three phase, 230/460 or 575V
- X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460V
- IG IntelliGear® variable speed for 3/460V power supplies

Browning®

Gearmotors

CbN SERIES 3000

10 HP

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	AGMA Class	Service Factor	Output Torque in-lb	OHL lb	Nominal Ratio	Frame Size Gear	Frame Size Motor	Std. Motor Types ◊
1423	I	1.2	434	230	1.25	3201	215T	T,C,X,IG
1413	III	3+	437	1059	1.25	3401	215T	T,C,X,IG
1389	I,II	1.4	446	616	1.25	3301	215T	T,C,X,IG
1264	I, II, III	3+	489	1106	1.4	3401	215T	T,C,X,IG
1207	I	1.1	512	222	1.4	3201	215T	T,C,X,IG
1199	II	1.4	514	629	1.4	3301	215T	T,C,X,IG
1129	I	1.1	546	216	1.6	3201	215T	T,C,X,IG
1125	II, III	3+	549	1139	1.6	3401	215T	T,C,X,IG
1087	I	1.3	567	637	1.6	3301	215T	T,C,X,IG
1008	II, III	3+	612	1173	1.8	3401	215T	T,C,X,IG
1000	I	1.1	618	200	1.8	3201	215T	T,C,X,IG
989	I,II	1.4	626	643	1.8	3301	215T	T,C,X,IG
902	I	1.0	684	183	2	3201	215T	T,C,X,IG
889	III	3+	694	1222	2	3401	215T	T,C,X,IG
836	I, II	1.4	718	648	2	3301	215T	T,C,X,IG
806	III	3+	767	1258	2.24	3401	215T	T,C,X,IG
778	I, II	1.4	794	648	2.24	3301	215T	T,C,X,IG
689	III	3+	896	1308	2.5	3401	215T	T,C,X,IG
678	I, II	1.4	912	645	2.5	3301	215T	T,C,X,IG
618	I, II, III	2.8	1000	1353	2.8	3401	215T	T,C,X,IG
601	I	1.2	1027	637	2.8	3301	215T	T,C,X,IG
554	I	1.0	1115	628	3.15	3301	215T	T,C,X,IG
550	II, III	2.6	1123	1384	3.15	3401	215T	T,C,X,IG
486	I, II, III	2.3	1271	1425	3.55	3401	215T	T,C,X,IG
452	I, II	1.6	1353	556	4	3242	215T	T,C,X,IG
442	III	2.6	1376	1516	4	3362	215T	T,C,X,IG
426	I, II, III	2.0	1451	1469	4	3401	215T	T,C,X,IG
383	I, II	1.4	1531	559	4.5	3242	215T	T,C,X,IG
381	III	2.3	1587	1572	4.5	3362	215T	T,C,X,IG
359	I	1.3	1727	559	5	3242	215T	T,C,X,IG
346	II, III	2.1	1749	1610	5	3362	215T	T,C,X,IG
318	I	1.2	1954	557	5.6	3242	215T	T,C,X,IG
313	II	1.9	1932	1649	5.6	3362	215T	T,C,X,IG
287	I	1.0	2220	551	6.3	3242	215T	T,C,X,IG
273	II	1.6	2217	1702	6.3	3362	215T	T,C,X,IG
247	I, II	1.5	2450	1740	7.1	3362	215T	T,C,X,IG
229	I	1.0	2650	600	8	3252	215T	T,C,X,IG
223	II, III	2.1	2714	1796	8	3372	215T	T,C,X,IG
215	I	1.3	2813	1791	8	3362	215T	T,C,X,IG
203	III	3+	2975	2607	9	3482	215T	T,C,X,IG

◊ **Standard Motor Types** (see page A-16 for product codes)
- T TEFC, three phase, 230/460 or 575 volts
- C Corro-Duty®, three phase, 230/460 or 575V
- X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460V
- IG IntelliGear® variable speed for 3/460V power supplies

10 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	AGMA Class	Service Factor	Output Torque in-lb	OHL lb	Nominal Ratio	Frame Size Gear	Frame Size Motor	Std. Motor Types ◊
192	I	1.1	3168	1833	9	3362	215T	T,C,X,IG
192	II,III	1.9	3131	1852	9	3372	215T	T,C,X,IG
176	I	1.0	3441	1862	10	3362	215T	T,C,X,IG
175	II	1.8	3451	1889	10	3372	215T	T,C,X,IG
162	III	3+	3728	2759	11.2	3482	215T	T,C,X,IG
159	I,II	1.7	3812	1926	11.2	3372	215T	T,C,X,IG
143	III	3.0	4228	2843	12.5	3482	215T	T,C,X,IG
138	I,II	1.5	4374	1880	12.5	3372	215T	T,C,X,IG
130	III	2.8	4667	2908	14	3482	215T	T,C,X,IG
125	I,II	1.4	4834	1798	14	3372	215T	T,C,X,IG
111	II,III	2.5	5454	3010	16	3482	215T	T,C,X,IG
109	I	1.3	5550	1655	16	3372	215T	T,C,X,IG
99	II,III	2.2	6087	3079	18	3482	215T	T,C,X,IG
97	I	1.1	6250	1499	18	3372	215T	T,C,X,IG
89	I	1.0	6789	1370	20	3372	215T	T,C,X,IG
89	II,III	2.0	6836	3150	20	3482	215T	T,C,X,IG
79	III	3+	7627	4268	22.4	3592	215T	T,C,X,IG
78	I,II	1.8	7735	3221	22.4	3482	215T	T,C,X,IG
73	III	3+	8325	4401	25	3592	215T	T,C,X,IG
68	I,II	1.6	8833	3292	25	3482	215T	T,C,X,IG
65	III	2.8	9352	4471	28	3592	215T	T,C,X,IG
64	I,II	1.4	9479	3327	28	3482	215T	T,C,X,IG
58	II,III	2.4	10420	4580	31.5	3592	215T	T,C,X,IG
55	I	1.2	11029	3394	31.5	3482	215T	T,C,X,IG
51	I	1.1	11970	3424	35.5	3482	215T	T,C,X,IG
51	II,III	2.2	11817	4580	35.5	3592	215T	T,C,X,IG
46	I	1.0	13222	3455	40	3482	215T	T,C,X,IG
45	II	1.9	13562	4580	40	3592	215T	T,C,X,IG
45	III	2.7	13484	13617	40	3602	215T	T,C,X,IG
41	I,II	1.7	14753	4580	45	3592	215T	T,C,X,IG
41	III	2.3	14798	13617	45	3602	215T	T,C,X,IG
36	III	2.1	16630	13617	50	3603	215T	T,C,X,IG
35	I,II	1.5	17188	4580	50	3592	215T	T,C,X,IG
31	II,III	2.0	19026	13617	56	3603	215T	T,C,X,IG
31	I	1.2	19170	4580	56	3593	215T	T,C,X,IG
29	III	3.7	20718	18558	63	3733	215T	T,C,X,IG
28	I	1.1	20799	4580	63	3593	215T	T,C,X,IG
28	II	1.8	21328	13617	63	3603	215T	T,C,X,IG
25	I	1.0	23637	4580	71	3593	215T	T,C,X,IG

◊ **Standard Motor Types** (see page A-16 for product codes)
- T TEFC, three phase, 230/460 or 575 volts
- C Corro-Duty®, three phase, 230/460 or 575V
- X Explosionproof, Cl 1 group D, Cl 2 groups F&G, three phase, 230/460V
- IG IntelliGear® variable speed for 3/460V power supplies

Browning®

Gearmotors

CbN SERIES 3000

10 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	AGMA Class	Service Factor	Output Torque in-lb	OHL lb	Nominal Ratio	Frame Size Gear	Frame Size Motor	Std. Motor Types ◊
26	III	3.4	23122	18558	71	3733	215T	T,C,X,IG
25	II	1.6	23968	13617	71	3603	215T	T,C,X,IG
23	III	3.2	25999	18558	80	3733	215T	T,C,X,IG
23	I,II	1.5	26033	13617	80	3603	215T	T,C,X,IG
20	I	1.3	29554	13617	90	3603	215T	T,C,X,IG
19	II,III	2.8	30434	18558	90	3733	215T	T,C,X,IG
18	I	1.2	32702	13617	100	3603	215T	T,C,X,IG
17	II,III	2.5	34530	18558	100	3733	215T	T,C,X,IG
16	II,III	2.4	37577	18558	112	3733	215T	T,C,X,IG
16	I	1.0	37916	13617	112	3603	215T	T,C,X,IG
14	I,II,III	2.0	43671	18558	125	3733	215T	T,C,X,IG
12	I,II	1.9	47733	18558	140	3733	215T	T,C,X,IG
11	I,II	1.7	53488	18558	160	3733	215T	T,C,X,IG
11	III	2.4	55858	22000	160	3843	215T	T,C,X,IG
10	I,II	1.5	59244	18558	180	3733	215T	T,C,X,IG
10	I,II	1.5	59244	18558	180	3733	215T	T,C,X,IG
9.5	III	2.2	62290	22000	180	3843	215T	T,C,X,IG
8.9	I, II	2.0	66691	22000	200	3843	215T	T,C,X,IG
8.8	I	1.3	67030	18558	200	3733	215T	T,C,X,IG
8.1	I	1.2	73462	18558	224	3733	215T	T,C,X,IG
7.9	III	1.8	74816	22000	224	3843	215T	T,C,X,IG
7.3	III	1.5	79221	22000	250	3844	215T	T,C,X,IG
7.2	I	1.1	82602	18558	250	3733	215T	T,C,X,IG
6.6	I, II	1.4	87448	22000	280	3844	215T	T,C,X,IG
5.7	I	1.2	102152	22000	315	3844	215T	T,C,X,IG
5.1	I	1.1	114070	22000	355	3844	215T	T,C,X,IG

◊ **Standard Motor Types** (see page A-16 for product codes)
- T TEFC, three phase, 230/460 or 575 volts
- C Corro-Duty®, three phase, 230/460 or 575V
- X Explosionproof, Cl 1 group D, Cl 2 groups F&G, three phase, 230/460V
- IG IntelliGear® variable speed for 3/460V power supplies

15 HP

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	AGMA Class	Service Factor	Output Torque in-lb	OHL lb	Nominal Ratio	Frame Size Gear	Frame Size Motor	Std. Motor Types ◊
1413	I, II, III	2.6	655	1020	1.25	3401	254T	T,C
1264	I, II, III	2.7	733	1063	1.4	3401	254T	T,C
1125	I, II, III	2.8	824	1093	1.6	3401	254T	T,C
1008	I, II, III	2.4	919	1123	1.8	3401	254T	T,C
889	I, II, III	2.4	1042	1166	2	3401	254T	T,C
806	I, II, III	2.3	1150	1198	2.24	3401	254T	T,C
689	I, II, III	2.0	1344	1241	2.5	3401	254T	T,C
618	I, II	1.9	1500	1279	2.8	3401	254T	T,C
550	I, II	1.7	1684	1304	3.15	3401	254T	T,C
486	I, II	1.5	1906	1321	3.55	3401	254T	T,C
448	I, II, III	2.6	2028	1994	4	3482	254T	T,C
442	I, II	1.7	2064	1430	4	3362	254T	T,C
426	I	1.3	2176	1303	4	3401	254T	T,C
400	II, III	2.8	2268	2050	4.5	3482	254T	T,C
397	I	1.2	2336	1272	4.5	3401	254T	T,C
381	I, II	1.5	2380	1473	4.5	3362	254T	T,C
356	II, III	2.8	2548	2109	5	3482	254T	T,C
346	I, II	1.4	2624	1501	5	3362	254T	T,C
341	I	1.1	2718	1244	5	3401	254T	T,C
319	I, II, III	2.4	2842	2164	5.6	3482	254T	T,C
314	I	1.0	2950	1190	5.6	3401	254T	T,C
313	I	1.2	2898	1512	5.6	3262	254T	T,C
282	I, II, III	2.4	3223	2226	6.3	3482	254T	T,C
273	I	1.1	3326	1426	6.3	3362	254T	T,C
255	I, II, III	2.3	3558	2274	7.1	3482	254T	T,C
227	III	2.6	3990	2399	8	3482	254T	T,C
223	I, II	1.4	4071	1445	8	3372	254T	T,C
203	II, III	2.6	4462	2459	9	3482	254T	T,C
193	I	1.3	4696	1316	9	3372	254T	T,C
181	II, III	2.4	5013	2518	10	3482	254T	T,C
175	I	1.2	5176	1207	10	3372	254T	T,C
162	II, III	2.2	5592	2573	11.2	3482	254T	T,C
159	I	1.1	5718	1076	11.2	3372	254T	T,C
143	II, III	2.0	6342	2632	12.5	3482	254T	T,C
138	I	1.0	6561	858	12.5	3372	254T	T,C
130	I, II	1.9	7001	2676	14	3482	254T	T,C
125	III	3+	7251	3570	14	3592	254T	T,C
115	III	3.0	7867	3695	16	3592	254T	T,C
111	I, II	1.6	8181	2738	16	3482	254T	T,C
102	III	2.8	8941	3781	18	3592	254T	T,C
99	I, II	1.5	9131	2775	18	3482	254T	T,C
92	II, III	2.4	9891	3869	20	3592	254T	T,C
89	I	1.3	10254	2809	20	3482	254T	T,C

◊ **Standard Motor Types** (see page A-16 for product codes)
T TEFC, three phase, 230/460 or 575 volts
C Corro-Duty®, three phase, 230/460 or 575V

Browning®

Gearmotors

CbN SERIES 3000

15 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	AGMA Class	Service Factor	Output Torque in-lb	OHL lb	Nominal Ratio	Frame Size Gear	Frame Size Motor	Std. Motor Types ◊
79	II,III	2.3	11411	3958	22.4	3592	254T	T,C
78	I	1.2	11602	2835	22.4	3482	254T	T,C
73	II,III	2.1	12488	4047	25	3592	254T	T,C
68	I	1.0	13249	2852	25	3482	254T	T,C
65	II	1.8	14029	4090	28	3592	254T	T,C
64	I	1.0	14220	2854	28	3482	254T	T,C
63	III	2.5	14365	13617	28	3602	254T	T,C
58	I,II	1.7	15631	4175	31.5	3592	254T	T,C
56	III	2.2	16129	13617	31.5	3602	254T	T,C
51	I,II	1.5	17726	4214	35.5	3592	254T	T,C
51	III	2.0	17892	13617	35.5	3602	254T	T,C
45	I	1.3	20345	4253	40	3592	254T	T,C
45	II	1.8	20226	13617	40	3602	254T	T,C
44	III	3.1	20848	18558	40	3732	254T	T,C
41	I	1.2	22129	4285	45	3592	254T	T,C
41	II	1.6	22196	13617	45	3602	254T	T,C
41	III	2.6	22300	18558	45	3732	254T	T,C
36	III	2.1	24893	18558	50	3732	254T	T,C
36	II	1.4	24945	13617	50	3602	254T	T,C
35	I	1.0	25780	4310	50	3592	254T	T,C
32	II,III	2.6	28132	18558	56	3733	254T	T,C
31	I	1.3	28538	13617	56	3603	254T	T,C
29	II,III	2.4	31077	18558	63	3733	254T	T,C
28	I	1.2	31991	13617	63	3603	254T	T,C
26	II,III	2.3	34683	8558	71	3733	254T	T,C
25	I	1.1	35952	13617	71	3603	254T	T,C
23	II,III	2.1	38999	18558	80	3733	254T	T,C
23	I	1.0	39050	13617	80	3603	254T	T,C
19	I,II	1.9	45651	18558	90	3733	254T	T,C
18.9	III	2.8	46921	22000	90	3843	254T	T,C
17.2	I,II	1.7	51796	18558	100	3733	254T	T,C
16.8	III	2.5	52811	22000	100	3843	254T	T,C
15.8	I,II	1.6	56366	18558	112	3733	254T	T,C
15.1	III	2.3	58905	22000	112	3843	254T	T,C
13.6	I,II	1.4	65506	18558	125	3733	254T	T,C
13.5	III	2.0	66014	22000	125	3843	254T	T,C
12.4	I	1.2	71600	18558	140	3733	254T	T,C
12.0	II	1.8	74139	22000	140	3843	254T	T,C
11.1	I	1.1	80233	18558	160	3733	254T	T,C
10.6	II	1.6	83787	22000	160	3843	254T	T,C
10.0	I	1.0	88865	18558	180	3733	254T	T,C
9.5	II	1.4	93435	22000	180	3843	254T	T,C
8.9	I	1.3	100037	22000	200	3843	254T	T,C
7.9	I	1.2	112224	22000	224	3843	254T	T,C
7.3	I	1.0	118831	22000	250	3844	254T	T,C

◊ **Standard Motor Types** (see page A-16 for product codes)
T TEFC, three phase, 230/460 or 575 volts
C Corro-Duty®, three phase, 230/460 or 575V

20 HP

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	AGMA Class	Service Factor	Output Torque in-lb	OHL lb	Nominal Ratio	Frame Size Gear	Frame Size Motor	Std. Motor Types ◊
1411	III	1.9	875	981	1.25	3401	256T	T,C
1268	III	2.1	974	1020	1.4	3401	256T	T,C
1122	III	2.1	1101	1041	1.6	3401	256T	T,C
1006	I, II	1.8	1228	1045	1.8	3401	256T	T,C
978	III	2.8	1264	1202	1.8	3501	256T	T,C
888	I, II	1.8	1391	1045	2	3401	256T	T,C
875	III	2.6	1412	1238	2	3501	256T	T,C
806	I, II	1.7	1532	1039	2.24	3401	256T	T,C
778	III	2.5	1588	1277	2.24	3501	256T	T,C
717	III	2.4	1722	1304	2.5	3501	256T	T,C
689	I,II	1.5	1793	1021	2.5	3401	256T	T,C
632	III	2.3	1955	1346	2.8	3501	256T	T,C
618	I, II	1.4	1998	996	2.8	3401	256T	T,C
570	III	2.1	2167	1380	3.15	3501	256T	T,C
550	I	1.3	2245	971	3.15	3401	256T	T,C
493	III	2.0	2506	1427	3.55	3501	256T	T,C
486	I	1.1	2541	930	3.55	3401	256T	T,C
448	II	1.9	2704	1914	4	3482	256T	T,C
430	III	3+	2814	2484	4	3592	256T	T,C
426	I	1.0	2901	874	4	3401	256T	T,C
400	II, III	2.1	3022	1961	4.5	3482	256T	T,C
356	I, II, III	2.1	3395	2009	5	3482	256T	T,C
319	I, II	1.8	3789	2052	5.6	3482	256T	T,C
307	III	2.9	3941	2709	5.6	3592	256T	T,C
282	I, II	1.8	4294	2099	6.3	3482	256T	T,C
274	III	2.7	4412	2793	6.3	3592	256T	T,C
255	I, II	1.7	4744	2134	7.1	3482	256T	T,C
244	III	2.4	4965	2858	7.1	3592	256T	T,C
222	I, II	1.9	5456	2267	8	3482	256T	T,C
221	III	3+	5476	2998	8	3592	256T	T,C
203	I, II	1.9	5947	2310	9	3482	256T	T,C
193	III	3+	6272	3078	9	3592	256T	T,C
181	I, II	1.8	6687	2352	10	3482	256T	T,C
176	III	3.0	6873	3160	10	3592	256T	T,C
162	I, II	1.7	7454	2387	11.2	3482	256T	T,C
158	III	2.8	7682	3235	11.2	3592	256T	T,C
143	I, II	1.5	8457	2421	12.5	3482	256T	T,C
141	III	2.6	8595	3319	12.5	3592	256T	T,C
130	I, II	1.4	9335	2443	14	3482	256T	T,C
125	III	2.4	9667	3382	14	3592	256T	T,C
111	I	1.2	10905	2466	16	3482	256T	T,C
102	II, III	2.1	11921	3476	16	3592	256T	T,C
99	I	1.1	12177	2472	18	3482	256T	T,C
99	II	1.8	13186	3537	18	3592	256T	T,C

◊ **Standard Motor Types** (see page A-16 for product codes)
T TEFC, three phase, 230/460 or 575 volts
C Corro-Duty®, three phase, 230/460 or 575V

Browning®

Gearmotors

CbN SERIES 3000

20 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	AGMA Class	Service Factor	Output Torque in-lb	OHL lb	Nominal Ratio	Frame Size Gear	Frame Size Motor	Std. Motor Types ◊
92	II,III	2.0	13186	3594	20	3592	256T	T, C
89	I	1.0	13670	2468	20	3482	256T	T, C
80	III	2.3	15143	12709	22.4	3602	256T	T, C
79	I,II	1.7	15254	3647	22.4	3592	256T	T, C
73	I,II	1.6	16651	3692	25	3592	256T	T, C
69	III	2.0	17633	13087	25	3602	256T	T, C
65	I,II	1.4	18704	3710	28	3592	256T	T, C
63	II	1.9	19154	13288	28	3602	256T	T, C
62	III	3.9	19638	18558	28	3732	256T	T, C
58	I	1.3	20841	3732	31.5	3592	256T	T, C
56	II	1.7	21505	13550	31.5	3602	256T	T, C
55	III	3.4	21989	18558	31.5	3732	256T	T, C
51	I	1.1	23635	3733	35.5	3592	256T	T, C
51	II	1.5	23856	13617	35.5	3602	256T	T, C
49	III	2.8	24893	18558	35.5	3732	256T	T, C
45	-	0.97	27127	3722	40	3592	256T	T, C
45	I,II	1.4	26967	13617	40	3602	256T	T, C
44	III	2.4	27797	18558	40	3732	256T	T, C
41	I	1.2	29595	13617	45	3602	256T	T, C
41	II	1.9	29733	18558	45	3732	256T	T, C
41	III	2.2	28979	18558	45	3733	256T	T, C
36	I	1.1	33260	13617	50	3602	256T	T, C
36	II	1.6	33191	18558	50	3732	256T	T, C
36	III	2.1	32499	18558	50	3733	256T	T, C
32	I,II,III	2.2	33041	18558	56	3733	256T	T, C
29	I,II,III	2.0	37510	18558	63	3733	256T	T, C
26	I,II	1.9	41437	18558	71	3733	256T	T, C
24	III	2.0	46244	12000	71	3843	256T	T, C
23	I,II	1.7	48952	18558	80	3733	256T	T, C
21	III	2.4	55452	22000	80	3843	256T	T, C
19.5	I,II	1.4	60868	18558	90	3733	256T	T, C
18.9	III	2.1	62561	22000	90	3843	256T	T, C
17.2	I	1.3	69061	18558	100	3733	256T	T, C
16.8	II,III	1.9	70415	22000	100	3843	256T	T, C
15.8	I	1.2	75155	18558	112	3733	256T	T, C
15.1	II	1.7	78540	22000	112	3843	256T	T, C
13.6	I	1.0	87342	18558	125	3733	256T	T, C
13.5	II	1.5	88019	22000	125	3843	256T	T, C
12.0	I, II	1.4	98852	22000	140	3843	256T	T, C
10.6	I	1.2	111716	22000	160	3843	256T	T, C
9.5	I	1.1	124581	22000	180	3843	256T	T, C
8.9	I	1.0	133383	22000	200	3843	256T	T, C

◊ **Standard Motor Types** (see page A-16 for product codes)
T TEFC, three phase, 230/460 or 575 volts
C Corro-Duty®, three phase, 230/460 or 575V

25 HP

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	AGMA Class	Service Factor	Output Torque in-lb	OHL lb	Nominal Ratio	Frame Size Gear	Frame Size Motor	Std. Motor Types ◊
1411	I, II	1.5	1094	827	1.25	3401	284T	T,C
1367	III	2.5	1129	1062	1.25	3501	284T	T,C
1268	I, II	1.7	1218	827	1.4	3401	284T	T,C
1199	III	2.4	1288	1101	1.4	3501	284T	T,C
1122	I, II	1.7	1376	822	1.6	3401	284T	T,C
1094	III	2.3	1412	1128	1.6	3501	284T	T,C
1006	I, II	1.4	1535	811	1.8	3401	284T	T,C
978	III	2.2	1579	1161	1.8	3501	284T	T,C
888	I, II	1.5	1738	788	2	3401	284T	T,C
875	III	2.1	1765	1194	2	3501	284T	T,C
806	I, II	1.4	1915	763	2.24	3401	284T	T,C
778	III	2.0	1985	1228	2.24	3501	284T	T,C
717	I, II	1.9	2153	1252	2.5	3501	284T	T,C
689	I	1.2	2241	715	2.5	3401	284T	T,C
632	I, II	1.9	2444	1288	2.8	3501	284T	T,C
618	I	1.1	2497	660	2.8	3401	284T	T,C
570	I, II	1.7	2709	1286	3.15	3501	284T	T,C
550	I	1.0	2806	614	3.15	3401	284T	T,C
545	III	3.0+	2832	7440	3.15	3602	284T	T,C
493	I, II	1.6	3132	1259	3.55	3501	284T	T,C
480	III	3.0+	3905	7431	3.55	3602	284T	T,C
486	n/a	0.91	3176	540	3.55	3401	284T	T,C
448	I, II	1.6	3380	1834	4	3482	284T	T,C
430	III	3+	3518	2421	4	3592	284T	T,C
400	I, II	1.7	3777	1872	4.5	3482	284T	T,C
376	III	3+	4028	2488	4.5	3592	284T	T,C
356	I, II	1.7	4244	1909	5	3482	284T	T,C
343	III	3.0	4408	2557	5	3592	284T	T,C
319	I, II	1.4	4737	1940	5.6	3482	284T	T,C
307	III	2.3	4927	2621	5.6	3592	284T	T,C
282	I, II	1.5	5368	1973	6.3	3482	284T	T,C
274	III	2.2	5515	2693	6.3	3592	284T	T,C
255	I, II	1.4	5929	1994	7.1	3482	284T	T,C
244	III	2.0	6206	2749	7.1	3592	284T	T,C
222	I, II	1.5	6820	2134	8	3482	284T	T,C
221	III	3.0	6846	2892	8	3592	284T	T,C
203	I, II	1.5	7433	2162	9	3482	284T	T,C
193	III	2.6	7840	2959	9	3592	284T	T,C
181	I, II	1.4	8358	2185	10	3482	284T	T,C
176	III	2.4	8592	3025	10	3592	284T	T,C
162	I	1.3	9318	2201	11.2	3482	284T	T,C
158	II, III	2.2	9603	3085	11.2	3592	284T	T,C
143	I	1.2	10571	2210	12.5	3482	284T	T,C
141	II, III	2.1	10744	3149	12.5	3592	284T	T,C
130	I	1.1	11669	2210	14	3482	284T	T,C

◊ **Standard Motor Types** (see page A-16 for product codes)
T TEFC, three phase, 230/460 or 575 volts
C Corro-Duty®, three phase, 230/460 or 575V

Browning®

Gearmotors

CbN SERIES 3000

25 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	AGMA Class	Service Factor	Output Torque in-lb	OHL lb	Nominal Ratio	Frame Size Gear	Frame Size Motor	Std. Motor Types ◊
130	III	2.8	11669	11168	14	3602	284T	T, C
125	II	1.9	12084	3195	14	3592	284T	T, C
116	III	2.5	13052	11440	16	3602	284T	T, C
113	II	1.9	13371	3257	16	3592	284T	T, C
111	I	1.0	13631	2193	16	3482	284T	T, C
99	III	2.2	15299	11794	18	3602	284T	T, C
92	I,II	1.5	16483	3292	18	3592	284T	T, C
92	I,II	1.6	16483	3320	20	3592	284T	T, C
88	III	2.0	17287	12068	20	3602	284T	T, C
80	II	1.8	18929	12248	22.4	3602	284T	T, C
79	I,II	1.4	19067	3336	22.4	3592	284T	T, C
77	III	3.8	19534	18558	22.4	3732	284T	T, C
73	I	1.2	20813	3337	25	3592	284T	T, C
69	III	3.4	21781	18558	25	3732	284T	T, C
69	II	1.6	22041	12250	25	3602	284T	T, C
63	I,II	1.5	23942	12704	28	3602	284T	T, C
62	III	3.1	24547	18558	28	3732	284T	T, C
56	I	1.3	26881	12896	31.5	3602	284T	T, C
55	II,III	2.7	27486	18558	31.5	3732	284T	T, C
51	I	1.2	29820	13050	35.5	3602	284T	T, C
49	II,III	2.2	31116	18558	35.5	3732	284T	T, C
45	I	1.1	33709	13202	40	3602	284T	T, C
45	III	2.0	33796	22000	40	3842	284T	T, C
44	II	1.9	34747	18558	40	3732	284T	T, C
41	I,II	1.5	37167	18558	45	3732	284T	T, C
41	II	1.8	36562	18558	45	3733	284T	T, C
40	III	3+	37493	22000	45	3843	284T	T, C
36	I	1.3	41488	18558	50	3732	284T	T, C
36	II	1.7	41301	18558	50	3733	284T	T, C
35	III	3.0	42909	22000	50	3843	284T	T, C
32	I,II	1.5	46887	18558	56	3733	284T	T, C
31	III	2.8	47395	22000	56	3843	284T	T, C
29	I,II	1.5	51796	18558	63	3733	284T	T, C
28	III	2.4	53658	22000	63	3843	284T	T, C
26	I,II	1.4	57805	18558	71	3733	284T	T, C
24	III	2.2	60682	22000	71	3843	284T	T, C
23	I	1.3	64999	18558	80	3733	284T	T, C
21	II	1.9	69315	22000	80	3843	284T	T, C
19.5	I	1.1	76086	18558	90	3733	284T	T, C
18.9	II	1.7	78201	22000	90	3843	284T	T, C
17.2	I	1.0	86326	18558	100	3733	284T	T, C
16.8	II	1.5	88019	22000	100	3843	284T	T, C
15.1	I, II	1.4	98175	22000	112	3843	284T	T, C
13.5	I	1.2	110024	22000	125	3843	284T	T, C
12.0	I	1.1	123565	22000	140	3843	284T	T, C

◊ **Standard Motor Types** (see page A-16 for product codes)
T TEFC, three phase, 230/460 or 575 volts
C Corro-Duty®, three phase, 230/460 or 575V

30 HP

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	AGMA Class	Service Factor	Output Torque in-lb	OHL lb	Nominal Ratio	Frame Size Gear	Frame Size Motor	Std. Motor Types ◊
1411	I	1.3	1313	638	1.25	3401	286T	T, C
1389	II,III	2.1	1334	1030	1.25	3501	286T	T, C
1268	I,II	1.4	1461	621	1.4	3401	286T	T, C
1199	III	2.0	1546	1066	1.4	3501	286T	T, C
1122	I,II	1.4	1652	603	1.6	3401	286T	T, C
1094	I,II	1.9	1694	1091	1.6	3501	286T	T, C
1006	I	1.2	1842	577	1.8	3401	286T	T, C
978	I,II	1.8	1895	1112	1.8	3501	286T	T, C
888	I	1.2	2086	530	2	3401	286T	T, C
875	I,II	1.8	2118	1112	2	3501	286T	T, C
806	I	1.1	2298	486	2.24	3401	286T	T, C
778	I,II	1.7	2382	1104	2.24	3501	286T	T, C
717	I,II	1.6	2584	1095	2.5	3501	286T	T, C
689	I	1.0	2689	409	2.5	3401	286T	T, C
648	I,II	1.6	2859	1070	2.8	3501	286T	T, C
618	N/A	0.95	2996	325	2.8	3401	286T	T, C
570	I,II	1.4	3251	1041	3.15	3501	286T	T, C
545	III	3.0+	3290	7030	3.15	3602	286T	T, C
493	I,II	1.4	3759	984	3.55	3501	286T	T, C
480	III	3.0+	3730	7025	3.55	3602	286T	T, C
448	I	1.3	4055	1755	4	3482	286T	T, C
430	III	2.8	4221	2358	4	3592	286T	T, C
400	I,II	1.4	4533	1783	4.5	3482	286T	T, C
376	III	2.6	4833	2418	4.5	3592	286T	T, C
356	I,II	1.4	5093	1809	5	3482	286T	T, C
343	III	2.5	5290	2478	5	3592	286T	T, C
319	I	1.2	5684	1829	5.6	3482	286T	T, C
307	II	1.9	5912	2533	5.6	3592	286T	T, C
282	I	1.2	6441	1846	6.3	3482	286T	T, C
274	II	1.8	6617	2594	6.3	3592	286T	T, C
255	I	1.1	7115	1854	7.1	3482	286T	T, C
244	II	1.6	7447	2639	7.1	3592	286T	T, C
222	I	1.3	8184	2001	8	3482	286T	T, C
221	II,III	2.5	8215	2785	8	3592	286T	T, C
203	I	1.3	8920	2013	9	3482	286T	T, C
193	II,III	2.2	9408	2839	9	3592	286T	T, C
181	I	1.2	10030	2018	10	3482	286T	T, C
176	II,III	2.0	10310	2891	10	3592	286T	T, C
162	I	1.1	11181	2015	11.2	3482	286T	T, C
158	II	1.9	11523	2935	11.2	3592	286T	T, C
161	III	2.8	11306	10438	11.2	3602	286T	T, C
145	III	2.6	12550	10647	12.5	3602	286T	T, C
143	I	1.0	12685	1999	12.5	3482	286T	T, C
141	II	1.7	12893	2979	12.5	3592	286T	T, C
130	N/A	0.93	14002	1977	14	3482	286T	T, C

◊ **Standard Motor Types** (see page A-16 for product codes)
T TEFC, three phase, 230/460 or 575 volts
C Corro-Duty®, three phase, 230/460 or 575V

Browning®

Gearmotors

CbN SERIES 3000

30 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	AGMA Class	Service Factor	Output Torque in-lb	OHL lb	Nominal Ratio	Frame Size Gear	Frame Size Motor	Std. Motor Types ◊
130	III	2.3	14002	10682	14	3602	286T	T, C
125	I,II	1.6	14500	3007	14	3592	286T	T, C
116	III	2.1	15662	11121	16	3602	286T	T, C
115	I,II	1.4	15783	3038	16	3592	286T	T, C
102	I	1.3	17882	3048	18	3592	286T	T, C
99	III	1.8	18359	11421	18	3602	286T	T, C
98	III	3.9	18462	18558	18	3732	286T	T, C
92	I	1.3	19780	3045	20	3592	286T	T, C
88	III	1.6	20744	11645	20	3602	286T	T, C
87	III	3.5	20848	18558	20	3732	286T	T, C
80	III	1.5	22715	11788	22.4	3602	286T	T, C
79	I	1.1	22881	3026	22.4	3592	286T	T, C
77	III	3.1	23441	18558	22.4	3732	286T	T, C
73	I	1.0	24976	2764	25	3592	286T	T, C
69	II,III	2.9	26138	18558	25	3732	286T	T, C
69	I	1.3	26449	12014	25	3602	286T	T, C
63	I	1.2	28731	12120	28	3602	286T	T, C
62	II,III	2.6	29457	18558	28	3732	286T	T, C
56	I	1.1	32257	12241	31.5	3602	286T	T, C
55	II,III	2.3	32983	18558	31.5	3732	286T	T, C
51	I	1.0	35784	12323	35.5	3602	286T	T, C
51	III	2.2	35888	22000	35.5	3842	286T	T, C
49	II	1.8	37340	18558	35.5	3732	286T	T, C
45	II	1.7	40555	22000	40	3842	286T	T, C
44	I,II	1.6	41696	18558	40	3732	286T	T, C
44	III	3+	40218	22000	40	3843	286T	T, C
41	I	1.3	44600	18558	45	3732	286T	T, C
41	II	1.5	43874	18558	45	3733	286T	T, C
40	III	2.9	44991	22000	45	3843	286T	T, C
36	I	1.1	49786	18558	50	3732	286T	T, C
36	II	1.4	49561	18558	50	3733	286T	T, C
35	III	2.5	51491	22000	50	3843	286T	T, C
32	I	1.3	56264	18558	56	3733	286T	T, C
31	II,III	2.3	56874	22000	56	3843	286T	T, C
29	I	1.2	62155	18558	63	3733	286T	T, C
28	II, III	2.0	64389	22000	63	3843	286T	T, C
26	I	1.1	69366	18558	71	3733	286T	T, C
24	II	1.8	72819	22000	71	3843	286T	T, C
23	I	1.1	77998	18558	80	3733	286T	T, C
21	II	1.6	83178	22000	80	3843	286T	T, C
19	I, II	1.4	93842	22000	90	3843	286T	T, C
17	I	1.3	105623	22000	100	3843	286T	T, C
15	I	1.1	117810	22000	112	3843	286T	T, C
13	I	1.0	132028	22000	125	3843	286T	T, C

◊ **Standard Motor Types** (see page A-16 for product codes)
T TEFC, three phase, 230/460 or 575V
C Corro-Duty®, three phase, 230/460 or 575V

40 HP

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	AGMA Class	Service Factor	Output Torque in-lb	OHL lb	Nominal Ratio	Frame Size Gear	Frame Size Motor	Std. Motor Types ◊
1367	I,II	1.5	1807	819	1.25	3501	324T	T, C
1199	I,II	1.5	2061	812	1.4	3501	324T	T, C
1094	I,II	1.4	2259	802	1.6	3501	324T	T, C
978	I,II	1.4	2527	784	1.8	3501	324T	T, C
875	I	1.3	2824	757	2	3501	324T	T, C
778	I	1.3	3176	718	2.24	3501	324T	T, C
717	I	1.2	3445	684	2.5	3501	324T	T, C
632	I	1.2	3911	317	2.8	3501	324T	T, C
570	I	1.1	4334	550	3.15	3501	324T	T, C
545	II,III	3.0	4439	7616	3.15	3602	324T	T, C
493	I	1.0	5012	431	3.55	3501	324T	T, C
481	II,III	3.0	5034	7834	3.55	3602	324T	T, C
451	III	3.0	5366	7870	4	3602	324T	T, C
430	I,II	1.7	5629	2233	4	3592	324T	T, C
403	III	3.0	6002	7999	4.5	3602	324T	T, C
376	I,II,	1.7	6445	2278	4.5	3592	324T	T, C
356	III	3.0	6790	8226	5	3602	324T	T, C
343	I,II	1.9	7053	2321	5	3592	324T	T, C
315	III	3.0	7689	8717	5.6	3602	324T	T, C
307	I,II	1.4	7883	2358	5.6	3592	324T	T, C
285	II,III	3.0	8505	8907	6.3	3602	324T	T, C
274	I	1.3	8823	2395	6.3	3592	324T	T, C
255	II,III	2.7	9487	9124	7.1	3602	324T	T, C
244	I	1.2	9930	2419	7.1	3592	324T	T, C
227	III	2.5	10663	9348	8	3602	324T	T, C
221	I,II	1.9	10953	2571	8	3592	324T	T, C
194	III	2.1	12488	9637	9	3602	324T	T, C
193	I,II	1.6	12543	2600	9	3592	324T	T, C
182	III	2.3	13318	9755	10	3602	324T	T, C
176	I,II	1.5	13747	2623	10	3592	324T	T, C
161	III	2.1	15074	9977	11.2	3602	324T	T, C
158	I,II	1.4	15365	2636	11.2	3592	324T	T, C
145	II	1.9	16734	10139	12.5	3602	324T	T, C
143	III	3.0	16872	17316	12.5	3732	324T	T, C
141	I	1.3	17190	2639	12.5	3592	324T	T, C
130	II	1.7	18670	10314	14	3602	324T	T, C
127	III	3.0	19085	17831	14	3732	324T	T, C
125	I	1.2	19334	2632	14	3592	324T	T, C
116	II	1.6	20883	10482	16	3602	324T	T, C
115	I	1.1	21044	2601	16	3592	324T	T, C
111	III	3.0	21712	18352	16	3732	324T	T, C
102	I	1	23842	2535	18	3592	324T	T, C
99	II	1.4	24478	10675	18	3602	324T	T, C
98	III	2.9	24616	18558	18	3732	324T	T, C

◊ **Standard Motor Types** (see page A-16 for product codes)
T TEFC, three phase, 230/460 or 575V
C Corro-Duty®, three phase, 230/460 or 575V

Browning®

Gearmotors

CbN SERIES 3000

40 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	AGMA Class	Service Factor	Output Torque in-lb	OHL lb	Nominal Ratio	Frame Size Gear	Frame Size Motor	Std. Motor Types ◊
88	I	1.2	27659	10799	20	3602	324T	T, C
87	II,III	2.6	27797	18558	20	3732	324T	T, C
80	I	1.1	30287	10866	22.4	3602	324T	T, C
77	II,III	2.4	31255	18558	22.4	3732	324T	T, C
69	II,III	2.1	34850	18558	25	3732	324T	T, C
69	I	1.0	35265	10940	25	3602	324T	T, C
63	III	2.6	38169	22000	28	3842	324T	T, C
62	I, II	1.9	39276	18558	28	3732	324T	T, C
57	III	2.3	42733	22000	31.5	3842	324T	T, C
55	I,II	1.7	43978	18558	31.5	3732	324T	T, C
55	III	3.0	42926	22000	31.5	3843	324T	T, C
51	III	1.7	47850	22000	35.5	3842	324T	T, C
50	III	2.7	47801	22000	35.5	3843	324T	T, C
49	I, II	1.4	49786	18558	35.5	3732	324T	T, C
45	I	1.3	54073	22000	40	3842	324T	T, C
44	I	1.2	55595	18558	40	3732	324T	T, C
44	II, III	2.4	53624	22000	40	3843	324T	T, C
41	I	1.1	58499	18558	45	3732	324T	T, C
40	III	2.2	59988	22000	45	3843	324T	T, C
36	I	1.0	66082	18558	45	3733	324T	T, C
35	II	1.9	68655	22000	50	3843	324T	T, C
31	I, II	1.7	75832	22000	56	3843	324T	T, C
28	I, II	1.5	85852	22000	63	3843	324T	T, C
24	I, II	1.4	97092	22000	71	3843	324T	T, C
21	I	1.2	110904	22000	80	3843	324T	T, C
19	I	1.1	125122	22000	90	3843	324T	T, C

◊ **Standard Motor Types** (see page A-16 for product codes)
T TEFC, three phase, 230/460 or 575V
C Corro-Duty®, three phase, 230/460 or 575V

50 HP

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	AGMA Class	Service Factor	Output Torque in-lb	OHL lb	Nominal Ratio	Frame Size Gear	Frame Size Motor	Std. Motor Types ◊
545	I,II,III	2.4	5549	7482	3.15	3602	326T	T, C
481	I,II,III	2.4	6292	7684	3.55	3602	326T	T, C
451	I,II,III	2.4	6707	7837	4	3602	326T	T, C
403	I,II,III	2.4	7502	8043	4.5	3602	326T	T, C
356	I,II,III	2.4	8488	8261	5	3602	326T	T, C
315	I,II,III	2.4	9611	8482	5.6	3602	326T	T, C
285	I,II,III	2.4	10631	8648	6.3	3602	326T	T, C
255	I,II,III	2.2	11859	8834	7.1	3602	326T	T, C
227	I,II,III	2.0	13328	9022	8	3602	326T	T, C
194	I,II	1.7	15610	9257	9	3602	326T	T, C
193	III	2.4	15714	15833	9	3732	326T	T, C
182	I,II	1.9	16647	9349	10	3602	326T	T, C
170	III	2.4	17805	16283	10	3732	326T	T, C
161	I,II	1.7	18843	9516	11.2	3602	326T	T, C
159	III	2.4	19016	16561	11.2	3732	326T	T, C
145	I,II	1.5	20917	9631	12.5	3602	326T	T, C
143	III	2.4	21090	16923	12.5	3732	326T	T, C
130	I,II	1.4	23337	9746	14	3602	326T	T, C
127	III	2.4	23856	17385	14	3732	326T	T, C
116	I	1.3	26103	9843	16	3602	326T	T, C
111	II,III	2.4	27140	17846	16	3732	326T	T, C
99	I	1.1	30598	9929	18	3602	326T	T, C
98	II,III	2.3	30771	18300	18	3732	326T	T, C
88		0.99	34574	9954	20	3602	326T	T, C
87	I,II,III	2.1	34747	18558	20	3732	326T	T, C
77	I,II	1.9	39068	18558	22.4	3732	326T	T, C
71	III	2.4	42699	22000	25	3842	324T	T, C
69	I,II	1.7	43563	18558	25	3732	326T	T, C
63	III	2.1	47712	22000	28	3842	324T	T, C
62	I,II	1.5	49095	18558	28	3732	326T	T, C
57	II	1.8	53416	22000	31.5	3842	324T	T, C
55	I,II	1.4	54972	18558	31.5	3732	326T	T, C
55	III	2.4	53658	22000	31.5	3843	324T	T, C
50	II, II	2.2	59751	22000	35.5	3843	324T	T, C
49	I	1.1	62233	18558	35.5	3732	326T	T, C
45	I	1.0	67592	22000	40	3842	324T	T, C
44	II	1.9	67030	22000	40	3843	324T	T, C
40	I, II	1.7	74985	22000	45	3843	324T	T, C
35	I, II	1.5	85818	22000	50	3843	324T	T, C
31	I, II	1.4	94790	22000	56	3843	324T	T, C
28	I	1.2	107315	22000	63	3843	324T	T, C
24	I	1.1	121365	22000	71	3843	324T	T, C

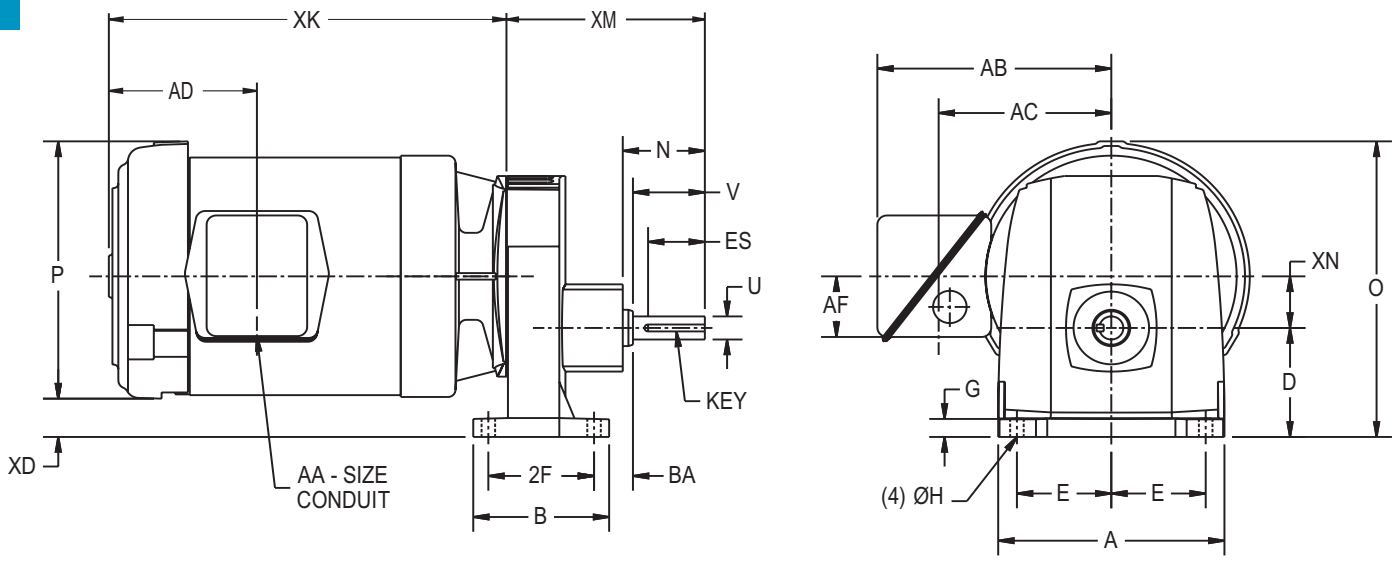
◊ **Standard Motor Types** (see page A-16 for product codes)
T TEFC, three phase, 230/460 or 575V
C Corro-Duty®, three phase, 230/460 or 575V

Browning®

Three Phase Gearmotor

CbN SERIES 3000

Foot Mounted - Single Reduction



Gear Frame	A	B	D[1]	E	G	H	N	U[3]	V	BA	2F	ES	XN	XM	Key
30	5.90	3.54	2.95	2.46	.49	.35	2.14	.625	1.88	1.01	2.76	1.48	1.40	5.75	3/16 Sq.

Motor Frame	Type[4]	XK	O	P[5]	AA	AB	AC	AD	AF	XD
56	T	9.79	8.01	7.22	3/4	6.10	4.50	3.86	1.64	1.04
B56	T	11.04	8.01	7.22	3/4	6.10	4.50	3.86	1.64	1.04
143T,145T	T	11.04	8.01	7.22	3/4	6.10	4.50	3.86	1.64	1.04

[1] Dimension “D” will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

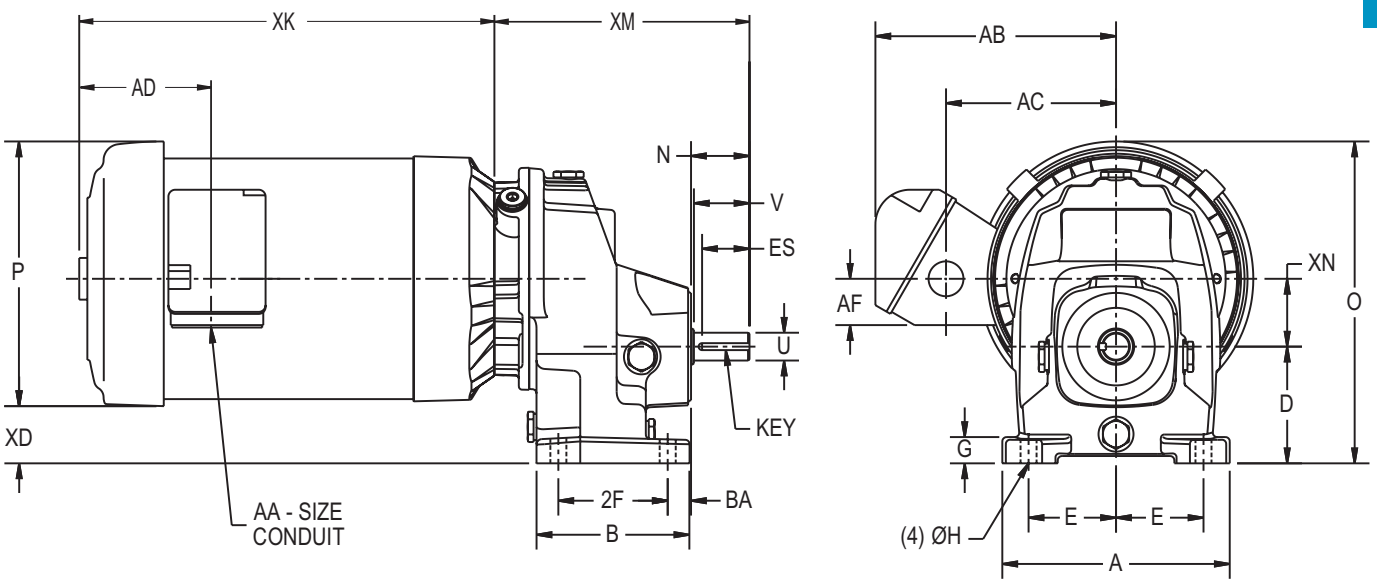
[2] All rough casting dimensions may vary by .25" due to casting variations.

[3] Shaft extension tolerance: +.0000"; –.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; –.001".

[4] For any motor type other than T (3 phase TEFC) or type T and S with brakes, refer to pages A-109 to A-111.

[5] Largest motor width.

Foot Mounted - Single Reduction



Gear Frame	A	B	D[1]	E	G	H	N	U[3]	V	BA	2F	ES	XN	XM	Key
31	6.14	4.13	3.15	2.36	.71	.43	1.58	.750	1.50	.71	2.95	1.28	1.83	6.89	3/16 Sq.

Motor Frame	Type[4]	XK	O	P[5]	AA	AB	AC	AD	AF	XD
56	T	9.79	8.64	7.22	3/4	6.10	4.21	3.86	.94	1.65
B56	T	11.04	8.64	7.22	3/4	6.10	4.21	3.86	.94	1.65
143T,145T	T	11.04	8.64	7.22	3/4	6.10	4.21	3.86	.94	1.65
182T,184T	T	14.04	9.76	9.56	3/4	7.52	6.27	5.13	2.13	.64

[1] Dimension “D” will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

[2] All rough casting dimensions may vary by .25" due to casting variations.

[3] Shaft extension tolerance: +.0000"; –.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; –.001".

[4] For any motor type other than T (3 phase TEFC) or type T and S with brakes, refer to pages A-109 to A-111.

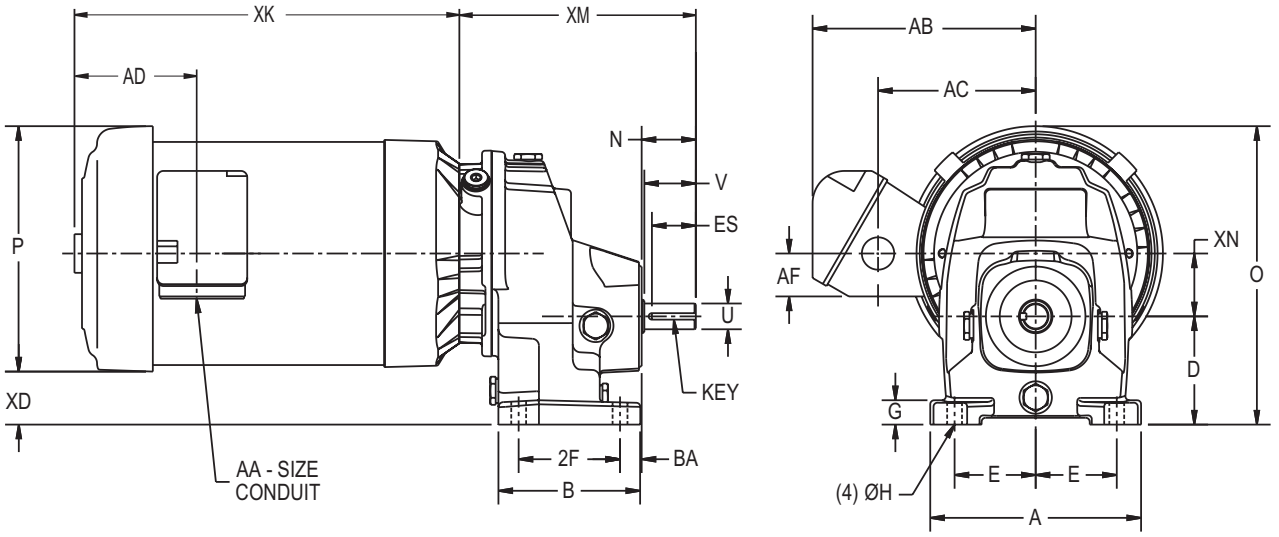
[5] Largest motor width.

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Three Phase Gearmotor

CbN SERIES 3000

Foot Mounted - Single Reduction



Gear Frame	A	B	D[1]	E	G	H	N	U[3]	V	BA	2F	ES	XN	XM	Key
32	7.08	4.48	3.54	2.76	.77	.55	2.08	1.000	2.00	.75	3.15	1.56	2.48	7.51	1/4 Sq.

Motor Frame	Type[4]	XK	O	P[5]	AA	AB	AC	AD	AF	XD
56	T	9.79	9.68	7.22	3/4	6.10	4.50	3.86	1.64	2.75
B56	T	11.04	9.68	7.22	3/4	6.10	4.50	3.86	1.64	2.75
143T,145T	T	11.04	9.68	7.22	3/4	6.10	4.50	3.86	1.64	2.75
182T,184T	T	14.04	10.81	9.56	3/4	7.52	6.27	5.13	2.13	1.68
213T	T	16.15	11.65	11.25	3/4	8.42	7.17	5.6	2.13	.96
215T	T	17.65	11.65	11.25	3/4	8.42	7.17	5.6	2.13	1.09

[1] Dimension “D” will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

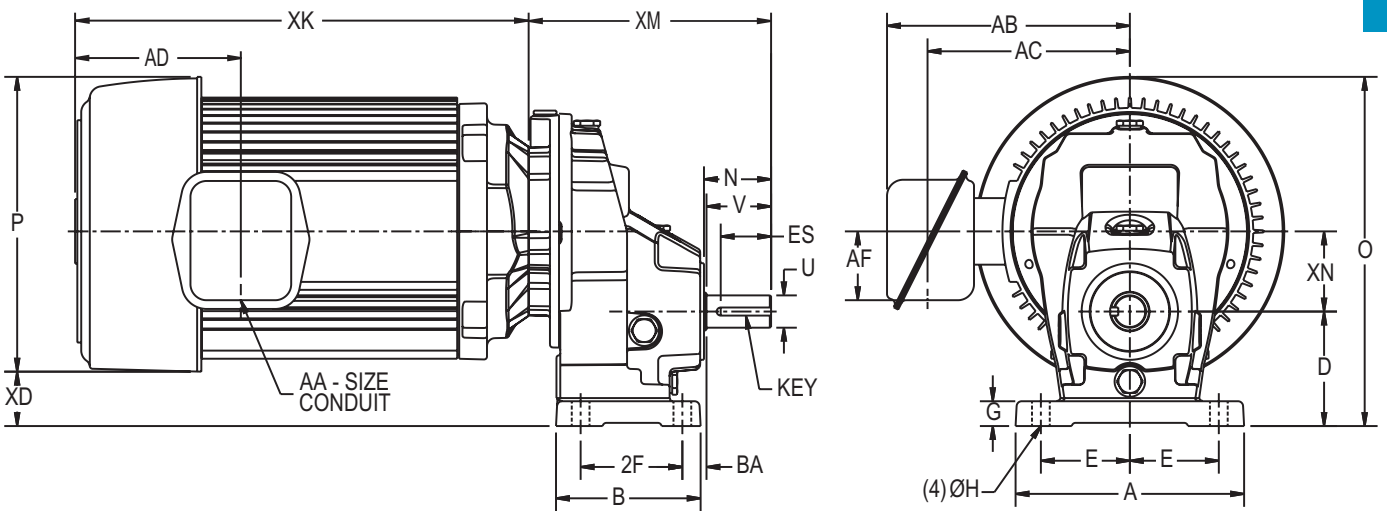
[2] All rough casting dimensions may vary by .25" due to casting variations.

[3] Shaft extension tolerance: +.0000"; –.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; –.001".

[4] For any motor type other than T (3 phase TEFC) or type T and S with brakes, refer to pages A-109 to A-111.

[5] Largest motor width.

Foot Mounted - Single Reduction



Gear Frame	A	B	D[1]	E	G	H	N	U[3]	V	BA	2F	ES	XN	XM	Key
33	9.69	5.30	4.41	3.74	1.00	.63	2.83	1.38	2.75	1.09	3.94	2.40	2.76	8.91	5/16 Sq.

Motor Frame	Type[4]	XK	O	P[5]	AA	AB	AC	AD	AF	XD
182T,184T	T	14.04	11.95	9.56	3/4	7.52	6.27	5.13	2.13	2.83
213T	T	16.15	12.79	11.25	1	8.42	7.16	5.60	2.13	2.10
215T	T	17.65	12.79	11.25	1	8.42	7.16	5.60	2.13	2.10
254T	T	20.58	13.86	13.38	1 1/4	9.79	7.68	8.29	1.81	1.17
256T	T	22.33	13.86	13.38	1 1/4	9.79	7.68	8.29	1.81	1.17

[1] Dimension “D” will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

[2] All rough casting dimensions may vary by .25" due to casting variations.

[3] Shaft extension tolerance: +.0000"; –.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; –.001".

[4] For any motor type other than T (3 phase TEFC) or type T and S with brakes, refer to pages A-109 to A-111.

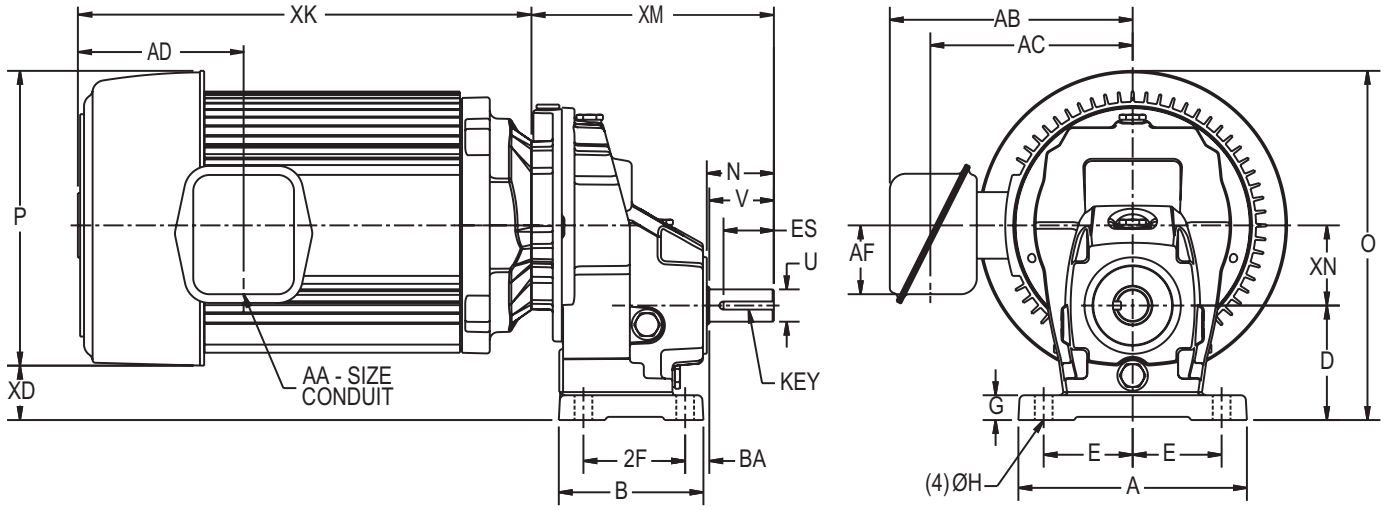
[5] Largest motor width.

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Three Phase Gearmotor

CbN SERIES 3000

Foot Mounted - Single Reduction



Gear Frame	A	B	D[1]	E	G	H	N	U[3]	V	BA	2F	ES	XN	XM		Key
														182T-215T	254T-286T	
34	11.02	6.59	5.20	4.25	1.34	.71	3.06	1.50	3.00	1.10	4.92	2.56	3.43	9.98	10.63	3/8 Sq.

Motor Frame	Type[4]	XK	O	P[5]	AA	AB	AC	AD	AF	XD
182T, 184T	T	14.04	13.90	9.56	3/4	7.52	6.27	5.13	2.13	4.28
213T	T	16.15	14.25	11.25	1	8.42	7.17	5.6	2.13	3.56
215T	T	17.65	14.25	11.25	1	8.42	7.17	5.6	2.13	3.56
254T	T	19.61	15.31	13.38	1 1/4	9.79	7.68	8.29	1.81	2.62
256T	T	21.36	15.31	13.38	1 1/4	9.79	7.68	8.29	1.81	2.62
284T, 286T	T	24.71	15.96	14.66	1 1/2	11.33	9.16	13.19	2.63	1.34

[1] Dimension “D” will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

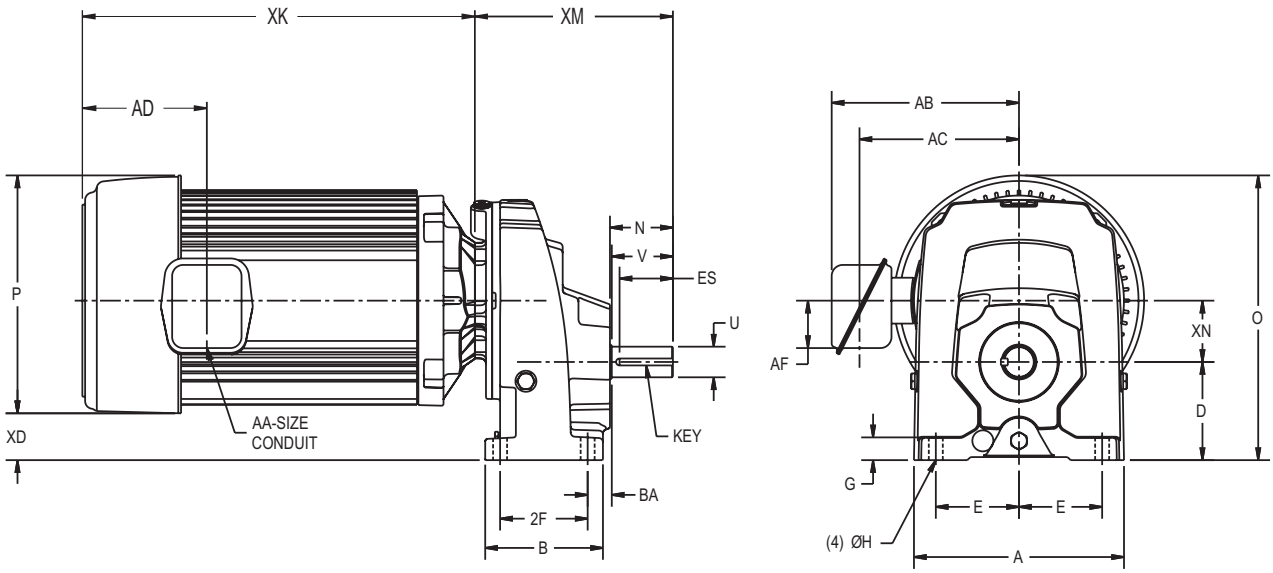
[2] All rough casting dimensions may vary by .25" due to casting variations.

[3] Shaft extension tolerance: +.0000"; –.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; –.001".

[4] For any motor type other than T (3 phase TEFC) or type T and S with brakes, refer to pages A-109 to A-111.

[5] Largest motor width.

Foot Mounted - Single Reduction



Gear Frame	A	B	D[1]	E	G	H	N	U[3]	V	BA	2F	ES	XN	XM		Key
														213T-215T	254T-324T	
35	13.65	7.76	6.30	5.12	1.61	.79	3.56	1.750	3.50	1.18	6.30	3.06	4.33	10.84	11.36	3/8 Sq.

Motor Frame	Type[4]	XK	O	P[5]	AA	AB	AC	AD	AF	XD
213T	T	16.15	17.37	11.25	1	8.42	7.17	5.6	2.13	5.57
215T	T	17.65	17.37	11.25	1	8.42	7.17	5.6	2.13	5.57
254T	T	19.61	17.37	13.38	1 1/4	9.79	7.68	8.29	1.81	4.63
256T	T	21.36	17.37	13.38	1 1/4	9.79	7.68	8.29	1.81	4.63
284T, 286T	T	24.71	17.99	14.66	1 1/2	11.33	9.16	13.19	2.63	3.37
324T	T	24.96	18.81	16.34	2	14.30	10.69	14.16	3.25	2.85

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[4] For any motor type other than T (3 phase TEFC) or type T and S with brakes, refer to pages A-109 to A-111.

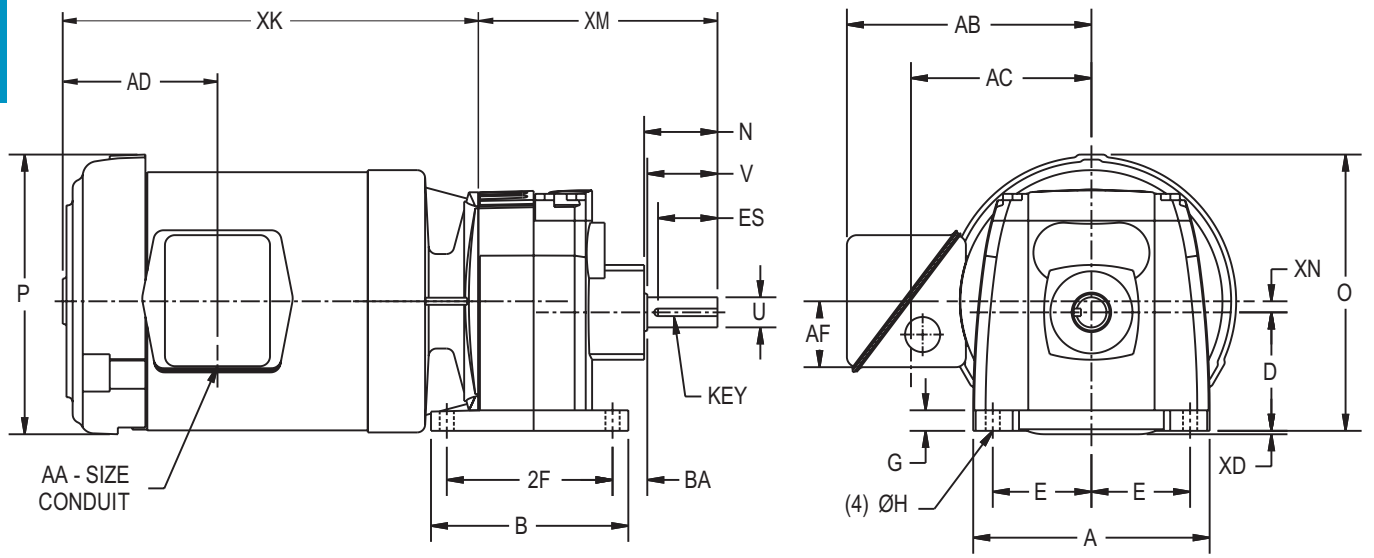
[5] Largest motor width.

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Three Phase Gearmotor

CbN SERIES 3000

Foot Mounted - Double/Triple Reduction



Gear Frame	A	B	D[1]	E	G	H	N	U[3]	V	BA	2F	ES	XN	XM	Key
3012	5.90	4.92	2.95	2.46	.51	.35	1.83	.750	1.75	.87	4.13	1.48	.28	6.54	3/16 Sq.
3013	5.90	5.71	2.95	2.46	.51	.35	1.83	.750	1.75	.87	4.92	1.48	.28	7.33	3/16 Sq.

Motor Frame	Type[4]	XK	O	P[5]	AA	AB	AC	AD	AF	XD
56	T	9.79	6.88	7.22	1/2	6.10	4.50	3.86	1.64	.08
B56	T	11.04	6.88	7.22	3/4	6.10	4.50	3.86	1.64	.08
143T,145T	T	11.04	6.88	7.22	3/4	6.10	4.50	3.86	1.64	.08

[1] Dimension “D” will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

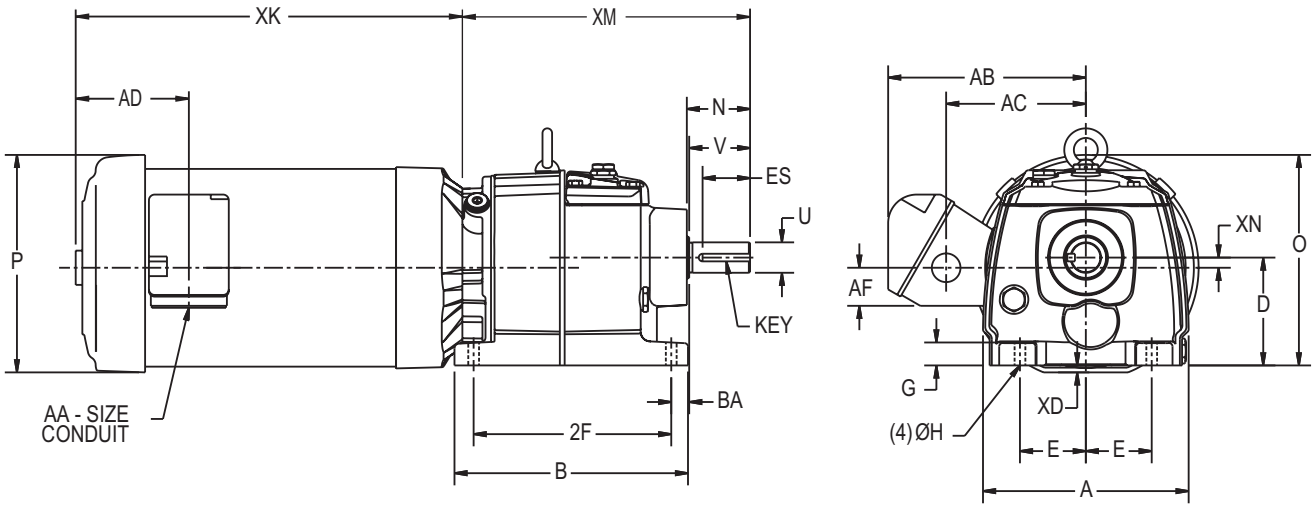
[2] All rough casting dimensions may vary by .25" due to casting variations.

[3] Shaft extension tolerance: +.0000"; –.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; –.001".

[4] For any motor type other than T (3 phase TEFC) or type T and S with brakes, refer to pages A-109 to A-111.

[5] Largest motor width.

Foot Mounted - Double/Triple Reduction



Gear Frame	A	B	D[1]	E	G	H	XN	N	U[3]	V	BA	2F	ES	XM	Key
31	6.76	7.68	3.54	2.17	.75	.35	.33	2.08	1.000	2.00	.59	6.50	1.56	9.46	1/4 Sq.

Motor Frame	Type[4]	XK	O	P[5]	AA	AB	AC	AD	AF	XD
56	T	9.79	6.87	7.22	3/4	6.10	4.21	3.86	.94	.10
B56	T	11.04	6.87	7.22	3/4	6.10	4.21	3.86	.94	.10
143T,145T	T	11.04	6.87	7.22	3/4	6.10	4.21	3.86	.94	.10
182T,184T	T	14.04	7.99	9.56	3/4	7.52	6.27	5.13	2.13	1.13

[1] Dimension “D” will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

[2] All rough casting dimensions may vary by .25" due to casting variations.

[3] Shaft extension tolerance: +.0000"; –.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; –.001".

[4] For any motor type other than T (3 phase TEFC) or type T and S with brakes, refer to pages A-109 to A-111.

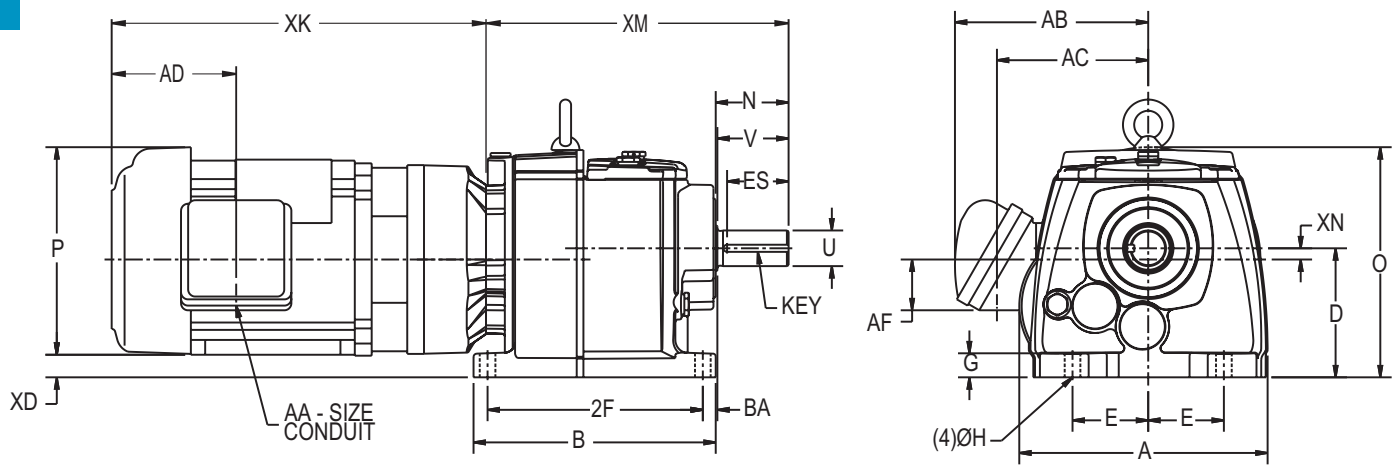
[5] Largest motor width.

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Three Phase Gearmotor

CbN SERIES 3000

Foot Mounted - Double/Triple Reduction



Gear Frame	A	B	D[1]	E	G	H	N	U[3]	V	BA	2F	ES	XN	XM	Key
32	8.72	8.50	4.53	2.66	.84	.55	2.56	1.250	2.50	.51	7.56	2.16	.39	10.63	1/4 Sq.

Motor Frame	Type[4]	XK	O	P[5]	AA	AB	AC	AD	AF	XD
56	T	9.79	7.98	7.22	3/4	6.10	4.50	3.86	1.64	.87
B56	T	11.04	7.98	7.22	3/4	6.10	4.50	3.86	1.64	.87
143T,145T	T	11.04	7.98	7.22	3/4	6.10	4.50	3.86	1.64	.87
182T,184T	T	14.04	8.92	9.56	3/4	7.52	6.27	5.13	2.13	1.08
213T	T	16.15	9.76	11.25	1	8.42	7.17	5.60	2.13	2.05
215T	T	17.65	9.76	11.25	1	8.42	7.17	5.60	2.13	2.05

[1] Dimension “D” will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

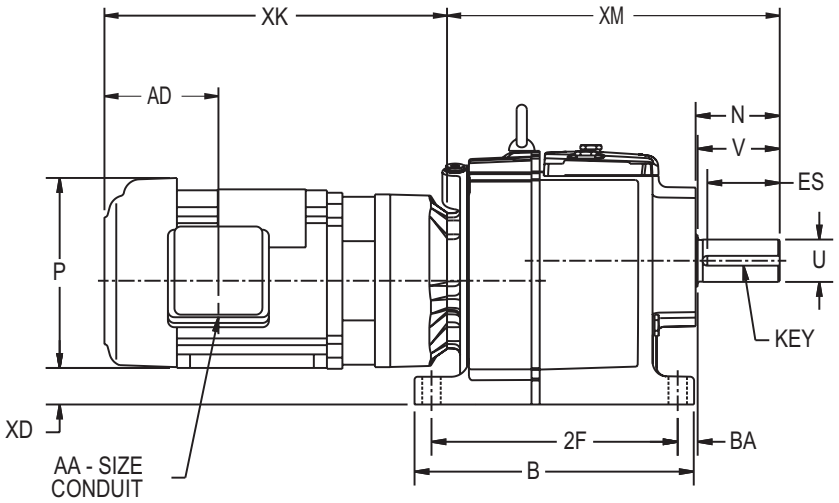
[2] All rough casting dimensions may vary by .25" due to casting variations.

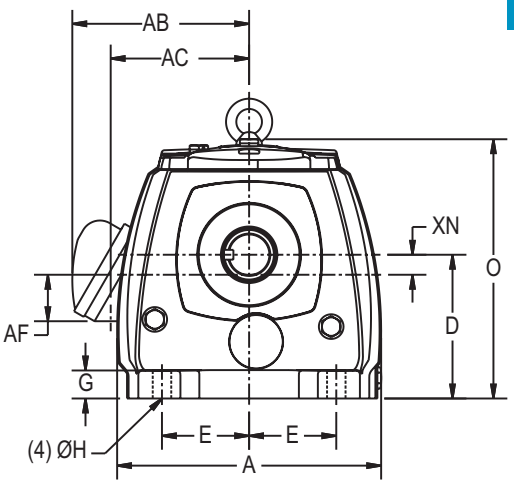
[3] Shaft extension tolerance: +.0000"; –.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; –.001".

[4] For any motor type other than T (3 phase TEFC) or type T and S with brakes, refer to pages A-109 to A-111.

[5] Largest motor width.

Foot Mounted - Double/Triple Reduction





Gear Frame	A	B	D[1]	E	G	H	N	U[3]	V	BA	2F	ES	XN	XM	Key
3362,3363	10.13	10.72	5.51	3.35	1.07	.71	3.08	1.50	3.00	.77	9.45	2.56	.77	12.62	3/8 Sq.
3372,3373	10.13	10.72	5.51	3.35	1.07	.71	3.23	1.63	3.15	.77	9.45	2.78	.77	12.77	3/8 Sq.

Motor Frame	Type[4]	XK	O	P[5]	AA	AB	AC	AD	AF	XD
56	T	9.79	9.94	7.22	3/4	6.10	4.50	3.86	1.64	1.47
B56	T	11.04	9.94	7.22	3/4	6.10	4.50	3.86	1.64	1.47
143T,145T	T	11.04	9.94	7.22	3/4	6.10	4.50	3.86	1.64	1.47
182T,184T	T	14.04	9.94	9.56	3/4	7.52	6.27	5.13	2.13	.40
213T	T	16.15	10.37	11.25	1	8.42	7.16	5.60	2.13	.32
215T	T	17.65	10.37	11.25	1	8.42	7.16	5.60	2.13	.32
254T	T	20.58	11.44	13.38	1 1/4	9.79	7.68	8.29	1.81	1.25
256T	T	22.33	11.44	13.38	1 1/4	9.79	7.68	8.29	1.81	1.25

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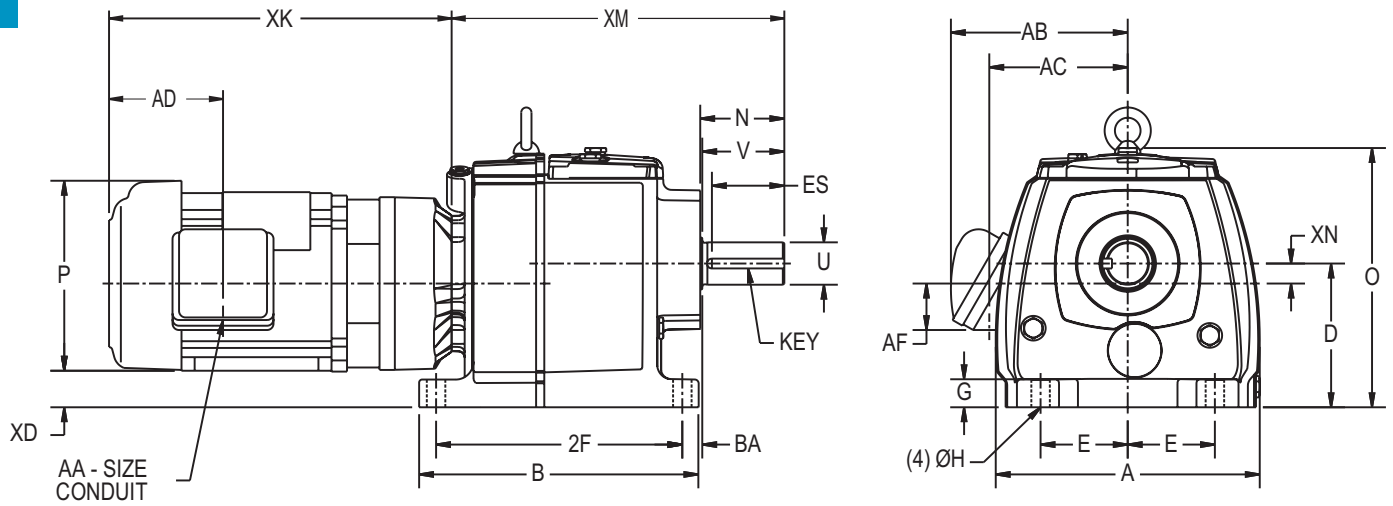
[5] Largest motor width.

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Three Phase Gearmotor

CbN SERIES 3000

Foot Mounted - Double/Triple Reduction



Gear Frame	A	B	D[1]	E	G	H	N	U[3]	V	BA	2F	ES	XN	XM		Key
														143T-256T	284T-324T	
34	11.97	10.87	7.09	4.53	1.37	.71	3.58	2.125	3.50	.98	9.25	3.06	1.02	14.34	14.69	1/2 Sq.

Motor Frame	Type[4]	XK	O	P[5]	AA	AB	AC	AD	AF	XD
56	T	9.79	11.89	7.22	0.75	6.10	4.50	3.86	1.64	2.75
B56	T	11.04	11.89	7.22	0.75	6.10	4.50	3.86	1.64	2.75
143T,145T	T	11.04	11.89	7.22	0.75	6.10	4.50	3.86	1.64	2.75
182T,184T	T	14.04	11.89	9.56	0.75	7.52	6.27	5.13	2.13	1.72
213T	T	16.15	11.89	11.25	1	8.42	7.17	5.60	2.13	1.00
215T	T	17.65	11.89	11.25	1	8.42	7.17	5.60	2.13	1.00
254T	T	19.61	12.75	13.38	1.25	9.79	7.68	8.29	1.81	.06
256T	T	21.36	12.75	13.38	1.25	9.79	7.68	8.29	1.81	.06
284T, 286T	T	24.71	13.44	14.66	1 1/2	11.33	9.16	13.19	2.63	-1.22

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

[2] All rough casting dimensions may vary by .25" due to casting variations.

[3] Shaft extension tolerance: +.0000"; –.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; –.001".

[4] For any motor type other than T (3 phase TEFC) or type T and S with brakes, refer to pages A-109 to A-111.

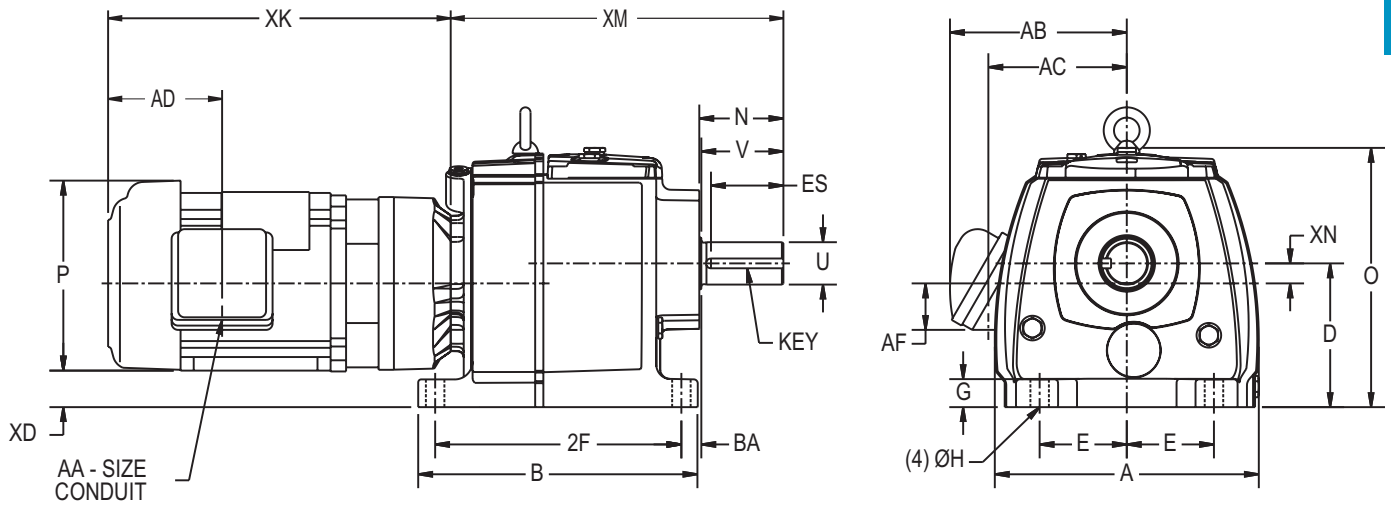
[5] Largest motor width.

Browning®

Three Phase Gearmotor

CbN SERIES 3000

Foot Mounted - Double/Triple Reduction



Gear Frame	A	B	D[1]	E	G	H	N	U[3]	V	BA	2F	ES	XN	XM		Key
														143T-256T	284T-324T	
35	14.19	12.89	8.86	5.51	1.73	.87	4.81	2.38	4.72	1.10	11.02	4.19	1.14	16.60	17.12	5/8 Sq.

Motor Frame	Type[4]	XK	O	P[5]	AA	AB	AC	AD	AF	XD
B56	T	11.04	14.84	7.22	3/4	6.10	4.50	3.86	1.64	4.40
143T,145T	T	11.04	14.84	7.22	3/4	6.10	4.50	3.86	1.64	4.40
182T,184T	T	14.04	14.84	9.56	3/4	7.52	6.27	5.13	2.13	3.38
213T	T	16.15	14.84	11.25	1	8.42	7.17	5.60	2.13	2.65
215T	T	17.65	14.84	11.25	1	8.42	7.17	5.60	2.13	2.65
254T	T	19.61	14.84	13.38	1 1/4	9.79	7.68	8.29	1.81	1.72
256T	T	21.36	14.84	13.38	1 1/4	9.79	7.68	8.29	1.81	1.72
284T, 286T	T	24.71	15.01	14.66	1 1/2	11.33	9.16	13.19	2.63	.39

[1] Dimension “D” will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

[2] All rough casting dimensions may vary by .25" due to casting variations.

[3] Shaft extension tolerance: +.0000"; –.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; –.001".

[4] For any motor type other than T (3 phase TEFC) or type T and S with brakes, refer to pages A-109 to A-111.

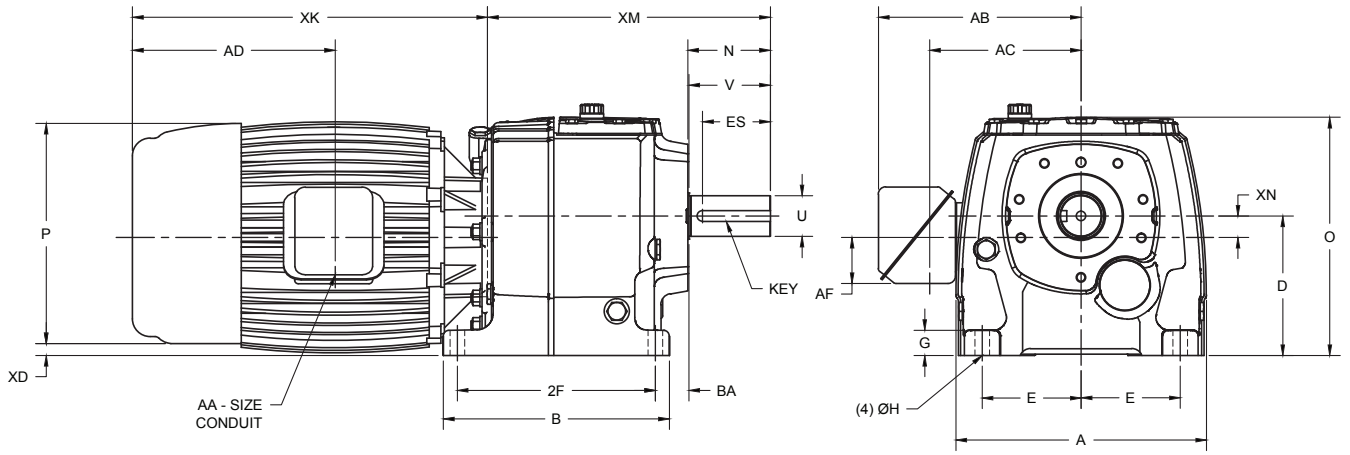
[5] Largest motor width.

Browning®

Three Phase Gearmotor

CbN SERIES 3000

Foot Mounted - Double/Triple Reduction



Gear Frame	A	B	D [1]	E	G	H	N	O	U [3]	V	BA	2F	ES	XN	XM		Key
															145T-215T	254T-326T	
36	17.68	15.95	9.85	6.99	1.77	1.02	5.847	17.72	2.875	5.75	2.36	13.98	4.784	1.102	19.96	20.31	3/4 Sq

Motor Frame	Type [4]	XK	P [5]	AA	AB	AC	AD	AF	XD
145T	T	11.04	7.31	0.75	6.10	4.50	3.86	1.77	5.42
182T,184T	T	14.04	9.56	0.75	7.52	6.27	5.13	1.77	4.40
213T	T	16.16	11.25	1.00	8.42	7.17	5.60	2.42	3.68
215T	T	17.65	11.25	1.00	8.42	7.17	5.60	2.42	3.68
254T	T	19.61	13.38	1.25	9.79	7.68	8.29	1.81	2.74
256T	T	21.36	13.38	1.25	9.79	7.68	8.29	1.81	2.74
284T,286T	T	24.71	14.62	1.50	11.33	8.51	12.44	2.63	1.45
324T,326T	T	24.96	17.20	2.00	14.99	11.34	14.16	3.63	0.55

[1] Dimension “D” will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

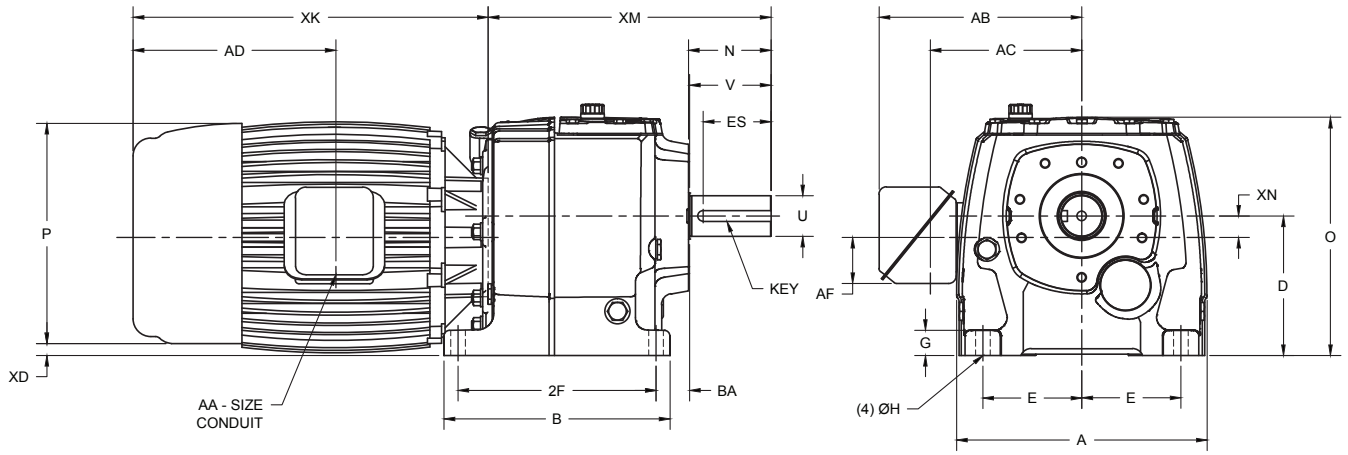
[2] All rough casting dimensions may vary by .25" due to casting variations.

[3] Shaft extension tolerance: +.0000"; –.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; –.001".

[4] For any motor type other than T (3 phase TEFC) or type T with brakes, refer to pages A-109 to A-111.

[5] Largest motor width.

Foot Mounted - Double/Triple Reduction



Gear Frame	A	B	D [1]	E	G	H	N	O	U [3]	V	BA	2F	ES	XN	XM		Key
															182T-215T	254T-326T	
37	20.39	17.91	12.40	8.27	2.17	1.02	7.127	20.40	3.625	7.00	2.56	15.35	5.893	2.362	23.88	24.23	7/8 Sq

Motor Frame	Type [4]	XK	P [5]	AA	AB	AC	AD	AF	XD
182T,184T	T	14.04	9.56	0.75	7.52	6.27	5.13	1.77	5.69
213T	T	16.16	11.25	1.00	8.42	7.17	$5.60	2.42	4.97
215T	T	17.65	11.25	1.00	8.42	7.17	$5.60	2.42	4.97
254T	T	19.61	13.38	1.25	9.79	7.68	8.29	1.81	4.03
256T	T	21.36	13.38	1.25	9.79	7.68	8.29	1.81	4.03
284T,286T	T	24.71	14.62	1.50	11.33	8.51	12.44	2.63	2.75
324T,326T	T	24.96	17.20	2.00	14.99	11.34	14.16	3.63	1.84

[1] Dimension “D” will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

[2] All rough casting dimensions may vary by .25" due to casting variations.

[3] Shaft extension tolerance: +.0000"; –.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; –.001".

[4] For any motor type other than T (3 phase TEFC) or type T with brakes, refer to pages A-109 to A-111.

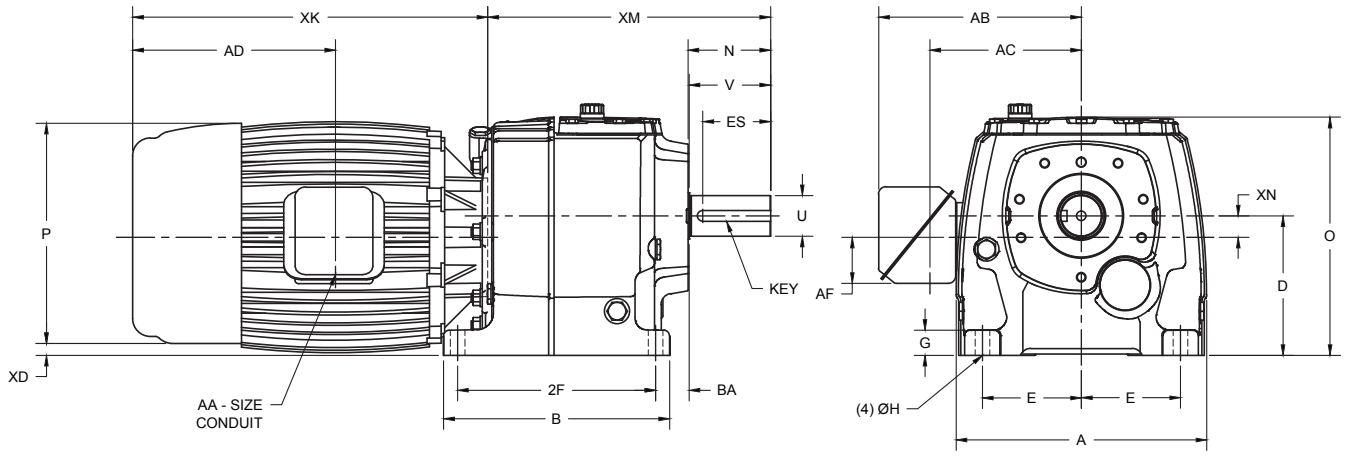
[5] Largest motor width.

Browning

Three Phase Gearmotor

CbN SERIES 3000

Foot Mounted - Double/Triple Reduction



Gear Frame	A	B	D[1]	E	G	H	N	O	U[3]	V	BA	2F	ES	XN	XM	Key
38	23.94	21.65	13.98	10.04	2.35	1.02	9.99	22.60	4.375	9.99	1.97	18.90	9.02	2.559	29.98	1 SQ

Frame	Motor Type[4]	XK	O	P[5]	AA	AB	AC	AD	AF	XD
213T	T	17.47	23.47	11.25	1	8.25	6.39	5.6	1.56	6.35
215T	T	18.96	23.47	11.25	1	8.25	6.39	5.6	1.56	6.35
254T	T	19.61	23.47	13.38	1 1/4	9.96	7.72	8.29	1.81	5.41
256T	T	21.36	23.47	13.38	1 1/4	9.96	7.72	8.29	1.81	5.41
284T,286T	T	24.71	23.47	14.66	1 1/2	11.33	9.16	13.19	2.63	4.01
324T,326T	T	24.96	27.60	17.20	2	14.99	11.34	14.16	3.63	3.11

[1] Dimension “D” will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

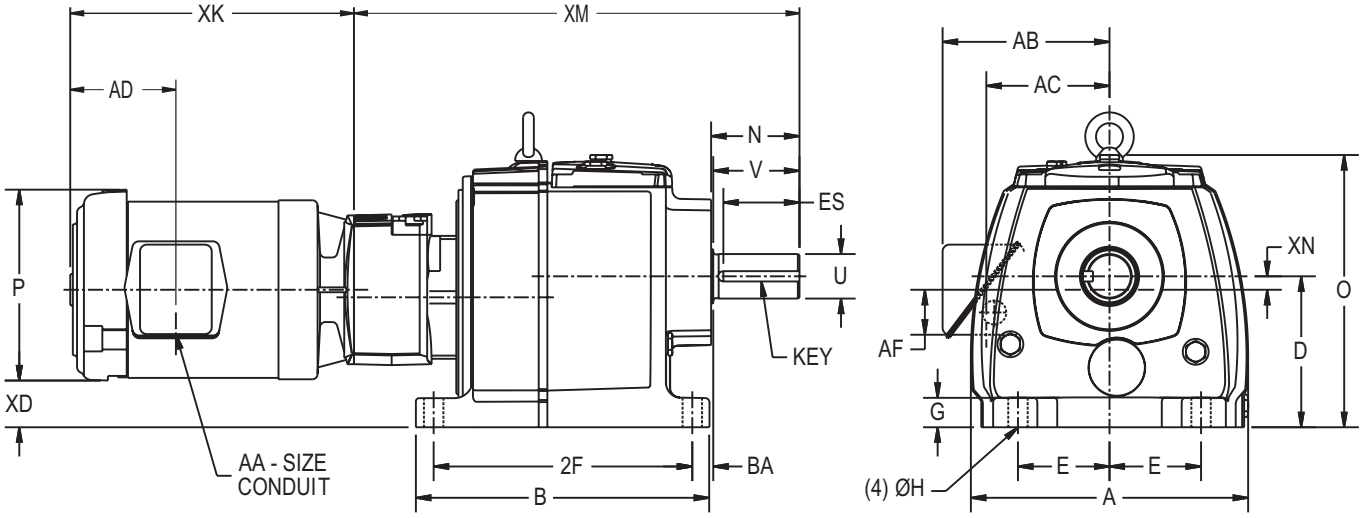
[2] All rough casting dimensions may vary by .25" due to casting variations.

[3] Shaft extension tolerance: +.0000; -.001".

[4] For any motor type other than T (3 phase TEFC) or type T and S with brakes, refer to pages A-109 to A-111.

[5] Largest motor width.

Foot Mounted - Combined Reduction



Gear Frame	A	B	D[1]	E	G	H	N	U[3]	V	BA	2F	ES	XN	XM	Key
32	8.72	8.50	4.53	2.66	.84	.55	2.56	1.250	2.50	.51	7.56	2.16	.12	14.71	1/4 Sq.
33	10.13	10.72	5.51	3.35	1.07	.71	3.23	1.625	3.15	.77	9.45	2.78	.49	16.86	3/8 Sq.
34	11.97	10.87	7.09	4.53	1.37	.71	3.58	2.125	3.50	.98	9.25	3.06	1.35	21.31	1/2 Sq.

Frame	Motor Type[4]	XK	O			P[5]	AA	AB	AC	AD	AF	XD		
			32	33	34							32	33	34
56	T	9.79	8.07	9.94	11.89	7.22	3/4	6.10	4.50	3.86	1.64	1.1	1.71	2.42
B56	T	11.04	8.07	9.94	11.89	7.22	3/4	6.10	4.50	3.86	1.64	1.1	1.71	2.42
143T,145T	T	11.04	8.07	9.94	11.89	7.22	3/4	6.10	4.50	3.86	1.64	1.1	1.71	2.42

[1] Dimension “D” will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

[2] All rough casting dimensions may vary by .25" due to casting variations.

[3] Shaft extension tolerance: +.0000"; –.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; –.001".

[4] For any motor type other than T (3 phase TEFC) or type T and S with brakes, refer to pages A-109 to A-111.

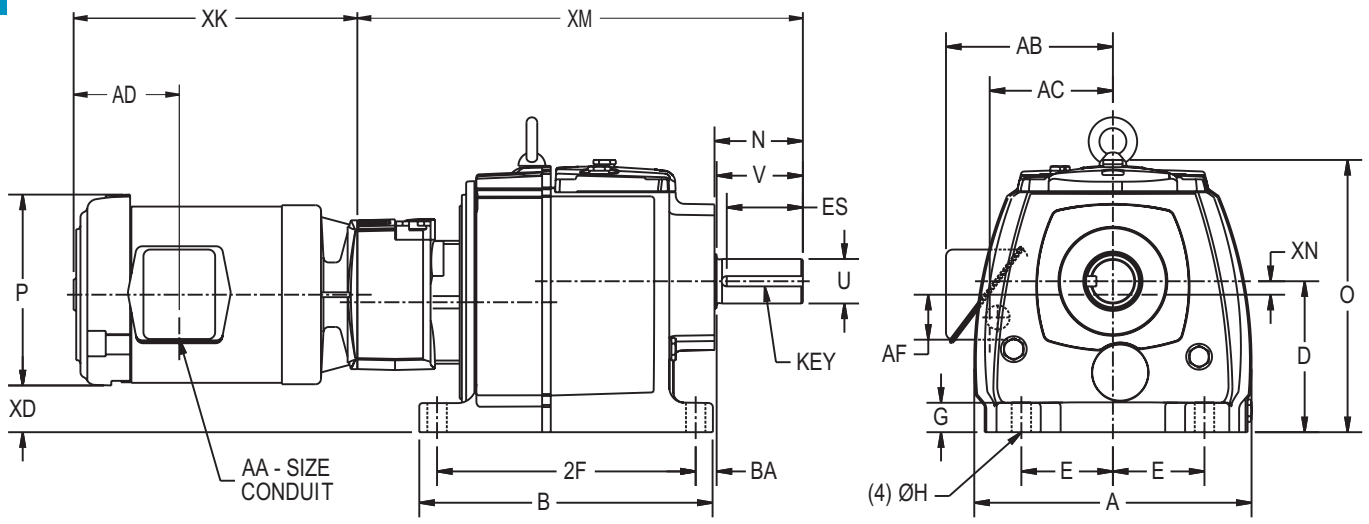
[5] Largest motor width.

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Three Phase Gearmotor

CbN SERIES 3000

Foot Mounted - Combined Reduction



Gear Frame	A	B	D[1]	E	G	H	N	U[3]	V	BA	2F	ES	XN	XM	Key
35	14.19	12.89	8.86	5.51	1.73	.87	4.81	2.375	4.72	1.10	11.02	4.19	1.47	23.72	5/8 Sq.

Frame	Motor Type[4]	XK	O	P[5]	AA	AB	AC	AD	AF	XD
56	T	9.79	11.89	7.22	3/4	6.10	4.50	3.86	1.64	4.07
B56	T	11.04	11.89	7.22	3/4	6.10	4.50	3.86	1.64	4.07
143T,145T	T	11.04	11.89	7.22	3/4	6.10	4.50	3.86	1.64	4.07

[1] Dimension “D” will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

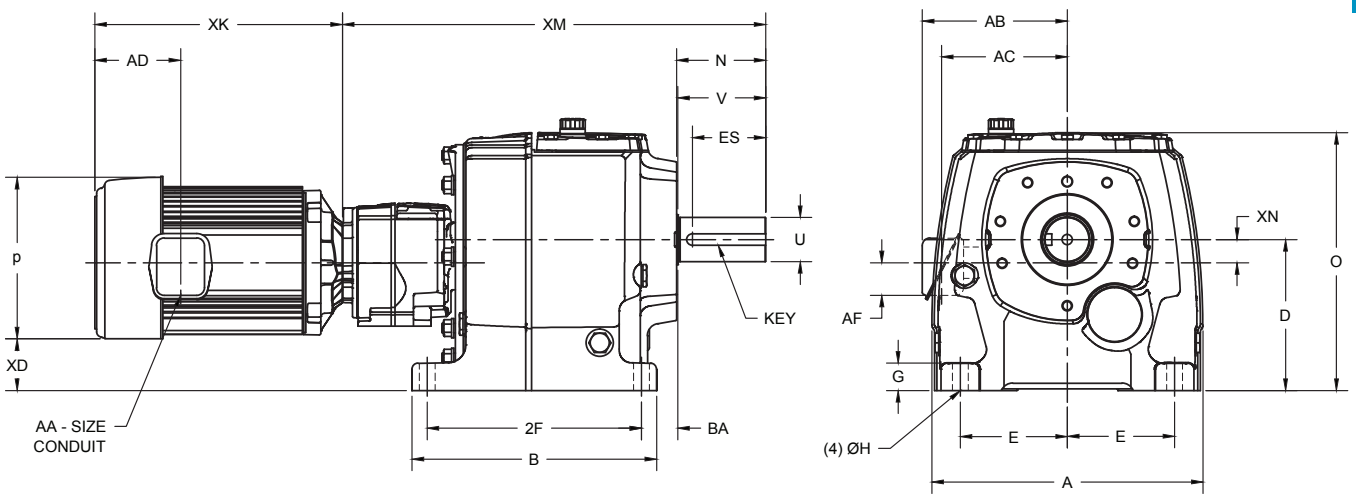
[2] All rough casting dimensions may vary by .25" due to casting variations.

[3] Shaft extension tolerance: +.0000"; –.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; –.001".

[4] For any motor type other than T (3 phase TEFC) or type T and S with brakes, refer to pages A-109 to A-111.

[5] Largest motor width.

Foot Mounted - Combined Reduction



Gear Frame	A	B	D[1]	E	G	H	N	O	U[3]	V	BA	2F	ES	XN	XM	Key
36	17.68	15.95	9.85	6.99	1.77	1.02	5.847	17.72	2.875	5.75	2.36	13.98	4.784	1.492	27.62	3/4 Sq
37	20.39	17.91	12.40	8.27	2.17	1.02	7.127	20.40	3.625	7.00	2.56	15.35	5.893	2.752	31.54	7/8 Sq

Motor Frame	Gear Frame	Type [4]	XK	P [5]	AA	AB	AC	AD	AF	XD	
										36	37
56	All	T	9.79	7.22	0.75	6.10	4.50	3.86	1.77	5.03	6.33
B56	All	T	11.04	7.22	0.75	6.10	4.50	3.86	1.77	5.03	6.33
143T, 145T	All	T	11.04	7.22	0.75	6.10	4.50	3.86	1.77	5.03	6.33
182T,184T	All	T	14.04	9.56	0.75	7.52	6.27	5.13	1.77	4.01	5.30
213T	37	T	16.16	11.25	1.00	8.42	7.17	5.60	2.42	-	4.58

[1] Dimension “D” will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

[2] All rough casting dimensions may vary by .25" due to casting variations.

[3] Shaft extension tolerance: +.0000"; –.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; –.001".

[4] For any motor type other than T (3 phase TEFC) or type T with brakes, refer to pages A-109 to A-111.

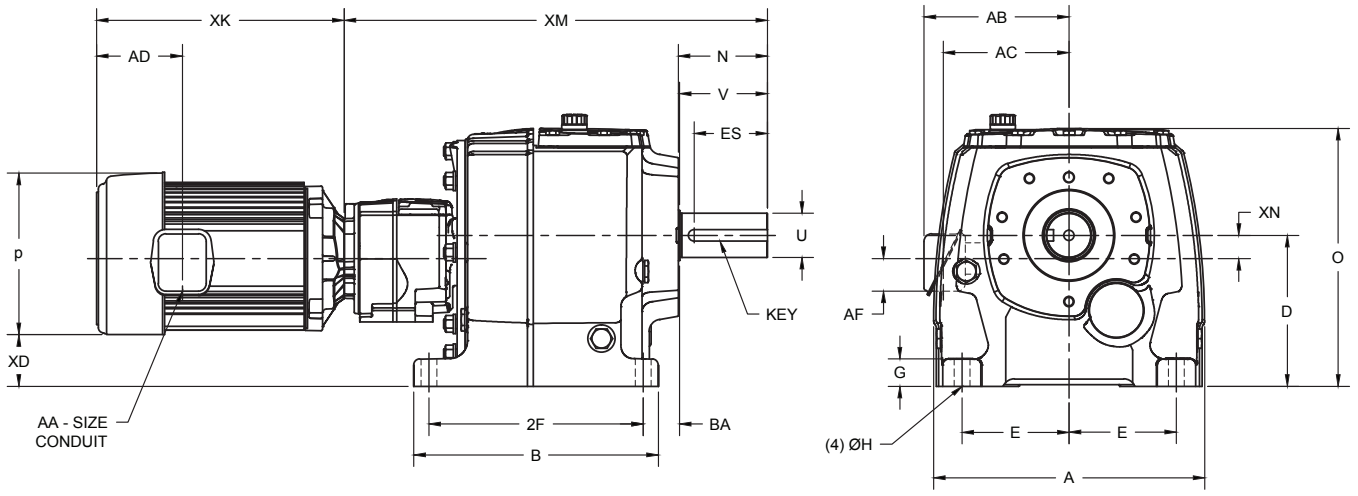
[5] Largest motor width.

Browning

Three Phase Gearmotor

CbN SERIES 3000

Foot Mounted - Combined Reduction



Gear Frame	A	B	D[1]	E	G	H	N	O	U[3]	V	BA	2F	ES	XN	XM	Key
38	23.94	21.65	13.98	10.04	2.35	1.02	9.99	22.60	4.375	9.99	1.97	18.90	9.02	2.559	40.20	1 SQ

Frame	Motor Type[4]	XK	O	P[5]	AA	AB	AC	AD	AF	XD
56	T	9.79	23.47	7.22	3/4	5.01	4.06	3.86	1.13	8.10
B56	T	11.04	23.47	7.22	3/4	5.01	4.06	3.86	1.13	8.10
143T,145T	T	11.04	23.47	7.22	3/4	5.01	4.06	3.86	1.13	8.10
182T,184T	T	14.04	23.47	9.56	3/4	7.51	6.31	5.13	2.13	7.07
213T	T	16.15	23.47	11.25	1	8.25	6.39	5.6	1.56	6.35
215T	T	17.65	23.47	11.25	1	8.25	6.39	5.6	1.56	6.35

[1] Dimension “D” will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

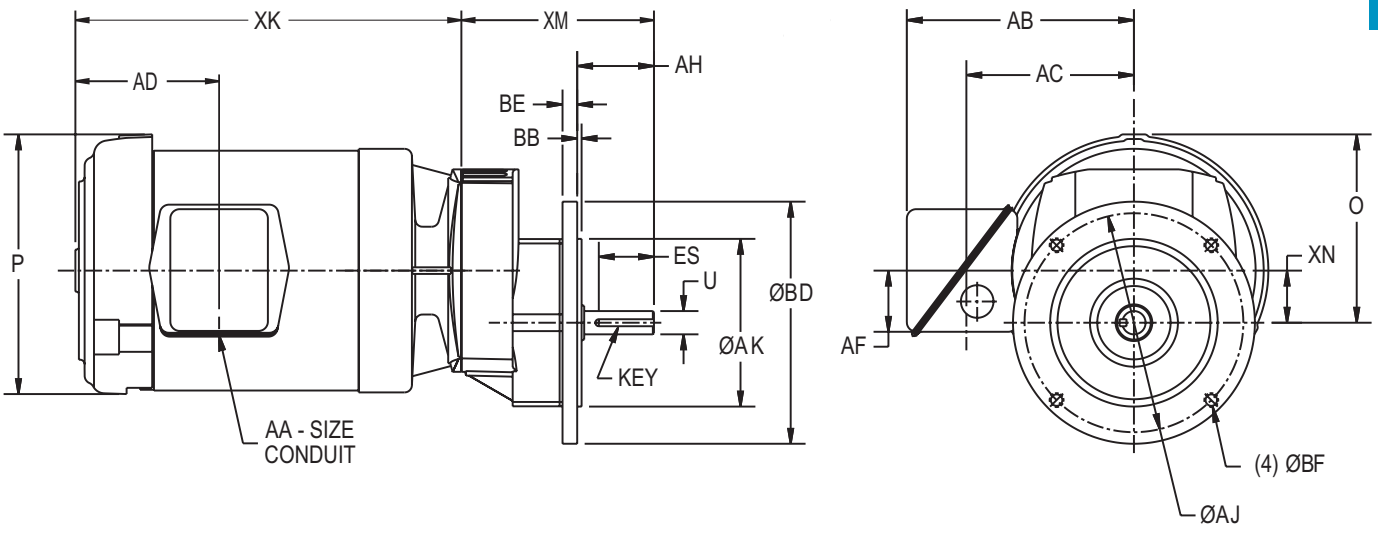
[2] All rough casting dimensions may vary by .25" due to casting variations.

[3] Shaft extension tolerance: +.0000; -.001".

[4] For any motor type other than T (3 phase TEFC) or type T and S with brakes, refer to pages A-109 to A-111.

[5] Largest motor width.

Flange Mounted - Single Reduction



Gear Frame	U[3]	AH	ES	XN	XM	Key
30	.625	2.06	1.48	1.40	5.75	3/16 Sq.

Flange Type	AK	AJ	BB	BD	BE	BF
56C	4.50	5.875	.12	6.50	.39	3/8-16
BS	3.74	4.53	.12	5.51	.31	.35
BD1	3.15	3.94	.12	4.72	39	.28
BD2	4.33	5.12	.08	6.30	39	.35
BD3	5.12	6.50	.12	7.87	.31	.35

Motor Frame	Type[4]	XK	O	P[5]	AA	AB	AC	AD	AF
56	T	9.79	5.05	7.22	3/4	6.10	4.50	3.86	1.64
B56	T	11.04	5.05	7.22	3/4	6.10	4.50	3.86	1.64
143T,145T	T	11.04	5.05	7.22	3/4	6.10	4.50	3.86	1.64

[2] All rough casting dimensions may vary by .25" due to casting variations.

[3] Shaft extension tolerance: +.0000"; –.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; –.001".

[4] For any motor type other than T (3 phase TEFC) or type T and S with brakes, refer to pages A-109 to A-111. Standard as shown with conduit opening down.

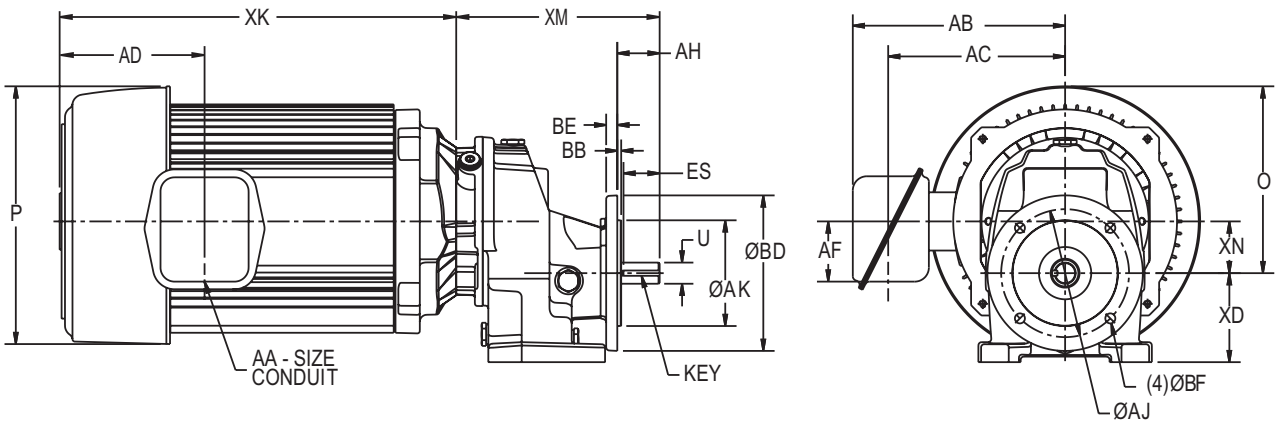
[5] Largest motor width.

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Three Phase Gearmotor

CbN SERIES 3000

Flange Mounted - Single Reduction



Gear Frame	U[3]	AH	ES	XD	XN	XM	Key
31	.75	1.50	1.28	3.15	1.83	7.20	3/16 Sq.

Flange Type	AK	AJ	BB	BD	BE	BF
BS	4.33	5.12	.14	6.29	.39	.35
BD2	3.74	4.53	.14	5.50	.39	.35

Motor Frame	Type[4]	XK	O	P[5]	AA	AB	AC	AD	AF
56	T	9.79	5.49	7.22	3/4	6.10	4.21	3.86	.83
B56	T	11.04	5.49	7.22	3/4	6.10	4.21	3.86	.83
143T,145T	T	11.04	5.49	7.22	3/4	6.10	4.21	3.86	.83
182T,184T	T	14.04	6.61	9.56	3/4	7.52	6.27	5.13	2.13

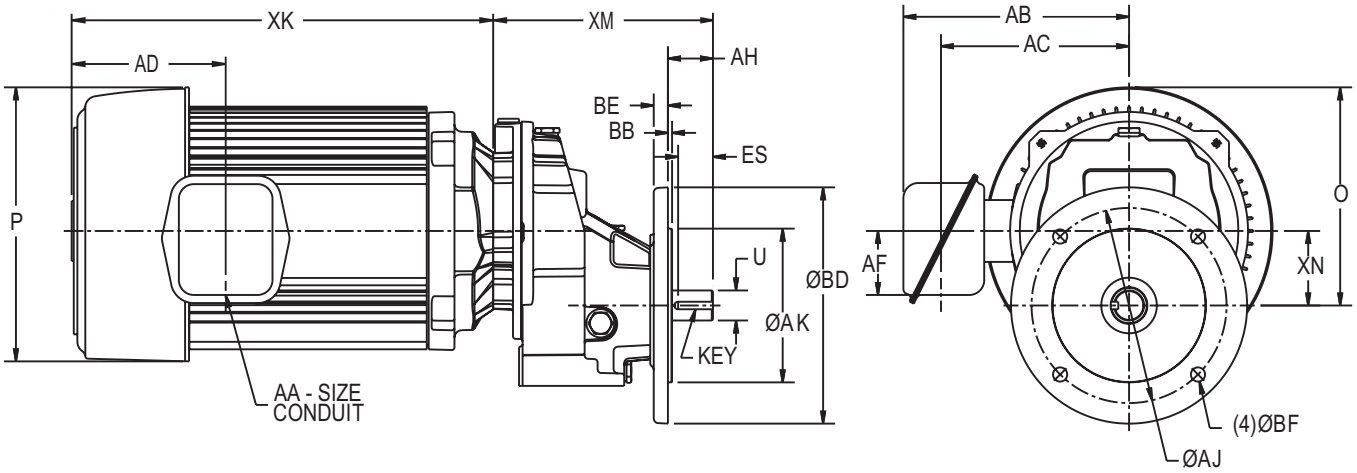
[2] All rough casting dimensions may vary by .25" due to casting variations.

[3] Shaft extension tolerance: +.0000"; –.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; –.001".

[4] For any motor type other than T (3 phase TEFC) or type T and S with brakes, refer to pages A-109 to A-111.

[5] Largest motor width.

Flange Mounted - Single Reduction



Gear Frame	U[3]	AH	ES	XD	XN	XM	Key
32	1.00	1.50	1.16	3.54	2.48	7.32	1/4 Sq.

Flange Type	AK	AJ	BB	BD	BE	BF
BS	5.12	6.50	.14	7.87	.47	.47
BD2	4.33	5.12	.14	6.29	.39	.35

Motor Frame	Type[4]	XK	O	P[5]	AA	AB	AC	AD	AF
56	T	9.79	6.22	7.22	3/4	6.10	4.50	3.86	1.64
B56	T	11.04	6.22	7.22	3/4	6.10	4.50	3.86	1.64
143T,145T	T	11.04	6.22	7.22	3/4	6.10	4.50	3.86	1.64
182T,184T	T	14.04	7.26	9.56	3/4	7.52	6.27	5.13	2.13
213T	T	16.15	8.11	11.25	1	8.42	7.17	5.6	2.13
215T	T	17.65	8.11	11.25	1	8.42	7.17	5.6	2.13

[2] All rough casting dimensions may vary by .25" due to casting variations.

[3] Shaft extension tolerance: +.0000"; –.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; –.001".

[4] For any motor type other than T (3 phase TEFC) or type T and S with brakes, refer to pages A-109 to A-111.

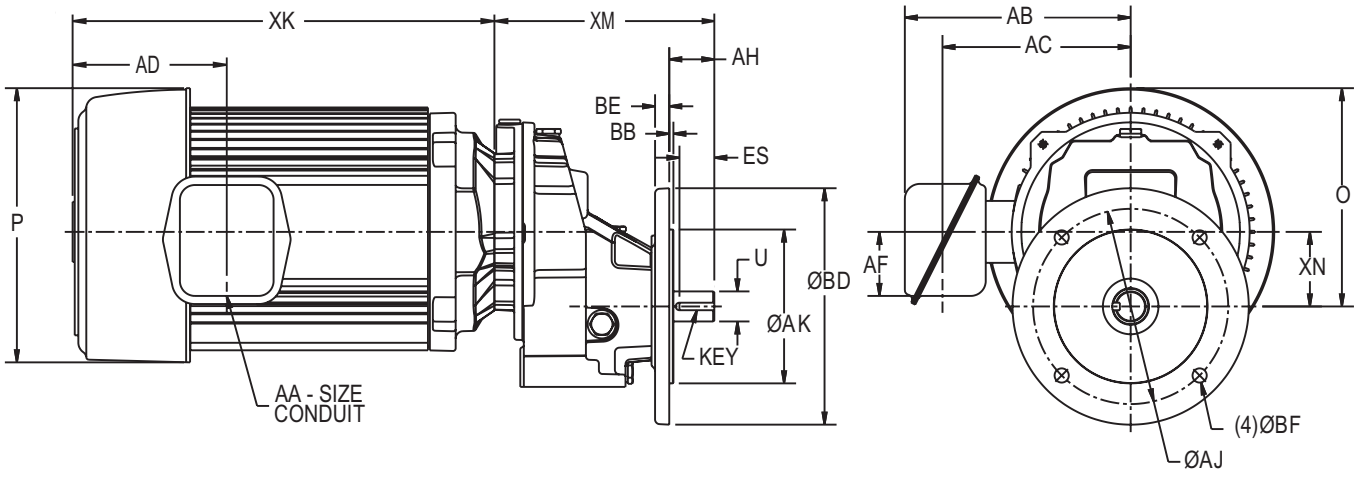
[5] Largest motor width.

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Three Phase Gearmotor

CbN SERIES 3000

Flange Mounted - Single Reduction



Gear Frame	D	U[3]	AH	ES	XN	XM	Key
33	4.41	1.375	2.75	2.40	2.76	9.3	5/16 Sq.

Flange Type	AK	AJ	BB	BD	BE	BF
BS	7.09	8.46	.16	9.83	.47	.55
BD2	5.12	6.50	.16	7.86	.47	.43

Motor Frame	Type[4]	XK	O	P[5]	AA	AB	AC	AD	AF
182T,184T	T	14.04	7.54	9.56	3/4	7.52	6.27	5.13	2.13
213T	T	16.15	8.39	11.25	1	8.42	7.16	5.60	2.13
215T	T	17.65	8.39	11.25	1	8.42	7.16	5.60	2.13
254T	T	20.58	9.45	13.38	1 1/4	9.79	7.68	8.29	1.81
256T	T	22.33	9.45	13.38	1 1/4	9.79	7.68	8.29	1.81

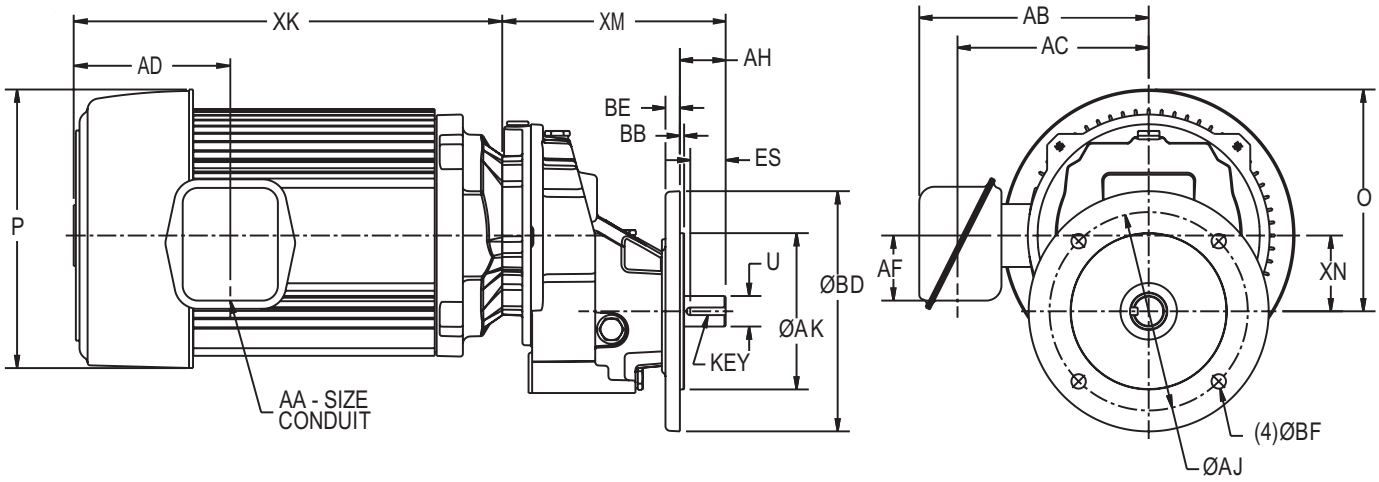
[2] All rough casting dimensions may vary by .25" due to casting variations.

[3] Shaft extension tolerance: +.0000"; –.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; –.001".

[4] For any motor type other than T (3 phase TEFC) or type T and S with brakes, refer to pages A-109 to A-111.

[5] Largest motor width.

Flange Mounted - Single Reduction



Gear Frame	XD	U[3]	AH	ES	XN	XM		Key
						182T-215T	254T-324T	
34	5.20	1.50	3.00	2.56	3.43	11.05	11.4	3/8 Sq.

Flange Type	AK	AJ	BB	BD	BE	BF
BS	9.06	10.43	.16	11.80	59	.55
BD2	7.09	8.46	.16	9.84	59	.55

Motor Frame	Type[4]	XK	O	P[5]	AA	AB	AC	AD	AF	XD
182T,184T	T	14.04	8.70	9.56	3/4	7.52	6.27	5.13	2.13	4.28
213T	T	16.15	9.05	11.25	1	8.42	7.17	5.60	2.13	3.56
215T	T	17.65	9.05	11.25	1	8.42	7.17	5.60	2.13	2.62
254T	T	19.61	10.12	13.38	1 1/4	9.79	7.68	8.29	1.81	2.62
256T	T	21.36	10.12	13.38	1 1/4	9.79	7.68	8.29	1.81	2.62
284T	T	21.86	10.12	13.38	1 1/2	10.71	8.18	8.29	2.13	2.62
286T	T	23.36	10.12	13.38	1 1/2	10.71	8.18	8.29	2.13	2.62

[2] All rough casting dimensions may vary by .25" due to casting variations.

[3] Shaft extension tolerance: +.0000"; –.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; –.001".

[4] For any motor type other than T (3 phase TEFC) or type T and S with brakes, refer to pages A-109 to A-111.

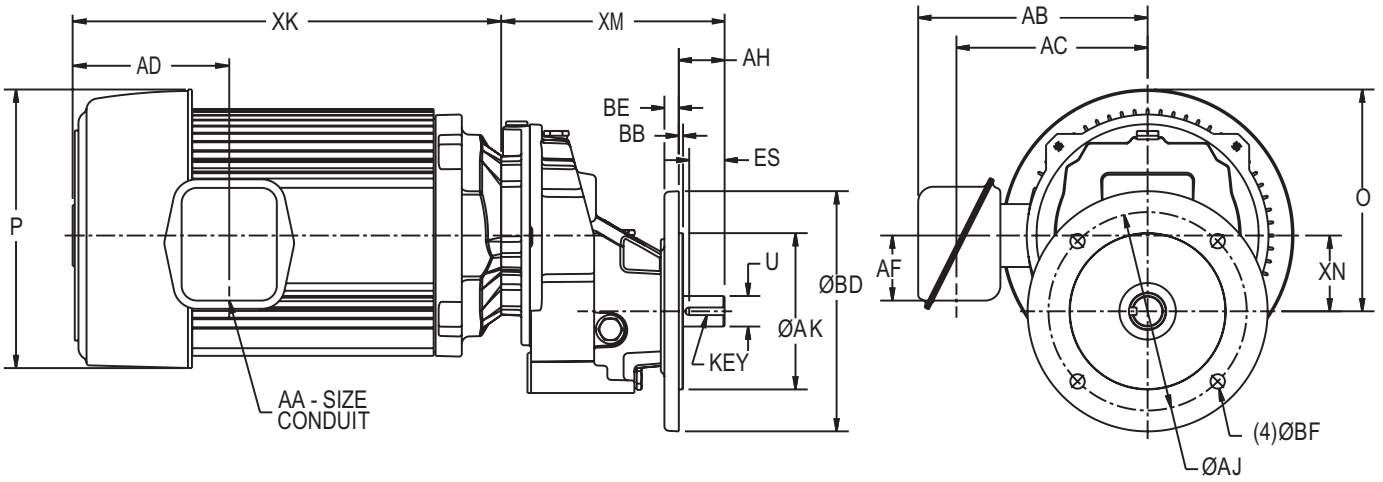
[5] Largest motor width.

Browning®

Three Phase Gearmotor

CbN SERIES 3000

Flange Mounted - Single Reduction



Gear Frame	XD	U[3]	AH	ES	XN	XM		Key
						213T-215T	254T-324T	
35	6.30	1.750	3.50	3.06	4.33	12.04	12.56	3/8 Sq.

Flange Type	AK	AJ	BB	BD	BE	BF
BS	9.84	11.81	.20	13.78	.71	.71
BD2	9.06	10.43	.20	11.81	.71	.55

Motor Frame	Type[4]	XK	O	P[5]	AA	AB	AC	AD	AF
213T	T	16.15	11.07	11.25	1	8.42	7.17	5.6	2.13
215T	T	17.65	11.07	11.25	1	8.42	7.17	5.6	2.13
254T	T	19.61	11.07	13.38	1 1/4	9.79	7.68	8.29	1.81
256T	T	21.36	11.07	13.38	1 1/4	9.79	7.68	8.29	1.81
284T, 286T	T	24.71	11.66	14.66	1 1/2	11.33	9.16	13.19	2.63

[2] All rough casting dimensions may vary by .25" due to casting variations.

[3] Shaft extension tolerance: +.0000"; –.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; –.001".

[4] For any motor type other than T (3 phase TEFC) or type T and S with brakes, refer to pages A-109 to A-111.

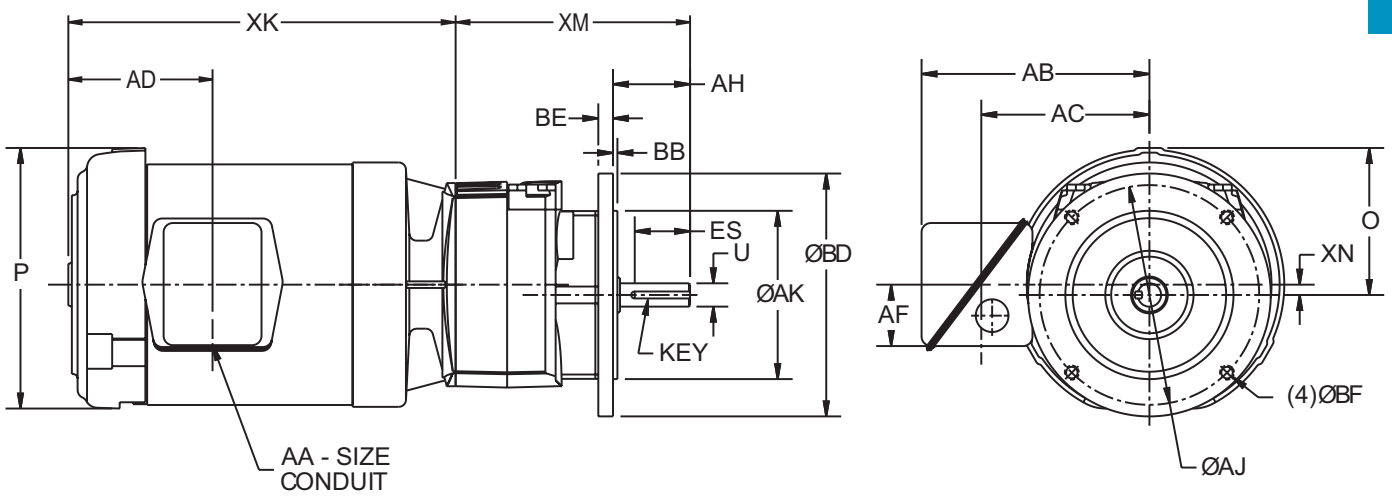
[5] Largest motor width.

Browning®

Three Phase Gearmotor

CbN SERIES 3000

Flange Mounted - Double/Triple Reduction



Gear Frame	U[3]	AH	ES	XN	XM	Key
3012	.625	2.06	1.48	.28	6.85	3/16 Sq.
3013	.625	2.06	1.48	.28	7.64	3/16 Sq.

Flange Type	AK	AJ	BB	BD	BE	BF
56C	4.50	5.875	.12	6.50	.39	3/8-16
BS	3.74	4.53	.12	5.51	.31	.35
BD1	3.15	3.94	.10	4.72	.28	.28
BD2	4.33	5.12	.12	6.30	.31	.35
BD3	5.12	6.50	.12	7.87	.31	.35

Motor Frame	Type[4]	XK	O	P[5]	AA	AB	AC	AD	AF
56	T	9.79	3.93	7.22	3/4	6.10	4.50	3.86	1.64
B56	T	11.04	3.93	7.22	3/4	6.10	4.50	3.86	1.64
143T,145T	T	11.04	3.93	7.22	3/4	6.10	4.50	3.86	1.64

[2] All rough casting dimensions may vary by .25" due to casting variations.

[3] Shaft extension tolerance: +.0000"; –.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; –.001".

[4] For any motor type other than T (3 phase TEFC) or type T and S with brakes, refer to pages A-109 to A-111.

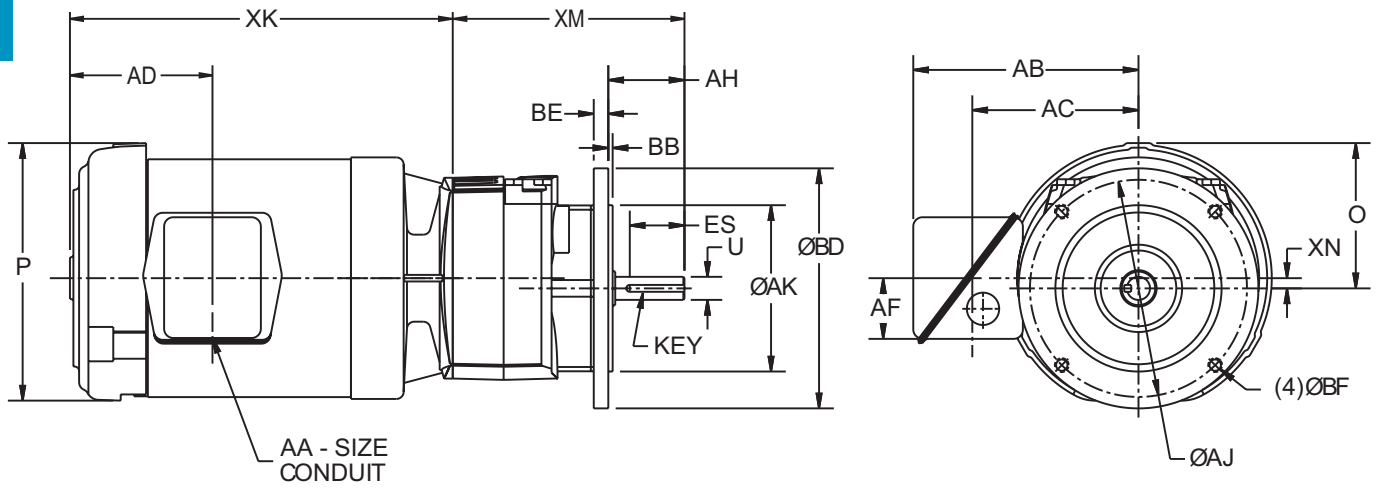
[5] Largest motor width.

Browning

Three Phase Gearmotor

CbN SERIES 3000

Flange Mounted - Double/Triple Reduction



Gear Frame	U[3]	AH	ES	XD	XN	XM	Key
31	1.00	1.50	1.16	3.54	.33	9.27	1/4 Sq.

Flange Type	AK	AJ	BB	BD	BE	BF
BS	5.12	6.50	.14	7.87	.47	.47
BD1	4.33	5.12	.14	6.29	.39	.35
BD2	3.74	4.53	.14	5.50	.39	.35
BD3	3.15	3.96	.10	4.72	.39	.28

Motor Frame	Type[4]	XK	O	P[5]	AA	AB	AC	AD	AF
56	T	9.79	3.33	7.22	3/4	6.14	4.21	3.86	1.77
B56	T	11.04	3.33	7.22	3/4	6.14	4.21	3.86	1.77
143T,145T	T	11.04	3.33	7.22	3/4	6.14	4.21	3.86	1.77
182T,184T	T	14.04	4.45	9.56	3/4	7.52	6.27	5.13	2.13

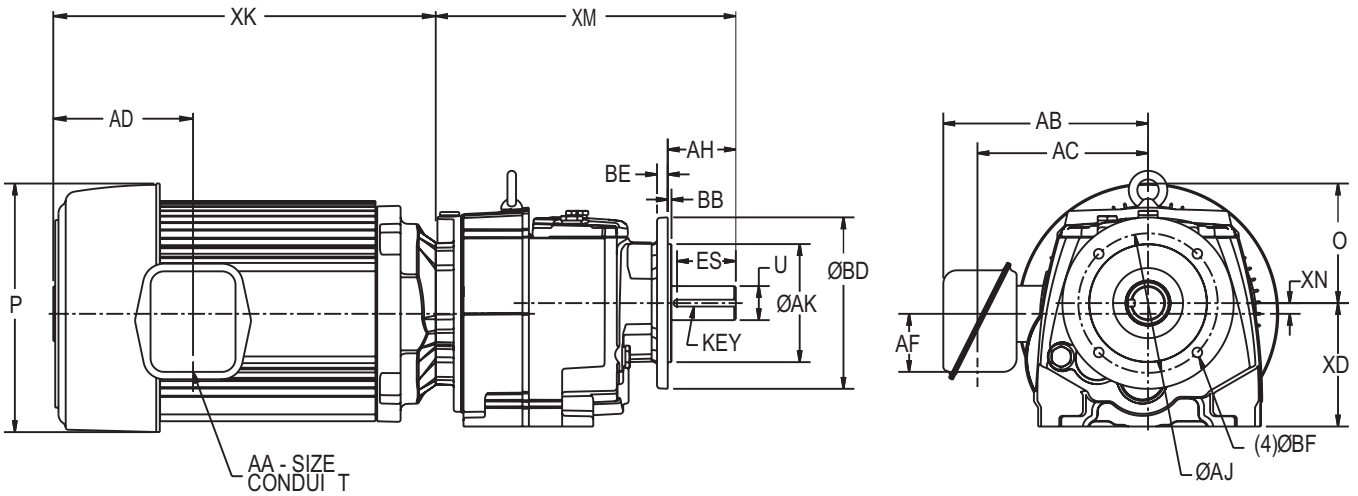
[2] All rough casting dimensions may vary by .25" due to casting variations.

[3] Shaft extension tolerance: +.0000"; –.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; –.001".

[4] For any motor type other than T (3 phase TEFC) or type T and S with brakes, refer to pages A-109 to A-111.

[5] Largest motor width.

Flange Mounted - Double/Triple Reduction



Gear Frame	D	U[3]	AH	ES	XD	XN	XM	Key
32	4.53	1.250	2.50	2.16	4.53	0.39	11.02	1/4 Sq.

Flange Type	AK	AJ	BB	BD	BE	BF
BS	7.09	8.46	.16	9.83	.47	.55
BD1	5.12	6.50	.14	7.87	.39	.47
BD2	4.33	5.12	.14	6.29	.39	.35

Motor Frame	Type[4]	XK	O	P[5]	AA	AB	AC	AD	AF
56	T	9.79	3.50	7.22	3/4	6.10	4.50	3.86	1.64
B56	T	11.04	3.50	7.22	3/4	6.10	4.50	3.86	1.64
143T,145T	T	11.04	3.50	7.22	3/4	6.10	4.50	3.86	1.64
182T,184T	T	14.04	4.39	9.56	3/4	7.52	6.27	5.13	2.13
213T	T	16.15	6.02	11.25	1	8.42	7.17	5.60	2.13
215T	T	17.65	6.02	11.25	1	8.42	7.17	5.60	2.13

[2] All rough casting dimensions may vary by .25" due to casting variations.

[3] Shaft extension tolerance: +.0000"; –.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; –.001".

[4] For any motor type other than T (3 phase TEFC) or type T and S with brakes, refer to pages A-109 to A-111.

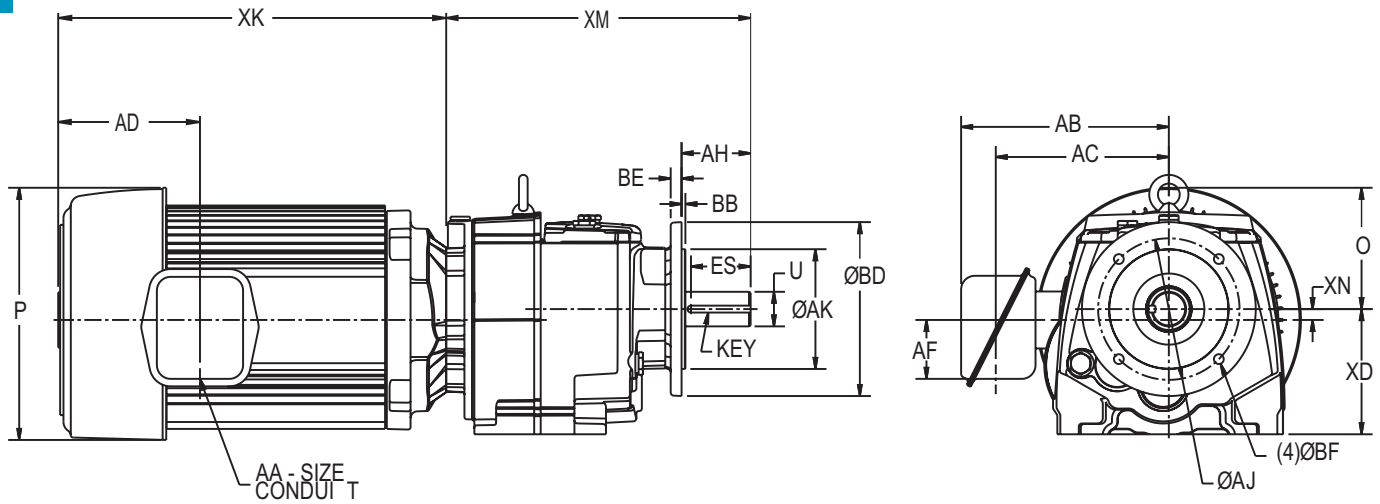
[5] Largest motor width.

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Three Phase Gearmotor

CbN SERIES 3000

Flange Mounted - Double/Triple Reduction



Gear Frame	U[3]	AH	ES	XD	XN	XM	Key
3362,3363	1.50	3.00	2.56	5.51	.77	13.64	3/8 Sq.
3372,3373	1.625	3.15	2.78	5.51	.77	13.79	3/8 Sq.

Flange Type	AK	AJ	BB	BD	BE	BF
BS	9.06	10.43	.16	11.80	.47	.55
BD1	7.09	8.46	.16	9.83	.47	.55
BD2	5.12	6.50	.14	7.86	.47	.47

Motor Frame	Type[4]	XK	O	P[5]	AA	AB	AC	AD	AF
56	T	9.79	4.43	7.22	3/4	6.10	4.50	3.86	1.64
B56	T	11.04	4.43	7.22	3/4	6.10	4.50	3.86	1.64
143T,145T	T	11.04	4.43	7.22	3/4	6.10	4.50	3.86	1.64
182T,184T	T	14.04	4.43	9.56	3/4	7.52	6.27	5.13	2.13
213T	T	16.15	4.86	11.25	1	8.42	7.16	5.6	2.13
215T	T	17.65	4.86	11.25	1	8.42	7.16	5.6	2.13
254T	T	20.58	5.93	13.38	1 1/4	9.79	7.68	8.29	1.81
256T	T	22.33	5.93	13.38	1 1/4	9.79	7.68	8.29	1.81

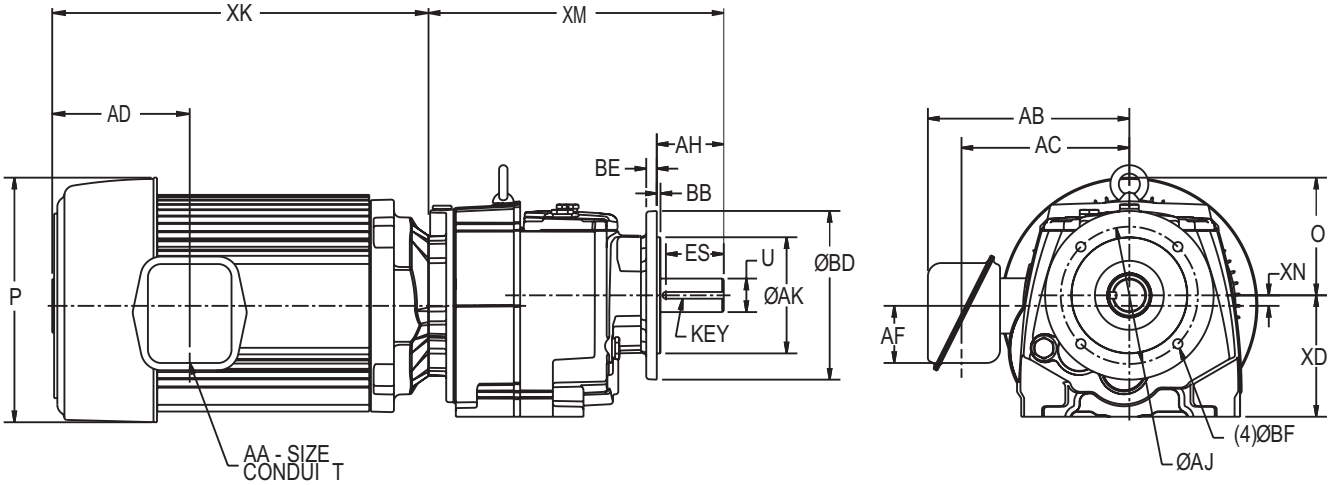
[2] All rough casting dimensions may vary by .25" due to casting variations.

[3] Shaft extension tolerance: +.0000"; –.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; –.001".

[4] For any motor type other than T (3 phase TEFC) or type T and S with brakes, refer to pages A-109 to A-111.

[5] Largest motor width.

Flange Mounted - Double/Triple Reduction



Gear Frame	U[3]	AH	ES	XD	XN	XM		Key
						56-215T	254T-286T	
34	2.125	3.50	3.06	7.09	1.02	15.09	15.44	1/2 Sq.

Flange Type	AK	AJ	BB	BD	BE	BF
BS	9.84	11.81	.16	13.77	.59	.71
BD1	9.06	10.43	.16	11.80	.59	.55
BD2	7.09	8.46	.16	9.83	.59	.55

Motor Frame	Type[4]	XK	O	P[5]	AA	AB	AC	AD	AF
56	T	9.79	4.80	7.22	3/4	6.10	4.50	3.86	1.64
B56	T	11.04	4.80	7.22	3/4	6.10	4.50	3.86	1.64
143T,145T	T	11.04	4.80	7.22	3/4	6.10	4.50	3.86	1.64
182T,184T	T	14.04	4.80	9.56	3/4	7.52	6.27	5.13	2.13
213T	T	16.15	4.80	11.25	1	8.42	7.17	5.6	2.13
215T	T	17.65	4.80	11.25	1	8.42	7.17	5.6	2.13
254T	T	19.61	5.67	13.38	1 1/4	9.79	7.68	8.29	1.81
256T	T	21.36	5.67	13.38	1 1/4	9.79	7.68	8.29	1.81
284T, 286T	T	24.71	6.31	14.66	1 1/2	11.33	9.16	13.19	2.63

[2] All rough casting dimensions may vary by .25" due to casting variations.

[3] Shaft extension tolerance: +.0000"; –.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; –.001".

[4] For any motor type other than T (3 phase TEFC) or type T and S with brakes, refer to pages A-109 to A-111.

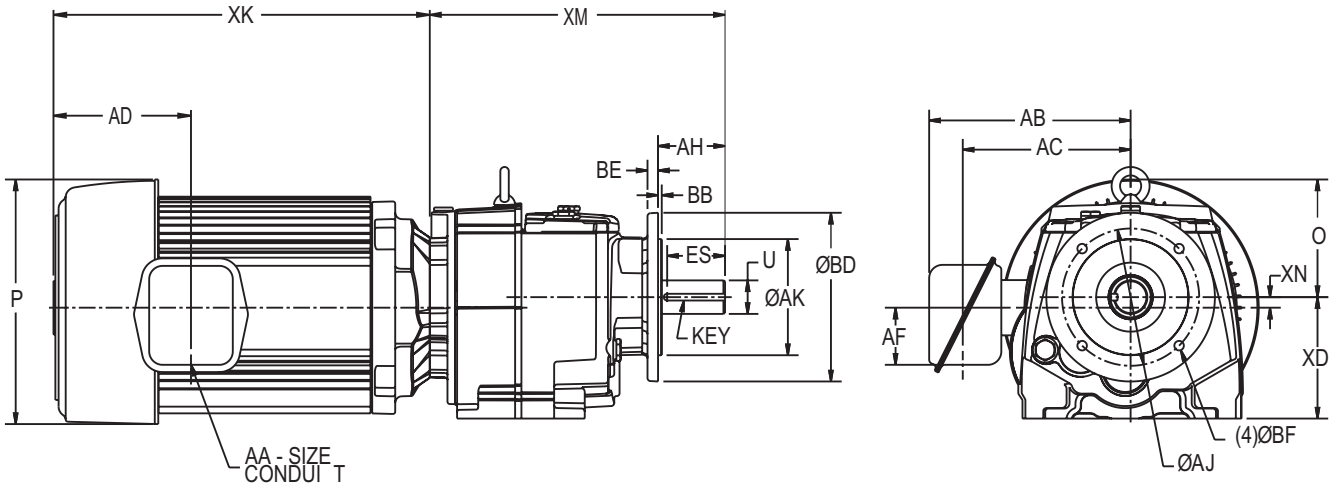
[5] Largest motor width.

Browning

Three Phase Gearmotor

CbN SERIES 3000

Flange Mounted - Double/Triple Reduction



Gear Frame	U[3]	AH	ES	XD	XN	XM		Key
						143T-215T	254T-324T	
35	2.375	4.72	4.19	8.86	1.14	17.6	18.12	5/8 Sq.

Flange Type	AK	AJ	BB	BD	BE	BF
BS	11.81	13.78	.20	15.75	.71	.71
BD1	9.84	11.81	.20	13.78	.71	.71
BD2	9.06	10.43	.20	11.81	.71	.55

Motor Frame	Type[4]	XK	O	P[5]	AA	AB	AC	AD	AF
B56	T	11.04	5.98	7.22	3/4	6.10	4.50	3.86	1.64
143T,145T	T	11.04	5.98	7.22	3/4	6.10	4.50	3.86	1.64
182T,184T	T	14.04	5.98	9.56	3/4	7.52	6.27	5.13	2.13
213T	T	16.15	5.98	11.25	1	8.42	7.17	5.6	2.13
215T	T	17.65	5.98	11.25	1	8.42	7.17	5.6	2.13
254T	T	19.61	5.98	13.38	1 1/4	9.79	7.68	8.29	1.81
256T	T	21.36	5.98	13.38	1 1/4	9.79	7.68	8.29	1.81
284T, 286T	T	24.71	6.19	14.66	1 1/2	11.33	9.16	13.19	2.63

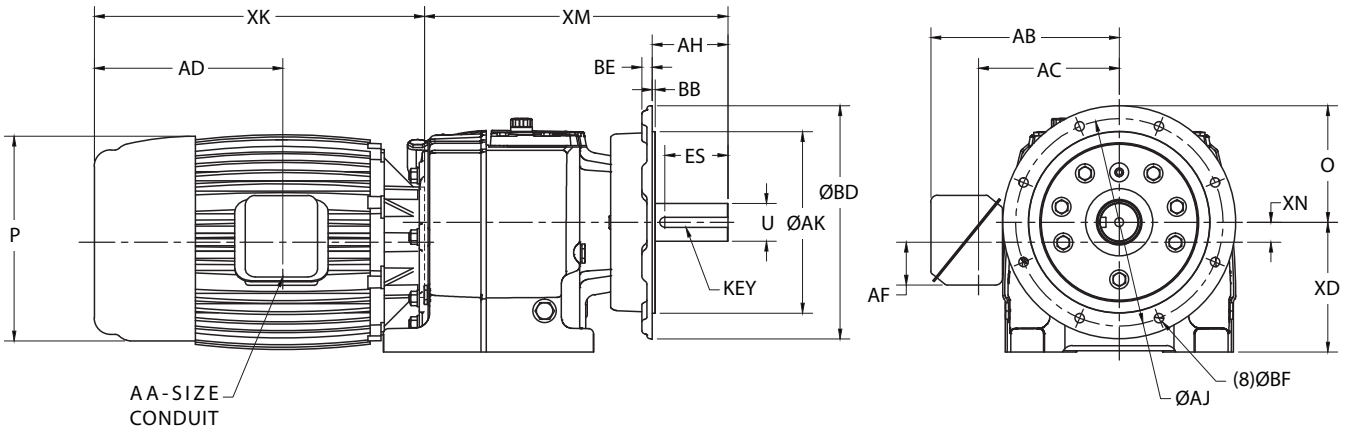
[2] All rough casting dimensions may vary by .25" due to casting variations.

[3] Shaft extension tolerance: +.0000"; –.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; –.001".

[4] For any motor type other than T (3 phase TEFC) or type T and S with brakes, refer to pages A-109 to A-111.

[5] Largest motor width.

Flanged Mounted - Double/Triple Reduction



Gear Frame	O	U[3]	AH	ES	XD	XN	XM			Key
							145T	182T-215T	254T-326T	
36	**7.87**	2.875	5.75	4.784	9.85	1.102	19.96	19.96	20.31	3/4 Sq
37	**8.00**	3.625	7.00	5.89	12.40	2.362	-	23.88	24.23	7/8 Sq

Gear Frame	Flange Type	AK	AJ	BB	BD	BE	BF
36	BS	17.717	19.685	0.236	21.65	0.79	0.70
	BD1	13.780	15.748	0.236	17.70	0.79	0.70
37	BS	17.717	19.685	0.236	21.65	0.79	0.70
	BD1	13.780	15.748	0.236	17.70	0.79	0.70

Motor Frame	Gear Frame	Type [4]	XK	P [5]	AA	AB	AC	AD	AF
145T	36	T	11.04	7.31	0.75	6.10	4.50	3.86	1.77
182T,184T	All	T	14.04	9.56	0.75	7.52	6.27	5.13	1.77
213T	All	T	16.16	11.25	1.00	8.42	7.17	5.60	2.42
215T	All	T	17.65	11.25	1.00	8.42	7.17	5.60	2.42
254T	All	T	19.61	13.38	1.25	9.79	7.68	8.29	1.81
256T	All	T	21.36	13.38	1.25	9.79	7.68	8.29	1.81
284T,286T	All	T	24.71	14.62	1.50	11.33	8.51	12.44	2.63
324T,326T	All	T	24.96	17.20	2.00	14.99	11.34	14.16	3.63

[1] Dimension “D” will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

[2] All rough casting dimensions may vary by .25" due to casting variations.

[3] Shaft extension tolerance: +.0000"; –.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; –.001".

[4] For any motor type other than T (3 phase TEFC) or type T with brakes, refer to pages A-109 to A-111.

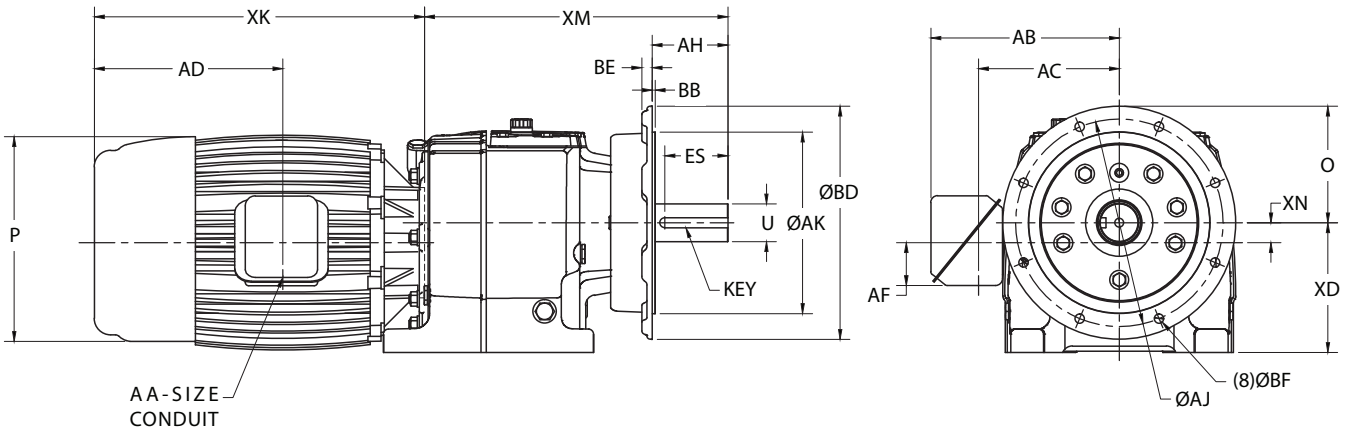
[5] Largest motor width.

Browning®

Three Phase Gearmotor

CbN SERIES 3000

Flanged Mounted - Double/Triple Reduction



Gear Frame	U[3]	AH	ES	XD	XN	XM	Key
38	4.375	6.84	9.02	13.98	2.559	29.98	1 SQ

Gear Frame	Flange Type	AK	AJ	BB	BD	BE	BF
38	BS	21.65	23.62	.197	25.98	.79	.87
	BD1	17.72	19.69	.197	21.65	.79	.69

Frame	Motor Type[4]	XK	O	P[5]	AA	AB	AC	AD	AF
213T	T	17.47	23.47	11.25	1	8.25	6.39	5.6	1.56
215T	T	18.96	23.47	11.25	1	8.25	6.39	5.6	1.56
254T	T	19.61	23.47	13.38	1 1/4	9.96	7.72	8.29	1.81
256T	T	21.36	23.47	13.38	1 1/4	9.96	7.72	8.29	1.81
284T,286T	T	24.71	23.47	14.66	1 1/2	11.33	9.16	13.19	2.63
324T,326T	T	24.96	27.60	17.20	2	14.99	11.34	14.16	3.63

[1] Dimension “D” will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

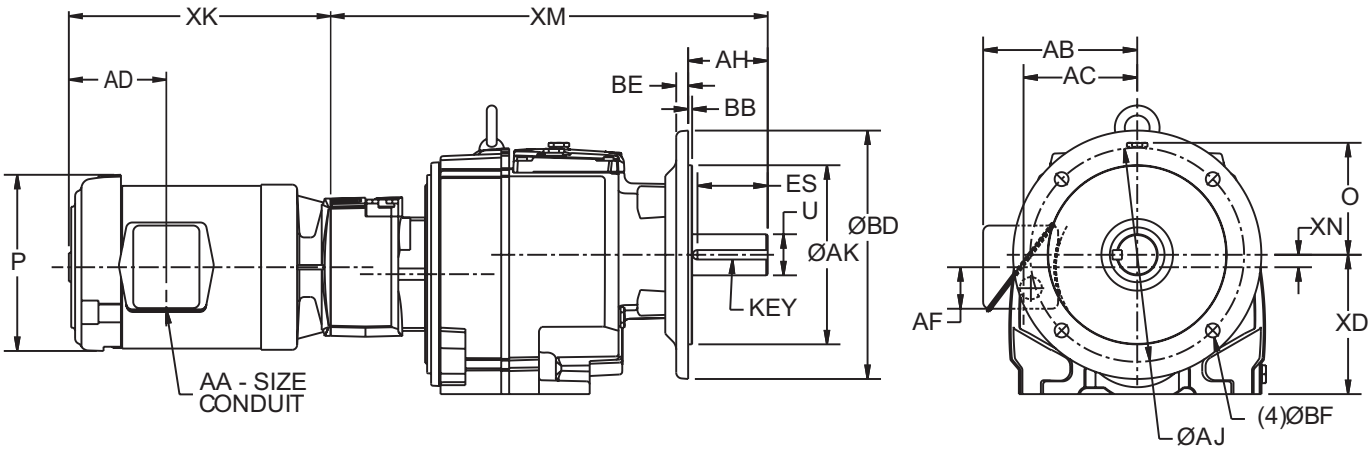
[2] All rough casting dimensions may vary by .25" due to casting variations.

[3] Shaft extension tolerance: +.0000; -.001".

[4] For any motor type other than T (3 phase TEFC) or type T with brakes, refer to pages A-109 to A-111.

[5] Largest motor width.

Flange Mounted - Combined Reduction



Gear Frame	U[3]	AH	ES	XD	XN	XM	Key
32	1.250	2.50	2.16	4.53	.12	15.1	1/4 Sq.

Flange Type	AK	AJ	BB	BD	BE	BF
BS	7.09	8.46	.16	9.83	.47	.55
BD1	5.12	6.50	.14	7.87	.39	.47
BD2	4.33	5.12	.14	6.29	.39	.35

Motor Frame	Type[4]	XK	O	P[5]	AA	AB	AC	AD	AF
56	T	9.79	3.54	7.22	3/4	6.10	4.50	3.86	1.64

[2] All rough casting dimensions may vary by .25" due to casting variations.

[3] Shaft extension tolerance: +.0000"; –.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; –.001".

[4] For any motor type other than T (3 phase TEFC) or type T and S with brakes, refer to pages A-109 to A-111.

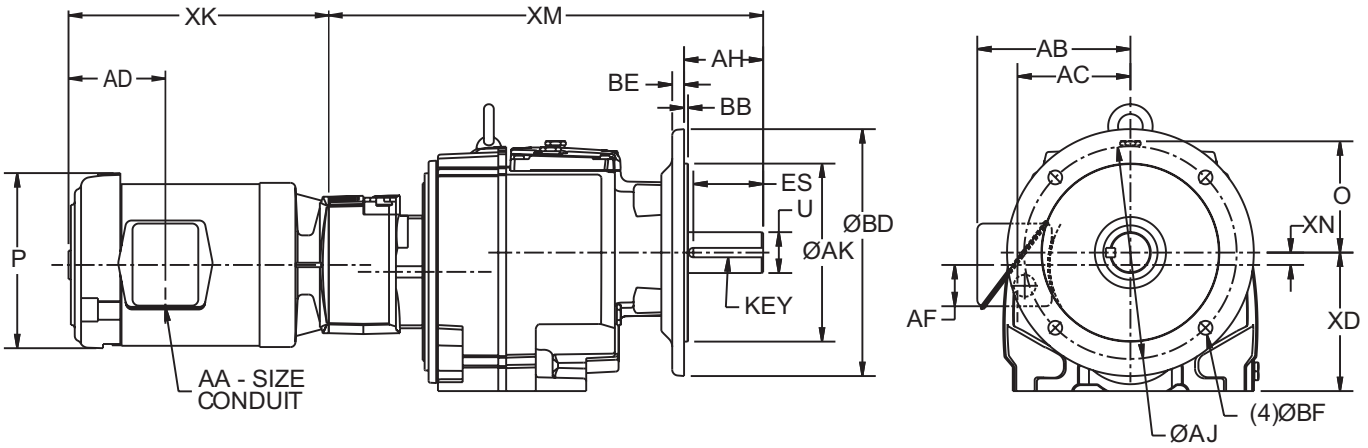
[5] Largest motor width.

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Three Phase Gearmotor

CbN SERIES 3000

Flange Mounted - Combined Reduction



Gear Frame	U[3]	AH	ES	XD	XN	XM	Key
33	1.625	3.15	2.78	5.51	.49	17.88	3/8 Sq.

Flange Type	AK	AJ	BB	BD	BE	BF
BS	9.06	10.43	.16	11.80	.47	.55
BD1	7.09	8.46	.16	9.83	.47	.55
BD2	5.12	6.50	.14	7.86	.47	.47

Motor Frame	Type[4]	XK	O	P[5]	AA	AB	AC	AD	AF
56	T	9.79	4.43	7.22	3/4	6.10	4.50	3.86	1.64
B56	T	11.04	4.43	7.22	3/4	6.10	4.50	3.86	1.64
143T,145T	T	11.04	4.43	7.22	3/4	6.10	4.50	3.86	1.64

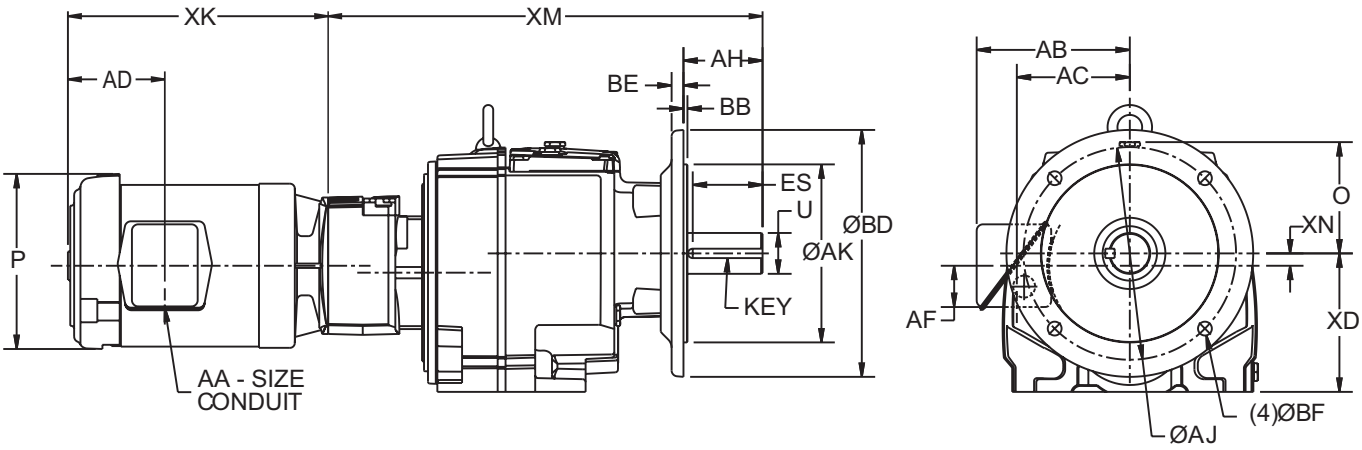
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[3] Shaft extension tolerance: +.0000"; –.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; –.001".

[4] For any motor type other than T (3 phase TEFC) or type T and S with brakes, refer to pages A-109 to A-111.

[5] Largest motor width.

Flange Mounted - Combined Reduction



Gear Frame	U[3]	AH	ES	XD	XN	XM	Key
34	2.125	3.50	3.06	7.09	1.35	22.06	1/2 Sq.

Flange Type	AK	AJ	BB	BD	BE	BF
BS	9.84	11.81	.16	13.77	.59	.71
BD1	9.06	10.43	.16	11.80	.59	.55
BD2	7.09	8.46	.16	9.83	.59	.55

Motor Frame	Type[4]	XK	O	P[5]	AA	AB	AC	AD	AF
56	T	9.79	4.80	7.22	3/4	6.10	4.50	3.86	1.64
B56	T	11.04	4.80	7.22	3/4	6.10	4.50	3.86	1.64
143T,145T	T	11.04	4.80	7.22	3/4	6.10	4.50	3.86	1.64

[2] All rough casting dimensions may vary by .25" due to casting variations.

[3] Shaft extension tolerance: +.0000"; –.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; –.001".

[4] For any motor type other than T (3 phase TEFC) or type T and S with brakes, refer to pages A-109 to A-111.

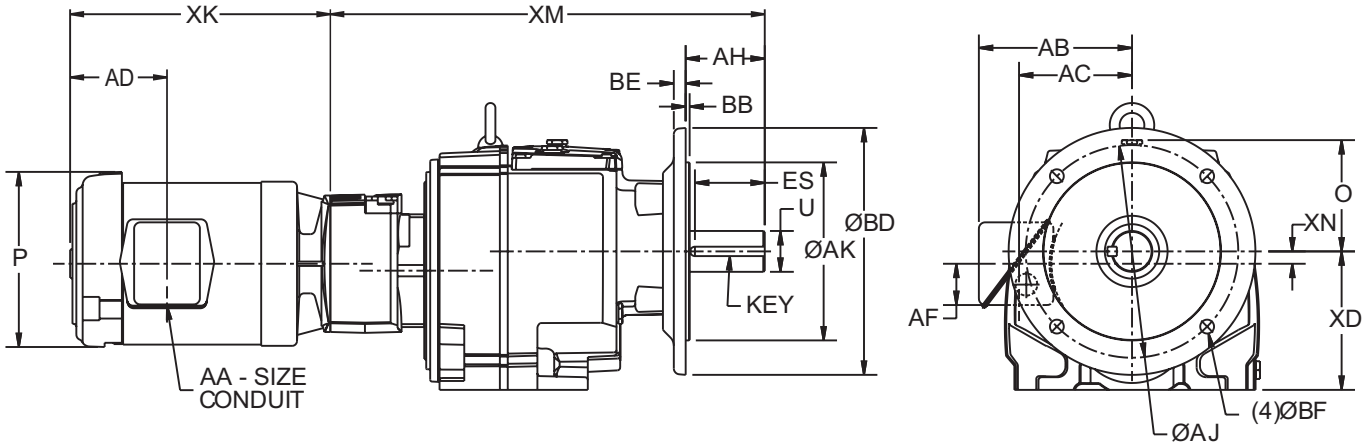
[5] Largest motor width.

Browning

Three Phase Gearmotor

CbN SERIES 3000

Flange Mounted - Combined Reduction



Gear Frame	U[3]	AH	ES	XD	XN	XM	Key
35	2.875	4.72	4.19	8.86	1.47	24.73	5/8 Sq.

Flange Type	AK	AJ	BB	BD	BE	BF
BS	11.81	13.78	.20	15.75	.71	.71
BD1	9.84	11.81	.20	13.78	.71	.71
BD2	9.06	10.43	.20	11.81	.71	.55

Motor Frame	Type[4]	XK	O	P[5]	AA	AB	AC	AD	AF
56	T	9.79	5.98	7.22	3/4	6.10	4.50	3.86	1.64
B56	T	11.04	5.98	7.22	3/4	6.10	4.50	3.86	1.64
143T,145T	T	11.04	5.98	7.22	3/4	6.10	4.50	3.86	1.64
182T	T	12.04	5.98	9.56	3/4	7.52	6.27	5.13	2.13

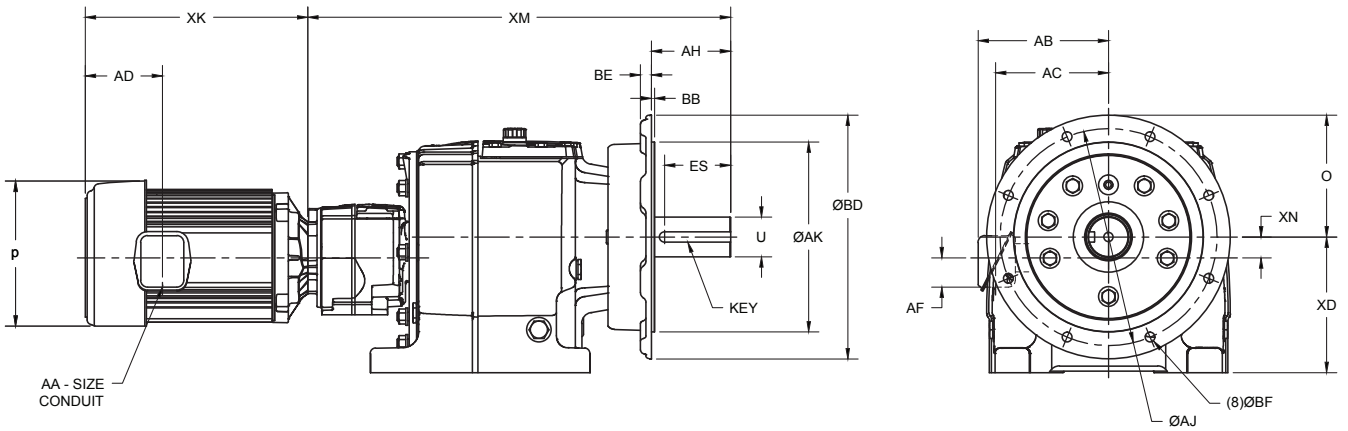
[2] All rough casting dimensions may vary by .25" due to casting variations.

[3] Shaft extension tolerance: +.0000"; –.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; –.001".

[4] For any motor type other than T (3 phase TEFC) or type T and S with brakes, refer to pages A-109 to A-111.

[5] Largest motor width.

Flanged Mounted - Combined Reduction



Gear Frame	O	U[3]	AH	ES	XD	XN	XM	KEY
36	**7.87**	2.875	5.75	4.784	9.85	1.492	27.62	3/4 Sq
37	**8.00**	3.625	7.00	5.89	12.40	2.752	31.54	7/8 Sq

Gear Frame	Flange Type	AK	AJ	BB	BD	BE	BF
36	BS	17.717	19.685	0.236	21.65	0.79	0.70
	BD1	13.780	15.748	0.236	17.70	0.79	0.70
37	BS	17.717	19.685	0.236	21.65	0.79	0.70
	BD1	13.780	15.748	0.236	17.70	0.79	0.70

Motor Frame	Gear Frame	Type [4]	XK	P [5]	AA	AB	AC	AD	AF
56	All	T	9.79	7.22	0.75	6.10	4.50	3.86	1.77
B56	All	T	11.04	7.22	0.75	6.10	4.50	3.86	1.77
143T, 145T	All	T	11.04	7.22	0.75	6.10	4.50	3.86	1.77
182T,184T	All	T	14.04	9.56	0.75	7.52	6.27	5.13	1.77
213T	37	T	16.16	11.25	1.00	8.42	7.17	5.60	2.42

[1] Dimension “D” will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

[2] All rough casting dimensions may vary by .25" due to casting variations.

[3] Shaft extension tolerance: +.0000"; –.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; –.001".

[4] For any motor type other than T (3 phase TEFC) or type T with brakes, refer to pages A-109 to A-111.

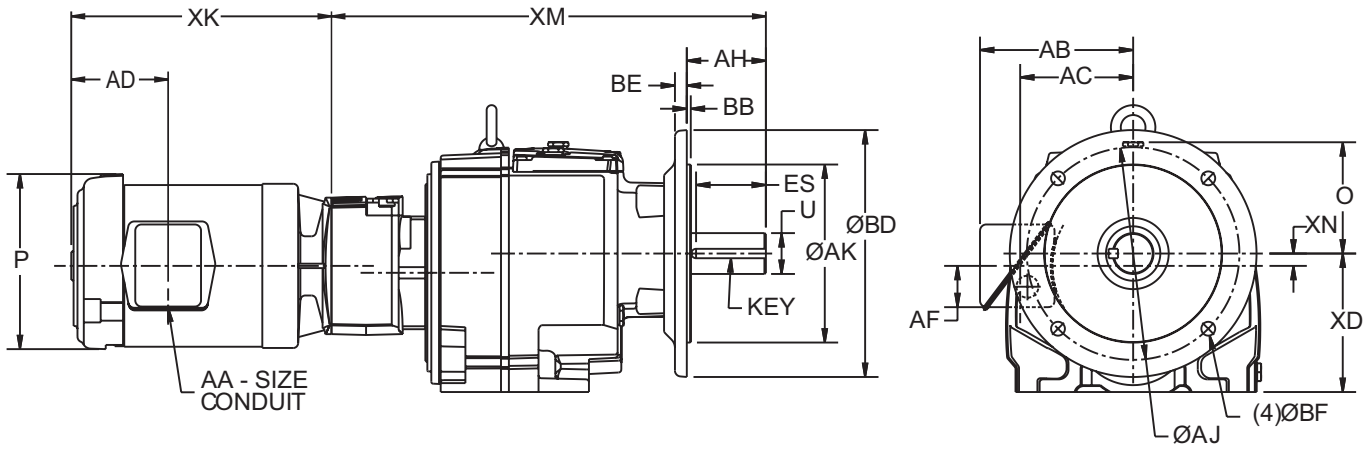
[5] Largest motor width.

Browning®

Three Phase Gearmotor

CbN SERIES 3000

Flange Mounted - Combined Reduction



Gear Frame	U[3]	AH	ES	XD	XN	XM	Key
38	4.375	6.84	9.02	13.98	2.559	40.20	1 SQ

Gear Frame	Flange Type	AK	AJ	BB	BD	BE	BF
38	BS	21.65	23.62	.197	25.98	.79	.87
	BD1	17.72	19.69	.197	21.65	.79	.69

Frame	Motor Type[4]	XK	O	P[5]	AA	AB	AC	AD	AF
56	T	9.79	23.47	7.22	3/4	5.01	4.06	3.86	1.13
B56	T	11.04	23.47	7.22	3/4	5.01	4.06	3.86	1.13
143T,145T	T	11.04	23.47	7.22	3/4	5.01	4.06	3.86	1.13
182T,184T	T	14.04	23.47	9.56	3/4	7.51	6.31	5.13	2.13
213T	T	16.15	23.47	11.25	1	8.25	6.39	5.6	1.56
215T	T	17.65	23.47	11.25	1	8.25	6.39	5.6	1.56

[1] Dimension "D" will never be exceeded, buy may vary from value shown. When exact dimensions are required, shims up to .03" may be necessary

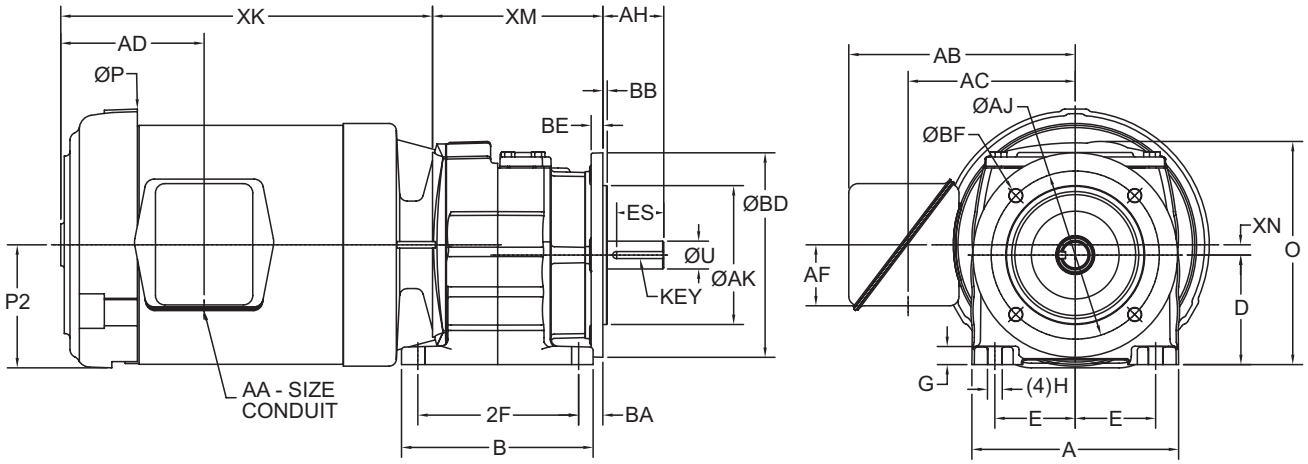
[2] All rough casting dimensions may vary by .25" due to casting variations.

[3] Shaft extension tolerance: +.0000; -.001".

[4] For any motor type other than T (3 phase TEFC) or type T and S with brakes, refer to pages A-109 to A-111.

[5] Largest motor width.

Foot Mount with Flange - Double/Triple Reduction



Gear Frame	A	B	D[1]	E	2F	G	H	U[3]	ES	XM	XN	Key
3012A	5.62	5.16	2.95	2.165	4.33	.47	.35	0.750	1.25	4.81	.276	3/16 Sq
3013A	6.76	7.68	3.54	2.170	6.50	.75	.35	0.750	1.25	9.48	-.330	3/16 Sq
31	6.76	7.68	3.54	2.170	6.50	.75	.35	1.000	1.16	9.45	-.330	1/4 Sq

Gear Frame	Flange Type	AH	AJ	AK	BA	BB	BD	BE	BF
3012A	SBD1	2.06	3.94	3.15	.65	.12	4.72	.28	.28
	SBS	2.06	4.53	3.74	.65	.12	5.51	.31	.35
3013A	SBD1	2.06	3.94	3.15	.944	.10	4.72	.39	.28
	SBS	2.06	4.53	3.74	.944	.14	5.51	.39	.35
31	SBD1	1.50	5.12	4.33	.944	.14	6.29	.39	.35
	SBD2	1.50	4.53	3.74	.944	.14	5.51	.39	.35
	SBD3	1.50	3.94	3.15	.944	.10	4.72	.39	.28

Gear Frame	Motor Frame	XK	O	P[5]	AA	AB	AC	AD	AF	XD
3012A	56	9.79	6.88	7.22	3/4	6.10	4.50	3.86	1.64	.08
	56B	11.04	6.88	7.22	3/4	6.10	4.50	3.86	1.64	.08
	143,145T	11.04	6.88	7.22	3/4	6.10	4.50	3.86	1.64	.08
3013A, 31	56	9.79	6.88	7.22	3/4	6.10	4.50	3.86	.94	.10
	56B	11.04	6.88	7.22	3/4	6.10	4.50	3.86	.94	.10
	143,145T	11.04	6.88	7.22	3/4	6.10	4.50	3.86	.94	.10
	182,184T	14.04	7.99	9.56	3/4	7.52	6.27	5.13	2.13	1.13

[1] Dimension “D” will never be exceeded, but may vary from value shown. When exact dimension is required, shims up to .03” may be required.

[2] All rough casting dimensions may vary by .25” due to casting variations.

[3] Shaft extension tolerance +.0000”, -.0005” up to 1.5” diameter.

[4] For any motor types other than T (3 phase TEFC) or for T and S with brakes, refer to pages A-109 to A111.

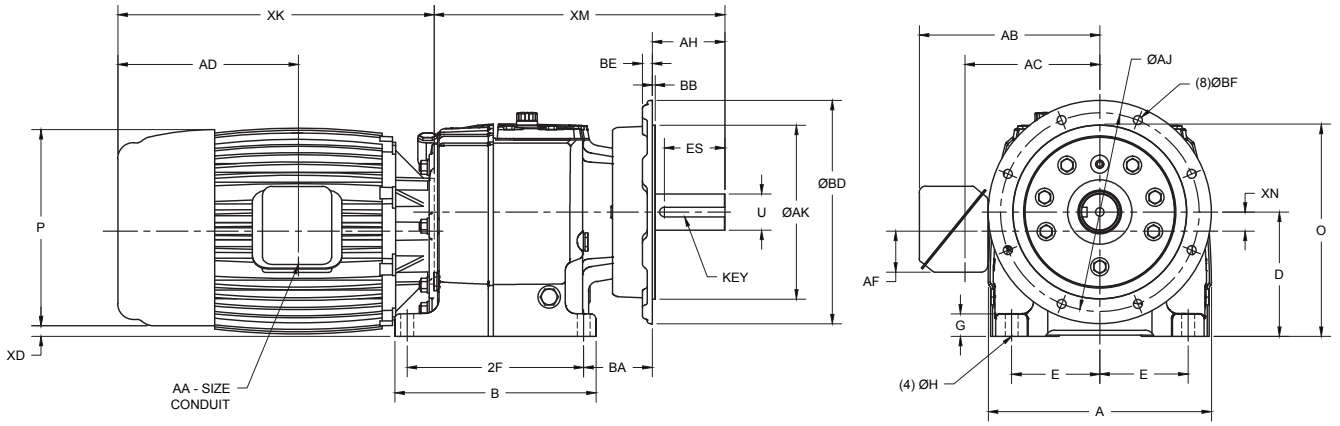
[5] Largest motor width.

Browning®

Three Phase Gearmotor

CbN SERIES 3000

Foot Mount with Flange - Double/Triple Reduction



Gear Frame	A	B	D [1]	E	G	H	O	U [3]	2F	ES	XN	XM			Key
												145T	182T-215T	254T-326T	
36	17.68	15.95	9.85	6.99	1.77	1.02	7.87	2.875	13.98	4.784	1.102	19.96	19.96	20.31	3/4 Sq
37	20.39	17.91	12.40	8.27	2.17	1.02	8.00	3.625	15.35	5.893	2.362	-	23.88	24.23	7/8 Sq
38	23.94	21.65	13.98	10.04	2.35	1.02		4.375	18.90	9.02		-	40.20	40.20	1 SQ

Gear Frame	Flange Type	AH	AK	AJ	BA	BB	BD	BE	BF
36	SBS	5.75	17.717	19.685	.79	0.236	21.65	0.79	0.70
	SBD1	5.75	13.780	15.748	.79	0.236	17.70	0.79	0.70
37	SBS	7.00	17.717	19.685	.79	0.236	21.65	0.79	0.70
	SBD1	7.00	13.780	15.748	.79	0.236	17.70	0.79	0.70
38	SBS	6.84	21.65	23.62	1.97	.197	25.98	.79	.87
	SBD1	6.84	17.72	19.69	1.97	.197	21.65	.79	.69

Motor Frame	Gear Frame	Type [4]	XK	P [5]	AA	AB	AC	AD	AF	XD		
										36	37	38
145T	36	T	11.04	7.31	0.75	6.10	4.50	3.86	1.77	5.42	-	-
182T,184T	36, 37	T	14.04	9.56	0.75	7.52	6.27	5.13	1.77	4.40	5.69	-
213T	36,37	T	16.16	11.25	1.00	8.42	7.17	5.60	2.42	3.68	4.97	-
	38	T	17.47	11.25	1.00	8.42	7.17	5.60	2.42	-	-	6.35
215T	36,37	T	17.65	11.25	1.00	8.42	7.17	5.60	2.42	3.68	4.97	-
	38	T	18.96	11.25	1.00	8.42	7.17	5.60	2.42	-	-	6.35
254T	All	T	19.61	13.38	1.25	9.79	7.68	8.29	1.81	2.74	4.03	5.41
256T	All	T	21.36	13.38	1.25	9.79	7.68	8.29	1.81	2.74	4.03	5.41
284T,286T	All	T	24.71	14.62	1.50	11.33	8.51	12.44	2.63	1.45	2.75	4.01
324T,326T	All	T	24.96	17.20	2.00	14.99	11.34	14.16	3.63	0.55	1.84	3.11

[1] Dimension “D” will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

[2] All rough casting dimensions may vary by .25" due to casting variations.

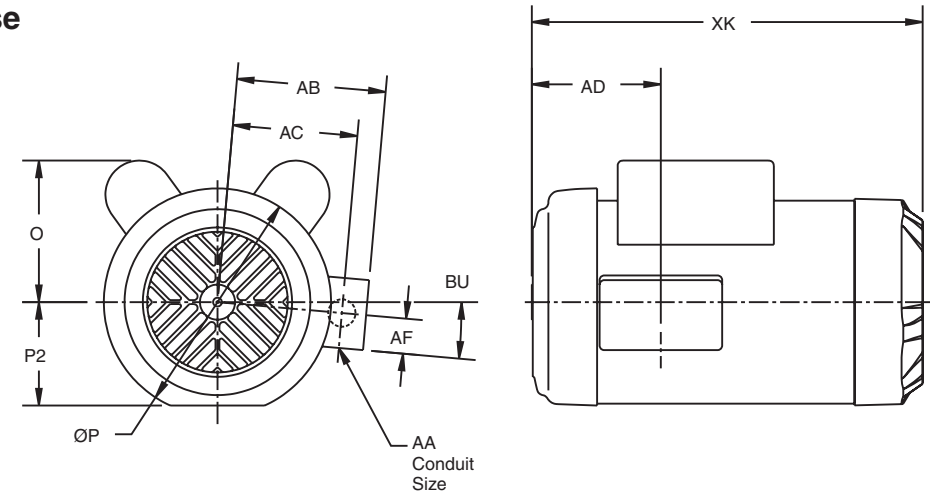
[3] Shaft extension tolerance: +.0000; -.001".

[4] For any motor type other than T (3 phase TEFC) or type T with brakes, refer to pages A-109 to A-111.

[5] Largest motor width.

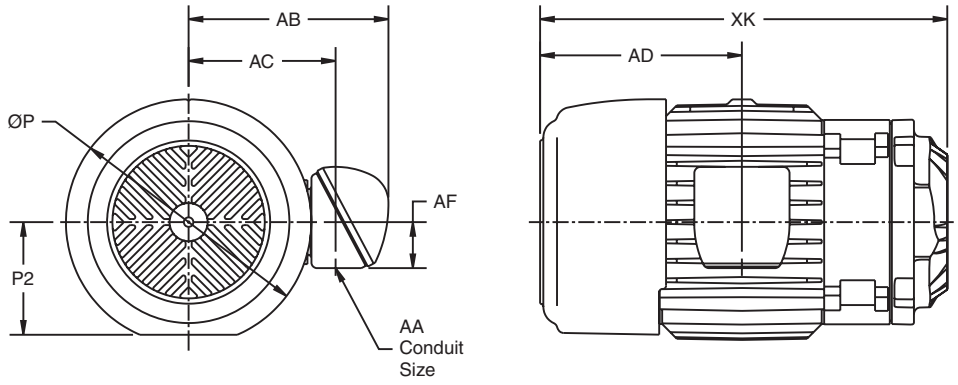
Alternate Motor Dimensions

Single Phase



Motor Frame	HP	O	P	P2	AA	AB	AC	AD	AF	BU	XK
56	1/3, 1/2	4.78	7.28	3.31	3/4	4.78	4.00	4.14	1.13	N/A	9.52[2]
	3/4	4.78	7.28	3.31	3/4	4.78	4.00	4.14	1.13	N/A	11.02[2]
143T	1	5.09	7.28	3.31	3/4	4.78	4.00	4.14	1.13	N/A	11.02[2]
145TY	1 1/2, 2	4.53	7.28	3.31	3/4	4.78	3.83	4.14	1.13	5°	12.52
184T	3, 5	5.11	9.56	4.39	3/4	8.58	6.45	7.14	3.09	N/A	16.54

Corro-Duty®



Motor Frame	P	P2	AA	AB	AC	AD	AF	XK
56	7.41	3.44	3/4	6.50	4.59	3.72	1.25	10.21 [2]
143T, 145T	7.41	3.44	3/4	6.50	4.59	3.72	1.25	11.21 [2]
182T, 184T	9.57	4.33	3/4 [3]	7.80	6.00	7.79	2.32	14.23
213T, 215T	11	5.44	1	9.47	7.15	9.63	2.00	19.67
254T, 256T	13.31	6.58	1 1/2	11.33	8.51	12.44	2.63	24.26 [1]
284T, 286T	14.66	7.29	1 1/2	11.33	9.16	13.19	2.63	24.71

[1] XK = 23.29 on CbN 33 all reductions.
[2] XK will increase by .58" if applied to frames 32 and 33 combined units.
[3] This frame has two openings in conduit box.

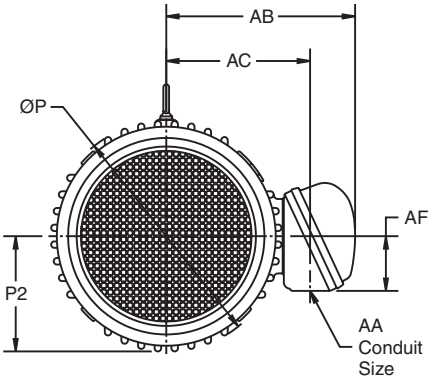
Browning®

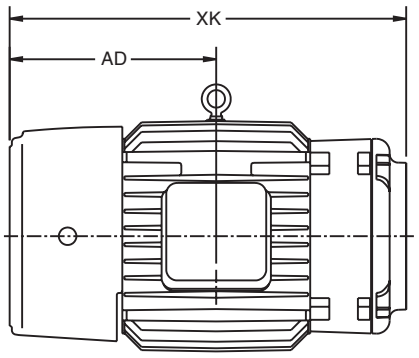
Gearmotor

CbN SERIES 3000

Alternate Motor Dimensions

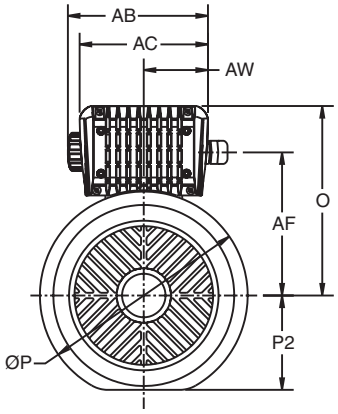
Explosion Proof

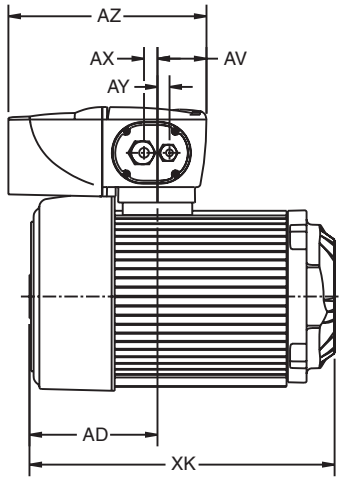




Motor Frame	P	P2	AA	AB	AC	AD	AF	XK
56	7.88	3.38	3/4	6.79	5.31	4.37	1.78	13.15[2]
143T, 145T	7.88	3.38	3/4	6.79	5.31	4.37	1.78	13.90[2]
182T, 184T	9.50	4.56	3/4	7.70	5.79	7.75	2.25	15.70
213T, 215T	11.12	5.44	1	9.06	6.81	8.68	2.63	18.72

IntelliGear®



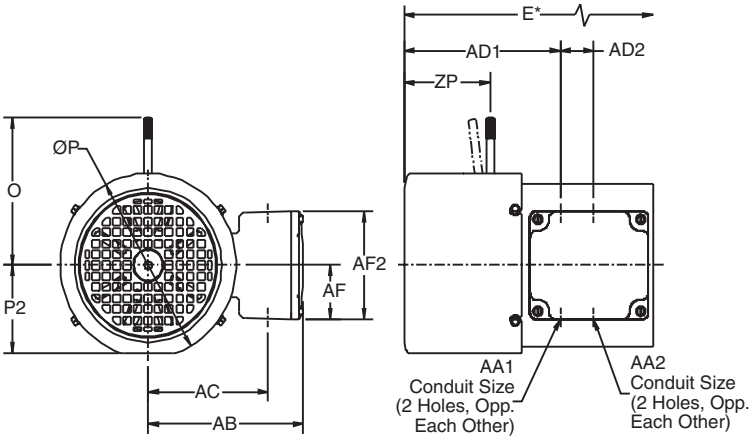


Motor Frame	Controller	O	P	P2	AB	AC	AD	AF	AV	AW	AX	AY	AZ	XK
56	1, 1M	7.74	7.33	3.67	6.45	5.91	4.35	5.61	2.25	2.95	.62	.55	8.53	9.79[2]
143T,145T	1, 1M	7.74	7.33	3.67	6.45	5.91	4.35	5.61	2.25	2.95	.62	.55	8.53	11.04[2]
56	2M	7.74	7.33	3.67	6.45	5.91	4.35	5.61	2.25	2.95	.62	.55	9.12	9.79
145T	2, 2M	7.74	7.33	3.67	6.45	5.91	4.35	5.61	2.25	2.95	.62	.55	9.12	11.04
182T,184T	2	8.72	9.56	4.78	6.45	5.91	5.89	6.58	2.25	2.95	.62	.55	9.12	14.05
	3	11.16	9.56	4.78	8.97	8.44	10.01	7.37	2.83	4.22	.62	.55	13.10	14.05
213T	3	11.99	11.25	4.98	8.97	8.44	11.73	8.11	2.83	4.22	.62	.55	13.10	16.15
215T	3	11.99	11.25	4.98	8.97	8.44	13.23	8.11	2.83	4.22	.62	.55	13.10	17.65

[2] XK will increase by .58" if applied to frames 32 and 33 combined units.

Input Power Phase/Voltage	Motor HP @ Max. Hz					
	0.33 to 0.50	0.75	1	1.5 to 2	3 to 5	7.5 to 10
1/115	1M	2M	-	-	-	-
1/230	1M	1M	1M	2M	-	-
3/230	1	1	1	2	3	-
3/460	1	1	1	1	2	3

Dimensional Supplement



DC FCR Brake with Type "T" Motor

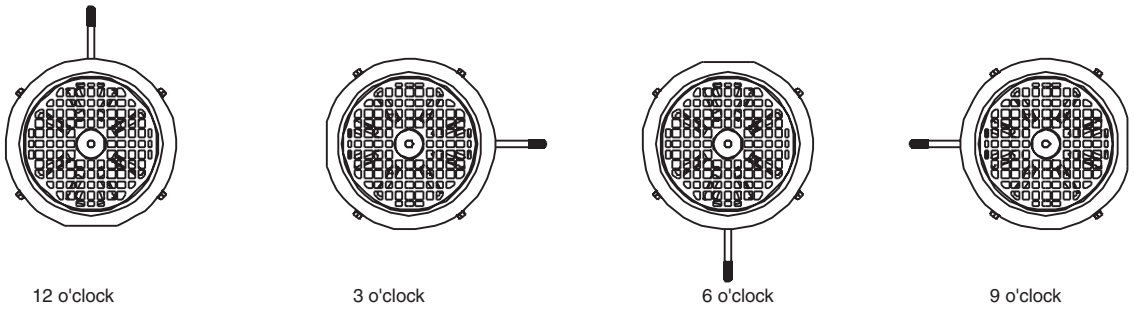
Motor Frame	E*	O	P	AA1	
				Size	Qty
56-143/145T	2.63	5.80	7.24	3/4 NPT	2
182/184T	1.95	7.3	9.23	3/4 NPT	1

Motor Frame	AA2		AB	AC	AD1
	Size	Qty			
56-143/145T	1/2 NPT	2	6.38	4.94	6.43
182/184T	3/4 NPT	1	7.8	6.14	8.84

Motor Frame	AD2	AF	AF2	P2	ZP
56-143/145T	1.38	2.13	4.25	3.46	3.54
182/184T	1.81	2.32	4.65	N/A	4.41

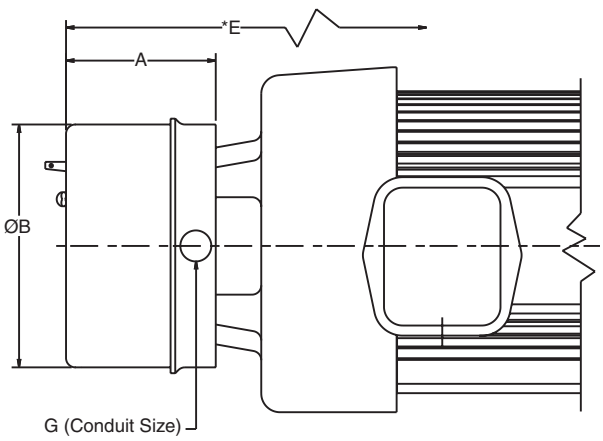
*Add "E" to XK of equivalent three phase frame motor.

Manual Release Lever Position



12 o'clock 3 o'clock 6 o'clock 9 o'clock

See page A-17 for specifying the o'clock position on orders.



AC Brake with Type "T" and "S" Motor

Motor Type	Motor Frame	Brake Torque (ft. lbs.)	A	B	E*	G
S	56	3	4.01	6.54	4.56	1/2
		6	4.01	6.54	4.56	1/2
	143T/145T 145TY	3	4.01	6.54	4.56	1/2
		6	4.01	6.54	4.56	1/2
		10	4.01	6.54	4.56	1/2
	184T	15	4.01	6.54	4.56	1/2
T	213T	25	7.38	9.38	8.75	1/2
	215T	35	7.38	9.38	8.75	1/2

* Dimension "E" represents the additional length of motor with brake mounted. Add "E" to XK of equivalent three phase frame motor.

Browning

Gearmotor

CbN SERIES 3000

Product Weights (Lbs.)

Foot Mounted Single Reduction - TEFC Three Phase Motor

Gear Frame	Motor Frame											
	56	143T	145T	182T	184T	213T	215T	254T	256T	284T	286T	324T
30	33	35	42	-	-	-	-	-	-	-	-	-
31	51	55	62	77	87	-	-	-	-	-	-	-
32	56	58	65	80	90	-	-	-	-	-	-	-
33	-	83	85	100	110	147	155	205	-	-	-	-
34	-	-	-	-	113	150	163	213	258	448	498	-
35	-	-	-	-	-	200	213	253	308	498	548	728

Foot Mounted Multiple Reduction - TEFC Three Phase Motor

Gear Frame	Stages	Motor Frame											
		56	143T	145T	182T	184T	213T	215T	254T	256T	284T	286T	320T
30	2, 3	39	41	48	-	-	-	-	-	-	-	-	-
31	2, 3	65	67	75	90	100	-	-	-	-	-	-	-
32	2, 3	78	80	87	102	112	144	152	-	-	-	-	-
	4, 5	86	88	-	-	-	-	-	-	-	-	-	-
33	2, 3	107	109	115	132	142	184	192	240	-	-	-	-
	4, 5	117	119	-	-	-	-	-	-	-	-	-	-
34	2, 3	130	132	138	156	166	204	212	249	299	489	539	-
	4, 5	129	131	138	-	-	-	-	-	-	-	-	-
35	2, 3	-	225	230	249	259	290	298	348	398	588	638	818
	4, 5	234	236	243	257	267	-	-	-	-	-	-	
36	2,3	-	-	350	366	367	400	408	458	508	768	818	998
	4,5,6	399	408	412	-	-	-	-	-	-	-	-	-
37	2, 3	-	-	-	465	475	499	507	557	607	867	917	1097
	4,5,6	454	463	467	488	498	522	-	-	-	-	-	-
38	2, 3	-	-	-	-	-	818	826	876	926	1186	1236	1416
	4,5,6	799	808	812	833	843	867	880	-	-	-	-	-

Weight Adders

Optional Motor Types

Type	Motor Frame												
	56	143T	145T	145TY	182T	184T	213T	215T	254T	256T	284T	286T	320T
C Corro-Duty	8	9	11	11	52	50	73	70	190	165	-	-	RO
X Explosionproof	19	21	25	-	33	30	50	50	-	-	-	-	-
S Single Phase	6	11	-	5	-	17	-	-	-	-	-	-	-
IG IntelliGear	7	15	18	20	31	30	51	53	-	-	-	-	-

B14 and Flange Mounted

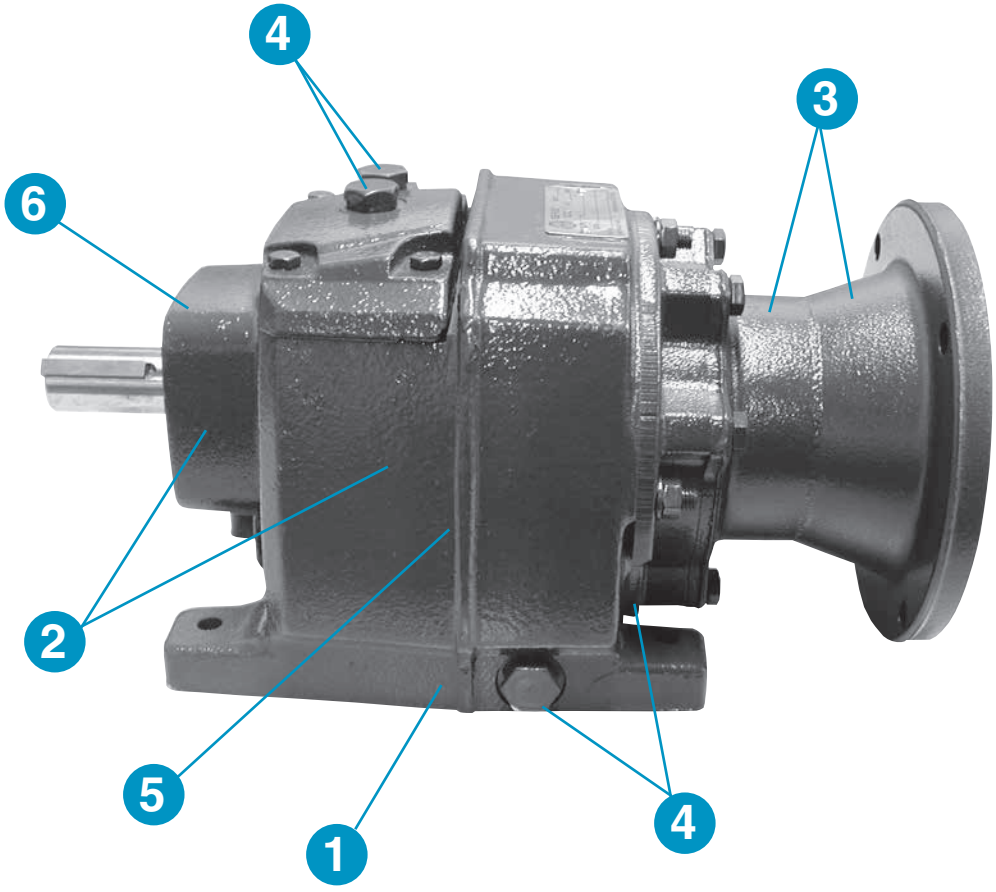
Single Reduction

Gear Frame	B14 Face Mount	Flange Mount
30	0	1
31	-1	3
32	-1	4
33	-1	8
34	-2	8
35	-2	9

Multiple and Combined

Gear Frame	B14 Face Mount	Flange Mount
30	0	1
31	-1	2
32	-1	4
33	-3	8
34	-5	8
35	-6	9
36	0	21
37	0	21
38	0	35

Type CbN Helical In-line Series 3000 Speed Reducer Features...



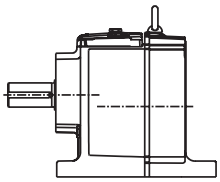
Design Features

1. Gear reducers are delivered factory filled with synthetic hydrocarbon lubricant.
2. Cast one-piece housing/endshield construction provides added strength and rigidity.
3. Series 3000 C-Face reducers utilize compact quill construction with two bearings for support and the quill has a non-metallic liner to eliminate fretting.
4. Oversized plugs and magnetic drain plug make normal maintenance easier. Dipstick provided on frames >35 to simplify oil checks
5. All gears are keyed to shafts and finished to provide quiet operation.
6. Oversized bearings are used to help provide longer life.

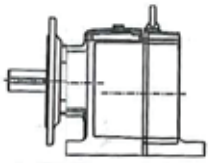
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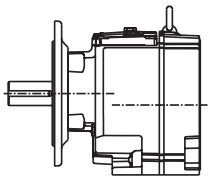
Mounting Versatility and Size Range



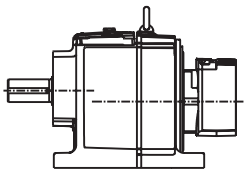
Foot Mount
1, 2, 3 stages
Frames 0 – 8
Max. 134,00 in. lbs.



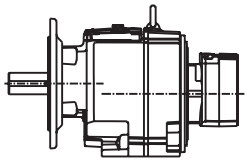
Footed with Flange
1, 2, 3 stages
Frames 1 – 5
Max. 27,000 in. lbs.



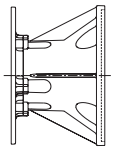
Flange and Face
1, 2, 3 stages
Frames 0 – 8
Max. 134,000 in. lbs.



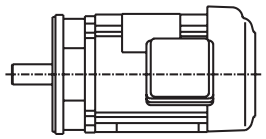
Foot Mount
4, 5, 6 stages
Frames 2 – 8
Max. 134,000 in. lbs.



Flange Mount
4, 5, 6 stages
Frames 2 – 8
Max. 134,000 in. lbs.



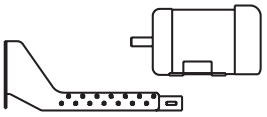
NEMA C-Face
56C to 365TC
Frames 0 – 8



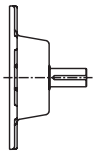
C-Face Motors
Frames 56 - 365TC

Backstop Option **

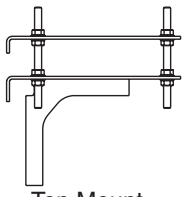




Scoop Mount
Frames 2 - 8*
56 to 326T



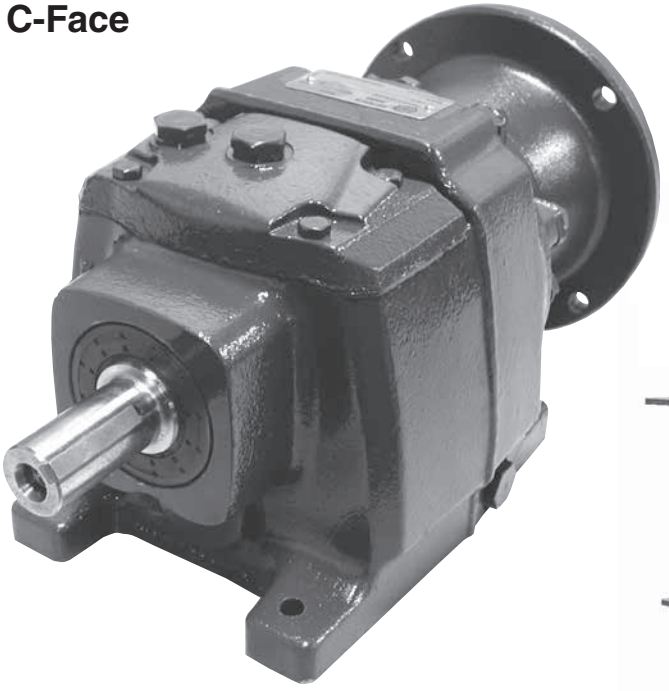
Input Shaft
Frames 0 – 8



Top Mount
Frames 2 - 8*
56 to 326T

* Refer to page A-122 for availability of this style of reducer for any single and combined stage product
** Excluding all Frame 0 and Frames 2 and 3 combined

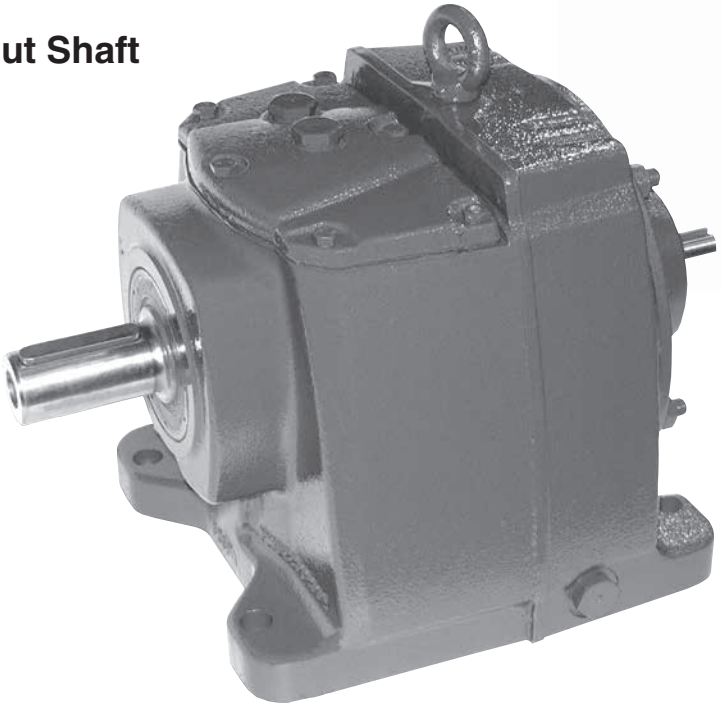
C-Face



Top Mount



Input Shaft



Selection

Selection Information

1. Input HP
- Based on application data.

2. Speed/Ratio
- Obtain either desired output speed (RPM) or gearbox ratio based on application.

3. Service Factor
- Determine the required service factor using either the AGMA application classification chart (pages A-123 to A-125), or the duration of operation, load type, and drive type with the table below:

Prime Mover	Hours of Operation	Uniform Load U	Moderate Shock Load M	Heavy Shock Load V
Electric Motor	0 - 3	0.80	1.00	1.50
	3 - 10	1.00	1.25	1.75
	10 - 24	1.25	1.50	2.00
Internal Combustion Engine	0 - 3	1.00	1.25	1.75
	3 - 10	1.25	1.50	2.00
	10 - 24	1.50	1.75	2.25

Size Selection

Step 1
- Locate speed reducer selection tables (pages A-126 to A-143) based on input speed to gearbox.

Step 2
- Choose the nominal ratio appropriate for the output speed required.

Step 3
- Select the gear unit size for the chosen ratio and the known input speed so that the mechanical power rating P (hp) satisfies the following:

$$P \geq P_m \times SF$$

P = mechanical power rating (hp) of gearbox

P_m = motor power (hp)

SF = required service factor

Note: Size selection based on absorbed power (Pa) or absorbed torque (Ta) at the low speed shaft instead of motor power (Pm) is allowed when the former is known with sufficient accuracy and if the number of start operations is limited. When Ta is applied in size selection, verify if:

$$T \geq T_a \times SF$$

T = torque rating (in. lbs.) at low speed shaft

T_a = absorbed torque (in. lbs.) from load at low speed shaft

SF = required service factor

Size Selection (cont.)

Step 4
- Verify overhung load ratings where required (see page A-118).

Example

1. Application Data

Rotary lobe pump, 10+ hours per day, speed reducer direct coupled to load, foot mounted, 1.25 service factor.

Motor rating: 7 1/2 HP, 1750 RPM, 213TC frame footed[1].

Output speed: 280 RPM

2. Size Selection

280 RPM required output	
Equals 6.3:1 nominal ratio	6.1 **3242** Example 10.45 2208
P_m x SF = P	
7.5 HP x 1.25 = 9.4 HP	
3242 (10.45 HP) > 9.4 HP	pg. A-126
Select CbN 3242 [1]	

(There are no thermal or OHL considerations.)

3. Catalog Designation
(see "ordering" page A-119)

CbN • 3242 • S • B3 • 6.3 • U • 213TC

[1] CbN frame 3242 with 210TC motor required a footed motor with motor outboard foot supported.

Overhung Load Capacities

When a sprocket, sheave, pulley or pinion is mounted on any shaft of a reducer, it is necessary to calculate the overhung load. This calculated load must be compared with the gearbox capacity listed to make sure the gearbox will not be overloaded. To calculate the overhung load you need to know the torque or horsepower at the take-off shaft and the location along the shaft at which the load is applied.

A. If torque is known:

$$OHL = \frac{T \times K \times LLF}{r}$$

B. If horsepower is known:

$$OHL = \frac{63025 \times HP \times K \times LLF}{RPM \times r}$$

OHL capacities are calculated at gear capacity rounded to the closest motor HP at mid shaft. For capacity when HP is known, refer to gearmotor selection tables.

Where:

OHL = Overhung load (pounds)
T = Torque (in. lbs.)
r = Radius of driving member (in.)
HP = Horsepower
K = Drive type factor
LLF = Load location factor

Driving Member	Value of K
Chain Drive	1.00
Pinion	1.25
Timing Belt	1.25
V-Belt	1.50
Flat Belt	2.50

Load Location	Value of LLF
End of shaft extension	1.20
Center of shaft extension	1.00
Shaft extension shoulder	0.80

Single Reduction Overhung Load (lbs.)

Output R.P.M.	Reducer Size					
	0	1	2	3	4	5
	30	31	32	33	34	35
>1000	84	222	230	500	580	802
801-1000	80	229	250	600	615	757
551-800	75	240	288	648	674	1041
451-550	54	320	360	668	874	1234
351-450	33	334	370	806	1244	1495
<350	153	366	457	786	1560	1744

Multiple Reduction Overhung Load (lbs.)

Output R.P.M.	Reducer Size											
	0	1		2		3		4	5	6	7	8
	3012	3122	313X	3242	325X	336X	337X	34	35	36	37	38
301-450	-	455	-	460	-	890	-	1755	1983	6200	9800	15963
201-300	-	469	-	557	-	1200	-	1829	2065	6400	10300	16165
151-200	129	591	619	670	699	1233	1233	2013	2065	7100	10800	16647
101-150	138	603	649	685	692	1296	1296	2015	2163	7700	11350	16610
51-100	388	701	714	850	856	1305	1305	2472	2213	9620	14400	17710
31-50	600	-	1030	-	1105	-	1305	3424	3733	12300	18558	22000
16-30	600	-	1297	-	1357	-	1905	3670	4580	13620	18558	22000
<15	600	-	1345	-	1610	-	1905	4340	4580	13620	18558	22000

Minimum OHL capacity based on minimum recommended sheave diameter and unit driven by maximum motor HP.

Catalog Nomenclature

CbN • 3122 • S • B3 • 40 • U • 143TC

See below and next page prior to ordering

See page 122 prior to ordering

Series	Gear Frame	Number of Reductions	Mounting Configuration For Gear (housing and Shaft Extension)	Mounting Position	Nom. Gear Ratio	Gear Input	Motor Frame
3 = 3000	0	1 = 1 stage	Refer to the illustrations below of the basic mounting options based on gear frame and stages of reduction. For any Foot with Flange or Flanged gear mounting, refer to details for options that are available on A-120 based on frame size, flange dimensions, and thrust loads for the application	See Page A-121	Determine from selection pages	AP = Input shaft AD = Input shaft w/backstop* SP = Scoop mount SD = Scoop mount w/backstop* U = C-face UD = C-face w/backstop* TM = Top mount TD = Top mount w/backstop*	Req'd for any order for c-face or scoop reducer
	1	2 = 2 stages					
	2	3 = 3 stages					
	3	4 = 4 stages					
	4	5 = 5 stages					
	5	6 = 6 stages					
	6						
	7						
	8						

* For units with backstops, specify output shaft rotation facing the output shaft extension.



Gear Output	Foot Mounted	Foot Mounted (w/ flange)	Flange Mount (footless)		Face Mount (footless)
			Std. Thrust	High Thrust	
Configuration Code (inches)	**S**[1]	See Page A-120	See Page A-120	See Page A-120	**B14**
Frame(s) Available	All	See Page A-120	All	See Page A-120	30 - 35

[1] Inch ouput shaft. For output with metric shaft, insert "M" following last alpha character (i.e. metric footmount, S becomes SM).

Browning

Flange Mounted Gearing and Availability Guide

CbN SERIES 3000

Flange - No Feet

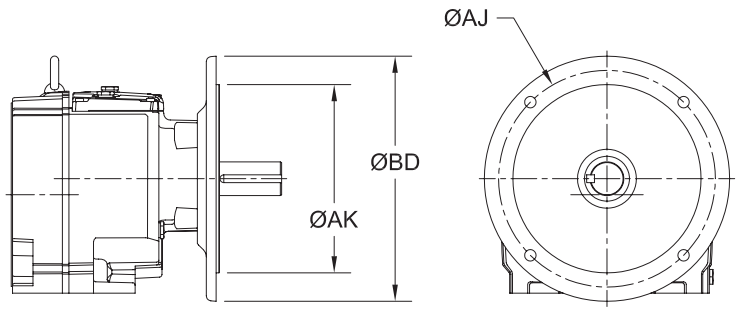
		Output Flange Dimensions Available												
	Reduction Stages		Inches	MM										
		BD	6.50	120	140	160	200	250	300	350	400	450	550	650
		AK	4.50	80	95	110	130	180	230	250	300	350	450	550
		AJ	5.875	100	115	130	165	215	254	300	350	400	500	600
		Gear Frame												
Normal Thrust	Single	30	56C	BD1	BS	BD2	BD3							
		31			BD2	BS								
		32				BD2	BS							
		33					BD2	BS						
		34						BD2	BS					
		35							BD2	BS				
	Multiple	30	56C	BD1	BS	BD2	BD3							
		31		BD3	BD2	BD1	BS							
		32				BD2	BD1	BS						
		33					BD2	BD1	BS					
		34						BD2	BD1	BS				
		35							BD2	BD1	BS			
		36										BD1	BS	
		37										BD1	BS	
		38											BD1	BS
High Thrust	Multiple	33						BR						
		34							BR					
		35								BR				

Footed - with Flange

		Output Flange Dimensions Available												
	Reduction Stages		Inches	MM										
		BD	6.50	120	140	160	200	250	300	350	400	450	550	650
		AK	4.50	80	95	110	130	180	230	250	300	350	450	550
		AJ	5.875	100	115	130	165	215	254	300	350	400	500	600
		Gear Frame												
Normal Thrust	Single	31			SBD2	SBS								
		32				SBD2	SBS							
		33					SBD2	SBS						
		34						SBD2	SBS					
		35							SBD2	SBS				
	Multiple	30A		SBD1	SBS									
		31		SBD3	SBD2	SBD1								
		32					SBD1	SBS						
		33						SBD1	SBS					
		34							SBD1	SBS				
		35								SBD1	SBS			
		36										SBD1	SBS	
		37										SBD1	SBS	
		38											SBD1	SBS

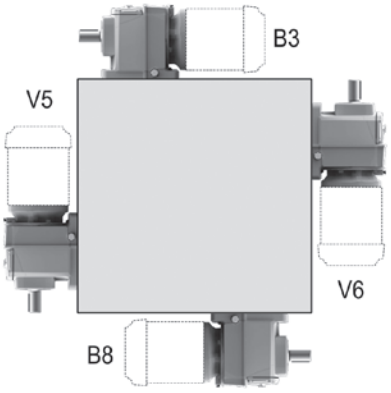
Shaded fields indicate factory lead-time applies

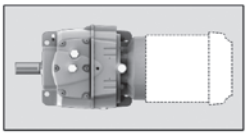
Note: For metric output shaft on any output nomenclature above, add "M" before any numeric designator. (i.e. metric shaft with BD1 flange = BDM1)

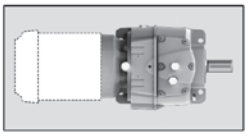


Mounting Positions

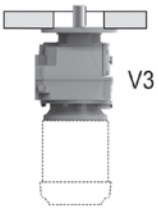
Foot Mounted (with/without flange) Any Reduction

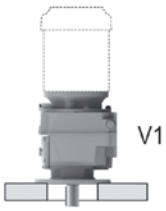


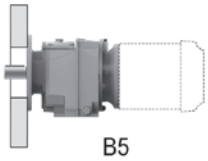




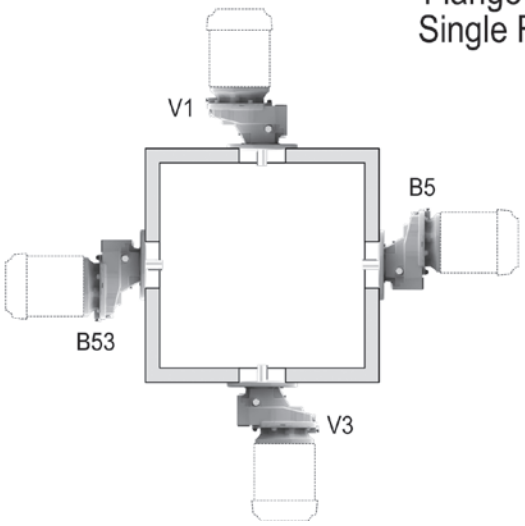
Flange Mounted (footless) Multiple Reductions

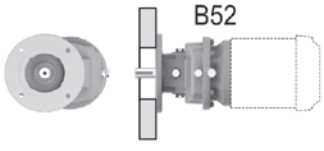


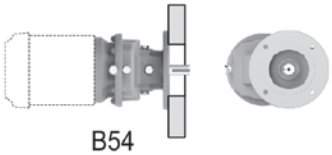




Flange Mounted Single Reduction







Browning

Reducers Availability

CbN SERIES 3000

C-Face Reducer Availability

Gear Frame	Reduction Stages	AC Motor Frames Sizes							
		56C	140TC	180TC	210TC	250TC	280TC	320TC	360TC
30	1,2,3	X	X [1]	-	-	-	-	-	-
31	1,2,3	X	X	X [3]	-	-	-	-	-
32	1,2.3	X	X	X	X [3]	-	-	-	-
	4,5	X				-	-	-	-
33	1,2,3	X	X	X	X [2]	-	-	-	-
	4,5	X	X	-	-	-	-	-	-
34	1,2,3	X	X	X	X	X	X [3]		
	4,5	X	X	-	-	-	-	-	-
35	1	X	X	X	X	X	X [3]	X [3]	-
	2,3	X	X	X	X	X	X	X [3]	-
	4,5	X	X	X	-	-	-	-	-
36	2,3	-	X	X	X	X	X	X	-
	4,5,6	X	X	X	-	-	-	-	-
37	2,3	-	-	X	X	X	X	X	X
	4,5,6	X	X	X	X	-	-	-	-
38	3	-	-	-	X	X	X	X	X
	4,5,6	X	X	X	X	X	-	-	-

Scoop Mount Reducer Availability

Gear Frame	Reduction Stages	AC Motor Frames Sizes						
		56	140T	180T	210T	250T	280T	320T
32	2,3	X	X	-	-	-	-	-
33	2,3	X	X	X	-	-	-	-
34	1,2,3	-	X	X	X	-	-	-
35	1	-	-	X	X	X	-	-
	2,3	-	X	X	X	X	X	-
36	2,3	-	-	X	X	X	X	X
	4,5,6	-	X	-	-	-	-	-
37	2,3	-	-	X	X	X	X	X
	4,5,6	-	X	-	-	-	-	-
38	2, 3	-	-	-	-	X	X	X
	4,5,6	-	X	X	X	-	-	-

Top Mount Reducer Availability

Gear Frame	Reduction Stages	AC Motor Frames Sizes						
		56	140T	180T	210T	250T	280T	320T
32	2,3	X	X	X	-	-	-	-
33	2,3	X	X	X	X	-	-	-
34	1		X	X	X	-	-	-
	2,3	-	X	X	X	X	-	-
35	1	-	X	X	X	X	X	-
	2,3	-	X	X	X	X	X	-
36,37	2,3	-	-	X	X	X	X	X
	4,5,6	-	-	-	-	-	-	-
38	2, 3	-	-	-	X	X	X	X
	4,5,6		-	-	-	-	-	-

[1] Not available on 3012 with ratios of 31.5, 35.5, 40,45. Use frame 3013 in these requirements
[2] When using this frame with 3301 gear, a footed motor with outboard foot supported.
[3] Motor selected must be a footed C-face motor with outboard foot supported

Backstop can be supplied in this input.

AGMA Application Classifications

U: Uniform load **M: Moderate shock load** **V: Heavy shock load**

Application	Load Class	Up to 3 hrs/day	Up to 10 hrs/day	Over 10 hrs/day
Agitators (Mixers)				
Pure Liquids		—	1.00	1.25
Liquids & Solids		1.00	1.25	1.50
Liquids - Variable Density		1.00	1.25	1.50
Blowers				
Centrifugal		1.00	1.25	—
Lobe		1.00	1.25	1.50
Vane		—	1.00	1.25
Brewing and Distillers				
Bottling Machinery		—	1.00	1.25
Brew Kettles, Continuous Duty		—	1.00	1.25
Cookers - Continuous Duty		—	1.00	1.25
Mash Tubs - Continuous Duty		—	1.00	1.25
Scale Hoppers, Frequent Starts		1.00	1.25	1.50
Can Filling Machines		—	1.00	1.25
Car Dumpers		1.25	1.50	1.75
Car Pullers		1.00	1.25	1.50
Clarifiers		—	1.00	1.25
Classifiers		1.00	1.25	1.50
Clayworking Industry				
Brick Press		1.25	1.50	1.75
Briquette Machine		1.25	1.50	1.75
Pug Mill		1.00	1.25	1.50
Compactors		1.50	1.75	2.00
Compressors				
Centrifugal		—	1.00	1.25
Lobe		1.00	1.25	1.50
Reciprocating, Multi - Cylinder		1.00	1.25	1.50
Reciprocating, Single - Cylinder		1.25	1.50	1.75
Conveyors - General Purpose				
Uniformly Loaded or Fed		—	1.00	1.25
Not Uniformly Fed		1.00	1.25	1.50
Reciprocating or Shaker		1.25	1.50	1.75
Cranes				
Dry Dock				
Main Hoist		1.25	1.50	1.75
Auxiliary		1.25	1.50	1.75
Boom Hoist		1.25	1.50	1.75
Slewing Drive		1.25	1.50	1.75
Traction Drive		1.50	1.50	1.50
Container				
Main Hoist		Refer To Application Engineering		

Application	Load Class	Up to 3 hrs/day	Up to 10 hrs/day	Over 10 hrs/day
Cranes (Continued)				
Boom Hoist		Refer To Application Engineering		
Trolley Drive		Refer To Application Engineering		
(Gantry Drive)				
(Traction Drive)		Refer To Application Engineering		
Mill Duty				
Main		Refer To Application Engineering		
Auxiliary		Refer To Application Engineering		
Bridge & Trolley Travel		Refer To Application Engineering		
Industrial Duty				
Main		1.25	1.50	1.75
Auxiliary		Refer To Application Engineering		
Bridge & Trolley Travel		Refer To Application Engineering		
Crusher				
Stone or Ore		1.50	1.75	2.00
Dredges				
Cable Reels		1.00	1.25	1.50
Conveyors		1.00	1.25	1.50
Cutter Head Drives		1.25	1.50	1.75
Pumps 1.00		1.25	1.50	
Screen Drives		1.25	1.50	1.75
Stackers		1.00	1.25	1.50
Winches		1.00	1.25	1.50
Elevators				
Bucket		1.00	1.25	1.50
Centrifugal Discharge		—	1.00	1.25
Escalators		Refer To Application Engineering		
Freight		Refer To Application Engineering		
Gravity Discharge		—	1.00	1.25
Extruders				
General		1.25	1.25	1.25
Plastics				
(a) Variable Speed Drive		1.50	1.50	1.50
(b) Fixed Speed Drive		1.75	1.75	1.75
Rubber				
(a) Continuous Screw Operation		1.50	1.50	1.50
(b) Intermittent Screw Operation		1.75	1.75	1.75
Fans				
Centrifugal		—	1.00	1.25
Cooling Towers		Refer To Application Engineering		
Forced Draft		1.25	1.25	1.25
Induced Draft		1.00	1.25	1.50
Industrial & Mine		1.00	1.25	1.50

Browning®

Speed Reducers

CbN SERIES 3000

AGMA Application Classifications

U: Uniform load **M: Moderate shock load** **V: Heavy shock load**

Application	Load Class Up to 3 hrs/day	Up to 10 hrs/day	Over 10 hrs/day
Feeders			
Apron	—	1.25	1.50
Belt	1.00	1.25	1.50
Disc	—	1.00	1.25
Reciprocating	1.25	1.50	1.75
Screw	1.00	1.25	1.50
Food Industry			
Cereal Cooker	—	1.00	1.25
Dough Mixers	1.00	1.25	1.50
Meat Grinders	1.00	1.25	1.50
Slicers	1.00	1.25	1.50
Generators and Executors	—	1.00	1.25
Hammer Mills	1.50	1.50	1.75
Hoists			
Heavy Duty	1.25	1.50	1.75
Medium Duty	1.00	1.25	1.50
Skip Hoist	1.00	1.25	1.50
Laundry Tumblers	1.00	1.25	1.50
Laundry Washers	1.00	1.25	1.50
Lumber Industry			
Barkers			
- Spindle Feed	1.25	1.25	1.25
- Main Drive	1.50	1.50	1.50
Conveyors			
- Burner	1.25	1.25	1.50
- Main or Heavy Duty	1.50	1.50	1.50
- Main Log	1.50	1.50	1.50
- Re-Saw, Merry-Go-Round	1.25	1.25	1.50
- Slab	1.50	1.50	1.75
- Transfer	1.25	1.25	1.50
Chains			
- Floor	1.50	1.50	1.50
- Green	1.50	1.50	1.50
Cut-Off Saws			
- Chain	1.50	1.50	1.50
- Drag	1.50	1.50	1.50
Debarking Drums	1.50	1.50	1.75
Feeds			
- Edger	1.25	1.25	1.50
- Gang	1.50	1.50	1.50
- Trimmer	1.25	1.25	1.50
Log Deck	1.50	1.50	1.50
Log Hauls - Incline-Well Type	1.50	1.50	1.50
Log Turning Devices	1.50	1.50	1.50
Planner Feed	1.25	1.25	1.25
Planer Tilting Hoists	1.50	1.50	1.50
Rolls - Live-Off Bearing.-Roll Cases	1.50	1.50	1.50
Sorting Table	1.25	1.25	1.50
Tipple Hoist	1.25	1.25	1.50
Transfers			
- Chain	1.50	1.50	1.50
- Causeway	1.50	1.50	1.50
Tray Drives	1.25	1.25	1.50
Veneer Lathe Drives	Refer To Application Engineering		

Application	Load Class Up to 3 hrs/day	Up to 10 hrs/day	Over 10 hrs/day
Metal Mills			
Draw Bench Carriage & Main Drive	1.00	1.25	1.50
Runout Table			
Non-reversing			
Group Drives	1.00	1.25	1.50
Individual Drives	1.50	1.50	1.75
Reversing	1.50	1.50	1.75
Slab Pushers	1.25	1.25	1.50
Shears	1.50	1.50	1.75
Wire Drawing	1.00	1.25	1.50
Wire Winding Machine	1.00	1.25	1.50
Metal Strip Processing Machinery			
Bridles	1.25	1.25	1.50
Coilers & Uncoilers	1.00	1.00	1.25
Edge Trimmers	1.00	1.25	1.50
Flatteners	1.00	1.25	1.50
Loopers (Accumulators)	1.00	1.00	1.00
Pinch Rolls	1.00	1.25	1.50
Scrap Choppers	1.00	1.25	1.50
Shears	1.50	1.50	1.75
Slitters	1.00	1.25	1.50
Mills, Rotary Type			
Ball & Rod			
Spur Ring Gear	1.50	1.50	1.75
Helical Ring Gear	1.50	1.50	1.50
Direct Connected	1.50	1.50	1.75
Cement Kilns	1.50	1.50	1.50
Dryers & Coolers	1.50	1.50	1.50
Mixers, Concrete	1.00	1.25	1.50
Paper Mills			
Agitator (Mixer)	1.50	1.50	1.50
Agitator for Pure Liquids	1.25	1.25	1.25
Barkers - Mechanical	1.75	1.75	1.75
Barking Drums	1.75	1.75	1.75
Beater	1.50	1.50	1.50
Breaker Stack	1.25	1.25	1.25
❖ Calender	1.25	1.25	1.25
Chipper	1.75	1.75	1.75
Chip Feeder	1.50	1.50	1.50
Coating Rolls	1.25	1.25	1.25
Conveyors			
Chip, Bark, Chemical	1.25	1.25	1.25
Log (Including Slab)	1.75	1.75	1.75
Couch Rolls	1.25	1.25	1.25
Cutter	1.75	1.75	1.75
Cylinder Molds	1.25	1.25	1.25
❖ Dryers			
Paper Machine	1.25	1.25	1.25
Conveyor Type	1.25	1.25	1.25
Embosser	1.25	1.25	1.25
Extruder	1.50	1.50	1.50
Fourdrinier Rolls (Includes Lump Breaker, Dandy Roll, Wire Turning, and Return Rolls)	1.25	1.25	1.25
Jordan	1.25	1.25	1.25
Kiln Drive	1.50	1.50	1.50
Mt. Hope Roll	1.25	1.25	1.25

AGMA Application Classifications

U: Uniform load **M: Moderate shock load** **V: Heavy shock load**

Application	Load Class Up to 3 hrs/day	Load Class Up to 10 hrs/day	Load Class Over 10 hrs/day
Paper Mills (Continued)			
Paper Rolls	1.25	1.25	1.25
Platter	1.50	1.50	1.50
Presses - Felt & Suction	1.25	1.25	1.25
Pulper	1.50	1.50	1.75
Pumps - Vacuum	1.50	1.50	1.50
Reel (Surface Type)	1.25	1.25	1.50
Screens			
Chip	1.50	1.50	1.50
Rotary	1.50	1.50	1.50
Vibrating	1.75	1.75	1.75
Size Press	1.25	1.25	1.25
Super Calender (See Note)	1.25	1.25	1.25
Thickner			
(AC Motor)	1.50	1.50	1.50
(DC Motor)	1.25	1.25	1.25
Washer			
(AC Motor)	1.50	1.50	1.50
(DC Motor)	1.25	1.25	1.25
Wind and Unwind Stand	1.00	1.00	1.00
Winders (Surface Type)	1.25	1.25	1.25
❖ Yankee Dryers	1.25	1.25	1.25
Plastics Industry - Primary Processing			
Intensive Internal Mixers			
(a) Batch Mixers	1.75	1.75	1.75
(b) Continuous Mixers	1.50	1.50	1.50
Batch Drop Mill - 2 Smooth Rolls	1.25	1.25	1.25
Continuous Feed, Holding & Blend Mill	1.25	1.25	1.25
Compounding Mills	1.25	1.25	1.25
Calenders	1.50	1.50	1.50
Plastics Industry - Secondary Processing			
Blow Molders	1.50	1.50	1.50
Coating	1.25	1.25	1.25
Film	1.25	1.25	1.25
Pipe	1.25	1.25	1.25
Pre-Plasticizers	1.50	1.50	1.50
Rods	1.25	1.25	1.25
Sheet	1.25	1.25	1.25
Tubing	1.25	1.25	1.50
Pullers - Barge Haul	1.00	1.50	1.75
Pumps			
Centrifugal	—	1.00	1.25
Proportioning	1.00	1.25	1.50
Reciprocating			
Single Acting, 3 or more cylinders	1.00	1.25	1.50
Double Acting, 2 or more cylinders	1.00	1.25	1.50
Rotary			
- Gear	—	1.00	1.50
- Lobe	—	1.00	1.25
- Vane	—	1.00	1.25

Application	Load Class Up to 3 hrs/day	Load Class Up to 10 hrs/day	Load Class Over 10 hrs/day
Rubber Industry			
Intensive Internal Mixers			
(a) Batch Mixers	1.50	1.75	1.75
(b) Continuous Mixers	1.25	1.50	1.50
Mixing Mill - 2 Smooth Rolls - (If corrugated rolls are used, (then use the same service factors that are used for a Cracker-Warmer)	1.50	1.50	1.50
Batch Drop Mill - 2 Smooth Rolls	1.50	1.50	1.50
Cracker Warmer - 1 Corrugated Roll	1.75	1.75	1.75
Cracker - 2 Corrugated Rolls	1.75	1.75	1.75
Holding, Feed & Blend Mill - 2 Rolls	1.25	1.25	1.25
Refiner - 2 Rolls	1.50	1.50	1.50
Calenders	1.50	1.50	1.50
Sand Miller	1.00	1.25	1.50
Sewage Disposal			
Bar Screens	—	1.00	1.25
Chemical Feeders	—	1.00	1.25
Dewatering Screens	1.00	1.25	1.50
Scum Breakers	1.00	1.25	1.50
Slow or Rapid Mixers	1.00	1.25	1.50
Sludge Collectors	1.00	1.00	1.25
Thickeners	1.00	1.25	1.50
Vacuum Filters	1.00	1.25	1.50
Screens			
Air Washing	—	1.00	1.25
Rotary - Stone or Gravel	1.00	1.25	1.50
Traveling Water Intake	—	1.00	1.25
Sugar Industry			
Beet Slicer	1.50	1.50	1.75
Cane Knives	1.50	1.50	1.50
Crushers	1.50	1.50	1.50
Mills (Low Speed End)	1.50	1.50	1.50
Textile Industry			
Batchers	1.00	1.25	1.50
Calenders	1.00	1.25	1.50
Cards	1.00	1.25	1.50
Dry Cans	1.00	1.25	1.50
Dryers	1.00	1.25	1.50
Dyeing Machinery	1.00	1.25	1.50
Looms	1.00	1.25	1.50
Mangles	1.00	1.25	1.50
Nappers	1.00	1.25	1.50
Pads	1.00	1.25	1.50
Slashers	1.00	1.25	1.50
Soapers	1.00	1.25	1.50
Spinners	1.00	1.25	1.50
Tenter Frames	1.00	1.25	1.50
Washers	1.00	1.25	1.50
Winders	1.00	1.25	1.50

❖ Anti-friction bearings only.

NOTE: A service factor of 1.0 may be applied at the base of a super calender, operating over a speed range where part of the range is constant horsepower and part of the range is constant torque, provided that the constant horsepower part is greater than 1.5 to 1. A service factor of 1.25 is applicable to super calenders operating over the entire speed range at constant torque, or where the constant horsepower speed range is less than 1.5 to 1.

Browning

Speed Reducers

Motor RPM 1750

CbN SERIES 3000

Exact Ratio rpm, HP and Torque

rpm	Nom. Ratio	Size of CbN 3000 Reducer											
		0		1			2			3			
1400	1.25	1.24	**3001**	1.22	**3101**		1.23	**3201**		1.26	**3301**		
		3.06	134	6.78	292		11.98	520		14.42	643		
1250	1.4	1.46	**3001**	1.38	**3101**		1.45	**3201**		1.46	**3301**		
		3.06	158	6.37	310		11.06	567		13.73	706		
1094	1.6	1.54	**3001**	1.56	**3101**		1.55	**3201**		1.61	**3301**		
		3.06	166	6.15	338		11.39	623		13.43	761		
972	1.8	1.83	**3001**	1.76	**3101**		1.75	**3201**		1.77	**3301**		
		3.06	198	5.91	367		10.58	654		12.83	803		
875	2	1.96	**3001**	2	**3101**		1.94	**3201**		2.04	**3301**		
		3.06	212	5.65	399		10.35	708		14.33	1030		
781	2.24	2.19	**3001**	2.29	**3101**		2.21	**3201**		2.25	**3301**		
		3.06	237	5.37	434		9.08	708		13.63	1083		
700	2.5	2.55	**3001**	2.58	**3101**		2.55	**3201**		2.58	**3301**		
		3.06	275	4.86	442		7.88	708		13.96	1273		
625	2.8	2.75	**3001**	2.74	**3101**		2.77	**3201**		2.91	**3301**		
		3.06	297	4.58	443		7.37	708		11.99	1232		
556	3.15	3.24	**3001**	3.25	**3101**		3.09	**3201**		3.16	**3301**		
		2.98	340	3.86	442		6.5	708		10.1	1127		
493	3.55	3.63	**3001**	3.44	**3101**		3.43	**3201**		3.52	**3301**		
		2.72	348	3.65	442		5.85	708		9.79	1217		
438	4	4.08	**3001**	3.93	**3101**		3.89	**3201**		3.95	**3301**		
		2.58	372	3.19	442		5.15	708		9.42	1315		
				3.91	**3122**		3.87	**3242**		3.96	**3362**		
				6.78	916		16.04	2150		26.24	3615		
389	4.5	4.58	**3001**	4.36	**3101**		4.33	**3201**		4.47	**3301**		
		2.24	362	2.86	442		4.63	708		8.4	1327		
				4.43	**3122**		4.57	**3242**		4.59	**3362**		
				6.32	969		13.94	2208		22.74	3615		
350	5	5.17	**3001**	4.92	**3101**		4.88	**3201**		4.87	**3301**		
		1.05	192	2.55	442		4.11	708		7.73	1327		
				4.99	**3122**		4.88	**3242**		5.06	**3362**		
				6.14	1061		13.07	2208		20.64	3615		
313	5.6	5.82	**3001**	5.69	**3101**		5.71	**3201**		5.5	**3301**		
		1.05	216	2.2	442		3.51	708		6.78	1315		
				5.65	**3122**		5.51	**3242**		5.59	**3362**		
				5.9	1155		11.57	2208		18.68	3615		
278	6.3	6.4	**3001**	6.25	**3101**		6.31	**3201**		6.33	**3301**		
		1	226	2.01	442		3.18	708		5.94	1327		
				6.42	**3122**		6.1	**3242**		6.41	**3362**		
				5.63	1251		10.45	2208		16.28	3615		
246	7.1	7.22	**3001**	7.17	**3101**		6.92	**3201**		7.06	**3301**		
		0.98	250	1	253		2.9	708		5.31	1327		
		7.38	**3012**	7.34	**3122**		6.96	**3242**		7.09	**3362**		
		2.69	683	4.93	1251		9.17	2208		14.73	3615		
219	8	8.13	**3001**	7.91	**3101**		8.06	**3201**		7.83	**3301**		
		0.88	252	1	279		2.48	708		4.8	1327		
		8.16	**3012**	8.28	**3122**	7.57	**3132**	8.02	**3242**	7.63	**3252**	8.14	**3362**	7.85	**3372**
		2.69	762	4.37	1252	5.18	1359	7.95	2208	10.28	2718	12.83	3615	21.22	5767
194	9	8.59	**3012**	8.79	**3122**	8.57	**3132**	8.57	**3242**	9.02	**3252**	9.16	**3362**	9.06	**3372**
		2.56	763	4.11	1252	4.79	1421	7.44	2208	9.26	2891	11.39	3615	19.35	6069
175	10	10.2	**3012**	10.43	**3122**	9.67	**3132**	9.72	**3242**	9.62	**3252**	9.95	**3362**	9.98	**3372**
		2.17	768	3.46	1252	4.42	1480	6.56	2208	8.84	2947	10.49	3615	18.13	6266

Exact ratio	**Gear frame**
Input H.P.	Output torque

Motor RPM 1750 (Continued)

Exact Ratio rpm, HP and Torque

rpm	Nom. Ratio	Size of CbN 3000 Reducer									
		4		5		6		7		8	
1400	1.25	1.24	**3401**	1.28	**3501**						
		38.4	1679	61.53	2770						
1250	1.4	1.38	**3401**	1.46	**3501**						
		41.22	2015	59.42	3062						
1094	1.6	1.56	**3401**	1.6	**3501**						
		41.74	2292	57.18	3230						
972	1.8	1.74	**3401**	1.79	**3501**						
		35.43	2171	55.44	3496						
875	2	1.97	**3401**	2	**3501**						
		36.29	2521	52.88	3735						
781	2.24	2.17	**3401**	2.25	**3501**						
		34.03	2610	50.13	3982						
700	2.5	2.54	**3401**	2.44	**3501**						
		30.62	2745	48.17	4152						
625	2.8	2.83	**3401**	2.77	**3501**						
		28.35	2836	46.17	4522						
556	3.15	3.18	**3401**	3.07	**3501**	3.21	**3602**				
		25.76	2894	42.96	4655	120	13318				
493	3.55	3.6	**3401**	3.55	**3501**	3.64	**3602**				
		22.84	2903	40.6	5088	120	15102				
438	4	4.11	**3401**	3.88	**3501**						
		20	2903	38.16	5221						
		3.91	**3482**	4.07	**3592**	3.88	**3602**				
		38.77	5249	66.63	9371	120	16098				
389	4.5	4.41	**3401**	4.35	**3501**						
		18.63	2903	33.97	5221						
		4.37	**3482**	4.66	**3592**	4.34	**3602**	4.39	**3732**		
		41.6	6299	66.63	10727	120	18006	120	18213		
350	5	5.13	**3401**	4.85	**3501**						
		16.01	2903	30.49	5221						
		4.91	**3482**	5.1	**3592**	4.91	**3602**	4.91	**3732**		
		42.14	7168	66.63	11960	120	20371	120	20371		
313	5.6	5.57	**3401**	5.5	**3501**						
		14.76	2903	26.29	5103						
		5.48	**3482**	5.7	**3592**	5.56	**3602**	5.63	**3732**	5.76	**3842**
		35.76	6786	57.53	11350	120	23068	120	23358	190	37853
278	6.3	6.15	**3401**	6.31	**3501**						
		13.36	2903	23.43	5221						
		6.21	**3482**	6.38	**3592**	6.15	**3602**	6.21	**3732**	6.36	**3842**
		36.63	7883	53.87	11903	120	25515	120	25764	190	41796
246	7.1	6.83	**3401**	6.87	**3501**						
		11.32	2730	21.54	5221						
		6.86	**3482**	7.18	**3592**	6.86	**3602**	7.04	**3732**	6.98	**3842**
		34.35	8160	48.81	12133	120	25923	120	29208	190	45871
219	8	8.1	**3401**	8	**3501**						
		9.47	2708	18.48	5221						
		7.69	**3482**	7.92	**3592**	7.71	**3602**	7.99	**3732**	8.15	**3842**
		38.77	10329	66.63	18252	101.9	27163	120	33149	190	53560
194	9	8.6	**3482**	9.07	**3592**	9.03	**3602**	9.09	**3732**	8.8	**3842**
		38.41	11446	64.65	20305	84.4	26350	120	37713	190	57831
175	10	9.67	**3482**	9.94	**3592**	9.63	**3602**	10.3	**3732**	10	**3842**
		35.65	11933	60.86	20956	93.4	31097	119.9	42697	190	65717

If shaded, mechanical H.P. may exceed thermal H.P. limit.
Refer to page A-144.

Exact ratio	**Gear frame**
Input H.P.	Output torque

Browning

Speed Reducers

CbN SERIES 3000

Motor RPM 1750 (Continued)

Exact Ratio rpm, HP and Torque

rpm	Nom. Ratio	Size of CbN 3000 Reducer											
		0		1			2			3			
156	11.2	10.92	**3012**	11.04	**3122**	10.94	**3132**	10.8	**3242**	10.88	**3252**	11.09	**3362**	11.03	**3372**
		2.03	769	3.28	1252	4.07	1542	5.9	2208	8.18	3082	9.41	3615	16.56	6330
140	12.5	12.23	**3012**	12.61	**3122**	12.43	**3132**	12.27	**3242**	12.04	**3252**	12.45	**3362**	12.65	**3372**
		1.82	772	2.87	1252	3.74	1609	5.2	2208	7.64	3186	8.39	3615	15.46	6774
125	14	14.24	**3012**	14.08	**3122**	14.2	**3132**	13.65	**3242**	13.72	**3252**	14.09	**3362**	13.98	**3372**
		1.57	776	2.57	1252	3.42	1681	4.67	2208	7.02	3335	7.41	3615	14.12	6839
109	16	15.35	**3012**	15.79	**3122**	16.03	**3132**	15.36	**3242**	15.82	**3252**	15.33	**3362**	16.05	**3372**
		1.46	777	2.29	1252	3.15	1750	4.15	2208	6.38	3492	6.81	3615	12.68	7052
97	18	18.06	**3012**	18.28	**3122**	17.01	**3132**	18	**3242**	16.9	**3252**	17.33	**3362**	18.08	**3372**
		1.25	781	1.98	1252	2.98	1753	3.54	2208	6.1	3571	6.03	3615	11.39	7132
88	20	20.24	**3012**	20.07	**3122**	20.2	**3132**	19.87	**3242**	19.18	**3252**	19.95	**3362**	19.64	**3372**
		1.12	783	1.8	1252	2.52	1762	3.21	2208	5.6	3719	5.23	3615	10.49	7132
78	22.4	22.76	**3012**	23.01	**3122**	21.36	**3132**	21.79	**3242**	21.31	**3252**	22.29	**3362**	21.89	**3372**
		1	786	1	796	2.39	1765	2.93	2208	5.22	3850	4.68	3615	9.41	7132
70	25	25.59	**3012**	25.39	**3122**	24.41	**3132**	25.44	**3242**	24.2	**3252**	24.68	**3362**	24.56	**3372**
		0.89	787	1	878	2.09	1771	2.51	2208	4.72	3952	4.23	3615	8.39	7132
63	28	28.85	**3012**			27.25	**3132**			26.93	**3252**			27.8	**3372**
		0.79	789			1.88	1776			4.25	3964			7.41	7132
56	31.5	33.48	**3012**			30.55	**3132**			30.29	**3252**	32.32	**3363**	30.24	**3372**
		0.7	791			1.68	1780			3.79	3977	5.4	5910	6.81	7132
49	35.5	35.73	**3012**			35.37	**3132**			35.51	**3252**	37.29	**3363**	34.18	**3372**
		0.64	793			1.46	1786			3.25	3993	4.73	5965	6.03	7132
44	40	40.32	**3012**			38.84	**3132**			39.2	**3252**	41.1	**3363**	39.36	**3372**
		0.57	794			1.33	1790			2.95	4002	4.3	6010	5.23	7132
39	45	45.36	**3012**			44.54	**3132**			42.98	**3252**	45.4	**3363**	43.98	**3372**
		0.51	796			1	1540			2.69	4010	3.97	6070	4.68	7132
35	50	49.16	**3013**			49.15	**3132**			50.19	**3252**	52.09	**3363**	48.68	**3372**
		0.53	796			1	1699			2.32	4024	3.46	6100	4.23	7132
31	56	55.04	**3013**			57.83	**3133**			55.7	**3253**	57.6	**3363**	57.57	**3373**
		0.47	798			0.69	1351			2.13	4032	3.13	6100	3.77	7383
28	63	64.07	**3013**			65.25	**3133**			64.2	**3253**	66.11	**3363**	66.1	**3373**
		0.4	800			0.63	1406			1.85	4038	2.73	6100	3.36	7525
25	71	69.09	**3013**			69.24	**3133**			68.61	**3253**	74.4	**3363**	74.44	**3373**
		0.37	801			0.61	1434			1.73	4038	2.42	6100	3.02	7611
22	80	81.29	**3013**			82.23	**3133**			77.86	**3253**	80.86	**3363**	80.87	**3373**
		0.32	803			0.54	1519			1.53	4038	2.2	6100	2.78	7611
19	90	91.08	**3013**			86.97	**3133**			86.48	**3253**	90.12	**3363**	90.1	**3373**
		0.29	804			0.52	1547			1.37	4038	2	6100	2.5	7611
18	100	102.43	**3013**			99.4	**3133**			98.24	**3253**	101.13	**3363**	101.13	**3373**
		0.25	806			0.48	1618			1.21	4038	1.78	6100	2.22	7611
16	112	115.16	**3013**			110.94	**3133**			109.3	**3253**	114.47	**3363**	114.47	**3373**
		0.23	807			0.45	1678			1.09	4038	1.57	6100	1.96	7611
14	125	129.81	**3013**			124.4	**3133**			122.96	**3253**	124.53	**3363**	124.53	**3373**
		0.2	808			0.41	1744			0.97	4038	1.45	6100	1.8	7611
12.5	140	146.18	**3013**			144.02	**3133**			144.13	**3253**	141	**3363**	140.74	**3373**
		0.18	809			0.37	1804			0.82	4038	1.28	6100	1.6	7611
10.9	160	160.8	**3013**			158.13	**3133**			159.1	**3253**	162.1	**3363**	162.06	**3373**
		0.17	810			0.34	1804			0.75	4038	1.1	6100	1.39	7611
9.7	180	181.46	**3013**			181.32	**3133**			174.46	**3253**	181	**3363**	181.09	**3373**
		0.14	811			0.29	1804			0.68	4038	1	6100	1.24	7611
8.8	200	204.14	**3013**			200.11	**3133**			203.72	**3253**	200.44	**3363**	200.44	**3373**
		0.13	812			0.27	1804			0.58	4038	0.9	6100	1.12	7611

Exact ratio	**Gear frame**
Input H.P.	Output torque

Motor RPM 1750 (Continued)

Exact Ratio rpm, HP and Torque

rpm	Nom. Ratio	Size of CbN Reducer									
		4		5		6		7		8	
156	**11.2**	10.78	**3482**	11.1	**3592**	10.9	**3602**	11	**3732**	11.1	**3842**
		33.16	12381	56.06	21544	84.1	31693	120	45637	190	72946
140	**12.5**	12.23	**3482**	12.43	**3592**	12.1	**3602**	12.2	**3732**	12.5	**3842**
		30.33	12844	52.23	22478	76.6	32045	120	50616	190	82147
125	**14**	13.5	**3482**	13.96	**3592**	13.5	**3602**	13.8	**3732**	13.8	**3842**
		28	13089	47.77	23128	69.6	32485	120	57254	190	90690
109	**16**	15.77	**3482**	15.17	**3592**	15.1	**3602**	15.7	**3732**	15.5	**3842**
		24.63	13452	45.28	23788	63.1	32942	120	65137	173	92629
97	**18**	17.61	**3482**	17.24	**3592**	17.7	**3602**	17.8	**3732**	17.5	**3842**
		22.21	13540	41.48	24761	54.9	33596	115.9	71326	163	98366
88	**20**	19.77	**3482**	19.07	**3592**	20	**3602**	20.1	**3732**	19.5	**3842**
		19.86	13601	36.51	24111	49.3	34090	104.3	72481	143	96389
78	**22.4**	22.37	**3482**	22.06	**3592**	21.9	**3602**	22.6	**3732**	22	**3842**
		17.64	13663	33.75	25783	45.5	34451	94.2	73605	120	91313
70	**25**	25.55	**3482**	24.08	**3592**	25.5	**3602**	25.2	**3732**	24.7	**3842**
		15.52	13727	31.03	25876	39.8	35089	85.8	75754	120	102519
63	**28**	27.42	**3482**	27.05	**3592**	27.7	**3602**	28.4	**3732**	27.6	**3842**
		14.49	13760	27.74	25987	37.1	35530	77.4	75999	105.4	100618
56	**31.5**	31.9	**3482**	30.14	**3592**	31.1	**3602**	31.8	**3732**	30.9	**3842**
		12.52	13826	25	26088	33.5	36021	67.7	74432	92.6	98968
49	**35.5**	34.62	**3482**	34.18	**3592**	34.5	**3602**	36	**3732**	34.6	**3842**
		11.56	13861	22.14	26199	30.6	36499	55.2	68705	66	78985
44	**40**	38.24	**3482**	39.23	**3592**	39	**3602**	40.2	**3732**	39.1	**3842**
		10.5	13901	19.37	26314	27.5	37080	47.1	65463	50.2	67890
39	**45**	42.46	**3482**	42.67	**3592**	42.8	**3602**	43.2	● **3733**		
		9.48	13941	17.85	26381	23.5	34774	44.5	65080		
35	**50**	50.34	**3482**	49.71	**3592**	48.1	**3602**	48.8	**3733**		
		8.03	14004	15.39	26496	21.4	35588	41.5	68560		
31	**56**	54.71	**3483**	56.63	**3593**	56.2	**3603**	55.4	**3733**		
		7.55	14033	11.64	22403	19.9	37861	38.5	72206		
28	**63**	63.93	**3483**	61.44	**3593**	63	**3603**	61.2	**3733**		
		6.48	14084	11.13	23239	17.9	38177	36.5	75622		
25	**71**	71.36	**3483**	69.82	**3593**	70.8	**3603**	68.3	**3733**		
		5.82	14118	10.32	24473	15.9	38109	34.2	79077		
22	**80**	80.13	**3483**	77.24	**3593**	76.9	**3603**	76.8	**3733**		
		5.2	14152	9.74	25562	14.7	38269	31.9	82938		
19	**90**	90.66	**3483**	89.35	**3593**	87.3	**3603**	89.9	**3733**		
		4.61	14187	8.63	26204	13	37608	28.1	85520		
18	**100**	103.54	**3483**	97.53	**3593**	96.6	**3603**	102	**3733**		
		4.04	14222	8.03	26602	11.5	37608	25.4	87707		
16	**112**	111.11	**3483**	109.55	**3593**	112	**3603**	111	**3733**		
		3.77	14240	7.25	26991	10.2	38674	23.6	88682		
14	**125**	129.28	**3483**	122.06	**3593**	122	**3603**	129	**3733**		
		3.25	14277	6.52	27049	9.04	38755	20.34	88827		
13	**140**	140.31	**3483**	138.42	**3593**	137	**3603**	141	**3733**		
		3	14295	5.77	27115	8.37	38819	18.64	88975		
10.9	**160**	154.98	**3483**	158.87	**3593**	153	**3603**	158	**3733**		
		2.72	14317	5.03	27173	7.51	38899	16.66	89112		
9.7	**180**	172.09	**3483**	172.82	**3593**	173	**3603**	175	**3733**		
		2.45	14339	4.63	27212	6.65	38947	15.06	89221		
8.8	**200**	203.99	**3483**	201.34	**3593**	199	**3603**	198	**3733**		
		2.07	14373	3.99	27274	5.79	39006	13.33	89351		
7.8	**224**					216	**3603**	217	**3733**		
						5.33	38974	12.17	89403		
7.0	**250**					252	**3603**	244	**3733**		
						4.57	38986	10.82	89375		

If shaded, mechanical H.P. may exceed thermal H.P. limit.
Refer to page A-144.

● Alternative rating

48	**3732**
32.1	53271

Exact ratio	**Gear frame**
Input H.P.	Output torque

Browning

Speed Reducers

Motor RPM 1450

CbN SERIES 3000

Exact Ratio rpm, HP and Torque

rpm	Nom. Ratio	Size of CbN 3000 Reducer											
		0		1			2			3			
1160	1.25	1.24	**3001**	1.22	**3101**		1.23	**3201**		1.26	**3301**		
		2.54	134	5.62	292		10.54	552		12.7	684		
1036	1.4	1.46	**3001**	1.38	**3101**		1.45	**3201**		1.46	**3301**		
		2.54	158	5.61	330		9.74	602		11.82	750		
906	1.6	1.54	**3001**	1.56	**3101**		1.55	**3201**		1.61	**3301**		
		2.54	167	5.41	359		10.03	661		11.29	809		
806	1.8	1.83	**3001**	1.76	**3101**		1.75	**3201**		1.77	**3301**		
		2.54	198	5.2	390		9.31	694		12.63	854		
725	2	1.96	**3001**	2	**3101**		1.94	**3201**		2.04	**3301**		
		2.54	212	4.54	424		8.57	708		12	1095		
647	2.24	2.19	**3001**	2.29	**3101**		2.21	**3201**		2.25	**3301**		
		2.54	237	4.54	442		7.52	708		12	1151		
580	2.5	2.55	**3001**	2.58	**3101**		2.55	**3201**		2.58	**3301**		
		2.54	276	4.03	442		6.53	708		12.06	1327		
518	2.8	2.75	**3001**	2.74	**3101**		2.77	**3201**		2.91	**3301**		
		2.54	298	3.79	443		6.11	708		10.56	1309		
460	3.15	3.24	**3001**	3.25	**3101**		3.09	**3201**		3.16	**3301**		
		2.49	343	3.19	442		5.38	708		8.89	1198		
408	3.55	3.63	**3001**	3.44	**3101**		3.43	**3201**		3.52	**3301**		
		2.27	351	3.02	442		4.85	708		8.62	1293		
363	4	4.08	**3001**	3.93	**3101**		3.89	**3201**		3.95	**3301**		
		2.16	375	2.64	442		4.27	708		7.88	1327		
				3.91	**3122**		3.87	**3242**		3.96	**3362**		
				5.62	919		13.65	2150		21.74	3615		
322	4.5	4.58	**3001**	4.36	**3101**		4.33	**3201**		4.47	**3301**		
		1.87	365	2.37	442		3.83	708		6.96	1327		
				4.43	**3122**		4.57	**3242**		4.59	**3362**		
				5.56	1030		11.55	2208		18.85	3615		
290	5	5.17	**3001**	4.92	**3101**		4.88	**3201**		4.87	**3301**		
		0.84	178	2.11	442		3.41	708		6.4	1327		
				4.99	**3122**		4.88	**3242**		5.06	**3362**		
				5.4	1128		10.83	2208		17.1	3615		
259	5.6	5.82	**3001**	5.69	**3101**		5.71	**3201**		5.5	**3301**		
		0.84	201	1.82	442		2.91	708		5.62	1318		
				5.65	**3122**		5.51	**3242**		5.59	**3362**		
				5.2	1228		9.58	2208		15.48	3615		
230	6.3	6.4	**3001**	6.25	**3101**		6.31	**3201**		6.33	**3301**		
		0.81	221	1.66	442		2.63	708		4.92	1327		
				6.42	**3122**		6.1	**3242**		6.41	**3362**		
				4.66	1252		8.66	2208		13.49	3615		
204	7.1	7.22	**3001**	7.17	**3101**		6.92	**3201**		7.06	**3301**		
		0.81	249	0.81	247		2.4	708		4.4	1327		
		7.38	**3012**	7.34	**3122**		6.96	**3242**		7.09	**3362**		
		2.23	683	4.08	1252		7.59	2208		12.2	3615		
181	8	8.13	**3001**	7.91	**3101**		8.06	**3201**		7.83	**3301**		
		0.81	254	0.81	273		2.06	708		3.98	1327		
		8.16	**3012**	8.28	**3122**	7.57	**3132**	8.02	**3242**	7.63	**3252**	8.14	**3362**	7.85	**3372**
		2.25	766	3.62	1252	4.53	1435	6.59	2208	9	2871	10.63	3615	18.57	6091
161	9	8.59	**3012**	8.79	**3122**	8.57	**3132**	8.57	**3242**	9.02	**3252**	9.16	**3362**	9.06	**3372**
		2.14	768	3.41	1252	4.19	1501	6.17	2208	8.1	3054	9.44	3615	16.94	6410
145	10	10.2	**3012**	10.43	**3122**	9.67	**3132**	9.72	**3242**	9.62	**3252**	9.95	**3362**	9.98	**3372**
		1.81	772	2.87	1252	3.87	1564	5.43	2208	7.74	3113	8.69	3615	15.87	6618

Exact ratio	**Gear frame**
Input H.P.	Output torque

Motor RPM 1450 (Continued)

Exact Ratio rpm, HP and Torque

rpm	Nom. Ratio	Size of CbN 3000 Reducer									
		4		5		6		7		8	
1160	1.25	1.24	**3401**	1.28	**3501**						
		32.27	1703	54.01	2935						
1036	1.4	1.38	**3401**	1.46	**3501**						
		34.63	2043	52.14	3243						
906	1.6	1.56	**3401**	1.6	**3501**						
		35.06	2324	50.12	3417						
806	1.8	1.74	**3401**	1.79	**3501**						
		29.75	2200	48.68	3705						
725	2	1.97	**3401**	2	**3501**						
		30.46	2554	46.41	3955						
647	2.24	2.17	**3401**	2.25	**3501**						
		28.55	2643	43.98	4217						
580	2.5	2.54	**3401**	2.44	**3501**						
		25.69	2779	42.27	4397						
518	2.8	2.83	**3401**	2.77	**3501**						
		23.77	2870	40.49	4786						
460	3.15	3.18	**3401**	3.07	**3501**	3.21	**3602**				
		21.41	2903	37.67	4926	100	13394				
408	3.55	3.6	**3401**	3.55	**3501**	3.64	**3602**				
		18.92	2903	34.51	5221	100	15189				
363	4	4.11	**3401**	3.88	**3501**						
		16.57	2903	31.62	5221						
		3.91	**3482**	4.07	**3592**	3.88	**3602**				
		32.58	5324	56.21	9371	100	16190				
322	4.5	4.41	**3401**	4.35	**3501**						
		15.44	2903	28.15	5221						
		4.37	**3482**	4.66	**3592**	4.34	**3602**	4.39	**3732**		
		34.96	6388	55.21	10727	100	18109	100	18318		
290	5	5.13	**3401**	4.85	**3501**						
		13.27	2903	25.26	5221						
		4.91	**3482**	5.1	**3592**	4.91	**3602**	4.91	**3732**		
		35.39	7266	56.21	11760	100	20488	100	20488		
259	5.6	5.57	**3401**	5.5	**3501**						
		12.23	2903	21.78	5103						
		5.48	**3482**	5.7	**3592**	5.56	**3602**	5.63	**3732**	5.76	**3842**
		30.03	6877	48.35	11513	100	23200	100	23492	158	37991
230	6.3	6.15	**3401**	6.31	**3501**						
		11.07	2903	19.41	5221						
		6.21	**3482**	6.38	**3592**	6.15	**3602**	6.21	**3732**	6.36	**3842**
		30.75	7986	45.26	12071	100	25662	100	25912	158	41948
204	7.1	6.83	**3401**	6.87	**3501**						
		9.38	2730	17.84	5221						
		6.86	**3482**	7.18	**3592**	6.86	**3602**	7.04	**3732**	6.98	**3842**
		28.82	8264	41	12301	91.9	26306	100	33340	158	46037
181	8	8.1	**3401**	8	**3501**						
		7.91	2731	15.32	5221						
		7.69	**3482**	7.92	**3592**	7.71	**3602**	7.99	**3732**	8.15	**3842**
		32.58	10477	55.21	18253	88.3	28407	100	33340	158	53754
161	9	8.6	**3482**	9.07	**3592**	9.03	**3602**	9.09	**3732**	8.8	**3842**
		33.43	12023	55.21	20894	70.8	31825	100	37930	158	58041
145	10	9.67	**3482**	9.94	**3592**	9.63	**3602**	10.3	**3732**	10	**3842**
		31.03	12535	52.96	22009	79.2	31825	100	42979	158	65956

If shaded, mechanical H.P. may exceed thermal H.P. limit.
Refer to page A-144.

Exact ratio	**Gear frame**
Input H.P.	Output torque

Browning

Speed Reducers

CbN SERIES 3000

Motor RPM 1450 (Continued)

Exact Ratio rpm, HP and Torque

rpm	Nom. Ratio	Size of CbN 3000 Reducer											
		0		1			2			3			
129	11.2	10.92	**3012**	11.04	**3122**	10.94	**3132**	10.8	**3242**	10.88	**3252**	11.09	**3362**	11.03	**3372**
		1.69	774	2.71	1252	3.56	1630	4.89	2208	7.16	3255	7.8	3615	14.51	6685
116	12.5	12.23	**3012**	12.61	**3122**	12.43	**3132**	12.27	**3242**	12.04	**3252**	12.45	**3362**	12.65	**3372**
		1.52	776	2.37	1252	3.27	1700	4.31	2208	6.69	3365	6.95	3615	13.43	7101
104	14	14.24	**3012**	14.08	**3122**	14.2	**3132**	13.65	**3242**	13.72	**3252**	14.09	**3362**	13.98	**3372**
		1.31	779	2.13	1252	2.95	1753	3.87	2208	6.14	3522	6.14	3615	12.2	7127
91	16	15.35	**3012**	15.79	**3122**	16.03	**3132**	15.36	**3242**	15.82	**3252**	15.33	**3362**	16.05	**3372**
		1.22	781	1.9	1252	2.63	1759	3.44	2208	5.58	3689	5.64	3615	10.63	7132
81	18	18.06	**3012**	18.28	**3122**	17.01	**3132**	18	**3242**	16.9	**3252**	17.33	**3362**	18.08	**3372**
		1.04	784	1.64	1252	2.48	1763	2.93	2208	5.34	3772	4.99	3615	9.44	7132
73	20	20.24	**3012**	20.07	**3122**	20.2	**3132**	19.87	**3242**	19.18	**3252**	19.95	**3362**	19.64	**3372**
		0.93	786	1.49	1252	2.1	1770	2.66	2208	4.9	3928	4.34	3615	8.69	7132
65	22.4	22.76	**3012**	23.01	**3122**	21.36	**3132**	21.79	**3242**	21.31	**3252**	22.29	**3362**	21.89	**3372**
		0.83	788	0.81	778	1.99	1773	2.42	2208	4.45	3958	3.88	3615	7.8	7132
58	25	25.59	**3012**	25.39	**3122**	24.41	**3132**	25.44	**3242**	24.2	**3252**	24.68	**3362**	24.56	**3372**
		0.74	790	0.81	858	1.74	1779	2.08	2208	3.93	3972	3.51	3615	6.95	7132
52	28	28.85	**3012**			27.25	**3132**			26.93	**3252**			27.8	**3372**
		0.66	792			1.57	1783			3.54	3983			6.14	7132
46	31.5	33.48	**3012**			30.55	**3132**			30.29	**3252**	32.32	**3363**	30.24	**3372**
		0.58	794			1.4	1788			3.16	3995	4.6	6001	5.64	7132
41	35.5	35.73	**3012**			35.37	**3132**			35.51	**3252**	37.29	**3363**	34.18	**3372**
		0.53	795			1.21	1793			2.7	4010	3.99	6100	4.99	7132
36	40	40.32	**3012**			38.84	**3132**			39.2	**3252**	41.1	**3363**	39.36	**3372**
		0.47	797			1.11	1796			2.45	4018	3.62	6100	4.34	7132
32	45	45.36	**3012**			44.54	**3132**			42.98	**3252**	45.4	**3363**	43.98	**3372**
		0.42	798			0.81	1505			2.24	4026	3.28	6100	3.88	7132
29	50	49.16	**3013**			49.15	**3132**			50.19	**3252**	52.09	**3363**	48.68	**3372**
		0.4	796			0.81	1661			1.93	4038	2.86	6100	3.51	7132
26	56	55.04	**3013**			57.83	**3133**			55.7	**3253**	57.6	**3363**	57.57	**3373**
		0.35	798			0.73	1719			1.77	4038	2.58	6100	3.13	7389
23	63	64.07	**3013**			65.25	**3133**			64.2	**3253**	66.11	**3363**	66.1	**3373**
		0.3	800			0.67	1784			1.53	4038	2.25	6100	2.79	7525
20	71	69.09	**3013**			69.24	**3133**			68.61	**3253**	74.4	**3363**	74.44	**3373**
		0.28	801			0.64	1804			1.44	4038	2	6100	2.5	7611
18	80	81.29	**3013**			82.23	**3133**			77.86	**3253**	80.86	**3363**	80.86	**3373**
		0.24	803			0.54	1804			1.26	4038	1.84	6100	2.3	7611
16	90	91.08	**3013**			86.97	**3133**			86.48	**3253**	90.12	**3363**	90.12	**3373**
		0.22	804			0.51	1804			1.14	4038	1.65	6100	2.07	7611
15	100	102.43	**3013**			99.4	**3133**			98.24	**3253**	101.13	**3363**	101.13	**3373**
		0.19	806			0.44	1804			1	4038	1.47	6100	1.84	7611
13	112	115.16	**3013**			110.94	**3133**			109.3	**3253**	114.47	**3363**	114.47	**3373**
		0.17	807			0.4	1804			0.9	4038	1.3	6100	1.63	7611
12	125	129.81	**3013**			124.4	**3133**			122.96	**3253**	124.53	**3363**	124.53	**3373**
		0.15	808			0.23	1804			0.8	4038	1.19	6100	1.5	7611
10	140	146.18	**3013**			144.02	**3133**			144.13	**3253**	141	**3363**	140.74	**3373**
		0.13	809			0.21	1804			0.68	4038	1.06	6100	1.32	7611
9.1	160	160.8	**3013**			158.13	**3133**			159.1	**3253**	162.1	**3363**	162.06	**3373**
		0.12	810			0.19	1804			0.62	4038	0.92	6100	1.15	7611
8.1	180	181.46	**3013**			181.32	**3133**			174.46	**3253**	181	**3363**	181.09	**3373**
		0.11	811			0.18	1804			0.56	4038	0.82	6100	1.03	7611
7.3	200	204.14	**3013**			200.11	**3133**			203.72	**3253**	200.44	**3363**	200.44	**3373**
		0.1	812			0.17	1804			0.48	4038	0.74	6100	0.93	7611

Exact ratio	**Gear frame**
Input H.P.	Output torque

Motor RPM 1450 (Continued)

Exact Ratio rpm, HP and Torque

rpm	Nom. Ratio	Size of CbN Reducer									
		4		5		6		7		8	
129	11.2	10.78	**3482**	11.1	**3592**	10.9	**3602**	11	**3732**	11.1	**3842**
		28.86	13006	48.37	22434	71	32292	100	45900	158	73211
116	12.5	12.23	**3482**	12.43	**3592**	12.1	**3602**	12.2	**3732**	12.5	**3842**
		26.28	13433	45.25	23504	64.8	32717	100	50907	158	82445
104	14	13.5	**3482**	13.98	**3592**	13.5	**3602**	13.8	**3732**	13.8	**3842**
		23.91	13489	40.99	23956	58.8	33123	100	57583	158	91019
91	16	15.77	**3482**	15.17	**3592**	15.1	**3602**	15.7	**3732**	15.5	**3842**
		20.59	13574	38.91	24673	53.3	33583	100	65511	150	97308
81	18	17.61	**3482**	17.24	**3592**	17.7	**3602**	17.8	**3732**	17.5	**3842**
		18.52	13631	35.59	25646	46.4	34269	98.2	72937	141	103335
73	20	19.77	**3482**	19.07	**3592**	20	**3602**	20.1	**3732**	19.5	**3842**
		16.56	13688	30.63	24416	41.7	34800	88.4	74142	124	101258
65	22.4	22.37	**3482**	22.06	**3592**	21.9	**3602**	22.6	**3732**	22	**3842**
		14.7	13746	28.15	25956	38.5	35182	79.9	75348	100	91837
58	25	25.55	**3482**	24.08	**3592**	25.5	**3602**	25.2	**3732**	24.7	**3842**
		12.93	13806	25.88	26044	33.7	35858	72.8	76550	100	103108
52	28	27.42	**3482**	27.05	**3592**	27.7	**3602**	28.4	**3732**	27.6	**3842**	27.8	**3843**
		12.08	13836	23.12	26142	31.4	36293	65.7	77857	89.5	103117	100	113728
46	31.5	31.9	**3482**	30.14	**3592**	31.1	**3602**	31.8	**3732**	30.9	**3842**	31.7	**3843**
		10.42	13898	20.83	26239	28.40	36855	57.5	76298	77.4	99838	100	129260
41	35.5	34.62	**3482**	34.18	**3592**	34.5	**3602**	36	**3732**	34.6	**3842**	35.3	**3843**
		9.63	13930	18.44	26345	25.9	37285	46.9	70452	56.1	81028	90	129624
36	40	38.24	**3482**	39.23	**3592**	39	**3602**	40.2	**3732**	39.1	**3842**	39.6	**3843**
		8.74	13967	16.13	26451	23.2	37754	40.1	67265	42.7	69695	80	130003
32	45	42.46	**3482**	42.67	**3592**	42.8	**3602**	43.2	● **3733**			44.3	**3843**
		7.89	14005	14.87	26513	20	35718	38.8	68484			72	130378
29	50	50.34	**3482**	49.71	**3592**	48.1	**3603**	48.8	**3733**			50.7	**3843**
		6.68	14063	12.81	26619	18.3	36729	36.1	71978			63	130841
26	56	54.71	**3483**	56.63	**3593**	56.2	**3603**	55.4	**3733**			56	**3843**
		6.28	14090	10.19	23664	16.6	38117	33.5	75828			57	131149
23	63	63.93	**3483**	61.44	**3593**	63	**3603**	61.2	**3733**			63.4	**3843**
		5.39	14137	9.75	24558	14.9	38353	31.8	79515			51	131564
20	71	71.36	**3483**	69.82	**3593**	70.8	**3603**	68.3	**3733**			71.7	**3843**
		4.84	14169	9.03	25850	13.3	38473	29.8	83159			45	131978
18	80	80.13	**3483**	77.24	**3593**	76.9	**3603**	76.8	**3733**			81.9	**3843**
		4.32	14201	8.49	26894	12.2	38332	27.8	87233			40	132408
16	90	90.66	**3483**	89.35	**3593**	87.3	**3603**	89.9	**3733**			92.4	**3843**
		3.83	14233	7.36	26982	10.8	38522	24.1	88522			35	132770
15	100	103.54	**3483**	97.53	**3593**	99.6	**3603**	102	**3733**			104	**3843**
		3.36	14265	6.76	27027	9.79	38640	21.28	88684			31	133136
13	112	111.11	**3483**	109.55	**3593**	112	**3603**	111	**3733**			116	**3843**
		3.13	14282	6.03	27080	8.47	38759	19.59	88844			28	133489
12	125	129.28	**3483**	122.06	**3593**	122	**3603**	129	**3733**			130	**3843**
		2.7	14316	5.42	27133	7.8	38880	16.92	89352			25	133854
10	140	140.31	**3483**	138.42	**3593**	137	**3603**	141	**3733**			146	**3843**
		2.49	14333	4.79	27195	6.96	38959	15.51	89352			22	134209
9.1	160	154.98	**3483**	158.87	**3593**	153	**3603**	158	**3733**			165	**3843**
		2.26	14353	4.18	27248	6.24	39008	13.85	89409			20	134209
8.1	180	172.09	**3483**	172.82	**3593**	173	**3603**	175	**3733**			184	**3843**
		2.04	14373	3.85	27283	5.52	39017	12.5	89392			18	134209
7.3	200	203.99	**3483**	201.34	**3593**	199	**3603**	198	**3733**			197	**3843**
		1.72	14404	3.31	27345	4.8	39027	11.05	89392			17	134209
6.5	224					216	**3603**	217	**3733**			221	**3843**
						4.42	39007	10.08	89370			15	134209
5.8	250					252	**3603**	244	**3733**				
						3.79	39022	8.97	89424				

If shaded, mechanical H.P. may exceed thermal H.P. limit.
Refer to page A-144.

● Alternative rating

48	**3732**
32.1	53271

Exact ratio	**Gear frame**
Input H.P.	Output torque

Browning

Speed Reducers

CbN SERIES 3000

Motor RPM 1160

Exact Ratio rpm, HP and Torque

rpm	Nom. Ratio	Size of CbN 3000 Reducer											
		0		1			2			3			
928	1.25	1.24	**3001**	1.22	**3101**		1.23	**3201**		1.26	**3301**		
		2.03	134	5.33	346		9.36	612		11.27	758		
829	1.4	1.46	**3001**	1.38	**3101**		1.45	**3201**		1.46	**3301**		
		2.03	158	4.97	365		8.64	668		10.72	832		
725	1.6	1.54	**3001**	1.56	**3101**		1.55	**3201**		1.61	**3301**		
		2.03	166	4.8	399		8.58	708		10.49	897		
644	1.8	1.83	**3001**	1.76	**3101**		1.75	**3201**		1.77	**3301**		
		2.03	198	4.61	432		7.59	708		10.02	947		
580	2	1.96	**3001**	2	**3101**		1.94	**3201**		2.04	**3301**		
		2.03	212	4.15	442		6.86	708		11.2	1214		
518	2.24	2.19	**3001**	2.29	**3101**		2.21	**3201**		2.25	**3301**		
		2.03	237	3.63	442		6.02	708		10.65	1276		
464	2.5	2.55	**3001**	2.58	**3101**		2.55	**3201**		2.58	**3301**		
		2.03	276	3.22	442		5.22	708		9.65	1327		
414	2.8	2.75	**3001**	2.74	**3101**		2.77	**3201**		2.91	**3301**		
		2.03	297	3.04	443		4.89	708		8.57	1327		
368	3.15	3.24	**3001**	3.25	**3101**		3.09	**3201**		3.16	**3301**		
		2.02	348	2.56	442		4.31	708		7.89	1327		
327	3.55	3.63	**3001**	3.44	**3101**		3.43	**3201**		3.52	**3301**		
		1.84	356	2.42	442		3.88	708		7.08	1327		
290	4	4.08	**3001**	3.93	**3101**		3.89	**3201**		3.95	**3301**		
		1.75	380	2.11	442		3.41	708		6.31	1327		
				3.91	**3122**		3.87	**3242**		3.96	**3362**		
				5.5	1122		10.92	2208		17.39	3615		
258	4.5	4.58	**3001**	4.36	**3101**		4.33	**3201**		4.47	**3301**		
		1.51	368	1.89	442		3.07	708		5.57	1327		
				4.43	**3122**		4.57	**3242**		4.59	**3362**		
				4.93	1139		9.24	2208		15.08	3615		
232	5	5.17	**3001**	4.92	**3101**		4.88	**3201**		4.87	**3301**		
		0.65	179	1.69	442		2.73	708		5.12	1327		
				4.99	**3122**		4.88	**3242**		5.06	**3362**		
				4.79	1247		8.66	2208		13.68	3615		
207	5.6	5.82	**3001**	5.69	**3101**		5.71	**3201**		5.5	**3301**		
		0.65	201	1.46	442		2.33	708		4.53	1327		
				5.65	**3122**		5.51	**3242**		5.59	**3362**		
				4.24	1252		7.67	2208		12.38	3615		
184	6.3	6.4	**3001**	6.25	**3101**		6.31	**3201**		6.33	**3301**		
		0.65	221	1.33	442		2.11	708		3.93	1327		
				6.42	**3122**		6.1	**3242**		6.41	**3362**		
				3.73	1252		6.92	2208		10.79	3615		
163	7.1	7.22	**3001**	7.17	**3101**		6.92	**3201**		7.06	**3301**		
		0.65	249	0.65	248		1.92	708		3.52	1327		
		7.38	**3012**	7.34	**3122**		6.96	**3242**		7.09	**3362**		
		2.03	781	3.26	1252		6.08	2208		9.76	3615		
145	8	8.13	**3001**	7.91	**3101**		8.06	**3201**		7.83	**3301**		
		0.59	254	0.65	274		1.65	708		3.18	1327		
		8.16	**3012**	8.28	**3122**	7.57	**3132**	8.02	**3242**	7.63	**3252**	8.14	**3362**	7.85	**3372**
		1.82	775	2.89	1252	3.98	1575	5.27	2208	7.9	3151	8.5	3615	16.3	6685
129	9	8.59	**3012**	8.79	**3122**	8.57	**3132**	8.57	**3242**	9.02	**3252**	9.16	**3362**	9.06	**3372**
		1.73	775	2.73	1252	3.68	1648	4.93	2208	7.11	3352	7.55	3615	14.87	7035
116	10	10.2	**3012**	10.43	**3122**	9.67	**3132**	9.72	**3242**	9.62	**3252**	9.95	**3362**	9.98	**3372**
		1.46	777	2.3	1252	3.4	1716	4.35	2208	6.8	3417	6.95	3615	13.66	7120
104	11.2	10.92	**3012**	11.04	**3122**	10.94	**3132**	10.8	**3242**	10.88	**3252**	11.09	**3362**	11.03	**3372**
		1.37	780	2.17	1252	3.07	1756	3.91	2208	6.29	3573	6.24	3615	12.38	7132

Exact ratio	**Gear frame**
Input H.P.	Output torque

Motor RPM 1160 (Continued)

Exact Ratio rpm, HP and Torque

rpm	Nom. Ratio	Size of CbN Reducer									
		4		5		6		7		8	
928	**1.25**	1.24	**3401**	1.26	**3501**						
		26.45	1744	44.17	2999						
829	**1.4**	1.38	**3401**	1.46	**3501**						
		28.35	2091	44.17	3432						
725	**1.6**	1.56	**3401**	1.6	**3501**						
		28.7	2378	43.14	3677						
644	**1.8**	1.74	**3401**	1.79	**3501**						
		24.33	2249	41.91	3986						
580	**2**	1.97	**3401**	2	**3501**						
		24.9	2610	39.95	4256						
518	**2.24**	2.17	**3401**	2.25	**3501**						
		23.33	2699	37.85	4537						
464	**2.5**	2.54	**3401**	2.44	**3501**						
		20.96	2835	36.38	4731						
414	**2.8**	2.83	**3401**	2.77	**3501**						
		19.23	2903	34.85	5150						
368	**3.15**	3.18	**3401**	3.07	**3501**	3.21	**3602**				
		17.13	2903	31.94	5221	80	13394				
327	**3.55**	3.6	**3401**	3.55	**3501**	3.64	**3602**				
		15.14	2903	27.61	5221	80	15189				
290	**4**	4.11	**3401**	3.88	**3501**						
		13.26	2903	25.3	5221						
		3.91	**3482**	4.07	**3592**	3.88	**3602**				
		26.69	5452	44.17	9372	80	16190				
258	**4.5**	4.41	**3401**	4.35	**3601**	4.6	**2602**				
		12.35	2903	22.52	5221	80	11980				
		4.37	**3482**	4.66	**3592**	4.34	**3602**	4.39	**3732**		
		28.62	6538	44.17	10728	80	18109	80	18318		
232	**5**	5.13	**3401**	4.85	**3501**						
		10.62	2903	20.21	5221						
		4.91	**3482**	5.1	**3592**	4.91	**3602**	4.91	**3732**		
		28.96	7433	44.17	11761	80	20488	80	20488		
207	**5.6**	5.57	**3401**	5.5	**3501**						
		9.78	2903	17.42	5101						
		5.48	**3482**	5.7	**3592**	5.56	**3602**	5.63	**3732**	5.76	**3842**
		24.56	7031	39.63	11796	80	23200	80	23492	126	37870
184	**6.3**	6.15	**3401**	6.31	**3501**						
		8.86	2903	15.53	5221						
		6.21	**3482**	6.38	**3592**	6.15	**3602**	6.21	**3732**	6.36	**3842**
		25.13	8159	37.06	12354	80	25662	80	25912	126	41815
163	**7.1**	6.83	**3401**	6.87	**3501**						
		7.5	2729	14.27	5221						
		6.86	**3482**	7.18	**3592**	6.86	**3602**	7.04	**3732**	**6.98**	**3842**
		23.55	8439	33.56	12584	75.1	26871	80	29376	126	45892
145	**8**	8.1	**3401**	8	**3501**						
		6.42	2769	12.25	5221						
		7.69	**3482**	7.92	**3592**	7.71	**3602**	7.99	**3732**	8.15	**3842**
		26.69	10729	44.17	18254	72.1	28995	80	33340	126	53584
129	**9**	8.6	**3482**	9.07	**3592**	9.03	**3602**	9.09	**3732**	8.8	**3842**
		28.62	12867	44.17	20895	57.6	27129	80	37930	126	57858
116	**10**	9.67	**3482**	9.94	**3592**	9.63	**3602**	10.3	**3732**	10	**3842**
		26.68	13476	44.17	22907	65.8	33051	80	42979	126	65747
104	**11.2**	10.78	**3482**	11.1	**3592**	10.9	**3602**	11	**3732**	11.1	**3842**
		24.03	13536	39.63	22973	59	33543	80	45900	126	72979

If shaded, mechanical H.P. may exceed thermal H.P. limit.
Refer to page A-144.

Exact ratio	**Gear frame**
Input H.P.	Output torque

Browning

Speed Reducers

CbN SERIES 3000

Motor RPM 1160 (Continued)

Exact Ratio rpm, HP and Torque

rpm	Nom. Ratio	Size of CbN 3000 Reducer											
		0		1			2			3			
93	12.5	12.23	**3012**	12.61	**3122**	12.43	**3132**	12.27	**3242**	12.04	**3252**	12.45	**3362**	12.65	**3372**
		1.22	776	1.9	1252	2.71	1762	3.44	2208	5.87	3693	5.56	3615	10.79	7132
83	14	14.24	**3012**	14.08	**3122**	14.2	**3132**	13.65	**3242**	13.72	**3252**	14.09	**3362**	13.98	**3372**
		1.06	787	1.7	1252	2.38	1769	3.1	2208	5.39	3866	4.91	3615	9.76	7132
73	16	15.35	**3012**	15.79	**3122**	16.03	**3132**	15.36	**3242**	15.82	**3252**	15.33	**3362**	16.05	**3372**
		0.98	785	1.52	1252	2.12	1774	2.75	2208	4.79	3960	4.51	3615	8.5	7132
64	18	18.06	**3012**	18.28	**3122**	17.01	**3132**	18	**3242**	16.9	**3252**	17.33	**3362**	18.08	**3372**
		0.84	791	1.31	1252	2	1776	2.35	2208	4.49	3967	3.99	3615	7.55	7132
58	20	20.24	**3012**	20.07	**3122**	20.2	**3132**	19.87	**3242**	19.18	**3252**	19.95	**3362**	19.64	**3372**
		0.75	792	1.19	1252	1.69	1784	2.13	2208	3.97	3980	3.47	3615	6.95	7132
52	22.4	22.76	**3012**	23.01	**3122**	21.36	**3132**	21.79	**3242**	21.31	**3252**	22.29	**3362**	21.89	**3372**
		0.67	795	0.65	780	1.6	1786	1.94	2208	3.59	3991	3.1	3615	6.24	7132
46	25	25.59	**3012**	25.39	**3122**	24.41	**3132**	25.44	**3242**	24.2	**3252**	24.68	**3362**	24.56	**3372**
		0.59	787	0.65	861	1.4	1791	1.66	2208	3.17	4003	2.8	3615	5.56	7132
41	28	28.85	**3012**			27.25	**3132**			26.93	**3252**			27.8	**3372**
		0.53	798			1.26	1795			2.85	4013			4.91	7132
37	31.5	33.48	**3012**			30.55	**3132**			30.29	**3252**	31.84	**3363**	30.24	**3372**
		0.47	821			1.13	1799			2.54	4023	3.93	6416	4.51	7132
33	35.5	35.73	**3012**			35.37	**3132**			35.51	**3252**	35.18	**3363**	34.18	**3372**
		0.43	801			0.98	1803			2.18	4036	3.4	6100	3.99	7132
29	40	40.32	**3012**			38.84	**3132**			39.2	**3252**	41.1	**3363**	39.36	**3372**
		0.38	799			0.89	1804			1.97	4038	2.9	6100	3.47	7132
26	45	45.36	**3012**			44.54	**3132**			42.98	**3252**	45.4	**3363**	43.98	**3372**
		0.34	804			0.65	1510			1.8	4038	2.63	6100	3.1	7132
23	50	49.16	**3013**			49.15	**3132**			50.19	**3252**	52.09	**3363**	48.68	**3372**
		0.32	803			0.65	1666			1.54	4038	2.29	6100	2.8	7132
21	56	55.04	**3013**			57.83	**3133**			55.7	**3253**	57.6	**3363**	57.57	**3373**
		0.28	787			0.54	1592			1.41	4038	2.07	6100	2.5	7389
18	63	64.07	**3013**			65.25	**3133**			64.2	**3253**	66.11	**3363**	66.1	**3373**
		0.24	785			0.5	1657			1.23	4038	1.9	6100	2.18	7389
16	71	69.09	**3013**			69.24	**3133**			68.61	**3253**	74.4	**3363**	74.44	**3373**
		0.23	812			0.48	1690			1.15	4038	1.7	6100	2	7611
15	80	81.29	**3013**			82.23	**3133**			77.86	**3253**	80.86	**3363**	80.86	**3373**
		0.19	789			0.42	1790			1.01	4038	1.52	6100	1.84	7611
13	90	91.08	**3013**			86.97	**3133**			86.48	**3253**	90.12	**3363**	90.12	**3373**
		0.17	791			0.4	1804			0.91	4038	1.34	6100	1.65	7611
12	100	102.43	**3013**			99.4	**3133**			98.24	**3253**	101.13	**3363**	101.13	**3373**
		0.15	785			0.35	1804			0.8	4038	1.23	6100	1.47	7611
10	112	115.16	**3013**			110.94	**3133**			109.3	**3253**	114.47	**3363**	114.47	**3373**
		0.14	823			0.32	1804			0.72	4038	1.09	6100	1.3	7611
9.3	125	129.81	**3013**			124.4	**3133**			122.96	**3253**	124.53	**3363**	124.53	**3373**
		0.12	796			0.28	1804			0.64	4038	0.96	6100	1.19	7611
8.3	140	146.18	**3013**			144.02	**3133**			144.13	**3253**	141	**3363**	140.74	**3373**
		0.11	821			0.24	1804			0.55	4038	0.85	6100	1.06	7611
7.3	160	160.8	**3013**			158.13	**3133**			159.1	**3253**	162.1	**3363**	162.06	**3373**
		0.1	821			0.22	1804			0.5	4038	0.77	6100	0.92	7611
6.4	180	181.46	**3013**			181.32	**3133**			174.46	**3253**	181	**3363**	181.09	**3373**
		0.09	834			0.19	1804			0.45	4038	0.66	6100	0.82	7611
5.8	200	204.14	**3013**			200.11	**3133**			203.72	**3253**	200.44	**3363**	200.44	**3373**
		0.08	834			0.18	1804			0.39	4038	0.59	6100	0.74	7611

Exact ratio	**Gear frame**
Input H.P.	Output torque

Motor RPM 1160 (Continued)

Exact Ratio rpm, HP and Torque

rpm	Nom. Ratio	Size of CbN Reducer									
		4		5		6		7		8	
93	12.5	12.23	**3482**	12.43	**3592**	12.1	**3602**	12.2	**3732**	12.5	**3842**
		21.29	13603	37.06	24062	53.8	33954	80	50907	126	82184
83	14	13.5	**3482**	13.98	**3592**	13.5	**3602**	13.8	**3732**	13.8	**3842**
		19.36	13653	33.55	24504	48.9	34433	80	57583	126	90731
73	16	15.77	**3482**	15.17	**3592**	15.1	**3602**	15.7	**3732**	15.5	**3842**
		16.66	13728	31.82	25221	44.4	34969	80	65511	126	101908
64	18	17.61	**3482**	17.24	**3592**	17.7	**3602**	17.8	**3732**	17.5	**3842**
		14.98	13778	28.89	26018	38.6	35636	80	74274	124	113430
58	20	19.77	**3482**	19.07	**3592**	20	**3602**	20.1	**3732**	19.5	**3842**
		13.39	13829	25.02	24929	34.7	36198	73.09	76627	109	111149
52	22.4	22.37	**3482**	22.06	**3592**	21.9	**3602**	22.6	**3732**	22	**3842**
		11.88	13880	22.77	26239	32.1	36667	66.08	77894	80.0	91837
46	25	25.55	**3482**	24.08	**3592**	25.5	**3602**	25.2	**3732**	24.7	**3842**
		10.44	13932	20.91	26310	28.1	37374	60.9	80047	80.0	103108
41	28	27.42	**3482**	27.05	**3592**	27.7	**3602**	28.4	**3732**	27.6	**3842**
		9.75	13959	18.69	26407	26.2	37854	55	81472	74.5	107293
37	31.5	31.9	**3482**	30.14	**3592**	31.1	**3602**	31.8	**3732**	30.9	**3842**
		8.41	14014	16.82	26487	23.40	37958	48	79615	62.8	101257
33	35.5	34.62	**3482**	34.18	**3592**	34.5	**3603**	36	**3732**	34.6	**3842**
		7.76	14042	14.88	26575	21.1	37969	39.2	73606	46.9	84675
29	40	38.24	**3482**	39.23	**3592**	39	**3602**	40.2	**3732**	39.1	**3842**
		7.04	14074	13.02	26673	18.7	38039	33.5	70242	35.8	73041
26	45	42.46	**3482**	42.67	**3592**	42.8	**3602**	43.2	**3733**		
		6.36	14107	11.99	26726	16.8	37504	34	75015		
23	50	50.34	**3482**	49.71	**3592**	48.1	**3602**	48.8	**3733**		
		5.38	14158	10.33	26823	15.3	38385	31.8	79256		
21	56	54.71	**3483**	56.63	**3593**	55.4	**3603**	55.4	**3733**		
		5.06	14181	9.02	26186	13.4	38461	29.5	83467		
18	63	63.93	**3483**	61.44	**3593**	63	**3603**	61.2	**3733**		
		4.34	14223	8.56	26947	12	38610	27.9	87204		
16	71	71.36	**3483**	69.82	**3593**	70.8	**3603**	68.3	**3733**		
		3.9	14250	7.55	27009	10.7	38690	25.4	88601		
15	80	80.13	**3483**	77.24	**3593**	76.9	**3603**	76.8	**3733**		
		3.48	14278	6.84	27062	9.86	38725	22.62	88723		
13	90	90.66	**3483**	89.35	**3593**	87.3	**3603**	89.9	**3733**		
		3.08	14306	5.92	27133	8.71	38834	19.4	89073		
12	100	103.54	**3483**	97.53	**3593**	96.6	**3603**	102	**3733**		
		2.7	14334	5.44	27177	7.89	38926	17.14	89288		
10	112	111.11	**3483**	109.55	**3593**	112	**3603**	111	**3733**		
		2.52	14349	4.85	27221	6.82	39011	15.77	89400		
9.3	125	129.28	**3483**	122.06	**3593**	122	**3603**	129	**3733**		
		2.17	14378	4.36	27265	6.26	39005	13.57	89403		
8.3	140	140.31	**3483**	138.42	**3593**	137	**3603**	141	**3733**		
		2	14393	3.85	27319	5.57	38992	12.4	89404		
7.3	160	154.98	**3483**	158.87	**3593**	153	**3603**	158	**3733**		
		1.81	14410	3.36	27372	4.99	38992	11.08	89409		
6.4	180	172.09	**3483**	172.82	**3593**	199	**3603**	175	**3733**		
		1.64	14428	3.09	27398	3.84	39027	10	89390		
5.8	200	203.99	**3483**	201.34	**3593**	216	**3603**	198	**3733**		
		1.38	14455	2.66	27451	3.54	39052	8.84	89392		
5.2	224					216	**3603**	217	**3733**		
						3.54	39051	8.06	89325		
4.6	250					252	**3603**	244	**3733**		
						3.03	38996	7.17	89349		

If shaded, mechanical H.P. may exceed thermal H.P. limit.
Refer to page A-144.

Exact ratio	**Gear frame**
Input H.P.	Output torque

Browning

Speed Reducers

Motor RPM 870

CbN SERIES 3000

Exact Ratio rpm, HP and Torque

rpm	Nom. Ratio	Size of CbN 3000 Reducer											
		0		1			2			3			
696	1.25	1.24	**3001**	1.22	**3101**		1.23	**3201**		1.26	**3301**		
		1.52	134	4.27	370		7.5	654		9.03	810		
621	1.4	1.46	**3001**	1.38	**3101**		1.45	**3201**		1.46	**3301**		
		1.52	158	3.9	391		6.87	708		8.6	890		
544	1.6	1.54	**3001**	1.56	**3101**		1.55	**3201**		1.61	**3301**		
		1.52	166	3.85	425		6.44	708		8.41	959		
483	1.8	1.83	**3001**	1.76	**3101**		1.75	**3201**		1.77	**3301**		
		1.52	197	3.54	442		5.7	708		8.6	1083		
435	2	1.96	**3001**	2	**3101**		1.94	**3201**		2.04	**3301**		
		1.52	212	3.12	442		5.14	708		8.98	1298		
388	2.24	2.19	**3001**	2.29	**3101**		2.21	**3201**		2.25	**3301**		
		1.52	237	2.73	442		4.51	708		8.31	1327		
348	2.5	2.55	**3001**	2.58	**3101**		2.55	**3201**		2.58	**3301**		
		1.52	276	2.42	442		3.92	708		7.24	1327		
311	2.8	2.75	**3001**	2.74	**3101**		2.77	**3201**		2.91	**3301**		
		1.52	298	2.28	443		3.66	708		6.42	1327		
276	3.15	3.24	**3001**	3.25	**3101**		3.09	**3201**		3.16	**3301**		
		1.52	350	1.92	442		3.23	708		5.91	1327		
245	3.55	3.63	**3001**	3.44	**3101**		3.43	**3201**		3.52	**3301**		
		1.39	351	1.81	442		2.91	708		5.31	1327		
218	4	4.08	**3001**	3.93	**3101**		3.89	**3201**		3.95	**3301**		
		1.32	375	1.59	442		2.56	708		4.73	1327		
				3.91	**3122**		3.87	**3242**		3.96	**3362**		
				4.41	1202		8.19	2208		13.04	3615		
193	4.5	4.58	**3001**	4.36	**3101**		4.33	**3201**		4.47	**3301**		
		1.14	365	1.42	442		2.3	708		4.18	1327		
				4.43	**3122**		4.57	**3242**		4.59	**3362**		
				3.96	1221		6.93	2208		11.31	3615		
174	5	5.17	**3001**	4.92	**3101**		4.88	**3201**		4.87	**3301**		
		0.49	178	1.27	442		2.04	708		3.84	1327		
				4.99	**3122**		4.88	**3242**		5.06	**3362**		
				3.6	1252		6.5	2208		10.26	3615		
155	5.6	5.82	**3001**	5.69	**3101**		5.71	**3201**		5.5	**3301**		
		0.49	201	1.09	442		1.74	708		3.4	1327		
				5.65	**3122**		5.51	**3242**		5.59	**3362**		
				3.18	1252		5.75	2208		9.29	3615		
138	6.3	6.4	**3001**	6.25	**3101**		6.31	**3201**		6.33	**3301**		
		0.49	221	1	442		1.58	708		2.95	1327		
				6.42	**3122**		6.1	**3242**		6.41	**3362**		
				2.8	1252		5.19	2208		8.09	3615		
122	7.1	7.22	**3001**	7.17	**3101**		6.92	**3201**		7.06	**3301**		
		0.49	249	0.49	248		1.44	708		2.64	1327		
		7.38	**3012**	7.34	**3122**		6.96	**3242**		7.09	**3362**		
		1.52	733	2.45	1252		4.56	2208		7.32	3615		
109	8	8.13	**3001**	7.91	**3101**		8.06	**3201**		7.83	**3301**		
		0.45	254	0.49	274		1.23	708		2.39	1327		
		8.16	**3012**	8.28	**3122**	7.57	**3132**	8.02	**3242**	7.63	**3252**	8.14	**3362**	7.85	**3372**
		1.37	779	2.17	1252	3.17	1673	3.95	2208	6.29	3151	6.38	3615	13.01	7100
97	9	8.59	**3012**	8.79	**3122**	8.57	**3132**	8.57	**3242**	9.02	**3252**	9.16	**3362**	9.06	**3372**
		1.3	780	2.05	1252	2.93	1750	3.7	2208	5.67	3352	5.66	3615	11.31	7132
87	10	10.2	**3012**	10.43	**3122**	9.67	**3132**	9.72	**3242**	9.62	**3252**	9.95	**3362**	9.98	**3372**
		1.1	783	1.72	1252	2.61	1760	3.26	2208	5.41	3417	5.21	3615	10.26	7132
78	11.2	10.92	**3012**	11.04	**3122**	10.94	**3132**	10.8	**3242**	10.88	**3252**	11.09	**3362**	11.03	**3372**
		1.03	784	1.63	1252	2.32	1766	2.93	2208	5.01	3573	4.68	3615	9.29	7132

Exact ratio	**Gear frame**
Input H.P.	Output torque

Motor RPM 870 (Continued)

Exact Ratio rpm, HP and Torque

rpm	Nom. Ratio	Size of CbN Reducer									
		4		5		6		7		8	
696	**1.25**	1.24	**3401**	1.28	**3501**						
		20.12	1770	33.12	2998						
621	**1.4**	1.38	**3401**	1.46	**3501**						
		21.57	2121	33.12	3432						
544	**1.6**	1.56	**3401**	1.6	**3501**						
		21.82	2411	32.35	3677						
483	**1.8**	1.74	**3401**	1.79	**3501**						
		18.49	2279	31.43	3986						
435	**2**	1.97	**3401**	2	**3501**						
		18.92	2644	29.96	4256						
388	**2.24**	2.17	**3401**	2.25	**3501**						
		17.72	2734	28.39	4537						
348	**2.5**	2.54	**3401**	2.44	**3501**						
		15.92	2870	27.29	4731						
311	**2.8**	2.83	**3401**	2.77	**3501**						
		14.42	2903	25.15	4956						
276	**3.15**	3.18	**3401**	3.07	**3501**	3.21	**3602**				
		12.84	2903	23.95	5221	60	13394				
245	**3.55**	3.6	**3401**	3.55	**3501**	3.64	**3602**				
		11.35	2903	20.71	5221	60	15189				
218	**4**	4.11	**3401**	3.88	**3501**						
		9.94	2903	18.97	5221						
		3.91	**3482**	4.07	**3592**	3.88	**3602**				
		20.31	5532	33.12	9370	60	16190				
193	**4.5**	4.41	**3401**	4.35	**3501**						
		9.26	2903	16.89	5221						
		4.37	**3482**	4.66	**3592**	4.34	**3602**	4.39	**3732**		
		21.78	6632	33.12	10725	60	18109	60	18318		
174	**5**	5.13	**3401**	4.85	**3501**						
		7.96	2903	15.16	5221						
		4.91	**3482**	5.1	**3592**	4.91	**3602**	4.91	**3732**		
		22.03	7537	33.12	11758	60	20488	60	20488		
155	**5.6**	5.57	**3401**	5.5	**3501**						
		7.34	2903	13.07	5103						
		5.48	**3482**	5.7	**3592**	5.56	**3602**	5.63	**3732**	5.76	**3842**
		18.67	7126	30.16	11968	60	23200	60	23492	95	37900
138	**6.3**	6.15	**3401**	6.31	**3501**						
		6.64	2903	11.65	5221						
		6.21	**3482**	6.38	**3592**	6.15	**3602**	6.21	**3732**	6.36	**3842**
		19.1	8267	28.19	12531	60	25662	60	25912	95	42036
123	**7.1**	6.83	**3401**	6.87	**3501**						
		5.63	2731	10.17	5221						
		6.86	**3482**	7.18	**3592**	6.86	**3602**	7.24	**3732**	6.98	**3842**
		17.89	8547	25.52	12761	57.4	27384	71.1	29376	95	46134
109	**8**	8.1	**3401**	8	**3501**						
		4.85	2792	9.19	5221						
		7.69	**3482**	7.92	**3592**	7.71	**3602**	7.99	**3732**	8.15	**3842**
		20.31	10887	33.12	18250	55	29490	60	33340	95	53868
97	**9**	8.6	**3482**	9.07	**3592**	9.03	**3602**	9.09	**3732**	8.8	**3842**
		21.78	13051	33.12	20890	43.9	27569	60	37930	95	58164
87	**10**	9.67	**3482**	9.94	**3592**	9.63	**3602**	10.3	**3732**	10	**3842**
		20.18	13589	33.12	22902	51.3	34356	60	42979	95	66095
78	**11.2**	10.78	**3482**	11.1	**3592**	10.9	**3602**	11	**3732**	11.1	**3842**
		18.17	13645	30.16	23310	46	34870	60	45900	95.0	73366

If shaded, mechanical H.P. may exceed thermal H.P. limit.
Refer to page A-144.

Exact ratio	**Gear frame**
Input H.P.	Output torque

Browning

Speed Reducers

CbN SERIES 3000

Motor RPM 870 (Continued)

Exact Ratio rpm, HP and Torque

rpm	Nom. Ratio	Size of CbN 3000 Reducer											
		0		1			2			3			
70	12.5	12.23	**3012**	12.61	**3122**	12.43	**3132**	12.27	**3242**	12.04	**3252**	12.45	**3362**	12.65	**3372**
		0.92	786	1.42	1252	2.05	1772	2.58	2208	4.68	3923	4.17	3615	8.09	7132
62	14	14.24	**3012**	14.08	**3122**	14.2	**3132**	13.65	**3242**	13.72	**3252**	14.09	**3362**	13.98	**3372**
		0.8	789	1.28	1252	1.8	1777	2.32	2208	4.15	3866	3.68	3615	7.32	7132
54	16	15.35	**3012**	15.79	**3122**	16.03	**3132**	15.36	**3242**	15.82	**3252**	15.33	**3362**	16.05	**3372**
		0.74	790	1.14	1252	1.6	1782	2.06	2208	3.61	3960	3.39	3615	6.38	7132
48	18	18.06	**3012**	18.28	**3122**	17.01	**3132**	18	**3242**	16.9	**3252**	17.33	**3362**	18.08	**3372**
		0.63	793	0.98	1252	1.51	1785	1.76	2208	3.39	3967	3	3615	5.66	7132
44	20	20.24	**3012**	20.07	**3122**	20.2	**3132**	19.87	**3242**	19.18	**3252**	19.95	**3362**	19.64	**3372**
		0.56	794	0.9	1252	1.27	1791	1.6	2208	2.99	3980	2.6	3615	5.21	7132
39	22.4	22.76	**3012**	23.01	**3122**	21.36	**3132**	21.79	**3242**	21.31	**3252**	22.29	**3362**	21.89	**3372**
		0.5	796	0.49	780	1.21	1793	1.45	2208	2.7	3991	2.33	3615	4.68	7132
35	25	25.59	**3012**	25.39	**3122**	24.41	**3132**	25.44	**3242**	24.2	**3252**	24.68	**3362**	24.56	**3372**
		0.45	798	0.49	861	1.06	1798	1.25	2208	2.38	4003	2.1	3615	4.17	7132
31	28	28.85	**3012**			27.25	**3132**			26.93	**3252**			27.8	**3372**
		0.4	799			0.95	1801			2.15	4013			3.68	7132
28	31.5	33.48	**3012**			30.55	**3132**			30.29	**3252**	31.84	**3363**	30.24	**3372**
		0.35	800			0.85	1804			1.91	4023	2.81	6100	3.39	7132
25	35.5	35.73	**3012**			35.37	**3132**			35.51	**3252**	35.18	**3363**	34.18	**3372**
		0.32	800			0.73	1804			1.63	4036	2.54	6100	3	7132
22	40	40.32	**3012**			38.84	**3132**			39.2	**3252**	41.1	**3363**	39.36	**3372**
		0.28	800			0.67	1804			1.48	4038	2.21	6100	2.6	7132
19	45	45.36	**3012**			44.54	**3132**			42.98	**3252**	45.4	**3363**	43.98	**3372**
		0.25	800			0.59	1804			1.35	4038	2	6100	2.33	7132
17	50	49.16	**3013**			49.15	**3132**			50.19	**3252**	52.09	**3363**	48.68	**3372**
		0.24	796			0.52	1804			1.16	4038	1.74	6100	2.1	7132
16	56	55.04	**3013**			57.83	**3133**			55.7	**3253**	57.6	**3363**	57.57	**3373**
		0.21	798			0.46	1804			1.06	4038	1.55	6100	1.88	7389
14	63	64.07	**3013**			65.25	**3133**			64.2	**3253**	66.11	**3363**	66.1	**3373**
		0.18	800			0.4	1804			0.92	4038	1.43	6100	1.64	7389
12	71	69.09	**3013**			69.24	**3133**			68.61	**3253**	74.4	**3363**	74.44	**3373**
		0.17	801			0.38	1804			0.86	4038	1.28	6100	1.5	7611
11	80	81.29	**3013**			82.23	**3133**			77.86	**3253**	80.86	**3363**	80.86	**3373**
		0.14	803			0.32	1804			0.76	4038	1.14	6100	1.38	7611
10	90	91.08	**3013**			86.97	**3133**			86.48	**3253**	90.12	**3363**	90.12	**3373**
		0.13	804			0.3	1804			0.68	4038	1.01	6100	1.24	7611
9	100	102.43	**3013**			99.4	**3133**			98.24	**3253**	101.13	**3363**	101.13	**3373**
		0.12	806			0.27	1804			0.6	4038	0.93	6100	1.1	7611
8	112	115.16	**3013**			110.94	**3133**			109.3	**3253**	114.47	**3363**	114.47	**3373**
		0.1	807			0.24	1804			0.54	4038	0.82	6100	0.97	7611
7	125	129.81	**3013**			124.4	**3133**			122.96	**3253**	124.53	**3363**	124.53	**3373**
		0.09	808			0.16	1380			0.48	4038	0.71	6100	0.89	7611
6.2	140	146.18	**3013**			144.02	**3133**			144.13	**3253**	141	**3363**	140.74	**3373**
		0.08	809			0.15	1438			0.41	4038	0.64	6100	0.79	7611
5.4	160	160.8	**3013**			158.13	**3133**			159.1	**3253**	162.1	**3363**	162.06	**3373**
		0.07	810			0.14	1497			0.37	4038	0.58	6100	0.69	7611
4.8	180	181.46	**3013**			181.32	**3133**			174.46	**3253**	181	**3363**	181.09	**3373**
		0.07	811			0.11	1560			0.34	4038	0.49	6100	0.61	7611
4.4	200	204.14	**3013**			200.11	**3133**			203.72	**3253**	200.44	**3363**	200.44	**3373**
		0.06	812			0.11	1628			0.29	4038	0.45	6100	0.56	7611

Exact ratio	**Gear frame**
Input H.P.	Output torque

Motor RPM 870 (Continued)

Exact Ratio rpm, HP and Torque

rpm	Nom. Ratio	Size of CbN Reducer											
		4		5		6		7		8			
70	12.5	12.23 16.09	**3482** 13706	12.43 28.2	**3592** 24410	12.1 42	**3602** 35343	12.2 60	**3732** 50907	12.5 95.0	**3842** 82618		
62	14	13.5 14.62	**3482** 13752	13.98 25.51	**3592** 24847	13.5 38.2	**3602** 35864	13.8 60	**3732** 57583	13.8 95.0	**3842** 91211		
54	16	15.77 12.58	**3482** 13821	15.17 24.19	**3592** 25563	15.1 34.7	**3602** 36439	15.7 60	**3732** 65511	15.5 95.0	**3842** 102447		
48	18	17.61 11.31	**3482** 13867	17.24 21.82	**3592** 26206	17.7 30.2	**3602** 37174	17.8 60	**3732** 74274	17.5 95.0	**3842** 115666		
44	20	19.77 10.1	**3482** 13914	19.07 19.01	**3592** 25248	20 27.1	**3602** 37693	20.1 58	**3732** 81075	19.5 90.2	**3842** 122391		
39	22.4	22.37 8.96	**3482** 13961	22.06 17.18	**3592** 26404	21.9 24.9	**3602** 37923	22.6 52.5	**3732** 82515	22 60.0	**3842** 91837		
35	25	25.55 7.87	**3482** 14008	24.08 15.78	**3592** 26475	25.5 21.4	**3602** 37950	25.2 47.8	**3732** 83770	24.7 60.0	**3842** 103108.		
31	28	27.42 7.35	**3482** 14033	27.05 14.1	**3592** 26560	27.7 19.8	**3602** 38142	28.4 43.1	**3732** 85125	27.6 58.2	**3842** 111758	27.8 60.0	**3843** 113728
28	31.5	31.9 6.34	**3482** 14083	30.14 12.69	**3592** 26634	31.1 17.70	**3602** 38282	31.8 37.6	**3732** 83153	30.9 47.7	**3842** 102547	31.7 60.0	**3843** 129683
25	35.5	34.62 5.85	**3482** 14108	34.18 11.22	**3592** 26717	34.5 16	**3602** 38388	36 30.7	**3732** 76860	34.6 36.8	**3842** 88587	35.3 54.7	**3843** 131697
22	40	38.24 5.31	**3482** 14138	39.23 9.81	**3592** 26802	39 14.2	**3602** 38513	40.2 26.4	**3732** 73806	39.1 28.1	**3842** 76441	39.6 48.9	**3843** 132077
19	45	42.46 4.79	**3482** 14169	42.67 9.04	**3592** 26855	42.8 12.9	**3602** 38397	43.2 28.1	**3733** 82663			44.3 43.8	**3843** 132441
17	50	50.34 4.05	**3482** 14215	49.71 7.78	**3592** 26941	48.1 11.5	**3602** 38468	48.8 26.2	**3733** 87064			50.7 38.4	**3843** 132869
16	56	54.71 3.81	**3483** 14236	56.63 6.92	**3593** 26776	56.2 10.1	**3603** 38652	55.4 23.5	**3733** 88654			56 34.9	**3843** 133174
14	63	63.93 3.27	**3483** 14274	61.44 6.44	**3593** 27053	63 9.05	**3603** 38824	61.2 21.34	**3733** 88933			63.4 30.9	**3843** 133566
12	71	71.36 2.93	**3483** 14299	69.82 5.68	**3593** 27115	70.8 8.07	**3603** 38907	68.3 19.17	**3733** 89158			71.7 27.4	**3843** 133962
11	80	80.13 2.62	**3483** 14324	77.24 5.15	**3593** 27162	76.9 7.45	**3603** 39012	76.8 19.09	**3733** 99836			81.9 24.0	**3843** 134209
10	90	90.66 2.32	**3483** 14349	89.35 4.46	**3593** 27227	87.3 6.56	**3603** 38997	89.9 14.6	**3733** 89378			92.4 21.3	**3843** 134209
9	100	103.54 2.03	**3483** 14375	97.53 4.09	**3593** 27260	96.6 5.93	**3603** 39007	102 12.87	**3733** 89392			104 18.9	**3843** 134209
8	112	111.11 1.89	**3483** 14388	109.55 3.65	**3593** 27304	112 5.11	**3603** 38972	111 11.82	**3733** 89343			116 17.0	**3843** 134209
7	125	129.28 1.63	**3483** 14415	122.06 3.28	**3593** 27348	122 4.69	**3603** 38963	129 10.17	**3733** 89337			130 15.1	**3843** 134209
6.2	140	140.31 1.5	**3483** 14428	138.42 2.9	**3593** 27395	137 4.18	**3603** 38995	141 9.31	**3733** 89390			146 13.5	3843 134209
5.4	160	154.98 1.36	**3483** 14444	158.87 2.53	**3593** 27442	153 3.74	**3603** 38965	158 8.31	**3733** 89408			165 11.9	3843 134209
4.8	180	172.09 1.23	**3483** 14460	172.82 2.33	**3593** 27463	173 3.31	**3603** 38993	175 7.5	**3733** 89375			184 10.7	3843 134209
4.4	200	203.99 1.04	**3483** 14485	201.34 2	**3593** 27510	199 2.88	**3603** 39027	198 6.63	**3733** 89392			197 9.99	3843 134209
3.9	224					216 2.65	**3603** 38978	217 6.05	**3733** 89399			221 8.91	3843 134209
3.5	250					252 2.27	**3603** 38953	244 5.38	**3733** 89390				

Exact ratio	**Gear frame**
Input H.P.	Output torque

Browning®

Speed Reducers

CbN SERIES 3000

Combined - Motor RPM 1750

Exact Ratio rpm, HP and Torque

rpm	Nom. Ratio	Size of CbN Reducer													
		2		3		4		5		6		7		8	
12.5	140														
10.9	160														
9.7	180														
8.8	200														
7.8	224	223.5 0.545	**3254** 4038	223.2 0.964	**3374** 7132	229.4 1.869	**3484** 14206	228.2 3.556	**3594** 26890					210.21 17.53	**3844** 122392
7	250	247.2 0.493	**3254** 4038	246.8 0.872	**3374** 7132	241.5 1.775	**3484** 14206	258.3 3.142	**3594** 26890					238.49 15.45	**3844** 122392
6.3	280	260.2 0.468	**3254** 4038	259.8 0.829	**3374** 7132	273.4 1.568	**3484** 14206	291.5 2.784	**3594** 26890	280.01 4.148	**3604** 38582	272.1 9.128	**3734** 82505	263.25 14.00	**3844** 122392
5.6	315	308.9 0.395	**3254** 4038	308.4 0.698	**3374** 7132	308.5 1.39	**3484** 14206	329.7 2.462	**3594** 26890	299.1 3.883	**3604** 38580.	310.07 8.01	**3734** 82503	307.52 11.98	**3844** 122392
4.9	355	330.8 0.368	**3254** 4038	330.2 0.652	**3374** 7132	349 1.229	**3484** 14206	374.5 2.167	**3594** 26890	339.486 3.422	**3604** 38590	357.53 6.947	**3734** 82506	343.39 10.73	**3844** 122392
4.4	400	370.4 0.329	**3254** 4038	369.8 0.582	**3374** 7132	396.5 1.081	**3484** 14206	428 1.896	**3594** 26890	377.19 3.079	**3604** 38578	381.94 6.503	**3734** 82506	385.52 9.56	**3844** 122392
3.9	450	431.3 0.283	**3254** 4038	430.6 0.5	**3374** 7132	453 0.946	**3484** 14206	483.1 1.68	**3594** 26890	428.34 2.711	**3604** 38574	433.47 5.73	**3734** 82507	436.22 8.45	**3844** 122392
3.5	500	465 0.262	**3254** 4038	464.2 0.464	**3374** 7132	511.4 0.838	**3484** 14206	512.7 1.583	**3594** 26890	476.66 2.437	**3604** 38587	481.61 5.157	**3734** 82503	498.23 7.40	**3844** 122392
3.1	560	547 0.223	**3254** 4038	546.1 0.394	**3374** 7132	542.6 0.79	**3484** 14206	608.8 1.333	**3594** 26890	536.13 2.167	**3604** 38592	546.92 4.541	**3734** 82500	534.69 6.89	**3844** 122392
2.8	630	613.1 0.199	**3254** 4038	612.1 0.352	**3374** 7132	644.4 0.665	**3484** 14206	643.8 1.261	**3594** 26890	628.53 1.848	**3604** 38583	608.62 4.081	**3734** 82507	622.05 5.92	**3844** 122392
2.5	710	689.4 0.177	**3254** 4038	688.3 0.313	**3374** 7132	681.4 0.629	**3484** 14206	735.7 1.103	**3594** 26890	693.84 1.674	**3604** 38582	684.55 3.628	**3734** 82499	675.09 5.46	**3844** 122392
2.2	800	775.1 0.157	**3254** 4038	773.8 0.278	**3374** 7132	778.7 0.551	**3484** 14206	821.3 0.988	**3594** 26890	760.75 1.527	**3604** 38588	802.53 3.095	**3734** 82508	745.68 4.94	**3844** 122392
1.9	900	873.9 0.139	**3254** 4038	872.4 0.247	**3374** 7132	869.3 0.493	**3484** 14206	920.8 0.881	**3594** 26890	888.36 1.308	**3604** 38598	885.92 2.804	**3734** 82518	827.97 4.45	**3844** 122392
1.8	1000	983.8 0.124	**3254** 4038	982.2 0.219	**3374** 7132	974.5 0.44	**3484** 14206	1066.1 0.761	**3594** 26890	986.89 1.202	**3605** 38616	971.35 2.557	**3734** 82506	981.63 3.75	**3844** 122392
1.6	1120	1082.3 0.113	**3254** 4038	1080.5 0.199	**3374** 7132	1128.3 0.38	**3484** 14206	1170.6 0.693	**3594** 26890	1136.34 1.043	**3605** 38583	1134.29 2.19	**3734** 82517	1066.85 3.52	**3845** 122392
1.4	1250	1221.3 0.1	**3254** 4038	1219.3 0.177	**3374** 7132	1239 0.346	**3484** 14206	1342.4 0.605	**3594** 26890	1214.4 0.976	**3605** 38584.	1258.82 2.013	**3735** 82492	1246.64 3.02	**3845** 122392

Exact ratio	**Gear frame**
Input H.P.	Output torque

Combined - Motor RPM 1750 (Continued)

Exact Ratio rpm, HP and Torque

rpm	Nom. Ratio	Size of CbN Reducer													
		2		3		4		5		6		7		8	
1.3	1400	1374	**3255**	1371.7	**3375**	1420.8	**3484**	1481.4	**3594**	1378.1	**3605**	1450.92	**3735**	1391.52	**3845**
		0.091	4038	0.171	7611	0.302	14206	0.548	26890	0.860	38581	1.747	82516	2.70	122392
1.1	1600	1498.6	**3255**	1555.6	**3375**	1567.9	**3484**	1536.3	**3595**	1530.7	**3605**	1550.58	**3735**	1562.54	**3845**
		0.083	4038	0.151	7611	0.273	14206	0.554	27563	0.774	38568	1.635	82531	2.41	122392
0.97	1800	1779.5	**3255**	1847.1	**3375**	1695.5	**3485**	1738	**3595**	1738.8	**3605**	1759.6	**3735**	1767.87	**3845**
		0.07	4038	0.127	7611	0.264	14507	0.489	27563	0.862	48793	1.44	82486	2.13	122392
0.88	2000	1905.1	**3255**	1977.5	**3375**	1926.4	**3485**	1974.8	**3595**	1934.6	**3605**	1954.448	**3735**	2019.03	**3845**
		0.065	4038	0.119	7611	0.232	14507	0.431	27563	0.613	38606	1.297	82521	1.86	122392
0.78	2240	2133.6	**3255**	2214.7	**3375**	2200.7	**3485**	2256	**3595**	2176.4	**3605**	2220.22	**3735**	2166.65	**3845**
		0.058	4038	0.106	7611	0.203	14507	0.377	27563	0.545	38613	1.142	82540	1.74	122392
0.7	2500	2484.3	**3255**	2578.7	**3375**	2484.3	**3485**	2546.7	**3595**	2551.1	**3605**	2470.2	**3735**	2520.96	**3845**
		0.05	4038	0.091	7611	0.18	14507	0.334	27563	0.465	38617	1.026	82505	1.49	122392
0.63	2800	2678	**3255**	2779.7	**3375**	2636.2	**3485**	2702.4	**3595**	2816.1	**3605**	2778.896	**3735**	2736.04	**3845**
		0.047	4038	0.084	7611	0.17	14507	0.315	27563	0.421	38595	0.912	82503	1.37	122392
0.56	3150	3150.7	**3255**	3270.5	**3375**	3130.6	**3485**	3209.2	**3595**	3087.9	**3605**	3257.34	**3735**	3011.11	**3845**
		0.04	4038	0.072	7611	0.143	14507	0.265	27563	0.384	38601	0.778	82498	1.25	122392
0.49	3550	3531.1	**3255**	3665.3	**3375**	3310.4	**3485**	3393.5	**3595**	3605.8	**3605**	3595.6	**3735**	3355.76	**3845**
		0.035	4038	0.064	7611	0.135	14507	0.251	27563	0.329	38619	0.705	82521	1.12	122392
0.44	4000	3970.7	**3255**	4121.6	**3375**	3783.1	**3485**	3878	**3595**	3939.4	**3606**	3942.8	**3735**	3977.81	**3845**
		0.031	4038	0.057	7611	0.118	14507	0.219	27563	0.310	38960	0.643	82531	0.95	122392
0.39	4500	4464.4	**3255**	4634.1	**3375**	4223.2	**3485**	4329.2	**3595**	4382.9	**3606**	4604.1	**3735**	4583.78	**3846**
		0.028	4038	0.051	7611	0.106	14507	0.196	27563	0.279	39011	0.55	82435	0.92	133962
0.35	5000	5033.2	**3255**	5224.4	**3375**	4734.6	**3485**	4853.5	**3595**	4930.7	**3606**	5007.43	**3736**	5116.51	**3846**
		0.025	4038	0.045	7611	0.095	14507	0.175	27563	0.248	39011	0.559	89301	0.82	133962
0.31	5600	5666.5	**3255**	5881.8	**3375**	5481.6	**3485**	5619.2	**3595**	5779.6	**3606**	5771.58	**3736**	5745.32	**3846**
		0.022	4038	0.04	7611	0.082	14507	0.151	27563	0.211	38905	0.485	89303	0.73	133962
0.28	6300	6233.5	**3255**	6470.3	**3375**	6019.4	**3485**	6170.5	**3595**	6238.4	**3606**	6168	**3736**	6500.32	**3846**
		0.02	4038	0.036	7611	0.074	14507	0.138	27563	0.196	39008	0.454	89337	0.65	133962
0.25	7100	7034.2	**3255**	7301.6	**3375**	6904.4	**3485**	7077.7	**3595**	7190.4	**3606**	6999.6	**3736**	7423.82	**3846**
		0.018	4038	0.032	7611	0.065	14507	0.12	27563	0.170	38997	0.4	89323	0.57	133962
0.22	8000	7913.5	**3255**	8214.2	**3375**	7617.3	**3485**	7808.5	**3595**	7684.32	**3606**	7853.7	**3736**	7966.59	**3846**
		0.016	4038	0.029	7611	0.059	14507	0.109	27563	0.159	38979	0.357	89448	0.53	133962
0.19	9000	8576.5	**3256**	8982.1	**3376**	8891.1	**3486**	8876.4	**3596**	8720.3	**3606**	9052.2	**3736**	9269.38	**3846**
		0.015	4038	0.027	7611	0.051	14401	0.097	27333	0.14	38948	0.309	89236	0.45	133962
0.18	10000	9602.3	**3256**	9967.2	**3376**	9932.4	**3486**	9912.3	**3596**	9685.8	**3606**	9674	**3736**	10060.23	**3846**
		0.013	4038	0.024	7611	0.046	14401	0.087	27333	0.126	38934	0.2896	89379	0.42	133962

Exact ratio	**Gear frame**
Input H.P.	Output torque

Thermal Power Rating (Pt)

Nominal Ratio	Reducer Size			
	5	6	7	8
	Pt (hp)	Pt (hp)	Pt (hp)	Pt (hp)
3.15	-	65	84	-
3.55	-	65	84	-
4	46	65	84	-
4.5	46	65	83	-
5	46	65	83	-
5.6	46	65	83	95
6.3	46	65	83	95
7.1	45	64	83	95
8	45	64	82	95
9	44	64	80	95
10	43	63	78	95
11.2	43	62	76	95
12.5	43	60	76	95
14	43	59	76	95
16	43	59	76	95
18	-	-	76	80
20	-	-	76	80
22.4	-	-	76	80
25	-	-	76	80
28	-	-	76	80
31.5	-	-	-	80
35.5	-	-	-	80
40	-	-	-	80
45	-	-	-	80

Modifications

Gear Modifications

G11 Corro-Duty

Corro-Duty® gear reducers are designed for applications in food processing, chemical, poultry and any other industries that will be subjected to extreme humidity, washdown, steam, detergents, and mild acids. Construction of the Corro-Duty reducer includes the normally closed breather in the gear case. The exterior of the entire unit is then painted in one of the two options chosen at order entry:

Option #1 - Corro-Duty grey
- 2 step paint system using 316 stainless steel paint
- Light grey semigloss finish
- USDA and FDA approved

Option #2 - Corro-Duty white
- 2 step paint system using epoxy paint
- White gloss finish
- USDA and FDA approved

G12a Foodgrade Synthetic Lubricant

When this modification is specified, the CbN oil sump is filled with the required volume of an FDA approved H1 rated synthetic lubricant for helical gearing (Refer to page A-224).

G12b Washdown FG Service Reducer

When this modification is specified, a reducer will be built with all the features detailed above under G11 and G12a. When ordering, state the paint finish color that is to be provided.

G15 Export Boxing

Export boxing can be provided for “under-deck” transport. When the quantity of CbN gearmotors or reducers exceeds five (5) units, refer to international sales for most economical accommodations.

G16 Extra or Special Nameplate

Units can be provided with limited additional special information on the standard product nameplate. When required, an extra nameplate may be provided, stamped with custom markings.

Accessories

The following accessories can be ordered along with reducer and will be supplied loose for mounting by others

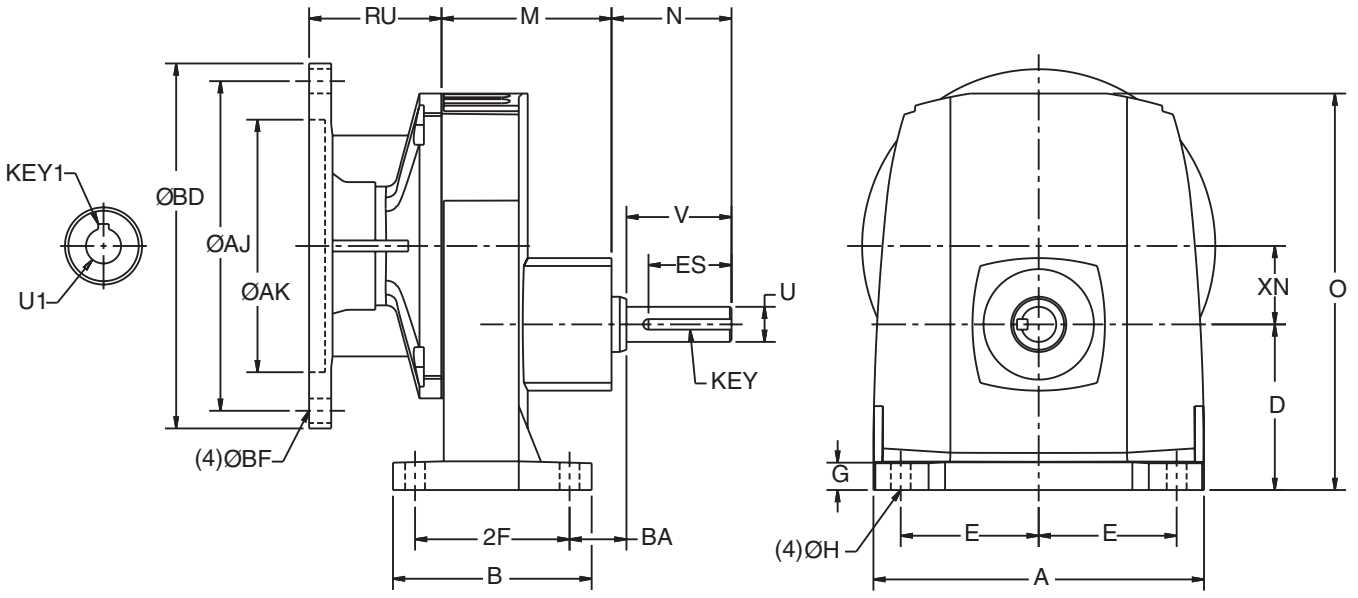
Description	Gear Frames	Part #
NPT Adapter (1/4” NPFT)	31 to 35	0436216
NPT Adapter (3/4” NPFT)	36 to 38	0436218
Oil Level View Port	31 to 35	0435936
	36 to 38	0435938
Scoop Guard Kit (scoop mount reducers)	32 to 35	0965634
	36/37 to 250T	0965635
	36/37 280T to 320T	0965637
	38 to 280T	0965636
	38 w/ 320T	0965637
	36 to 38 Comb.	0965634

Browning®

C-Face Reducer

CbN SERIES 3000

Foot Mounted - Single Reduction



Gear Frame	A	B	D [1]	E	G	H	M	N	O	U [3]	V	BA	2F	ES	XN	Key
30	5.90	3.54	2.95	2.46	0.49	0.35	3.03	2.14	7.07	0.63	1.88	1.01	2.76	1.48	1.40	3/16 Sq.

Motor Frame	AJ	RU	BF	AK	BD	U1	Key1
56C	5.875	3.33	0.44	4.50	6.50	0.625	3/16 Sq.
140TC [4]	5.875	3.33	0.44	4.50	6.50	0.875	3/16 Sq.

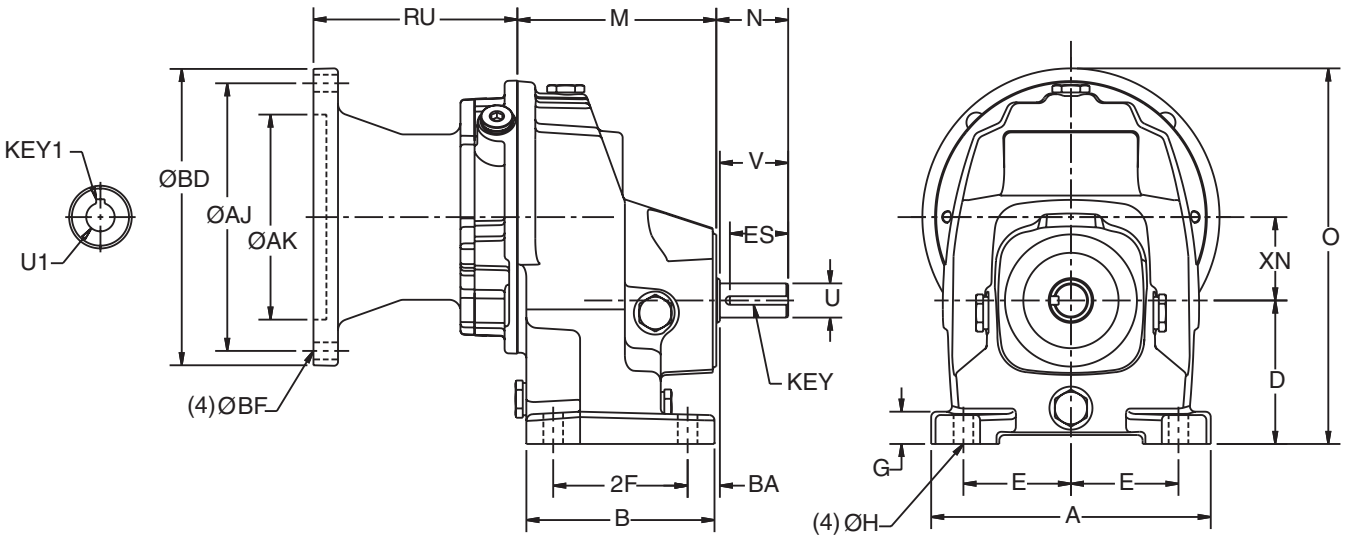
[1] Dimension “D” will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

[2] All rough casting dimensions may vary by .25" due to casting variations.

[3] Shaft extension tolerance: +.0000"; –.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; –.001".

[4] Not available in ratios 5.6 through 8:1.

Foot Mounted - Single Reduction



Gear Frame	A	B	D [1]	E	G	H	M	N	O	U [3]	V	BA	2F	ES	XN	Key
31	6.14	4.13	3.15	2.36	0.71	0.43	4.37	1.58	8.24	0.75	1.50	0.71	2.95	1.28	1.83	3/16 Sq.

Motor Frame	AJ	RU	BF	AK	BD	U1	Key1
56C	5.875	4.48	0.44	4.50	6.50	0.625	3/16 Sq.
140TC	5.875	4.48	0.44	4.50	6.50	0.875	3/16 Sq.
180TC [4]	7.250	6.20	0.57	8.50	9.00	1.125	1/4 Sq.

[1] Dimension “D” will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

[2] All rough casting dimensions may vary by .25" due to casting variations.

[3] Shaft extension tolerance: +.0000"; –.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; –.001".

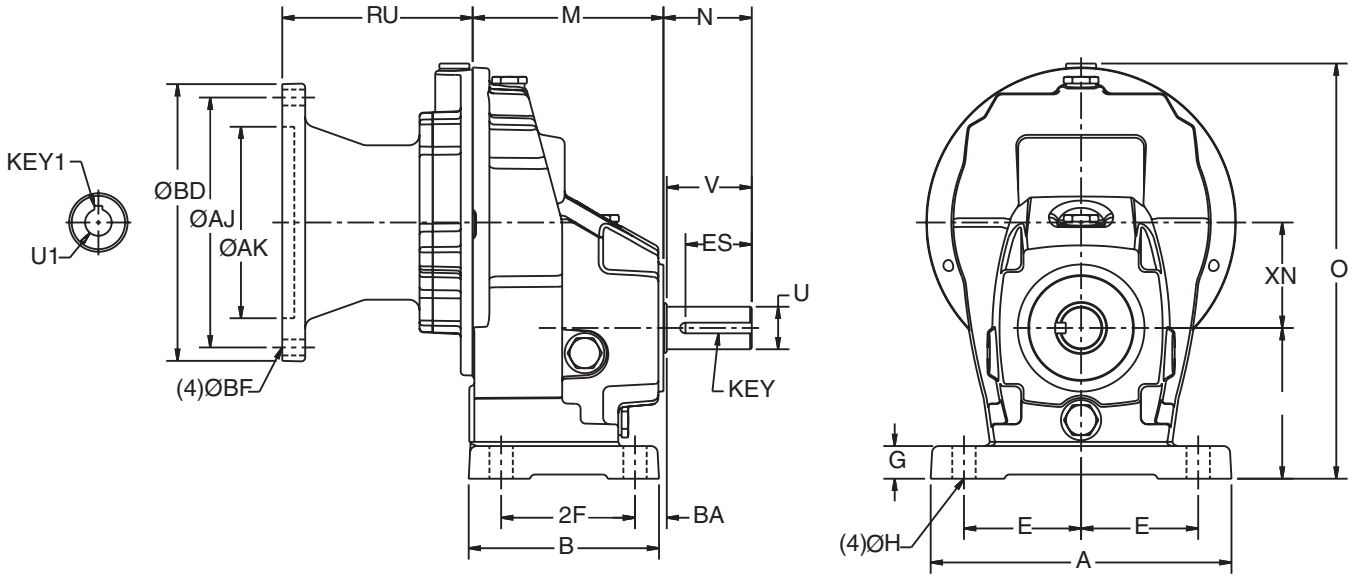
[4] Use foot mounted motor, utilizing separate support of motor feet for this motor frame.

Browning

C-Face Reducer

CbN SERIES 3000

Foot Mounted - Single Reduction



Gear Frame	A	B	D [1]	E	G	H	M	N	O	U [3]	V	BA	2F	ES	XN	Key
32	7.08	4.48	3.54	2.76	0.77	0.55	4.49	2.08	9.76	1.00	2.00	0.75	3.15	1.56	2.48	1/4 Sq.

Motor Frame	AJ	RU	BF	AK	BD	U1	Key1
56C	5.875	4.48	0.44	4.50	6.50	0.625	3/16 Sq.
140TC	5.875	4.48	0.44	4.50	6.50	0.875	3/16 Sq.
180TC	7.250	6.20	0.57	8.50	9.00	1.125	1/4 Sq.
210TC[4]	7.250	6.20	0.57	8.50	9.00	1.375	5/16 Sq.

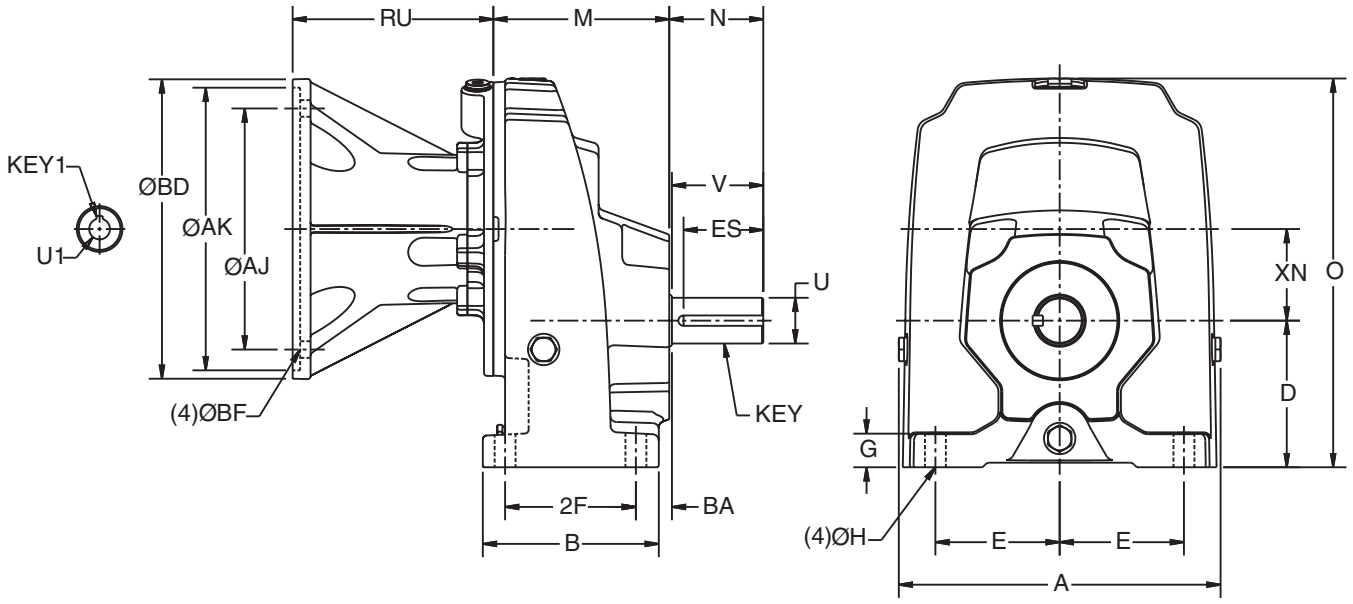
[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

[2] All rough casting dimensions may vary by .25" due to casting variations.

[3] Shaft extension tolerance: +.0000"; –.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; –.001".

[4] Use foot mounted motor, utilizing separate support of motor feet for this motor frame.

Foot Mounted - Single Reduction



Gear Frame	A	B	D [1]	E	G	H	M	N	O	U [3]	V	BA	2F	ES	XN	Key
33	9.69	5.30	4.41	3.74	1.00	0.63	5.30	2.83	11.69	1.38	2.75	1.09	3.94	2.40	2.76	5/16 Sq.

Motor Frame	AJ	RU	BF	AK	BD	U1	Key1
56C	5.875	4.32	0.44	4.50	6.50	0.625	3/16 Sq.
140TC	5.875	4.32	0.44	4.50	6.50	0.875	3/16 Sq.
180TC	7.25	6.04	0.57	8.50	9.00	1.125	1/4 Sq.
210TC [4]	7.25	6.04	0.57	8.50	9.00	1.375	5/16 Sq.

[1] Dimension “D” will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

[2] All rough casting dimensions may vary by .25" due to casting variations.

[3] Shaft extension tolerance: +.0000"; –.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; –.001".

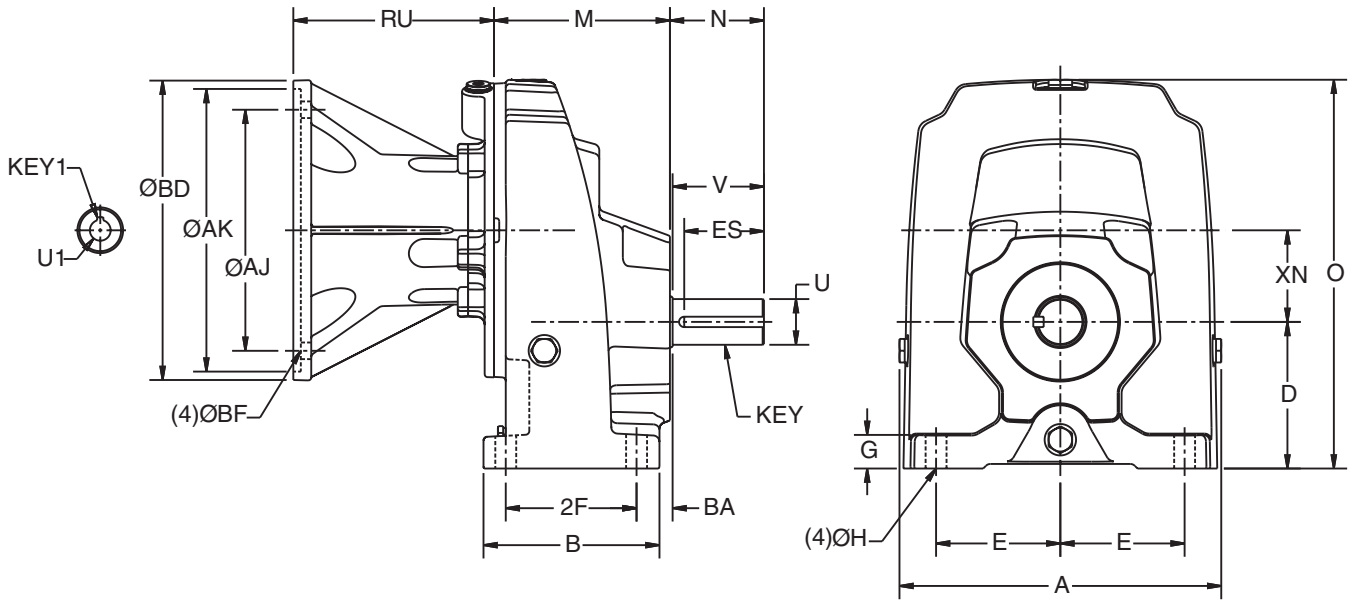
[4] Use foot mounted motor, utilizing separate support of motor feet for this motor frame.

Browning®

C-Face Reducer

CbN SERIES 3000

Foot Mounted - Single Reduction



Gear Frame	A	B	D [1]	E	G	H	M	N	O	U [3]	V	BA	2F	ES	XN	Key
34	11.02	6.59	5.20	4.25	1.34	0.71	6.26	3.06	13.90	1.50	3.00	1.10	4.92	2.56	3.43	3/8 Sq.

Motor Frame	AJ	RU	BF	AK	BD	U1	Key1
182/184TC	7.25	6.22	0.57	8.50	9.00	1.125	1/4 Sq.
213/215TC	7.25	6.22	0.57	8.50	9.00	1.375	5/16 Sq.
254/256TC	7.25	7.43	0.57	8.50	9.00	1.625	3/8 Sq.
284/286TC[4]	9.00	8.40	0.57	10.50	11.25	1.875	1/2 Sq.

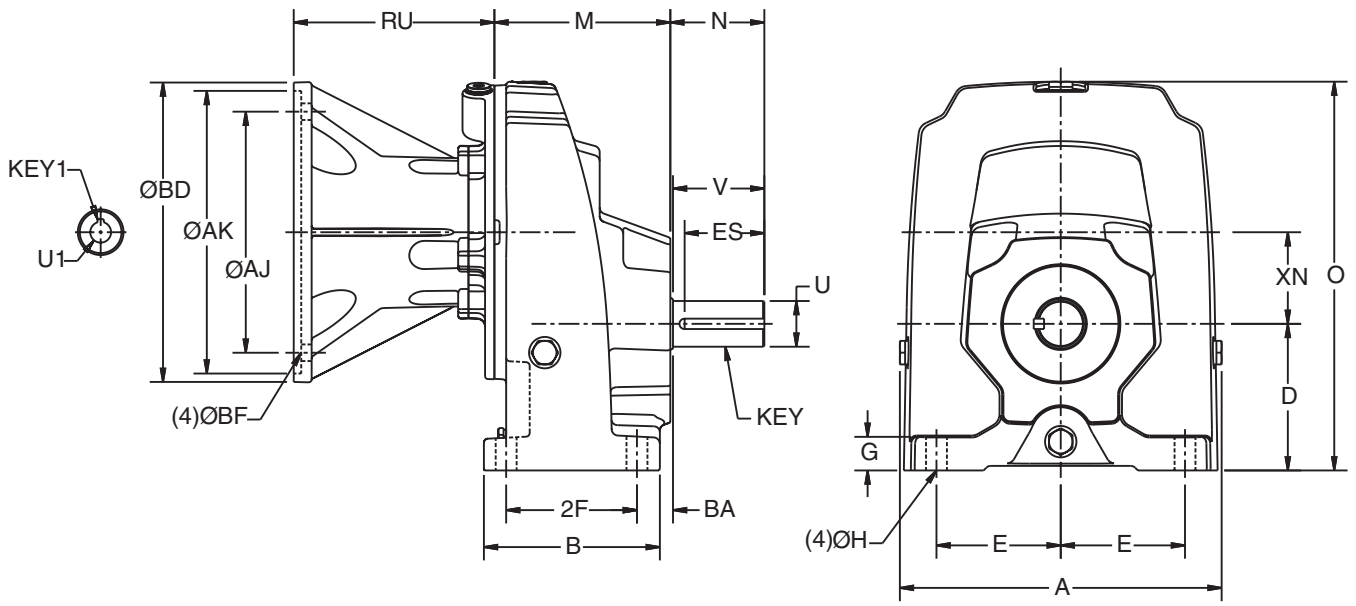
[1] Dimension “D” will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

[2] All rough casting dimensions may vary by .25" due to casting variations.

[3] Shaft extension tolerance: +.0000"; –.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; –.001".

[4] Use foot mounted motor, utilizing separate support of motor feet for this motor frame.

Foot Mounted - Single Reduction



Gear Frame	A	B	D [1]	E	G	H	M	N	O	U [3]	V	BA	2F	ES	XN	Key
35	13.65	7.76	6.30	5.12	1.61	0.79	6.83	3.56	17.37	1.75	3.50	1.18	6.30	3.06	4.33	3/8 Sq.

Motor Frame	AJ	RU	BF	AK	BD	U1	Key1
213/215TC	7.25	5.87	0.57	8.50	9.00	1.375	5/16 Sq.
254/256TC	7.25	7.09	0.57	8.50	9.00	1.625	3/8 Sq.
284/286TC[4]	9.00	8.06	0.57	10.50	11.25	1.875	1/2 Sq.
324/326TC[4]	11.00	8.79	0.69	12.50	13.38	2.125	1/2 Sq.

[1] Dimension “D” will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

[2] All rough casting dimensions may vary by .25" due to casting variations.

[3] Shaft extension tolerance: +.0000"; –.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; –.001".

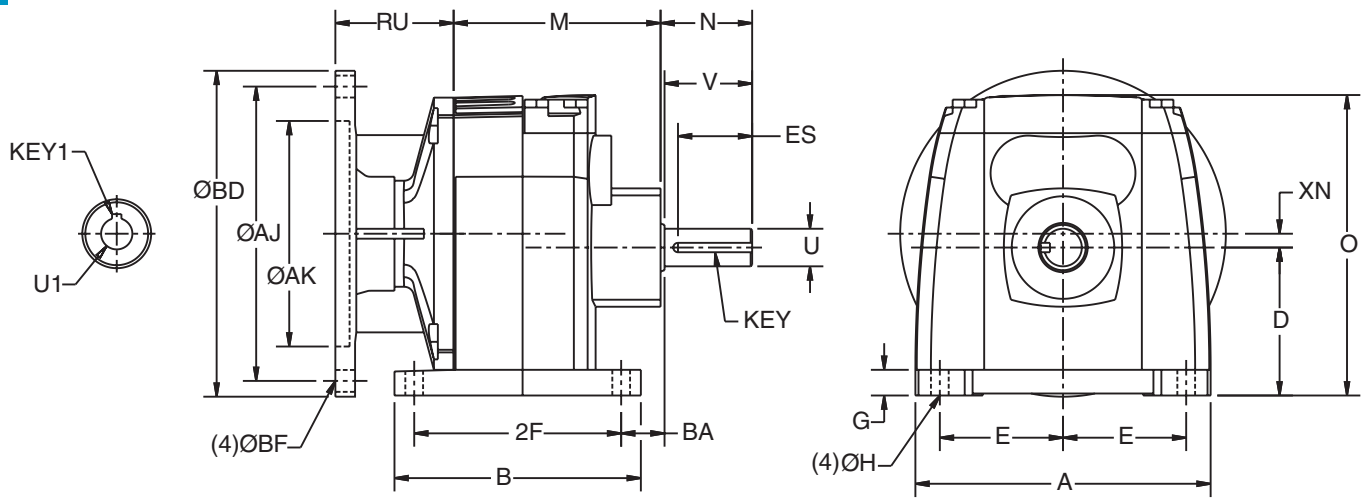
[4] Use foot mounted motor, utilizing separate support of motor feet for this motor frame.

Browning

C-Face Reducer

CbN SERIES 3000

Foot Mounted - Double/Triple Reduction



Gear Frame	A	B	D [1]	E	G	H	M	N	O	U [3]	V	BA	2F	ES	XN	Key
3012	5.90	4.92	2.95	2.46	0.51	0.35	4.13	1.83	6.00	0.75	1.75	0.87	4.13	1.48	0.28	3/16 Sq.
3013	5.90	5.71	2.95	2.46	0.51	0.35	4.92	1.83	6.00	0.75	1.75	0.87	4.92	1.48	0.28	3/16 Sq.

Motor Frame	AJ	RU	BF	AK	BD	U1	Key1
56C	5.875	3.33	0.44	4.50	6.50	0.625	3/16 Sq.
140TC [4]	5.875	3.33	0.44	4.50	6.50	0.875	3/16 Sq.

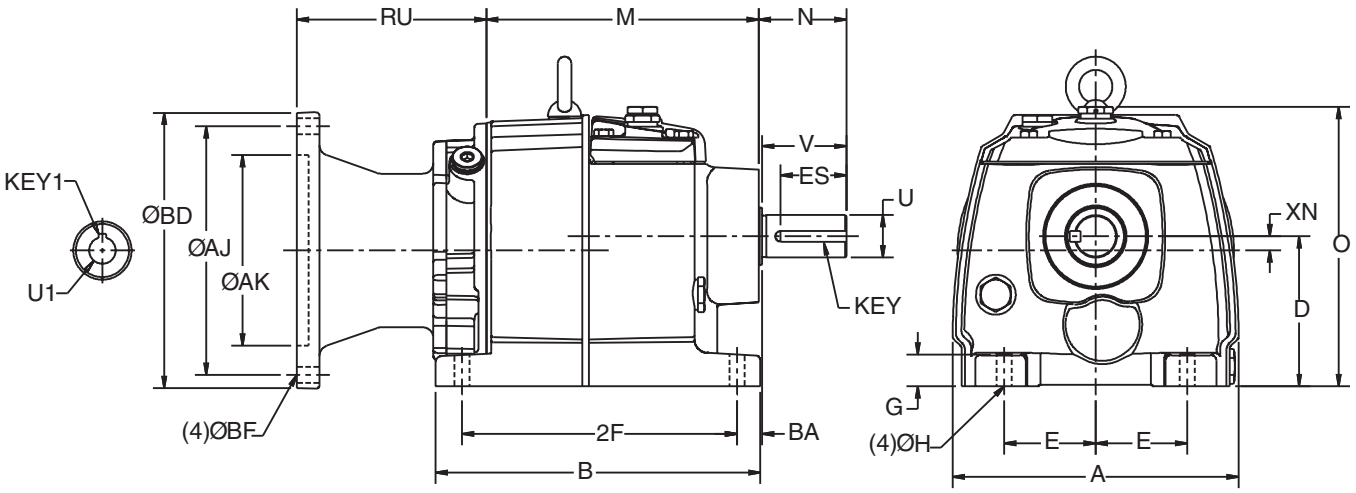
[1] Dimension “D” will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

[2] All rough casting dimensions may vary by .25" due to casting variations.

[3] Shaft extension tolerance: +.0000"; –.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; –.001".

[4] Not available for ratio 31.5 to 45:1 in 3012. Use 3013 for 35.5 to 45:1.

Foot Mounted - Double/Triple Reduction



Gear Frame	A	B	D [1]	E	G	H	M	N	O	U [3]	V	BA	2F	ES	XN	Key
31	6.76	7.68	3.54	2.17	0.75	0.35	6.44	2.08	6.60	1.00	2.00	0.59	6.50	1.56	0.33	1/4 Sq.

Motor Frame	AJ	RU	BF	AK	BD	U1	Key1
56C	5.88	4.48	0.44	4.50	6.50	0.625	3/16 Sq.
140TC	5.88	4.48	0.44	4.50	6.50	0.875	3/16 Sq.
180TC [4]	7.25	6.20	0.57	8.50	9.00	1.125	1/4 Sq.

[1] Dimension “D” will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

[2] All rough casting dimensions may vary by .25" due to casting variations.

[3] Shaft extension tolerance: +.0000"; –.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; –.001".

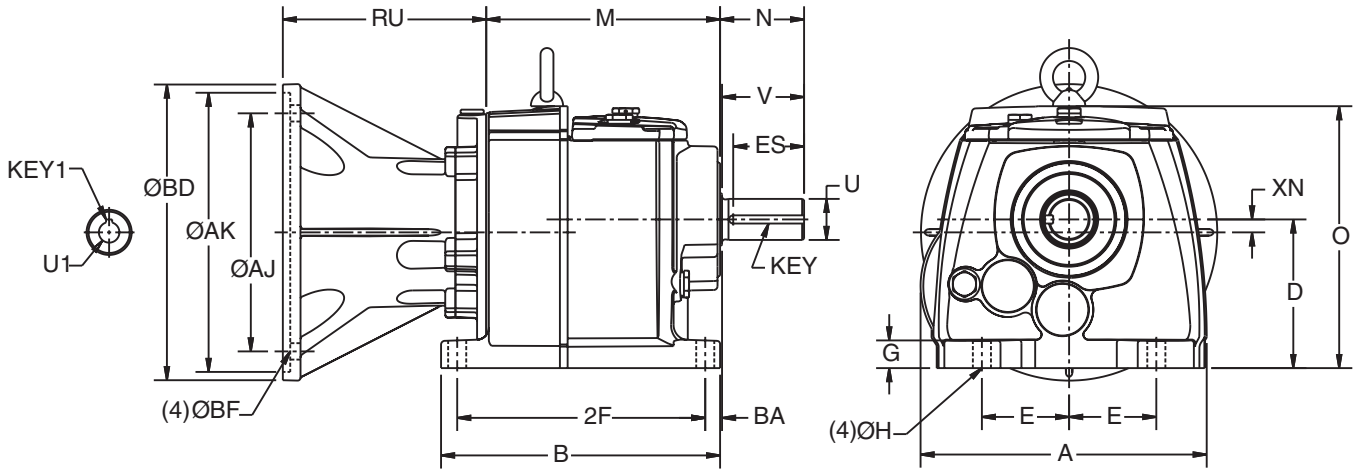
[4] Use foot mounted motor, utilizing separate support of motor feet for this motor frame.

Browning

C-Face Reducer

CbN SERIES 3000

Foot Mounted - Double/Triple Reduction



Gear Frame	A	B	D [1]	E	G	H	M	N	O	U [3]	V	BA	2F	ES	XN	Key
32	8.72	8.50	4.53	2.66	0.84	0.55	7.13	2.56	7.97	1.25	2.50	0.51	7.56	2.16	0.39	1/4 Sq.

Motor Frame	AJ	RU	BF	AK	BD	U1	Key1
56C	5.875	4.48	0.44	4.50	6.50	0.625	3/16 Sq.
140TC	5.875	4.48	0.44	4.50	6.50	0.875	3/16 Sq.
180TC	7.25	6.20	0.57	8.50	9.00	1.125	1/4 Sq.
210TC [4]	7.25	6.20	0.57	8.50	9.00	1.375	5/16 Sq.

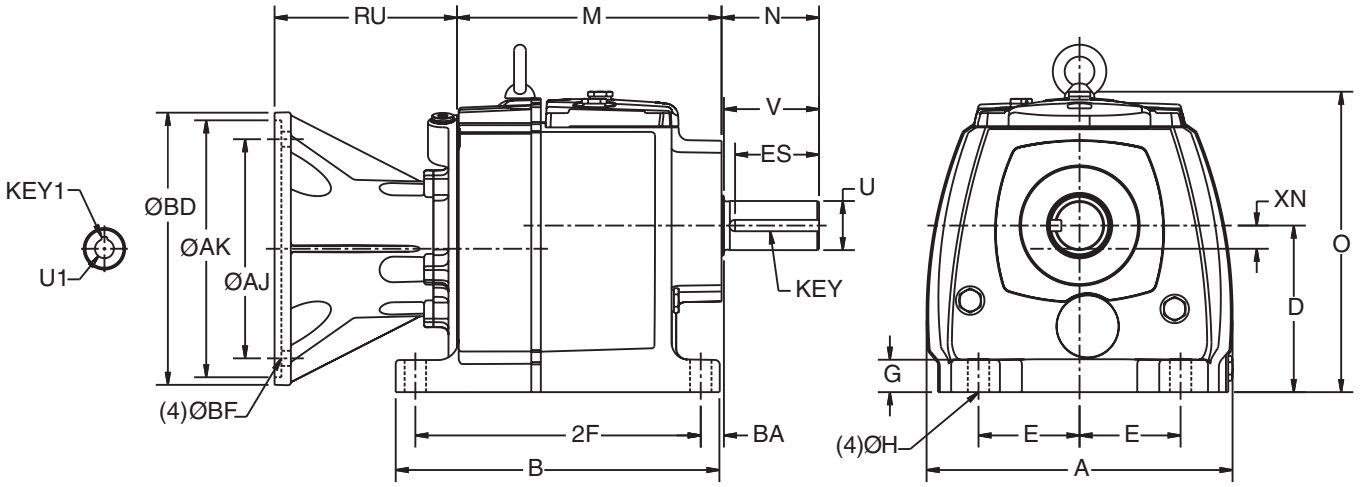
[1] Dimension “D” will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

[2] All rough casting dimensions may vary by .25" due to casting variations.

[3] Shaft extension tolerance: +.0000"; –.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; –.001".

[4] Use foot mounted motor, utilizing separate support of motor feet for this motor frame.

Foot Mounted - Double/Triple Reduction



Gear Frame	A	B	D [1]	E	G	H	M	N	O	U [3]	V	BA	2F	ES	XN	Key
3362,3363	10.13	10.72	5.51	3.35	1.07	0.71	8.76	3.08	9.94	1.50	3.00	0.77	9.45	2.56	0.77	3/8 Sq.
3372,3373	10.13	10.72	5.51	3.35	1.07	0.71	8.76	3.23	9.94	1.63	3.15	0.77	9.45	2.78	0.77	3/8 Sq.

Motor Frame	AJ	RU	BF	AK	BD	U1	Key1
56C	5.875	4.32	0.44	4.50	6.50	0.625	3/16 Sq.
140TC	5.875	4.32	0.44	4.50	6.50	0.875	3/16 Sq.
180TC	7.25	6.04	0.57	8.50	9.00	1.125	1/4 Sq.
210TC	7.25	6.04	0.57	8.50	9.00	1.375	5/16 Sq.

[1] Dimension “D” will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

[2] All rough casting dimensions may vary by .25" due to casting variations.

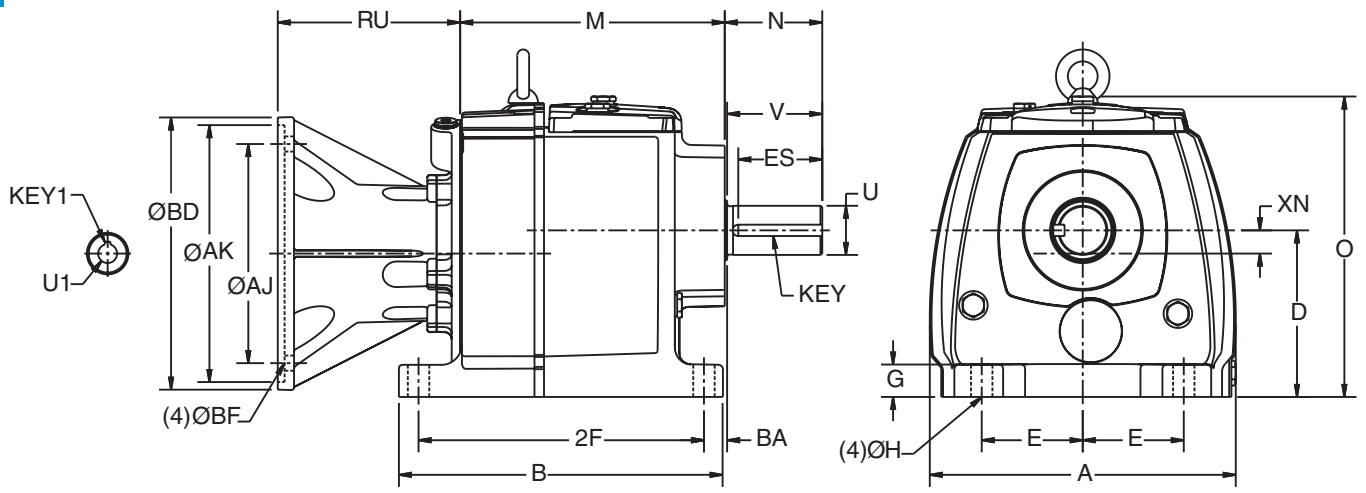
[3] Shaft extension tolerance: +.0000"; –.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; –.001".

Browning

C-Face Reducer

CbN SERIES 3000

Foot Mounted - Double/Triple Reduction



Gear Frame	A	B	D [1]	E	G	H	M	N	O	U [3]	V	BA	2F	ES	XN	Key
34	11.97	10.87	7.09	4.53	1.37	0.71	9.80	3.58	11.89	2.13	3.50	0.98	9.25	3.06	1.02	1/2 Sq.
35	14.19	12.89	8.86	5.51	1.73	0.87	11.34	4.81	14.84	2.38	4.72	1.10	11.02	4.15	1.14	5/8 Sq.

Motor Frame	Gear Frame	AJ	RU	BF	AK	BD	U1	Key1
56C	All	5.875	4.14	0.44	4.50	6.50	0.625	3/16 Sq.
143/145TC	All	5.875	4.14	0.44	4.50	6.50	0.875	3/16 Sq.
182/184TC	All	7.250	5.87	0.57	8.50	9.00	1.125	1/4 Sq.
213/215TC	All	7.250	5.87	0.57	8.50	9.00	1.375	5/16 Sq.
254/256TC	All	7.250	7.09	0.57	8.50	9.00	1.625	3/8 Sq.
284/286TC	34 [4], 35	9.000	8.06	0.57	10.50	11.25	1.875	1/2 Sq.
324/326TC	35 [4]	11.000	8.79	0.69	12.50	13.38	2.125	1/2 Sq.

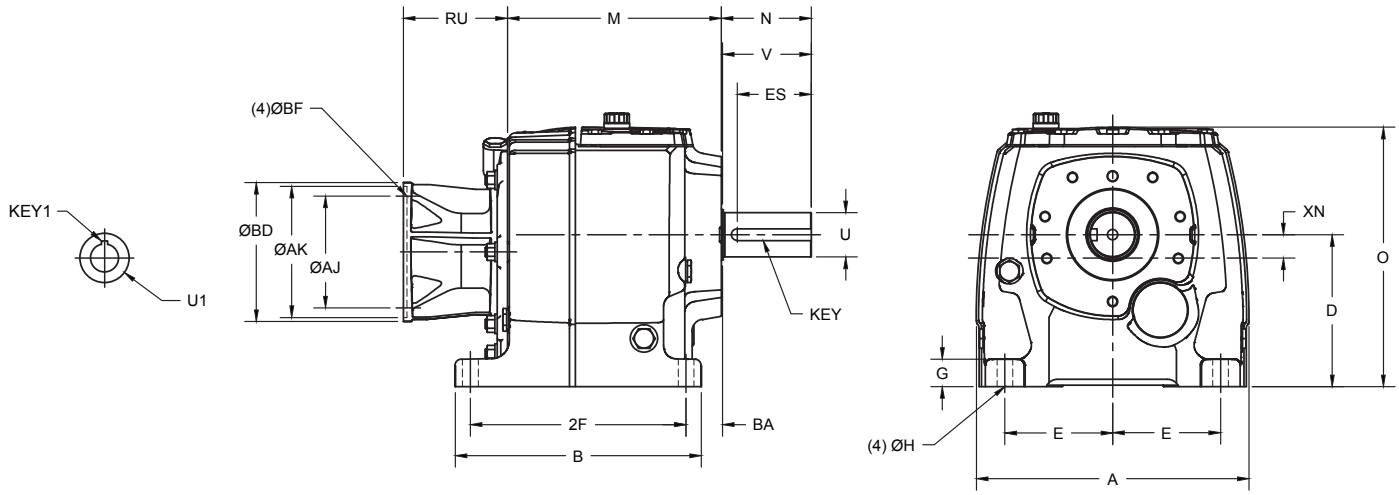
[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

[2] All rough casting dimensions may vary by .25" due to casting variations.

[3] Shaft extension tolerance: +.0000"; –.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; –.001".

[4] Use foot mounted motor, utilizing separate support of motor feet for this motor frame.

Foot Mounted - Double/Triple Reduction



Gear Frame	A	B	D [1]	E	G	H	N	O	U[3]	V	BA	2F	ES	XN	M	Key
36	17.68	15.95	9.85	6.99	1.77	1.02	5.847	17.72	2.875	5.75	2.36	13.98	4.784	1.102	13.86	3/4 Sq
37	20.39	17.91	12.40	8.27	2.17	1.02	7.127	20.40	3.625	7.00	2.56	15.35	5.893	2.362	16.54	7/8 Sq
38	23.94	21.65	13.98	10.04	2.35	1.02	9.99	22.60	4.375	9.99	1.97	18.90	9.02	2.559	19.88	1 SQ

Motor Frame	Gear Frame	AJ	AK	BF	U1	RU	BDX	Key1
182TC-184TC	36,37	7.25	8.50	.50	1.125	5.26	9.00	1/4 Sq.
213TC-215TC	36,37	7.25	4.50	.50	1.375	5.26	9.00	5/16 Sq.
	38	7.25	4.50	.50	1.375	6.12	9.00	5/16 Sq.
254TC-256TC	All	7.25	8.50	.50	1.625	6.12	9.00	3/8 Sq.
284TC-286TC	All	9.00	10.50	.50	1.875	7.09	9.00	1/2 Sq.
324TC-326TC	All	11.00	12.50	.625	2.125	8.45	13.38	1/2 Sq.
364TC-365TC	37,38	11.00	12.50	.625	2.375	8.45	13.38	5/8 Sq.

[1] Dimension “D” will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

[2] All rough casting dimensions may vary by .25" due to casting variations.

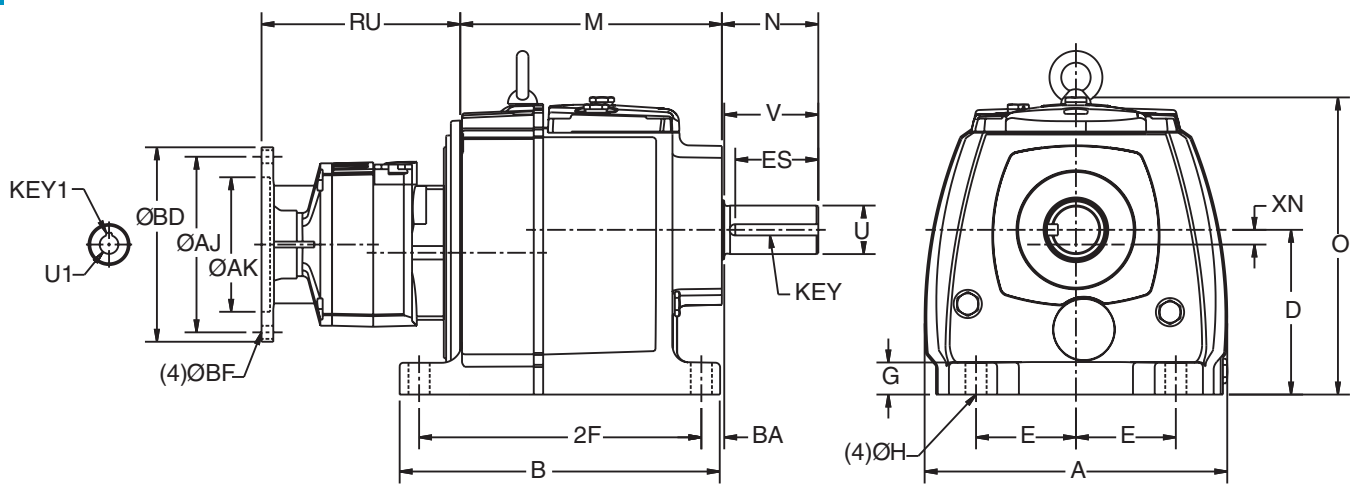
[3] Shaft extension tolerance: +.0000; -.001".

Browning

C-Face Reducer

CbN SERIES 3000

Foot Mounted - Combined Reduction



Gear Frame	A	B	D [1]	E	G	H	M	N	O	U [3]	V	BA	2F	ES	XN	Key
32	8.72	8.50	4.53	2.66	0.84	0.55	7.13	2.56	7.97	1.25	2.50	0.51	7.56	2.16	0.39	1/4 Sq.
33	10.13	10.72	5.51	3.35	1.07	0.71	8.76	3.23	9.94	1.63	3.15	0.77	9.45	2.78	0.49	3/4 Sq.

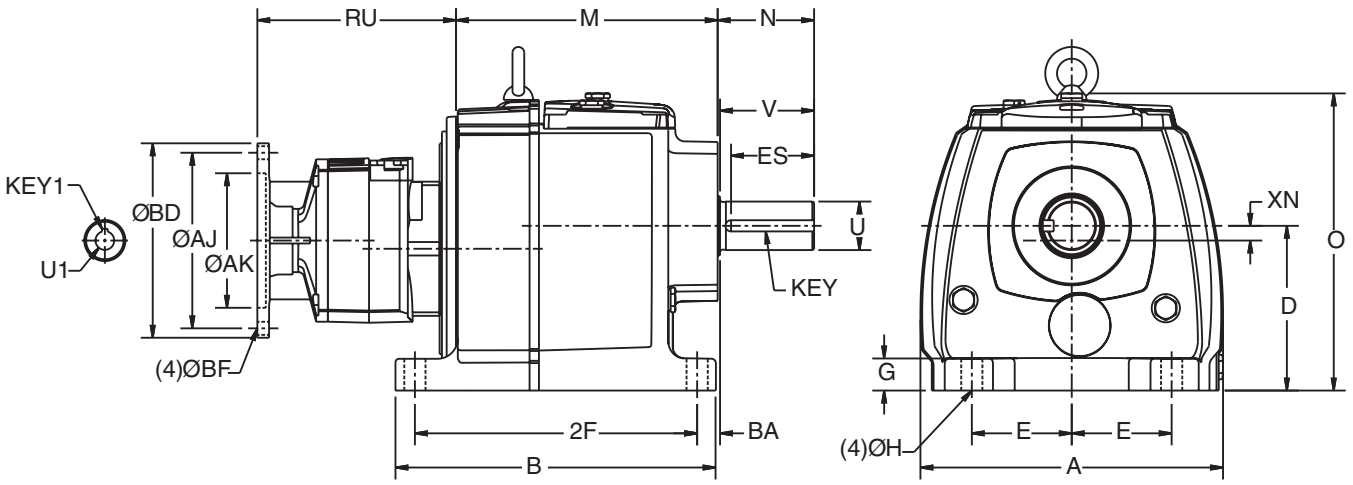
Motor Frame	RU	AJ	BF	AK	BD	U1	Key1
56C	7.79	5.875	0.44	4.50	6.50	0.625	3/16 Sq.
140TC	7.79	5.875	0.44	4.50	6.50	0.875	3/16 Sq.

[1] Dimension “D” will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

[2] All rough casting dimensions may vary by .25" due to casting variations.

[3] Shaft extension tolerance: +.0000"; –.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; –.001".

Foot Mounted - Combined Reduction



Gear Frame	A	B	D [1]	E	G	H	M	N	O	U [3]	V	BA	2F	ES	XN	Key
34	11.97	10.87	7.09	4.53	1.37	0.71	9.80	3.58	11.89	2.13	3.50	0.98	9.25	3.12	1.35	1/2 Sq.

Motor Frame	RU	AJ	BF	AK	BD	U1	Key1
56C	11.46	5.875	0.44	4.50	6.50	0.625	3/16 Sq.
143/145TC	11.46	5.875	0.44	4.50	6.50	0.875	3/16 Sq.

[1] Dimension “D” will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

[2] All rough casting dimensions may vary by .25" due to casting variations.

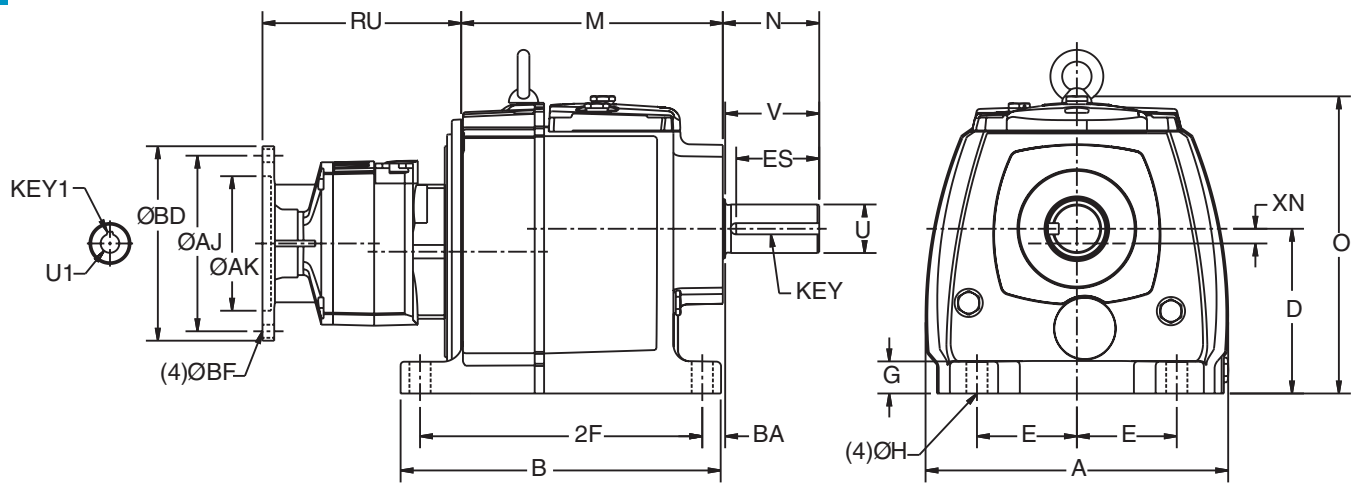
[3] Shaft extension tolerance: +.0000"; –.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; –.001".

Browning®

C-Face Reducer

CbN SERIES 3000

Foot Mounted - Combined Reduction



Gear Frame	A	B	D [1]	E	G	H	M	N	O	U [3]	V	BA	2F	ES	XN	Key
35	14.19	12.89	8.86	5.51	1.73	0.87	11.34	4.81	14.84	2.38	4.72	1.10	11.02	4.19	1.47	5/8 Sq.

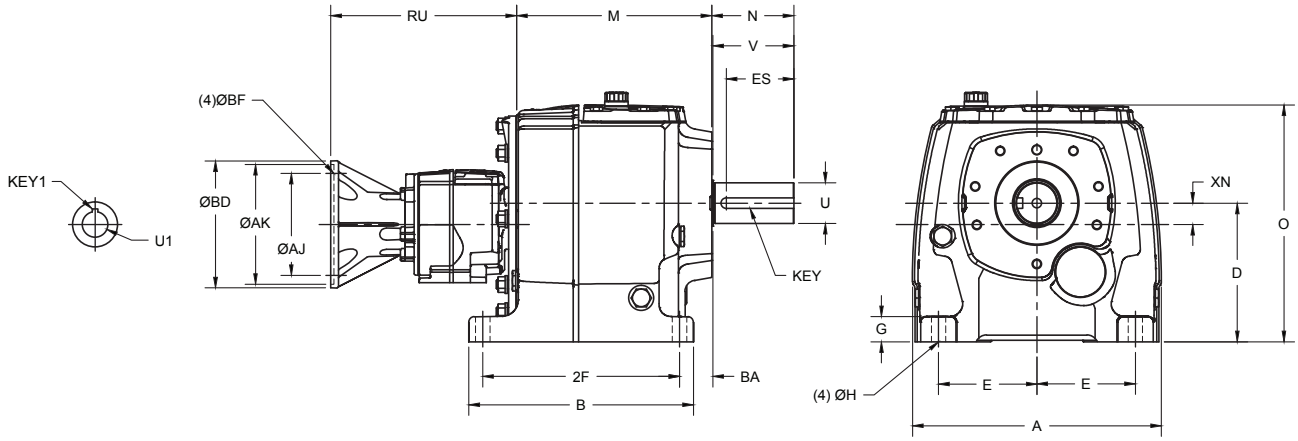
Motor Frame	RU	AJ	BF	AK	BD	U1	Key1
56C	11.11	5.875	0.44	4.50	6.50	0.625	3/16 Sq.
143/145TC	11.11	5.875	0.44	4.50	6.50	0.875	3/16 Sq.
182/184TC	12.83	7.25	0.57	8.50	9.00	1.125	1/4 Sq.

[1] Dimension “D” will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

[2] All rough casting dimensions may vary by .25" due to casting variations.

[3] Shaft extension tolerance: +.0000"; –.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; –.001".

Foot Mounted - Combined Reduction



Gear Frame	A	B	D [1]	E	G	H	N	O	U [3]	V	BA	2F	ES	XN	M	Key
36	17.68	15.95	9.85	6.99	1.77	1.02	5.847	17.72	2.875	5.75	2.36	13.98	4.784	1.492	13.86	3/4 Sq
37	20.39	17.91	12.40	8.27	2.17	1.02	7.127	20.40	3.625	7.00	2.56	15.35	5.893	2.752	16.54	7/8 Sq
38	23.94	21.65	13.98	10.04	2.35	1.02	9.99	22.60	4.375	9.99	1.97	18.90	9.02	2.559	28.90	1 SQ

Motor Frame	Gear Frame	AJ	AK	BF1	U1	RU			BD	Key1
						36	37	38		
56C	All	5.875	4.50	.38	0.625	11.47	11.47	13.52	3/16 Sq.	3/16 Sq.
143TC-145TC	All	5.875	4.50	.38	.875	11.47	11.47	13.52	3/16 Sq.	3/16 Sq.
182TC-184TC	All	7.25	8.50	.50	1.125	13.19	13.19	15.24	1/4 Sq.	1/4 Sq.
213TC-215TC	37,38	7.25	4.50	.50	1.375	-	13.19	15.24	5/16 Sq.	5/16 Sq.
254TC-256TC	38	7.25	8.50	.50	1.625	-	-	16.44	3/8 Sq.	3/8 Sq.

[1] Dimension “D” will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

[2] All rough casting dimensions may vary by .25" due to casting variations.

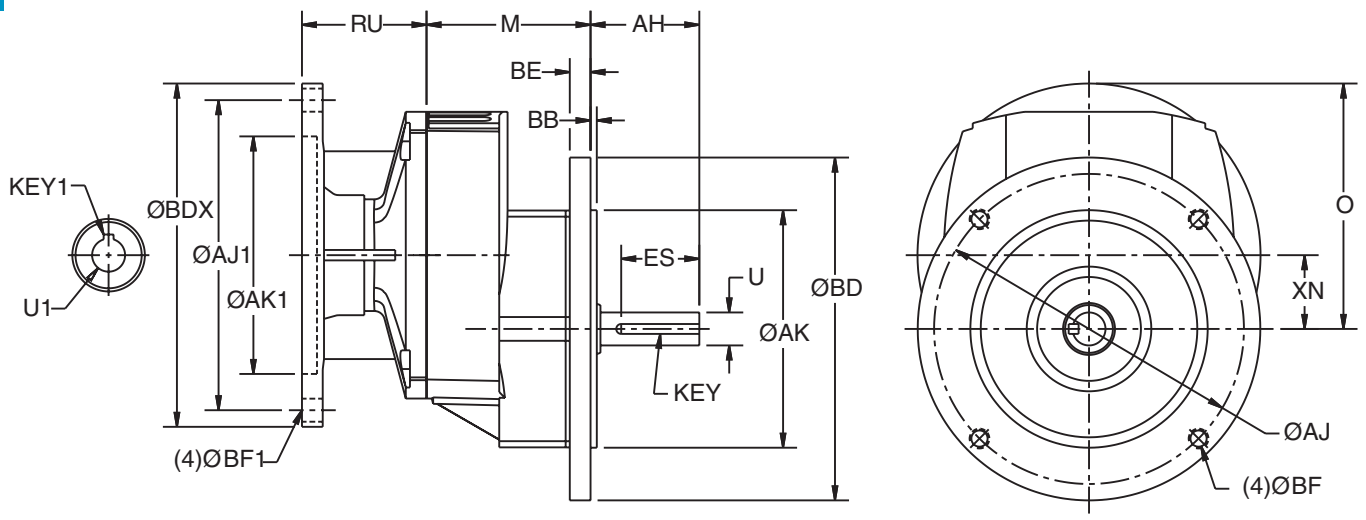
[3] Shaft extension tolerance: +.0000; -.001".

Browning

C-Face Reducer

CbN SERIES 3000

Flange Mounted - Single Reduction



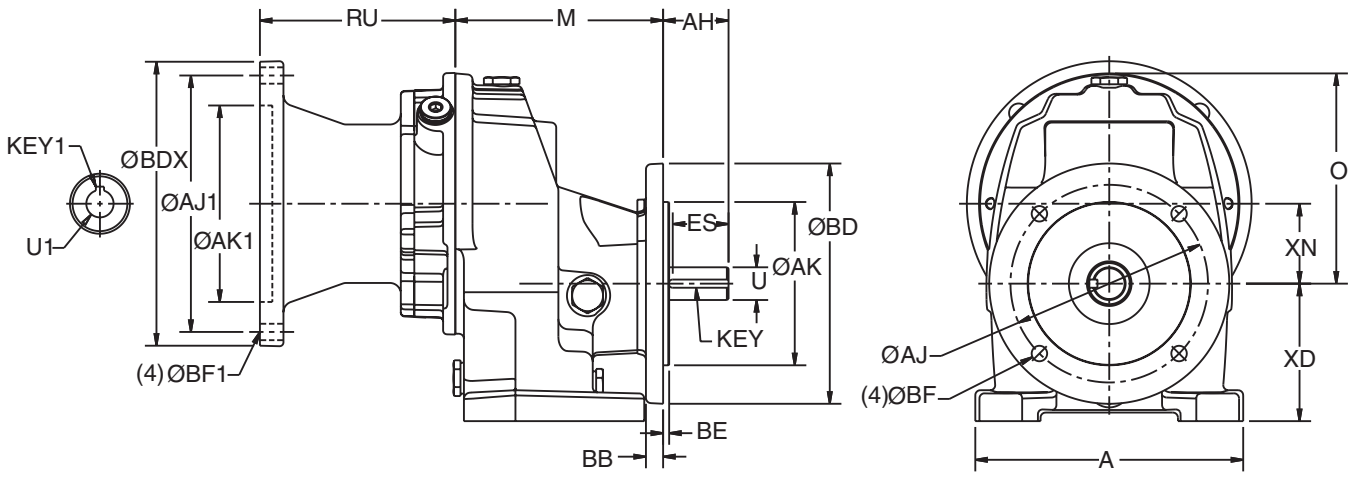
Gear Frame	M	O	U [3]	AH	ES	XN	Key
30	3.50	4.65	0.625	2.06	1.48	1.40	3/16

Flange Type	AK	AJ	BB	BD	BE	BF
56C	4.50	5.88	0.12	6.50	0.39	3/8-16
BS	3.74	4.53	0.12	5.51	0.31	0.35
BD1	3.15	3.94	0.12	4.72	0.39	0.28
BD2	4.33	5.12	0.08	6.30	0.39	0.35
BD3	5.12	6.50	0.12	7.87	0.31	0.35

Motor Frame	AJ1	RU	BF1	AK1	BDX	U1	Key1
56C	5.875	3.33	0.44	4.50	6.50	0.625	3/16 Sq.
140TC [1]	5.875	3.33	0.44	4.50	6.50	0.875	3/16 Sq.

[1] Not available on ratios 5.6 through 8:1.
[2] All rough casting dimensions may vary by .25" due to casting variations.
[3] Shaft extension tolerance: +.0000"; –.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; –.001".

Flange Mounted - Single Reduction



Gear Frame	A	M	O	U [3]	AH	ES	XD	XN	Key
31	6.14	4.76	4.82	0.75	1.50	1.28	3.15	1.83	3/16 Sq.

Flange Type	AK	AJ	BB	BD	BE	BF
BS	4.33	5.12	0.14	6.29	0.39	0.35
BD2	3.74	4.53	0.14	5.50	0.39	0.35

Motor Frame	AJ1	RU	BF1	AK1	BDX	U1	Key1
56C	5.875	4.48	0.44	4.50	6.50	0.625	3/16 Sq.
140TC	5.875	4.48	0.44	4.50	6.50	0.875	3/16 Sq.
180TC [4]	7.250	6.20	0.57	8.50	9.00	1.125	1/4 Sq.

[2] All rough casting dimensions may vary by .25" due to casting variations.

[3] Shaft extension tolerance: +.0000"; –.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; –.001".

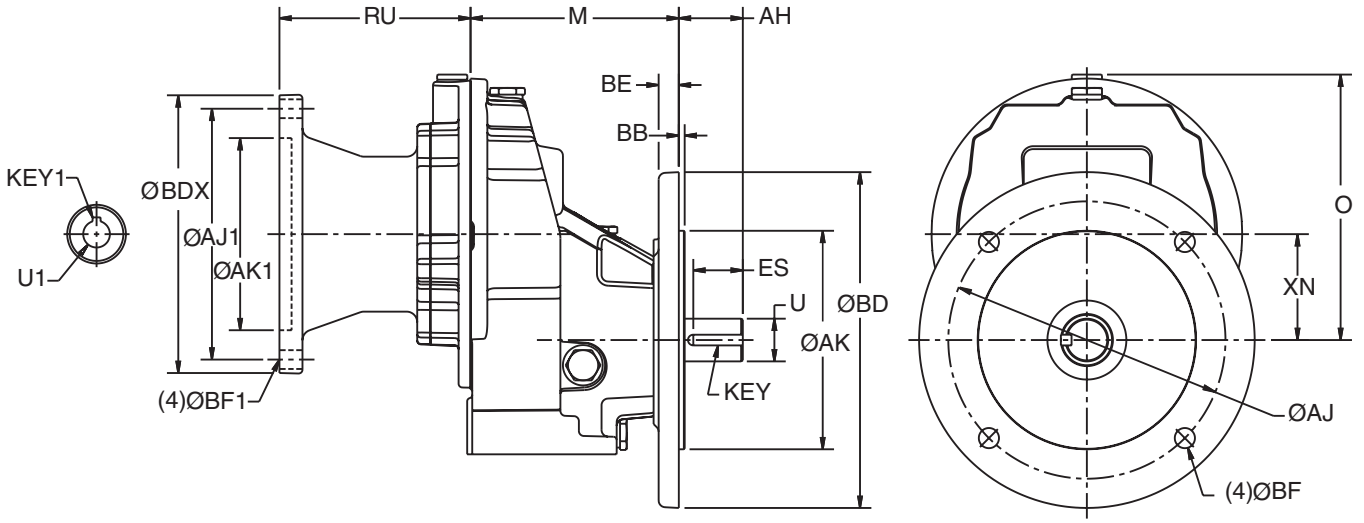
[4] Permitted in vertical mounting only.

Browning

C-Face Reducer

CbN SERIES 3000

Flange Mounted - Single Reduction



Gear Frame	M	O	U [3]	AH	ES	XN	Key
32	4.88	6.22	1.00	1.50	1.16	2.48	1/4 Sq.

Flange Type	AK	AJ	BB	BD	BE	BF
BS	5.12	6.5	0.14	7.87	0.47	0.47
BD2	4.33	5.12	0.14	6.29	0.39	0.35

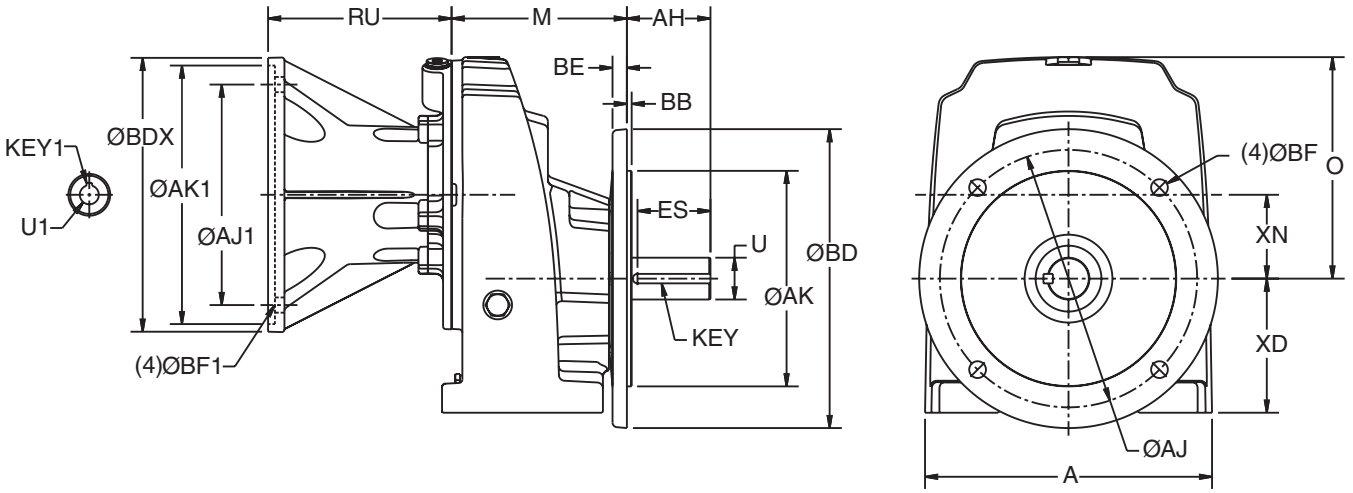
Motor Frame	AJ1	RU	BF1	AK1	BDX	U1	Key1
56C	5.875	4.48	0.44	4.50	6.50	0.625	3/16 Sq.
140TC	5.875	4.48	0.44	4.50	6.50	0.875	3/16 Sq.
180TC	7.250	6.20	0.57	8.50	9.00	1.125	1/4 Sq.
210TC [4]	7.250	6.20	0.57	8.50	9.00	1.375	5/16 Sq.

[2] All rough casting dimensions may vary by .25" due to casting variations.

[3] Shaft extension tolerance: +.0000"; –.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; –.001".

[4] Permitted in vertical mounting only.

Flange Mounted - Single Reduction



Gear Frame	A	M	O	U [3]	AH	ES	XD	XN	Key
33	9.44	5.77	7.28	1.375	2.75	2.40	4.41	2.76	5/16 Sq.

Flange Type	AK	AJ	BB	BD	BE	BF
BS	7.09	8.46	0.16	9.83	0.47	0.55
BD2	5.12	6.50	0.16	7.86	0.47	0.43

Motor Frame	AJ1	RU	BF1	AK1	BDX	U1	Key1
56C	5.875	4.32	0.44	4.50	6.50	0.625	3/16 Sq.
140TC	5.875	4.32	0.44	4.50	6.50	0.875	3/16 Sq.
180TC	7.250	6.04	0.57	8.50	9.00	1.125	1/4 Sq.
210TC [4]	7.250	6.04	0.57	8.50	9.00	1.375	5/16 Sq.

[2] All rough casting dimensions may vary by .25" due to casting variations.

[3] Shaft extension tolerance: +.0000"; –.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; –.001".

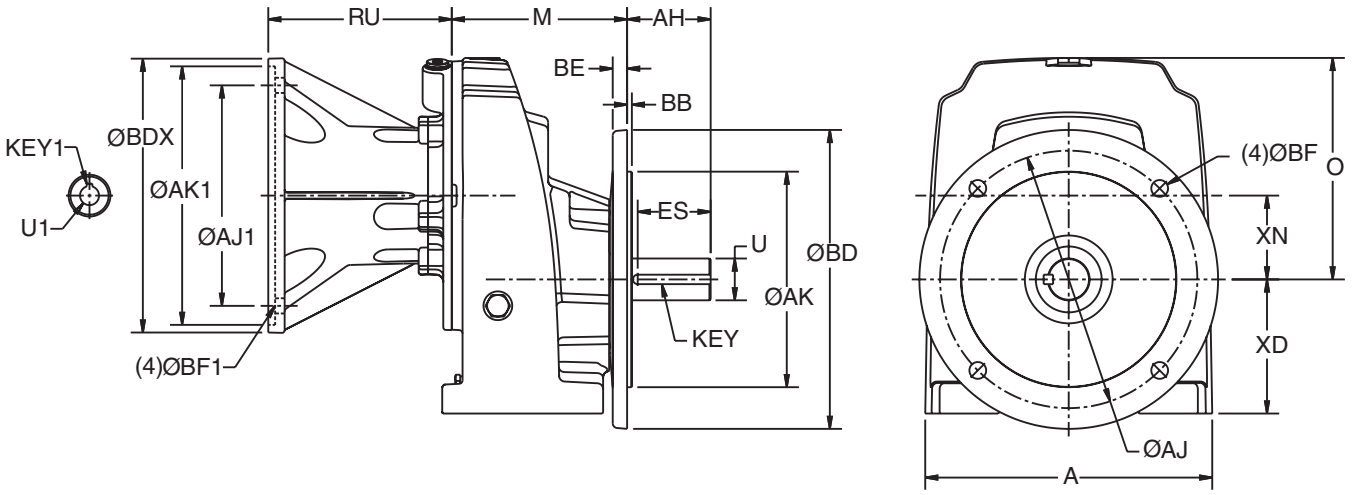
[4] Permitted in vertical mounting only.

Browning

C-Face Reducer

CbN SERIES 3000

Flange Mounted - Single Reduction



Gear Frame	A	M	O	U [3]	AH	ES	XD	XN	Key
34	11.02	7.09	8.70	1.50	3.00	2.56	5.20	3.43	3/8 Sq.

Flange Type	AK	AJ	BB	BD	BE	BF
BS	9.06	10.43	0.16	11.80	0.59	0.55
BD2	7.09	8.46	0.16	9.83	0.59	0.55

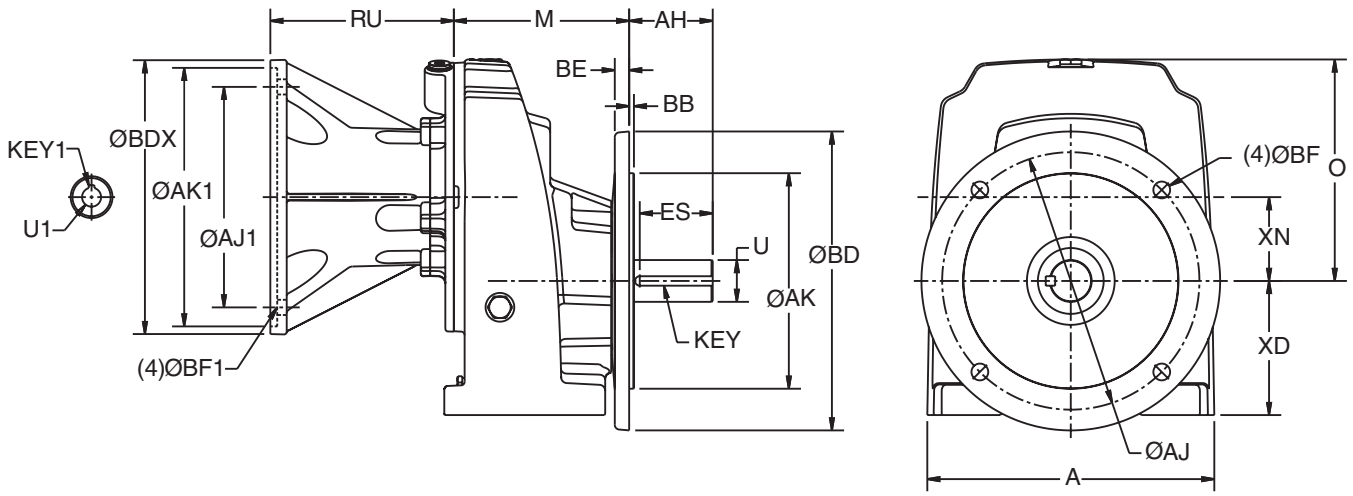
Motor Frame	AJ1	RU	BF1	AK1	BDX	U1	Key1
182/184TC	7.25	6.22	0.57	8.50	9.00	1.125	1/4 Sq.
213/215TC	7.25	6.22	0.57	8.50	9.00	1.375	5/16 Sq.
254/256TC	7.25	7.43	0.57	8.50	9.00	1.625	3/8 Sq.
284/286TC[4]	9.00	8.40	0.57	10.50	11.25	1.875	1/2 Sq.

[2] All rough casting dimensions may vary by .25" due to casting variations.

[3] Shaft extension tolerance: +.0000"; –.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; –.001".

[4] Permitted in vertical mounting only.

Flange Mounted - Single Reduction



Gear Frame	A	M	O	U [3]	AH	ES	XD	XN	Key
35	13.65	7.89	11.07	1.75	3.50	3.06	6.30	4.33	3/8 Sq.

Flange Type	AK	AJ	BB	BD	BE	BF
BS	9.84	11.81	0.20	13.78	0.71	0.71
BD2	9.06	10.43	0.20	11.81	0.71	0.55

Motor Frame	AJ1	RU	BF1	AK1	BDX	U1	Key1
213/215TC	7.25	5.87	0.57	8.50	9.00	1.375	5/16 Sq.
254/256TC	7.25	7.09	0.57	8.50	9.00	1.625	3/8 Sq.
284/286TC	9.00	8.06	0.57	10.50	11.25	1.875	1/2 Sq.
324/326TC [4]	11.00	8.79	0.69	12.50	13.38	2.125	1/2 Sq.

[2] All rough casting dimensions may vary by .25" due to casting variations.

[3] Shaft extension tolerance: +.0000"; –.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; –.001".

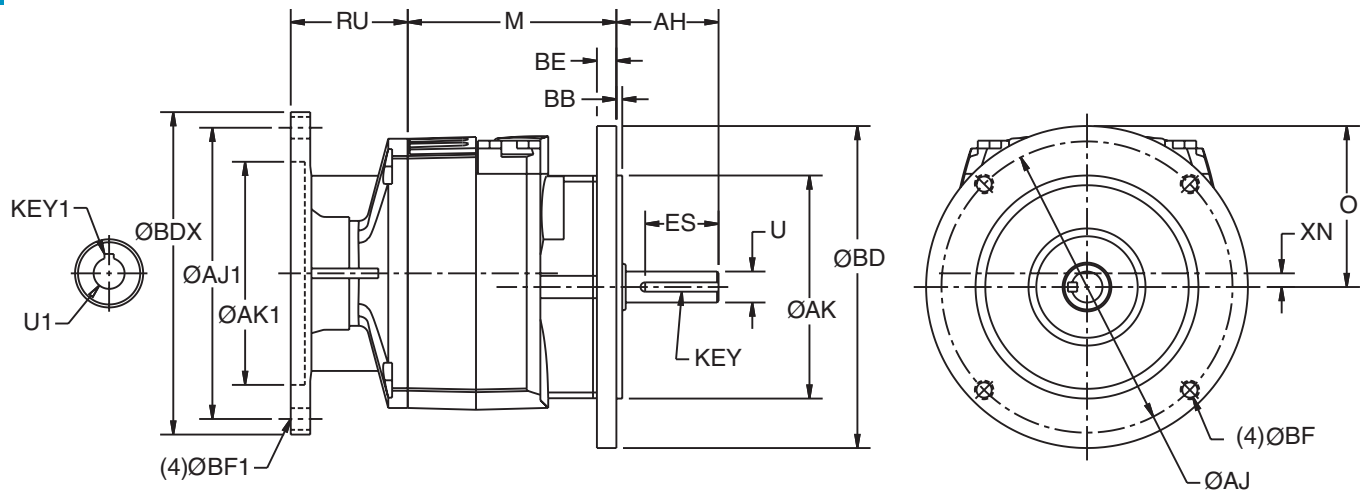
[4] Permitted in vertical mounting only.

Browning

C-Face Reducer

CbN SERIES 3000

Flange Mounted - Double/Triple Reduction



Gear Frame	M	O	U [3]	AH	ES	XN	Key
3012	4.21	3.25	0.63	2.06	1.48	0.28	3/16 Sq.
3013	5.00	3.25	0.63	2.06	1.48	0.28	3/16 Sq.

Flange Type	AK	AJ	BB	BD	BE	BF
56C	4.50	5.88	0.12	6.50	0.39	3/8-16
BS	3.74	4.53	0.12	5.51	0.31	0.35
BD1	3.15	3.94	0.10	4.72	0.28	0.28
BD2	4.33	5.12	0.12	6.30	0.31	0.35
BD3	5.12	6.50	0.12	7.87	0.31	0.35

Motor Frame	AJ1	RU	BF1	AK1	BDX	U1	Key1
56C	5.875	3.33	0.44	4.50	6.50	0.625	3/16 Sq.
140TC [1]	5.875	3.33	0.44	4.50	6.50	0.875	3/16 Sq.

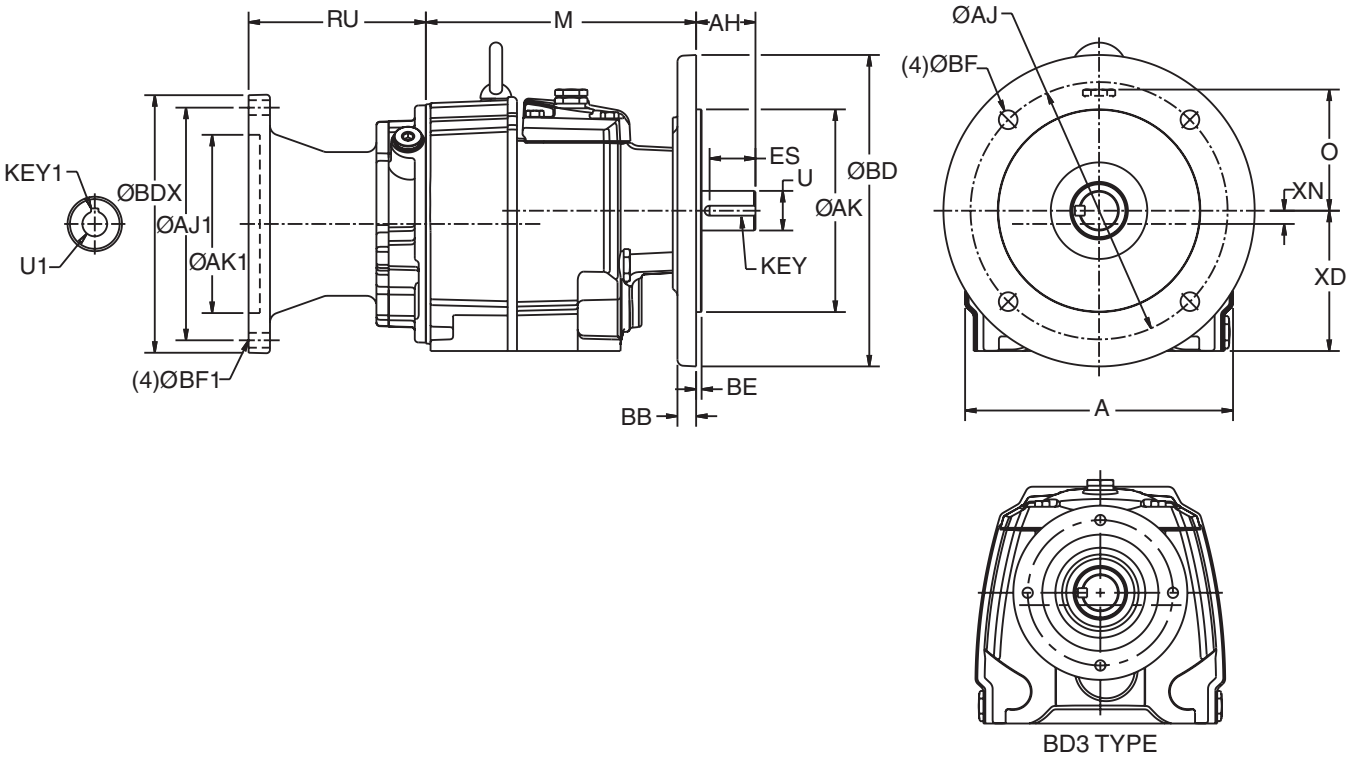
[1] Not available on ratios 31.5 to 45:1 in 3012. Use 3013 for 35.5 to 45:1.
[2] All rough casting dimensions may vary by .25" due to casting variations.
[3] Shaft extension tolerance: +.0000"; –.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; –.001".

Browning

C-Face Reducer

CbN SERIES 3000

Flange Mounted - Double/Triple Reduction



Gear Frame	A	M	O	U [3]	AH	ES	XD	XN	Key
31	6.77	6.83	3.06	1.00	1.50	1.16	3.54	0.33	1/4 Sq.

Flange Type	AK	AJ	BB	BD	BE	BF
BS	5.12	6.50	0.14	7.87	0.47	0.47
BD1	4.33	5.12	0.14	6.29	0.39	0.35
BD2	3.74	4.53	0.14	5.50	0.39	0.35
BD3	3.15	3.94	0.10	4.72	0.39	0.28

Motor Frame	AJ1	RU	BF1	AK1	BDX	U1	Key1
56C	5.88	4.48	0.44	4.50	6.50	0.625	3/16 Sq.
140TC	5.88	4.48	0.44	4.50	6.50	0.875	3/16 Sq.
180TC [4]	7.25	6.20	0.57	8.50	9.00	1.125	1/4 Sq.

[2] All rough casting dimensions may vary by .25" due to casting variations.

[3] Shaft extension tolerance: +.0000"; –.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; –.001".

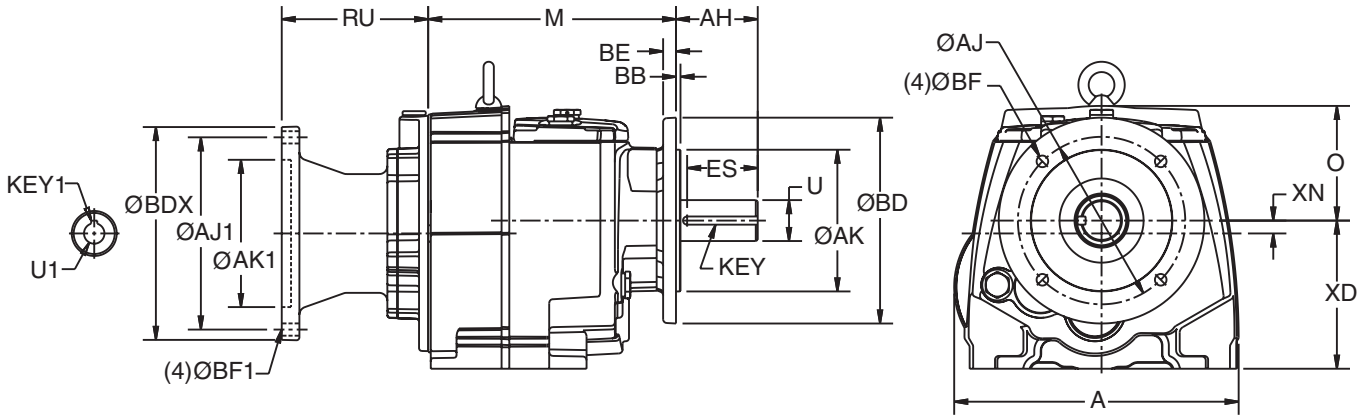
[4] Permitted in vertical mounting only.

Browning®

C-Face Reducer

CbN SERIES 3000

Flange Mounted - Double/Triple Reduction



Gear Frame	A	M	O	U [3]	AH	ES	XD	XN	Key
32	8.70	7.58	3.50	1.25	2.50	2.16	4.53	0.39	1/4 Sq.

Flange Type	AK	AJ	BB	BD	BE	BF
BS	7.09	8.46	0.16	9.83	0.47	0.55
BD1	5.12	6.50	0.14	7.87	0.39	0.47
BD2	4.33	5.12	0.14	6.29	0.39	0.35

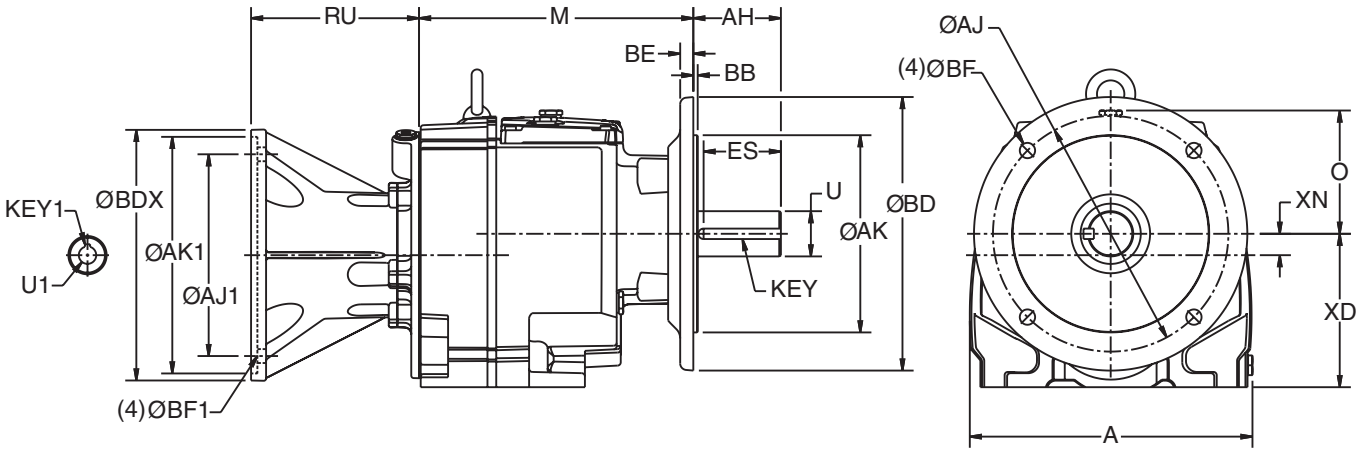
Motor Frame	AJ1	RU	BF1	AK1	BDX	U1	Key1
56C	5.875	4.48	0.44	4.50	6.50	0.625	3/16 Sq.
140TC	5.875	4.48	0.44	4.50	6.50	0.875	3/16 Sq.
180TC	7.250	6.20	0.57	8.50	9.00	1.125	1/4 Sq.
210TC [4]	7.250	6.20	0.57	8.50	9.00	1.375	5/16 Sq.

[2] All rough casting dimensions may vary by .25" due to casting variations.

[3] Shaft extension tolerance: +.0000"; –.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; –.001".

[4] Permitted in vertical mounting only.

Flange Mounted - Double/Triple Reduction



Gear Frame	A	M	O	U [3]	AH	ES	XD	XN	Key
3362,3363	10.16	9.86	4.43	1.50	3.00	2.56	5.51	0.77	3/4 Sq.
3372,3373	10.16	9.86	4.43	1.63	3.15	2.78	5.51	0.77	3/4 Sq.

Flange Type	AK	AJ	BB	BD	BE	BF
BS	9.06	10.43	0.16	11.80	0.47	0.55
BD1	7.09	8.46	0.16	9.83	0.47	0.55
BD2	5.12	6.50	0.14	7.86	0.47	0.47

Motor Frame	AJ1	RU	BF1	AK1	BDX	U1	Key1
56C	5.875	4.32	0.44	4.50	6.50	0.625	3/16 Sq.
140TC	5.875	4.32	0.44	4.50	6.50	0.875	3/16 Sq.
180TC	7.250	6.04	0.57	8.50	9.00	1.125	1/4 Sq.
210TC	7.250	6.04	0.57	8.50	9.00	1.375	5/16 Sq.

[2] All rough casting dimensions may vary by .25" due to casting variations.

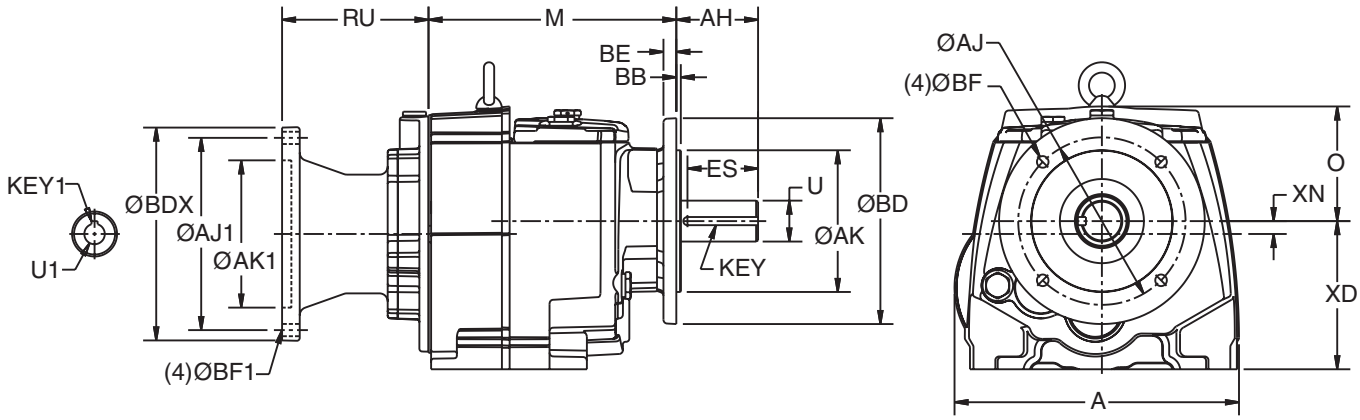
[3] Shaft extension tolerance: +.0000"; –.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; –.001".

Browning

C-Face Reducer

CbN SERIES 3000

Flange Mounted - Double/Triple Reduction



Gear Frame	A	M	O	U [3]	AH	ES	XD	XN	Key
34	11.97	10.63	4.80	2.13	3.50	3.06	7.09	1.02	1/2 Sq.

Flange Type	AK	AJ	BB	BD	BE	BF
BS	9.84	11.81	0.16	13.77	0.59	0.71
BD1	9.06	10.43	0.16	11.80	0.59	0.55
BD2	7.09	8.46	0.16	9.83	0.59	0.55

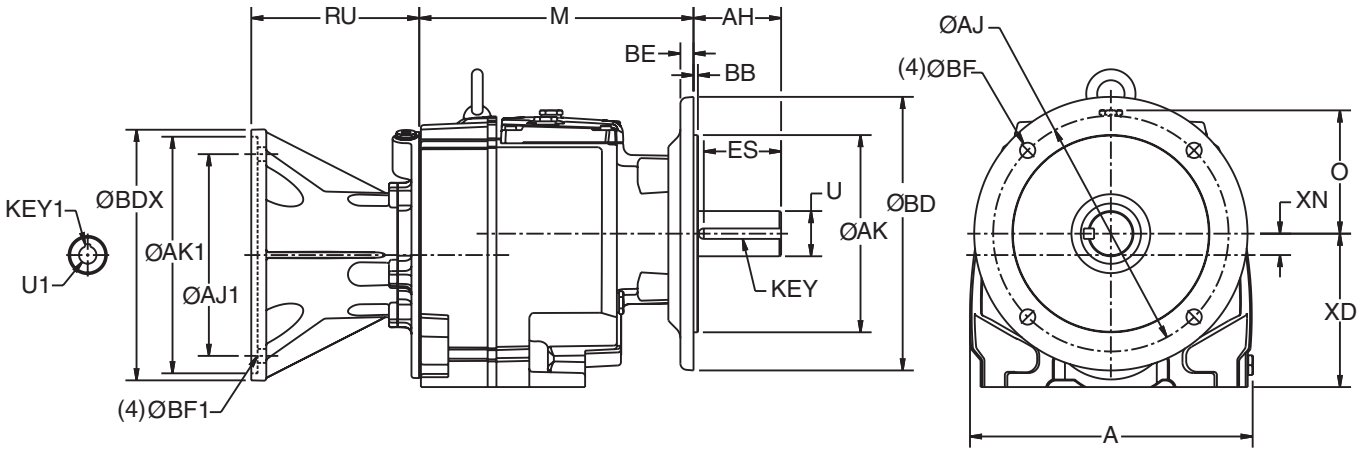
Motor Frame	AJ1	RU	BF1	AK1	BDX	U1	Key1
56C	5.875	4.50	0.44	4.50	6.50	0.625	3/16 Sq.
143/145TC	5.875	4.50	0.44	4.50	6.50	0.875	3/16 Sq.
182/184TC	7.250	6.22	0.57	8.50	9.00	1.125	1/4 Sq.
213/215TC	7.250	6.22	0.57	8.50	9.00	1.375	5/16 Sq.
254/256TC	7.250	7.43	0.57	8.50	9.00	1.625	3/8 Sq.
284/286TC [4]	9.000	8.40	0.57	10.50	11.25	1.875	1/2 Sq.

[2] All rough casting dimensions may vary by .25" due to casting variations.

[3] Shaft extension tolerance: +.0000"; –.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; –.001".

[4] Permitted in vertical mounting only.

Flange Mounted - Double/Triple Reduction



Gear Frame	A	M	O	U [3]	AH	ES	XD	XN	Key
35	14.19	12.40	5.98	2.375	4.72	4.19	8.86	1.14	5/8 Sq.

Flange Type	AK	AJ	BB	BD	BE	BF
BS	11.81	13.78	0.20	15.75	0.71	0.71
BD1	9.84	11.81	0.20	13.78	0.71	0.71
BD2	9.06	10.43	0.20	11.81	0.71	0.55

Motor Frame	AJ1	RU	BF1	AK1	BDX	U1	Key1
56C	5.875	4.14	0.44	4.50	6.50	0.625	3/16 Sq.
143/145TC	5.875	4.14	0.44	4.50	6.50	0.875	3/16 Sq.
182/184TC	7.250	5.87	0.57	8.50	9.00	1.125	1/4 Sq.
213/215TC	7.250	5.87	0.57	8.50	9.00	1.375	5/16 Sq.
254/256TC	7.250	7.09	0.57	8.50	9.00	1.625	3/8 Sq.
284/286TC	9.000	8.06	0.57	10.50	11.25	1.875	1/2 Sq.
324/326TC [4]	11.000	8.79	0.69	12.50	13.38	2.125	1/2 Sq.

[2] All rough casting dimensions may vary by .25" due to casting variations.

[3] Shaft extension tolerance: +.0000"; –.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; –.001".

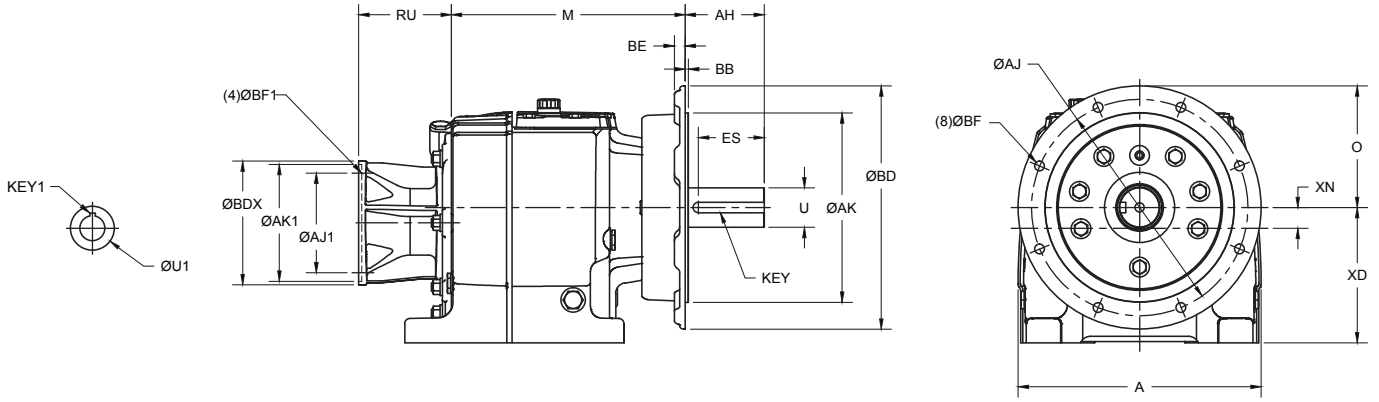
[4] Permitted in vertical mounting only.

Browning

C-Face Reducer

CbN SERIES 3000

Flange Mounted - Double/Triple Reduction



Gear Frame	A	M	O	U [3]	AH	ES	XD	XN	Key
36	17.68	17.00	7.88	2.875	5.75	4.784	9.85	1.102	3/4 Sq
37	20.39	19.69	8.00	3.625	7.00	5.893	12.40	2.362	7/8 Sq
38	23.94	23.03	8.63	4.375	6.84	9.02	13.98	2.559	1 SQ

Gear Frame	Flange Type	AK	AJ	BB	BD	BE	BF
36	BS	17.717	19.685	0.236	21.65	0.79	0.70
	BD1	13.780	15.748	0.236	17.70	0.79	0.70
37	BS	17.717	19.685	0.236	21.65	0.79	0.70
	BD1	13.780	15.748	0.236	17.70	0.79	0.70
38	BS	21.65	23.62	.197	25.98	0.79	0.87
	BD1	17.72	19.69	.197	21.65	0.79	0.69

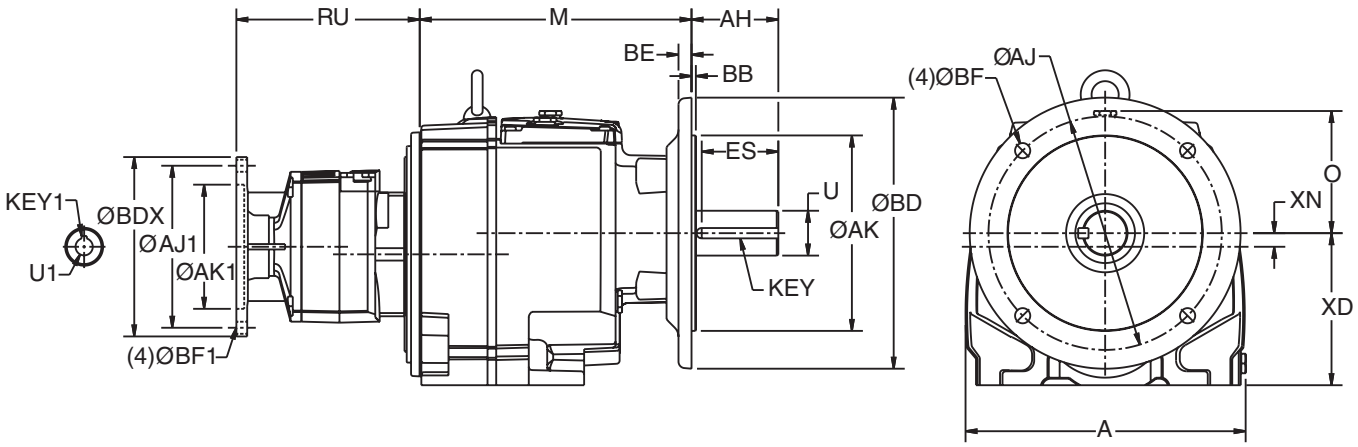
Motor Frame	Gear Frame	AJ	AK	BF	U1	RU	BDX	Key1
145TC	36	5.88	4.50	.38	.875	3.54	6.50	3/16 Sq.
182TC-184TC	36,37	7.25	8.50	.50	1.125	5.26	9.00	1/4 Sq.
213TC	36,37	7.25	4.50	.50	1.375	5.26	9.00	5/16 Sq.
215TC	38	7.25	4.50	.50	1.375	6.12	9.00	5/16 Sq.
254TC-256TC	All	7.25	8.50	.50	1.625	6.12	9.00	3/8 Sq.
284TC-286TC	All	9.00	10.50	.50	1.875	7.09	9.00	1/2 Sq.
324TC-326TC	All	11.00	12.50	.625	2.125	8.45	13.38	1/2 Sq.
364TC-365TC	37,38	11.00	12.50	.625	2.375	8.45	13.38	5/8 Sq.

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

[2] All rough casting dimensions may vary by .25" due to casting variations.

[3] Shaft extension tolerance: +.0000; -.001".

Flange Mounted - Combined Reduction



Gear Frame	A	M	O	U [3]	AH	ES	XD	XN	Key
3254,3255	8.70	7.58	3.50	1.25	2.50	2.16	4.53	0.12	1/4 Sq.
3374,3375	10.16	9.86	4.43	1.63	3.15	2.78	5.51	0.49	3/8 Sq.

Flange Type	32						33					
	AK	AJ	BB	BD	BE	BF	AK	AJ	BB	BD	BE	BF
BS	7.09	8.46	0.16	9.83	0.47	0.55	9.06	10.43	0.16	11.80	0.47	0.55
BD1	5.12	6.50	0.14	7.87	0.39	0.47	7.09	8.46	0.16	9.83	0.47	0.55
BD2	4.33	5.12	0.14	6.29	0.39	0.35	5.12	6.50	0.14	7.86	0.47	0.47

Motor Frame	RU	AJ1	BF1	AK1	BDX	U1	Key1
56C	7.79	5.875	0.44	4.50	6.50	0.625	3/16 Sq.
140TC	7.79	5.875	0.44	4.50	6.50	0.875	3/16 Sq.

[2] All rough casting dimensions may vary by .25" due to casting variations.

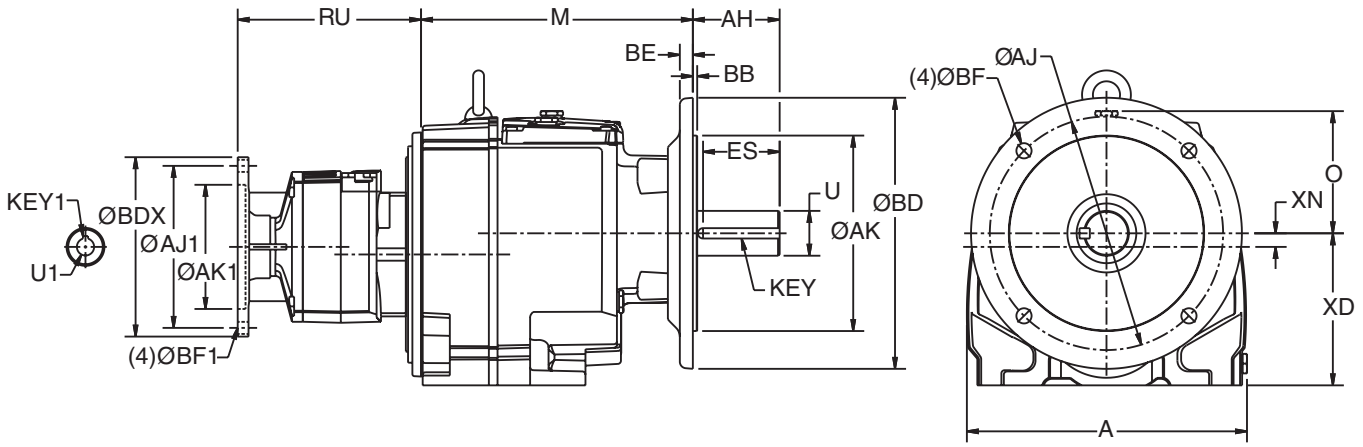
[3] Shaft extension tolerance: +.0000"; –.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; –.001".

Browning

C-Face Reducer

CbN SERIES 3000

Flange Mounted - Combined Reduction



Gear Frame	A	M	O	U [3]	AH	ES	XD	XN	Key
34	11.97	10.63	4.80	2.13	3.50	3.06	7.09	1.35	1/2 Sq.

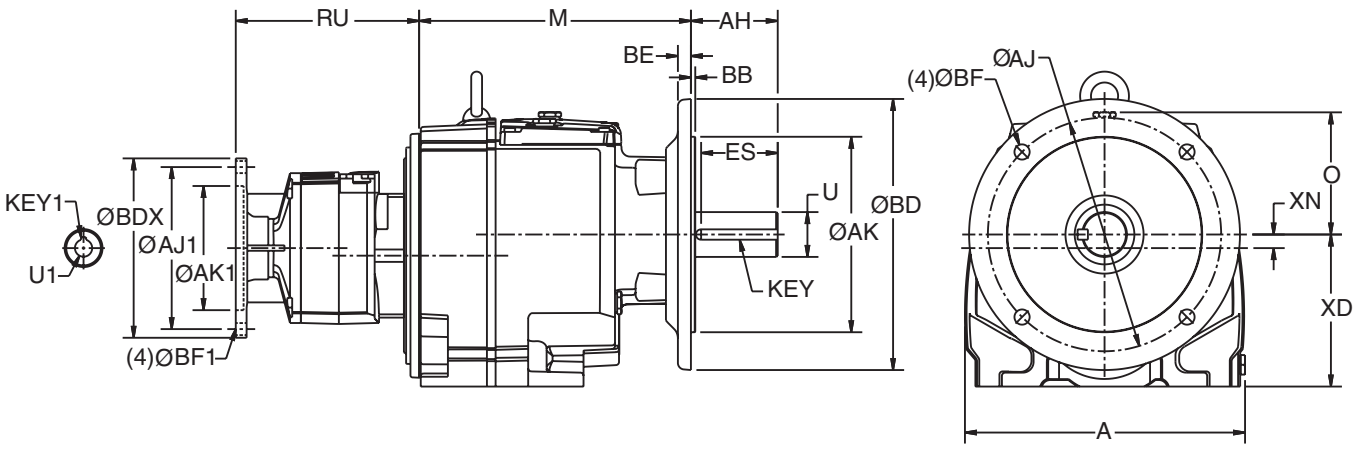
Flange Type	AK	AJ	BB	BD	BE	BF
BS	9.84	11.81	0.16	13.77	0.59	0.71
BD1	9.06	10.43	0.16	11.80	0.59	0.55
BD2	7.09	8.46	0.16	9.83	0.59	0.55

Motor Frame	RU	AJ1	BF1	AK1	BDX	U1	Key1
56C	11.46	5.875	0.44	4.50	6.50	0.625	3/16 Sq.
143/145TC	11.46	5.875	0.44	4.50	6.50	0.875	3/16 Sq.
182/184TC	13.18	7.25	0.57	8.50	9.00	1.125	1/4 Sq.

[2] All rough casting dimensions may vary by .25" due to casting variations.

[3] Shaft extension tolerance: +.0000"; –.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; –.001".

Flange Mounted - Combined Reduction



Gear Frame	A	M	O	U [3]	AH	ES	XD	XN	Key
35	14.19	12.40	5.98	2.375	4.72	4.19	8.86	1.47	5/8 Sq.

Flange Type	AK	AJ	BB	BD	BE	BF
BS	11.81	13.78	0.20	15.75	0.71	0.71
BD1	9.84	11.81	0.20	13.78	0.71	0.71
BD2	9.06	10.43	0.20	11.81	0.71	0.55

Motor Frame	RU	AJ1	BF1	AK1	BDX	U1	Key1
56C	11.11	5.875	0.44	4.50	6.50	0.625	3/16 Sq.
143/145TC	11.11	5.875	0.44	4.50	6.50	0.875	3/16 Sq.
182/184TC	12.83	7.25	0.57	8.50	9.00	1.125	1/4 Sq.

[2] All rough casting dimensions may vary by .25" due to casting variations.

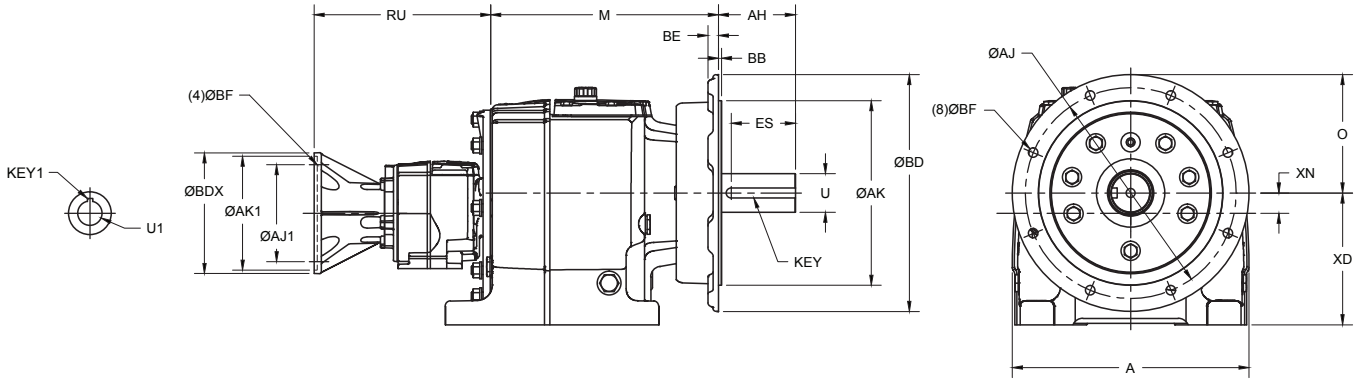
[3] Shaft extension tolerance: +.0000"; –.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; –.001".

Browning

C-Face Reducer

CbN SERIES 3000

Flanged Mounted - Combined Reduction



Gear Frame	A	M	O	U [3]	AH	ES	XD	XN	Key
36	17.68	17.00	7.88	2.875	5.75	4.784	9.85	1.492	3/4 Sq
37	20.39	19.69	8.00	3.625	7.00	5.893	12.40	2.752	7/8 Sq
38	23.94	32.05	8.63	4.375	6.84	9.02	13.98	2.559	1 SQ

Gear Frame	Flange Type	AK	AJ	BB	BD	BE	BF
36	BS	17.717	19.685	0.236	21.65	0.79	0.70
	BD1	13.780	15.748	0.236	17.70	0.79	0.70
37	BS	17.717	19.685	0.236	21.65	0.79	0.70
	BD1	13.780	15.748	0.236	17.70	0.79	0.70
38	BS	21.65	23.62	.197	25.98	0.79	0.87
	BD1	17.72	19.69	.197	21.65	0.79	0.69

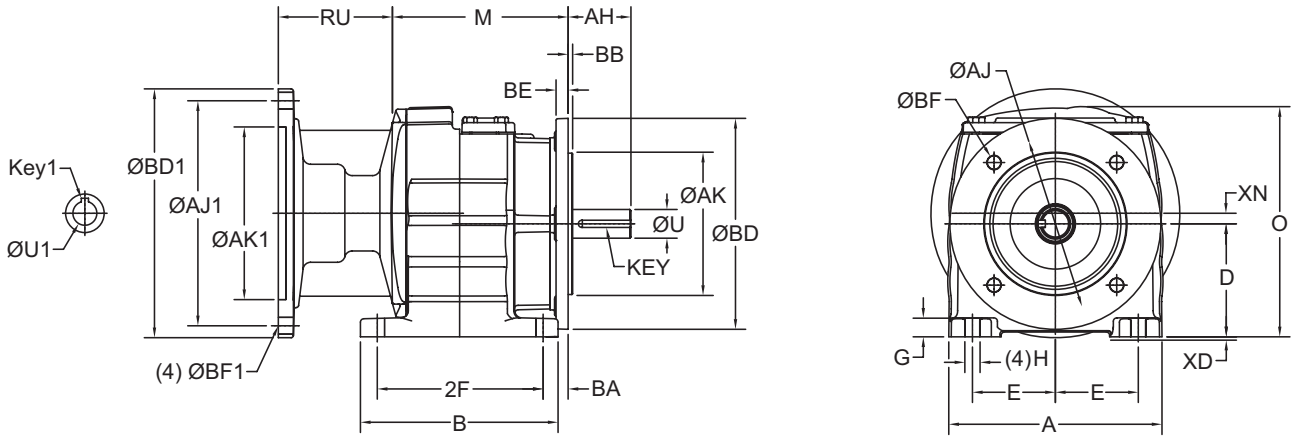
Motor Frame	Gear Frame	AJ	AK	BF1	U1	RU			BDX	Key1
						36	37	38		
56C	All	5.875	4.50	.38	0.625	11.47	11.47	13.52	6.50	3/16 Sq.
143TC-145TC	All	5.875	4.50	.38	.875	11.47	11.47	13.52	6.50	3/16 Sq.
182TC-184TC	All	7.25	8.50	.50	1.125	13.19	13.19	15.24	9.00	1/4 Sq.
213TC-215TC	37,38	7.25	4.50	.50	1.375	-	13.19	15.24	9.00	5/16 Sq.
254TC-256TC	38	7.25	8.50	.50	1.625	-	-	16.44	9.00	3/8 Sq.

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

[2] All rough casting dimensions may vary by .25" due to casting variations.

[3] Shaft extension tolerance: +.0000; -.001".

Foot Mount with Flange - Double/Triple Reduction



Gear Frame	A	B	D[1]	E	2F	G	H	O	U[3]	ES	M	XN	Key
3012A	5.62	5.16	2.95	2.165	4.33	.47	.35	6.00	0.750	1.25	4.21	.276	3/16 Sq
3013A	6.76	7.68	3.54	2.170	6.50	.75	.35	6.60	0.750	1.25	6.83	-.330	3/16 Sq
31	6.76	7.68	3.54	2.170	6.50	.75	.35	6.60	1.000	1.16	6.83	-.330	1/4 Sq

Gear Frame	Flange Type	AH	AJ	AK	BA	BB	BD	BE	BF
3012A	SBD1	2.06	3.94	3.15	.65	.12	4.72	.28	.28
	SBS	2.06	4.53	3.74	.65	.12	5.51	.31	.35
3013A	SBD1	2.06	3.94	3.15	.944	.10	4.72	.39	.28
	SBS	2.06	4.53	3.74	.944	.14	5.51	.39	.35
31	SBD1	1.50	5.12	4.33	.944	.14	6.29	.39	.35
	SBD2	1.50	4.53	3.74	.944	.14	5.51	.39	.35
	SBD3	1.50	3.94	3.15	.944	.10	4.72	.39	.28

Gear Frame	Motor Frame	AJ1	AK1	BDX	BF1	RU	U1	Key1	XD
3012A	56C	5.875	4.50	6.50	.44	3.33	0.625	3/15 Sq	0.024
	143,145TC	5.875	4.50	6.50	.44	3.33	0.875	3/15 Sq	0.024
3013A, 31	56C	5.875	4.50	6.50	.44	4.48	0.625	3/15 Sq	0.040
	143,145TC	5.875	4.50	6.50	.44	4.48	0.875	3/15 Sq	0.040
31	182, 184TC	7.25	8.50	9.00	.57	6.20	1.125	1/4 Sq	1.29

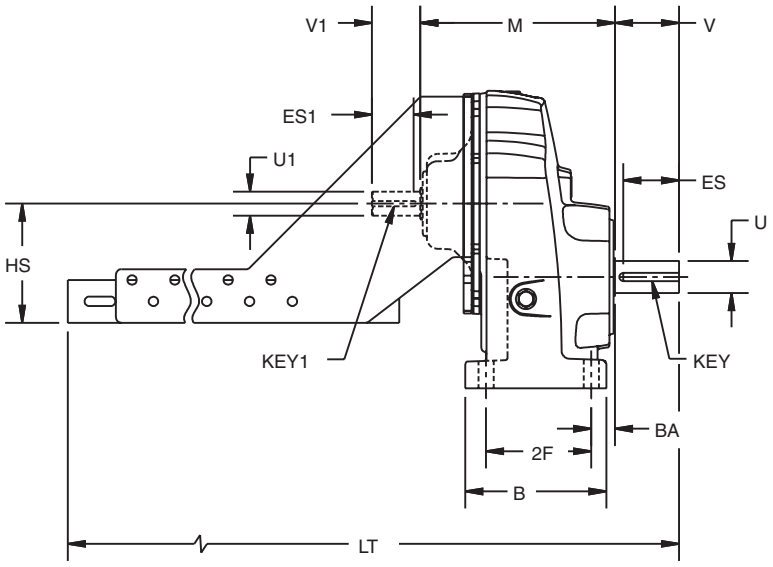
[1] Dimension "D" will never be exceeded, but may vary from value shown. When exact dimension is required, shims up to .03" may be required.
[2] All rough casting dimensions may vary by .25" due to casting variations.
[3] Shaft extension tolerance +.0000", -.0005" up to 1.5" diameter.
[4] Not available in ratios from 31.5 through 45:1.

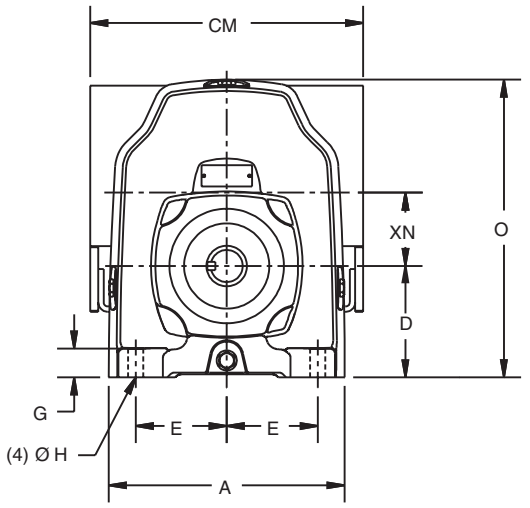
Browning®

Scoop Mount Reducer

CbN SERIES 3000

Foot Mounted - Single Reduction





Gear Frame	A	B	D [1]	E	G	H	M	O	U [3]	U1 [3]	V	V1	BA	2F	ES	ES1	XN	Key	Key1
34	11.02	6.59	5.20	4.25	1.34	0.71	9.10	13.90	1.50	1.13	3.00	2.25	1.10	4.92	2.56	1.94	3.43	3/8 Sq.	1/4 Sq.

Motor Frame					
182/184T			213/215T		
CM	HS	LT	CM	HS	LT
12.75	5.56	34.98	12.75	5.56	35.38

[1] Dimension “D” will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

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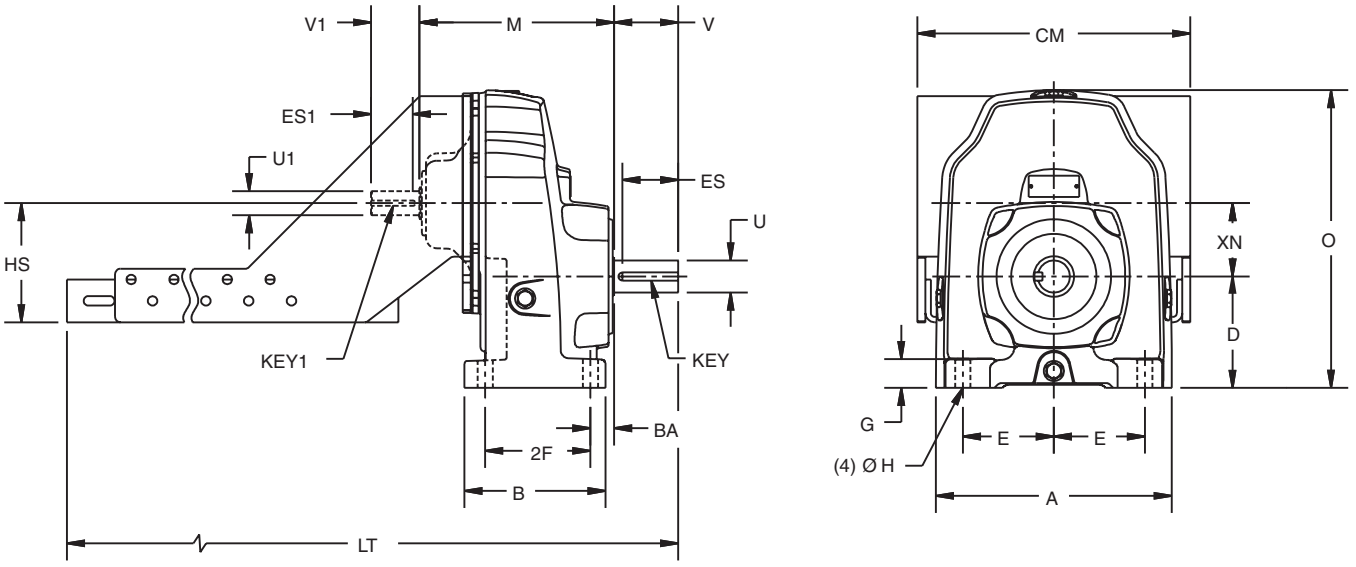
[3] Shaft extension tolerance: +.0000"; –.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; –.001".

Browning®

Scoop Mount Reducer

CbN SERIES 3000

Foot Mounted - Single Reduction



Gear Frame	A	B	D [1]	E	G	H	M	O	U [3]	U1 [3]	V	V1	BA	2F	ES	ES1	XN	Key	Key1
35	13.65	7.76	6.30	5.12	1.61	0.79	10.38	17.37	1.75	1.38	3.50	2.75	1.18	6.30	3.06	2.31	4.33	3/8 Sq.	5/16 Sq.

Motor Frame					
213/215T			254/256T		
CM	HS	LT	CM	HS	LT
12.75	5.56	37.28	17.00	7.44	41.70

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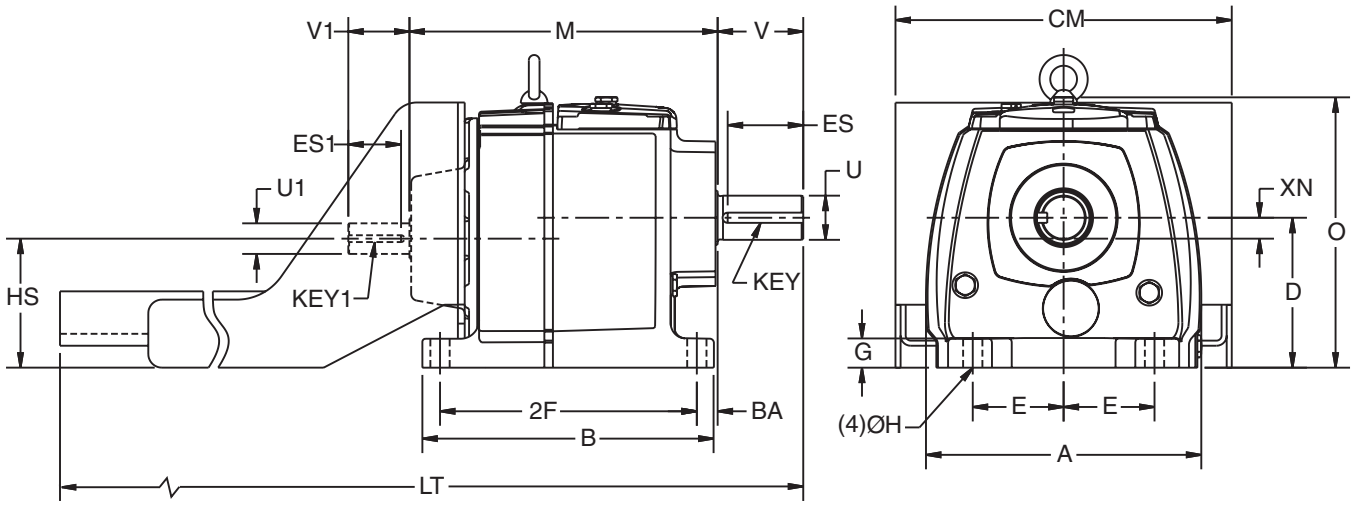
[3] Shaft extension tolerance: +.0000"; –.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; –.001".

Browning®

Scoop Mount Reducer

CbN SERIES 3000

Foot Mounted - Double/Triple Reduction



Gear Frame	A	B	D [1]	E	G	H	M	O	U [3]	U1 [3]	V	V1	BA	2F	ES	ES1	XN	Key	Key1
32	8.72	8.50	4.53	2.66	0.84	0.55	9.11	7.97	1.25	0.63	2.50	1.25	0.51	7.56	2.16	1.00	0.39	1/4 Sq.	3/16 Sq.
3362,3363	10.13	10.72	5.51	3.35	1.07	0.71	11.34	9.94	1.50	1.13	3.00	2.25	0.77	9.45	2.56	1.94	0.77	3/8 Sq.	1/4 Sq.
3372,3373	10.13	10.72	5.51	3.35	1.07	0.71	11.34	9.94	1.63	1.13	3.15	2.25	0.77	9.45	2.78	1.94	0.77	3/8 Sq.	1/4 Sq.
34	11.97	10.87	7.09	4.53	1.37	0.71	12.66	11.89	2.13	1.13	3.50	2.25	0.98	9.25	3.06	1.94	1.02	1/2 Sq.	1/4 Sq.

Gear Frame	Motor Frame								
	143/145T			182/184T			213/215T		
	CM	HS	LT	CM	HS	LT	CM	HS	LT
32	11.38	3.75	27.97	-	-	-	-	-	-
3362,3363	12.38	4.74	37.31	12.38	4.74	37.31	-	-	-
3372,3373	12.38	4.74	37.46	12.38	4.74	37.46	-	-	-
34	12.75	5.56	40.04	12.75	5.56	39.04	12.75	5.56	39.44

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[2] All rough casting dimensions may vary by .25" due to casting variations.

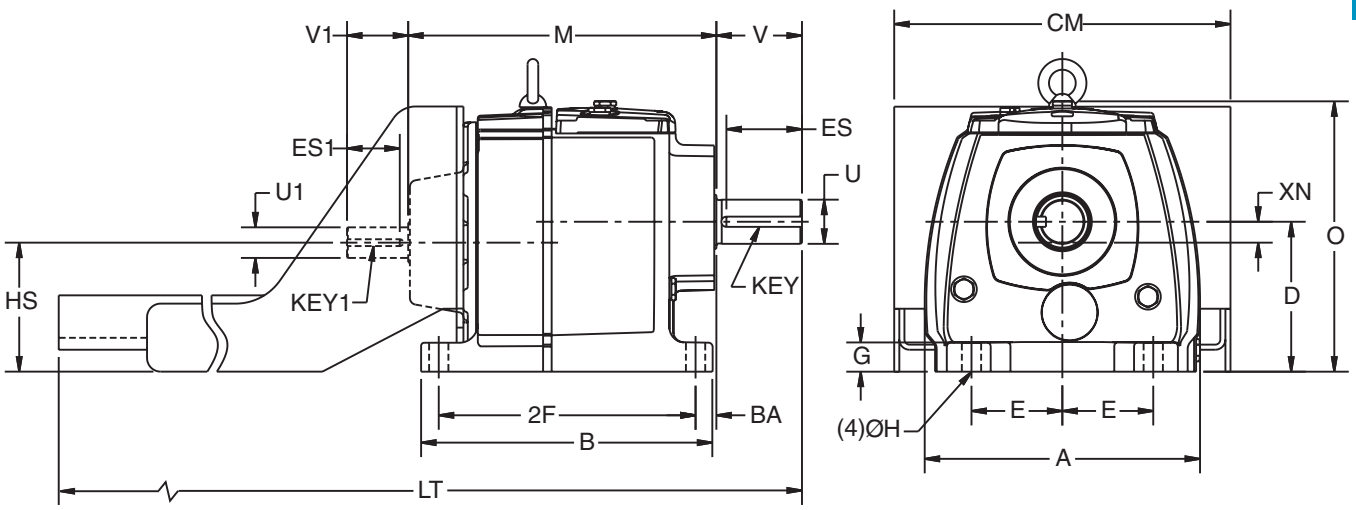
[3] Shaft extension tolerance: +.0000"; –.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; –.001".

Browning®

Scoop Mount Reducer

CbN SERIES 3000

Foot Mounted - Double/Triple Reduction



Gear Frame	A	B	D [1]	E	G	H	M	O	U [3]	U1 [3]	V	V1	BA	2F	ES	ES1	XN	Key	Key1
35	14.19	12.89	8.86	5.51	1.73	0.87	14.95	14.84	2.38	1.38	4.72	2.75	1.10	11.02	4.19	2.31	1.14	5/8 Sq.	5/16 Sq.

Motor Frame														
143/145T			182/184T			213/215T			254/256T			284/286T		
CM	HS	LT	CM	HS	LT	CM	HS	LT	CM	HS	LT	CM	HS	LT
12.75	5.56	44.08	12.75	5.56	43.08	12.75	5.56	43.41	17.00	7.44	47.83	17.00	7.44	47.96

[1] Dimension “D” will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

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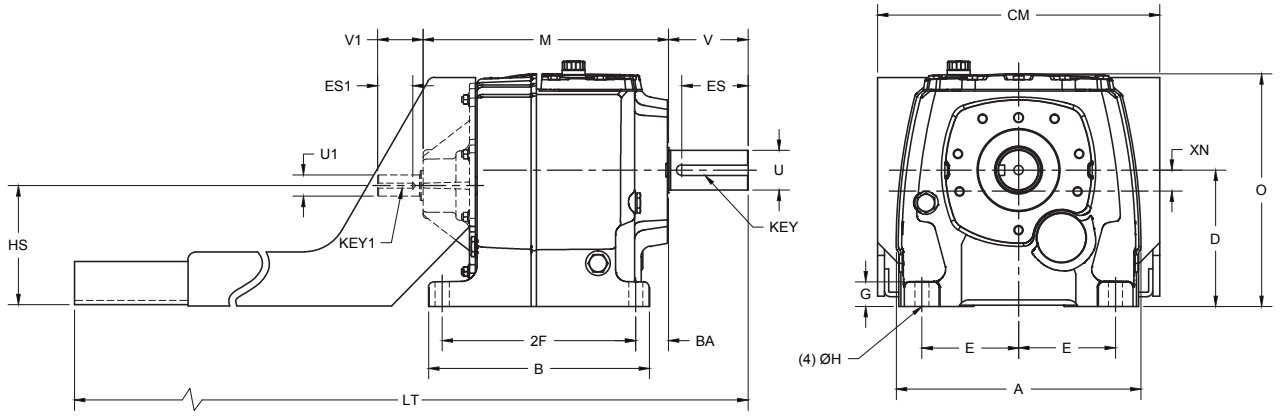
[3] Shaft extension tolerance: +.0000"; –.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; –.001".

Browning®

Scoop Mount Reducer

CbN SERIES 3000

Foot Mounted - Double/Triple Reduction



Gear Frame	A	B	D [1]	E	G	H	M	O	U [3]	U1 [3]	V	V1	BA	2F	ES	ES1	XN	Key	Key 1
36	17.68	15.95	9.85	6.99	1.77	1.02	17.48	17.72	2.875	1.875	5.75	3.75	2.36	13.98	4.784	3.06	1.102	3/4 Sq	1/2 Sq.
37	20.39	17.91	12.40	8.27	2.17	1.02	20.16	20.40	3.625	1.875	7.00	3.75	2.56	15.35	5.893	3.06	2.362	7/8 Sq	1/2 Sq.
38	23.94	21.65	13.98	10.04	2.35	1.02	23.64	22.60	4.375	2.375	9.99	4.75	1.97	18.90	9.02	4.03	2.559	1 SQ	5/8 SQ

Gear Frame	Motor Frame														
	182/184T			213/215T			254/256T			284/286T			324/326T		
	CM	HS	LT	CM	HS	LT	CM	HS	LT	CM	HS	LT	CM	HS	LT
36	15.00	6.63	48.60	15.00	6.63	48.75	15.00	6.63	51.85	19.06	8.50	57.85	19.06	8.50	59.28
37	15.00	6.63	52.02	15.00	6.63	52.17	15.00	6.63	55.27	19.06	8.50	61.27	19.06	8.50	62.70
38	-	-	-	-	-	-	19.06	8.50	60.25	19.06	8.50	60.38	19.06	8.50	71.22

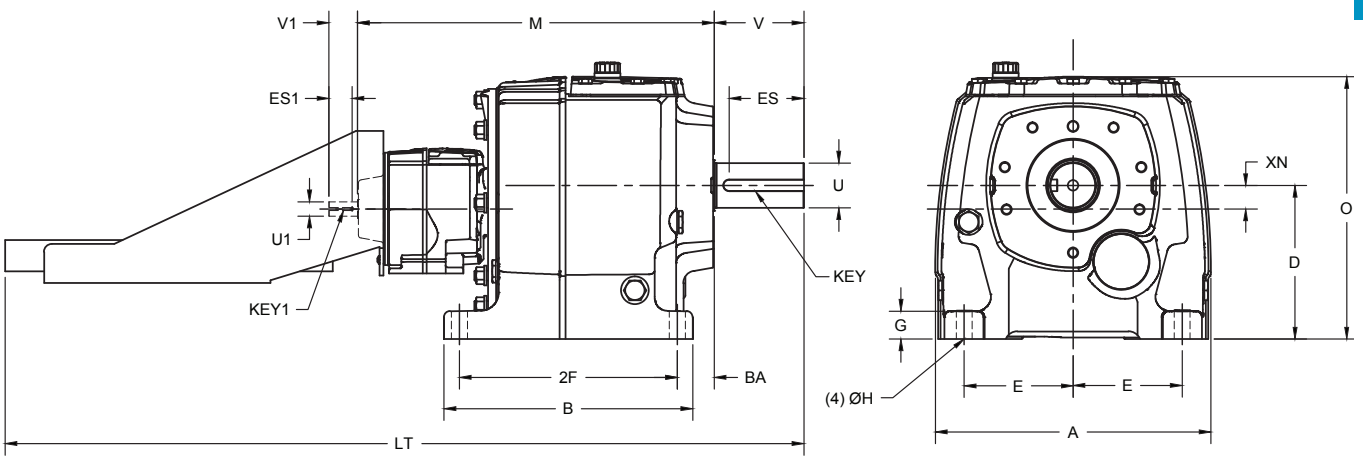
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[2] All rough casting dimensions may vary by .25" due to casting variations.

[3] Shaft extension tolerance: +.0000; -.001"

Scoop Mount Reducer

Foot Mounted - Combined Reduction



Gear Frame	A	B	D [1]	E	G	H	M	O	U [3]	U1 [3]	V	V1	BA	2F	ES	ES1	XN	Key	Key 1
36	17.68	15.95	9.85	6.99	1.77	1.02	22.73	17.72	2.875	0.63	5.75	1.25	2.36	13.98	4.784	1.00	1.492	3/4 Sq	3/16 Sq.
37	20.39	17.91	12.40	8.27	2.17	1.02	25.40	20.40	3.625	0.63	7.00	1.25	2.56	15.35	5.893	1.00	2.752	7/8 Sq	3/16 Sq.
38	23.94	21.65	13.98	10.04	2.35	1.02	23.64	22.60	4.375	2.375	9.99	5.56	1.97	18.90	9.02	5.00	2.559	1 SQ	5/8 SQ

Gear Frame	Motor Frame					
	143/145T		182/184T		213/215T	
	HS	LT	HS	LT	HS	LT
36	3.75	51.21	-	-	-	-
37	3.75	55.14	-	-	-	-
38	5.56	63.03	5.56	62.03	5.56	62.16

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[2] All rough casting dimensions may vary by .25" due to casting variations.

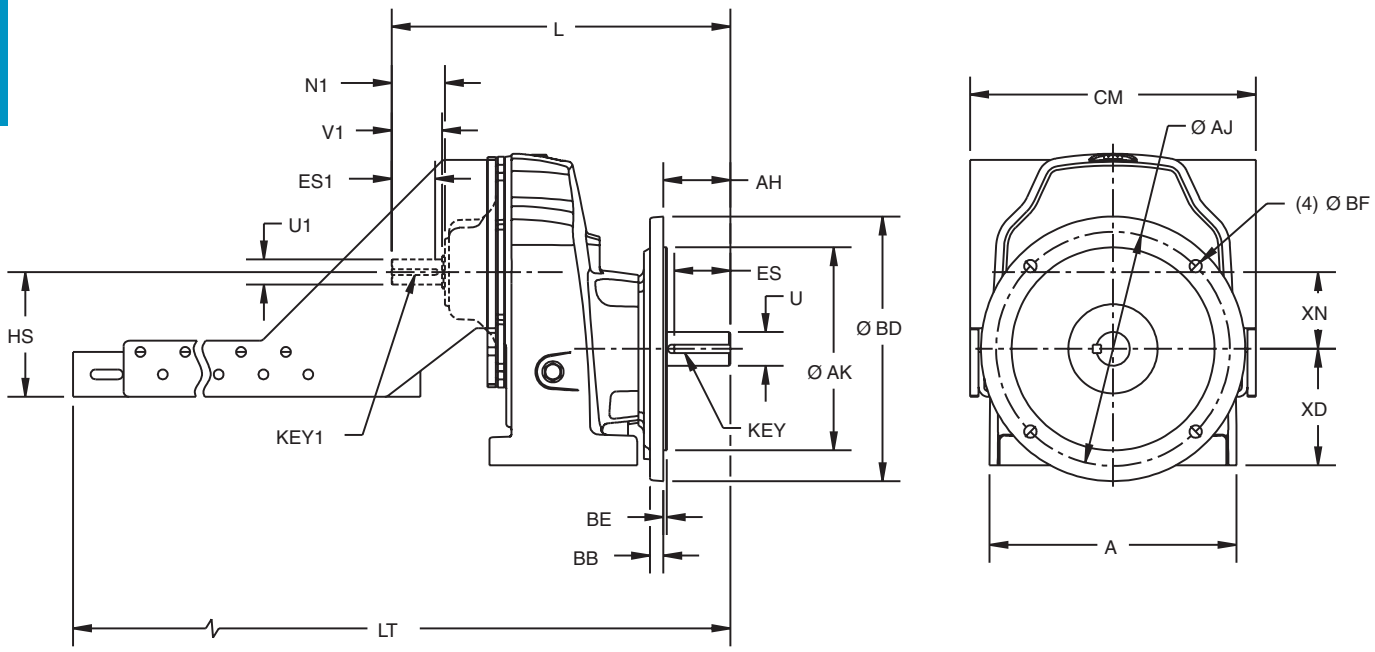
[3] Shaft extension tolerance: +.0000; -.001".

Browning

Scoop Mount Reducer

CbN SERIES 3000

Flange Mounted - Single Reduction



Gear Frame	A	L	N1	U [3]	U1 [3]	V1	AH	ES	ES1	XD	XN	Key	Key1
34	11.02	15.12	2.37	1.50	1.13	2.25	3.00	2.56	1.94	5.20	3.43	3/8 Sq.	1/4 Sq.

Flange Type	AK	AJ	BB	BD	BE	BF
BS	9.06	10.43	0.16	11.80	0.59	0.55
BD2	7.09	8.46	0.16	9.83	0.59	0.55

Motor Frame					
182/184T			213/215T		
CM	HS	LT	CM	HS	LT
12.75	5.56	35.75	12.75	5.56	36.05

[2] All rough casting dimensions may vary by .25" due to casting variations.

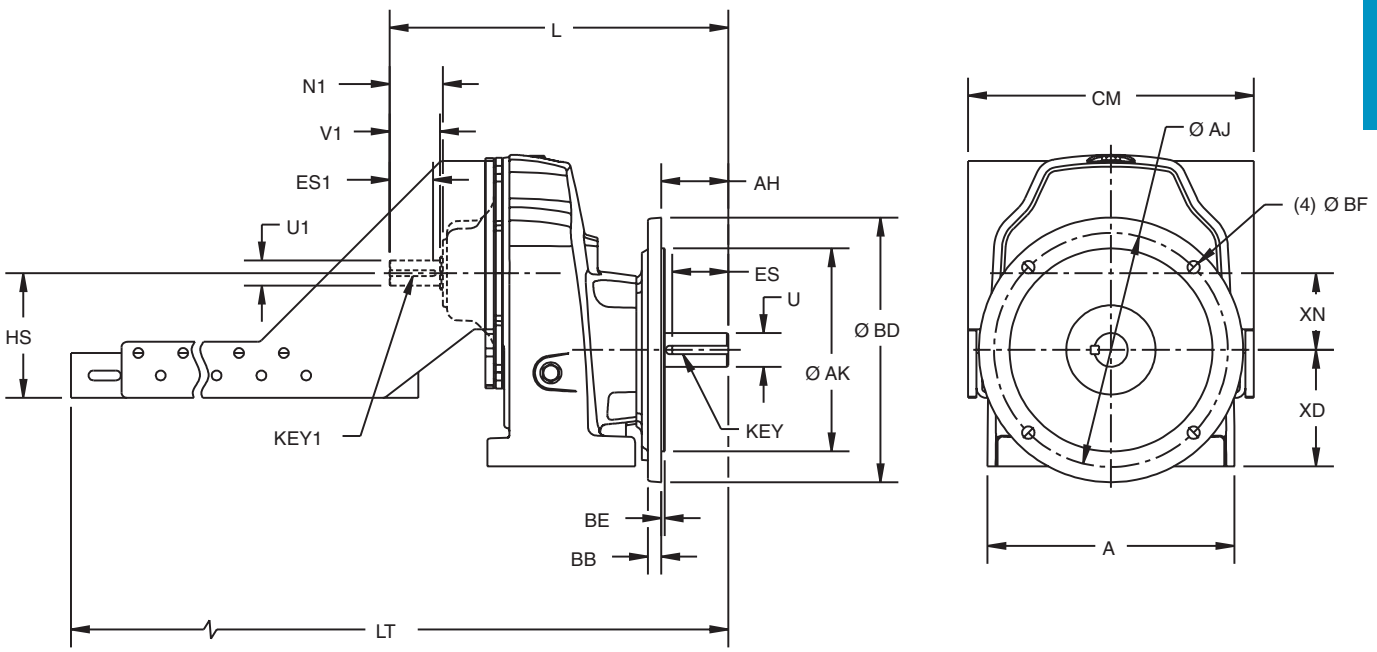
[3] Shaft extension tolerance: +.0000"; –.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; –.001".

Browning

Scoop Mount Reducer

CbN SERIES 3000

Flange Mounted - Single Reduction



Gear Frame	A	L	N1	U [3]	U1 [3]	V1	AH	ES	ES1	XD	XN	Key	Key1
35	13.65	17.90	2.92	1.75	1.38	2.75	3.50	3.06	2.31	6.30	4.33	3/8 Sq.	5/16 Sq.

Flange Type	AK	AJ	BB	BD	BE	BF
BS	9.84	11.81	0.20	13.78	0.71	0.71
BD2	9.06	10.43	0.20	11.81	0.71	0.55

Motor Frame								
213/215T			254/256T			284/286T		
CM	HS	LT	CM	HS	LT	CM	HS	LT
12.75	5.56	38.85	17.00	7.44	43.27	17.00	7.44	43.40

[2] All rough casting dimensions may vary by .25" due to casting variations.

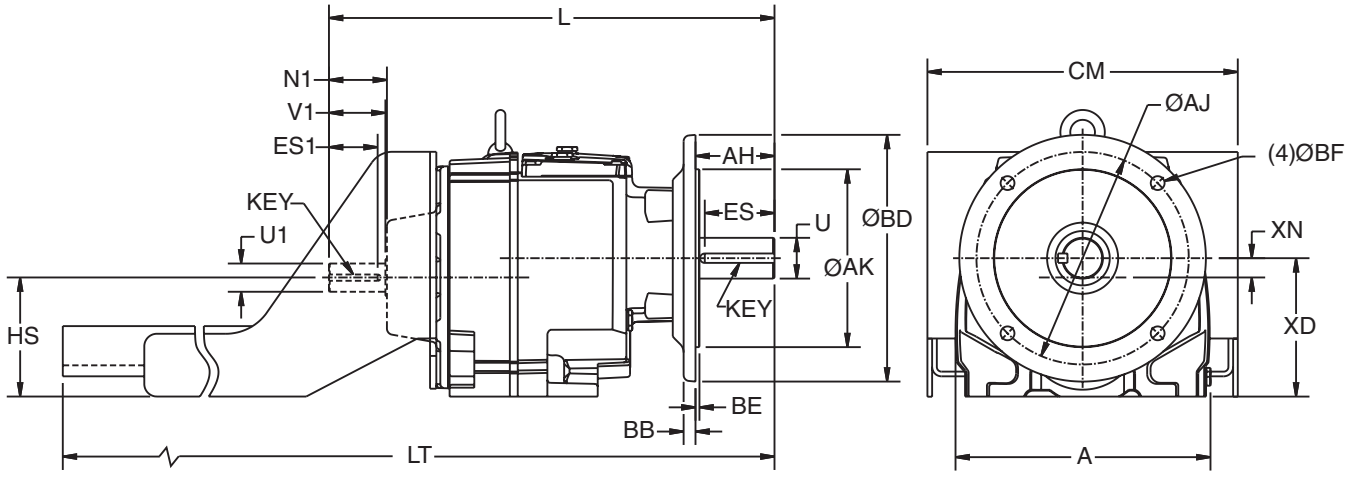
[3] Shaft extension tolerance: +.0000"; –.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; –.001".

Browning

Scoop Mount Reducer

CbN SERIES 3000

Flange Mounted - Double/Triple Reduction



Gear Frame	A	L	N1	U [3]	U1 [3]	V1	AH	ES	ES1	XD	XN	Key	Key1
32	8.70	13.25	1.29	1.25	0.63	1.25	2.50	2.16	1.00	4.53	0.39	1/4 Sq.	3/16 Sq.
3362,3363	10.16	17.61	2.31	1.50	1.13	2.25	3.00	2.56	1.94	5.51	0.77	3/8 Sq.	1/4 Sq.
3372,3373	10.16	17.76	2.31	1.63	1.13	2.25	3.15	2.78	1.94	5.51	0.77	3/8 Sq.	1/4 Sq.

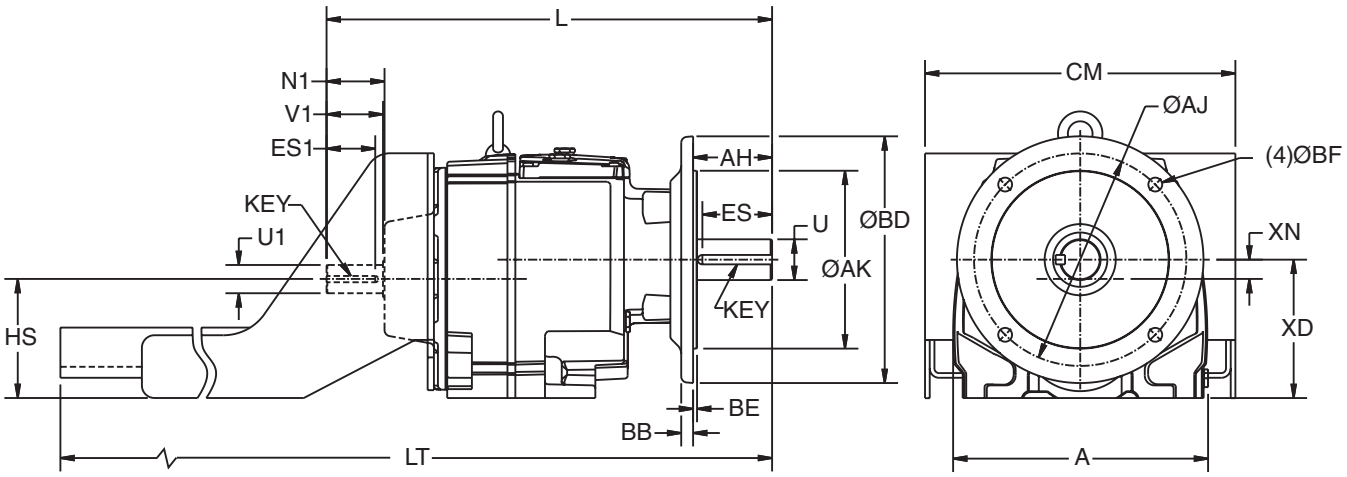
Flange Type	32						33					
	AK	AJ	BB	BD	BE	BF	AK	AJ	BB	BD	BE	BF
BS	7.09	8.46	0.16	9.83	0.47	0.55	9.06	10.43	0.16	11.80	0.47	0.55
BD1	5.12	6.50	0.14	7.87	0.39	0.47	7.09	8.46	0.16	9.83	0.47	0.55
BD2	4.33	5.12	0.14	6.29	0.39	0.35	5.12	6.50	0.14	7.86	0.47	0.47

Gear Frame	Motor Frame					
	143/145T			182/184T		
	CM	HS	LT	CM	HS	LT
32	11.38	3.75	28.36	-	-	-
3362,3363	12.38	4.74	38.33	12.38	4.74	38.33
3372,3373	12.38	4.74	38.48	12.38	4.74	38.48

[2] All rough casting dimensions may vary by .25" due to casting variations.

[3] Shaft extension tolerance: +.0000"; –.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; –.001".

Flange Mounted - Double/Triple Reduction



Gear Frame	A	L	N1	U [3]	U1 [3]	V1	AH	ES	ES1	XD	XN	Key	Key1
34	11.97	19.16	2.37	2.125	1.12	2.25	3.50	3.06	1.94	7.09	1.02	1/2 Sq.	1/4 Sq.

Flange Type	AK	AJ	BB	BD	BE	BF
BS	9.84	11.81	0.16	13.77	0.59	0.71
BD1	9.06	10.43	0.16	11.80	0.59	0.55
BD2	7.09	8.46	0.16	9.83	0.59	0.55

Motor Frame								
143/145T			182/184T			213/215T		
CM	HS	LT	CM	HS	LT	CM	HS	LT
12.75	5.56	40.79	12.75	5.56	39.79	12.75	5.56	40.19

[2] All rough casting dimensions may vary by .25" due to casting variations.

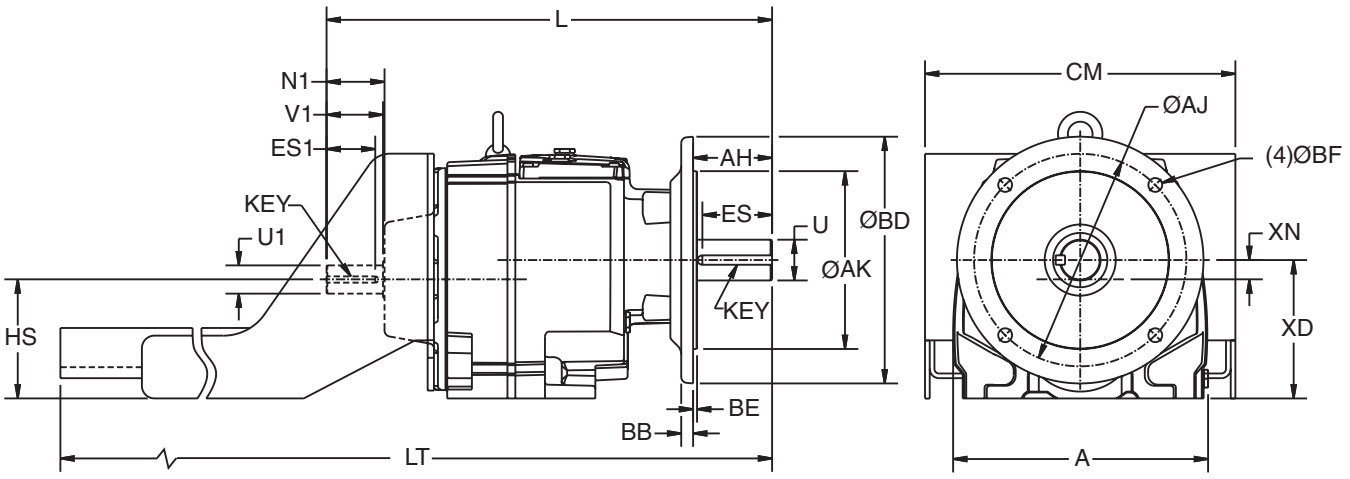
[3] Shaft extension tolerance: +.0000"; –.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; –.001".

Browning

Scoop Mount Reducer

CbN SERIES 3000

Flange Mounted - Double/Triple Reduction



Gear Frame	A	L	N1	U [3]	U1 [3]	V1	AH	ES	ES1	XD	XN	Key	Key1
35	14.19	23.42	2.92	2.375	1.375	2.75	4.72	4.19	2.31	8.86	1.14	5/8 Sq.	5/16 Sq.

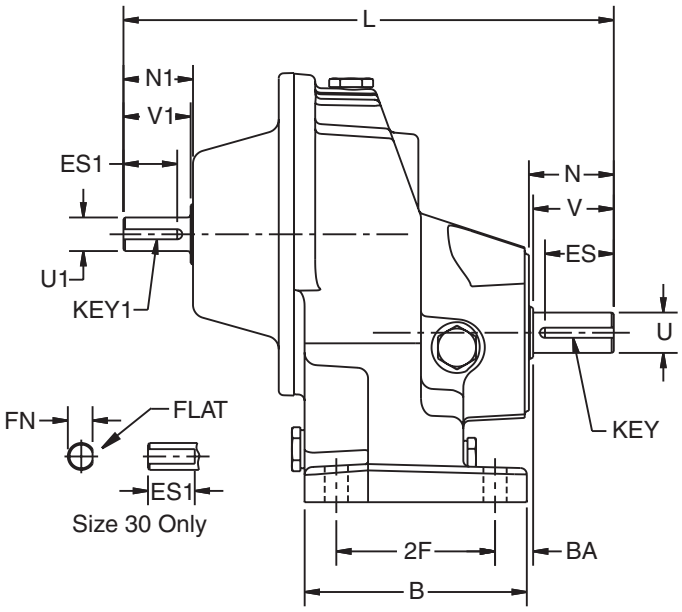
Flange Type	AK	AJ	BB	BD	BE	BF
BS	11.81	13.78	0.20	15.75	0.71	0.71
BD1	9.84	11.81	0.20	13.78	0.71	0.71
BD2	9.06	10.43	0.20	11.81	0.71	0.55

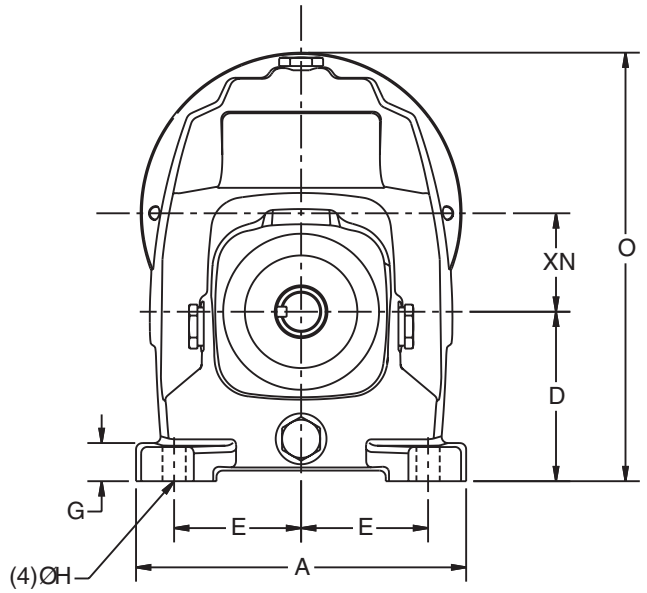
Motor Frame														
56, 143/145T			182/184T			213/215T			254/256T			284/286T		
CM	HS	LT	CM	HS	LT	CM	HS	LT	CM	HS	LT	CM	HS	LT
12.75	5.56	45.05	12.75	5.56	44.05	12.75	5.56	44.38	17.00	7.44	48.80	17.00	7.44	48.93

[2] All rough casting dimensions may vary by .25" due to casting variations.

[3] Shaft extension tolerance: +.0000"; –.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; –.001".

Foot Mounted - Single Reduction





Gear Frame	A	B	D [1]	E	G	H	L	N	N1	O	U [3]
30	5.90	3.54	2.95	2.46	0.49	0.35	8.77	2.14	1.12	7.07	0.625
31	6.14	4.13	3.15	2.36	0.71	0.43	9.12	1.58	1.29	7.97	0.75
32	7.28	4.48	3.54	2.76	0.77	0.55	9.74	2.08	1.29	9.67	1.00
33	9.69	5.30	4.41	3.74	1.02	0.63	12.88	2.83	2.31	11.69	1.375
34	11.02	6.59	5.20	4.25	1.34	0.71	14.35	3.06	2.37	13.90	1.500
35	13.65	7.76	6.30	5.12	1.61	0.79	16.73	3.60	2.92	17.37	1.75

Gear Frame	U1 [3]	V	V1	BA	ES	ES1	2F	FN	XN	Key	Key1
30	0.500	1.87	1.00	1.01	1.48	0.87	2.76	0.46	1.40	3/16 Sq.	N/A
31	0.625	1.50	1.25	0.71	1.28	1.00	2.95	N/A	1.83	3/16 Sq.	3/16 Sq.
32	0.625	2.00	1.25	0.75	1.56	1.00	3.15	N/A	2.48	1/4 Sq.	3/16 Sq.
33	1.125	2.75	2.25	1.08	2.40	1.94	3.94	N/A	2.76	5/16 Sq.	1/4 Sq.
34	1.125	3.00	2.25	1.10	2.56	1.94	4.92	N/A	3.43	3/8 Sq.	1/4 Sq.
35	1.375	3.50	2.75	1.18	3.06	2.31	6.30	N/A	4.33	3/8 Sq.	5/16 Sq.

[1] Dimension “D” will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

[2] All rough casting dimensions may vary by .25" due to casting variations.

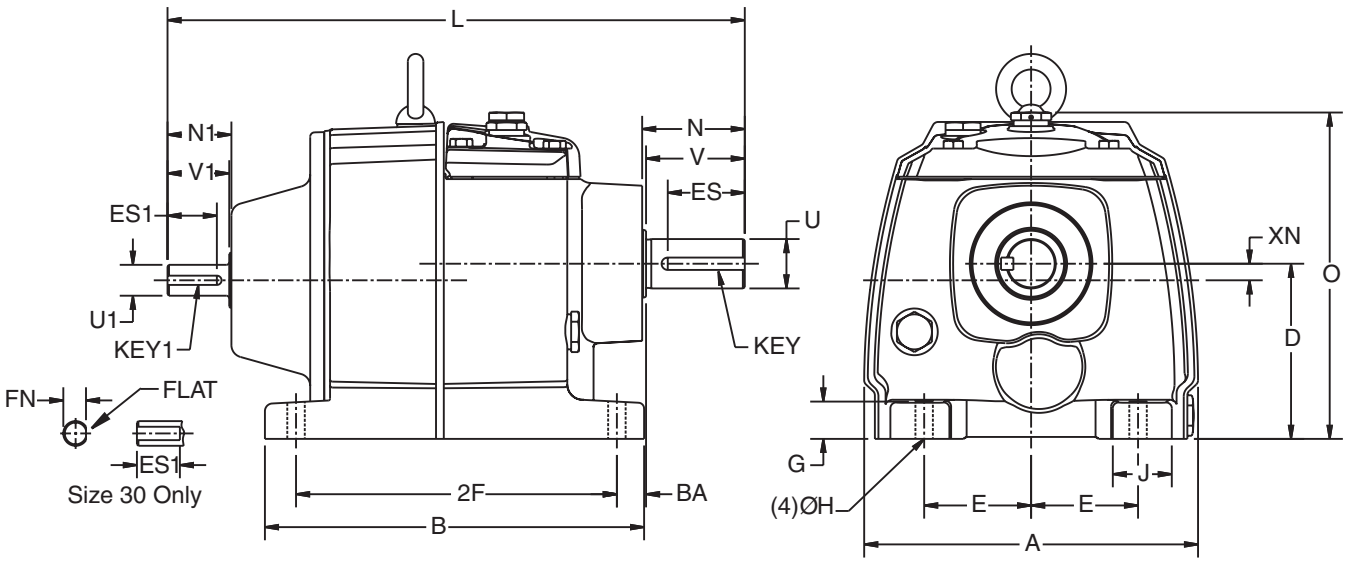
[3] Shaft extension tolerance: +.0000"; –.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; –.001".

Browning

Input Shaft Reducer

CbN SERIES 3000

Foot Mounted - Double/Triple Reduction



Gear Frame	A	B	D [1]	E	G	H	J	L	N	N1	O	U [3]
3012	5.90	4.92	2.95	2.46	0.51	0.35	1.10	9.56	1.83	1.12	6.00	0.75
3013	5.90	5.71	2.95	2.46	0.51	0.35	1.10	10.35	1.83	1.12	6.00	0.75
31	6.76	7.68	3.54	2.17	0.75	0.35	1.38	11.69	2.08	1.29	6.60	1.00
32	8.72	8.50	4.53	2.66	0.84	0.55	2.56	12.86	2.56	1.29	7.97	1.25
3362,3363	10.13	10.72	5.51	3.35	1.07	0.71	2.56	16.59	3.08	2.31	9.94	1.50
3372,3373	10.13	10.72	5.51	3.35	1.07	0.71	2.56	16.74	3.23	2.31	9.94	1.63
34	11.97	10.87	7.09	4.53	1.37	0.71	1.81	18.41	3.58	2.37	11.89	2.13
35	14.19	12.89	8.86	5.51	1.73	0.87	3.33	22.45	4.75	2.92	14.84	2.37

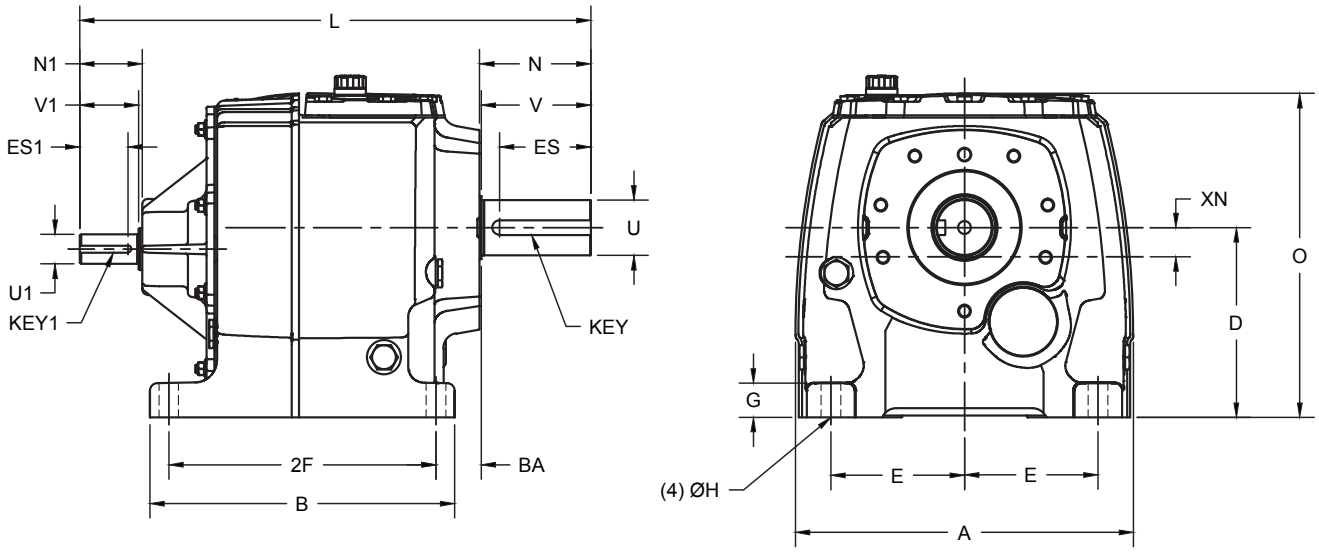
Gear Frame	U1 [3]	V	V1	BA	ES	ES1	2F	FN	XN	Key	Key1
3012	0.500	1.75	1.00	0.87	1.48	0.87	4.13	0.46	0.28	3/16 Sq.	N/A
3013	0.500	1.75	1.00	0.87	1.48	0.87	4.92	0.46	0.28	3/16 Sq.	N/A
31	0.625	2.00	1.25	0.59	1.56	1.00	6.50	N/A	0.33	1/4 Sq.	3/16 Sq.
32	0.625	2.50	1.25	0.51	2.16	1.00	7.56	N/A	0.39	1/4 Sq.	3/16 Sq.
3362,3363	1.125	3.00	2.25	0.77	2.56	1.94	9.45	N/A	0.77	3/8 Sq.	1/4 Sq.
3372,3373	1.125	3.15	2.25	0.77	2.78	1.94	9.45	N/A	0.77	3/8 Sq.	1/4 Sq.
34	1.125	3.50	2.25	0.98	3.06	N/A	9.25	1.94	1.02	1/2 Sq.	1/4 Sq.
35	1.375	4.72	2.75	1.10	4.19	2.31	11.02	N/A	1.14	5/8 Sq.	5/16 Sq.

[1] Dimension “D” will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

[2] All rough casting dimensions may vary by .25" due to casting variations.

[3] Shaft extension tolerance: +.0000"; –.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; –.001".

Foot Mounted - Double/Triple Reduction



Gear Frame	A	B	D [1]	E	G	H	J	L	N	N1	O	U [3]
36	17.68	15.95	9.85	6.99	1.77	1.02	2.76	27.25	5.875	3.94	17.72	2.875
37	20.39	17.91	12.40	8.27	2.17	1.02	2.36	31.18	7.127	3.94	20.40	3.625
38	23.94	21.65	13.98	10.04	2.35	1.02	4.92	38.46	8.16	4.93	22.60	4.375

Gear Frame	U1 [3]	V	V1	BA	2F	ES	ES1	XN	Key	Key 1
36	1.875	5.75	3.75	2.36	13.98	4.784	3.06	1.102	3/4 Sq	1/2 Sq.
37	1.875	7.00	3.75	2.56	15.35	5.893	3.06	2.362	7/8 Sq	1/2 Sq.
38	2.375	9.99	4.75	1.97	18.90	9.02	4.03	2.559	1 SQ	5/8 SQ

[1] Dimension “D” will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

[2] All rough casting dimensions may vary by .25" due to casting variations.

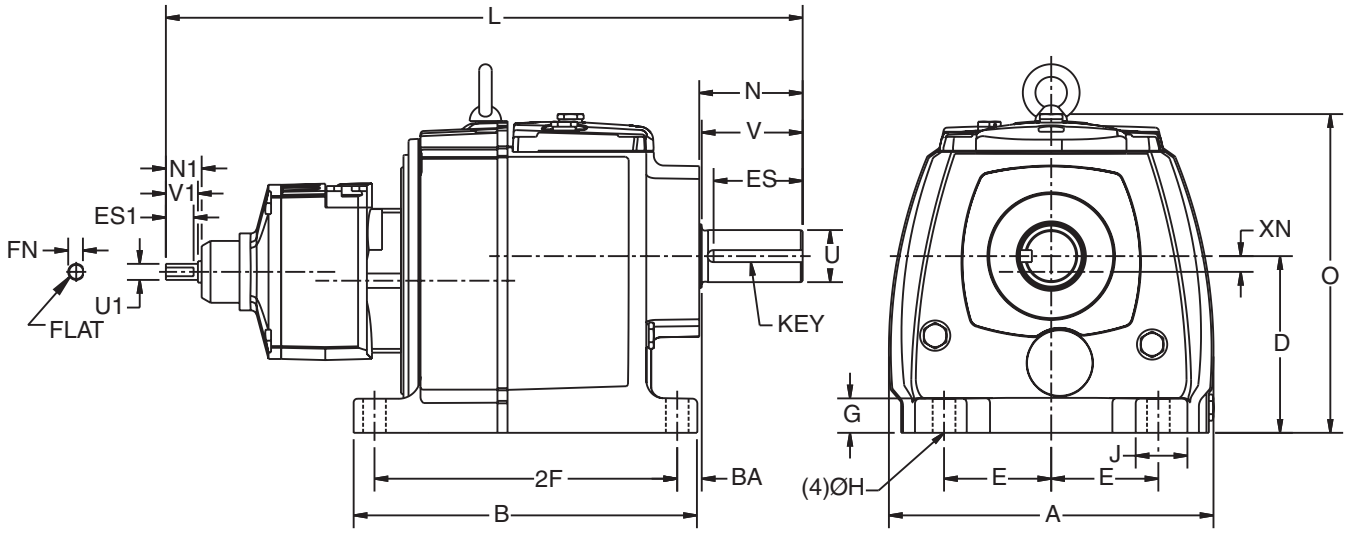
[3] Shaft extension tolerance: +.0000; -.001".

Browning

Input Shaft Reducer

CbN SERIES 3000

Foot Mounted - Combined Reduction



Gear Frame	A	B	D [1]	E	G	H	J	L	N	N1	O
32	8.72	8.50	4.53	2.66	0.84	0.55	2.56	17.73	2.56	1.12	7.97
33	10.13	10.72	5.51	3.35	1.07	0.71	2.56	19.88	3.23	1.12	9.94

Gear Frame	U [3]	U1 [3]	V	V1	BA	2F	FN	ES	ES1	XN	Key
32	1.25	0.50	2.50	1.00	0.51	7.56	0.46	2.16	0.87	0.12	1/4 Sq.
33	1.625	0.50	3.15	1.00	0.77	9.45	0.46	2.78	0.87	0.49	3/8 Sq.

[1] Dimension “D” will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

[2] All rough casting dimensions may vary by .25" due to casting variations.

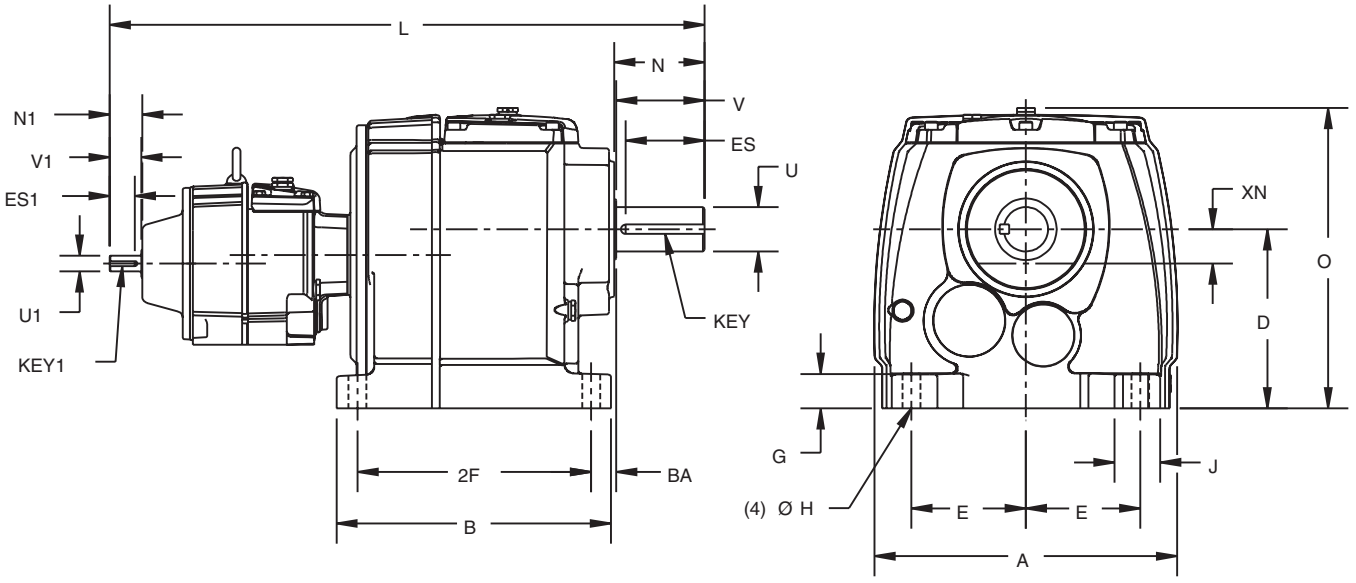
[3] Shaft extension tolerance: +.0000"; –.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; –.001".

Browning®

Input Shaft Reducer

CbN SERIES 3000

Foot Mounted - Combined Reduction



Gear Frame	A	B	D [1]	E	G	H	J	L	N	N1	O	U [3]
34	11.97	10.87	7.09	4.53	1.37	0.71	1.81	23.54	3.58	1.29	11.89	2.125

Gear Frame	U1 [3]	V	V1	BA	2F	ES	ES1	XN	Key	Key1
34	0.625	3.50	1.25	0.98	9.25	3.06	1.00	1.35	1/2 Sq.	3/16 Sq.

[1] Dimension “D” will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

[2] All rough casting dimensions may vary by .25" due to casting variations.

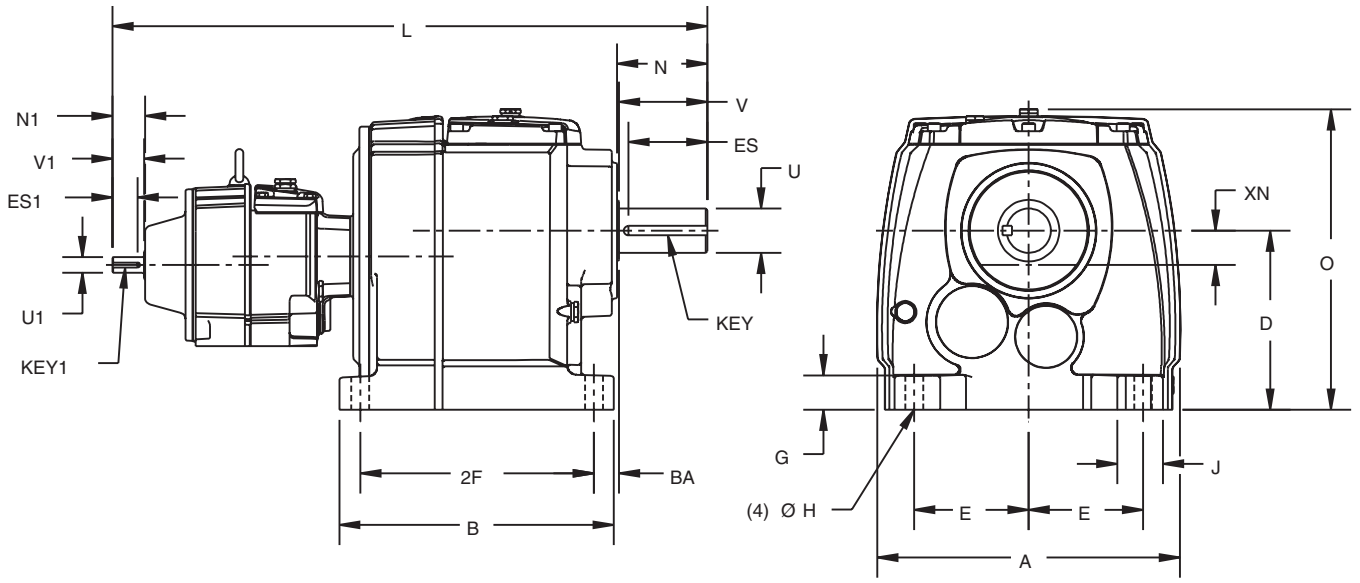
[3] Shaft extension tolerance: +.0000"; –.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; –.001".

Browning

Input Shaft Reducer

CbN SERIES 3000

Foot Mounted - Combined Reduction



Gear Frame	A	B	D [1]	E	G	H	J	L	N	N1	O
35	14.19	12.89	8.86	5.51	1.73	0.87	3.33	25.95	4.81	1.29	14.84

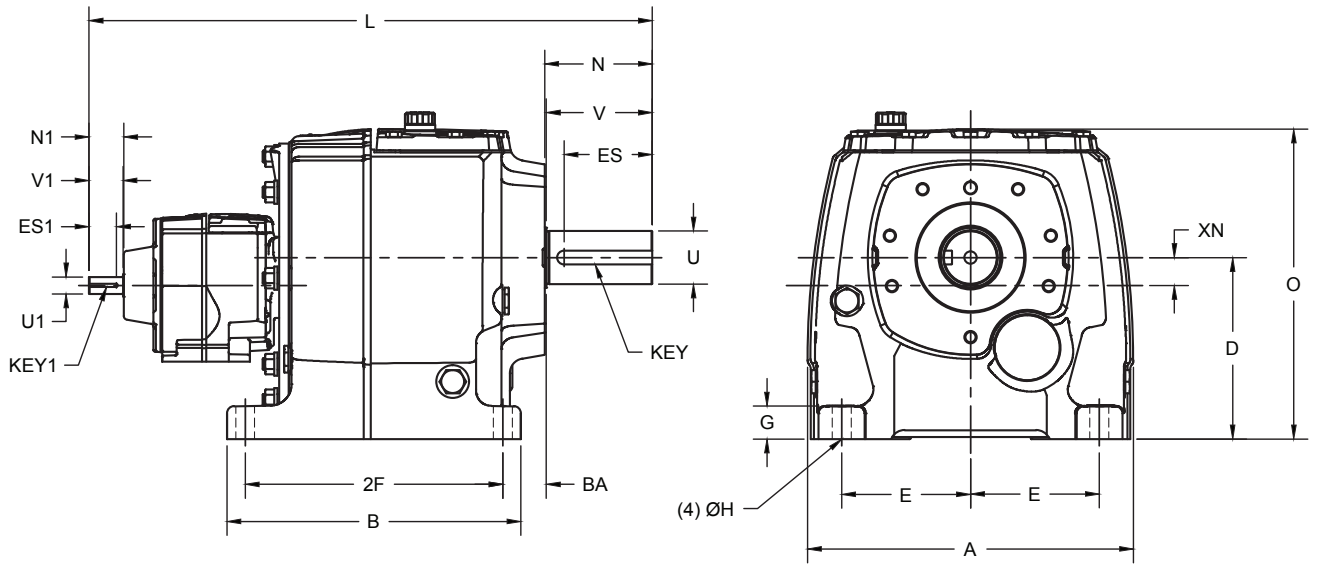
Gear Frame	U [3]	U1 [3]	V	V1	BA	2F	ES	ES1	XN	Key	Key1
35	2.375	0.625	4.72	1.25	1.10	11.02	4.19	1.00	1.47	5/8 Sq.	3/16 Sq.

[1] Dimension “D” will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

[2] All rough casting dimensions may vary by .25" due to casting variations.

[3] Shaft extension tolerance: +.0000"; –.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; –.001".

Foot Mounted - Combined Reduction



Gear Frame	A	B	D [1]	E	G	H	J	L	N	N1	O	U [3]
36	17.68	15.95	9.85	6.99	1.77	1.02	2.76	29.91	5.875	1.35	17.72	2.875
37	20.39	17.91	12.40	8.27	2.17	1.02	2.36	33.84	7.127	1.35	20.40	3.625
38	23.94	21.65	13.98	10.04	2.35	1.02	4.92	39.19	8.16	2.37	22.60	4.375

Gear Frame	U1 [3]	V	V1	BA	2F	ES	ES1	FN	XN	Key	Key 1
36	0.63	5.75	1.25	2.36	13.98	4.784	1.00	N/A	1.492	3/4 Sq	3/16 Sq.
37	0.63	7.00	1.25	2.56	15.35	5.893	1.00	N/A	2.752	7/8 Sq	3/16 Sq.
38	1.125	9.99	2.25	1.97	18.90	9.02	1.94	N/A	2.559	1 SQ	1/4 SQ

[1] Dimension “D” will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

[2] All rough casting dimensions may vary by .25" due to casting variations.

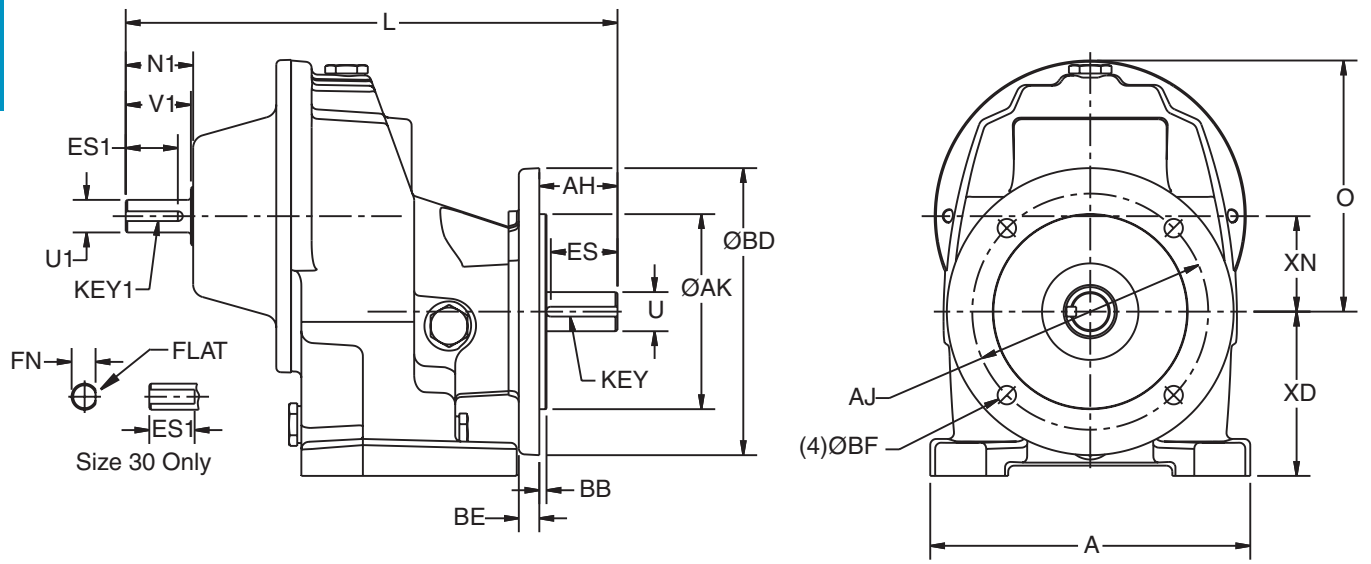
[3] Shaft extension tolerance: +.0000; -.001".

Browning®

Input Shaft Reducer

CbN SERIES 3000

Flange Mounted - Single Reduction



Gear Frame	A	L	N1	O	U [3]	U1 [3]	V1
30	-	8.77	1.12	4.11	0.63	0.50	1.00
31	6.14	9.44	1.29	4.82	0.75	0.63	1.25
32	8.70	9.55	1.29	7.38	1.00	0.63	1.25
33	9.44	13.27	2.31	7.28	1.38	1.13	2.25

Gear Frame	AH	ES	ES1	FN	XD	XN	Key	Key1
30	2.06	1.48	0.87	0.46	2.24	1.40	3/16 Sq.	N/A
31	1.50	1.28	1.00	N/A	3.15	1.83	3/16 Sq.	3/16 Sq.
32	1.50	1.16	1.00	N/A	2.68	2.48	1/4 Sq.	3/16 Sq.
33	2.75	2.40	1.94	N/A	4.41	2.76	5/16 Sq.	1/4 Sq.

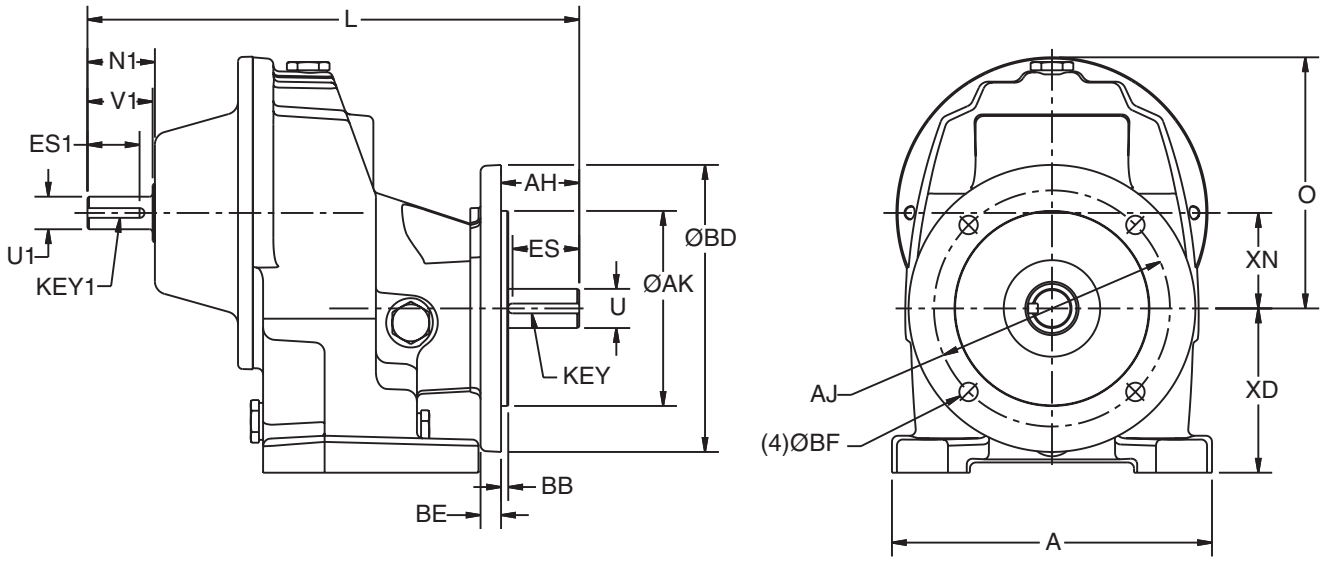
Flange Type	30						31					
	AK	AJ	BB	BD	BE	BF	AK	AJ	BB	BD	BE	BF
56C	4.50	5.88	0.12	6.50	0.39	3/8-16	-	-	-	-	-	-
BS	3.74	4.53	0.12	5.51	0.31	0.35	4.33	5.12	0.14	6.29	0.39	0.35
BD1	4.33	5.12	0.08	6.30	0.39	0.35	-	-	-	-	-	-
BD2	3.15	3.94	0.12	4.72	0.39	0.28	3.74	4.53	0.14	5.50	0.39	0.35
BD3	5.12	6.50	0.12	7.87	0.31	0.35	-	-	-	-	-	-

Flange Type	32						33					
	AK	AJ	BB	BD	BE	BF	AK	AJ	BB	BD	BE	BF
BS	5.12	6.50	0.14	7.87	0.47	0.47	7.09	8.46	0.16	9.83	0.47	0.55
BD2	4.33	5.12	0.14	6.29	0.39	0.35	5.12	6.50	0.16	7.86	0.47	0.43

[2] All rough casting dimensions may vary by .25" due to casting variations.

[3] Shaft extension tolerance: +.0000"; –.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; –.001".

Flange Mounted - Single Reduction



Gear Frame	A	L	N1	O	U [3]	U1 [3]	V1
34	11.02	15.12	2.37	8.70	1.50	1.125	2.25
35	13.65	17.90	2.92	11.07	1.75	1.375	2.75

Gear Frame	AH	ES	ES1	XD	XN	Key	Key1
34	3.00	2.56	1.94	5.20	3.43	3/8 Sq.	1/4 Sq.
35	3.50	3.06	2.31	6.30	4.33	3/8 Sq.	5/16 Sq.

Flange Type	34						35					
	AK	AJ	BB	BD	BE	BF	AK	AJ	BB	BD	BE	BF
BS	9.06	10.43	0.16	11.80	0.59	0.55	9.84	11.81	0.20	13.78	0.71	0.71
BD2	7.09	8.46	0.16	9.83	0.59	0.55	9.06	10.43	0.20	11.81	0.71	0.55

[2] All rough casting dimensions may vary by .25" due to casting variations.

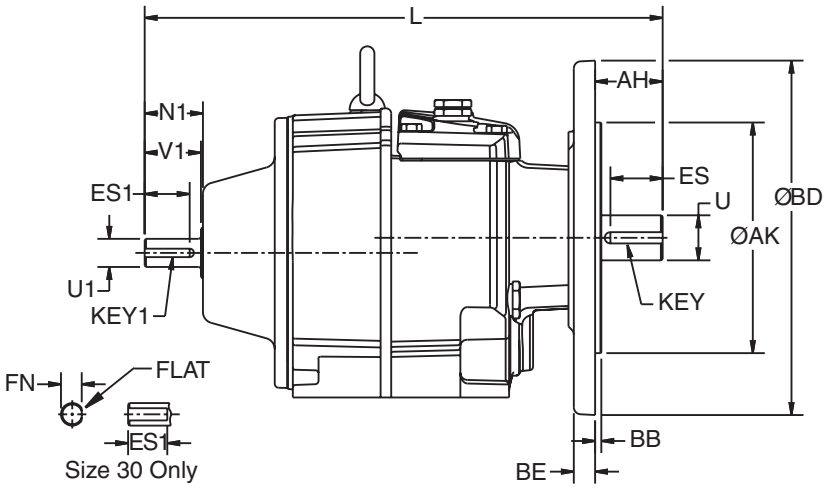
[3] Shaft extension tolerance: +.0000"; –.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; –.001".

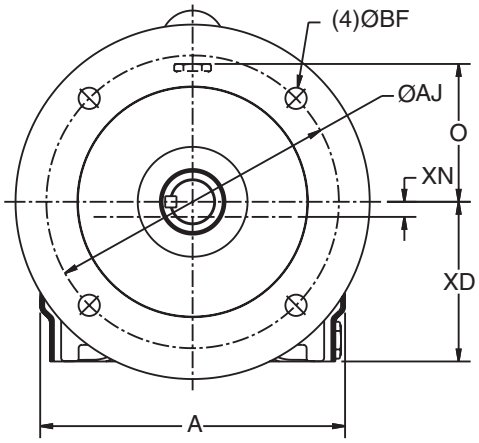
Browning

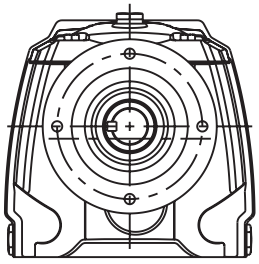
Input Shaft Reducer

CbN SERIES 3000

Flange Mounted - Double/Triple Reduction







BD3 TYPE (31)

Gear Frame	A	L	N1	O	U [3]	U1 [3]	V1
3012	5.51	9.87	1.12	3.04	0.625	0.500	1.00
3013	5.51	10.66	1.12	3.04	0.625	0.500	1.00
31	6.77	11.50	1.29	3.06	1.000	0.625	1.20

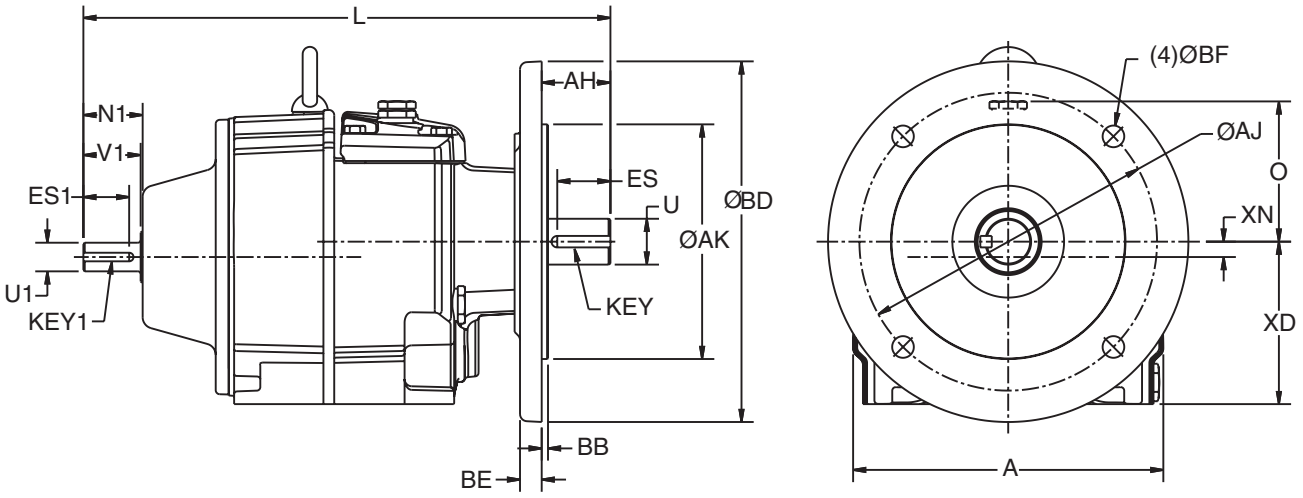
Gear Frame	AH	ES	ES1	FN	XD	XN	Key	Key1
3012	2.07	1.48	0.87	0.46	2.48	0.28	3/16 Sq.	N/A
3013	2.07	1.48	0.87	0.46	2.48	0.28	3/16 Sq.	N/A
31	1.50	1.16	1.00	N/A	3.54	0.33	1/4 Sq.	3/16 Sq.

Flange Type	30						31					
	AK	AJ	BB	BD	BE	BF	AK	AJ	BB	BD	BE	BF
56C	4.50	5.88	0.12	6.50	0.39	3/8-16	-	-	-	-	-	-
BS	3.74	4.53	0.12	5.51	0.31	0.35	5.12	6.50	0.14	7.87	0.47	0.47
BD1	3.15	3.94	0.10	4.72	0.28	0.28	4.33	5.12	0.14	6.29	0.39	0.35
BD2	4.33	5.12	0.12	6.30	0.31	0.35	3.74	4.53	0.14	5.50	0.39	0.35
BD3	5.12	6.50	0.12	7.87	0.31	0.35	3.15	3.94	0.10	4.72	0.39	0.28

[2] All rough casting dimensions may vary by .25" due to casting variations.

[3] Shaft extension tolerance: +.0000"; –.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; –.001".

Flange Mounted - Double/Triple Reduction



Gear Frame	A	L	N1	O	U [3]	U1 [3]	V1
32	8.70	13.25	1.29	3.50	1.250	0.625	1.25
3362,3363	10.16	17.62	2.31	4.43	1.500	1.125	2.25
3372,3373	10.16	17.77	2.31	4.43	1.625	1.125	2.25

Gear Frame	AH	ES	ES1	FN	XD	XN	Key	Key1
32	2.50	2.16	1.00	N/A	4.53	0.39	1/4 Sq.	3/16 Sq.
3362,3363	3.00	2.56	1.94	N/A	5.51	0.77	3/8 Sq.	1/4 Sq.
3372,3373	3.15	2.78	1.94	N/A	5.51	0.77	3/8 Sq.	1/4 Sq.

Flange Type	32						33					
	AK	AJ	BB	BD	BE	BF	AK	AJ	BB	BD	BE	BF
BS	7.09	8.46	0.16	9.83	0.47	0.55	9.06	10.43	0.16	11.80	0.47	0.55
BD1	5.12	6.50	0.14	7.87	0.39	0.47	7.09	8.46	0.16	9.83	0.47	0.55
BD2	4.33	5.12	0.14	6.29	0.39	0.35	5.12	6.50	0.14	7.86	0.47	0.47

[2] All rough casting dimensions may vary by .25" due to casting variations.

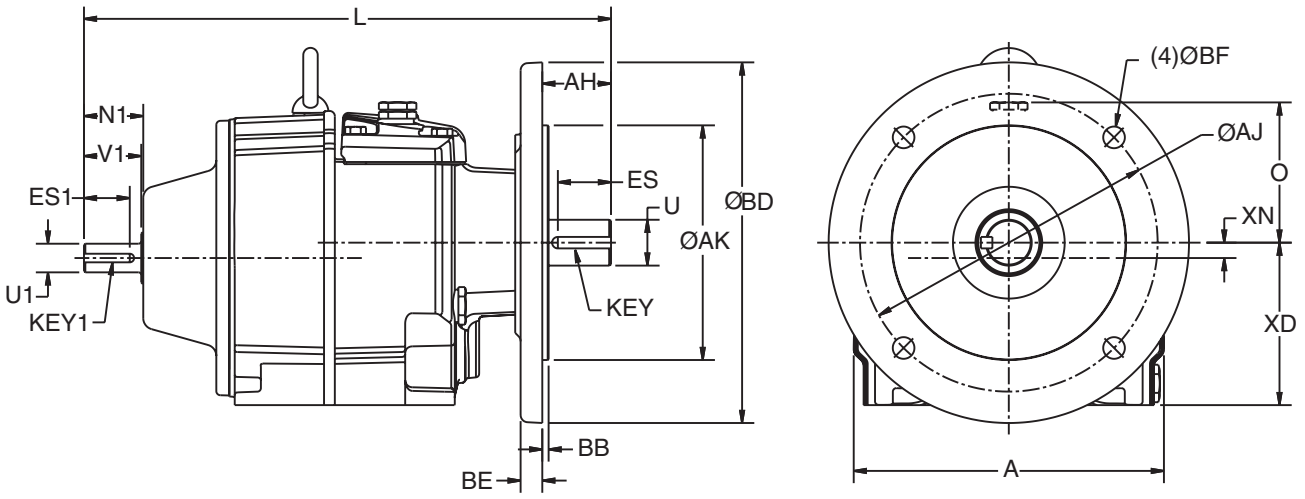
[3] Shaft extension tolerance: +.0000"; –.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; –.001".

Browning®

Input Shaft Reducer

CbN SERIES 3000

Flange Mounted - Double/Triple Reduction



Gear Frame	A	L	N1	O	U [3]	U1 [3]	V1
34	11.97	19.16	2.37	4.80	2.125	1.125	2.25
35	14.19	23.42	2.92	5.98	2.375	1.375	2.75

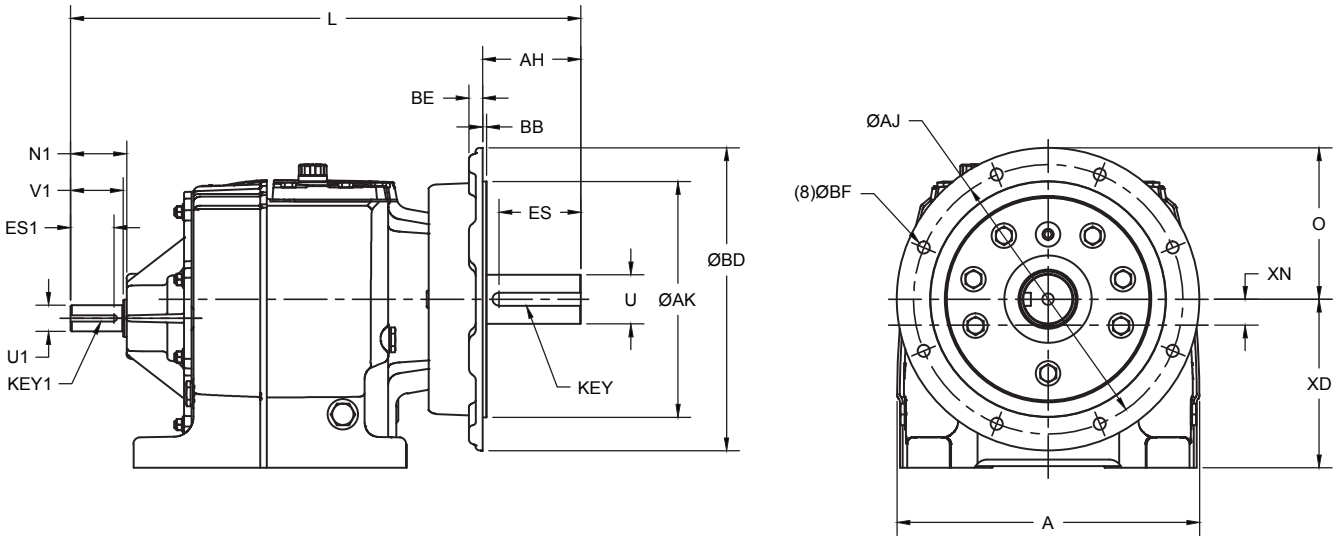
Gear Frame	AH	ES	ES1	XD	XN	Key	Key1
34	3.5	3.06	1.94	7.09	1.02	1/2 Sq.	1/4 Sq.
35	4.72	4.19	2.31	8.86	1.14	5/8 Sq.	5/16 Sq.

Flange Type	34						35					
	AK	AJ	BB	BD	BE	BF	AK	AJ	BB	BD	BE	BF
BS	9.84	11.81	0.16	13.77	0.59	0.71	11.81	13.78	0.20	15.75	0.71	0.71
BD1	9.06	10.43	0.16	11.80	0.59	0.55	9.84	11.81	0.20	13.78	0.71	0.71
BD2	7.09	8.46	0.16	9.83	0.59	0.55	9.06	10.43	0.20	11.81	0.71	0.55

[2] All rough casting dimensions may vary by .25" due to casting variations.

[3] Shaft extension tolerance: +.0000"; –.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; –.001".

Flanged Mounted - Double/Triple Reduction



Gear Frame	A	L	N1	O	U [3]	U1 [3]	V1
36	17.68	30.32	3.94	7.87	2.875	1.875	3.75
37	20.39	34.25	3.94	7.99	3.625	1.875	3.75
38	23.94	38.46	4.93	8.63	4.375	2.375	4.75

Gear Frame	AH	ES	ES1	XD	XN	Key	Key 1
36	5.75	4.784	3.06	9.84	1.102	3/4 Sq	1/2 Sq.
37	7.00	5.893	3.06	12.40	2.362	7/8 Sq	1/2 Sq.
38	6.84	9.02	4.03	13.98	2.559	1 SQ	5/8 SQ

Gear Frame	Flange Type	AK	AJ	BB	BD	BE	BF
36	BS	17.717	19.685	0.236	21.65	0.79	0.70
	BD1	13.780	15.748	0.236	17.70	0.79	0.70
37	BS	17.717	19.685	0.236	21.65	0.79	0.70
	BD1	13.780	15.748	0.236	17.70	0.79	0.70
38	BS	21.654	23.622	0.197	25.98	0.79	0.87
	BD1	17.717	19.685	0.197	21.65	0.79	0.69

[1] Dimension “D” will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

[2] All rough casting dimensions may vary by .25" due to casting variations.

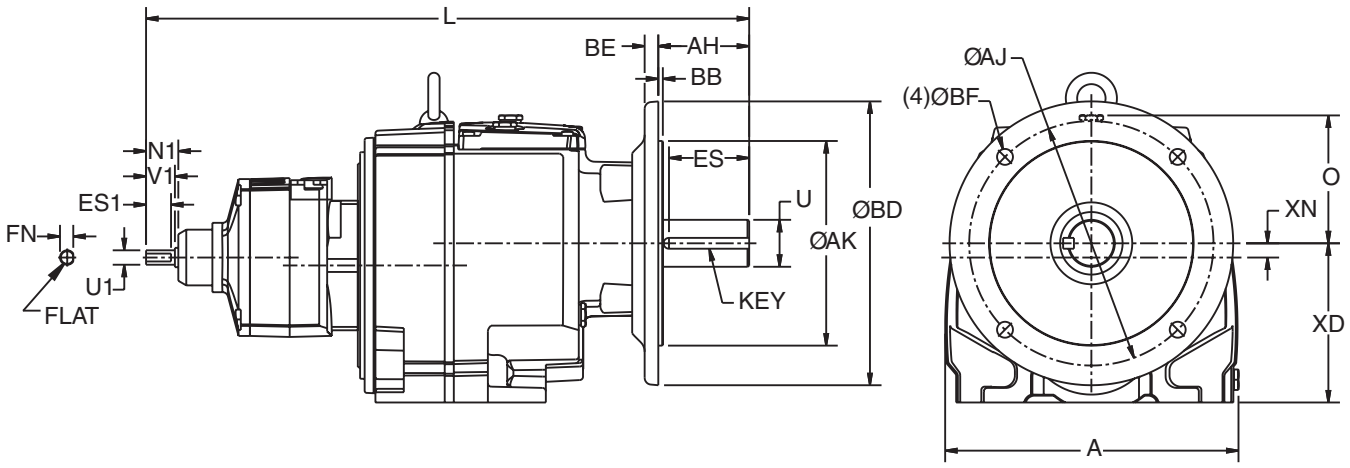
[3] Shaft extension tolerance: +.0000; -.001".

Browning®

Input Shaft Reducer

CbN SERIES 3000

Flange Mounted - Combined Reduction



Gear Frame	A	L	N1	O	U [3]	U1 [3]	V1	XD
32	8.70	18.13	1.12	3.50	1.25	0.50	1.00	4.53
33	10.16	20.90	1.12	4.43	1.63	0.50	1.00	5.51

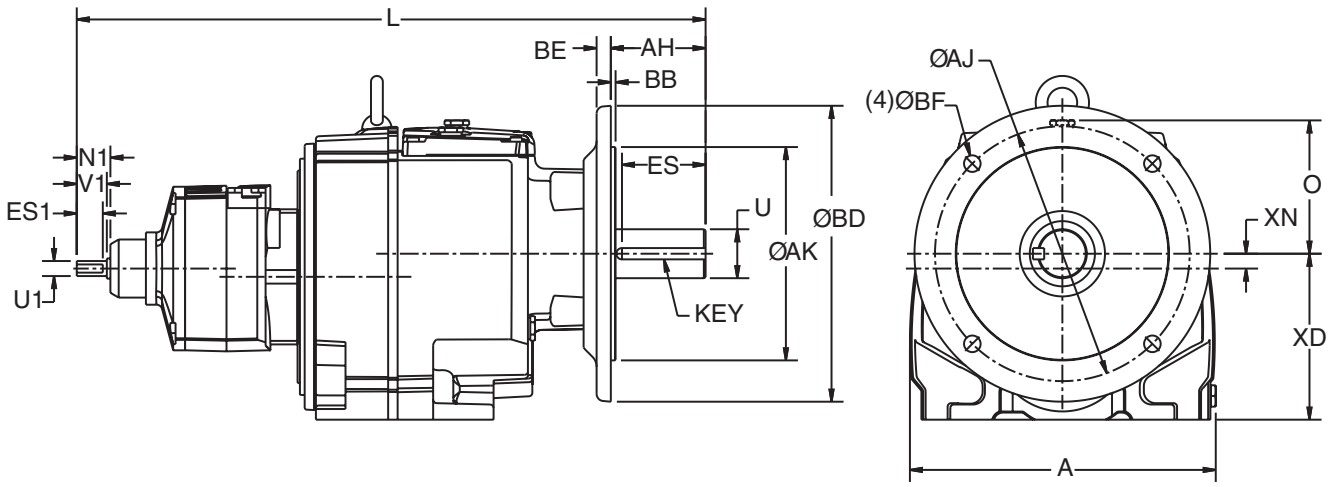
Gear Frame	AH	ES	ES1	FN	XN	Key
32	2.50	2.16	0.86	0.46	0.12	1/4 Sq.
33	3.15	2.78	0.86	0.46	0.49	3/8 Sq.

Flange Type	32						33					
	AK	AJ	BB	BD	BE	BF	AK	AJ	BB	BD	BE	BF
BS	7.09	8.46	0.16	9.83	0.47	0.55	9.06	10.43	0.16	11.80	0.47	0.55
BD1	5.12	6.50	0.14	7.87	0.39	0.47	7.09	8.46	0.16	9.83	0.47	0.55
BD2	4.33	5.12	0.14	6.29	0.39	0.35	5.12	6.50	0.14	7.86	0.47	0.47

[2] All rough casting dimensions may vary by .25" due to casting variations.

[3] Shaft extension tolerance: +.0000"; –.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; –.001".

Flange Mounted - Combined Reduction



Gear Frame	A	L	N1	O	U [3]	U1 [3]	V1
34	11.97	24.29	1.29	4.80	2.125	1.125	1.25
35	14.19	26.86	1.29	5.98	2.125	0.625	1.25

Gear Frame	AH	ES	ES1	XD	XN	Key	Key1
34	3.50	3.06	1.00	7.09	1.35	1/2 Sq.	3/16 Sq.
35	4.72	4.19	1.00	8.86	1.47	5/8 Sq.	3/16 Sq.

Flange Type	34						35					
	AK	AJ	BB	BD	BE	BF	AK	AJ	BB	BD	BE	BF
BS	9.84	11.81	0.16	13.77	0.59	0.71	11.81	13.78	0.20	15.75	0.71	0.71
BD1	9.06	10.43	0.16	11.80	0.59	0.55	9.84	11.81	0.20	13.78	0.71	0.71
BD2	7.09	8.46	0.16	9.83	0.59	0.55	9.06	10.43	0.20	11.81	0.71	0.55

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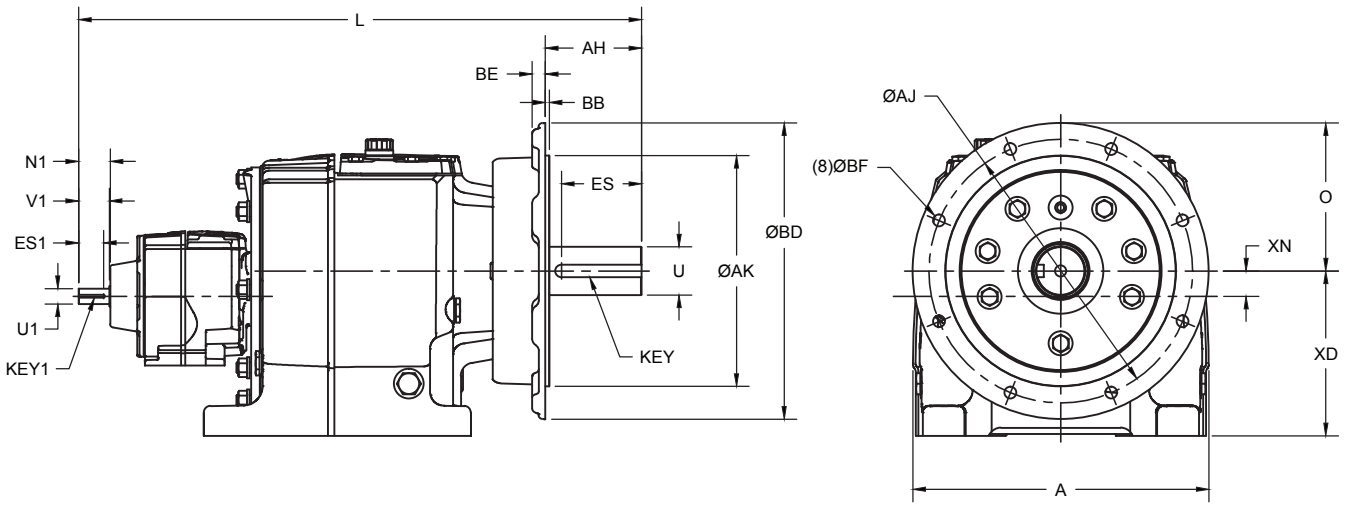
[3] Shaft extension tolerance: +.0000"; –.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; –.001".

Browning

Input Shaft Reducer

CbN SERIES 3000

Flange Mounted - Combined Reduction



Gear Frame	A	L	N1	O	U [3]	U1 [3]	V1
36	17.68	32.98	1.35	7.87	2.875	0.63	1.25
37	20.39	36.91	1.35	7.99	3.625	0.63	1.25
38	23.94	43.92	2.37	8.63	4.375	1.125	2.25

Gear Frame	AH	ES	ES1	XD	XN	Key	Key 1
36	5.75	4.784	1.00	9.86	1.492	3/4 Sq	3/16 Sq.
37	7.00	5.893	1.00	12.40	2.752	7/8 Sq	3/16 Sq.
38	6.84	9.02	1.94	13.98	2.559	1 SQ	1/4 SQ

Gear Frame	Flange Type	AK	AJ	BB	BD	BE	BF
36	BS	17.717	19.685	0.236	21.65	0.79	0.70
	BD1	13.780	15.748	0.236	17.70	0.79	0.70
37	BS	17.717	19.685	0.236	21.65	0.79	0.70
	BD1	13.780	15.748	0.236	17.70	0.79	0.70
38	BS	21.654	23.620	0.197	25.98	0.79	0.87
	BD1	17.717	19.685	0.197	21.65	0.79	0.69

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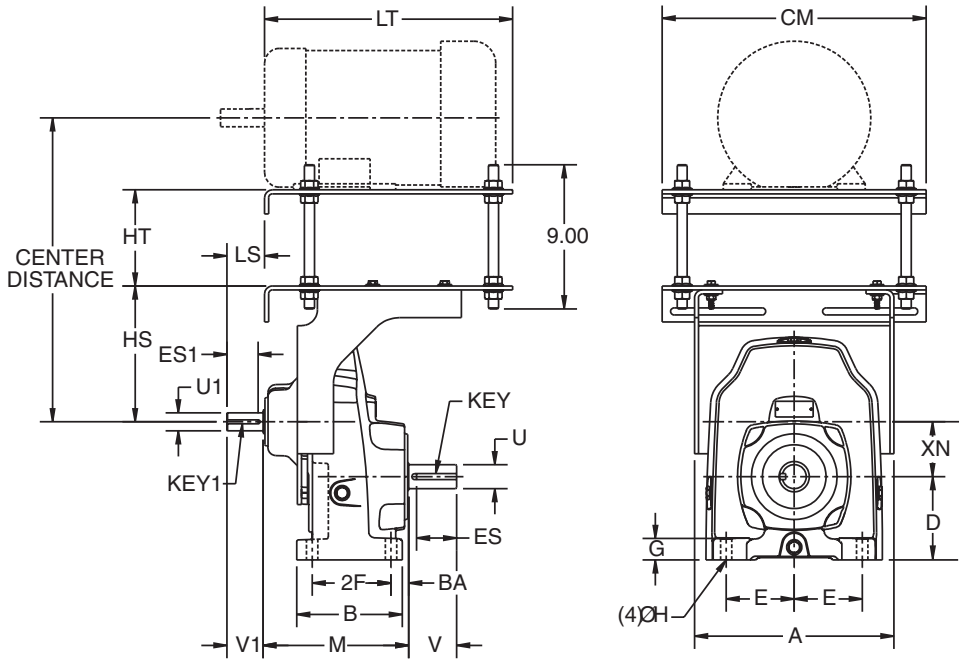
[3] Shaft extension tolerance: +.0000; -.001".

Browning®

Top Mount Reducer

CbN SERIES 3000

Foot Mounted - Single Reduction



Gear Frame	A	B	D [1]	E	G	H	M	U [3]	U1 [3]	V	V1	BA
34	12.47	6.59	5.20	4.25	1.34	0.71	9.10	1.50	1.13	3.00	2.25	1.10
35	15.45	7.76	6.30	5.12	1.61	0.79	10.38	1.75	1.38	3.50	2.75	1.18

Gear Frame	CM	2F	HS	HT		LS	LT	ES	ES1	XN	Key	Key1
				Min.	Max.							
34	16.50	4.92	14.48	1.89	7.36	2.35	15.50	2.56	1.94	3.43	3/8 Sq.	1/4 Sq.
35	20.00	6.30	10.48	1.89	7.36	2.72	20.25	3.06	2.31	4.33	3/8 Sq.	5/16 Sq.

Motor Frame	34 Center Distance		35 Center Distance	
	Min.	Max.	Min.	Max.
143/145T	13.87	19.34	15.87	21.34
182/184T	14.87	20.34	16.87	22.34
213/215T	15.62	21.09	17.62	23.09
254/256T	-	-	18.62	24.09
284/286T	-	-	19.37	24.84

[1] Dimension “D” will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

[2] All rough casting dimensions may vary by .25" due to casting variations.

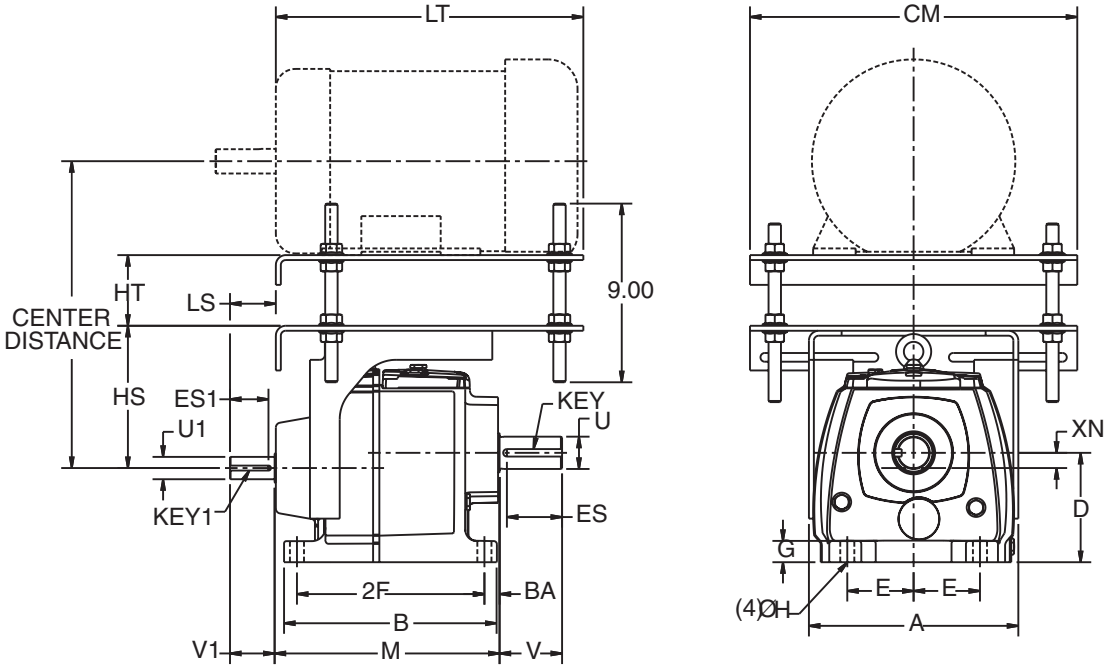
[3] Shaft extension tolerance: +.0000"; –.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; –.001".

Browning®

Top Mount Reducer

CbN SERIES 3000

Foot Mounted - Double/Triple Reduction



Gear Frame	A	B	D [1]	E	G	H	M	U [3]	U1 [3]	V	V1	BA
32	10.56	8.50	4.53	2.66	0.84	0.55	9.11	1.25	0.63	2.50	1.25	0.51
3362,3363	10.56	10.72	5.51	3.35	1.07	0.71	11.34	1.50	1.13	3.00	2.25	0.77
3372,3373	10.56	10.72	5.51	3.35	1.07	0.71	11.34	1.63	1.13	3.15	2.25	0.77

Gear Frame	CM	2F	HS	HT		LS	LT	ES	ES1	XN	Key	Key1
				Min.	Max.							
32	16.50	7.56	7.14	1.64	7.61	1.29	15.50	2.16	1.00	0.39	1/4 Sq.	3/16 Sq.
3362,3363	16.50	9.45	7.17	1.64	7.61	2.31	15.50	2.56	1.94	0.77	3/8 Sq.	1/4 Sq.
3372,3373	16.50	9.45	7.17	1.64	7.61	2.31	15.50	2.78	1.94	0.77	3/8 Sq.	1/4 Sq.

Motor Frame	32 Center Distance		33 Center Distance	
	Min.	Max.	Min.	Max.
56	12.28	18.25	12.31	18.28
143/145T	12.28	18.25	12.31	18.28
182/184T	13.28	19.25	13.31	19.28
213/215T	-	-	14.06	20.03

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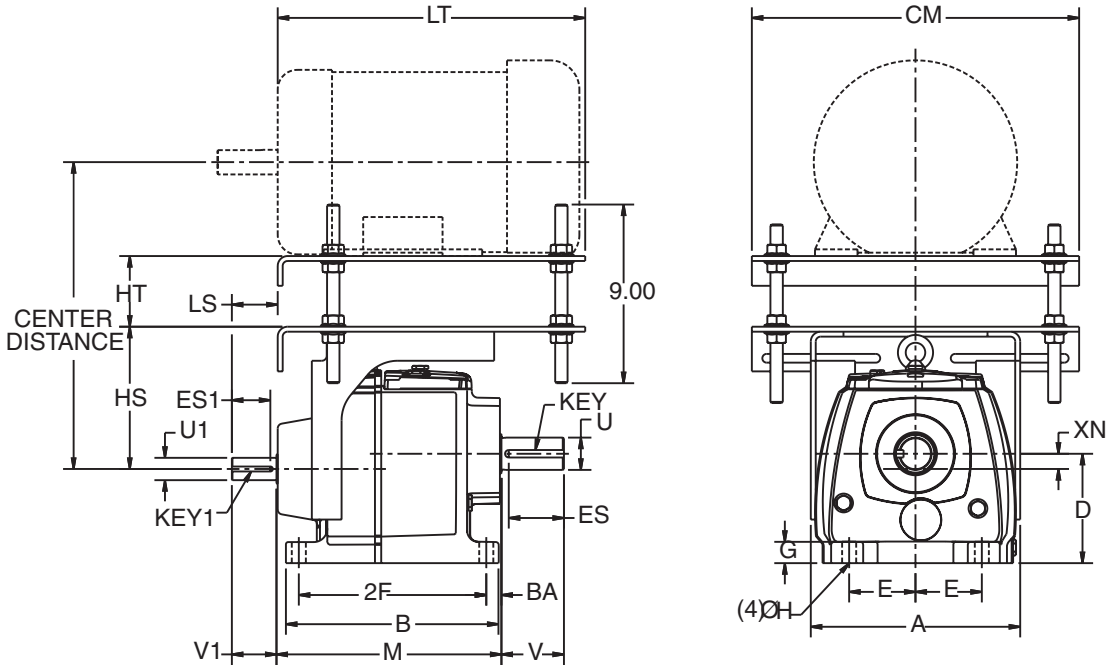
[3] Shaft extension tolerance: +.0000"; –.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; –.001".

Browning®

Top Mount Reducer

CbN SERIES 3000

Foot Mounted - Double/Triple Reduction



Gear Frame	A	B	D [1]	E	G	H	M	U [3]	U1 [3]	V	V1	BA
34	12.47	10.87	7.09	4.53	1.37	0.71	12.66	2.13	1.13	3.50	2.25	0.98
35	15.45	12.89	8.86	5.51	1.73	0.87	14.95	2.38	1.38	4.72	2.75	1.10

Gear Frame	CM	2F	HS	HT		LS	LT	ES	ES1	XN	Key	Key1
				Min.	Max.							
34	16.50	9.25	14.48	1.89	7.36	2.35	15.50	3.06	1.94	1.02	1/2 Sq.	1/4 Sq.
35	20.00	11.02	10.48	1.89	7.36	2.72	20.25	4.19	2.31	1.14	5/8 Sq.	5/16 Sq.

Motor Frame	34 Center Distance		35 Center Distance	
	Min.	Max.	Min.	Max.
143/145T	13.87	19.34	15.87	21.34
182/184T	14.87	20.34	16.87	22.34
213/215T	15.62	21.09	17.62	23.09
254/256T	16.62	22.09	18.62	24.09
284/286T	-	-	19.37	24.84

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[2] All rough casting dimensions may vary by .25" due to casting variations.

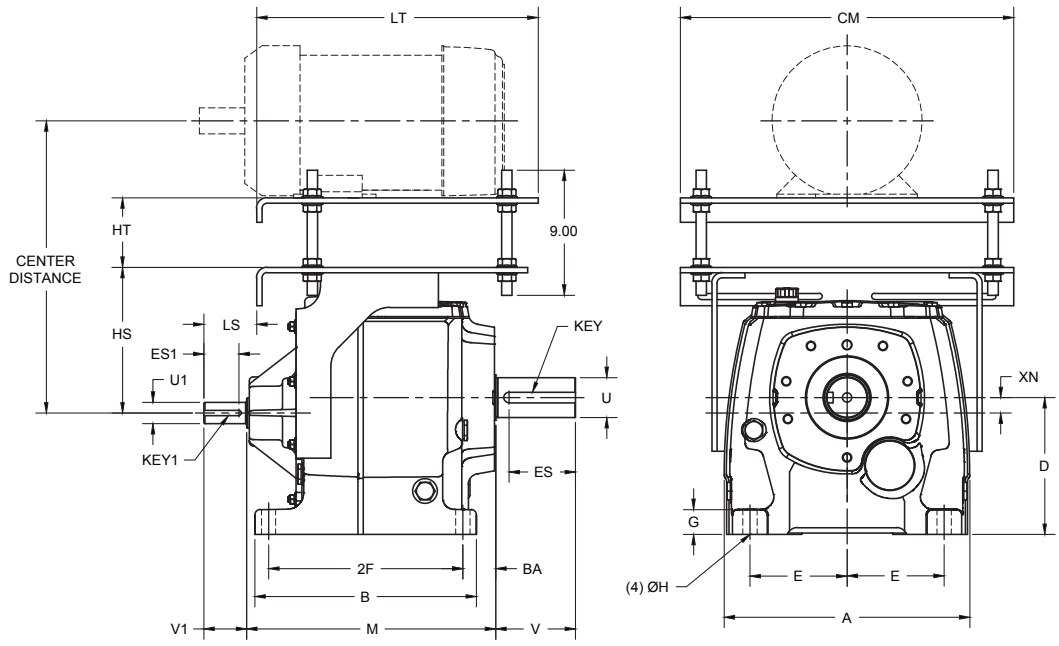
[3] Shaft extension tolerance: +.0000"; –.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; –.001".

Browning®

Top Mount Reducer

CbN SERIES 3000

Foot Mounted - Double/Triple Reduction



Gear Frame	A	B	D [1]	E	G	H	M	U [3]	U1 [3]	V	V1	BA
36	17.68	15.95	9.85	6.99	1.77	1.02	17.48	2.875	1.875	5.75	3.75	2.36
37	20.39	17.91	12.40	8.27	2.17	1.02	20.16	3.625	1.875	7.00	3.75	2.56
38	23.94	21.65	13.98	10.04	2.35	1.02	19.88	4.375	2.375	9.99	4.75	1.97

Gear Frame	CM	2F	HS	HT		LS	LT	ES	ES1	XN	Key	Key1
				Min.	Max.							
36	24.00	13.98	10.48	1.89	7.36	3.76	10.48	4.784	1.00	1.102	3/4 Sq	1/2 Sq.
37	24.00	15.35	10.48	1.89	7.36	3.76	10.48	5.893	1.00	2.362	7/8 Sq	1/2 Sq.
38	24.00	18.90	19.38	1.89	7.36	5.47	19.25	9.02	4.03	2.559	1 SQ	5/8 SQ

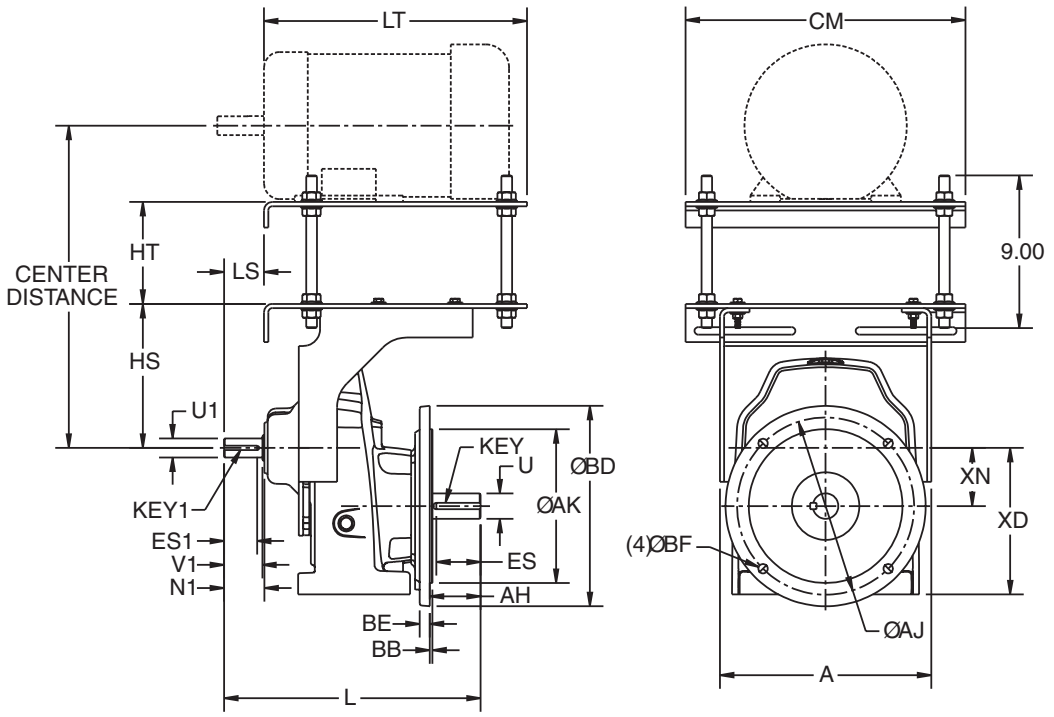
Motor Frame	36 or 37 Center Distance		38 Center Distance	
	Min.	Max.	Min.	Max.
182T/184T	16.73	22.73	25.78	31.25
213T/215T	17.48	23.48	26.53	32.00
254T/256T	18.48	24.48	27.53	33.00
284T/286T	19.23	25.23	28.28	33.75
324T/326T	20.23	26.23	29.28	34.75

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[2] All rough casting dimensions may vary by .25" due to casting variations.

[3] Shaft extension tolerance: +.0000; -.001".

Flange Mounted - Single Reduction



Gear Frame	A	L	N1	U [3]	U1 [3]	V1	AH	CM	ES
34	12.47	15.12	2.37	1.50	1.13	2.25	3.00	16.50	2.56
35	15.45	17.90	2.92	1.75	1.38	2.75	3.50	20.00	3.06

Gear Frame	ES1	XD	HS	HT		LS	LT	XN	Key	Key1
				Min.	Max.					
34	1.94	5.20	14.48	1.89	7.36	2.35	15.50	3.43	3/8 Sq.	1/4 Sq.
35	2.31	6.30	10.48	1.89	7.36	2.72	20.25	4.33	3/8 Sq.	5/16 Sq.

Flange Type	34						35					
	AK	AJ	BB	BD	BE	BF	AK	AJ	BB	BD	BE	BF
BS	9.06	10.43	0.16	11.8	0.59	0.55	9.84	11.81	0.2	13.78	0.71	0.71
BD2	7.09	8.46	0.16	9.83	0.59	0.55	9.06	10.43	0.2	11.81	0.71	0.55

Motor Frame	34 Center Distance		35 Center Distance	
	Min.	Max.	Min.	Max.
143/145T	13.87	19.34	15.87	21.34
182/184T	14.87	20.34	16.87	22.34
213/215T	15.62	21.09	17.62	23.09
254/256T	-	-	18.62	24.09
284/286T	-	-	19.37	24.84

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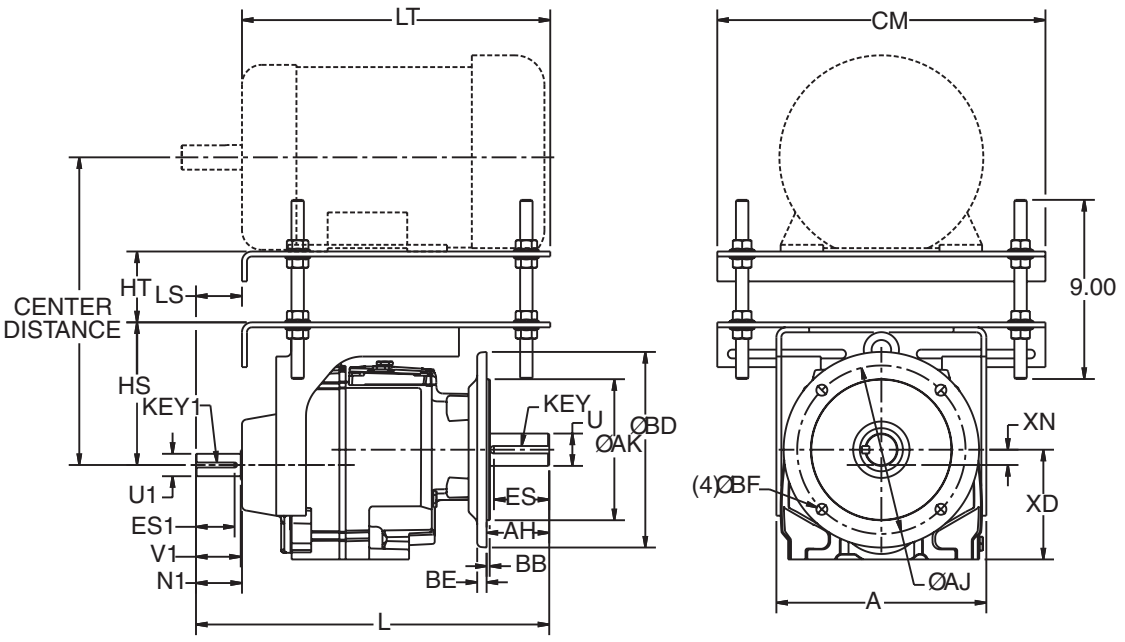
[3] Shaft extension tolerance: +.0000"; –.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; –.001".

Browning

Top Mount Reducer

CbN SERIES 3000

Flange Mounted - Double/Triple Reduction



Gear Frame	A	L	N1	U [3]	U1 [3]	V1	AH	CM	ES
32	10.56	13.25	1.29	1.25	0.63	1.25	2.50	16.50	2.16
3362,3363	10.56	17.61	2.31	1.50	1.13	2.25	3.00	16.50	2.56
3372,3373	10.56	17.76	2.31	1.63	1.13	2.25	3.15	16.50	2.78

Gear Frame	ES1	XD	HS	HT		LS	LT	XN	Key	Key1
				Min.	Max.					
32	1.00	4.53	7.14	1.64	7.61	1.29	15.50	0.39	1/4 Sq.	3/16 Sq.
3362,3363	1.94	5.51	7.17	1.64	7.61	2.31	15.50	0.77	3/8 Sq.	1/4 Sq.
3372,3373	1.94	5.51	7.17	1.64	7.61	2.31	15.50	0.77	3/8 Sq.	1/4 Sq.

Flange Type	32						33					
	AK	AJ	BB	BD	BE	BF	AK	AJ	BB	BD	BE	BF
BS	7.09	8.46	0.16	9.83	0.47	0.55	9.06	10.43	0.16	11.80	0.47	0.55
BD1	5.12	6.50	0.14	7.87	0.39	0.47	7.09	8.46	0.16	9.83	0.47	0.55
BD2	4.33	5.12	0.14	6.29	0.39	0.35	5.12	6.50	0.14	7.86	0.47	0.47

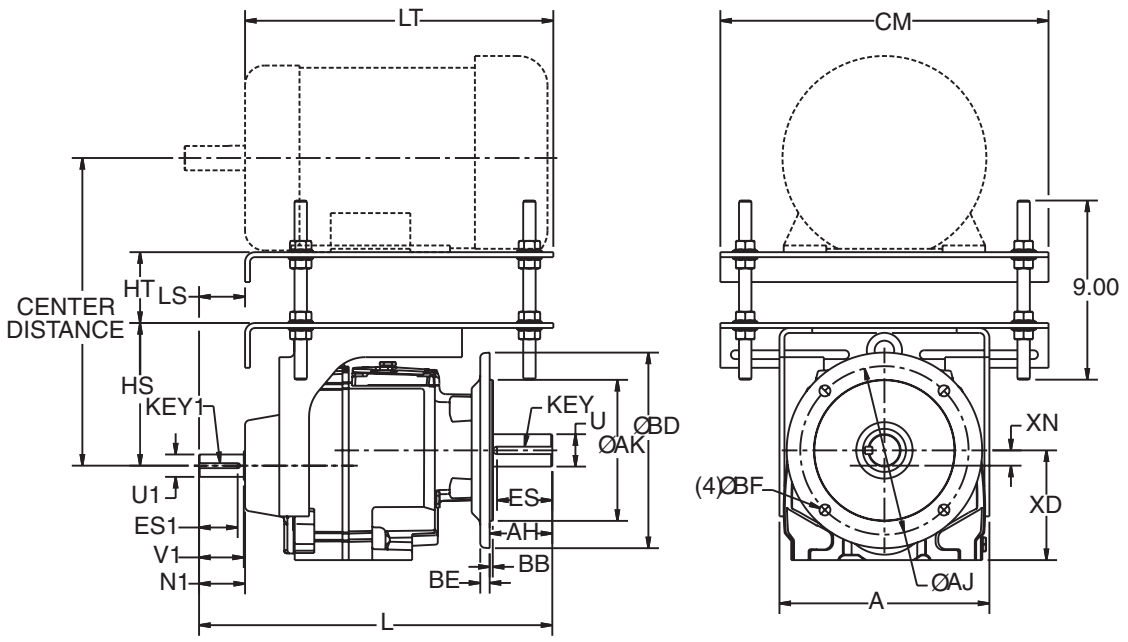
Motor Frame	32 Center Distance		33 Center Distance	
	Min.	Max.	Min.	Max.
56	12.28	18.25	12.31	18.28
143T, 145T	12.28	18.25	12.31	18.28
182T, 184T	13.28	19.25	13.31	19.28
213T, 215T	-	-	14.06	20.03

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

[2] All rough casting dimensions may vary by .25" due to casting variations.

[3] Shaft extension tolerance: +.0000"; –.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; –.001".

Flange Mounted - Double/Triple Reduction



Gear Frame	A	L	N1	U [3]	U1 [3]	V1	AH	CM	ES
34	12.47	19.16	2.37	2.13	1.13	2.25	3.50	16.50	3.06
35	15.45	23.42	2.92	2.13	1.38	2.75	4.72	20.00	4.19

Gear Frame	ES1	XD	HS	HT		LS	LT	XN	Key	Key1
				Min.	Max.					
34	1.94	7.09	14.48	1.89	7.36	2.35	15.5	1.02	1/2 Sq.	1/4 Sq.
35	2.31	8.86	10.48	1.89	7.36	2.72	20.25	1.14	5/8 Sq.	5/16 Sq.

Flange Type	34						35					
	AK	AJ	BB	BD	BE	BF	AK	AJ	BB	BD	BE	BF
BS	9.84	11.81	0.16	13.77	0.59	0.71	11.81	13.78	0.20	15.75	0.71	0.71
BD1	9.06	10.43	0.16	11.80	0.59	0.55	9.84	11.81	0.20	13.78	0.71	0.71
BD2	7.09	8.46	0.16	9.83	0.59	0.55	9.06	10.43	0.20	11.81	0.71	0.55

Motor Frame	34 Center Distance		35 Center Distance	
	Min.	Max.	Min.	Max.
143/145T	13.87	19.34	15.87	21.34
182/184T	14.87	20.34	16.87	22.34
213/215T	15.62	21.09	17.62	23.09
254/256T	16.62	22.09	18.62	24.09
284/286T	-	-	19.37	24.84

[1] Dimension “D” will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

[2] All rough casting dimensions may vary by .25" due to casting variations.

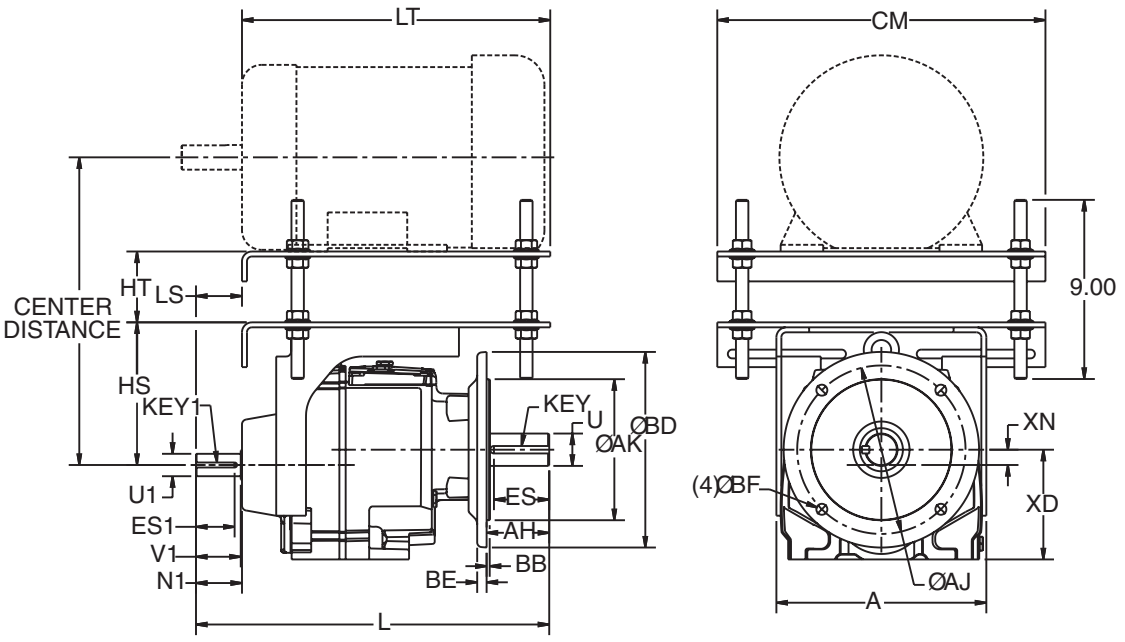
[3] Shaft extension tolerance: +.0000"; –.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; –.001".

Browning

Top Mount Reducer

CbN SERIES 3000

Flange Mounted - Double/Triple Reduction



Gear Frame	A	L	N1	O	U [3]	U1 [3]	V1	AH	CM	ES	ES1
36	17.68	30.32	3.94	7.87	2.875	1.875	3.75	5.75	24.00	4.784	3.06
37	20.39	34.25	3.94	7.99	3.625	1.875	3.75	7.00	24.00	5.89	3.06
38	23.94	38.46	4.93	8.63	4.375	2.375	4.75	6.84	24.00	9.02	4.03

Gear Frame	XD	HT		LS	LT	ES	ES1	XN	Key	Key 1
		Min.	Max.							
36	9.84	1.89	7.36	3.76	10.48	4.784	1.00	1.102	3/4 Sq	1/2 Sq.
37	12.40	1.89	7.36	3.76	10.48	5.893	1.00	2.362	7/8 Sq	1/2 Sq.
38	13.98	1.89	7.36	5.47	19.25	9.02	5.00	2.559	1 SQ	5/8 SQ

Gear Frame	Flange Type	AK	AJ	BB	BD	BE	BF
36	BS	17.717	19.685	0.236	21.65	0.79	0.70
	BD1	13.780	15.748	0.236	17.70	0.79	0.70
37	BS	17.717	19.685	0.236	21.65	0.79	0.70
	BD1	13.780	15.748	0.236	17.70	0.79	0.70
38	BS	21.654	23.620	0.197	25.98	0.79	0.87
	BD1	17.717	19.685	0.197	21.65	0.79	0.69

Motor Frame	36 or 37 Center Distance		38 Center Distance	
	Min.	Max.	Min.	Max.
182T/184T	16.73	22.73	25.78	31.25
213T/215T	17.48	23.48	26.53	32.00
254T/256T	18.48	24.48	27.53	33.00
284T/286T	19.23	25.23	28.28	33.75
324T/326T	20.23	26.23	29.28	34.75

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

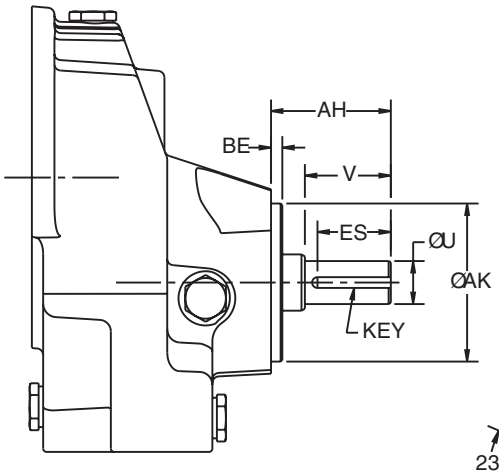
[2] All rough casting dimensions may vary by .25" due to casting variations.

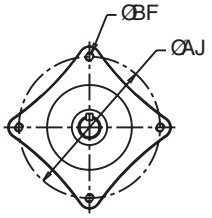
[3] Shaft extension tolerance: +.0000; -.001".

B14 Face Mounting Supplement

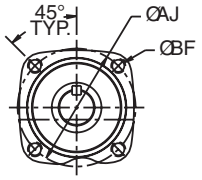
CbN SERIES 3000

Single Reduction

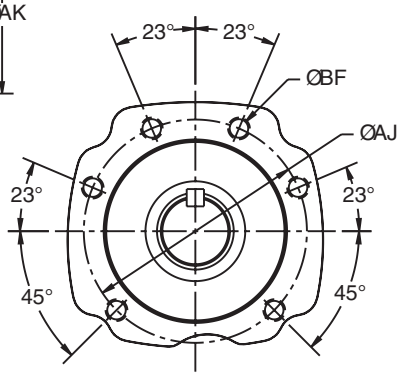




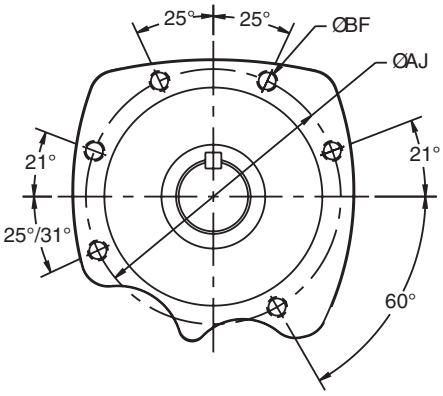
30



31 / 32



33



34 / 35

Gear Frame	U [1]	V	AH	AJ	AK [2]	BE	BF	ES	Key
30	0.625	1.88	2.53	3.937	2.362	0.12	M6x.63	1.42	3/16 Sq.
31	0.750	1.50	2.09	3.268	2.756	0.2	M10x.87	1.28	3/16 Sq.
32	1.000	2.00	2.09	3.268	2.756	0.2	M10x.87	1.56	1/4 Sq.
33	1.375	2.75	3.34	4.724	3.937	0.31	M10x.87	2.40	5/16 Sq.
34	2.125	3.00	4.10	5.984	5.118	0.28	M12x.87	2.56	3/8 Sq.
35	2.375	3.50	4.84	7.480	6.100	0.3	M16x1.06	3.06	3/8 Sq.

[1] Shaft extension tolerance: +.0000"; –.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; –.001".

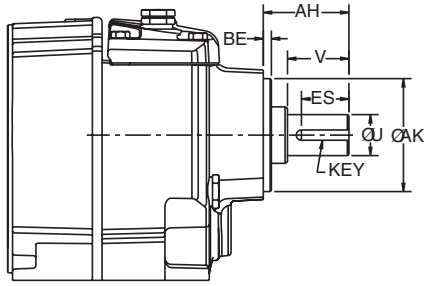
[2] Tolerance is J6.

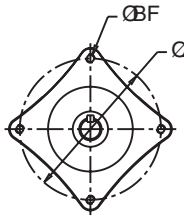
Browning

B14 Face Mounting Supplement

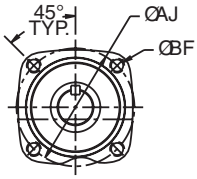
CbN SERIES 3000

Multiple Reduction

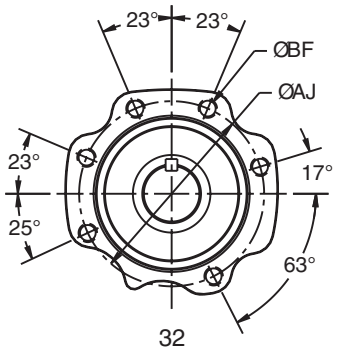




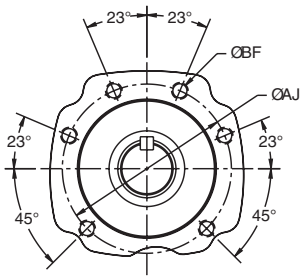
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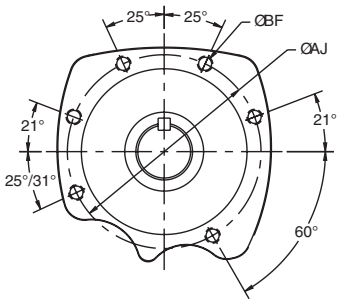
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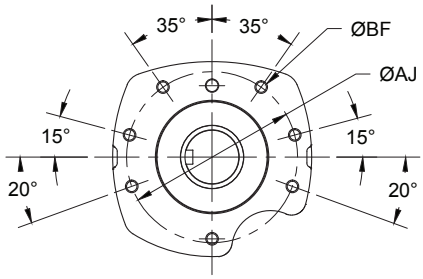
32



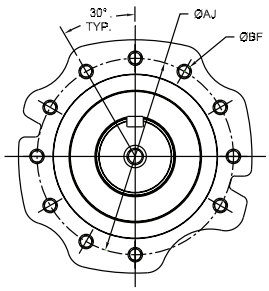
33



34 / 35



36 / 37



38

Gear Frame	U [1]	V	AH	AJ	AK [2]	BE	BF	ES	Key
30	0.625	1.50	2.53	3.937	2.362	0.39	M6x.63	1.42	3/16 Sq.
31	1.000	1.50	2.09	3.268	2.756	0.20	M10x.87	1.16	1/4 Sq.
32	1.250	2.50	3.09	3.937	3.228	0.14	M10x.87	2.16	1/4 Sq.
3362,3363	1.500	3.00	3.91	4.842	3.937	-0.14	M10x.87	2.56	3/8 Sq.
3372,3373	1.625	3.15	4.06	4.842	3.937	-0.14	M10x.87	2.78	3/8 Sq.
34	2.125	3.50	4.60	5.984	5.118	0.28	M12x.87	3.06	1/2 Sq.
35	2.375	4.72	6.09	7.480	6.100	0.30	M16x1.06	4.19	5/8 Sq.
36	2.875	5.75	5.83	9.055	5.905	-.16	M16x1.06	4.784	3/4 Sq
37	3.625	7.00	7.08	9.055	7.087	-.16	M20x1.38	5.890	7/8 Sq
38	4.375	9.99	10.26	11.811	9.84	.28	M20x1.38	9.02	1 SQ

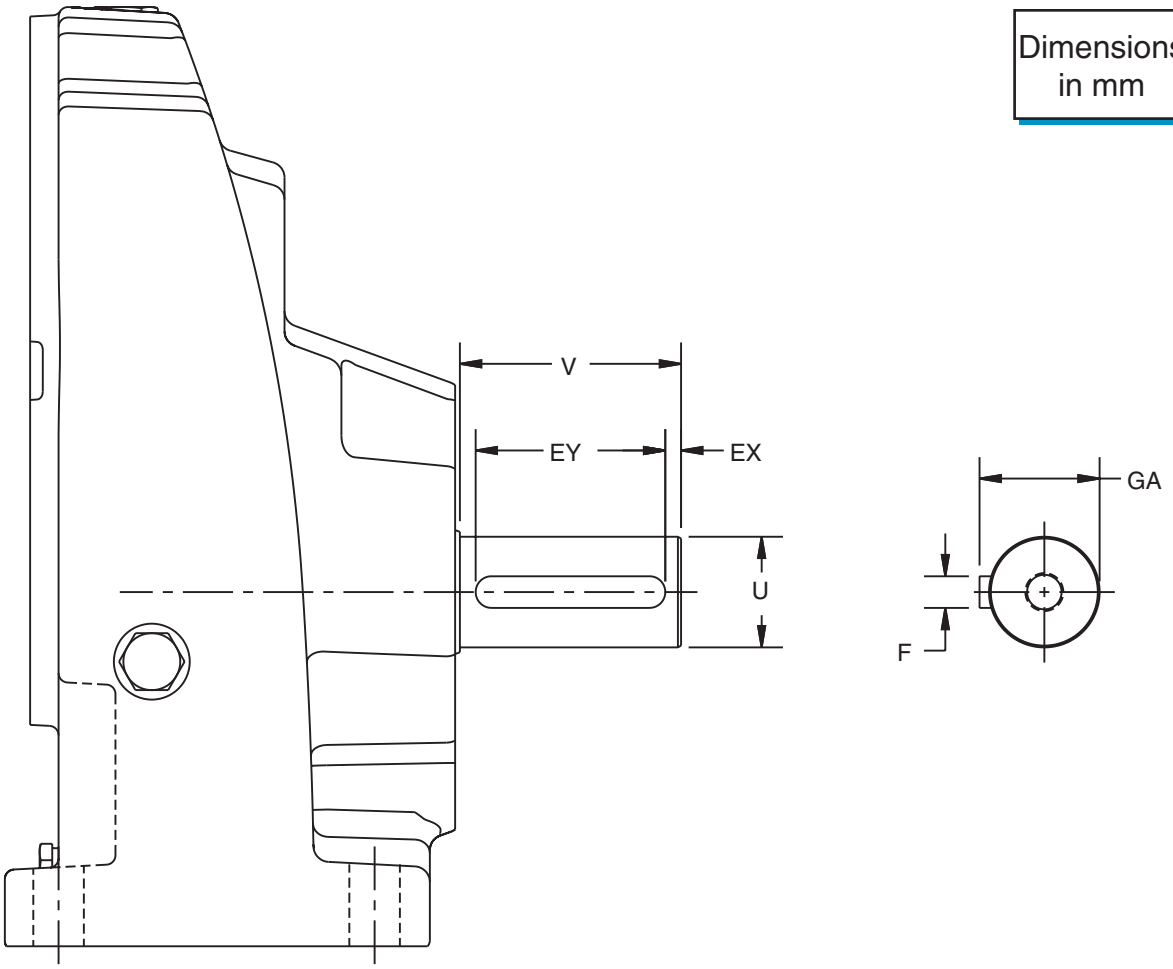
[1] Shaft extension tolerance: +.0000"; –.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; –.001".

[2] Tolerance is J6.

Metric Output Shaft Dimensions

SM Foot Mounted - Single Reduction

Dimensions in mm



Gear Frame	F	U	GA	V	EX	EY
30	5	16j6	18	40	7	25
31	6	20j6	22,5	40	7	30
32	8	25j6	28	50	5	40
33	10	35k6	38	70	5	60
34	12	40k6	43	80	3	72
35	14	45	48.5	90	5	80

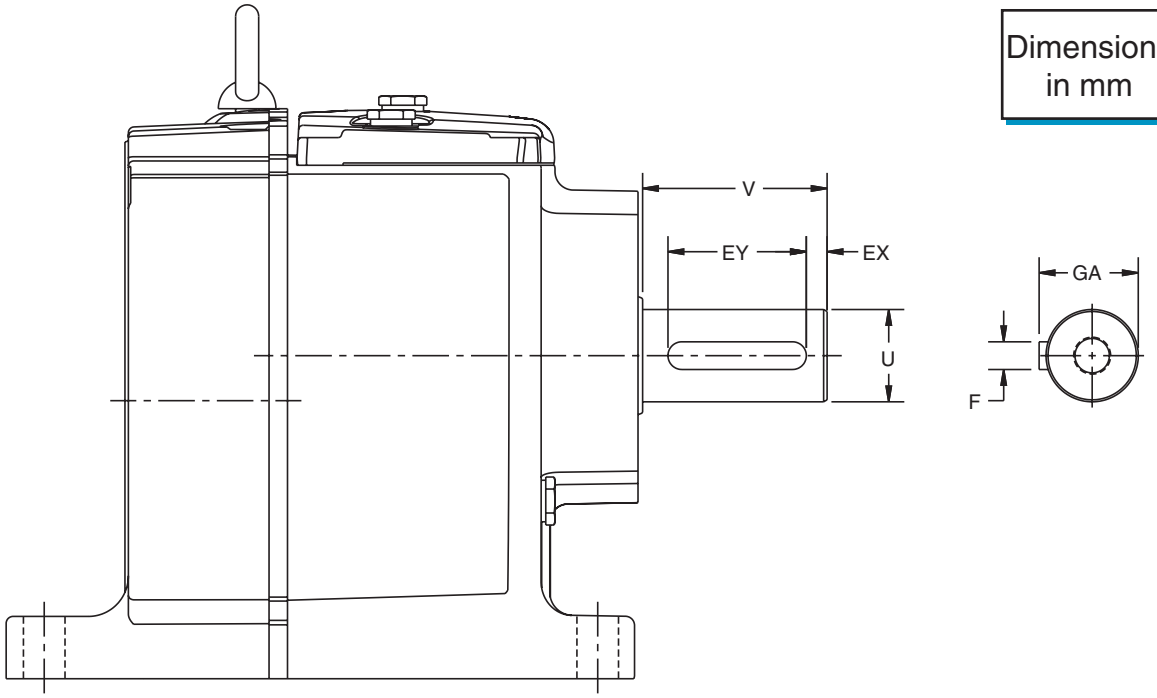
Browning

Metric Output Shaft Dimensions

CbN SERIES 3000

SM Foot Mounted - Multiple Reduction

Dimensions in mm



Gear Frame	F	U	GA	V	EX	EY
30	6	20j6	22,5	40	7	25
31	8	25j6	28	50	5	40
32	8	30j6	33	60	6	45
33	12	40k6	43	80	9	60
34	14	50k6	53.5	100	3	90
35	18	60m6	64	120	4	110
36	20	70m6	74.5	140	10	115
37	25	90m6	95	170	12	140
38	28	110m6	116	210	12	180

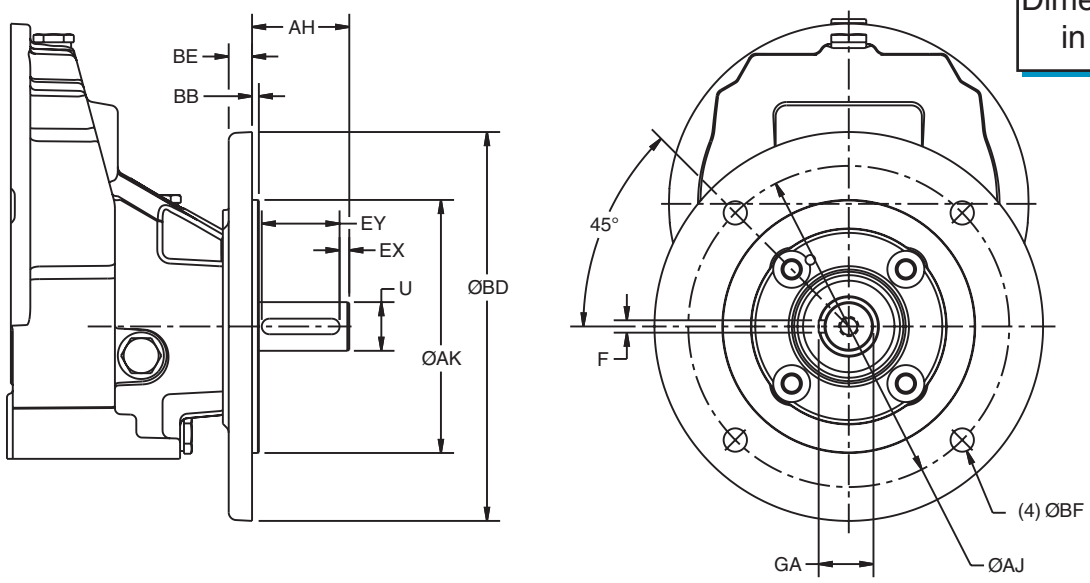
Browning

Metric Output Shaft Dimensions

CbN SERIES 3000

Flange Mounted - Single Reduction

Dimensions in mm



Gear Frame	F	U	AH	GA	EX	EY
30	5	16j6	40	18	7	25
31	6	20j6	40	22.5	7	30
32	8	25j6	50	28	5	40
33	10	35k6	70	38	5	60

Gear Frame	BSM						BDM1					
	AK	AJ	BB	BD	BE	BF	AK	AJ	BB	BD	BE	BF
30	95j6	115	3	140	8	9	80j6	100	3	120	10	7
31	110j6	130	3.5	160	10	9	-	-	-	-	-	-
32	130j6	165	3.5	200	12	12	-	-	-	-	-	-
33	180j6	215	4	250	12	14	-	-	-	-	-	-

Gear Frame	BDM2						BDM3					
	AK	AJ	BB	BD	BE	BF	AK	AJ	BB	BD	BE	BF
30	110j6	130	2	160	10	9	130j6	165	3	200	8	9
31	95j6	115	3	140	10	9	-	-	-	-	-	-
32	110j6	130	3.5	160	9	9	-	-	-	-	-	-
33	130j6	165	3.5	200	12	11	-	-	-	-	-	-

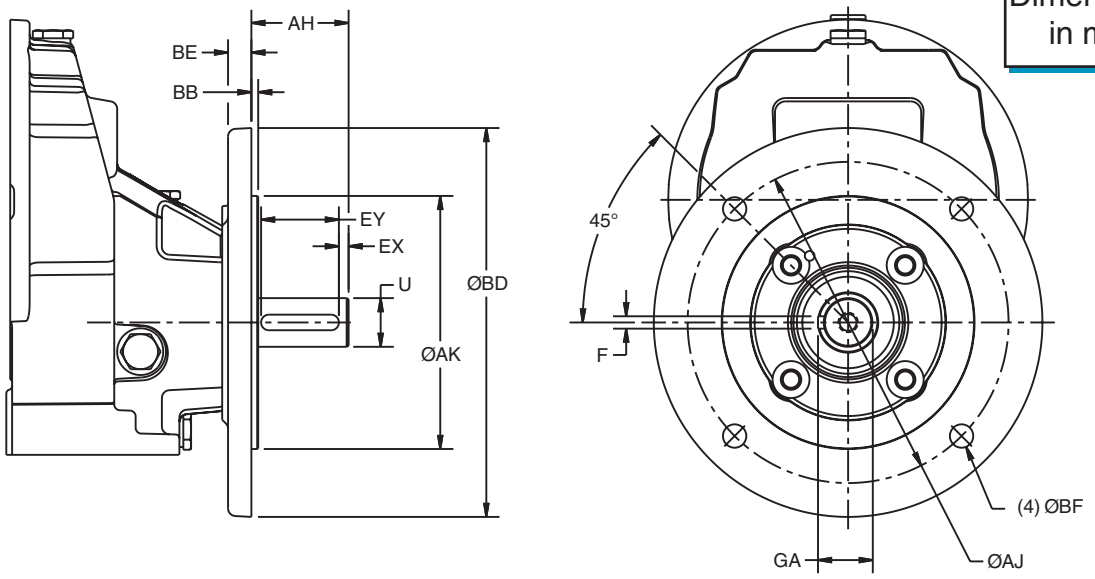
Browning

Metric Output Shaft Dimensions

CbN SERIES 3000

Flange Mounted - Single Reduction

Dimensions in mm



Gear Frame	F	U	AH	GA	EX	EY
34	12	40k6	80	43	3	72
35	14	45	90	48.5	5	80

Gear Frame	BSM						BDM2					
	AK	AJ	BB	BD	BE	BF	AK	AJ	BB	BD	BE	BF
34	230j6	265	4	300	15	14	180j6	215	4	250	15	14
35	250	300	5	350	18	18	230	265	5	300	18	14

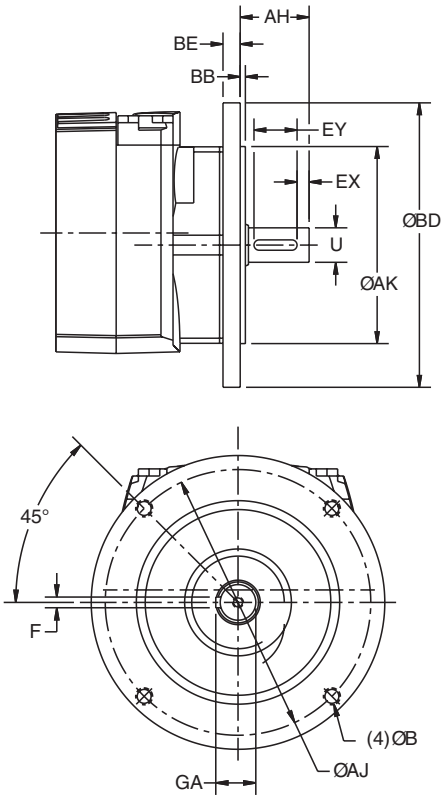
Browning

Metric Output Shaft Dimensions

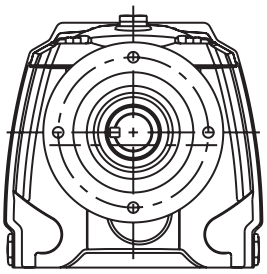
CbN SERIES 3000

Flange Mounted - Multiple Reduction

Dimensions in mm



BSM, BDM1, BDM2



BD3 TYPE (31)

Gear Frame	F	U	AH	GA	EX	EY
30	6	20j6	40	22.5	7	25
31	8	25j6	50	28	5	40
32	8	30j6	60	33	6	45
33	12	40k6	80	43	9	6

Gear Frame	BSM						BDM1						BDM2					
	AK	AJ	BB	BD	BE	BF	AK	AJ	BB	BD	BE	BF	AK	AJ	BB	BD	BE	BF
30	95j6	115	3	140	8	9	80j6	100	2.5	120	7	7	110j6	130	3	160	8	9
31	130j6	165	3.5	200	10	11	110j6	130	3.5	160	10	9	95j6	115	3.5	140	10	9
32	180j6	215	4	250	12	14	130j6	165	3.5	200	10	11	110j6	130	3.5	160	10	9
33	230j6	265	4	300	12	14	180j6	215	4	250	12	14	130j6	165	3.5	200	12	11

Gear Frame	BDM3					
	AK	AJ	BB	BD	BE	BF
31 (1)	80j6	100	2,5	120	10	7

(1) Refer to illustration above for correct hole orientation in BDM3 flange.

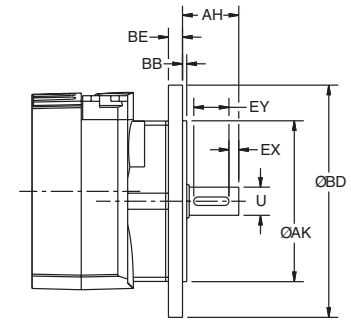
Browning

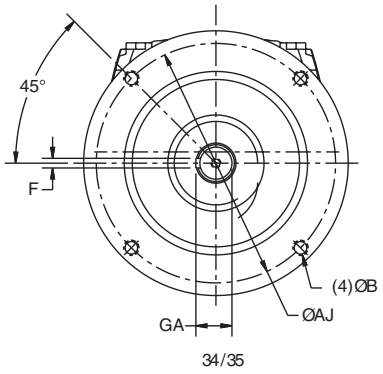
Metric Output Shaft Dimensions

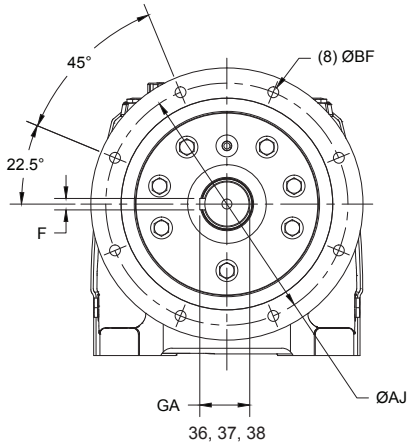
CbN SERIES 3000

Flange Mounted - Multiple Reduction

Dimensions in mm







Gear Frame	F	U	AH	GA	EX	EY
34	14	50k6	100	53.5	9	85
35	18	60m6	120	64	4	110
36	14	70m6	140	51.5	10	90
37	14	90m6	170	51.5	10	90
38	28	110m6	210	116	12	180

Gear Frame	BS						BD1						BD2					
	AK	AJ	BB	BD	BE	BF	AK	AJ	BB	BD	BE	BF	AK	AJ	BB	BD	BE	BF
34	250	300	4	350	15	18	230	265	4	300	15	14	180	215	4	250	15	14
35	300	350	5	400	18	18	250	300	5	350	15	18	230	265	5	300	15	14
36	450	500	6	550	20	18	350	400	6	450	20	18						
37	450	500	6	550	20	18	350	400	6	450	20	18						
38	550	600	6	660	16	22	450	500	5	550	20	18						

Product Weights (Lbs.)

Foot Mounted Single Reduction

C-Face Reducers

Gear Frame	Input Size				
	56/140TC	180/210TC	250TC	280TC	320TC
30	11	-	-	-	-
31	24	30	-	-	-
32	35	44	-	-	-
33	53	62	69	-	-
34	-	63	68	70	-
35	-	88	89	92	100

Input Shaft

Gear Frame	Style
	AP
30	9
31	23
32	28
33	55
34	66
35	89

Foot Mounted Multiple Reduction

C-Face Reducers

Gear Frame	Stages	Input Size				
		56/140TC	180/210TC	250TC	280TC	320TC
30	2, 3	17	-	-	-	-
31	2, 3	45	53	-	-	-
32	2, 3	57	66	-	-	-
	4, 5	63	-	-	-	-
33	2, 3	85	94	101	-	-
	4, 5	90	-	-	-	-
34	2, 3	93	95	98	100	-
	4, 5	130	-	-	-	-
35	2, 3	160	163	166	168	178
	4, 5	197	205	-	-	-
36	2,3	-	264	267	269	279
	4,5,6	475	483	-	-	-
37	2,3	-	363	366	368	378
	4,5,6	555	563	-	-	-
38	2, 3	-	660	663	665	675
	4,5,6	920	928	-	-	-

Input Shaft

Gear Frame	Stages	Style		
		AP	Scoop	Top Mt.
30	2, 3	15	-	-
31	2, 3	37	-	-
32	2, 3	50	75	97
	4, 5	55	-	-
33	2, 3	87	120	134
	4, 5	92	-	-
34	2, 3	99	151	169
	4, 5	149	-	-
35	2, 3	198	250	172
	4, 5	235	-	-
36	2,3	308	420	411
	4,5,6	375	410	-
37	2,3	407	503	492
	4,5,6	430	465	-
38	2,3	800	925	900
	4,5,6	855	895	-

Weight Adders

B14 and Flange Mounted

Single Reduction

Gear Frame	B14 Face Mount	Flange Mount
30	0	1
31	-1	3
32	-1	4
33	-1	8
34	-2	8
35	-2	9

Multiple and Combined

Gear Frame	B14 Face Mount	Flange Mount
30	0	1
31	-1	2
32	-1	4
33	-3	8
34	-5	8
35	-6	9
36	0	21
37	0	21
38	0	35

Lubrication

CbN gearing is shipped with one of the following synthetic lubricants per the table below and fitted with a magnetic drain. Each reducer is filled according to the mounting position specified when ordered. Refer to the unit nameplate and charts below or A-225 for the mounting position arrangement of your unit.

In the case of synthetic oil, the lubricant does not require changing, but it is recommended that the oil level be checked periodically.

Standard Synthetic Gear Oil (Non-Food Grade)

No Backstop

Manufacturer	-25° F to 125° F (-30° C to 50° C)
Fuchs*	Sintogear* 125
Mobil*	Mobilgear* SHC 150
Shell*	Omala* Fluids HD 150

With Backstop (1)

Manufacturer	-25° F to 125° F (-30° C to 50° C)
Shell*	Omala RL 100
Mobil*	SHC 629

Synthetic Gear Oil (Food Grade)

No Backstop

Manufacturer	22°F to 125°F (-20°C to 50°C)
Mobil*	SHC Cibus 150

⚠ CAUTION

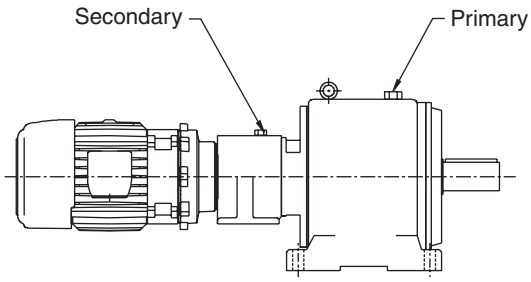
- Never mix synthetic oil and mineral oil.
- Never use extreme pressure (EP) oil in a reducer with a backstop.
- Refer to installation and maintenance manual for mineral oil selection.

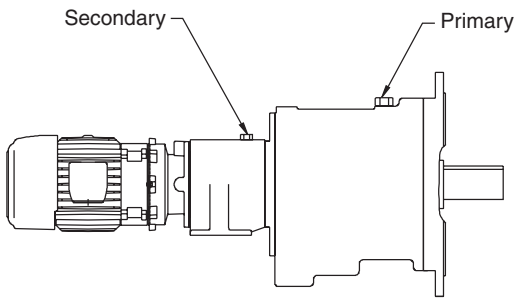
Oil Capacities (U.S. Quarts)

Reduction Stages	Gear Frame	Mounting Positions											
		B3	B5	B6	B7	B8	B52	B53	B54	V1	V3	V5	V6
One	30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30
	31	0.34	0.34	0.53	0.53	0.74	0.53	0.74	0.53	0.58	1.06	0.58	1.06
	32	0.26	0.26	0.63	0.63	1.06	0.63	1.06	0.63	0.69	1.27	0.69	1.27
	33	0.95	0.95	1.48	1.48	2.01	1.48	2.01	1.48	2.22	2.22	2.22	2.22
	34	1.06	1.06	1.59	1.59	2.64	1.59	2.64	1.59	2.22	2.22	2.22	2.22
	35	1.27	1.17	3.84	3.84	5.69	2.55	3.95	2.55	2.91	3.95	5.12	6.04
Two	30	.64	.64	.64	.64	.64	.64	.64	.64	.64	.64	.64	.64
	31	0.63	0.63	1.00	0.90	1.16	-	-	-	1.22	1.48	1.22	1.48
	32	1.00	1.00	1.85	1.64	2.38	-	-	-	2.38	2.85	2.38	2.85
	33	1.69	1.69	3.49	3.12	4.76	-	-	-	4.76	4.65	4.76	4.65
	34	2.32	2.32	5.39	4.97	7.93	-	-	-	8.24	7.82	8.24	7.82
	35	4.10	4.90	9.80	8.80	14.40	-	-	-	14.5	15.70	15.30	16.30
	36	8.00	8.00	12.00	18.00	22.50	-	-	-	24.00	24.50	24.00	24.50
	37	13.00	13.00	21.00	32.00	38.00	-	-	-	42.50	41.50	42.50	41.50
	38	17.96	17.96	26.42	53.89	61.30	-	-	-	68.68	64.46	68.68	64.46
Three	30	.74	.74	.74	.74	.74	.74	.74	.74	.74	.74	.74	.74
	31	0.63	0.63	1.30	0.90	1.16	-	-	-	1.22	1.48	1.22	1.48
	32	1.00	1.00	2.40	1.64	2.38	-	-	-	2.38	2.85	2.38	2.85
	33	1.69	1.69	4.60	3.12	4.76	-	-	-	4.76	4.65	4.76	4.65
	34	2.32	2.32	6.97	4.97	7.93	-	-	-	8.24	7.82	8.24	7.82
	35	3.61	4.65	9.18	8.83	14.3	-	-	-	14.40	15.80	15.00	15.50
	36	8.00	8.00	15.00	18.00	22.50	-	-	-	24.00	24.50	24.00	24.50
	37	13.00	13.00	27.00	32.00	38.00	-	-	-	42.50	41.50	42.50	41.50
	38	17.96	17.96	45.44	53.89	61.30	-	-	-	68.68	64.46	68.68	64.46

* The following are believed to be the trademarks and/or trade names of their respective owners and are not owned or controlled by Emerson Power Transmission. Fuchs and Sintogear: Fuchs Petrolube AG; Mobil and Mobilgear: Exxon Mobil Corporation; Shell and Omala: Shell Oil Company.

Lubrication





Foot Mounted Combined Units (U.S. Quarts)

Reduction Stages	Gear Frame	Composition		Mounting Positions											
				B3		B8		B6		B7		V5		V6	
		Prim.	Sec.	Prim.	Sec.	Prim.	Sec.	Prim.	Sec.	Prim.	Sec.	Prim.	Sec.	Prim.	Sec.
Four	3254	3252	3012	0.95	.64	2.3	.64	2.4	.64	1.6	.64	2.4	.64	2.65	.64
	3374	3372	3012	1.74	.64	5	.64	4.6	.64	2.9	.64	4.7	.64	4.4	.64
	3484	3482	3132	2.32	0.63	7.93	1.16	5.39	1	4.97	0.9	8.24	1.22	7.82	1.48
	3594	3592	3132	4.1	0.63	14.4	1.16	9.8	1	8.8	0.9	15.3	1.22	16.3	1.48
	3604	3602	3252	8.00	1.00	22.50	2.38	12.00	1.85	18.00	1.64	24.00	2.38	24.50	2.85
	3734	3732	3252	13.00	1.00	38.00	2.38	21.00	1.85	32.00	1.64	42.50	2.38	41.50	2.85
	3844	3842	3482	17.96	2.32	17.96	7.93	26.42	5.39	53.89	4.97	68.68	8.24	64.46	7.82
Five	3255	3253	3012	0.95	.64	2.3	.64	2.4	.64	1.6	.64	2.4	.64	2.65	.64
	3375	3373	3012	1.74	.64	5	.64	4.6	.64	2.9	.64	4.7	.64	4.4	.64
	3485	3483	3132	2.32	0.63	7.93	1.16	6.97	1.00	4.97	0.9	8.24	1.22	7.82	1.48
	3595	3593	3132	3.61	0.63	14.3	1.16	9.18	1.00	8.83	0.9	15	1.22	15.5	1.48
	3605	3602	3253	8.00	1.00	22.50	2.38	12.00	2.43	18.00	1.64	24.00	2.38	24.50	2.85
	3735	3732	3253	13.00	1.00	38.00	2.38	21.00	2.43	32.00	1.64	42.50	2.38	41.50	2.85
	3845	3842	3483	17.96	2.32	17.96	7.93	45.44	6.97	53.89	4.97	68.68	8.24	64.46	7.82
Six	3606	3603	3253	8.00	1.00	22.50	2.38	15.00	2.43	18.00	1.64	24.00	2.38	24.50	2.85
	3736	3733	3253	13.00	1.00	38.00	2.38	27.00	2.43	32.00	1.64	42.50	2.38	41.50	2.85
	3846	3843	3483	17.96	2.32	17.96	7.93	45.44	6.97	53.89	4.97	68.68	8.24	64.46	7.82

Flanged Mounted Combined Units (U.S. Quarts)

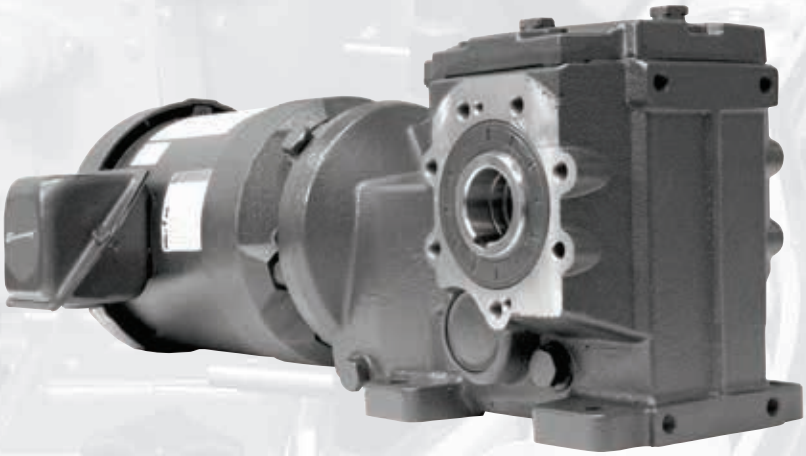
Reduction Stages	Gear Frame	Composition		Mounting Positions					
				B5		V1		V3	
		Prim.	Sec.	Prim.	Sec.	Prim.	Sec.	Prim.	Sec.
Four	3254	3252	3012	0.95	.64	2.4	.64	2.65	.64
	3374	3372	3012	1.5	.64	4.7	.64	4.4	.64
	3484	3482	3132	2.32	0.63	8.24	1.22	7.82	1.48
	3594	3592	3132	4.9	0.63	14.5	1.22	15.7	1.48
	3604	3602	3252	8.00	1.00	24.00	2.38	24.50	2.85
	3734	3732	3252	13.00	1.00	42.50	2.38	41.50	2.85
	3844	3842	3482	17.96	2.32	68.58	8.24	64.46	7.82
Five	3255	3253	3012	0.95	.64	2.4	.64	2.65	.64
	3375	3373	3012	1.5	.64	4.7	.64	4.4	.64
	3485	3483	3132	2.32	0.63	8.24	1.22	7.82	1.48
	3595	3593	3132	4.65	0.63	14.4	1.22	15.8	1.48
	3605	3602	3253	8.00	1.00	24.00	2.38	24.50	2.85
	3735	3732	3253	13.00	1.00	42.50	2.38	41.50	2.85
	3845	3842	3483	17.96	2.32	68.58	8.24	64.46	7.82
Six	3606	3603	3253	8.00	1.00	24.00	2.38	24.50	2.85
	3736	3733	3253	13.00	1.00	42.50	2.38	41.50	2.85
	3846	3843	3483	17.96	2.32	68.58	8.24	64.46	7.82

Notes:

Browning®

OtN Helical-Bevel Right Angle Gearmotors and Speed Reducers

OtN Series

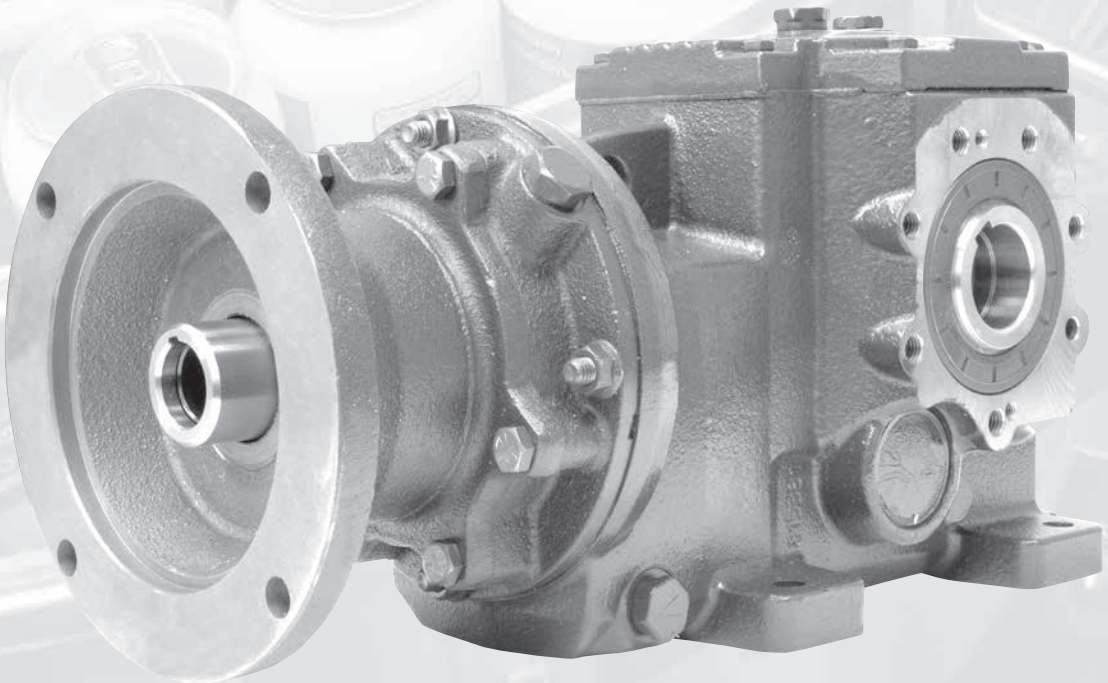


Industries

- ❑ Food and Beverage
- ❑ Warehousing
- ❑ Parcel and Package Sortation
- ❑ Oil
- ❑ Recycling
- ❑ Airport
- ❑ Waste Treatment

Applications

- ❑ Unit Handling Conveyors
- ❑ Mixers and Agitators
- ❑ Turntables
- ❑ Chain Conveyors
- ❑ Screw Conveyors
- ❑ Baggage Handling Conveyor
- ❑ Sludge Collection Tanks

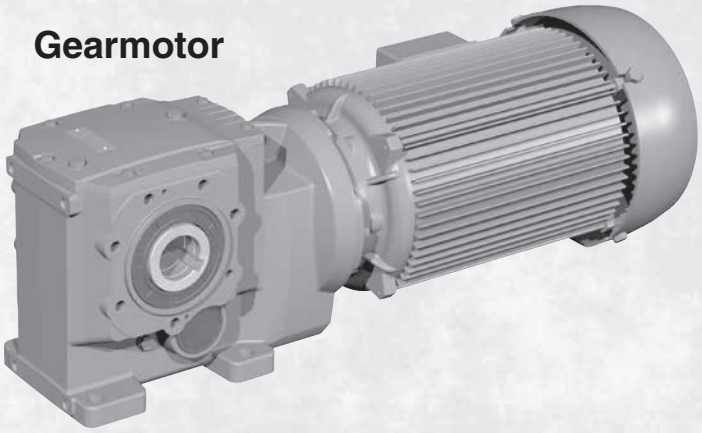


Browning®

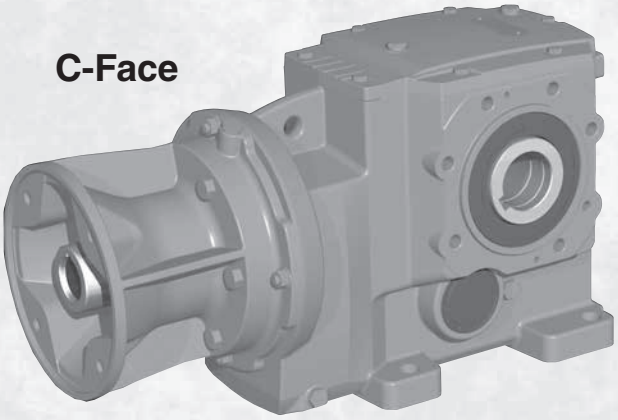
OtN Helical-Bevel Right Angle Gearmotors and Speed Reducers

OtN Series

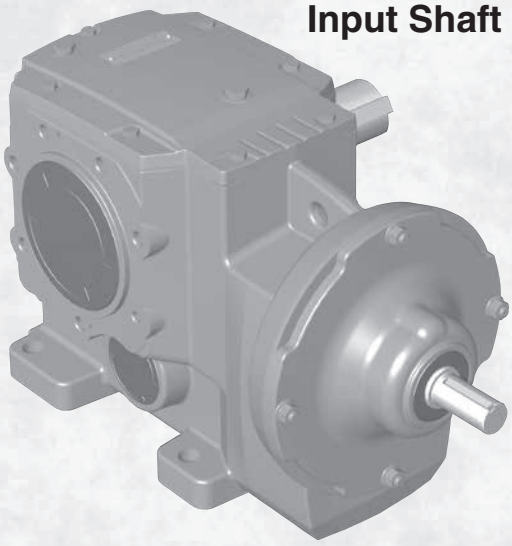
Gearmotor

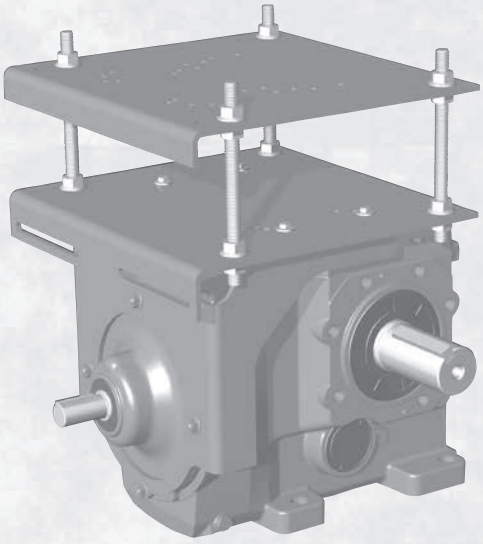


C-Face

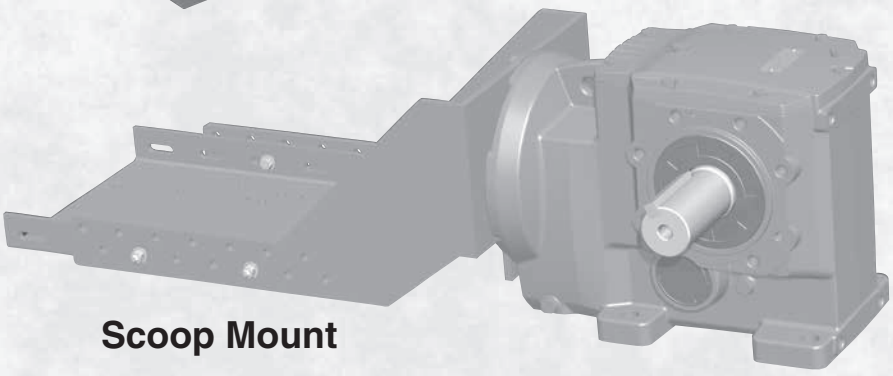


Input Shaft

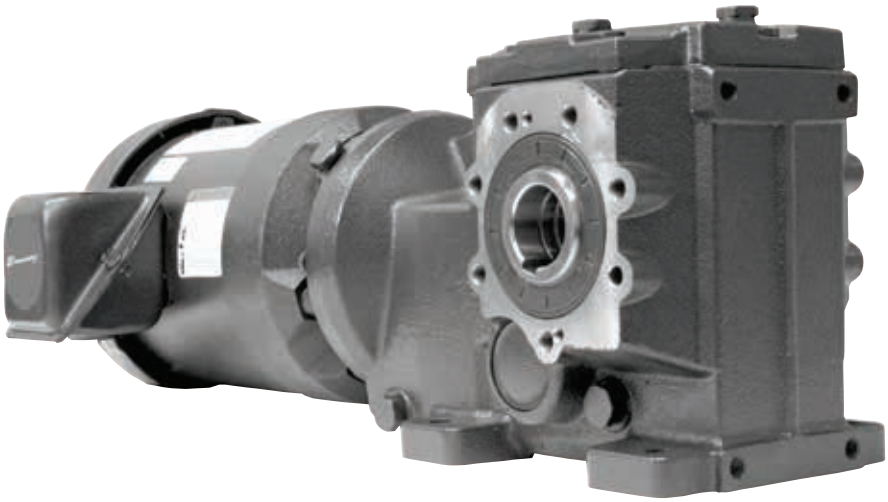




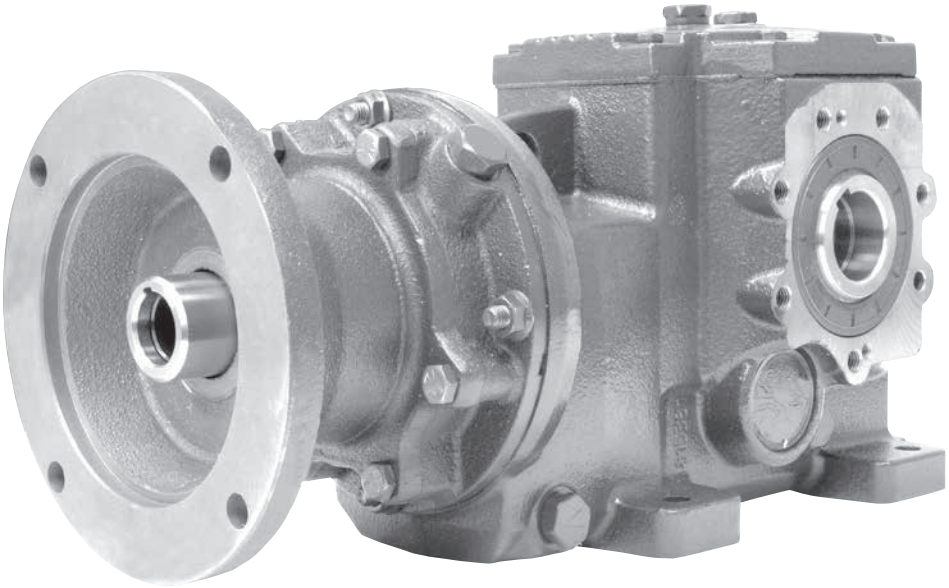
Top Mount



Scoop Mount

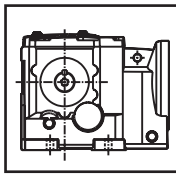


Gearmotor Section .....Page B-6 - B-105

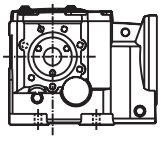


Reducer Section .....Page B-106 - B-214

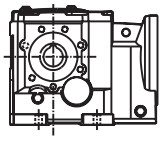
Mounting Versatility and Size Range



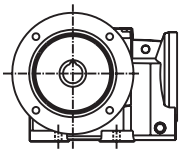
Foot Mount
Frames 1-8
Solid Shaft
Max. 120,000 lb-in



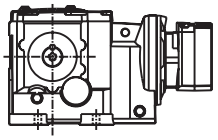
Shaft Mount
Torque Arm
Frames 1-8
Hollow Shaft
Tapered Bushed (Fr 1 - 8)
Max. 120,000 lb-in



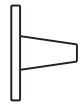
Face Mount
Frames 1-8
Hollow Shaft
Max. 120,000 lb-in



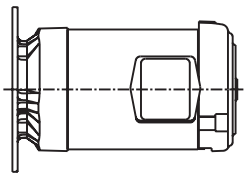
Flange Mount
Frames 1-8
Solid Shaft
Hollow Shaft
Max. 120,000 lb-in



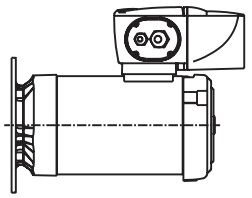
High Ratio Combined
Frames 2-8 - All Styles
Max. 120,000 lb-in



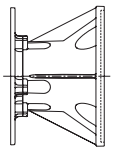
Modular Tapered
Connection
56 - 326T



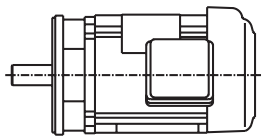
Gearmotors
1/3 - 50 HP



Variable Speed
IntelliGear®
1/3 - 10 HP



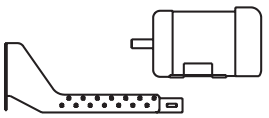
NEMA C-Face
56C to 360TC



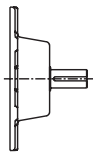
C-Face Motors
Frame 56C - 365TC

Backstop Options ***

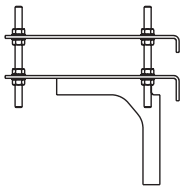




Scoop Mount
Frames 3 - 8*
56 to 326T



Input Shaft



Top Mount
Frames 2 - 8**
56 to 326T

* Refer to page B-115 for availability based on gear and motor frame size.
** Refer to page B-115 for availability based on gear and motor frame size.
*** Not available for frames 3245 and 3365A.

General

OtN helical-bevel right angle gearmotors and speed reducers incorporate the latest in design and manufacturing technologies to deliver an energy efficient, reliable, helical-bevel gear train. This gearing can be combined with either a constant or variable speed motor if a gearmotor is desired. The latest generation of OtN gearing is 98% efficient per gear stage, with two, three, five or six stages available for ratios of 3.55:1 to 10,000:1. OtN is available in a wide variety of mounting arrangements that include foot mount, face mount, flange mount or shaft mount with a torque arm. The output can be left, right, or dual solid shaft or shaft mounted with hollow quill or new tapered bushed.

Gearmotors

Three phase OtN gearmotors are available with HE type high efficiency motors in non-hazardous enclosures starting at 1/3 HP at standard lead-times. These motors comply with requirements in the US and Canada for energy efficiency to deliver superior operating cost savings, reduced motor temperature rise and 5:1 minimum constant torque output (60-11 Hz) from PWM power supplies for the End User. There are several motor enclosure options within the HE umbrella including Corro-Duty® cast iron exterior construction for most hostile environments. These features are complimented by the standard use of inverter duty winding materials that comply with NEMA MG1 Part 31. Emerson also offers gearmotors with 1 phase TEFC motors to 5 HP and Explosionproof 3 phase gearmotors to 10HP.

Housing

The unique housing design allows the OtN3000 to directly interchange with many popular competitive products, while offering a version that also replaces the OtN2000 sizes that it replaces. This allows for simple aftermarket replacement of both OtN2000 and many of the more common helical-bevel products from other manufacturers. All housings are cast from high-strength cast iron. Additionally, the new, quill style c-face of OtN3000 is often shorter than competitive designs, while allowing room for a fully rated backstop.

Performance

OtN designs deliver ratings that are amongst the highest in the industry for similar frame sizes. For replacements, this means that dimensional replacements generally meet or exceed the original unit ratings for long life. In new applications, this can mean cost savings through downsizing versus the competition. Each OtN unit is also supplied factory-filled with high quality synthetic lubricant, an extra cost option for competitive units. This offers operation over a wide temperature range with minimal maintenance required.

Flexibility

The new OtN3000 offers a shaft-mounted version that incorporates the tapered bushing system from the Browning TorqTaper Plus shaft mount reducer. This extends each frame size to be usable on a variety of shaft sizes. It also provides a proven bushing system with a centering ring that reduces wobbling on the shaft for reduced wear and tear. All sizes are also available with a hollow quill sized to match popular competitive units. The bushed version of OtN3000 includes a bushing to match the OtN2000 equivalent frame size for replacements. The shaft-mounted units all include feet on the housing base and they can be tied down to the machine frame using a face mount, flange mount, or torque arm. There are two flanges available for most OtN3000 frame sizes, one of which is competitively interchangeable. Also, for applications requiring the gearmotors to be powered by an inverter (VFD), all Allguard® three phase motor designs now incorporate an upgraded wire and varnish treatment. Housings can be mounted in a variety of positions as well, with only a change in the breather and drain plug positions and a change in oil volume.

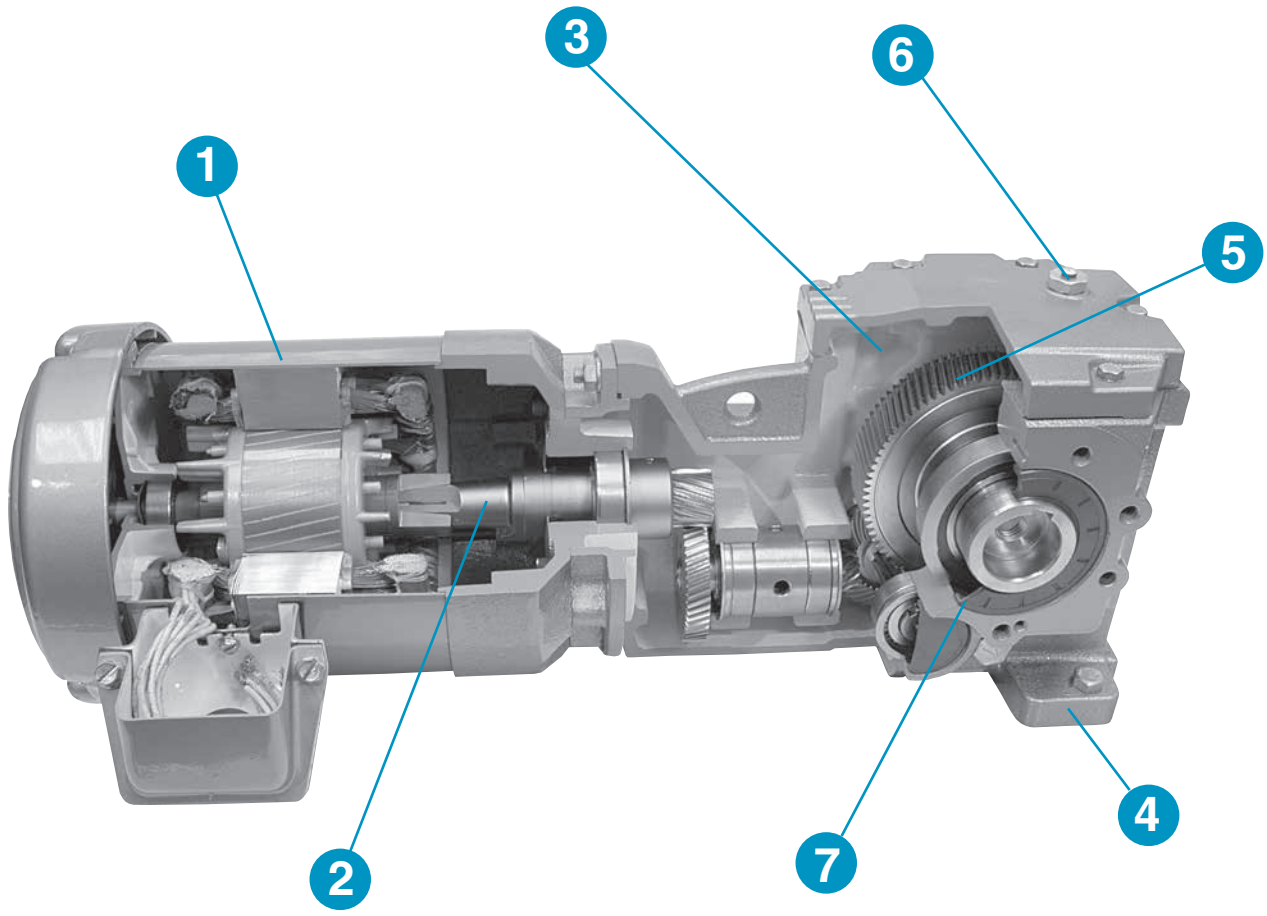
Reliability

Gear housing sizes 1-5 are fitted with normally closed breathers to exclude contaminants, while preserving low internal operating pressure. All oil seals operate on plunge ground shaft surfaces to deliver extended life. Enhanced insulating materials and other standard features of our premium Varidyne® inverter duty motors allow Emerson to extend an industry leading 3-year motor warranty, even when using these motors with PWM inverter power up to 575 VAC.

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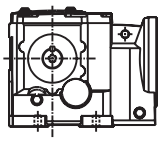
Type OtN Helical-Bevel Series 3000 Gearmotor Features...



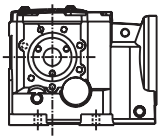
Design Features

1. **High Efficiency Motor Design Available**
   - Any 3 phase non-XP gearmotor.
2. **Innovative Self-Locking, Self-Aligning Taper Shaft Motor Connection**
   - Easy on-site motor replacement.
   - Change motor without draining oil, breaking the gearcase seal, or changing primary pinion.
3. **Gearbox Supplied Factory Filled with Synthetic Oil**
   - Wide temperature range and longer life.
4. **Corrosion and Shock Resistant Cast Iron Housing**
   - One piece, reinforced and ribbed for extra strength.
5. **High Efficiency Helical-Bevel Gears. 98% per Stage**
   - Helical gearing is case hardened and then skived, superfinished or ground.
   - All gears heat shrunk on shafts or mounted on self-locking tapered shafts and keyed for high shock load capability.
6. **Normally Closed Breather with Multiple Locations**
7. **Double Lip Seals on Heat Treated, Plunge Ground Shafts**

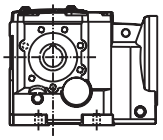
Mounting Versatility and Size Range



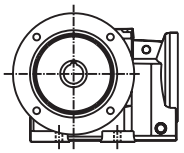
Foot Mount
Frames 1-8
Solid Shaft
Max. 120,000 lb-in



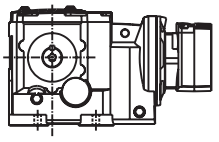
Shaft Mount
Torque Arm
Hollow Shaft
Tapered Bushed
Frames 1-8
Max. 120,000 lb-in



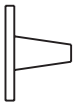
Face Mount
Frames 1-8
Hollow Shaft
Max. 120,000 lb-in



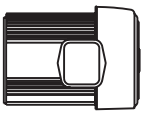
Flange Mount
Frames 1-8
Solid Shaft
Hollow Shaft
Max. 120,000 lb-in



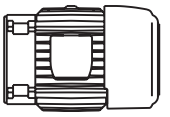
High Ratio Combined
Frames 2-8 - All Styles
Max. 120,000 lb-in



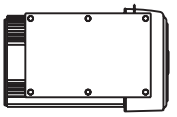
Modular Input Assembly
Tapered Connection



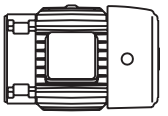
Three Phase TEFC
1/3 – 50 HP



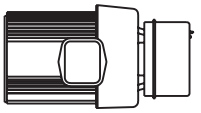
Corro-Duty®
1/3 – 50 HP



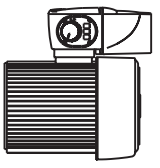
Single Phase TEFC
1/3 – 5 HP



Explosion Proof
1/3 – 10 HP*



Brakemotor
1/3 – 10 HP



IntelliGear® Motor
with VFD
1/3 – 10 HP

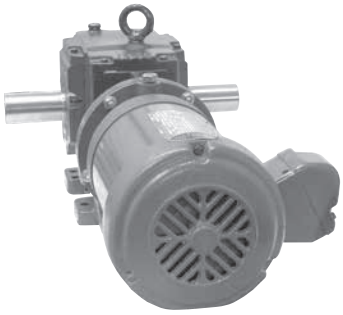
* 1/3 - 3/4 HP for 575V designs

Motor Options



TEFC – Three Phase

- Suitable for general purpose industrial applications
- High efficient design standard
- 1.25 service factor through 5 HP; 1.15 service factor above 5 HP
- Available for 50 Hz, 190/380 VAC through 30 HP
- Premium class F Allguard® insulation standard
- Premium efficiency available as option 3 HP and larger
- Inverter duty option per NEMA MG1 part 31 stocked
- Washdown gearmotor available to 2 HP



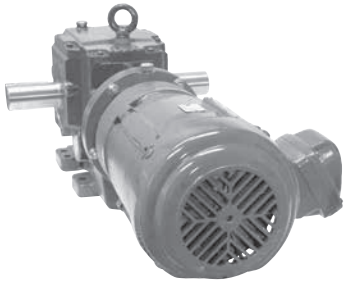
Corro-Duty®

- Designed for wet, corrosive applications and industries including waste treatment, mining and lumber.
- All cast iron construction (56 and 140 frames are rolled steel)
- High efficiency standard 1/3 HP and above
- Premium efficient option 3 HP and larger
- 1.15 service factor, class F Allguard motor insulation
- Condensation drains in motor and conduit box
- 40°C ambient, NEMA design B, continuous duty
- Inverter duty version per NEMA MG1 part 31 stocked to 20 HP



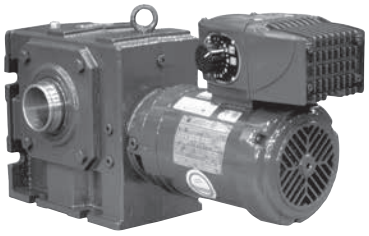
TEFC – Single Phase

- For agricultural, light material handling, textile, and light pumping applications
- 1.25 service factor
  (1.0 service factor, 2 HP and 1.15 service factor, 3 - 5 HP)
- Capacitor start
  (capacitor run above 1/2 HP, 48 frame)
  (capacitor run above 1/2 HP, 56 – 180T frames)
- Class B insulation, continuous duty, reversible



Explosion Proof

- Ideal for the petro-chemical, grain, mining, and chemical industries
- Class I, group D, class II, groups F and G
- All cast iron construction (plastic fan cover)
- 1.0 service factor, class B insulation
- 40°C ambient, NEMA B design, continuous duty
- UL* approved Inverter duty per NEMA MG1 part 31 available



IntelliGear®

- Variable speed gearmotor with NEMA 4/12 enclosure
- "Onboard" push button and remote speed changing options
- Pre-programmed 6:1 constant torque speed range
- Versions for 3/460V input power supplies from 1/3 to 10 HP
- 1/230V and 3/230V to 5 HP
- 1/115 V through 3/4 HP
- UL, CUL and CE
- Optional 10:1 and 15:1 speed ranges

*UL is believed to be a trade name and/or trademark of Underwriters Laboratories, Inc., and is NOT owned or controlled by Emerson Power Transmission.

Selection Information

1. Input HP
   - Based on application data

2. Speed / ratio
   - Obtain either desired output speed (RPM) or gearbox ratio based on application.

3. Mechanical service factors - gears
   - There are three standard classifications for gearmotor applications:

     Class I - uniform loading, 3-10 hours per day, service factor 1.0 (minimum).

     Class II - uniform loading over 10 hours per day or moderate shock loading up to 10 hours per day; service factor 1.4 (minimum).

     Class III - moderate shock loading over 10 hours per day or heavy shock loading up to 10 hours per day; service factor 2.0 (minimum).

   - The tables on pages B-24 through B-26 are based on past operating experience within the industries listed and information gathered by AGMA. If the user has data reflecting greater severity than normal industry usage, then the AGMA class should be increased.

   - Choose the AGMA class for your given application based on this criteria. If your application cannot be found, use the following table to determine the service factor.

Duty Cycle	Hours Operation	Uniform Load **U**	Moderate Shock Load **M**	Heavy Shock Load **V**
Continuous	0 - 3	0.80	1.00	1.50
	3 - 10	1.00	1.25	1.75
	10 - 24	1.25	1.50	2.00
Frequent Starts/Stops*	0 - 3	1.00	1.25	1.75
	3 - 10	1.25	1.50	2.00
	10 - 24	1.50	1.75	2.25

*Greater than 10 per hour

Size Selection

Step 1 - Locate gearmotor selection tables (pages B-27 - B-59) based on motor HP.

Step 2 - Choose the appropriate nominal speed or ratio required.

Step 3 - Select the correct gearmotor based on AGMA class or service factor determined from selection information.

Step 4 - Verify overhung load ratings where required (see below).

Overhung Load

When a sprocket, sheave, pulley, or pinion is mounted on the take-off shaft of a gearmotor, it is necessary to calculate the overhung load. This calculated load must be compared with the gearbox capacity listed to make sure the gearbox will not be overloaded. To calculate the overhung load you need to know the torque or horsepower at the take-off shaft and the location along the shaft at which the load is applied.

A. If torque is known:

$$OHL = \frac{T \times K \times LLF}{r}$$

B. If horsepower is known:

$$OHL = \frac{63025 \times HP \times K \times LLF}{rpm \times r}$$

Where:
OHL = Overhung load (pounds)
T = Torque (in. lbs.)
r = Radius of driving member (in.)
HP = Horsepower
K = Drive type factor
LLF = Load location factor

Driving Member	Value of K
Chain Drive	1.00
Pinion	1.25
V-Belt	1.50
Timing Belts	1.25

Load Location	Value of LLF
End of shaft extension	1.20
Center of shaft extension	1.00
Shaft extension shoulder	0.80

Selection Example

A right angle, foot mounted gearmotor is required to operate a uniformly loaded belt conveyor at 30 RPM, 24 hours per day. An 11" diameter sprocket is mounted at the end of the shaft and drives the conveyor with a chain drive. The customer has specified a 230/460 VAC, 3-phase, TEFC high efficiency motor rated 5 HP. Shaft extension is to be on the right, viewing the motor fan cover. The unit will be in the normal floor mounted position with the motor horizontal and the mounting feet on the bottom.

Refer to AGMA service classification table on page B-24.

Application	Load	Class	
		Up to 10 Hrs/Day	Over 10 Hrs/Day
Conveyors – Uniformly Loaded or Fed: Apron, Assembly, Belt, Bucket, Chain, Flight, Oven, Screw	U	I	II

Since this application operates 24 hours per day, a Class II service factor is required.

Step 1... Locate a gearmotor for 5 HP on page B-47.

Step 2... Find a nominal speed closest to the 30 RPM output required.

Step 3... Select the row in the table for Class II service factor.

Output rpm	AGMA Class	Service Factor	Output Torque in-lb	OHL lb	Nominal Ratio	Frame Size Gear	Frame Size Motor	Std. Motor Types
31	I,II	1.4	9661	2875	56	3473	184T	T,C,S,X,IG
28	I	1.3	10491	2875	63	3473	184T	T,C,S,X,IG

30 rpm falls between these two lines in the selection table, but the 28 rpm line doesn't meet the Class II service factor requirement. Size 3473 gear frame with 56:1 nominal ratio and 31 rpm output is the best selection.

Step 4... Verify that the Overhung Load Rating is sufficient for the applied load.

$$r = \frac{\text{Sprocket Diameter}}{2} \quad \frac{11}{2} = 5.5"$$

K = 1.0 (chain drive)

LLF = 1.2 (sprocket on end of shaft)

HP = 5

$$OHL = \frac{63025 \times HP \times K \times LLF}{rpm \times r} = \frac{63025 \times 5 \times 1.0 \times 1.2}{31 \times 5.5} = 2217.9 \text{ lbs.}$$

Since the gearmotor output OHL rating is 2875 lbs (see selection table) and this is greater than the applied OHL of 2217.9 lbs, the selection is fine. If the OHL rating was too low, the sprocket diameter or gear frame could be increased.

Complete the Process by Building a Complete Part Number

Catalog designation (see "Catalog Nomenclature" page B-14):

OtN • 3473 • S2 • B33G • 56 • HT24 • 184T • 5

The codes indicate the following: Frame 3473 OtN Gearmotor, S2 = the standard output shaft and mounting dimensions, B = Floor Mount, 33 = No Faces or Flanges, G = Single Shaft on Right Facing Motor Fan, 56:1 Ratio, HT24 = High efficiency TEFC Motor, 184T Motor Frame, 5 HP. Page B-16 shows mounting positions, page B-15 explains output shaft and face or flange positions, and page B-17 shows motor types.

Gearmotor Selection

Selection Information

1. Determine installation environment
   - Control enclosure is NEMA 4/12
2. Input HP
   - For constant torque loads this is at maximum speed of range. Therefore, the gear ratio should be selected to closely match the required maximum speed.
3. Speed range
   - Confirm maximum and minimum of needed range.
4. Determine control power supply
   - Phase and voltage

Power Supply	Input HP's
1 ph / 115 v	.33 to .75
1 ph / 230 v	.33 to 2
3 ph / 230 v	.33 to 5
3 ph / 460 v	.33 to 10
3 ph / special	R. O.

5. Mechanical service factoring of gear
   - Refer to page B-10 for this procedure.

   Note: IntelliGear application for 1 phase power supply is limited to 10 starts per hour where the unit is started via AC power mains contractor.

6. Determine speed adjustment option
   - Select from:

   PD = Digital keypad with forward/reverse/stop/ speed up/speed down/speed display on IntelliGear enclosure *
   P1 = Run/stop/speed pot. mounted on IntelliGear enclosure
   P2 = Forward/reverse/stop/speed pot. mounted on IntelliGear enclosure
   P3 - Speed pot. (only) mounted on IntelliGear enclosure (start/stop by others)
   P4 = Speed pot. (only) mounted inside IntelliGear enclosure (start/stop by others)
   R = Remote signal following (0-10VDC or 4-20mA supplied by others)

Size Selection

Step 1 - Determine the maximum motor rpm from the following table based on the whether the application requires a speed range of 6:1, 10:1 or 15:1.

$$\text{Speed Range} = \frac{\text{Maximum Output Speed Required}}{\text{Minimum Output Speed Required}}$$

HP	IntelliGear Motor Speed Range		
	6:1 Speed Range	10:1 Speed Range	15:1 Speed Range
1/3 - 3/4 HP	1760 - 293 rpm	1760 - 176 rpm	2625 - 175 rpm
1 - 1 1/2 HP	1750 - 291 rpm	1750 - 175 rpm	2620 - 175 rpm
2 HP	1750 - 291 rpm	2585 - 255 rpm	N. A.
3 HP	1750 - 291 rpm	2630 - 263 rpm	N. A.
5 HP	2150 - 358 rpm	2605 - 260 rpm	N. A.
7.5 HP	2150 - 358 rpm	2670 - 267 rpm	N. A.
10 HP	2100 - 350 rpm	2600 - 260 rpm	N. A.

Step 2 - Determine the gear ratio required. Use the maximum motor rpm from the table above.

$$\text{Gear Ratio} = \frac{\text{Maximum Motor Speed}}{\text{Maximum Output Speed Req'd.}}$$

Step 3 - Locate gearmotor selection tables based on the input HP required at the ratio calculated in Step 2. Select the nominal gear ratio closest to the one calculated.

Step 4 - Select the correct gearmotor that meets or exceeds the AGMA class or service factor determined in the selection information.

Step 5 - Verify overhung load rating where applicable per formulas on page B-10.

Step 6 - Confirm input power supply is compatible with HP of selection and select the speed adjustment option desired for the application.

Step 7 - Referring to page B-18, determine if an alternative controller location is required for the application. (Note that the default location is "FO" – the 12 o'clock position.)

* PD option not available at 3/4 hp with 1 ph, 115V power supply. and 1.5 or 2 HP with 1 ph; 230V power supply

Selection Example

A right angle, flange mounted gearmotor is required to operate a mixer for a variable density solution. The mixer operates 8 hours per day, and the speed range is 12-56 rpm. The mixer shaft will be directly coupled to the gearmotor output shaft on the right side viewed from the motor end. The customer has specified a 2 HP gearmotor with a TEFC motor, and the power supply is 460 VAC, 3-phase. The flange is to be located on the right, viewing the motor fan cover, and the OD required is 250 mm. The unit will be mounted on its side with the motor horizontal and the output shaft vertical down. Viewed from the top of the gearcase housing, the motor will be mounted to the right.

Refer to AGMA service classification table on page B-25.

Application	Load	Class	
		Up to 10 Hrs/Day	Over 10 Hrs/Day
Mixers (Also see Agitators):			
Concrete - Continuous	M	II	II
Concrete - Intermittent	M	I	-
Constant Density	U	I	II
Variable Density	M	II	II

Since this mixer is variable density and operates 8 hours per day, a Class II service factor is required.

Step 1... Calculate the speed range required: 56 rpm max./12 rpm min. = 4.7:1, so an IntelliGear with 6:1 range is required. This means the motor top speed will be 1750 rpm for a 2 HP IntelliGear.

Step 2... The ideal gear ratio is 1750 rpm / 56 rpm = 31.25:1.

Step 3... Locate gearmotor for 2 HP on page B-41, and find a nominal ratio close to 31.25:1.

Step 4... Select the row in the table for Class II service factor.

Output rpm	AGMA Class	Service Factor	Output Torque in-lb	OHL lb	Nominal Ratio	Frame Size Gear	Frame Size Motor	Std. Motor Types
57	III	3+	2072	2090	31.5	3363	145T	T,C,S,X,IG
56	I, II	1.5	2178	2071	31.5	3242	145T	T,C,S,X,IG
53	III	3+	2228	2090	35.5	3363	145T	T,C,S,X,IG

Note that 31.25:1 ratio is closest to 31.5:1 nominal ratio. There are two choices at this ratio, and both meet the Class II service factor requirement. This means that the smaller Size 3242 gear frame will be the most economical selection.

Step 5... For a direct coupled application, it is not necessary to consider the Overhung Load Rating.

Step 6... The power supply is 460 VAC/3-phase, and there is an IntelliGear available for this voltage at 2 HP. (See the footnote at the bottom of page B-41.)

Complete the Process by Building a Complete Part Number
Catalog designation (see "Catalog Nomenclature" page B-14):

OtN • 3242 • S2 • T63G • 31.5 • IG4 • 145T • 2

The codes indicate the following: Frame 3242 OtN Gearmotor, S2 = the standard output shaft and mounting dimensions, T = Flange mount with output shaft down, 63 = Flange on right side, G = Single Output Shaft on the right side, 31.5:1 Nominal Ratio, IG4 = 460 VAC/3-Phase IntelliGear, 145T Motor Frame, 2 HP. Page B-16 shows mounting positions, page B-15 explains output shaft and face or flange positions, and page B-17 shows motor types.

OtN • 34 7 3 • S2 • B 33 G • 22.4 • HT24 • 145T • 1.5 • G11

See pages B-15 - B-16

Browning Right-Angle Helical-Bevel	Series	Reducer Size		Stages	Shaft & Foot Dimensions [1]	Mounting Position	Output Face/ Flange Right-Left Viewed From Input End	Output Shaft Configuration Viewed from Input End	Nominal Gear Ratio	Input Type	Motor Frame	Motor HP	Modification(s)
	SERIES 3000	31	3	2= 2 stages	S2 = Industry interchange dimensions	B = Floor mount P = Ceiling mount H = Wall mount, input left T = Wall mount, input right V = Input vertical up W = Input vertical down	3 = Standard round 4 = Face mount 5 = Standard dimension flange mount 6 = Alternate dimension flange mount	G = Shaft right D = Shaft left X = Dual shaft C = Finish bore B = Tapered bushed	22.4 = 22.4:1 Use nominal ratio selected from gearmotor selection tables	Motor type selected from catalog designations column in standard motor input from table on page B-17			Select from modifications listed on pages B-18 to B-21
		32	4	3(A) = 3 stages									
		33	6	5 = 5 stages									
		34	7	6 = 6 stages	S1 = OtN2000 replacement dimensions								
		35	8										
		36	9										
		37	0										
		38	2										

[1] Shaft and critical mounting dimensions match either OtN2000 or SEW® "K" Series units. These dimensions include the mounting base, output flanges, output shaft diameter, distance from housing center line to shaft tip, and output quill diameter. The B14 mounting faces and overall product envelope (height, width, depth) do NOT match.

SEW is believed to be a trade name of SEW-Eurodrive GMBH & Co. and is NOT owned or controlled by Emerson.

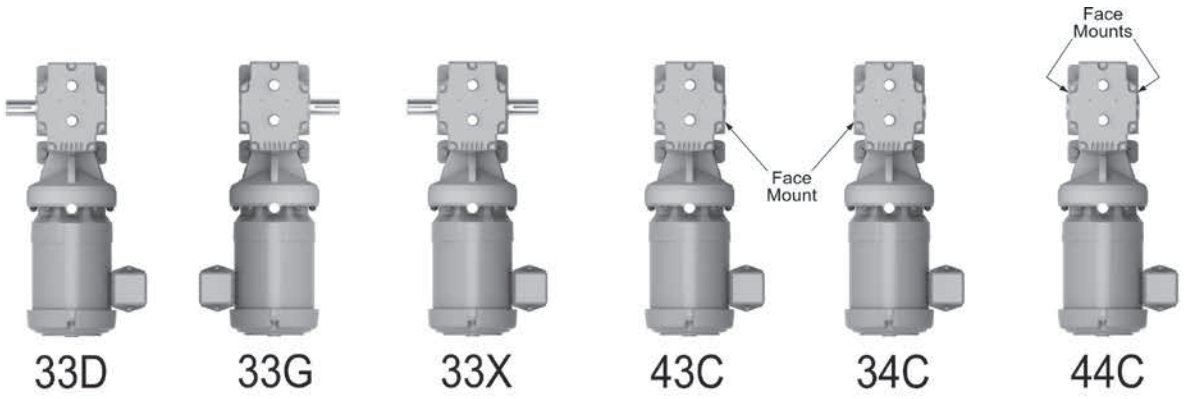
Emerson cannot and does not represent or warrant the accuracy of this information.

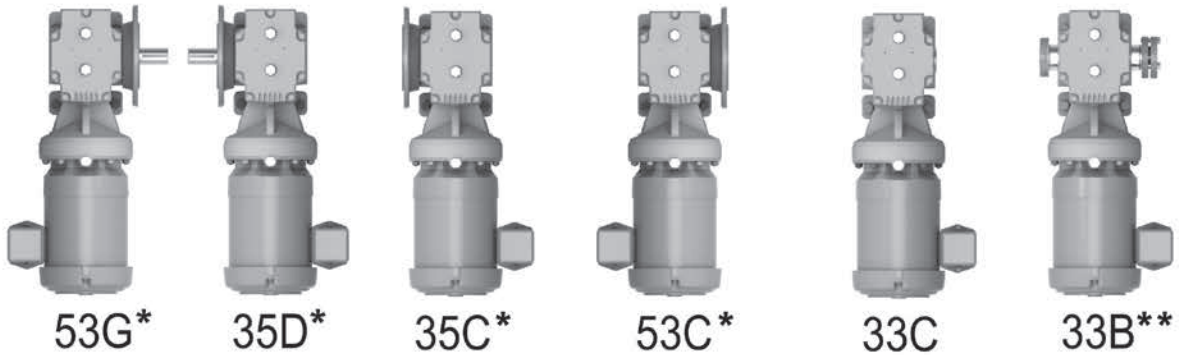
Output Flange Sizes

Flange Dimensions (mm)										
BD	140	165	200	250	300	350	400	450	550	660
AK	95	110	130	180	230	250	300	350	450	550
AJ	115	130	165	215	265	300	350	400	500	600
Gear Frame	Output Flange Type Designation Code									
31	6	5								
32			5	6						
33				5	6					
34					5	6				
35						5	6			
36								5	6	
37								5	6	
38									5	6

Gear Output Options

Brackets and Shaft





Examples Above are Top Views

OtN Frame	Foot Mounted			Face Mounted				Flange Mounted					Shaft Mounted	
	Solid Shaft			Hollow Shaft				Solid Shaft		Hollow Shaft			Hollow	Bushed
	33G	33D	33X	33C	34C	43C	44C	53G	35D	53C	35C	55C	33C	33B**
31	●	●	●	●	●	●	●	●	●	●	●	●	●	●
32	●	●	●	●	●	●	●	●	●	●	●	●	●	●
33	●	●	●	●	●	●	●	●	●	●	●	●	●	-
33A	-	-	-	-	-	-	-	-	-	-	-	-	-	●
34	●	●	●	●	●	●	●	●	●	●	●	●	●	●
35	●	●	●	●	●	●	●	●	●	●	●	●	●	●
36	●	●	●	●	●	●	●	●	●	●	●	●	●	●
37	●	●	●	●	●	●	●	●	●	●	●	●	●	●
38	●	●	●	●	●	●	●	●	●	●	●	●	●	●

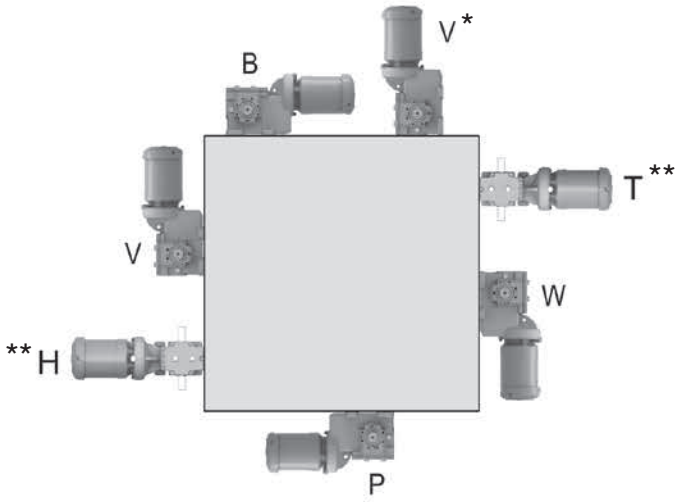
If shaded, the alternative flange can be specified by replacing “5” with “6” in the coding

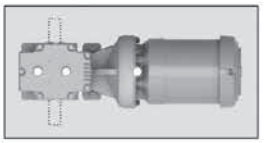
● This is available at normal lead-time

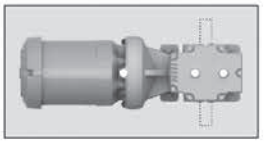
* See note for shaded field for flange option

** Bushing can be assembled on either side of reducer during field mounting

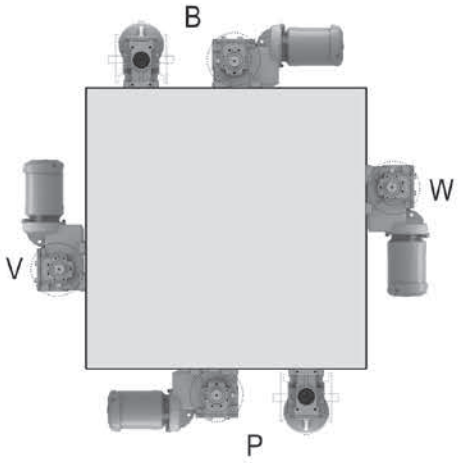
Foot Mount

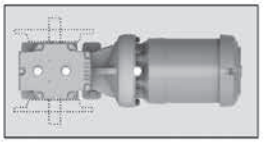


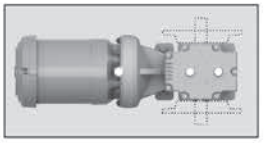

T


H

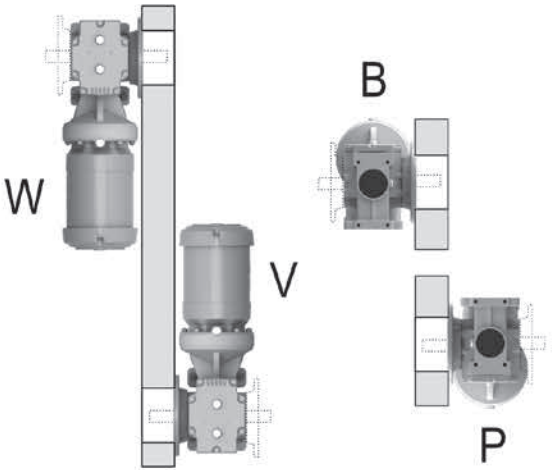
Foot Mount with Face or Flange

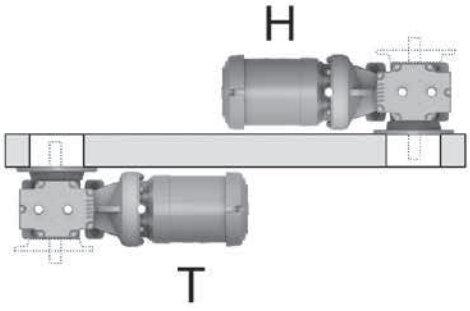



T


H

Flange, Face or Shaft Mount





* Refer to B-212 for mounting details
** Only available on frame 31. Refer to page B-212

Standard Motor Input Types

Example: High Efficiency, TEFC, 3 phase 60 Hz, 575V, with Fail-safe Brake

H T 5 B

1 Efficiency

- **"blank"** Normal
- **H** High
- **I** Inverter Duty
- **P** Premium

2 Enclosure, pole

- **T** TEFC, 4 pole
- **C** Corro-Duty, 4 pole
- **W** Washdown, 4 pole
- **WP** Washdown Plus, 4 pole
- **X** Explosionproof, 4 pole
- **G** IntelliGear, 4 pole

3 Phase, Hz, Voltage

- **S1** 1 Phase, 60, 115V
- **S12** 1 Phase, 60, 115/230V
- **S2** 1 Phase, 60, 230V
- **2** 3 Phase, 60, 230V
- **24** 3 Phase, 60, 230/460V
- **53** 3 Phase, 50, 380V
- **4** 3 Phase, 60, 460V
- **54** 3 Phase, 50, 400/415V
- **5** 3 Phase, 60, 575V

4 Accessories

- **"blank"** No Brake
- **B** Fail-safe Brake

Base Design	Input Code	Motor HP															
		0.33	0.50	0.75	1	1.5	2	3	5	7.5	10	15	20	25	30	40	50
S Single Phase TEFC	TS12	Y	Y	Y	Y	Y	Y	-	-	-	-	-	-	-	-	-	-
	TS12B	Y	Y	Y	Y	Y	Y	-	-	-	-	-	-	-	-	-	-
	TS2	-	-	-	-	-	-	Y	Y	-	-	-	-	-	-	-	-
	TS2B	-	-	-	-	-	-	Y	Y	-	-	-	-	-	-	-	-
T 3 Phase TEFC	HT24	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	HT24B	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	-	-	-	-	-	-
	HT5	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	HT5B	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	-	-	-	-	-	-
	T24	Y	Y	Y	Y[1]	Y	Y	Y	Y	Y	Y	-	-	-	-	-	-
	T24B	Y	Y	Y	Y[1]	Y	Y	Y	Y	Y	Y	-	-	-	-	-	-
	T5	Y	Y	Y	Y[1]	-	-	-	-	-	-	-	-	-	-	-	-
	T5B	Y	Y	Y	Y[1]	Y	Y	Y	Y	Y	Y	-	-	-	-	-	-
	● T53	Y	Y	Y	Y[1]	Y	Y	Y	Y	P	P	P	P	P	P	P	P
	● T53B	Y	Y	Y	Y[1]	Y	Y	Y	Y	-	-	-	-	-	-	-	-
	T54	Y	Y	Y	Y	Y	Y	Y	Y	P	P	P	P	P	P	P	P
	IT24	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	IT24B	Y	Y	Y	Y	Y	Y	Y	Y	-	-	-	-	-	-	-	-
	IT5	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	IT5B	Y	Y	Y	Y	Y	Y	Y	Y	-	-	-	-	-	-	-	-
	PT24	-	-	-	-	-	-	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	PT5	-	-	-	-	-	-	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	W24	Y	Y	Y	Y[1]	Y	Y	-	-	-	-	-	-	-	-	-	-
	W5	Y	Y	Y	Y[1]	Y	Y	-	-	-	-	-	-	-	-	-	-
	WP24	Y	Y	Y	Y[1]	Y	Y	-	-	-	-	-	-	-	-	-	-
	WP5	Y	Y	Y	Y[1]	Y	Y	-	-	-	-	-	-	-	-	-	-
C 3 Phase Corro-Duty®	HC24	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	HC5	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	IC24	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	IC5	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	PC24	-	-	-	-	-	-	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	PC5	-	-	-	-	-	-	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
X 3 Phase Explosionproof	X24	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	-	-	-	-	-	-
	X5	Y	Y	Y	-	-	-	-	-	-	-	-	-	-	-	-	-
	IX24	P	P	P	P	P	P	P	P	P	P	-	-	-	-	-	-
IG IntelliGear®	IGS1	Y	Y	Y	-	-	-	-	-	-	-	-	-	-	-	-	-
	IGS2	Y	Y	Y	Y	Y	Y	-	-	-	-	-	-	-	-	-	-
	IG2	Y	Y	Y	Y	Y	Y	Y	Y	-	-	-	-	-	-	-	-
	IG4	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	-	-	-	-	-	-

P = Production lead-time Y = Available from stock Y[1] = Motor frame is B56 - = not available

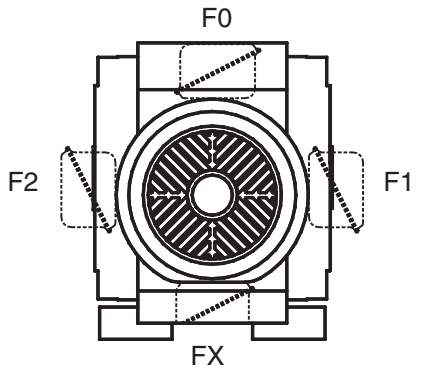
● Refer to page B-20 if CCC motor certification is required on gearmotor

Electrical Connection Options

Conduit Box Location

When ordering a conventional OtN gearmotor, specify the desired conduit box location when viewing fan cover guard of motor. If no option is specified, the conduit box location per gearbox mounting will be supplied as shown in the table below.

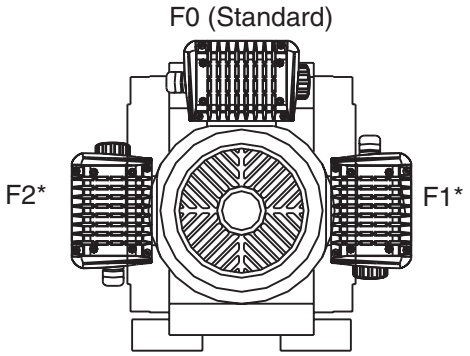
Output Arrangement	Standard Conduit Box Location
33D, 35D, 36D, 33X, 55X, 66X, 33B, 33C, 34C, 44C , 35C, 36C, 55C , 66C, 73S	F-1
33G, 53G, 63G, 43C, 53C, 63C, 73S	F-2



Controller Location

When ordering an IntelliGear® Series 2000 or 3000 gearmotor, you can specify the controller location and conduit entry location when viewing the fan cover guard of motor. If no options are specified, the "F0" controller location will be supplied.

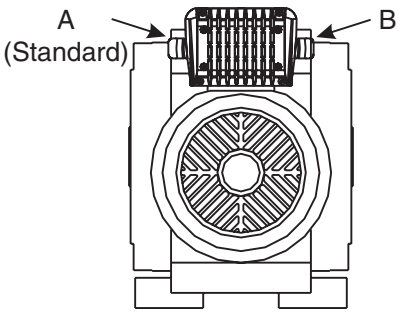
* Refer to Application Engineering for de-rating guidance in the F1 or F2 IntelliGear locations.



IntelliGear® Controller

Cable Entry

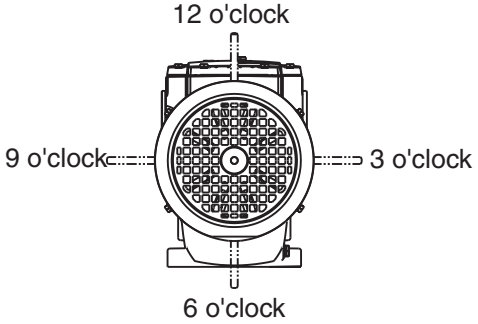
IntelliGear Cable Entry can be from either side of enclosure. If no option is specified, "A" will be supplied.



Cable Entry

FCR Brake Release Lever Positioning

Unit Type	Default Location	Optional Location(s)
OtN less IntelliGear	12 o'clock	3, 6, or 9 o'clock
OtN with IntelliGear	9 o'clock	3, 6, or 12 o'clock (but lever can not be in same position as the IntelliGear)



Brake Lever Location

Inverter Duty Gearmotors

Improvements in the motors for OtN gearmotors include an upgrade in the wire and varnish treatment used in all Allguard® non-explosionproof three phase motors. This makes the three phase gearmotor suitable for use with PWM inverters in many applications. A one year warranty will be extended for standard efficiency motors on constant torque applications over 3:1 range from 60-20 Hz. The same warranty is extended for high efficiency design motors on constant torque applications over 5:1 range from 60-12 Hz providing the following conditions are met:

- Motor is non-hazardous 3 phase > 48 frame
- Cable length to controller < 100 feet
- Line voltage is < 480 VAC
- Thermal protectors are not required

For all other conditions of operation (including 575 VAC) that exceed these parameters and all hazardous motor applications, select the inverter duty motor design under the motor Type required by the application. These designs include winding thermostats and will be covered by a three (3) year limited warranty of the motor as covered in the Standard Terms and Conditions, and full compliance with NEMA MG1 Part 31.

Motor Modifications

M1 Brakes

Design
These motor mounted brakes have a direct acting, spring set, electromagnetically released disc design. When power to the brake is interrupted, the brake will immediately set and hold. When power is restored to the brake then the brake will be released automatically.

Brake Enclosures
IP23 – suitable for indoors with relatively dry, clean and non-hazardous applications

IP55 – suitable for outdoor or indoor where gearmotor can be exposed to splashing liquids, dusts, and chemicals that are non-hazardous. Not suitable for washdown applications

Non-Hazardous Motor Types	Motor Frame Size(s)	
	56-180T	210T
S	IP23	N/A
T	IP55	IP23
IG	IP55	N/A

Motor Modifications Continued

Operating Voltage
Brakemotors for fixed frequency operation will be arranged for operating with motor power as standard. If another lower voltage like 115 VAC is to be used for the brake on a 3 phase motor, state this voltage at order entry

Brakes for inverter duty brakemotors require a separate fixed frequency AC power source for the brake, but interlocked with starting of the motor. The standard brake design for inverter duty gearmotors will be arranged for single phase 115/230 VAC.

Mounting
Brakes for OtN gearmotors are suitable for the mounting ordered for the gearmotor. The standard brake will have a manual release included. Refer to the table on B-18 for the manual release mounting options available on the FCR type IP 55 brake design.

M2 Premium Efficiency Motors

High efficiency motor design is a standard option for three phase motors on 56 frames and larger motors in types "T" and "C" to meet the energy legislation in Canada and most end user specifications.

Premium efficiency motors are also optional starting at 3 HP.

M3 Washdown Duty Motors

See GM1 under Gearmotor Modifications

M4 Canopy Cap/Drip Cover

A canopy cap can be supplied for protection from dripping liquids entering the fan end of a gearmotor. It is recommended but not standard when gearmotor mounting is ordered to be "V"

M5 Frequency – 50 Hz

Motors for operation at 50 Hz are available. Refer all 3 phase requirements for 50 Hz to motor code T53 (380V) or T54 (400/415V). The published output speed in catalogs are based on 60 Hz. When operating or selecting a 50 Hz gearmotor, catalog output speed must be reduced by 5/6 for a given ratio. The service factor must also be reduced by 5/6 if the HP is maintained.

For all other 50 Hz voltages, refer to application engineering.

Motor Modifications Continued

M6 Voltage (3 phase only)

Standard voltages are listed in the table below. 200 VAC will be handled by 208-230/460V motors up to 10 HP. Refer all other voltages to the Pricing Group to confirm availability.

Frequency	3 Phase Voltages Thru 30 HP
60 Hz	200, 230, 460, 575
50 Hz	380, 400/415

M7 Motor Insulation

Emerson's 3 phase motors are built with a premium Class F insulation system for "T", "C" and "IG" types. All "S" and "X" type motors use a Class B insulation.

Tropical insulation treatment is available as a modification on any motor designs noted above

Class H insulation systems require production lead-times and are not available on explosions proof "X" designs.

M8 Space Heaters

Space heaters are recommended for gearmotors installed in very damp locations to prevent condensation from forming on the motor windings when the motor is not operating. Leads will be brought out to the standard motor conduit box. Space heater voltages (115, 230, and 460V) must be specified when an order is entered. This is available on motors > ¾ hp.

M9 Thermal Protection – Thermostats

This protection uses a bi-metallic disc thermostat embedded each phase of the motor winding and then connected by others into the holding circuit of the motor starter or VFD drive. The sensor is normally closed, and opens the control circuit to shut the motor down if the motor achieves over-temperature conditions based on the motor insulation class or design code. Thermostats give protection for running overloads, abnormally high ambient, voltage imbalance, high or low voltage, and ventilation failure. Thermostats do not give protection for locked rotor, starting overloads or single phasing.

Thermostats are standard in inverter duty motor designs (including IG) as well as explosionproof dual label motors type "X".

Motor Options

Certification or Approvals For Gearmotors

Hertz	Phase	Motor Voltage	Approvals [1]	
			Standard	Optional
60 Hz	1	115/230V	UL, CSA	-
	3	230/460	UL, CSA	-
		575	UL, CSA	-
50 Hz	3	380	CE	CCC [2]
		415	CE	-

[1] Corresponding logo(s) will be displayed on motor nameplate

[2] CCC is available for TEFC 3 phase gearmotors through 1.5hp, 50/380V for export to China. Motor nameplate will be in Chinese, with metric performance values (i.e motor power=kW). To order with CCC, add "C" to either T38 or T38B input codes i.e. T38C or T38BC will have CCC

Gear Modifications

G11 Corro-Duty

Corro-Duty treatment can be applied to a gearmotor or reducer when corrosive chemicals are present or unit will be operated outside in adverse environmental conditions. For gearmotors, the unit should start with specification of the Corro-Duty® type "C" motor design. Other special features of this treatment include:

- Normally closed breather design
- Corro-Duty exterior paint treatment (entire unit)
  - o Grey Option (default type)
    - ▪ 316 stainless steel paint (2 step)
    - ▪ Light grey semigloss finish
    - ▪ USDA and FDA approved
  - o White Option
    - ▪ Two step epoxy paint system
    - ▪ White gloss finish
    - ▪ USDA and FDA approved

For washdown application for gearmotors, refer to GM1 Washdown Duty Gearmotors and/or Washdown Duty Gearmotor PLUS.

G12a Foodgrade Synthetic Lubricant

When this modification is specified, the OtN oil sump is filled with the required volume of an FDA approved H1 rated synthetic lubricant for helical gearing (refer to page B-213).

G15 Export Boxing

Export boxing can be provided for "under-deck" transport. When the quantity of OtN gearmotors or reducers exceeds five (5) units, refer to international sales for most economical accommodations.

Gear Modifications Continued

G16 Extra or Special Nameplate

Units can be provided with limited additional special information on the standard product nameplate. When required, an extra nameplate may be provided, stamped with custom markings.

Gearmotor Modifications

GM1 Washdown Duty Gearmotors

This three phase gearmotor design combines special features of the gear and motor required for washdown duty. These include:

- Special treatment of motor interior and windings
- Drains at low point(s) of the motor frame
- Labyrinth seal at motor SE bracket/shaft extension
- Special “protected” breather for gearcase
- Corro-Duty exterior multi-application paint treatment (see Corro-Duty® Reducer for color options).

Motor types “W24” or “W5” are used to order this design based on motor voltage. This is available from 1/3 to 2 HP.

GM2 Washdown Duty Gearmotor PLUS

This three phase gearmotor design includes all the special features noted under GM1 above plus the oil sump of the reducer will be filled before shipment with a FDA approved H1 rated synthetic lubricant for helical gearing. Volume of the oil will be dictated by the mounting position specified on the order.

Motor types “WP24” or “WP5” are used to order this design based on motor voltage. This is available from 1/3 to 2 HP.

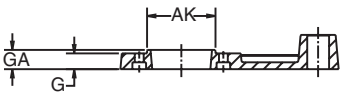
Accessories

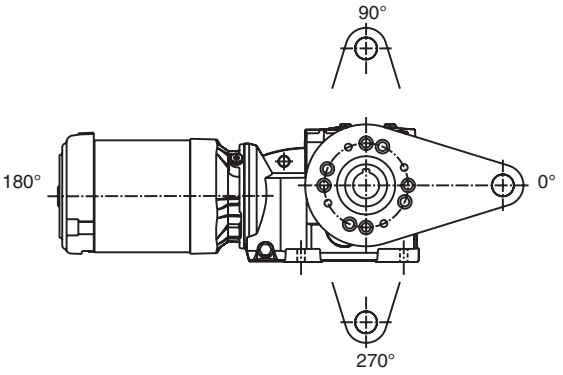
The following accessories can be ordered along with gearmotors and will be supplied loose for mounting by others

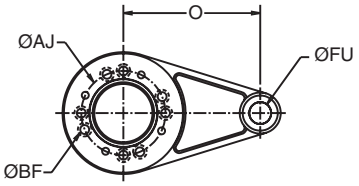
Description	Gear Frames	Part #
NPT Adapter (1/4” NPFT)	31 to 35	0436216
NPT Adapter (3/4” NPFT)	36 to 38	0436218
Bushing Guard Kit [1] (includes 2 guards to protect both sides)	32	XS9142
	33	XS9143
	34	XS9144
	35	XS9145
	36	XS9160
	37	XS9161
	38	PLA335F0002*
Oil Level View Port	31 to 35	0435936
	36 to 38	0435938

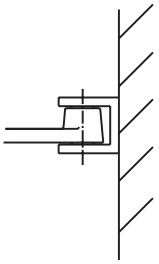
[1] These kits include all mounting hardware.
* These kit contains only (1) Guard.

Torque Reaction Arm









Anchoring of the Torque Arm (top view)

- Torque arm can be assembled in any of the three positions shown in the drawing above relative to the input (motor) when called out on the order.
- Torque arm can be affixed to either side of the 33C or 33B gear housing.
- If a torque arm is requested on an assembly order, it will be supplied loose for mounting by others.
- See page 23 for optional Torque Arm designs for frames 36 and 37.

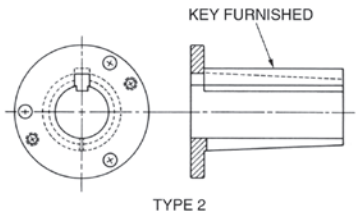
Series 3000

OtN Frame	Part ID # Kit	G	O	AJ	AK	BF	FU	GA
31	ROC100KT001	-	5.118	3.74	3.246	.35	.394	.63
32	ROC200KT001	.63	5.118	3.94	3.150	.43	.394	.79
33	ROC300KT001	.91	7.874	4.84	3.937	.51	.630	1.10
34	ROC400KT001	-	9.842	5.98	5.118	.51	.630	.91
35	ROC500KT001	-	12.205	7.48	6.102	.67	.630	.908
36	ROC600KT001	0.79	13.78	9.06	5.905	.63	.940	.98
37	ROC700KT001	1.02	17.72	9.06	7.087	.87	.940	1.22
38	ROC800KT001	1.10	21.65	11.81	9.84	.87	2.20	1.34

Tapered Bushings

Each Series 3000 OtN can be ordered with a Tapered Bushed Output. This “33B” mounting configuration will include the appropriate bushing kit unassembled when a bore is defined at order entry. The table below shows the various stocked bushing bores for each OtN frame that can be specified. Each bushing kit is supplied with bushing, hardware for mounting and a stabilizer ring. If bushings are required as a spare or bore changed in the field, refer to the OtN 3000 frame and select the required kit from below.





OtN Frame	Meas. Unit	Bushing Number	Bore [1]	Shaft Keyseat Required	Type
31	Inch	105TBP100	1”	1/4 x 1/8 x 2 1/2	2
		105TBP103	1 3/16”	1/4 x 1/8 x 2 1/2	2
		105TBP104	1 1/4”	1/4 x 1/8 x 2 1/2	2
		105TBP105	1 5/16”	5/16 x 5/32 x 2 1/2	2
	Metric *	105TBP30MM	30 mm	8 x 3.5 x 65 (mm)	2
32	Inch	107TBP105	1 5/16”	5/16 x 5/32 x 3 7/8	2
		107TBP106	1 3/8”	5/16 x 5/32 x 3 7/8	2
		107TBP107	1 7/16”	3/8 x 3/16 x 3 7/8	2
	Metric *	107TBP30MM	30 mm	8 x 3.5 x 100 (mm)	2
		107TBP35MM	35 mm	10 x 4 x 100 (mm)	2
33A	Inch	115TBP107	1 7/16	3/8 x 3/16 x 4 1/8	2
		115TBP108	1 1/2	3/8 x 3/16 x 4 1/8	2
		115TBP110	1 5/8	3/8 x 3/16 x 4 1/8	2
		115TBP111	1 11/16	3/8 x 3/16 x 4 1/8	2
		115TBP112	1 3/4	3/8 x 3/16 x 4 1/8	2
		115TBP114	1 7/8	1/2 x 1/4 x 4 1/8	2
		115TBP115	1 15/16	1/2 x 1/4 x 4 1/8	2
	Metric *	115TBP40MM	40 mm	12 x 4 x 105 (mm)	2
		115TBP45MM	45 mm	14 x 4.5 x 105 (mm)	2
34	Inch	115TBP111	1 11/16	3/8 x 3/16 x 4 1/8	2
		115TBP112	1 3/4	3/8 x 3/16 x 4 1/8	2
		115TBP114	1 7/8	1/2 x 1/4 x 4 1/8	2
		115TBP115	1 15/16	1/2 x 1/4 x 4 1/8	2
	Metric *	115TBP45MM	45 mm	14 x 4.5 x 105 (mm)	2

OtN Frame	Meas. Unit	Bushing Number	Bore [1]	Shaft Keyseat Required	Type
35	Inch	207TBP200	2	1/2 x 1/4 x 5 1/8	2
		207TBP202	2 1/8	1/2 x 1/4 x 5 1/8	2
		207TBP203	2 3/16	1/2 x 1/4 x 5 1/8	2
		207TBP204	2 1/4	1/2 x 1/4 x 5 1/8	2
		207TBP207	2 7/16	5/8 x 5/16 x 5 1/8	2
	Metric *	207TBP50MM	50 mm	14 x 4.5 x 130 (mm)	2
		207TBP60MM	60 mm	18 x 5.5 x 130 (mm)	2
36	Inch	215TBP207	2 7/16	5/8 X 5/16 X 5 5/8	2
		215TBP208	2 1/2	5/8 X 5/16 X 5 5/8	2
		215TBP211	2 11/16	5/8 X 5/16 X 5 5/8	2
		215TBP215	2 15/16	3/4 X 3/8 X 5 5/8	2
	Metric *	215TBP60MM	60 mm	18 x 5.5 x 140 (mm)	2
		215TBP70MM	70 mm	20 x 6 x 140 (mm)	2
37	Inch	307TBP214	2 7/8	3/4 x 3/8 x 6 3/4	2
		307TBP215	2 15/16	3/4 x 3/8 x 6 3/4	2
		307TBP300	3	3/4 x 3/8 x 6 3/4	2
		307TBP306	3 3/8	7/8 x 7/16 x 6 3/4	2
		307TBP307	3 7/16	7/8 x 7/16 x 6 3/4	2
	Metric *	307TBP75MM	75 mm	20 x 6 x 170 (mm)	2
		307TPB80MM	80 mm	22 x 7 x 170 (mm)	2
		307TBP85MM	85 mm	22 x 7 x 170 (mm)	2
38	Inch	315TBP215	2 15/16	3/4 x 3/8 x 7 15/16	2
		315TBP300	3	3/4 x 3/8 x 7 15/16	2
		315TBP303	3 3/16	3/4 x 3/8 x 7 15/16	2
		315TBP307	3 7/16	7/8 x 7/16 x 15/16	2
		315TBP315	3 15/16	1 x 1/2 x 7 15/16	2
	Metric*	315TBP90MM	90mm	25 x 7 x 190 (mm)	2

[1] Bushing bore shown must be selected by customer based on complete application details.
* Metric bushings have metric bores and require metric keyseats as shown in mm.

AGMA Application Classifications

U: Uniform load **M: Moderate shock load** **V: Heavy shock load**

Application	Load	Class Up to 10 hrs/day	Class Over 10 hrs/day
Agitators			
Paper Mills	M	II	II
Pure Liquids	U	I	II
Liquids & Solids	M	II	II
Liquids - Variable Density	M	II	II
Apron Conveyors			
Uniformly Loaded or Fed	U	I	II
Heavy Duty	M	II	II
Apron Feeders	M	II	II
Assembly Conveyors			
Uniformly Loaded or Fed	U	I	II
Heavy Duty	M	II	II
Ball Mills	V	III	III
Barking			
Drums	V	-	III
Hydraulic Auxiliaries	V	-	III
Mechanical	V	-	III
Barscreens (Sewage)	U	I	II
Batchers (Textile)	M	II	II
Beaters and Pulpers (Paper)	U	-	II
Belt Conveyors			
Uniformly Loaded or Fed	U	I	II
Heavy Duty	M	II	II
Belt Feeders	M	II	II
Bending Rolls (Machine)	M	II	II
Bleachers (Paper)	M	-	II
Blowers			
Centrifugal	U	I	II
Lobe	M	II	II
Vane	U	I	II
Bottling Machinery	U	I	II
Brewing and Distilling			
Bottling Machinery	U	I	II
Brew Kettles, Cont. Duty	U	-	II
Can Filling Machines	U	I	II
Cookers - Cont. Duty	U	-	II
Mash Tubs - Cont. Duty	U	-	II
Scale Hoppers - Frequent Starts	M	II	II
Brick Press (Clay Working)	V	III	III
Briquetts Machines (Clay Working)	V	III	III
Bucket			
Conveyors, Uniform	U	I	II
Conveyors, Heavy Duty	M	II	II
Elevators Cont.	U	I	II
Elevators Uniform	U	I	II
Elevators, Heavy Duty	M	II	II
Calenders			
Paper	U	-	II
Super (Paper)	U	-	II
Rubber	M	II	II
Textile	M	II	II
Cane Knives	M	II	II
Can Filling Machines	U	I	II
Card Machines (Textile)	M	II	II
Car Dumpers	V	III	-
Car Pullers	M	II	-
Cement Kilns	Refer to Application Engineering		
Centrifugal			
Blowers, Compressors, Discharge Elevators or Pumps	U	I	II
Chain Conveyors			
Uniformly Loaded or Fed	U	I	II
Heavy Duty	M	II	II
Chemical Feeders (Sewage)	U	I	II
Clarifiers	U	I	II
Classifiers	M	II	II
Clay Working Industry			
Brick Press	V	III	III
Briquette Machine	V	III	III
Clay Working Machinery	M	II	II
Pug Mill	M	II	II
Collectors (Sewage)	U	I	II
Compressors			
Centrifugal	U	I	II
Lobe	M	II	II
Reciprocating,			
Multi - Cylinder	M	II	II
Single - Cylinder	V	III	III
Concrete Mixers			
Continuous	M	II	II
Intermittent	U	I	-
Converting Machines (Paper)	M	-	II
Conveyors - Uniformly Loaded or Fed: Apron, Assembly, Belt, Bucket, Chain, Flight, Oven, Screw	U	I	II
Conveyors - Heavy Duty Not Uniformly Fed: Apron, Assembly, Belt, Bucket, Chain, Flight, Oven, Screw	M	II	II
Live Roll (Package)	U	I	II
Reciprocating, shaker	V	III	III
Cookers (Brewing and Distilling) (Food)	U	I	II
Cooling Tower Fans			
Induced Draft	M	II	II
Forced Draft	Refer to Application Engineering		
Couch (Paper)	M	-	II
Cranes and Hoists			
Main Hoists			
Heavy Duty	V	III	III
Medium Duty	M	II	II
Reversing	V	II	II
Skip Hoists	M	II	II
Trolley Drive	M	II	II
Bridge Drive	M	II	II
Crushers			
Ore or Stone	V	III	III
Cutters (Paper)	V	-	III
Cylinders (Paper)	M	-	II
Dewatering Screens (Sewage)	M	II	II
Disc Feeders	U	I	II
Distilling	(See Brewing)		
Double Acting Pumps			
2 or more Cylinders	M	II	II
Single Cylinder	Refer to Application Engineering		
Dough Mixer (Food)	M	II	II
Draw Bench (Metal Mills)			
Carriage & Main Drive	V	III	III
Dredges			
Cable Reels	M	II	-
Conveyors	M	II	II
Cutter Head Drives	V	III	III
Jig Drives	V	III	III
Maneuvering Winches	M	II	-
Pumps	M	II	II
Screen Drives	V	III	III
Stackers	M	II	II
Utility Winches	M	II	-

AGMA Application Classifications

U: Uniform load **M: Moderate shock load** **V: Heavy shock load**

Application	Load	Class: Up to 10 hrs/day	Class: Over 10 hrs/day
Dryers (Paper)	U	-	II
Dryers and Coolers (Mills, Rotary)	M	II	II
Dyeing Machinery (Textile)	M	II	II
Elevators			
Bucket - Uniform Load	U	I	II
Bucket - Heavy Duty	M	II	II
Bucket - Continuous	U	I	II
Centrifugal Discharge	U	I	II
Escalators	U	I	II
Freight	M	II	II
Gravity Discharge	U	I	II
Man Lifts, Passenger	Refer to Application Engr.		
Escalators U	I	II	
Fans			
Centrifugal	M	II	II
Cooling Towers			
Induced Draft	M	II	II
Forced Draft	Refer to Application Engr.		
Induced Draft	M	II	II
Large (Mine, etc.)	M	II	II
Large Industrial	M	II	II
Light (Small Diameter)	U	I	II
Feeders			
Apron, belt	M	II	II
Disc	U	I	II
Reciprocating	V	III	III
Screw	M	II	II
Felt			
Stretchers (Paper)	U	-	II
Whippers (Paper)	U	-	II
Flight			
Conveyors, Uniform	U	I	II
Conveyors, Heavy	M	II	II
Food Industry			
Beet Slicers	M	II	II
Bottling, Can Filling Mach.	U	I	II
Cereal Cookers	U	I	II
Dough Mixers	M	II	II
Meat Grinders	M	II	II
Forming Machines (Metal Mills)	V	III	III
Generators (Not welding)	U	I	II
Gravity Discharge Elevators	U	I	II
Grit Collectors (Sewage)	U	I	II
Hammer Mills	V	III	III
Induced Draft Fans	M	II	II
Jordans (Paper)	U	-	II
Kilns (Mills, Rotary)	M	II	II
Cement	Refer to Application Engineering		
Laundry Washers and Tumblers	M	II	II
Line Shafts			
Heavy Shock Load	V	III	III
Moderate Shock Load	M	II	II
Uniform Load	U	I	II
Live Roll Conveyors			
Package	U	I	II
Lobe Blower or Compressors	M	II	II
Log Hauls (Paper and Lumber)	V	III	III
Looms (Textile)	M	II	II
Lumber Industry			
Barkers - Spindle Feed	V	II	III
Barkers - Main Drive	V	III	III
Carriage Drive	Refer to Application Engr.		
Conveyors			
Burner	V	II	III
Main or Heavy Duty	V	II	III
Main Log	V	III	III
Re-Saw Merry-Go-Round	V	II	III
Slab	V	III	III
Transfer	V	II	III
Chains - Floor	V	II	III
Chains - Green	V	II	III
Cut-Off Saws-Chain	V	II	III
Cut-Off Saws-Drag	V	II	III
Debarking Drums	V	III	III
Feeds - Edger	V	II	III
Feeds - Gang	V	III	III
Feeds - Trimmer	V	II	III
Log Deck	V	III	III
Log Hauls - Incline, Well Type	V	III	III
Log Turning Devices	V	III	III
Planner Feed	V	II	III
Planer Tilting Hoists	V	II	III
Rolls - Live-Off Bearing Roll Cases	V	III	III
Sorting Table	V	II	III
Tipple Hoist	V	II	III
Transfers - Chain	V	II	III
Transfers - Craneway	V	II	III
Tray Drives	V	II	III
Machine Tools			
Auxiliary Drives	U	I	II
Bending Rolls	M	II	II
Main Drives	M	II	II
Notching Press (Belted)	Refer to Application Engr.		
Plate Planers	V	III	III
Punch Press (Geared)	V	III	III
Tapping Machines	V	III	III
Mangle (Textile)	M	II	II
Mash Tubs (Brewing and Distilling)	U	-	II
Meat Grinder (Food)	M	II	II
Metal Mills			
Draw Bench Carriages & Main Drives	V	III	III
Forming Machines	V	III	III
Pinch, Dryer & Scrubber Rolls Reversing	Refer to Application Engineering		
Slitters	M	II	II
Table Conveyors, Non-Reversing	M	II	III
Reversing	V	-	III
Wire Drawing & Flattening Machines	M	II	III
Wire Winding Machines	M	II	II
Mills, Rotary Type			
Ball, Pebble, Rod	V	III	III
Cement Kilns	Refer to Application Engineering		
Coolers, Dryers, Kilns	V	II	II
Tumbling Barrels	V	III	III
Mixers (Also see Agitators)			
Concrete - Continuous	M	II	II
Concrete - Intermittent	M	I	-
Constant Density	U	I	II
Variable Density	M	II	II
Nappers (Textile)	M	II	II
Oil Industry			
Chillers	M	II	II
Oil Well Pumping	Refer to Application Engineering		
Paraffin Filter Press	M	II	II
Rotary Kilns	M	II	II
Ore Crushers	V	III	III
Oven Conveyors			
Uniform	U	I	II
Heavy Duty	M	II	II

AGMA Application Classifications

U: Uniform load **M: Moderate shock load** **V: Heavy shock load**

Application	Load	Class Up to 10 hrs/day	Class Over 10 hrs/day
Paper Mills			
Agitator (Mixers)	M	II	II
Barker - Auxiliaries - Hyd.	V	-	III
Barker, Mechanical	V	-	III
Barking Drum	V	-	III
Beater & Pulper	M	-	II
Bleacher	M	-	II
Calenders	M	-	II
Calenders - Super	M	-	II
Converting Mach.-			
Except Cutters - Platers	M	-	II
Conveyors	M	-	II
Couch	M	-	II
Cutters, Platers	V	-	III
Cylinders	U	-	II
Dryers	U	-	II
Felt Stretchers	U	-	II
Felt Whippers	V	-	III
Jordans	M	-	II
Log Haul	V	-	III
Presses	M	-	II
Pulp Machine Reels	M	-	II
Stock Chests	M	-	II
Suction Rolls	M	-	II
Washers & Thickeners	M	-	II
Winders	M	-	II
Passenger Elevators	Refer to Application Engr.		
Pebble Mills	V	III	III
Plate Planers	V	III	III
Presses (Paper)	V	-	III
Proportioning Pumps	M	II	II
Pub Mills (Clay)	M	II	II
Pullers (Barge Haul)	V	III	III
Pulp Machine Reels	U	-	II
Pumps			
Centrifugal	U	I	II
Proportioning	M	II	II
Reciprocating			
Single Act., 3 or more cyl.	M	II	II
Double Act., 2 or more cyl.	M	II	II
Single Act., 1 or 2 cyl.	Refer to Application Engr.		
Rotary: Gear, Lobe, Vane	U	I	II
Punch Press (Gear Driven)	V	III	III
Reciprocating			
Conveyors, Feeders	V	III	III
Reciprocating Compressors			
Multi-Cylinder	M	II	II
Single cylinder	V	III	III
Rod Mills	V	III	III
Rotary			
Pumps, Gear, Lobe, Vane	U	I	II
Screens (Sand or Gravel)	V	II	II
Rubber Industry			
Mixer	V	III	III
Rubber Calender	M	II	II
Rubber Mill (2 or more)	M	II	II
Sheeter	M	II	II
Tire Building Machines	Refer to Application Engr.		
Tire, Tube Press Openers	Refer to Application Engr.		
Tubers & Strainers	M	II	II
Sand Mullers	Refer to Application Engr.		
Screens			
Air Washing	U	I	II
Rotary - Sand or Gravel	M	II	II
Traveling Water Intake	U	I	II
Screw Conveyors			
Uniform	U	I	II
Heavy Duty or Feeder	M	II	II
Scum Breakers (Sewage)	M	II	II
Sewage Disposal			
Aerators	Refer to Application Engr.		
Bar Screens	U	I	II
Chemical Feeders	U	I	II
Collectors	U	I	II
Dewatering Screens	M	II	II
Grit Collectors	U	I	II
Scum Breakers	M	II	II
Slow or Rapid Mixers	M	II	II
Sludge Collectors	U	I	II
Thickeners	M	II	II
Vacuum Filters	M	II	II
Shaker Conveyors	V	III	III
Sheeters (Rubber)	M	II	II
Single Acting Pump			
1 or 2 Cylinders	Refer to Application Engr.		
3 or more Cylinders	M	II	II
Skip Hoist	M	II	II
Slab Pushers	M	II	II
Slitters (Metal)	M	II	II
Sludge Collectors (Sewage)	U	I	II
Soapers (Textile)	M	II	II
Spinners (Textile)	M	II	II
Steering Gears	M	II	II
Stock Chests(Paper)	U	-	II
Stokers	U	I	II
Stone Crushers	V	III	III
Suction Rolls(Paper)	U	-	II
Table Conveyors			
(Metal Mills) Non-Reversing	V	II	III
Reversing	V	-	III
Tenter Frames (Textile)	M	II	II
Textile Industry			
Batchers	M	II	II
Calenders	M	II	II
Card Machines	M	II	II
Cloth Finishing Mach. (Calenders, Dryers, Pads, Tenters, Washers)	M	II	II
Dry Cans	M	II	II
Dyeing Machinery	M	II	II
Knitting Machinery	Refer to Application Engr.		
Looms, Mangles, Nappers	M	II	II
Range Drives	Refer to Application Engr.		
Soapers, Spinners	M	II	II
Tenter Frames	M	II	II
Winders	M	II	II
Yarn Preparatory Mach. (Cards, Spinners, Slashers)	M	II	II
Thickeners (Sewage)	M	II	II
Tumbling Barrels	V	III	III
Vacuum Filters (sewage)	M	II	II
Vane Blowers	U	I	II
Winches (Dredges)	M	II	-
Winders			
(Paper)	U	-	II
(Textile)	M	II	II
Windlass	M	II	II
Wire			
Drawing Machines	M	II	III
Winding Machines	M	II	II

Applications not listed in this table, or where the user has data indicating the severity of this usage to be greater than average, should be referred to Application Engineering.

1/3 HP

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output RPM	AGMA Class	Service Factor	Output Torque in - lbs	OHL Δ lb	Nominal Ratio	Frame Size Gear	Frame Size Motor	Std. Motor Types ◊
472	I, II, III	3+	42	1825	3.55	3242	56	T,C,S,X,IG
374	I, II, III	3+	53	1955	4.5	3242	56	T,C,S,X,IG
343	I, II, III	3+	58	1294	5	3132	56	T,C,S,X,IG
313	I, II, III	3+	64	2062	5.6	3242	56	T,C,S,X,IG
272	I, II, III	3+	73	1294	6.3	3132	56	T,C,S,X,IG
242	I, II, III	3+	82	1294	7.1	3132	56	T,C,S,X,IG
230	I, II, III	3+	87	1294	8	3132	56	T,C,S,X,IG
203	I, II, III	3+	98	1294	9	3132	56	T,C,S,X,IG
180	I, II, III	3+	111	1294	10	3132	56	T,C,S,X,IG
159	I, II, III	3+	126	1294	11.2	3132	56	T,C,S,X,IG
140	I, II, III	3+	143	1294	12.5	3132	56	T,C,S,X,IG
122	I, II, III	3+	163	1294	14	3132	56	T,C,S,X,IG
109	I, II, III	3+	184	1294	16	3132	56	T,C,S,X,IG
102	I, II, III	3+	195	1294	18	3132	56	T,C,S,X,IG
86	I, II, III	3+	232	1294	20	3132	56	T,C,S,X,IG
81	I, II, III	3+	245	1294	22.4	3132	56	T,C,S,X,IG
71	I, II, III	3+	281	1294	25	3132	56	T,C,S,X,IG
64	I, II, III	3+	313	1294	28	3132	56	T,C,S,X,IG
57	I, II, III	3+	350	1294	31.5	3132	56	T,C,S,X,IG
49	I, II, III	3+	406	1294	35.5	3132	56	T,C,S,X,IG
45	I, II, III	3+	446	1294	40	3132	56	T,C,S,X,IG
39	I, II, III	3+	511	1294	45	3132	56	T,C,S,X,IG
35	I, II, III	3+	564	1294	50	3132	56	T,C,S,X,IG
32	I, II, III	3+	605	1490	56	3243	56	T,C,S,X,IG
27	I, II, III	3+	719	1490	63	3243	56	T,C,S,X,IG
26	I, II, III	3+	761	1490	71	3243	56	T,C,S,X,IG
23	I, II, III	3+	869	1490	80	3243	56	T,C,S,X,IG
20	I, II, III	3+	970	1490	90	3243	56	T,C,S,X,IG
18	I, II, III	3+	1087	1490	100	3243	56	T,C,S,X,IG
15	I, II, III	3+	1264	1490	112	3243	56	T,C,S,X,IG
14	I, II, III	2.9	1387	1490	125	3243	56	T,C,S,X,IG
12	I, II, III	2.5	1588	1490	140	3243	56	T,C,S,X,IG
11	I, II, III	2.3	1745	1490	160	3243	56	T,C,S,X,IG
10.1	I, II, III	3+	1869	2090	180	3365	56	T,C,S,X,IG
9.8	I, II, III	2.1	1912	1490	180	3245	56	T,C,S,X°,IG
8.9	I, II, III	3+	2106	2090	200	3365	56	T,C,S,X,IG
8.9	I, II	1.9	2116	1490	200	3245	56	T,C,S,X°,IG
8.5	I, II	1.8	2224	1490	224	3245	56	T,C,S,X°,IG
7.9	I, II, III	3+	2385	2090	224	3365	56	T,C,S,X,IG
7.1	I, II	1.5	2643	1490	250	3245	56	T,C,S,X°,IG

◊ **Standard Motor Types** (see page B-17 for product codes)
- T TEFC, three phase, 208-230/460 or 575 volts
- S TEFC, single phase, 115/230 volts
- C Corro-Duty®, three phase, 230/460 or 575 volts
- X° Explosionproof, CL1 group D, three phase, 230/460 or 575 volts
- X Explosionproof, Cl 1 group D, Cl 2 groups F&G, three phase, 230/460 or 575 volts
- IG IntelliGear® variable speed for 1-ph/115V, 1-ph/230V, 3-ph/230V, or 3-ph/460V power supplies, NEMA 4/12

Δ Overhung load rating is at shaft midpoint.

1/3 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output RPM	AGMA Class	Service Factor	Output Torque in - lbs	OHL Δ lb	Nominal Ratio	Frame Size Gear	Frame Size Motor	Std. Motor Types ◊
6.9	I, II, III	2.6	2707	2090	250	3365	56	T,C,S,X,IG
6.7	I, II	1.4	2825	1490	280	3245	56	T,C,S,X°,IG
6.1	I, II, III	2.3	3094	2090	280	3365	56	T,C,S,X,IG
5.9	I	1.2	3169	1490	315	3245	56	T,C,S,X°,IG
5.4	I, II, III	2.0	3491	2090	315	3365	56	T,C,S,X,IG
5.1	I	1.1	3685	1490	355	3245	56	T,C,S,X°,IG
5.1	I, II	1.9	3706	2090	355	3365	56	T,C,S,X,IG
4.7	I	1.0	3975	1490	400	3245	56	T,C,S,X°,IG
4.5	I, II, III	3+	4147	2875	400	3475	56	T,C,S,X,IG
4.3	I, II	1.6	4405	2090	400	3365	56	T,C,S,X,IG
4.0	I, II	1.5	4662	2090	450	3365	56	T,C,S,X,IG
4.0	I, II, III	3+	4695	2875	450	3475	56	T,C,S,X,IG
3.6	I, II, III	2.8	5178	2875	500	3475	56	T,C,S,X,IG
3.5	I	1.3	5329	2090	500	3365	56	T,C,S,X,IG
3.2	I, II, III	2.4	5887	2875	560	3475	56	T,C,S,X,IG
3.2	I	1.2	5941	2090	560	3365	56	T,C,S,X,IG
2.8	I	1.1	6661	2090	630	3365	56	T,C,S,X,IG
2.8	I, II, III	2.1	6725	2875	630	3475	56	T,C,S,X,IG
2.5	I, II	1.9	7594	2875	710	3475	56	T,C,S,X,IG
2.4	I, II, III	2.9	7961	4100	800	3585	56	T,C,S,X,IG
2.3	I, II	1.8	8057	2875	800	3475	56	T,C,S,X,IG
2.0	I, II, III	2.5	9303	4100	900	3585	56	T,C,S,X,IG
2.0	I, II	1.5	9572	2875	900	3475	56	T,C,S,X,IG
1.9	I, II	1.4	10120	2875	1000	3475	56	T,C,S,X,IG
1.8	I, II, III	2.2	10485	4100	1000	3585	56	T,C,S,X,IG
1.6	I, II, III	2.0	11871	4100	1120	3585	56	T,C,S,X,IG
1.5	I	1.1	12730	2875	1120	3475	56	T,C,S,X,IG
1.4	I, II	1.7	13482	4100	1250	3585	56	T,C,S,X,IG
1.3	I, II	1.7	14170	4100	1400	3585	56	T,C,S,X,IG
1.3	I	1.0	14557	2875	1250	3475	56	T,C,S,X,IG
1.2	I, II	1.5	16104	4100	1600	3585	56	T,C,S,X,IG
1	I	1.3	18403	4100	1800	3585	56	T,C,S,X,IG
0.91	I	1.1	20766	4100	2000	3585	56	T,C,S,X,IG
0.85	I	1.1	22034	4100	2240	3585	56	T,C,S,X,IG

◊ **Standard Motor Types** (see page B-17 for product codes)
- T TEFC, three phase, 208-230/460 or 575 volts
- S TEFC, single phase, 115/230 volts
- C Corro-Duty®, three phase, 230/460 or 575 volts
- X° Explosionproof, CL1 group D, three phase, 230/460 or 575 volts
- X Explosionproof, Cl 1 group D, Cl 2 groups F&G, three phase, 230/460 or 575 volts
- IG IntelliGear® variable speed for 1-ph/115V, 1-ph/230V, 3-ph/230V, or 3-ph/460V power supplies, NEMA 4/12

Δ Overhung load rating is at shaft midpoint.

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output RPM	AGMA Class	Service Factor	Output Torque in - lbs	OHL Δ lb	Nominal Ratio	Frame Size Gear	Frame Size Motor	Std. Motor Types ◊
472	I, II, III	3+	64	1825	3.55	3242	56	T,C,S,X,IG
374	I, II, III	3+	81	1955	4.5	3242	56	T,C,S,X,IG
343	I, II, III	3+	88	1294	5	3132	56	T,C,S,X,IG
313	I, II, III	3+	97	2062	5.6	3242	56	T,C,S,X,IG
272	I, II, III	3+	111	1294	6.3	3132	56	T,C,S,X,IG
242	I, II, III	3+	125	1294	7.1	3132	56	T,C,S,X,IG
230	I, II, III	3+	132	1294	8	3132	56	T,C,S,X,IG
203	I, II, III	3+	149	1294	9	3132	56	T,C,S,X,IG
180	I, II, III	3+	168	1294	10	3132	56	T,C,S,X,IG
159	I, II, III	3+	190	1294	11.2	3132	56	T,C,S,X,IG
140	I, II, III	3+	216	1294	12.5	3132	56	T,C,S,X,IG
122	I, II, III	3+	247	1294	14	3132	56	T,C,S,X,IG
109	I, II, III	3+	278	1294	16	3132	56	T,C,S,X,IG
102	I, II, III	3+	296	1294	18	3132	56	T,C,S,X,IG
86	I, II, III	3+	351	1294	20	3132	56	T,C,S,X,IG
81	I, II, III	3+	372	1294	22.4	3132	56	T,C,S,X,IG
71	I, II, III	3+	425	1294	25	3132	56	T,C,S,X,IG
64	I, II, III	3+	474	1294	28	3132	56	T,C,S,X,IG
57	I, II, III	3+	531	1294	31.5	3132	56	T,C,S,X,IG
49	I, II, III	3+	615	1294	35.5	3132	56	T,C,S,X,IG
45	I, II, III	3+	676	1294	40	3132	56	T,C,S,X,IG
39	I, II, III	2.0	774	1294	45	3132	56	T,C,S,X,IG
35	I, II, III	2.0	854	1294	50	3132	56	T,C,S,X,IG
32	I, II, III	3+	917	1490	56	3243	56	T,C,S,X,IG
27	I, II, III	3+	1090	1490	63	3243	56	T,C,S,X,IG
26	I, II, III	3+	1152	1490	71	3243	56	T,C,S,X,IG
23	I, II, III	3+	1317	1490	80	3243	56	T,C,S,X,IG
20	I, II, III	2.7	1469	1490	90	3243	56	T,C,S,X,IG
18	I, II, III	2.4	1647	1490	100	3243	56	T,C,S,X,IG
15	I, II, III	2.1	1915	1490	112	3243	56	T,C,S,X,IG
14	I, II	1.9	2102	1490	125	3243	56	T,C,S,X,IG
14	I, II, III	3+	2119	2090	125	3363	56	T,C,S,X,IG
13	I, II, III	3+	2322	2090	140	3363	56	T,C,S,X,IG
12	I, II	1.7	2407	1490	140	3243	56	T,C,S,X,IG
11	I, II	1.5	2644	1490	160	3243	56	T,C,S,X,IG
11	I, II, III	2.6	2712	2090	160	3363	56	T,C,S,X,IG
10	I, II, III	2.5	2832	2090	180	3365	56	T,C,S,X,IG
10	I, II	1.4	2897	1490	180	3245	56	T,C,S,X°,IG
7.9	I, II, III	2.0	3614	2090	224	3365	56	T,C,S,X,IG
7.1	I	1.0	4004	1490	250	3245	56	T,C,S,X°,IG

◊ **Standard Motor Types** (see page B-17 for product codes)
- T TEFC, three phase, 208-230/460 or 575 volts
- S TEFC, single phase, 115/230 volts
- C Corro-Duty®, three phase, 230/460 or 575 volts
- X° Explosionproof, CL1 group D, three phase, 230/460 or 575 volts
- X Explosionproof, Cl 1 group D, Cl 2 groups F&G, three phase, 230/460 or 575 volts
- IG IntelliGear® variable speed for 1-ph/115V, 1-ph/230V, 3-ph/230V, or 3-ph/460V power supplies, NEMA 4/12

Δ Overhung load rating is at shaft midpoint.

1/2 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output RPM	AGMA Class	Service Factor	Output Torque in - lbs	OHL Δ lb	Nominal Ratio	Frame Size Gear	Frame Size Motor	Std. Motor Types ◊
7.0	I, II, III	3+	4069	2875	250	3475	56	T,C,S,X,IG
6.9	I, II	1.7	4102	2090	250	3365	56	T,C,S,X,IG
6.1	I, II, III	3+	4655	2875	280	3475	56	T,C,S,X,IG
6.1	I, II	1.5	4688	2090	280	3365	56	T,C,S,X,IG
5.4	I, II, III	2.7	5241	2875	315	3475	56	T,C,S,X,IG
5.4	I	1.3	5290	2090	315	3365	56	T,C,S,X,IG
5.1	I, II, III	2.6	5567	2875	355	3475	56	T,C,S,X,IG
5.1	I	1.3	5616	2090	355	3365	56	T,C,S,X,IG
4.5	I, II, III	2.3	6283	2875	400	3475	56	T,C,S,X,IG
4.3	I	1.1	6674	2090	400	3365	56	T,C,S,X,IG
4.2	I, II, III	3+	6723	4100	450	3585	56	T,C,S,X,IG
4.0	I	1.0	7064	2090	450	3365	56	T,C,S,X,IG
4.0	I, II, III	2.0	7113	2875	450	3475	56	T,C,S,X,IG
3.6	I, II	1.8	7846	2875	500	3475	56	T,C,S,X,IG
3.6	I, II, III	2.9	7976	4100	500	3585	56	T,C,S,X,IG
3.4	I, II, III	2.7	8432	4100	560	3585	56	T,C,S,X,IG
3.2	I, II	1.6	8920	2875	560	3475	56	T,C,S,X,IG
3.0	I, II, III	2.4	9636	4100	630	3585	56	T,C,S,X,IG
2.8	I, II	1.4	10190	2875	630	3475	56	T,C,S,X,IG
2.6	I, II, III	2.1	10759	4100	710	3585	56	T,C,S,X,IG
2.5	I	1.2	11508	2875	710	3475	56	T,C,S,X,IG
2.4	I, II	1.9	12061	4100	800	3585	56	T,C,S,X,IG
2.3	I	1.2	12208	2875	800	3475	56	T,C,S,X,IG
2.0	I, II	1.7	14096	4100	900	3585	56	T,C,S,X,IG
2.0	I	1.0	14503	2875	900	3475	56	T,C,S,X,IG
1.9	I, II, III	2.2	14420	13249	900	3695	56	T,C,S,X,IG
1.8	I, II	1.5	15887	4100	1000	3585	56	T,C,S,X,IG
1.6	I	1.3	17986	4100	1120	3585	56	T,C,S,X,IG
1.6	II, III	2.3	17482	13249	1120	3695	56	T,C,S,X,IG
1.5	I, II, III	3+	18816	18242	1120	3705	56	T,C,S,X,IG
1.4	I	1.1	20428	4100	1250	3585	56	T,C,S,X,IG
1.4	II	1.9	20411	13249	1250	3695	56	T,C,S,X,IG
1.3	II, III	3+	21128	18242	1250	3705	56	T,C,S,X,IG
1.3	I	1.1	21470	4100	1400	3585	56	T,C,S,X,IG
1.2	I	1.0	24400	4100	1600	3585	56	T,C,S,X,IG
1.2	III	3+	23878	18242	1400	3705	56	T,C,S,X,IG
1.2	II	1.7	24481	13249	1400	3695	56	T,C,S,X,IG
1.1	I, II	1.6	26157	13249	1600	3695	56	T,C,S,X,IG
1.1	III	2.9	26434	18242	1600	3705	56	T,C,S,X,IG
1.0	I, II	1.4	29673	13249	1800	3695	56	T,C,S,X,IG

◊ **Standard Motor Types** (see page B-17 for product codes)
- T TEFC, three phase, 208-230/460 or 575 volts
- S TEFC, single phase, 115/230 volts
- C Corro-Duty®, three phase, 230/460 or 575 volts
- X° Explosionproof, CL1 group D, three phase, 230/460 or 575 volts
- X Explosionproof, Cl 1 group D, Cl 2 groups F&G, three phase, 230/460 or 575 volts
- IG IntelliGear® variable speed for 1-ph/115V, 1-ph/230V, 3-ph/230V, or 3-ph/460V power supplies, NEMA 4/12

Δ Overhung load rating is at shaft midpoint.

1/2 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output RPM	AGMA Class	Service Factor	Output Torque in - lbs	OHL Δ lb	Nominal Ratio	Frame Size Gear	Frame Size Motor	Std. Motor Types ◊
0.95	III	2.5	30129	18242	1800	3705	56	T,C,S,X,IG
0.86	I	1.2	32961	13249	2000	3695	56	T,C,S,X,IG
0.82	II, III	2.6	34735	18242	2000	3705	56	T,C,S,X,IG
0.81	III	3.4	35084	21873	2240	3825	56	T,C,S,X,IG
0.77	II, III	2.0	37112	18242	2240	3705	56	T,C,S,X,IG
0.76	I	1.1	37453	13249	2240	3695	56	T,C,S,X,IG
0.70	II, III	2.9	40970	21873	2500	3825	56	T,C,S,X,IG
0.68	I	1.0	41669	13249	2500	3695	56	T,C,S,X,IG
0.68	II	1.8	42125	18242	2500	3705	56	T,C,S,X,IG
0.64	II, III	2.7	44791	21873	2800	3825	56	T,C,S,X,IG
0.61	I, II	1.6	46780	18242	2800	3705	56	T,C,S,X,IG
0.54	I, II	1.4	53144	18242	3150	3705	56	T,C,S,X,IG
0.54	III	2.3	52502	21873	3150	3825	56	T,C,S,X,IG
0.49	II, III	2.1	57954	21873	3550	3825	56	T,C,S,X,IG
0.48	I	1.3	59118	18242	3550	3705	56	T,C,S,X,IG
0.45	II	1.9	63549	21873	4000	3825	56	T,C,S,X,IG
0.43	I	1.1	66508	18242	4000	3705	56	T,C,S,X,IG
0.38	II	1.6	74209	21873	4500	3825	56	T,C,S,X,IG
0.37	I	1.0	77967	18242	4500	3705	56	T,C,S,X,IG
0.35	II	1.5	80705	21873	5000	3826	56	T,C,S,X,IG
0.30	I	1.3	93026	21873	5600	3826	56	T,C,S,X,IG
0.28	I	1.2	99405	21873	6300	3826	56	T,C,S,X,IG
0.25	I	1.1	112816	21873	7100	3826	56	T,C,S,X,IG
0.22		0.95	125300	21873	8000	3826	56	T,C,S,X,IG

◊ **Standard Motor Types** (see page B-17 for product codes)
- T TEFC, three phase, 208-230/460 or 575 volts
- S TEFC, single phase, 115/230 volts
- C Corro-Duty®, three phase, 230/460 or 575 volts
- X° Explosionproof, CL1 group D, three phase, 230/460 or 575 volts
- X Explosionproof, Cl 1 group D, Cl 2 groups F&G, three phase, 230/460 or 575 volts
- IG IntelliGear® variable speed for 1-ph/115V, 1-ph/230V, 3-ph/230V, or 3-ph/460V power supplies, NEMA 4/12

Δ Overhung load rating is at shaft midpoint.

3/4 HP

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output RPM	AGMA Class	Service Factor	Output Torque in - lbs	OHL Δ lb	Nominal Ratio	Frame Size Gear	Frame Size Motor	Std. Motor Types ◊
472	I, II, III	3+	96	1825	3.55	3242	56	T,C,S,X,IG
374	I, II, III	3+	121	1955	4.5	3242	56	T,C,S,X,IG
343	I, II, III	3+	132	1294	5	3132	56	T,C,S,X,IG
313	I, II, III	3+	145	2063	5.6	3242	56	T,C,S,X,IG
272	I, II, III	3+	167	1294	6.3	3132	56	T,C,S,X,IG
242	I, II, III	3+	187	1294	7.1	3132	56	T,C,S,X,IG
230	I, II, III	3+	198	1294	8	3132	56	T,C,S,X,IG
203	I, II, III	3+	224	1294	9	3132	56	T,C,S,X,IG
180	I, II, III	3+	252	1294	10	3132	56	T,C,S,X,IG
159	I, II, III	3+	285	1294	11.2	3132	56	T,C,S,X,IG
140	I, II, III	3+	324	1294	12.5	3132	56	T,C,S,X,IG
122	I, II, III	3+	371	1294	14	3132	56	T,C,S,X,IG
109	I, II, III	3+	417	1294	16	3132	56	T,C,S,X,IG
102	I, II, III	3+	443	1294	18	3132	56	T,C,S,X,IG
86	I, II, III	3+	526	1294	20	3132	56	T,C,S,X,IG
81	I, II, III	3.0	558	1294	22.4	3132	56	T,C,S,X,IG
71	I, II, III	2.7	638	1294	25	3132	56	T,C,S,X,IG
64	I, II, III	2.5	710	1294	28	3132	56	T,C,S,X,IG
57	I, II, III	2.3	796	1294	31.5	3132	56	T,C,S,X,IG
49	I, II, III	2.1	923	1294	35.5	3132	56	T,C,S,X,IG
45	I, II	1.9	1014	1294	40	3132	56	T,C,S,X,IG
44	III	3+	1004	1490	40	3243	56	T,C,S,X,IG
39	I,	1.3	1162	1294	45	3132	56	T,C,S,X,IG
39	II, III	3+	1149	1490	45	3243	56	T,C,S,X,IG
35	I,	1.3	1281	1294	50	3132	56	T,C,S,X,IG
34	II, III	3+	1297	1490	50	3243	56	T,C,S,X,IG
32	I, II, III	2.8	1375	1490	56	3243	56	T,C,S,X,IG
27	I, II, III	2.4	1635	1490	63	3243	56	T,C,S,X,IG
26	I, II, III	2.3	1729	1490	71	3243	56	T,C,S,X,IG
23	I, II, III	2.0	1975	1490	80	3243	56	T,C,S,X,IG
20	I, II, III	3+	2179	2090	90	3363	56	T,C,S,X,IG
20	I, II	1.8	2204	1490	90	3243	56	T,C,S,X,IG
18	I, II, III	2.9	2451	2090	100	3363	56	T,C,S,X,IG
18	I, II	1.6	2471	1490	100	3243	56	T,C,S,X,IG
15	I, II	1.4	2873	1490	112	3243	56	T,C,S,X,IG
15	I, II, III	2.5	2873	2090	112	3363	56	T,C,S,X,IG

◊ **Standard Motor Types** (see page B-17 for product codes)
- T TEFC, three phase, 208-230/460 or 575 volts
- S TEFC, single phase, 115/230 volts
- C Corro-Duty®, three phase, 230/460 or 575 volts
- X Explosionproof, Cl 1 group D, Cl 2 groups F&G, three phase, 230/460 or 575 volts
- IG IntelliGear® variable speed for 1-ph/115V, 1-ph/230V, 3-ph/230V, or 3-ph/460V power supplies, NEMA 4/12

Δ Overhung load rating is at shaft midpoint.

3/4 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output RPM	AGMA Class	Service Factor	Output Torque in - lbs	OHL Δ lb	Nominal Ratio	Frame Size Gear	Frame Size Motor	Std. Motor Types ◊
14	I	1.3	3152	1490	125	3243	56	T,C,S,X,IG
14	I, II, III	2.2	3178	2090	125	3363	56	T,C,S,X,IG
13	I, II, III	2.1	3483	2090	140	3363	56	T,C,S,X,IG
12	I	1.1	3610	1490	140	3243	56	T,C,S,X,IG
11	I, II, III	3+	3915	2875	160	3473	56	T,C,S,X,IG
11	I	$1.0	3966	1490	160	3243	56	T,C,S,X,IG
11	I, II	1.8	4068	2090	160	3363	56	T,C,S,X,IG
10.2	I, II, III	3+	4200	2875	180	3475	56	T,C,S,X,IG
10.1	I, II	1.7	4248	2090	180	3365	56	T,C,S,X,IG
9.0	I, II, III	3+	4737	2875	200	3475	56	T,C,S,X,IG
8.9	I, II	1.5	4786	2090	200	3365	56	T,C,S,X,IG
8.0	I, II, III	2.6	5372	2875	224	3475	56	T,C,S,X,IG
7.9	I	1.3	5420	2090	224	3365	56	T,C,S,X,IG
7.0	I, II, III	2.3	6104	2875	250	3475	56	T,C,S,X,IG
6.9	I	1.1	6153	2090	250	3365	56	T,C,S,X,IG
6.1	I, II, III	2.0	6983	2875	280	3475	56	T,C,S,X,IG
6.1	I	1.0	7032	2090	280	3365	56	T,C,S,X,IG
5.8	I, II, III	3+	7374	4100	315	3585	56	T,C,S,X,IG
5.4	I, II	1.8	7862	2875	315	3475	56	T,C,S,X,IG
5.1	I, II	1.7	8350	2875	355	3475	56	T,C,S,X,IG
5.1	I, II, III	2.7	8423	4100	355	3585	56	T,C,S,X,IG
4.5	I, II	1.5	9425	2875	400	3475	56	T,C,S,X,IG
4.5	I, II, III	2.4	9498	4100	400	3585	56	T,C,S,X,IG
4.2	I, II, III	2.3	10084	4100	450	3585	56	T,C,S,X,IG
4.0	I	1.3	10670	2875	450	3475	56	T,C,S,X,IG
3.6	I	1.2	11768	2875	500	3475	56	T,C,S,X,IG
3.6	I, II	1.9	11964	4100	500	3585	56	T,C,S,X,IG
3.4	I, II	1.8	12647	4100	560	3585	56	T,C,S,X,IG
3.2	I	1.1	13380	2875	560	3475	56	T,C,S,X,IG
3.0	I, II	1.6	14454	4100	630	3585	56	T,C,S,X,IG
2.9	III	2.7	14771	13249	630	3695	56	T,C,S,X,IG
2.6	III	2.4	16432	13249	710	3695	56	T,C,S,X,IG
2.6	I, II	1.4	16139	4100	710	3585	56	T,C,S,X,IG
2.4	I	1.3	18092	4100	800	3585	56	T,C,S,X,IG
2.3	II, III	2.2	18483	13249	800	3695	56	T,C,S,X,IG
2.0	I	1.1	21144	4100	900	3585	56	T,C,S,X,IG
2.0	II	1.8	21657	13249	900	3695	56	T,C,S,X,IG
1.8	III	3+	23317	18242	900	3705	56	T,C,S,X,IG
1.8	I	1.0	23830	4100	1000	3585	56	T,C,S,X,IG
1.8	II	1.7	23903	13249	1000	3695	56	T,C,S,X,IG

◊ **Standard Motor Types** (see page B-17 for product codes)
- T TEFC, three phase, 208-230/460 or 575 volts
- S TEFC, single phase, 115/230 volts
- C Corro-Duty®, three phase, 230/460 or 575 volts
- X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 or 575 volts
- IG IntelliGear® variable speed for 1-ph/115V, 1-ph/230V, 3-ph/230V, or 3-ph/460V power supplies, NEMA 4/12

Δ Overhung load rating is at shaft midpoint.

3/4 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output RPM	AGMA Class	Service Factor	Output Torque in - lbs	OHL Δ lb	Nominal Ratio	Frame Size Gear	Frame Size Motor	Std. Motor Types ◊
1.7	III	2.8	25734	18242	1000	3705	56	T,C,S,X,IG
1.6	I, II	1.5	26222	13249	1120	3695	56	T,C,S,X,IG
1.5	III	2.6	28224	18242	1120	3705	56	T,C,S,X,IG
1.4	I	1.3	30617	13249	1250	3695	56	T,C,S,X,IG
1.3	II, III	2.4	31691	18242	1250	3705	56	T,C,S,X,IG
1.2	II, III	2.1	35818	18242	1400	3705	56	T,C,S,X,IG
1.2	I	1.1	36721	13249	1400	3695	56	T,C,S,X,IG
1.1	I	1.0	39236	13249	1600	3695	56	T,C,S,X,IG
1.1	II	1.9	39651	18242	1600	3705	56	T,C,S,X,IG
1		0.92	44510	13249	1800	3695	56	T,C,S,X,IG
1.0	III	2.7	43478	21873	1800	3825	56	T,C,S,X,IG
0.95	I, II	1.7	45193	18242	1800	3705	56	T,C,S,X,IG
0.89	III	2.5	47993	21873	2000	3825	56	T,C,S,X,IG
0.82	I, II	1.4	52103	18242	2000	3705	56	T,C,S,X,IG
0.81	III	2.3	52626	21873	2240	3825	56	T,C,S,X,IG
0.77	I, II	1.4	55667	18242	2240	3705	56	T,C,S,X,IG
0.70	II	1.9	61455	21873	2500	3825	56	T,C,S,X,IG
0.68	I, II	1.2	63187	18242	2500	3705	56	T,C,S,X,IG
0.64	II	1.8	67186	21873	2800	3825	56	T,C,S,X,IG
0.61	I, II	1.1	70170	18242	2800	3705	56	T,C,S,X,IG
0.54		0.95	79717	18242	3150	3705	56	T,C,S,X,IG
0.54	I, II	1.5	78753	21873	3150	3825	56	T,C,S,X,IG
0.49	I, II	1.4	86931	21873	3550	3825	56	T,C,S,X,IG
0.45	I	1.3	95324	21873	4000	3825	56	T,C,S,X,IG
0.38	I	1.1	111314	21873	4500	3825	56	T,C,S,X,IG
0.35		0.99	121058	21873	5000	3826	56	T,C,S,X,IG

◊ **Standard Motor Types** (see page B-17 for product codes)
- T TEFC, three phase, 208-230/460 or 575 volts
- S TEFC, single phase, 115/230 volts
- C Corro-Duty®, three phase, 230/460 or 575 volts
- X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 or 575 volts
- IG IntelliGear® variable speed for 1-ph/115V, 1-ph/230V, 3-ph/230V, or 3-ph/460V power supplies, NEMA 4/12

Δ Overhung load rating is at shaft midpoint.

1 HP

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output RPM	AGMA Class	Service Factor	Output Torque in - lbs	OHL Δ lb	Nominal Ratio	Frame Size Gear	Frame Size Motor	Std. Motor Types ◊
472	I, II, III	3+	128	1808	3.55	3242	143T	T,C,S,X,IG
374	I, II, III	3+	162	1933	4.5	3242	143T	T,C,S,X,IG
343	I, II, III	3+	176	1294	5	3132	143T	T,C,S,X,IG
313	I, II, III	3+	194	2036	5.6	3242	143T	T,C,S,X,IG
272	I, II, III	3+	222	1294	6.3	3132	143T	T,C,S,X,IG
242	I, II, III	3+	250	1294	7.1	3132	143T	T,C,S,X,IG
230	I, II, III	3+	263	1294	8	3132	143T	T,C,S,X,IG
203	I, II, III	3+	298	1294	9	3132	143T	T,C,S,X,IG
180	I, II, III	3+	336	1294	10	3132	143T	T,C,S,X,IG
159	I, II, III	3+	380	1294	11.2	3132	143T	T,C,S,X,IG
140	I, II, III	3+	432	1294	12.5	3132	143T	T,C,S,X,IG
122	I, II, III	2.9	494	1294	14	3132	143T	T,C,S,X,IG
109	I, II, III	2.7	557	1294	16	3132	143T	T,C,S,X,IG
102	I, II, III	2.6	591	1294	18	3132	143T	T,C,S,X,IG
86	I, II, III	2.3	702	1294	20	3132	143T	T,C,S,X,IG
81	I, II, III	2.2	743	1294	22.4	3132	143T	T,C,S,X,IG
71	I, II, III	2.0	851	1294	25	3132	143T	T,C,S,X,IG
64	I, II	1.9	947	1294	28	3132	143T	T,C,S,X,IG
64	III	3+	925	1428	28	3243	143T	T,C,S,X,IG
57	I, II	1.7	1061	1294	31.5	3132	143T	T,C,S,X,IG
57	III	3+	1044	1471	31.5	3243	143T	T,C,S,X,IG
50	III	3+	1178	1490	35.5	3243	143T	T,C,S,X,IG
49	I, II	1.6	1231	1294	35.5	3132	143T	T,C,S,X,IG
45	I, II	1.5	1352	1294	40	3132	143T	T,C,S,X,IG
44	III	2.9	1339	1490	40	3243	143T	T,C,S,X,IG
39	I	1.0	1549	1294	45	3132	143T	T,C,S,X,IG
39	II, III	2.6	1532	1490	45	3243	143T	T,C,S,X,IG
35	I	1.0	1708	1294	50	3132	143T	T,C,S,X,IG
34	II, III	2.3	1729	1490	50	3243	143T	T,C,S,X,IG
32	I, II, III	2.1	1834	1490	56	3243	143T	T,C,S,X,IG
29	I, II, III	3+	2068	2090	63	3363	143T	T,C,S,X,IG
27	I, II	1.8	2180	1490	63	3243	143T	T,C,S,X,IG
26	I, II, III	3+	2298	2090	71	3363	143T	T,C,S,X,IG
26	I, II	1.7	2305	1490	71	3243	143T	T,C,S,X,IG
23	I, II, III	2.7	2610	2090	80	3363	143T	T,C,S,X,IG
23	I, II	1.5	2634	1490	80	3243	143T	T,C,S,X,IG
20	I, II, III	2.4	2905	2090	90	3363	143T	T,C,S,X,IG
20	I	1.3	2939	1490	90	3243	143T	T,C,S,X,IG
18	I, II, III	2.2	3268	2090	100	3363	143T	T,C,S,X,IG
18	I	1.2	3295	1490	100	3243	143T	T,C,S,X,IG

◊ **Standard Motor Types** (see page B-17 for product codes)
- T TEFC, three phase, 208-230/460 or 575 volts
- S TEFC, single phase, 115/230 volts
- C Corro-Duty®, three phase, 230/460 or 575 volts
- X Explosionproof, Cl 1 group D, Cl 2 groups F&G, three phase, 230/460 volts
- IG IntelliGear® variable speed for 1-ph/230V, 3-ph/230V, or 3-ph/460V power supplies, NEMA 4/12

Δ Overhung load rating is at shaft midpoint.

1 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output RPM	AGMA Class	Service Factor	Output Torque in - lbs	OHL Δ lb	Nominal Ratio	Frame Size Gear	Frame Size Motor	Std. Motor Types ◊
16	I, II, III	3+	3661	2875	112	3473	143T	T,C,S,X,IG
15	I	1.0	3830	1490	112	3243	143T	T,C,S,X,IG
15	I, II	1.9	3830	2090	112	3363	143T	T,C,S,X,IG
14	I, II, III	3+	4203	2875	125	3473	143T	T,C,S,X,IG
14	I, II	1.7	4237	2090	125	3363	143T	T,C,S,X,IG
13	I, II	1.5	4644	2090	140	3363	143T	T,C,S,X,IG
13	I, II, III	3+	4712	2875	140	3473	143T	T,C,S,X,IG
11	I, II, III	2.7	5220	2875	160	3473	143T	T,C,S,X,IG
11	I	1.3	5424	2090	160	3363	143T	T,C,S,X,IG
10.2	I, II, III	2.5	5599	2875	180	3475	143T	T,C,S,X,IG
10.1	I	1.2	5664	2090	180	3365	143T	T,C,S,X,IG
9.0	I, II, III	2.2	6316	2875	200	3475	143T	T,C,S,X,IG
8.9	I	1.1	6381	2090	200	3365	143T	T,C,S,X,IG
8.0	I, II, III	2.0	7162	2875	224	3475	143T	T,C,S,X,IG
7.9	I	1.0	7227	2090	224	3365	143T	T,C,S,X,IG
7.4	I, II, III	3+	7650	4100	250	3585	143T	T,C,S,X,IG
7.0	I, II	1.7	8139	2875	250	3475	143T	T,C,S,X,IG
6.6	I, II, III	2.6	8627	4100	280	3585	143T	T,C,S,X,IG
6.1	I, II	1.5	9310	2875	280	3475	143T	T,C,S,X,IG
5.8	I, II, III	2.3	9831	4100	315	3585	143T	T,C,S,X,IG
5.4	I	1.3	10482	2875	315	3475	143T	T,C,S,X,IG
5.1	I	1.3	11133	2875	355	3475	143T	T,C,S,X,IG
5.1	I, II, III	2.0	11231	4100	355	3585	143T	T,C,S,X,IG
4.5	I	1.1	12566	2875	400	3475	143T	T,C,S,X,IG
4.5	I, II	1.8	12664	4100	400	3585	143T	T,C,S,X,IG
4.2	I, II	1.7	13445	4100	450	3585	143T	T,C,S,X,IG
4.1	III	2.9	13738	13249	450	3695	143T	T,C,S,X,IG
4.0	I	1.0	14226	2875	450	3475	143T	T,C,S,X,IG
3.7	II, III	2.6	15593	13249	500	3695	143T	T,C,S,X,IG
3.6	I, II	1.4	15951	4100	500	3585	143T	T,C,S,X,IG
3.4	I, II	1.4	16863	4100	560	3585	143T	T,C,S,X,IG
3.3	III	2.3	17319	13249	560	3695	143T	T,C,S,X,IG
3.0	I	1.2	19272	4100	630	3585	143T	T,C,S,X,IG
2.9	II, III	2.0	19695	13249	630	3695	143T	T,C,S,X,IG
2.6	II	1.8	21909	13249	710	3695	143T	T,C,S,X,IG
2.6	I	1.1	21518	4100	710	3585	143T	T,C,S,X,IG
2.4	III	3+	23569	18242	710	3705	143T	T,C,S,X,IG
2.3	I, II	1.6	24643	13249	800	3695	143T	T,C,S,X,IG
2.1	III	2.8	26532	18242	800	3705	143T	T,C,S,X,IG

◊ **Standard Motor Types** (see page B-17 for product codes)
- T TEFC, three phase, 208-230/460 or 575 volts
- S TEFC, single phase, 115/230 volts
- C Corro-Duty®, three phase, 230/460 or 575 volts
- X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 volts
- IG IntelliGear® variable speed for 1-ph/230V, 3-ph/230V, or 3-ph/460V power supplies, NEMA 4/12

Δ Overhung load rating is at shaft midpoint.

1 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output RPM	AGMA Class	Service Factor	Output Torque in - lbs	OHL Δ lb	Nominal Ratio	Frame Size Gear	Frame Size Motor	Std. Motor Types ◊
2.0	I, II	1.4	28875	13249	900	3695	143T	T,C,S,X,IG
1.8	III	2.4	31089	18242	900	3705	143T	T,C,S,X,IG
1.8	I	1.2	31870	13249	1000	3695	143T	T,C,S,X,IG
1.7	II, III	2.1	34312	18242	1000	3705	143T	T,C,S,X,IG
1.6	I	1.1	34963	13249	1120	3695	143T	T,C,S,X,IG
1.5	II	1.9	37632	18242	1120	3705	143T	T,C,S,X,IG
1.4	I	1	40823	13249	1250	3695	143T	T,C,S,X,IG
1.4	III	3.0	39512	21873	1250	3825	143T	T,C,S,X,IG
1.3	I, II	1.8	42255	18242	1250	3705	143T	T,C,S,X,IG
1.3	III	2.7	43961	21873	1400	3825	143T	T,C,S,X,IG
1.2	I, II	1.6	47757	18242	1400	3705	143T	T,C,S,X,IG
1.2	III	2.4	49456	21873	1600	3825	143T	T,C,S,X,IG
1.1	I, II	1.4	52868	18242	1600	3705	143T	T,C,S,X,IG
1.0	III	2.1	57971	21873	1800	3825	143T	T,C,S,X,IG
0.95	I	1.3	60258	18242	1800	3705	143T	T,C,S,X,IG
0.89	III	1.9	63991	21873	2000	3825	143T	T,C,S,X,IG
0.82	I	1.1	69470	18242	2000	3705	143T	T,C,S,X,IG
0.81	III	1.7	70169	21873	2240	3825	143T	T,C,S,X,IG
0.77	I	1	74223	18242	2240	3705	143T	T,C,S,X,IG
0.70	II	1.5	81940	21873	2500	3825	143T	T,C,S,X,IG
0.64	I	1.3	89581	21873	2800	3825	143T	T,C,S,X,IG
0.54	I	1.1	105004	21873	3150	3825	143T	T,C,S,X,IG
0.49	I	1.0	115908	21873	3550	3825	143T	T,C,S,X,IG
0.45		0.94	127098	21873	4000	3825	143T	T,C,S,X,IG

◊ **Standard Motor Types** (see page B-17 for product codes)
- T TEFC, three phase, 208-230/460 or 575 volts
- S TEFC, single phase, 115/230 volts
- C Corro-Duty®, three phase, 230/460 or 575 volts
- X Explosionproof, Cl 1 group D, Cl 2 groups F&G, three phase, 230/460 volts
- IG IntelliGear® variable speed for 1-ph/230V, 3-ph/230V, or 3-ph/460V power supplies, NEMA 4/12

Δ Overhung load rating is at shaft midpoint.

1 1/2 HP

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output RPM	AGMA Class	Service Factor	Output Torque in - lbs	OHL Δ lb	Nominal Ratio	Frame Size Gear	Frame Size Motor	Std. Motor Types ◊
472	I, II, III	3+	192	2071	3.55	3242	145T	T,C,S,X,IG
374	I, II, III	3+	243	2071	4.5	3242	145T	T,C,S,X,IG
343	I, II, III	3+	264	1294	5	3132	145T	T,C,S,X,IG
313	I, II, III	3+	290	2071	5.6	3242	145T	T,C,S,X,IG
272	I, II, III	3.2	333	1294	6.3	3132	145T	T,C,S,X,IG
242	I, II, III	3.0	375	1294	7.1	3132	145T	T,C,S,X,IG
230	I, II, III	2.9	395	1294	8	3132	145T	T,C,S,X,IG
203	I, II, III	2.7	447	1294	9	3132	145T	T,C,S,X,IG
180	I, II, III	2.5	504	1294	10	3132	145T	T,C,S,X,IG
159	I, II, III	2.3	570	1294	11.2	3132	145T	T,C,S,X,IG
140	I, II, III	2.1	648	1294	12.5	3132	145T	T,C,S,X,IG
124	III	3+	731	1146	14	3242	145T	T,C,S,X,IG
122	I, II	1.9	742	1294	14	3132	145T	T,C,S,X,IG
109	I, II	1.8	835	1294	16	3132	145T	T,C,S,X,IG
112	III	3+	809	1189	16	3242	145T	T,C,S,X,IG
102	I, II	1.7	887	1294	18	3132	145T	T,C,S,X,IG
99	III	3+	918	1198	18	3242	145T	T,C,S,X,IG
89	III	3.1	1022	1258	20	3242	145T	T,C,S,X,IG
86	I, II	1.5	1053	1294	20	3132	145T	T,C,S,X,IG
81	I, II	1.5	1115	1294	22.4	3132	145T	T,C,S,X,IG
79	III	3+	1151	1291	22.4	3242	145T	T,C,S,X,IG
71	I, II	1.4	1276	1294	25	3132	145T	T,C,S,X,IG
67	III	2.4	1348	1306	25	3242	145T	T,C,S,X,IG
64	I	1.3	1421	1294	28	3132	145T	T,C,S,X,IG
61	II, III	2.1	1488	1340	28	3242	145T	T,C,S,X,IG
57	I	1.2	1592	1294	31.5	3132	145T	T,C,S,X,IG
56	II, III	2.0	1634	2071	31.5	3242	145T	T,C,S,X,IG
50	III	2.2	1769	1403	35.5	3243	145T	T,C,S,X,IG
49	I	1.1	1846	1294	35.5	3132	145T	T,C,S,X,IG
48	II	1.7	1908	2071	35.5	3242	145T	T,C,S,X,IG
46	I, II, III	3+	1947	2090	40	3363	145T	T,C,S,X,IG
44	I, II	1.9	2008	1433	40	3243	145T	T,C,S,X,IG
40	I, II, III	3+	2222	2090	45	3363	145T	T,C,S,X,IG
39	I, II	1.7	2298	1461	45	3243	145T	T,C,S,X,IG
35	I, II, III	2.7	2557	2090	50	3363	145T	T,C,S,X,IG
34	I, II	1.5	2593	1483	50	3243	145T	T,C,S,X,IG
33	I, II, III	2.6	2735	2090	56	3363	145T	T,C,S,X,IG
32	I, II	1.4	2751	1490	56	3243	145T	T,C,S,X,IG
29	I, II, III	2.3	3102	2090	63	3363	145T	T,C,S,X,IG
27	I	1.2	3269	1490	63	3243	145T	T,C,S,X,IG

◊ **Standard Motor Types** (see page B-17 for product codes)
- T TEFC, three phase, 208-230/460 or 575 volts
- S TEFC, single phase, 115/230 volts (Note that the frame is 145TY for single phase).
- C Corro-Duty®, three phase, 230/460 or 575 volts
- X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 volts
- IG IntelliGear® variable speed for 1-ph/230V, 3-ph/230V, or 3-ph/460V power supplies, NEMA 4/12

Δ Overhung load rating is at shaft midpoint.

1 1/2 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output RPM	AGMA Class	Service Factor	Output Torque in - lbs	OHL Δ lb	Nominal Ratio	Frame Size Gear	Frame Size Motor	Std. Motor Types ◊
26	I, II, III	2.0	3447	2090	71	3363	145T	T,C,S,X,IG
26	I	1.1	3457	1490	71	3243	145T	T,C,S,X,IG
23	I, II	1.8	3915	2090	80	3363	145T	T,C,S,X,IG
23	I, II, III	3+	3940	2875	80	3473	145T	T,C,S,X,IG
23	I	1.0	3951	1490	80	3243	145T	T,C,S,X,IG
20	I, II	1.6	4357	2090	90	3363	145T	T,C,S,X,IG
20	I, II, III	3+	4459	2875	90	3473	145T	T,C,S,X,IG
18	I, II, III	2.9	4851	2875	100	3473	145T	T,C,S,X,IG
18	I, II	1.4	4901	2090	100	3363	145T	T,C,S,X,IG
16	I, II, III	2.6	5491	2875	112	3473	145T	T,C,S,X,IG
15	I	1.2	5745	2090	112	3363	145T	T,C,S,X,IG
14	I, II, III	2.3	6305	2875	125	3473	145T	T,C,S,X,IG
14	I	1.1	6356	2090	125	3363	145T	T,C,S,X,IG
13	I	1.0	6966	2090	140	3363	145T	T,C,S,X,IG
13	I, II, III	2.0	7067	2875	140	3473	145T	T,C,S,X,IG
11	I, II	1.8	7830	2875	160	3473	145T	T,C,S,X,IG
10.2	I, II	1.7	8399	2875	180	3475	145T	T,C,S,X,IG
10	I, II, III	2.7	8497	4100	180	3585	145T	T,C,S,X,IG
9.5	I, II, III	2.5	8985	4100	200	3585	145T	T,C,S,X,IG
9.0	I, II	1.5	9473	2875	200	3475	145T	T,C,S,X,IG
8.4	I, II, III	2.2	10157	4100	224	3585	145T	T,C,S,X,IG
8.0	I	1.3	10743	2875	224	3475	145T	T,C,S,X,IG
7.4	I, II, III	2.0	11475	4100	250	3585	145T	T,C,S,X,IG
7.0	I	1.2	12208	2875	250	3475	145T	T,C,S,X,IG
6.6	I, II	1.8	12940	4100	280	3585	145T	T,C,S,X,IG
6.1	I	1.0	13966	2875	280	3475	145T	T,C,S,X,IG
5.8	I, II	1.5	14747	4100	315	3585	145T	T,C,S,X,IG
5.8	III	2.7	14835	13249	315	3695	145T	T,C,S,X,IG
5.1	III	2.4	16651	13249	355	3695	145T	T,C,S,X,IG
5.1	I, II	1.4	16847	4100	355	3585	145T	T,C,S,X,IG
4.5	I	1.2	18995	4100	400	3585	145T	T,C,S,X,IG
4.4	II, III	2.1	19288	13249	400	3695	145T	T,C,S,X,IG
4.2	I	1.1	20167	4100	450	3585	145T	T,C,S,X,IG
4.1	II	1.9	20607	13249	450	3695	145T	T,C,S,X,IG
3.8	III	3+	22218	18242	450	3705	145T	T,C,S,X,IG
3.7	II	1.7	23390	13249	500	3695	145T	T,C,S,X,IG
3.6	I	1.0	23927	4100	500	3585	145T	T,C,S,X,IG
3.4	III	2.9	25197	18242	500	3705	145T	T,C,S,X,IG

◊ **Standard Motor Types** (see page B-17 for product codes)
- T TEFC, three phase, 208-230/460 or 575 volts
- S TEFC, single phase, 115/230 volts (Note that the frame is 145TY for single phase).
- C Corro-Duty®, three phase, 230/460 or 575 volts
- X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 volts
- IG IntelliGear® variable speed for 1-ph/230V, 3-ph/230V, or 3-ph/460V power supplies, NEMA 4/12

Δ Overhung load rating is at shaft midpoint.

1 1/2 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output RPM	AGMA Class	Service Factor	Output Torque in - lbs	OHL Δ lb	Nominal Ratio	Frame Size Gear	Frame Size Motor	Std. Motor Types ◊
3.3	I, II	1.5	25978	13249	560	3695	145T	T,C,S,X,IG
3.1	III	2.6	27980	18242	560	3705	145T	T,C,S,X,IG
2.9	I	1.3	29543	13249	630	3695	145T	T,C,S,X,IG
2.7	II, III	2.3	31789	18242	630	3705	145T	T,C,S,X,IG
2.6	I	1.2	32863	13249	710	3695	145T	T,C,S,X,IG
2.4	II, III	2.1	35354	18242	710	3705	145T	T,C,S,X,IG
2.3	I	1.1	36965	13249	800	3695	145T	T,C,S,X,IG
2.2	III	3.1	38735	21873	800	3825	145T	T,C,S,X,IG
2.1	II	1.8	39787	18242	800	3705	145T	T,C,S,X,IG
2.1	III	2.9	41391	21873	900	3825	145T	T,C,S,X,IG
1.8	I, II	1.6	46634	18242	900	3705	145T	T,C,S,X,IG
1.8	III	2.5	46975	21873	1000	3825	145T	T,C,S,X,IG
1.7	I, II	1.4	51468	18242	1000	3705	145T	T,C,S,X,IG
1.6	III	2.3	52174	21873	1120	3825	145T	T,C,S,X,IG
1.5	I	1.3	56449	18242	1120	3705	145T	T,C,S,X,IG
1.4	II, III	2.0	59267	21873	1250	3825	145T	T,C,S,X,IG
1.3	I	1.2	63383	18242	1250	3705	145T	T,C,S,X,IG
1.3	II	1.8	65942	21873	1400	3825	145T	T,C,S,X,IG
1.2	I	1.1	71635	18242	1400	3705	145T	T,C,S,X,IG
1.2	II	1.6	74185	21873	1600	3825	145T	T,C,S,X,IG
1.1	I	1	79302	18242	1600	3705	145T	T,C,S,X,IG
1.0	II	1.4	86956	21873	1800	3825	145T	T,C,S,X,IG
0.89	I	1.2	95986	21873	2000	3825	145T	T,C,S,X,IG
0.81	I	1.1	105253	21873	2240	3825	145T	T,C,S,X,IG
0.70		0.97	122909	21873	2500	3825	145T	T,C,S,X,IG

◊ **Standard Motor Types** (see page B-17 for product codes)
- T TEFC, three phase, 208-230/460 or 575 volts
- S TEFC, single phase, 115/230 volts (Note that the frame is 145TY for single phase).
- C Corro-Duty®, three phase, 230/460 or 575 volts
- X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 volts
- IG IntelliGear® variable speed for 1-ph/230V, 3-ph/230V, or 3-ph/460V power supplies, NEMA 4/12

Δ Overhung load rating is at shaft midpoint.

2 HP

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output RPM	AGMA Class	Service Factor	Output Torque in - lbs	OHL Δ lb	Nominal Ratio	Frame Size Gear	Frame Size Motor	Std. Motor Types ◊
472	I, II, III	3+	257	2071	3.55	3242	145T	T,C,S,X,IG
374	I, II, III	3+	324	2071	4.5	3242	145T	T,C,S,X,IG
343	I, II, III	2.8	353	1294	5	3132	145T	T,C,S,X,IG
313	I, II, III	3+	387	2071	5.6	3242	145T	T,C,S,X,IG
272	I, II, III	2.4	445	1294	6.3	3132	145T	T,C,S,X,IG
242	I, II, III	2.3	500	1294	7.1	3132	145T	T,C,S,X,IG
230	I, II, III	2.2	527	1294	8	3132	145T	T,C,S,X,IG
203	I, II, III	2.0	596	1294	9	3132	145T	T,C,S,X,IG
180	I, II	1.9	672	1294	10	3132	145T	T,C,S,X,IG
179	III	3+	664	1013	10	3243	145T	T,C,S,X,IG
159	I, II	1.7	761	1294	11.2	3132	145T	T,C,S,X,IG
141	III	3+	857	2071	12.5	3242	145T	T,C,S,X,IG
140	I, II	1.6	864	1294	12.5	3132	145T	T,C,S,X,IG
124	III	3+	975	2071	14	3242	145T	T,C,S,X,IG
122	I, II	1.5	989	1294	14	3132	145T	T,C,S,X,IG
112	II, III	3.0	1079	2071	16	3242	145T	T,C,S,X,IG
109	I	1.3	1113	1294	16	3132	145T	T,C,S,X,IG
102	I	1.3	1182	1294	18	3132	145T	T,C,S,X,IG
99	II, III	2.6	1224	2071	18	3242	145T	T,C,S,X,IG
89	II, III	2.3	1362	2071	20	3242	145T	T,C,S,X,IG
86	I	1.2	1404	1294	20	3132	145T	T,C,S,X,IG
81	I	1.1	1487	1294	22.4	3132	145T	T,C,S,X,IG
76	II, III	2.0	1583	2071	22.4	3242	145T	T,C,S,X,IG
73	III	2.3	1632	1238	25	3243	145T	T,C,S,X,IG
71	I	1.0	1701	1294	25	3132	145T	T,C,S,X,IG
67	II	1.8	1798	2071	25	3242	145T	T,C,S,X,IG
64		0.91	1895	1294	28	3132	145T	T,C,S,X,IG
64	III	2.0	1848	1252	28	3243	145T	T,C,S,X,IG
61	I, II	1.6	1985	2071	28	3242	145T	T,C,S,X,IG
57	III	3+	2072	2090	31.5	3363	145T	T,C,S,X,IG
56	I, II	1.5	2178	2071	31.5	3242	145T	T,C,S,X,IG
53	III	3+	2228	2090	35.5	3363	145T	T,C,S,X,IG
50	II	1.7	2356	1291	35.5	3243	145T	T,C,S,X,IG
48	I	1.3	2545	2071	35.5	3242	145T	T,C,S,X,IG
46	I, II, III	2.7	2597	2090	40	3363	145T	T,C,S,X,IG
44	I, II	1.5	2678	1306	40	3243	145T	T,C,S,X,IG
40	I, II, III	2.4	2963	2090	45	3363	145T	T,C,S,X,IG
39	I	1.3	3064	1316	45	3243	145T	T,C,S,X,IG
35	I, II, III	2.1	3410	2090	50	3363	145T	T,C,S,X,IG
34	I	1.1	3457	1319	50	3243	145T	T,C,S,X,IG

◊ **Standard Motor Types** (see page B-17 for product codes)
- T TEFC, three phase, 208-230/460 or 575 volts
- S TEFC, single phase, 115/230 volts (Note that the frame is 145TY for single phase)
- C Corro-Duty®, three phase, 230/460 or 575 volts
- X Explosionproof, Cl 1 group D, Cl 2 groups F&G, three phase, 230/460 volts
- IG IntelliGear® variable speed for 1-ph/230V, 3-ph/230V, or 3-ph/460V power supplies, NEMA 4/12

Δ Overhung load rating is at shaft midpoint.

2 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output RPM	AGMA Class	Service Factor	Output Torque in - lbs	OHL Δ lb	Nominal Ratio	Frame Size Gear	Frame Size Motor	Std. Motor Types ◊
33	I, II	1.9	3647	2090	56	3363	145T	T,C,S,X,IG
32	I	1.1	3668	1319	56	3243	145T	T,C,S,X,IG
31	II, III	3+	3864	2875	56	3473	145T	T,C,S,X,IG
29	I, II	1.7	4135	2090	63	3363	145T	T,C,S,X,IG
28	III	3+	4196	2875	63	3473	145T	T,C,S,X,IG
26	I, II	1.5	4596	2090	71	3363	145T	T,C,S,X,IG
25	III	3+	4678	2875	71	3473	145T	T,C,S,X,IG
23	I, II	1.4	5220	2090	80	3363	145T	T,C,S,X,IG
23	III	2.7	5254	2875	80	3473	145T	T,C,S,X,IG
20	I	1.2	5810	2090	90	3363	145T	T,C,S,X,IG
20	II, III	2.4	5946	2875	90	3473	145T	T,C,S,X,IG
18	II, III	2.2	6468	2875	100	3473	145T	T,C,S,X,IG
18	I	1.1	6535	2090	100	3363	145T	T,C,S,X,IG
16	I, II	1.9	7322	2875	112	3473	145T	T,C,S,X,IG
14	III	2.8	8203	4100	125	3583	145T	T,C,S,X,IG
14	I, II	1.7	8406	2875	125	3473	145T	T,C,S,X,IG
13	III	2.5	9084	4100	140	3583	145T	T,C,S,X,IG
13	I, II	1.5	9423	2875	140	3473	145T	T,C,S,X,IG
11	I, II	1.4	10440	2875	160	3473	145T	T,C,S,X,IG
11	III	2.1	10779	4100	160	3583	145T	T,C,S,X,IG
10.2	I	1.3	11199	2875	180	3475	145T	T,C,S,X,IG
10	II, III	2.0	11329	4100	180	3585	145T	T,C,S,X,IG
9.5	I, II	1.9	11980	4100	200	3585	145T	T,C,S,X,IG
9.0	I	1.1	12631	2875	200	3475	145T	T,C,S,X,IG
8.4	I, II	1.7	13543	4100	224	3585	145T	T,C,S,X,IG
8.0	I	1.0	14324	2875	224	3475	145T	T,C,S,X,IG
7.4	I, II	1.5	15301	4100	250	3585	145T	T,C,S,X,IG
7.3	III	2.5	15558	13249	250	3695	145T	T,C,S,X,IG
6.6	I	1.3	17254	4100	280	3585	145T	T,C,S,X,IG
6.4	II, III	2.3	17633	13249	280	3695	145T	T,C,S,X,IG
5.8	I	1.2	19663	4100	315	3585	145T	T,C,S,X,IG
5.8	II, III	2.0	19447	13249	315	3695	145T	T,C,S,X,IG
5.1	I, II	1.8	22202	13249	355	3695	145T	T,C,S,X,IG
5.1	I	1	22463	4100	355	3585	145T	T,C,S,X,IG
4.8	III	3+	23895	18242	355	3705	145T	T,C,S,X,IG

◊ **Standard Motor Types** (see page B-17 for product codes)
- T TEFC, three phase, 208-230/460 or 575 volts
- S TEFC, single phase, 115/230 volts (Note that the frame is 145TY for single phase)
- C Corro-Duty®, three phase, 230/460 or 575 volts
- X Explosionproof, Cl 1 group D, Cl 2 groups F&G, three phase, 230/460 volts
- IG IntelliGear® variable speed for 1-ph/230V, 3-ph/230V, or 3-ph/460V power supplies, NEMA 4/12

Δ Overhung load rating is at shaft midpoint.

2 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output RPM	AGMA Class	Service Factor	Output Torque in - lbs	OHL Δ lb	Nominal Ratio	Frame Size Gear	Frame Size Motor	Std. Motor Types ◊
4.4	I, II	1.5	25718	13249	400	3695	145T	T,C,S,X,IG
4.1	I, II	1.4	27476	13249	450	3695	145T	T,C,S,X,IG
4.1	III	2.6	27671	18242	400	3705	145T	T,C,S,X,IG
3.8	III	2.5	29624	18242	450	3705	145T	T,C,S,X,IG
3.7	I	1.3	31187	13249	500	3695	145T	T,C,S,X,IG
3.4	II, III	2.2	33596	18242	500	3705	145T	T,C,S,X,IG
3.3	I	1.1	34637	13249	560	3695	145T	T,C,S,X,IG
3.1	II, III	2.0	37307	18242	560	3705	145T	T,C,S,X,IG
2.9	I	1	39390	13249	630	3695	145T	T,C,S,X,IG
2.9	III	3.0	39483	21873	630	3825	145T	T,C,S,X,IG
2.7	II	1.7	42385	13249	630	3705	145T	T,C,S,X,IG
2.5	III	2.7	44807	21873	710	3825	145T	T,C,S,X,IG
2.4	I, II	1.6	47138	18242	710	3705	145T	T,C,S,X,IG
2.2	III	2.3	51646	21873	800	3825	145T	T,C,S,X,IG
2.1	I, II	1.4	53063	18242	800	3705	145T	T,C,S,X,IG
2.1	II, III	2.2	55188	21873	900	3825	145T	T,C,S,X,IG
1.8	I	1.2	62178	18242	900	3705	145T	T,C,S,X,IG
1.8	II	1.9	62633	21873	1000	3825	145T	T,C,S,X,IG
1.7	1	1.1	68624	18242	1000	3705	145T	T,C,S,X,IG
1.6	II	1.7	69565	21873	1120	3825	145T	T,C,S,X,IG
1.5		0.97	75265	18242	1120	3705	145T	T,C,S,X,IG
1.4	I, II	1.5	79023	21873	1250	3825	145T	T,C,S,X,IG
1.3	I, II	1.4	87922	21873	1400	3825	145T	T,C,S,X,IG
1.2	I	1.2	98913	21873	1600	3825	145T	T,C,S,X,IG
1.0	I	1.0	115941	21873	1800	3825	145T	T,C,S,X,IG

◊ **Standard Motor Types** (see page B-17 for product codes)
- T TEFC, three phase, 208-230/460 or 575 volts
- S TEFC, single phase, 115/230 volts (Note that the frame is 145TY for single phase)
- C Corro-Duty®, three phase, 230/460 or 575 volts
- X Explosionproof, Cl 1 group D, Cl 2 groups F&G, three phase, 230/460 volts
- IG IntelliGear® variable speed for 1-ph/230V, 3-ph/230V, or 3-ph/460V power supplies, NEMA 4/12

Δ Overhung load rating is at shaft midpoint.

3 HP

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output RPM	AGMA Class	Service Factor	Output Torque in - lbs	OHL Δ lb	Nominal Ratio	Frame Size Gear	Frame Size Motor	Std. Motor Types ◊
472	I, II, III	3+	385	1756	3.55	3242	182T	T,C,S,X,IG
374	I, II, III	3+	485	1868	4.5	3242	182T	T,C,S,X,IG
343	I, II	1.9	529	1294	5	3132	182T	T,C,S,X,IG
313	I, II, III	3+	581	1957	5.6	3242	182T	T,C,S,X,IG
272	I, II	1.6	667	1294	6.3	3132	182T	T,C,S,X,IG
265	III	3+	686	1294	6.3	3242	182T	T,C,S,X,IG
248	III	3+	731	1294	7.1	3242	182T	T,C,S,X,IG
242	I, II	1.5	750	1294	7.1	3132	182T	T,C,S,X,IG
230	I, II	1.5	790	1294	8	3132	182T	T,C,S,X,IG
220	III	3+	827	2071	8	3242	182T	T,C,S,X,IG
203	I	1.3	894	1294	9	3132	182T	T,C,S,X,IG
198	II, III	3+	916	2071	9	3242	182T	T,C,S,X,IG
180	I, II, III	1.2	1008	1294	10	3132	182T	T,C,S,X,IG
173	III	3.0	1048	2071	10	3242	182T	T,C,S,X,IG
159	I	1.1	1141	1294	11.2	3132	182T	T,C,S,X,IG
151	II, III	2.6	1203	2071	11.2	3242	182T	T,C,S,X,IG
141	II, III	2.5	1286	2071	12.5	3242	182T	T,C,S,X,IG
140	I	1.1	1297	1294	12.5	3132	182T	T,C,S,X,IG
124	I, II, III	2.2	1462	2071	14	3242	182T	T,C,S,X,IG
122		0.9	1483	1294	14	3132	182T	T,C,S,X,IG
112	I, II, III	2.0	1618	2071	16	3242	182T	T,C,S,X,IG
99	I, II	1.7	1836	2071	18	3242	182T	T,C,S,X,IG
94	III	3.3	1889	2090	20	3363	182T	T,C,S,X,IG
89	I, II	1.6	2043	2071	20	3242	182T	T,C,S,X,IG
79	I, II	1.4	2303	2071	22.4	3242	182T	T,C,S,X,IG
75	III	2.9	2366	2090	22.4	3363	182T	T,C,S,X,IG
73	I, II	1.5	2500	1074	25	3243	182T	T,C,S,X,IG
72	III	2.8	2468	2090	25	3363	182T	T,C,S,X,IG
67	I	1.2	2697	2071	25	3242	182T	T,C,S,X,IG
64	II	1.4	2773	1077	28	3243	182T	T,C,S,X,IG
61	I	1.1	2977	2071	28	3242	182T	T,C,S,X,IG
61	II, III	2.5	2915	2090	28	3363	182T	T,C,S,X,IG
57	II, III	2.3	3112	2090	31.5	3363	182T	T,C,S,X,IG
57	I	1.2	3132	1075	31.5	3243	182T	T,C,S,X,IG
51	II, III	2.0	3518	2090	35.5	3363	182T	T,C,S,X,IG
50	I	1.1	3539	1068	35.5	3243	182T	T,C,S,X,IG
46	I, II	1.8	3895	2090	40	3363	182T	T,C,S,X,IG
44	I	1.0	4017	1052	40	3243	182T	T,C,S,X,IG
44	II, III	3+	4057	2875	40	3473	182T	T,C,S,X,IG
40	I, II	1.6	4444	2090	45	3363	182T	T,C,S,X,IG

◊ **Standard Motor Types** (see page B-17 for product codes)
- T TEFC, three phase, 208-230/460 or 575 volts
- S TEFC, single phase, 230 volts (Note that single phase motor has 184T frame.)
- C Corro-Duty®, three phase, 230/460 or 575 volts
- X Explosionproof, Cl 1 group D, Cl 2 groups F&G, three phase, 230/460 volts
- IG IntelliGear® variable speed for 3-ph/230V or 3-ph/460V power supplies, NEMA 4/12

Δ Overhung load rating is at shaft midpoint.

3 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output RPM	AGMA Class	Service Factor	Output Torque in - lbs	OHL Δ lb	Nominal Ratio	Frame Size Gear	Frame Size Motor	Std. Motor Types ◊
40	III	3+	4485	2875	45	3473	182T	T,C,S,X,IG
35	I, II	1.4	5115	2090	50	3363	182T	T,C,S,X,IG
35	III	2.6	5146	2875	50	3473	182T	T,C,S,X,IG
33	I	1.3	5471	2090	56	3363	182T	T,C,S,X,IG
31	I, II, III	2.4	5796	2875	56	3473	182T	T,C,S,X,IG
29	I	1.1	6203	2090	63	3363	182T	T,C,S,X,IG
28	I, II, III	2.2	6295	2875	63	3473	182T	T,C,S,X,IG
26	I	1.0	6895	2090	71	3363	182T	T,C,S,X,IG
25	I, II, III	2.0	7017	2875	71	3473	182T	T,C,S,X,IG
23	I, II	1.8	7881	2875	80	3473	182T	T,C,S,X,IG
22	I, II, III	2.8	8196	4100	80	3583	182T	T,C,S,X,IG
20	I, II, III	2.6	8796	4100	90	3583	182T	T,C,S,X,IG
20	I, II	1.6	8918	2875	90	3473	182T	T,C,S,X,IG
18	I, II	1.5	9701	2875	100	3473	182T	T,C,S,X,IG
17	I, II, III	2.2	10271	4100	100	3583	182T	T,C,S,X,IG
16	I	1.3	10983	2875	112	3473	182T	T,C,S,X,IG
16	I, II, III	2.1	11084	4100	112	3583	182T	T,C,S,X,IG
14	I, II	1.9	12305	4100	125	3583	182T	T,C,S,X,IG
14	I	1.1	12610	2875	125	3473	182T	T,C,S,X,IG
14	III	3+	12304	13249	125	3693	182T	T,C,S,X,IG
13	III	2.9	13728	13249	140	3693	182T	T,C,S,X,IG
13	I, II	1.7	13627	4100	140	3583	182T	T,C,S,X,IG
13	I	1.0	14135	2875	140	3473	182T	T,C,S,X,IG
11	III	2.5	15965	13249	160	3693	182T	T,C,S,X,IG
11	I, II	1.4	16169	4100	160	3583	182T	T,C,S,X,IG
10.1	I	1.3	16993	4100	180	3585	182T	T,C,S,X,IG
9.7	II, III	2.3	17502	13249	180	3695	182T	T,C,S,X,IG
9.5	I	1.3	17970	4100	200	3585	182T	T,C,S,X,IG
9.2	II, IIII	2.0	18572	13249	200	3695	182T	T,C,S,X,IG
8.4	I	1.1	20314	4100	224	3585	182T	T,C,S,X,IG
7.7	II	1.9	21879	13249	224	3695	182T	T,C,S,X,IG
7.6	III	3+	22462	18242	224	3705	182T	T,C,S,X,IG
7.4	I	1.0	22951	4100	250	3585	182T	T,C,S,X,IG
7.3	II	1.7	23337	13249	250	3695	182T	T,C,S,X,IG
6.7	III	2.9	25490	18242	250	3705	182T	T,C,S,X,IG
6.4	I, II	1.5	26449	13249	280	3695	182T	T,C,S,X,IG
6.0	II, III	2.6	28322	18242	280	3705	182T	T,C,S,X,IG
5.8	I	1.3	29172	13249	315	3695	182T	T,C,S,X,IG
5.3	II, III	2.3	32228	18242	315	3705	182T	T,C,S,X,IG
5.1	I	1.2	33303	13249	355	3695	182T	T,C,S,X,IG

◊ **Standard Motor Types** (see page B-17 for product codes)
- T TEFC, three phase, 208-230/460 or 575 volts
- S TEFC, single phase, 230 volts (Note that single phase motor has 184T frame.)
- C Corro-Duty®, three phase, 230/460 or 575 volts
- X Explosionproof, Cl 1 group D, Cl 2 groups F&G, three phase, 230/460 volts
- IG IntelliGear® variable speed for 3-ph/230V or 3-ph/460V power supplies, NEMA 4/12

Δ Overhung load rating is at shaft midpoint.

3 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output RPM	AGMA Class	Service Factor	Output Torque in - lbs	OHL Δ lb	Nominal Ratio	Frame Size Gear	Frame Size Motor	Std. Motor Types ◊
4.8	II, III	2.0	35842	18242	355	3705	182T	T,C,S,X,IG
4.4	I	1.0	39065	13249	400	3695	182T	T,C,S,X,IG
4.4	II, III	3.1	38936	21873	400	3825	182T	T,C,S,X,IG
4.1	I, II	1.8	41506	18242	400	3705	182T	T,C,S,X,IG
4.1	III	2.9	41526	21873	450	3825	182T	T,C,S,X,IG
3.8	I, II	1.6	44436	18242	450	3705	182T	T,C,S,X,IG
3.6	III	2.5	46966	21873	500	3825	182T	T,C,S,X,IG
3.4	I, II	1.5	50394	18242	500	3705	182T	T,C,S,X,IG
3.3	III	2.3	51973	21873	560	3825	182T	T,C,S,X,IG
3.1	I	1.3	55960	18242	560	3705	182T	T,C,S,X,IG
2.9	I, II	2.0	59224	21873	630	3825	182T	T,C,S,X,IG
2.7	I	1.2	63578	18242	630	3705	182T	T,C,S,X,IG
2.5	II	1.8	67210	21873	710	3825	182T	T,C,S,X,IG
2.4	I	1.0	70707	18242	710	3705	182T	T,C,S,X,IG
2.2	I, II	1.5	77470	21873	800	3825	182T	T,C,S,X,IG
2.1	I, II	1.4	82782	21873	900	3825	182T	T,C,S,X,IG
1.8	I	1.3	93950	21873	1000	3825	182T	T,C,S,X,IG
1.6	I	1.1	104347	21873	1120	3825	182T	T,C,S,X,IG
1.4	I	1.0	118535	21873	1250	3825	182T	T,C,S,X,IG

◊ **Standard Motor Types** (see page B-17 for product codes)
- T TEFC, three phase, 208-230/460 or 575 volts
- S TEFC, single phase, 230 volts (Note that single phase motor has 184T frame.)
- C Corro-Duty®, three phase, 230/460 or 575 volts
- X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 volts
- IG IntelliGear® variable speed for 3-ph/230V or 3-ph/460V power supplies, NEMA 4/12

Δ Overhung load rating is at shaft midpoint.

5 HP

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output RPM	AGMA Class	Service Factor	Output Torque in - lbs	OHL Δ lb	Nominal Ratio	Frame Size Gear	Frame Size Motor	Std. Motor Types ◊
472	I, II, III	4.2	641	1704	3.55	3242	184T	T,C,S,X,IG
374	I, II, III	3.7	809	1803	4.5	3242	184T	T,C,S,X,IG
343	I	1.1	882	1294	5	3132	184T	T,C,S,X,IG
313	I, II, III	3.3	968	1850	5.6	3242	184T	T,C,S,X,IG
265	I, II, III	2.8	1143	1906	6.3	3242	184T	T,C,S,X,IG
248	I, II, III	2.6	1219	1977	7.1	3242	184T	T,C,S,X,IG
220	I, II, III	2.3	1378	2028	8	3242	184T	T,C,S,X,IG
198	I, II, III	2.1	1526	2070	9	3242	184T	T,C,S,X,IG
179	III	3.3	1655	1771	10	3363	184T	T,C,S,X,IG
173	I, II	1.8	1746	2071	10	3242	184T	T,C,S,X,IG
151	I, II	1.6	2005	2071	11.2	3242	184T	T,C,S,X,IG
142	III	2.7	2082	1866	12.5	3363	184T	T,C,S,X,IG
141	I, II	1.5	2144	2071	12.5	3242	184T	T,C,S,X,IG
124	I	1.3	2437	2071	14	3242	184T	T,C,S,X,IG
118	II, III	2.4	2505	1941	14	3363	184T	T,C,S,X,IG
112	I	1.2	2697	2071	16	3242	184T	T,C,S,X,IG
109	II, III	2.3	2725	1963	16	3363	184T	T,C,S,X,IG
99	I	1.0	3060	2071	18	3242	184T	T,C,S,X,IG
94	II, III	2.0	3148	2026	18	3363	184T	T,C,S,X,IG
86	I, II, III	2.0	3441	2057	20	3363	184T	T,C,S,X,IG
86	I	1.0	3457	800	20	3243	184T	T,C,S,X,IG
82	I, II, III	3+	3610	2875	22.4	3473	184T	T,C,S,X,IG
75	I, II	1.7	3949	2090	22.4	3363	184T	T,C,S,X,IG
72	I, II	1.7	4118	2090	25	3363	184T	T,C,S,X,IG
71	III	3+	4203	2875	25	3473	184T	T,C,S,X,IG
61	III	2.7	4847	2875	28	3473	184T	T,C,S,X,IG
61	I, II	1.5	4864	2090	28	3363	184T	T,C,S,X,IG
57	I, II	1.4	5186	2090	31.5	3363	184T	T,C,S,X,IG
56	III	2.5	5339	2875	31.5	3473	184T	T,C,S,X,IG
51	I	1.2	5864	2090	35.5	3363	184T	T,C,S,X,IG
50	III	2.3	5898	2875	35.5	3473	184T	T,C,S,X,IG
46	I	1.1	6491	2090	40	3363	184T	T,C,S,X,IG
44	I, II, III	2.0	6762	2875	40	3473	184T	T,C,S,X,IG
41	III	3+	7220	4100	45	3583	184T	T,C,S,X,IG
40	I, II	1.8	7474	2875	45	3473	184T	T,C,S,X,IG
35	III	2.7	8440	4100	50	3583	184T	T,C,S,X,IG
35	I, II	1.6	8576	2875	50	3473	184T	T,C,S,X,IG
32	III	2.4	9406	4100	56	3583	184T	T,C,S,X,IG
31	I, II	1.4	9661	2875	56	3473	184T	T,C,S,X,IG
28	I	1.3	10491	2875	63	3473	184T	T,C,S,X,IG
28	II, III	2.1	10576	4100	63	3583	184T	T,C,S,X,IG

◊ **Standard Motor Types** (see page B-17 for product codes)
- T TEFC, three phase, 208-230/460 or 575 volts
- S TEFC, single phase, 230 volts
- C Corro-Duty®, three phase, 230/460 or 575 volts
- X Explosionproof, Cl 1 group D, Cl 2 groups F&G, three phase, 230/460 volts
- IG IntelliGear® variable speed for 3-ph/230V or 3-ph/460V power supplies, NEMA 4/12

Δ Overhung load rating is at shaft midpoint.

5 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output RPM	AGMA Class	Service Factor	Output Torque in - lbs	OHL Δ lb	Nominal Ratio	Frame Size Gear	Frame Size Motor	Std. Motor Types ◊
25	III	3+	11796	12633	71	3693	184T	T,C,S,X,IG
25	I	1.2	11694	2875	71	3473	184T	T,C,S,X,IG
25	II	1.9	11966	4100	71	3583	184T	T,C,S,X,IG
23	III	3+	12864	12956	80	3693	184T	T,C,S,X,IG
23	I	1.1	13135	2875	80	3473	184T	T,C,S,X,IG
22	II	1.7	13660	4100	80	3583	184T	T,C,S,X,IG
21	III	2.7	14457	13249	90	3693	184T	T,C,S,X,IG
20	I, II	1.6	14660	4100	90	3583	184T	T,C,S,X,IG
18	II, II	2.5	16118	13249	100	3693	184T	T,C,S,X,IG
17	I	1.3	17118	4100	100	3583	184T	T,C,S,X,IG
16	II, III	2.2	18304	13249	112	3693	184T	T,C,S,X,IG
16	I	1.2	18474	4100	112	3583	184T	T,C,S,X,IG
14	III	3+	20846	18242	125	3703	184T	T,C,S,X,IG
14	II	1.9	21016	13249	125	3693	184T	T,C,S,X,IG
14	I	1.1	20508	4100	125	3583	184T	T,C,S,X,IG
13	I	1.0	22711	4100	140	3583	184T	T,C,S,X,IG
13	II	1.8	22880	13249	140	3693	184T	T,C,S,X,IG
13	III	3+	22880	18242	140	3703	184T	T,C,S,X,IG
12	III	2.9	25761	18242	160	3703	184T	T,C,S,X,IG
11	I, II	1.5	26609	13249	160	3693	184T	T,C,S,X,IG
9.7	I, II	1.4	29171	13242	180	3695	184T	T,C,S,X,IG
9.4	III	2.3	31693	18242	180	3705	184T	T,C,S,X,IG
9.1	I	1.2	30954	13249	200	3695	184T	T,C,S,X,IG
8.1	II, III	2.0	36608	18242	200	3705	184T	T,C,S,X,IG
7.8	I	1.1	36464	13242	224	3695	184T	T,C,S,X,IG
7.6	II, III	2.0	37437	18242	224	3705	184T	T,C,S,X,IG
7.3	I	1.0	38895	13249	250	3695	184T	T,C,S,X,IG
6.7	II	1.7	42483	18242	250	3705	184T	T,C,S,X,IG
6.0	I, II	1.5	47203	18242	280	3705	184T	T,C,S,X,IG
5.3	I, II	1.4	53714	18242	315	3705	184T	T,C,S,X,IG
5.2	II, III	2.1	54894	21873	355	3825	184T	T,C,S,X,IG
4.8	I	1.2	59737	18242	355	3705	184T	T,C,S,X,IG
4.4	II	1.8	64893	21873	400	3825	184T	T,C,S,X,IG
4.1	II	1.7	69210	21873	450	3825	184T	T,C,S,X,IG
4.1	I	1.1	69177	18242	400	3705	184T	T,C,S,X,IG
3.8	I	1	74060	18242	450	3705	184T	T,C,S,X,IG
3.6	I, II	1.5	78276	21873	500	3825	184T	T,C,S,X,IG
3.3	I, II	1.4	86621	21873	560	3825	184T	T,C,S,X,IG
2.9	I	1.2	98707	21873	630	3825	184T	T,C,S,X,IG
2.5	I	1.1	112017	21873	710	3825	184T	T,C,S,X,IG

◊ **Standard Motor Types** (see page B-17 for product codes)
- T TEFC, three phase, 208-230/460 or 575 volts
- S TEFC, single phase, 230 volts
- C Corro-Duty®, three phase, 230/460 or 575 volts
- X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 volts
- IG IntelliGear® variable speed for 3-ph/230V or 3-ph/460V power supplies, NEMA 4/12

Δ Overhung load rating is at shaft midpoint.

7 1/2 HP

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output RPM	AGMA Class	Service Factor	Output Torque in - lbs	OHL Δ lb	Nominal Ratio	Frame Size Gear	Frame Size Motor	Std. Motor Types ◊
472	I, II, III	2.8	962	1639	3.55	3242	213T	T,C,X,IG
374	I, II, III	2.5	1214	1721	4.5	3242	213T	T,C,X,IG
313	I, II, III	2.2	1462	1735	5.6	3242	213T	T,C,X,IG
265	I, II, III	1.9	1714	1834	6.3	3242	213T	T,C,X,IG
248	I, II	1.7	1828	1854	7.1	3242	213T	T,C,X,IG
220	I, II	1.5	2067	1889	8	3242	213T	T,C,X,IG
198	I, II	1.4	2290	1916	9	3242	213T	T,C,X,IG
179	II, III	2.2	2483	1644	10	3363	213T	T,C,X,IG
173	I	1.2	2619	1947	10	3242	213T	T,C,X,IG
151	I	1.1	3008	1974	11.2	3242	213T	T,C,X,IG
142	I, II	1.8	3123	1707	12.5	3363	213T	T,C,X,IG
142	III	3.1	3123	2875	12.5	3473	213T	T,C,X,IG
141		0.99	3215	2071	12.5	3242	213T	T,C,X,IG
118	I, II	1.6	3763	1750	14	3363	213T	T,C,X,IG
115	I, II, III	3+	3864	2875	14	3473	213T	T,C,X,IG
113	I, II, III	3+	3941	2875	16	3473	213T	T,C,X,IG
109	I, II	1.6	4093	1765	16	3363	213T	T,C,X,IG
100	I, II, III	2.6	4449	2875	18	3473	213T	T,C,X,IG
94	I	1.3	4729	1786	18	3363	213T	T,C,X,IG
87	I, II, III	2.4	5110	2875	20	3473	213T	T,C,X,IG
86	I	1.3	5161	1794	20	3363	213T	T,C,X,IG
82	I, II, III	2.1	5415	2875	22.4	3473	213T	T,C,X,IG
75	I	1.1	5923	1800	22.4	3363	213T	T,C,X,IG
72	I	1.1	6178	1799	25	3363	213T	T,C,X,IG
71	I, II, III	2.0	6305	2875	25	3473	213T	T,C,X,IG
65	I, II, III	3+	6890	4100	28	3583	213T	T,C,X,IG
61	II	1.8	7271	2875	28	3473	213T	T,C,X,IG
61	I	1.0	7296	1785	28	3363	213T	T,C,X,IG
57	III	2.8	7754	4100	31.5	3583	213T	T,C,X,IG
56	I, II	1.7	8008	2875	31.5	3473	213T	T,C,X,IG
51	III	2.6	8644	4100	35.5	3583	213T	T,C,X,IG
50	I, II	1.5	8847	2875	35.5	3473	213T	T,C,X,IG
45	III	2.3	9813	4100	40	3583	213T	T,C,X,IG
44	I	1.3	10144	2875	40	3473	213T	T,C,X,IG
41	II, III	2.1	10830	4100	45	3583	213T	T,C,X,IG
40	I	1.2	11211	2875	45	3473	213T	T,C,X,IG
37	III	3+	12152	11250	50	3693	213T	T,C,X,IG
35	II	1.8	12660	4100	50	3583	213T	T,C,X,IG
35	I	1.0	12864	2875	50	3473	213T	T,C,X,IG
32	III	2.8	13830	11485	56	3693	213T	T,C,X,IG

◊ **Standard Motor Types** (see page B-17 for product codes)
- T TEFC, three phase, 208-230/460 or 575 volts
- C Corro-Duty®, three phase, 230/460 or 575 volts
- X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 volts
- IG IntelliGear® variable speed for 3-ph/460V power supplies, NEMA 4/12

Δ Overhung load rating is at shaft midpoint.

7 1/2 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output RPM	AGMA Class	Service Factor	Output Torque in - lbs	OHL Δ lb	Nominal Ratio	Frame Size Gear	Frame Size Motor	Std. Motor Types ◊
32	I,II	1.6	14110	4100	56	3583	213T	T,C,X,IG
29	III	2.6	15279	11667	63	3693	213T	T,C,X,IG
28	I, II	1.4	15864	4100	63	3583	213T	T,C,X,IG
25	II, III	2.2	17694	12097	71	3693	213T	T,C,X,IG
25	I	1.3	17948	4100	71	3583	213T	T,C,X,IG
23	II, III	2.1	19296	12349	80	3693	213T	T,C,X,IG
21	I, II	1.8	21685	12686	90	3693	213T	T,C,X,IG
20	III	3+	22219	18242	90	3703	213T	T,C,X,IG
18	I, II	1.6	24177	12995	100	3693	213T	T,C,X,IG
18	III	3.0	24914	18242	100	3703	213T	T,C,X,IG
16	I, II	1.5	27456	13249	112	3693	213T	T,C,X,IG
14	II, III	2.4	31269	18242	125	3703	213T	T,C,X,IG
14	I	1.3	31524	13249	125	3693	213T	T,C,X,IG
13	I	1.2	34320	13249	140	3693	213T	T,C,X,IG
13	II, III	2.1	34320	18242	140	3703	213T	T,C,X,IG
12	II	1.9	38593	18242	160	3703	213T	T,C,X,IG
11	III	3.1	39150	20214	160	3823	213T	T,C,X,IG
11	I	1.0	39913	13249	160	3693	213T	T,C,X,IG
9.4	I, II	1.6	45857	18242	180	3705	213T	T,C,X,IG
8.1	I, II	1.4	52738	18242	200	3705	213T	T,C,X,IG
7.6	I, II	1.3	56156	18242	224	3705	213T	T,C,X,IG
6.7	I, II	1.1	63725	18242	250	3705	213T	T,C,X,IG
6.0	I, II	1	70805	18242	280	3705	213T	T,C,X,IG
5	I, II	1.4	82341	21873	355	3825	213T	T,C,X,IG
4	I	1.2	97340	21873	400	3825	213T	T,C,X,IG
4	I	1.2	103815	21873	450	3825	213T	T,C,X,IG
4	I	1.0	117414	21873	500	3825	213T	T,C,X,IG

◊ **Standard Motor Types** (see page B-17 for product codes)
- T TEFC, three phase, 208-230/460 or 575 volts
- C Corro-Duty®, three phase, 230/460 or 575 volts
- X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 volts
- IG IntelliGear® variable speed for 3-ph/460V power supplies, NEMA 4/12

Δ Overhung load rating is at shaft midpoint.

10 HP

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output RPM	AGMA Class	Service Factor	Output Torque in - lbs	OHL Δ lb	Nominal Ratio	Frame Size Gear	Frame Size Motor	Std. Motor Types ◊
472	I, II, III	2.1	1283	1575	3.55	3242	215T	T,C,X,IG
374	I, II	1.9	1618	1639	4.5	3242	215T	T,C,X,IG
313	I, II	1.6	1936	1670	5.6	3242	215T	T,C,X,IG
265	I, II	1.4	2285	1719	6.3	3242	215T	T,C,X,IG
248	I	1.3	2437	1731	7.1	3242	215T	T,C,X,IG
220	I	1.2	2756	1750	8	3242	215T	T,C,X,IG
198	I	1.0	3053	1762	9	3242	215T	T,C,X,IG
179	III	2.5	3311	2761	10	3473	215T	T,C,X,IG
179	I, II	1.7	3311	1539	10	3363	215T	T,C,X,IG
173		0.91	3492	1850	10	3242	215T	T,C,X,IG
142	I	1.3	4169	1549	12.5	3363	215T	T,C,X,IG
142	I, II, III	2.3	4169	2875	12.5	3473	215T	T,C,X,IG
118	I	1.2	5017	1558	14	3363	215T	T,C,X,IG
115	I, II, III	2.2	5152	2875	14	3473	215T	T,C,X,IG
113	I, II, III	2.2	5254	2875	16	3473	215T	T,C,X,IG
109	I	1.2	5457	1557	16	3363	215T	T,C,X,IG
100	I, II, III	2.0	5932	2875	18	3473	215T	T,C,X,IG
94	I	1.0	6305	1546	18	3363	215T	T,C,X,IG
88	I, II, III	2.9	6779	4100	20	3583	215T	T,C,X,IG
87	I, II	1.8	6813	2875	20	3473	215T	T,C,X,IG
86	I	1.0	6881	1532	20	3363	215T	T,C,X,IG
82	I, II	1.6	7220	2875	22.4	3473	215T	T,C,X,IG
74	I, II, III	2.6	8000	4100	22.4	3583	215T	T,C,X,IG
72	III	2.6	8237	4100	25	3583	215T	T,C,X,IG
71	I, II	1.5	8406	2875	25	3473	215T	T,C,X,IG
65	I, II, III	2.3	9186	4100	28	3583	215T	T,C,X,IG
61	I	1.3	9694	2875	28	3473	215T	T,C,X,IG
57	I, II, III	2.1	10338	4100	31.5	3583	215T	T,C,X,IG
56	I	1.3	10677	2875	31.5	3473	215T	T,C,X,IG
51	I, II	1.9	11525	4100	35.5	3583	215T	T,C,X,IG
50	I	1.1	11796	2875	35.5	3473	215T	T,C,X,IG
45	I, II	1.7	13084	4100	40	3583	215T	T,C,X,IG
45	III	2.9	13287	10115	40	3693	213T	T,C,X,IG
44	I	1.0	13525	2875	40	3473	215T	T,C,X,IG
41	I, II	1.6	14440	4100	45	3583	215T	T,C,X,IG
40	III	2.6	14948	10414	45	3693	215T	T,C,X,IG
37	III	2.4	16202	10619	50	3693	215T	T,C,X,IG
35	I	1.3	16880	4100	50	3583	215T	T,C,X,IG
32	III	2.1	18440	10941	56	3693	215T	T,C,X,IG
32	I, II	1.6	14110	4100	56	3583	215T	T,C,X,IG

◊ **Standard Motor Types** (see page B-17 for product codes)
- T TEFC, three phase, 208-230/460 or 575 volts
- C Corro-Duty®, three phase, 230/460 or 575 volts
- X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 volts
- IG IntelliGear® variable speed for 3-ph/460V power supplies, NEMA 4/12

Δ Overhung load rating is at shaft midpoint.

10 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output RPM	AGMA Class	Service Factor	Output Torque in - lbs	OHL Δ lb	Nominal Ratio	Frame Size Gear	Frame Size Motor	Std. Motor Types ◊
29	II	1.9	20372	11187	63	3693	215T	T,C,X,IG
28	I	1.1	21151	4100	63	3583	215T	T,C,X,IG
28	III	3.3	21422	16900	63	3703	215T	T,C,X,IG
25	III	3.1	23355	17304	71	3703	215T	T,C,X,IG
25	I, II	1.7	23592	11541	71	3693	215T	T,C,X,IG
23	I, II	1.5	25727	11743	80	3693	215T	T,C,X,IG
22	III	2.7	27253	18036	80	3703	215T	T,C,X,IG
21	I, II	1.4	28914	12005	90	3693	215T	T,C,X,IG
20	III	2.5	29625	18242	90	3703	215T	T,C,X,IG
18	I	1.2	32235	12236	100	3693	215T	T,C,X,IG
18	II, III	2.2	33218	18242	100	3703	215T	T,C,X,IG
16	I	1.1	36608	12485	112	3693	215T	T,C,X,IG
16	II, III	2.0	36947	18242	112	3703	215T	T,C,X,IG
14		0.95	42220	12500	125	3693	215T	T,C,X,IG
14	I, II	1.8	41879	18242	125	3703	215T	T,C,X,IG
14	III	2.8	43387	18945	125	3823	215T	T,C,X,IG
13	I, II	1.6	45965	18242	140	3703	215T	T,C,X,IG
13	III	2.6	46438	19265	140	3823	215T	T,C,X,IG
11	I, II	1.4	51753	18242	160	3703	215T	T,C,X,IG
11	III	2.3	52200	19790	160	3823	215T	T,C,X,IG
9.4	I	1.2	60876	18242	180	3705	215T	T,C,X,IG
8.1	I	1.0	70317	18242	200	3705	215T	T,C,X,IG
7.6		0.98	74874	18242	224	3705	215T	T,C,X,IG
5	I	1.0	109789	21873	355	3825	215T	T,C,X,IG

◊ **Standard Motor Types** (see page B-17 for product codes)
- T TEFC, three phase, 208-230/460 or 575 volts
- C Corro-Duty®, three phase, 230/460 or 575 volts
- X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 volts
- IG IntelliGear® variable speed for 3-ph/460V power supplies, NEMA 4/12

Δ Overhung load rating is at shaft midpoint.

15 HP

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output RPM	AGMA Class	Service Factor	Output Torque in - lbs	OHL Δ lb	Nominal Ratio	Frame Size Gear	Frame Size Motor	Std. Motor Types ◊
185	III	3+	4815	3659	10	3583	254T	T,C
184	I, II	1.7	4835	2545	10	3473	254T	T,C
142	I, II	1.5	6254	2641	12.5	3473	254T	T,C
142	III	3+	6254	3874	12.5	3583	254T	T,C
117	III	2.6	7576	4022	14	3583	254T	T,C
115	I, II	1.5	7728	2698	14	3473	254T	T,C
113	I, II	1.5	7881	2702	16	3473	254T	T,C
113	III	2.3	7881	4051	16	3583	254T	T,C
100	I	1.3	8898	2720	18	3473	254T	T,C
94	II, III	2.2	9508	4100	18	3583	254T	T,C
88	II, III	2.0	10169	4100	20	3583	254T	T,C
87	I	1.2	10220	2728	20	3473	254T	T,C
82	I	1.1	10830	2726	22.4	3473	254T	T,C
82	II, III	3+	10867	8265	22.4	3693	254T	T,C
74	II	1.8	11999	4100	22.4	3583	254T	T,C
72	I, II	1.7	12355	4100	25	3583	254T	T,C
71	I	1.0	12609	2705	25	3473	254T	T,C
70	III	3.0	12695	8586	25	3693	254T	T,C
65	I, II	1.6	13779	4100	28	3583	254T	T,C
61	III	2.5	14523	8863	28	3693	254T	T,C
57	I, II	1.4	15508	4100	31.5	3583	254T	T,C
56	III	2.3	15945	9052	31.5	3693	254T	T,C
51	I	1.3	17287	4100	35.5	3583	254T	T,C
50	II, III	2.1	17773	9261	35.5	3693	254T	T,C
45	I	1.1	19626	4100	40	3583	254T	T,C
45	II, III	2.0	19906	9489	40	3693	254T	T,C
41	I	1.0	21660	4100	45	3583	254T	T,C
41	III	2.9	21582	14612	45	3703	254T	T,C
40	II	1.7	22394	9709	45	3693	254T	T,C
37	I, II	1.6	24273	9853	50	3693	254T	T,C
37	III	2.7	24222	15056	50	3703	254T	T,C
32	I, II	1.4	27624	10073	56	3693	254T	T,C
31	III	2.8	28386	15687	56	3703	254T	T,C
29	I	1.3	30519	10227	63	3693	254T	T,C
28	II, III	2.2	32093	16170	63	3703	254T	T,C
25	I,	1.1	35343	10429	71	3693	254T	T,C
25	II, III	2.0	34988	16508	71	3703	254T	T,C
23	I	1.0	38542	10530	80	3693	254T	T,C
22	II	1.8	40827	17107	80	3703	254T	T,C
22	III	2.9	40930	16370	80	3823	254T	T,C
21		0.92	43315	10610	90	3693	254T	T,C
20	I, II	1.6	44382	17426	90	3703	254T	T,C
19	III	2.6	46167	16850	90	3823	254T	T,C

◊ **Standard Motor Types** (see page B-17 for product codes)
T TEFC, three phase, 208-230/460 or 575 volts
C Corro-Duty®, three phase, 230/460 or 575 volts

Δ Overhung load rating is at shaft midpoint.

15 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output RPM	AGMA Class	Service Factor	Output Torque in - lbs	OHL Δ lb	Nominal Ratio	Frame Size Gear	Frame Size Motor	Std. Motor Types ◊
18	I, II	1.5	49765	17855	100	3703	254T	T,C
17	III	2.3	51861	17309	100	3823	254T	T,C
16	I	1.3	55350	18241	112	3703	254T	T,C
15	II, III	2.0	58471	17795	112	3823	254T	T,C
14	I	1.2	62460	18242	125	3703	254T	T,C
14	II	1.8	65081	18236	125	3823	254T	T,C
13	I	1.1	68553	18242	140	3703	254T	T,C
13	II	1.7	69657	18507	140	3823	254T	T,C
12	I	1.0	77186	18242	160	3703	254T	T,C
11	II	1.5	78301	18942	160	3823	254T	T,C

◊ **Standard Motor Types** (see page B-17 for product codes)
T TEFC, three phase, 208-230/460 or 575 volts
C Corro-Duty®, three phase, 230/460 or 575 volts

Δ Overhung load rating is at shaft midpoint.

20 HP

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output RPM	AGMA Class	Service Factor	Output Torque in - lbs	OHL Δ lb	Nominal Ratio	Frame Size Gear	Frame Size Motor	Std. Motor Types ◊
185	I, II, III	2.7	6420	3469	10	3583	256T	T,C
142	I, II, III	2.3	8339	3626	12.5	3583	256T	T,C
117	I, II	1.9	10101	3722	14	3583	256T	T,C
113	I, II	1.8	10508	3739	16	3583	256T	T,C
109	III	2.4	10833	7410	16	3693	256T	T,C
98	III	2.3	12120	7610	18	3693	256T	T,C
94	I, II	1.6	12677	3803	18	3583	256T	T,C
88	I, II	1.5	13559	3819	20	3583	256T	T,C
91	III	2.4	13000	7734	20	3693	256T	T,C
82	II, III	2.4	14489	7923	22.4	3693	256T	T,C
74	I	1.3	15999	3837	22.4	3583	256T	T,C
72	I	1.3	16474	3837	25	3583	256T	T,C
70	II, III	2.2	16927	8187	25	3693	256T	T,C
65	III	3.1	18213	12568	28	3703	256T	T,C
65	I	1.2	18372	3826	28	3583	256T	T,C
61	II	1.5	19364	8406	28	3693	256T	T,C
58	III	2.7	20583	12981	31.5	3703	256T	T,C
57	I	1.1	20677	3793	31.5	3583	256T	T,C
56	II	1.8	21260	8551	31.5	3693	256T	T,C
51	III	2.5	23020	13401	35.5	3703	256T	T,C
50	I, II	1.6	23697	8709	35.5	3693	256T	T,C
46	III	2.3	25796	13749	40	3703	256T	T,C
45	I, II	1.5	26541	8862	40	3693	256T	T,C
41	II, III	2.2	28775	14121	45	3703	256T	T,C
40	I	1.3	29859	9004	45	3693	256T	T,C
37	I	1.2	32364	9090	50	3693	256T	T,C
37	II, III	2.0	32296	14512	50	3703	256T	T,C
32	I	1.1	36833	9203	56	3693	256T	T,C
31	II, III	2.1	37848	15041	56	3703	256T	T,C
29	I	1.0	40692	8210	63	3693	256T	T,C
28	II	1.6	42791	15440	63	3703	256T	T,C
27	III	2.7	43591	15130	63	3823	256T	T,C
25	I, II	1.5	46650	15713	71	3703	256T	T,C
24	III	2.4	48946	15537	71	3823	256T	T,C
22	I	1.3	54436	16179	80	3703	256T	T,C
22	II, III	2.2	54573	15925	80	3823	256T	T,C
20	I	1.2	59176	16416	90	3703	256T	T,C
19	II	1.9	61556	16349	90	3823	256T	T,C
18	I	1.1	66353	16723	100	3703	256T	T,C
17	II	1.7	69149	16746	100	3823	256T	T,C
16	I	1.0	73800	16800	112	3703	256T	T,C
15	II	1.5	77962	17160	112	3823	256T	T,C
14	I, II	1.4	86775	17528	125	3823	256T	T,C
13	I	1.3	92876	17748	140	3823	256T	T,C
11	I	1.1	104401	18095	160	3823	256T	T,C

◊ **Standard Motor Types** (see page B-17 for product codes)
T TEFC, three phase, 230/460 or 575 volts
C Corro-Duty®, three phase, 230/460 or 575 volts

Δ Overhung load rating is at shaft midpoint.

25 HP

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output RPM	AGMA Class	Service Factor	Output Torque in - lbs	OHL Δ lb	Nominal Ratio	Frame Size Gear	Frame Size Motor	Std. Motor Types ◊	Special Note(s)
185	I, II, III	2.2	8025	3278	10	3583	284T	T,C	TL
161	I, II, III	2.4	9225	6549	11.2	3693	284T	T,C	
142	I, II	1.8	10423	3379	12.5	3583	284T	T,C	TL
138	III	2.2	10748	6793	12.5	3693	284T	T,C	
120	III	2.1	12357	7012	14	3693	284T	T,C	
117	I, II	1.5	12626	3422	14	3583	284T	T,C	TL
113	I, II	1.4	13135	3427	16	3583	284T	T,C	TL
113	III	2.9	13118	10592	16	3703	284T	T,C	
109	II	1.9	13541	7154	16	3693	284T	T,C	
99	III	2.8	14896	10172	18	3703	284T	T,C	
98	II	1.9	15149	7324	18	3693	284T	T,C	
94	I	1.3	15847	3427	18	3583	284T	T,C	TL
91	II	1.9	16250	7427	20	3693	284T	T,C	
88	I	1.2	16948	3416	20	3583	284T	T,C	TL
88	III	2.8	16842	11341	20	3703	284T	T,C	
82	II	1.9	18112	7581	22.4	3693	284T	T,C	
77	III	2.8	19127	11726	22.4	3703	284T	T,C	
74	I	1.1	19999	3362	22.4	3583	284T	T,C	TL
73	III	2.8	20312	11909	25	3703	284T	T,C	
72	I	1.0	20592	3347	25	3583	284T	T,C	TL
70	II	1.8	21158	7788	25	3693	284T	T,C	
65	III	2.4	22766	12287	28	3703	284T	T,C	
61	I, II	1.5	24205	7949	28	3693	284T	T,C	
58	III	2.2	25729	12630	31.5	3703	284T	T,C	
56	I, II	1.4	26575	8049	31.5	3693	284T	T,C	
51	II, III	2.0	28775	13004	35.5	3703	284T	T,C	
50	I	1.3	29622	8150	35.5	3693	284T	T,C	
46	II	1.9	32245	13309	40	3703	284T	T,C	
45	I	1.2	33176	8236	40	3693	284T	T,C	
43	III	3.5	34405	13292	40	3823	284T	T,C	
41	II, III	1.7	35969	13631	45	3703	284T	T,C	
40	I	1.0	37323	8300	45	3693	284T	T,C	
38	II, III	3.2	38811	13679	45	3823	284T	T,C	
37	I	1.0	40455	8410	50	3693	284T	T,C	
37	II	1.6	40370	13961	50	3703	284T	T,C	
35	III	2.8	42455	13974	50	3823	284T	T,C	
31	I, II	1.7	47310	14395	56	3703	284T	T,C	
31	III	2.5	48302	14388	56	3823	284T	T,C	
28	I	1.3	53488	14710	63	3703	284T	T,C	
27	II, III	2.2	54488	14775	63	3823	284T	T,C	
25	I	1.2	58313	14171	71	3703	284T	T,C	
24	I, III	2.0	61183	15138	71	3823	284T	T,C	
22	I	1.1	68045	15250	80	3703	284T	T,C	
22	II	1.8	68216	15481	80	3823	284T	T,C	
20	I	1.0	73970	15250	90	3703	284T	T,C	
19	II	1.6	76945	15848	90	3823	284T	T,C	
17	II	1.4	86436	16184	100	3823	284T	T,C	
17	I	1.0	86411	15250	100	3703	284T	T,C	
15	I	1.2	97452	16526	112	3823	284T	T,C	
14	I	1.1	108468	16819	125	3823	284T	T,C	
13	I	1.0	116095	16989	140	3823	284T	T,C	

◊ **Standard Motor Types** (see page B-17 for product codes)
T TEFC, three phase, 230/460 or 575 volts
C Corro-Duty®, three phase, 230/460 or 575 volts

Δ Overhung load rating is at shaft midpoint.
TL Denotes a selection of HP/gear frame where thermal limits may restrict this selection based on mounting position. See table on B-129

30 HP

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output RPM	AGMA Class	Service Factor	Output Torque in - lbs	OHL Δ lb	Nominal Ratio	Frame Size Gear	Frame Size Motor	Std. Motor Types ◊	Special Note(s)
185	I, II	1.8	9618	3278	10	3583	286T	T,C	TL
178	III	2.2	9963	6223	10	3693	286T	T,C	TL
161	III	2.0	11070	6375	11.2	3693	286T	T,C	TL
142	I, II	1.5	12492	3379	12.5	3583	286T	T,C	TL
142	III	2.7	12492	9787	12.5	3703	286T	T,C	
138	II	1.9	12898	6590	12.5	3693	286T	T,C	
128	III	2.4	13914	10079	14	3703	286T	T,C	
120	II	1.7	14828	6779	14	3693	286T	T,C	
117	I	1.3	15191	3422	14	3583	286T	T,C	TL
113	I	1.2	15728	3427	16	3583	286T	T,C	TL
113	III	2.4	15742	10418	16	3703	286T	T,C	
109	II	1.6	16250	6898	16	3693	286T	T,C	
99	III	2.3	17875	10770	18	3703	286T	T,C	
98	II	1.6	18179	7038	18	3693	286T	T,C	
94	I	1.1	18908	3427	18	3583	286T	T,C	TL
91	II	1.6	19524	7120	20	3693	286T	T,C	
88	I	1.0	20197	3416	20	3583	286T	T,C	TL
88	III	2.3	20236	11111	20	3703	286T	T,C	
82	I, II	1.6	21761	7239	22.4	3693	286T	T,C	
77	III	2.3	22982	11465	22.4	3703	286T	T,C	
73	III	2.3	24405	11623	25	3703	286T	T,C	
70	I, II	1.5	25422	7388	25	3693	286T	T,C	
65	II, III	2.0	27320	11976	28	3703	286T	T,C	
61	I	1.2	29046	7492	28	3693	286T	T,C	
58	II	1.8	30874	12278	31.5	3703	286T	T,C	
56	I	1.2	31890	7547	31.5	3693	286T	T,C	
54	III	3.4	32947	12252	31.5	3823	286T	T,C	
51	II	1.7	34530	12606	35.5	3703	286T	T,C	
50	I	1.1	35546	7591	35.5	3693	286T	T,C	
48	III	3+	37015	12656	35.5	3823	286T	T,C	
46	II	1.6	38694	12869	40	3703	286T	T,C	
45	III	3.0	39557	12947	40	3823	286T	T,C	
45	I	1.0	39812	7600	40	3693	286T	T,C	
41	I, II	1.5	43163	13140	45	3703	286T	T,C	
40	III	2.6	44947	13321	45	3823	286T	T,C	
37	I, II	1.4	48444	13410	50	3703	286T	T,C	
35	III	2.3	50946	13698	50	3823	286T	T,C	
31	I	1.2	56772	13750	56	3703	286T	T,C	
31	II, III	2.1	57963	14073	56	3823	286T	T,C	
28	I	1.1	64186	13970	63	3703	286T	T,C	
27	II	1.8	65386	14420	63	3823	286T	T,C	
25	I	1.0	69975	14121	71	3703	286T	T,C	
24	II	1.6	73420	14740	71	3823	286T	T,C	
22	I, II	1.5	81860	15036	80	3823	286T	T,C	
19	I	1.3	92334	15346	90	3823	286T	T,C	
17	I	1.2	103723	15622	100	3823	286T	T,C	
15	I	1.0	116942	15891	112	3823	286T	T,C	

◊ **Standard Motor Types** (see page B-17 for product codes)
T TEFC, three phase, 230/460 or 575 volts
C Corro-Duty®, three phase, 230/460 or 575 volts

Δ Overhung load rating is at shaft midpoint.
TL Denotes a selection of HP/gear frame where thermal limits may restrict this selection based on mounting position. See table on B-129

40 HP

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output RPM	AGMA Class	Service Factor	Output Torque in - lbs	OHL Δ lb	Nominal Ratio	Frame Size Gear	Frame Size Motor	Std. Motor Types ◊	Special Note(s)
178	I, II	1.6	13284	5910	10	3693	324T	T,C	TL
173	III	2.3	13677	9100	10	3703	324T	T,C	TL
161	I, II	1.5	14760	6026	11.2	3693	324T	T,C	TL
152	III	2.1	15573	9314	11.2	3703	324T	T,C	TL
142	III	2.1	16656	9503	12.5	3703	324T	T,C	TL
138	I, II	1.4	17198	6184	12.5	3693	324T	T,C	TL
128	II	1.8	18552	9763	14	3703	324T	T,C	TL
120	I	1.3	19770	6313	14	3693	324T	T,C	TL
113	II	1.8	20989	10060	16	3703	324T	T,C	TL
109	I	1.2	21666	6387	16	3693	324T	T,C	TL
99	II	1.7	23833	10363	18	3703	324T	T,C	
98	I	1.1	24239	6466	18	3693	324T	T,C	TL
91	I	1.2	26032	6506	20	3693	324T	T,C	TL
88	II	1.8	26947	10652	20	3703	324T	T,C	
82	I	1.2	29015	6555	22.4	3693	324T	T,C	TL
79	III	3.0	30100	11052	22.4	3823	324T	T,C	
77	II	1.8	30603	10943	22.4	3703	324T	T,C	
73	II	1.7	32499	11078	25	3703	324T	T,C	
70	I	1.1	33896	6589	25	3693	324T	T,C	TL
69	III	3.0	34303	11387	25	3823	324T	T,C	
65	I, II	1.5	36426	11375	28	3703	324T	T,C	
61	III	2.7	38913	11726	28	3823	324T	T,C	
58	I, II	1.4	41166	11576	31.5	3703	324T	T,C	
54	III	2.6	43930	12042	31.5	3823	324T	T,C	
51	I	1.3	46041	11812	35.5	3703	324T	T,C	
48	II, III	2.3	49353	12340	35.5	3823	324T	T,C	
46	I	1.2	51593	11989	40	3703	324T	T,C	
43	II, III	2.2	55048	12621	40	3823	324T	T,C	
41	I	1.1	57551	11670	45	3703	324T	T,C	
38	II, III	2.0	62098	12922	45	3823	324T	T,C	
37	I	1.0	64592	12308	50	3703	324T	T,C	
35	II	1.8	67928	13144	50	3823	324T	T,C	
31		0.91	75696	12410	56	3703	324T	T,C	
31	I, II	1.5	77284	13444	56	3823	324T	T,C	
27	I, II	1.4	87181	13709	63	3823	324T	T,C	
24	I	1.2	97893	13943	71	3823	324T	T,C	
22	I	1.1	109146	14147	80	3823	324T	T,C	

◊ **Standard Motor Types** (see page B-17 for product codes)
T TEFC, three phase, 230/460 or 575 volts
C Corro-Duty®, three phase, 230/460 or 575 volts

Δ Overhung load rating is at shaft midpoint.

TL Denotes a selection of HP/gear frame where thermal limits may restrict this selection based on mounting position. See tables on B-128 and B- 129

50 HP

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output RPM	AGMA Class	Service Factor	Output Torque in - lbs	OHL Δ lb	Nominal Ratio	Frame Size Gear	Frame Size Motor	Std. Motor Types ◊	Special Note(s)
128	I, II	1.4	23219	9446	14	3703	326T	T,C	TL
113	I, II	1.4	26270	9702	16	3703	326T	T,C	TL
99	I, II	1.4	29829	9957	18	3703	326T	T,C	TL
88	I, II	1.4	33727	10192	20	3703	326T	T,C	TL
79	III	2.4	37625	10807	22.4	3823	326T	T,C	
77	I, II	1.4	38303	10421	22.4	3703	326T	T,C	TL
73	I, II	1.4	40676	10523	25	3703	326T	T,C	TL
69	III	2.4	42879	11109	25	3823	326T	T,C	
65	I	1.2	45533	10704	28	3703	326T	T,C	
61	II. III	2.1	48641	11409	28	3823	326T	T,C	
58	I	1.1	51457	10874	31.5	3703	326T	T,C	
54	II, III	2.1	54912	11685	31.5	3823	326T	T,C	
51	I	1.0	57551	11012	35.5	3703	326T	T,C	
48	II	1.8	61691	11939	35.5	3823	326T	T,C	
46		0.94	64491	11158	40	3703	326T	T,C	
43	I, II	1.7	68810	12173	40	3823	326T	T,C	
41		0.87	71939	11350	45	3703	326T	T,C	
38	I, II	1.6	77623	12416	45	3823	326T	T,C	
35	I, II	1.4	84910	12814	50	3823	326T	T,C	
31	I	1.2	96605	12999	56	3823	326T	T,C	
27	I	1.1	108977	13147	63	3823	326T	T,C	
24		0.98	122366	13258	71	3823	326T	T,C	

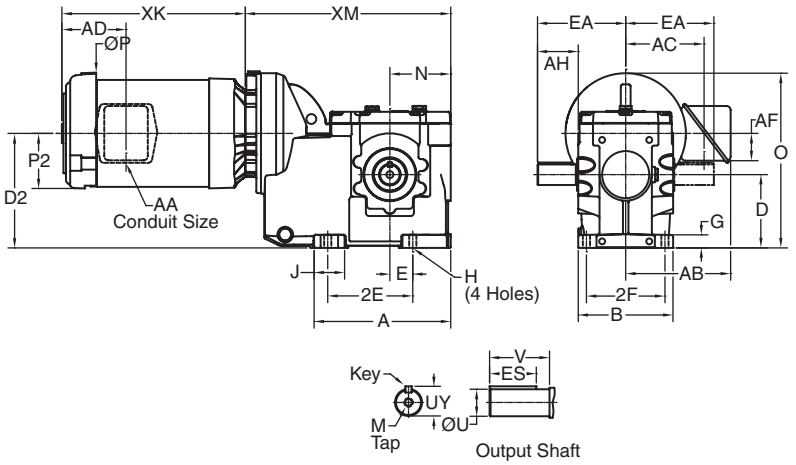
◊ **Standard Motor Types** (see page B-17 for product codes)
T TEFC, three phase, 230/460 or 575 volts
C Corro-Duty®, three phase, 230/460 or 575 volts

Δ Overhung load rating is at shaft midpoint.

TL Denotes a selection of HP/gear frame where thermal limits may restrict this selection based on mounting position. See tables on B-128 and B-129

2-Stage Output Shafted Foot Mount
OtN31 - 32

Standard conduit box location will be opposite shaft extension unless specified otherwise.



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	XM
3132	S2	5.88	4.65	3.15	4.98	1.97	3.94	3.94	.56	.35	1.53	8.01	3.15	10.59
3242	S2	8.22	5.71	4.41	6.89	1.38	5.12	4.72	.79	.43	1.83	10.51	3.66	12.36

Output Shaft

Gear Frame	Version	U[3]	UY	V	AH	EA	Key	ES	M
3132	S2	1.000	1.10	1.77	1.83	4.33	1/4 Sq.	1.34	3/8-16 X .87
3242	S2	1.250	1.35	2.38	2.45	5.31	1/4 Sq.	2.03	1/2-13 X 1.12

Motor Frame	Motor Type[4]	Gear Frame	P	P2	AA	AB	AC	AD	AF	XK
56	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	9.79
B56	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
143T, 145T	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
182T/184T	T	Any	9.56	4.34	.75	6.10	4.50	5.13	1.77	14.04
213T	T	32	11.25	5.06	1.00	8.42	7.17	5.60	2.42	16.15
215T	T	32	11.25	5.06	1.00	8.42	7.17	5.60	2.42	17.65

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

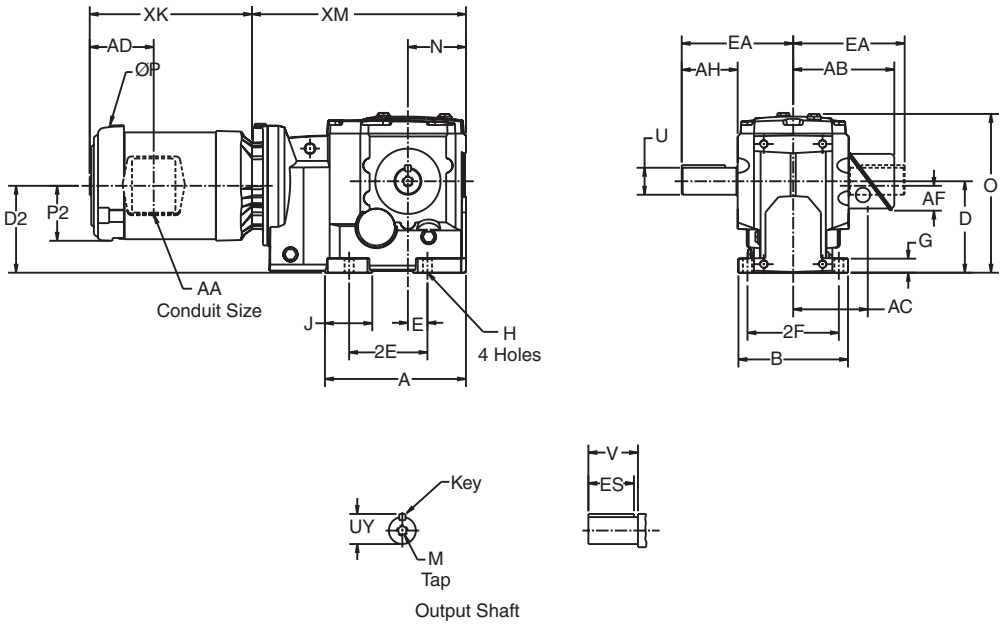
[2] All rough casting dimensions may vary by .25" due to casting variations.

[3] Shaft extension tolerances: +.0000"; –.0005" for shafts up to 1.5" diameter "U". Larger diameter: "U", +.000"; –.001".

[4] Motor dimensions for other than "Type T" three phase TEFC motors, refer to pages B-102 to B-104.

3-Stage Output Shafted Foot Mount
OtN32 - 33

Standard conduit box location will be opposite shaft extension unless specified otherwise.



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	XM
32	S2	7.81	5.71	4.41	3.78	1.38	5.12	4.72	.73	.43	2.34	8.09	3.03	10.98
33	S2	8.50	6.61	5.51	5.24	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	12.90
	S1	8.08	8.58	4.92	5.20	3.35	6.69	6.10	.79	.55	2.27	10.43	3.54	12.90

Output Shaft

Gear Frame	Version	U[3]	UY	V	AH	EA	Key	ES	M
32	S2	1.250	1.354	2.36	2.46	5.31	1/4 Sq.	2.06	1/2-13 x 1.12
33	S2	1.625	1.783	3.25	3.39	6.73	3/8 Sq.	2.78	5/8-11 x 1.38
	S1	1.500	1.657	3.18	3.19	7.12	3/8 Sq.	2.78	5/8-11 x 1.38

Motor Frame	Motor Type[4]	Gear Frame	P	P2	AA	AB	AC	AD	AF	XK
56	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	9.79
B56	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
143T, 145T	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
182T/184T	T	Any	9.56	4.34	.75	6.10	4.50	5.13	1.77	14.04
213T	T	32	11.25	5.06	1.00	8.42	7.17	5.60	2.42	16.15
215T	T	32	11.25	5.06	1.00	8.42	7.17	5.60	2.42	17.65

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

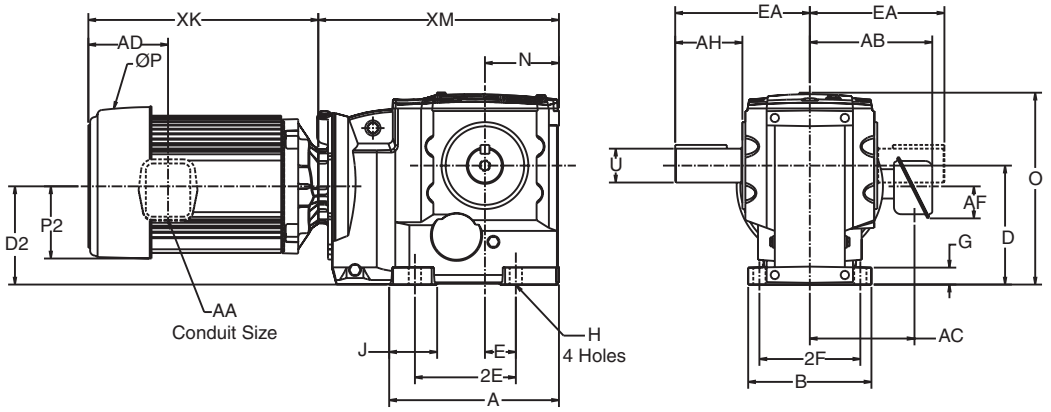
[2] All rough casting dimensions may vary by .25" due to casting variations.

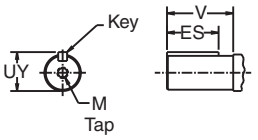
[3] Shaft extension tolerances: +.0000"; –.0005" for shafts up to 1.5" diameter "U". Larger diameter: "U", +.000"; –.001".

[4] Motor dimensions for other than "Type T" three phase TEFC motors, refer to pages B-102 to B-104.

3-Stage Output Shafted Foot Mount
OtN34 - 35

Standard conduit box location will be opposite shaft extension unless specified otherwise.





Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	XM	
														56T-215T	254T-286T
34	S2	10.13	7.87	7.09	5.90	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	14.56	-
	S1	10.69	9.60	6.30	7.49	4.53	9.06	7.68	1.18	.71	3.19	13.39	4.49		
35	S2	11.92	8.66	8.35	6.89	2.17	7.09	7.09	1.18	.87	3.37	13.58	5.20	16.90	17.25
	S1	13.07	10.98	7.87	9.33	5.51	11.02	9.06	1.40	.87	4.05	16.22	5.20		

Output Shaft

Gear Frame	Version	U[3]	UY	V	AH	EA	Key	ES	M
34	S2	2.000	2.21	3.63	3.76	8.11	1/2 Sq.	3.06	3/4-10 X 1.61
	S1	1.750	1.909	3.56	3.66	8.46	3/8 Sq.	3.56	3/4-10 X 1.61
35	S2	2.375	2.638	4.61	4.74	9.45	5/8 Sq.	3.81	3/4-10 X 1.61
	S1	2.375	2.638	5.73	5.27	10.57	5/8 Sq.	4.81	3/4-10 X 1.61

Motor Frame	Motor Type [4]	Gear Frame	P	P2	AA	AB	AC	AD	AF	XK
56	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	9.79
B56	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
143T, 145T	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
182T/184T	T	Any	9.56	4.34	.75	6.10	4.50	5.13	1.77	14.04
213T	T	Any	11.25	5.06	1.00	8.42	7.17	5.60	2.42	16.15
215T	T	Any	11.25	5.06	1.00	8.42	7.17	5.60	2.42	17.65
254T	T	34	13.38	6.00	1.25	9.79	7.68	8.29	1.81	20.58
	T	35	13.38	6.00	1.25	9.79	7.68	8.29	1.81	19.61
256T	T	34	13.38	6.00	1.25	9.79	7.68	8.29	1.81	22.33
	T	35	13.38	6.00	1.25	9.79	7.68	8.29	1.81	21.36
284T/286T	T	35	14.62	7.29	1.50	11.33	8.51	12.44	2.63	24.26

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

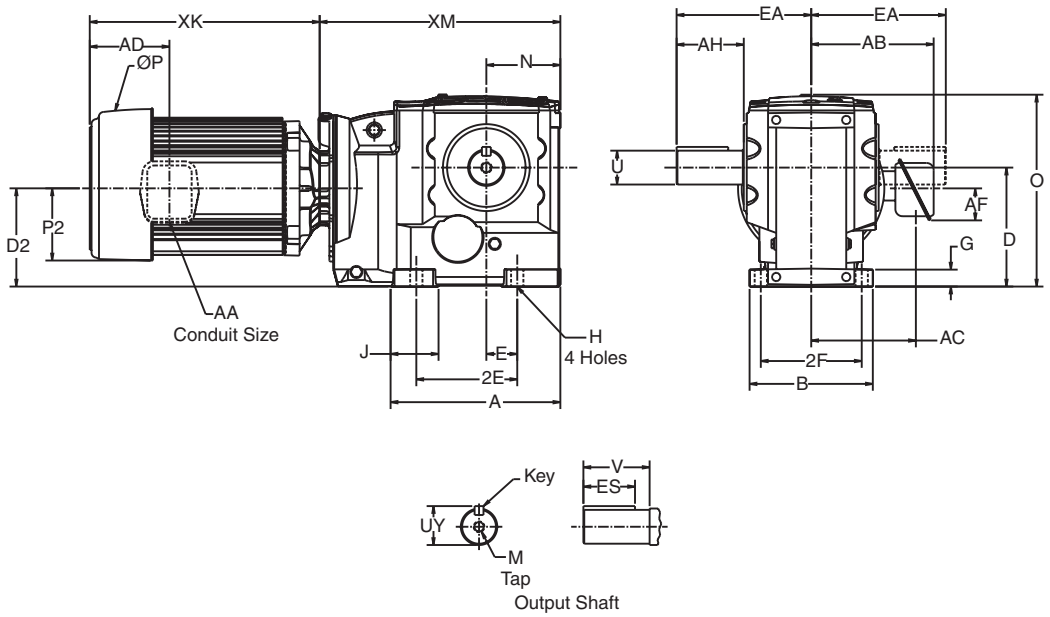
[2] All rough casting dimensions may vary by .25" due to casting variations.

[3] Shaft extension tolerances: +.0000"; –.0005" for shafts up to 1.5" diameter "U". Larger diameter: "U", +.000"; –.001".

[4] Motor dimensions for other than "Type T" three phase TEFC motors, refer to pages B-102 to B-104.

3-Stage Output Shafted Foot Mount
OtN36-38

Standard conduit box location will be opposite shaft extension unless specified otherwise.



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	XM		
														182T/184T	213T-215T	254T-UP
36	S1	17.06	11.41	8.86	8.86	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	23.38	23.38	23.73
37	S1	20.58	12.99	9.84	10.98	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	-	29.06	29.41
38	S2	20.13	13.39	14.76	11.87	4.53	13.78	10.63	1.98	1.26	4.06	24.11	8.86	-	24.29	24.64

Output Shaft

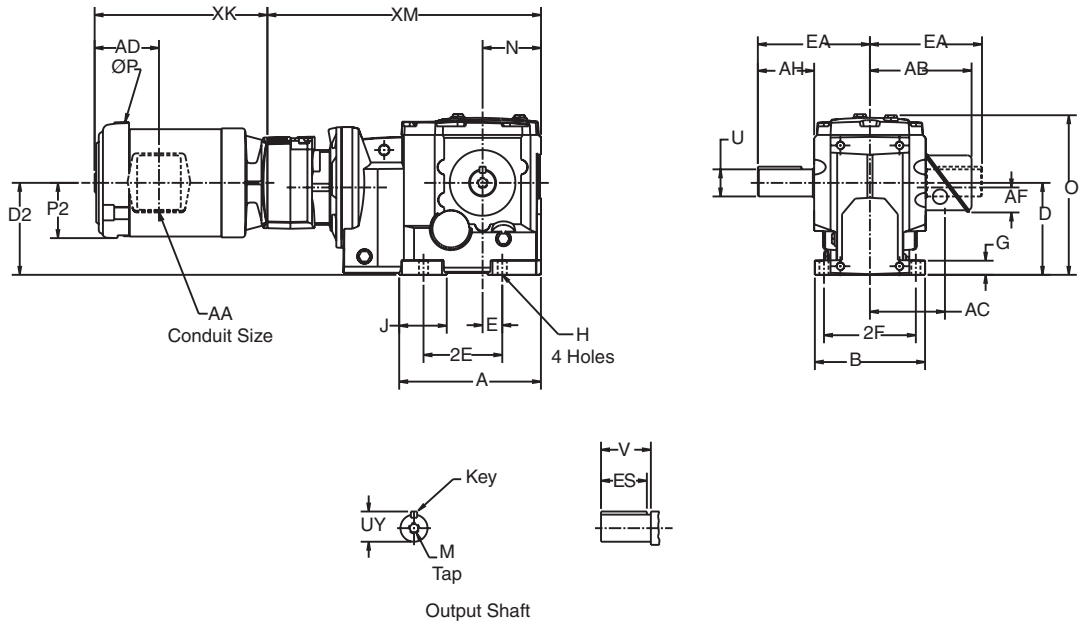
Gear Frame	Version	U[3]	UY	V	AH	EA	Key	ES	M
36	S1	2.875	3.200	5.75	5.92	11.94	3/4 SQ.	5.00	3/4-10 X 1.61
37	S1	3.625	4.010	6.86	7.04	13.66	7/8 SQ.	6.00	1-8 X 2.13
38	S2	4.375	4.809	8.99	9.97	17.03	1.00 SQ.	7.00	1-8 X 2.25

Motor Frame	Motor Type[4]	Gear Frame	P	P2	AA	AB	AC	AD	AF	XK
182T/184T	T	36	9.56	4.34	.75	6.10	4.50	5.13	1.77	14.04
213T	T	All	11.25	5.06	1.00	8.42	7.17	5.60	2.42	16.15
215T	T	All	11.25	5.06	1.00	8.42	7.17	5.60	2.42	17.65
254T	T	All	13.38	6.00	1.25	9.79	7.68	8.29	1.81	19.61
256T	T	All	13.38	6.00	1.25	9.79	7.68	8.29	1.81	21.36
284T/286T	T	All	14.62	7.29	1.50	11.33	8.51	12.44	2.63	24.26
324T/326T	T	All	17.20	7.78	2.00	14.99	11.34	14.16	3.63	27.36

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
[2] All rough casting dimensions may vary by .25" due to casting variations.
[3] Shaft extension tolerances: +.0000"; –.0005" for shafts up to 1.5" diameter "U". Larger diameter: "U", +.000"; –.001".
[4] Motor dimensions for other than "Type T" three phase TEFC motors, refer to pages B-102 to B-104.

Combined Output Shafted Foot Mount
OtN32 - 33

Standard conduit box location will be opposite shaft extension unless specified otherwise.



Output Shaft

Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	XM
32	S2	7.81	5.71	4.41	4.06	1.38	5.12	4.72	.73	.43	2.34	8.09	3.03	14.49
33	S2	8.50	6.61	5.51	4.91	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	19.90
	S1	8.08	8.58	4.92	4.87	3.35	6.69	6.10	.79	.55	2.27	10.43	3.54	19.90

Output Shaft

Gear Frame	Version	U[3]	UY	V	AH	EA	Key	ES	M
32	S2	1.250	1.354	2.36	2.46	5.31	1/4 Sq.	2.06	1/2-13 X 1.12
33	S2	1.625	1.783	3.25	3.39	6.73	3/8 Sq.	2.78	5/8-11 X 1.38
	S1	1.500	1.657	3.18	3.19	7.12	3/8 Sq.	2.78	5/8-11 X 1.38

Motor Frame	Motor Type[4]	Gear Frame	P	P2	AA	AB	AC	AD	AF	XK
56	T	32	7.31	3.31	.75	6.10	4.50	3.86	1.77	10.37
	T	33	7.31	3.31	.75	6.10	4.50	3.86	1.77	9.79
B56	T	32	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.62
	T	33	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
143T, 145T	T	32	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

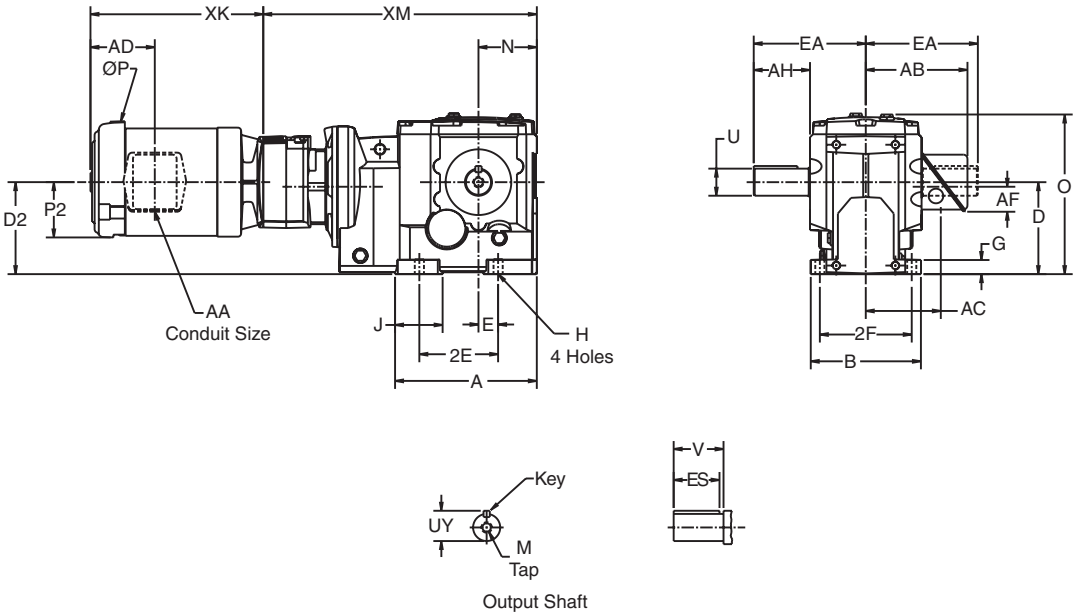
[2] All rough casting dimensions may vary by .25" due to casting variations.

[3] Shaft extension tolerances: +.0000"; –.0005" for shafts up to 1.5" diameter "U". Larger diameter: "U", +.000"; –.001".

[4] Motor dimensions for other than "Type T" three phase TEFC motors, refer to pages B-102 to B-104.

Combined Output Shafted Foot Mount
OtN34 - 35

Standard conduit box location will be opposite shaft extension unless specified otherwise.



Output Shaft

Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	XM
34	S2	10.13	7.87	7.09	5.57	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	21.55
	S1	10.69	9.60	6.30	7.16	4.53	9.06	7.68	1.18	.71	3.19	13.39	4.49	21.55
35	S2	11.92	8.66	8.35	6.56	2.17	7.09	7.09	1.18	.87	3.37	13.58	5.20	23.87
	S1	13.07	10.98	7.87	9.00	5.51	11.02	9.06	1.40	.87	4.05	16.22	5.20	23.87

Output Shaft

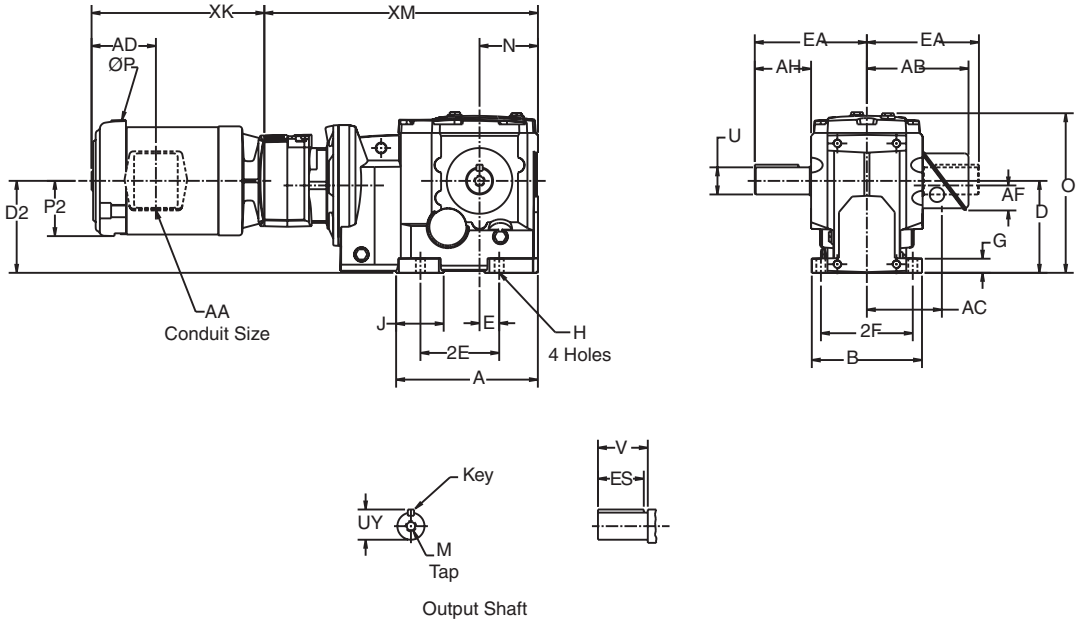
Gear Frame	Version	U[3]	UY	V	AH	EA	Key	ES	M
34	S2	2.000	2.21	3.63	3.76	8.11	1/2 Sq.	3.06	3/4-10 X 1.61
	S1	1.750	1.909	3.56	3.66	8.46	3/8 Sq.	3.56	3/4-10 X 1.61
35	S2	2.375	2.638	4.61	4.74	9.45	5/8 Sq.	3.81	3/4-10 X 1.61
	S1	2.375	2.638	5.73	5.27	10.57	5/8 Sq.	4.81	3/4-10 X 1.61

Motor Frame	Motor Type [4]	Gear Frame	P	P2	AA	AB	AC	AD	AF	XK
56	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	9.79
B56	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
143T, 145T	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
182T/184T	T	35	9.56	4.34	.75	6.10	4.50	5.13	1.77	14.04

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
[2] All rough casting dimensions may vary by .25" due to casting variations.
[3] Shaft extension tolerances: +.0000"; –.0005" for shafts up to 1.5" diameter "U". Larger diameter: "U", +.000"; –.001".
[4] Motor dimensions for other than "Type T" three phase TEFC motors, refer to pages B-102 to B-104

Combined Output Shafted Foot Mount
OtN36 - 38

Standard conduit box location will be opposite shaft extension unless specified otherwise.



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	XM
														56 -215T
36	S1	17.06	11.41	8.86	8.46	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	31.04
37	S1	20.58	12.99	9.84	10.57	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	36.37
38	S2	20.13	13.39	14.76	11.48	4.53	13.78	10.63	1.98	1.26	4.06	24.11	8.86	31.94

Output Shaft

Gear Frame	Version	U[3]	UY	V	AH	EA	Key	ES	M
36	S1	2.875	3.20	5.75	5.92	11.94	3/4 SQ.	5.00	3/4-10 X 1.61
37	S1	3.625	4.01	6.86	7.04	13.66	7/8 SQ.	6.00	1-8 X 2.13
38	S2	4.375	4.809	8.99	9.97	17.03	1.00 SQ.	7.00	1-8 X 2.25

Motor Frame	Motor Type[4]	Gear Frame	P	P2	AA	AB	AC	AD	AF	XK
56	T	All	7.31	3.31	.75	6.10	4.50	3.86	1.77	9.79
B56	T	All	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
143T, 145T	T	All	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
182T/184T	T	All	9.56	4.34	.75	6.10	4.50	5.13	1.77	14.04
213T	T	All	11.25	5.06	1.00	8.42	7.17	5.60	2.42	16.15
215T	T	All	11.25	5.06	1.00	8.42	7.17	5.60	2.42	17.65

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

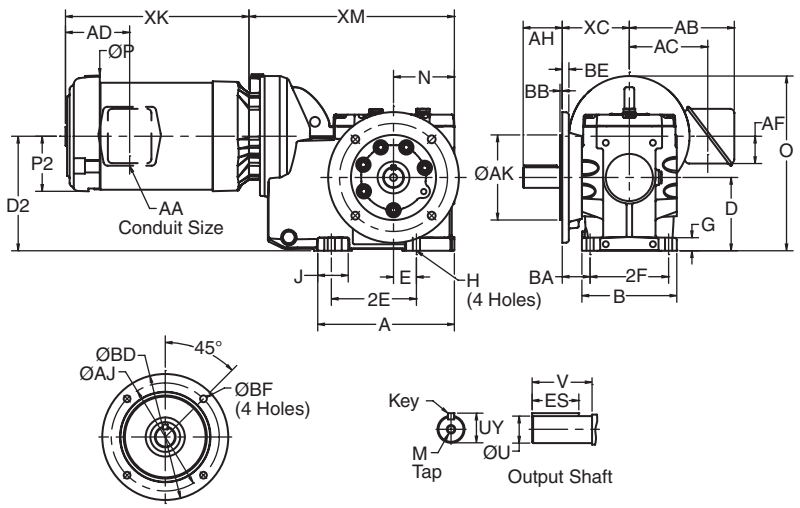
[2] All rough casting dimensions may vary by .25" due to casting variations.

[3] Shaft extension tolerances: +.0000"; –.0005" for shafts up to 1.5" diameter "U". Larger diameter: "U", +.000"; –.001".

[4] Motor dimensions for other than "Type T" three phase TEFC motors, refer to pages B-102 to B-104

2-Stage Output Shafted Flange Mount
OtN31 - 32

Standard conduit box location will be opposite flange unless specified otherwise.



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	BA	XC	XM
3132	S2	5.88	4.65	3.15	4.98	1.97	3.94	3.94	.56	.35	1.53	8.01	3.15	1.54	3.50	10.59
3242	S2	8.22	5.71	4.41	6.89	1.38	5.12	4.72	.79	.43	1.83	10.51	3.66	1.67	4.04	12.36

Output Shaft

Gear Frame	Version	U[3]	UY	V	AH	Key	ES	M
3132	S2	1.000	1.10	1.97	1.97	1/4 Sq.	1.34	3/8-16 X .87
3242	S2	1.250	1.35	2.36	2.35	1/4 Sq.	2.03	1/2-13 X 1.13

Output Flange

Gear Frame	Flange Code	AK	AJ	BB	BD	BE	BF
3132	5	4.331	5.12	.14	6.50	.39	.35
	6	3.740	4.53	.14	5.51	.44	.35
3242	5	5.118	6.50	.14	7.87	.39	.47
	6	7.087	8.46	.16	9.84	.47	.55

Motor Frame	Motor Type[4]	Gear Frame	P	P2	AA	AB	AC	AD	AF	XK
56	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	9.79
B56	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
143T, 145T	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
182T/184T	T	Any	9.56	4.34	.75	6.10	4.50	5.13	1.77	14.04
213T	T	32	11.25	5.06	1.00	8.42	7.17	5.60	2.42	16.15
215T	T	32	11.25	5.06	1.00	8.42	7.17	5.60	2.42	17.65

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

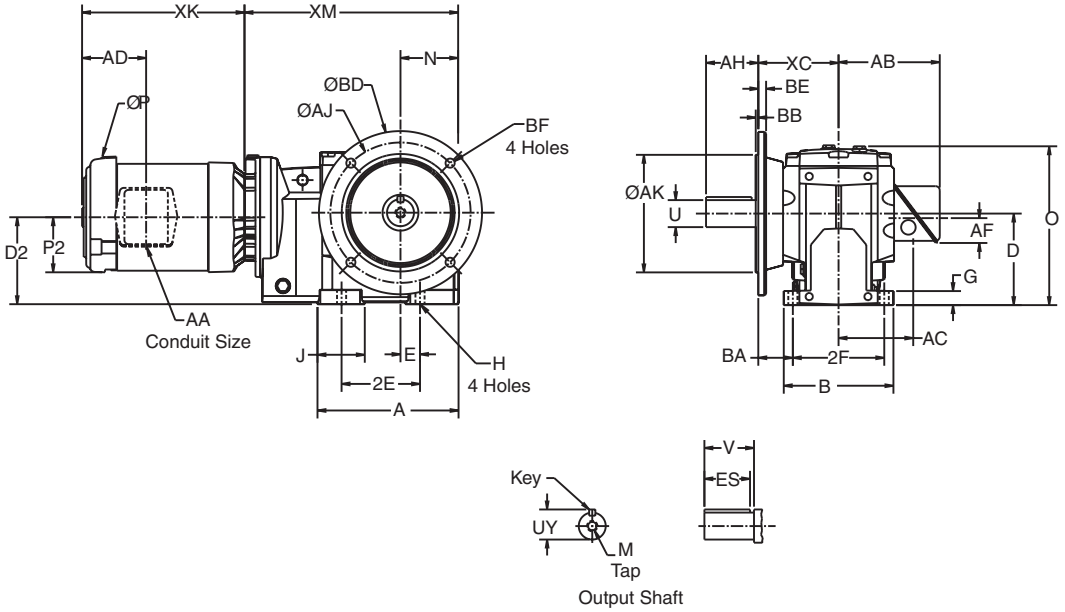
[2] All rough casting dimensions may vary by .25" due to casting variations.

[3] Shaft extension tolerances: +.0000"; –.0005" for shafts up to 1.5" diameter "U". Larger diameter: "U", +.000"; –.001".

[4] Motor dimensions for other than "Type T" three phase TEFC motors, refer to pages B-102 to B-104

3-Stage Output Shafted Flange Mount
OtN32 - 33

Standard conduit box location will be opposite flange unless specified otherwise.



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	BA	XC	XM
32	S1,S2	7.81	5.71	4.41	3.78	1.38	5.12	4.71	.73	.43	2.34	8.09	3.03	1.81	4.04	10.98
33	S1,S2	8.50	6.61	5.51	5.24	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	2.24	4.84	12.90

Output Shaft

Gear Frame	Version	U[3]	UY	V	AH	Key	ES	M
32	S2	1.250	1.354	2.38	2.36	1/4 Sq.	2.06	1/2-13 X 1.12
	S1	1.250	1.354	1.77	1.75	1/4 Sq.	1.45	1/2-13 X 1.12
33	S2	1.625	1.783	3.25	3.15	3/8 Sq.	2.78	5/8-11 X 1.38
	S1	1.500	1.657	3.18	2.28	3/8 Sq.	2.19	5/8-11 X 1.38

Output Flange

Gear Frame	Flange Code	AK	AJ	BB	BD	BE	BF
32	5	5.118	6.50	.14	7.87	.39	.47
	6	7.087	8.46	.16	9.84	.47	.55
33	5	7.087	8.46	.16	9.84	.47	.55
	6	9.055	10.43	.16	11.81	.47	.55

Motor Frame	Motor Type[4]	Gear Frame	P	P2	AA	AB	AC	AD	AF	XK
56	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	9.79
B56	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
143T, 145T	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
182T/184T	T	Any	9.56	4.34	.75	6.10	4.50	5.13	1.77	14.04
213T	T	32	11.25	5.06	1.00	8.42	7.17	5.60	2.42	16.15
215T	T	32	11.25	5.06	1.00	8.42	7.17	5.60	2.42	17.65

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

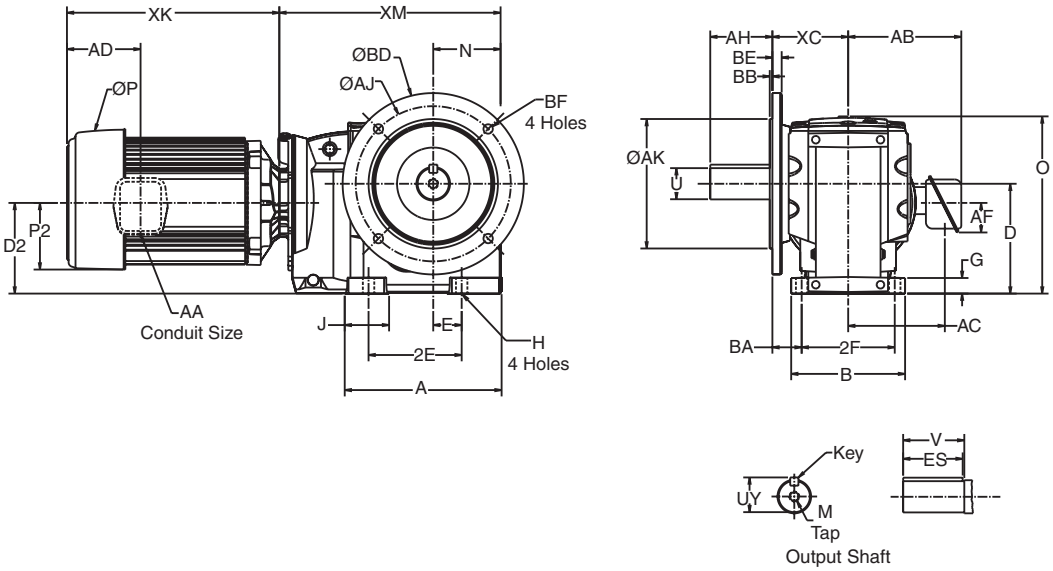
[2] All rough casting dimensions may vary by .25" due to casting variations.

[3] Shaft extension tolerances: +.0000"; –.0005" for shafts up to 1.5" diameter "U". Larger diameter: "U", +.000"; –.001".

[4] Motor dimensions for other than "Type T" three phase TEFC motors, refer to pages B-102 to B-104.

3-Stage Output Shafted Flange Mount
OtN34 - 35

Standard conduit box location will be opposite flange unless specified otherwise.



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	BA	XC	XM	
																56T-215T	254T-286T
34	S1,S2	10.13	7.87	7.09	5.90	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	1.93	5.18	14.56	-
35	S2	11.92	8.66	8.35	6.89	2.17	7.09	7.09	1.19	.87	3.45	13.58	5.20	2.22	5.76	16.90	17.25

Output Shaft

Gear Frame	Version	U[3]	UY	V	AH	Key	ES	M
34	S2	2.000	2.210	3.94	3.94	1/2 Sq.	3.06	3/4-10 X 1.61
	S1	1.750	1.909	3.56	3.28	3/8 Sq.	3.56	3/4-10 X 1.61
35	S2	2.375	2.638	4.72	4.72	5/8 Sq.	3.81	3/4-10 X 1.61

Output Flange

Gear Frame	Flange Code	AK	AJ	BB	BD	BE	BF
34	5	9.055	10.43	.16	11.81	.59	.55
	6	9.842	11.80	.16	13.77	.59	.71
35	5	9.842	11.80	.20	13.77	.71	.71
	6	11.810	13.77	.20	15.75	.71	.71

Motor Frame	Motor Type [4]	Gear Frame	P	P2	AA	AB	AC	AD	AF	XK
56	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	9.79
B56	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
143T, 145T	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
182T/184T	T	Any	9.56	4.34	.75	6.10	4.50	5.13	1.77	14.04
213T	T	Any	11.25	5.06	1.00	8.42	7.17	5.60	2.42	16.15
215T	T	Any	11.25	5.06	1.00	8.42	7.17	5.60	2.42	17.65
254T	T	34	13.38	6.00	1.25	9.79	7.68	8.29	1.81	20.58
	T	35	13.38	6.00	1.25	9.79	7.68	8.29	1.81	19.61
256T	T	34	13.38	6.00	1.25	9.79	7.68	8.29	1.81	22.33
	T	35	13.38	6.00	1.25	9.79	7.68	8.29	1.81	21.36
284T/286T	T	35 - 37	14.62	7.29	1.50	11.33	8.51	12.44	2.63	24.26

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

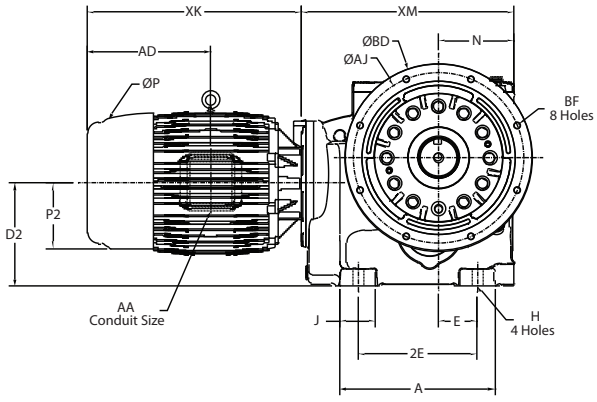
[2] All rough casting dimensions may vary by .25" due to casting variations.

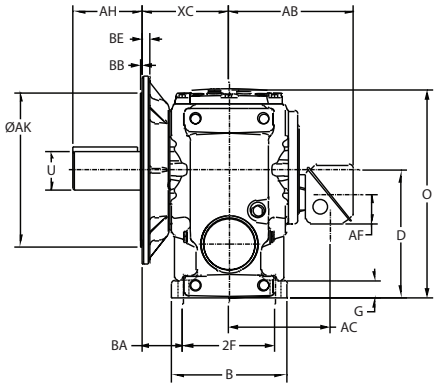
[3] Shaft extension tolerances: +.0000"; –.0005" for shafts up to 1.5" diameter "U". Larger diameter: "U", +.000"; –.001".

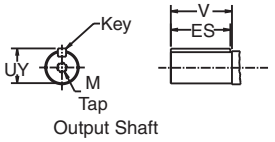
[4] Motor dimensions for other than "Type T" three phase TEFC motors, refer to pages B-102 to B-104.

3-Stage Output Shafted Flange Mount
OtN36 - 38

Standard conduit box location will be opposite flange unless specified otherwise.







Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	BA	XC	XM		
																182T/184T	213T-215T	254T-UP
36	S2	17.06	11.41	8.86	8.86	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	4.45	9.17	23.38	23.38	23.73
37	S2	20.58	12.99	9.84	10.98	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	4.45	9.76	-	29.06	29.41
38	S2	20.13	13.39	14.76	11.87	4.53	13.78	10.63	1.98	1.26	4.06	24.11	8.86	4.65	9.96	-	24.29	24.64

Output Shaft

Gear Frame	Version	U[3]	UY	V	AH	Key	ES	M
36	S2	2.875	3.200	7.68	5.51	3/4 SQ.	5.00	3/4-10 X 1.61
37	S2	3.625	4.010	8.88	6.69	7/8 SQ.	6.00	1-8 X 2.13
38	S2	4.375	4.809	8.99	9.97	1.00 SQ.	7.00	1-8 X 2.25

Output Flange

Gear Frame	Flange Code	AK	AJ	BB	BD	BE	BF
36 & 37	5	13.78	15.75	.236	17.70	.79	.71
	6	17.72	19.68	.236	21.65	.63	.87
38	5	17.72	19.69	.200	21.65	.79	.69
	6	21.65	23.62	.236	25.98	.63	.87

Motor Frame	Motor Type[4]	Gear Frame	P	P2	AA	AB	AC	AD	AF	XK
182T/184T	T	36	9.56	4.34	.75	6.10	4.50	5.13	1.77	14.04
213T	T	All	11.25	5.06	1.00	8.42	7.17	5.60	2.42	16.15
215T	T	All	11.25	5.06	1.00	8.42	7.17	5.60	2.42	17.65
254T	T	All	13.38	6.00	1.25	9.79	7.68	8.29	1.81	19.61
256T	T	All	13.38	6.00	1.25	9.79	7.68	8.29	1.81	21.36
284T/286T	T	All	14.62	7.29	1.50	11.33	8.51	12.44	2.63	24.26
324T/326T	T	All	17.2	7.78	2.00	14.99	11.34	14.16	3.63	27.36

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

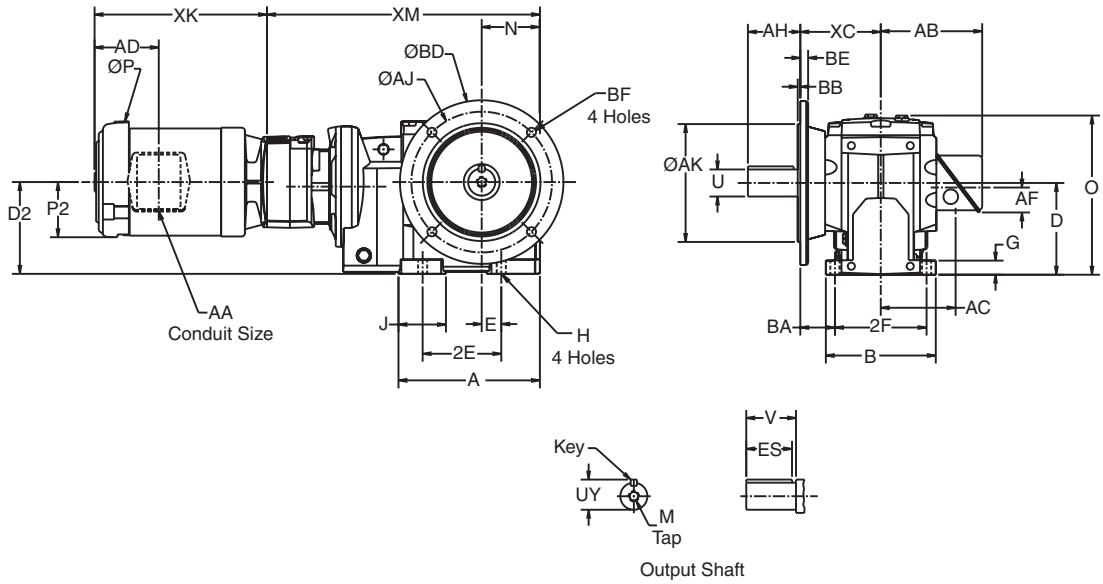
[2] All rough casting dimensions may vary by .25" due to casting variations.

[3] Shaft extension tolerances: +.0000"; –.0005" for shafts up to 1.5" diameter "U". Larger diameter: "U", +.000"; –.001".

[4] Motor dimensions for other than "Type T" three phase TEFC motors, refer to pages B-102 to B-104

Combined Output Shafted Flange Mount
OtN32 - 33

Standard conduit box location will be opposite flange unless specified otherwise.



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	BA	XC	XM
32	S1,S2	7.81	5.71	4.41	4.06	1.38	5.12	4.71	.73	.43	2.34	8.09	3.03	1.81	4.04	14.49
33	S1,S2	8.50	6.61	5.51	4.91	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	2.24	4.84	19.90

Output Shaft

Gear Frame	Version	U[3]	UY	V	AH	Key	ES	M
32	S2	1.250	1.354	2.38	2.36	1/4 Sq.	2.06	1/2-13 X 1.12
	S1	1.250	1.354	1.77	1.75	1/4 Sq.	1.45	1/2-13 X 1.12
33	S2	1.625	1.783	3.25	3.15	3/8 Sq.	2.78	5/8-11 X 1.38
	S1	1.500	1.657	3.18	2.28	3/8 Sq.	2.19	5/8-11 X 1.38

Output Flange

Gear Frame	Flange Code	AK	AJ	BB	BD	BE	BF
32	5	5.118	6.50	.14	7.87	.39	.47
	6	7.087	8.46	.16	9.84	.47	.55
33	5	7.087	8.46	.16	9.84	.47	.55
	6	9.055	10.43	.16	11.81	.47	.55

Motor Frame	Motor Type[4]	Gear Frame	P	P2	AA	AB	AC	AD	AF	XK
56	T	32	7.31	3.31	.75	6.10	4.50	3.86	1.77	10.37
	T	33	7.31	3.31	.75	6.10	4.50	3.86	1.77	9.79
B56	T	32	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.62
	T	33	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
143T, 145T	T	33	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

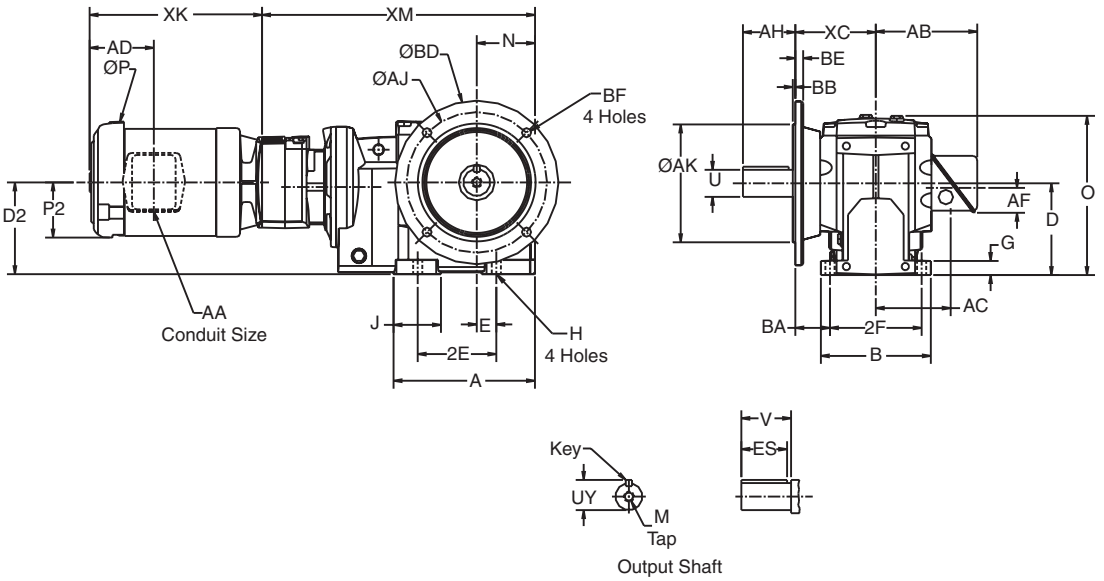
[2] All rough casting dimensions may vary by .25" due to casting variations.

[3] Shaft extension tolerances: +.0000"; –.0005" for shafts up to 1.5" diameter "U". Larger diameter: "U", +.000"; –.001".

[4] Motor dimensions for other than "Type T" three phase TEFC motors, refer to pages B-102 to B-104

Combined Output Shafted Flange Mount
OtN34 - 35

Standard conduit box location will be opposite flange unless specified otherwise.



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	BA	XC	XM
34	S1, S2	10.13	7.87	7.09	5.57	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	1.93	5.18	21.55
35	S2	11.92	8.66	8.35	6.56	2.17	7.09	7.09	1.19	.87	3.45	13.58	5.20	2.22	5.76	23.87

Output Shaft

Gear Frame	Version	U[3]	UY	V	AH	Key	ES	M
34	S2	2.000	2.21	3.94	3.94	1/2 Sq.	3.06	3/4-10 X 1.61
	S1	1.750	1.909	3.56	3.28	3/8 Sq.	3.56	3/4-10 X 1.61
35	S2	2.375	2.638	4.72	4.72	5/8 Sq.	3.81	3/4-10 X 1.61

Output Flange

Gear Frame	Flange Code	AK	AJ	BB	BD	BE	BF
34	5	9.055	10.43	.16	11.81	.59	.55
	6	9.842	11.80	.16	13.77	.59	.71
35	5	9.842	11.80	.20	13.77	.71	.71
	6	11.810	13.77	.20	15.75	.71	.71

Motor Frame	Motor Type[4]	Gear Frame	P	P2	AA	AB	AC	AD	AF	XK
56	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	9.79
B56	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
143T, 145T	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
182T/184T	T	35	9.56	4.34	.75	6.10	4.50	5.13	1.77	14.04

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

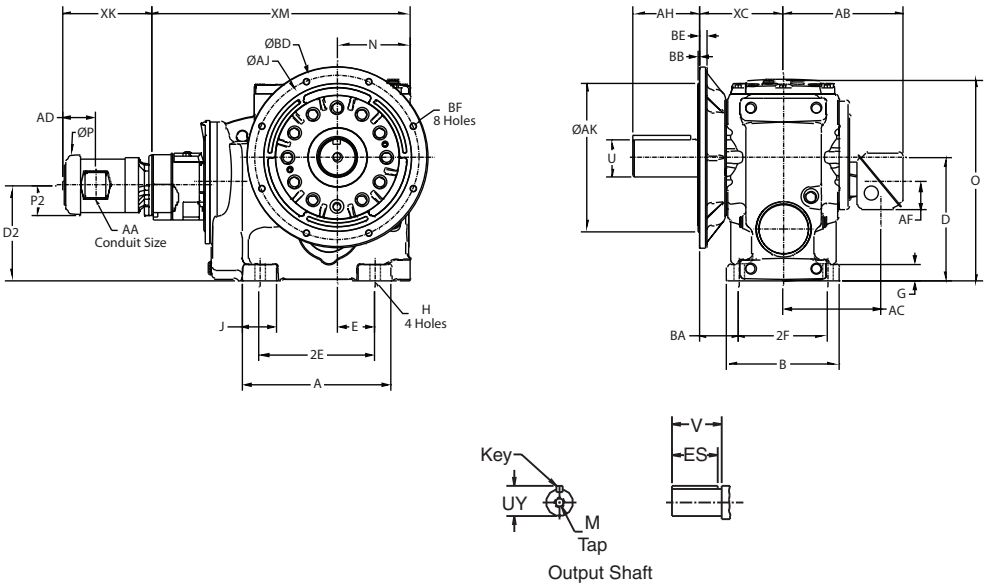
[2] All rough casting dimensions may vary by .25" due to casting variations.

[3] Shaft extension tolerances: +.0000"; –.0005" for shafts up to 1.5" diameter "U". Larger diameter: "U", +.000"; –.001".

[4] Motor dimensions for other than "Type T" three phase TEFC motors, refer to pages B-102 to B-104.

Combined Output Shafted Flange Mount
OtN36 - 38

Standard conduit box location will be opposite flange unless specified otherwise.



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	BA	XC	XM
																56 -215T
36	S2	17.06	11.41	8.86	8.46	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	4.45	9.17	31.04
37	S2	20.58	12.99	9.84	10.57	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	4.45	9.76	36.37
38	S2	20.13	13.39	14.76	11.48	4.53	13.78	10.63	1.98	1.26	4.06	24.11	8.86	4.65	9.96	31.94

Output Shaft

Gear Frame	Version	U[3]	UY	V	AH	Key	ES	M
36	S2	2.875	3.20	7.68	5.51	3/4 SQ.	5.00	3/4-10 X 1.61
37	S2	3.625	4.01	8.88	6.69	7/8 SQ.	6.00	1-8 X 2.13
38	S2	4.375	4.809	8.99	9.97	1.00 SQ.	7.00	1-8 X 2.25

Output Flange

Gear Frame	Flange Code	AK	AJ	BB	BD	BE	BF
36 & 37	5	13.78	15.75	.236	17.70	.79	.71
	6	17.72	19.68	.236	21.65	.63	.87
38	5	17.72	19.69	.200	21.65	.79	.69
	6	21.65	23.62	.236	25.98	.63	.87

Motor Frame	Motor Type[4]	Gear Frame	P	P2	AA	AB	AC	AD	AF	XK
56	T	All	7.31	3.31	.75	6.10	4.50	3.86	1.77	9.79
B56	T	All	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
143T, 145T	T	All	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
182T/184T	T	All	9.56	4.34	.75	6.10	4.50	5.13	1.77	14.04
213T	T	All	11.25	5.06	1.00	8.42	7.17	5.60	2.42	16.15
215T	T	All	11.25	5.06	1.00	8.42	7.17	5.60	2.42	17.65

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

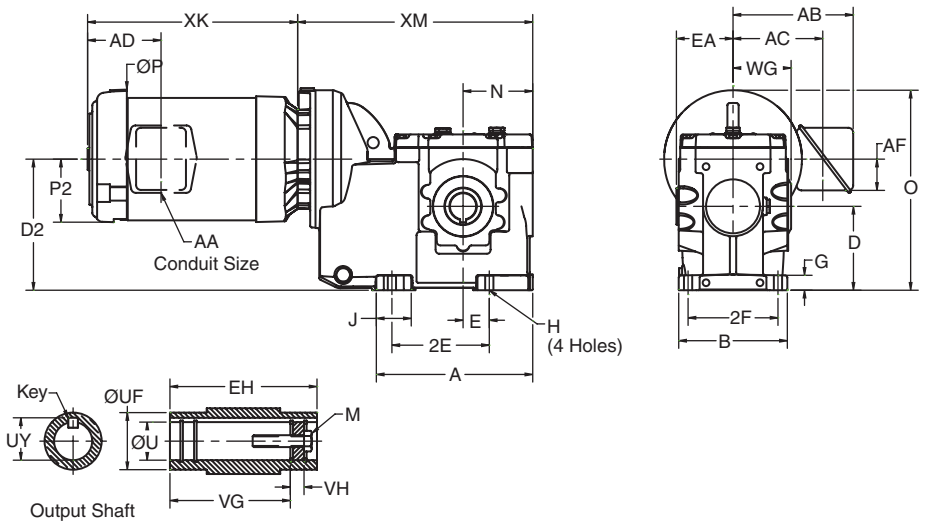
[2] All rough casting dimensions may vary by .25" due to casting variations.

[3] Shaft extension tolerances: +.0000"; –.0005" for shafts up to 1.5" diameter "U". Larger diameter: "U", +.000"; –.001".

[4] Motor dimensions for other than "Type T" three phase TEFC motors, refer to pages B-102 to B-104.

2-Stage Finished Bore Hollow Shaft
OtN31 - 32

Standard conduit box location will be F1 unless specified otherwise.



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	WG	XM
3132	S2	5.88	4.65	3.15	4.98	1.97	3.94	3.94	.56	.35	1.53	8.01	3.15	2.85	10.59
3242	S2	8.22	5.71	4.41	6.89	1.38	5.12	4.72	.79	.43	1.83	10.51	3.66	3.22	12.36

Output Shaft

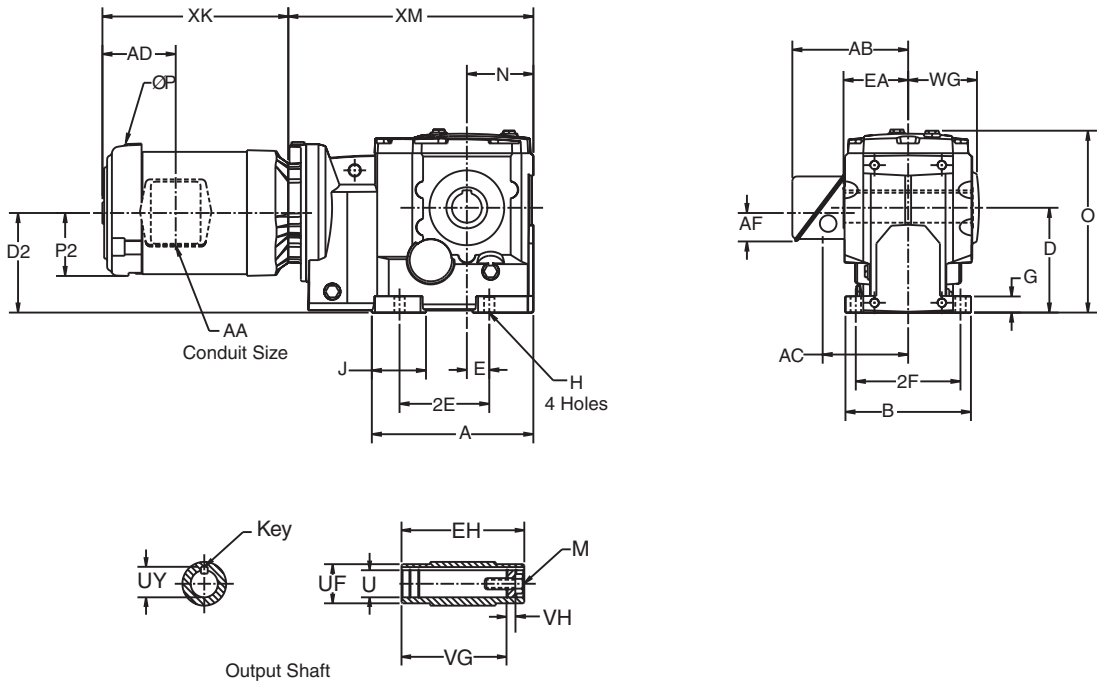
Gear Frame	Version	EA	EH	U[3,7]	UF	UY	VG	VH	Key[5]	M
3132	S2	2.56	5.12	1.250	1.77	1.372	4.31	.37	1/4 X 1/4 X 1 1/2	7/16-14 X 1.00
3242	S2	2.97	5.94	1.375	1.96	1.523	5.06	.37	5/16 X 5/16 1 13/16	1/2-13 X 1.00

Motor Frame	Motor Type[8]	Gear Frame	P	P2	AA	AB	AC	AD	AF	XK
56	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	9.79
B56	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
143T, 145T	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
182T/184T	T	Any	9.56	4.34	.75	6.10	4.50	5.13	1.77	14.04
213T	T	32	11.25	5.06	1.00	8.42	7.17	5.60	2.42	16.15
215T	T	32	11.25	5.06	1.00	8.42	7.17	5.60	2.42	17.65

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
[2] All rough casting dimensions may vary by .25" due to casting variations.
[3] Refer to page B-23 by gear frame for Tapered Bushed designs if driven shaft varies from "U" dimensions offered above.
[4] Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.
[5] Output key not supplied.
[6] For details of the torque arm kit, refer to page B-22.
[7] Output bore tolerance: +.0020", - .0000" for all diameters.
[8] Motor dimensions for other than "Type T" three phase TEFC motors, refer to pages B-102 to B-104.

3-Stage Finished Bore Hollow Shaft
OtN32 - 33

Standard conduit box location will be F1 unless specified otherwise.



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	WG	XM
32	S2	7.81	5.71	4.41	3.78	1.38	5.12	4.71	.73	.43	2.34	8.09	3.03	3.22	10.98
33	S2	8.50	6.61	5.51	5.24	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	3.73	12.90

Output Shaft

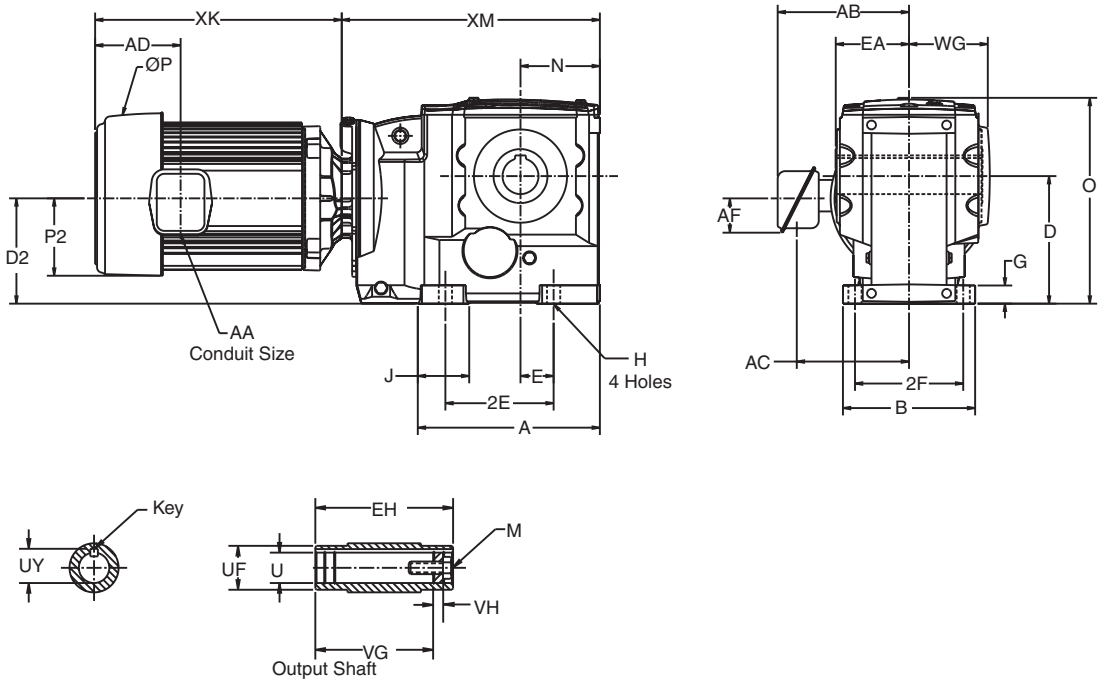
Gear Frame	Version	EA	EH	U[3 7]	UF	UY	VG	VH	Key[5]	M
32	S2	2.98	5.95	1.375	1.96	1.523	5.20	.55	5/16 X 5/16 X 1 13/16	1/2-13 X 1.00
33	S2	3.47	6.94	1.500	2.16	1.674	5.96	.55	3/8 X 3/8 X 2 1/4	5/8-11 X 1.75

Motor Frame	Motor Type[8]	Gear Frame	P	P2	AA	AB	AC	AD	AF	XK
56	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	9.79
B56	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
143T, 145T	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
182T/184T	T	Any	9.56	4.34	.75	6.10	4.50	5.13	1.77	14.04
213T	T	33	11.25	5.06	1.00	8.42	7.17	5.60	2.42	16.15
215T	T	33	11.25	5.06	1.00	8.42	7.17	5.60	2.42	17.65

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
[2] All rough casting dimensions may vary by .25" due to casting variations.
[3] Refer to page B-23 by gear frame for Tapered Bushed designs if driven shaft varies from "U" dimensions offered above.
[4] Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.
[5] Output key not supplied.
[6] For details of the torque arm kit, refer to page B-22.
[7] Output bore tolerance: +.0020", - .0000" for all diameters.
[8] Motor dimensions for other than "Type T" three phase TEFC motors, refer to pages B-102 to B-104

3-Stage Finished Bore Hollow Shaft
OtN34 - 35

Standard conduit box location will be F1 unless specified otherwise.



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	WG	XM	
															56T-215T	254T-286T
34	S2	10.13	7.87	7.09	5.90	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	4.66	14.56	-
35	S2	11.92	8.66	8.35	6.89	2.17	7.09	7.09	1.18	.87	3.45	13.58	5.20	5.15	16.90	17.25

Output Shaft

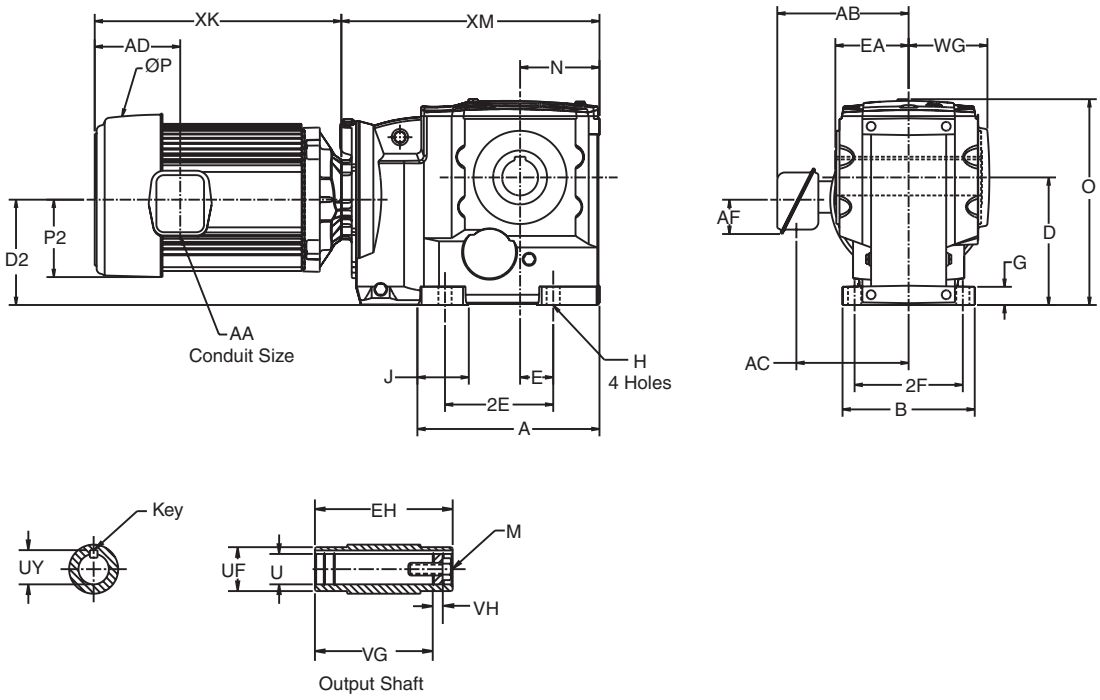
Gear Frame	Version	EA	EH	U[3] [7]	UF	UY	VG	VH	Key[5]	M
34	S2	4.49	8.97	2.000	2.56	2.210	7.44	.79	1/2 X 7/16 X 2 5/8	5/8-11 X 1.75
35	S2	4.83	9.66	2.375	3.54	2.656	8.15	.94	5/8 X 5/8 X 3 5/8	3/4-10 X 2.00

Motor Frame	Motor Type[8]	Gear Frame	P	P2	AA	AB	AC	AD	AF	XK
56	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	9.79
B56	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
143T, 145T	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
182T/184T	T	Any	9.56	4.34	.75	6.10	4.50	5.13	1.77	14.04
213T	T	Any	11.25	5.06	1.00	8.42	7.17	5.60	2.42	16.15
215T	T	Any	11.25	5.06	1.00	8.42	7.17	5.60	2.42	17.65
254T	T	34	13.38	6.00	1.25	9.79	7.68	8.29	1.81	20.58
	T	35	13.38	6.00	1.25	9.79	7.68	8.29	1.81	19.61
256T	T	34	13.38	6.00	1.25	9.79	7.68	8.29	1.81	22.33
	T	35	13.38	6.00	1.25	9.79	7.68	8.29	1.81	21.36
284T/286T	T	35	14.62	7.29	1.50	11.33	8.51	12.44	2.63	24.26

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
[2] All rough casting dimensions may vary by .25" due to casting variations.
[3] Refer to page B-23 by gear frame for Tapered Bushed designs if driven shaft varies from "U" dimensions offered above.
[4] Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.
[5] Output key supplied on frame 34 only.
[6] For details of the torque arm kit, refer to page B-22.
[7] Output bore tolerance: +.0020", - .0000" for all diameters.
[8] Motor dimensions for other than "Type T" three phase TEFC motors, refer to pages B-102 to B-104.

3-Stage Finished Bore Hollow Shaft
OtN36 - 38

Standard conduit box location will be F1 unless specified otherwise.



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	WG	XM		
															182T/184T	213T-215T	254T-UP
36	S2	17.06	11.41	8.86	8.86	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	6.78	23.38	23.38	23.73
37	S2	20.58	12.99	9.84	10.98	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	7.44	-	29.06	29.41
38	S2	20.13	13.39	14.76	11.87	4.53	13.78	10.63	1.98	1.26	4.06	24.11	8.86	7.40	-	24.29	24.64

Output Shaft

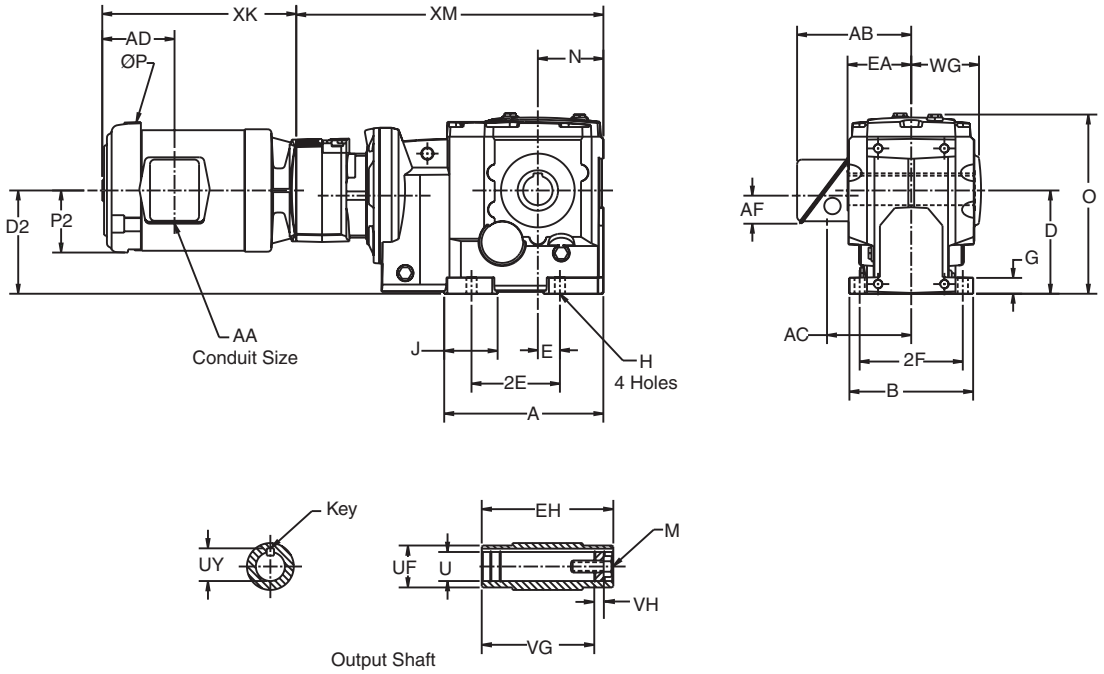
Gear Frame	Version	EA	EH	U[3 7]	UF	UY	VG	VH	Key[8]	M
36	S2	6.22	12.44	2.750	3.93	3.037	10.89	1.23	5/8 X 5/8 X 5 1/2	3/4-10 X 2.00
37	S2	6.80	13.59	3.625	4.72	4.019	11.90	1.23	7/8 X 7/8 X 5 1/2	3/4-10 X 2.00
38	S2	6.81	13.74	4.000	5.50	4.316	11.86	.92	1 X 1 X 6 1/2	1-8 X 2.25

Motor Frame	Motor Type[7]	Gear Frame	P	P2	AA	AB	AC	AD	AF	XK
182T/184T	T	36	9.56	4.34	.75	6.10	4.50	5.13	1.77	14.04
213T	T	All	11.25	5.06	1.00	8.42	7.17	5.60	2.42	16.15
215T	T	All	11.25	5.06	1.00	8.42	7.17	5.60	2.42	17.65
254T	T	All	13.38	6.00	1.25	9.79	7.68	8.29	1.81	19.61
256T	T	All	13.38	6.00	1.25	9.79	7.68	8.29	1.81	21.36
284T/286T	T	All	14.62	7.29	1.50	11.33	8.51	12.44	2.63	24.26
324T/326T	T	All	17.2	7.78	2.00	14.99	11.34	14.16	3.63	27.36

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
[2] All rough casting dimensions may vary by .25" due to casting variations.
[3] Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.
[5] For details of the torque arm kit, refer to pages B-22.
[6] Output bore tolerance: +.0020", - .0000" for all diameters.
[7] Motor dimensions for other than "Type T" three phase TEFC motors, refer to pages B-102 to B-104.
[8] Key not supplied with reducer.

Combined Finished Bore Hollow Shaft
OtN32 - 33

Standard conduit box location will be F1 unless specified otherwise.



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	WG	XM
32	S2	7.81	5.71	4.41	4.06	1.38	5.12	4.71	.73	.43	2.34	8.09	3.03	3.22	14.49
33	S2	8.50	6.61	5.51	4.91	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	3.73	19.90

Output Shaft

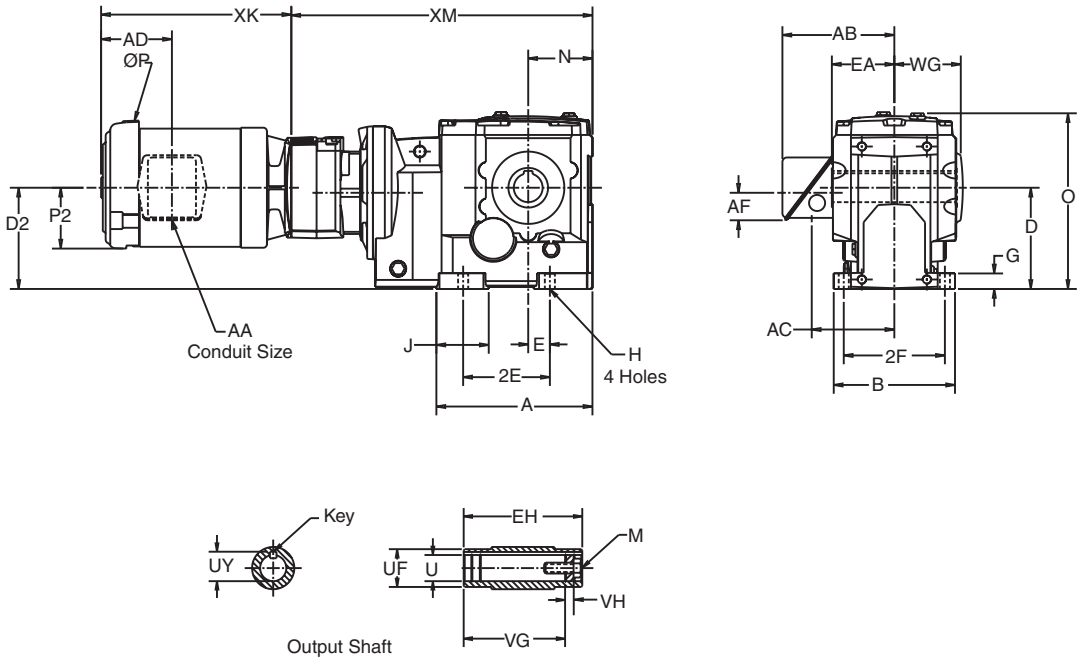
Gear Frame	Version	EA	EH	U[3] [6]	UF	UY	VG	VH	Key[8]	M
32	S2	2.98	5.96	1.375	1.96	1.523	5.20	.55	5/16 X 5/16 X 1 13/16	1/2-13 X 1.00
33	S2	3.47	6.94	1.500	2.16	1.674	5.96	.55	3/8 X 3/8 X 2 1/4	5/8-11 X 1.75

Motor Frame	Motor Type[7]	Gear Frame	P	P2	AA	AB	AC	AD	AF	XK
56	T	32	7.31	3.31	.75	6.10	4.50	3.86	1.77	10.37
	T	33	7.31	3.31	.75	6.10	4.50	3.86	1.77	9.79
B56	T	32	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.62
	T	33	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
143T, 145T	T	32	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.62
	T	33	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
[2] All rough casting dimensions may vary by .25" due to casting variations.
[3] Refer to page B-23 by gear frame for Tapered Bushed designs if driven shaft varies from "U" dimensions offered above.
[4] Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.
[5] For details of the torque arm kit, refer to page B-22.
[6] Output bore tolerance: +.0020", - .0000" for all diameters.
[7] Motor dimensions for other than "Type T" three phase TEFC motors, refer to pages B-102 to B-104.
[8] Output key not supplied.

Combined Finished Bore Hollow Shaft
OtN34 - 35

Standard conduit box location will be F1 unless specified otherwise.



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	WG	XM
34	S2	10.13	7.87	7.09	5.57	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	4.66	21.55
35	S2	11.92	8.66	8.35	6.56	2.17	7.09	7.09	1.18	.87	3.45	13.58	5.20	5.15	23.87

Output Shaft

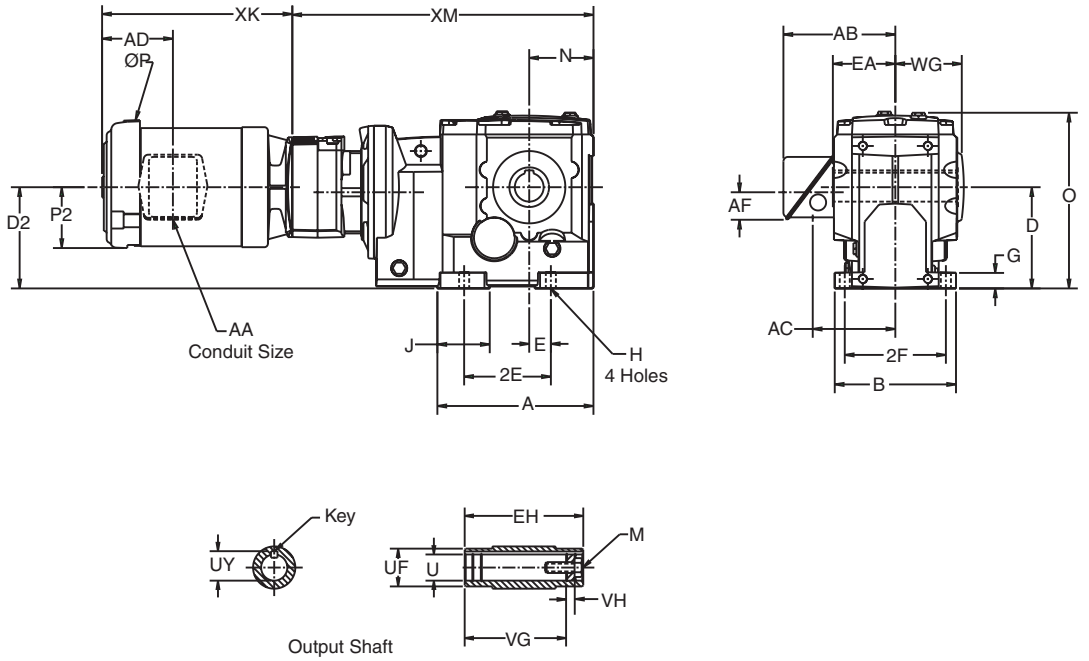
Gear Frame	Version	EA	EH	U[3 7]	UF	UY	VG	VH	Key [5]	M
34	S2	4.49	8.97	2.000	2.56	2.210	7.44	.79	1/2 X 7/16 X 2 5/8	5/8-11 X 1.75
35	S2	4.83	9.66	2.375	3.54	2.656	8.15	.94	5/8 X 5/8 X 3 5/8	3/4-10 X 2.00

Motor Frame	Motor Type[8]	Gear Frame	P	P2	AA	AB	AC	AD	AF	XK
56	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	9.79
B56	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
143T, 145T	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
182T/184T	T	35	9.56	4.34	.75	6.10	4.50	5.13	1.77	14.04

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
[2] All rough casting dimensions may vary by .25" due to casting variations.
[3] Refer to page B-23 by gear frame for Tapered Bushed designs if driven shaft varies from "U" dimensions offered above.
[4] Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.
[5] Output key supplied on frame 34 only.
[6] For details of the torque arm kit, refer to page B-22.
[7] Output bore tolerance: +.0020", - .0000" for all diameters.
[8] Motor dimensions for other than "Type T" three phase TEFC motors, refer to pages B-102 to B-104.

Combined Finished Bore Hollow Shaft
OtN36 - 38

Standard conduit box location will be F1 unless specified otherwise.



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	WG	XM
															56 -215T
36	S2	17.06	11.41	8.86	8.46	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	6.78	31.04
37	S2	20.58	12.99	9.84	10.57	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	7.44	36.37
38	S2	20.13	13.39	14.76	11.48	4.53	13.78	10.63	1.98	1.26	4.06	24.11	8.86	7.40	31.94

Output Shaft

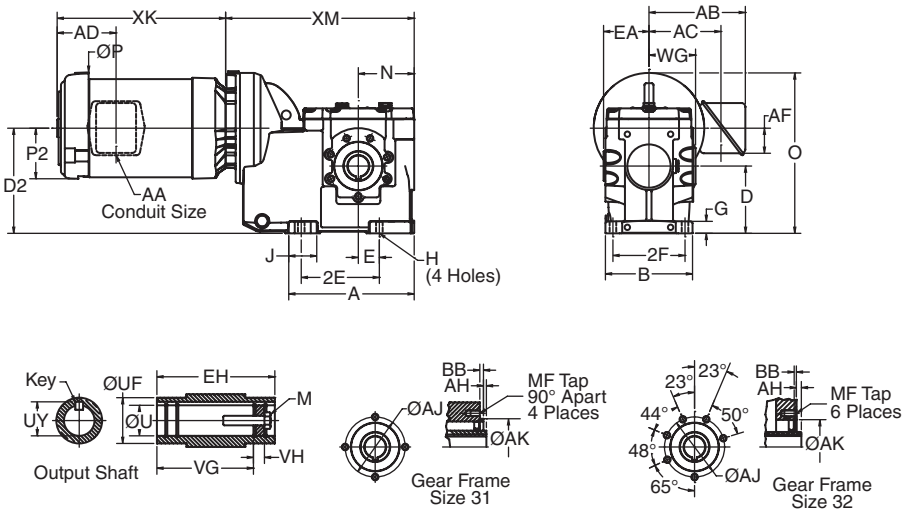
Gear Frame	Version	EA	EH	U[3 7]	UF	UY	VG	VH	Key[5]	M
36	S2	6.22	12.44	2.750	3.93	3.037	10.89	1.23	5/8 X 5/8 X 5 1/2	3/4-10 X 2.00
37	S2	6.80	13.59	3.625	4.72	4.019	11.90	1.23	7/8 X 7/8 X 5 1/2	3/4-10 X 2.00
38	S2	6.81	13.74	4.000	5.50	4.316	11.86	.92	1 x 1 x 6 1/2	1-8 x 2.25

Motor Frame	Motor Type[4]	Gear Frame	P	P2	AA	AB	AC	AD	AF	XK
56	T	All	7.31	3.31	.75	6.10	4.50	3.86	1.77	9.79
B56	T	All	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
143T, 145T	T	All	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
182T/184T	T	All	9.56	4.34	.75	6.10	4.50	5.13	1.77	14.04
213T	T	All	11.25	5.06	1.00	8.42	7.17	5.60	2.42	16.15
215T	T	All	11.25	5.06	1.00	8.42	7.17	5.60	2.42	17.65

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
[2] All rough casting dimensions may vary by .25" due to casting variations.
[3] Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.
[4] For details of the torque arm kit, refer to page B-22.
[5] Output bore tolerance: +.0020", - .0000" for all diameters.
[6] Motor dimensions for other than "Type T" three phase TEFC motors, refer to pages B-102 to B-104

2-Stage Finished Bore Hollow Shaft Face Mount - OtN31 - 32

Standard conduit box location will be opposite face mounting unless specified otherwise.



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	WG	XM
3132	S2	5.88	4.65	3.15	4.98	1.97	3.94	3.94	.56	.35	1.53	8.01	3.15	2.85	10.59
3242	S2	8.22	5.71	4.41	6.89	1.38	5.12	4.72	.79	.43	1.83	10.51	3.66	3.22	12.36

Output Shaft

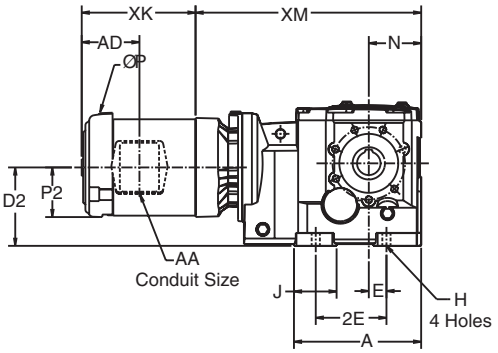
Gear Frame	Version	EA	EH	U[5]	UF	UY	VG	VH	Key[6]	M
3132	S2	2.56	5.12	1.250	1.77	1.372	4.31	.37	1/4 X 1/4 X 1 1/2	7/16-14 X 1.00
3242	S2	2.97	5.94	1.375	1.96	1.523	5.06	.37	5/16 X 5/16 1 13/16	1/2-13 X 1.00

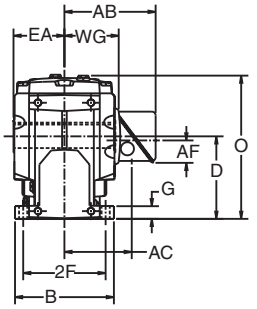
Motor Frame	Motor Type[4]	Gear Frame	P	P2	AA	AB	AC	AD	AF	XK
56	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	9.79
B56	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
143T, 145T	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
182T/184T	T	Any	9.56	4.34	.75	6.10	4.50	5.13	1.77	14.04
213T	T	32	11.25	5.06	1.00	8.42	7.17	5.60	2.42	16.15
215T	T	32	11.25	5.06	1.00	8.42	7.17	5.60	2.42	17.65

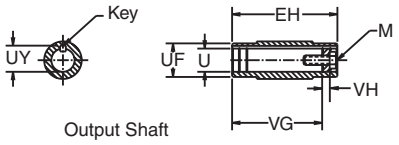
[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
[2] All rough casting dimensions may vary by .25" due to casting variations.
[3] Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.
[4] Motor dimensions for other than "Type T" three phase TEFC motors, refer to pages B-102 to B-104.
[5] Output bore tolerance: +.0020", - .0000" for all diameters.
[6] Output key not supplied.

3-Stage Finished Bore Hollow Shaft Face Mount - OtN32 - 33

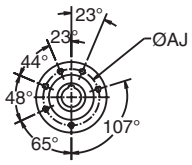
Standard conduit box location will be opposite face mounting unless specified otherwise.



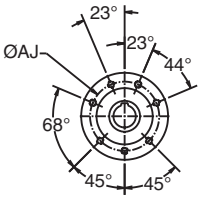




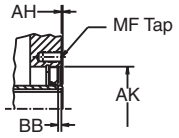
Output Shaft



Gear Frame - Size 32



Gear Frame - Size 33



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	WG	XM
32	S2	7.81	5.71	4.41	3.78	1.38	5.12	4.71	.73	.43	2.34	8.09	3.03	3.15	10.98
33	S2	8.50	6.61	5.51	5.24	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	3.63	12.90

Output Shaft

Gear Frame	Version	EA	EH	U[5]	UF	UY	VG	VH	Key[6]	M
32	S2	2.98	5.95	1.375	1.96	1.523	5.20	.55	5/16 X 5/16 X 1 13/16	1/2-13 X 1.00
33	S2	3.47	6.94	1.500	2.16	1.674	5.96	.55	3/8 X 3/8 X 2 1/4	5/8-11 X 1.75

Face Mount

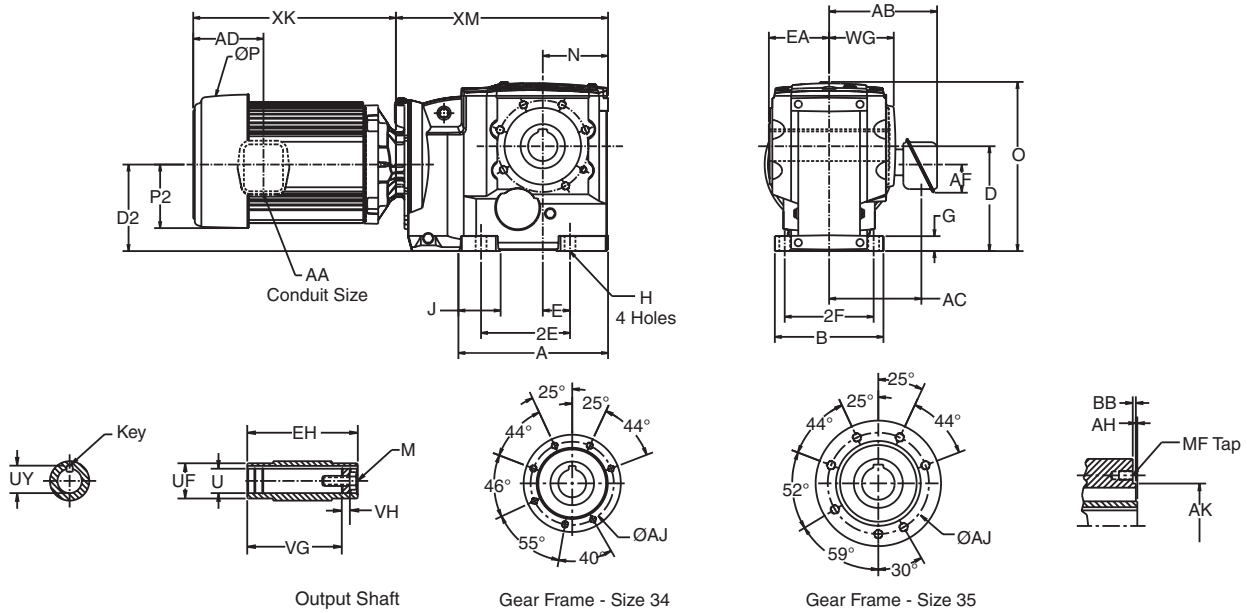
Gear Frame	Flange Code	AH	AJ	AK	BB	MF
32	S2	.12	3.94	3.15	.16	M10-1.50 X 22
33	S2	.12	4.84	3.94	.16	M12-1.75 X 22

Motor Frame	Motor Type[3]	Gear Frame	P	P2	AA	AB	AC	AD	AF	XK
56	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	9.79
B56	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
143T, 145T	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
182T/184T	T	Any	9.56	4.34	.75	6.10	4.50	5.13	1.77	14.04
213T	T	33	11.25	5.06	1.00	8.42	7.17	5.60	2.42	16.15
215T	T	33	11.25	5.06	1.00	8.42	7.17	5.60	2.42	17.65

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
[2] All rough casting dimensions may vary by .25" due to casting variations.
[3] Motor dimensions for other than "Type T" three phase TEFC motors, refer to pages B-102 to B-104.
[4] Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.
[5] Output bore tolerance: +.0020", - .0000" for all diameters.
[6] Output key not supplied.

3-Stage Finished Bore Hollow Shaft Face Mount - OtN34 - 35

Standard conduit box location will be opposite face mounting unless specified otherwise.



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	WG	XM	
															56T-215T	254T-286T
34	S2	10.13	7.87	7.09	5.90	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	4.66	14.56	-
35	S2	11.92	8.66	8.35	6.89	2.17	7.09	7.09	1.18	.87	3.45	13.58	5.20	5.15	16.90	17.25

Output Shaft

Gear Frame	Version	EA	EH	U[6]	UF	UY	VG	VH	Key[5]	M
34	S2	4.49	8.97	2.000	2.56	2.210	7.44	.79	1/2 X 7/16 X 2 5/8	5/8-11 X 1.75
35	S2	4.83	9.66	2.375	3.54	2.656	8.15	.94	5/8 X 5/8 X 3 5/8	3/4-10 X 2.00

Face Mount

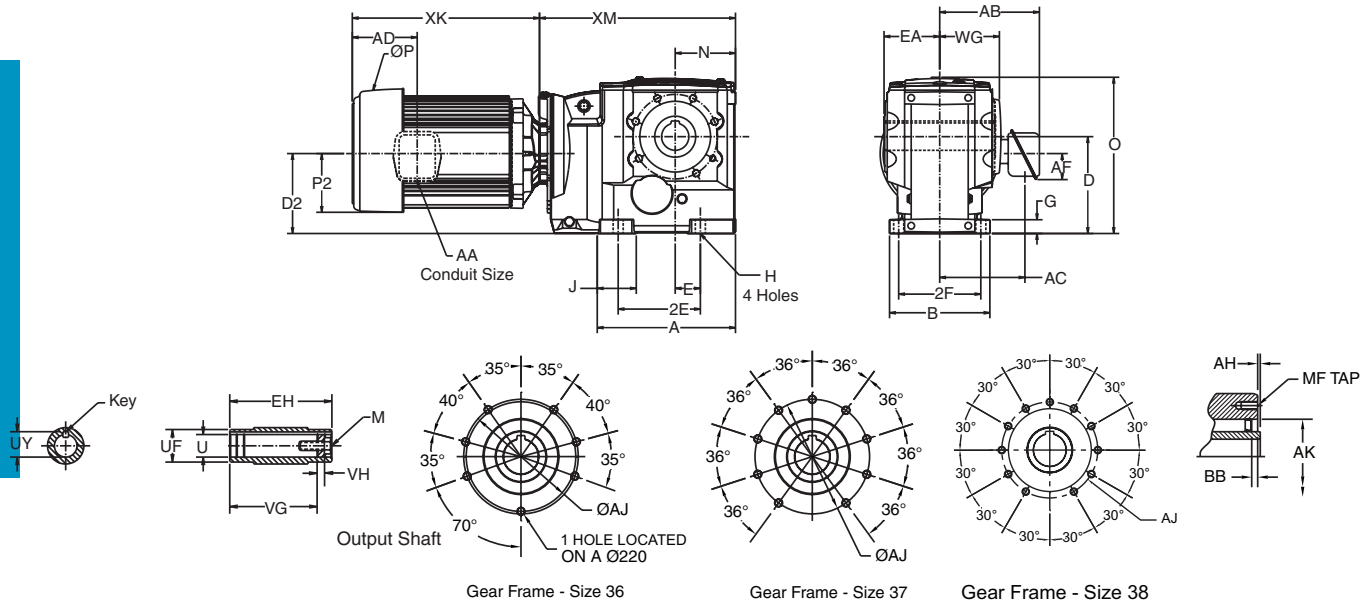
Gear Frame	Version	AH	AJ	AK	BB	MF
34	S2	.14	5.98	5.12	.28	M12-1.75 X 22
35	S2	.13	7.48	6.10	.28	M16-2.00 X 27

Motor Frame	Motor Type[3]	Gear Frame	P	P2	AA	AB	AC	AD	AF	XK
56	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	9.79
B56	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
143T, 145T	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
182T/184T	T	Any	9.56	4.34	.75	6.10	4.50	5.13	1.77	14.04
213T	T	Any	11.25	5.06	1.00	8.42	7.17	5.60	2.42	16.15
215T	T	Any	11.25	5.06	1.00	8.42	7.17	5.60	2.42	17.65
254T	T	34	13.38	6.00	1.25	9.79	7.68	8.29	1.81	20.58
	T	35	13.38	6.00	1.25	9.79	7.68	8.29	1.81	19.61
256T	T	34	13.38	6.00	1.25	9.79	7.68	8.29	1.81	22.33
	T	35	13.38	6.00	1.25	9.79	7.68	8.29	1.81	21.36
284T/286T	T	35	14.62	7.29	1.50	11.33	8.51	12.44	2.63	24.26

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
[2] All rough casting dimensions may vary by .25" due to casting variations.
[3] Motor dimensions for other than "Type T" three phase TEFC motors, refer to pages B-102 to B-104.
[4] Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.
[5] Output key supplied on frame 34 only.
[6] Output bore tolerance: +.0020", - .0000" for all diameters.

3-Stage Finished Bore Hollow Shaft Face Mount - OtN36 - 38

Standard conduit box location will be opposite face mounting unless specified otherwise.



Gear Frame - Size 36 | Gear Frame - Size 37 | Gear Frame - Size 38

Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	WG	XM		
															182T/184T	213T-215T	254T-UP
36	S2	17.06	11.41	8.86	8.86	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	6.78	23.38	23.38	23.73
37	S2	20.58	12.99	9.84	10.98	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	7.44	-	29.06	29.41
38	S2	20.13	13.39	14.76	11.87	4.53	13.78	10.63	1.98	1.26	4.06	24.11	8.86	7.40	-	24.29	24.64

Output Shaft

Gear Frame	Version	EA	EH	U[3, 5]	UF	UY	VG	VH	Key[6]	M
36	S2	6.22	12.44	2.750	3.93	3.037	10.89	1.23	5/8 X 5/8 X 5 1/2	3/4-10 X 2.00
37	S2	6.80	13.59	3.625	4.72	4.019	11.90	1.23	7/8 X 7/8 X 5 1/2	3/4-10 X 2.00
38	S2	6.81	13.74	4.000	5.50	4.316	11.86	.92	1 x 1 X 6 1/2	1-8 X 2.25

Face Mount

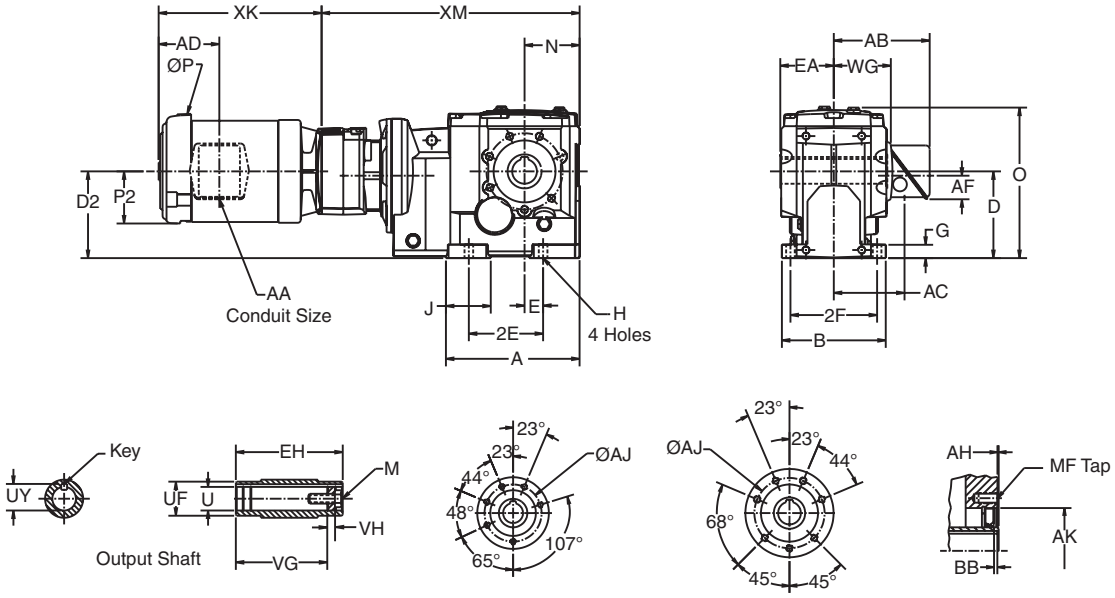
Gear Frame	Version	AH	AJ	AK	BB	MF
36	S2	.20	9.06	5.91	.28	M16-2.0 X 27
37	S2	.20	9.06	7.09	.28	M20-2.5 X 35
38	S2	.10	11.81	9.84	.20	M20-2.00 X 35

Motor Frame	Motor Type[4]	Gear Frame	P	P2	AA	AB	AC	AD	AF	XK
182T/184T	T	36	9.56	4.34	.75	6.10	4.50	5.13	1.77	14.04
213T	T	All	11.25	5.06	1.00	8.42	7.17	5.60	2.42	16.15
215T	T	All	11.25	5.06	1.00	8.42	7.17	5.60	2.42	17.65
254T	T	All	13.38	6.00	1.25	9.79	7.68	8.29	1.81	19.61
256T	T	All	13.38	6.00	1.25	9.79	7.68	8.29	1.81	21.36
284T/286T	T	All	14.62	7.29	1.50	11.33	8.51	12.44	2.63	24.26
324T/326T	T	All	17.2	7.78	2.00	14.99	11.34	14.16	3.63	27.36

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
[2] All rough casting dimensions may vary by .25" due to casting variations.
[3] Motor dimensions for other than "Type T" three phase TEFC motors, refer to pages B-102 to B-104.
[4] Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.
[5] Output bore tolerance: +.0020", - .0000" for all diameters.
[6] Output key not supplied with reducer

Combined Finished Bore Hollow Shaft Face Mount - OtN32 - 33

Standard conduit box location will be opposite face mounting unless specified otherwise.



Gear Frame - Size 32 Gear Frame - Size 33

Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	WG	XM
32	S2	7.81	5.71	4.41	4.06	1.38	5.12	4.71	.73	.43	2.34	8.09	3.03	3.15	14.49
33	S2	8.50	6.61	5.51	4.91	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	3.63	19.90

Output Shaft

Gear Frame	Version	EA	EH	U[5]	UF	UY	VG	VH	Key[6]	M
32	S2	2.98	5.96	1.375	1.96	1.523	5.20	.55	5/16 X 5/16 X 1 13/16	1/2-13 X 1.00
33	S2	3.47	6.94	1.500	2.16	1.674	5.96	.55	3/8 X 3/8 X 2 1/4	5/8-11 X 1.75

Face Mount

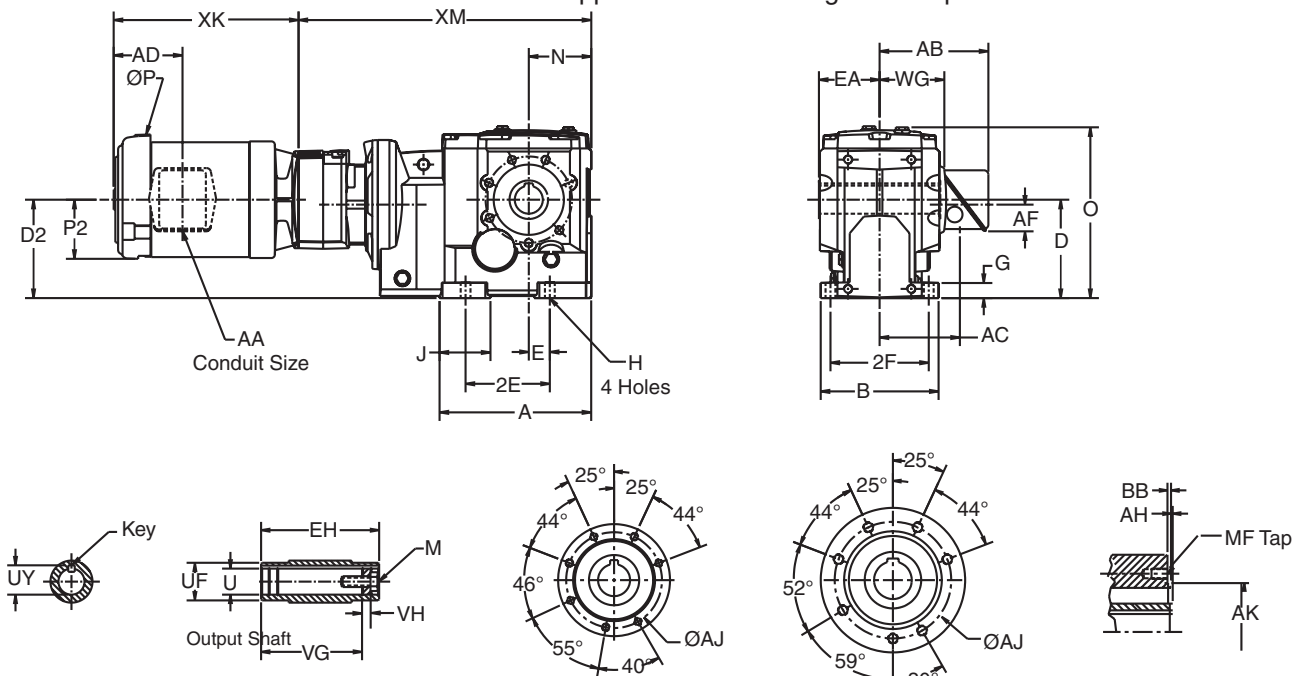
Gear Frame	Version	AH	AJ	AK	BB	MF
32	S2	.12	3.94	3.15	.16	M10-1.50 X 22
33	S2	.12	4.84	3.94	.16	M12-1.75 X 22

Motor Frame	Motor Type[3]	Gear Frame	P	P2	AA	AB	AC	AD	AF	XK
56	T	32	7.31	3.31	.75	6.10	4.50	3.86	1.77	10.37
	T	33	7.31	3.31	.75	6.10	4.50	3.86	1.77	9.79
B56	T	32	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.62
	T	33	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
143T, 145T	T	33	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
[2] All rough casting dimensions may vary by .25" due to casting variations.
[3] Motor dimensions for other than "Type T" three phase TEFC motors, refer to pages B-102 to B-104.
[4] Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.
[5] Output bore tolerance: +.0020", - .0000" for all diameters.
[6] Output key not supplied.

Combined Finished Bore Hollow Shaft
Face Mount - OtN34 - 35

Standard conduit box location will be opposite face mounting unless specified otherwise.



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	WG	XM
34	S2	10.13	7.87	7.09	5.57	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	4.66	21.55
35	S2	11.92	8.66	8.35	6.56	2.17	7.09	7.09	1.18	.87	3.45	13.58	5.20	5.15	23.87

Output Shaft

Gear Frame	Version	EA	EH	U[6]	UF	UY	VG	VH	Key[5]	M
34	S2	4.49	8.97	2.000	2.56	2.210	7.44	.79	1/2 X 7/16 X 2 5/8	5/8-11 X 1.75
35	S2	4.83	9.66	2.375	3.54	2.656	8.15	.94	5/8 X 5/8 X 3 5/8	3/4-10 X 2.00

Face Mount

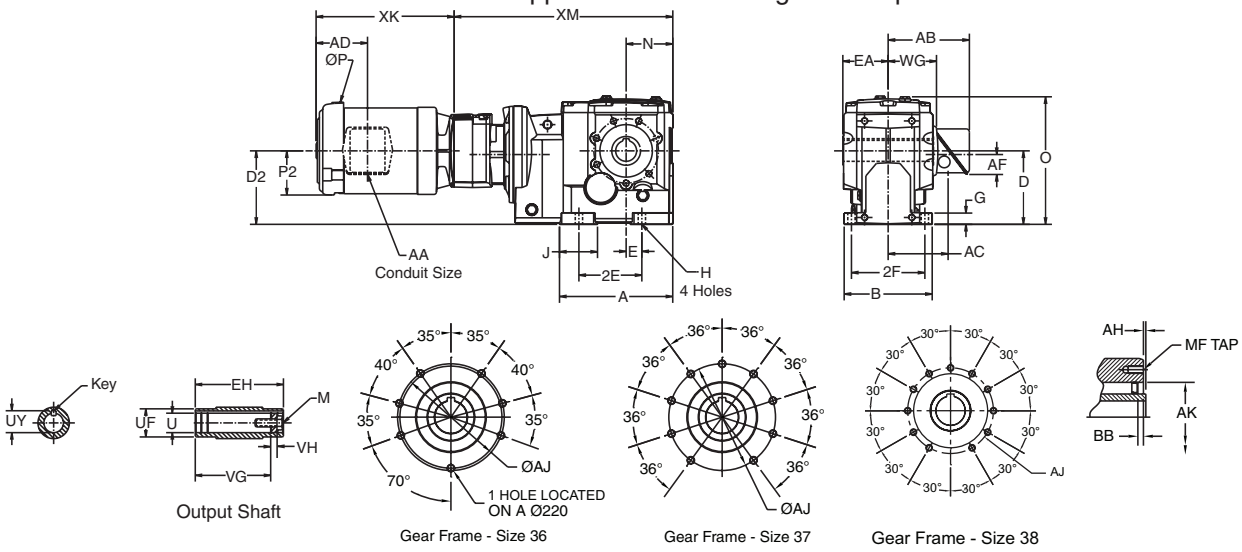
Gear Frame	Version	AH	AJ	AK	BB	MF
34	S2	.14	5.98	5.12	.28	M12-1.75 X 22
35	S2	.13	7.48	6.10	.28	M16-2.00 X 27

Motor Frame	Motor Type[3]	Gear Frame	P	P2	AA	AB	AC	AD	AF	XK
56	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	9.79
B56	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
143T, 145T	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
182T/184T	T	35	9.56	4.34	.75	6.10	4.50	5.13	1.77	14.04

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
[2] All rough casting dimensions may vary by .25" due to casting variations.
[3] Motor dimensions for other than "Type T" three phase TEFC motors, refer to pages B-102 to B-104.
[4] Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.
[5] Output key supplied only on frame 34 "S2" version.
[6] Output bore tolerance: +.0020", - .0000" for all diameters.

Combined Finished Bore Hollow Shaft Face Mount - OtN36 - 38

Standard conduit box location will be opposite face mounting unless specified otherwise.



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	WG	XM
															56 -215T
36	S2	17.06	11.41	8.86	8.46	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	6.78	31.04
37	S2	20.58	12.99	9.84	10.57	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	7.44	36.37
38	S2	20.13	13.39	14.76	11.48	4.53	13.78	10.63	1.98	1.26	4.06	24.11	8.86	7.40	31.94

Output Shaft

Gear Frame	Version	EA	EH	U[3, 5]	UF	UY	VG	VH	Key[6]	M
36	S2	6.22	12.44	2.750	3.93	3.037	10.89	1.23	5/8 X 5/8 X 5 1/2	3/4-10 X 2.00
37	S2	6.80	13.59	3.625	4.72	4.019	11.90	1.23	7/8 X 7/8 X 5 1/2	3/4-10 X 2.00
38	S2	6.81	13.74	4.000	5.50	4.316	11.86	.92	1 X 1 X 6 1/2	1-8 X 2.25

Face Mount

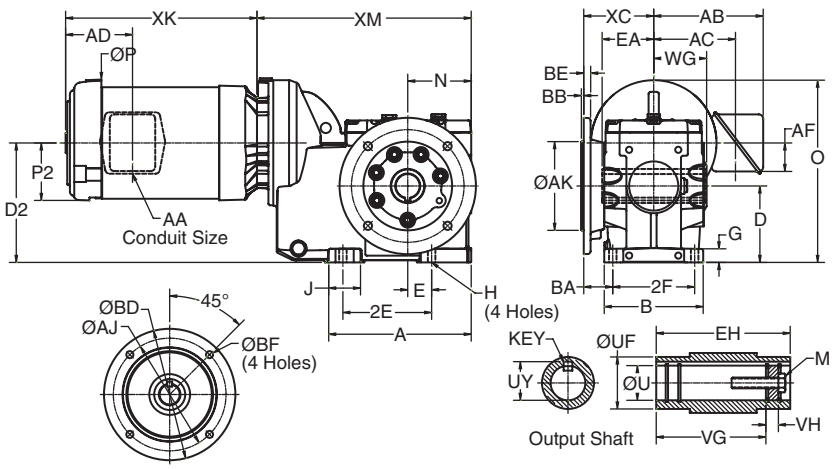
Gear Frame	Version	AH	AJ	AK	BB	MF
36	S2	.20	9.06	5.91	.28	M16-2.0 X 27
37	S2	.20	9.06	7.09	.28	M20-2.5 X 35
38	S2	.10	11.81	9.84	.20	M20-2.00 X 35

Motor Frame	Motor Type[4]	Gear Frame	P	P2	AA	AB	AC	AD	AF	XK
56	T	All	7.31	3.31	.75	6.10	4.50	3.86	1.77	9.79
B56	T	All	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
143T, 145T	T	All	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
182T/184T	T	All	9.56	4.34	.75	6.10	4.50	5.13	1.77	14.04
213T	T	All	11.25	5.06	1.00	8.42	7.17	5.60	2.42	16.15
215T	T	All	11.25	5.06	1.00	8.42	7.17	5.60	2.42	17.65

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
[2] All rough casting dimensions may vary by .25" due to casting variations.
[3] Motor dimensions for other than "Type T" three phase TEFC motors, refer to pages B-102 to B-104.
[4] Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.
[5] Output bore tolerance: +.0020", - .0000" for all diameters.
[6] Output key not supplied with reducer

2-Stage Finished Bore Hollow Shaft Flange Mount - OtN31 - 32

Standard conduit box location will be opposite flange unless specified otherwise.



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	BA	WG	XC	XM
3132	S2	5.88	4.65	3.15	4.98	1.97	3.94	3.94	.56	.35	1.53	8.01	3.15	1.54	2.85	3.50	10.59
3242	S2	8.22	5.71	4.41	6.89	1.38	5.12	4.72	.79	.43	1.83	10.51	3.66	1.67	3.22	4.04	12.36

Output Shaft

Gear Frame	Version	EA	EH	U[5]	UF	UY	VG	VH	Key[6]	M
3132	S2	2.56	5.12	1.250	1.77	1.372	4.31	.37	1/4 X 1/4 X 1 1/2	7/16-14 X 1.00
3242	S2	2.97	5.94	1.375	1.96	1.523	5.06	.37	5/16 X 5/16 1 13/16	1/2-13 X 1.00

Output Flange

Gear Frame	Flange Code	AK	AJ	BB	BD	BE	BF
3132	5	4.331	5.12	.14	6.50	.39	.35
	6	3.740	4.53	.14	5.51	.44	.35
3242	5	5.118	6.50	.14	7.87	.39	.47
	6	7.087	8.46	.16	9.84	.47	.55

Motor Frame	Motor Type[3]	Gear Frame	P	P2	AA	AB	AC	AD	AF	XK
56	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	9.79
B56	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
143T, 145T	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
182T/184T	T	Any	9.56	4.34	.75	6.10	4.50	5.13	1.77	14.04
213T	T	32	11.25	5.06	1.00	8.42	7.17	5.60	2.42	16.15
215T	T	32	11.25	5.06	1.00	8.42	7.17	5.60	2.42	17.65

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

[2] All rough casting dimensions may vary by .25" due to casting variations.

[3] Motor dimensions for other than "Type T" three phase TEFC motors, refer to pages B-102 to B-104.

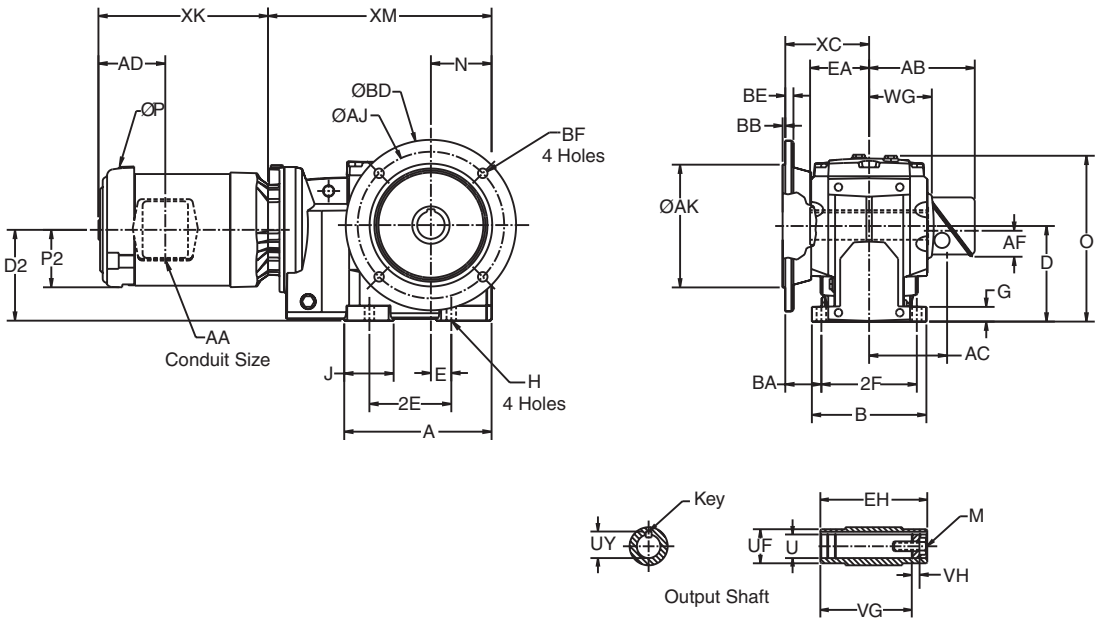
[4] Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.

[5] Output bore tolerance: +.0020", - .0000" for all diameters.

[6] Output key not supplied.

3-Stage Finished Bore Hollow Shaft Flange Mount - OtN32 - 33

Standard conduit box location will be opposite flange unless specified otherwise.



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	BA	WG	XC	XM
32	S2	7.81	5.71	4.41	3.78	1.38	5.12	4.71	.73	.43	2.34	8.09	3.03	1.81	3.22	4.04	10.98
33	S2	8.50	6.61	5.51	5.24	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	2.08	3.73	4.84	12.90

Output Shaft

Gear Frame	Version	EA	EH	U[5]	UF	UY	VG	VH	Key	M
32	S2	2.98	5.96	1.375	1.96	1.523	5.20	.55	5/16 X 5/16 X 1 13/16	1/2-13 X 1.00
33	S2	3.47	6.94	1.500	2.16	1.674	5.96	.55	3/8 X 3/8 X 2 1/4	5/8-11 X 1.75

Output Flange

Gear Frame	Flange Code	AK	AJ	BB	BD	BE	BF
32	5	5.118	6.50	.14	7.87	.39	.47
	6	7.087	8.46	.16	9.84	.47	.55
33	5	7.087	8.46	.16	9.84	.47	.55
	6	9.055	10.43	.16	11.81	.47	.55

Motor Frame	Motor Type[3]	Gear Frame	P	P2	AA	AB	AC	AD	AF	XK
56	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	9.79
B56	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
143T, 145T	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
182T/184T	T	Any	9.56	4.34	.75	6.10	4.50	5.13	1.77	14.04
213T	T	33	11.25	5.06	1.00	8.42	7.17	5.60	2.42	16.15
215T	T	33	11.25	5.06	1.00	8.42	7.17	5.60	2.42	17.65

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

[2] All rough casting dimensions may vary by .25" due to casting variations.

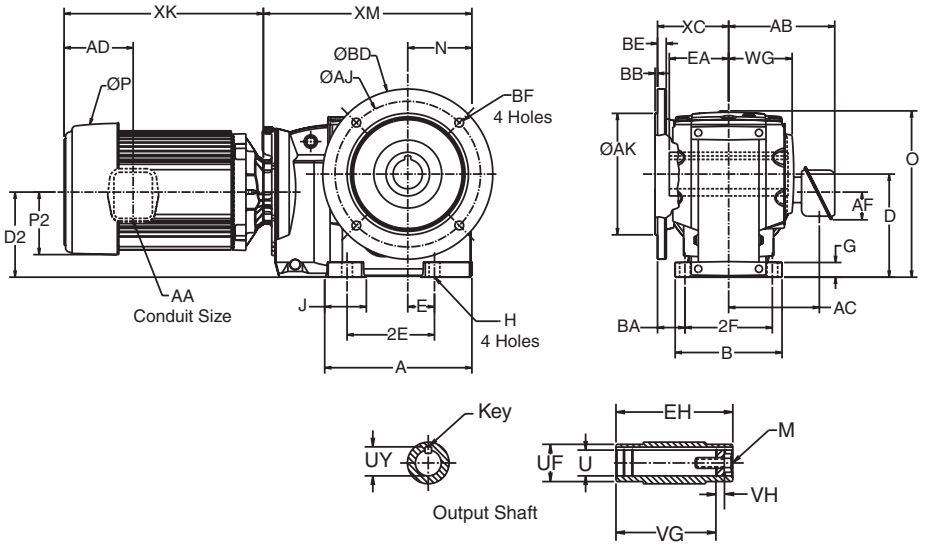
[3] Motor dimensions for other than "Type T" three phase TEFC motors, refer to pages B-102 to B-104.

[4] Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.

[5] Output bore tolerance: +.0020", - .0000" for all diameters.

3-Stage Finished Bore Hollow Shaft Flange Mount - OtN34 - 35

Standard conduit box location will be opposite flange unless specified otherwise.



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	BA	WG	XC	XM	
																	56T-215T	254T-286T
34	S2	10.13	7.87	7.09	5.90	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	1.93	4.66	5.18	14.56	-
35	S2	11.92	8.66	8.35	6.89	2.17	7.09	7.09	1.18	.87	3.45	13.58	5.20	2.22	5.15	5.76	16.90	17.25

Output Shaft

Gear Frame	Version	EA	EH	U[6]	UF	UY	VG	VH	Key[5]	M
34	S2	4.49	8.97	2.000	2.56	2.210	7.44	.79	1/2 X 7/16 X 2 5/8	5/8-11 X 1.75
35	S2	4.83	9.66	2.375	3.54	2.656	8.15	.94	5/8 X 5/8 X 3 5/8	3/4-10 X 2.00

Output Flange

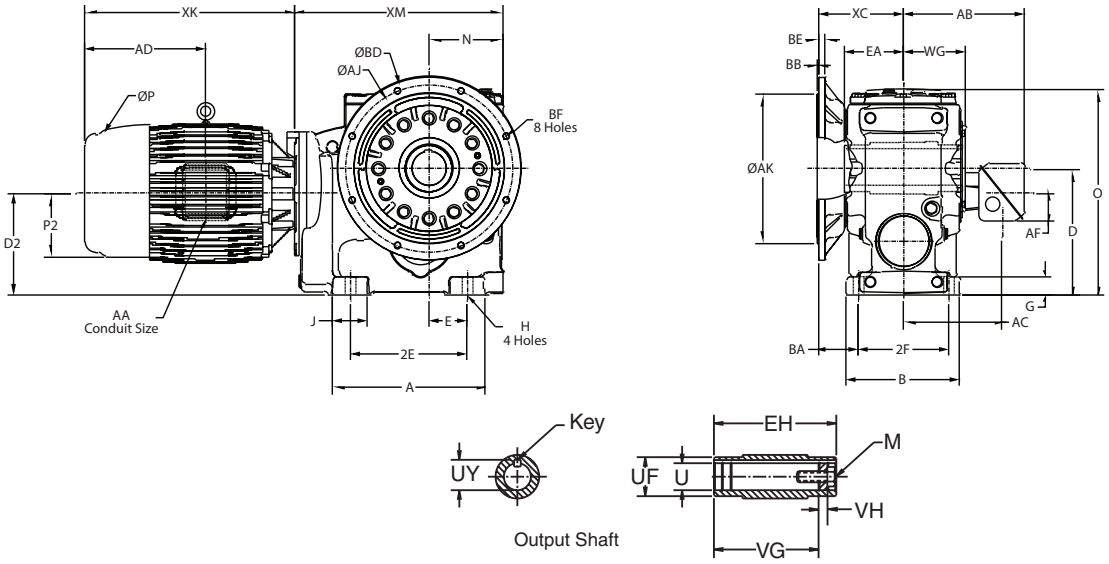
Gear Frame	Flange Code	AK	AJ	BB	BD	BE	BF
34	5	9.055	10.43	.16	11.80	.59	.55
	6	9.842	11.80	.16	13.77	.59	.71
35	5	9.842	11.80	.20	13.77	.71	.71
	6	11.810	13.77	.20	15.75	.71	.71

Motor Frame	Motor Type[3]	Gear Frame	P	P2	AA	AB	AC	AD	AF	XK
56	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	9.79
B56	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
143T, 145T	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
182T/184T	T	Any	9.56	4.34	.75	6.10	4.50	5.13	1.77	14.04
213T	T	Any	11.25	5.06	1.00	8.42	7.17	5.60	2.42	16.15
215T	T	Any	11.25	5.06	1.00	8.42	7.17	5.60	2.42	17.65
254T	T	34	13.38	6.00	1.25	9.79	7.68	8.29	1.81	20.58
	T	35	13.38	6.00	1.25	9.79	7.68	8.29	1.81	19.61
256T	T	34	13.38	6.00	1.25	9.79	7.68	8.29	1.81	22.33
	T	35	13.38	6.00	1.25	9.79	7.68	8.29	1.81	21.36
284T	T	35	13.38	6.00	1.50	10.58	8.18	8.29	2.13	21.86
286T	T	35	13.38	6.00	1.50	10.33	7.93	8.29	2.13	23.36

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
[2] All rough casting dimensions may vary by .25" due to casting variations.
[3] Motor dimensions for other than "Type T" three phase TEFC motors, refer to pages B-102 to B-104.
[4] Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.
[5] Output key supplied on frame 34 only.
[6] Output bore tolerance: +.0020", - .0000" for all diameters.

3-Stage Finished Bore Hollow Shaft Flange Mount - OtN36 - 38

Standard conduit box location will be opposite flange unless specified otherwise.



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	BA	WG	XC	XM		
																	182T/184T	213T-215T	254T-UP
36	S2	17.06	11.41	8.86	8.86	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	4.45	6.78	9.17	23.38	23.38	23.73
37	S2	20.58	12.99	9.84	10.98	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	4.45	7.44	9.76	-	29.06	29.41
38	S2	20.13	13.39	14.76	11.87	4.53	13.78	10.63	1.98	1.26	4.06	24.11	8.86	4.65	7.40	9.96	-	24.29	24.64

Output Shaft

Gear Frame	Version	EA	EH	U[4,5]	UF	UY	VG	VH	Key[6]	M
36	S2	6.22	12.44	2.750	3.93	3.037	10.89	1.23	5/8 X 5/8 X 5 1/2	3/4-10 X 2.00
37	S2	6.80	13.59	3.625	4.72	4.019	11.90	1.23	7/8 X 7/8 X 5 1/2	3/4-10 X 2.00
38	S2	6.81	13.74	4.000	5.50	4.316	11.86	.92	1 X 1 X 6 1/2	1-8 X 2.25

Output Flange

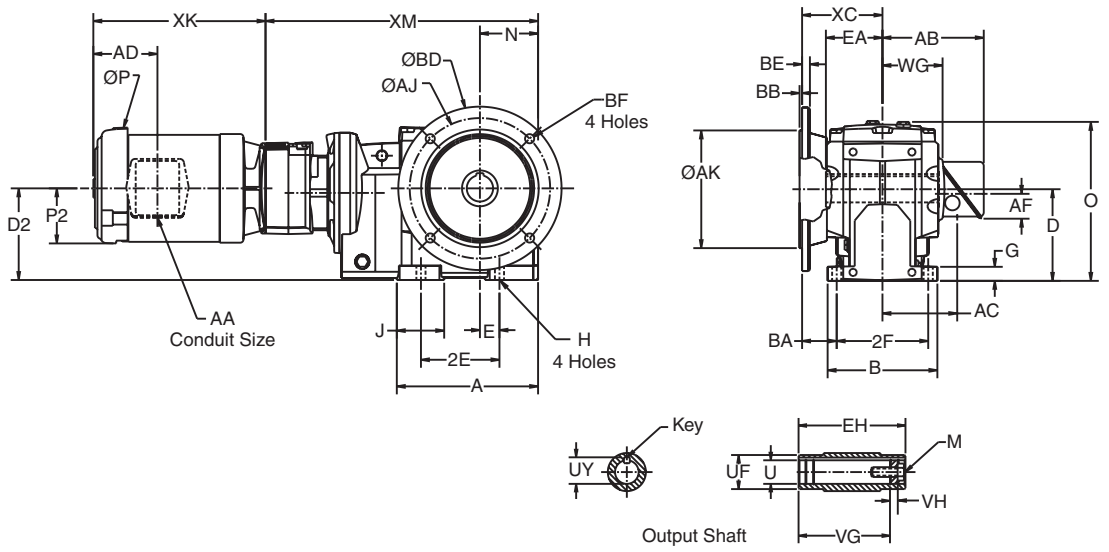
Gear Frame	Flange Code	AJ	AK	BB	BD	BE	BF
36 & 37	5	13.78	15.75	.236	17.70	.79	.71
	6	17.72	19.68	.236	21.65	.63	.87
38	5	17.72	19.69	.200	21.65	.79	.69
	6	21.65	23.62	.236	25.98	.63	.87

Motor Frame	Motor Type[3]	Gear Frame	P	P2	AA	AB	AC	AD	AF	XK
182T/184T	T	36	9.56	4.34	.75	6.10	4.50	5.13	1.77	14.04
213T	T	All	11.25	5.06	1.00	8.42	7.17	5.60	2.42	16.15
215T	T	All	11.25	5.06	1.00	8.42	7.17	5.60	2.42	17.65
254T	T	All	13.38	6.00	1.25	9.79	7.68	8.29	1.81	19.61
256T	T	All	13.38	6.00	1.25	9.79	7.68	8.29	1.81	21.36
284T/286T	T	All	14.62	7.29	1.50	11.33	8.51	12.44	2.63	24.26
324T/326T	T	All	17.2	7.78	2.00	14.99	11.34	14.16	3.63	24.96

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
[2] All rough casting dimensions may vary by .25" due to casting variations.
[3] Motor dimensions for other than "Type T" three phase TEFC motors, refer to pages B-102 to B-104.
[4] Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.
[5] Output bore tolerance: +.0020", - .0000" for all diameters.
[6] Output shaft key not supplied.

Combined Finished Bore Hollow Shaft Flange Mount - OtN32 - 33

Standard conduit box location will be opposite flange unless specified otherwise.



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	BA	WG	XC	XM
32	S2	7.81	5.71	4.41	4.06	1.38	5.12	4.71	.73	.43	2.34	8.09	3.03	1.81	3.22	4.04	14.49
33	S2	8.50	6.61	5.51	4.91	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	2.08	3.73	4.84	19.90

Output Shaft

Gear Frame	Version	EA	EH	U[5]	UF	UY	VG	VH	Key[6]	M
32	S2	2.98	5.96	1.375	1.96	1.523	5.20	.55	5/16 X 5/16 X 1 13/16	1/2-13 X 1.00
33	S2	3.47	6.94	1.500	2.16	1.674	5.96	.55	3/8 X 3/8 X 2 1/4	5/8-11 X 1.75

Output Flange

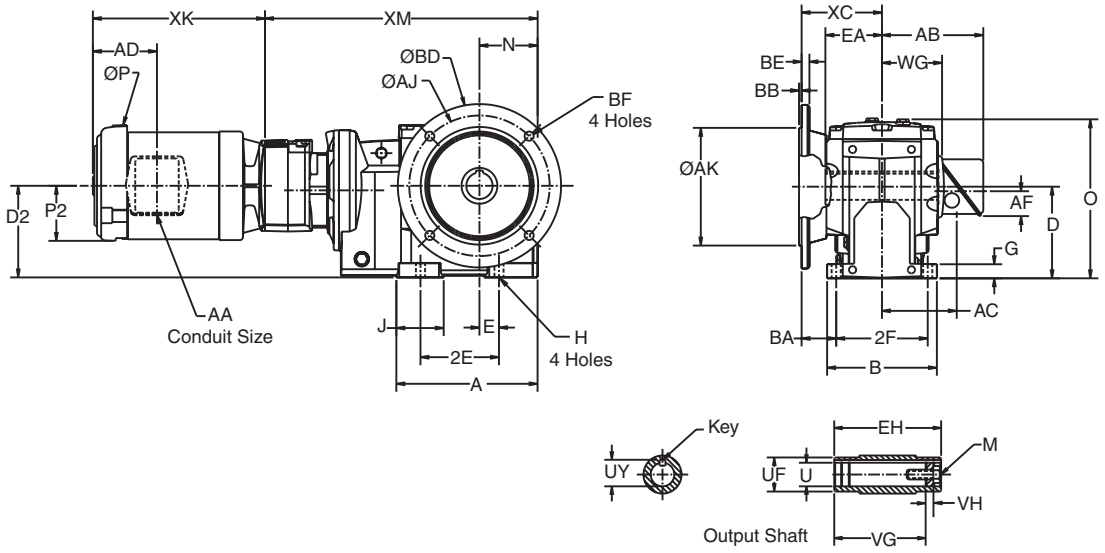
Gear Frame	Flange Code	AK	AJ	BB	BD	BE	BF
32	5	5.118	6.50	.14	7.87	.39	.47
	6	7.087	8.46	.16	9.84	.47	.55
33	5	7.087	8.46	.16	9.84	.47	.55
	6	9.055	10.43	.16	11.81	.47	.55

Motor Frame	Motor Type[3]	Gear Frame	P	P2	AA	AB	AC	AD	AF	XK
56	T	32	7.31	3.31	.75	6.10	4.50	3.86	1.77	10.37
	T	33	7.31	3.31	.75	6.10	4.50	3.86	1.77	9.79
B56	T	32	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.62
	T	33	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
143T, 145T	T	33	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
[2] All rough casting dimensions may vary by .25" due to casting variations.
[3] Motor dimensions for other than "Type T" three phase TEFC motors, refer to pages B-102 to B-104.
[4] Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.
[5] Output bore tolerance: +.0020", - .0000" for all diameters.
[6] Output key not supplied.

Combined Finished Bore Hollow Shaft Flange Mount - OtN34 - 35

Standard conduit box location will be opposite flange unless specified otherwise.



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	BA	WG	XC	XM
34	S2	10.13	7.87	7.09	5.57	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	1.93	4.66	5.18	21.55
35	S2	11.92	8.66	8.35	6.56	2.17	7.09	7.09	1.18	.87	3.45	13.58	5.20	2.22	5.15	5.76	23.87

Output Shaft

Gear Frame	Version	EA	EH	U[6]	UF	UY	VG	VH	Key[5]	M
34	S2	4.49	8.97	2.000	2.56	2.210	7.44	.79	1/2 X 7/16 X 2 5/8	5/8-11 X 1.75
35	S2	4.83	9.66	2.375	3.54	2.656	8.15	.94	5/8 X 5/8 X 3 5/8	3/4-10 X 2.00

Output Flange

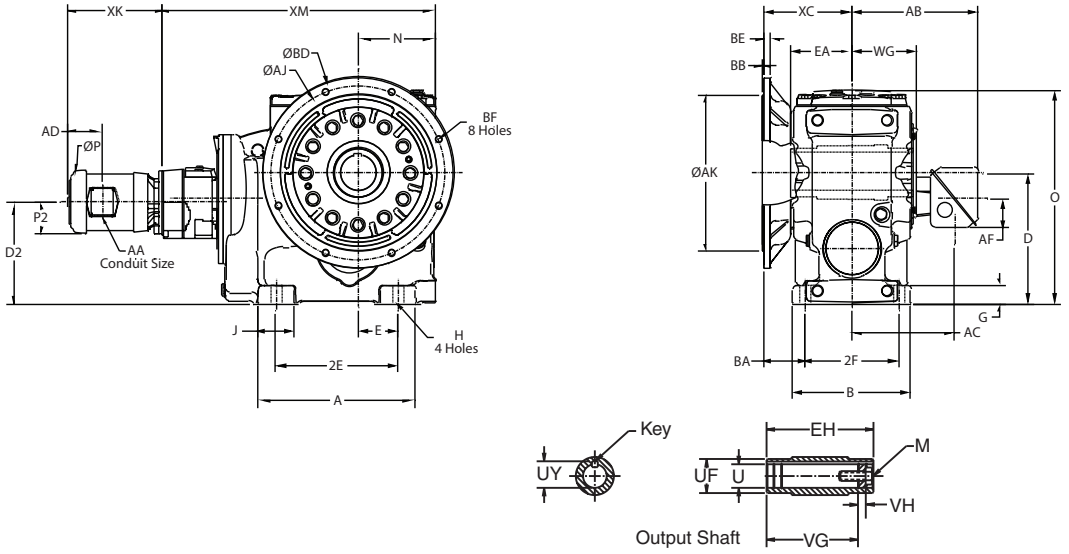
Gear Frame	Flange Code	AK	AJ	BB	BD	BE	BF
34	5	9.055	10.43	.16	11.80	.59	.55
	6	9.842	11.80	.16	13.77	.59	.71
35	5	9.842	11.80	.20	13.77	.71	.71
	6	11.810	13.77	.20	15.75	.71	.71

Motor Frame	Motor Type[3]	Gear Frame	P	P2	AA	AB	AC	AD	AF	XK
56	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	9.79
B56	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
143T, 145T	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
182T/184T	T	35	9.56	4.34	.75	6.10	4.50	5.13	1.77	14.04

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
[2] All rough casting dimensions may vary by .25" due to casting variations.
[3] Motor dimensions for other than "Type T" three phase TEFC motors, refer to pages B-102 to B-104.
[4] Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.
[5] Output key supplied only on frame 34 "S2" version.
[6] Output bore tolerance: +.0020", - .0000" for all diameters.

Combined Finished Bore Hollow Shaft Flange Mount - OtN36 - 38

Standard conduit box location will be opposite flange unless specified otherwise.



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	BA	WG	XC	XM 56 -215T
36	S2	17.06	11.41	8.86	8.46	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	4.45	6.78	9.17	31.04
37	S2	20.58	12.99	9.84	10.57	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	4.45	7.44	9.76	36.37
38	S2	20.13	13.39	14.76	11.48	4.53	13.78	10.63	1.98	1.26	4.06	24.11	8.86	4.65	7.40	9.96	31.94

Output Shaft

Gear Frame	Version	EA	EH	U[4, 5]	UF	UY	VG	VH	Key[6]	M
36	S2	6.22	12.44	2.750	3.93	3.037	10.89	1.23	5/8 X 5/8 X 5 1/2	3/4-10 X 2.00
37	S2	6.80	13.59	3.625	4.72	4.019	11.90	1.23	7/8 X 7/8 X 5 1/2	3/4-10 X 2.00
38	S2	6.81	13.74	4.000	5.50	4.316	11.86	.92	1 X 1 X 6 1/2	1-8 X 2.25

Output Flange

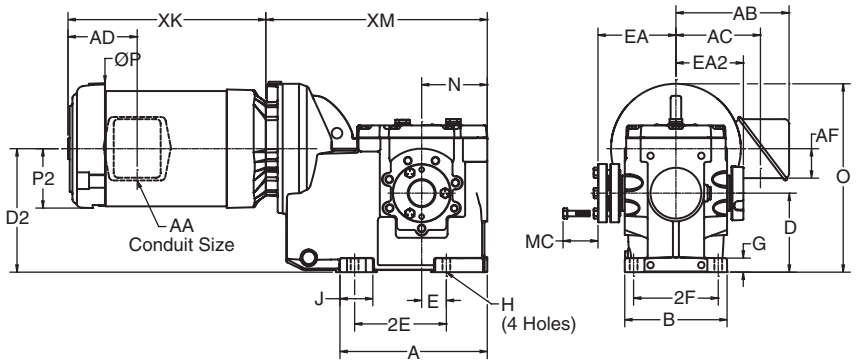
Gear Frame	Flange Code	AJ	AK	BB	BD	BE	BF
36 & 37	5	13.78	15.75	.236	17.70	.79	.71
	6	17.72	19.68	.236	21.65	.63	.87
38	5	17.72	19.69	.200	21.65	.79	.69
	6	21.65	23.62	.236	25.98	.63	.87

Motor Frame	Motor Type[4]	Gear Frame	P	P2	AA	AB	AC	AD	AF	XK
56	T	All	7.31	3.31	.75	6.10	4.50	3.86	1.77	9.79
B56	T	All	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
143T, 145T	T	All	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
182T/184T	T	All	9.56	4.34	.75	6.10	4.50	5.13	1.77	14.04
213T	T	All	11.25	5.06	1.00	8.42	7.17	5.60	2.42	16.15
215T	T	All	11.25	5.06	1.00	8.42	7.17	5.60	2.42	17.65

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
[2] All rough casting dimensions may vary by .25" due to casting variations.
[3] Motor dimensions for other than "Type T" three phase TEFC motors, refer to pages B-102 to B-104.
[4] Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.
[5] Output bore tolerance: +.0020", - .0000" for all diameters.
[6] Output key not supplied with unit

2-Stage Bushed Shaft Mount
OtN31 - 32

Standard conduit box location will be F1 unless specified otherwise.



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	XM
3132	S2	5.88	4.65	3.15	4.98	1.97	3.94	3.94	.56	.35	1.53	8.01	3.15	10.59
3242	S2	8.22	5.71	4.41	6.89	1.38	5.12	4.72	.79	.43	1.83	10.51	3.66	12.36

Output Shaft

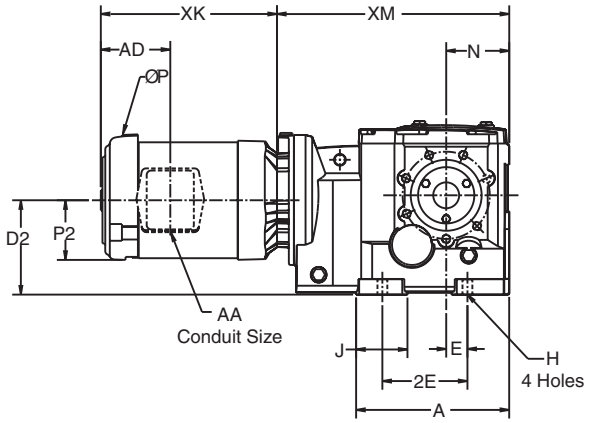
Gear Frame	Version	EA	EA2	MC[5]	Bushing Bores[4]	
					Min.	Max.
3132	S2	4.25	3.80	1.50	1	1 5/16
3242	S2	4.85	4.27	1.75	1 5/16	1 7/16

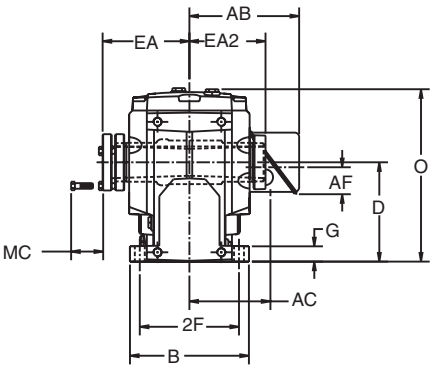
Motor Frame	Motor Type[3]	Gear Frame	P	P2	AA	AB	AC	AD	AF	XK
56	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	9.79
B56	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
143T, 145T	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
182T/184T	T	Any	9.56	4.34	.75	6.10	4.50	5.13	1.77	14.04
213T	T	32	11.25	5.06	1.00	8.42	7.17	5.60	2.42	16.15
215T	T	32	11.25	5.06	1.00	8.42	7.17	5.60	2.42	17.65

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
[2] All rough casting dimensions may vary by .25" due to casting variations.
[3] Motor dimensions for other than "Type T" three phase TEFC motors, refer to pages B-102 to B-104.
[4] Refer to page B-23 by gear frame for listing of all inch and metric bushing bore sizes available.
[5] The "MC" dimension shows spacing required to install or remove the bushing from the reducer.
[6] Bushing and dust cap can be installed opposite of how they are shown above.
[7] Driven shaft entry can be from either side of the gear reducer housing. Refer to Installation Manual for requirements.
[8] For details of the torque arm kit,refer to page B-22.

3-Stage Taper Bushed Shaft Mount
OtN32 - 33

Standard conduit box location will be F1 unless specified otherwise.





Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	XM
32	S2	7.81	5.71	4.41	37.78	1.38	5.12	4.71	.73	.43	2.34	8.09	3.03	10.98
33A	S2	8.50	6.61	5.51	5.24	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	12.90

Output Shaft

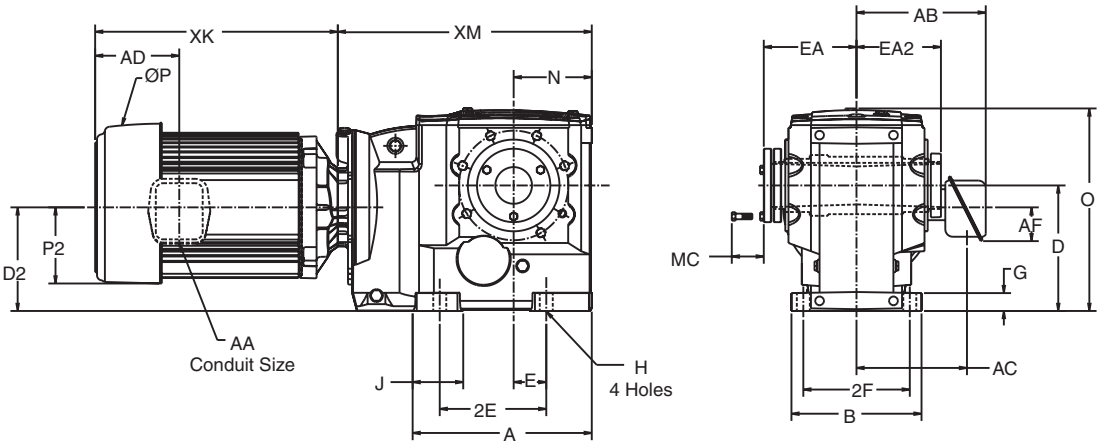
Gear Frame	Version	EA	EA2	MC[5]	Bushing Bores[4]	
					Min.	Max.
32	S2	4.85	4.27	1.75	1 5/16	1 7/16
33A	S2	5.76	5.18	1.88	1 7/16	1 15/16

Motor Frame	Motor Type[3]	Gear Frame	P	P2	AA	AB	AC	AD	AF	XK
56	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	9.79
B56	T	Any	7.31	3.31	0.75	6.10	4.50	3.86	1.77	11.04
143T, 145T	T	Any	7.31	3.31	0.75	6.10	4.50	3.86	1.77	11.04
182T/184T	T	Any	9.56	4.34	.75	6.10	4.50	5.13	1.77	14.04
213T	T	33A	11.25	5.06	1.00	8.42	7.17	5.60	2.42	16.15
215T	T	33A	11.25	5.06	1.00	8.42	7.17	5.60	2.42	17.65

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
[2] All rough casting dimensions may vary by .25" due to casting variations.
[3] Motor dimensions for other than "Type T" three phase TEFC motors, refer to pages B-102 to B-104.
[4] Refer to page B-23 by gear frame for listing of all inch and metric bushing bore sizes available.
[5] The "MC" dimension shows spacing required to install or remove the bushing from the reducer.
[6] Bushing and dust cap can be installed opposite of how they are shown above.
[7] Driven shaft entry can be from either side of the gear reducer housing. Refer to Installation Manual for requirements.
[8] For details of the torque arm kit,refer to page B-22.

3-Stage Taper Bushed Shaft Mount
OtN34 - 35

Standard conduit box location will be F1 unless specified otherwise.



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	XM	
														56-215T	254T-286T
34	S2	10.13	7.87	7.09	5.90	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	14.56	-
35	S2	11.92	8.66	8.35	6.89	2.17	7.09	7.09	1.18	.87	3.45	13.58	5.20	16.90	17.25

Output Shaft

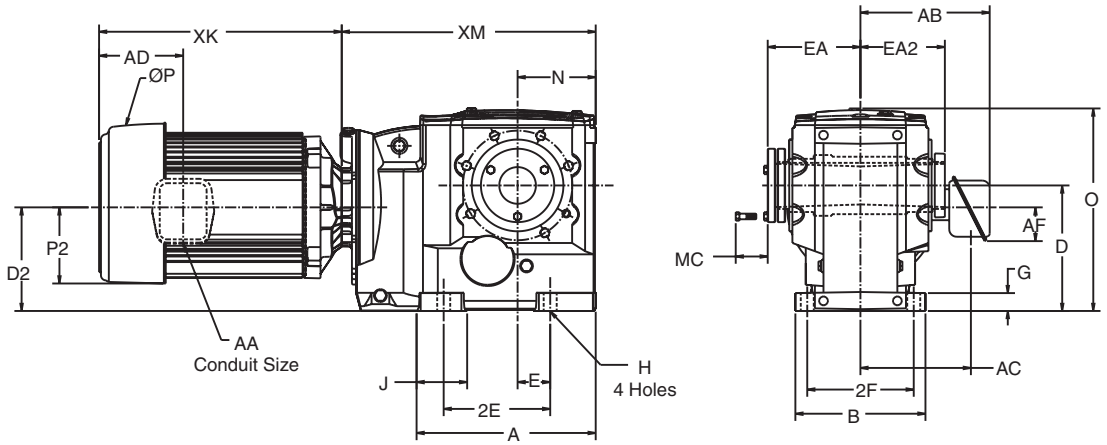
Gear Frame	Version	EA	EA2	MC[5]	Bushing Bores[4]	
					Min.	Max
34	S2	5.84	5.27	1.88	1 11/16	1 15/16
35	S2	6.17	5.62	1.88	2	2 7/16

Motor Frame	Motor Type[3]	Gear Frame	P	P2	AA	AB	AC	AD	AF	XK
56	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	9.79
B56	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
143T, 145T	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
182T/184T	T	Any	9.56	4.34	.75	6.10	4.50	5.13	1.77	14.04
213T	T	Any	11.25	5.06	1.00	8.42	7.17	5.60	2.42	16.15
215T	T	Any	11.25	5.06	1.00	8.42	7.17	5.60	2.42	17.65
254T	T	34	13.38	6.00	1.25	9.79	7.68	8.29	1.81	20.58
	T	35	13.38	6.00	1.25	9.79	7.68	8.29	1.81	19.61
256T	T	34	13.38	6.00	1.25	9.79	7.68	8.29	1.81	22.33
	T	35	13.38	6.00	1.25	9.79	7.68	8.29	1.81	21.36
284T/286T	T	35	14.62	7.29	1.50	11.33	8.51	12.44	2.63	24.26

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
[2] All rough casting dimensions may vary by .25" due to casting variations.
[3] Motor dimensions for other than "Type T" three phase TEFC motors, refer to pages B-102 to B-104.
[4] Refer to page B-23 by gear frame for listing of all inch and metric bushing bore sizes available.
[5] The "MC" dimension shows spacing required to install or remove the bushing from the reducer.
[6] Bushing and dust cap can be installed opposite of how they are shown above.
[7] Driven shaft entry can be from either side of the gear reducer housing. Refer to Installation Manual for requirements.
[8] For details of the torque arm kit,refer to page B-22.

3-Stage Taper Bushed Shaft Mount
OtN36 - 38

Standard conduit box location will be F1 unless specified otherwise.



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	XM		
														182T/184T	213T-215T	254T-UP
36	S2	17.06	11.41	8.86	8.86	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	23.38	23.38	23.73
37	S2	20.58	12.99	9.84	10.98	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	-	29.06	29.41
38	S2	20.13	13.39	14.76	11.87	4.53	13.78	10.63	1.98	1.26	4.06	24.11	8.86	-	24.29	24.64

Output Shaft

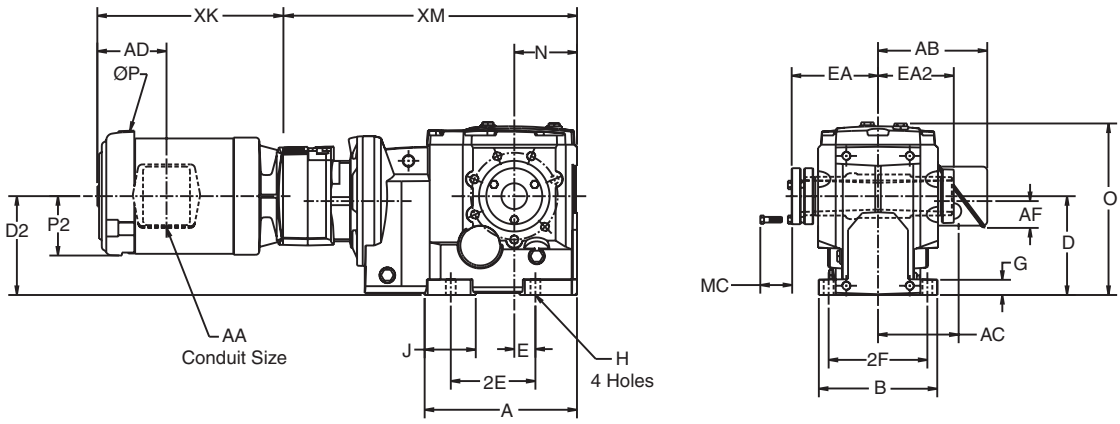
Gear Frame	Version	EA	EA2	MC[5]	Bushing Bores[4]	
					Min.	Max.
36	S2	6.81	7.83	1.88	2 7/16	2 15/16
37	S2	9.50	8.86	2.25	2 7/8	3 7/16
38	S2	8.66	8.08	2.75	2 15/16	3 15/16

Motor Frame	Motor Type[3]	Gear Frame	P	P2	AA	AB	AC	AD	AF	XK
182T/184T	T	36	9.56	4.34	.75	6.10	4.50	5.13	1.77	14.04
213T	T	All	11.25	5.06	1.00	8.42	7.17	5.60	2.42	16.15
215T	T	All	11.25	5.06	1.00	8.42	7.17	5.60	2.42	17.65
254T	T	All	13.38	6.00	1.25	9.79	7.68	8.29	1.81	19.61
256T	T	All	13.38	6.00	1.25	9.79	7.68	8.29	1.81	21.36
284T/286T	T	All	14.62	7.29	1.50	11.33	8.51	12.44	2.63	24.26
324T/326T	T	All	17.2	7.78	2.00	14.99	11.34	14.16	3.63	27.36

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
[2] All rough casting dimensions may vary by .25" due to casting variations.
[3] Motor dimensions for other than "Type T" three phase TEFC motors, refer to pages B-102 to B-104.
[4] Refer to page B-23 by gear frame for listing of all inch and metric bushing bore sizes available.
[5] The “MC” dimension shows spacing required to install or remove the bushing from the reducer.
[6] Bushing and dust cap can be installed opposite of how they are shown above.
[7] Driven shaft entry can be from either side of the gear reducer housing. Refer to Installation Manual for requirements.
[8] For details of the torque arm kit,refer to pages B-22.

Combined Taper Bushed Shaft Mount
OtN32 - 33

Standard conduit box location will be F1 unless specified otherwise.



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	XM
32	S2	7.81	5.71	4.41	4.06	1.38	5.12	4.71	.73	.43	2.34	8.09	3.03	14.49
33A	S2	8.50	6.61	5.51	4.91	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	19.90

Output Shaft

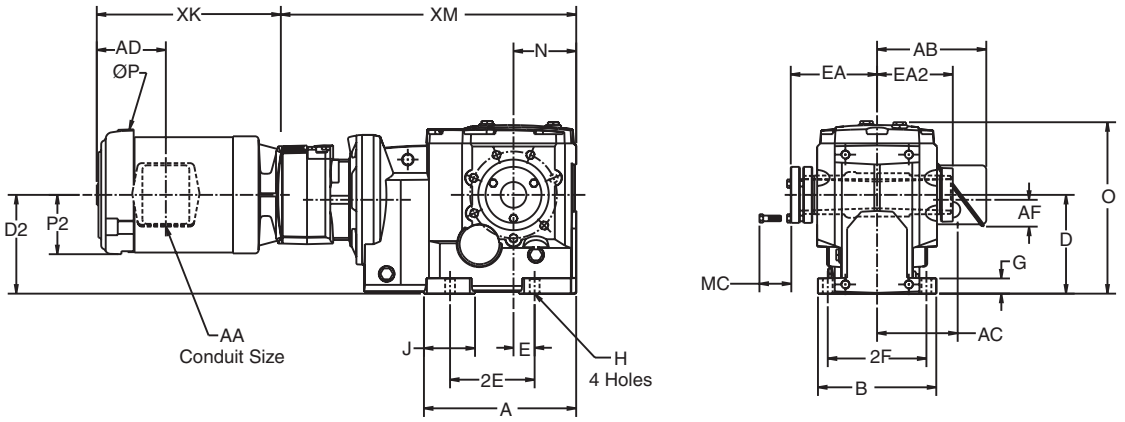
Gear Frame	Version	EA	EA2	MC[5]	Bushing Bores[4]	
					Min.	Max.
32	S2	4.85	4.27	1.75	1 5/16	1 7/16
33A	S2	5.76	5.18	1.88	1 7/16	1 15/16

Motor Frame	Motor Type[3]	Gear Frame	P	P2	AA	AB	AC	AD	AF	XK
56	T	32	7.31	3.31	.75	6.10	4.50	3.86	1.77	10.37
	T	33A	7.31	3.31	.75	6.10	4.50	3.86	1.77	9.79
B56	T	32	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.62
	T	33A	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
143T, 145T	T	33A	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
[2] All rough casting dimensions may vary by .25" due to casting variations.
[3] Motor dimensions for other than "Type T" three phase TEFC motors, refer to pages B-102 to B-104.
[4] Refer to page B-23 by gear frame for listing of all inch and metric bushing bore sizes available.
[5] The "MC" dimension shows spacing required to install or remove the bushing from the reducer.
[6] Bushing and dust cap can be installed opposite of how they are shown above.
[7] Driven shaft entry can be from either side of the gear reducer housing. Refer to Installation Manual for requirements.
[8] For details of the torque arm kit,refer to page B-22.

Combined Taper Bushed Shaft Mount
OtN34 - 35

Standard conduit box location will be F1 unless specified otherwise.



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	XM
34	S2	10.13	7.87	7.09	5.57	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	21.55
35	S2	11.92	8.66	8.35	6.56	2.17	7.09	7.09	1.18	.87	3.45	13.58	5.20	23.87

Output Shaft

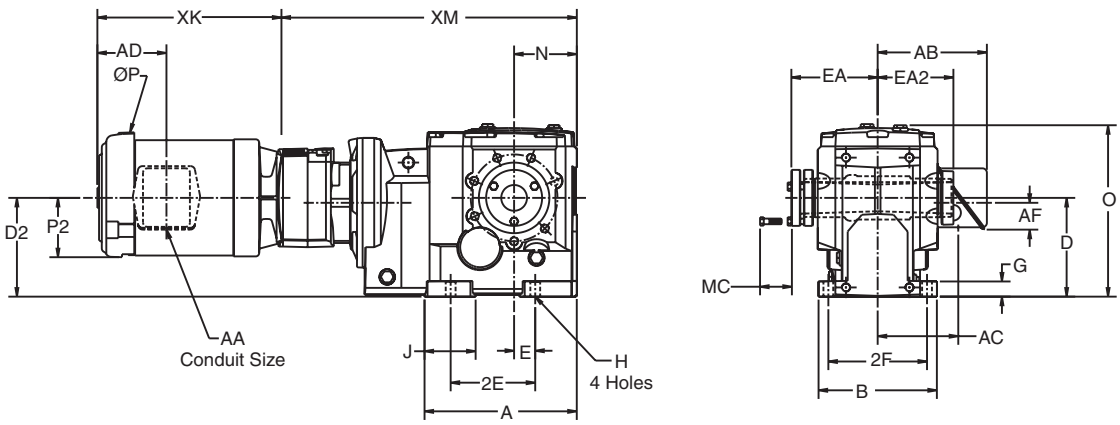
Gear Frame	Version	EA	EA2	MC[5]	Bushing Bores[4]	
					Min.	Max
34	S2	5.84	5.27	1.88	1 11/16	1 15/16
35	S2	6.17	5.62	1.88	2	2 7/16

Motor Frame	Motor Type[3]	Gear Frame	P	P2	AA	AB	AC	AD	AF	XK
56	T	All	7.31	3.31	.75	6.10	4.50	3.86	1.77	9.79
B56	T	All	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
143T, 145T	T	All	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
182T/184T	T	35	9.56	4.34	.75	6.10	4.50	5.13	1.77	14.04

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
[2] All rough casting dimensions may vary by .25" due to casting variations.
[3] Motor dimensions for other than "Type T" three phase TEFC motors, refer to pages B-102 to B-104.
[4] Refer to page B-23 by gear frame for listing of all inch and metric bushing bore sizes available.
[5] The “MC” dimension shows spacing required to install or remove the bushing from the reducer.
[6] Bushing and dust cap can be installed opposite of how they are shown above.
[7] Driven shaft entry can be from either side of the gear reducer housing. Refer to Installation Manual for requirements.
[8] For details of the torque arm kit,refer to page B-22.

Combined Taper Bushed Shaft Mount
OtN36 - 38

Standard conduit box location will be F1 unless specified otherwise.



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	XM
36	S2	17.06	11.41	8.86	8.46	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	31.04
37	S2	20.58	12.99	9.84	10.57	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	36.37
38	S2	20.13	13.39	14.76	11.48	4.53	13.78	10.63	1.98	1.26	4.06	24.11	8.86	31.94

Output Shaft

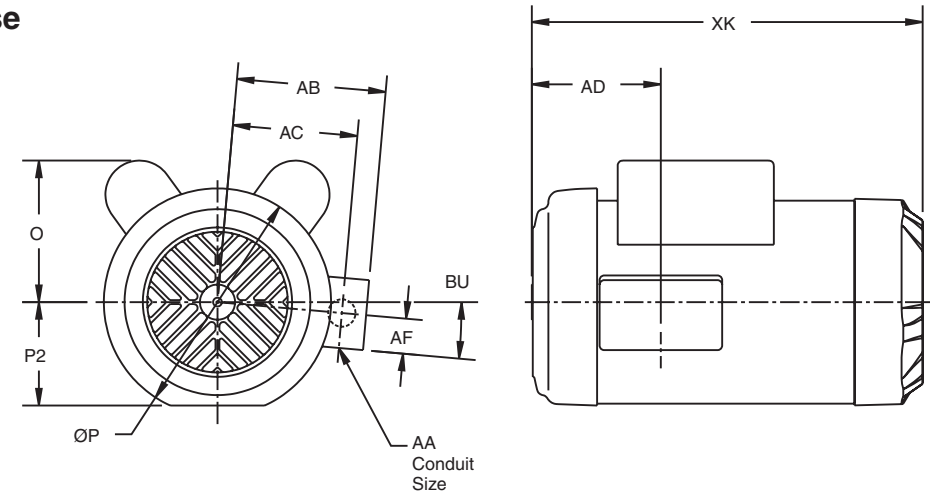
Gear Frame	Version	EA	EA2	MC[5]	Bushing Bores[4]	
					Min.	Max.
36	S2	6.81	7.83	1.88	2 7/16	2 15/16
37	S2	9.50	8.86	2.25	2 7/8	3 7/16
38	S2	8.66	8.08	2.75	2 15/16	3 15/16

Motor Frame	Motor Type[3]	Gear Frame	P	P2	AA	AB	AC	AD	AF	XK
56	T	All	7.31	3.31	.75	6.10	4.50	3.86	1.77	9.79
B56	T	All	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
143T, 145T	T	All	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
182T/184T	T	All	9.56	4.34	.75	6.10	4.50	5.13	1.77	14.04
213T	T	All	11.25	5.06	1.00	8.42	7.17	5.60	2.42	16.15
215T	T	All	11.25	5.06	1.00	8.42	7.17	5.60	2.42	17.65

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
[2] All rough casting dimensions may vary by .25" due to casting variations.
[3] Motor dimensions for other than "Type T" three phase TEFC motors, refer to pages B-102 to B-104.
[4] Refer to page B-23 by gear frame for listing of all inch and metric bushing bore sizes available.
[5] The "MC" dimension shows spacing required to install or remove the bushing from the reducer.
[6] Bushing and dust cap can be installed opposite of how they are shown above.
[7] Driven shaft entry can be from either side of the gear reducer housing. Refer to Installation Manual for requirements.
[8] For details of the torque arm kit,refer to pages B-22.

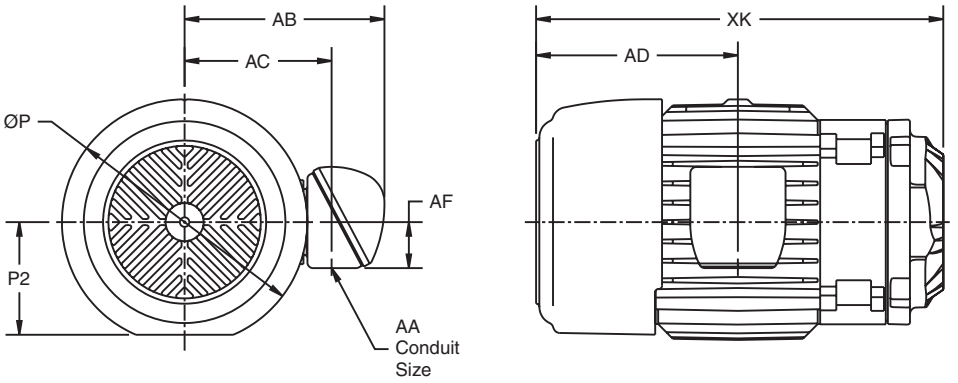
Alternate Motor Dimensions

Single Phase



Motor Frame	HP	O	P	P2	AA	AB	AC	AD	AF	BU	XK
56	1/3, 1/2	4.78	7.28	3.31	3/4	4.78	4.00	4.14	1.13	N/A	9.52[2]
	3/4	4.78	7.28	3.31	3/4	4.78	4.00	4.14	1.13	N/A	11.02[2]
143T	1	5.09	7.28	3.31	3/4	4.78	4.00	4.14	1.13	N/A	11.02[2]
145TY	1 1/2, 2	4.53	7.28	3.31	3/4	4.78	3.83	4.14	1.13	5°	12.52
184T	3, 5	5.11	9.56	4.39	3/4	8.58	6.45	7.14	3.09	N/A	16.54

Corro-Duty®

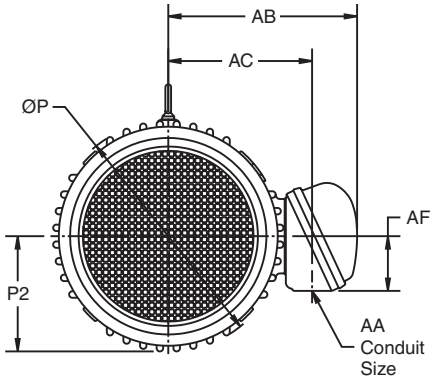


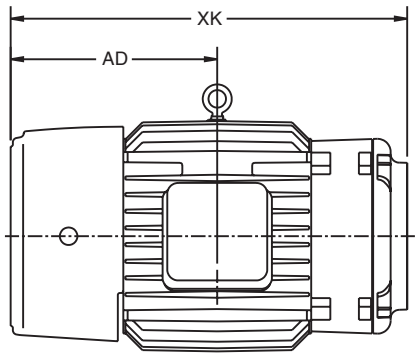
Motor Frame	P	P2	AA	AB	AC	AD	AF	XK
56	7.41	3.44	3/4	6.50	4.59	3.72	1.25	10.21 [2]
143T, 145T	7.41	3.44	3/4	6.50	4.59	3.72	1.25	11.21 [2]
182T, 184T	9.57	4.33	3/4 [3]	7.80	6.00	7.79	2.32	14.23
213T, 215T	11	5.44	1	9.47	7.15	9.63	2.00	19.67
254T, 256T	13.31	6.58	1 1/2	11.33	8.51	12.44	2.63	24.26 [1]
284T, 286T	14.62	7.29	1 1/2	11.33	9.16	13.19	2.63	24.71

[1] XK = 23.29 on OtN 34 three stage and 27A combined.
[2] XK will increase by .58" if used on 32 combined units.
[3] There are 2 conduit openings on this frame size.

Alternate Motor Dimensions

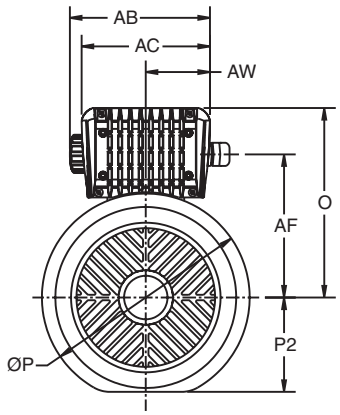
Explosion Proof

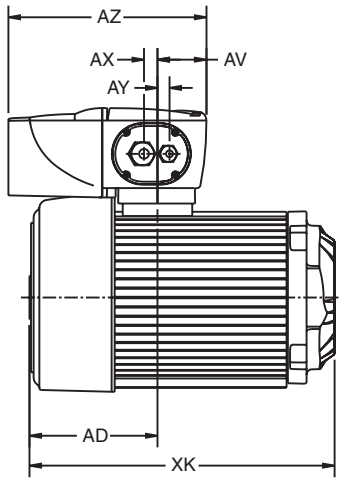




Motor Frame	P	P2	AA	AB	AC	AD	AF	XK
56	7.88	3.38	3/4	6.79	5.31	4.37	1.78	13.15[2]
143T, 145T	7.88	3.38	3/4	6.79	5.31	4.37	1.78	13.90[2]
182T, 184T	9.50	4.56	3/4	7.70	5.79	7.75	2.25	15.70
213T, 215T	11.12	5.44	1	9.06	6.81	8.68	2.63	18.72

IntelliGear®



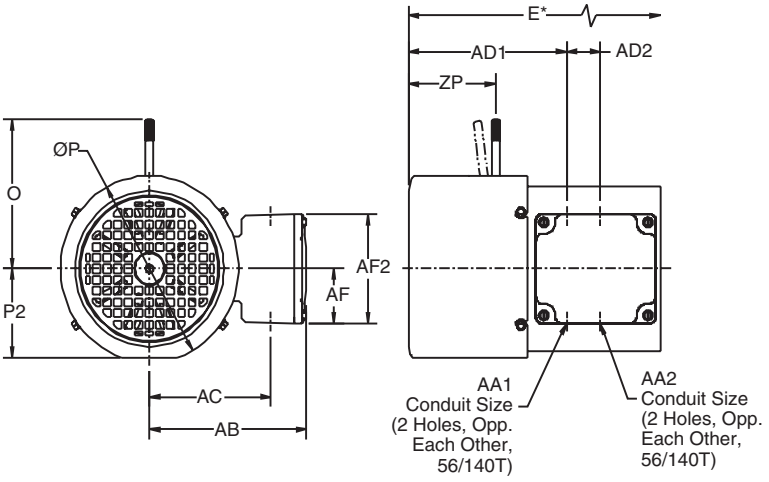


Motor Frame	Controller	O	P	P2	AB	AC	AD	AF	AV	AW	AX	AY	AZ	XK
56	1, 1M	7.74	7.33	3.67	6.45	5.91	4.35	5.61	2.25	2.95	.62	.55	8.53	9.79[2]
143T, 145T	1	7.74	7.33	3.67	6.45	5.91	4.35	5.61	2.25	2.95	.62	.55	8.53	11.04[2]
56	2M	7.74	7.33	3.67	6.45	5.91	4.35	5.61	2.25	2.95	.62	.55	9.12	9.79
143T, 145T	2, 2M	7.74	7.33	3.67	6.45	5.91	4.35	5.61	2.25	2.95	.62	.55	9.12	11.04
182T,184T	2	8.72	9.56	4.78	6.45	5.91	5.89	6.58	2.25	2.95	.62	.55	9.12	14.05
	3	11.16	9.56	4.78	8.97	8.44	10.01	7.37	2.83	4.22	.62	.55	13.10	14.05
213T	3	11.99	11.25	4.98	8.97	8.44	11.73	8.11	2.83	4.22	.62	.55	13.10	16.15
215T	3	11.99	11.25	4.98	8.97	8.44	13.23	8.11	2.83	4.22	.62	.55	13.10	17.65

Input Power Phase/Voltage	Motor HP @ Max. Hz					
	0.33 to 0.50	0.75	1	1.5 to 2	3 to 5	7.5 to 10
1/115	1M	2M	-	-	-	-
1/230	1M	1M	1M	2M	-	-
3/230	1	1	1	2	3	-
3/460	1	1	1	1	2	3

[1] XK = 22.58 on OtN 34 three stage and 27A combined.
[2] XK will increase by .58" if used on 32 combined.

Dimensional Supplement



DC FCR Brake with Type "T" Motor

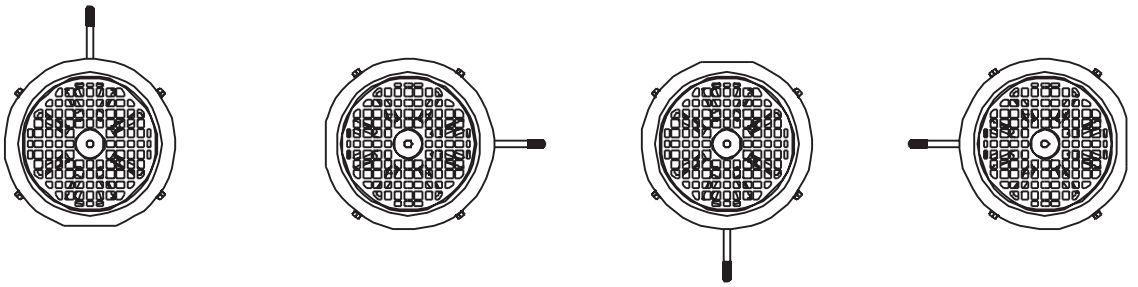
Motor Frame	E*	O	P	AA1	
				Size	Qty
56-143/145T	2.63	5.80	7.24	3/4 NPT	2
182/184T	1.95	7.3	9.23	3/4 NPT	1

Motor Frame	AA2		AB	AC	AD1
	Size	Qty			
56-143/145T	1/2 NPT	2	6.38	4.94	6.43
182/184T	3/4 NPT	1	7.8	6.14	8.84

Motor Frame	AD2	AF	AF2	P2	ZP
56-143/145T	1.38	2.13	4.25	3.46	3.54
182/184T	1.81	2.32	4.65	N/A	4.41

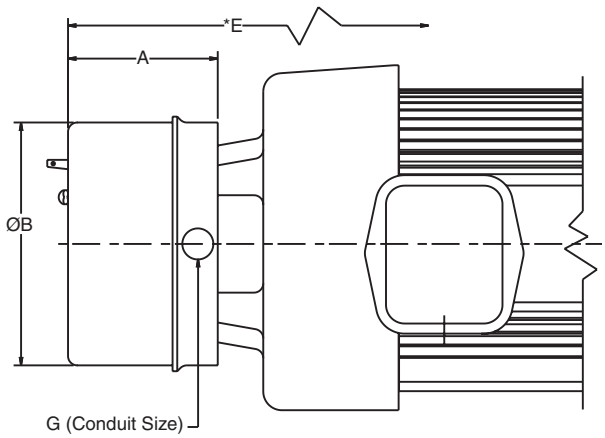
*Add "E" to XK or C of equivalent three phase frame motor.

Manual Release Lever Position



12 o'clock | 3 o'clock | 6 o'clock | 9 o'clock

See page B-18 for specifying the o'clock position on orders.



AC Brake with Type "T" and "S" Motor

Motor Frame	Motor Type	Brake Torque (ft. lbs.)	A	B	E*	G
56	S	3	4.01	6.54	4.56	1/2
		6	4.01	6.54	4.56	1/2
143T/145T 145TY		3	4.01	6.54	4.56	1/2
		6	4.01	6.54	4.56	1/2
		10	4.01	6.54	4.56	1/2
184T		15	4.01	6.54	4.56	1/2
213T	T	25	7.38	9.38	8.75	1/2
215T		35	7.38	9.38	8.75	1/2

* Dimension "E" represents the additional length of motor with brake mounted. Add this amount to the gearmotor length "C". Add "E" to XK or C of equivalent three phase frame motor.

TEFC Three Phase Gearmotors

Gear Frame	Reduction Stages	Motor Frame												
		56	143T	145T	182T	184T	213T	215T	254T	256T	284T	286T	324T	326T
31	2	65	74	76	98	101	-	-	-	-	-	-	-	-
32	2	70	79	81	103	106	136	149	-	-	-	-	-	-
	3	77	86	88	110	116	-	-	-	-	-	-	-	-
	5	85	-	-	-	-	-	-	-	-	-	-	-	-
33	3	99	108	110	133	139	167	180	-	-	-	-	-	-
	5.6	129	138	140	-	-	-	-	-	-	-	-	-	-
34	3	147	156	158	181	187	215	228	273	323	-	-	-	-
	5.6	176	185	188	-	-	-	-	-	-	-	-	-	-
35	3	-	231	233	252	258	286	299	344	394	584	604	-	-
	5.6	240	250	253	275	281	-	-	-	-	-	-	-	-
36	3	-	-	-	490	500	539	552	604	654	753	773	845	910
	5.6	509	511	518	533	543	575	583	-	-	-	-	-	-
37	3	-	-	-	726	736	775	788	840	890	949	969	1081	1146
	5.6	745	747	754	769	779	811	819	-	-	-	-	-	-
38	3	-	-	-	-	-	862	875	920	970	1160	1180	1380	1440
	5.6	930	940	943	985	991	993	1000	-	-	-	-	-	-

Motor Options

Motor Type	Motor Frame													
	56	143T	145T	145TY	182T	184T	213T	215T	254T	256T	284T	286T	324T	326T
C Corro-Duty	8	9	11	-	52	50	73	70	190	165	0	0	0	0
X Explosionproof	19	21	25	-	33	30	50	50	-	-	-	-	-	-
S Single Phase	6	11	-	10	-	17	-	-	-	-	-	-	-	-
IG Intelligear	7	15	18	-	31	30	51	53	-	-	-	-	-	-

Gear Options

Gear Frame	Std Flange Mount	Footed S1
31	3	-
32	4	-
33	5	2
34	7	3
35	8	5
36	10	-
37	12	-
38	15	-

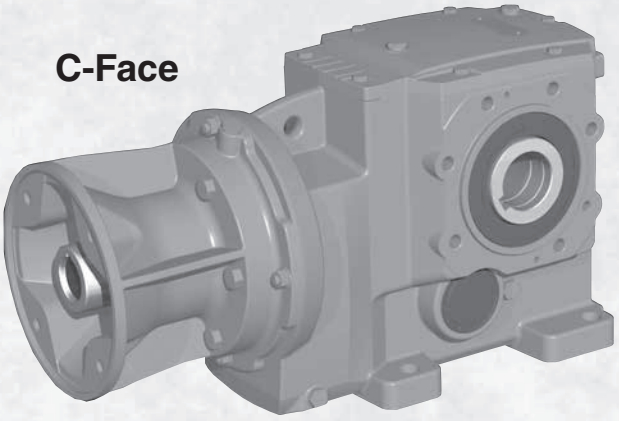
** Frames 36 and 37 are only available in S1 design with feet. Refer to upper table for weights on these frames

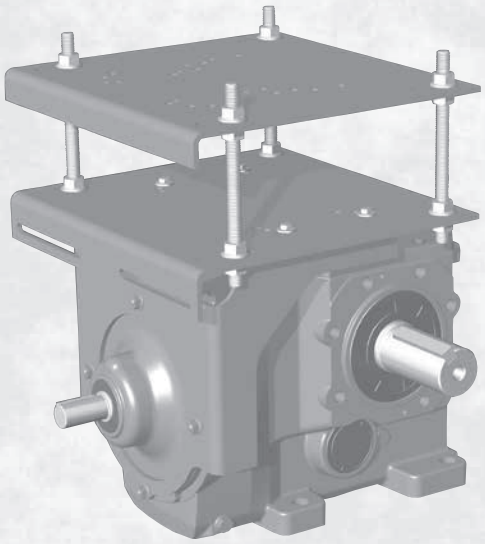
Browning®

OtN Helical-Bevel Right Angle Speed Reducers

OtN Series

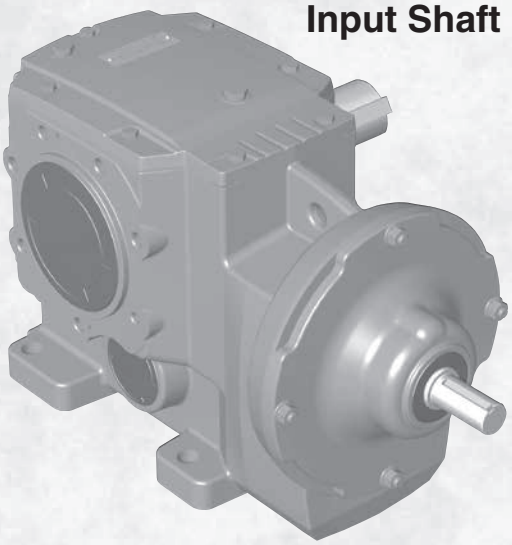
C-Face

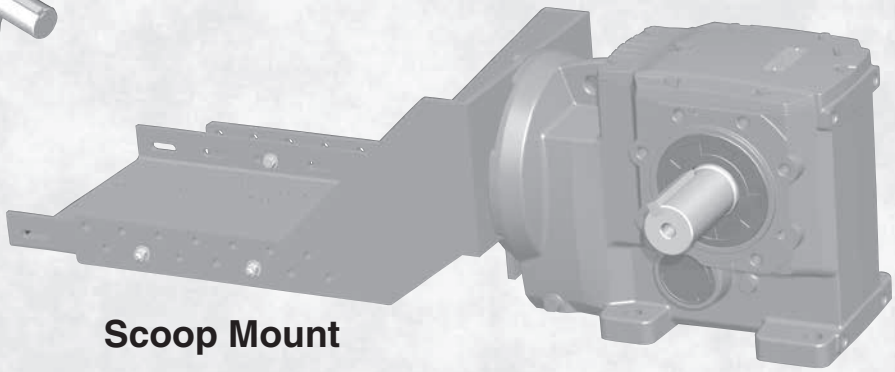




Top Mount

Input Shaft



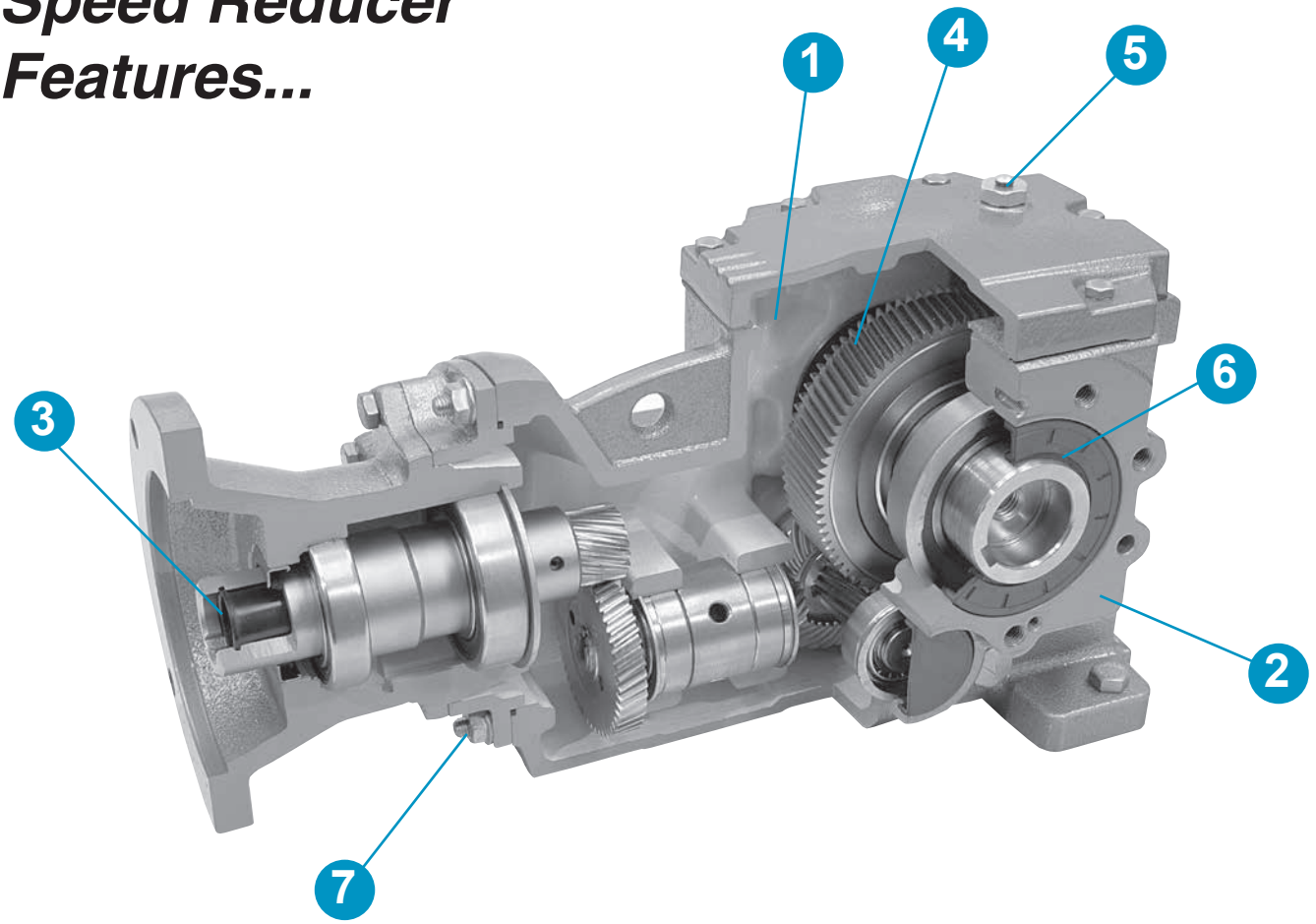


Scoop Mount

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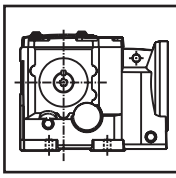
Type OtN Helical-Bevel Speed Reducer Features...



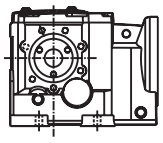
Design Features

1. **Gearcase Supplied Factory Filled with Synthetic Oil**
   - Wide temperature range and longer life.
2. **Corrosion and Shock Resistant Cast Iron Housing**
   - One-piece, reinforced and ribbed for extra strength.
3. **Series 3000 C-Face Reducers with Compact Quill Design**
   - Non-metallic liner to eliminate fretting.
   - Shorter design.
   - Two bearings for support.
4. **High Efficiency Helical-Bevel Gears. 98% per Stage**
   - Helical gearing is case hardened and then skived, superfinished or ground.
   - All gears heat shrunk on shafts or mounted on self-locking tapered shafts and keyed for high shock load capability.
5. **Normally Closed Breather with Multiple Locations**
6. **Double Lip Seals on Heat Treated, Plunge Ground Shafts**
7. **Magnetic Drain Plug Standard**

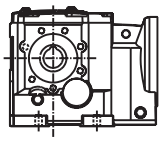
Mounting Versatility and Size Range



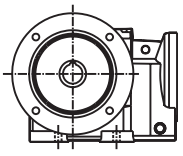
Foot Mount
Frames 1-8
Solid Shaft
Max. 120,000 lb-in



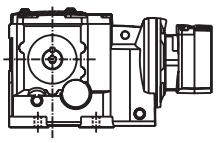
Shaft Mount
Torque Arm
Frames 1-8
Hollow Shaft
Tapered Bushed (Fr 1 - 8)
Max. 120,000 lb-in



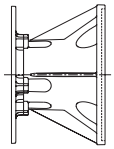
Face Mount
Frames 1-8
Hollow Shaft
Max. 120,000 lb-in



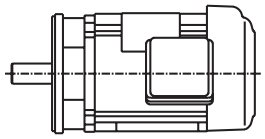
Flange Mount
Frames 1-8
Solid Shaft
Hollow Shaft
Max. 120,000 lb-in



High Ratio Combined
Frames 2-8 - All Styles
Max. 120,000 lb-in



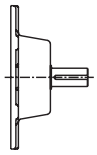
NEMA C-Face
56C to 365TC



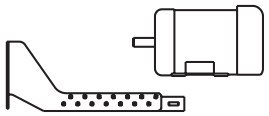
C-Face Motors
Frames 56C - 365TC

Backstop Options***

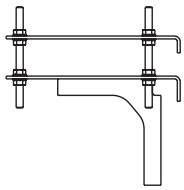




Input Shaft



Scoop Mount
Frames 3 - 8*
56 to 326T



Top Mount
Frames 2 - 8**
56 to 326T

* Refer to page B-115 for availability based on gear and motor frame size.
** Refer to page B-115 for availability based on gear and motor frame size.
*** Not available for frames 3245 and 3365A.

Selection Information

1. ***Input HP***
   - Based on application data.
2. ***Speed/Ratio***
   - Obtain either desired output speed (rpm) or gearbox ratio based on application.
3. ***Service Factor***
   - Determine the required service factor using either the AGMA application classification chart (pages B-119 - B-121), or the duration of operation, load type, and drive type with the table below:

Prime Mover	Hours of Operation	Uniform Load U	Moderate Shock Load M	Heavy Shock Load V*
Electric Motor	0 - 3	0.80	1.00	1.50
	3 - 10	1.00	1.25	1.75
	10 - 24	1.25	1.50	2.00
Internal Combustion Engine	0 - 3	1.00	1.25	1.75
	3 - 10	1.25	1.50	2.00
	10 - 24	1.50	1.75	2.25

Size Selection

Step 1
- Locate speed reducer selection tables (pages B-122 - B-127) based on input speed to gearbox.

Step 2
- Choose the nominal ratio appropriate for the speeds required.

Step 3
- Select the gear unit size for the chosen ratio and the known input speed so that the mechanical power rating P (hp) satisfies the following:

$$P \geq P_m \bullet SF$$

P = mechanical power rating (hp) of gearbox

P_m = motor power (hp)

SF = required service factor

Note: Size selection based on absorbed power (Pa) or absorbed torque (Ta) at the low speed shaft instead of motor power (Pm) is allowed when the former is known with sufficient accuracy and if the number of start operations is limited. When Ta is applied in size selection, verify if:

$$T \geq T_a \bullet SF$$

T = torque rating (in. lbs.) at low speed shaft

T_a = absorbed torque (in. lbs.) at low speed shaft

SF = required service factor

Size Selection (cont.)

Step 4
- Verify overhung load ratings where required (see page B-111).

Example

1. Application Data

Bottling conveyor, 24-hrs/day operation. Requires right angle hollow shaft mounted speed reducer to be mounted directly to the conveyor drive shaft with a torque arm. The customer prefers a c-face mounted motor.

Motor rating: 5 HP, 1750 rpm, 184TC Footless Frame, 230/460 VAC, 3-Phase, 60 Hz, TEFC

Output speed: 44 rpm

2. Size Selection

Nominal Ratio: Locate nominal rpm closest to 44 rpm. 40:1 nominal ratio is the proper selection.

Service Factor: Using AGMA application classification chart (page B-119) under the "Brewing and Distilling" heading, bottling machinery that operates over 10 hours/day should have a 1.25 service factor.

Rating Req'd: Minimum reducer rating required is

$P = P_m \times SF$

$P = 5\ HP \times 1.25 = 6.25\ HP$

Catalog Rating:

Exact ratio	**Gear Frame**	39.9	**3473**
Input H.P.	Output Torque	9.96	13453

Selection: OtN3473 is rated 9.96 HP input /13453 lb-in output with 39.9:1 ratio. 1750 rpm / 39.9 = 43.9 rpm output speed. 9.96 / 5 = 1.99 SF.

3. Catalog Designation

Reducer: OtN-3473-S2-B33C-40-U-184TC (See page B-123)

Torque Arm: ROC400KT001 (See page B-117)

** Applications with reversing or frequent starts and stops should not utilize a C-Face reducer design.*

Overhung Load Capacities

When a sprocket, sheave, pulley, or pinion is mounted on the take-off shaft of a reducer, it is necessary to calculate the overhung load. This calculated load must be compared with the gearbox capacity listed to make sure the gearbox will not be overloaded. To calculate the overhung load you need to know the torque or horsepower at the take-off shaft and the location along the shaft at which the load is applied.

A. If torque is known:

$$OHL = \frac{T \times K \times LLF}{r}$$

B. If horsepower is known:

$$OHL = \frac{63025 \times HP \times K \times LLF}{rpm \times r}$$

Where:
OHL = Overhung load (pounds)
T = Torque (in. lbs.)
r = Radius of driving member (in.)
HP = Horsepower
K = Drive type factor
LLF = Load location factor

Driving Member	Value of K
Chain Drive	1.00
Pinion	1.25
Timing Belt	1.25
V-Belt	1.50
Flat Belt	2.50

Load Location	Value of LLF
End of shaft extension	1.20
Center of shaft extension	1.00
Shaft extension shoulder	0.80

Overhung Load (lbs.)

Output RPM	Frame								
	Two Stages		Three of More Stages						
	31	32	32	33	34	35	36	37	38
301 - 550	1366	1358	-	-	-	-	-	-	-
175 - 300	1366	1579	-	-	-	-	4497	7097	-
151 - 175	1366	825	825	1392	1653	2565	5126	7834	-
101-150	1366	834	834	1549	1707	2815	5253	8124	9039
51 - 100	1366	902	902	1737	1892	3339	5689	9273	10077
31-50	1366	1148	1148	2090	2435	4100	6595	11017	11537
16-30	1366	1490	1490	2090	2875	4100	8584	12910	12184
5-15	-	-	1490	2090	2875	4100	12209	16982	15622
< 5	-	-	1490	2090	2875	4100	13249	18242	19780

OHL capacities above are calculated at gear capacity rounded to the closest motor HP at mid shaft. For capacity when HP is known, refer to gearmotor selection tables.

Ordering

OtN • 34 7 3 • S2 • B 33 G • 22.4 • U • 145TC • G11

See pages B-113 and B-114

Browning Right-Angle Helical-Bevel	Series	Reducer Size		Stages	Shaft & Foot Dimensions [1]	Mounting Position	Output Face/ Flange Right-Left Viewed From Input End	Output Shaft Configuration Viewed from Input End	Nominal Gear Ratio	Input Type	Motor Frame	Modification(s)
	SERIES 3000	31	3	2= 2 stages	S2 = Industry interchange dimensions	B = Floor mount	3 = Standard round	G = Shaft right	22.4 = 22.4:1	AP = Input Shaft	C-Face 56C-365TC	Select from modifications listed on page B-116
		32	4	3(A) = 3 stages		P = Ceiling mount	4 = Face mount	D = Shaft left	Use nominal ratio selected from reducer selection tables	AD = Input Shaft w/backstop	Scoop Mount 143T-326T	
		33	6	5 = 5 stages		H = Wall mount, input left	5 = Standard dimension flange mount	X = Dual shaft		SP = Scoop Mount	Top Mount 56-286T	
		34	7	6 = 6 stages	S1 = OtN2000 replacement dimensions	T = Wall mount, input right	6 = Alternate dimension flange mount	C = Finish bore		SD = Scoop Mount w/backstop	See Page B-115	
		35	8			V = Input vertical up		B = Tapered bushed		U = C-Face		
		36	9			W = Input vertical down				UD = C-Face w/backstop		
		37	0							TM = Top mount		
										TMD = Top Mount w/backstop		
		38	2									

[1] Shaft and critical mounting dimensions match either OtN2000 or SEW "K" Series units. These dimensions include the mounting base, output flanges, output shaft diameter, distance from housing center line to shaft tip, and output quill diameter. B14 mounting faces and overall product envelope (height, width, depth) do NOT match.

SEW is believed to be a trade name of SEW-Eurodrive GMBH & Co. and is NOT owned or controlled by Emerson.

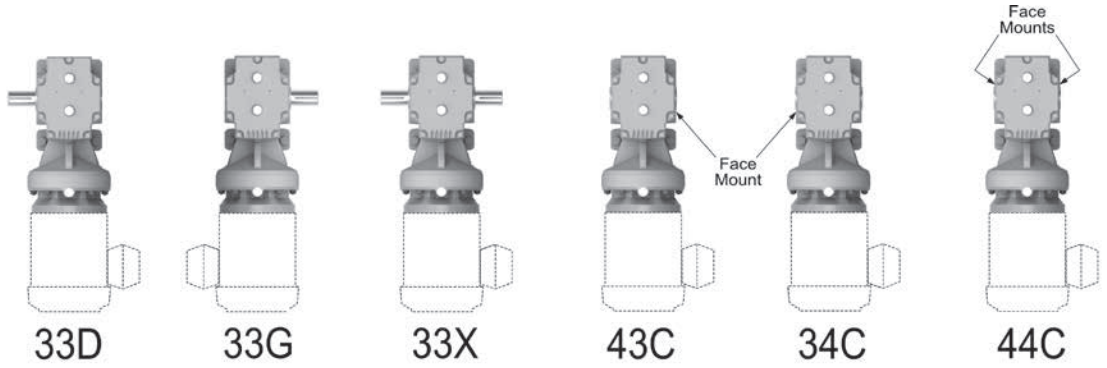
Emerson cannot and does not represent or warrant the accuracy of this information.

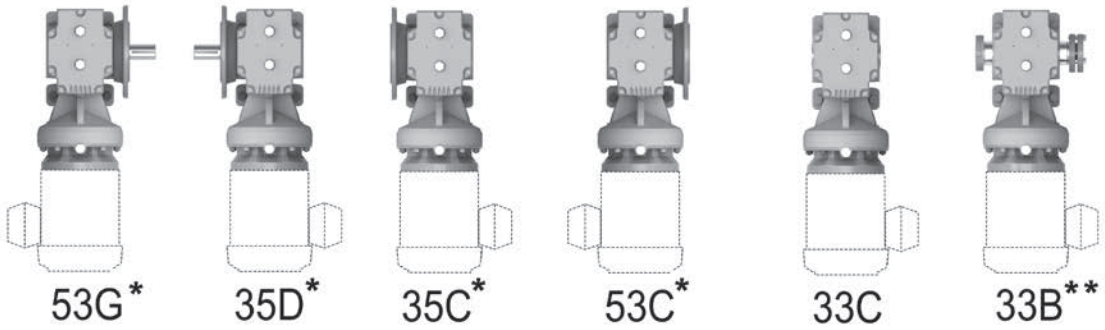
Output Flange Sizes

Flange Dimensions (mm)										
BD	140	165	200	250	300	350	400	450	550	660
AK	95	110	130	180	230	250	300	350	450	550
AJ	115	130	165	215	265	300	350	400	500	600
Gear Frame	Output Flange Type Designation Code									
31	6	5								
32			5	6						
33				5	6					
34					5	6				
35						5	6			
36								5	6	
37								5	6	
38									5	6

Gear Output Options

Brackets and Shaft





Examples Above are Top Views (with C-Face motor)

OtN Frame	Foot Mounted				Face Mounted			Flange Mounted					Shaft Mounted	
	Solid Shaft			Hollow Shaft				Solid Shaft		Hollow Shaft			Hollow	Bushed
	33G	33D	33X	33C	34C	43C	44C	53G	35D	53C	35C	55C	33C	33B**
31	●	●	●	●	●	●	●	●	●	●	●	●	●	●
32	●	●	●	●	●	●	●	●	●	●	●	●	●	●
33	●	●	●	●	●	●	●	●	●	●	●	●	●	-
33A	-	-	-	-	-	-	-	-	-	-	-	-	-	●
34	●	●	●	●	●	●	●	●	●	●	●	●	●	●
35	●	●	●	●	●	●	●	●	●	●	●	●	●	●
36	●	●	●	●	●	●	●	●	●	●	●	●	●	●
37	●	●	●	●	●	●	●	●	●	●	●	●	●	●
38	●	●	●	●	●	●	●	●	●	●	●	●	●	●

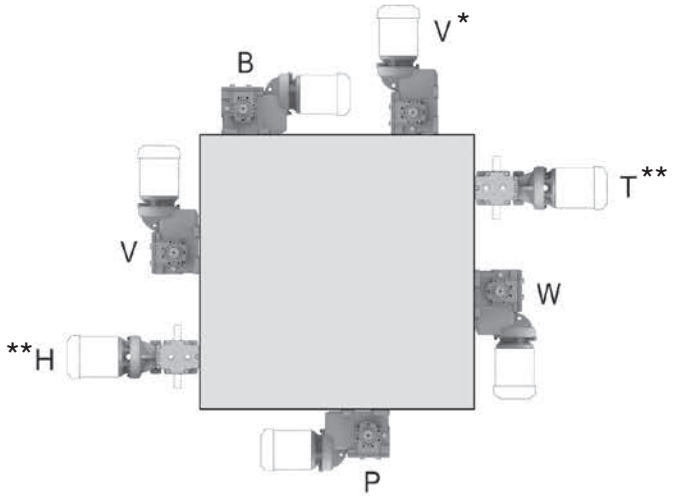
If shaded, the alternative flange can be specified by replacing “5” with “6” in the coding

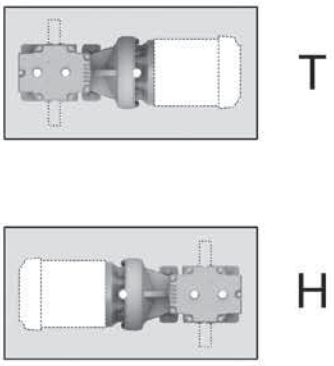
● This is available at normal lead-time

* See note for shaded field for flange option

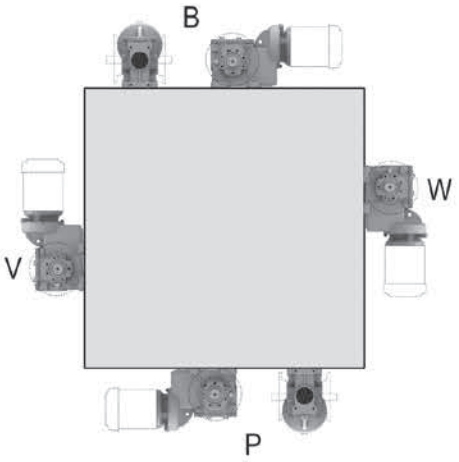
** Bushing can be assembled on either side of reducer during field mounting

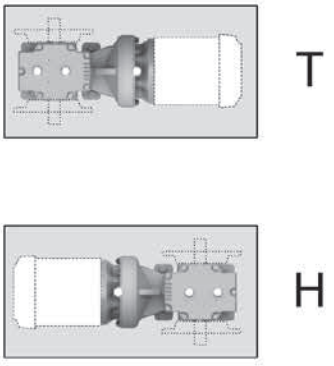
Foot Mount



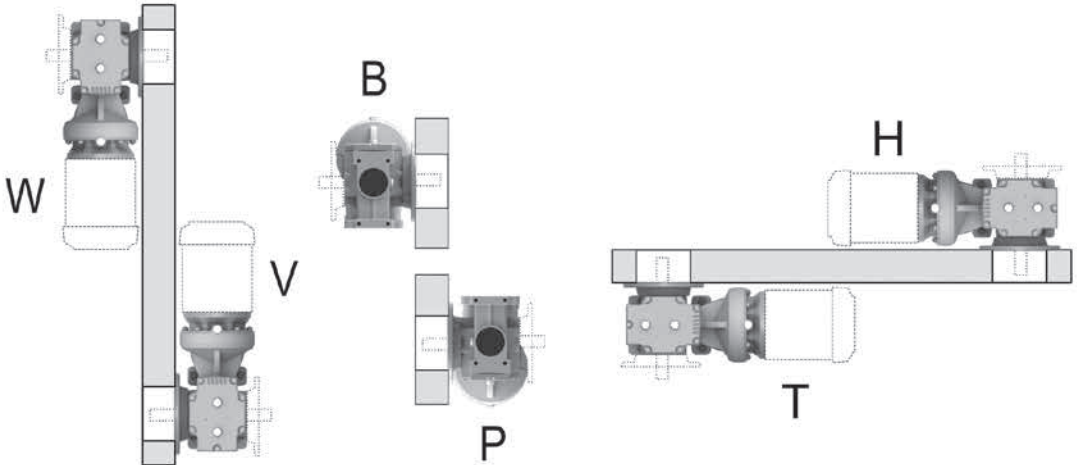


Foot Mount with Face or Flange





Flange, Face or Shaft Mount



* Refer to B-212 for mounting details
** Only available on frame 31. Refer to page B-212

Catalog Nomenclature

C-Face Frames

Gear Frame	AC Motor Frame Sizes							
	56C	140TC	180TC	210TC	250TC	280TC	320TC	360TC
3132	X	X						
3242	X	X	X					
3243	X	X	X					
3245	X	X						
3363 (A)	X	X	X	X				
3365	X	X	X					
3473	X	X	X	X				
3475/3476	X	X	X					
3583	X	X	X	X	X	X		
3585/3586	X	X	X					
3693			X	X	X	X	X	
3695/3696	X	X	X	X				
3703			X	X	X	X	X	X
3705/3706	X	X	X	X				
3823				X	X	X	X	X
3825/3826	X	X	X	X				

Scoop Mount Frames

Gear Frame [1]	AC Motor Frame Sizes						
	56	140T	180T	210T	250T	280T	320T
3363 (A)	X	X					
3473	X	X	X				
3583		X	X	X			
3693			X	X	X	X	
3695/3696	X	X					
3703		X	X	X	X	X	X
3705/3706	X	X					
3823				X	X	X	X
3825/3826	X	X					

Top Mount Frames

Gear Frame [1]	AC Motor Frame Sizes						
	56	140T	180T	210T	250T	280T	320T
3242	X	X	X				
3363 (A)	X	X	X				
3473	X	X	X	X			
3583		X	X	X	X		
3693			X	X	X	X	X
3703			X	X	X	X	X
3823			X	X	X	X	X

1 Frames not listed on the above tables are not offered in this configuration
X Available in this input design for frame of motor noted.

Gear Modifications

G11 Corro-Duty® Reducer

Corro-Duty treatment can be applied to a reducer when the unit will be subjected to harsh chemicals or used outside. Special features of this treatment include:

- Normally closed breather design
- Corro-Duty exterior paint treatment (entire unit)
  - o Grey Option (default type)
    - ▪ 316 stainless steel paint (2 step)
    - ▪ Light grey semigloss finish
    - ▪ USDA and FDA approved
  - o White Option
    - ▪ Two step epoxy paint system
    - ▪ White gloss finish
    - ▪ USDA and FDA approved

For washdown application, refer to G12b Washdown FG Service Reducer modification.

G12a Foodgrade Synthetic Lubricant

When this modification is specified, the OtN oil sump is filled with the required volume of an FDA approved H1 rated synthetic lubricant for helical gearing (refer to page B-214).

G12b Washdown FG Service Reducer

When this modification is specified, a reducer will be built with all the features detailed above under G11 and G12a. When ordering, state the paint finish that is to be provided.

G15 Export Boxing

Export boxing can be provided for “under-deck” transport. When the quantity of OtN gearmotors or reducers exceeds five (5) units, refer to international sales for most economical accommodations.

G16 Extra or Special Nameplate

Units can be provided with limited additional special information on the standard product nameplate. When required, an extra nameplate may be provided, stamped with custom markings.

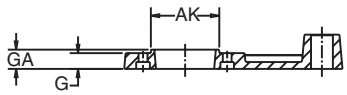
Accessories

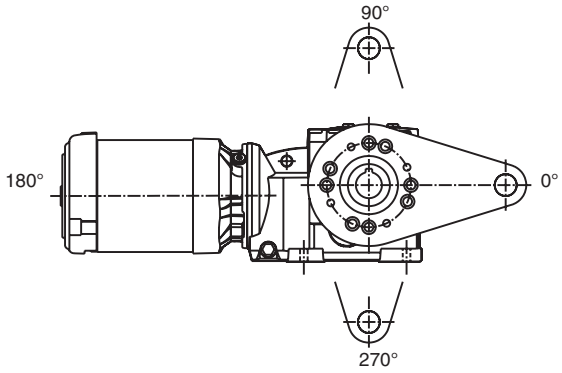
The following accessories can be ordered along with reducers and will be supplied loose for mounting by others:

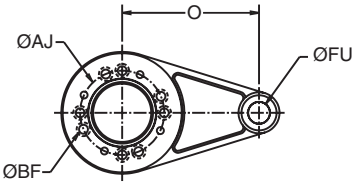
Description	Gear Frames	Part #
NPT Adapter (1/4” NPFT)	31 to 35	0436216
NPT Adapter (3/4” NPFT)	36 to 38	0436218
Bushing Guard Kit [1] (includes 2 guards to protect both sides)	31	XS9154
	32	XS9134
	33	XS9135
	33A	XS9768
	34	XS9136
	35	XS9137
	36	XS9158
	37	XS9159
	38	PLA335F0002*
Oil Level View Port	31 to 35	0435936
	36 to 38	0435938
Coupling Guard Kit (scoop mount reducers)	33 to 35	0965634
	36 to 38 up to 250T	0965635
	36 to 38 280-320T	0965636
	36 to 38 combined	0965634

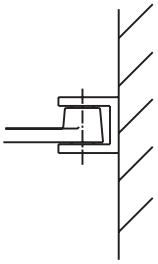
[1] These kits include all mounting hardware.
* These kit contains only (1) Guard.

Torque Reaction Arm









Anchoring of the Torque Arm (top view)

- Torque arm can be assembled in any of the three positions shown in the drawing above relative to the input (motor) when called out on the order.
- Torque arm can be affixed to either side of the 33C or 33B gear housing.
- If torque arm is requested on an assembly order, it will be supplied loose for mounting by others.

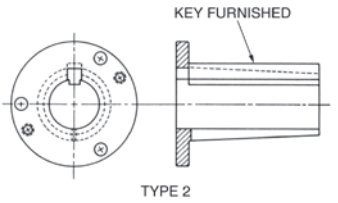
Series 3000

OtN Frame	Part ID # Kit	G	O	AJ	AK	BF	FU	GA
31	ROC100KT001	-	5.118	3.74	3.246	.35	.394	.63
32	ROC200KT001	.63	5.118	3.94	3.150	.43	.394	.79
33	ROC300KT001	.91	7.874	4.84	3.937	.51	.630	1.10
34	ROC400KT001	-	9.842	5.98	5.118	.51	.630	.91
35	ROC500KT001	-	12.205	7.48	6.102	.67	.630	.908
36	ROC600KT001	0.79	13.78	9.06	5.905	.63	.940	.98
37	ROC700KT001	1.02	17.72	9.06	7.087	.87	.940	1.22
38	ROC800KT001	1.10	21.65	11.81	9.84	.87	2.20	1.34

Tapered Bushings

Each Series 3000 OtN can be ordered with a Tapered Bushed Output. This “33B” mounting configuration will include the appropriate bushing kit unassembled when if requested at order entry. The table below shows the various stocked bushing bores for each OtN frame that can be specified. Each bushing kit is supplied with bushing, hardware for mounting and a stabilizer ring. If bushings are required as a spare or bore changed in the field, refer to the OtN 3000 frame and select the required kit from below.





OtN Frame	Meas. Unit	Bushing Number	Bore [1]	Shaft Keyseat Required	Type
31	Inch	105TBP100	1”	1/4 x 1/8 x 2 1/2	2
		105TBP103	1 3/16”	1/4 x 1/8 x 2 1/2	2
		105TBP104	1 1/4”	1/4 x 1/8 x 2 1/2	2
		105TBP105	1 5/16”	5/16 x 5/32 x 2 1/2	2
	Metric *	105TBP30MM	30 mm	8 x 3.5 x 65 (mm)	2
32	Inch	107TBP105	1 5/16”	5/16 x 5/32 x 3 7/8	2
		107TBP106	1 3/8”	5/16 x 5/32 x 3 7/8	2
		107TBP107	1 7/16”	3/8 x 3/16 x 3 7/8	2
	Metric *	107TBP30MM	30 mm	8 x 3.5 x 100 (mm)	2
		107TBP35MM	35 mm	10 x 4 x 100 (mm)	2
33A	Inch	115TBP107	1 7/16	3/8 x 3/16 x 4 1/8	2
		115TBP108	1 1/2	3/8 x 3/16 x 4 1/8	2
		115TBP110	1 5/8	3/8 x 3/16 x 4 1/8	2
		115TBP111	1 11/16	3/8 x 3/16 x 4 1/8	2
		115TBP112	1 3/4	3/8 x 3/16 x 4 1/8	2
		115TBP114	1 7/8	1/2 x 1/4 x 4 1/8	2
		115TBP115	1 15/16	1/2 x 1/4 x 4 1/8	2
	Metric *	115TBP40MM	40 mm	12 x 4 x 105 (mm)	2
		115TBP45MM	45 mm	14 x 4.5 x 105 (mm)	2
34	Inch	115TBP111	1 11/16	3/8 x 3/16 x 4 1/8	2
		115TBP112	1 3/4	3/8 x 3/16 x 4 1/8	2
		115TBP114	1 7/8	1/2 x 1/4 x 4 1/8	2
		115TBP115	1 15/16	1/2 x 1/4 x 4 1/8	2
	Metric *	115TBP45MM	45 mm	14 x 4.5 x 105 (mm)	2

OtN Frame	Meas. Unit	Bushing Number	Bore [1]	Shaft Keyseat Required	Type
35	Inch	207TBP200	2	1/2 x 1/4 x 5 1/8	2
		207TBP202	2 1/8	1/2 x 1/4 x 5 1/8	2
		207TBP203	2 3/16	1/2 x 1/4 x 5 1/8	2
		207TBP204	2 1/4	1/2 x 1/4 x 5 1/8	2
		207TBP207	2 7/16	5/8 x 5/16 x 5 1/8	2
	Metric *	207TBP50MM	50 mm	14 x 4.5 x 130 (mm)	2
		207TBP60MM	60 mm	18 x 5.5 x 130 (mm)	2
36	Inch	215TBP207	2 7/16	5/8 X 5/16 X 5 5/8	2
		215TBP208	2 1/2	5/8 X 5/16 X 5 5/8	2
		215TBP211	2 11/16	5/8 X 5/16 X 5 5/8	2
		215TBP215	2 15/16	3/4 X 3/8 X 5 5/8	2
	Metric *	215TBP60MM	60 mm	18 x 5.5 x 140 (mm)	2
		215TBP70MM	70 mm	20 x 6 x 140 (mm)	2
37	Inch	307TBP214	2 7/8	3/4 x 3/8 x 6 3/4	2
		307TBP215	2 15/16	3/4 x 3/8 x 6 3/4	2
		307TBP300	3	3/4 x 3/8 x 6 3/4	2
		307TBP306	3 3/8	7/8 x 7/16 x 6 3/4	2
		307TBP307	3 7/16	7/8 x 7/16 x 6 3/4	2
	Metric *	307TBP75MM	75 mm	20 x 6 x 170 (mm)	2
		307TPB80MM	80 mm	22 x 7 x 170 (mm)	2
		307TBP85MM	85 mm	22 x 7 x 170 (mm)	2
38	Inch	315TBP215	2 15/16	3/4 x 3/8 x 7 15/16	2
		315TBP300	3	3/4 x 3/8 x 7 15/16	2
		315TBP303	3 3/16	3/4 x 3/8 x 7 15/16	2
		315TBP307	3 7/16	7/8 x 7/16 x 15/16	2
		315TBP315	3 15/16	1 x 1/2 x 7 15/16	2
	Metric*	315TBP90MM	90mm	25 x 7 x 190 (mm)	2

[1] Bushing bore shown must be selected by customer based on complete application details.
* Metric bushings have metric bores and require metric keyseats as shown in mm.

AGMA Application Classifications

Application	Service Factor		
	Up to 3 hrs/day	Up to 10 hrs/day	Over 10 hrs/day
Agitators (Mixers)			
Pure Liquids	—	1.00	1.25
Liquids & Solids	1.00	1.25	1.50
Liquids - Variable Density	1.00	1.25	1.50
Blowers			
Centrifugal	1.00	1.25	—
Lobe	1.00	1.25	1.50
Vane	—	1.00	1.25
Brewing and Distilling			
Bottling Machinery	—	1.00	1.25
Brew Kettles, Continuous Duty	—	1.00	1.25
Cookers - Continuous Duty	—	1.00	1.25
Mash Tubs - Continuous Duty	—	1.00	1.25
Scale Hoppers, Frequent Starts	1.00	1.25	1.50
Can Filling Machines	—	1.00	1.25
Car Dumpers	1.25	1.50	1.75
Car Pullers	1.00	1.25	1.50
Clarifiers	—	1.00	1.25
Classifiers	1.00	1.25	1.50
Clay Working Industry			
Brick Press	1.25	1.50	1.75
Briquette Machine	1.25	1.50	1.75
Pug Mill	1.00	1.25	1.50
Compactors	1.50	1.75	2.00
Compressors			
Centrifugal	—	1.00	1.25
Lobe	1.00	1.25	1.50
Reciprocating, Multi - Cylinder	1.00	1.25	1.50
Reciprocating, Single - Cylinder	1.25	1.50	1.75
Conveyors - General Purpose			
Uniformly Loaded or Fed	—	1.00	1.25
Not Uniformly Fed	1.00	1.25	1.50
Reciprocating or Shaker	1.25	1.50	1.75
Cranes			
Dry Dock			
Main Hoist	1.25	1.50	1.75
Auxiliary	1.25	1.50	1.75
Boom Hoist	1.25	1.50	1.75
Slewing Drive	1.25	1.50	1.75
Traction Drive	1.50	1.50	1.50
Container			
Main Hoist	Refer to Application Engineering		

Application	Service Factor		
	Up to 3 hrs/day	Up to 10 hrs/day	Over 10 hrs/day
Cranes (Continued)			
Boom Hoist	Refer to Application Engineering		
Trolley Drive	Refer to Application Engineering		
(Gantry Drive)			
(Traction Drive)	Refer to Application Engineering		
Mill Duty			
Main	Refer to Application Engineering		
Auxiliary	Refer to Application Engineering		
Bridge & Trolley Travel	Refer to Application Engineering		
Industrial Duty			
Main	1.25	1.50	1.75
Auxiliary	Refer to Application Engineering		
Bridge & Trolley Travel	Refer to Application Engineering		
Crusher			
Stone or Ore	1.50	1.75	2.00
Dredges			
Cable Reels	1.00	1.25	1.50
Conveyors	1.00	1.25	1.50
Cutter Head Drives	1.25	1.50	1.75
Pumps	1.00	1.25	1.50
Screen Drives	1.25	1.50	1.75
Stackers	1.00	1.25	1.50
Winches	1.00	1.25	1.50
Elevators			
Bucket	1.00	1.25	1.50
Centrifugal Discharge	—	1.00	1.25
Escalators	Refer to Application Engineering		
Freight	Refer to Application Engineering		
Gravity Discharge	—	1.00	1.25
Extruders			
General	1.25	1.25	1.25
Plastics			
(a) Variable Speed Drive	1.50	1.50	1.50
(b) Fixed Speed Drive	1.75	1.75	1.75
Rubber			
(a) Continuous Screw Operation	1.50	1.50	1.50
(b) Intermittent Screw Operation	1.75	1.75	1.75
Fans			
Centrifugal	—	1.00	1.25
Cooling Towers	Refer to Application Engineering		
Forced Draft	1.25	1.25	1.25
Induced Draft	1.00	1.25	1.50
Industrial & Mine	1.00	1.25	1.50

AGMA Application Classifications

Application	Service Factor		
	Up to 3 hrs/day	Up to 10 hrs/day	Over 10 hrs/day
Feeders			
Apron	—	1.25	1.50
Belt	1.00	1.25	1.50
Disc	—	1.00	1.25
Reciprocating	1.25	1.50	1.75
Screw	1.00	1.25	1.50
Food Industry			
Cereal Cooker	—	1.00	1.25
Dough Mixers	1.00	1.25	1.50
Meat Grinders	1.00	1.25	1.50
Slicers	1.00	1.25	1.50
Generators and Exciters	—	1.00	1.25
Hammer Mills	1.50	1.50	1.75
Hoists			
Heavy Duty	1.25	1.50	1.75
Medium Duty	1.00	1.25	1.50
Skip Hoist	1.00	1.25	1.50
Laundry Tumblers	1.00	1.25	1.50
Laundry Washers	1.00	1.25	1.50
Lumber Industry			
Barkers			
- Spindle Feed	1.25	1.25	1.25
- Main Drive	1.50	1.50	1.50
Conveyors			
- Burner	1.25	1.25	1.50
- Main or Heavy Duty	1.50	1.50	1.50
- Main Log	1.50	1.50	1.50
- Re-Saw, Merry-Go-Round	1.25	1.25	1.50
- Slab	1.50	1.50	1.75
- Transfer	1.25	1.25	1.50
Chains			
- Floor	1.50	1.50	1.50
- Green	1.50	1.50	1.50
Cut-Off Saws			
- Chain	1.50	1.50	1.50
- Drag	1.50	1.50	1.50
Debarking Drums	1.50	1.50	1.75
Feeds			
- Edger	1.25	1.25	1.50
- Gang	1.50	1.50	1.50
- Trimmer	1.25	1.25	1.50
Log Deck	1.50	1.50	1.50
Log Hauls - Incline-Well Type	1.50	1.50	1.50
Log Turning Devices	1.50	1.50	1.50
Planner Feed	1.25	1.25	1.25
Planer Tilting Hoists	1.50	1.50	1.50
Rolls - Live-Off Bearing.-Roll Cases	1.50	1.50	1.50
Sorting Table	1.25	1.25	1.50
Tipple Hoist	1.25	1.25	1.50
Transfers			
- Chain	1.50	1.50	1.50
- Causeway	1.50	1.50	1.50
Tray Drives	1.25	1.25	1.50
Veneer Lathe Drives	Refer to Application Engineering		

Application	Service Factor		
	Up to 3 hrs/day	Up to 10 hrs/day	Over 10 hrs/day
Metal Mills			
Draw Bench Carriage & Main Drive	1.00	1.25	1.50
Runout Table			
Non-reversing			
Group Drives	1.00	1.25	1.50
Individual Drives	1.50	1.50	1.75
Reversing	1.50	1.50	1.75
Slab Pushers	1.25	1.25	1.50
Shears	1.50	1.50	1.75
Wire Drawing	1.00	1.25	1.50
Wire Winding Machine	1.00	1.25	1.50
Metal Strip Processing Machinery			
Bridles	1.25	1.25	1.50
Coilers & Uncoilers	1.00	1.00	1.25
Edge Trimmers	1.00	1.25	1.50
Flatteners	1.00	1.25	1.50
Loopers (Accumulators)	1.00	1.00	1.00
Pinch Rolls	1.00	1.25	1.50
Scrap Choppers	1.00	1.25	1.50
Shears	1.50	1.50	1.75
Slitters	1.00	1.25	1.50
Mills, Rotary Type			
Ball & Rod			
Spur Ring Gear	1.50	1.50	1.75
Helical Ring Gear	1.50	1.50	1.50
Direct Connected	1.50	1.50	1.75
Cement Kilns	1.50	1.50	1.50
Dryers & Coolers	1.50	1.50	1.50
Mixers, Concrete	1.00	1.25	1.50
Paper Mills			
Agitator (Mixer)	1.50	1.50	1.50
Agitator for Pure Liquids	1.25	1.25	1.25
Barkers - Mechanical	1.75	1.75	1.75
Barking Drums	1.75	1.75	1.75
Beater	1.50	1.50	1.50
Breaker Stack	1.25	1.25	1.25
❖ Calender	1.25	1.25	1.25
Chipper	1.75	1.75	1.75
Chip Feeder	1.50	1.50	1.50
Coating Rolls	1.25	1.25	1.25
Conveyors			
Chip, Bark, Chemical	1.25	1.25	1.25
Log (Including Slab)	1.75	1.75	1.75
Couch Rolls	1.25	1.25	1.25
Cutter	1.75	1.75	1.75
Cylinder Molds	1.25	1.25	1.25
❖ Dryers			
Paper Machine	1.25	1.25	1.25
Conveyor Type	1.25	1.25	1.25
Embosser	1.25	1.25	1.25
Extruder	1.50	1.50	1.50
Fourdrinier Rolls (Includes Lump Breaker, Dandy Roll, Wire Turning, and Return Rolls)	1.25	1.25	1.25
Jordan	1.25	1.25	1.25
Kiln Drive	1.50	1.50	1.50
Mt. Hope Roll	1.25	1.25	1.25

AGMA Application Classifications

Application	Service Factor		
	Up to 3 hrs/day	Up to 10 hrs/day	Over 10 hrs/day
Paper Mills (Continued)			
Paper Rolls	1.25	1.25	1.25
Platter	1.50	1.50	1.50
Presses - Felt & Suction	1.25	1.25	1.25
Pulper	1.50	1.50	1.75
Pumps - Vacuum	1.50	1.50	1.50
Reel (Surface Type)	1.25	1.25	1.50
Screens			
Chip	1.50	1.50	1.50
Rotary	1.50	1.50	1.50
Vibrating	1.75	1.75	1.75
Size Press	1.25	1.25	1.25
Super Calender (See Note)	1.25	1.25	1.25
Thickner			
(AC Motor)	1.50	1.50	1.50
(DC Motor)	1.25	1.25	1.25
Washer			
(AC Motor)	1.50	1.50	1.50
(DC Motor)	1.25	1.25	1.25
Wind and Unwind Stand	1.00	1.00	1.00
Winders (Surface Type)	1.25	1.25	1.25
❖ Yankee Dryers	1.25	1.25	1.25
Plastics Industry - Primary Processing			
Intensive Internal Mixers			
(a) Batch Mixers	1.75	1.75	1.75
(b) Continuous Mixers	1.50	1.50	1.50
Batch Drop Mill - 2 Smooth Rolls	1.25	1.25	1.25
Continuous Feed, Holding & Blend Mill	1.25	1.25	1.25
Compounding Mills	1.25	1.25	1.25
Calenders	1.50	1.50	1.50
Plastics Industry - Secondary Processing			
Blow Molders	1.50	1.50	1.50
Coating	1.25	1.25	1.25
Film	1.25	1.25	1.25
Pipe	1.25	1.25	1.25
Pre-Plasticizers	1.50	1.50	1.50
Rods	1.25	1.25	1.25
Sheet	1.25	1.25	1.25
Tubing	1.25	1.25	1.50
Pullers - Barge Haul	1.00	1.50	1.75
Pumps			
Centrifugal	—	1.00	1.25
Proportioning	1.00	1.25	1.50
Reciprocating			
Single Acting, 3 or more cylinders	1.00	1.25	1.50
Double Acting, 2 or more cylinders	1.00	1.25	1.50
Rotary			
- Gear	—	1.00	1.50
- Lobe	—	1.00	1.25
- Vane	—	1.00	1.25

Application	Service Factor		
	Up to 3 hrs/day	Up to 10 hrs/day	Over 10 hrs/day
Rubber Industry			
Intensive Internal Mixers			
(a) Batch Mixers	1.50	1.75	1.75
(b) Continuous Mixers	1.25	1.50	1.50
Mixing Mill - 2 Smooth Rolls - (If corrugated rolls are used, then use the same service factors that are used for a Cracker-Warmer)	1.50	1.50	1.50
Batch Drop Mill - 2 Smooth Rolls	1.50	1.50	1.50
Cracker Warmer - 1 Corrugated Roll	1.75	1.75	1.75
Cracker - 2 Corrugated Rolls	1.75	1.75	1.75
Holding, Feed & Blend Mill - 2 Rolls	1.25	1.25	1.25
Refiner - 2 Rolls	1.50	1.50	1.50
Calenders	1.50	1.50	1.50
Sand Miller	1.00	1.25	1.50
Sewage Disposal			
Bar Screens	—	1.00	1.25
Chemical Feeders	—	1.00	1.25
Dewatering Screens	1.00	1.25	1.50
Scum Breakers	1.00	1.25	1.50
Slow or Rapid Mixers	1.00	1.25	1.50
Sludge Collectors	1.00	1.00	1.25
Thickeners	1.00	1.25	1.50
Vacuum Filters	1.00	1.25	1.50
Screens			
Air Washing	—	1.00	1.25
Rotary - Stone or Gravel	1.00	1.25	1.50
Traveling Water Intake	—	1.00	1.25
Sugar Industry			
Beet Slicer	1.50	1.50	1.75
Cane Knives	1.50	1.50	1.50
Crushers	1.50	1.50	1.50
Mills (Low Speed End)	1.50	1.50	1.50
Textile Industry			
Batchers	1.00	1.25	1.50
Calenders	1.00	1.25	1.50
Cards	1.00	1.25	1.50
Dry Cans	1.00	1.25	1.50
Dryers	1.00	1.25	1.50
Dyeing Machinery	1.00	1.25	1.50
Looms	1.00	1.25	1.50
Mangles	1.00	1.25	1.50
Nappers	1.00	1.25	1.50
Pads	1.00	1.25	1.50
Slashers	1.00	1.25	1.50
Soapers	1.00	1.25	1.50
Spinners	1.00	1.25	1.50
Tenter Frames	1.00	1.25	1.50
Washers	1.00	1.25	1.50
Winders	1.00	1.25	1.50

❖ Anti-friction bearings only.

Note: A service factor of 1.0 may be applied at the base of a super calender, operating over a speed range where part of the range is constant horsepower and part of the range is constant torque, provided that the constant horsepower part is greater than 1.5 to 1. A service factor of 1.25 is applicable to super calenders operating over the entire speed range at constant torque, or where the constant horsepower speed range is less than 1.5 to 1.

Specifications

Motor rpm 1750

Gear Frame																							
Nom. RPM	Nom. Ratio	31		32 Double		32 Triple		33		34		35		36		37		38	
493	3.55			3.71 21.23	3242 2723														
389	4.5			4.68 18.59	3242 3008														
350	5	5.1 5.53	3132 975											RO		RO			
313	5.6			5.60 16.27	3242 3150									RO		RO			
278	6.3	6.43 4.83	3132 1074	6.61 13.95	3242 3188									RO		RO			
246	7.1	7.23 4.5	3132 1125	7.05 13.08	3242 3188									RO		RO			
219	8	7.62 4.37	3132 1151	7.97 11.57	3242 3188									RO		RO			
194	9	8.62 4.02	3132 1198	8.83 10.44	3242 3187									RO		RO			
175	10	9.72 3.73	3132 1253	10.10 9.13	3242 3188			9.78 15.62	3363 5172	9.51 25.2	3473 8113	9.47 54.65	3583 17520	9.81 64.96	3693 21573	10.1 92.68	3703 31689		
156	11.2	11 3.45	3132 1312	11.60 7.95	3242 3188									10.9 61.20	3693 22583	11.5 85.80	3703 33403	11.1 120	3823 45093
140	12.5	12.5 3.18	3132 1374	12.40 7.44	3242 3190			12.3 13.31	3363 5542	12.3 23.08	3473 9610	12.3 45.48	3583 18938	12.7 55.94	3693 24051	12.3 82.31	3703 34274	12.4 120	3823 50374
125	14	14.3 2.91	3132 1439	14.10 6.54	3242 3188			14.8 12.06	3363 6042	15.2 22.45	3473 11552	14.9 38.69	3583 19516	14.6 51.34	3693 25375	13.7 72.29	3703 33528	13.9 120	3823 56468
109	16	16.1 2.69	3132 1497	15.60 5.91	3242 3188	16.1 6.07	3243 3308	16.1 11.68	3363 6366	15.5 22.27	3473 11686	15.5 35.13	3583 18434	16 48.54	3693 26292	15.5 71.65	3703 37597	15.5 120	3823 62967
97	18	17.1 2.61	3132 1543	17.70 5.21	3242 3188			18.6 10.01	3363 6303	17.5 19.65	3473 11641	18.7 32.7	3583 20701	17.9 46.68	3693 28287	17.6 68.88	3703 41040	17.8 120	3823 72311
88	20	20.3 2.31	3132 1621	19.70 4.68	3242 3188	20.4 5.11	3243 3529	20.3 9.92	3363 6817	20.1 18.14	3473 12343	20 29.43	3583 19926	19.2 48.50	3693 31524	19.9 70.18	3703 47279	19.6 120	3823 79623
78	22.4	21.5 2.24	3132 1665	22.20 4.15	3242 3185	22.9 4.72	3243 3659	23.3 8.61	3363 6791	21.3 15.9	3473 11465	23.6 26.36	3583 21060	21.4 47.99	3693 34767	22.6 70.01	3703 53564	22.2 120	3823 90185
70	25	24.6 2.03	3132 1727	26.00 3.55	3242 3191	24.1 4.53	3243 3696	24.3 8.48	3363 6976	24.8 15.23	3473 12787	24.3 25.63	3583 21084	25 44.31	3693 37501	24 69.80	3703 56711	25.3 120	3823 102779
63	28	27.4 1.90	3132 1800	28.70 3.21	3242 3185	27.3 4.08	3243 3771	28.7 7.47	3363 7258	28.6 13.43	3473 13003	27.1 23.4	3583 21468	28.6 37.44	3693 36250	26.9 58.43	3703 53210	28.7 107.13	3823 104086
56	31.5	30.7 1.75	3132 1857	31.50 2.93	3242 3191	30.8 3.69	3243 3848	30.6 6.89	3363 7137	31.5 12.61	3473 13447	30.5 21.2	3583 21890	31.4 35.02	3693 37226	30.4 54.12	3703 55697	32.4 102.97	3823 112942
49	35.5	35.6 1.58	3132 1945	36.80 2.51	3242 3194	34.8 3.3	3243 3888	34.6 5.93	3363 6946	34.8 11.41	3473 13442	34 19.34	3583 22261	35 32.08	3693 38011	34.4 50.08	3703 58321	36.4 91.49	3823 112739
44	40	39.1 1.46	3132 1974			39.5 2.92	3243 3905	38.3 5.37	3363 6963	39.9 9.96	3473 13453	38.6 17.11	3583 22358	39.2 29.26	3693 38830	38.1 46.88	3703 60467	40.6 87.17	3823 119810
39	45	44.8 1.00	3132 1549			45.2 2.56	3243 3917	43.7 4.72	3363 6983	44.1 9.01	3473 13451	42.6 15.55	3583 22426	44.1 26.16	3693 39055	42.5 43.69	3703 62860	45.8 79.67	3823 123527
35	50	49.4 1.00	3132 1708			51 2.27	3243 3919	50.3 4.11	3363 6999	50.6 7.85	3473 13447	49.8 13.37	3583 22540	47.8 24.20	3693 39160	47.7 40.56	3703 65497	50.1 70.36	3823 119334
31	56					54.1 2.14	3243 3919	53.8 3.85	3363 7012	57 7.06	3473 13623	55.5 12.03	3583 22603	54.4 21.34	3693 39300	55.9 36.50	3703 69073	57 61.84	3823 119329
28	63					64.3 1.81	3243 3940	61 3.41	3363 7042	61.9 6.58	3473 13789	62.4 10.73	3583 22667	60.1 19.37	3693 39410	63.2 32.99	3703 70583	64.3 54.82	3823 119330
25	71					68 1.71	3243 3936	67.8 3.07	3363 7046	69 6.01	3473 14039	70.6 9.52	3583 22753	69.6 16.79	3693 39561	68.9 30.73	3703 71678	72.2 48.82	3823 119326
22	80					77.7 1.5	3243 3946	77 2.71	3363 7064	77.5 5.37	3473 14089	80.6 8.36	3583 22811	75.9 15.43	3693 39647	80.4 26.78	3703 72890	80.5 43.79	3823 119336
19	90					86.7 1.35	3243 3962	85.7 2.44	3363 7079	87.7 4.76	3473 14132	86.5 7.81	3583 22870	85.3 13.77	3693 39764	87.4 24.68	3703 73023	90.8 38.83	3823 119359
18	100					97.2 1.21	3243 3982	96.4 2.17	3363 7082	95.4 4.38	3473 14146	101 6.71	3583 22943	95.1 12.38	3693 39857	98 22.08	3703 73253	102 34.56	3823 119337
16	112					113 1.04	3243 3978	113 1.86	3363 7115	108 3.88	3473 14186	109 6.23	3583 22989	108 10.93	3693 39962	109 19.90	3703 73431	115 30.65	3823 119325
14	125					124 0.95	3243 3988	125 1.68	3363 7109	124 3.39	3473 14231	121 5.62	3583 23021	124 9.54	3693 40047	123 17.68	3703 73619	128 27.54	3823 119337
12.5	140					142 0.83	3243 3990	137 1.54	3363 7142	139 3.03	3473 14258	134 5.09	3583 23090	135 8.78	3693 40126	135 16.14	3703 73763	137 25.73	3823 119334
10.9	160					156 0.76	3243 4014	160 1.32	3363 7150	154 2.74	3473 14285	159 4.3	3583 23146	157 7.57	3693 40234	152 14.37	3703 73944	154 22.89	3823 119335

Note: If shaded, Mechanical HP shown may exceed thermal HP limit. Refer to Page B-143-144

R.O. Refer application details to Marketing

Exact ratio	**Gear Frame**
Input H.P.	Output Torque

Specifications

Motor rpm 1450

Gear Frame																							
Nom. RPM	Nom. Ratio	31		32 Double		32 Triple		33		34		35		36		37		38	
408	3.55			3.71 18.48	3242 2861														
322	4.5			4.68 16.18	3242 3160														
290	5	5.1 4.81	3132 1024											RO		RO			
259	5.6			5.60 13.64	3242 3187									RO		RO			
230	6.3	6.43 4.21	3132 1130	6.61 11.56	3242 3188									RO		RO			
204	7.1	7.23 3.92	3132 1183	7.05 10.84	3242 3189									RO		RO			
181	8	7.62 3.8	3132 1208	7.97 9.59	3242 3189									RO		RO			
161	9	8.62 3.5	3132 1259	8.83 8.65	3242 3187									RO		RO			
145	10	9.72 3.25	3132 1318	10.10 7.56	3242 3186			9.78 13.6	3363 5434	9.51 21.23	3473 8249	9.47 47.56	3583 19577	9.81 55.21	3693 22129	10.1 80.66	3703 33285		
129	11.2	11 3	3132 1377	11.60 6.59	3242 3190									10.9 53.26	3693 23719	11.5 74.67	3703 35085	100	3823 45352
116	12.5	12.5 2.77	3132 1445	12.40 6.16	3242 3187			12.3 11.59	3363 5825	12.3 17.72	3473 8905	12.3 39.58	3583 19891	12.7 48.69	3693 25265	12.3 71.64	3703 36003	12.4 100	3823 50663
104	14	14.3 2.53	3132 1510	14.10 5.42	3242 3189			14.8 10.01	3363 6053	15.2 15.76	3473 9788	14.9 32.82	3583 19980	14.6 44.69	3693 26659	13.7 62.92	3703 35219	13.9 100	3823 56792
91	16	16.1 2.34	3132 1572	15.60 4.90	3242 3190	16.1 5.26	3243 3460	16.1 9.05	3363 5953	15.5 15.58	3473 9867	15.5 30.58	3583 19366	16 42.25	3693 27620	15.5 62.36	3703 39492	15.5 100	3823 63329
81	18	17.1 2.27	3132 1620	17.70 4.32	3242 3191			18.6 8.03	3363 6102	17.5 13.85	3473 9903	18.7 27.49	3583 21003	17.9 40.63	3693 29715	17.6 59.95	3703 43110	17.8 100	3823 72727
73	20	20.3 2.01	3132 1703	19.70 3.88	3242 3189	20.4 4.45	3243 3709	20.3 7.76	3363 6436	20.1 12.98	3473 10660	20 25.61	3583 20927	19.2 41.74	3693 32744	19.9 61.08	3703 49662	19.6 100	3823 80081
65	22.4	21.5 1.95	3132 1749	22.20 3.44	3242 3187	22.9 4.1	3243 3836	23.3 6.81	3363 6483	21.3 12.07	3473 10504	23.6 22.31	3583 21512	21.4 41.77	3693 36522	22.6 61.02	3703 56345	22.2 100	3823 90703
58	25	24.6 1.77	3132 1817	26.00 2.94	3242 3190	24.1 3.93	3243 3870	24.3 6.75	3363 6702	24.8 11.2	3473 11349	24.3 22.28	3583 22120	25 37.74	3693 38549	24 60.75	3703 59570	25.3 100	3823 103370
52	28	27.4 1.65	3132 1886	28.70 2.66	3242 3186	27.3 3.48	3243 3882	28.7 5.87	3363 6883	28.6 10.14	3473 11849	27.1 20.07	3583 22222	28.6 32.59	3693 38082	26.9 50.85	3703 55888	28.7 93.25	3823 109346
46	31.5	30.7 1.52	3132 1947	31.50 2.43	3242 3194	30.8 3.09	3243 3888	30.6 5.5	3363 6876	31.5 9.48	3473 12201	30.5 17.9	3583 22306	31.4 30.28	3693 38847	30.4 47.10	3703 58502	32.4 89.68	3823 118717
41	35.5	35.6 1.38	3132 2050	36.80 2.08	3242 3194	34.8 2.75	3243 3910	34.6 4.93	3363 6969	34.8 8.84	3473 12569	34 16.12	3583 22393	35 27.27	3693 38997	34.4 43.58	3703 61252	36.4 79.68	3823 118501
36	40	39.1 1.26	3132 2056			39.5 2.43	3243 3922	38.3 4.47	3363 6995	39.9 8.03	3473 13091	38.6 14.25	3583 22474	39.2 24.43	3693 39128	38.1 40.80	3703 63512	40.6 75.88	3823 125871
32	45	44.8 0.83	3132 1552			45.2 2.13	3243 3934	43.7 3.93	3363 7017	44.1 7.49	3473 13496	42.6 12.95	3583 22540	44.1 21.79	3693 39262	42.5 38.02	3703 66020	45.8 69.34	3823 129754
29	50	49.4 0.83	3132 1711			51 1.89	3243 3938	50.3 3.42	3363 7029	50.6 6.78	3473 14017	49.8 11.13	3583 22646	47.8 20.15	3693 39353	47.7 35.30	3703 68796	50.1 58.3	3823 119338
26	56					54.1 1.78	3243 3935	53.8 3.2	3363 7034	57 6.04	3473 14066	55.5 10.02	3583 22721	54.4 17.77	3693 39497	55.9 31.74	3703 72492	57 51.24	3823 119332
23	63					64.3 1.5	3243 3941	61 2.83	3363 7053	61.9 5.56	3473 14062	62.4 8.93	3583 22767	60.1 16.12	3693 39583	63.2 28.17	3703 72741	64.3 45.42	3823 119325
20	71					68 1.42	3243 3945	67.8 2.55	3363 7064	69 5	3473 14096	70.6 7.92	3583 22846	69.6 13.97	3693 39726	68.9 25.90	3703 72911	72.2 40.45	3823 119324
18	80					77.7 1.25	3243 3968	77 2.25	3363 7079	77.5 4.47	3473 14154	80.6 6.96	3583 22920	75.9 12.84	3693 39818	80.4 22.28	3703 73189	80.5 36.28	3823 119326
16	90					86.7 1.12	3243 3967	85.7 2.03	3363 7108	87.7 3.95	3473 14154	86.5 6.49	3583 22937	85.3 11.45	3693 39905	87.4 20.54	3703 73347	90.8 32.17	3823 119346
15	100					97.2 1	3243 3971	96.4 1.81	3363 7129	95.4 3.64	3473 14188	101 5.58	3583 23027	95.1 10.29	3693 39982	98 18.37	3703 73554	102 28.63	3823 119315
13	112					113 0.86	3243 3971	113 1.54	3363 7110	108 3.22	3473 14209	109 5.18	3583 23069	108 9.09	3693 40111	109 16.55	3703 73705	115 25.4	3823 119345
12	125					124 0.79	3243 4002	125 1.4	3363 7150	124 2.81	3473 14236	121 4.67	3583 23087	124 7.93	3693 40176	123 14.71	3703 73925	128 22.82	3823 119343
10.4	140					142 0.69	3243 4003	137 1.28	3363 7165	139 2.51	3473 14255	134 4.23	3583 23159	135 7.30	3693 40265	135 13.42	3703 74022	137 21.32	3823 119338
9.1	160					156 0.63	3243 4015	160 1.1	3363 7191	154 2.27	3473 14283	159 3.57	3583 23192	157 6.29	3693 40348	152 11.95	3703 74214	154 18.97	3823 119361

Note: If shaded, Mechanical HP shown may exceed thermal HP limit. Refer to Page B-128-129

R.O. Refer application details to Marketing

Exact ratio	**Gear Frame**
Input H.P.	Output Torque

Gear Frame																							
Nom. RPM	Nom. Ratio	31		32 Double		32 Triple		33		34		35		36		37		38	
327	3.55			3.71 16.01	3242 3098														
258	4.5			4.68 13.04	3242 3183														
232	5	5.1 4.17	3132 1109											RO		RO			
207	5.6			5.60 10.91	3242 3187									RO		RO			
184	6.3	6.43 3.64	3132 1221	6.61 9.25	3242 3189									RO		RO			
163	7.1	7.23 3.39	3132 1278	7.05 8.67	3242 3188									RO		RO			
145	8	7.62 3.29	3132 1308	7.97 7.67	3242 3188									RO		RO			
129	9	8.62 3.03	3132 1362	8.83 6.92	3242 3187									RO		RO			
116	10	9.72 2.81	3132 1425	10.10 6.05	3242 3187			9.78 11.78	3363 5884	9.51 17.42	3473 8461	9.47 39.91	3583 19303	9.81 44.17	3693 22130	10.1 69.89	3703 36051		
104	11.2	11 2.6	3132 1492	11.60 5.27	3242 3189									10.9 44.17	3693 24589	11.5 64.69	3703 37994	11.1 80	3823 45352
93	12.5	12.5 2.4	3132 1565	12.40 4.93	3242 3189			12.3 9.62	3363 6043	12.3 15.36	3473 9649	12.3 33.05	3583 20762	12.7 42.17	3693 27352	12.3 62.07	3703 38991	12.4 80	3823 50663
83	14	14.3 2.2	3132 1641	14.10 4.33	3242 3184			14.8 8.43	3363 6372	15.2 14.71	3473 11419	14.9 26.8	3583 20394	14.6 38.70	3693 28857	13.7 54.51	3703 38140	13.9 80	3823 56792
73	16	16.1 2.03	3132 1705	15.60 3.92	3242 3190	16.1 4.55	3243 3741	16.1 8.1	3363 6660	15.5 14.59	3473 11550	15.5 26.49	3583 20970	16 36.59	3693 29900	15.5 54.02	3703 42763	15.5 80	3823 63329
64	18	17.1 1.97	3132 1757	17.70 3.45	3242 3185			18.6 6.78	3363 6441	17.5 12.58	3473 11243	18.7 22.2	3583 21202	17.9 35.19	3693 32170	17.6 51.94	3703 46687	17.8 80	3823 72727
58	20	20.3 1.74	3132 1842	19.70 3.10	3242 3185	20.4 3.7	3243 3855	20.3 6.64	3363 6884	20.1 12.03	3473 12349	20 21.56	3583 22022	19.2 36.16	3693 35458	19.9 52.91	3703 53774	19.6 80	3823 80081
52	22.4	21.5 1.69	3132 1895	22.20 2.75	3242 3184	22.9 3.32	3243 3883	23.3 5.74	3363 6830	21.3 10.46	3473 11379	23.6 18.66	3583 22491	21.4 35.16	3693 38428	22.6 52.71	3703 60839	22.2 80	3823 90704
46	25	24.6 1.53	3132 1963	26.00 2.35	3242 3187	24.1 3.16	3243 3889	24.3 5.6	3363 6950	24.8 10.09	3473 12780	24.3 18	3583 22339	25 30.46	3693 38891	24 52.63	3703 64510	25.3 80	3823 103370
41	28	27.4 1.42	3132 2029	28.70 2.13	3242 3189	27.3 2.8	3243 3904	28.7 4.76	3363 6977	28.6 8.9	3473 13000	27.1 16.2	3583 22422	28.6 26.68	3693 38970	26.9 44.05	3703 60517	28.7 80	3823 117261
37	31.5	30.7 1.27	3132 2034	31.50 1.94	3242 3187	30.8 2.49	3243 3917	30.6 4.48	3363 7001	31.5 8.36	3473 13449	30.5 14.44	3583 22493	31.4 24.43	3693 39177	30.4 40.81	3703 63361	32.4 78.65	3823 130145
33	35.5	35.6 1.11	3132 2061	36.80 1.66	3242 3186	34.8 2.21	3243 3928	34.6 3.97	3363 7015	34.8 7.66	3473 13614	34 13	3583 22574	35 21.98	3693 39290	34.4 37.75	3703 66322	36.4 69.88	3823 129908
29	40	39.1 1.01	3132 2060			39.5 1.95	3243 3934	38.3 3.59	3363 7022	39.9 6.82	3473 13898	38.6 11.49	3583 22651	39.2 19.69	3693 39420	38.1 35.35	3703 68786	40.6 63.16	3823 130964
26	45	44.8 0.66	3132 1542			45.2 1.71	3243 3947	43.7 3.16	3363 7053	44.1 6.21	3473 13987	42.6 10.44	3583 22714	44.1 17.55	3693 39527	42.5 32.94	3703 71498	45.8 56.16	3823 131364
23	50	49.4 0.66	3132 1701			51 1.52	3243 3959	50.3 2.75	3363 7065	50.6 5.45	3473 14084	49.8 8.96	3583 22789	47.8 16.23	3693 39621	47.7 29.64	3703 72207	50.1 46.64	3823 119338
21	56					54.1 1.43	3243 3951	53.8 2.58	3363 7089	57 4.85	3473 14119	55.5 8.06	3583 22846	54.4 14.30	3693 39730	55.9 25.58	3703 73029	57 40.99	3823 119326
18	63					64.3 1.21	3243 3974	61 2.28	3363 7103	61.9 4.48	3473 14163	62.4 7.19	3583 22914	60.1 12.98	3693 39841	63.2 22.69	3703 73238	64.3 36.34	3823 119338
16	71					68 1.14	3243 3959	67.8 2.05	3363 7098	69 4.02	3473 14166	70.6 6.37	3583 22968	69.6 11.24	3693 39954	68.9 20.86	3703 73403	72.2 32.36	3823 119324
15	80					77.7 1	3243 3968	77 1.81	3363 7118	77.5 3.59	3473 14210	80.6 5.6	3583 23052	75.9 10.32	3693 40004	80.4 17.94	3703 73665	80.5 29.03	3823 119351
13	90					86.7 0.9	3243 3985	85.7 1.63	3363 7134	87.7 3.18	3473 14243	86.5 5.22	3583 23061	85.3 9.21	3693 40123	87.4 16.53	3703 73785	90.8 25.73	3823 119319
12	100					97.2 0.8	3243 3971	96.4 1.45	3363 7139	95.4 2.93	3473 14276	101 4.49	3583 23161	95.1 8.27	3693 40167	98 14.77	3703 73925	102 22.91	3823 119346
10	112					113 0.69	3243 3982	113 1.24	3363 7156	108 2.59	3473 14286	109 4.16	3583 23158	108 7.30	3693 40265	109 13.31	3703 74095	115 20.32	3823 119345
9	125					124 0.63	3243 3990	125 1.12	3363 7150	124 2.26	3473 14312	121 3.75	3583 23174	124 6.37	3693 40341	123 11.82	3703 74252	128 18.25	3823 119304
8.3	140					142 0.55	3243 3989	137 1.03	3363 7207	139 2.02	3473 14340	134 3.4	3583 23268	135 5.86	3693 40403	135 10.79	3703 74394	137 17.06	3823 119366
7.3	160					156 0.5	3243 3984	160 0.88	3363 7191	154 1.82	3473 14314	159 2.87	3583 23306	157 5.05	3693 40492	152 9.60	3703 74524	154 15.17	3823 119313

Note: If shaded, Mechanical HP shown may exceed thermal HP limit. Refer to Page B-128-129

R.O. Refer application details to Marketing

Exact ratio	**Gear Frame**
Input H.P.	Output Torque

Specifications

Motor rpm 870

Gear Frame

Nom. RPM	Nom. Ratio	31	32 Double	32 Triple	33	34	35	36	37	38
245	3.55		3.71 3242 12.31 3176							
193	4.5		4.68 3242 9.79 3186							
174	5	5.1 3132 3.41 1209						RO	RO	
155	5.6		5.60 3242 8.19 3190					RO	RO	
138	6.3	6.43 3132 2.98 1333	6.61 3242 6.93 3186					RO	RO	
123	7.1	7.23 3132 2.78 1398	7.05 3242 6.50 3187					RO	RO	
109	8	7.62 3132 2.7 1431	7.97 3242 5.75 3187					RO	RO	
97	9	8.62 3132 2.48 1487	8.83 3242 5.19 3187					RO	RO	
87	10	9.72 3132 2.3 1555	10.10 3242 4.54 3189		9.78 3363 9.11 6067	9.51 3473 13.07 8464	9.47 3583 30.73 19817	9.81 3693 33.12 22125	10.1 3703 57.21 39347	
78	11.2	11 3132 2.13 1629	11.60 3242 3.95 3187					10.9 3693 33.12 24583	11.5 3703 51.04 39970	11.1 3823 60 45352
70	12.5	12.5 3132 1.96 1704	12.40 3242 3.70 3191		12.3 3363 7.32 6131	12.3 3473 12.57 10528	12.3 3583 25.21 21115	12.7 3693 33.12 28643	12.3 3703 49.10 41125	12.4 3823 60 50663
62	14	14.3 3132 1.8 1790	14.10 3242 3.25 3187		14.8 3363 6.47 6521	15.2 3473 11.3 11696	14.9 3583 21.29 21601	14.6 3693 31.68 31496	13.7 3703 44.62 41627	13.9 3823 60 56792
54	16	16.1 3132 1.66 1859	15.60 3242 2.94 3190	16.1 3243 3.53 3870	16.1 3363 6.29 6896	15.5 3473 11.05 11663	15.5 3583 20.88 22039	16 3693 29.96 32642	15.5 3703 44.22 46674	15.5 3823 60 63329
48	18	17.1 3132 1.61 1915	17.70 3242 2.59 3188		18.6 3363 5.22 6612	17.5 3473 9.82 11702	18.7 3583 16.81 21406	17.9 3693 28.34 34544	17.6 3703 42.51 50948	17.8 3823 60 72727
44	20	20.3 3132 1.42 2005	19.70 3242 2.33 3192	20.4 3243 2.81 3904	20.3 3363 5.05 6981	20.1 3473 9.2 12592	20 3583 16.45 22404	19.2 3693 29.30 38308	19.9 3703 43.31 58690	19.6 3823 60 80081
39	22.4	21.5 3132 1.35 2019	22.20 3242 2.06 3180	22.9 3243 2.51 3914	23.3 3363 4.31 6838	21.3 3473 8.37 12140	23.6 3583 14.05 22579	21.4 3693 26.81 39069	22.6 3703 43.12 66360	22.2 3823 60 90704
35	25	24.6 3132 1.19 2036	26.00 3242 1.76 3182	24.1 3243 2.39 3922	24.3 3363 4.23 7000	24.8 3473 7.94 13409	24.3 3583 13.62 22537	25 3693 23.05 39240	24 3703 43.08 70406	25.3 3823 60 103370
31	28	27.4 3132 1.08 2058	28.70 3242 1.60 3193	27.3 3243 2.11 3923	28.7 3363 3.6 7036	28.6 3473 7.08 13789	27.1 3583 12.25 22606	28.6 3693 20.22 39379	26.9 3703 36.06 66054	28.7 3823 60 117261
28	31.5	30.7 3132 0.97 2071	31.50 3242 1.46 3198	30.8 3243 1.88 3943	30.6 3363 3.38 7043	31.5 3473 6.48 13900	30.5 3583 10.92 22680	31.4 3693 18.47 39493	30.4 3703 33.40 69142	32.4 3823 59.5 131275
25	35.5	35.6 3132 0.83 2055	36.80 3242 1.25 3199	34.8 3243 1.67 3957	34.6 3363 2.99 7045	34.8 3473 5.92 14029	34 3583 9.83 22759	35 3693 16.61 39588	34.4 3703 30.52 71493	36.4 3823 53.11 131643
22	40	39.1 3132 0.75 2039		39.5 3243 1.47 3954	38.3 3363 2.71 7068	39.9 3473 5.19 14101	38.6 3583 8.68 22815	39.2 3693 14.87 39693	38.1 3703 27.84 72230	40.6 3823 47.75 132014
19	45	44.8 3132 0.5 1558		45.2 3243 1.29 3971	43.7 3363 2.38 7082	44.1 3473 4.71 14144	42.6 3583 7.88 22859	44.1 3693 13.26 39820	42.5 3703 25.23 73018	45.8 3823 42.45 132393
17	50	49.4 3132 0.5 1718		51 3243 1.14 3959	50.3 3363 2.07 7090	50.6 3473 4.11 14162	49.8 3583 6.77 22958	47.8 3693 12.25 39874	47.7 3703 22.55 73246	50.1 3823 34.98 119338
16	56			54.1 3243 1.08 3979	53.8 3363 1.94 7107	57 3473 3.66 14206	55.5 3583 6.08 22978	54.4 3693 10.79 39971	55.9 3703 19.32 73543	57 3823 30.74 119316
14	63			64.3 3243 0.91 3984	61 3363 1.72 7145	61.9 3473 3.37 14205	62.4 3583 5.42 23031	60.1 3693 9.79 40066	63.2 3703 17.13 73722	64.3 3823 27.25 119316
12	71			68 3243 0.86 3982	67.8 3363 1.55 7156	69 3473 3.03 14237	70.6 3583 4.81 23124	69.6 3693 8.48 40191	68.9 3703 15.74 73849	72.2 3823 24.27 119324
11	80			77.7 3243 0.75 3968	77 3363 1.36 7131	77.5 3473 2.7 14249	80.6 3583 4.22 23162	75.9 3693 7.78 40211	80.4 3703 13.53 74076	80.5 3823 21.77 119337
10	90			86.7 3243 0.68 4015	85.7 3363 1.23 7178	87.7 3473 2.39 14273	86.5 3583 3.94 23208	85.3 3693 6.94 40312	87.4 3703 12.47 74216	90.8 3823 19.3 119334
9	100			97.2 3243 0.6 3971	96.4 3363 1.09 7155	95.4 3473 2.2 14292	101 3583 3.38 23247	95.1 3693 6.24 40410	98 3703 11.14 74342	102 3823 17.18 119329
8	112			113 3243 0.52 4001	113 3363 0.93 7156	108 3473 1.95 14341	109 3583 3.14 23307	108 3693 5.50 40449	109 3703 10.03 74447	115 3823 15.24 119345
7	125			124 3243 0.48 4053	125 3363 0.84 7150	124 3473 1.7 14355	121 3583 2.83 23318	124 3693 4.80 40531	123 3703 8.91 74628	128 3823 13.69 119326
6.2	140			142 3243 0.42 4061	137 3363 0.77 7183	139 3473 1.52 14387	134 3583 2.56 23360	135 3693 4.41 40541	135 3703 8.13 74739	137 3823 12.79 119320
5.4	160			156 3243 0.38 4037	160 3363 0.66 7191	154 3473 1.37 14367	159 3583 2.16 23387	157 3693 3.80 40626	152 3703 7.23 74835	154 3823 11.38 119340

Note: If shaded, Mechanical HP shown may exceed thermal HP limit. Refer to Page B-128-129

R.O. Refer application details to Marketing

Exact ratio	**Gear Frame**
Input H.P.	Output Torque

Combined - Motor rpm 1750

Gear Frame															
Nom. RPM	Nom. Ratio	32		33		34		35		36		37		38	
16	112														
14	125														
12.5	140														
10.9	160														
9.7	180	178	3245	174	3365	172	3475	174	3585	180	3695	187	3705		
		0.686	3960	1.252	7060	2.523	14065	4.051	22845	6.817	39775	12.067	73140		
8.8	200	197	3245	196	3365	194	3475	184	3585	191	3695	216	3705		
		0.620	3960	1.111	7060	2.237	14065	3.831	22845	6.425	39775	10.447	73140		
7.8	224	207	3245	222	3365	220	3475	208	3585	225	3695	230	3705		
		0.590	3960	0.981	7060	1.972	14065	3.389	22845	5.454	39775	9.811	73140		
7.0	250	246	3245	252	3365	250	3475	235	3585	240	3695	261	3705		
		0.497	3960	0.864	7060	1.736	14065	2.999	22845	5.113	39775	8.646	73140		
6.3	280	263	3245	288	3365	286	3475	265	3585	272	3695	290	3705		
		0.465	3960	0.756	7060	1.517	14065	2.660	22845	4.512	39775	7.781	73140		
5.6	315	295	3245	325	3365	322	3475	302	3585	300	3695	330	3705		
		0.414	3960	0.670	7060	1.348	14065	2.334	22845	4.090	39775	6.838	73140		
4.9	355	343	3245	345	3365	342	3475	345	3585	341	3695	367	3705	337.3	3825
		0.356	3960	0.631	7060	1.286	14259	2.043	22845	3.599	39775	6.149	73140	10.28	112861
4.4	400	370	3245	410	3365	386	3475	389	3585	395	3695	425	3705	398.7	3825
		0.330	3960	0.531	7060	1.140	14259	1.812	22845	3.107	39775	5.309	73140	9.2	119450
3.9	450	435	3245	434	3365	437	3475	413	3585	422	3695	455	3705	425.2	3825
		0.281	3960	0.502	7060	1.007	14259	1.707	22845	2.908	39775	4.959	73140	8.63	119450
3.5	500	488	3245	496	3365	482	3475	490	3585	479	3695	516	3705	480.9	3825
		0.250	3960	0.439	7060	0.914	14286	1.438	22845	2.562	39775	4.373	73140	7.63	119450
3.1	560	549	3245	553	3365	548	3475	518	3585	532	3695	573	3705	532.2	3825
		0.223	3960	0.394	7060	0.804	14286	1.361	22845	2.307	39775	3.938	73140	6.89	119450
2.8	630	617	3245	620	3365	626	3475	592	3585	605	3695	651	3705	606.4	3825
		0.198	3960	0.351	7060	0.704	14286	1.191	22845	2.028	39775	3.466	73140	6.05	119450
2.5	710	718	3245	734	3365	707	3475	661	3585	673	3695	724	3705	688.2	3825
		0.173	4032	0.303	7215	0.623	14286	1.066	22845	1.823	39775	3.117	73140	5.33	119450
2.2	800	793	3245	829	3365	750	3475	741	3585	757	3695	815	3705	793.2	3825
		0.157	4032	0.269	7215	0.588	14286	0.951	22845	1.621	39775	2.769	73140	4.63	119450
1.9	900	835	3245	937	3365	891	3475	866	3585	887	3695	955	3705	847.6	3825
		0.149	4032	0.238	7215	0.495	14286	0.835	23447	1.383	39775	2.363	73140	4.33	119450
1.8	1000	991	3245	1010	3365	942	3475	976	3585	979	3695	1054	3705	962.0	3825
		0.126	4032	0.221	7246	0.468	14286	0.741	23447	1.253	39775	2.141	73140	3.81	119450
1.6	1120	1062	3245	1116	3365	1185	3475	1105	3585	1074	3695	1156	3705	1068.5	3825
		0.117	4032	0.200	7246	0.376	14436	0.655	23447	1.143	39775	1.952	73140	3.43	119450
1.4	1250	1189	3245	1175	3365	1355	3475	1255	3585	1254	3695	1298	3705	1213.7	3825
		0.105	4032	0.190	7246	0.329	14436	0.576	23447	0.979	39775	1.792	75388	3.02	119450
1.3	1400	1384	3245	1394	3365	1529	3475	1319	3585	1504	3695	1467	3705	1350.4	3825
		0.090	4032	0.160	7246	0.291	14436	0.550	23500	0.836	40747	1.585	75388	2.72	119450
1.1	1600	1493	3245	1494	3365	1622	3475	1499	3585	1607	3695	1624	3705	1519.2	3825
		0.083	4032	0.150	7246	0.275	14436	0.484	23500	0.782	40747	1.432	75388	2.42	119450
0.97	1800	1756	3245	1673	3365	1926	3475	1713	3585	1823	3695	1851	3705	1780.8	3825
		0.071	4032	0.134	7246	0.231	14436	0.423	23500	0.690	40747	1.257	75388	2.06	119450
0.88	2000	1968	3245	1947	3365	2037	3475	1933	3585	2025	3695	2134	3705	1965.7	3825
		0.063	4032	0.115	7246	0.219	14436	0.375	23500	0.621	40747	1.090	75388	1.87	119450
0.78	2240	2213	3245	2100	3365	2329	3475	2051	3585	2301	3695	2280	3705	2155.5	3825
		0.056	4032	0.106	7246	0.191	14436	0.353	23500	0.546	40747	1.020	75388	1.7	119450

Exact ratio	**Gear Frame**
Input H.P.	Output Torque

Combined - Motor rpm 1750 (Continued)

Gear Frame															
Nom. RPM	Nom. Ratio	32		33		34		35		36		37		38	
0.70	2500	2488	3245	2470	3365	2599	3475	2436	3585	2560	3695	2588	3705	2517	3825
		0.050	4032	0.091	7246	0.171	14436	0.298	23500	0.491	40747	0.899	75388	1.46	119450
0.63	2800	2804	3245	2768	3365	2914	3475	2576	3585	2880	3695	2874	3705	2922	3826
		0.044	4032	0.081	7246	0.153	14436	0.281	23500	0.437	40747	0.809	75388	1.282	119450
0.56	3150	3158	3245	3113	3365	3374	3475	2944	3585	2946	3696	3265	3705	3442	3826
		0.039	4032	0.072	7246	0.132	14436	0.246	23500	0.427	40747	0.712	75388	1.089	119450
0.49	3550	3474	3245	3500	3365	3705	3475	3286	3585	3480	3696	3632	3705	3682	3826
		0.036	4032	0.064	7246	0.120	14436	0.221	23500	0.361	40747	0.640	75388	1.018	119450
0.44	4000	3920	3245	3945	3365	4248	3475	3685	3585	4196	3696	4086	3705	4158	3826
		0.032	4032	0.057	7246	0.105	14436	0.197	23500	0.300	40747	0.569	75388	0.901	119450
0.39	4500	4410	3245	4443	3365	4437	3476	4266	3585	4645	3696	4790	3705	4609	3826
		0.028	4032	0.050	7246	0.103	14419	0.170	23500	0.271	40747	0.486	75388	0.813	119450
0.35	5000	4779	3246	4887	3365	5071	3476	4684	3585	5295	3696	5268	3706	5059	3826
		0.027	4032	0.046	7246	0.090	14419	0.155	23500	0.237	40747	0.442	75388	0.74	119450
0.31	5600	5350	3246	5515	3365	5721	3476	5371	3585	6103	3696	5954	3706	5831	3826
		0.024	4032	0.041	7246	0.080	14419	0.135	23500	0.206	40747	0.391	75388	0.64	119450
0.28	6300	6229	3246	6204	3365	6071	3476	6625	3586	6521	3696	6592	3706	6231	3826
		0.020	4032	0.036	7246	0.075	14419	0.111	23385	0.193	40747	0.353	75388	0.6	119450
0.25	7100	6717	3246	7014	3366	7210	3476	7008	3586	7401	3696	7513	3706	7072	3826
		0.019	4032	0.032	7207	0.063	14419	0.105	23385	0.170	40747	0.310	75388	0.53	119450
0.22	8000	7902	3246	7888	3366	7626	3476	8009	3586	8220	3696	8660	3706	7855	3826
		0.016	4032	0.029	7207	0.060	14419	0.092	23385	0.153	40747	0.269	75388	0.48	119450
0.19	9000	8854	3246	8868	3366	8715	3476	8938	3586	9338	3696	9254	3706	8923	3826
		0.014	4032	0.026	7207	0.052	14419	0.083	23385	0.135	40747	0.251	75388	0.42	119450
0.18	10000	9958	3246	9997	3366	9727	3476	10023	3586	10389	3696	10502	3706	9928	3826
		0.013	4032	0.023	7207	0.047	14419	0.074	23385	0.121	40747	0.221	75388	0.38	119450

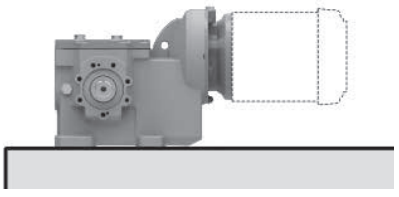
Exact ratio	**Gear Frame**
Input H.P.	Output Torque

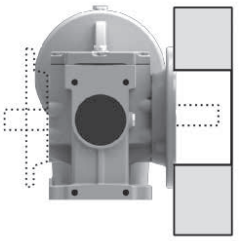
Thermal Power Rating (Pt)

Mounting Position(s): B
Ambient Temperature: 40C
Cooling Method: Convection

Nominal Ratio	Reducer Size			
	35	36	37	38
	Pt (hp)	Pt (hp)	Pt (hp)	Pt (hp)
10	27	46	66	**
11.2	N/A	44	61	**
12.5	27	44	59	**
14	27	44	51	**
16	27	44	51	**
18	27	43	49	**
20	27	43	49	**
22.4	27	43	49	59
25	#	43	-	59
28	#	-	-	59
31.5	#	-	-	59
35.5	-	-	-	59
40	-	-	-	59
45	-	-	-	-
50	-	-	-	-

Examples of "B" Mounting Positions



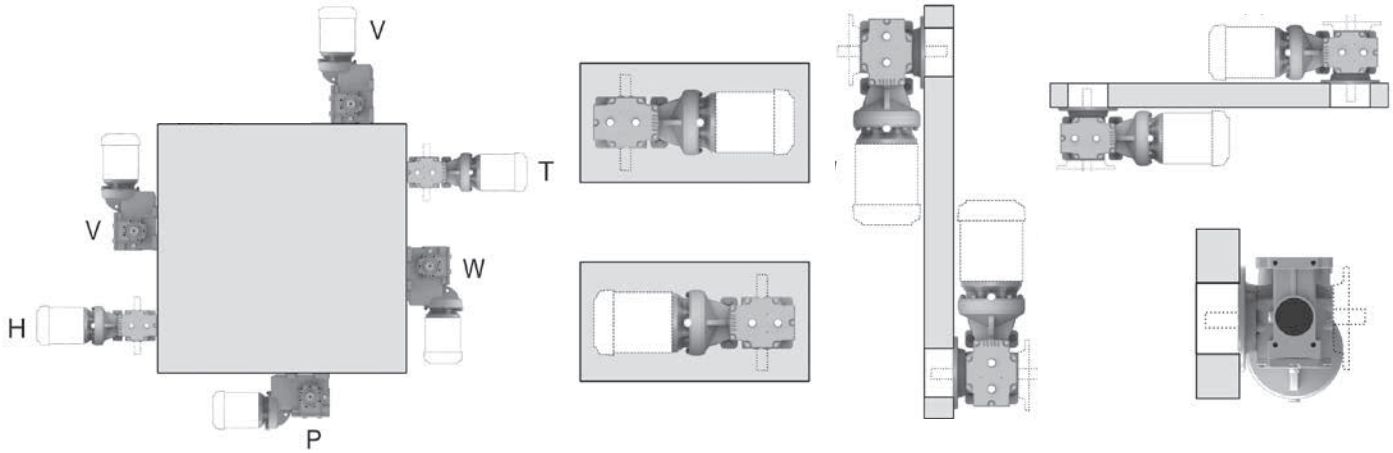


1 For operation greater than 3 hours per day and when an AP reducer design is utilized, refer to office for evaluation of a reducer equipped with a fan and guard supplied on the high speed input shaft.
** Reducers must be used with external cooling supplied by others when with these ratios, gear mounting positions(s) noted and for operation exceeding 3 hours per day.
# Refer to B-129 for other than "B" mounting position

Thermal Power Rating (Pt)

Mounting Position(s): P, H, T, V, W
Ambient Temperature: 40C
Cooling Method: Convection

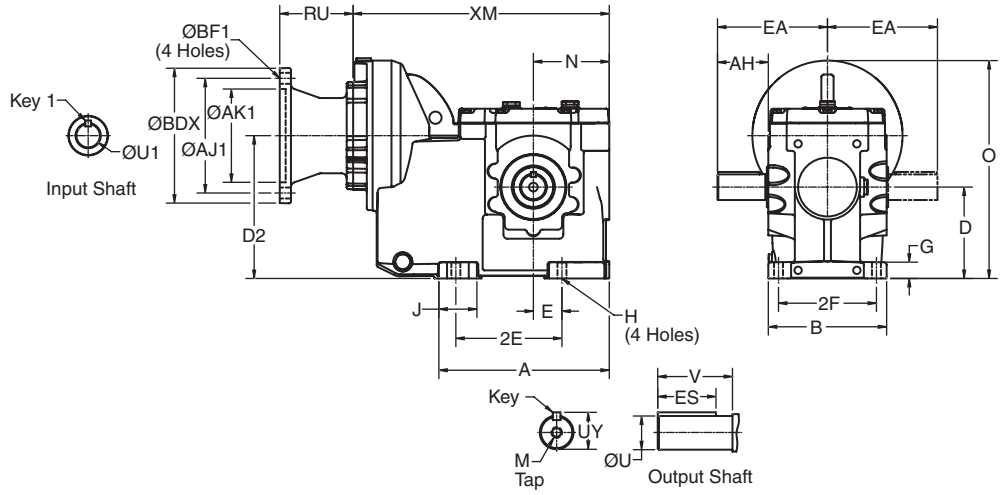
Nominal Ratio	Reducer Size			
	35	36	37	38
	Pt (hp)	Pt (hp)	Pt (hp)	Pt (hp)
10	22	**	**	**
11.2		**	**	**
12.5	22	**	**	**
14	22	**	41	**
16	22	36	41	**
18	22	34	41	**
20	22	34	41	**
22.4	22	34	41	**
25	22	34	-	**
28	22	-	-	49
31.5		-	-	49
35.5		-	-	49
40		-	-	49
45		-	-	49
50		-	-	-



1 For operation greater than 3 hours per day and when an AP reducer design is utilized, refer to office for evaluation of a reducer equipped with a fan and guard supplied on the high speed input shaft.

** Reducers must be used with external cooling supplied by others when with these ratios, gear mounting positions(s) noted and for operation exceeding 3 hours per day.

2-Stage Output Shafted Foot Mount
OtN31 - 32



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	XM
3132	S2	5.88	4.65	3.15	4.98	1.97	3.94	3.94	.56	.35	1.53	8.01	3.15	10.59
3242	S2	8.22	5.71	4.41	6.89	1.38	5.12	4.72	.79	.43	1.83	10.51	3.66	12.36

Output Shaft

Gear Frame	Version	U[3]	UY	V	AH	EA	Key	ES	M
3132	S2	1.000	1.10	1.77	1.83	4.33	1/4 Sq.	1.34	3/8-16 X .87
3242	S2	1.250	1.35	2.38	2.45	5.31	1/4 Sq.	2.03	1/2-13 X 1.12

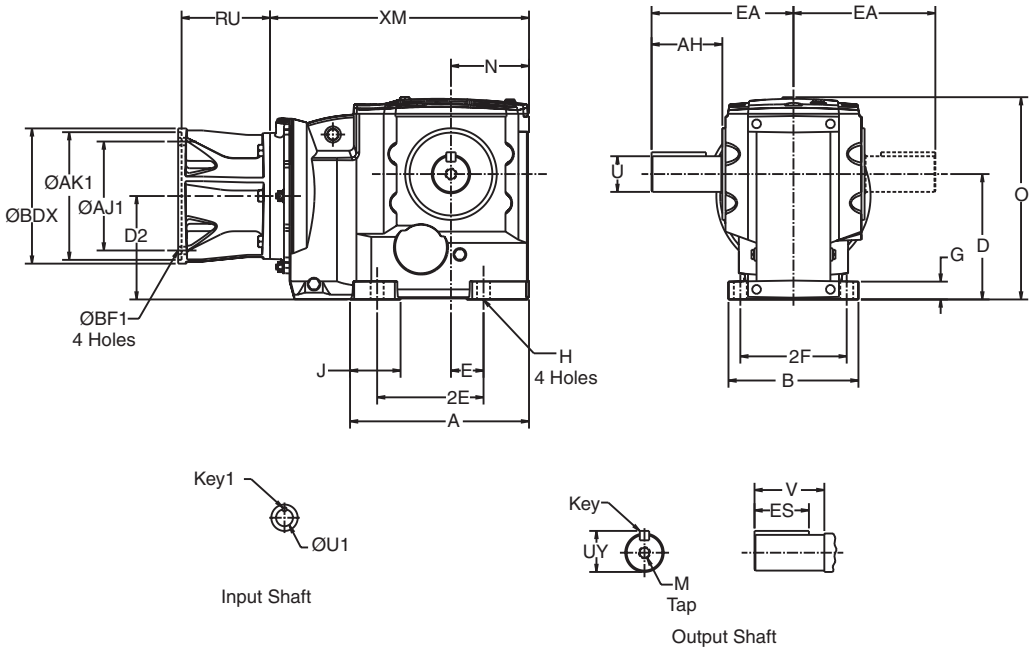
Motor Frame	Gear Frame	AJ1	AK1	BF1	U1	RU	BDX	Key1
56C	Any	5.88	4.50	.38	.625	3.54	6.50	3/16 Sq.
143TC/145TC	Any	5.88	4.50	.38	.875	3.54	6.50	3/16 Sq.
182TC/184TC	32	7.25	8.50	.50	1.125	5.26	9.00	1/4 Sq.

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

[2] All rough casting dimensions may vary by .25" due to casting variations.

[3] Output shaft extension tolerances: +.0000"; –.0005" for shafts up to 1.5" diameter "U". Larger diameter "U", +.000"; –.001".

3-Stage Output Shafted Foot Mount
OtN32 - 35



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	XM	
														56C-215TC	254TC-286TC
32	S2	7.81	5.71	4.41	3.78	1.38	5.12	4.72	.73	.43	2.34	8.09	3.03	10.98	-
33	S2	8.50	6.61	5.51	5.24	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	12.90	-
	S1	8.08	8.58	4.92	5.20	3.35	6.69	6.10	.79	.55	2.27	10.43	3.54		
34	S2	10.13	7.87	7.09	5.90	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	14.56	-
	S1	10.69	9.60	6.30	7.49	4.53	9.06	7.68	1.18	.71	3.19	13.39	4.49		
35	S2	11.92	8.66	8.35	6.89	2.17	7.09	7.09	1.18	.87	3.37	13.58	5.20	16.90	17.25
	S1	13.07	10.98	7.87	9.33	5.51	11.02	9.06	1.40	.87	4.05	16.22	5.20		

Output Shaft

Gear Frame	Version	U[3]	UY	V	AH	EA	Key	ES	M
32	S2	1.250	1.354	2.36	2.46	5.31	1/4 Sq.	2.06	1/2-13 X 1.12
33	S2	1.625	1.783	3.25	3.39	6.73	3/8 Sq.	2.78	5/8-11 X 1.38
	S1	1.500	1.657	3.18	3.19	7.12	3/8 Sq.	2.78	5/8-11 X 1.38
34	S2	2.000	2.210	3.63	3.76	8.11	1/2 Sq.	3.06	3/4-10 X 1.61
	S1	1.750	1.909	3.56	3.66	8.46	3/8 Sq.	3.56	3/4-10 X 1.61
35	S2	2.375	2.638	4.61	4.74	9.45	5/8 Sq.	3.81	3/4-10 X 1.61
	S1	2.375	2.638	5.73	5.27	10.57	5/8 Sq.	4.81	3/4-10 X 1.61

C-Face Input

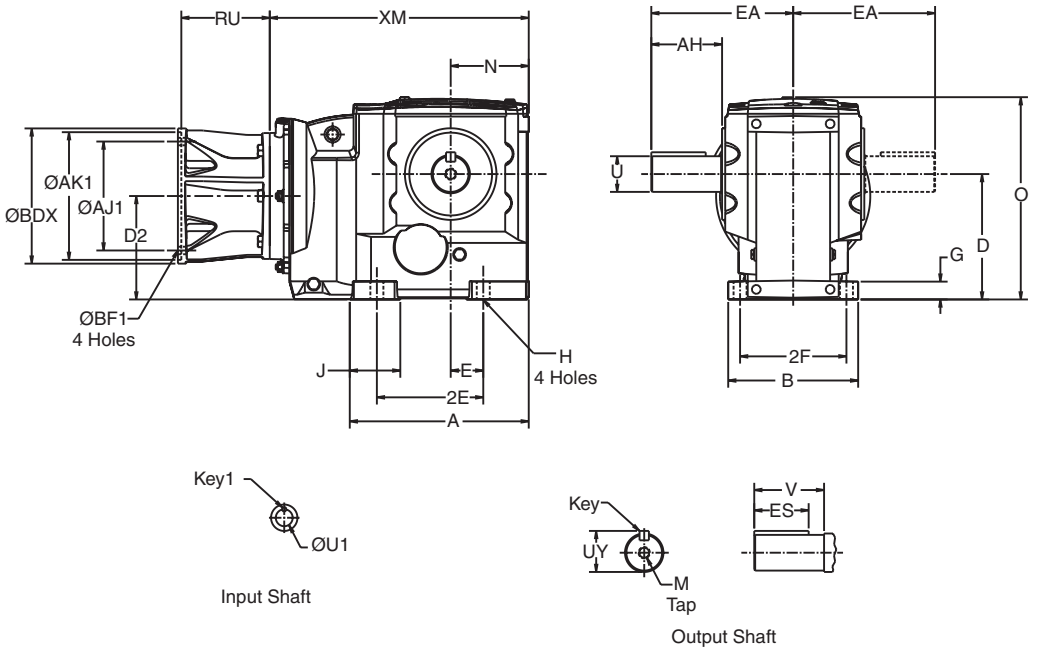
Motor Frame	Gear Frame	AJ1	AK1	BF1	U1	RU	BDX	Key1
56C	Any	5.88	4.50	.38	.625	3.54	6.50	3/16 Sq.
143TC/145TC	Any	5.88	4.50	.38	.875	3.54	6.50	3/16 Sq.
182TC/184TC	Any	7.25	8.50	.50	1.125	5.26	9.00	1/4 Sq.
213TC/215TC	33,34,35	7.25	8.50	.50	1.375	5.26	9.00	5/16 Sq.
254TC/256TC	35	7.25	8.50	.50	1.625	6.12	9.00	3/8 Sq.
284TC/286TC	35	9.00	10.50	.50	1.875	7.09	11.25	1/2 Sq.

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

[2] All rough casting dimensions may vary by .25" due to casting variations.

[3] Output shaft extension tolerances: +.0000"; –.0005" for shafts up to 1.5" diameter "U". Larger diameter "U", +.000"; –.001".

3-Stage Output Shafted Foot Mount
OtN36 - 38



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	XM	
														182-215TC	254-365TC
36	S1	17.06	11.41	8.86	8.86	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	23.38	23.73
37	S1	20.58	12.99	9.84	10.98	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	23.38	29.06
38	S2	20.13	13.39	14.76	11.87	4.53	13.78	10.63	1.98	1.26	4.06	24.11	8.86	24.29	24.64

Output Shaft

Gear Frame	Version	U[3]	UY	V	AH	EA	Key	ES	M
36	S1	2.875	3.20	5.75	5.92	11.94	3/4 SQ.	5.00	3/4-10 X 1.61
37	S1	3.625	4.01	6.86	7.04	13.66	7/8 SQ.	6.00	1-8 X 2.13
38	S2	4.375	4.809	8.99	9.97	17.03	1.00 SQ.	7.00	1-8 X 2.25

Motor Frame	Gear Frame	AJ1	AK1	BF1	U1	RU	BDX	Key1
182TC/184TC	36,37	7.25	8.50	.50	1.125	5.26	9.00	1/4 Sq.
213TC/215TC	All	7.25	8.50	.50	1.375	5.26	9.00	5/16 Sq.
254TC/256TC	All	7.25	8.50	.50	1.625	6.12	9.00	3/8 Sq.
284TC/286TC	All	9.00	10.50	.50	1.875	7.09	11.25	1/2 Sq.
324TC/326TC	All	11.00	12.50	.625	2.125[4]	8.45	13.38	1/2 Sq.
364TC/365TC	All	11.00	12.50	.625	2.375[4]	8.45	13.38	5/8 Sq.

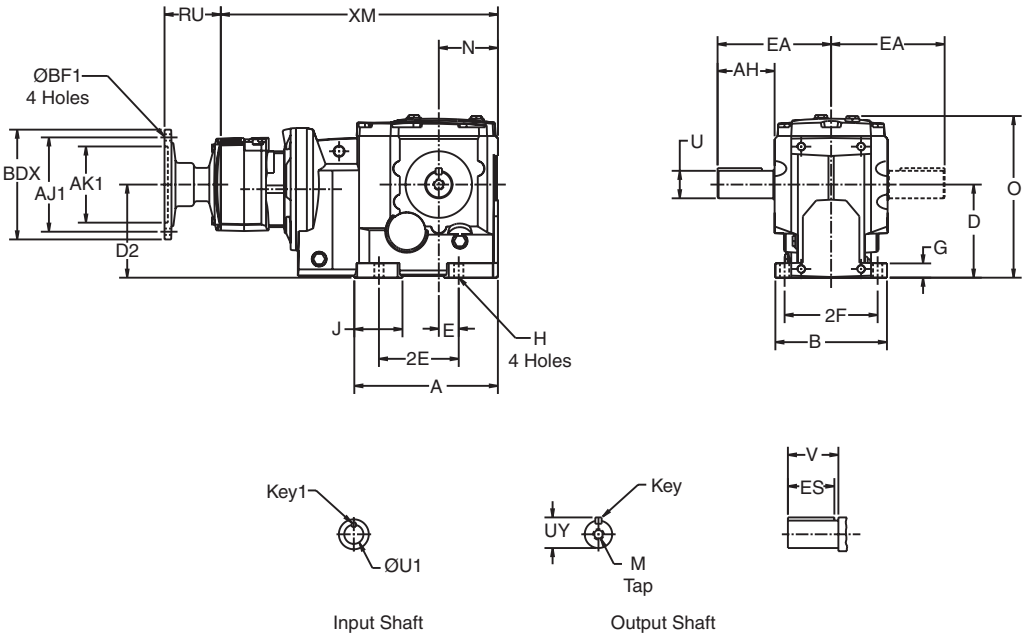
[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

[2] All rough casting dimensions may vary by .25" due to casting variations.

[3] Output shaft extension tolerances: +.0000"; –.0005" for shafts up to 1.5" diameter "U". Larger diameter "U", +.000"; –.001".

[4] These frames utilize a coupling . This is the bore of the coupling for the motor shaft.

Combined Output Shafted Foot Mount
OtN32 - 35



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	XM
32	S2	7.81	5.71	4.41	4.06	1.38	5.12	4.72	.73	.43	2.34	8.09	3.03	14.49
33,33A	S2	8.50	6.61	5.51	4.91	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	19.90[4]
	S1	8.08	8.58	4.92	4.87	3.35	6.69	6.10	.79	.55	2.27	10.43	3.54	
34	S2	10.13	7.87	7.09	5.57	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	21.55
	S1	10.69	9.60	6.30	7.16	4.53	9.06	7.68	1.18	.71	3.19	13.39	4.49	
35	S2	11.92	8.66	8.35	6.56	2.17	7.09	7.09	1.18	.87	3.37	13.58	5.20	23.87
	S1	13.07	10.98	7.87	9.00	5.51	11.02	9.06	1.40	.87	4.05	16.22	5.20	

Output Shaft

Gear Frame	Version	U[3]	UY	V	AH	EA	Key	ES	M
32	S2	1.250	1.354	2.36	2.46	5.31	1/4 Sq.	2.06	1/2-13 X 1.12
33,33A	S2	1.625	1.783	3.25	3.39	6.73	3/8 Sq.	2.78	5/8-11 X 1.38
	S1	1.500	1.657	3.18	3.19	7.12	3/8 Sq.	2.78	5/8-11 X 1.38
34	S2	2.000	2.210	3.63	3.76	8.11	1/2 Sq.	3.06	3/4-10 X 1.61
	S1	1.750	1.909	3.56	3.66	8.46	3/8 Sq.	3.56	3/4-10 X 1.61
35	S2	2.375	2.638	4.61	4.74	9.45	5/8 Sq.	3.81	3/4-10 X 1.61
	S1	2.375	2.638	5.73	5.27	10.57	5/8 Sq.	4.81	3/4-10 X 1.61

C-Face Input

Motor Frame	Gear Frame	AJ1	AK1	BF1	U1	RU	BDX	Key1
56C	32,33A	5.88	4.50	.38	.625	3.33	6.50	3/16 Sq.
	33,34,35	5.88	4.50	.38	.625	3.54	6.50	3/16 Sq.
143TC/145TC	32,33A	5.88	4.50	.38	.875	3.33	6.50	3/16 Sq.
	33,34,35	5.88	4.50	.38	.875	3.54	6.50	3/16 Sq.
182TC/184TC	33,34,35	7.25	8.50	.50	1.125	5.26	9.00	1/4 Sq.

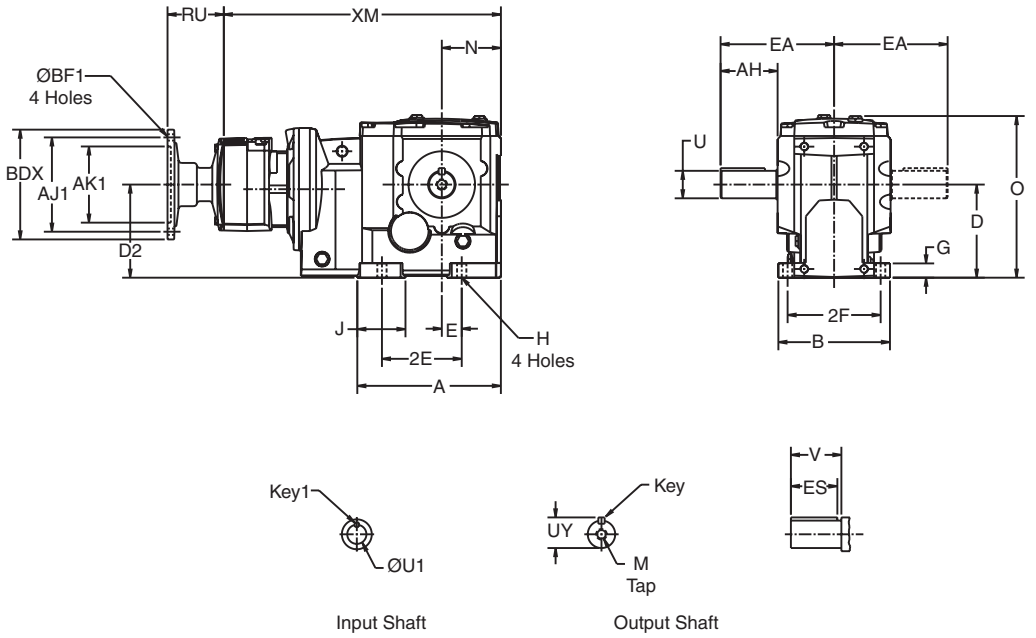
[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

[2] All rough casting dimensions may vary by .25" due to casting variations.

[3] Output shaft extension tolerances: +.0000"; –.0005" for shafts up to 1.5" diameter "U". Larger diameter "U", +.000"; –.001".

[4] XM dimension when gear frame 33A is used will be 16.42.

Combined Output Shafted Foot Mount
OtN36 - 38



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	XM
														56-215TC
36	S1	17.06	11.41	8.86	8.46	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	31.04
37	S1	20.58	12.99	9.84	10.57	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	36.37
38	S2	20.13	13.39	14.76	11.48	4.53	13.78	10.63	1.98	1.26	4.06	24.11	8.86	31.94

Output Shaft

Gear Frame	Version	U[3]	UY	V	AH	EA	Key	ES	M
36	S1	2.875	3.20	5.75	5.92	11.94	3/4 SQ.	5.00	3/4-10 X 1.61
37	S1	3.625	4.01	6.86	7.04	13.66	7/8 SQ.	6.00	1-8 X 2.13
38	S2	4.375	4.809	8.99	9.97	17.03	1.00 SQ.	7.00	1-8 X 2.25

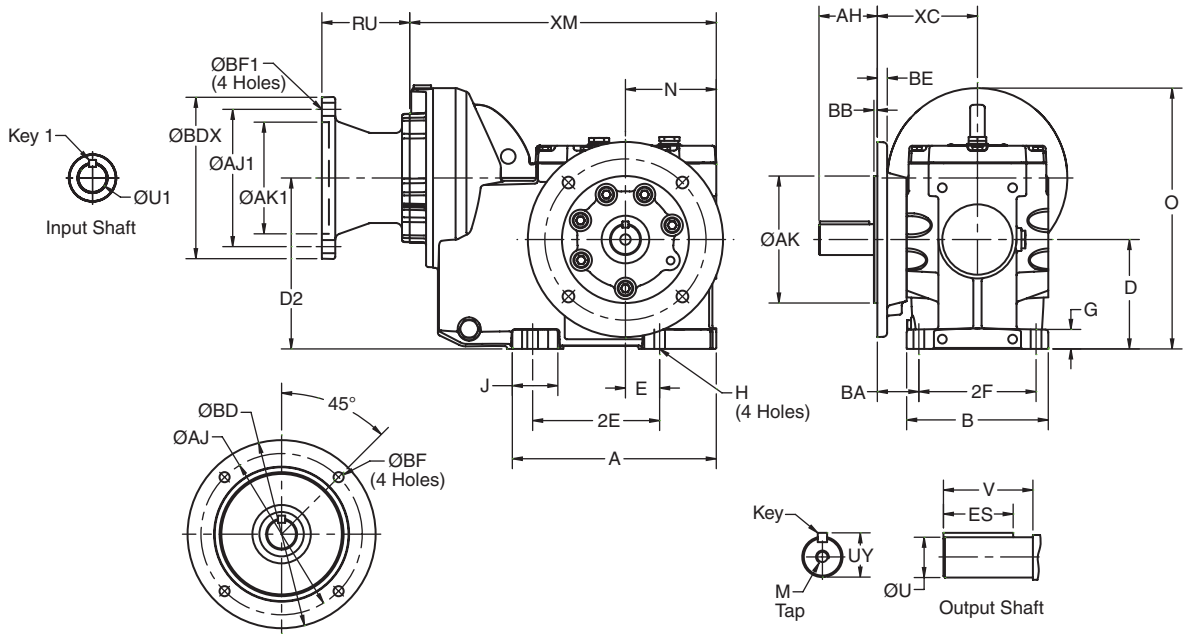
Motor Frame	Gear Frame	AJ1	AK1	BF1	U1	RU	BDX	Key1
56C	All	5.88	4.50	.38	.625	3.54	6.50	3/16 Sq.
143TC/145TC	All	5.88	4.50	.38	.875	3.54	6.50	3/16 Sq.
182TC/184TC	All	7.25	8.50	.50	1.125	5.26	9.00	1/4 Sq.
213TC/215TC	All	7.25	8.50	.50	1.375	5.26	9.00	5/16 Sq.

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

[2] All rough casting dimensions may vary by .25" due to casting variations.

[3] Output shaft extension tolerances: +.0000"; –.0005" for shafts up to 1.5" diameter "U". Larger diameter "U", +.000"; –.001".

2-Stage Output Shafted Flange Mount
OtN31 - 32



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	BA	XC	XM
3132	S2	5.88	4.65	3.15	4.98	1.97	3.94	3.94	.56	.35	1.53	8.01	3.15	1.54	3.50	10.59
3242	S2	8.22	5.71	4.41	6.89	1.38	5.12	4.72	.79	.43	1.83	10.51	3.66	1.67	4.04	12.36

Output Shaft

Gear Frame	Version	U[3]	UY	V	AH	Key	ES	M
3132	S2	1.000	1.10	1.97	1.97	1/4 Sq.	1.34	3/8-16 X .87
3242	S2	1.250	1.35	2.36	2.35	1/4 Sq.	2.03	1/2-13 X 1.13

Output Flange

Gear Frame	Flange Code	AK	AJ	BB	BD	BE	BF
3132	5	4.331	5.12	.14	6.50	.39	.35
3132	6	3.740	4.53	.14	5.51	.44	.35
3242	5	5.118	6.50	.14	7.87	.39	.47
3242	6	7.087	8.46	.16	9.84	.47	.55

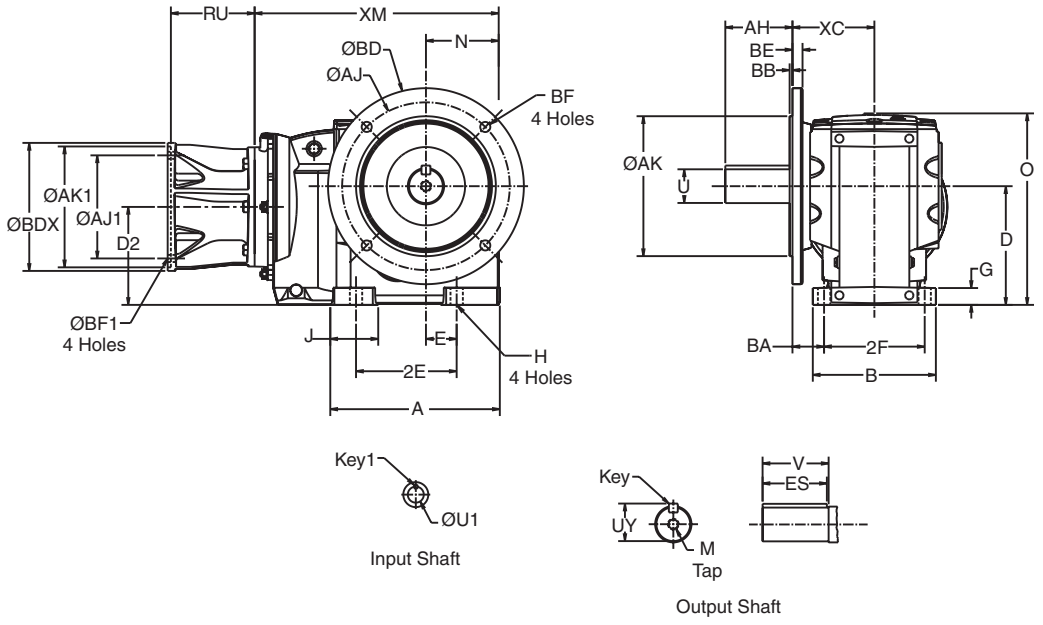
Motor Frame	Gear Frame	AJ1	AK1	BF1	U1	RU	BDX	Key1
56C	Any	5.88	4.50	.38	.625	3.54	6.50	3/16 Sq.
143TC/145TC	Any	5.88	4.50	.38	.875	3.54	6.50	3/16 Sq.
182TC/184TC	32	7.25	8.50	.50	1.125	5.26	9.00	1/4 Sq.

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

[2] All rough casting dimensions may vary by .25" due to casting variations.

[3] Output shaft extension tolerances: +.0000"; –.0005" for shafts up to 1.5" diameter "U". Larger diameter "U", +.000"; –.001".

3-Stage Output Shafted Flange Mount
OtN32 - 35



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	BA	XC	XM	
																56C-215TC	254TC-286TC
32	S1,S2	7.81	5.71	4.41	3.78	1.38	5.12	4.71	.73	.43	2.34	8.09	3.03	1.81	4.04	10.98	-
33	S1,S2	8.50	6.61	5.51	5.24	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	2.24	4.84	12.90	-
34	S1,S2	10.13	7.87	7.09	5.90	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	1.93	5.18	14.56	-
35	S2	11.92	8.66	8.35	6.89	2.17	7.09	7.09	1.18	.87	3.45	13.58	5.20	2.22	5.76	16.90	17.25

Output Shaft

Gear Frame	Version	U[3]	UY	V	AH	Key	ES	M
32	S2	1.250	1.354	2.38	2.36	1/4 Sq.	2.06	1/2-13 X 1.12
	S1	1.250	1.354	1.77	1.75	1/4 Sq.	1.45	1/2-13 X 1.12
33	S2	1.625	1.783	3.25	3.15	3/8 Sq.	2.78	5/8-11 X 1.38
	S1	1.500	1.657	3.18	2.28	3/8 Sq.	2.19	5/8-11 X 1.38
34	S2	2.000	2.210	3.94	3.94	1/2 Sq.	3.06	3/4-10 X 1.61
	S1	1.750	1.909	3.56	3.28	3/8 Sq.	3.56	3/4-10 X 1.61
35	S2	2.375	2.638	4.72	4.72	5/8 Sq.	3.81	3/4-10 X 1.61

Output Flange

Gear Frame	Flange Code	AK	AJ	BB	BD	BE	BF
32	5	5.118	6.50	.14	7.87	.39	.47
	6	7.087	8.46	.16	9.84	.47	.55
33	5	7.087	8.46	.16	9.84	.47	.55
	6	9.055	10.43	.16	11.81	.47	.55
34	5	9.055	10.43	.16	11.81	.59	.55
	6	9.842	11.80	.16	13.77	.59	.71
35	5	9.842	11.80	.20	13.77	.71	.71
	6	11.810	13.77	.20	15.75	.71	.71

C-Face Input

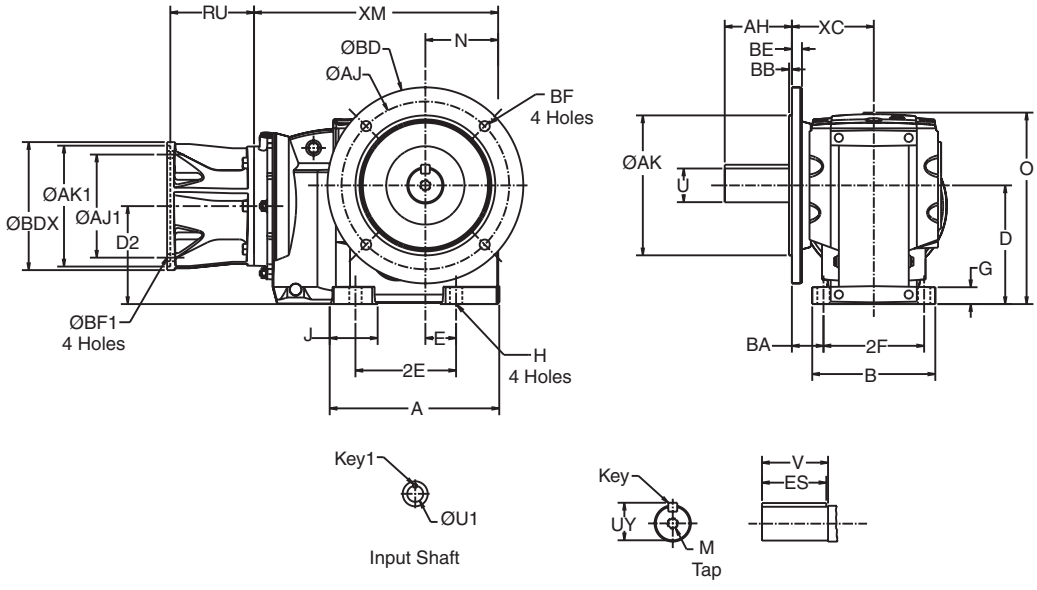
Motor Frame	Gear Frame	AJ1	AK1	BF1	U1	RU	BDX	Key1
56C	Any	5.88	4.50	.38	.625	3.54	6.50	3/16 Sq.
143TC/145TC	Any	5.88	4.50	.38	.875	3.54	6.50	3/16 Sq.
182TC/184TC	Any	7.25	8.50	.50	1.125	5.26	9.00	1/4 Sq.
213TC/215TC	33,34,35	7.25	8.50	.50	1.375	5.26	9.00	5/16 Sq.
254TC/256TC	35	7.25	8.50	.50	1.625	6.12	9.00	3/8 Sq.
284TC/286TC	35	9.00	10.50	.50	1.875	7.09	11.25	1/2 Sq.

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

[2] All rough casting dimensions may vary by .25" due to casting variations.

[3] Output shaft extension tolerances: +.0000"; –.0005" for shafts up to 1.5" diameter "U". Larger diameter "U", +.000"; –.001".

3-Stage Output Shafted Flange Mount
OtN36 - 38



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	BA	XC	XM	
																182-215TC	254-365TC
36	S2	17.06	11.41	8.86	8.86	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	4.45	9.17	23.38	23.73
37	S2	20.58	12.99	9.84	10.98	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	4.45	9.76	23.38	29.06
38	S2	20.13	13.39	14.76	11.87	4.53	13.78	10.63	1.98	1.26	4.06	24.11	8.86	4.65	9.96	24.29	24.64

Output Shaft

Gear Frame	Version	U[3]	UY	V	AH	Key	ES	M
36	S2	2.875	3.20	7.68	5.51	3/4 SQ.	5.00	3/4-10 X 1.61
37	S2	3.625	4.01	8.88	6.69	7/8 SQ.	6.00	1-8 X 2.13
38	S2	4.375	4.809	8.99	9.97	1.00 SQ.	7.00	1-8 X 2.25

Output Flange

Gear Frame	Flange Code	AK	AJ	BB	BD	BE	BF
36 & 37	5	13.78	15.75	.236	17.70	.79	.71
	6	17.72	19.68	.236	21.65	.63	.87
38	5	17.72	19.69	.200	21.65	.79	.69
	6	21.65	23.62	.236	25.98	.63	.87

Motor Frame	Gear Frame	AJ1	AK1	BF1	U1	RU	BDX	Key1
182TC/184TC	36,37	7.25	8.50	.50	1.125	5.26	9.00	1/4 Sq.
213TC/215TC	All	7.25	8.50	.50	1.375	5.26	9.00	5/16 Sq.
254TC/256TC	All	7.25	8.50	.50	1.625	6.12	9.00	3/8 Sq.
284TC/286TC	All	9.00	10.50	.50	1.875	7.09	11.25	1/2 Sq.
324TC/326TC	All	11.00	12.50	.625	2.125[4]	8.45	13.38	1/2 Sq.
364TC/365TC	37, 38	11.00	12.50	.625	2.375[4]	8.45	13.38	5/8 Sq.

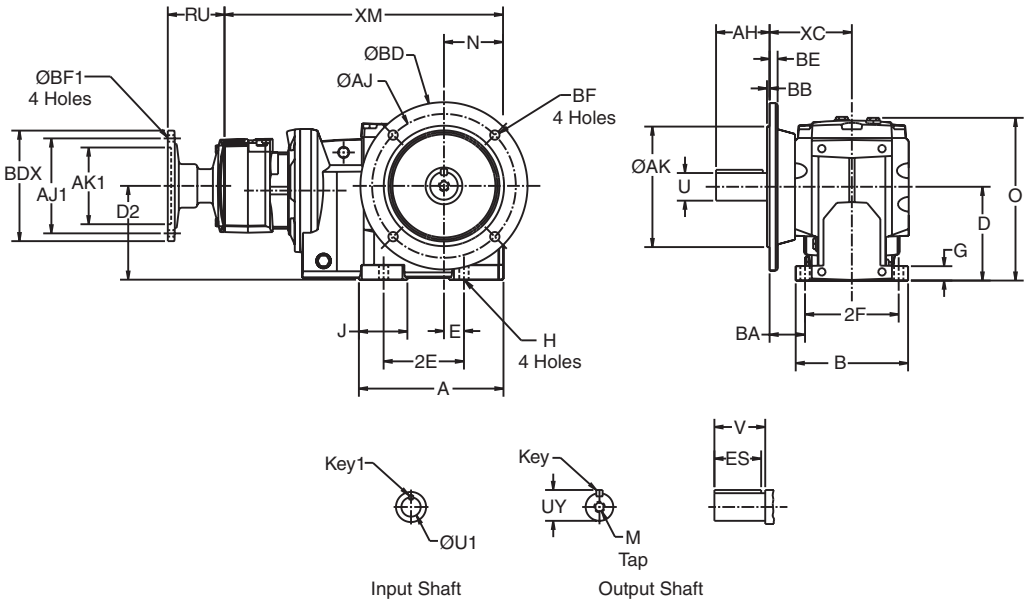
[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

[2] All rough casting dimensions may vary by .25" due to casting variations.

[3] Output shaft extension tolerances: +.0000"; –.0005" for shafts up to 1.5" diameter "U". Larger diameter "U", +.000"; –.001".

[4] These frames utilize coupling input. This is input bore for coupling provided.

Combined Output Shafted Flange Mount
OtN32 - 35



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	BA	XC	XM
32	S1,S2	7.81	5.71	4.41	4.06	1.38	5.12	4.71	.73	.43	2.34	8.09	3.03	1.81	4.04	14.49
33,33A	S1,S2	8.50	6.61	5.51	4.91	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	2.24	4.84	19.90[4]
34	S1,S2	10.13	7.87	7.09	5.57	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	1.93	5.18	21.55
35	S2	11.92	8.66	8.35	6.56	2.17	7.09	7.09	1.18	.87	3.45	13.58	5.20	2.22	5.76	23.87

Output Shaft

Gear Frame	Version	U[3]	UY	V	AH	Key	ES	M
32	S2	1.250	1.354	2.38	2.36	1/4 Sq.	2.06	1/2-13 X 1.12
	S1	1.250	1.354	1.77	1.75	1/4 Sq.	1.45	1/2-13 X 1.12
33,33A	S2	1.625	1.783	3.25	3.15	3/8 Sq.	2.78	5/8-11 X 1.38
	S1	1.500	1.657	3.18	2.28	3/8 Sq.	2.19	5/8-11 X 1.38
34	S2	2.000	2.210	3.94	3.94	1/2 Sq.	3.06	3/4-10 X 1.61
	S1	1.750	1.909	3.56	3.28	3/8 Sq.	3.56	3/4-10 X 1.61
35	S2	2.375	2.638	4.72	4.72	5/8 Sq.	3.81	3/4-10 X 1.61

Output Flange

Gear Frame	Flange Code	AK	AJ	BB	BD	BE	BF
32	5	5.118	6.50	.14	7.87	.39	.47
	6	7.087	8.46	.16	9.84	.47	.55
33,33A	5	7.087	8.46	.16	9.84	.47	.55
	6	9.055	10.43	.16	11.81	.47	.55
34	5	9.055	10.43	.16	11.81	.59	.55
	6	9.842	11.80	.16	13.77	.59	.71
35	5	9.842	11.80	.20	13.77	.71	.71
	6	11.810	13.77	.20	15.75	.71	.71

C-Face Input

Motor Frame	Gear Frame	AJ1	AK1	BF1	U1	RU	BDX	Key1
56C	32,33A	5.88	4.50	.38	.625	3.33	6.50	3/16 Sq.
	33,34,35	5.88	4.50	.38	.625	3.54	6.50	3/16 Sq.
143TC/145TC	32,33A	5.88	4.50	.38	.875	3.33	6.50	3/16 Sq.
	33,34,35	5.88	4.50	.38	.875	3.54	6.50	3/16 Sq.
182TC/184TC	33,34,35	7.25	8.50	.50	1.125	5.26	9.00	1/4 Sq.

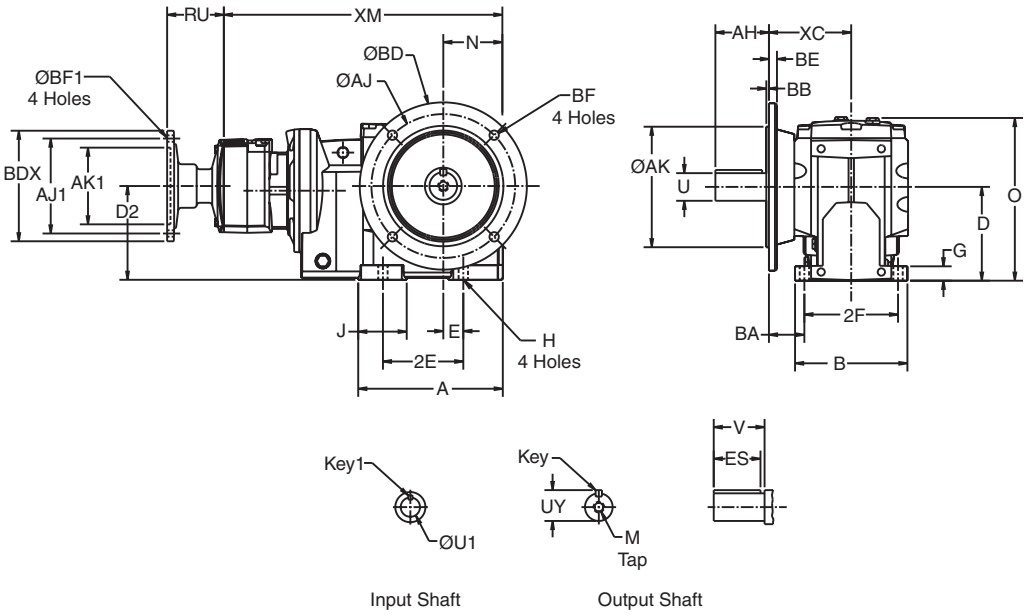
[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

[2] All rough casting dimensions may vary by .25" due to casting variations.

[3] Output shaft extension tolerances: +.0000"; –.0005" for shafts up to 1.5" diameter "U". Larger diameter "U", +.000"; –.001".

[4] XM dimension when gear frame 33A is used will be 16.42.

Combined Output Shafted Flange Mount
OtN36 - 38



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	BA	XC	XM 56-215TC
36	S2	17.06	11.41	8.86	8.46	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	4.45	9.17	31.04
37	S2	20.58	12.99	9.84	10.57	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	4.45	9.76	36.37
38	S2	20.13	13.39	14.76	11.48	4.53	13.78	10.63	1.98	1.26	4.06	24.11	8.86	4.65	9.96	31.94

Output Shaft

Gear Frame	Version	U[3]	UY	V	AH	Key	ES	M
36 & 37	S2	2.875	3.20	7.68	5.51	3/4 SQ.	5.00	3/4-10 X 1.61
	S2	3.625	4.01	8.88	6.69	7/8 SQ.	6.00	1-8 X 2.13
38	S2	4.375	4.809	8.99	9.97	1.00 SQ.	7.00	1-8 X 2.25

Output Flange

Gear Frame	Flange Code	AK	AJ	BB	BD	BE	BF
36 & 37	5	13.78	15.75	.236	17.70	.79	.71
	6	17.72	19.68	.236	21.65	.63	.87
38	5	17.72	19.69	.200	21.65	.79	.69
	6	21.65	23.62	.236	25.98	.63	.87

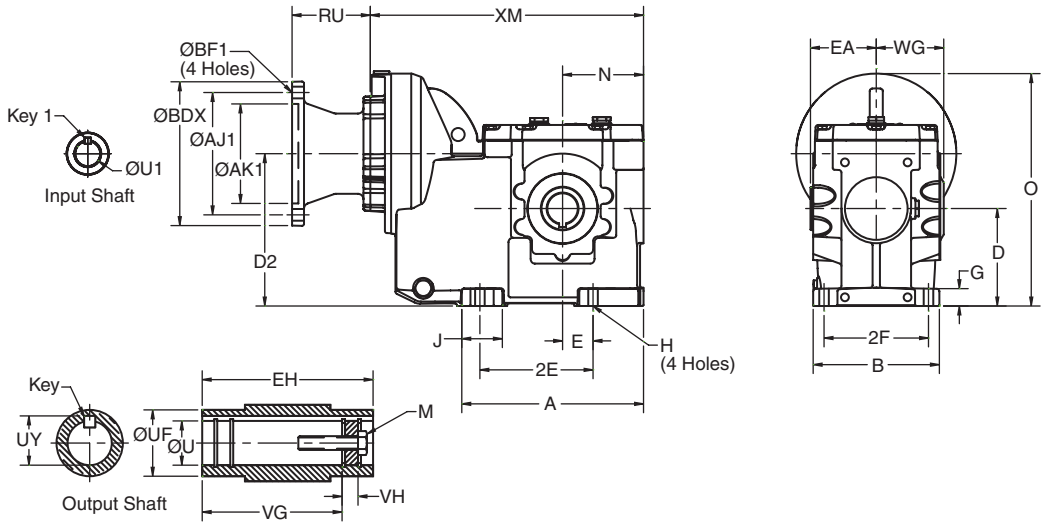
Motor Frame	Gear Frame	AJ1	AK1	BF1	U1	RU	BDX	Key1
56C	All	5.88	4.50	.38	.625	3.54	6.50	3/16 Sq.
143TC/145TC	All	5.88	4.50	.38	.875	3.54	6.50	3/16 Sq.
182TC/184TC	All	7.25	8.50	.50	1.125	5.26	9.00	1/4 Sq.
213TC/215TC	All	7.25	8.50	.50	1.375	5.26	9.00	5/16 Sq.
254TC/256TC	38	9.00	10.50	.50	1.875	7.09	11.02	1/2 Sq.

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

[2] All rough casting dimensions may vary by .25" due to casting variations.

[3] Output shaft extension tolerances: +.0000"; –.0005" for shafts up to 1.5" diameter "U". Larger diameter "U", +.000"; –.001".

2-Stage Finished Bore Hollow Shaft
OtN31 - 32



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	WG	XM
3132	S2	5.88	4.65	3.15	4.98	1.97	3.94	3.94	.56	.35	1.53	8.01	3.15	2.85	10.59
3242	S2	8.22	5.71	4.41	6.89	1.38	5.12	4.72	.79	.43	1.83	10.51	3.66	3.22	12.36

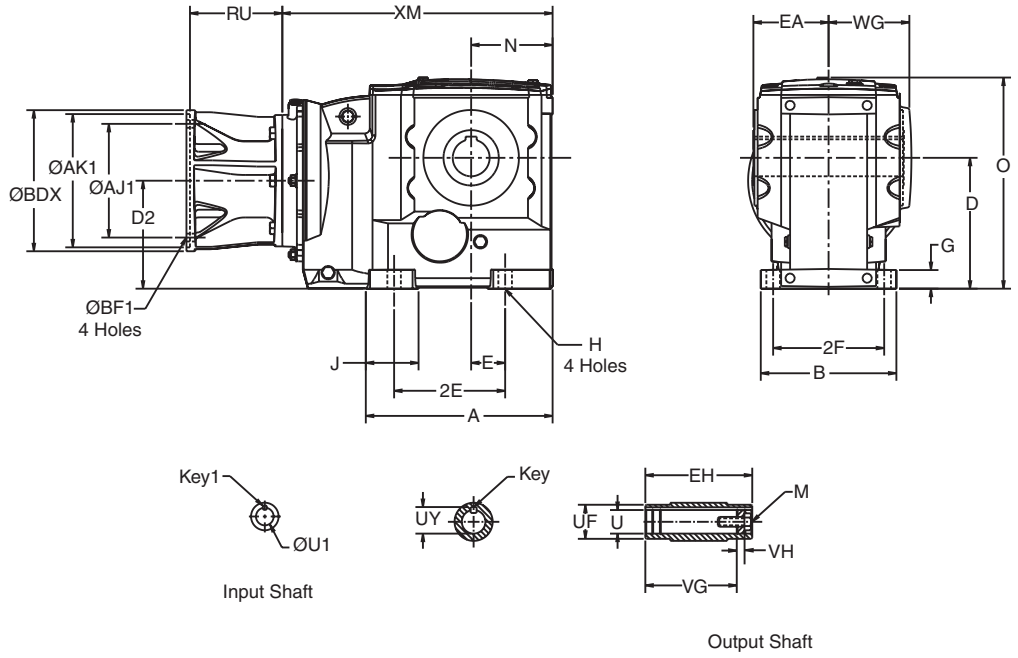
Output Shaft

Gear Frame	Version	EA	EH	U[3,5,6]	UF	UY	VG	VH	Key[7]	M
3132	S2	2.56	5.12	1.250	1.77	1.372	4.31	.37	1/4 X 1/4 X 1 1/2	7/16-14 X 1.00
3242	S2	2.97	5.94	1.375	1.96	1.523	5.06	.37	5/16 X 5/16 1 13/16	1/2-13 X 1.00

Motor Frame	Gear Frame	AJ1	AK1	BF1	U1	RU	BDX	Key1
56C	Any	5.88	4.50	.38	.625	3.54	6.50	3/16 Sq.
143TC/145TC	Any	5.88	4.50	.38	.875	3.54	6.50	3/16 Sq.
182TC/184TC	32	7.25	8.50	.50	1.125	5.26	9.00	1/4 Sq.

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
[2] All rough casting dimensions may vary by .25" due to casting variations.
[3] Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.
[4] For details of the torque arm kit,refer to page B-117.
[5] Output bore tolerances: +.0020",-.0000" for all diameters.
[6] Refer to page B-118 by gear frame for Tapered Bushed designs if driven shaft varies from "U" dimensions offered above.
[7] Key not supplied with reducer.

3-Stage Finished Bore Hollow Shaft
OtN32 - 35



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	WG	XM	
															56C-215TC	254TC-286TC
32	S2	7.81	5.71	4.41	3.78	1.38	5.12	4.71	.73	.43	2.34	8.09	3.03	3.22	10.98	-
33	S2	8.50	6.61	5.51	5.24	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	3.73	12.90	-
34	S2	10.13	7.87	7.09	5.90	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	4.66	14.56	-
35	S2	11.92	8.66	8.35	6.89	2.17	7.09	7.09	1.18	.87	3.45	13.58	5.20	5.15	16.90	17.25

Output Shaft

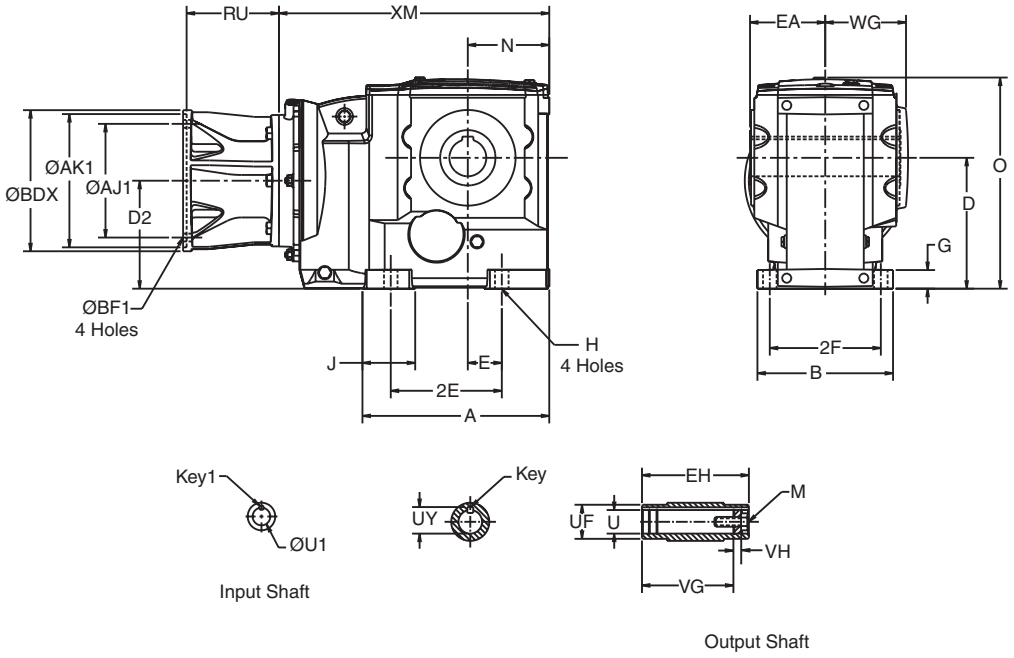
Gear Frame	Version	EA	EH	U[6, 7]	UF	UY	VG	VH	Key[4]	M
32	S2	2.98	5.95	1.375	1.96	1.523	5.20	.55	5/16 X 5/16 X 1 13/16	1/2-13 X 1.00
33	S2	3.47	6.94	1.500	2.16	1.674	5.96	.55	3/8 X 3/8 X 2 1/4	5/8-11 X 1.75
34	S2	4.49	8.97	2.000	2.56	2.210	7.44	.79	1/2 X 7/16 X 2 5/8	5/8-11 X 1.75
35	S2	4.83	9.66	2.375	3.54	2.656	8.15	.94	5/8 X 5/8 X 3 5/8	3/4-10 X 2.00

C-Face Input

Motor Frame	Gear Frame	AJ1	AK1	BF1	U1	RU	BDX	Key1
56C	Any	5.88	4.50	.38	.625	3.54	6.50	3/16 Sq.
143TC/145TC	Any	5.88	4.50	.38	.875	3.54	6.50	3/16 Sq.
182TC/184TC	Any	7.25	8.50	.50	1.125	5.26	9.00	1/4 Sq.
213TC/215TC	33,34,35	7.25	8.50	.50	1.375	5.26	9.00	5/16 Sq.
254TC/256TC	35	7.25	8.50	.50	1.625	6.12	9.00	3/8 Sq.
284TC/286TC	35	9.00	10.50	.50	1.875	7.09	11.25	1/2 Sq.

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
[2] All rough casting dimensions may vary by .25" due to casting variations.
[3] Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.
[4] Output key supplied only on frame 34 in “S2” version.
[5] For details of the torque arm kit,refer to page B-117.
[6] Output bore tolerances: +.0020",-.0000" for all diameters.
[7] Refer to page B-118 by gear frame for Tapered Bushed designs if driven shaft varies from "U" dimensions offered above.

3-Stage Finished Bore Hollow Shaft
OtN36 - 38



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	WG	XM	
															182-215TC	254-365TC
36	S2	17.06	11.41	8.86	8.86	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	6.78	23.38	23.73
37	S2	20.58	12.99	9.84	10.98	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	7.44	23.38	29.06
38	S2	20.13	13.39	14.76	11.87	4.53	13.78	10.63	1.98	1.26	4.06	24.11	8.86	7.40	24.29	24.64

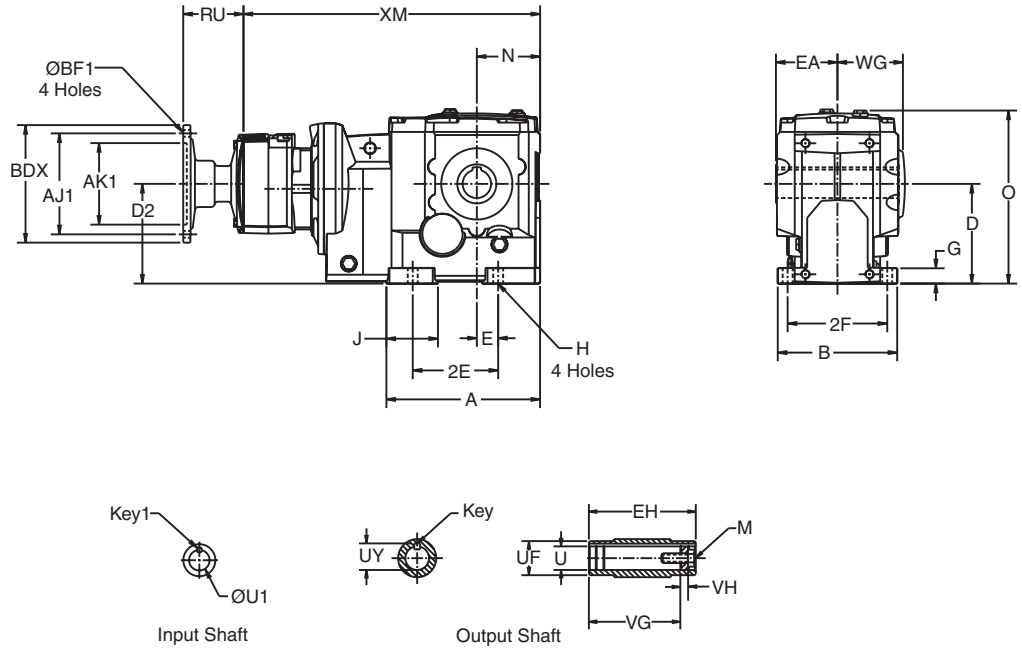
Output Shaft

Gear Frame	Version	EA	EH	U[3,5]	UF	UY	VG	VH	Key[6]	M
36	S2	6.22	12.44	2.750	3.93	3.037	10.89	1.23	5/8 X 5/8 X 5 1/2	3/4-10 X 2.00
37	S2	6.80	13.59	3.625	4.72	4.019	11.90	1.23	7/8 X 7/8 X 5 1/2	3/4-10 X 2.00
38	S2	6.81	13.74	4.000	5.50	4.316	11.86	.92	1 X 1 X 6 1/2	1-8 X 2.25

Motor Frame	Gear Frame	AJ1	AK1	BF1	U1	RU	BDX	Key1
182TC/184TC	36,37	7.25	8.50	.50	1.125	5.26	9.00	1/4 Sq.
213TC/215TC	All	7.25	8.50	.50	1.375	5.26	9.00	5/16 Sq.
254TC/256TC	All	7.25	8.50	.50	1.625	6.12	9.00	3/8 Sq.
284TC/286TC	All	9.00	10.50	.50	1.875	7.09	11.25	1/2 Sq.
324TC/326TC	All	11.00	12.50	.625	2.125[7]	8.45	13.38	1/2 Sq.
364TC/365TC	37, 38	11.00	12.50	.625	2.375[7]	8.45	13.38	5/8 Sq.

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
[2] All rough casting dimensions may vary by .25" due to casting variations.
[3] Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.
[4] For details of the torque arm kit,refer to page B-117.
[5] Output bore tolerances: +.0020",-.0000" for all diameters.
[6] Key not supplied with reducer.
[7] These frames utilize coupling input. This is input bore for coupling provided.

Combined Finished Bore Hollow Shaft
OtN32 - 35



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	WG	XM
32	S2	7.81	5.71	4.41	4.06	1.38	5.12	4.71	.73	.43	2.34	8.09	3.03	3.22	14.49
33,33A	S2	8.50	6.61	5.51	4.91	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	3.73	19.90[8]
34	S2	10.13	7.87	7.09	5.57	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	4.66	21.55
35	S2	11.92	8.66	8.35	6.56	2.17	7.09	7.09	1.18	.87	3.45	13.58	5.20	5.15	23.87

Output Shaft

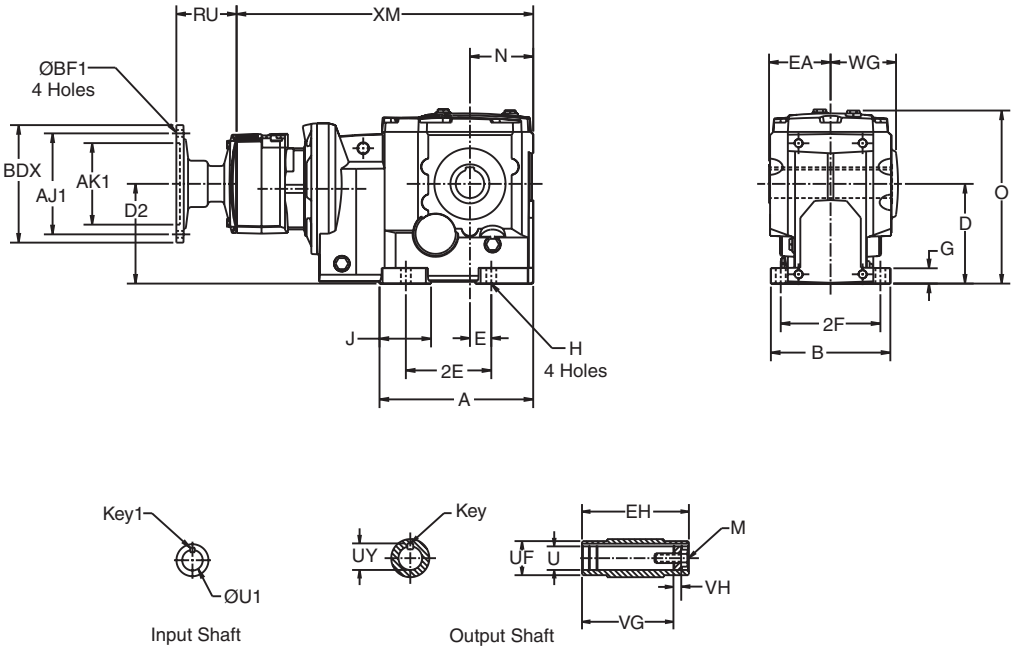
Gear Frame	Version	EA	EH	U[3,7]	UF	UY	VG	VH	Key[5]	M
32	S2	2.98	5.95	1.375	1.96	1.523	5.20	.55	5/16 X 5/16 X 1 13/16	1/2-13 X 1.00
33,33A	S2	3.47	6.94	1.500	2.16	1.674	5.96	.55	3/8 X 3/8 X 2 1/4	5/8-11 X 1.75
34	S2	4.49	8.97	2.000	2.56	2.210	7.44	.79	1/2 X 7/16 X 2 5/8	5/8-11 X 1.75
35	S2	4.83	9.66	2.375	3.54	2.656	8.15	.94	5/8 X 5/8 X 3 5/8	3/4-10 X 2.00

C-Face Input

Motor Frame	Gear Frame	AJ1	AK1	BF1	U1	RU	BDX	Key1
56C	32,33A	5.88	4.50	.38	.625	3.33	6.50	3/16 Sq.
	33,34,35	5.88	4.50	.38	.625	3.54	6.50	3/16 Sq.
143TC/145TC	32,33A	5.88	4.50	.38	.875	3.33	6.50	3/16 Sq.
	33,34,35	5.88	4.50	.38	.875	3.54	6.50	3/16 Sq.
182TC/184TC	33,34,35	7.25	8.50	.50	1.125	5.26	9.00	1/4 Sq.

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
[2] All rough casting dimensions may vary by .25" due to casting variations.
[3] Refer to page B-118 by gear frame for Tapered Bushed designs if driven shaft varies from "U" dimension offered above.
[4] Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.
[5] Output key supplied only on frame 34 in "S2" version.
[6] For details of the torque arm kit,refer to page B-117.
[7] Output bore tolerances: +.0020",-.0000" for all diameters.
[8] XM dimension when gear frame 33A is used will be 16.42.

Combined Finished Bore Hollow Shaft
OtN36 - 38



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	WG	XM
															56-215TC
36	S2	17.06	11.41	8.86	8.46	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	6.78	31.04
37	S2	20.58	12.99	9.84	10.57	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	7.44	36.37
38	S2	20.13	13.39	14.76	11.48	4.53	13.78	10.63	1.98	1.26	4.06	24.11	8.86	7.40	31.94

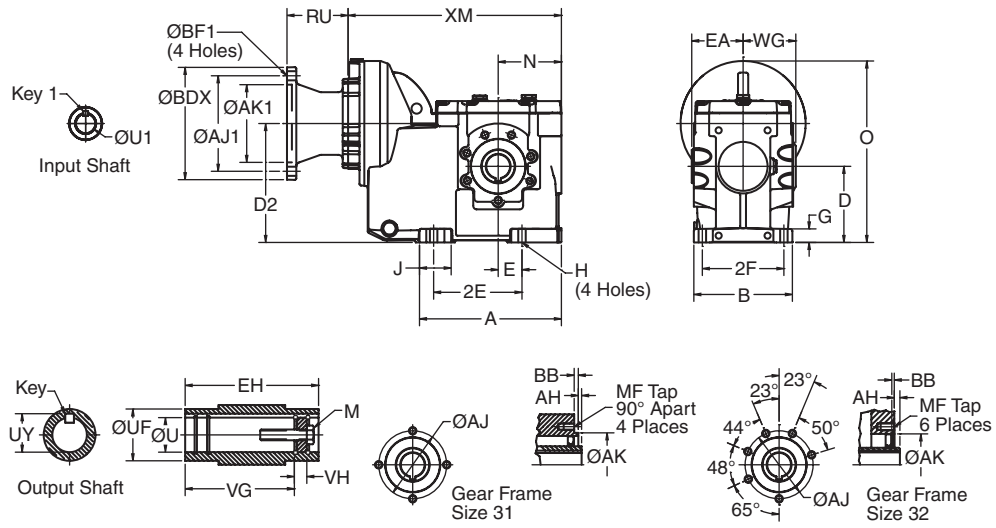
Output Shaft

Gear Frame	Version	EA	EH	U[3,5]	UF	UY	VG	VH	Key[6]	M
36	S2	6.22	12.44	2.750	3.93	3.037	10.89	1.23	5/8 X 5/8 X 5 1/2	3/4-10 X 2.00
37	S2	6.80	13.59	3.625	4.72	4.019	11.90	1.23	7/8 X 7/8 X 5 1/2	3/4-10 X 2.00
38	S2	6.81	13.74	4.000	5.50	4.316	11.86	.92	1 X 1 X 6 1/2	1-8 X 2.25

Motor Frame	Gear Frame	AJ1	AK1	BF1	U1	RU	BDX	Key1
56C	All	5.88	4.50	.38	.625	3.54	6.50	3/16 Sq.
143TC/145TC	All	5.88	4.50	.38	.875	3.54	6.50	3/16 Sq.
182TC/184TC	All	7.25	8.50	.50	1.125	5.26	9.00	1/4 Sq.
213TC/215TC	All	7.25	8.50	.50	1.375	5.26	9.00	5/16 Sq.

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
[2] All rough casting dimensions may vary by .25" due to casting variations.
[3] Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.
[4] For details of the torque arm kit,refer to page B-117.
[5] Output bore tolerances: +.0020",-.0000" for all diameters.
[6] Key not supplied with reducer.

2-Stage Finished Bore Hollow Shaft Face Mount
OtN31 - 32



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	WG	XM
3132	S2	5.88	4.65	3.15	4.98	1.97	3.94	3.94	.56	.35	1.53	8.01	3.15	2.85	10.59
3242	S2	8.22	5.71	4.41	6.89	1.38	5.12	4.72	.79	.43	1.83	10.51	3.66	3.22	12.36

Output Shaft

Gear Frame	Version	EA	EH	U[3,4]	UF	UY	VG	VH	Key[5]	M
3132	S2	2.56	5.12	1.250	1.77	1.372	4.31	.37	1/4 X 1/4 X 1 1/2	7/16-14 X 1.00
3242	S2	2.97	5.94	1.375	1.96	1.523	5.06	.37	5/16 X 5/16 1 13/16	1/2-13 X 1.00

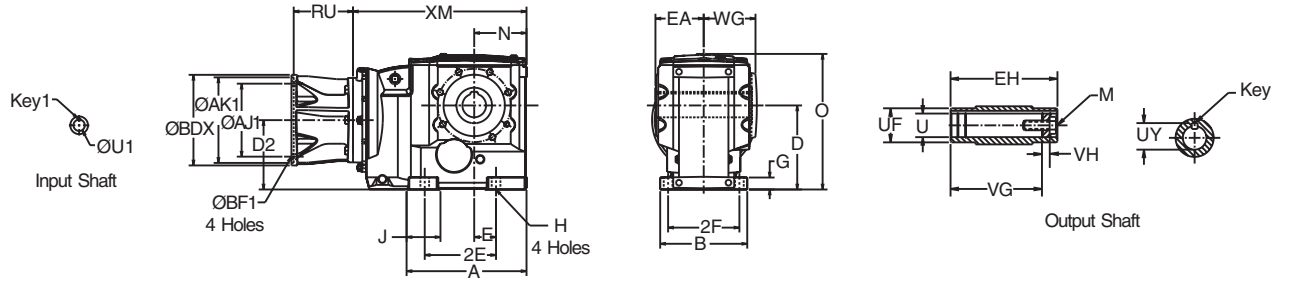
Face Mount

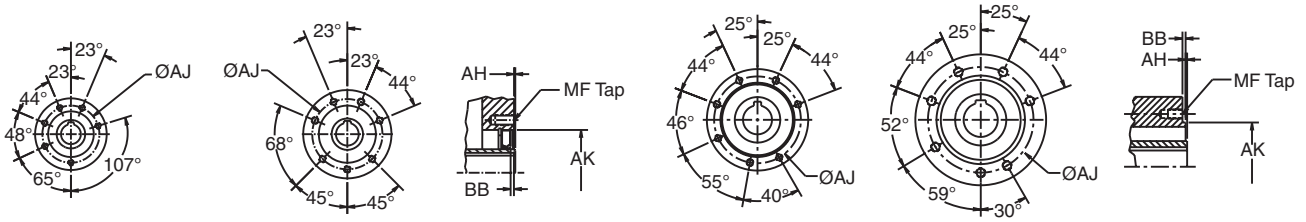
Gear Frame	Version	AH	AJ	AK	BB	MF
31	S2	.20	3.740	3.35	.14	M8-1.25 X 12
32	S2	.12	3.94	3.15	.16	M10-1.50 X 22

Motor Frame	Gear Frame	AJ1	AK1	BF1	U1	RU	BDX	Key1
56C	Any	5.88	4.50	.38	.625	3.54	6.50	3/16 Sq.
143TC/145TC	Any	5.88	4.50	.38	.875	3.54	6.50	3/16 Sq.
182TC/184TC	32	7.25	8.50	.50	1.125	5.26	9.00	1/4 Sq.

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
[2] All rough casting dimensions may vary by .25" due to casting variations.
[3] Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.
[4] Output bore tolerances: +.0020",-.0000" for all diameters.
[5] Key not supplied with reducer.

3-Stage Finished Bore Hollow Shaft Face Mount
OtN32 - 35





Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	WG	XM	
															56C-215TC	254TC-286TC
32	S2	7.81	5.71	4.41	3.78	1.38	5.12	4.71	.73	.43	2.34	8.09	3.03	3.15	10.98	-
33	S2	8.50	6.61	5.51	5.24	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	3.63	12.90	-
34	S2	10.13	7.87	7.09	5.90	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	4.66	14.56	-
35	S2	11.92	8.66	8.35	6.89	2.17	7.09	7.09	1.18	.87	3.45	13.58	5.20	5.15	16.90	17.25

Output Shaft

Gear Frame	Version	EA	EH	U[4]	UF	UY	VG	VH	Key[5]	M
32	S2	2.98	5.95	1.375	1.96	1.523	5.20	.55	5/16 X 5/16 X 1 13/16	1/2-13 X 1.00
33	S2	3.47	6.94	1.500	2.16	1.674	5.96	.55	3/8 X 3/8 X 2 1/4	5/8-11 X 1.75
34	S2	4.49	8.97	2.000	2.56	2.210	7.44	.79	1/2 X 7/16 X 2 5/8	5/8-11 X 1.75
35	S2	4.83	9.66	2.375	3.54	2.656	8.15	.94	5/8 X 5/8 X 3 5/8	3/4-10 X 2.00

Face Mount

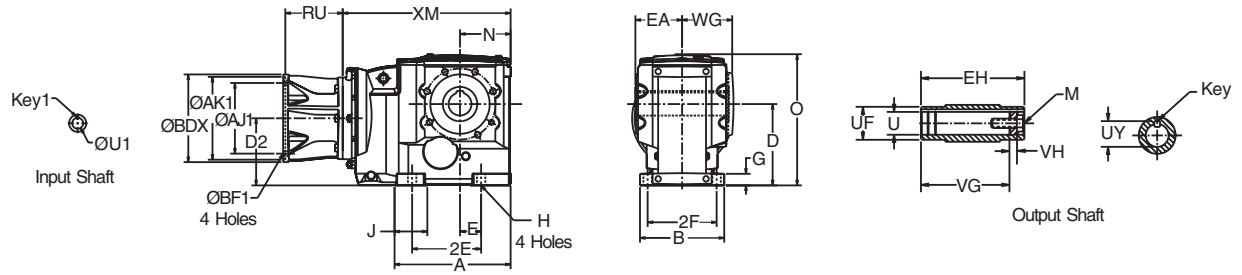
Gear Frame	Version	AH	AJ	AK	BB	MF
32	S2	.12	3.94	3.15	.16	M10-1.50 X 22
33	S2	.12	4.84	3.94	.16	M12-1.75 X 22
34	S2	.14	5.98	5.12	.28	M12-1.75 X 22
35	S2	.13	7.48	6.10	.28	M16-2.00 X 27

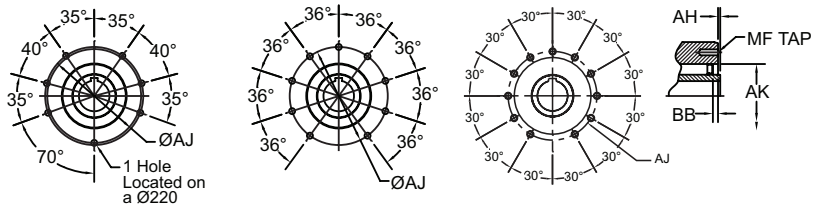
C-Face Input

Motor Frame	Gear Frame	AJ1	AK1	BF1	U1	RU	BDX	Key1
56C	Any	5.88	4.50	.38	.625	3.54	6.50	3/16 Sq.
143TC/145TC	Any	5.88	4.50	.38	.875	3.54	6.50	3/16 Sq.
182TC/184TC	Any	7.25	8.50	.50	1.125	5.26	9.00	1/4 Sq.
213TC/215TC	33,34,35	7.25	8.50	.50	1.375	5.26	9.00	5/16 Sq.
254TC/256TC	35	7.25	8.50	.50	1.625	6.12	9.00	3/8 Sq.
284TC/286TC	35	9.00	10.50	.50	1.875	7.09	11.25	1/2 Sq.

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
[2] All rough casting dimensions may vary by .25" due to casting variations.
[3] Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.
[4] Output bore tolerances: +.0020",-.0000" for all diameters.
[5] Output key supplied only on frame 34 in "S2" version.

3-Stage Finished Bore Hollow Shaft Face Mount
OtN36 - 38





Gear Frame - Size 36 | Gear Frame - Size 37 | Gear Frame - Size 38

Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	WG	XM	
															182-215TC	254-365TC
36	S2	17.06	11.41	8.86	8.86	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	6.78	23.38	23.73
37	S2	20.58	12.99	9.84	10.98	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	7.44	23.38	29.06
38	S2	20.13	13.39	14.76	11.87	4.53	13.78	10.63	1.98	1.26	4.06	24.11	8.86	7.40	24.29	24.64

Output Shaft

Gear Frame	Version	EA	EH	U[3,4]	UF	UY	VG	VH	Key[5]	M
36	S2	6.22	12.44	2.750	3.93	3.037	10.89	1.23	5/8 X 5/8 X 5 1/2	3/4-10 X 2.00
37	S2	6.80	13.59	3.625	4.72	4.019	11.90	1.23	7/8 X 7/8 X 5 1/2	3/4-10 X 2.00
38	S2	6.81	13.74	4.000	5.50	4.316	11.86	.92	1 X 1 X 6 1/2	1-8 X 2.25

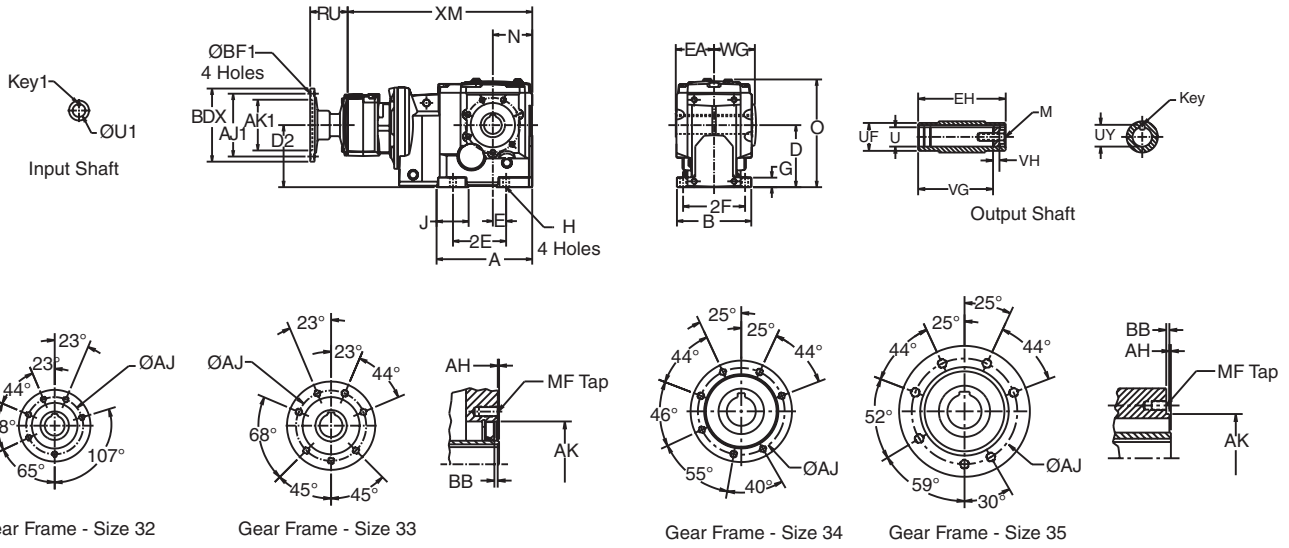
Face Mount

Gear Frame	Version	AH	AJ	AK	BB	MF
36	S2	.20	9.06	5.91	.28	M16-2.0 X 27
37	S2	.20	9.06	7.09	.28	M20-2.5 X 35
38	S2	.10	11.81	9.84	.20	M20-2.00 X 35

Motor Frame	Gear Frame	AJ1	AK1	BF1	U1	RU	BDX	Key1
182TC/184TC	36,37	7.25	8.50	.50	1.125	5.26	9.00	1/4 Sq.
213TC/215TC	All	7.25	8.50	.50	1.375	5.26	9.00	5/16 Sq.
254TC/256TC	All	7.25	8.50	.50	1.625	6.12	9.00	3/8 Sq.
284TC/286TC	All	9.00	10.50	.50	1.875	7.09	11.25	1/2 Sq.
324TC/326TC	All	11.00	12.50	.625	2.125[6]	8.45	13.38	1/2 Sq.
364TC/365TC	37, 38	11.00	12.50	.625	2.375[6]	8.45	13.38	5/8 Sq.

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
[2] All rough casting dimensions may vary by .25" due to casting variations.
[3] Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.
[4] Output bore tolerances: +.0020",-.0000" for all diameters.
[5] Key not supplied with reducer.
[6] These frames utilize coupling input. This is input bore for coupling provided.

Combined Finished Bore Hollow Shaft Face Mount
OtN32 - 35



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	WG	XM
32	S2	7.81	5.71	4.41	4.06	1.38	5.12	4.71	.73	.43	2.34	8.09	3.03	3.15	14.49
33	S2	8.50	6.61	5.51	4.91	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	3.63	19.90[3]
34	S2	10.13	7.87	7.09	5.57	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	4.66	21.55
35	S2	11.92	8.66	8.35	6.56	2.17	7.09	7.09	1.18	.87	3.45	13.58	5.20	5.15	23.87

Output Shaft

Gear Frame	Version	EA	EH	U[4,5]	UF	UY	VG	VH	Key[6]	M
32	S2	2.98	5.95	1.375	1.96	1.523	5.20	.55	5/16 X 5/16 X 1 13/16	1/2-13 X 1.00
33	S2	3.47	6.94	1.500	2.16	1.674	5.96	.55	3/8 X 3/8 X 2 1/4	5/8-11 X 1.75
34	S2	4.49	8.97	2.000	2.56	2.210	7.44	.79	1/2 X 7/16 X 2 5/8	5/8-11 X 1.75
35	S2	4.83	9.66	2.375	3.54	2.656	8.15	.94	5/8 X 5/8 X 3 5/8	3/4-10 X 2.00

Face Mount

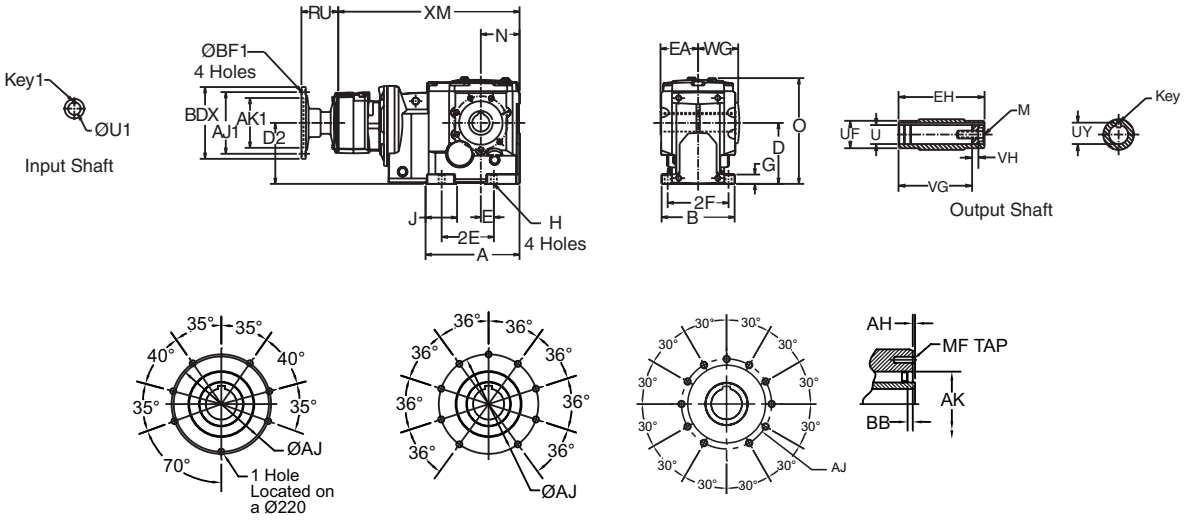
Gear Frame	Version	AH	AJ	AK	BB	MF
32	S2	.12	3.94	3.15	.16	M10-1.50 X 22
33	S2	.12	4.84	3.94	.16	M12-1.75 X 22
34	S2	.14	5.98	5.12	.28	M12-1.75 X 22
35	S2	.13	7.48	6.10	.28	M16-2.00 X 27

C-Face Input

Motor Frame	Gear Frame	AJ1	AK1	BF1	U1	RU	BDX	Key1
56C	32	5.88	4.50	.38	.625	3.33	6.50	3/16 Sq.
	33,34,35	5.88	4.50	.38	.625	3.54	6.50	3/16 Sq.
143TC/145TC	32	5.88	4.50	.38	.875	3.33	6.50	3/16 Sq.
	33 ,34,35	5.88	4.50	.38	.875	3.54	6.50	3/16 Sq.
182TC/184TC	33,34,35	7.25	8.50	.50	1.125	5.26	9.00	1/4 Sq.

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
[2] All rough casting dimensions may vary by .25" due to casting variations.
[3] XM dimension when gear frame 33A is used will be 16.42.
[4] Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.
[5] Output bore tolerances: +.0020",-.0000" for all diameters.
[6] Output key supplied only on frame 34 in "S2" version.

Combined Finished Bore Hollow Shaft Face Mount
OtN36 - 38



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	WG	XM
															56-215TC
36	S2	17.06	11.41	8.86	8.46	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	6.78	31.04
37	S2	20.58	12.99	9.84	10.57	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	7.44	36.37
38	S2	20.13	13.39	14.76	11.48	4.53	13.78	10.63	1.98	1.26	4.06	24.11	8.86	7.40	31.94

Output Shaft

Gear Frame	Version	EA	EH	U[3,4]	UF	UY	VG	VH	Key[5]	M
36	S2	6.22	12.44	2.750	3.93	3.037	10.89	1.23	5/8 X 5/8 X 5 1/2	3/4-10 X 2.00
37	S2	6.80	13.59	3.625	4.72	4.019	11.90	1.23	7/8 X 7/8 X 5 1/2	3/4-10 X 2.00
38	S2	6.81	13.74	4.000	5.50	4.316	11.86	.92	1 X 1 X 6 1/2	1-8 X 2.25

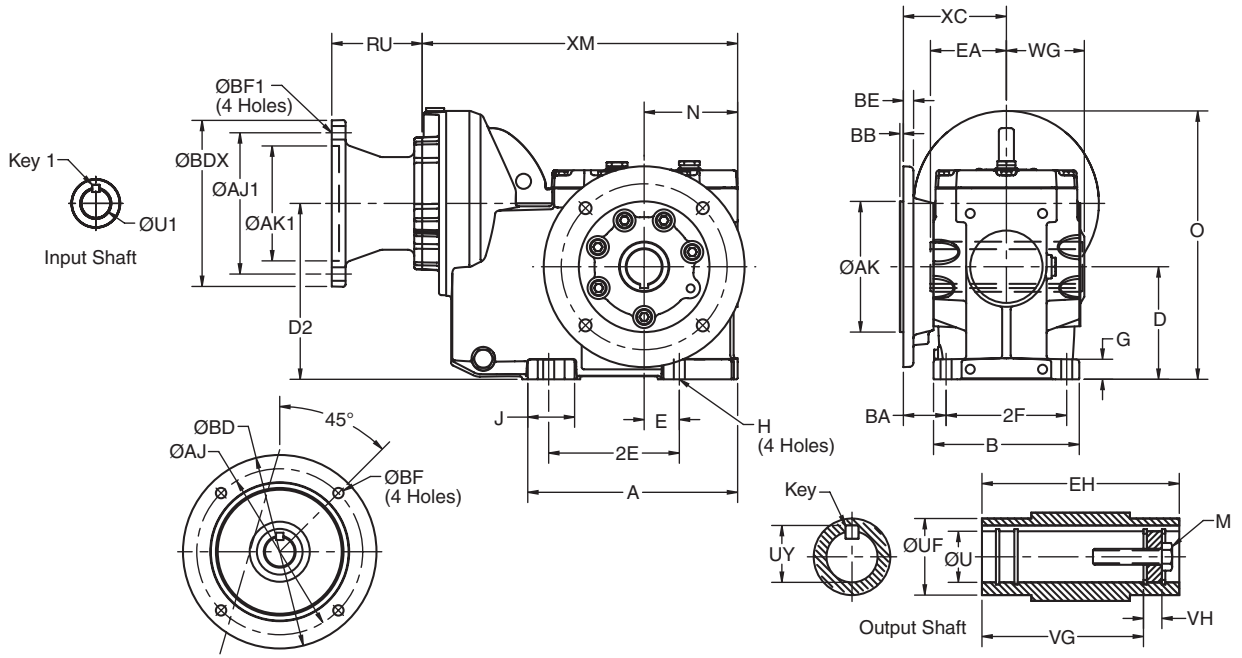
Face Mount

Gear Frame	Version	AH	AJ	AK	BB	MF
36	S2	.20	9.06	5.91	.28	M16-2.0 X 27
37	S2	.20	9.06	7.09	.28	M20-2.5 X 35
38	S2	.10	11.81	9.84	.20	M20-2.00 X 35

Motor Frame	Gear Frame	AJ1	AK1	BF1	U1	RU	BDX	Key1
56C	All	5.88	4.50	.38	.625	3.54	6.50	3/16 Sq.
143TC/145TC	All	5.88	4.50	.38	.875	3.54	6.50	3/16 Sq.
182TC/184TC	All	7.25	8.50	.50	1.125	5.26	9.00	1/4 Sq.
213TC/215TC	All	7.25	8.50	.50	1.375	5.26	9.00	5/16 Sq.

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
[2] All rough casting dimensions may vary by .25" due to casting variations.
[3] Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.
[4] Output bore tolerances: +.0020",-.0000" for all diameters.
[5] Key not supplied with reducer.

2-Stage Finished Bore Hollow Shaft Flange Mount
OtN31 - 32



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	BA	WG	XC	XM
3132	S2	5.88	4.65	3.15	4.98	1.97	3.94	3.94	.56	.35	1.53	8.01	3.15	1.54	2.85	3.50	10.59
3242	S2	8.22	5.71	4.41	6.89	1.38	5.12	4.72	.79	.43	1.83	10.51	3.66	1.67	3.22	4.04	12.36

Output Shaft

Gear Frame	Version	EA	EH	U[3,4]	UF	UY	VG	VH	Key[5]	M
3132	S2	2.56	5.12	1.250	1.77	1.372	4.31	.37	1/4 X 1/4 X 1 1/2	7/16-14 X 1.00
3242	S2	2.97	5.94	1.375	1.96	1.523	5.06	.37	5/16 X 5/16 1 13/16	1/2-13 X 1.00

Output Flange

Gear Frame	Flange Code	AK	AJ	BB	BD	BE	BF
3132	5	4.331	5.12	.14	6.50	.39	.35
	6	3.740	4.53	.14	5.51	.44	.35
3242	5	5.118	6.50	.14	7.87	.39	.47
	6	7.087	8.46	.16	9.84	.47	.55

Motor Frame	Gear Frame	AJ1	AK1	BF1	U1	RU	BDX	Key1
56C	Any	5.88	4.50	.38	.625	3.54	6.50	3/16 Sq.
143TC/145TC	Any	5.88	4.50	.38	.875	3.54	6.50	3/16 Sq.
182TC/184TC	32	7.25	8.50	.50	1.125	5.26	9.00	1/4 Sq.

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

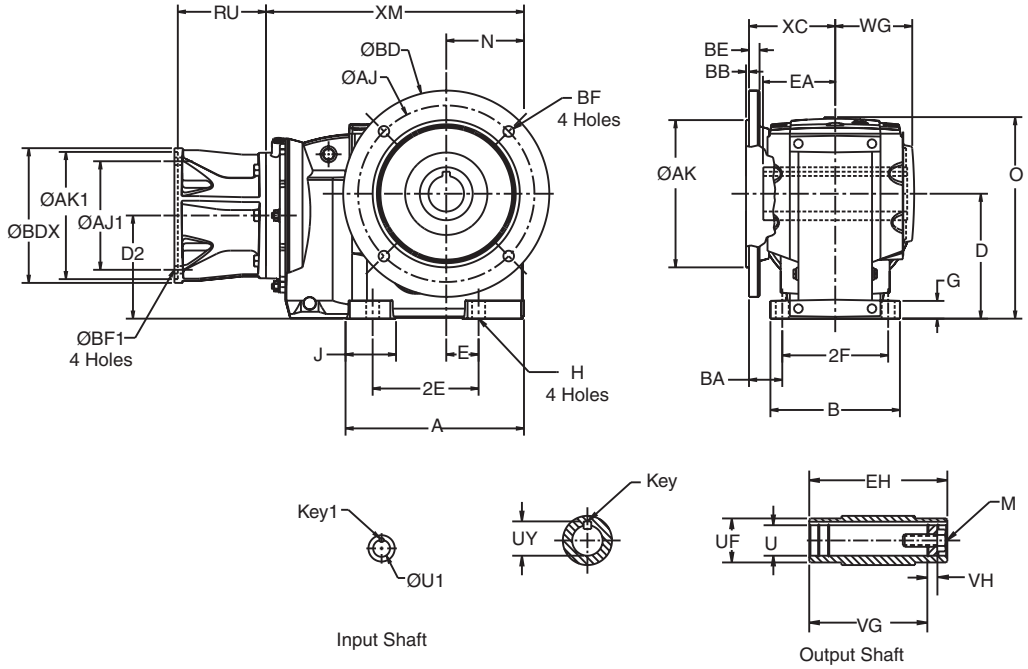
[2] All rough casting dimensions may vary by .25" due to casting variations.

[3] Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.

[4] Output bore tolerances: +.0020",-.0000" for all diameters.

[5] Key not supplied with reducer.

3-Stage Finished Bore Hollow Shaft Flange Mount
OtN32 - 35



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	BA	WG	XC	XM	
																	56C-215TC	254TC-286TC
32	S2	7.81	5.71	4.41	3.78	1.38	5.12	4.71	.73	.43	2.34	8.09	3.03	1.81	3.22	4.04	10.98	-
33	S2	8.50	6.61	5.51	5.24	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	2.08	3.73	4.84	12.90	-
34	S2	10.13	7.87	7.09	5.90	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	1.93	4.66	5.18	14.56	-
35	S2	11.92	8.66	8.35	6.89	2.17	7.09	7.09	1.18	.87	3.45	13.58	5.20	2.22	5.15	5.77	16.90	17.25

Output Shaft

Gear Frame	Version	EA	EH	U[3,5]	UF	UY	VG	VH	Key[4]	M
32	S2	2.98	5.95	1.375	1.96	1.523	5.20	.55	5/16 X 5/16 X 1 13/16	1/2-13 X 1.00
33	S2	3.47	6.94	1.500	2.16	1.674	5.96	.55	3/8 X 3/8 X 2 1/4	5/8-11 X 1.75
34	S2	4.49	8.97	2.000	2.56	2.210	7.44	.79	1/2 X 7/16 X 2 5/8	5/8-11 X 1.75
35	S2	4.83	9.66	2.375	3.54	2.656	8.15	.94	5/8 X 5/8 X 3 5/8	3/4-10 X 2.00

Output Flange

Gear Frame	Flange Code	AK	AJ	BB	BD	BE	BF
32	5	5.118	6.50	.14	7.87	.39	.47
	6	7.087	8.46	.16	9.84	.47	.55
33	5	7.087	8.46	.16	9.84	.47	.55
	6	9.055	10.43	.16	11.81	.47	.55
34	5	9.055	10.43	.16	11.81	.59	.55
	6	9.842	11.80	.16	13.77	.59	.71
35	5	9.842	11.80	.20	13.77	.71	.71
	6	11.810	13.77	.20	15.75	.71	.71

C-Face Input

Motor Frame	Gear Frame	AJ1	AK1	BF1	U1	RU	BDX	Key1
56C	Any	5.88	4.50	.38	.625	3.54	6.50	3/16 Sq.
143TC/145TC	Any	5.88	4.50	.38	.875	3.54	6.50	3/16 Sq.
182TC/184TC	Any	7.25	8.50	.50	1.125	5.26	9.00	1/4 Sq.
213TC/215TC	33,34,35	7.25	8.50	.50	1.375	5.26	9.00	5/16 Sq.
254TC/256TC	35	7.25	8.50	.50	1.625	6.12	9.00	3/8 Sq.
284TC/286TC	35	9.00	10.50	.50	1.875	7.09	11.25	1/2 Sq.

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

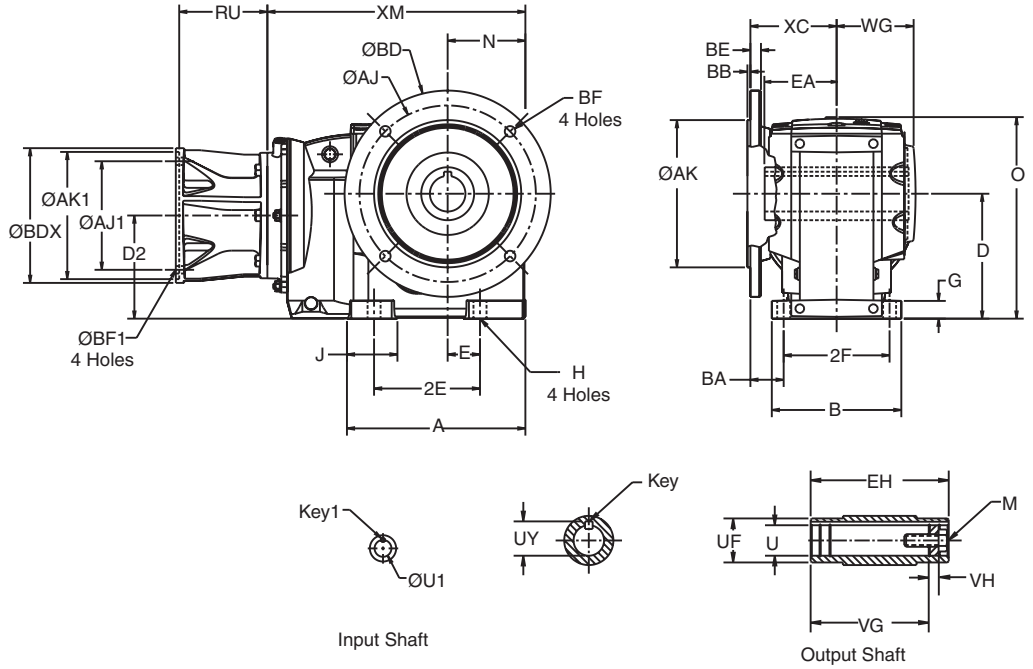
[2] All rough casting dimensions may vary by .25" due to casting variations.

[3] Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.

[4] Output key supplied only on frame 34 in "S2" version.

[5] Output bore tolerances: +.0020",-.0000" for all diameters.

3-Stage Finished Bore Hollow Shaft Flange Mount
OtN36 - 38



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	BA	WG	XC	XM	
																	182-215TC	254-365TC
36	S2	17.06	11.41	8.86	8.86	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	4.45	6.78	9.17	23.38	23.73
37	S2	20.58	12.99	9.84	10.98	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	4.45	7.44	9.76	23.38	29.06
38	S2	20.13	13.39	14.76	11.87	4.53	13.78	10.63	1.98	1.26	4.06	24.11	8.86	4.65	7.40	9.96	24.29	24.64

Output Shaft

Gear Frame	Version	EA	EH	U[3,4]	UF	UY	VG	VH	Key[5]	M
36	S2	6.22	12.44	2.750	3.93	3.037	10.89	1.23	5/8 X 5/8 X 5 1/2	3/4-10 X 2.00
37	S2	6.80	13.59	3.625	4.72	4.019	11.90	1.23	7/8 X 7/8 X 5 1/2	3/4-10 X 2.00
38	S2	6.81	13.74	4.000	5.50	4.316	11.86	.92	1 X 1 X 6 1/2	1-8 X 2.25

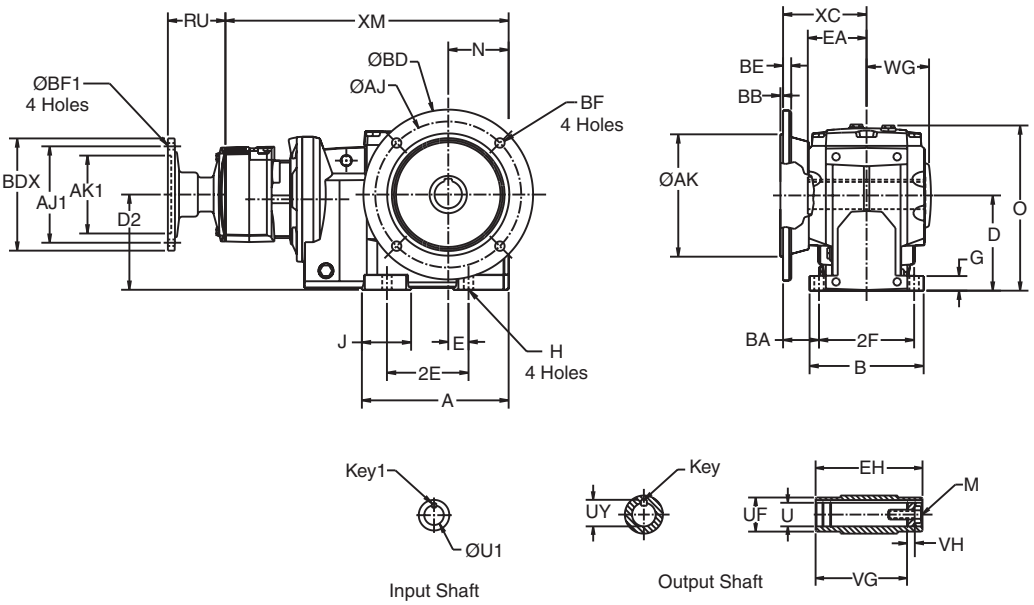
Output Flange

Gear Frame	Flange Code	AK	AJ	BB	BD	BE	BF
36 & 37	5	13.78	15.75	.236	17.70	.79	.71
	6	17.72	19.68	.236	21.65	.63	.87
38	5	17.72	19.69	.200	21.65	.79	.69
	6	21.65	23.62	.236	25.98	.63	.87

Motor Frame	Gear Frame	AJ1	AK1	BF1	U1	RU	BDX	Key1
182TC/184TC	All	7.25	8.50	.50	1.125	5.26	9.00	1/4 Sq.
213TC/215TC	All	7.25	8.50	.50	1.375	5.26	9.00	5/16 Sq.
254TC/256TC	All	7.25	8.50	.50	1.625	6.12	9.00	3/8 Sq.
284TC/286TC	All	9.00	10.50	.50	1.875	7.09	11.25	1/2 Sq.
324TC/326TC	All	11.00	12.50	.625	2.125[6]	8.45	13.38	1/2 Sq.
364TC/365TC	All	11.00	12.50	.625	2.375[6]	8.45	13.38	5/8 Sq.

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
[2] All rough casting dimensions may vary by .25" due to casting variations.
[3] Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.
[4] Output bore tolerances: +.0020",-.0000" for all diameters.
[5] Key not supplied with reducer.
[6] These frames utilize coupling input. This is input bore for coupling provided.

Combined Finished Bore Hollow Shaft Flange Mount
OtN32 - 35



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	BA	WG	XC	XM
32	S2	7.81	5.71	4.41	4.06	1.38	5.12	4.71	.73	.43	2.34	8.09	3.03	1.81	3.22	4.04	14.49
33	S2	8.50	6.61	5.51	4.91	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	2.08	3.73	4.84	19.90[3]
34	S2	10.13	7.87	7.09	5.57	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	1.93	4.66	5.18	21.55
35	S2	11.92	8.66	8.35	6.56	2.17	7.09	7.09	1.18	.87	3.45	13.58	5.20	2.22	5.15	5.77	23.87

Output Shaft

Gear Frame	Version	EA	EH	U[6]	UF	UY	VG	VH	Key[5]	M
32	S2	2.98	5.95	1.375	1.96	1.523	5.20	.55	5/16 X 5/16 X 1 13/16	1/2-13 X 1.00
33	S2	3.47	6.94	1.500	2.16	1.674	5.96	.55	3/8 X 3/8 X 2 1/4	5/8-11 X 1.75
34	S2	4.49	8.97	2.000	2.56	2.210	7.44	.79	1/2 X 7/16 X 2 5/8	5/8-11 X 1.75
35	S2	4.83	9.66	2.375	3.54	2.656	8.15	.94	5/8 X 5/8 X 3 5/8	3/4-10 X 2.00

Output Flange

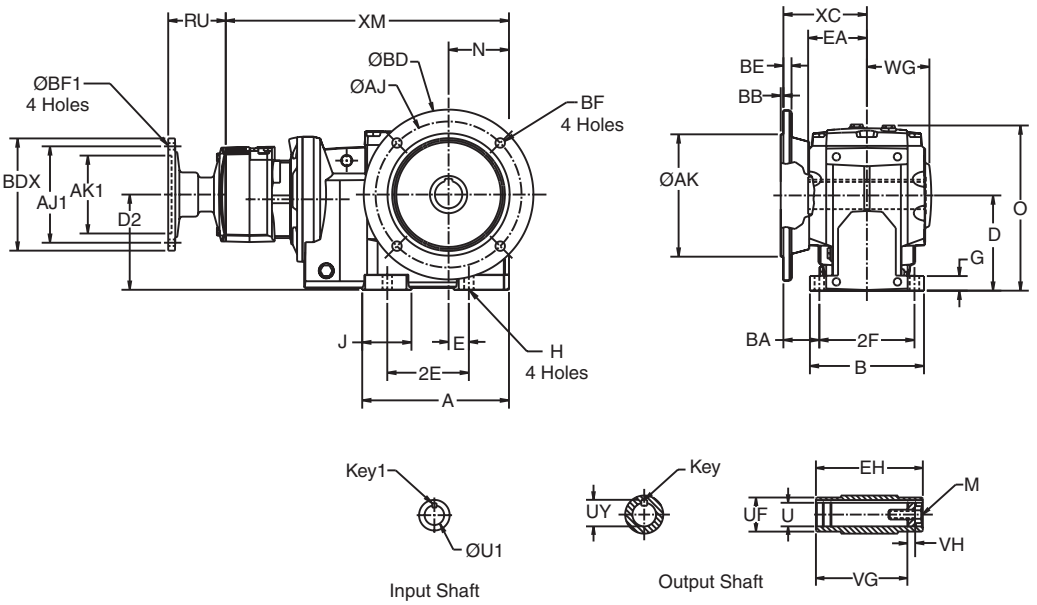
Gear Frame	Flange Code	AK	AJ	BB	BD	BE	BF
32	5	5.118	6.50	.14	7.87	.39	.47
	6	7.087	8.46	.16	9.84	.47	.55
33	5	7.087	8.46	.16	9.84	.47	.55
	6	9.055	10.43	.16	11.81	.47	.55
34	5	9.055	10.43	.16	11.81	.59	.55
	6	9.842	11.80	.16	13.77	.59	.71
35	5	9.842	11.80	.20	13.77	.71	.71
	6	11.810	13.77	.20	15.75	.71	.71

C-Face Input

Motor Frame	Gear Frame	AJ1	AK1	BF1	U1	RU	BDX	Key1
56C	32	5.88	4.50	.38	.625	3.33	6.50	3/16 Sq.
	33,34,35	5.88	4.50	.38	.625	3.54	6.50	3/16 Sq.
143TC/145TC	32	5.88	4.50	.38	.875	3.33	6.50	3/16 Sq.
	33,34,35	5.88	4.50	.38	.875	3.54	6.50	3/16 Sq.
182TC/184TC	33,34,35	7.25	8.50	.50	1.125	5.26	9.00	1/4 Sq.

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
[2] All rough casting dimensions may vary by .25" due to casting variations.
[3] XM dimension when gear frame 33A is used will be 16.42.
[4] Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.
[5] Output key supplied only on frame 34 in "S2" version.
[6] Output bore tolerances: +.0020",-.0000" for all diameters.

Combined Finished Bore Hollow Shaft Flange Mount
OtN36 - 38



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	BA	WG	XC	XM 56-215TC
36	S2	17.06	11.41	8.86	8.46	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	4.45	6.78	9.17	31.04
37	S2	20.58	12.99	9.84	10.57	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	4.45	7.44	9.76	36.37
38	S2	20.13	13.39	14.76	11.48	4.53	13.78	10.63	1.98	1.26	4.06	24.11	8.86	4.65	7.40	9.96	31.94

Output Shaft

Gear Frame	Version	EA	EH	U[3,4]	UF	UY	VG	VH	Key[5]	M
36	S2	6.22	12.44	2.750	3.93	3.037	10.89	1.23	5/8 X 5/8 X 5 1/2	3/4-10 X 2.00
37	S2	6.80	13.59	3.625	4.72	4.019	11.90	1.23	7/8 X 7/8 X 5 1/2	3/4-10 X 2.00
38	S2	6.81	13.74	4.000	5.50	4.316	11.86	.92	1 X 1 X 6 1/2	1-8 X 2.25

Output Flange

Gear Frame	Flange Code	AK	AJ	BB	BD	BE	BF
36 & 37	5	13.78	15.75	.236	17.70	.79	.71
	6	17.72	19.68	.236	21.65	.63	.87
38	5	17.72	19.69	.200	21.65	.79	.69
	6	21.65	23.62	.236	25.98	.63	.87

Motor Frame	Gear Frame	AJ1	AK1	BF1	U1	RU	BDX	Key1
56C	All	5.88	4.50	.38	.625	3.54	6.50	3/16 Sq.
143TC/145TC	All	5.88	4.50	.38	.875	3.54	6.50	3/16 Sq.
182TC/184TC	All	7.25	8.50	.50	1.125	5.26	9.00	1/4 Sq.
213TC/215TC	All	7.25	8.50	.50	1.375	5.26	9.00	5/16 Sq.

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

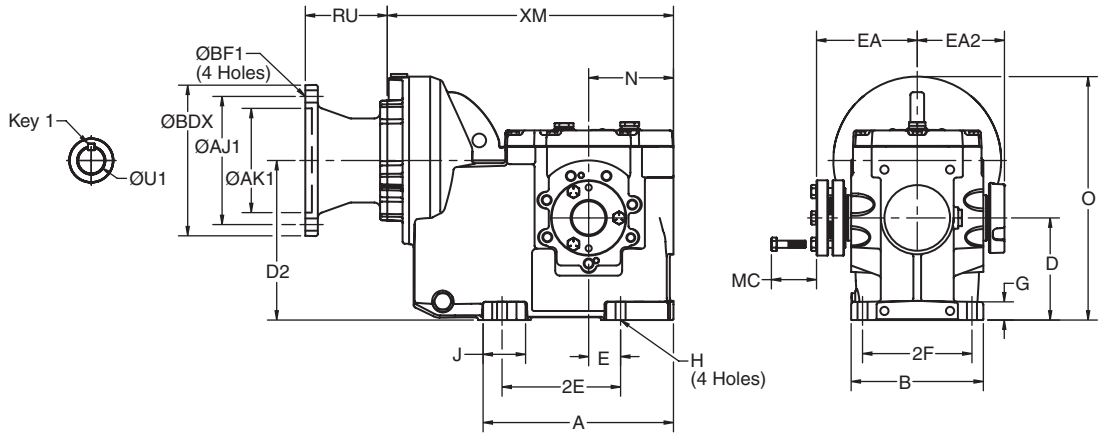
[2] All rough casting dimensions may vary by .25" due to casting variations.

[3] Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.

[4] Output bore tolerances: +.0020",-.0000" for all diameters.

[5] Key not supplied with reducer.

2-Stage Bushed Shaft Mount
OtN31 - 32



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	XM
3132	S2	5.88	4.65	3.15	4.98	1.97	3.94	3.94	.56	.35	1.53	8.01	3.15	10.59
3242	S2	8.22	5.71	4.41	6.89	1.38	5.12	4.72	.79	.43	1.83	10.51	3.66	12.36

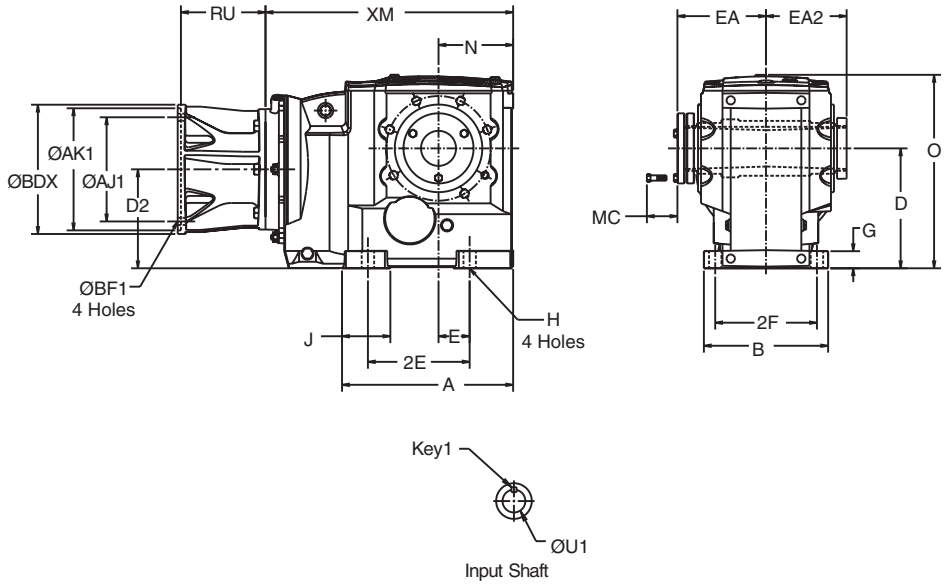
Output Shaft

Gear Frame	Version	EA	EA2	MC[4]	Bushing Bores[3]	
					Min.	Max.
3132	S2	4.25	3.80	1.50	1	1 5/16
3242	S2	4.85	4.27	1.75	1 5/16	1 7/16

Motor Frame	Gear Frame	AJ1	AK1	BF1	U1	RU	BDX	Key1
56C	Any	5.88	4.50	.38	.625	3.54	6.50	3/16 Sq.
143TC/145TC	Any	5.88	4.50	.38	.875	3.54	6.50	3/16 Sq.
182TC/184TC	32	7.25	8.50	.50	1.125	5.26	9.00	1/4 Sq.

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
[2] All rough casting dimensions may vary by .25" due to casting variations.
[3] Refer to page B-118 by gear frame for listing of all inch and metric bushing bore sizes available.
[4] The MC dimension shows spacing required to install or remove the bushing from the reducer.
[5] Bushing and dust cap can be installed opposite of how they are shown above.
[6] Driven shaft entry can be from either side of the gear reducer housing. Refer to installation manual for requirements.
[7] For details of the torque arm kit,refer to page B-117.

3-Stage Taper Bushed Shaft Mount
OtN32 - 35



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	XM	
														56C-215TC	254TC-286TC
32	S2	7.81	5.71	4.41	3.78	1.38	5.12	4.71	.73	.43	2.34	8.09	3.03	10.98	-
33A	S2	8.50	6.61	5.51	5.24	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	12.90	-
34	S2	10.13	7.87	7.09	5.90	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	14.56	-
35	S2	11.92	8.66	8.35	6.89	2.17	7.09	7.09	1.18	.87	3.45	13.58	5.20	16.90	17.25

Output Shaft

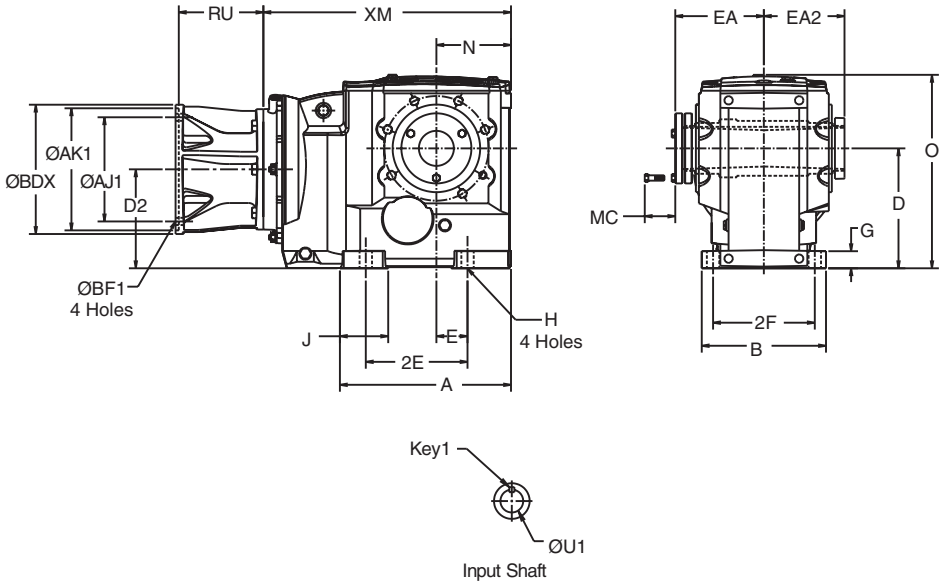
Gear Frame	Version	EA	EA2	MC[4]	Bushing Bores [3]	
					Min.	Max.
32	S2	4.85	4.27	1.75	1 5/16	1 7/16
33A	S2	5.76	5.18	1.88	1 7/16	1 15/16
34	S2	5.84	5.27	1.88	1 11/16	1 15/16
35	S2	6.17	5.620	1.88	2	2 7/16

C-Face Input

Motor Frame	Gear Frame	AJ1	AK1	BF1	U1	RU	BDX	Key1
56C	Any	5.88	4.50	.38	.625	3.54	6.50	3/16 Sq.
143TC/145TC	Any	5.88	4.50	.38	.875	3.54	6.50	3/16 Sq.
182TC/184TC	Any	7.25	8.50	.50	1.125	5.26	9.00	1/4 Sq.
213TC/215TC	33A,34,35	7.25	8.50	.50	1.375	5.26	9.00	5/16 Sq.
254TC/256TC	35	7.25	8.50	.50	1.625	6.12	9.00	3/8 Sq.
284TC/286TC	35	9.00	10.50	.50	1.875	7.09	11.25	1/2 Sq.

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
[2] All rough casting dimensions may vary by .25" due to casting variations.
[3] Refer to page B-118 by gear frame for listing of all inch and metric bushing bore sizes available.
[4] The MC dimension shows spacing required to install or remove the bushing from the reducer.
[5] Bushing and dust cap can be installed opposite of how they are shown above.
[6] Driven shaft entry can be from either side of the gear reducer housing. Refer to installation manual for requirements.
[7] For details of the torque arm kit,refer to page B-117.

3-Stage Taper Bushed Shaft Mount
OtN36 - 38



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	XM	
														182-215TC	254-365TC
36	S2	17.06	11.41	8.86	8.86	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	23.38	23.73
37	S2	20.58	12.99	9.84	10.98	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	23.38	29.06
38	S2	20.13	13.39	14.76	11.87	4.53	13.78	10.63	1.98	1.26	4.06	24.11	8.86	24.29	24.64

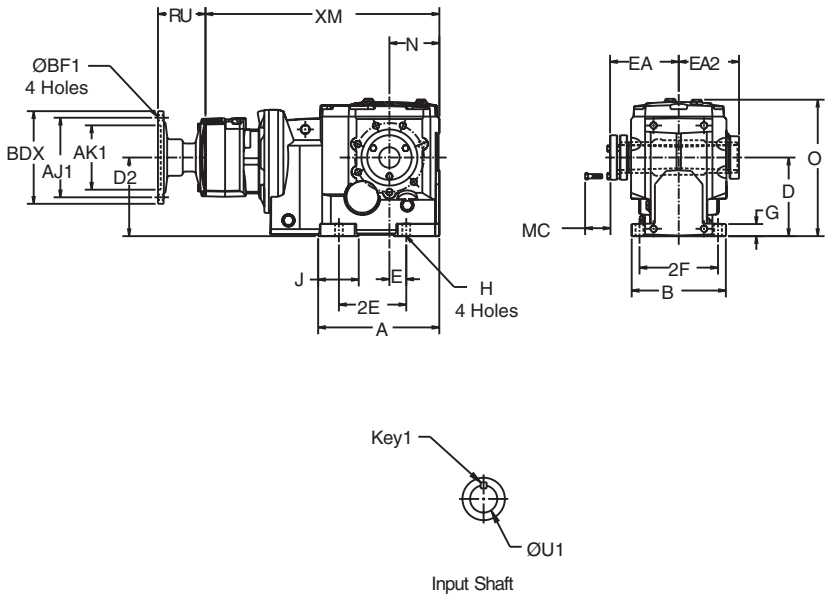
Output Shaft

Gear Frame	Version	EA	EA2	MC[4]	Bushing Bores[3]	
					Min.	Max.
36	S2	6.81	7.83	1.88	2 7/16	2 15/16
37	S2	9.50	8.86	2.25	2 7/8	3 7/16
38	S2	8.66	8.08	2.75	2 15/16	3 15/16

Motor Frame	Gear Frame	AJ1	AK1	BF1	U1	RU	BDX	Key1
182TC/184TC	36, 37	7.25	8.50	.50	1.125	5.26	9.00	1/4 Sq.
213TC/215TC	All	7.25	8.50	.50	1.375	5.26	9.00	5/16 Sq.
254TC/256TC	All	7.25	8.50	.50	1.625	6.12	9.00	3/8 Sq.
284TC/286TC	All	9.00	10.50	.50	1.875	7.09	11.25	1/2 Sq.
324TC/326TC	All	11.00	12.50	.625	2.125[8]	8.45	13.38	1/2 Sq.
364TC/365TC	37, 38	11.00	12.50	.625	2.375[8]	8.45	13.38	5/8 Sq.

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
[2] All rough casting dimensions may vary by .25" due to casting variations.
[3] Refer to page B-118 by gear frame for listing of all inch and metric bushing bore sizes available.
[4] The MC dimension shows spacing required to install or remove the bushing from the reducer.
[5] Bushing and dust cap can be installed opposite of how they are shown above.
[6] Driven shaft entry can be from either side of the gear reducer housing. Refer to installation manual for requirements.
[7] For details of the torque arm kit,refer to page B-117.
[8] These frames utilize coupling input. This is input bore for coupling provided.

Combined Taper Bushed Shaft Mount
OtN32 - 35



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	XM
32	S2	7.81	5.71	4.41	4.06	1.38	5.12	4.71	.73	.43	2.34	8.09	3.03	14.49
33A	S2	8.50	6.61	5.51	4.91	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	19.90[8]
34	S2	10.13	7.87	7.09	5.57	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	21.55
35	S2	11.92	8.66	8.35	6.56	2.17	7.09	7.09	1.18	.87	3.45	13.58	5.20	23.87

Output Shaft

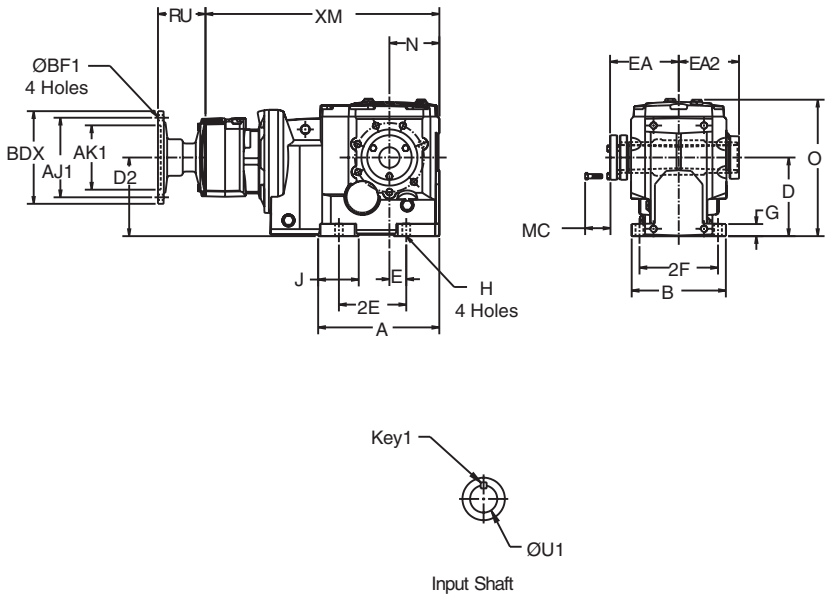
Gear Frame	Version	EA	EA2	MC[4]	Bushing Bores[3]	
					Min.	Max.
32	S2	4.85	4.27	1.75	1 5/16	1 7/16
33A	S2	5.76	5.18	1.88	1 7/16	1 15/16
34	S2	5.84	5.27	1.88	1 11/16	1 15/16
35	S2	6.17	5.620	1.88	2	2 7/16

C-Face Input

Motor Frame	Gear Frame	AJ1	AK1	BF1	U1	RU	BDX	Key1
56C	32	5.88	4.50	.38	.625	3.33	6.50	3/16 Sq.
	33A,34,35	5.88	4.50	.38	.625	3.54	6.50	3/16 Sq.
143TC/145TC	32	5.88	4.50	.38	.825	3.33	6.50	3/16 Sq.
	33A,34,35	5.88	4.50	.38	.875	3.54	6.50	3/16 Sq.
182TC/184TC	33A,34,35	7.25	8.50	.50	1.125	5.26	9.00	1/4 Sq.

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
[2] All rough casting dimensions may vary by .25" due to casting variations.
[3] Refer to page B-118 by gear frame for listing of all inch and metric bushing bore sizes available.
[4] The MC dimension shows spacing required to install or remove the bushing from the reducer.
[5] Bushing and dust cap can be installed opposite of how they are shown above.
[6] Driven shaft entry can be from either side of the gear reducer housing. Refer to installation manual for requirements.
[7] For details of the torque arm kit,refer to page B-117.
[8] XM dimension when gear frame 33A is used will be 16.42.

Combined Taper Bushed Shaft Mount
OtN36 - 38



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	XM
														56-215TC
36	S2	17.06	11.41	8.86	8.46	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	31.04
37	S2	20.58	12.99	9.84	10.57	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	36.37
38	S2	20.13	13.39	14.76	11.48	4.53	13.78	10.63	1.98	1.26	4.06	24.11	8.86	31.94

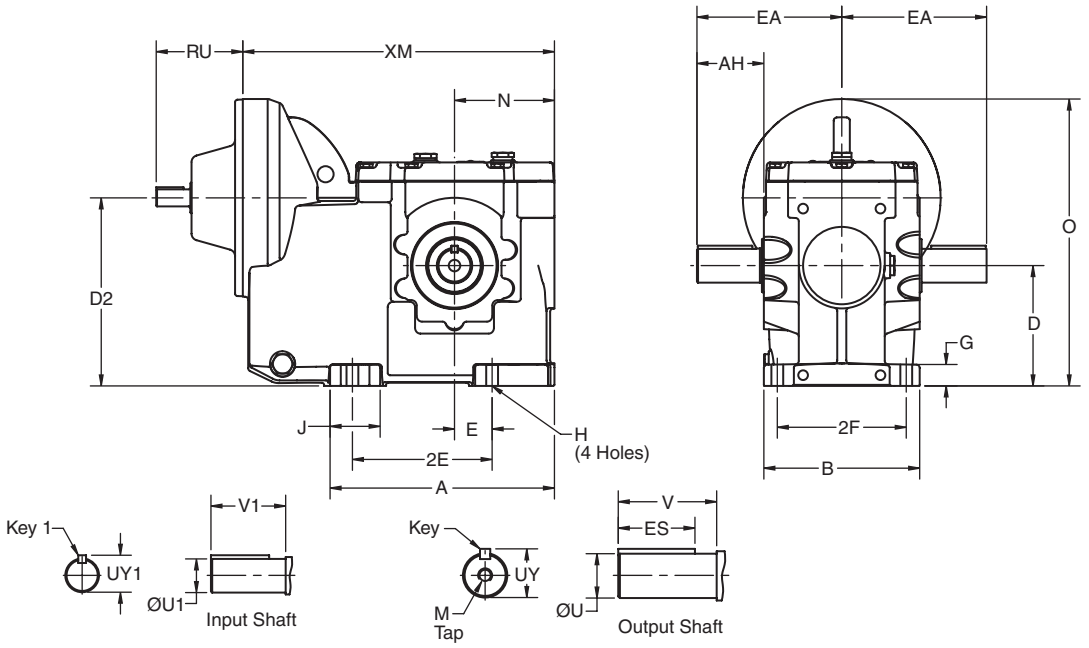
Output Shaft

Gear Frame	Version	EA	EA2	MC[4]	Bushing Bores[3]	
					Min.	Max.
36	S2	6.81	7.83	1.88	2 7/16	2 15/16
37	S2	9.50	8.86	2.25	2 7/8	3 7/16
38	S2	8.66	8.08	2.75	2 15/16	3 15/16

Motor Frame	Gear Frame	AJ1	AK1	BF1	U1	RU	BDX	Key1
56C	All	5.88	4.50	.38	.625	3.54	6.50	3/16 Sq.
143TC/145TC	All	5.88	4.50	.38	.875	3.54	6.50	3/16 Sq.
182TC/184TC	All	7.25	8.50	.50	1.125	5.26	9.00	1/4 Sq.
213TC/215TC	All	7.25	8.50	.50	1.375	5.26	9.00	5/16 Sq.

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
[2] All rough casting dimensions may vary by .25" due to casting variations.
[3] Refer to page B-118 by gear frame for listing of all inch and metric bushing bore sizes available.
[4] The MC dimension shows spacing required to install or remove the bushing from the reducer.
[5] Bushing and dust cap can be installed opposite of how they are shown above.
[6] Driven shaft entry can be from either side of the gear reducer housing. Refer to installation manual for requirements.
[7] For details of the torque arm kit,refer to pages B-117.
[8] XM dimension when gear frame 33A is used will be 16.42.

2-Stage Output Shafted Foot Mount
OtN31 - 32



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	XM
3132	S2	5.88	4.65	3.15	4.98	1.97	3.94	3.94	.56	.35	1.53	8.01	3.15	10.59
3242	S2	8.22	5.71	4.41	6.89	1.38	5.12	4.72	.79	.43	1.83	10.51	3.66	12.36

Output Shaft

Gear Frame	Version	U[3]	UY	V	AH	EA	Key	ES	M
3132	S2	1.000	1.10	1.77	1.83	4.33	1/4 Sq.	1.34	3/8-16 X .87
3242	S2	1.250	1.35	2.38	2.45	5.31	1/4 Sq.	2.03	1/2-13 X 1.12

Input Shaft

Gear Frame	Version	RU	U1[4]	UY1	V1	Key1
31	S2	3.17	.625	.705	1.25	3/16 Sq.
32	S2	3.17	.625	.705	1.25	3/16 Sq.

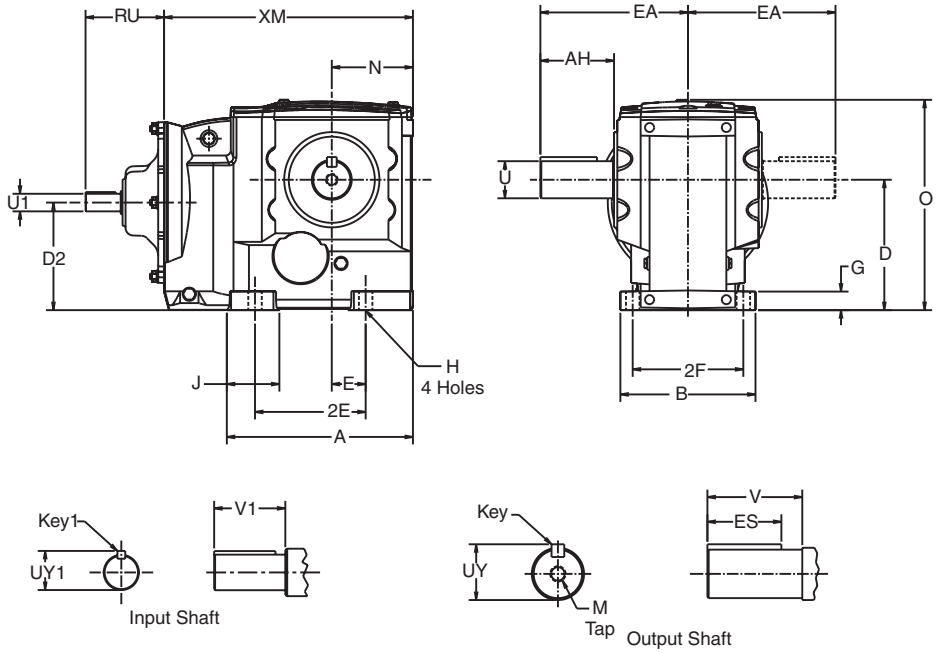
[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

[2] All rough casting dimensions may vary by .25" due to casting variations.

[3] Output shaft extension tolerances: +.0000"; –.0005" for shafts up to 1.5" diameter "U". Larger diameter "U", +.000"; –.001".

[4] Input shaft extension tolerances: +.0000"; –.0005" up to 1.5" diameter. Larger diameter "U1", +.000"; –.001".

3-Stage Output Shafted Foot Mount
OtN32 - 38



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	XM
32	S2	7.81	5.71	4.41	3.78	1.38	5.12	4.72	.73	.43	3.87	8.09	3.03	10.04
33	S2	8.50	6.61	5.51	5.24	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	11.97
	S1	8.08	8.58	4.92	5.20	3.35	6.69	6.10	.79	.55	2.27	10.43	3.54	11.97
34	S2	10.13	7.87	7.09	5.90	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	13.78
	S1	10.69	9.60	6.30	7.49	4.53	9.06	7.68	1.18	.71	3.19	13.39	4.49	13.78
35	S2	11.92	8.66	8.35	6.89	2.17	7.09	7.09	1.18	.87	3.37	13.58	5.20	15.95
	S1	13.07	10.98	7.87	9.33	5.51	11.02	9.06	1.40	.87	4.05	16.22	5.20	15.95
36	S1	17.06	11.41	8.86	8.86	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	23.11
37	S1	20.58	12.99	9.84	10.98	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	28.44
38	S2	20.13	13.39	14.76	11.87	4.53	13.78	10.63	1.98	1.26	4.06	24.11	8.86	24.02

Output Shaft

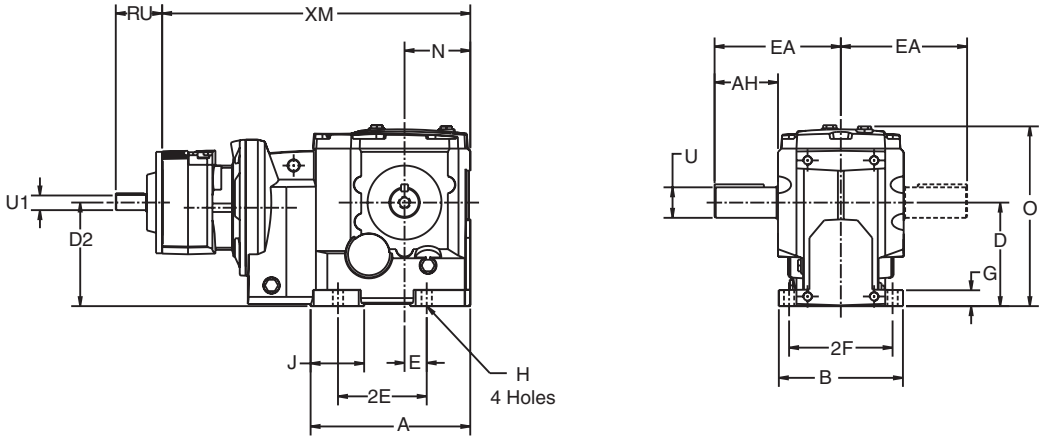
Gear Frame	Version	U[3]	UY	V	AH	EA	Key	ES	M
32	S2	1.250	1.354	2.36	2.46	5.31	1/4 Sq.	2.06	1/2 -13 x 1.12
33	S2	1.625	1.783	3.25	3.39	6.73	3/8 Sq.	2.78	5/8 -11 x 1.38
	S1	1.500	1.657	3.18	3.19	7.12	3/8 Sq.	2.78	5/8 - 11 x 1.38
34	S2	2.000	2.210	3.63	3.76	8.11	1/2 Sq.	3.06	3/4 -10 x 1.61
	S1	1.750	1.909	3.56	3.66	8.46	3/8 Sq.	3.56	3/4 -10 x 1.61
35	S2	2.375	2.638	4.61	4.74	9.45	5/8 Sq.	3.81	3/4 -10 x 1.61
	S1	2.375	2.638	5.73	5.27	10.57	5/8 Sq.	4.81	3/4 -10 x 1.61
36	S1	2.875	3.20	5.75	5.92	11.94	3/4 Sq.	5.00	3/4 -10 x 1.61
37	S1	3.625	4.01	6.86	7.04	13.66	7/8 Sq.	6.00	1-8 x 2.13
38	S2	4.375	4.809	8.99	9.97	17.03	1.00 Sq.	7.00	1-8 X 2.25

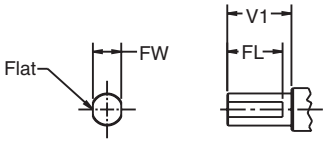
Input Shaft

Gear Frame	Version	RU	U1[4]	UY1	V1	Key1
32	S2	3.17	.625	.705	1.25	3/16 Sq.
33	S1, S2	3.17	.625	.705	1.25	3/16 Sq.
34	S1, S2	4.75	1.125	1.236	2.25	1/14 Sq.
35	S1, S2	5.03	1.125	1.236	2.25	1/14 Sq.
36	S1	7.56	1.875	2.101	3.75	1/2 Sq.
37	S1	7.56	1.875	2.101	3.75	1/2 Sq.
38	S2	7.56	1.875	2.101	3.75	1/2 Sq.

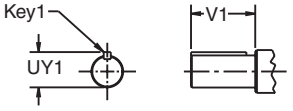
[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
[2] All rough casting dimensions may vary by .25" due to casting variations.
[3] Output shaft extension tolerances: +.0000"; –.0005" for shafts up to 1.5" diameter "U". Larger diameter "U", +.000"; –.001".
[4] Input shaft extension tolerances: +.0000"; –.0005" up to 1.5" diameter. Larger diameter "U1", +.000"; –.001".

Combined Output Shafted Foot Mount
OtN32 - 38

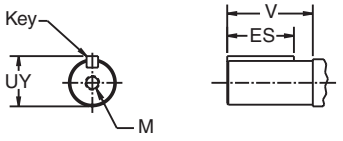




Input Shaft
Frame 32 and 33A Only



Input Shaft
Frames 33 and 34 - 38



Output Shaft

Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	XM
32	S2	7.81	5.71	4.41	4.06	1.38	5.12	4.72	.73	.43	2.34	8.09	3.03	14.49
33	S2	8.50	6.61	5.51	4.91	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	19.90[4]
	S1	8.08	8.58	4.92	4.87	3.35	6.69	6.10	.79	.55	2.27	10.43	3.54	19.90[4]
34	S2	10.13	7.87	7.09	5.57	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	21.55
	S1	10.69	9.60	6.30	7.16	4.53	9.06	7.68	1.18	.71	3.19	13.39	4.49	21.55
35	S2	11.92	8.66	8.35	6.56	2.17	7.09	7.09	1.18	.87	3.37	13.58	5.20	23.87
	S1	13.07	10.98	7.87	9.00	5.51	11.02	9.06	1.40	.87	4.05	16.22	5.20	23.87
36	S1	17.06	11.41	8.86	8.46	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	30.10
37	S1	20.58	12.99	9.84	10.57	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	35.43
38	S2	20.13	13.39	14.76	11.48	4.53	13.78	10.63	1.98	1.26	4.06	24.11	8.86	31.00

Output Shaft

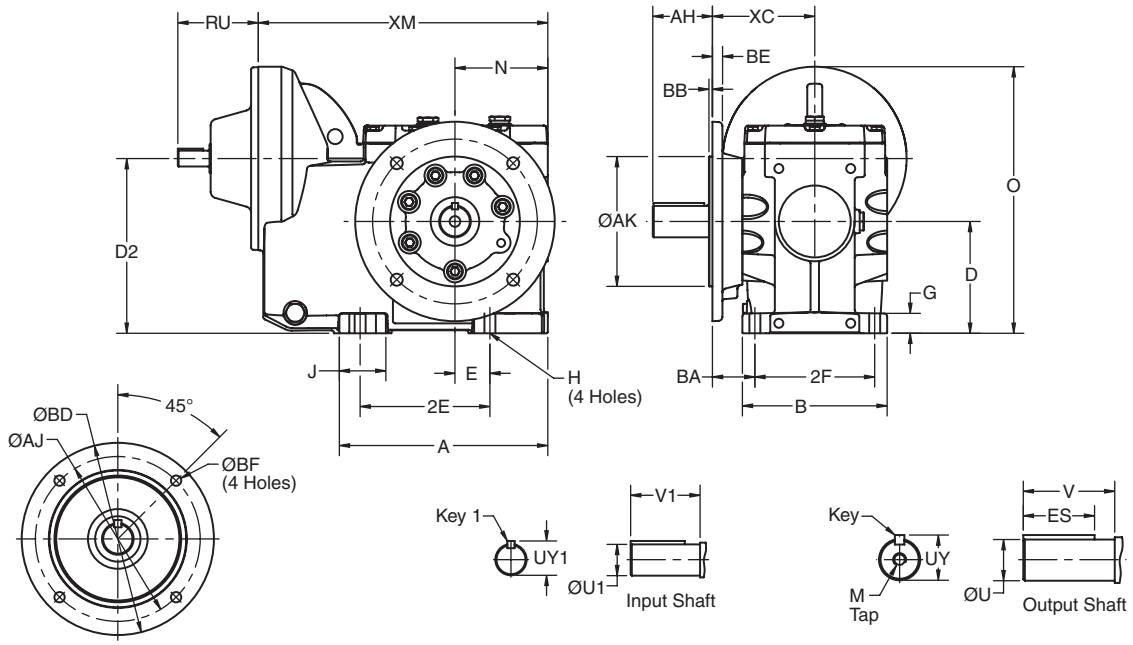
Gear Frame	Version	U[3]	UY	V	AH	EA	Key	ES	M
32	S2	1.250	1.354	2.36	2.46	5.31	1/4 Sq.	2.06	1/2 - 13 x 1.2
33	S2	1.625	1.783	3.25	3.39	6.73	3/8 Sq.	2.78	5/8 - 11 x 1.38
	S1	1.500	1.657	3.18	3.19	7.12	3/8 Sq.	2.78	5/8 - 11 x 1.38
34	S2	2.000	2.210	3.63	3.76	8.11	1/2 Sq.	3.06	3/4 -10 x 1.61
	S1	1.750	1.909	3.56	3.66	8.46	3/8 Sq.	3.56	3/4 -10 x 1.61
35	S2	2.375	2.638	4.61	4.74	9.45	5/8 Sq.	3.81	3/4 -10 x 1.61
	S1	2.375	2.638	5.73	5.27	10.57	5/8 Sq.	4.81	3/4 -10 x 1.61
36	S1	2.875	3.20	5.75	5.92	11.94	3/4 Sq.	5.00	3/4 -10 x 1.61
37	S1	3.625	4.01	6.86	7.04	13.66	7/8 Sq.	6.00	1-8 x 2.13
38	S2	4.375	4.809	8.99	9.97	17.03	1.00 SQ.	7.00	1-8 X 2.25

Input Shaft

Gear Frame	Version	RU	U1[5]	FL	FW	UY1	V1	Key1
32	S2	3.60	.500	.86	.46	-	1.00	-
33	S1, S2	3.17	.625	-	-	.705	1.25	3/16 Sq.
34	S1, S2	3.17	.625	-	-	.705	1.25	3/16 Sq.
35	S1, S2	3.17	.625	-	-	.705	1.25	3/16 Sq.
36	S1	3.17	.625	-	-	.714	1.25	3/16 Sq.
37	S1	3.17	.625	-	-	.714	1.25	3/16 Sq.
38	S2	3.17	.625	-	-	0.714	1.25	3/16 Sq.

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
[2] All rough casting dimensions may vary by .25" due to casting variations.
[3] Output shaft extension tolerances: +.0000"; –.0005" for shafts up to 1.5" diameter "U". Larger diameter "U", +.000"; –.001".
[4] XM dimension when gear frame 33A is used will be 16.42.
[5] Input shaft extension tolerances: +.0000"; –.0005" up to 1.5" diameter. Larger diameter "U1", +.000"; –.001".

2-Stage Output Shafted Flange Mount
OtN31 - 32



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	BA	XC	XM
3132	S2	5.88	4.65	3.15	4.98	1.97	3.94	3.94	.56	.35	1.53	8.01	3.15	1.54	3.50	10.59
3242	S2	8.22	5.71	4.41	6.89	1.38	5.12	4.72	.79	.43	1.83	10.51	3.66	1.67	4.04	12.36

Output Shaft

Gear Frame	Version	U[3]	UY	V	AH	Key	ES	M
3132	S2	1.000	1.10	1.97	1.97	1/4 Sq.	1.34	3/8-16 X .87
3242	S2	1.250	1.35	2.36	2.35	1/4 Sq.	2.03	1/2-13 X 1.13

Output Flange

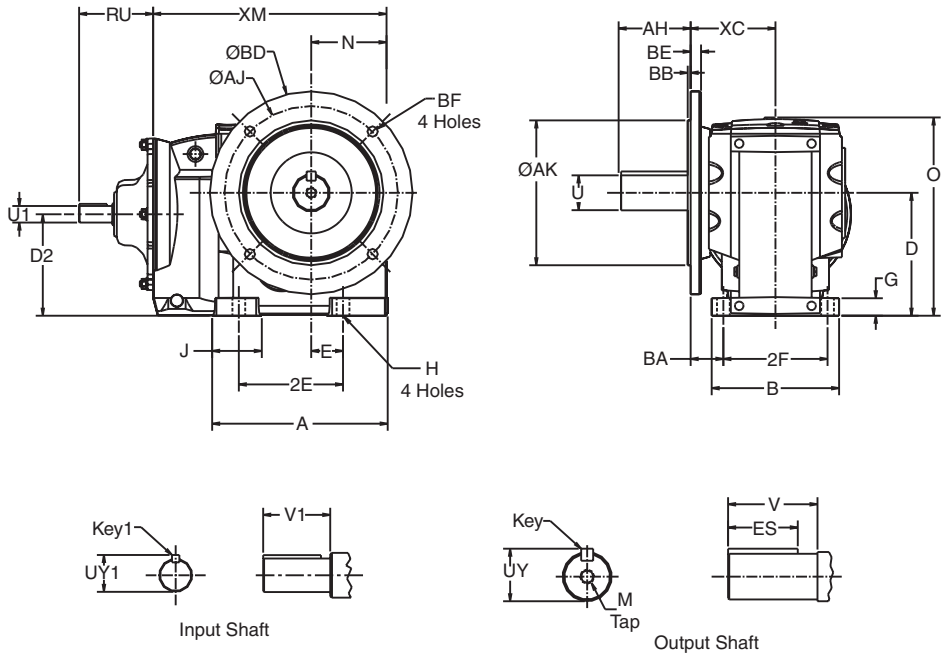
Gear Frame	Flange Code	AK	AJ	BB	BD	BE	BF
3132	5	4.331	5.12	.14	6.50	.39	.35
	6	3.740	4.53	.14	5.51	.44	.35
3242	5	5.118	6.50	.14	7.87	.39	.47
	6	7.087	8.46	.16	9.84	.47	.55

Input Shaft

Gear Frame	Version	RU	U1[4]	UY1	V1	Key1
31	S2	3.17	.625	.705	1.25	3/16 Sq.
32	S2	3.17	.625	.705	1.25	3/16 Sq.

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
[2] All rough casting dimensions may vary by .25" due to casting variations.
[3] Output shaft extension tolerances: +.0000"; –.0005" for shafts up to 1.5" diameter "U". Larger diameter "U", +.000"; –.001".
[4] Input shaft extension tolerances: +.0000"; –.0005" up to 1.5" diameter. Larger diameter "U1", +.000"; –.001".

3-Stage Output Shafted Flange Mount
OtN32 - 35



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	BA	XC	XM
32	S1, S2	7.81	5.71	4.41	3.78	1.38	5.12	4.71	.73	.43	2.34	8.09	3.03	1.81	4.04	10.04
33	S1, S2	8.50	6.61	5.51	5.24	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	2.24	4.84	11.97
34	S1, S2	10.13	7.87	7.09	5.90	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	1.93	5.18	13.78
35	S2	11.92	8.66	8.35	6.89	2.17	7.09	7.09	1.18	.87	3.45	13.58	5.20	2.22	5.76	15.95

Output Shaft

Gear Frame	Version	U[3]	UY	V	AH	Key	ES	M
32	S2	1.250	1.354	2.38	2.36	1/4 Sq.	2.06	1/2-13 X 1.12
	S1	1.250	1.354	1.77	1.75	1/4 Sq.	1.45	1/2-13 X 1.12
33	S2	1.625	1.783	3.25	3.15	3/8 Sq.	2.78	5/8-11 X 1.38
	S1	1.500	1.657	3.18	2.28	3/8 Sq.	2.19	5/8-11 X 1.38
34	S2	2.000	2.210	3.94	3.94	1/2 Sq.	3.06	3/4-11 X 1.61
	S1	1.750	1.909	3.56	3.28	3/8 Sq.	3.56	3/4-11 X 1.61
35	S2	2.375	2.646	4.72	4.72	5/8 Sq.	3.81	3/4-11 X 1.61

Output Flange

Gear Frame	Flange Code	AK	AJ	BB	BD	BE	BF
32	5	5.118	6.50	.14	7.87	.39	.47
	6	7.087	8.46	.16	9.84	.47	.55
33	5	7.087	8.46	.16	9.84	.47	.55
	6	9.055	10.43	.16	11.81	.47	.55
34	5	9.055	10.43	.16	11.81	.59	.55
	6	9.842	11.80	.16	13.77	.59	.71
35	5	9.842	11.80	.20	13.77	.71	.71
	6	11.810	13.77	.20	15.75	.71	.71

Input Shaft

Gear Frame	Version	RU	U1[4]	UY1	V1	Key1
32	S1,S2	3.17	.625	.705	1.25	3/16 Sq.
33	S1,S2	3.17	.625	.705	1.25	3/16 Sq.
34	S1,S2	4.75	1.125	1.236	2.25	1/4 Sq.
35	S2	5.03	1.125	1.236	2.25	1/4 Sq.

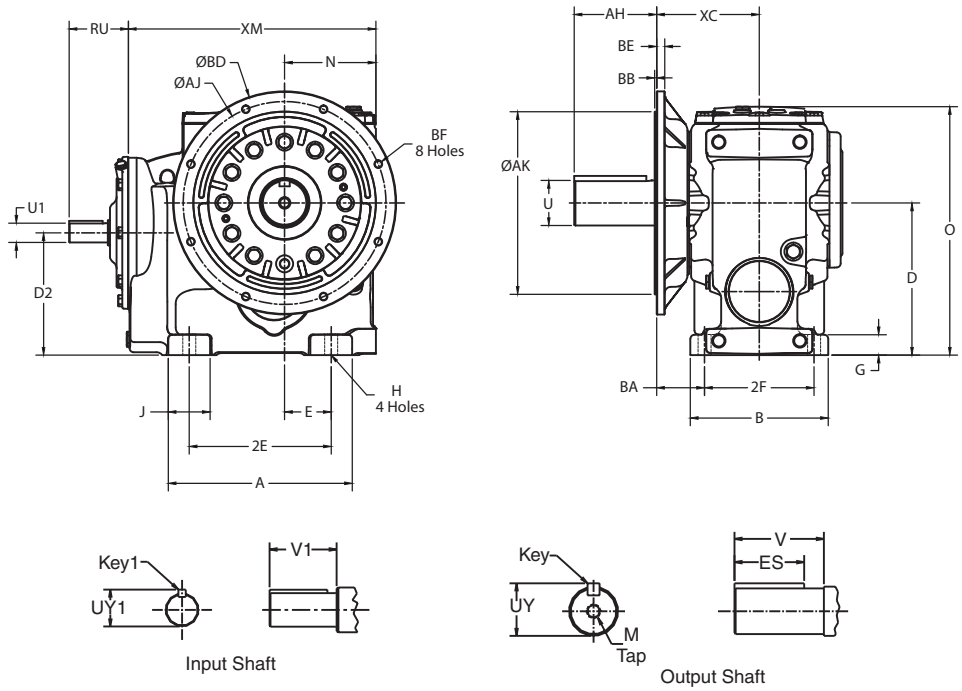
[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

[2] All rough casting dimensions may vary by .25" due to casting variations.

[3] Output shaft extension tolerances: +.0000"; –.0005" for shafts up to 1.5" diameter "U". Larger diameter "U", +.000"; –.001".

[4] Input shaft extension tolerances: +.0000"; –.0005" up to 1.5" diameter. Larger diameter "U1", +.000"; –.001".

3-Stage Output Shafted Flange Mount
OtN36 - 38



Input Shaft

Output Shaft

Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	BA	XC	XM
36	S2	17.06	11.41	8.86	8.86	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	4.45	9.17	23.11
37	S2	20.58	12.99	9.84	10.98	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	4.45	9.76	28.44
38	S2	20.13	13.39	14.76	11.87	4.53	13.78	10.63	1.98	1.26	4.06	24.11	8.86	4.65	9.96	24.02

Output Shaft

Gear Frame	Version	U[3]	UY	V	AH	Key	ES	M
36	S1	2.875	3.20	7.68	5.51	3/4 Sq.	5.00	3/4 -10 x 1.61
37	S1	3.625	4.01	8.88	6.69	7/8 Sq.	6.00	1-8 x 2.13
38	S2	4.375	4.809	8.99	9.97	1.00 Sq.	7.00	1-8 X 2.25

Output Flange

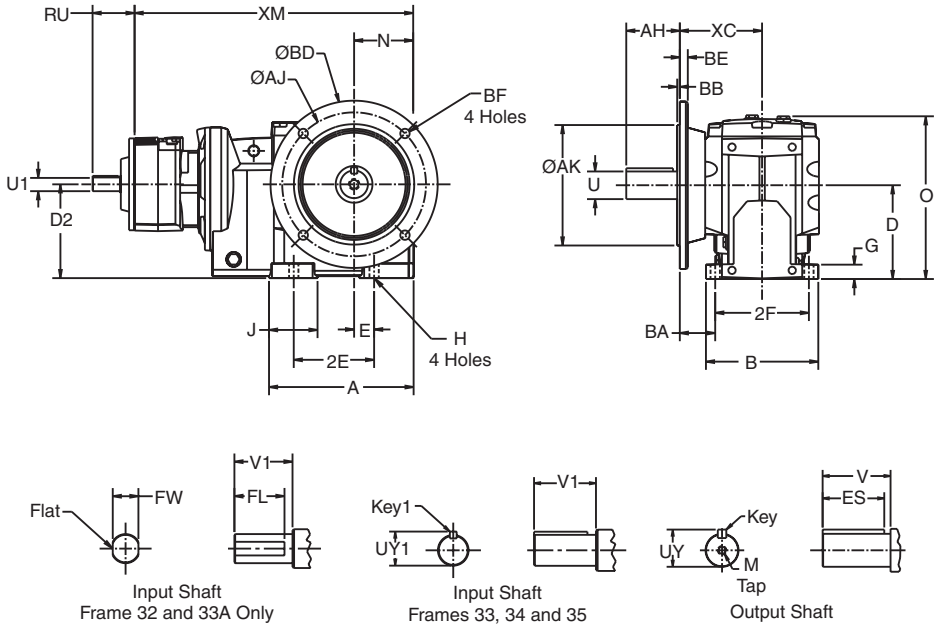
Gear Frame	Flange Code	AJ	AK	BB	BD	BE	BF
36 & 37	5	13.78	15.75	.236	17.70	.79	.71
	6	17.72	19.68	.236	21.65	.63	.87
38	5	17.72	19.69	.200	21.65	.79	.69
	6	21.65	23.62	.236	25.98	.63	.87

Input Shaft

Gear Frame	Version	RU	U1[4]	UY1	V1	Key1
36	S1	7.56	1.875	2.101	3.75	1/2 Sq.
37	S1	7.56	1.875	2.101	3.75	1/2 Sq.
38	S2	7.56	1.875	2.101	3.75	1/2 Sq.

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
[2] All rough casting dimensions may vary by .25" due to casting variations.
[3] Output shaft extension tolerances: +.0000"; –.0005" for shafts up to 1.5" diameter "U". Larger diameter "U", +.000"; –.001".
[4] Input shaft extension tolerances: +.0000"; –.0005" up to 1.5" diameter. Larger diameter "U1", +.000"; –.001".

Combined Output Shafted Flange Mount
OtN32 - 35



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	BA	XC	XM
32	S1,S2	7.81	5.71	4.41	4.06	1.38	5.12	4.71	.73	.43	2.34	8.09	3.03	1.81	4.04	14.49
33	S1,S2	8.50	6.61	5.51	4.91	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	2.24	4.84	19.90[4]
34	S1,S2	10.13	7.87	7.09	5.57	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	1.93	5.18	21.55
35	S2	11.92	8.66	8.35	6.56	2.17	7.09	7.09	1.18	.87	3.45	13.58	5.20	2.22	5.76	23.87

Output Shaft

Gear Frame	Version	U[3]	UY	V	AH	Key	ES	M
32	S2	1.250	1.354	2.38	2.36	1/4 Sq.	2.06	1/2-13 X 1.12
	S1	1.250	1.354	1.77	1.75	1/4 Sq.	1.45	1/2-13 X 1.12
33	S2	1.625	1.783	3.25	3.15	3/8 Sq.	2.78	5/8-11 X 1.38
	S1	1.500	1.657	3.18	2.28	3/8 Sq.	2.19	5/8-11 X 1.38
34	S2	2.000	2.210	3.94	3.94	1/2 Sq.	3.06	3/4-10 X 1.61
	S1	1.750	1.909	3.56	3.28	3/8 Sq.	3.56	3/4-10 X 1.61
35	S2	2.375	2.638	4.72	4.72	5/8 Sq.	3.81	3/4-10 X 1.61

Output Flange

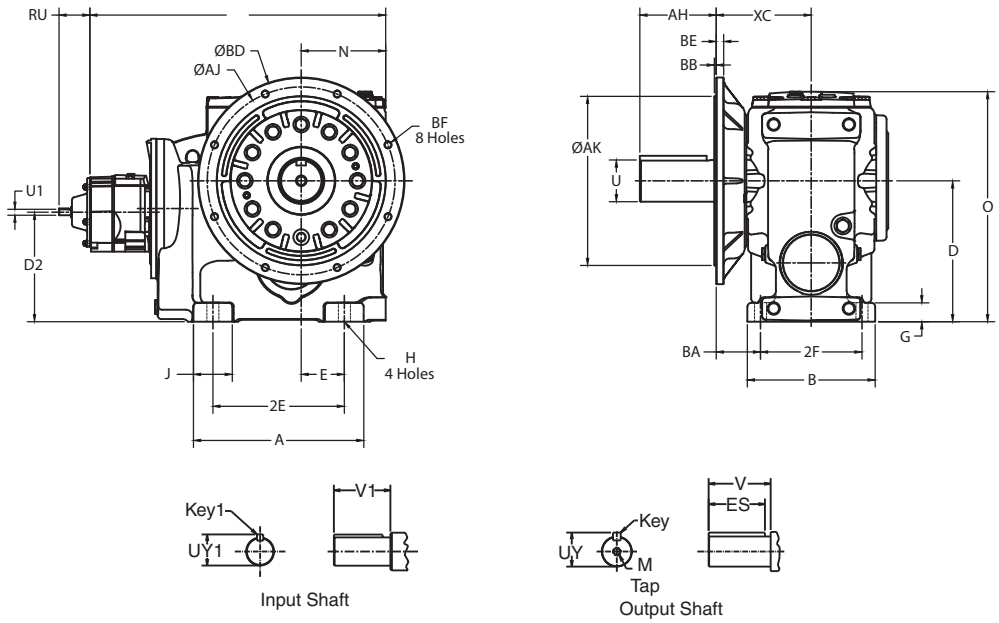
Gear Frame	Flange Code	AK	AJ	BB	BD	BE	BF
32	5	5.118	6.50	.14	7.87	.39	.47
	6	7.087	8.46	.16	9.84	.47	.55
33	5	7.087	8.46	.16	9.84	.47	.55
	6	9.055	10.43	.16	11.81	.47	.55
34	5	9.055	10.43	.16	11.81	.59	.55
	6	9.842	11.80	.16	13.77	.59	.71
35	5	9.842	11.80	.20	13.77	.71	.71
	6	11.810	13.77	.20	15.75	.71	.71

Input Shaft

Gear Frame	Version	RU	U1[5]	FL	FW	UY1	V1	Key1
32	S1,S2	3.60	.500	.86	.46	-	1.00	-
33	S1,S2	3.17	.625	-	-	.705	1.25	3/16 Sq.
34	S1,S2	3.17	.625	-	-	.705	1.25	3/16 Sq.
35	S2	3.17	.625	-	-	.705	1.25	3/16 Sq.

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
[2] All rough casting dimensions may vary by .25" due to casting variations.
[3] Output shaft extension tolerances: +.0000"; –.0005" for shafts up to 1.5" diameter "U". Larger diameter "U", +.000"; –.001".
[4] XM dimension when gear frame 33A is used will be 16.42.
[5] Input shaft extension tolerances: +.0000"; –.0005" up to 1.5" diameter. Larger diameter "U1", +.000"; –.001".

Combined Output Shafted Flange Mount
OtN36 - 38



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	BA	XC	XM
36	S2	17.06	11.41	8.86	8.46	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	4.45	9.17	30.10
37	S2	20.58	12.99	9.84	10.57	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	4.45	9.76	35.43
38	S2	20.13	13.39	14.76	11.48	4.53	13.78	10.63	1.98	1.26	4.06	24.11	8.86	4.65	9.96	31.00

Output Shaft

Gear Frame	Version	U[3]	UY	V	AH	Key	ES	M
36	S1	2.875	3.20	7.68	5.51	3/4 Sq.	5.00	3/4 -10 x 1.61
37	S1	3.625	4.01	8.88	6.69	7/8 Sq.	6.00	1-8 x 2.13
38	S2	4.375	4.809	8.99	9.97	1.00 Sq.	7.00	1-8 X 2.25

Output Flange

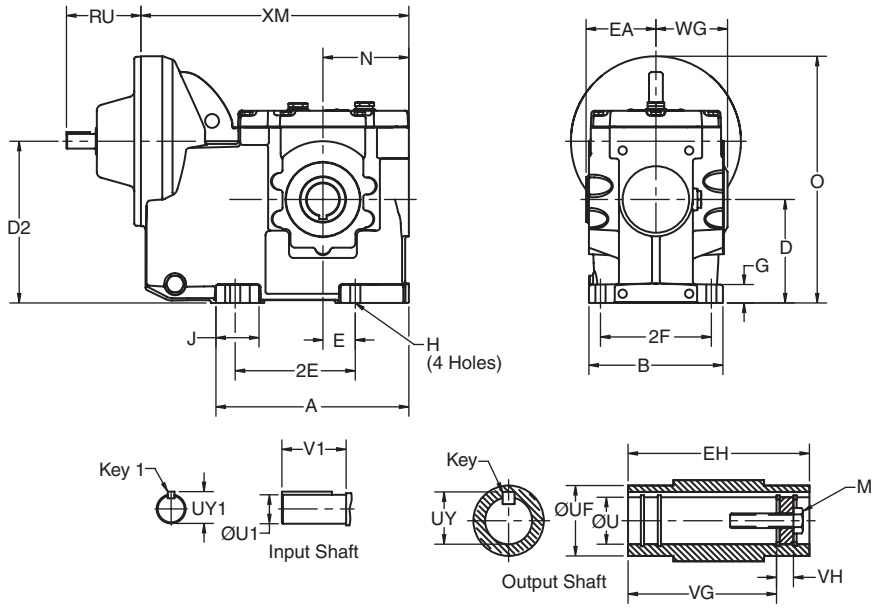
Gear Frame	Flange Code	AJ	AK	BB	BD	BE	BF
36 & 37	5	13.78	15.75	.236	17.70	.79	.71
	6	17.72	19.68	.236	21.65	.63	.87
38	5	17.72	19.69	.200	21.65	.79	.69
	6	21.65	23.62	.236	25.98	.63	.87

Input Shaft

Gear Frame	Version	RU	U1[4]	UY1	V1	Key1
36	S1	3.17	.625	.714	1.25	3/16 Sq.
37	S1	3.17	.625	.714	1.25	3/16Sq.
38	S2	3.17	0.625	0.714	1.25	3/16 Sq.

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
[2] All rough casting dimensions may vary by .25" due to casting variations.
[3] Output shaft extension tolerances: +.0000"; –.0005" for shafts up to 1.5" diameter "U". Larger diameter "U", +.000"; –.001".
[4] Input shaft extension tolerances: +.0000"; –.0005" up to 1.5" diameter. Larger diameter "U1", +.000"; –.001".

2-Stage Finished Bore Hollow Shaft
OtN31 - 32



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	WG	XM
3132	S2	5.88	4.65	3.15	4.98	1.97	3.94	3.94	.56	.35	1.53	8.01	3.15	2.85	10.59
3242	S2	8.22	5.71	4.41	6.89	1.38	5.12	4.72	.79	.43	1.83	10.51	3.66	3.22	12.36

Output Shaft

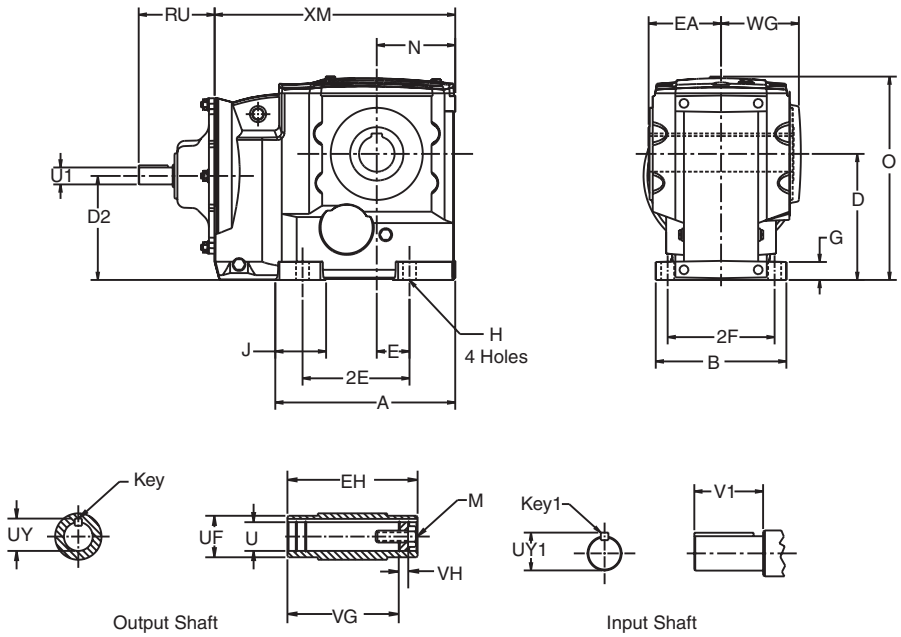
Gear Frame	Version	EA	EH	U[3,4,6]	UF	UY	VG	VH	Key[8]	M
3132	S2	2.56	5.12	1.250	1.77	1.372	4.31	.37	1/4 X 1/4 X 1 1/2	7/16-14 X 1.00
3242	S2	2.97	5.94	1.375	1.96	1.523	5.06	.37	5/16 X 5/16 1 13/16	1/2-13 X 1.00

Input Shaft

Gear Frame	Version	RU	U1[4]	UY1	V1	Key1
31	S2	3.17	.625	.705	1.25	3/16 Sq.
32	S2	3.17	.625	.705	1.25	3/16 Sq.

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
[2] All rough casting dimensions may vary by .25" due to casting variations.
[3] Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.
[4] Output finished bore tolerance: +.0020",-.0000 for all diameters.
[5] Input shaft extension tolerances: +.0000"; –.0005" up to 1.5" diameter. Larger diameter "U1", +.000"; –.001".
[6] Refer to Tapered Bushed designs if driven shaft varies from "U" dimensions offered above.
[7] For details of the torque arm kit,refer to page B-117.
[8] Key not supplied with reducer.

3-Stage Finished Bore Hollow Shaft Mount
OtN32 - 38



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	WG	XM
32	S2	7.81	5.71	4.41	3.78	1.38	5.12	4.71	.73	.43	2.34	8.09	3.03	3.22	10.04
33	S2	8.50	6.61	5.51	5.24	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	3.73	11.97
34	S2	10.13	7.87	7.09	5.90	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	4.66	13.78
35	S2	11.92	8.66	8.35	6.89	2.17	7.09	7.09	1.18	.87	3.45	13.58	5.20	5.15	15.95
36	S2	17.06	11.41	8.86	8.46	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	6.78	23.11
37	S2	20.58	12.99	9.84	10.57	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	7.44	28.44
38	S2	20.13	13.39	14.76	11.87	4.53	13.78	10.63	1.98	1.26	4.06	24.11	8.86	7.40	24.02

Output Shaft

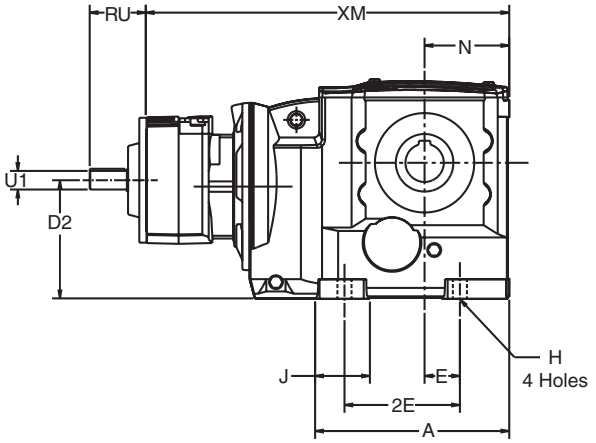
Gear Frame	Version	EA	EH	U[4,7]	UF	UY	VG	VH	Key[5]	M
33	S2	3.47	6.94	1.500	2.16	1.674	5.96	.55	3/8 x 3/8 x 2 1/4	5/8-11 x 1.75
34	S2	4.49	8.97	2.000	2.56	2.210	7.44	.79	1/2 x 7/16 x 2 5/8	5/8-11 x 1.75
35	S2	4.83	9.66	2.375	3.54	2.656	8.15	.94	5/8 x 5/8 x 3 5/8	3/4-10 x 2.00
36	S2	6.22	12.44	2.750	3.93	3.037	10.89	1.23	5/8 x 5/8 x 5 1/2	3/4-10 x 2.00
37	S2	6.80	13.59	3.625	4.72	4.019	11.90	1.23	7/8 x 7/8 x 5 1/2	3/4-10 x 2.00
38	S2	6.81	13.74	4.000	5.50	4.316	11.86	.92	1 x 1 x 6 1/2	1-8 x 2.25

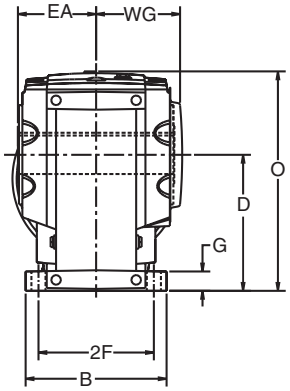
Input Shaft

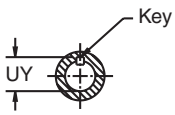
Gear Frame	Version	RU	U1[6]	UY1	V1	Key1
32	S2	3.17	.625	.705	1.25	3/16 Sq.
33	S2	3.17	.625	.705	1.25	3/16 Sq.
34	S2	4.75	1.125	1.236	2.25	1/4 Sq.
35	S2	5.03	1.125	1.236	2.25	1/4 Sq.
36	S2	7.56	1.875	2.101	3.75	1/2 Sq.
37	S2	7.56	1.875	2.101	3.75	1/2 Sq.
38	S2	7.56	1.875	2.101	3.75	1/2 Sq.

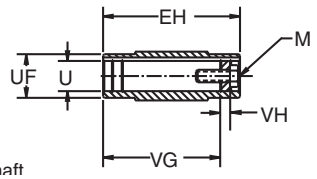
[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
[2] All rough casting dimensions may vary by .25" due to casting variations.
[3] Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.
[4] Output finished bore tolerance: +.0020",-.0000 for all diameters.
[5] Output key supplied only on frame 34 in "S2" version.
[6] Input shaft extension tolerances: +.0000"; –.0005" up to 1.5" diameter. Larger diameter "U1", +.000"; –.001".
[7] Refer to Tapered Bushed designs if driven shaft varies from "U" dimensions offered above. (Frames 32 - 35 only).
[8] For details of the torque arm kit,refer to page B-117

Combined Finished Bore Hollow Shaft
OtN32 - 38

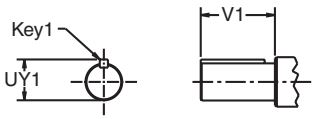




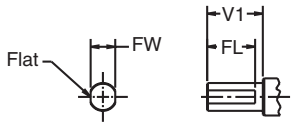




Output Shaft



Input Shaft
Frames 33 and 34-38



Input Shaft
Frame 32 and 33A Only

Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	WG	XM
32	S2	7.81	5.71	4.41	4.06	1.38	5.12	4.71	.73	.43	2.34	8.09	3.03	3.22	14.49
33	S2	8.50	6.61	5.51	4.91	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	3.73	19.90[7]
34	S2	10.13	7.87	7.09	5.57	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	4.66	21.55
35	S2	11.92	8.66	8.35	6.56	2.17	7.09	7.09	1.18	.87	3.45	13.58	5.20	5.15	23.87
36	S2	17.06	11.41	8.86	8.46	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	6.78	30.10
37	S2	20.58	12.99	9.84	10.57	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	7.44	35.43
38	S2	20.13	13.39	14.76	11.48	4.53	13.78	10.63	1.98	1.26	4.06	24.11	8.86	7.40	31.00

Output Shaft

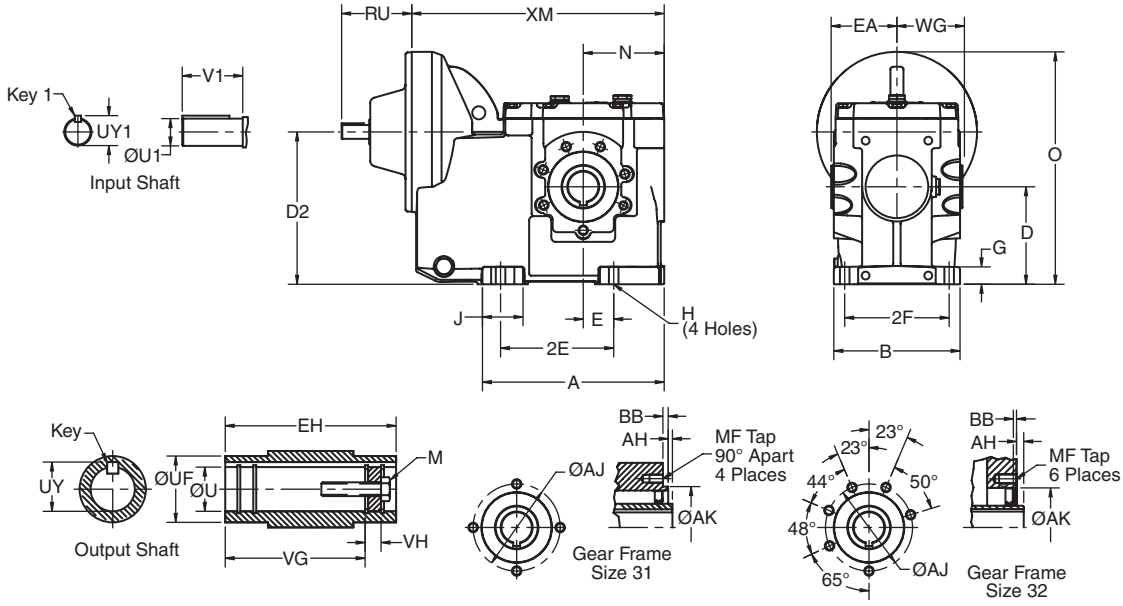
Gear Frame	Version	EA	EH	U[4, 8]	UF	UY	VG	VH	Key[5]	M
32	S2	2.98	5.95	1.375	1.96	1.523	5.20	.55	5/16 x 5/16 x 1 13/16	1/2-13 x 1.00
33	S2	3.47	6.94	1.500	2.16	1.674	5.96	.55	3/8 x 3/8 x 2 1/4	5/8-11 x 1.75
34	S2	4.49	8.97	2.000	2.56	2.210	7.44	.79	1/2 x 7/16 x 2 5/8	5/8-11 x 1.75
35	S2	4.83	9.66	2.375	3.54	2.656	8.15	.94	5/8 x 5/8 x 3 5/8	3/4-10 x 2.00
36	S2	6.22	12.44	2.750	3.93	3.037	10.89	1.23	5/8 x 5/8 x 5 1/2	3/4-10 x 2.00
37	S2	6.80	13.59	3.625	4.72	4.019	11.90	1.23	7/8 x 7/8 x 5 1/2	3/4-10 x 2.00
38	S2	6.81	13.74	4.000	5.50	4.316	11.86	.92	1 X 1 X 6 1/2	1-8 X 2.25

Input Shaft

Gear Frame	Version	RU	U1[6]	FL	FW	UY1	V1	Key1
32	S2	3.60	.500	.86	.46	-	1.00	-
33	S2	3.17	.625	-	-	.705	1.25	3/16 Sq.
34	S2	3.17	.625	-	-	.705	1.25	3/16 Sq.
35	S2	3.17	.625	-	-	.705	1.25	3/16 Sq.
36	S2	3.17	.625	-	-	.714	1.25	3/16 Sq.
37	S2	3.17	.625	-	-	.714	1.25	3/16 Sq.
38	S2	3.17	.625	-	-	.714	1.25	3/16 Sq.

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
[2] All rough casting dimensions may vary by .25" due to casting variations.
[3] Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.
[4] Output finished bore tolerance: +.0020",-.0000 for all diameters.
[5] Output key supplied only on frame 34 in "S2" version.
[6] Input shaft extension tolerances: +.0000"; –.0005" up to 1.5" diameter. Larger diameter "U1", +.000"; –.001".
[7] XM dimension when gear frame 33A is used will be 16.42.
[8] Refer to Tapered Bushed designs if driven shaft varies from "U" dimensions offered above. (Frames 32 - 37 only).
[9] For details of the torque arm kit,refer to pages B-117.

2-Stage Finished Bore Hollow Shaft Face Mount
OtN31 - 32



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	WG	XM
3132	S2	5.88	4.65	3.15	4.98	1.97	3.94	3.94	.56	.35	1.53	8.01	3.15	2.85	10.59
3242	S2	8.22	5.71	4.41	6.89	1.38	5.12	4.72	.79	.43	1.83	10.51	3.66	3.22	12.36

Output Shaft

Gear Frame	Version	EA	EH	U[3,4]	UF	UY	VG	VH	Key[6]	M
3132	S2	2.56	5.12	1.250	1.77	1.372	4.31	.37	1/4 X 1/4 X 1 1/2	7/16-14 X 1.00
3242	S2	2.97	5.94	1.375	1.96	1.523	5.06	.37	5/16 X 5/16 1 13/16	1/2-13 X 1.00

Face Mount

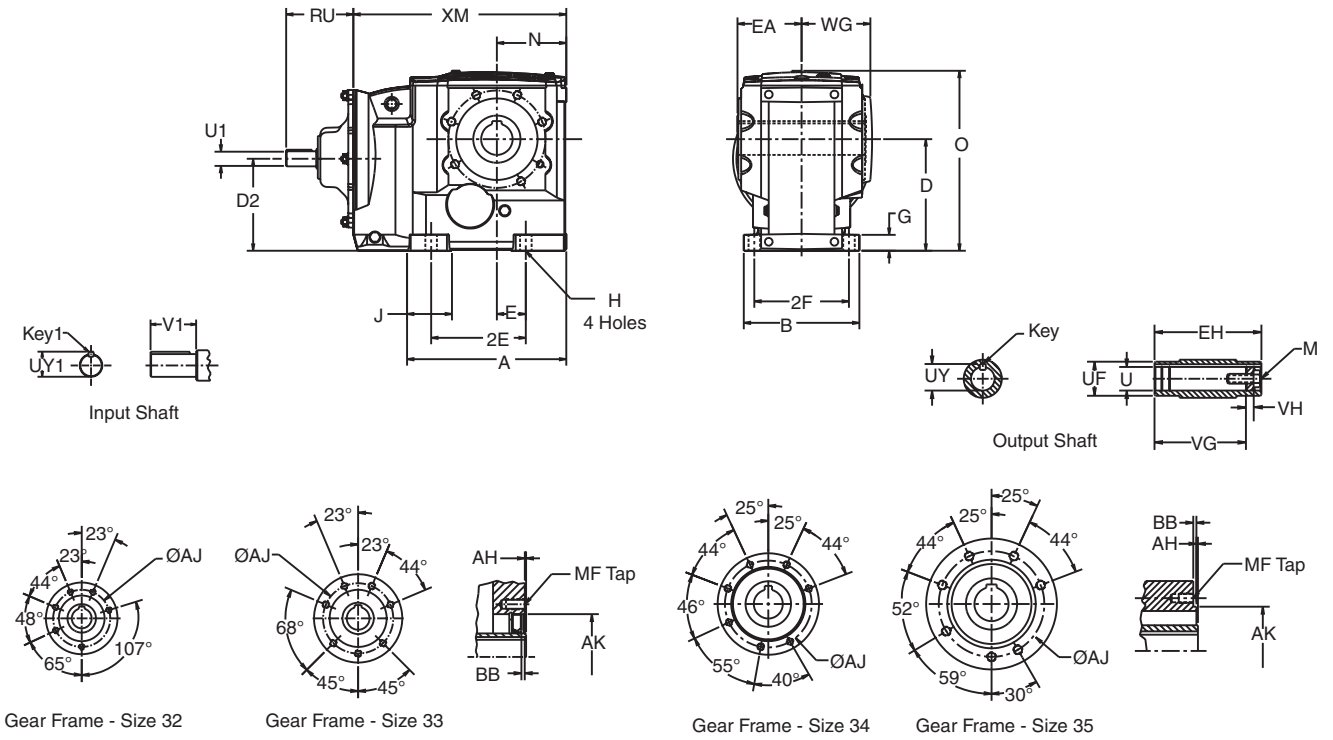
Gear Frame	Version	AH	AJ	AK	BB	MF
31	S2	.20	3.740	3.35	.14	M8-1.25 X12
32	S2	.12	3.94	3.15	.16	M10-1.50 X 22

Input Shaft

Gear Frame	Version	RU	U1[5]	UY1	V1	Key1
31	S2	3.17	.625	.705	1.25	3/16 Sq.
32	S2	3.17	.625	.705	1.25	3/16 Sq.

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
[2] All rough casting dimensions may vary by .25" due to casting variations.
[3] Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.
[4] Output finished bore tolerance: +.0020",-.0000 for all diameters.
[5] Input shaft extension tolerances: +.0000"; –.0005" up to 1.5" diameter. Larger diameter "U1", +.000"; –.001".
[6] Key not supplied with reducer.

3-Stage Finished Bore Hollow Shaft Face Mount
OtN32 - 35



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	WG	XM
32	S2	7.81	5.71	4.41	3.78	1.38	5.12	4.71	.73	.43	2.34	8.09	3.03	3.15	10.04
33	S2	8.50	6.61	5.51	5.24	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	3.63	11.97
34	S2	10.13	7.87	7.09	5.90	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	4.66	13.78
35	S2	11.92	8.66	8.35	6.89	2.17	7.09	7.09	1.18	.87	3.45	13.58	5.20	5.15	15.95

Face Mount

Gear Frame	Version	AH	AJ	AK	BB	MF
32	S2	.12	3.94	3.15	.16	M10-1.50 X 22
33	S2	.12	4.84	3.94	.16	M12-1.75 X 22
34	S2	.14	5.98	5.12	.28	M12-1.75 X 22
35	S2	.13	7.48	6.10	.28	M16-2.00 X 27

Output Shaft

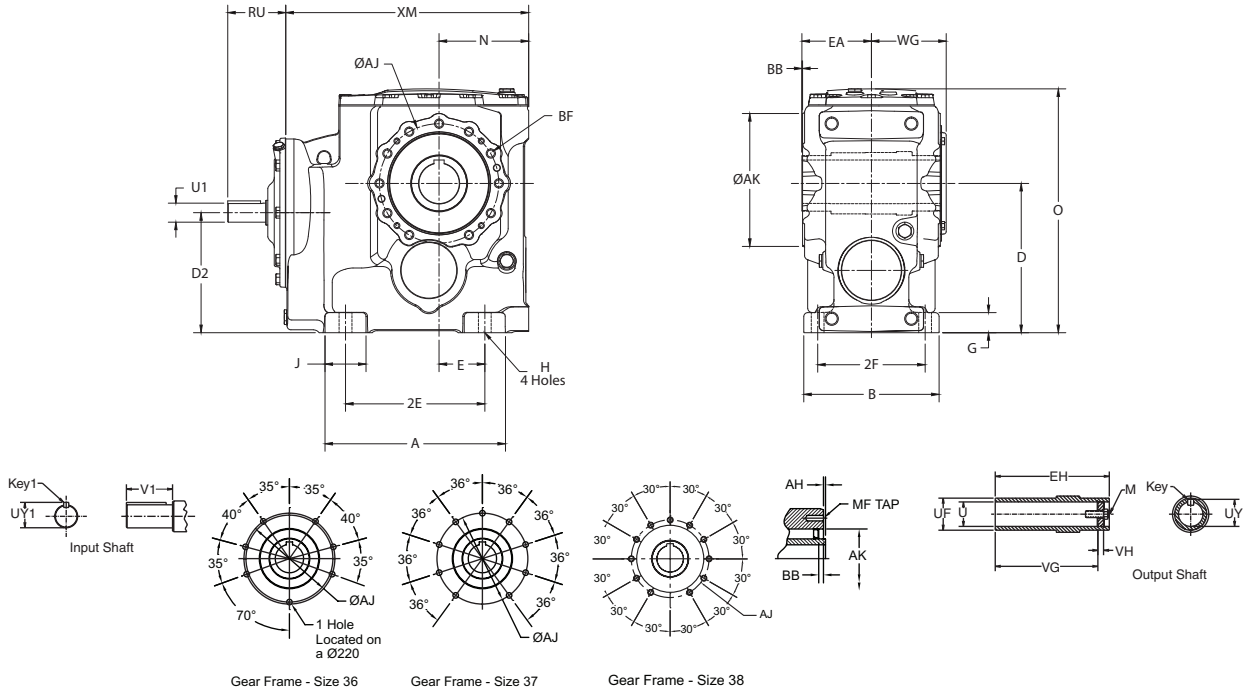
Gear Frame	Version	EA	EH	U[4]	UF	UY	VG	VH	Key[5]	M
32	S2	2.98	5.95	1.375	1.96	1.523	5.20	.55	5/16 X 5/16 X 1 13/16	1/2-13 X 1.00
33	S2	3.47	6.94	1.500	2.16	1.674	5.96	.55	3/8 X 3/8 X 2 1/4	5/8-11 X 1.75
34	S2	4.49	8.97	2.000	2.56	2.210	7.44	.79	1/2 X 7/16 X 2 5/8	5/8-11 X 1.75
35	S2	4.83	9.66	2.375	3.54	2.656	8.15	.94	5/8 X 5/8 X 3 5/8	3/4-10 X 2.00

Input Shaft

Gear Frame	Version	RU	U1[6]	UY1	V1	Key1
32	S2	3.17	.625	.705	1.25	3/16 Sq.
33	S2	3.17	.625	.705	1.25	3/16 Sq.
34	S2	4.75	1.125	1.236	2.25	1/4 Sq.
35	S2	5.03	1.125	1.236	2.25	1/4 Sq.

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
[2] All rough casting dimensions may vary by .25" due to casting variations.
[3] Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.
[4] Output finished bore tolerance: +.0020",-.0000 for all diameters.
[5] Output key supplied only on frame 34 in "S2" version.
[6] Input shaft extension tolerances: +.0000"; –.0005" up to 1.5" diameter. Larger diameter "U1", +.000"; –.001".

3-Stage Finished Bore Hollow Shaft Face Mount
OtN36 - 38



Gear Frame - Size 36 | Gear Frame - Size 37 | Gear Frame - Size 38

Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	WG	XM
36	S2	17.06	11.41	8.86	8.86	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	6.78	23.11
37	S2	20.58	12.99	9.84	10.98	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	7.44	28.44
38	S2	20.13	13.39	14.76	11.87	4.53	13.78	10.63	1.98	1.26	4.06	24.11	8.86	7.40	24.02

Face Mount

Gear Frame	Version	AH	AJ	AK	BB	MF
36	S2	.20	9.06	5.91	.28	M16-2.0 X 27
37	S2	.20	9.06	7.09	.28	M20-2.5 X 35
38	S2	.10	11.81	9.84	.20	M20-2.00 X 35

Output Shaft

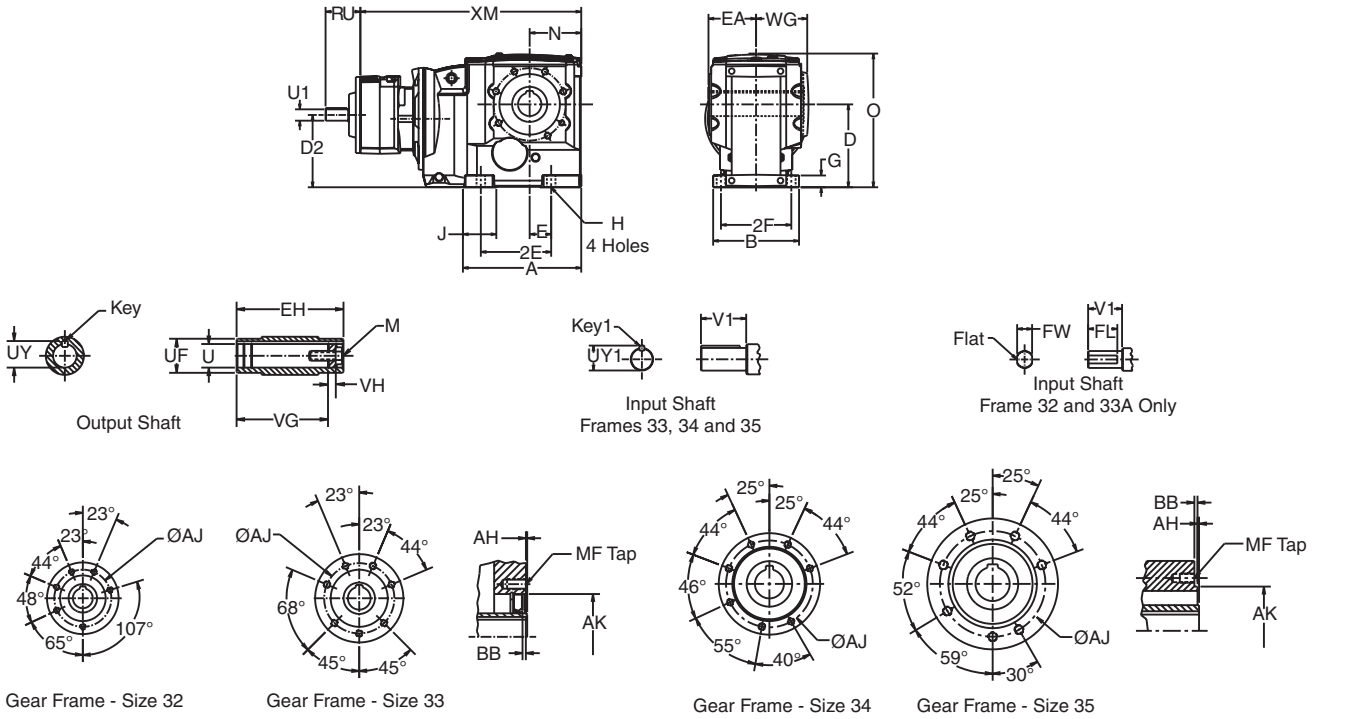
Gear Frame	Version	EA	EH	U[4]	UF	UY	VG	VH	Key[6]	M
36	S2	6.22	12.44	2.750	3.93	3.037	10.89	1.23	5/8 x 5/8 x 5 1/2	3/4-10 x 2.00
37	S2	6.80	13.59	3.625	4.72	4.019	11.90	1.23	7/8 x 7/8 x 5 1/2	3/4-10 x 2.00
38	S2	6.81	13.74	4.000	5.50	4.316	11.86	.92	1 X 1 X 6 1/2	1-8 X 2.25

Input Shaft

Gear Frame	Version	RU	U1[6]	UY1	V1	Key1
36	S2	7.56	1.875	2.101	3.75	1/2 Sq.
37	S2	7.56	1.875	2.101	3.75	1/2 Sq.
38	S2	7.56	1.875	2.101	3.75	1/2 Sq.

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
[2] All rough casting dimensions may vary by .25" due to casting variations.
[3] Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.
[4] Output finished bore tolerance: +.0020",-.0000 for all diameters.
[5] Input shaft extension tolerances: +.0000";–.0005" up to 1.5" diameter. Larger diameter "U1", +.000";–.001".
[6] Key not supplied with reducer.

Combined Finished Bore Hollow Shaft Face Mount
OtN32 - 35



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	WG	XM
32	S2	7.81	5.71	4.41	4.06	1.38	5.12	4.71	.73	.43	2.34	8.09	3.03	3.15	14.49
33	S2	8.50	6.61	5.51	4.91	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	3.63	19.90[7]
34	S2	10.13	7.87	7.09	5.57	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	4.66	21.55
35	S2	11.92	8.66	8.35	6.56	2.17	7.09	7.09	1.18	.87	3.45	13.58	5.20	5.15	23.87

Face Mount

Gear Frame	Version	AH	AJ	AK	BB	MF
32	S2	.12	3.94	3.15	.16	M10-1.50 X 22
33	S2	.12	4.84	3.94	.16	M12-1.75 X 22
34	S2	.14	5.98	5.12	.28	M12-1.75 X 22
35	S2	.13	7.48	6.10	.28	M16-2.00 X 27

Output Shaft

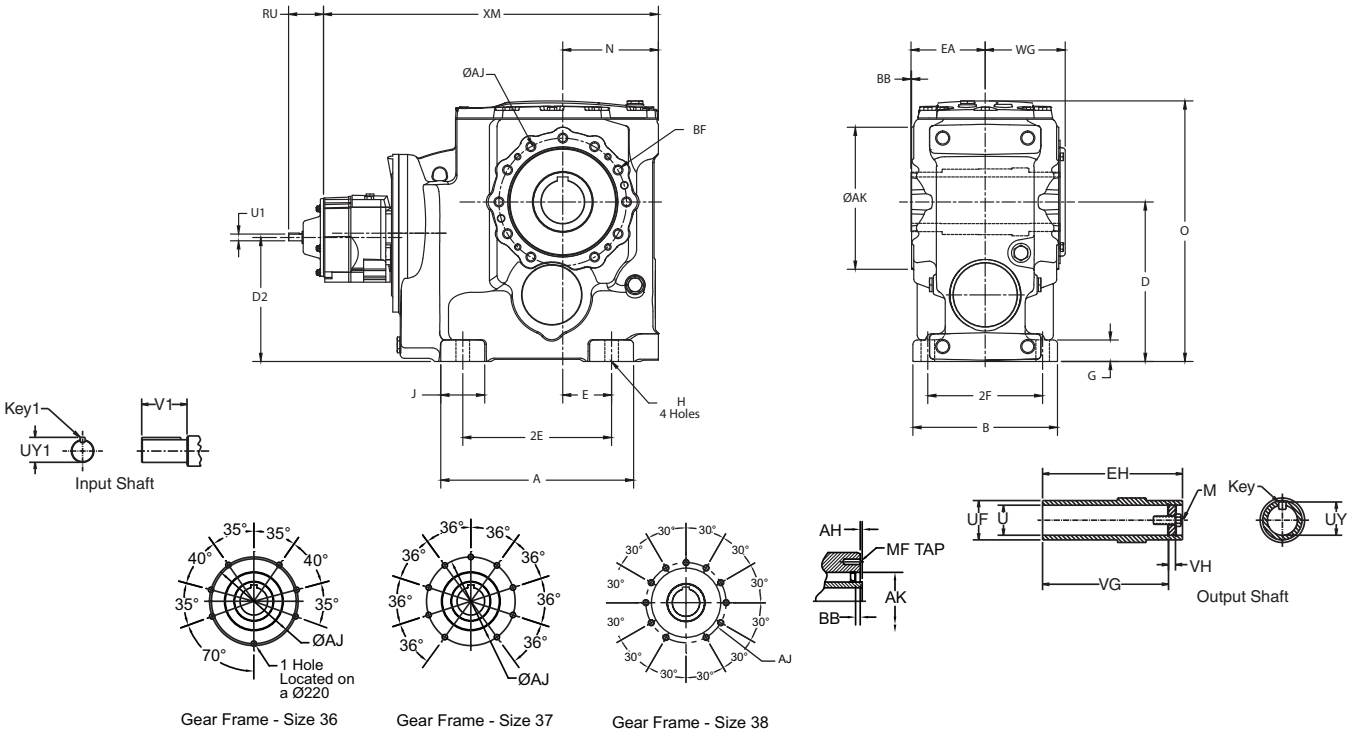
Gear Frame	Version	EA	EH	U[4]	UF	UY	VG	VH	Key[5]	M
32	S2	2.98	5.95	1.375	1.96	1.523	5.20	.55	5/16 X 5/16 X 1 13/16	1/2-13 X 1.00
33	S2	3.47	6.94	1.500	2.16	1.674	5.96	.55	3/8 X 3/8 X 2 1/4	5/8-11 X 1.75
34	S2	4.49	8.97	2.000	2.56	2.210	7.44	.79	1/2 X 7/16 X 2 5/8	5/8-11 X 1.75
35	S2	4.83	9.66	2.375	3.54	2.656	8.15	.94	5/8 X 5/8 X 3 5/8	3/4-10 X 2.00

Input Shaft

Gear Frame	Version	RU	U1[6]	FL	FW	UY1	V1	Key1
32	S2	3.60	.500	.86	.46	-	1.00	-
33	S2	3.17	.625	-	-	.705	1.25	3/16 Sq.
34	S2	3.17	.625	-	-	.705	1.25	3/16 Sq.
35	S2	3.17	.625	-	-	.705	1.25	3/16 Sq.

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
[2] All rough casting dimensions may vary by .25" due to casting variations.
[3] Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.
[4] Output finished bore tolerance: +.0020",-.0000 for all diameters.
[5] Output key supplied only on frame 34 in "S2" version.
[6] Input shaft extension tolerances: +.0000"; –.0005" up to 1.5" diameter. Larger diameter "U1", +.000"; –.001".
[7] XM dimension when gear frame 33A is used will be 16.42.

Combined Finished Bore Hollow Shaft Face Mount
OtN36 - 38



Gear Frame - Size 36 | Gear Frame - Size 37 | Gear Frame - Size 38

Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	WG	XM
36	S2	17.06	11.41	8.86	8.46	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	6.78	30.10
37	S2	20.58	12.99	9.84	10.57	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	7.44	37.49
38	S2	20.13	13.39	14.76	11.48	4.53	13.78	10.63	1.98	1.26	4.06	24.11	8.86	7.40	31.00

Face Mount

Gear Frame	Version	AJ	AK	BB	MF
36	S2	9.06	5.91	.28	M16-2.00 X 27
37	S2	9.06	7.09	.28	M20-2.50 X 35
38	S2	11.81	9.84	.20	M20-2.00 X 35

Output Shaft

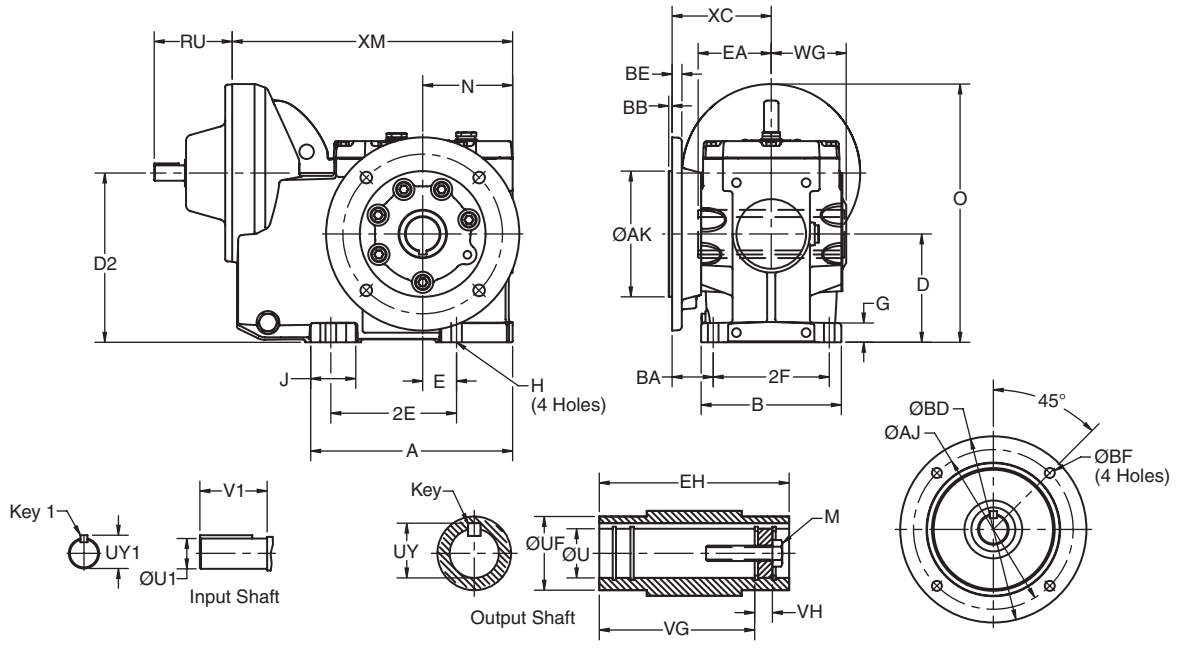
Gear Frame	Version	EA	EH	U[4]	UF	UY	VG	VH	Key[5]	M
36	S2	6.22	12.44	2.750	3.93	3.037	10.89	1.23	5/8 x 5/8 x 5 1/2	3/4-10 x 2.00
37	S2	6.80	13.59	3.625	4.72	4.019	11.90	1.23	7/8 x 7/8 x 5 1/2	3/4-10 x 2.00
38	S2	6.81	13.74	4.000	5.50	4.316	11.86	.92	1 X 1 X 6 1/2	1-8 X 2.25

Input Shaft

Gear Frame	Version	RU	U1[5]	UY1	V1	Key1
36	S2	3.17	.625	.714	1.25	3/16 Sq.
37	S2	3.17	.625	.714	1.25	3/16 Sq.
38	S2	3.17	.625	.714	1.25	3/16 Sq.

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
[2] All rough casting dimensions may vary by .25" due to casting variations.
[3] Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.
[4] Output finished bore tolerance: +.0020",-.0000 for all diameters.
[5] Input shaft extension tolerances: +.0000";–.0005" up to 1.5" diameter. Larger diameter "U1", +.000";–.001".
[6] Key not supplied with reducer.

2-Stage Finished Bore Hollow Shaft Flange Mount
OtN31 - 32



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	BA	WG	XC	XM
3132	S2	5.88	4.65	3.15	4.98	1.97	3.94	3.94	.56	.35	1.53	8.01	3.15	1.54	2.85	3.50	10.59
3242	S2	8.22	5.71	4.41	6.89	1.38	5.12	4.72	.79	.43	1.83	10.51	3.66	1.67	3.22	4.04	12.36

Output Shaft

Gear Frame	Version	EA	EH	U[3,4]	UF	UY	VG	VH	Key[6]	M
3132	S2	2.56	5.12	1.250	1.77	1.372	4.31	.37	1/4 X 1/4 X 1 1/2	7/16-14 X 1.00
3242	S2	2.97	5.94	1.375	1.96	1.523	5.06	.37	5/16 X 5/16 1 13/16	1/2-13 X 1.00

Output Flange

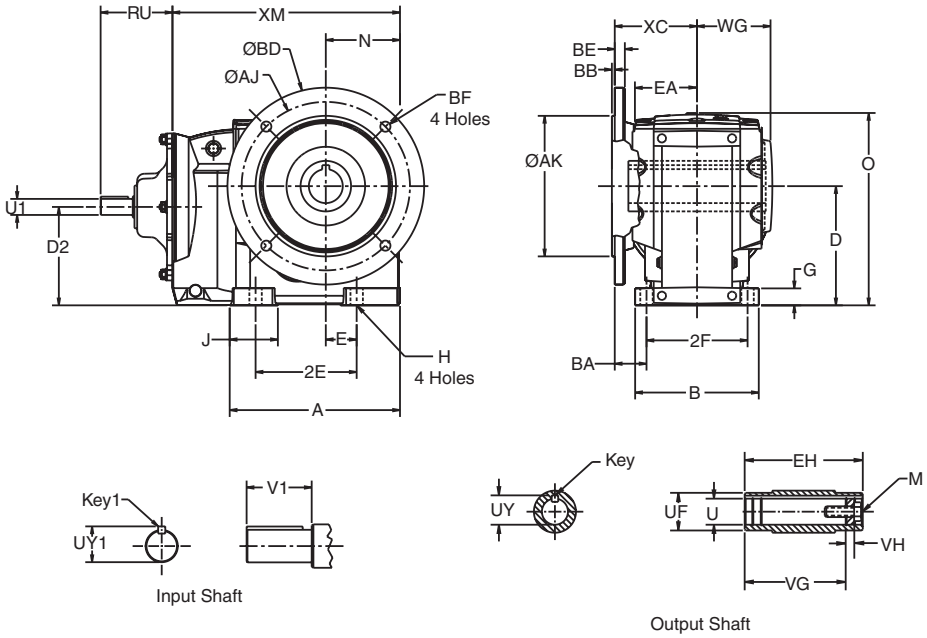
Gear Frame	Flange Code	AK	AJ	BB	BD	BE	BF
3132	5	4.331	5.12	.14	6.50	.39	.35
	6	3.740	4.53	.14	5.51	.44	.35
3242	5	5.118	6.50	.14	7.87	.39	.47
	6	7.087	8.46	.16	9.84	.47	.55

Input Shaft

Gear Frame	Version	RU	U1[5]	UY1	V1	Key1
31	S2	3.17	.625	.705	1.25	3/16 Sq.
32	S2	3.17	.625	.705	1.25	3/16 Sq.

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
[2] All rough casting dimensions may vary by .25" due to casting variations.
[3] Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.
[4] Output finished bore tolerance: +.0020",-.0000 for all diameters.
[5] Input shaft extension tolerances: +.0000"; –.0005" up to 1.5" diameter. Larger diameter "U1", +.000"; –.001".
[6] Key not supplied with reducer.

3-Stage Finished Bore Hollow Shaft Flange Mount
OtN32 - 35



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	BA	WG	XC	XM
32	S2	7.81	5.71	4.41	3.78	1.38	5.12	4.71	.73	.43	2.34	8.09	3.03	1.81	3.22	4.04	10.04
33	S2	8.50	6.61	5.51	5.24	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	2.08	3.73	4.84	11.97
34	S2	10.13	7.87	7.09	5.90	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	1.93	4.66	5.18	13.78
35	S2	11.92	8.66	8.35	6.89	2.17	7.09	7.09	1.18	.87	3.45	13.58	5.20	2.22	5.15	5.77	15.95

Output Shaft

Gear Frame	Version	EA	EH	U[4]	UF	UY	VG	VH	Key[5]	M
32	S2	2.98	5.95	1.375	1.96	1.523	5.20	.55	5/16 X 5/16 X 1 13/16	1/2-13 X 1.00
33	S2	3.47	6.94	1.500	2.16	1.674	5.96	.55	3/8 X 3/8 X 2 1/4	5/8-11 X 1.75
34	S2	4.49	8.97	2.000	2.56	2.210	7.44	.79	1/2 X 7/16 X 2 5/8	5/8-11 X 1.75
35	S2	4.83	9.66	2.375	3.54	2.656	8.15	.94	5/8 X 5/8 X 3 5/8	3/4-10 X 2.00

Output Flange

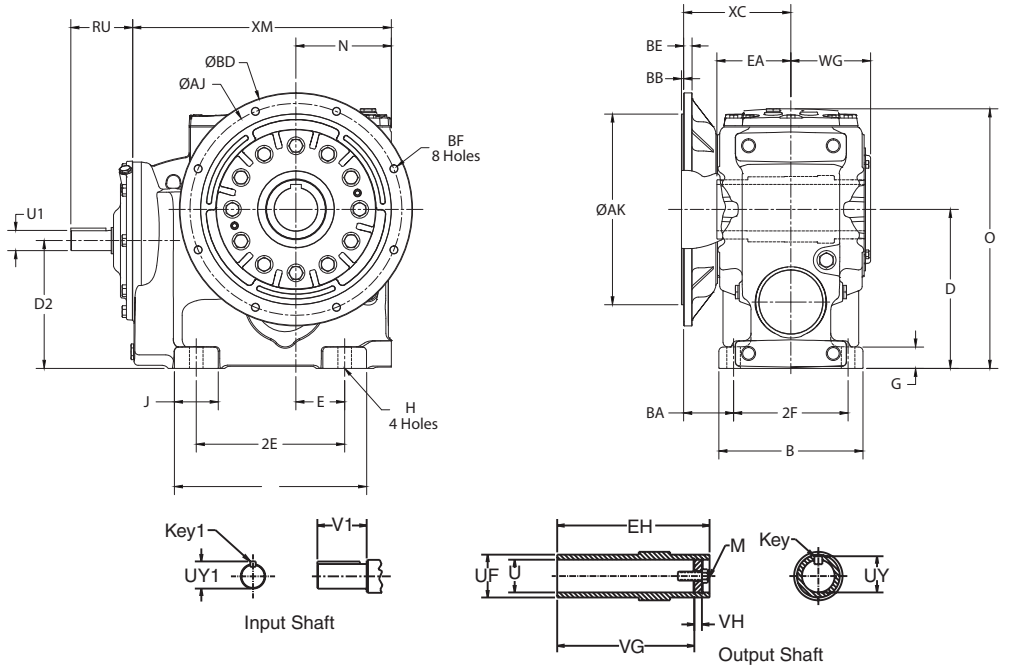
Gear Frame	Flange Code	AK	AJ	BB	BD	BE	BF
32	5	5.118	6.50	.14	7.87	.39	.47
	6	7.087	8.46	.16	9.84	.47	.55
33	5	7.087	8.46	.16	9.84	.47	.55
	6	9.055	10.43	.16	11.81	.47	.55
34	5	9.055	10.43	.16	11.81	.59	.55
	6	9.842	11.80	.16	13.77	.59	.71
35	5	9.842	11.80	.20	13.77	.71	.71
	6	11.810	13.77	.20	15.75	.71	.71

Input Shaft

Gear Frame	Version	RU	U1[6]	UY1	V1	Key1
32	S2	3.17	.625	.705	1.25	3/16 Sq.
33	S2	3.17	.625	.705	1.25	3/16 Sq.
34	S2	4.75	1.125	1.236	2.25	1/4 Sq.
35	S2	5.03	1.125	1.236	2.25	1/4 Sq.

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
[2] All rough casting dimensions may vary by .25" due to casting variations.
[3] Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.
[4] Output finished bore tolerance: +.0020",-.0000 for all diameters.
[5] Output key supplied only on frame 34 in "S2" version.
[6] Input shaft extension tolerances: +.0000"; –.0005" up to 1.5" diameter. Larger diameter "U1", +.000"; –.001".

3-Stage Finished Bore Hollow Shaft Flange Mount
OtN36 - 38



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	BA	WG	XC	XM
36	S2	17.06	11.41	8.86	8.86	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	4.45	6.78	9.17	23.11
37	S2	20.58	12.99	9.84	10.98	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	4.45	7.44	9.76	28.44
38	S2	20.13	13.39	14.76	11.87	4.53	13.78	10.63	1.98	1.26	4.06	24.11	8.86	4.65	7.40	9.96	24.02

Output Shaft

Gear Frame	Version	EA	EH	U[5]	UF	UY	VG	VH	Key[4]	M
36	S2	6.22	12.44	2.750	3.93	3.037	10.89	1.23	5/8 x 5/8 x 5 1/2	3/4-10 x 2.00
37	S2	6.80	13.59	3.625	4.72	4.019	11.90	1.23	7/8 x 7/8 x 5 1/2	3/4-10 x 2.00
38	S2	6.81	13.74	4.000	5.50	4.316	11.86	.92	1 x 1 x 6 1/2	1-8 x 2.25

Output Flange

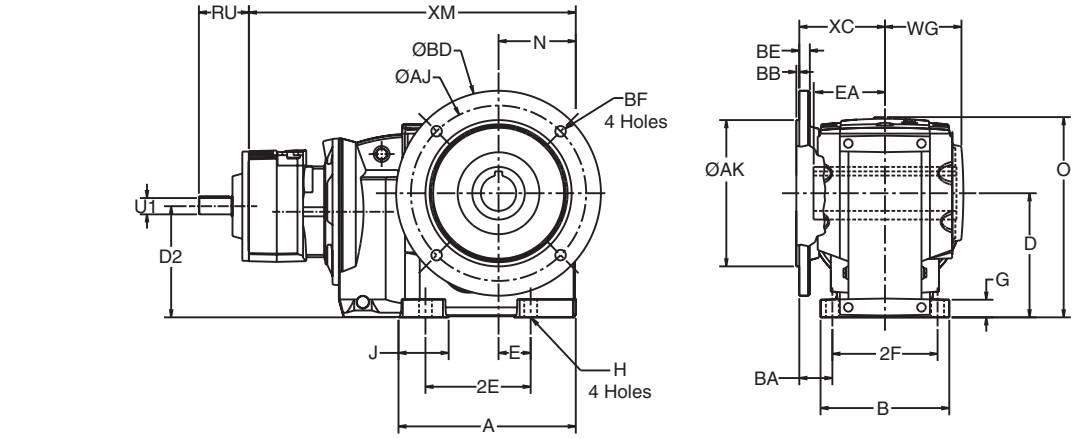
Gear Frame	Flange Code	AJ	AK	BB	BD	BE	BF
36 & 37	5	13.78	15.75	.236	17.70	.79	.71
	6	17.72	19.68	.236	21.65	.63	.87
38	5	17.72	19.69	.200	21.65	.79	.69
	6	21.65	23.62	.236	25.98	.63	.87

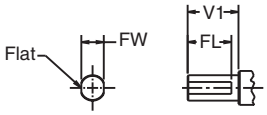
Input Shaft

Gear Frame	Version	RU	U1[6]	UY1	V1	Key1
36	S2	7.56	1.875	2.101	3.75	1/2 Sq.
37	S2	7.56	1.875	2.101	3.75	1/2 Sq.
38	S2	7.56	1.875	2.101	3.75	1/2 Sq.

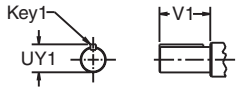
[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
[2] All rough casting dimensions may vary by .25" due to casting variations.
[3] Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.
[4] Output key supplied only on frame 34 in "S2" version.
[5] Output finished bore tolerance: +.0020",-.0000 for all diameters.
[6] Input shaft extension tolerances: +.0000"; –.0005" up to 1.5" diameter. Larger diameter "U1", +.000"; –.001".

Combined Finished Bore Hollow Shaft Flange Mount
OtN32 - 35

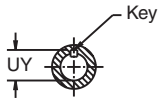


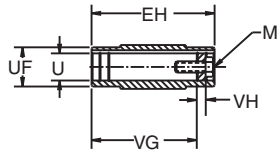


Input Shaft
Frame 32 and 33A Only



Input Shaft
Frames 33, 34 and 35





Output Shaft

Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	BA	WG	XC	XM
32	S2	7.81	5.71	4.41	4.06	1.38	5.12	4.71	.73	.43	2.34	8.09	3.03	1.81	3.22	4.04	14.49
33	S2	8.50	6.61	5.51	4.91	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	2.08	3.73	4.84	19.90[7]
34	S2	10.13	7.87	7.09	5.57	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	1.93	4.66	5.18	21.55
35	S2	11.92	8.66	8.35	6.56	2.17	7.09	7.09	1.18	.87	3.45	13.58	5.20	2.22	5.15	5.77	23.87

Output Shaft

Gear Frame	Version	EA	EH	U[5]	UF	UY	VG	VH	Key[4]	M
32	S2	2.98	5.95	1.375	1.96	1.523	5.20	.55	5/16 X 5/16 X 1 13/16	1/2-13 X 1.00
33	S2	3.47	6.94	1.500	2.16	1.674	5.96	.55	3/8 X 3/8 X 2 1/4	5/8-11 X 1.75
34	S2	4.49	8.97	2.000	2.56	2.210	7.44	.79	1/2 X 7/16 X 2 5/8	5/8-11 X 1.75
35	S2	4.83	9.66	2.375	3.54	2.656	8.15	.94	5/8 X 5/8 X 3 5/8	3/4-10 X 2.00

Output Flange

Gear Frame	Flange Code	AK	AJ	BB	BD	BE	BF
32	5	5.118	6.50	.14	7.87	.39	.47
	6	7.087	8.46	.16	9.84	.47	.55
33	5	7.087	8.46	.16	9.84	.47	.55
	6	9.055	10.43	.16	11.81	.47	.55
34	5	9.055	10.43	.16	11.81	.59	.55
	6	9.842	11.80	.16	13.77	.59	.71
35	5	9.842	11.80	.20	13.77	.71	.71
	6	11.810	13.77	.20	15.75	.71	.71

Input Shaft

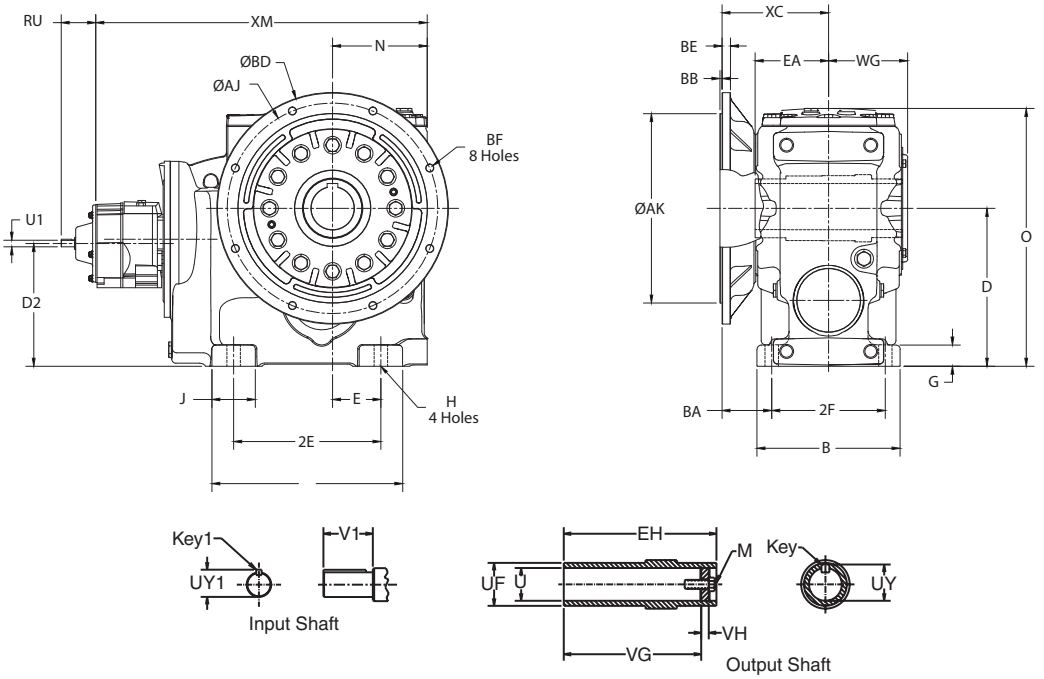
Gear Frame	Version	RU	U1[6]	FL	FW	UY1	V1	Key1
32	S2	3.60	.500	.86	.46	-	1.00	-
33	S2	3.17	.625	-	-	.705	1.25	3/16 Sq.
34	S2	3.17	.625	-	-	.705	1.25	3/16 Sq.
35	S2	3.17	.625	-	-	.705	1.25	3/16 Sq.

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
[2] All rough casting dimensions may vary by .25" due to casting variations.
[3] Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.
[4] Output key supplied only on frame 34 in "S2" version.
[5] Output finished bore tolerance: +.0020",-.0000 for all diameters.
[6] Input shaft extension tolerances: +.0000"; –.0005" up to 1.5" diameter. Larger diameter "U1", +.000"; –.001".
[7] XM dimension when gear frame 33A is used will be 16.42.

Input Shaft Reducer

Combined Finished Bore Hollow Shaft Flange Mount

OtN36 - 38



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	BA	WG	XC	XM
36	S2	17.06	11.41	8.86	8.46	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	4.45	6.78	9.17	30.10
37	S2	20.58	12.99	9.84	10.57	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	4.45	7.44	9.76	35.43
38	S2	20.13	13.39	14.76	11.48	4.53	13.78	10.63	1.98	1.26	4.06	24.11	8.86	4.65	7.40	9.96	31.00

Output Shaft

Gear Frame	Version	EA	EH	U[5]	UF	UY	VG	VH	Key[4]	M
36	S2	6.22	12.44	2.750	3.93	3.037	10.89	1.23	5/8 x 5/8 x 5 1/2	3/4-10 x 2.00
37	S2	6.80	13.59	3.625	4.72	4.019	11.90	1.23	7/8 x 7/8 x 5 1/2	3/4-10 x 2.00
38	S2	6.81	13.74	4.000	5.50	4.316	11.86	.92	1 x 1 x 6 1/2	1-8 x 2.25

Output Flange

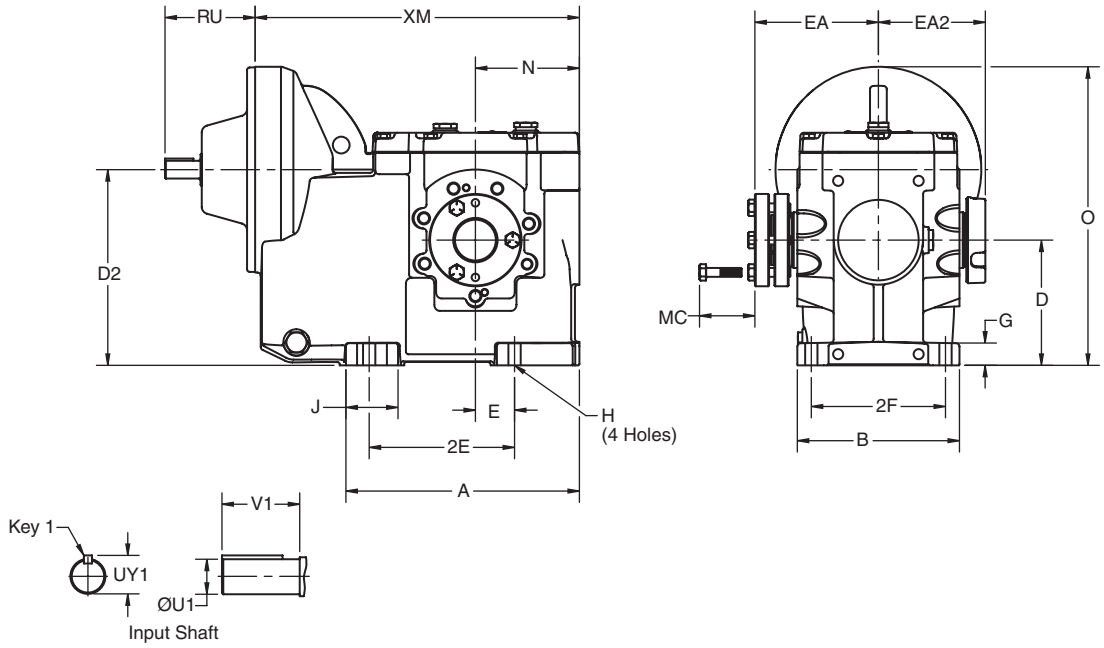
Gear Frame	Flange Code	AJ	AK	BB	BD	BE	BF
36 & 37	5	13.78	15.75	.236	17.70	.79	.71
	6	17.72	19.68	.236	21.65	.63	.87
38	5	17.72	19.69	.200	21.65	.79	.69
	6	21.65	23.62	.236	25.98	.63	.87

Input Shaft

Gear Frame	Version	RU	U1[6]	UY1	V1	Key1
36	S2	3.17	.625	.714	1.25	3/16 Sq.
37	S2	3.17	.625	.714	1.25	3/16 Sq.
38	S2	3.17	.625	.714	1.25	3/16 Sq.

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
[2] All rough casting dimensions may vary by .25" due to casting variations.
[3] Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.
[4] Output key supplied only on frame 34 in "S2" version.
[5] Output finished bore tolerance: +.0020",-.0000 for all diameters.
[6] Input shaft extension tolerances: +.0000";–.0005" up to 1.5" diameter. Larger diameter "U1", +.000"; –.001".

2-Stage Bushed Shaft Mount
OtN31 - 32



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	XM
3132	S2	5.88	4.65	3.15	4.98	1.97	3.94	3.94	.56	.35	1.53	8.01	3.15	10.59
3242	S2	8.22	5.71	4.41	6.89	1.38	5.12	4.72	.79	.43	1.83	10.51	3.66	12.36

Output Shaft

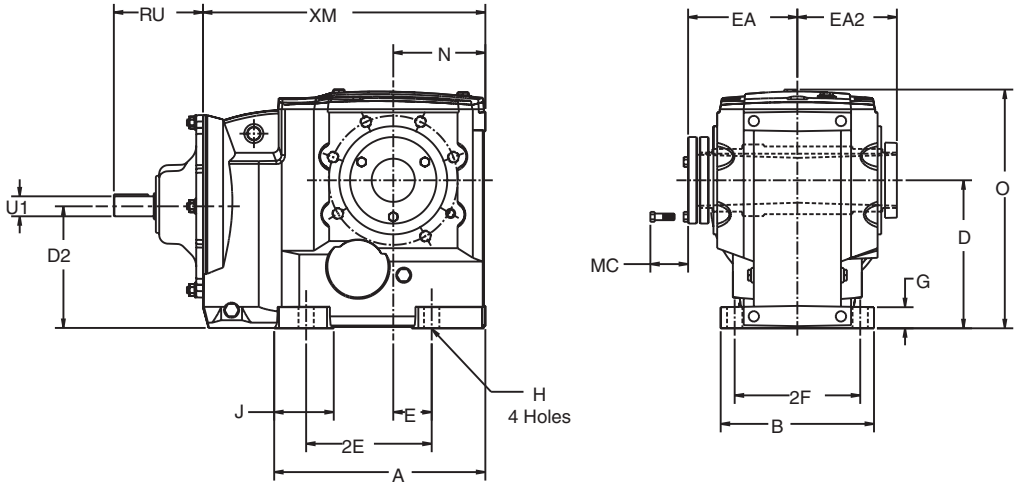
Gear Frame	Version	EA	EA2	MC[5]	Bushing Bores[4]	
					Min.	Max.
3132	S2	4.25	3.80	1.50	1	1 5/16
3242	S2	4.85	4.27	1.75	3/4	1 7/16

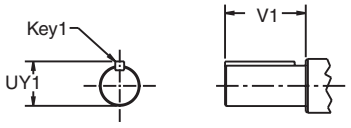
Input Shaft

Gear Frame	Version	RU	U1[3]	UY1	V1	Key1
31	S2	3.17	.625	.705	1.25	3/16 Sq.
32	S2	3.17	.625	.705	1.25	3/16 Sq.

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
[2] All rough casting dimensions may vary by .25" due to casting variations.
[3] Input shaft extension tolerances: +.0000"; –.0005" up to 1.5" diameter. Larger diameter "U1", +.000"; –.001".
[4] Refer to page B-118 by gear frame for listing of all inch and metric bushing bore sizes available.
[5] The MC dimension shows spacing required to install or remove the bushing from the reducer.
[6] Bushing and dust cap can be installed opposite of how they are shown above.
[7] Driven shaft entry can be from either side of the gear reducer housing. Refer to installation manual for requirements.
[8] For details of the torque arm kit,refer to page B-117.

3-Stage Taper Bushed Shaft Mount
OtN32 - 38





Input Shaft

Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	XM
32	S2	7.81	5.71	4.41	3.78	1.38	5.12	4.71	.73	.43	2.34	8.09	3.03	10.04
33A	S2	8.50	6.61	5.51	4.91	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	19.99
34	S2	10.13	7.87	7.09	5.90	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	13.78
35	S2	11.92	8.66	8.35	6.89	2.17	7.09	7.09	1.18	.87	3.45	13.58	5.20	15.95
36	S2	17.06	11.41	8.86	8.86	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	23.11
37	S2	20.58	12.99	9.84	10.98	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	28.44
38	S2	20.13	13.39	14.76	11.87	4.53	13.78	10.63	1.98	1.26	4.06	24.11	8.86	24.02

Output Shaft

Gear Frame	Version	EA	EA2	MC[5]	Bushing Bores[4]	
					Min.	Max.
32	S2	4.85	4.27	1.75	3/4	1 7/16
33A	S2	5.76	5.18	1.88	1 7/16	1 15/16
34	S2	5.84	5.27	1.88	15/16	1 15/16
35	S2	6.17	5.620	1.88	1 3/8	2 7/16
36	S2	6.81	7.83	1.88	2 7/16	2 15/16
37	S2	9.50	8.86	2.25	2 7/8	3 7/16
38	S2	8.66	8.08	2.75	2 15/16	3 15/16

Input Shaft

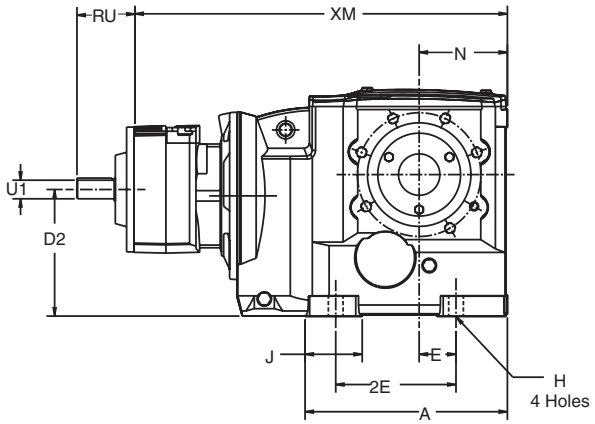
Gear Frame	Version	RU	U1[3]	UY1	V1	Key1
32, 33A	S2	3.17	.625	.705	1.25	3/16 Sq.
34	S2	4.75	1.125	1.236	2.25	1/4 Sq.
35	S2	5.03	1.125	1.236	2.25	1/4 Sq.
36	S2	7.56	1.875	2.101	3.75	1/2 Sq.
37	S2	7.56	1.875	2.101	3.75	1/2 Sq.
38	S2	7.56	1.875	2.101	3.75	1/2 Sq.

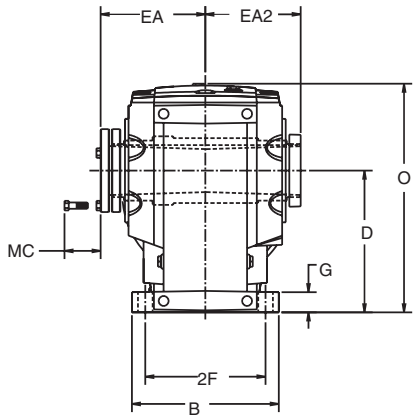
[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
[2] All rough casting dimensions may vary by .25" due to casting variations.
[3] Input shaft extension tolerances: +.0000"; –.0005" up to 1.5" diameter. Larger diameter "U1", +.000"; –.001".
[4] Refer to page B-118 by gear frame for listing of all inch and metric bushing bore sizes available.
[5] The MC dimension shows spacing required to install or remove the bushing from the reducer.
[6] Bushing and dust cap can be installed opposite of how they are shown above.
[7] Driven shaft entry can be from either side of the gear reducer housing. Refer to installation manual for requirements.
[8] For details of the torque arm kit,refer to page B-117.

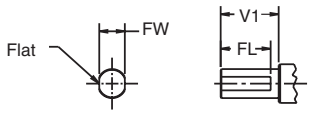
Input Shaft Reducer

Combined Taper Bushed Shaft Mount

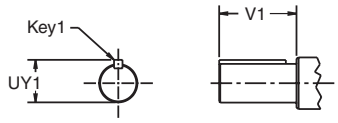
OtN32 - 38







Input Shaft
Frame 32 and 33A Only



Input Shaft
Frames 33 and 34-38

Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	XM
32	S2	7.81	5.71	4.41	4.06	1.38	5.12	4.71	.73	.43	2.34	8.09	3.03	14.49
33A	S2	8.50	6.61	5.51	4.91	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	19.99
34	S2	10.13	7.87	7.09	5.57	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	21.55
35	S2	11.92	8.66	8.35	6.56	2.17	7.09	7.09	1.18	.87	3.45	13.58	5.20	23.87
36	S2	17.06	11.41	8.86	8.46	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	30.10
37	S2	20.58	12.99	9.84	10.57	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	35.43
38	S2	20.13	13.39	14.76	11.48	4.53	13.78	10.63	1.98	1.26	4.06	24.11	8.86	31.00

Output Shaft

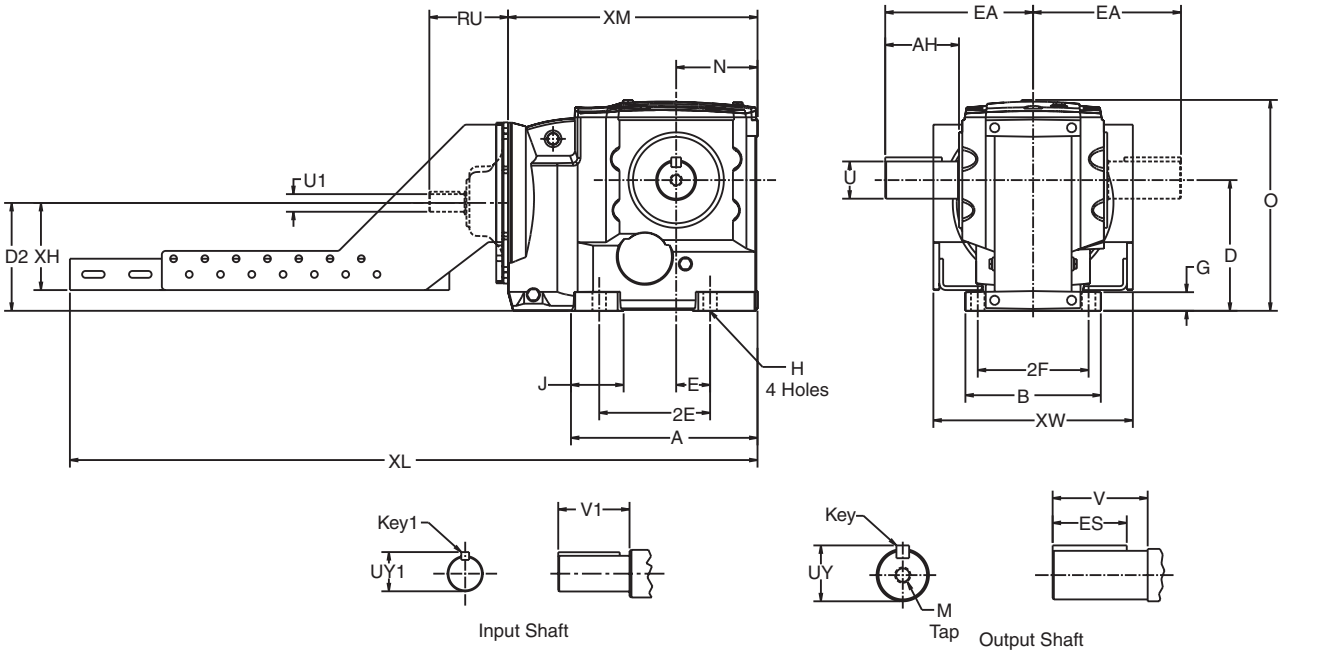
Gear Frame	Version	EA	EA2	MC[5]	Bushing Bores[4]	
					Min.	Max.
32	S2	4.85	4.27	1.75	1 5/16	1 7/16
33A	S2	5.76	5.18	1.88	1 7/16	1 15/16
34	S2	5.84	5.27	1.88	15/16	1 15/16
35	S2	6.17	5.620	1.88	1 3/8	2 7/16
36	S2	6.81	7.83	1.88	2 7/16	2 15/16
37	S2	9.50	8.86	2.25	2 7/8	3 7/16
38	S2	8.66	8.08	2.75	2 15/16	3 15/16

Input Shaft

Gear Frame	Version	RU	U1[3]	FL	FW	UY1	V1	Key1
32	S2	3.60	.500	.86	.46	-	1.00	-
33A	S2	3.17	.625	-	-	.705	1.25	3/16 Sq.
34	S2	3.17	.625	-	-	.705	1.25	3/16 Sq.
35	S2	3.17	.625	-	-	.705	1.25	3/16 Sq.
36	S2	3.17	.625	-	-	.714	1.25	3/16 Sq.
37	S2	3.17	.625	-	-	.714	1.25	3/16 Sq.
38	S2	3.17	.625	-	-	.714	1.25	3/16 Sq.

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
[2] All rough casting dimensions may vary by .25" due to casting variations.
[3] Input shaft extension tolerances: +.0000"; –.0005" up to 1.5" diameter. Larger diameter "U1", +.000"; –.001".
[4] Refer to page B-118 by gear frame for listing of all inch and metric bushing bore sizes available.
[5] The MC dimension shows spacing required to install or remove the bushing from the reducer.
[6] Bushing and dust cap can be installed opposite of how they are shown above.
[7] Driven shaft entry can be from either side of the gear reducer housing. Refer to installation manual for requirements.
[8] For details of the torque arm kit,refer to page B-117.
[9] XM dimension when gear frame 33A is used will be 16.42.

3-Stage Output Shafted Foot Mount
OtN33 - 35



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	XM
33	S2	8.50	6.61	5.51	5.24	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	11.97
	S1	8.08	8.58	4.92	5.20	3.35	6.69	6.10	.79	.55	2.27	10.43	3.54	11.97
34	S2	10.13	7.87	7.09	5.90	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	13.78
	S1	10.69	9.60	6.30	7.49	4.53	9.06	7.68	1.18	.71	3.19	13.39	4.49	13.78
35	S2	11.92	8.66	8.35	6.89	2.17	7.09	7.09	1.18	.87	3.37	13.58	5.20	15.95
	S1	13.07	10.98	7.87	9.33	5.51	11.02	9.06	1.40	.87	4.05	16.22	5.20	15.95

Output Shaft

Gear Frame	Version	U[3]	UY	V	AH	EA	Key	ES	M
33	S2	1.625	1.783	3.25	3.39	6.73	3/8 Sq.	2.78	5/8-11 X 1.38
	S1	1.500	1.657	3.18	3.19	7.12	3/8 Sq.	2.78	5/8-11 X 1.38
34	S2	2.000	2.210	3.63	3.76	8.11	1/2 Sq.	3.06	3/4-10 X 1.61
	S1	1.750	1.909	3.56	3.66	8.46	3/8 Sq.	3.56	3/4-10 X 1.61
35	S2	2.375	2.638	4.61	4.74	9.45	5/8 Sq.	3.81	3/4-10 X 1.61
	S1	2.375	2.638	5.73	5.27	10.57	5/8 Sq.	4.81	3/4-10 X 1.61

Input Shaft

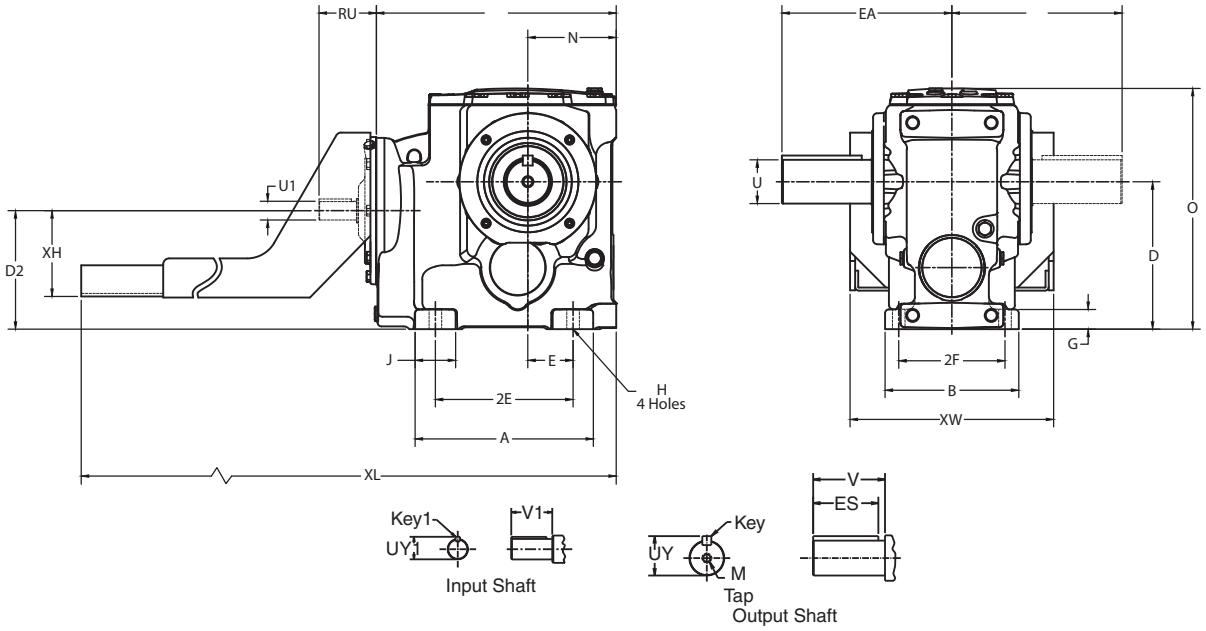
Gear Frame	Version	RU	U1[4]	UY1	V1	Key1
33	S1,S2	3.17	.625	.71	1.25	3/16 Sq.
34	S1,S2	4.75	1.125	1.236	2.25	1/4 Sq.
35	S1,S2	5.03	1.125	1.236	2.25	1/4 Sq.

Motor Frame

Gear Frame	143T-145T			182T-184T			213T-215T		
	XH	XL	XW	XH	XL	XW	XH	XL	XW
33	3.75	30.25	11.38	-	-	-	-	-	-
34	4.74	39.25	12.38	4.74	39.25	12.38	-	-	-
35	5.50	42.61	12.75	5.50	41.61	12.75	5.50	42.01	12.75

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
[2] All rough casting dimensions may vary by .25" due to casting variations.
[3] Output shaft extension tolerances: +.0000"; –.0005" for shafts up to 1.5" diameter "U". Larger diameter "U", +.000"; –.001".
[4] Input shaft extension tolerances: +.0000"; –.0005" up to 1.5" diameter. Larger diameter "U1", +.000"; –.001".

3-Stage Output Shafted Foot Mount
OtN36 - 38



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	XM
36	S1	17.06	11.41	8.86	8.86	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	23.12
37	S1	20.58	12.99	9.84	10.98	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	28.44
38	S2	20.13	13.39	14.76	11.87	4.53	13.78	10.63	1.98	1.26	4.06	24.11	8.86	24.02

Output Shaft

Gear Frame	Version	U[3]	UY	V	AH	EA	KEY	ES	M
36	S1	2.875	3.20	5.75	5.92	11.94	3/4 Sq.	5.00	3/4-10 x 1.61
37	S1	3.625	4.01	6.86	7.04	13.66	7/8 Sq.	6.00	1-8 x 2.13
38	S2	4.375	4.809	8.99	9.97	17.03	1.00 Sq.	7.00	1-8 x 2.25

Input Shaft

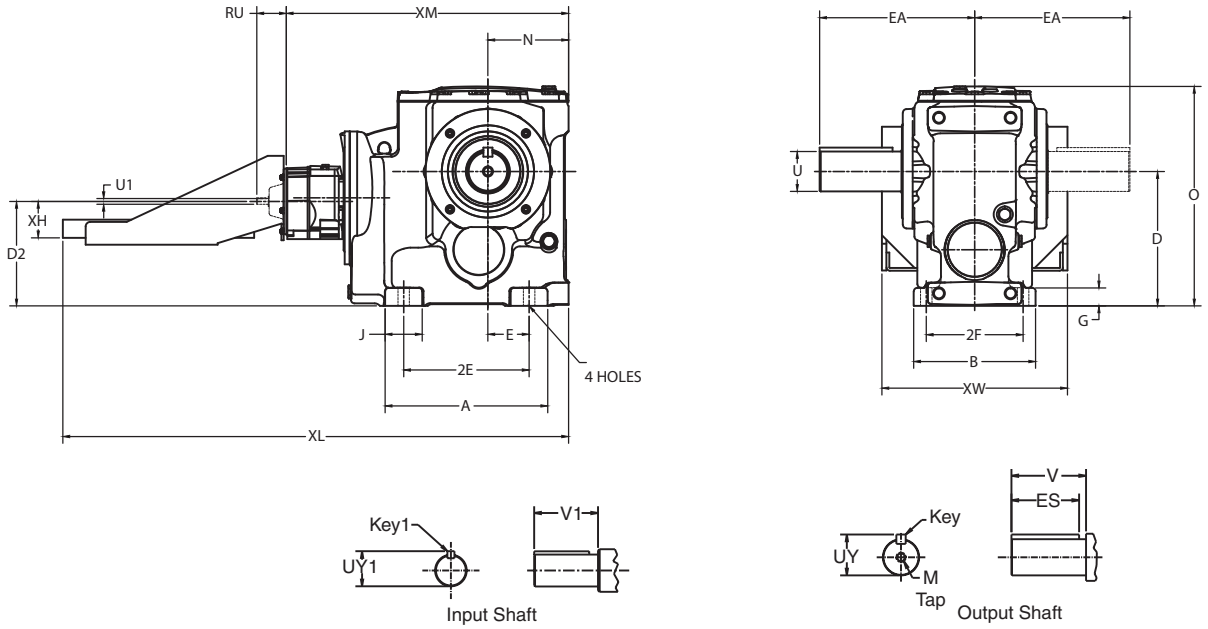
Gear Frame	Version	RU	U1[4]	UY1	V1	Key1
36	S1	7.56	1.875	2.101	3.75	1/2 Sq.
37	S1	7.56	1.875	2.101	3.75	1/2 Sq.
38	S2	7.56	1.875	2.101	3.75	1/2 Sq.

Motor Frame

Gear Frame	182-184T			213-215T			254-256T			284T-286T			324T-326T		
	XH	XL	XW	XH	XL	XW	XH	XL	XW	XH	XL	XW	XH	XL	XW
36	6.63	55.06	15.00	6.63	55.06	15.00	6.63	55.06	15.00	8.50	59.06	19.06	8.50	59.06	19.06
37	6.63	60.4	15.00	6.63	60.4	15.00	6.63	60.4	15.00	8.50	64.4	19.06	8.50	64.4	19.06
38	-	-	-	-	-	-	8.50	59.93	19.06	8.50	58.93	19.06	9.50	60.93	21.31

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
[2] All rough casting dimensions may vary by .25" due to casting variations.
[3] Output shaft extension tolerances: +.0000"; –.0005" for shafts up to 1.5" diameter "U". Larger diameter "U", +.000"; –.001".
[4] Input shaft extension tolerances: +.0000"; –.0005" for shafts up to 1.5" diameter. Larger diameter "U1", +.000"; –.001".

Combined Output Shafted Foot Mount
OtN36 - 38



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	XM
36	S1	17.06	11.41	8.86	8.46	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	30.10
37	S1	20.58	12.99	9.84	10.57	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	35.43
38	S2	20.13	13.39	14.76	11.48	4.53	13.78	10.63	1.98	1.26	4.06	24.11	8.86	31.00

Output Shaft

Gear Frame	Version	U[3]	UY	V	AH	EA	KEY	ES	M
36	S1	2.875	3.20	5.75	5.92	11.94	3/4 Sq.	5.00	3/4-10 x 1.61
37	S1	3.625	4.01	6.86	7.04	13.66	7/8 Sq.	6.00	1-8 x 2.13
38	S2	4.375	4.809	8.99	9.97	17.03	1.00 Sq.	7.00	1-8 x 2.25

Input Shaft

Gear Frame	Version	RU	U1[4]	UY1	V1	Key1
36	S1	3.17	.625	.714	1.25	3//4 Sq.
37	S1	3.17	.625	.714	1.25	3//4 Sq.
38	S2	3.17	0.625	0.714	1.25	3/16 Sq.

Motor Frame

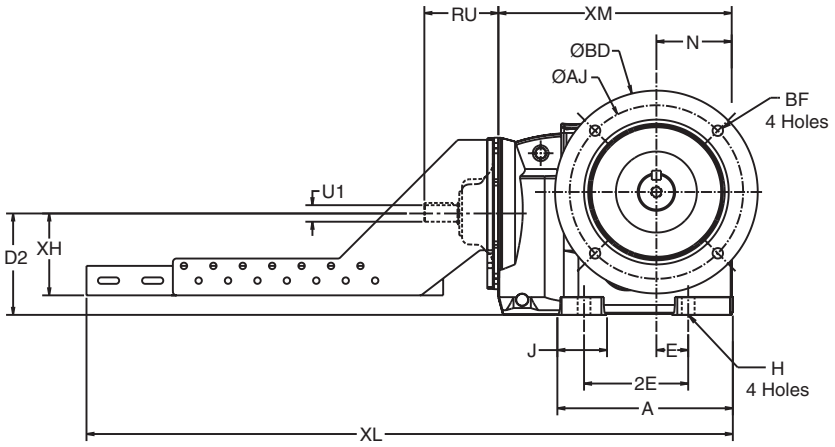
Gear Frame	143T-145T		
	XH	XL	XW
36	3.75	48.39	11.38
37	3.75	53.72	11.38
38	5.56	56.29	12.75

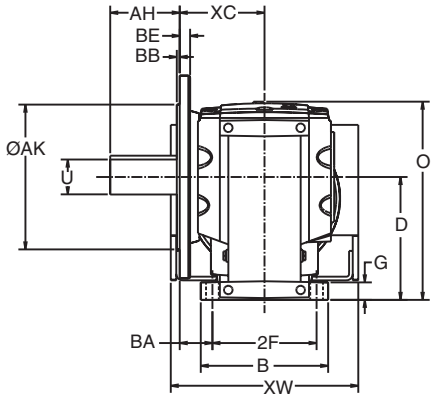
[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
[2] All rough casting dimensions may vary by .25" due to casting variations.
[3] Output shaft extension tolerances: +.0000"; –.0005" for shafts up to 1.5" diameter "U". Larger diameter "U", +.000"; –.001".
[4] Input shaft extension tolerances: +.0000"; –.0005" up to 1.5" diameter. Larger diameter "U1", +.000"; –.001".

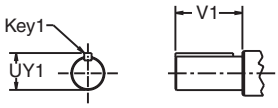
Scoop Mount Reducer

3-Stage Output Shafted Flange Mount

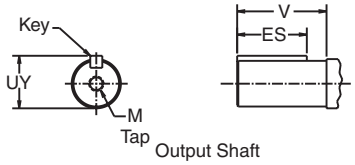
OtN33 - 35







Input Shaft



Output Shaft

Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	BA	XC	XM
33	S1,S2	8.50	6.61	5.51	5.24	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	2.24	4.84	11.97
34	S1,S2	10.13	7.87	7.09	5.90	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	1.93	5.18	13.78
35	S2	11.92	8.66	8.35	6.89	2.17	7.09	7.09	1.18	.87	3.45	13.58	5.20	2.22	5.76	15.95

Output Shaft

Gear Frame	Version	U[3]	UY	V	AH	Key	ES	M
33	S2	1.625	1.783	3.25	3.15	3/8 Sq.	2.78	5/8-11 X 1.38
	S1	1.500	1.657	3.18	2.28	3/8 Sq.	2.19	5/8-11 X 1.38
34	S2	2.000	2.210	3.94	3.94	1/2 Sq.	3.06	3/4-10 X 1.61
	S1	1.750	1.909	3.56	3.28	3/8 Sq.	3.56	3/4-10 X 1.61
35	S2	2.375	2.638	4.72	4.72	5/8 Sq.	3.81	3/4-10 X 1.61

Output Flange

Gear Frame	Flange Code	AK	AJ	BB	BD	BE	BF
33	5	7.087	8.46	.16	9.84	.47	.55
	6	9.055	10.43	.16	11.81	.47	.55
34	5	9.055	10.43	.16	11.81	.59	.55
	6	9.842	11.80	.16	13.77	.59	.71
35	5	9.842	11.80	.20	13.77	.71	.71
	6	11.810	13.77	.20	15.75	.71	.71

Input Shaft

Gear Frame	Version	RU	U1[4]	UY1	V1	Key1
33	S1,S2	3.17	.625	.705	1.25	3/16 Sq.
34	S1,S2	4.75	1.125	1.236	2.25	1/4 Sq.
35	S2	5.03	1.125	1.236	2.25	1/4 Sq.

Motor Frame

Gear Frame	143T-145T			182T-184T			213T-215T		
	XH	XL	XW	XH	XL	XW	XH	XL	XW
33	3.75	30.25	11.38	-	-	-	-	-	-
34	4.74	39.25	12.38	4.74	39.25	12.38	-	-	-
35	5.50	42.61	12.75	5.50	41.61	12.75	5.50	42.01	12.75

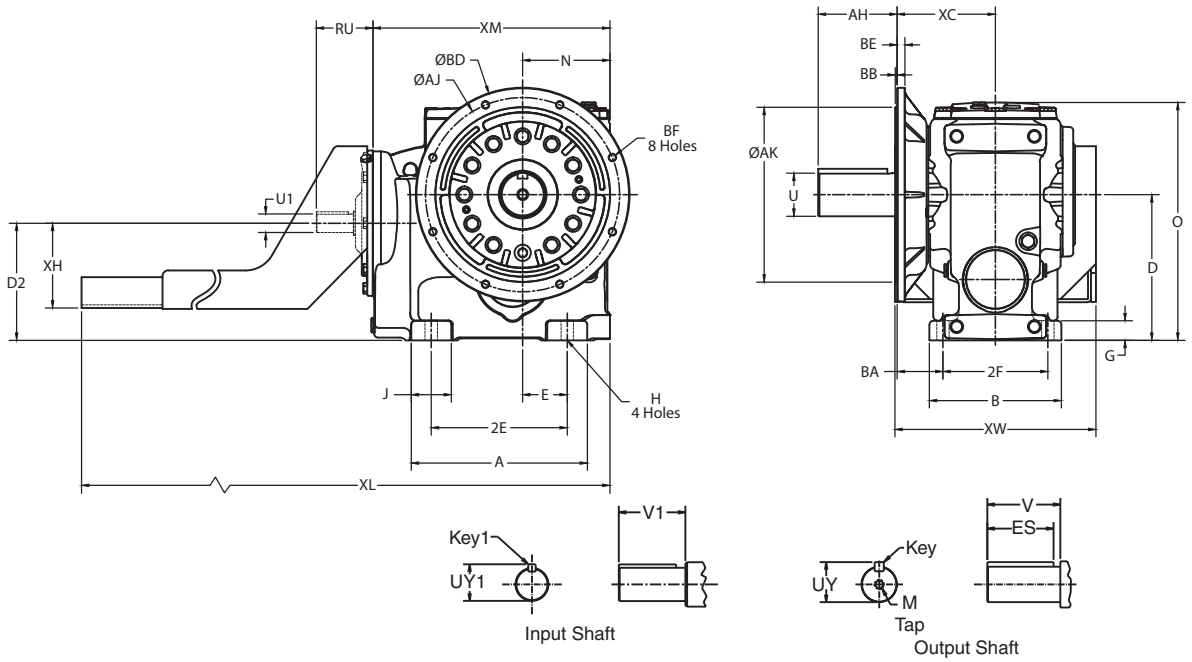
[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

[2] All rough casting dimensions may vary by .25" due to casting variations.

[3] Output shaft extension tolerances: +.0000"; –.0005" for shafts up to 1.5" diameter "U". Larger diameter "U", +.000"; –.001".

[4] Input shaft extension tolerances: +.0000"; –.0005" up to 1.5" diameter. Larger diameter "U1", +.000"; –.001".

3-Stage Output Shafted Flange Mount
OtN36 - 38



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	BA	XC	XM
36	S2	17.06	11.41	8.86	8.86	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	4.45	9.17	30.10
37	S2	20.58	12.99	9.84	10.98	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	4.45	9.76	35.43
38	S2	20.13	13.39	14.76	11.87	4.53	13.78	10.63	1.98	1.26	4.06	24.11	8.86	4.65	9.96	24.02

Output Shaft

Gear Frame	Version	U[3]	UY	V	AH	KEY	ES	M
36	S2	2.875	3.20	7.68	5.51	3/4 Sq.	5.00	3/4-10 x 1.61
37	S2	3.625	4.01	8.88	6.69	7/8 Sq.	6.00	1-8 x 2.13
38	S2	4.375	4.809	8.99	9.97	1.00 Sq.	7.00	1-8 X 2.25

Output Flange

Gear Frame	Flange Code	AJ	AK	BB	BD	BE	BF
36 & 37	5	13.78	15.75	.236	17.70	.79	.71
	6	17.72	19.68	.236	21.65	.63	.87
38	5	17.72	19.69	.200	21.65	.79	.69
	6	21.65	23.62	.236	25.98	.63	.87

Input Shaft

Gear Frame	Version	RU	U1[4]	UY1	V1	Key1
36	S2	7.56	1.875	2.101	3.75	1/2 Sq.
37	S2	7.56	1.875	2.101	3.75	1/2 Sq.
38	S2	7.56	1.875	2.101	3.75	1/2 Sq.

Motor Frame

Gear Frame	182-184T			213-215T			254-256T			284T-286T			324T-326T		
	XH	XL	XW	XH	XL	XW	XH	XL	XW	XH	XL	XW	XH	XL	XW
36	6.63	55.06	15.00	6.63	55.06	15.00	6.63	55.06	15.00	8.50	59.06	19.06	8.50	59.06	19.06
37	6.63	60.40	15.00	6.63	60.40	15.00	6.63	60.40	15.00	8.50	64.40	19.06	8.50	64.40	19.06
38	-	-	-	-	-	-	8.50	59.93	19.06	8.50	58.93	19.06	9.50	60.93	21.31

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

[2] All rough casting dimensions may vary by .25" due to casting variations.

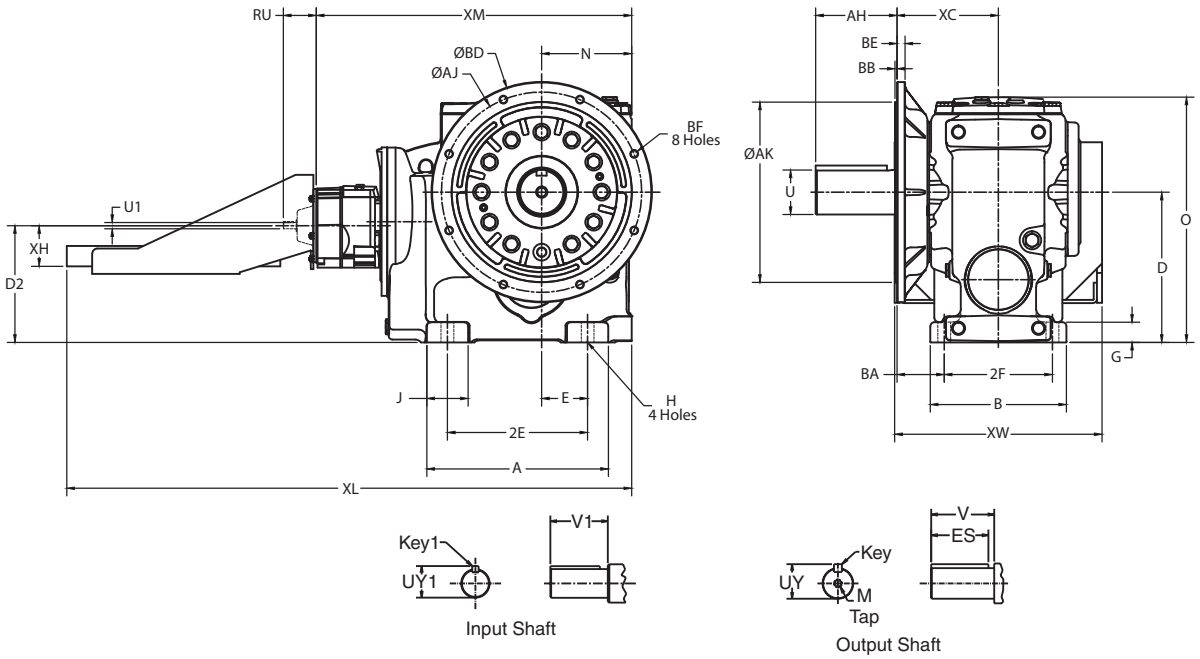
[3] Output shaft extension tolerances: +.0000"; –.0005" for shafts up to 1.5" diameter "U". Larger diameter "U", +.000"; –.001".

[4] Input shaft extension tolerances: +.0000"; –.0005" up to 1.5" diameter. Larger diameter "U1", +.000"; –.001".

Scoop Mount Reducer

Combined Output Shafted Flange Mount

OtN36 - 38



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	BA	XC	XM
36	S2	17.06	11.41	8.86	S2	8.46	13.98	9.45	1.57	.87	3.87	16.26	8.74	4.45	9.17	30.10
37	S2	20.58	12.99	9.84	S2	10.57	16.54	10.63	1.93	.94	4.78	18.29	10.04	4.45	9.76	35.43
38	S2	20.13	13.39	14.76	11.48	4.53	13.78	10.63	1.98	1.26	4.06	24.11	8.86	4.65	9.96	31.00

Output Shaft

Gear Frame	Version	U[3]	UY	V	AH	KEY	ES	M
36	S2	2.875	3.20	7.68	5.51	3/4 Sq.	5.00	3/4-10 x 1.61
37	S2	3.625	4.01	8.88	6.69	7/8 Sq.	6.00	1-8 x 2.13
38	S2	4.375	4.809	8.99	9.97	1.00 Sq.	7.00	1-8 x 2.25

Output Flange

Gear Frame	Flange Code	AJ	AK	BB	BD	BE	BF
36 & 37	5	13.78	15.75	.236	17.70	.79	.71
	6	17.72	19.68	.236	21.65	.63	.87
38	5	17.72	19.69	.200	21.65	.79	.69
	6	21.65	23.62	.236	25.98	.63	.87

Input Shaft

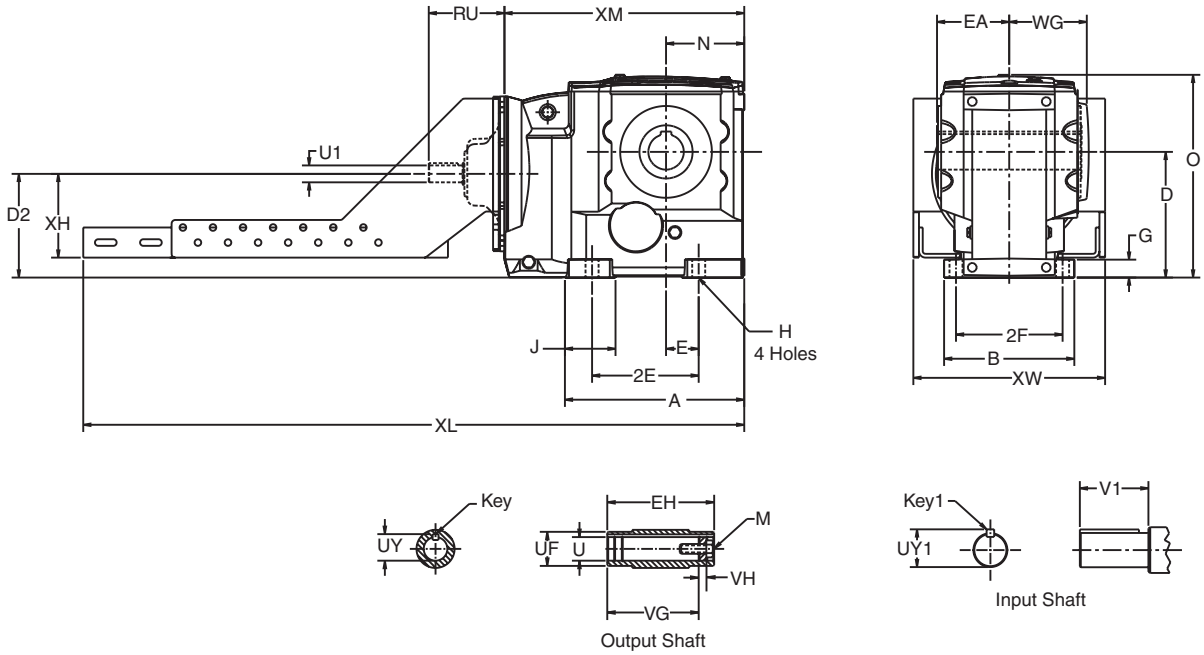
Gear Frame	Version	RU	U1[4]	UY1	V1	Key1
36	S2	3.17	.625	.714	1.25	3/16 Sq.
37	S2	3.17	.625	.714	1.25	3/16 Sq.
38	S2	3.17	0.625	0.714	1.25	3/16 Sq.

Motor Frame

Gear Frame	143T-145T		
	XH	XL	XW
36	3.75	48.39	11.38
37	3.75	53.72	11.38
38	5.56	56.29	12.75

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
[2] All rough casting dimensions may vary by .25" due to casting variations.
[3] Output shaft extension tolerances: +.0000"; –.0005" for shafts up to 1.5" diameter "U". Larger diameter "U", +.000"; –.001".
[4] Input shaft extension tolerances: +.0000"; –.0005" up to 1.5" diameter. Larger diameter "U1", +.000"; –.001".

3-Stage Finished Bore Hollow Shaft
OtN33 - 35



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	WG	XM
33	S2	8.50	6.61	5.51	5.24	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	3.73	11.97
34	S2	10.13	7.87	7.09	5.90	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	4.66	13.78
35	S2	11.92	8.66	8.35	6.89	2.17	7.09	7.09	1.18	.87	3.45	13.58	5.20	5.15	15.95

Output Shaft

Gear Frame	Version	EH	U[4, 7]	UY	EA	UF	VG	VH	Key[5]	M
33	S2	6.94	1.500	1.674	3.47	2.16	5.96	.55	3/8 X 3/8 X 2 1/4	5/8-11 X 1.75
34	S2	8.97	2.000	2.210	4.49	2.56	7.44	.79	1/2 X 7/16 X 2 5/8	5/8-11 X 1.75
35	S2	9.66	2.375	2.656	4.83	3.54	8.15	.94	5/8 X 5/8 X 3 5/8	3/4-10 X 2.00

Input Shaft

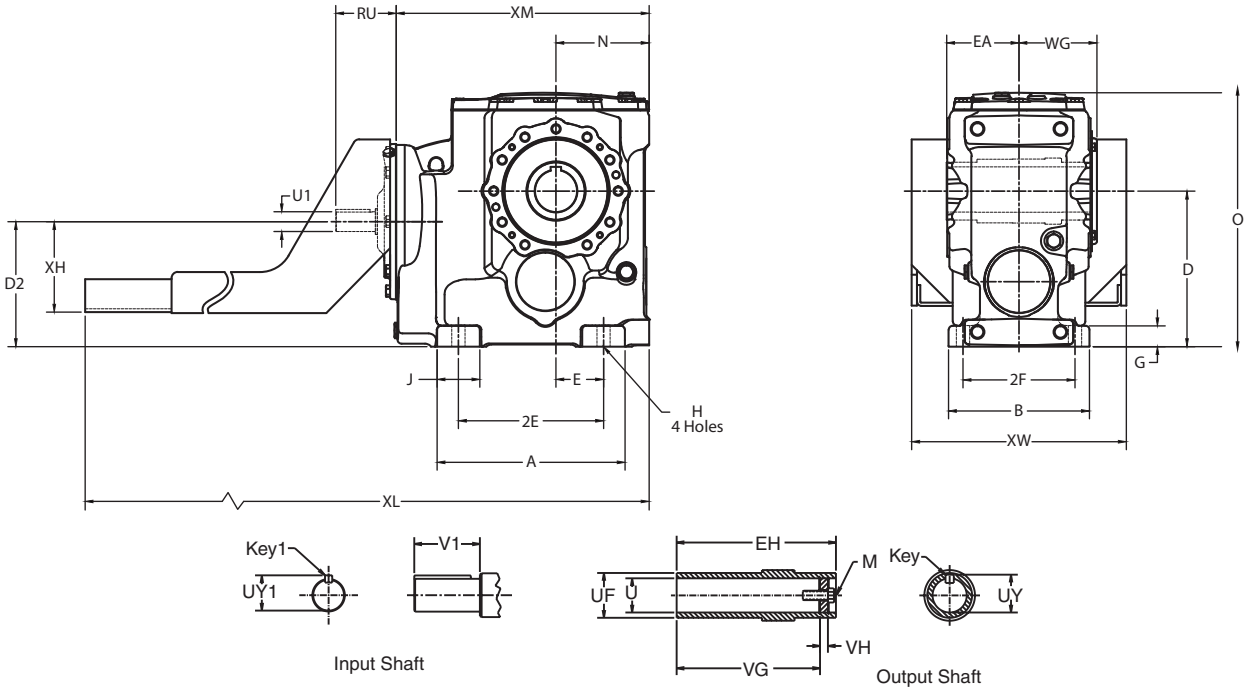
Gear Frame	Version	RU	U1[6]	UY1	V1	Key1
33	S2	3.17	.625	.705	1.25	3/16 Sq.
34	S2	4.75	1.125	1.236	2.25	1/4 Sq.
35	S2	5.03	1.125	1.236	2.25	1/4 Sq.

Motor Frame

Gear Frame	143T-145T			182T-184T			213T-215T		
	XH	XL	XW	XH	XL	XW	XH	XL	XW
33	3.75	30.25	11.38	-	-	-	-	-	-
34	4.74	39.25	12.38	4.74	39.25	12.38	-	-	-
35	5.50	42.61	12.75	5.50	41.61	12.75	5.50	42.01	12.75

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
[2] All rough casting dimensions may vary by .25" due to casting variations.
[3] Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.
[4] Output finished bore tolerance: +.0020",-.0000 for all diameters.
[5] Output key supplied only on frame 34 “S2” version.
[6] Input shaft extension tolerances: +.0000"; –.0005" up to 1.5" diameter. Larger diameter "U1", +.000"; –.001".
[7] Refer to Tapered Bushed designs if driven shaft varies from "U" dimensions offered above.
[8] For details of the torque arm kit,refer to page B-117.

3-Stage Finished Bore Hollow Shaft
OtN36 - 38



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	WG	XM
36	S2	17.06	11.41	8.86	8.86	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	6.78	23.11
37	S2	20.58	12.99	9.84	10.98	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	7.44	28.44
38	S2	20.13	13.39	14.76	11.87	4.53	13.78	10.63	1.98	1.26	4.06	24.11	8.86	7.40	24.02

Output Shaft

Gear Frame	Version	EA	EH	U[4]	UF	UY	VG	VH	Key[7]	M
36	S2	6.22	12.44	2.750	3.93	3.037	10.89	1.23	5/8 x 5/8 x 5 1/2	3/4-10 x 2.00
37	S2	6.22	13.59	3.625	4.72	4.019	11.90	1.23	7/8 x 7/8 x 5 1/2	3/4-10 x 2.00
38	S2	6.81	13.74	4.000	5.50	4.316	11.86	.92	1 x 1 x 6 1/2	1-8 x 2.25

Input Shaft

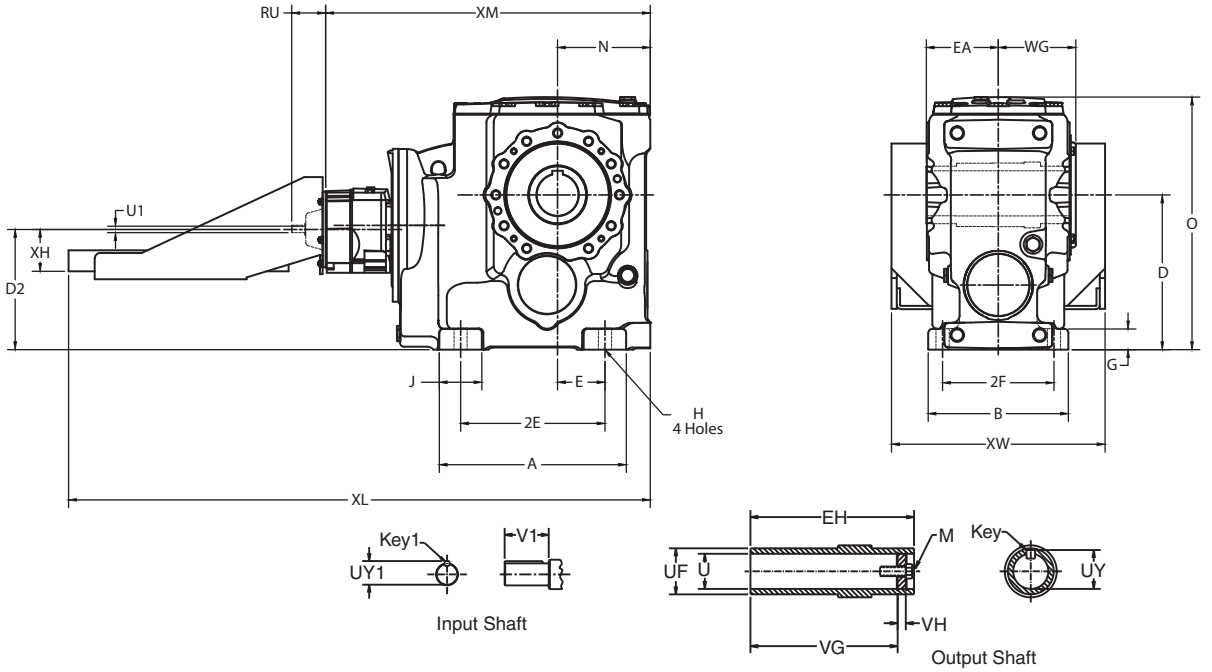
Gear Frame	Version	RU	U1[5]	UY1	V1	Key1
36	S2	7.56	1.875	2.101	3.75	1/2 Sq.
37	S2	7.56	1.875	2.101	3.75	1/2 Sq.
38	S2	7.56	1.875	2.101	3.75	1/2 Sq.

Motor Frame

Gear Frame	182-184T			213-215T			254-256T			284T-286T			324T-326T		
	XH	XL	XW	XH	XL	XW	XH	XL	XW	XH	XL	XW	XH	XL	XW
36	6.63	55.06	15.00	6.63	55.06	15.00	6.63	55.06	15.00	8.50	59.06	19.06	8.50	59.06	19.06
37	6.63	60.4	15.00	6.63	60.4	15.00	6.63	60.4	15.00	8.50	64.4	19.06	8.50	64.4	19.06
38	-	-	-	-	-	-	8.50	59.93	19.06	8.50	58.93	19.06	9.50	60.93	21.31

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
[2] All rough casting dimensions may vary by .25" due to casting variations.
[3] Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.
[4] Output finished bore tolerance: +.0020",-.0000 for all diameters.
[5] Input shaft extension tolerances: +.0000"; –.0005" up to 1.5" diameter. Larger diameter "U1", +.000"; –.001".
[6] For details of the torque arm kit,refer to page B-117.
[7] Key not supplied with reducer.

Combined Finished Bore Hollow Shaft
OtN36 - 38



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	WG	XM
36	S2	17.06	11.41	8.86	8.46	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	6.78	30.10
37	S2	20.58	12.99	9.84	10.57	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	7.44	35.43
38	S2	20.13	13.39	14.76	11.48	4.53	13.78	10.63	1.98	1.26	4.06	24.11	8.86	7.40	31.00

Output Shaft

Gear Frame	Version	EA	EH	U[4]	UF	UY	VG	VH	Key[7]	M
36	S2	6.22	12.44	2.750	3.93	3.037	10.89	1.23	5/8 x 5/8 x 5 1/2	3/4-10 x 2.00
37	S2	6.80	13.59	3.625	4.72	4.019	11.90	1.23	7/8 x 7/8 x 5 1/2	3/4-10 x 2.00
38	S2	6.81	13.74	4.000	5.50	4.316	11.86	.92	1 x 1 x 6 1/2	1-8 x 2.25

Input Shaft

Gear Frame	Version	RU	U1[5]	UY1	V1	Key1
36	S2	3.17	.625	.714	1.25	3/16 Sq.
37	S2	3.17	.625	.714	1.25	3/16 Sq.
38	S2	3.17	.625	.714	1.25	3/16 Sq.

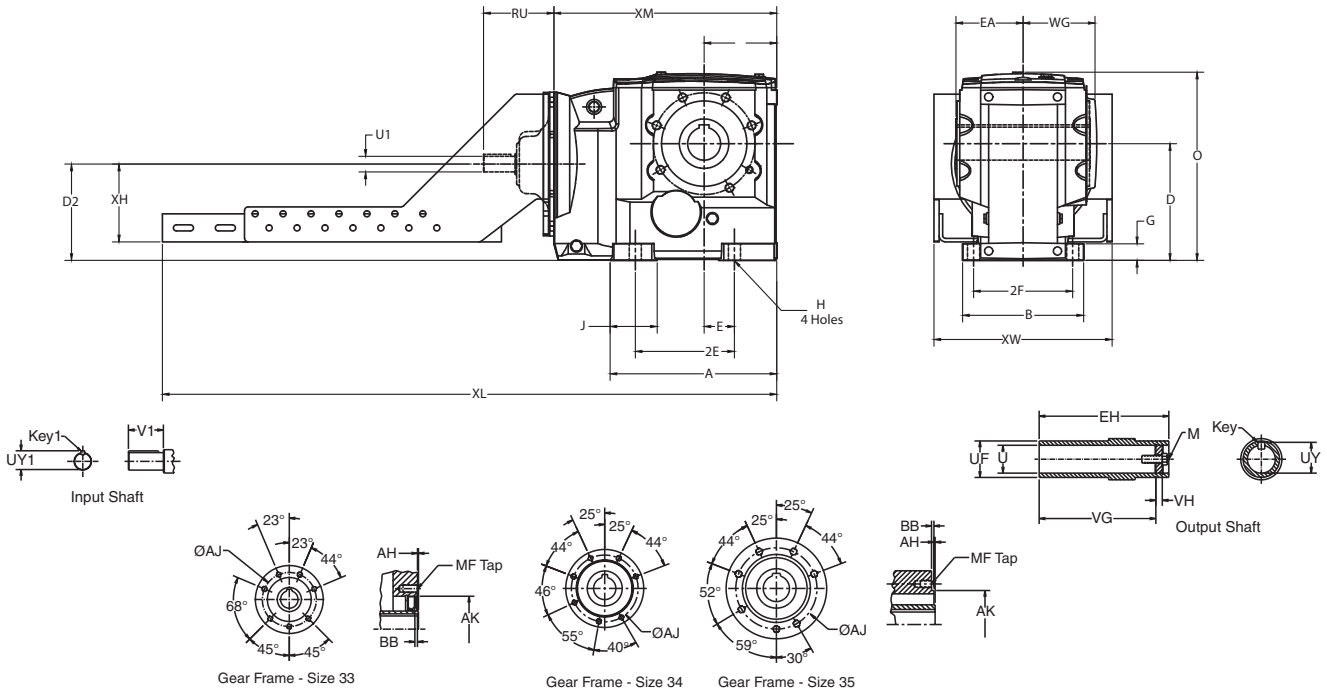
Motor Frame

Gear Frame	143T-145T		
	XH	XL	XW
36	3.75	48.39	11.38
37	3.75	53.72	11.38
38	5.56	56.29	12.75

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
[2] All rough casting dimensions may vary by .25" due to casting variations.
[3] Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.
[4] Output finished bore tolerance: +.0020",-.0000 for all diameters.
[5] Input shaft extension tolerances: +.0000"; –.0005" up to 1.5" diameter. Larger diameter "U1", +.000"; –.001".
[6] For details of the torque arm kit,refer to page B-117.
[7] Key not supplied with reducer.

3-Stage Finished Bore Hollow Shaft Face Mount

OtN33 - 35



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	WG	XM
33	S2	8.50	6.61	5.51	5.24	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	3.63	11.97
34	S2	10.13	7.87	7.09	5.90	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	4.66	13.78
35	S2	11.92	8.66	8.35	6.89	2.17	7.09	7.09	1.18	.87	3.45	13.58	5.20	5.15	15.95

Output Shaft

Gear Frame	Version	EA	EH	U[5]	UF	UY	VG	VH	Key[4]	M
33	S2	3.47	6.94	1.500	2.16	1.674	5.96	.55	3/8 X 3/8 X 2 1/4	5/8-11 X 1.75
34	S2	4.49	8.97	2.000	2.56	2.210	7.44	.79	1/2 X 7/16 X 2 5/8	5/8-11 X 1.75
35	S2	4.83	9.66	2.375	3.54	2.656	8.15	.94	5/8 X 5/8 X 3 5/8	3/4-10 X 2.00

Output Face

Gear Frame	Version	AH	AJ	AK	BB	MF
33	S2	.12	4.84	3.94	.16	M12-1.75 X 22
34	S2	.14	5.98	5.12	.28	M12-1.75 X 22
35	S2	.13	7.48	6.10	.28	M16-2.00 X 27

Input Shaft

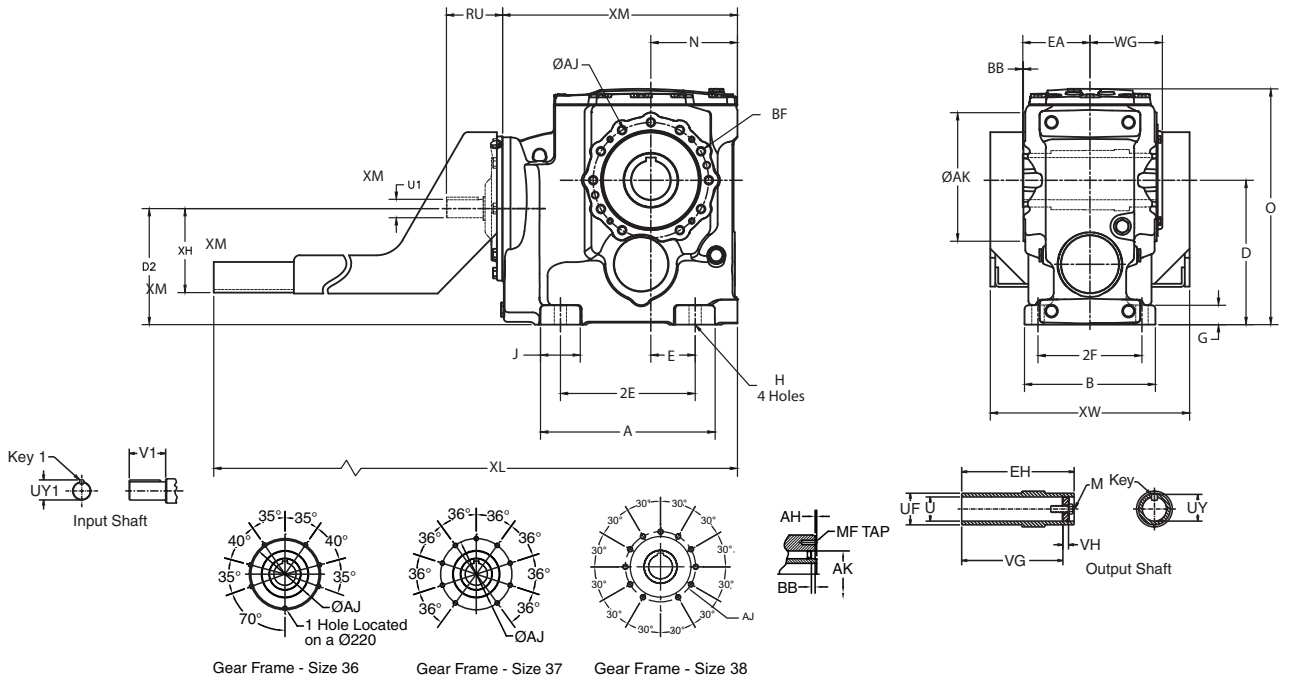
Gear Frame	Version	RU	U1[6]	UY1	V1	KEY[1]
33	S2	3.17	.625	.705	1.25	3/16 Sq.
34	S2	4.75	1.125	1.236	2.25	1/4 Sq.
35	S2	5.03	1.125	1.236	2.25	1/4 Sq.

Motor Frame

Gear Frame	143T-145T			182T-184T			213T-215T		
	XH	XL	XW	XH	XL	XW	XH	XL	XW
33	3.75	30.25	11.38	-	-	-	-	-	-
34	4.74	39.25	12.38	4.74	39.25	12.38	-	-	-
35	5.50	42.61	12.75	5.50	41.61	12.75	5.50	42.01	12.75

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
[2] All rough casting dimensions may vary by .25" due to casting variations.
[3] Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.
[4] Output key supplied only on frame 34 “S2” version.
[5] Output finished bore tolerance: +.0020",-.0000 for all diameters.
[6] Input shaft extension tolerances: +.0000"; –.0005" up to 1.5" diameter. Larger diameter "U1", +.000"; –.001".

3-Stage Finished Bore Hollow Shaft Face Mount
OtN36 - 38



Gear Frame - Size 36 | Gear Frame - Size 37 | Gear Frame - Size 38

Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	WG	XM
36	S2	17.06	11.41	8.86	8.86	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	6.78	23.11
37	S2	20.58	12.99	9.84	10.98	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	7.44	28.44
38	S2	20.13	13.39	14.76	11.87	4.53	13.78	10.63	1.98	1.26	4.06	24.11	8.86	7.40	24.02

Output Shaft

Gear Frame	Version	EA	EH	U[4]	UF	UY	VG	VH	Key[6]	M
36	S2	6.22	12.44	2.750	3.93	3.037	10.89	1.23	5/8 x 5/8 x 5 1/2	3/4-10 x 2.00
37	S2	6.80	13.59	3.625	4.72	4.019	11.90	1.23	7/8 x 7/8 x 5 1/2	3/4-10 x 2.00
38	S2	6.81	13.74	4.000	5.50	4.316	11.86	.92	1 x 1 x 6 1/2	1-8 x 2.25

Output Face

Gear Frame	Version	AH	AJ	AK	BB	BF
36	S2	-	9.06	5.91	.28	M16-2.0 x 27
37	S2	-	9.06	7.09	.28	M20-2.5 x 35
38	S2	.10	11.81	9.84	.20	M20-2.00 x 35

Input Shaft

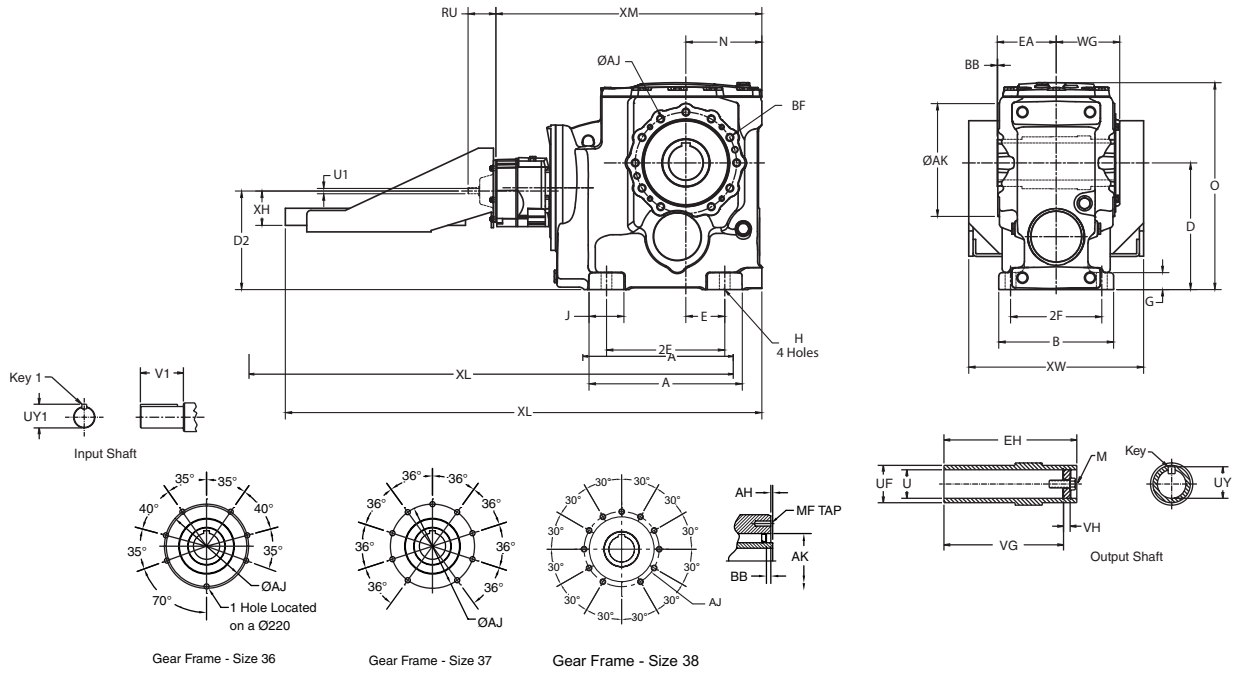
Gear Frame	Version	RU	U1[5]	UY1	V1	Key1
36	S2	7.56	1.875	2.101	3.75	1/2 Sq.
37	S2	7.56	1.875	2.101	3.75	1/2 Sq.
38	S2	7.56	1.875	2.101	3.75	1/2 Sq.

Motor Frame

Gear Frame	182-184T			213-215T			254-256T			284T-286T			324T-326T		
	XH	XL	XW	XH	XL	XW	XH	XL	XW	XH	XL	XW	XH	XL	XW
36	6.63	55.06	15.00	6.63	55.06	15.00	6.63	55.06	15.00	8.50	59.06	19.06	8.50	59.06	19.06
37	6.63	60.4	15.00	6.63	60.4	15.00	6.63	60.4	15.00	8.50	64.4	19.06	8.50	64.4	19.06
38	-	-	-	-	-	-	8.50	59.93	19.06	8.50	58.93	19.06	9.50	60.93	21.31

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
[2] All rough casting dimensions may vary by .25" due to casting variations.
[3] Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.
[4] Output finished bore tolerance: +.0020",-.0000 for all diameters.
[5] Input shaft extension tolerances: +.0000"; –.0005" up to 1.5" diameter. Larger diameter "U1", +.000"; –.001".
[6] Key not supplied with reducer.

Combined Finished Bore Hollow Shaft Face Mount
OtN36 - 38



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	WG	XM
36	S2	17.06	11.41	8.86	8.46	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	6.78	30.10
37	S2	20.58	12.99	9.84	10.57	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	7.44	35.43
38	S2	20.13	13.39	14.76	11.48	4.53	13.78	10.63	1.98	1.26	4.06	24.11	8.86	7.40	31.00

Output Shaft

Gear Frame	Version	EA	EH	U[4]	UF	UY	VG	VH	Key[6]	M
36	S2	6.22	12.44	2.750	3.93	3.037	10.89	1.23	5/8 x 5/8 x 5 1/2	3/4-10 x 2.00
37	S2	6.80	13.59	3.625	4.72	4.019	11.90	1.23	7/8 x 7/8 x 5 1/2	3/4-10 x 2.00
38	S2	6.81	13.74	4.000	5.50	4.316	11.86	.92	1 X 1 x 6 1/2	1-8 x 2.25

Output Face

Gear Frame	Version	AH	AJ	AK	BB	BF
36	S2	-	9.06	5.91	.28	M16-2.0 x 27
37	S2	-	9.06	7.09	.28	M20-2.5 x 35
38	S2	.10	11.81	9.84	.20	M20-2.0 X 35

Input Shaft

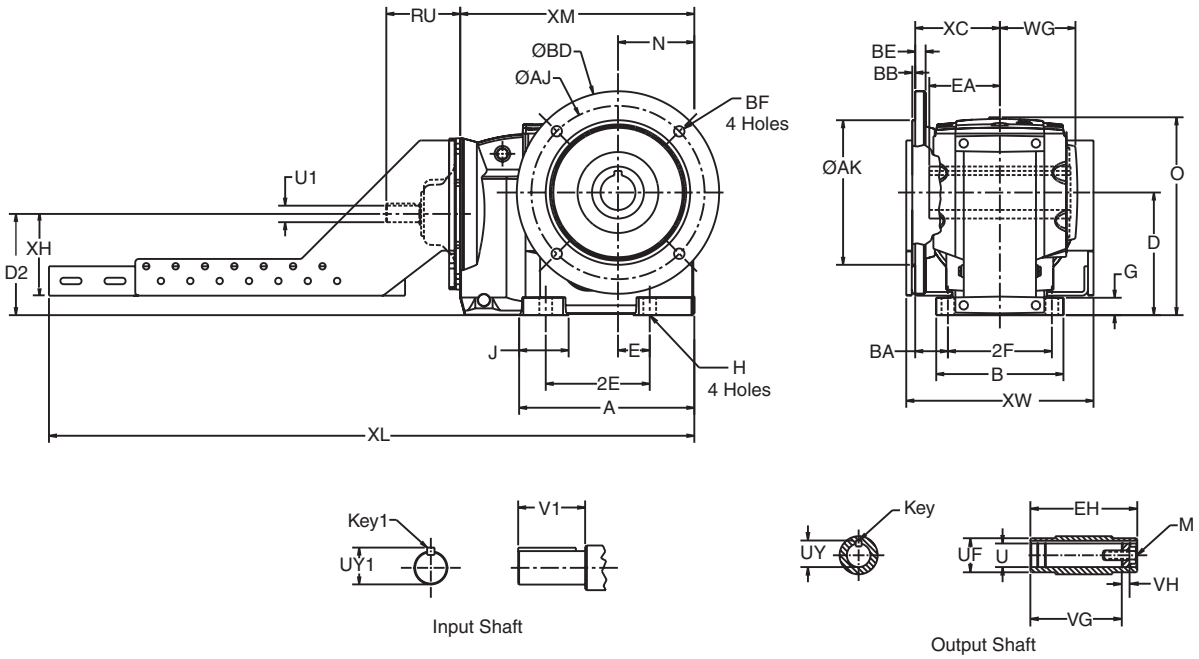
Gear Frame	Version	RU	U1[5]	UY1	V1	Key1
36	S2	3.17	.625	.714	1.25	3/16 Sq.
37	S2	3.17	.625	.714	1.25	3/16 Sq.
38	S2	3.17	.63	.71	1.25	3/16 Sq.

Motor Frame

Gear Frame	143T-145T		
	XH	XL	XW
36	3.75	48.39	11.38
37	3.75	53.72	11.38
38	5.56	56.29	12.75

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
[2] All rough casting dimensions may vary by .25" due to casting variations.
[3] Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.
[4] Output finished bore tolerance: +.0020",-.0000 for all diameters.
[5] Input shaft extension tolerances: +.0000"; –.0005" up to 1.5" diameter. Larger diameter "U1", +.000"; –.001".
[6] Key not supplied with reducer.

3-Stage Finished Bore Hollow Shaft Flange Mount
OtN33 - 35



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	BA	WG	XC	XM
33	S2	8.50	6.61	5.51	5.24	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	2.08	3.73	4.84	11.97
34	S2	10.13	7.87	7.09	5.90	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	1.93	4.66	5.18	13.78
35	S2	11.92	8.66	8.35	6.89	2.17	7.09	7.09	1.18	.87	3.45	13.58	5.20	2.22	5.15	5.77	15.95

Output Shaft

Gear Frame	Version	EA	EH	U[5]	UF	UY	VG	VH	Key[4]	M
33	S2	3.47	6.94	1.500	2.16	1.674	5.96	.55	3/8 X 3/8 X 2 1/4	5/8-11 X 1.75
34	S2	4.49	8.97	2.000	2.56	2.210	7.44	.79	1/2 X 7/16 X 2 5/8	5/8-11 X 1.75
35	S2	4.83	9.66	2.375	3.54	2.656	8.15	.94	5/8 X 5/8 X 3 5/8	3/4-10 X 2.00

Output Flange

Gear Frame	Flange Code	AK	AJ	BB	BD	BE	BF
33	5	7.087	8.46	.16	9.84	.47	.55
	6	9.055	10.43	.16	11.81	.47	.55
34	5	9.055	10.43	.16	11.81	.59	.55
	6	9.842	11.80	.16	13.77	.59	.71
35	5	9.842	11.80	.20	13.77	.71	.71
	6	11.810	13.77	.20	15.75	.71	.71

Input Shaft

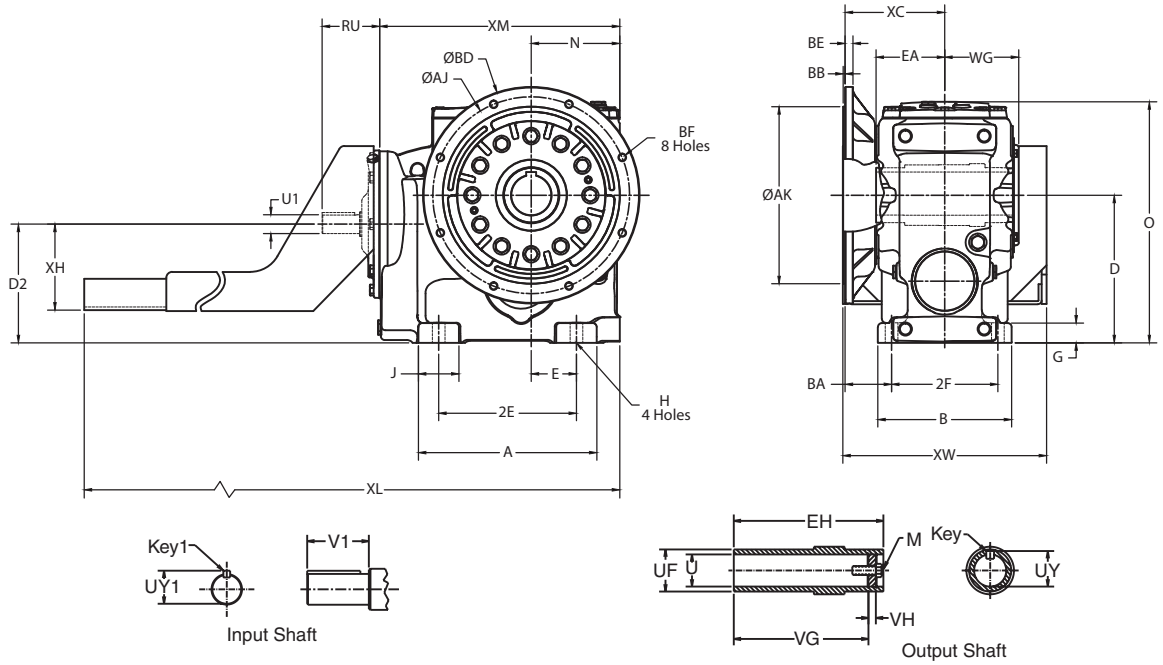
Gear Frame	Version	RU	U1[6]	UY1	V1	Key1
33	S2	3.17	.625	.705	1.25	3/16 Sq.
34	S2	4.75	1.125	1.236	2.25	1/4 Sq.
35	S2	5.03	1.125	1.236	2.25	1/4 Sq.

Motor Frame

Gear Frame	143T-145T			182T-184T			213T-215T		
	XH	XL	XW	XH	XL	XW	XH	XL	XW
33	3.75	30.25	11.38	-	-	-	-	-	-
34	4.74	39.25	12.38	4.74	39.25	12.38	-	-	-
35	5.50	42.61	12.75	5.50	41.61	12.75	5.50	42.01	12.75

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
[2] All rough casting dimensions may vary by .25" due to casting variations.
[3] Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.
[4] Output key supplied only on frame 34 “S2” version.
[5] Output finished bore tolerance: +.0020",-.0000 for all diameters.
[6] Input shaft extension tolerances: +.0000"; –.0005" up to 1.5" diameter. Larger diameter "U1", +.000"; –.001".

3-Stage Finished Bore Hollow Shaft Flange Mount
OtN36 - 38



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	BA	WG	XC	XM
36	S2	17.06	11.41	8.86	8.86	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	4.45	6.78	9.17	23.11
37	S2	20.58	12.99	9.84	10.98	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	4.45	7.44	9.76	28.44
38	S2	20.13	13.39	14.76	11.87	4.53	13.78	10.63	1.98	1.26	4.06	24.11	8.86	4.65	7.40	9.96	24.02

Output Shaft

Gear Frame	Version	EA	EH	U[4]	UF	UY	VG	VH	Key[6]	M
36	S2	6.22	12.44	2.750	3.93	3.037	10.89	1.23	5/8 x 5/8 x 5 1/2	3/4-10 x 2.00
37	S2	6.80	13.59	3.625	4.72	4.019	11.90	1.23	7/8 x 7/8 x 5 1/2	3/4-10 x 2.00
38	S2	6.81	13.74	4.000	5.50	4.316	11.86	.92	1 x 1 x 6 1/2	1-8 x 2.25

Output Flange

Gear Frame	Flange Code	AJ	AK	BB	BD	BE	BF
36 & 37	5	15.75	13.780	.236	17.70	.79	.71
	6	19.68	17.72	.236	21.65	.63	.87
38	5	19.69	17.72	.20	21.65	.79	.69

Input Shaft

Gear Frame	Version	RU	U1[5]	UY1	V1	Key1
36	S2	7.56	1.875	2.101	3.75	1/2 Sq.
37	S2	7.56	1.875	2.101	3.75	1/2 Sq.
38	S2	7.56	1.875	2.101	3.75	1/2 Sq.

Motor Frame

Gear Frame	182-184T			213-215T			254-256T			284T-286T			324T-326T		
	XH	XL	XW	XH	XL	XW	XH	XL	XW	XH	XL	XW	XH	XL	XW
36	6.63	55.06	15.00	6.63	55.06	15.00	6.63	55.06	15.00	8.50	59.06	19.06	8.50	59.06	19.06
37	6.63	60.4	15.00	6.63	60.4	15.00	6.63	60.4	15.00	8.50	64.4	19.06	8.50	64.4	19.06
38	-	-	-	-	-	-	8.50	59.93	19.06	8.50	58.93	19.06	9.50	60.93	21.31

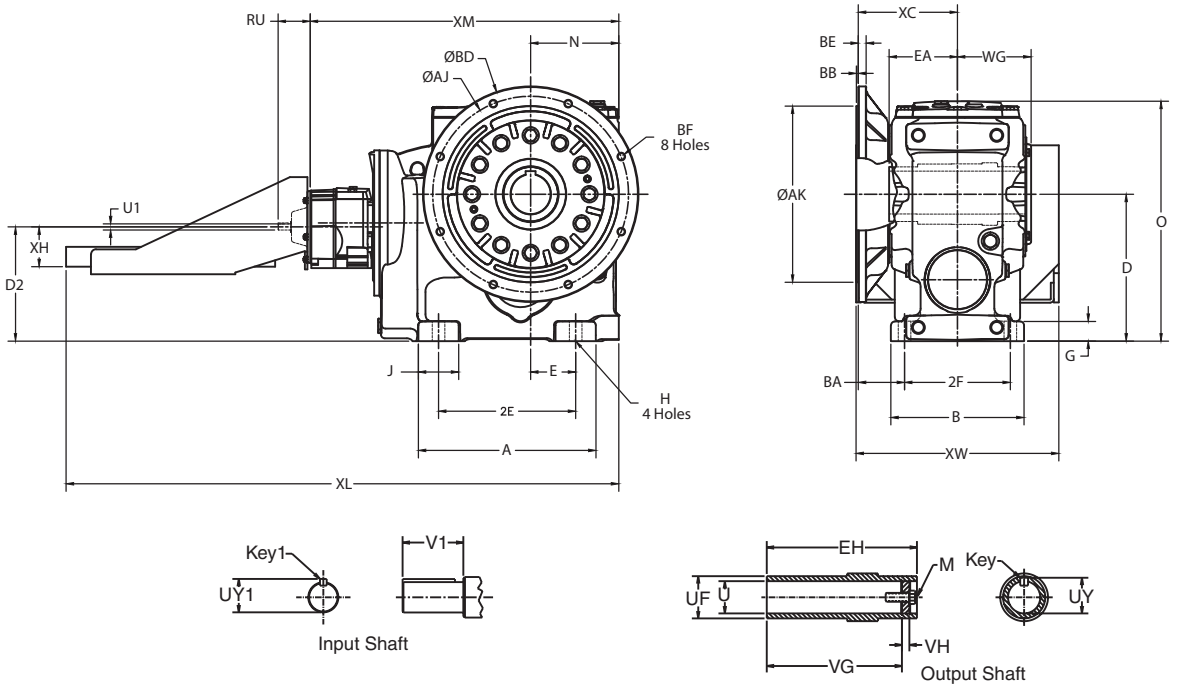
[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
[2] All rough casting dimensions may vary by .25" due to casting variations.
[3] Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.
[4] Output finished bore tolerance: +.0020",-.0000 for all diameters.
[5] Input shaft extension tolerances: +.0000"; –.0005" up to 1.5" diameter. Larger diameter "U1", +.000"; –.001".
[6] Key not supplied with reducer.

Scoop Mount Reducer

OtN SERIES 3000

Combined Finished Bore Hollow Shaft Flange Mount

OtN36 - 38



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	BA	WG	XC	XM
36	S2	17.06	11.41	8.86	8.46	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	4.45	6.78	9.17	30.10
37	S2	20.58	12.99	9.84	10.57	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	4.45	7.44	9.76	35.43
38	S2	20.13	13.39	14.76	11.48	4.53	13.78	10.63	1.98	1.26	4.06	24.11	8.86	4.65	7.40	9.96	31.00

Output Shaft

Gear Frame	Version	EA	EH	U[4]	UF	UY	VG	VH	Key[6]	M
36	S2	6.22	12.44	2.750	3.93	3.037	10.89	1.23	5/8 x 5/8 x 5 1/2	3/4-10 x 2.00
37	S2	6.80	13.59	3.625	4.72	4.019	11.90	1.23	7/8 x 7/8 x 5 1/2	3/4-10 x 2.00
38	S2	6.81	13.74	4.000	5.50	4.316	11.86	.92	1 x 1 x 6 1/2	1-8 x 2.25

Output Flange

Gear Frame	Flange Code	AJ	AK	BB	BD	BE	BF
36 & 37	5	15.75	13.780	.236	17.70	.79	.71
	6	19.68	17.72	.236	21.65	.63	.87
38	5	19.69	17.72	.20	21.65	.79	.69

Input Shaft

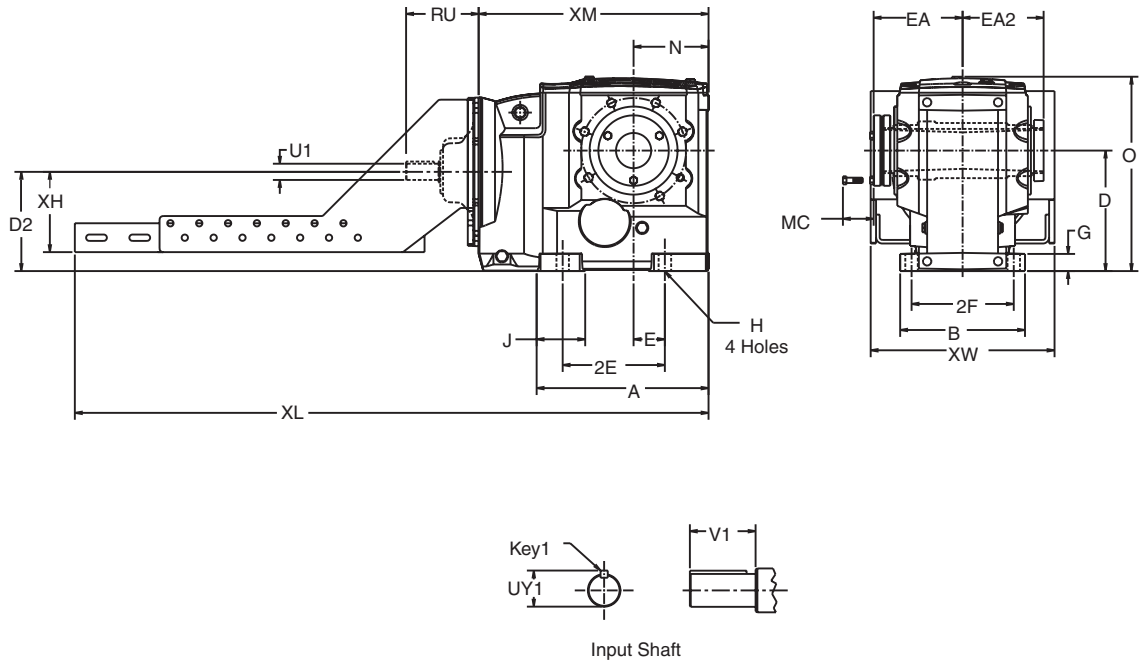
Gear Frame	Version	RU	U1[5]	UY1	V1	Key1
36	S2	3.17	.625	.714	1.25	3/16 Sq.
37	S2	3.17	.625	.714	1.25	3/16 Sq.
38	S2	3.17	.63	.71	1.25	3/16 Sq.

Motor Frame

Gear Frame	143T-145T		
	XH	XL	XW
36	3.75	48.39	11.38
37	3.75	53.72	11.38
38	5.56	56.29	12.75

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
[2] All rough casting dimensions may vary by .25" due to casting variations.
[3] Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.
[4] Output finished bore tolerance: +.0020",-.0000 for all diameters.
[5] Input shaft extension tolerances: +.0000"; –.0005" up to 1.5" diameter. Larger diameter "U1", +.000"; –.001".
[6] Key not supplied with reducer.

3-Stage Taper Bushed Shaft Mount
OtN33 - 35



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	XM
33A	S2	8.50	6.61	5.51	5.24	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	11.97
34	S2	10.13	7.87	7.09	5.90	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	13.78
35	S2	11.92	8.66	8.35	6.89	2.17	7.09	7.09	1.18	.87	3.45	13.58	5.2	15.95

Output Shaft

Gear Frame	Version	EA	EA2	MC[5]	Bushing Bores[4]	
					Min.	Max.
33A	S2	5.76	5.18	1.88	1 7/16	1 15/16
34	S2	5.84	5.27	1.88	15/16	1 15/16
35	S2	6.17	5.620	1.88	1 3/8	2 7/16

Input Shaft

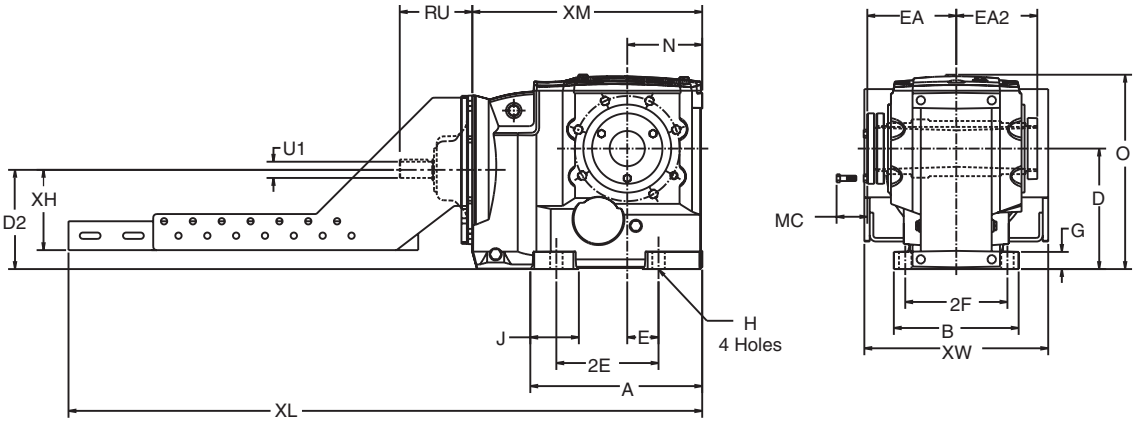
Gear Frame	Version	RU	U1[3]	UY1	V1	Key1
33A	S2	3.17	.625	.705	1.25	3/16 Sq.
34	S2	4.75	1.125	1.236	2.25	1/4 Sq.
35	S2	5.03	1.125	1.236	2.25	1/4 Sq.

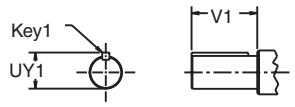
Motor Frame

Gear Frame	143T-145T			182T-184T			213T-215T		
	XH	XL	XW	XH	XL	XW	XH	XL	XW
33A	3.75	30.25	11.38	-	-	-	-	-	-
34	4.74	39.25	12.38	4.74	39.25	12.38	-	-	-
35	5.50	42.61	12.75	5.50	41.61	12.75	5.50	42.01	12.75

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
[2] All rough casting dimensions may vary by .25" due to casting variations.
[3] Input shaft extension tolerances: +.0000"; –.0005" for shafts up to 1.5" diameter. Larger diameter "U1", +.000"; –.001".
[4] Refer to page B-118 by gear frame for listing of all inch and metric bushing bore sizes available.
[5] The MC dimension shows spacing required to install or remove the bushing from the reducer.
[6] Bushing and dust cap can be installed opposite of how they are shown above.
[7] Driven shaft entry can be from either side of the gear reducer housing. Refer to installation manual for requirements.
[8] For details of the torque arm kit,refer to page B-117.

OtN36 - 38





Input Shaft

Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	XM
36	S2	17.06	11.41	8.86	8.86	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	23.11
37	S2	20.58	12.99	9.84	10.98	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	28.44
38	S2	20.13	13.39	14.76	11.87	4.53	13.78	10.63	1.98	1.26	4.06	24.11	8.86	24.02

Output Shaft

Gear Frame	Version	EA	EA2	MC[5]	Bushing Bores[4]	
					Min.	Max.
36	S2	6.81	7.83	1.88	2 7/16	2 15/16
37	S2	9.50	8.86	2.25	2 7/8	3 7/16
38	S2	8.66	8.08	2.75	2 15/16	3 15/16

Input Shaft

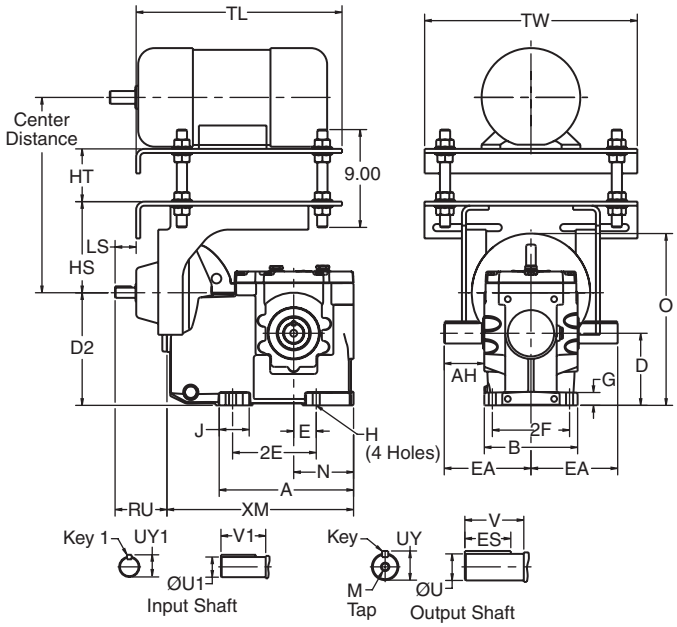
Gear Frame	RU	U1[3]	UY1	V1	Key1
36	7.56	1.875	2.101	3.75	1/2 Sq.
37	7.56	1.875	2.101	3.75	1/2 Sq.
38	7.56	1.875	2.101	3.75	1/2 Sq.

Motor Frame

Gear Frame	182T-184T			213T-215T			254T-256T			284T-286T			324T-326T		
	XH	XL	XW	XH	XL	XW	XH	XL	XW	XH	XL	XW	XH	XL	XW
36	6.63	55.06	15.00	6.63	55.06	15.00	6.63	55.06	15.00	8.50	59.06	19.06	8.50	59.06	19.06
37	6.63	60.4	15.00	6.63	60.4	15.00	6.63	60.4	15.00	8.50	64.4	19.06	8.50	64.4	19.06
38	-	-	-	-	-	-	8.50	59.93	19.06	8.50	58.93	19.06	9.50	60.93	21.31

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
[2] All rough casting dimensions may vary by .25" due to casting variations.
[3] Input shaft extension tolerances: +.0000"; –.0005" for shafts up to 1.5" diameter. Larger diameter "U1", +.000"; –.001".
[4] Refer to page B-118 by gear frame for listing of all inch and metric bushing bore sizes available.
[5] The MC dimension shows spacing required to install or remove the bushing from the reducer.
[6] Bushing and dust cap can be installed opposite of how they are shown above.
[7] Driven shaft entry can be from either side of the gear reducer housing. Refer to installation manual for requirements.
[8] For details of the torque arm kit,refer to page B-117.

2-Stage Output Shafted Foot Mount
OtN32



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	XM	LS	HS	HT	TL	TW
3242	S2	8.22	5.71	4.41	6.89	1.38	5.12	4.72	.79	.43	1.83	10.51	3.66	12.36	1.29	7.14	6.00	15.5	16.5

Output Shaft

Gear Frame	Version	U[3]	UY	V	AH	EA	Key	ES	M
3242	S2	1.250	1.35	2.38	2.45	5.31	1/4 Sq.	2.03	1/2-13 X 1.12

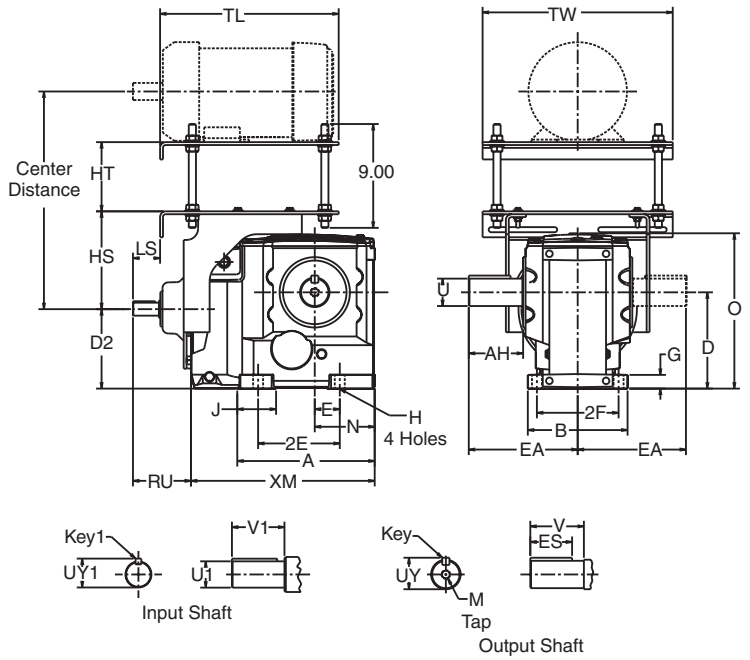
Input Shaft

Gear Frame	Version	RU	U1[4]	UY1	V1	Key1
3242	S2	3.17	.625	.705	1.25	3/16 Sq.

Motor Frame	Center Distance	
	Min.	Max.
56	12.28	18.25
B56	12.28	18.25
182T/184T	13.28	19.25

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
[2] All rough casting dimensions may vary by .25" due to casting variations.
[3] Output shaft extension tolerances: +.0000"; –.0005" for shafts up to 1.5" diameter "U". Larger diameter "U", +.000"; –.001".
[4] Input shaft extension tolerances: +.0000"; –.0005" up to 1.5" diameter. Larger diameter "U1", +.000"; –.001".

3-Stage Output Shafted Foot Mount
OtN33 - 35



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	XM	LS	HS	HT	TL	TW
33	S2	8.50	6.61	5.51	5.24	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	11.97	1.29	7.14	6.00	15.50	16.50
	S1	8.08	8.58	4.92	5.20	3.35	6.69	6.10	.79	.55	2.27	10.43	3.54	11.97					
34	S2	10.13	7.87	7.09	5.90	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	13.78	2.31	7.17	6.00	15.50	16.50
	S1	10.69	9.60	6.30	7.49	4.53	9.06	7.68	1.18	.71	3.19	13.39	4.49	13.78					
35	S2	11.92	8.66	8.35	6.89	2.17	7.09	7.09	1.18	.87	3.37	13.58	5.20	15.95	2.35	8.48	6.00	15.50	16.50
	S1	13.07	10.98	7.87	9.33	5.51	11.02	9.06	1.40	.87	4.05	16.22	5.20	15.95					

Output Shaft

Gear Frame	Version	U[3]	UY	V	AH	EA	Key	ES	M
33	S2	1.625	1.783	3.25	3.39	6.73	3/8 Sq.	2.78	5/8-11 X 1.38
	S1	1.500	1.657	3.18	3.19	7.12	3/8 Sq.	2.78	5/8-11 X 1.38
34	S2	2.000	2.210	3.63	3.76	8.11	1/2 Sq.	3.06	3/4-10 X 1.61
	S1	1.750	1.909	3.56	3.66	8.46	3/8 Sq.	3.56	3/4-10 X 1.61
35	S2	2.375	2.638	4.61	4.74	9.45	5/8 Sq.	3.81	3/4-10 X 1.61
	S1	2.375	2.638	5.73	5.27	10.57	5/8 Sq.	4.81	3/4-10 X 1.61

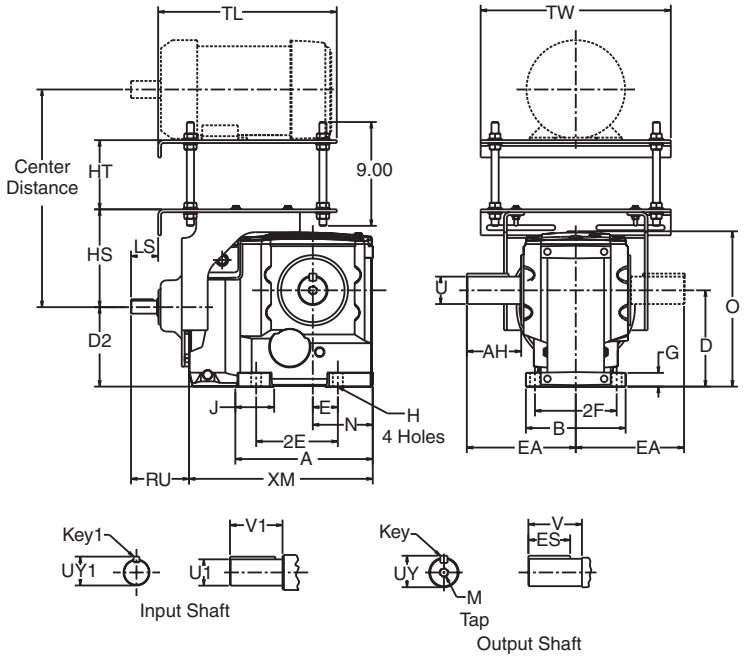
Input Shaft

Gear Frame	Version	RU	U1[4]	UY1	V1	Key1
33	S1,S2	3.17	.625	.70	1.25	3/16 Sq.
34	S1,S2	4.75	1.125	1.24	2.25	1/4 Sq.
35	S1,S2	5.03	1.125	1.24	2.25	1/4 Sq.

Motor Frame	33		34		35	
	Center Distance		Center Distance		Center Distance	
	Min.	Max.	Min.	Max.	Min.	Max.
56	12.28	18.25	12.31	18.28	-	-
143T/145T	12.28	18.25	12.31	18.28	13.87	19.34
182T/184T	13.28	19.25	13.31	19.28	14.87	20.34
213T/215T	-	-	14.06	20.03	15.62	21.09
254T/256T	-	-	-	-	16.62	22.09

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
[2] All rough casting dimensions may vary by .25" due to casting variations.
[3] Output shaft extension tolerances: +.0000"; –.0005" for shafts up to 1.5" diameter "U". Larger diameter "U", +.000"; –.001".
[4] Input shaft extension tolerances: +.0000"; –.0005" up to 1.5" diameter. Larger diameter "U1", +.000"; –.001".

3-Stage Output Shafted Foot Mount
OtN36 - 38



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	XM
36	S1	17.06	11.41	8.86	8.86	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	23.11
37	S1	20.58	12.99	9.84	10.98	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	28.44
38	S2	20.13	13.39	14.76	11.87	4.53	13.78	10.63	1.98	1.26	4.06	24.11	8.86	24.02

Output Shaft

Gear Frame	Version	U[3]	UY	V	AH	EA	Key	ES	M
36	S1	2.875	3.20	5.75	5.92	11.94	3/4 SQ.	5.00	3/4-10 X 1.61
37	S1	3.625	4.01	6.86	7.04	13.66	7/8 SQ.	6.00	1-8 X 2.13
38	S2	4.375	4.809	8.99	9.97	17.03	1.00 SQ.	7.00	1-8 X 2.25

Input Shaft

Gear Frame	RU	U1[4]	UY1	V1	Key1
36	7.56	1.875	2.101	3.75	1/2 Sq.
37	7.56	1.875	2.101	3.75	1/2 Sq.
38	7.56	1.875	2.101	3.75	1/2 Sq.

Top Mount

Gear Frame	LS	HS	HT		TL	TW
			Min.	Max.		
36	3.76	10.48	1.89	7.36	20.25	24.00
37	3.76	10.48	1.89	7.36	20.25	24.00
38	4.71	19.38	1.89	7.36	19.38	24.00

Motor Frame	36 Center Distance		37 Center Distance		38 Center Distance	
	Min.	Max.	Min.	Max.	Min.	Max.
182T/184T	16.73	22.73	16.73	22.73	25.78	31.25
213T/215T	17.48	23.48	17.48	23.48	26.53	32.00
254T/256T	18.48	24.48	18.48	24.48	27.53	33.00
284T/286T	19.23	25.23	19.23	25.23	28.28	33.75
324T/326T	20.23	26.23	20.23	26.23	29.28	34.75

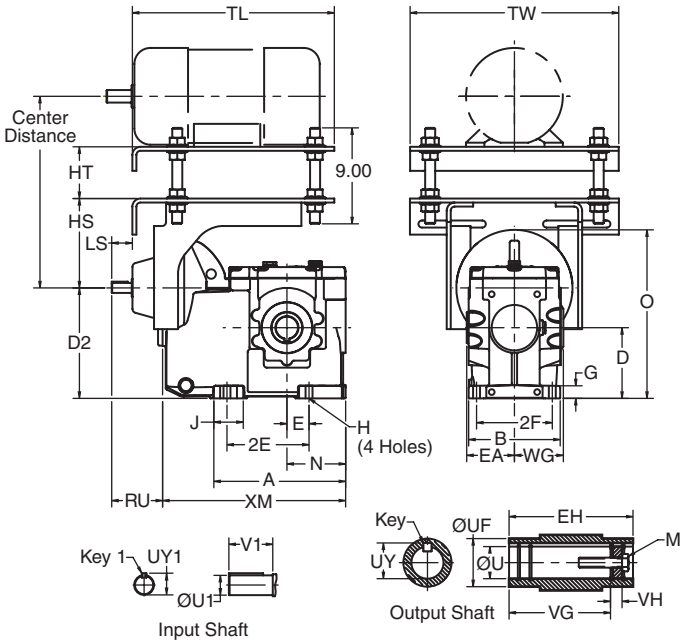
[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

[2] All rough casting dimensions may vary by .25" due to casting variations.

[3] Output shaft extension tolerances: +.0000"; –.0005" for shafts up to 1.5" diameter "U". Larger diameter "U", +.000"; –.001".

[4] Input shaft extension tolerances: +.0000"; –.0005" up to 1.5" diameter. Larger diameter "U1", +.000"; –.001".

2-Stage Finished Bore Hollow Shaft
OtN32



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	WG	XM	LS	HS	HT	TL	TW
3242	S2	8.22	5.71	4.41	6.89	1.38	5.12	4.72	.79	.43	1.83	10.51	3.66	3.22	12.36	1.29	7.14	6.00	15.5	16.5

Output Shaft

Gear Frame	Version	EA	EH	U[3 7]	UF	UY	VG	VH	Key[5]	M
3242	S2	2.97	5.94	1.375	1.96	1.523	5.06	.37	5/16 X 5/16 1 13/16	1/2-13 X 1.00

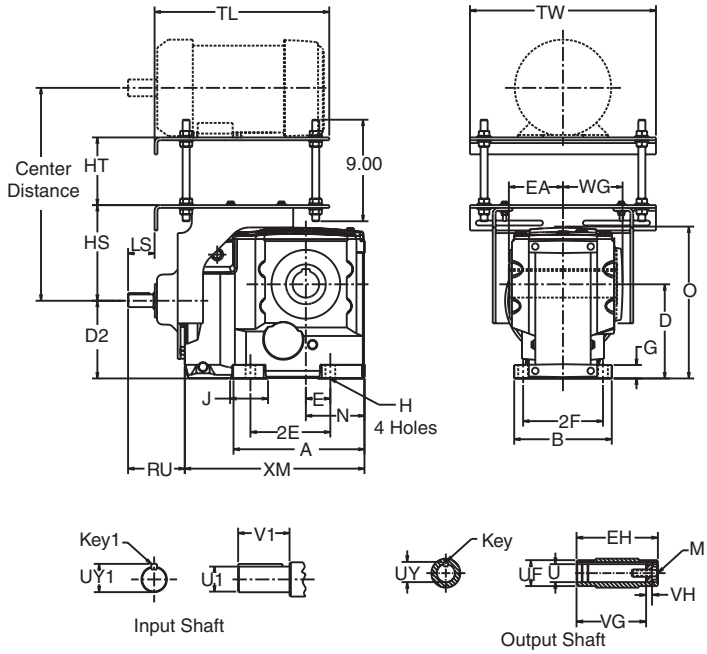
Input Shaft

Gear Frame	Version	RU	U1[4]	UY1	V1	Key1
3242	S2	3.17	.625	.705	1.25	3/16 Sq.

Motor Frame	Center Distance	
	Min.	Max.
56	12.28	18.25
B56	12.28	18.25
182T/184T	13.28	19.25

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
[2] All rough casting dimensions may vary by .25" due to casting variations.
[3] Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.
[4] Output finished bore tolerance: +.0020",-.0000 for all diameters.
[5] Output key supplied only on frame 34 “S2” version.
[6] Input shaft extension tolerances: +.0000"; –.0005" up to 1.5" diameter. Larger diameter "U1", +.000"; –.001".
[7] Refer to Tapered Bushed designs if driven shaft varies from "U" dimensions offered above.
[8] For details of the torque arm kit,refer to page B-117.

3-Stage Finished Bore Hollow Shaft
OtN33 - 35



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	WG	XM	LS	HS	HT	TL	TW
33	S2	8.50	6.61	5.51	5.24	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	3.73	11.97	1.29	7.14	6.00	15.50	16.50
34	S2	10.13	7.87	7.09	5.90	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	4.66	13.78	2.31	7.17	6.00	15.50	16.50
35	S2	11.92	8.66	8.35	6.89	2.17	7.09	7.09	1.18	.87	3.45	13.58	5.20	5.15	15.95	2.35	8.48	6.00	15.50	16.50

Output Shaft

Gear Frame	Version	EA	EH	U[4, 7]	UF	UY	VG	VH	Key[5]	M
33	S2	3.47	6.94	1.500	2.16	1.674	5.96	.55	3/8 X 3/8 X 2 1/4	5/8-11 X 1.75
34	S2	4.49	8.97	2.000	2.56	2.210	7.44	.79	1/2 X 7/16 X 2 5/8	5/8-11 X 1.75
35	S2	4.83	9.66	2.375	3.54	2.656	8.15	.94	5/8 X 5/8 X 3 5/8	3/4-10 X 2.00

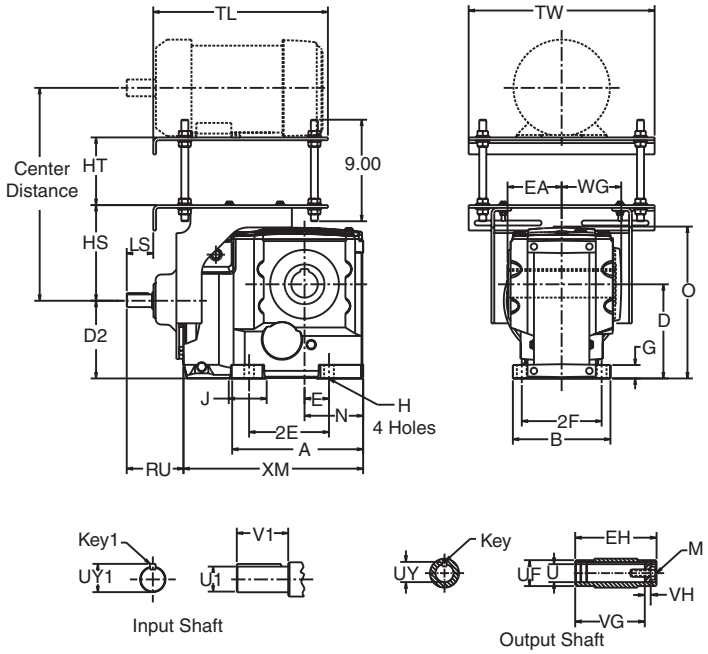
Input Shaft

Gear Frame	Version	RU	U1[6]	UY1	V1	Key1
33	S2	3.17	.625	.70	1.25	3/16 Sq.
34	S2	4.75	1.125	1.24	2.25	1/4 Sq.
35	S2	5.03	1.125	1.24	2.25	1/4 Sq.

Motor Frame	33		34		35	
	Center Distance		Center Distance		Center Distance	
	Min.	Max.	Min.	Max.	Min.	Max.
56	12.28	18.25	12.31	18.28	-	-
143T/145T	12.28	18.25	12.31	18.28	13.87	19.34
182T/184T	13.28	19.25	13.31	19.28	14.87	20.34
213T/215T	-	-	14.06	20.03	15.62	21.09
254T/256T	-	-	-	-	16.62	22.09

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
[2] All rough casting dimensions may vary by .25" due to casting variations.
[3] Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.
[4] Output finished bore tolerance: +.0020",-.0000 for all diameters.
[5] Output key supplied only on frame 34 “S2” version.
[6] Input shaft extension tolerances: +.0000"; –.0005" up to 1.5" diameter. Larger diameter "U1", +.000"; –.001".
[7] Refer to Tapered Bushed designs if driven shaft varies from "U" dimensions offered above.
[8] For details of the torque arm kit,refer to page B-117.

3-Stage Finished Bore Hollow Shaft
OtN36 - 38



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	XM
36	S2	17.06	11.41	8.86	8.86	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	23.11
37	S2	20.58	12.99	9.84	10.98	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	28.44
38	S2	17.85	13.39	14.76	11.87	4.53	13.78	10.63	1.98	1.26	4.06	24.11	8.86	24.02

Output Shaft

Gear Frame	Version	EA	EH	U[4,7]	UF	UY	VG	VH	Key[5]	M
36	S2	6.22	12.44	2.750	3.93	3.037	10.89	1.23	5/8 x 5/8 x 5 1/2	3/4 - 10 x 2.00
37	S2	6.22	13.59	3.625	4.72	4.019	11.90	1.23	7/8 x 7/8 x 5 1/2	3/4 - 10 x 2.00
38	S2	6.81	13.74	4.000	5.50	4.316	11.86	.92	1 x 1 x 6 1/2	1 -8 x 2.25

Input Shaft

Gear Frame	Version	RU	U1[5]	UY1	V1	Key1
36	S2	7.56	1.875	2.101	3.75	1/2 Sq.
37	S2	7.56	1.875	2.101	3.75	1/2 Sq.
38	S2	7.56	1.875	2.101	3.75	1/2 Sq.

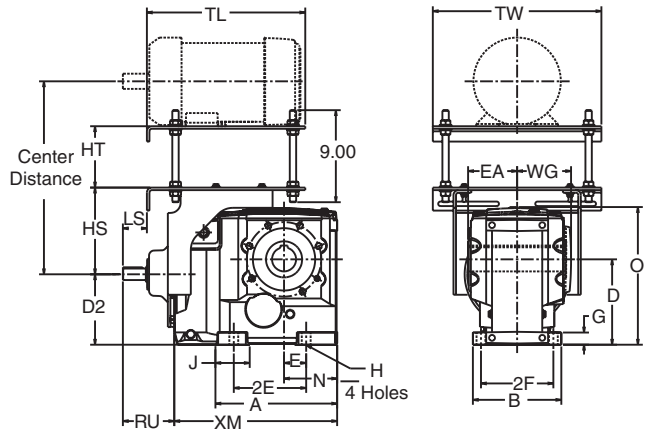
Top Mount

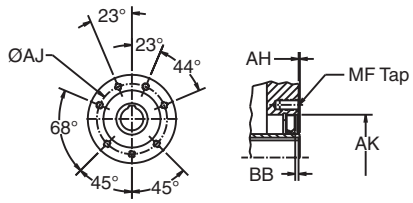
Gear Frame	LS	HS	HT		TL	TW
			Min.	Max.		
36	3.76	10.48	1.89	7.36	20.25	24.00
37	3.76	10.48	1.89	7.36	20.25	24.00
38	4.71	19.38	1.89	7.36	19.38	24.00

Motor Frame	36 Center Distance		37 Center Distance		38 Center Distance	
	Min.	Max.	Min.	Max.	Min.	Max.
182T/184T	16.73	22.73	16.73	22.73	25.78	31.25
213T/215T	17.48	23.48	17.48	23.48	26.53	32.00
254T/256T	18.48	24.48	18.48	24.48	27.53	33.00
284T/286T	19.23	25.23	19.23	25.23	28.28	33.75
324T/326T	20.23	26.23	20.23	26.23	29.28	34.75

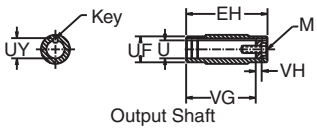
[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
[2] All rough casting dimensions may vary by .25" due to casting variations.
[3] Output shaft extension tolerances: +.0000";-.0005" for shafts up to 1.5" diameter "U". Larger diameter "U", +.000";-.001".
[4] Input shaft extension tolerances: +.0000";-.0005" up to 1.5" diameter. Larger diameter "U1", +.000";-.001".
[5] For details of the torque arm kit,refer to page B-117.

3-Stage Finished Bore Hollow Shaft Face Mount
OtN33 - 35

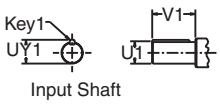




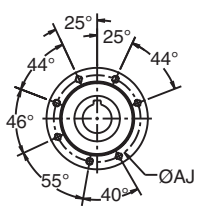
Gear Frame - Size 33



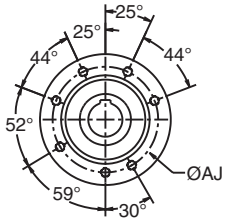
Output Shaft



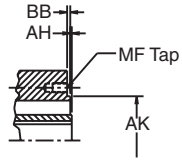
Input Shaft



Gear Frame - Size 34



Gear Frame - Size 35



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	WG	XM	LS	HS	HT	TL	TW
33	S2	8.50	6.61	5.51	5.24	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	3.63	11.97	1.29	7.14	6.00	15.50	16.50
34	S2	10.13	7.87	7.09	5.90	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	4.66	13.78	2.31	7.17	6.00	15.50	16.50
35	S2	11.92	8.66	8.35	6.89	2.17	7.09	7.09	1.18	.87	3.45	13.58	5.20	5.15	15.95	2.35	8.48	6.00	15.50	16.50

Output Shaft

Gear Frame	Version	EA	EH	U[5]	UF	UY	VG	VH	Key[4]	M
33	S2	3.47	6.94	1.500	2.16	1.674	5.96	.55	3/8 X 3/8 X 2 1/4	5/8-11 X 1.75
34	S2	4.49	8.97	2.000	2.56	2.210	7.44	.79	1/2 X 7/16 X 2 5/8	5/8-11 X 1.75
35	S2	4.83	9.66	2.375	3.54	2.638	8.15	.94	5/8 X 5/8 X 3 5/8	3/4-10 X 2.00

Output Face

Gear Frame	Version	AH	AJ	AK	BB	MF
33	S2	.12	4.84	3.94	.16	M12-1.75 X 22
34	S2	.14	5.98	5.12	.28	M12-1.75 X 22
35	S2	.13	7.48	6.10	.28	M16-2.00 X 27

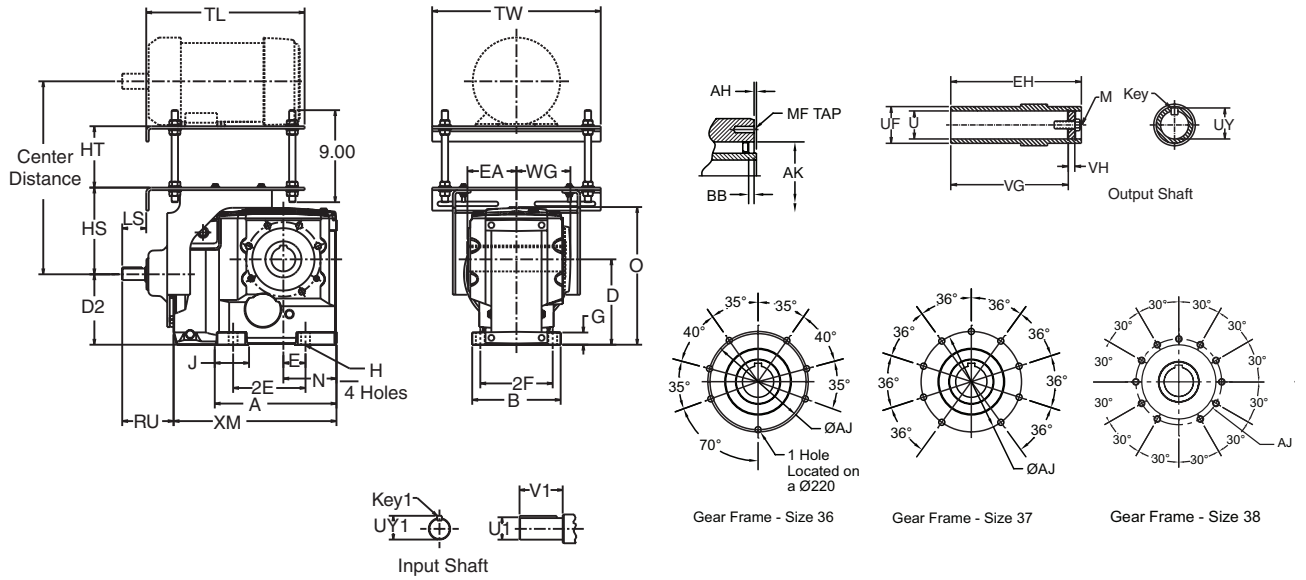
Input Shaft

Gear Frame	Version	RU	U1[6]	UY1	V1	Key1
33	S2	3.17	.625	.705	1.25	3/16 Sq.
34	S2	4.75	1.125	1.236	2.25	1/4 Sq.
35	S2	5.03	1.125	1.236	2.25	1/4 Sq.

Motor Frame	33		34		35	
	Center Distance		Center Distance		Center Distance	
	Min.	Max.	Min.	Max.	Min.	Max.
56	12.28	18.25	12.31	18.28	-	-
143T/145T	12.28	18.25	12.31	18.28	13.87	19.34
182T/184T	13.28	19.25	13.31	19.28	14.87	20.34
213T/215T	-	-	14.06	20.03	15.62	21.09
254T/256T	-	-	-	-	16.62	22.09

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
[2] All rough casting dimensions may vary by .25" due to casting variations.
[3] Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.
[4] Output key supplied only on frame 34 “S2” version.
[5] Output finished bore tolerance: +.0020",-.0000 for all diameters.
[6] Input shaft extension tolerances: +.0000"; –.0005" up to 1.5" diameter. Larger diameter "U1", +.000"; –.001".

3-Stage Finished Bore Hollow Shaft Face Mount
OtN36 - 38



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	WG	XM
36	S2	17.06	11.41	8.86	8.86	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	6.78	23.11
37	S2	20.58	12.99	9.84	10.98	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	7.44	28.44
38	S2	17.85	13.39	14.76	11.87	4.53	13.78	10.63	1.98	1.26	4.06	24.11	8.86	7.40	24.02

Output Shaft

Gear Frame	Version	EA	EH	U[4]	UF	UY	VG	VH	Key[6]	M
36	S2	6.22	12.44	2.750	3.93	3.037	10.89	1.23	5/8 x 5/8 x 5 1/2	3/4-10 x 2.00
37	S2	6.80	13.59	3.625	4.72	4.019	11.90	1.23	7/8 x 7/8 x 5 1/2	3/4-10 x 2.00
38	S2	6.81	13.74	4.000	5.50	4.316	11.86	.92	1 x 1 x 6 1/2	1-8 x 2.25

Output Face

Gear Frame	Version	AH	AJ	AK	BB	BF
36	S2	-	9.06	5.91	.28	M16-2.0 x 27
37	S2	-	9.06	7.09	.28	M20-2.5 x 35
38	S2	.10	11.81	9.84	.20	M20-2.00 x 25

Input Shaft

Gear Frame	Version	RU	U1[5]	UY1	V1	Key
36	S2	7.56	1.875	2.101	3.75	1/2 Sq.
37	S2	7.56	1.875	2.101	3.75	1/2 Sq.
38	S2	7.56	1.875	2.101	3.75	1/2 Sq.

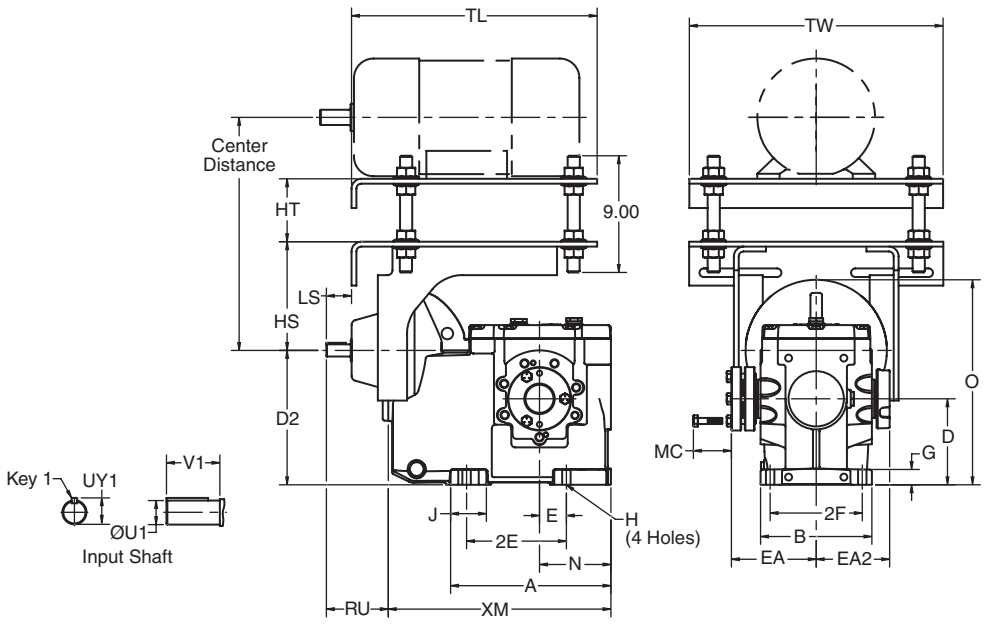
Top Mount

Gear Frame	LS	HS	HT		TL	TW
			Min.	Max.		
36	3.76	10.48	1.89	7.36	20.25	24.00
37	3.76	10.48	1.89	7.36	20.25	24.00
38	4.71	19.38	1.89	7.36	19.38	24.00

Motor Frame	36 Center Distance		37 Center Distance		38 Center Distance	
	Min.	Max.	Min.	Max.	Min.	Max.
182T/184T	16.73	22.73	16.73	22.73	25.78	31.25
213T/215T	17.48	23.48	17.48	23.48	26.53	32.00
254T/256T	18.48	24.48	18.48	24.48	27.53	33.00
284T/286T	19.23	25.23	19.23	25.23	28.28	33.75
324T/326T	20.23	26.23	20.23	26.23	29.28	34.75

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
[2] All rough casting dimensions may vary by .25" due to casting variations.
[3] Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.
[4] Output finished bore tolerance: +.0020",-.0000 for all diameters.
[5] Input shaft extension tolerances: +.0000"; –.0005" up to 1.5" diameter. Larger diameter "U1", +.000"; –.001"
[6] Key not supplied with reducer.

2-Stage Bushed Shaft Mount
OtN32



Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	EA	XC	XM	LS	HS	HT	TL	TW
3242	S2	8.22	5.71	4.41	6.89	1.38	5.12	4.72	.79	.43	1.83	10.51	3.66	2.85	7.35	12.36	1.29	7.14	6.00	15.5	16.5

Output Shaft

Gear Frame	Screw Dia.	JJ	L	U	S	T	T2	AH	AH2	BB
3242	6-10	.53	4.00	1.50	2.13	3.00	6.00	6.00	9.00	5.13
	9-12	.66	5.13	2.00	2.13	3.00	6.00	6.00	9.00	5.13
	12-14	.66	5.63	2.44	2.75	3.00	6.00	6.00	9.69	5.13
	12-20	.78	6.00	3.00	2.88	3.00	6.00	6.88	9.88	5.13

Input Shaft

Gear Frame	Version	RU	U1[5]	UY1	V1	Key1
3242	S2	3.17	.625	.705	1.25	3/16 Sq.

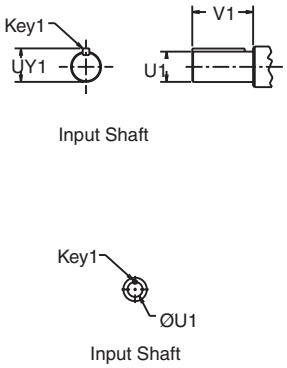
Motor Frame	Center Distance	
	Min.	Max.
56	12.28	18.25
B56	12.28	18.25
182T/184T	13.28	19.25

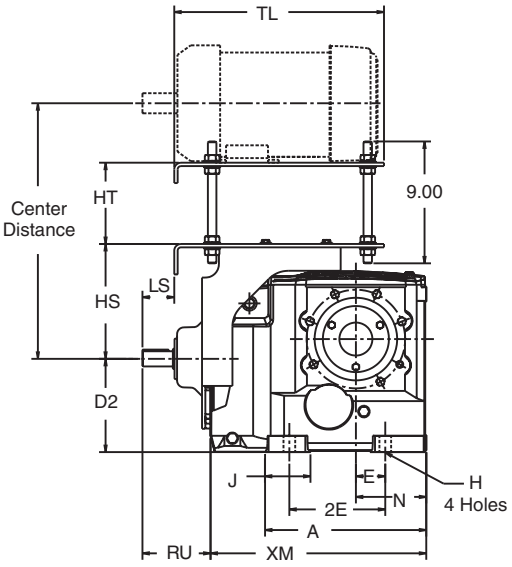
[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
[2] All rough casting dimensions may vary by .25" due to casting variations.
[3] Input shaft extension tolerances: +.0000"; –.0005" up to 1.5" diameter. Larger diameter "U1", +.000"; –.001"
[4] Refer to page B-118 by gear frame for listing of all inch and metric bushing bore sizes available.
[5] The MC dimension shows spacing required to install or remove the bushing from the reducer.
[6] Bushing and dust cap can be installed opposite of how they are shown above.
[7] Driven shaft entry can be from either side of the gear reducer housing. Refer to installation manual for requirements.
[8] For details of the torque arm kit, refer to page B-117.

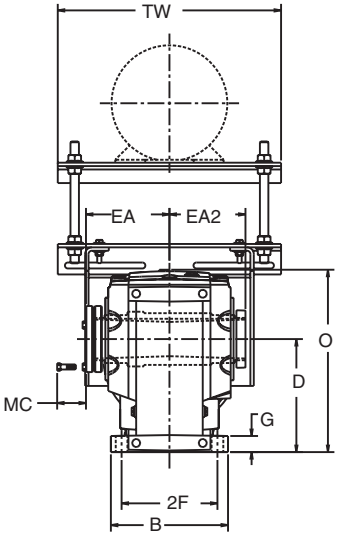
Top Mount Reducer

3-Stage Taper Bushed Shaft Mount

OtN33 - 35







Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	XM	LS	HS	HT	TL	TW
33A	S2	8.50	6.61	5.51	5.24	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	11.97	1.29	7.14	6.00	15.50	16.50
34	S2	10.13	7.87	7.09	5.90	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	13.78	2.31	7.17	6.00	15.50	16.50
35	S2	11.92	8.66	8.35	6.89	2.17	7.09	7.09	1.18	.87	3.45	13.58	5.20	15.95	2.35	8.48	6.00	15.50	16.50

Output Shaft

Gear Frame	Version	EA	EA2	MC[5]	Bushing Bores[4]	
					Min.	Max.
33A	S2	5.76	5.18	1.88	1 7/16	1 15/16
34	S2	5.84	5.27	1.88	1 11/16	1 15/16
35	S2	6.17	5.620	1.88	2	2 7/16

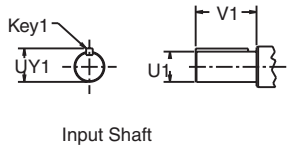
Input Shaft

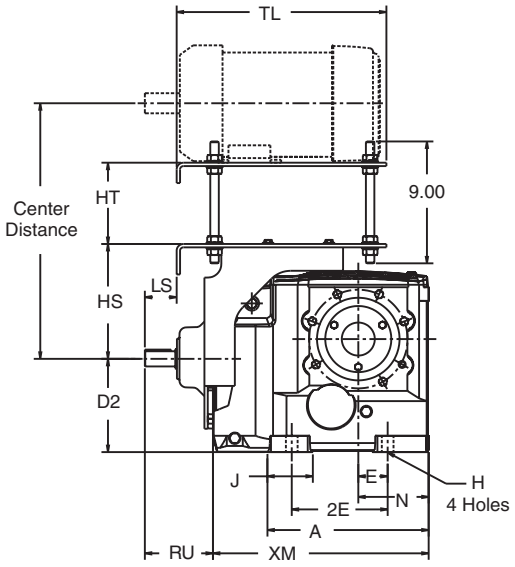
Gear Frame	Version	RU	U1[3]	UY1	V1	Key1
33A	S2	3.17	.625	.70	1.25	3/16 Sq.
34	S2	4.75	1.125	1.24	2.25	1/4 Sq.
35	S2	5.03	1.125	1.24	2.25	1/4 Sq.

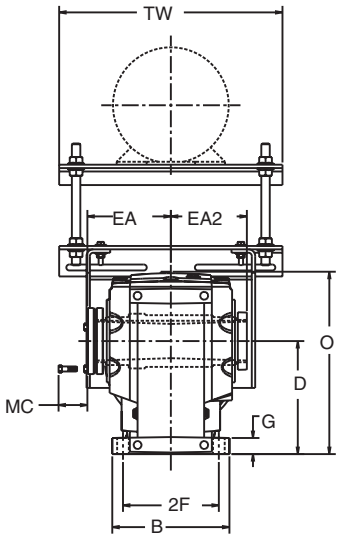
Motor Frame	33A Center Distance		34 Center Distance		35 Center Distance	
	Min.	Max.	Min.	Max.	Min.	Max.
56	12.28	18.25	12.31	18.28	-	-
B56	12.28	18.25	12.31	18.28	13.87	19.34
182T/184T	13.28	19.26	13.31	19.28	14.87	20.34
213T/215T	-	-	14.06	20.03	15.62	21.09
254T/256T	-	-	-	-	16.62	22.09

[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
[2] All rough casting dimensions may vary by .25" due to casting variations.
[3] Input shaft extension tolerances: +.0000"; –.0005" for shafts up to 1.5" diameter. Larger diameter "U1", +.000"; –.001".
[4] Refer to page B-118 by gear frame for listing of all inch and metric bushing bore sizes available.
[5] The MC dimension shows spacing required to install or remove the bushing from the reducer.
[6] Bushing and dust cap can be installed opposite of how they are shown above.
[7] Driven shaft entry can be from either side of the gear reducer housing. Refer to installation manual for requirements.
[8] For details of the torque arm kit,refer to page B-117.

3-Stage Taper Bushed Shaft Mount
OtN36 - 38







Gear Frame	Version	A	B	D[1]	D2	E	2E	2F	G	H	J	O	N	XM
36	S2	17.06	11.41	8.86	8.86	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	23.11
37	S2	20.58	12.99	9.84	10.98	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	28.44
38	S2	17.85	13.99	14.76	11.87	4.53	13.78	10.63	1.98	1.26	4.06	24.11	8.86	24.02

Output Shaft

Gear Frame	Version	EA	EA2	MC[5]	Bushing Bores[4]	
					Min.	Max.
36	S2	6.81	7.83	1.88	2 7/16	2 15/16
37	S2	9.50	8.86	2.25	2 7/8	3 7/16
38	S2	8.66	8.08	2.75	2 15/16	3 15/16

Input Shaft

Gear Frame	Version	RU	U1[3]	UY1	V1	Key1
36	S2	7.56	1.875	2.101	3.75	1/2 Sq.
37	S2	7.56	1.875	2.101	3.75	1/2 Sq.
38	S2	7.56	1.875	2.101	3.75	1/2 Sq.

Top Mount

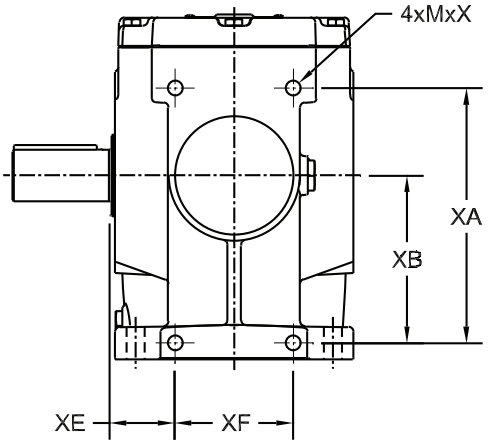
Gear Frame	LS	HS	HT		TL	TW
			Min.	Max.		
36	3.76	10.48	1.89	7.36	20.25	24.00
37	3.76	10.48	1.89	7.36	20.25	24.00
38	4.71	19.38	1.89	7.36	19.38	24.00

Motor Frame	36 Center Distance		37 Center Distance		38 Center Distance	
	Min.	Max.	Min.	Max.	Min.	Max.
182T/184T	16.73	22.73	16.73	22.73	25.78	31.25
213T/215T	17.48	23.48	17.48	23.48	26.53	32.00
254T/256T	18.48	24.48	18.48	24.48	27.53	33.00
284T/286T	19.23	25.23	19.23	25.23	28.28	33.75
324T/326T	20.23	26.23	20.23	26.23	29.28	34.75

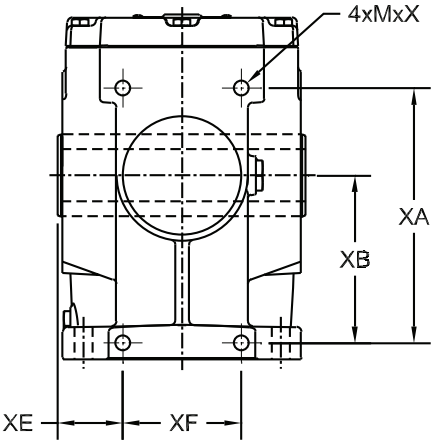
[1] Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
[2] All rough casting dimensions may vary by .25" due to casting variations.
[3] Input shaft extension tolerances: +.0000"; –.0005" for shafts up to 1.5" diameter. Larger diameter "U1", +.000"; –.001".
[4] Refer to page B-118 by gear frame for listing of all inch and metric bushing bore sizes available.
[5] The MC dimension shows spacing required to install or remove the bushing from the reducer.
[6] Bushing and dust cap can be installed opposite of how they are shown above.
[7] Driven shaft entry can be from either side of the gear reducer housing. Refer to installation manual for requirements.
[8] For details of the torque arm kit,refer to page B-117.

Optional Foot Mount Dimensions

"V" Mounting Position Only[1]



SOLID OUTPUT SHAFT

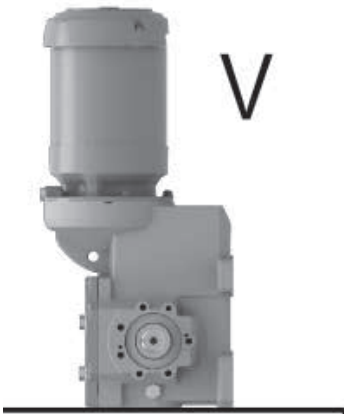


HOLLOW OUTPUT SHAFT

Option Mounting Surface

Gear Frame	Version	M x X	XA	XB	XE	XF
31	S2	9 +	3.94	1.97	0.59	3.94
32	S2	M10 x 22	6.10	4.02	1.52	2.83
33	S2	M12 x 22	7.24	5.00	1.63	3.54
34	S2	M12 x 22	9.37	6.46	2.46	3.94
35	S2	M16 x 27	11.02	7.72	2.34	4.92
36	S1 & S2	M20 x 40	11.61	7.87	3.07	6.06
37	S1 & S2	M24 x 40	13.58	8.82	3.35	6.69
38	S2	M30 x 45	19.29	13.39	2.95	7.87

+ These holes are through the feet and not tapped
[1] Operation only in "V" mounting position is required except frame 31



C-Face Reducers

Gear Frame	Reduction Stages	Input Size							
		56C	140TC	180TC	210TC	250TC	280TC	320TC	360TC
31	2	44	44	-	-	-	-	-	-
32	2	49	49	55	-	-	-	-	-
	3	56	56	62	-	-	-	-	-
	5	64	64	-	-	-	-	-	-
33 (A)	3	68	68	77	77	-	-	-	-
	5,6	98	98	-	-	-	-	-	-
34	3	118	118	127	127	-	-	-	-
	5,6	147	147	-	-	-	-	-	-
35	3	190	190	199	199	204	206	-	-
	5,6	210	210	219	-	-	-	-	-
36	3	-	351	360	360	365	367	-	-
	5,6	401	401	419	419	-	-	-	-
37	3	-	-	540	540	545	547	575	575
	5,6	576	576	585	585	-	-	-	-
38	3	-	-	-	850	855	857	885	-
	5,6	860	860	869	869	-	-	-	-

Input Shaft Reducers

Gear Frame	Reduction Stages	Style		
		AP/AD	Scoop	Top Mt.
31	2	40	-	-
32	2	45	-	100
	3	52	-	-
	5	60	-	-
33 (A)	3	74	99	121
	5,6	104	-	-
34	3	123	156	170
	5,6	151	-	-
35	3	195	247	266
	5,6	215	-	-
36	3	363	405	RO
	5,6	415	448	462
37	3	558	578	RO
	5,6	602	635	649
38	3	770	863	RO
	5,6	789	841	859

Gear Options

Gear Frame	Std Flange Mount	Footed S1
31	3	-
32	4	-
33	5	2
34	7	3
35	8	5
36	10	-
37	12	-
38	15	-

Lubrication

Series 3000 OtN gearing are shipped with one of the following synthetic lubricants per the table below and fitted with a magnetic drain. Each reducer is filled according to the mounting position specified when ordered. Refer to unit nameplate and the chart on page B-16 or B-121 for mounting position arrangement for your unit.

In the case of synthetic oil, the lubricant does not require changing but it is recommended that proper oil level be checked periodically.

Standard Synthetic Gear Oil (Non-Food Grade)

No Backstop

Manufacturer	-25° F to 125° F (-30° C to 50° C)
Fuchs*	Sintogear* 125
Mobil*	Mobilgear* SHC 150
Shell*	Omala* Fluids HD 150

With Backstop (1)

Manufacturer	-25° F to 125° F (-30° C to 50° C)
Shell*	Omala* RL 100
Mobil*	SHC 629

Standard Synthetic Gear Oil (H1 Rated Food Grade Requirements)

No Backstop

Manufacturer	22° F to 125° F (-20° C to 50° C)
Mobil*	SHC Cibus 150

⚠CAUTION

- Never mix synthetic oil and mineral oil.
- Never use extreme pressure (EP) oil in a reducer with a backstop.
- Refer to installation and maintenance manual for mineral oil selection.

Foot Mounted Triple Reduction Designs - US Quarts (Litre = Quart x .946)

Gear Frame Size	Mounting Config.	Mounting Position					
		B	P	H	T	V	W
3132	S2	0.95	1.06	0.95	0.80	1.64	1.11
3242	S2	1.96	2.06	1.74	2.06	3.12	2.48
3243	S1, S2	0.55	1.82	1.50	1.50	2.00	1.40
3363	S2	1.16	3.70	3.49	2.96	3.96	2.75
	S1	3.70	1.16	2.96	3.49	3.96	2.75
3473	S2	1.37	6.45	5.39	4.65	6.76	3.91
	S1	6.45	1.37	4.65	5.39	6.76	3.91
3583	S2	2.85	8.88	5.39	7.72	11.42	6.61
	S1	8.88	2.65	7.72	5.39	11.42	6.61
3693	S1, S2	6.08	19.24	14.28	12.90	23.36	13.95
3703	S1, S2	10.58	25.00	20.30	17/97	35.94	25.05
3823	S2	10.57	34.87	29.06	22.19	43.32	25.36

Face, Flange[1] or Shaft Mounted Triple Reduction Designs - US Quarts (Litre = Quart x .946)

Gear Frame Size	Mounting Config.	Mounting Position					
		B	P	H	T	V	W
3132	S2	0.95	1.06	0.95	0.80	1.64	1.11
3242	S2	1.96	2.06	1.74	2.06	3.12	2.48
3243	S2, S1	0.55	1.82	1.50	1.50	2.00	1.40
3363	S2, S1	1.16	3.70	3.49	2.96	3.96	2.75
3363A	S2	1.16	3.70	3.49	2.96	3.96	2.75
3473	S2, S1	1.37	6.45	5.39	4.65	6.76	3.91
3583	S2, S1	2.85	8.88	5.39	7.72	11.42	6.61
3693	S2	6.08	19.24	14.28	12.90	23.36	13.95
3703	S2	10.58	25.00	20.30	17/97	35.94	25.05
3823	S2	10.57	34.87	29.06	22.19	43.32	25.36

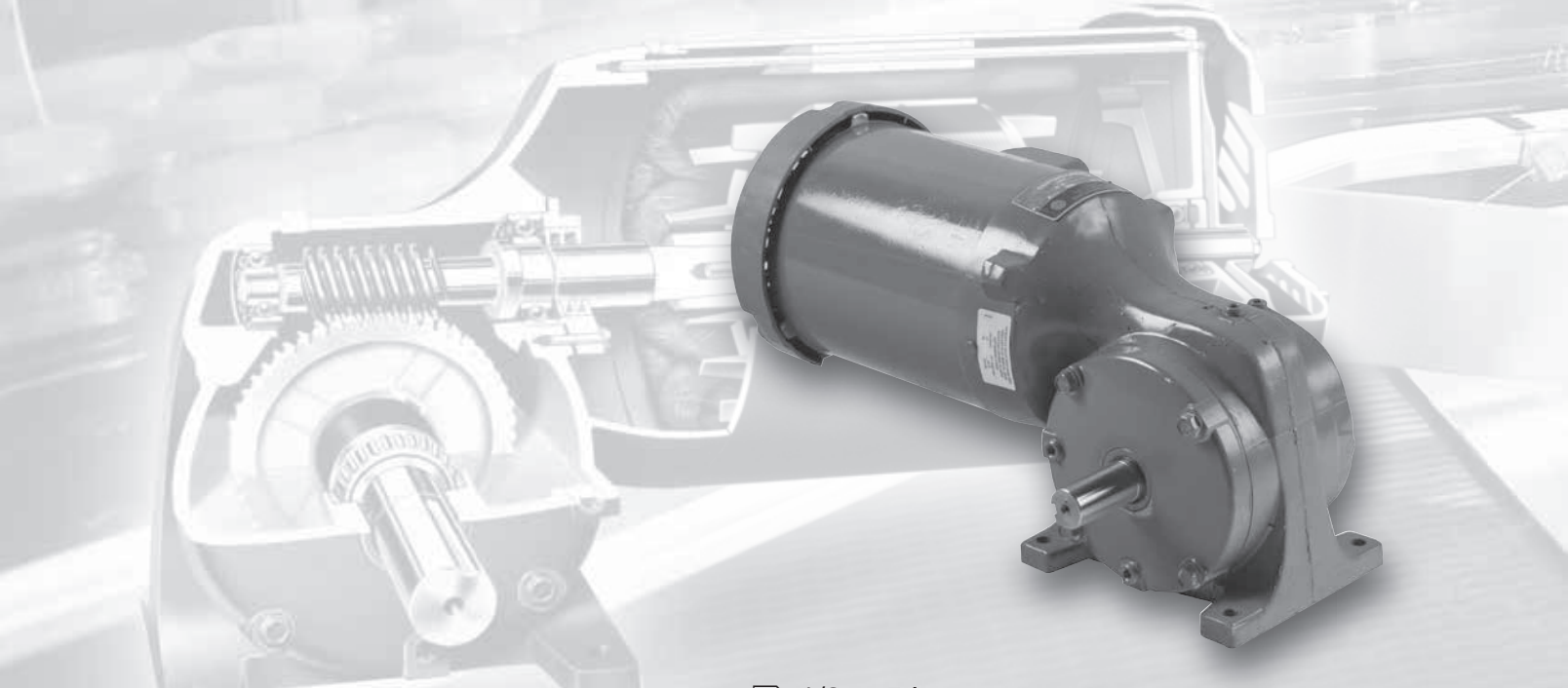
[1] This table defines oil volumes for types "5", "6" and "7" flanged gearing.

*The following are believed to be the trademarks and/or trade names of their respective owners and are not owned or controlled by Emerson Power Transmission. Fuchs and Sintogear: Fuchs Petrolube AG; Mobil and Mobilgear: Exxon Mobil Corporation; Shell and Omala: Shell Oil Company.

Browning®

IRA Gearmotors

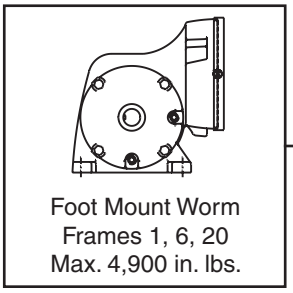
- ❑ Innovative self-locking taper shaft connection (motor to gear) allows on-site replacement without removing oil, primary pinion, or disconnecting the load. This helps ensure precision alignment and eliminates fretting to expedite motor removal.
- ❑ Forged "LMS" bronze worm wheel provides extra strength and life.
- ❑ Roller bearings on output shaft provide ample rating for high overhung load.
- ❑ Factory filled with oil.
- ❑ Two double lipped oil seals at input and output shafts.



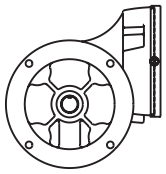
- ❑ 1/3 to 5 hp
- ❑ Worm and worm/helical ratios of 7:1 to 354:1
- ❑ Compact rugged physical envelope
- ❑ Three and single phase motors

Mounting Versatility and Size Range

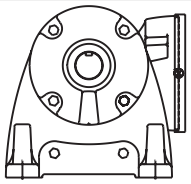
Type



Foot Mount Worm
Frames 1, 6, 20
Max. 4,900 in. lbs.



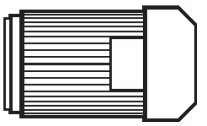
Flange Mount Worm
Frames 6, 20
Max. 4,900 in. lbs.



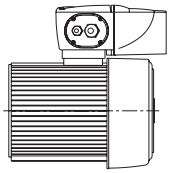
Foot Mount Worm Helical
Frames 6
Max. 2,800 in. lbs.



NEMA C - Face Adapter
Frames 6, 20



Motors
1/3 – 5 HP



IntelliGear®
1/3 – 5 HP

Type IRA

General
IRA worm and helical-worm speed reducers and gearmotors adapt the speed of an electric motor to the driven machine.
Selection depends on motor power (*P*) expressed in hp and on the required speed (*n*) in rpm.
Output torque of the driven system can be calculated using the following formulas, based on reducer efficiency:

$$T\ (\text{in.lbs.}) = \frac{P \times 63025 \times \text{eff.}}{n}$$

The overall ratio (i) of the drive system =

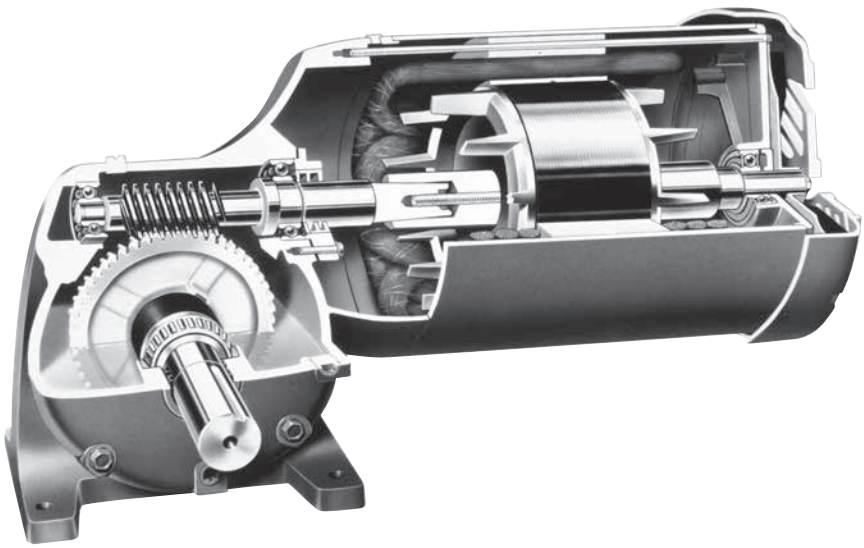
$$\frac{\text{motor speed (n)}}{\text{reducer output speed (n)}}$$

Design
Housing manufactured of high strength die-cast aluminum.
Roller bearings on output shaft provide greater overhung load.
Forged "LMS" bronze worm wheel provides extra strength.
Excellent reversibility.

Performances
This unique "worm-first" helical worm reducer (available only in frame size 6) provides for a higher efficiency than competitive units.
A range of three frame sizes: 1, 6, 20.
Output torque up to 4,300 in. lbs.
Numerous reduction ratios from 7:1 to 350:1.
High efficiency.
Low noise level.

Exceptional flexibility
Speed Reducers
- C-face input
- Output flange
- Multiple mounting positions available.

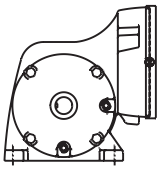
Gearmotors
- TEFC - three phase
- TEFC - single phase
- Corro-Duty®
- Explosionproof
- Brakemotor
- Inverter duty
- Washdown



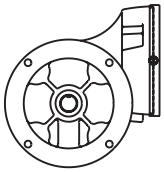
IRA Worm Drive

Mounting Versatility and Size Range

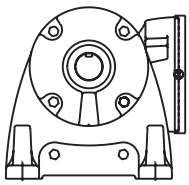
IRA Gearmotors



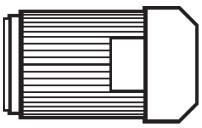
Foot Mount Worm
Frames 1, 6, 20
Max. 3,500 in. lbs.



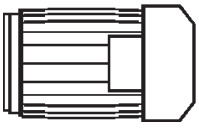
Flange Mount Worm
Frames 6, 20
Max. 3,500 in. lbs.



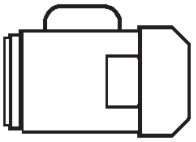
Foot Mount Worm Helical
Frames 6
Max. 2,700 in. lbs.



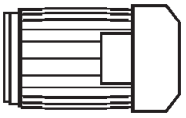
Three Phase TEFC
1/3 – 5 HP



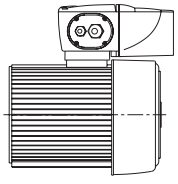
Corro-Duty®
1/3 – 5 HP



Single Phase TEFC
1/3 – 5 HP

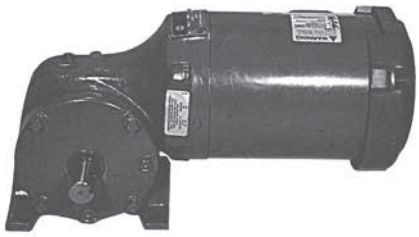


Explosionproof
1/3 – 5 HP



IntelliGear®
1/3 – 5 HP

Motor Options



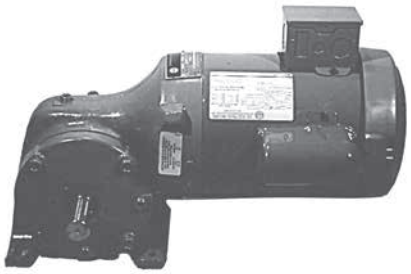
TEFC - Three Phase

- Suitable for general purpose industrial applications
- Premium class F insulation standard
- 40°C ambient, NEMA B design, continuous duty
- High efficiency design standard
- Washdown duty treatment available for food processors, meat packing, baking, drug, and cosmetic industries; includes N/C breather and USDA approved white paint
- Premium efficient motors option at 3 and 5 HP
- Inverter duty option per NEMA MG1 Part 31



Corro-Duty®

- Designed for applications in waste treatment, mining, and lumber industries
- All cast iron construction (56 and 140 frames are rolled steel)
- High efficiency standard an all HP's
- Premium efficient motors option at 3 and 5 HP
- 1.15 service factor, class F insulation
- Condensation drains in motor and conduit box
- 40°C ambient, NEMA design B, continuous duty



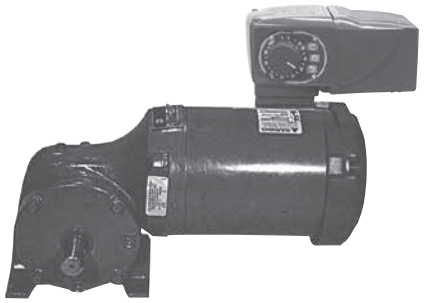
TEFC - Single Phase

- For agricultural, light material handling, textile, and light pumping applications
- 1.25 service factor
  (1.0 service factor, 2 thru 5 HP)
- Capacitor start
  (capacitor run above 1/2 HP, 48 frame)
  (capacitor run above 1 HP)
- Class B insulation, continuous duty, reversible



Explosionproof

- Ideal for the petro-chemical, grain, mining, and chemical industries
- Class I, group D, class II, groups F and G
- All cast iron construction (plastic fan cover)
- 1.0 service factor, class B insulation
- 40°C ambient, NEMA B design, continuous duty



IntelliGear® Plus

- Variable speed gearmotor with NEMA 4/12 enclosure
- "Onboard" pushbutton and remote speed changing options
- Pre-programmed 6:1 and wider C/T speed ranges
- Versions for 3/460V input power supplies from 1/3 to 5 HP
- 1/230V and 3/230V through 2 HP
- 1/115V through 3/4 HP
- UL*, CUL and CE

* UL is believed to be a trade name and/or trademark of Underwriters Laboratories, Inc., and is NOT owned or controlled by Emerson Power Transmission.

Selection and Ordering Information

Selection Information

1. Input hp
   - Based on application data.

2. Speed / Ratio
   - Obtain either desired output speed (rpm) or gearbox ratio based on application.

3. Service Factor
   - The tables on pages C14 to C16 are based on past operating experience within the industries listed and information gathered by AGMA. If the user has data reflecting greater severity than normal industry usage, then service factor should be increased.

   - Choose the AGMA class for your given application based on this criteria. If your application cannot be found, use the following table to determine service factor.

Prime Mover	Duration Of Service	Nature of Load From Driven Machine		
		Uniform	Mod. Shock	Heavy Shock
Electric Motor	Occasional 1/2 hour per day	0.80	0.90	1.00
	Intermittent 2 hours per day	0.90	1.00	1.25
	10 hours per day	1.00	1.25	1.50
	24 hours per day	1.25	1.50	1.75

The following service factors apply to applications involving frequent starts and stops.

Electric Motor	Occasional 1/2 hour per day	0.90	1.00	1.25
	Intermittent 2 hours per day	1.00	1.25	1.50
	10 hours per day	1.25	1.50	1.75
	24 hours per day	1.50	1.75	2.00

Size Selection

Step 1 - Locate appropriate gearmotor selection table (pages C18 to C24) based on input hp.

Step 2 - Choose the appropriate nominal speed required.

Step 3 - Select the correct gearmotor based on service factor determined in selection information.

Step 4 - Verify overhung load ratings where required (see below).

Overhung Load

When a sprocket, sheave, pulley, or pinion is mounted on the take-off shaft of a gearmotor, it is necessary to calculate the overhung load. This calculated load must be compared with the gearbox capacity listed to make sure the gearbox will not be overloaded. To calculate the overhung load you need to know the torque or horsepower at the take-off shaft and the location along the shaft at which the load is applied.

A. If torque is known:

$$OHL = \frac{T \times K \times LLF}{r}$$

B. If horsepower is known:

$$OHL = \frac{63025 \times hp \times K \times LLF}{rpm \times r}$$

Where:
OHL = Overhung load (pounds)
T = Torque (in. lbs.)
r = Radius of driving member (in.)
hp = Horsepower
K = Drive type factor
LLF = Load location factor

Driving Member	Value of K
Chain Drive	1.00
Pinion	1.25
Gearbelt	1.25
V-Belt	1.50
Flat Belt	2.50

Load Location	Value of LLF
End of shaft extension	1.20
Center of shaft extension	1.00
Shaft extension shoulder	0.80

Example

A right angle, foot mounted gearmotor is required to operate a uniformly loaded conveyor at 68 rpm, 24 hours per day. An 8" diameter sprocket is mounted at the end of the shaft and drives the conveyor with a chain. The load is .75 hp and customer requests a high efficiency 3/60 230/460 volt TEFC motor end. Shaft extension is to be on the right, viewed opposite the input. The gearmotor will be mounted on the floor.

Step 1 – AGMA service classification tables on page C-14 indicate that this is a 1.25 service factor application.

Step 2 – Page E-21 IRA gearmotor table indicates that a frame 143T-6 with 1 HP motor will do the job.

Output RPM	Service Factor	Output Torque in-lb	Output Horsepower	OHL Δ lb	Nominal Ratio	Frame Size Gear	Frame Size Motor	Std. Motor Types ◊
68	1.5	796	0.86	980	25	6	143T	T,C,S,X,IG

Step 3 – To check overhung load for the example:

$$r = \frac{\text{Sprocket Diameter}}{2} = \frac{8}{2} = 4$$

K = 1.0 (chain drive)

LLF = 1.2 (sprocket on end of shaft)

HP = 1

Torque formula:

$$OHL = \frac{63025 \times HP \times K \times LLF}{RPM \times r}$$

$$OHL = \frac{63025 \times 1 \times 1.0 \times 1.2}{68 \times 4} = 278 \text{ lbs.}$$

Overhung load capacity of 980 lbs. listed is greater than the calculated value of 278 lbs.

Step 4 – Catalog designation (see "Ordering" page C-10):

IRA - 6 - GW - F1 - 25 - HT24 - 143T - 1

Selection and Ordering Information

Selection Information

1. Determine Installation Environment
   - Control enclosure is NEMA 4/12
2. Input hp
   - For constant torque loads this is at maximum speed of range
3. Speed Range
   - Confirm maximum and mininum of 6:1 range.
4. Determine Control Power Supply
   - Phase and voltage.

Power Supply	Input HP's
1 ph / 115 v	.33 to .75
1 ph / 230 v	.33 to 2
3 ph / 230 v	.33 to 2
3 ph / 460 v	.33 to 5

5. Mechanical Service Factoring of Gear
   - Refer to Page E-6 for this procedure.

   Note: IntelliGear application for 1 phase power supply is limited to 10 starts per hour.

6. Determine Speed Adjustment Option (see Section D)
   - Select from:

   PD = Digital keypad with forward/reverse/stop/ speed up/speed down/speed display on IntelliGear enclosure *
   P1 = Run/Stop/Speed Pot. mounted on IntelliGear enclosure
   P2 = Forward/Reverse/Stop/Pot. mounted on IntelliGear enclosure
   P3 - Speed Pot. (only) mounted on IntelliGear enclosure (start/stop by others)
   P4 = Speed Pot. (only) mounted inside IntelliGear enclosure (start/stop by others)
   R = Remote Signal Following (0-10VDC or 4-20mA supplied by others)

Size Selection

Step 1 - Locate gearmotor selection tables based on the input HP required at maximum speed of the range.

Step 2 - Select the "output rpm" closest to the maximum speed of the range desired. If the motor hp is 5, make the rpm selection using the following formula:

$$\text{"Output rpm" Selection } * = \frac{\text{Max. Speed of Range}}{1.2}$$

Step 3 - Note the gear ratio after step 2.

Step 4 - Select correct gearmotor that meets or exceeds the AGMA service factor determined in the selection information.

Step 5 - Verify overhung load rating where applicable per formulas on Page C-6.

Step 6 - Confirm input power supply is compatible with hp of selection and record speed adjustment option desired for the applicaiton.

Step 7 - Refering to Page C-13, determine if an alternate controller location is required for the application. Default location is "FO" (at 12 o'clock).

* Maximum motor rpm will be 2150 @ 74 Hz for 5hp IntelliGear.

* PD option not available at 3/4 HP with 1ph, 115V power supply and 1.5 HP or 2 HP with 1ph, 230V power supply

Selection and Ordering Information

Selection Example

A foot mounted IRA worm gearmotor is required to operate a non-uniformly fed assembly conveyor from 38 to 6 rpm, 8-10 hours per day. The output shaft will be chain/sprocket connected to the conveyor shaft in a 3:1 ratio and a 3.5" radius sprocket mounted mid-shaft. The conveyor will require at least 0.51 hp at the maximum rpm of the range. The jobsite power supply is 3/230 VAC and speed control with start/stop push-buttons and speed knob on the controller enclosure. The enclosure requirement for the site is NEMA 12. Referencing the motor fan cover guard, the reducer output shaft should be at the left, the controller should be at the right, and the speed knob should be at the upper side on the control enclosure. Final mounting will be ceiling mount.

Step 1...

The closest gearmotor hp is a 0.75 HP unit and this unit @ 37 rpm 60 Hz has an output of 0.55 hp. (944 inch lbs torque @37 RPM)

Step 2...

The ratio that will more closely provide the desired speed range is 45:1.

Step 3...

AGMA service factor requirements for this application is a minimum of 1.25 S.F. and the selection from page C-20 will be gear frame 6 GW.

Output RPM	Service Factor	Output Torque in-lb	Output Horsepower	OHL Δ lb	Nominal Ratio	Frame Size Gear	Frame Size Motor	Std. Motor Types ◊
37	1.3	944	.55	980	45	6	56	T,S,C,X,IG

Step 4...

OHL with HP known = $\frac{63025 \times HP \times K \times LLF}{RPM \times R}$

= $\frac{63025 \times .51 \times 1.00 \times 1.00}{37 \times 3.5"}$

= 248 Lbs. (Less than 980 Lb OHL capacity)

Step 5...

The power supply of 3/230 VAC is ok for a .75 HP IRA gearmotor with "IG2" motor input, plus include F1 controller location plus "B" cable entry.

Step 6...

Catalog designation will be:

~~IRA • 6 • GW • C1 • 45 • IG2 • 56 • 3/4~~ **w/F1 controller and "B" cable entry. Supply "P1" speed control option.**

Catalog Designation

IRA • 6 • GW • F1 • 25 • HT24 • 143T • 1 • ____

Based on Selection

Choose one

Based on Application

Type	Gear Frame	Mounting Configuration	Mounting Positions	Ratio	Input	Motor Frame	Horsepower	Modification Code(s)
IRA	1 6 20	GW = Footed Worm GWV = Flanged Worm GWB = Footed Worm-Helical (Frame 6 only)	**See page C-11**	Use Nominal Ratio Selected	See legend on page C-12	48 56 B56 143T 145T 182T 184T	1/3 1/2 3/4 1 1.5 2 3 5	Number of Modification(s) from pages C-25 and C-26

Availability

Gear Frame	Footed		Flanged
	Universal #1	Universal #2	Universal #1
1 GW (worm)	●	◊	-
6 GW (worm)	●	◊	●
6 GWB (worm helical)	●	●	*
20 GW (worm)	●	◊	●

● Normally Stocked

◊ Available thru conversion of stock unit

* Refer application to Type OtN Product

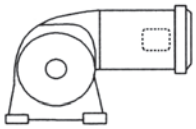
Mounting Positions

Type IRA

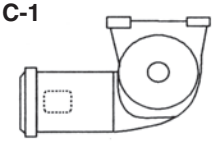
Foot Mount Worm and Worm Helical

Universal No. 1

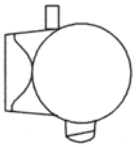
F-1 STANDARD



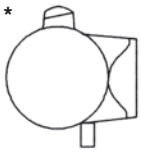
C-1



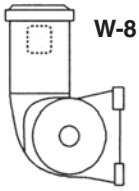
U-3*



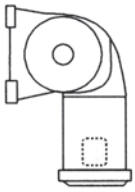
D-1*



W-8

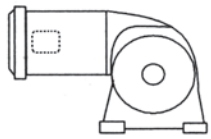


W-1

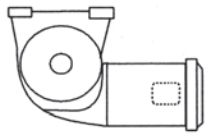


Universal No. 2

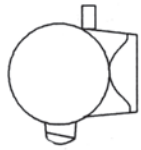
F-2



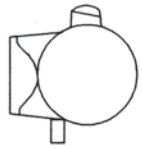
C-4



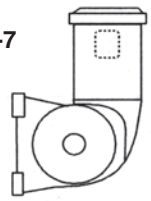
U-1*



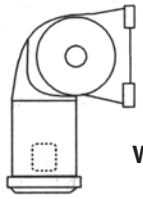
D-3*



W-7



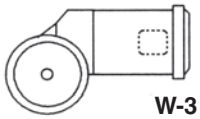
W-2



* Viewed from fan end of motor.

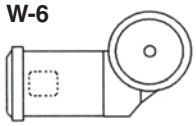
Flange Mount Worm

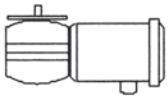
Universal No. 1



W-3 STANDARD

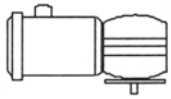
W-6

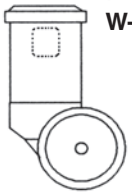




U-1

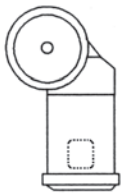
D-1





W-8

W-1



IRA Gearmotor Inputs

Example: High Efficiency, TEFC, 3 phase 60 Hz, 575V, with Fail-safe Brake

H T 5 B
1 2 3 4

1 Efficiency
- **Blank** Normal
- **H** High
- **I** Inverter Duty
- **P** Premium

2 Enclosure, pole
- **T** TEFC, 4 pole
- **C** Corro-Duty, 4 pole
- **W** Washdown, 4 pole
- **WP** Washdown Plus, 4 pole
- **X** Explosionproof, 4 pole
- **G** IntelliGear, 4 pole

3 Phase, Hz, Voltage
- **S1** 1 Phase, 60, 115V
- **S12** 1 Phase, 60, 115/230V
- **S2** 1 Phase, 60, 230V
- **2** 3 Phase, 60, 230V
- **24** 3 Phase, 60, 230/460V
- **53** 3 Phase, 50, 380V
- **4** 3 Phase, 60, 460V
- **54** 3 Phase, 50, 400/415V
- **5** 3 Phase, 60, 575V

4 Accessories
- No Brake
- **B** Fail-safe Brake

Base Design	InputCode	Motor HP							
		0.33	0.50	0.75	1	1.5	2	3	5
S Single Phase TEFC	TS12	Y	Y	Y	Y	Y	Y	-	-
	TS12B	Y	Y	Y	Y	Y	Y	-	-
	TS2	-	-	-	-	-	-	Y	Y
	TS2B	-	-	-	-	-	-	Y	Y
T 3 Phase TEFC	HT24	Y	Y	Y	Y	Y	Y	Y	Y
	HT24B	Y	Y	Y	Y	Y	Y	Y	Y
	HT5	Y	Y	Y	Y	Y	Y	Y	Y
	HT5B	Y	Y	Y	Y	Y	Y	Y	Y
	T24	Y	Y	Y	Y[1]	Y	Y	Y	Y
	T24B	Y	Y	Y	Y[1]	Y	Y	Y	Y
	T5	Y	Y	Y	Y[1]	-	-	-	-
	T5B	Y	Y	Y	Y[1]	Y	Y	Y	Y
	• T53	Y	Y	Y	Y[1]	Y	Y	Y	Y
	• T53B	Y	Y	Y	Y[1]	Y	Y	Y	Y
	T54	Y	Y	Y	Y	Y	Y	Y	Y
	IT24	Y	Y	Y	Y	Y	Y	Y	Y
	IT24B	Y	Y	Y	Y	Y	Y	Y	Y
	IT5	Y	Y	Y	Y	Y	Y	Y	Y
	IT5B	Y	Y	Y	Y	Y	Y	Y	Y
	PT24	-	-	-	-	-	-	Y	Y
	PT24B	-	-	-	-	-	-	Y	Y
	PT5	-	-	-	-	-	-	Y	Y
	PT5B	-	-	-	-	-	-	Y	Y
	W24	Y	Y	Y	Y[1]	Y	Y	Y	Y
	W5	Y	Y	Y	Y[1]	Y	Y	-	-
	WP24	Y	Y	Y	Y[1]	Y	Y	-	-
	WP5	Y	Y	Y	Y[1]	Y	Y	-	-
C 3 Phase Corro-Duty®	HC24	Y	Y	Y	Y	Y	Y	-	-
	HC5	Y	Y	Y	Y	Y	Y	Y	Y
	IC24	Y	Y	Y	Y	Y	Y	Y	Y
	IC5	Y	Y	Y	Y	Y	Y	Y	Y
	PC24	-	-	-	-	-	-	Y	Y
	PC5	-	-	-	-	-	-	Y	Y
X 3 Phase Explosionproof	X24	Y	Y	Y	Y	Y	Y	Y	Y
	X5	Y	Y	Y	-	-	-	-	-
	IX24	P	P	P	P	P	P	P	P
IG IntelliGear®	IGS1	Y	Y	Y	-	-	-	-	-
	IGS2	Y	Y	Y	Y	Y	Y	-	-
	IG2	Y	Y	Y	Y	Y	Y	Y	Y
	IG4	Y	Y	Y	Y	Y	Y	Y	Y

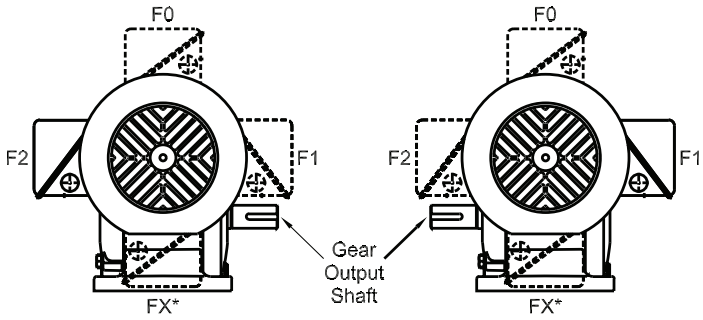
P Production lead-time | Y Available from stock | Y Not available with 48 frame motors | - Not available | Y[1] Motor frame is B56

• Refer to page C-26 if CCC motor certification is required on gearmotor

Availability and Electrical Connection Options - Type IRA

Electrical Connections Conduit Box Locations:

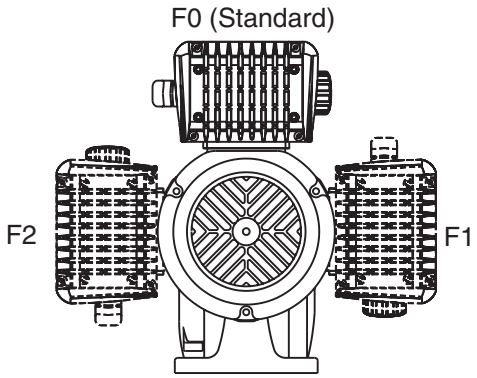
Shaft Orientation	Conduit Box Location	
	Std.	Optional
Universal #2	F2	F1 or F0 or FX
Universal #1	F1	F2 or F0 or FX



Universal #2 **Universal #1**

IntelliGear Controller Location

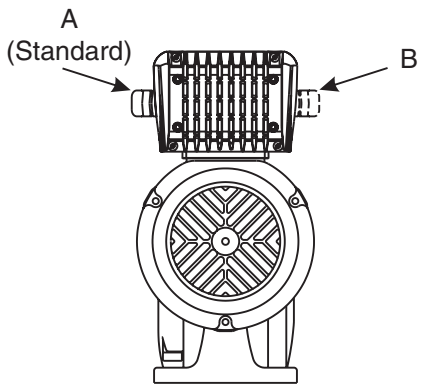
When ordering an IntelliGear® IRA gearmotor, you can specify the controller location and conduit entry location when viewing the unit fan cover guard. If no options are specified, the "F0" controller location will be supplied.



IntelliGear® Controller

IntelliGear Cable Entry

IntelliGear Cable Entry can be from either side of enclosure. If no option is specified, "A" will be supplied.



Cable Entry

* Some IRA Gearmotors ordered with "FX" conduit box locations will have conduit box below reducer feet.

AGMA Application Classification

Application	Recommended Service Factors		
	Up to 3 hrs/day	3-10 hrs/day	Over 10 hrs/day
AGITATORS (Mixers)			
Pure Liquids	- - -	1.00	1.25
Liquids & Solids	1.00	1.25	1.50
Liquids - Variable Density	1.00	1.25	1.50
BLOWERS			
Centrifugal	1.00	1.25	- - -
Lobe	1.00	1.25	1.50
Vane	- - -	1.00	1.25
BREWING & DISTILLING			
Bottling Machinery	- - -	1.00	1.25
Brew Kettles (Continuous Duty)	- - -	1.00	1.25
Cookers (Continuous Duty)	- - -	1.00	1.25
Mush Tubs (Continuous Duty)	- - -	1.00	1.25
Scale Hopper (Frequent Starts)	1.00	1.25	1.50
CAN FILLING MACHINES	- - -	1.00	1.25
CAR DUMPERS	1.25	1.50	1.75
CAR PULLERS	1.00	1.25	1.50
CLARIFIERS	- - -	1.00	1.25
CLASSIFIERS	1.00	1.25	1.50
CLAY WORKING MACHINERY			
Brick Press	1.25	1.50	1.75
Briquette Machine	1.25	1.50	1.75
Pug Mill	1.00	1.25	1.50
COMPACTORS	1.50	1.75	2.00
COMPRESSORS			
Centrifugal	- - -	1.00	1.25
Lobe	1.00	1.25	1.50
Reciprocating, Multi - Cylinder	1.00	1.25	1.50
Reciprocating, Single - Cylinder	1.25	1.50	1.75
CONVEYORS - GENERAL PURPOSE			
Uniformly loaded or fed	- - -	1.00	1.25
Not uniformly fed	1.00	1.25	1.50
Reciprocating or Shaker	1.25	1.50	1.75
CRANES			
Dry Dock			
Main Hoist	1.25	1.50	1.75
Auxiliary Hoist	1.25	1.50	1.75
Boom Hoist	1.25	1.50	1.75
Slewing Drive	1.25	1.50	1.75
Traction Drive	1.50	1.50	1.50
Container			
Main Hoist	◆	◆	◆
Boom Hoist	◆	◆	◆
Trolley Travel			
Gantry Drive	◆	◆	◆
Traction Drive	◆	◆	◆
Mill Duty			
Main Hoist	◆	◆	◆
Auxiliary	◆	◆	◆
Bridge and Trolley Travel	◆	◆	◆

Application	Recommended Service Factors		
	Up to 3 hrs/day	3-10 hrs/day	Over 10 hrs/day
CRANES (cont.)			
Industrial Duty			
Main	1.00	1.25	1.50
Auxiliary	◆	◆	◆
Bridge and Trolley Travel	◆	◆	◆
CRUSHER			
Stone or Ore	1.50	1.75	2.00
DREDGES			
Cable Reels	1.00	1.25	1.50
Conveyors	1.00	1.25	1.50
Cutter Head Drives	1.25	1.50	1.75
Pumps	1.00	1.25	1.50
Screen Drives	1.25	1.50	1.75
Stackers	1.00	1.25	1.50
Winches	1.00	1.25	1.50
ELEVATORS			
Bucket	1.00	1.25	1.50
Centrifugal Discharge	- - -	1.00	1.25
Escalators	◆	◆	◆
Freight	◆	◆	◆
Gravity Discharge	- - -	1.00	1.25
EXTRUDERS			
General	1.25	1.25	1.25
Plastics			
(a) Variable Speed Drive	1.50	1.50	1.50
(b) Fixed Speed Drive	1.75	1.75	1.75
Rubber			
(a) Continuous Screw Operation	1.50	1.50	1.50
(b) Intermittent Screw Operation	1.75	1.75	1.75
FANS			
Centrifugal	- - -	1.00	1.25
Cooling Towers	◆	◆	◆
Forced Draft	1.25	1.25	1.25
Induced Draft	1.00	1.25	1.50
Industrial & Mine	1.00	1.25	1.50
FEEDERS			
Apron	- - -	1.25	1.50
Belt	1.00	1.25	1.50
Disc	- - -	1.00	1.25
Reciprocating	1.25	1.50	1.75
Screw	1.00	1.25	1.50
FOOD INDUSTRY			
Cereal Cooker	- - -	1.00	1.25
Dough Mixer	1.00	1.25	1.50
Meat Grinders	1.00	1.25	1.50
Slicers	1.00	1.25	1.50
GENERATORS & EXCITERS	- - -	1.00	1.25
HAMMER MILLS	1.50	1.50	1.75
HOISTS			
Heavy Duty	1.25	1.50	1.75
Medium Duty	1.00	1.25	1.50
Skip Hoist	1.00	1.25	1.50

◆ **Refer to Application Engineering (1 800 626 2093)**

AGMA Application Classification

Application	Recommended Service Factors		
	Up to 3 hrs/day	3-10 hrs/day	Over 10 hrs/day
LAUNDRY TUMBLERS	1.00	1.25	1.50
LAUNDRY WASHERS	1.25	1.25	1.50
LUMBER INDUSTRY			
Barkers - Spindle Feed	1.25	1.25	1.50
- Main Drive	1.50	1.50	1.50
Conveyors - Burner	1.25	1.25	1.50
- Main or Heavy Duty	1.50	1.50	1.50
- Main Log	1.50	1.50	1.75
- Re-Saw, Merry-Go-Round	1.25	1.25	1.50
- Slab	1.50	1.50	1.75
- Transfer	1.25	1.25	1.50
Chains - Floor	1.50	1.50	1.50
- Green	1.50	1.50	1.50
Cut-Off Saws - Chain	1.50	1.50	1.50
- Drag	1.50	1.50	1.50
Debarking Drums	1.50	1.50	1.75
Feeds - Edger	1.25	1.25	1.50
- Gang	1.50	1.50	1.50
- Trimmer	1.25	1.25	1.50
Log Deck	1.50	1.50	1.50
Log Hauls - Incline - Well Type	1.50	1.50	1.50
Log Turning Devices	1.50	1.50	1.50
Planer Feed	1.25	1.25	1.50
Planer Tilting Hoist	1.50	1.50	1.50
Rolls - Live, Off Brg., Roll Cases	1.50	1.50	1.50
Sorting Table	1.25	1.25	1.50
Tipple Hoist	1.25	1.25	1.50
Transfers - Chain	1.50	1.50	1.50
- Craneway	1.50	1.50	1.50
Tray Drives	1.25	1.25	1.50
Veneer Lathe Drives	◆	◆	◆
METAL MILLS			
Draw Bench Carriage & Main Drive	1.00	1.25	1.50
Run Out Tables			
Non-Reversing			
Group Drives	1.00	1.25	1.50
Individual Drives	1.50	1.50	1.75
Reversing	1.50	1.50	1.75
Slab Pushers	1.25	1.25	1.50
Shears	1.50	1.50	1.75
Wire Drawing	1.00	1.25	1.50
Wire Winding Machine	1.00	1.25	1.50
METAL STRIP PROCESSING MACHINERY			
Bridles	1.25	1.25	1.50
Coilers & Uncoilers	1.00	1.00	1.25
Edge Trimmers	1.00	1.25	1.50
Flatteners	1.00	1.25	1.50
Loopers (Accumulators)	1.00	1.00	1.00
Pinch Rolls	1.00	1.25	1.50
Scrap Choppers	1.00	1.25	1.50
Shears	1.50	1.50	1.75
Slitters	1.00	1.25	1.50
MILLS, ROTARY TYPE			
Bell & Rod			
Spur Ring Gear	1.50	1.50	1.75
Helical Ring Gear	1.50	1.50	1.50
Direct Connected	1.50	1.50	1.75
Cement Kilns	1.50	1.50	1.50
Dryers & Coolers	1.50	1.50	1.50
MIXERS, CONCRETE	1.00	1.25	1.50

◆ **Refer to Application Engineering (1 800 626 2093).**

Application	Recommended Service Factors		
	Up to 3 hrs/day	3-10 hrs/day	Over 10 hrs/day
PAPER MILLS			
Agitator (Mixer)	1.50	1.50	1.50
Agitator for Pure Liquids	1.25	1.25	1.25
Barker Drums	1.75	1.75	1.75
Barker - Mechanical	1.75	1.75	1.75
Beater	1.50	1.50	1.50
Breaker Stack	1.25	1.25	1.25
Calender			
(Anti-Friction Bearings Only)	1.25	1.25	1.25
Chipper	1.75	1.75	1.75
Chip Feeder	1.50	1.50	1.50
Coating Rolls	1.25	1.25	1.25
Conveyors			
Chip, Bark, Chemical	1.25	1.25	1.25
Log (Including Slab)	1.75	1.75	1.75
Couch Rolls	1.25	1.25	1.25
Cutter	1.75	1.75	1.75
Cylinders Molds	1.25	1.25	1.25
Dryers (Anti-Friction Bearings Only)			
Paper Machine	1.25	1.25	1.25
Conveyor Type	1.25	1.25	1.25
Embosser	1.25	1.25	1.25
Extruder	1.50	1.50	1.50
Fourdrinier Rolls (Includes			
Lump Breaker, Dandy Roll,			
Wire Turning & Return Rolls)	1.25	1.25	1.25
Jordan	1.25	1.25	1.25
Kiln Drive	1.50	1.50	1.50
Mt. Hope Rolls	1.25	1.25	1.25
Paper Rolls	1.25	1.25	1.25
Platter	1.50	1.50	1.50
Pressers - Felt & Suction	1.25	1.25	1.25
Pulper	1.50	1.50	1.75
Pumps - Vacuum	1.50	1.50	1.50
Reel (Surface Type)	1.25	1.25	1.50
Screens			
Chip	1.50	1.50	1.50
Rotary	1.50	1.50	1.50
Vibrating	1.75	1.75	1.75
Size Press	1.25	1.25	1.25
Super Calender	1.25	1.25	1.25
Thickener (AC Motor)	1.50	1.50	1.50
(DC Motor)	1.25	1.25	1.25
Washer (AC Motor)	1.50	1.50	1.50
(DC Motor)	1.25	1.25	1.25
Wind & Unwind Stand	1.00	1.00	1.00
Winders (Surface Type)	1.25	1.25	1.25
Yankee Dryers (Anti-Friction			
Bearings Only)	1.25	1.25	1.25
PLASTICS INDUSTRY-PRIMARY PROCESSING			
Intensive Internal Mixers			
(a) Batch Mixers	1.75	1.75	1.75
(b) continuous Mixers	1.50	1.50	1.50
Batch Drop Mill - 2 Smooth Rolls	1.25	1.25	1.25
Continuous Feed, Holding &			
Blend Mill	1.25	1.25	1.25
Compounding Mills	1.25	1.25	1.25
Calenders	1.50	1.50	1.50
PLASTICS INDUSTRY - SECONDARY PROCESSING			
Blow Molders	1.50	1.50	1.50
Coating	1.25	1.25	1.25
Film	1.25	1.25	1.25
Pipe	1.25	1.25	1.25

Application	Recommended Service Factors		
	Up to 3 hrs/day	3-10 hrs/day	Over 10 hrs/day
PLASTICS INDUSTRY - SECONDARY PROCESSING (Cont.)			
Pre-Plasticizers	1.50	1.50	1.50
Rods	1.25	1.25	1.25
Sheets	1.25	1.25	1.25
Tubing	1.25	1.25	1.50
PULLERS - BARGE HAUL	1.00	1.50	1.75
PUMPS			
Centrifugal	- - -	1.00	1.25
Proportioning	1.00	1.25	1.50
Reciprocating			
Single Acting, 3 or more cylinders	1.00	1.25	1.50
Double Acting, 2 or more cylinders	1.00	1.25	1.50
Rotary - Gear Type	- - -	1.00	1.50
- Lobe Type	- - -	1.00	1.25
- Vane	- - -	1.00	1.25
RUBBER INDUSTRY			
Intensive Internal Mixers			
(a) Batch Mixers	1.50	1.75	1.75
(b) Continuous Mixers	1.25	1.50	1.50
Mixing Mill -			
2 Smooth Rolls (if corrugated rolls are used, than the same service factors that are used for a Cracker Warmer)	1.50	1.50	1.50
Batch Drop Mill - 2 Smooth Rolls	1.50	1.50	1.50
Cracker Warmer - 2 Rolls; 1 corrugated roll	1.75	1.75	1.75
Cracker - 2 corrugated rolls	1.75	1.75	1.75
Holding, Feed & Blend Mill - 2 Rolls	1.25	1.25	1.25
Refiner - 2 Rolls	1.50	1.50	1.50
Calenders	1.50	1.50	1.50
SAND MILLER	1.00	1.25	1.50

Application	Recommended Service Factors		
	Up to 3 hrs/day	3-10 hrs/day	Over 10 hrs/day
SEWAGE DISPOSAL EQUIPMENT			
Bar Screens	- - -	1.00	1.25
Chemical Feeders	- - -	1.00	1.25
Dewatering Screens	1.00	1.25	1.50
Scum Breakers	1.00	1.25	1.50
Slow or Rapid Mixers	1.00	1.25	1.50
Sludge Collectors	1.00	1.00	1.25
Thickeners	1.00	1.25	1.50
Vacuum Filters	1.00	1.25	1.50
SCREENS			
Air Washing	- - -	1.00	1.25
Rotary - Stone or Gravel	1.00	1.25	1.50
Traveling Water Intake	- - -	1.00	1.25
SUGAR INDUSTRY			
Beet Slicer	1.50	1.50	1.75
Cane Knives	1.50	1.50	1.50
Crushers	1.50	1.50	1.50
Mills (Low Speed End)	1.50	1.50	1.50
TEXTILE INDUSTRY			
Batchers	1.00	1.25	1.50
Calenders	1.00	1.25	1.50
Cards	1.00	1.25	1.50
Dry Cans	1.00	1.25	1.50
Dryers	1.00	1.25	1.50
Dyeing Machinery	1.00	1.25	1.50
Looms	1.00	1.25	1.50
Mangles	1.00	1.25	1.50
Nappers	1.00	1.25	1.50
Pads	1.00	1.25	1.50
Slashers	1.00	1.25	1.50
Soapers	1.00	1.25	1.50
Spinners	1.00	1.25	1.50
Tenter Frames	1.00	1.25	1.50
Washers	1.00	1.25	1.50
Winders	1.00	1.25	1.50

Applications not listed in this table or where the user has data indicating the severity of his usage to be greater than average should be referred to Application Engineering (1 800 626 2093).

Type IRA

The IRA gearbox is filled at the factory with oil according to the mounting position specified when ordered. The oil used depends on the order description at entry. Non¬washdown units are filled with an AGMA 8 mineral oil. In the event that a gearbox needs to be refilled, see the appropriate maintenance manual for the proper procedure and correct quantity of oil. If synthetic oil is used, the gearbox must be refilled with the same lubricant or must be completely drained and flushed.

Mineral Oils

Ambient Temperature	15 to 60 F	50 to 125 F
ISO Grade	460	680
AGMA	7	8

*Synthetic Oils

Ambient Temperature	-30 to 200 F	-30 to 200 F
ISO Grade	460	680
AGMA	7	8

* Gear sumps will be filled with a synthetic 460 series lubricant classified as a Polyglycol (PAG) oil when food grade lubricant is specified on your order.

IRA Gearmotors

1/3 HP

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	Service Factor	Output Torque in-lbs	Output Horsepower	OHL Δ lb	Nominal Ratio	Frame Size Gear	Frame Size Motor	Std. Motor Types ◊
230	3.0+	76	0.28	670	7.1	1	48	T,S
230	3.0+	83	0.30	696	7.1	6	56	T,C,S,X,IG
190	3.0+	91	0.27	670	9	1	48	T,S
190	3.0+	100	0.30	738	9	6	56	T,C,S,X,IG
155	3.0+	111	0.27	670	11.2	1	48	T,S
155	3.0+	121	0.30	804	11.2	6	56	T,C,S,X,IG
125	3.0+	134	0.27	670	14	1	48	T,S
125	3.0+	144	0.29	832	14	6	56	T,C,S,X,IG
100	3.0+	163	0.26	670	18	1	48	T,S
100	3.0+	179	0.28	942	18	6	56	T,C,S,X,IG
84	2.8	189	0.25	670	20	1	48	T,S
84	3.0+	210	0.28	980	20	6	56	T,C,S,X,IG
68	2.5	222	0.24	670	25	1	48	T,S
68	3.0+	250	0.27	980	25	6	56	T,C,S,X,IG
56	2.1	254	0.23	670	31.5	1	48	T,S
56	3.0+	292	0.26	980	31.5	6	56	T,C,S,X,IG
45	1.9	299	0.21	670	40	1	48	T,S
45	3.0+	350	0.25	980	40	6	56	T,C,S,X,IG
37	1.5	337	0.20	670	45	1	48	T,S
37	2.8	405	0.24	980	45	6	56	T,C,S,X,IG
30	1.3	381	0.18	670	56	1	48	T,S
30	2.3	475	0.23	980	56	6	56	T,C,S,X,IG
25	1.1	427	0.17	670	71	1	48	T,S
25	1.9	401	0.16	980	71	6	56	T,C,S,X,IG
20	1.5	461	0.15	980	90	6	56	T,C,S,X,IG
17	2.5	763	0.21	1234	100	6*	56	T,C,S,X,IG
13	2.2	881	0.18	1231	125	6*	56	T,C,S,X,IG
11	2.0	1058	0.18	1140	160	6*	56	T,C,S,X,IG
9	1.7	1213	0.17	1216	200	6*	56	T,C,S,X,IG
7.5	1.5	1416	0.17	1220	224	6*	56	T,C,S,X,IG
6	1.5	1599	0.15	1064	280	6*	56	T,C,S,X,IG
5	1.2	1837	0.15	1229	355	6*	56	T,C,S,X,IG

Refer to OtN Product for higher ratios and/or capacities.

* Worm-helical reducer (GWB)

◊ **Standard Motor Types** (see page C-12 for product codes)
- T TEFC, three phase, 208-230/460 or 575 volts
- C Corro-Duty®, three phase, 230/460 or 575 volts
- S TEFC, single phase, 115/230 volts
- X Explosionproof, Cls I Grp D, Cls II Grps F&G, three phase 230/460 or 575 volts
- IG IntelliGear® variable speed for 1/115, 1/230, 3/230, or 3/460V power supplies

Δ Overhung loads are at shaft midpoint

1/2 hp

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	Service Factor	Output Torque in-lbs	Output Horsepower	OHL Δ lb	Nominal Ratio	Frame Size Gear	Frame Size Motor	Std. Motor Types ◊
230	3.0+	119	0.43	670	7.1	1	48	T,S
230	3.0+	125	0.46	696	7.1	6	56	T,C,S,X,IG
190	3.0+	141	0.43	670	9	1	48	T,S
190	3.0+	147	0.44	738	9	6	56	T,C,S,X,IG
155	3.0+	173	0.43	670	11.2	1	48	T,S
155	3.0+	180	0.44	804	11.2	6	56	T,C,S,X,IG
125	2.6	210	0.42	670	14	1	48	T,S
125	3.0+	219	0.43	832	14	6	56	T,C,S,X,IG
100	2.2	254	0.40	670	18	1	48	T,S
100	3.0+	265	0.42	942	18	6	56	T,C,S,X,IG
84	1.7	292	0.39	670	20	1	48	T,S
84	3.0+	308	0.41	980	20	6	56	T,C,S,X,IG
68	1.6	344	0.37	670	25	1	48	T,S
68	3.0+	367	0.40	980	25	6	56	T,C,S,X,IG
56	1.4	390	0.35	670	31.5	1	48	T,S
56	2.6	428	0.38	980	31.5	6	56	T,C,S,X,IG
45	1.2	456	0.33	670	40	1	48	T,S
45	2.2	507	0.36	980	40	6	56	T,C,S,X,IG
37	1.9	405	0.24	980	45	6	56	T,C,S,X,IG
37	3.0+	601	0.35	913	45	6*	56	T,C,S,X,IG
30	1.6	680	0.32	980	56	6	56	T,C,S,X,IG
30	2.8	738	0.35	883	56	6*	56	T,C,S,X,IG
25	1.2	668	0.26	980	71	6	56	T,C,S,X,IG
25	2.3	911	0.36	1228	71	6*	56	T,C,S,X,IG
20	1.0	726	0.23	980	90	6	56	T,C,S,X,IG
20	2.0	1062	0.34	1228	90	6*	56	T,C,S,X,IG
16.5	1.7	1276	0.33	1234	112	6*	56	T,C,S,X,IG
13.5	1.6	1472	0.32	1231	125	6*	56	T,C,S,X,IG
11.0	1.3	1768	0.31	1140	160	6*	56	T,C,S,X,IG
9.0	1.1	2029	0.29	1216	200	6*	56	T,C,S,X,IG
7.5	1.0	2357	0.28	1220	250	6*	56	T,C,S,X,IG
6.0	1.0	2666	0.25	1064	280	6*	56	T,C,S,X,IG

Refer to OtN Product for higher ratios and/or capacities.

* Worm-helical reducer (GWB)

◊ **Standard Motor Types** (see page C-12 for product codes)
- T TEFC, three phase, 208-230/460 or 575 volts
- C Corro-Duty®, three phase, 230/460 or 575 volts
- S TEFC, single phase, 115/230 volts
- X Explosionproof, Cls I Grp D, Cls II Grps F&G, three phase 230/460 or 575 volts
- IG IntelliGear® variable speed for 1/115, 1/230, 3/230, or 3/460V power supplies

Δ Overhung loads are at shaft midpoint

IRA Gearmotors

3/4 hp

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	Service Factor	Output Torque in-lbs	Output Horsepower	OHL Δ lb	Nominal Ratio	Frame Size Gear	Frame Size Motor	Std. Motor Types ◊
230	2.6	177	0.65	670	7.1	1	48	T,S
230	3.0+	186	0.68	696	7.1	6	56	T,C,S,X,IG
190	2.3	210	0.63	670	9	1	48	T,S
190	3.0+	223	0.67	738	9	6	56	T,C,S,X,IG
155	2.1	253	0.62	670	11.2	1	48	T,S
155	3.0+	269	0.66	804	11.2	6	56	T,C,S,X,IG
125	1.7	315	0.62	670	14	1	48	T,S
125	3.0+	324	0.64	832	14	6	56	T,C,S,X,IG
100	1.5	394	0.63	670	18	1	48	T,S
100	2.7	394	0.63	942	18	6	56	T,C,S,X,IG
84	1.2	444	0.59	670	20	1	48	T,S
84	2.4	456	0.61	980	20	6	56	T,C,S,X,IG
68	2.0	537	0.58	980	25	6	56	T,C,S,X,IG
56	1.7	633	0.56	980	31.5	6	56	T,C,S,X,IG
56	3.0+	666	0.59	816	31.5	6*	56	T,C,S,X,IG
45	1.5	743	0.53	980	40	6	56	T,C,S,X,IG
45	2.6	784	0.56	894	40	6*	56	T,C,S,X,IG
37	1.3	944	0.55	980	45	6	56	T,C,S,X,IG
37	2.2	968	0.57	913	45	6*	56	T,C,S,X,IG
30	1.0	1120	0.56	980	56	6	56	T,C,S,X,IG
30	1.8	1187	0.57	883	56	6*	56	T,C,S,X,IG
25	1.5	1464	0.58	1097	71	6*	56	T,C,S,X,IG
20	1.3	1705	0.54	1228	90	6*	56	T,C,S,X,IG
16.5	1.1	2046	0.54	1234	112	6*	56	T,C,S,X,IG
13.5	1.0	2357	0.50	1231	125	6*	56	T,C,S,X,IG
11	1.0	2828	0.49	1140	160	6*	56	T,C,S,X,IG

Refer to OtN Product for higher ratios and/or capacities.

* Worm-helical reducer (GWB)

◊ **Standard Motor Types** (see page C-12 for product codes)
- T TEFC, three phase, 208-230/460 or 575 volts
- C Corro-Duty®, three phase, 230/460 or 575 volts
- S TEFC, single phase, 115/230 volts
- X Explosionproof, Cls I Grp D, Cls II Grps F&G, three phase 230/460 or 575 volts
- IG IntelliGear® variable speed for 1/115, 1/230, 3/230, or 3/460V power supplies

Δ Overhung loads are at shaft midpoint

1 hp

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	Service Factor	Output Torque in-lbs	Output Horsepower	OHL Δ lb	Nominal Ratio	Frame Size Gear	Frame Size Motor	Std. Motor Types ◊
230	3.0+	248	0.91	696	7.1	6	143T	T,C,S,X,IG
190	3.0+	297	0.90	738	9	6	143T	T,C,S,X,IG
155	2.8	357	0.88	804	11.2	6	143T	T,C,S,X,IG
125	2.4	430	0.85	832	14	6	143T	T,C,S,X,IG
100	2.0	522	0.83	942	18	6	143T	T,C,S,X,IG
84	1.8	605	0.81	980	20	6	143T	T,C,S,X,IG
84	3.0+	600	0.80	753	20	6*	143T	T,C,S,X,IG
68	1.5	796	0.86	980	25	6	143T	T,C,S,X,IG
68	2.8	740	0.80	827	25	6*	143T	T,C,S,X,IG
56	1.3	835	0.74	980	31.5	6	143T	T,C,S,X,IG
56	2.4	921	0.82	816	31.5	6*	143T	T,C,S,X,IG
45	1.1	966	0.69	980	40	6	143T	T,C,S,X,IG
45	2.0	1082	0.77	894	40	6*	143T	T,C,S,X,IG
37	1.7	1455	0.85	913	45	6*	143T	T,C,S,X,IG
30	1.4	1670	0.83	883	56	6*	143T	T,C,S,X,IG
25	1.1	2015	0.80	1097	71	6*	143T	T,C,S,X,IG
20	1.0	2345	0.74	1228	90	6*	143T	T,C,S,X,IG

Refer to OtN Product for higher ratios and/or capacities.

* Worm-helical reducer (GWB)

◊ **Standard Motor Types** (see page C-12 for product codes)
- T TEFC, three phase, 230/460 or 575 volts
- C Corro-Duty®, three phase, 230/460 or 575 volts
- S TEFC, single phase, 115/230 volts
- X Explosionproof, Cls I Grp D, Cls II Grps F&G, three phase 230/460
- IG IntelliGear® variable speed for 1/230, 3/230, or 3/460V power supplies

Δ Overhung loads are at shaft midpoint

IRA Gearmotors

1 1/2 hp

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	Service Factor	Output Torque in-lbs	Output Horsepower	OHL Δ lb	Nominal Ratio	Frame Size Gear	Frame Size Motor	Std. Motor Types ◊
230	2.4	372	1.36	696	7.1	6	145T	T,C,S,X,IG
190	2.3	444	1.34	738	9	6	145T	T,C,S,X,IG
155	1.9	534	1.31	804	11.2	6	145T	T,C,S,X,IG
125	1.6	644	1.28	832	14	6	145T	T,C,S,X,IG
100	1.3	779	1.24	942	18	6	145T	T,C,S,X,IG
100	2.4	785	1.25	720	18	6*	145T	T,C,S,X,IG
84	1.2	900	1.20	980	20	6	145T	T,C,S,X,IG
84	2.3	931	1.24	753	20	6*	145T	T,C,S,X,IG
68	1.0	1021	1.10	980	25	6	145T	T,C,S,X,IG
68	1.9	1148	1.24	827	25	6*	145T	T,C,S,X,IG
56	1.6	1480	1.32	816	31.5	6*	145T	T,C,S,X,IG
56	2.6	1194	1.06	2850	31.5	20	145T	T,C,S,X,IG
45	1.3	1820	1.30	894	40	6*	145T	T,C,S,X,IG
45	2.0	1523	1.09	2850	40	20	145T	T,C,S,X,IG
37	1.1	2160	1.27	913	45	6*	145T	T,C,S,X,IG
37	1.7	1815	1.07	2850	45	20	145T	T,C,S,X,IG

Refer to OtN Product for higher ratios and/or capacities.

* Worm-helical reducer (GWB)

◊ **Standard Motor Types** (see page C-12 for product codes)
- T TEFC, three phase, 230/460 or 575 volts
- C Corro-Duty®, three phase, 230/460 or 575 volts
- S TEFC, single phase, 115/230 volts, 145TY
- X Explosionproof, Cls I Grp D, Cls II Grps F&G, three phase 230/460
- IG IntelliGear® variable speed for 1/230, 3/230, or 3/460V power supplies

Δ Overhung loads are at shaft midpoint

2 hp

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	Service Factor	Output Torque in-lbs	Output Horsepower	OHL Δ lb	Nominal Ratio	Frame Size Gear	Frame Size Motor	Std. Motor Types ◊
230	1.8	495	1.81	696	7.1	6	145T	T,C,S,X,IG
190	1.7	591	1.78	738	9	6	145T	T,C,S,X,IG
155	1.4	711	1.75	804	11.2	6	145T	T,C,S,X,IG
125	1.2	852	1.69	832	14	6	145T	T,C,S,X,IG
100	1.8	1100	1.75	720	18	6*	145T	T,C,S,X,IG
84	1.7	1300	1.73	753	20	6*	145T	T,C,S,X,IG
68	1.4	1570	1.69	827	25	6*	145T	T,C,S,X,IG
68	2.3	1439	1.55	2850	25	20	145T	T,C,S,X,IG
56	1.2	1965	1.75	815	31.5	6*	145T	T,C,S,X,IG
56	2.0	1670	1.48	2850	31.5	20	145T	T,C,S,X,IG
45	1.0	2410	1.72	894	40	6*	145T	T,C,S,X,IG
37	1.2	2547	1.50	2850	45	20	145T	T,C,S,X,IG

Refer to OtN Product for higher ratios and/or capacities.

* Worm-helical reducer (GWB)

◊ **Standard Motor Types** (see page C-12 for product codes)
- T TEFC, three phase, 230/460 or 575 volts
- C Corro-Duty®, three phase, 230/460 or 575 volts
- S TEFC, single phase, 115/230 volts, 145TY
- X Explosionproof, Cls I Grp D, Cls II Grps F&G, three phase 230/460
- IG IntelliGear® variable speed for 1/230, 3/230, or 3/460V power supplies

Δ Overhung loads are at shaft midpoint

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

3 hp

Output rpm	Service Factor	Output Torque in-lbs	Output Horsepower	OHL Δ lb	Nominal Ratio	Frame Size Gear	Frame Size Motor	Std. Motor Types ◊
175	3.0+	938	2.60	2743	9	20	182T	T,C,X,S,IG
117	2.3	1374	2.55	2850	14	20	182T	T,C,X,S,IG
100	2.0	1663	2.64	2850	18	20	182T	T,C,X,S,IG
88	1.9	1784	2.49	2850	20	20	182T	T,C,X,S,IG
68	1.5	2122	2.29	2850	25	20	182T	T,C,X,S,IG
58	1.3	2550	2.35	2850	31.5	20	182T	T,C,X,S,IG

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

5 hp

Output rpm	Service Factor	Output Torque in-lbs	Output Horsepower	OHL Δ lb	Nominal Ratio	Frame Size Gear	Frame Size Motor	Std. Motor Types ◊
175	1.9	1613	4.48	2743	9	20	184T	T,C,X,S,IG
117	1.4	2358	4.38	2850	14	20	184T	T,C,X,S,IG
100	1.2	2819	4.47	2850	18	20	184T	T,C,X,S,IG
88	1.2	2950	4.12	2850	20	20	184T	T,C,X,S,IG

Refer to OtN Product for higher ratios and/or capacities.

◊ **Standard Motor Types** (see page C-12 for product codes)
- T TEFC, three phase, 230/460 or 575 volts
- C Corro-Duty®, three phase, 230/460 or 575 volts
- S TEFC, single phase, 230 volts, 184T frame for 3 HP
- X Explosionproof, Cls I Grp D, Cls II Grps F&G, three phase 230/460
- IG IntelliGear® variable speed for 3/460V power supplies

Δ Overhung loads are at shaft midpoint

Modifications

Inverter Duty Gearmotors

IRA three phase gearmotors in frame sizes 56 through 184T frame now incorporate upgraded wire and insulating materials for inverter service. A one year limited warranty as covered in the Standard Terms & Conditions will be extended for 3:1 (60 – 20 Hz) constant torque for standard efficiency motor designs and 5:1 (60 – 12 Hz) constant torque for high efficiency motor design providing the following conditions are met:

- Motor is non-hazardous 3 phase > 48 frame
- Cable length to controller < 100 ft.
- Line voltage is < 480VAC
- Thermal protection is not required

For all other conditions of operation/construction, including up to 575V, hazardous environment services, and/or thermostats in winding, select an inverter duty motor design. These designs include N/C thermostats in winding, a three (3) limited warranty as covered in the Standard Terms & Conditions on the motor and full compliance with NEMA MG1 Part 31.

Motor Modifications

M1 Brakes

Design

These mounted brakes have a direct acting, spring set, electromagnetically released disc design. When power to the brake is interrupted, the brake will immediately set and hold. When power is restored, the brake will automatically release.

Enclosures For Brakes

IP23 - suitable for indoor, relatively dry, clean and non-hazardous applications.

IP55 - suitable for outdoors or indoors applications where the gearmotor can be exposed to splashing liquids, dusts and some chemicals. Not suitable for washdown.

Standard Enclosures For Brake

Non-Hazardous Motor Type	Motor Frame Size	
	48	56 and Larger
S	IP23	Open
T	IP23	IP55
IG	N/A	IP55

Motor Modifications (Continued)

Operating Voltage

Brakemotors for fixed frequency operation will be arranged for powering brake from the motor. If another voltage is to be supplied to brake, state that voltage on the order.

Brakes for inverter duty brakemotors require a separate fixed frequency AC power source for the brake, but interlocked with the starting of the motor. The standard brake voltage for inverter duty gearmotors will be arranged for 115/230 volts single phase.

Mounting

Brakes for IRA gearmotors are suitable for the mounting positions specified for the gear.

M2 Premium Efficiency Motor

High efficiency three phase motors are standard to meet the energy legislations in the USA and Canada on 140T and larger motors in “T” and “C” types. Premium efficiency motors are optional at standard lead-time for 3 and 5 HP.

M3 Washdown Motor

See GM1 under Gearmotor Modifications

M4 Canopy Cap

A canopy cap can be supplied for protection from dripping liquids entering fan end of gearmotors. It is recommended but not standard when mounting is required to be in the W8 or W7 positions.

M5 Frequency - 50 Hz

Motors for operation at 3 phase 50 Hz are available. Refer all 3 phase requirements for 50 Hz to motor code T53 (380V) or T54 (400/415V). The published output speed and gear service facter based on 1750 rpm input will be reduced by a factor of (1.2) at the same gear ratio. Example: 100 rpm output, 60 Hz, 1750 rpm input is 83 rpm output, 50 Hz, 1450 rpm input.

M6 Voltage (3 Phase Only)

Standard voltages available are listed in the table below. Other voltages are available and must be specified at order entry and require special voltage adder.

Frequency	3 Phase Voltages Thru 30 hp
60 Hz	200, 230, 230/460, 460, 575
50 Hz	200, 220, 230, 220/380, 220/440, 380, 415, 460, 500, 575

3/50/380V is available from stock on "T" and "C" motor types with CE certification.

Modifications

Motor Modifications (Continued)

M7 Insulation

Standard 3 phase TEFC and Corro-Duty® motor ends have premium class F insulation standard. Single phase TEFC and explosionproof motor ends have class B insulation as standard. Class H insulation and tropical protection are available from production on 3 phase motors only (Class H not available on explosionproof).

M8 Space Heaters

Space heaters are recommended for gearmotors installed in damp locations to prevent condensation on the motor windings when the motor is not operating. Leads are brought to the standard motor conduit box. Space heater voltage (115, 230, 460 volts) must be specified when order is entered. Available in gearmotors > 3/4 hp.

M9 Thermal Protection - Thermostats

This protection uses a bi-metal disc thermostat, embedded in the motor winding, connected into the holding circuit of the motor starter. The sensor opens the control circuit, shutting down the motor on over temperature. Thermostats give protection for running overload, abnormally high ambient, voltage unbalance, high or low voltage, and ventilation failure. Thermostats will not give protection for locked rotor, starting overload, and single phasing.

Motor Options

Certification or Approvals For Gearmotors

Hertz	Phase	Motor Voltage	Approvals [1]	
			Standard	Optional
60 Hz	1	115/230V	UL, CSA	-
	3	230/460	UL, CSA	-
		575	UL, CSA	-
50 Hz	3	380	CE	CCC [2]
		415	CE	-

[1] Corresponding logo(s) will be displayed on motor nameplate

[2] CCC is available for TEFC 3 phase gearmotors 1/3 to 1.5hp, 50/380V for export to China. Motor nameplate will be in Chinese, with metric performance values (i.e motor power=kW). To order with CCC, add "C" to either T38 or T38B input codes i.e. T38C or T38BC will have CCC

Gear Modifications

G1 Food Grade Lubricant

When this modification is specified, the IRA gear sump will be filled with the required volume of a synthetic lubricant classified as a Polyglycol (PAG), 460 series that is approved for USDA H-1 food grade use.

Gear Modifications (Continued)

G2 Normally Closed Breather

For applications involving very dusty environments specify this breather design. The breather has a protected spring loaded valve construction opening only to relieve any pressure built up greater than 3 PSI and then closing.

G3 Double Extended Output Shafts

Double end output shafts are available on single reduction type GW worm-only units.

G5 Special Nameplates

Units can be provided with limited additional special information on the standard product nameplate. When requested, a special nameplate may be provided, stamped with custom markings.

G6 Low Ambient Temperature

Gearmotors can be supplied for low ambient down to -20F. Refer complete details of the applications to the Applications Department for review

Gearmotor Modifications

GM1 Washdown Duty Gearmotor

This gearmotor design combines special features of gear and motor required for washdown duty. These include: special treatment coating of winding and internal surfaces of motor frame, drains in motor frame, labyrinth seal at motor SE bracket/ shaft extension, special “protected”gearcase breather design, (2) double lipped oil seals at each gear shaft extension, exterior surfaces of gearmotor receive Corroduty Stainless Steel paint (option for epoxy white at no added cost). Specify input configuration “W24” or “W5” based on voltage needed on motor.

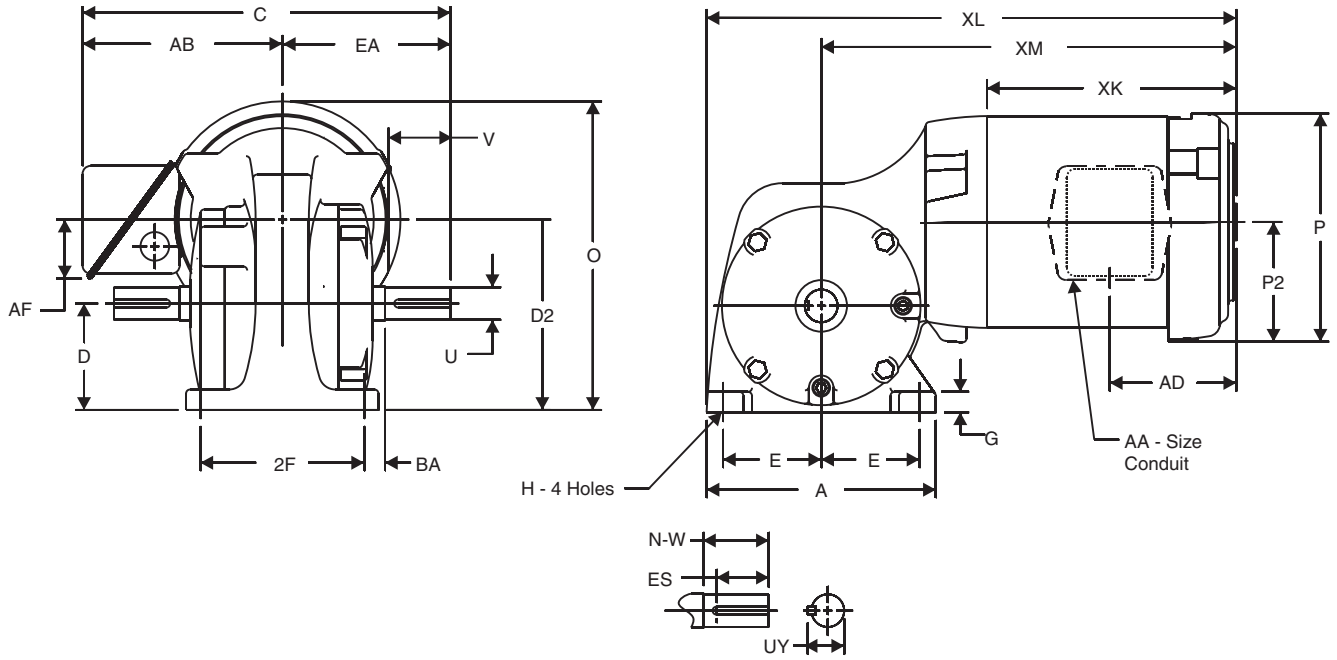
For inclusion of a food grade USDA H-1 approved lubricant, add a "P" for input code with a washdown motor (i.e. change “W24” to “WP24”, and refer to G1 Food Grade Lubricant for specifics on this lubricant

GM2 Export Boxing

Export boxing can be provided for "underdeck" transport. When the quantity of IRA gearmotors exceeds five(5) units, refer to the International Sales department for most economical accommodations.

Three Phase Gearmotor

Foot Mounted - GW Single Worm Reduction



Gear Frame	A	D	D2	E	2F	G	H	N-W	U[2]	V Min.	BA	ES	UY	AH	Key
1	5.63	2.50	4.50	2.375	4.75	0.50	0.343	1.63	0.750	1.406	0.406	1.25	0.837	1.88	3/16 Sq.
6	7.00	3.25	5.81	3	5.00	0.63	0.406	2.00	1.000	1.940	0.438	1.25	1.114	2.18	1/4 Sq.
20	10.25	4.50	8.25	4.375	8.00	1.00	0.688	3.25	1.625	2.938	0.906	2.38	1.796	3.38	3/8 Sq.

Frame Motor-Gear	Motor Type[1]	HP	C	XL	XM	XK	P	P2	AB	EA	AA	O	AD	AF
48 - 1	T	1/3 , 1/2	8.66	15.79	12.98	9.03	6.72	2.79	4.34	4.32	0.50	8.00	4.43	1.16
48 - 1	T	3/4	8.66	16.79	13.98	10.03	6.72	2.79	4.34	4.32	0.50	8.00	4.43	1.16
56 - 6	T	any	11.04	16.30	12.80	7.72	7.22	3.31	6.10	4.94	0.75	9.47	3.30	0.94
B56 - 6	T	1	11.04	17.55	14.05	8.97	7.22	3.31	6.10	4.94	0.75	9.47	3.30	0.94
143T,145T-6	T	any	11.04	17.55	14.05	8.97	7.22	3.31	6.10	4.94	0.75	9.47	3.30	0.94
143T,145T-20	T	any	14.23	20.28	15.15	8.97	7.22	3.31	6.10	4.94	0.75	9.47	3.30	0.94
182T,184T-20	T	any	15.65	21.57	18.07	11.89	9.56	4.39	7.52	8.13	0.75	13.03	5.13	2.13

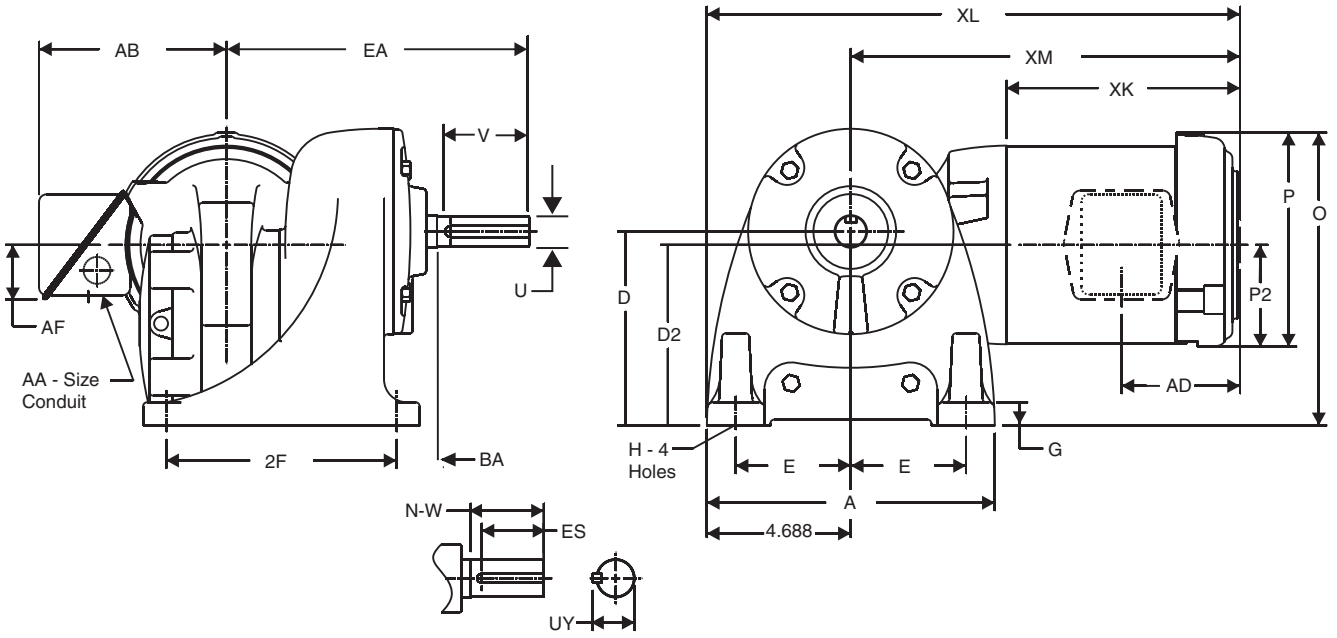
Dimension "D" will never be exceeded, but may be less than values shown. When exact dimensions are required, shims up to 1/16" may be necessary.

All rough casting dimensions may vary by 1/4" due to casting variations.

[2] Shaft diameter tolerances: +.0000"; -.0005" up to 1 1/2" diameter inclusive. Larger diameters: +.000"; -.001".

[1] See page C-30-C-32 for alternate motor enclosures and brakes.

Foot Mounted - GWB Worm-Helical Double Reduction



Gear Frame	A	D	D2	E	2F	G	H	N-W	U[2]	V Min.	BA	ES	UY	AH	Key
6	9.38	6.31	5.88	3.75	7.50	0.75	0.562	3.00	1.500	2.906	1.375	2.50	1.656	3/8 Sq.	1/4 Sq.

Frame Motor-Gear	Motor Type[1]	HP	C	XL	XM	XK	P	P2	AB	EA	AA	O	AD	AF
56 - 6	T	any	15.96	17.20	12.51	7.72	7.22	3.31	6.10	10.03	0.75	9.79	3.30	0.94
B56 - 6	T	1	15.96	18.45	13.76	8.97	7.22	3.31	6.10	10.03	0.75	9.79	3.30	0.94
143T,145T-6	T	any	15.96	18.45	13.76	8.97	7.22	3.31	6.10	10.03	0.75	9.79	3.30	0.94

Dimension "D" is the maximum value, but may be less than values shown. When exact dimensions are required, shims up to 1/16" may be necessary.

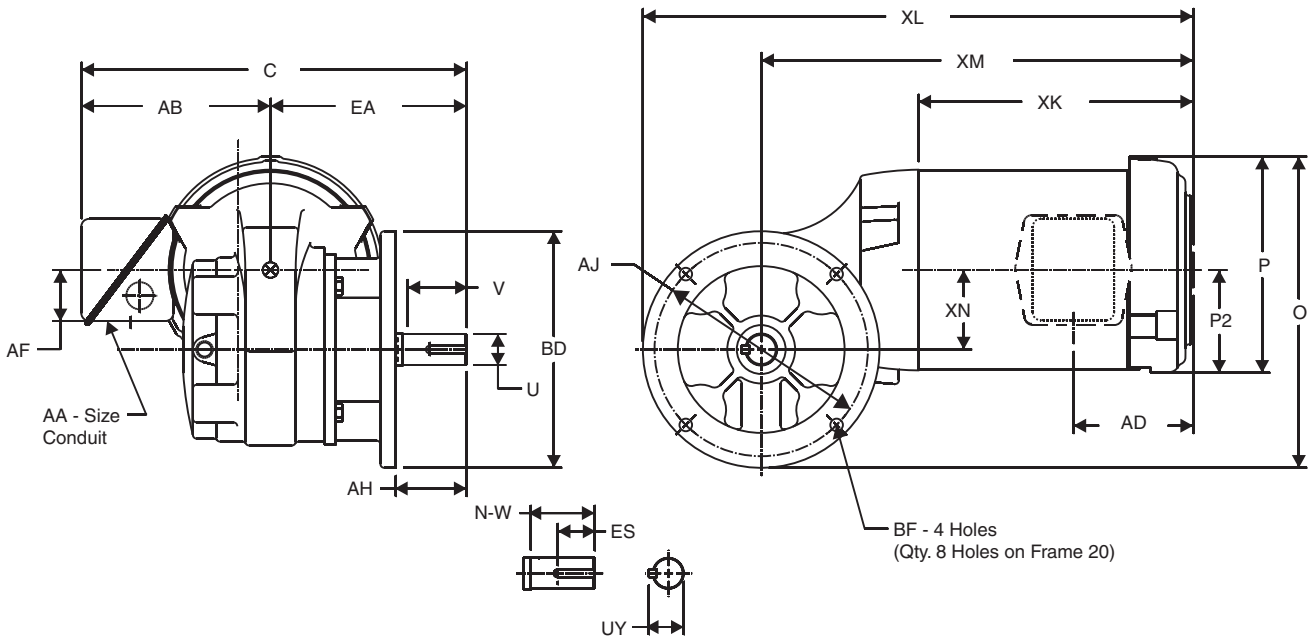
[2] Shaft diameter tolerances: +.0000"; -.0005" up to 1-1/2" diameter inclusive. Larger diameters: +.000"; -.001".

All rough casting dimensions may vary by 1/4" due to casting variations.

[1] See page C-30 to C-32 for alternate motor enclosures and brakes.

Three Phase Gearmotor

Flanged Mounted - GWV Single Worm Reduction



Gear Frame	A	BD	AH	XN	BF	N-W	U[2]	V Min.	ES	UY	Key
6	6.875	7.63	2.00	2.56	0.406	2.08	1.000	2.00	1.19	1.114	1/4 Sq.
20		10.00	3.06	3.75	0.560	3.25	1.625	2.94	2.34	1.796	3/8 Sq.

Frame Motor-Gear	Motor Type[1]	HP	C	XL	XM	XK	P	P2	AB	EA	AA	O	AD	AF
56 - 6	T	any	12.11	15.83	12.80	7.72	7.22	3.31	6.10	6.01	0.75	9.98	3.30	0.94
B56 - 6	T	1	12.11	17.08	14.05	8.97	7.22	3.31	6.10	6.01	0.75	9.98	3.30	0.94
143T,145T-6	T	any	12.11	17.08	14.05	8.97	7.22	3.31	6.10	6.01	0.75	9.98	3.30	0.94
143T,145T-20	T	any	15.59	20.15	15.15	8.97	7.22	3.31	6.10	9.49	0.75	12.36	3.30	0.94
182T,184T-20	T	any	17.01	23.07	18.07	11.89	11.89	4.39	7.52	9.49	0.75	13.53	5.13	2.13

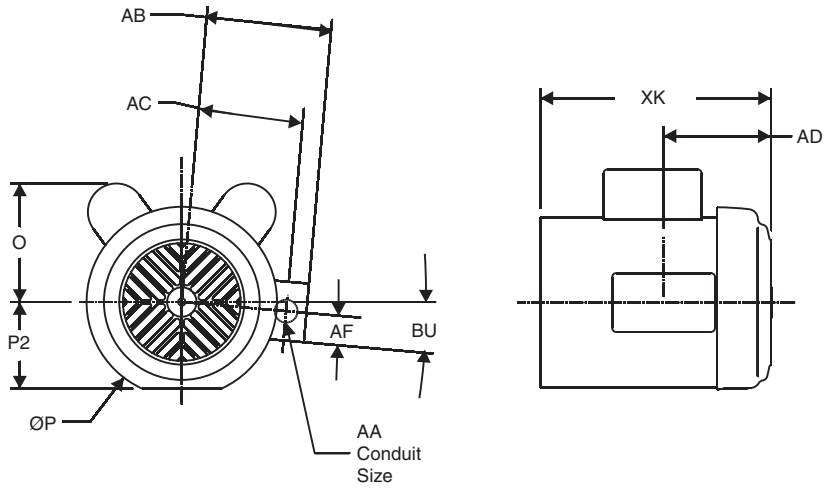
All rough casting dimensions may vary by 1/4" due to casting variations.

[2] Shaft diameter tolerances: +.0000"; -.0005" up to 1 1/2" diameter inclusive. Larger diameters: +.000"; -.001".

[1] See page C-30 to C-32 for alternate motor enclosures and brakes.

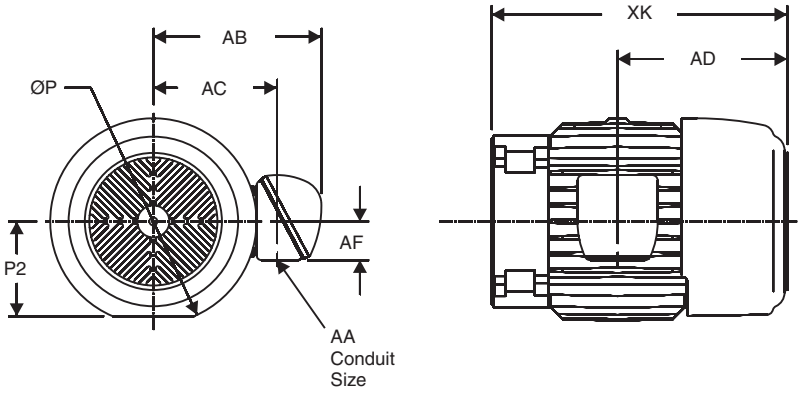
Alternate Motor Dimensions

Single Phase*



Motor Frame	HP	O	P	P2	AA	AB	AC	AD	AF	BU	XK
48	1/3, 1/2	4.40	6.72	2.79	1/2	4.72	3.79	5.29	1.13	N/A	8.03
	3/4, 1	3.87	6.72	2.79	1/2	4.34	3.55	5.29	1.16	10°	9.03
56	1/3, 1/2	4.78	7.28	3.31	3/4	4.78	4.00	4.14	1.13	N/A	7.34
	3/4	4.78	7.28	3.31	3/4	4.78	4.00	4.14	1.13	N/A	8.84
143T	1	5.09	7.28	3.31	3/4	4.78	4.00	4.14	1.13	N/A	8.84
145TY	1 1/2, 2	4.53	7.28	3.31	3/4	4.78	3.83	4.14	1.13	5°	10.34
184T	3, 5	5.11	9.56	4.39	3/4	8.58	6.45	7.14	3.09	N/A	14.33

CorroDuty®

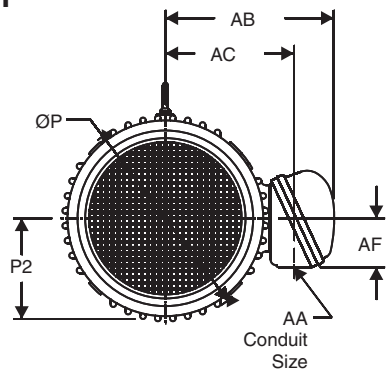


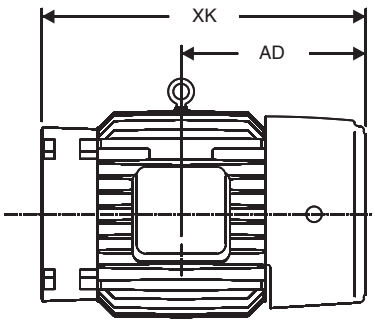
Motor Frame	P	P2	AA	AB	AC	AD	AF	XK
56	7.41	3.44	3/4	6.50	4.59	3.72	1.25	8.03
143T, 145T	7.41	3.44	3/4	6.50	4.59	3.72	1.25	9.03
182T, 184T	9.50	4.56	3/4	7.74	5.69	7.81	1.78	13.76

* See bottom of page C-32 for added dimension if a brake is required

Alternate Motor Dimensions

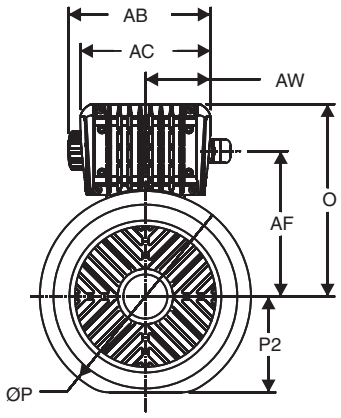
Explosion Proof

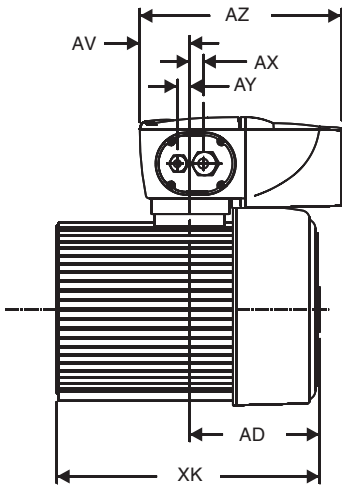




Motor Frame	P	P2	AA	AB	AC	AD	AF	XK
56	7.88	3.38	3/4	6.79	5.31	4.37	1.78	10.97
143T, 145T	7.88	3.38	3/4	6.79	5.31	4.37	1.78	11.72
182T, 184T	9.50	4.56	3/4	7.70	5.79	7.75	2.25	13.69

IntelliGear Plus®





Controller Size Selection

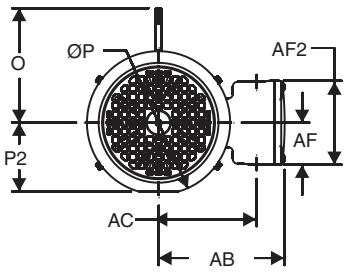
Input Power Phase/Voltage	Motor HP @ Max. Hz				
	0.33 to 0.50	0.75	1	1.5 to 2	3 to 5
1/115	1M	2M	-	-	-
1/230	1M	1M	1M	2M	-
3/230	1	1	1	2	3
3/460	1	1	1	1	2

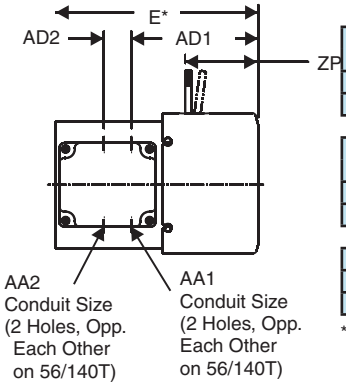
Dimensions

Motor Frame	Controller	O	P	P2	AB	AC	AD	AF	AV	AW	AX	AY	AZ	XK
56	1, 1M	7.74	7.33	3.67	6.45	5.91	4.35	5.61	2.25	2.95	0.62	0.55	8.53	7.72
143T,145T	1, 1M	7.74	7.33	3.67	6.45	5.91	4.35	5.61	2.25	2.95	0.62	0.55	8.53	8.97
56	2M	7.74	7.33	3.67	6.45	5.91	4.35	5.61	2.25	2.95	0.62	0.55	9.12	7.72
145T	2, 2M	7.74	7.33	3.67	6.45	5.91	4.35	5.61	2.25	2.95	0.62	0.55	9.12	8.97
182T,184T	2	8.72	9.56	4.78	6.45	5.91	5.89	6.58	2.25	2.95	0.62	0.55	9.12	11.89
	3	11.16	9.56	4.78	8.97	8.44	10.01	7.37	2.83	4.22	0.62	0.55	13.10	11.89

Dimensional Supplement

DC FCR Brake (IP55)





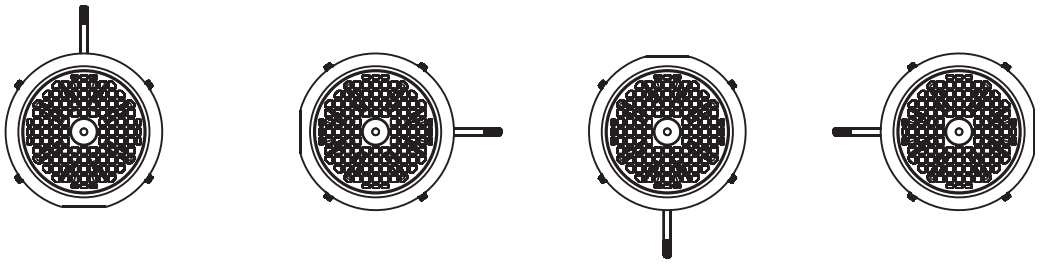
Motor Frame	E*	O	P	AA1	
				Size	Qty
56-143/145T	2.63	5.80	7.24	3/4 NPT	2
182/184T	1.95	7.30	9.23	3/4 NPT	1

Motor Frame	AA2		AB	AC	AD1
	Size	Qty			
56-143/145T	1/2 NPT	2	6.38	4.94	6.43
182/184T	3/4 NPT	1	7.80	6.14	8.84

Motor Frame	AD2	AF	AF2	P2	ZP
56-143/145T	1.38	2.13	4.25	3.46	3.54
182/184T	1.81	2.32	4.65	N/A	4.41

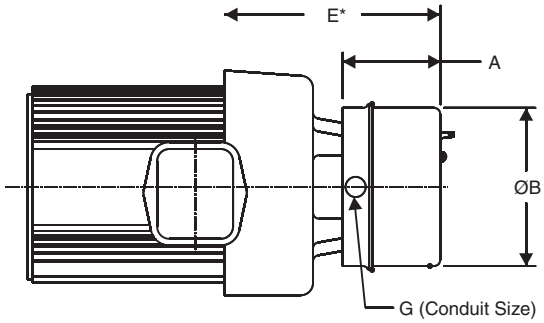
* Add “E” to XK, XM or XL of equivalent three phase frame motor.

Manual Release Lever Position



12 o'clock (standard) | 3 o'clock | 6 o'clock | 9 o'clock

AC Brake (Open)



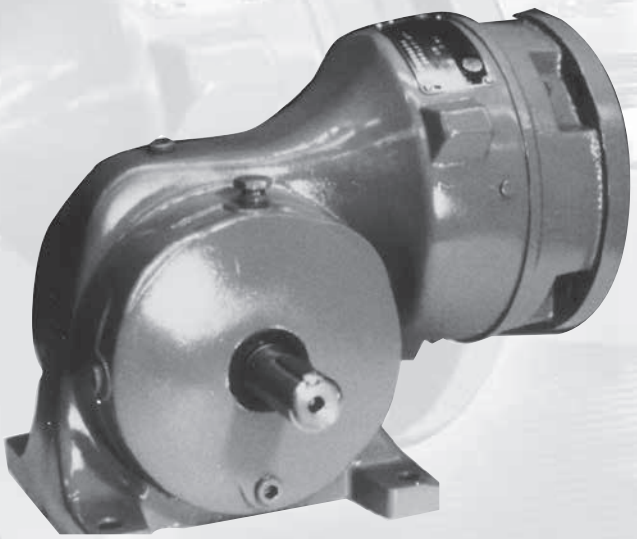
Motor Type	Motor Frame	Brake Torque (ft. lbs.)	A	B	E*	G
T	48	1.5, 3	3.84	5.50	3.31	0.88
S	48	1.5, 3	3.84	5.50	3.31	0.88
	56, B56	1.5, 3, 6	4.01	6.54	4.56	0.50
	143T / 145T	3, 6, 10	4.01	6.54	4.56	0.50
	145TY	6, 10	4.01	6.54	4.56	0.50
	184T	10, 15	4.01	6.54	4.56	0.50

* Dimension "E" represents the additional length of motor with brake mounted. Add this amount to the gearmotor XK, XM or XL of equivalent three phase frame motor.

Browning®

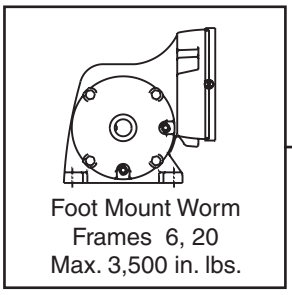
IRA Worm and Helical Reducers

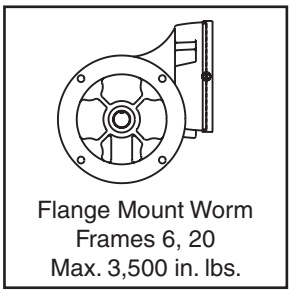
These right-angle gear reducers offer a standard NEMA C-Face alternative to the IRA gearmotor products. Where an application requires a DC or another type motor not available as an IRA gearmotor, this C-Face reducer may be used with the same mounting. The flexible IRA gear reducers are available in a foot mount configuration with worm or worm-helical gearing or as a flange mount worm gear.

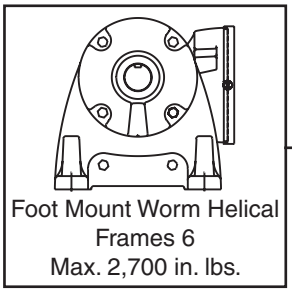


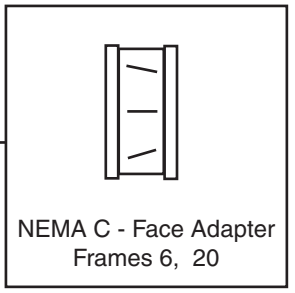
- ❑ Forged "LMS" bronze worm wheel provides extra strength and life.
- ❑ Roller bearings on output shaft provide ample rating for high overhung load.
- ❑ Factory filled with oil.
- ❑ Two double lipped oil seals at input and output shafts.

IRA Reducers







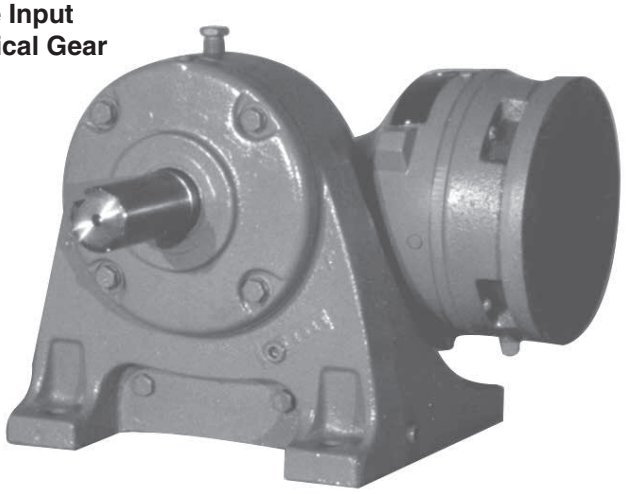


Type IRA

"C" Face Input Worm Gear



"C" Face Input Worm - Helical Gear



Selection and Ordering Information

Selection Information

1. Required Output Torque
- Based on application data.

2. Speed / Ratio
- Obtain either desired output speed (rpm) or gearbox ratio based on application.

3. Service Factor
- Determine the required service factor using either the AGMA Application Classification chart (pages C-40 to C-42), or the duration of operation, load type, and motor type with the table below.

Prime Mover	Duration Of Service	Nature of Load From Driven Machine		
		Uniform	Mod. Shock	Heavy Shock
Electric Motor	Occasional 1/2 hour per day	0.80	0.90	1.00
	Intermittent 2 hours per day	0.90	1.00	1.25
	10 hours per day	1.00	1.25	1.50
	24 hours per day	1.25	1.50	1.75

The following service factors apply to applications involving frequent starts and stops.

Electric Motor	Occasional 1/2 hour per day	0.90	1.00	1.25
	Intermittent 2 hours per day	1.00	1.25	1.50
	10 hours per day	1.25	1.50	1.75
	24 hours per day	1.50	1.75	2.00

Size Selection

Step 1
- Locate speed reducer selection tables (pages C-44 to C-47) based on input speed to gearbox.

Step 2
- Choose the nominal ratio appropriate for the speeds required.

Step 3 Calculate Equivalent Load
- Determine the service factored horsepower or output torque needed to drive the load. (equivalent brake horsepower)

Brake Horsepower x service factor = Equivalent BHP (Horsepower at load)

Output torque x service factor = Equivalent output torque

Step 4 Size Reducer from Rating Tables
- Size reducer or gearmotor from rating tables using the equivalent BHP or output torque and output speed.

Step 5 Selecting the Motor
- To select the proper motor horsepower, the reducer efficiency needs to be calculated for the reducer at the rating selected.

$$\text{HP motor} = \frac{\text{Torque output x rpm output}}{63025 \text{ x efficiency}} \quad \text{or hp motor} = \frac{\text{hp output}}{\text{efficiency}}$$

$$\text{Efficiency} = \frac{\text{Max. Output Torque x Output rpm}}{\text{Max. Input hp x 63025}} \text{ x100\%}$$

Step 6
- Verify thermal limitations.

Step 7
- Verify overhung load ratings where required (C-37).

Example

1. Application Data:

Uniformly loaded conveyor, 24 hrs./ day operation. Right angle hollow base speed reducer directly coupled to head pulley. Customer prefers C-Face motors.

Motor Rating: TEFC, 230/460V 1 hp, 1750 rpm, 143TC frame footless

Output Speed: 56 rpm

2. Size Selection

56 RPM REQUIRED OUTPUT

EQUALS 31.5:1 RATIO

PM • SF = P

1 HP • 1.25 = 1.25 HP

6 GW (1.3 HP) > 1.25

SELECT IRA 6 GW (1.3 HP) > 1.25

31.0	**6 GW(V)**
EXAMPLE	
1.3	1244

3. Catalog Designation (see "Ordering" page C-38)

IRA • 6 • GW • F1 • 25 • U • 143TC

Overhung Load

Type IRA

Overhung Load

When a sprocket, sheave, pulley, or pinion is mounted on the take-off shaft of a reducer, it is necessary to calculate the overhung load. This calculated load must be compared with the gearbox capacity listed to make sure the gearbox will not be overloaded. To calculate the overhung load you need to know the torque or horsepower at the take-off shaft and the location along the shaft at which the load is applied.

A. If torque is known:

$$OHL = \frac{T \times K \times LLF}{r}$$

B. If horsepower is known:

$$OHL = \frac{63025 \times hp \times K \times LLF}{rpm \times r}$$

Where:
OHL = Overhung load (pounds)
T = Torque (in. lbs.)
r = Radius of driving member (in.)
hp = Horsepower
K = Drive type factor
LLF = Load location factor

Driving Member	Value of K
Chain Drive	1.00
Pinion	1.25
Gearbelt	1.25
V-Belt	1.50
Flat Belt	2.50

Load Location	Value of LLF
End of shaft extension	1.20
Center of shaft extension	1.00
Shaft extension shoulder	0.80

Output Speed rpm	Overhung Load (In Pounds) by Frame and Type		
	6 GW, GWV	6 GWB	20 GW, GWV
230	696	-	-
190	738	-	2743
155	804	-	2800
125	832	-	2850
100	942	745	2850
84	980	753	2850
68	980	827	2850
56	980	816	2850
45	980	894	2850
37	980	913	2850
30	980	883	2850
25	980	1097	2850
20	980	1228	2850
16.5	980	1234	2850
11	980	1234	2850
9	980	1234	2850
7.5	980	1234	2850

Catalog Designation

IRA • 6 • GW • F1 • 25 • U • 143TC • ___

Based on Selection — Choose one of each — Based on Application

Type	Gear Frame	Mounting Configuration	Mounting Positions	Ratio	Input	Motor Frame	Modification Code(s)
IRA	6 20	GW = Foot Mounted GWV = Flanged Worm GWB = Footed Worm-Helical (Frame 6 Only)	See page C-39	Use Nominal Ratio Selected	U* = C-Face *Must specify NEMA Frame Size	Req'd on U	Number of Modification(s) From Page C-49

Availability

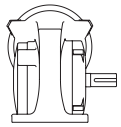
Gear Frame	Footed		Flanged
	Universal #1	Universal #2	Universal #1
6 GW (worm)	●	◊	●
6 GWB (worm helical)	●	●	✶
20 GW (worm)	●	◊	●

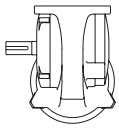
● Normally Stocked
◊ Available thru conversion of stock unit
✶ Refer application to type OtN product

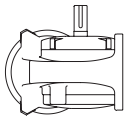
Mounting Positions
Type IRA

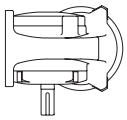
Foot Mount Worm and Worm - Helical

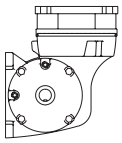
Universal No. 1

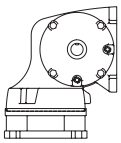
F1


C1


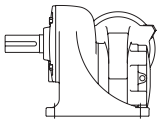
U3


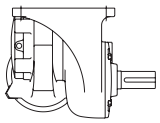
D1


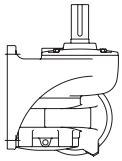
W8


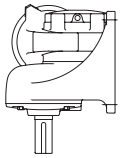
W1


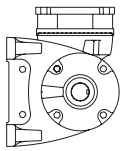
Universal No. 2

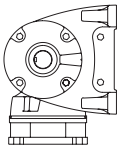
F2


C4


U1


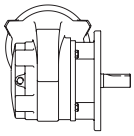
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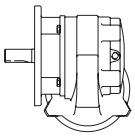
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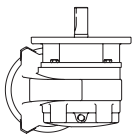
W2


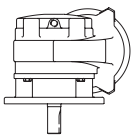
Flange Mount Worm

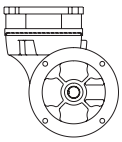
Universal No. 1

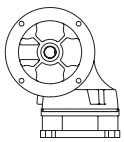
W3


W6


U1


D1


W8


W1


AGMA Application Classification

Application	Recommended Service Factors		
	Up to 3 hrs/day	3-10 hrs/day	Over 10 hrs/day
AGITATORS (Mixers)			
Pure Liquids	- - -	1.00	1.25
Liquids & Solids	1.00	1.25	1.50
Liquids - Variable Density	1.00	1.25	1.50
BLOWERS			
Centrifugal	1.00	1.25	- - -
Lobe	1.00	1.25	1.50
Vane	- - -	1.00	1.25
BREWING & DISTILLING			
Bottling Machinery	- - -	1.00	1.25
Brew Kettles (Continuous Duty)	- - -	1.00	1.25
Cookers (Continuous Duty)	- - -	1.00	1.25
Mush Tubs (Continuous Duty)	- - -	1.00	1.25
Scale Hopper (Frequent Starts)	1.00	1.25	1.50
CAN FILLING MACHINES	- - -	1.00	1.25
CAR DUMPERS	1.25	1.50	1.75
CAR PULLERS	1.00	1.25	1.50
CLARIFIERS	- - -	1.00	1.25
CLASSIFIERS	1.00	1.25	1.50
CLAY WORKING MACHINERY			
Brick Press	1.25	1.50	1.75
Briquette Machine	1.25	1.50	1.75
Pug Mill	1.00	1.25	1.50
COMPACTORS	1.50	1.75	2.00
COMPRESSORS			
Centrifugal	- - -	1.00	1.25
Lobe	1.00	1.25	1.50
Reciprocating, Multi - Cylinder	1.00	1.25	1.50
Reciprocating, Single - Cylinder	1.25	1.50	1.75
CONVEYORS - GENERAL PURPOSE			
Uniformly loaded or fed	- - -	1.00	1.25
Not uniformly fed	1.00	1.25	1.50
Reciprocating or Shaker	1.25	1.50	1.75
CRANES			
Dry Dock			
Main Hoist	1.25	1.50	1.75
Auxiliary Hoist	1.25	1.50	1.75
Boom Hoist	1.25	1.50	1.75
Slewing Drive	1.25	1.50	1.75
Traction Drive	1.50	1.50	1.50
Container			
Main Hoist	◆	◆	◆
Boom Hoist	◆	◆	◆
Trolley Travel			
Gantry Drive	◆	◆	◆
Traction Drive	◆	◆	◆
Mill Duty			
Main Hoist	◆	◆	◆
Auxiliary	◆	◆	◆
Bridge and Trolley Travel	◆	◆	◆

Application	Recommended Service Factors		
	Up to 3 hrs/day	3-10 hrs/day	Over 10 hrs/day
CRANES (cont.)			
Industrial Duty			
Main	1.00	1.25	1.50
Auxiliary	◆	◆	◆
Bridge and Trolley Travel	◆	◆	◆
CRUSHER			
Stone or Ore	1.50	1.75	2.00
DREDGES			
Cable Reels	1.00	1.25	1.50
Conveyors	1.00	1.25	1.50
Cutter Head Drives	1.25	1.50	1.75
Pumps	1.00	1.25	1.50
Screen Drives	1.25	1.50	1.75
Stackers	1.00	1.25	1.50
Winches	1.00	1.25	1.50
ELEVATORS			
Bucket	1.00	1.25	1.50
Centrifugal Discharge	- - -	1.00	1.25
Escalators	◆	◆	◆
Freight	◆	◆	◆
Gravity Discharge	- - -	1.00	1.25
EXTRUDERS			
General	1.25	1.25	1.25
Plastics			
(a) Variable Speed Drive	1.50	1.50	1.50
(b) Fixed Speed Drive	1.75	1.75	1.75
Rubber			
(a) Continuous Screw Operation	1.50	1.50	1.50
(b) Intermittent Screw Operation	1.75	1.75	1.75
FANS			
Centrifugal	- - -	1.00	1.25
Cooling Towers	◆	◆	◆
Forced Draft	1.25	1.25	1.25
Induced Draft	1.00	1.25	1.50
Industrial & Mine	1.00	1.25	1.50
FEEDERS			
Apron	- - -	1.25	1.50
Belt	1.00	1.25	1.50
Disc	- - -	1.00	1.25
Reciprocating	1.25	1.50	1.75
Screw	1.00	1.25	1.50
FOOD INDUSTRY			
Cereal Cooker	- - -	1.00	1.25
Dough Mixer	1.00	1.25	1.50
Meat Grinders	1.00	1.25	1.50
Slicers	1.00	1.25	1.50
GENERATORS & EXCITERS	- - -	1.00	1.25
HAMMER MILLS	1.50	1.50	1.75
HOISTS			
Heavy Duty	1.25	1.50	1.75
Medium Duty	1.00	1.25	1.50
Skip Hoist	1.00	1.25	1.50

◆ Refer to Application Engineering (1 800 626 2093).

AGMA Application Classification

Application	Recommended Service Factors		
	Up to 3 hrs/day	3-10 hrs/day	Over 10 hrs/day
LAUNDRY TUMBLERS	1.00	1.25	1.50
LAUNDRY WASHERS	1.25	1.25	1.50
LUMBER INDUSTRY			
Barkers - Spindle Feed	1.25	1.25	1.50
- Main Drive	1.50	1.50	1.50
Conveyors - Burner	1.25	1.25	1.50
- Main or Heavy Duty	1.50	1.50	1.50
- Main Log	1.50	1.50	1.75
- Re-Saw, Merry-Go-Round	1.25	1.25	1.50
- Slab	1.50	1.50	1.75
- Transfer	1.25	1.25	1.50
Chains - Floor	1.50	1.50	1.50
- Green	1.50	1.50	1.50
Cut-Off Saws - Chain	1.50	1.50	1.50
- Drag	1.50	1.50	1.50
Debarking Drums	1.50	1.50	1.75
Feeds - Edger	1.25	1.25	1.50
- Gang	1.50	1.50	1.50
- Trimmer	1.25	1.25	1.50
Log Deck	1.50	1.50	1.50
Log Hauls - Incline - Well Type	1.50	1.50	1.50
Log Turning Devices	1.50	1.50	1.50
Planer Feed	1.25	1.25	1.50
Planer Tilting Hoist	1.50	1.50	1.50
Rolls - Live, Off Brg., Roll Cases	1.50	1.50	1.50
Sorting Table	1.25	1.25	1.50
Tipple Hoist	1.25	1.25	1.50
Transfers - Chain	1.50	1.50	1.50
- Craneway	1.50	1.50	1.50
Tray Drives	1.25	1.25	1.50
Veneer Lathe Drives	◆	◆	◆
METAL MILLS			
Draw Bench Carriage & Main Drive	1.00	1.25	1.50
Run Out Tables			
Non-Reversing			
Group Drives	1.00	1.25	1.50
Individual Drives	1.50	1.50	1.75
Reversing	1.50	1.50	1.75
Slab Pushers	1.25	1.25	1.50
Shears	1.50	1.50	1.75
Wire Drawing	1.00	1.25	1.50
Wire Winding Machine	1.00	1.25	1.50
METAL STRIP PROCESSING MACHINERY			
Bridles	1.25	1.25	1.50
Coilers & Uncoilers	1.00	1.00	1.25
Edge Trimmers	1.00	1.25	1.50
Flatteners	1.00	1.25	1.50
Loopers (Accumulators)	1.00	1.00	1.00
Pinch Rolls	1.00	1.25	1.50
Scrap Choppers	1.00	1.25	1.50
Shears	1.50	1.50	1.75
Slitters	1.00	1.25	1.50
MILLS, ROTARY TYPE			
Bell & Rod			
Spur Ring Gear	1.50	1.50	1.75
Helical Ring Gear	1.50	1.50	1.50
Direct Connected	1.50	1.50	1.75
Cement Kilns	1.50	1.50	1.50
Dryers & Coolers	1.50	1.50	1.50
MIXERS, CONCRETE	1.00	1.25	1.50

Application	Recommended Service Factors		
	Up to 3 hrs/day	3-10 hrs/day	Over 10 hrs/day
PAPER MILLS			
Agitator (Mixer)	1.50	1.50	1.50
Agitator for Pure Liquids	1.25	1.25	1.25
Barker Drums	1.75	1.75	1.75
Barker - Mechanical	1.75	1.75	1.75
Beater	1.50	1.50	1.50
Breaker Stack	1.25	1.25	1.25
Calender (Anti-Friction Bearings Only)	1.25	1.25	1.25
Chipper	1.75	1.75	1.75
Chip Feeder	1.50	1.50	1.50
Coating Rolls	1.25	1.25	1.25
Conveyors			
Chip, Bark, Chemical	1.25	1.25	1.25
Log (Including Slab)	1.75	1.75	1.75
Couch Rolls	1.25	1.25	1.25
Cutter	1.75	1.75	1.75
Cylinders Molds	1.25	1.25	1.25
Dryers (Anti-Friction Bearings Only)			
Paper Machine	1.25	1.25	1.25
Conveyor Type	1.25	1.25	1.25
Embosser	1.25	1.25	1.25
Extruder	1.50	1.50	1.50
Fourdrinier Rolls (Includes			
Lump Breaker, Dandy Roll,			
Wire Turning & Return Rolls)	1.25	1.25	1.25
Jordan	1.25	1.25	1.25
Kiln Drive	1.50	1.50	1.50
Mt. Hope Rolls	1.25	1.25	1.25
Paper Rolls	1.25	1.25	1.25
Platter	1.50	1.50	1.50
Pressers - Felt & Suction	1.25	1.25	1.25
Pulper	1.50	1.50	1.75
Pumps - Vacuum	1.50	1.50	1.50
Reel (Surface Type)	1.25	1.25	1.50
Screens			
Chip	1.50	1.50	1.50
Rotary	1.50	1.50	1.50
Vibrating	1.75	1.75	1.75
Size Press	1.25	1.25	1.25
Super Calender	1.25	1.25	1.25
Thickener (AC Motor)	1.50	1.50	1.50
(DC Motor)	1.25	1.25	1.25
Washer (AC Motor)	1.50	1.50	1.50
(DC Motor)	1.25	1.25	1.25
Wind & Unwind Stand	1.00	1.00	1.00
Winders (Surface Type)	1.25	1.25	1.25
Yankee Dryers (Anti-Friction			
Bearings Only)	1.25	1.25	1.25
PLASTICS INDUSTRY-PRIMARY PROCESSING			
Intensive Internal Mixers			
(a) Batch Mixers	1.75	1.75	1.75
(b) continuous Mixers	1.50	1.50	1.50
Batch Drop Mill - 2 Smooth Rolls	1.25	1.25	1.25
Continuous Feed, Holding &			
Blend Mill	1.25	1.25	1.25
Compounding Mills	1.25	1.25	1.25
Calenders	1.50	1.50	1.50
PLASTICS INDUSTRY - SECONDARY PROCESSING			
Blow Molders	1.50	1.50	1.50
Coating	1.25	1.25	1.25
Film	1.25	1.25	1.25
Pipe	1.25	1.25	1.25

◆ Refer to Application Engineering (1 800 626 2093).

Application	Recommended Service Factors		
	Up to 3 hrs/day	3-10 hrs/day	Over 10 hrs/day
PLASTICS INDUSTRY - SECONDARY PROCESSING (Cont.)			
Pre-Plasticizers	1.50	1.50	1.50
Rods	1.25	1.25	1.25
Sheets	1.25	1.25	1.25
Tubing	1.25	1.25	1.50
PULLERS - BARGE HAUL	1.00	1.50	1.75
PUMPS			
Centrifugal	- - -	1.00	1.25
Proportioning	1.00	1.25	1.50
Reciprocating			
Single Acting, 3 or more cylinders	1.00	1.25	1.50
Double Acting, 2 or more cylinders	1.00	1.25	1.50
Rotary - Gear Type	- - -	1.00	1.50
- Lobe Type	- - -	1.00	1.25
- Vane	- - -	1.00	1.25
RUBBER INDUSTRY			
Intensive Internal Mixers			
(a) Batch Mixers	1.50	1.75	1.75
(b) Continuous Mixers	1.25	1.50	1.50
Mixing Mill -			
2 Smooth Rolls (if corrugated rolls are used, than the same service factors that are used for a Cracker Warmer)	1.50	1.50	1.50
Batch Drop Mill - 2 Smooth Rolls	1.50	1.50	1.50
Cracker Warmer - 2 Rolls;			
1 corrugated roll	1.75	1.75	1.75
Cracker - 2 corrugated rolls	1.75	1.75	1.75
Holding, Feed & Blend Mill - 2 Rolls	1.25	1.25	1.25
Refiner - 2 Rolls	1.50	1.50	1.50
Calenders	1.50	1.50	1.50
SAND MILLER	1.00	1.25	1.50

Application	Recommended Service Factors		
	Up to 3 hrs/day	3-10 hrs/day	Over 10 hrs/day
SEWAGE DISPOSAL EQUIPMENT			
Bar Screens	- - -	1.00	1.25
Chemical Feeders	- - -	1.00	1.25
Dewatering Screens	1.00	1.25	1.50
Scum Breakers	1.00	1.25	1.50
Slow or Rapid Mixers	1.00	1.25	1.50
Sludge Collectors	1.00	1.00	1.25
Thickeners	1.00	1.25	1.50
Vacuum Filters	1.00	1.25	1.50
SCREENS			
Air Washing	- - -	1.00	1.25
Rotary - Stone or Gravel	1.00	1.25	1.50
Traveling Water Intake	- - -	1.00	1.25
SUGAR INDUSTRY			
Beet Slicer	1.50	1.50	1.75
Cane Knives	1.50	1.50	1.50
Crushers	1.50	1.50	1.50
Mills (Low Speed End)	1.50	1.50	1.50
TEXTILE INDUSTRY			
Batchers	1.00	1.25	1.50
Calenders	1.00	1.25	1.50
Cards	1.00	1.25	1.50
Dry Cans	1.00	1.25	1.50
Dryers	1.00	1.25	1.50
Dyeing Machinery	1.00	1.25	1.50
Looms	1.00	1.25	1.50
Mangles	1.00	1.25	1.50
Nappers	1.00	1.25	1.50
Pads	1.00	1.25	1.50
Slashers	1.00	1.25	1.50
Soapers	1.00	1.25	1.50
Spinners	1.00	1.25	1.50
Tenter Frames	1.00	1.25	1.50
Washers	1.00	1.25	1.50
Winders	1.00	1.25	1.50

Applications not listed in this table or where the user has data indicating the severity of his usage to be greater than average should be referred to Application Engineering (1 800 626 2093).

Type IRA

The IRA gearbox is filled at the factory with oil according to the mounting position specified when ordered. The oil used depends on the order description at entry. Non¬washdown units are filled with an AGMA 8 mineral oil.

In the event that a gearbox needs to be refilled, see the appropriate maintenance manual for the proper procedure and correct quantity of oil. If synthetic oil is used, the gearbox must be refilled with the same lubricant or must be completely drained and flushed.

Mineral Oils

Ambient Temperature	15 to 60 F	50 to 125 F
ISO Grade	460	680
AGMA	7	8

Synthetic Oils*

Ambient Temperature	-30 to 200 F	-30 to 200 F
ISO Grade	460	680
AGMA	7	8

* Gear sumps units will be filled with a synthetic 460 series lubricant classified as a Polyglycol (PAG) oil when food grade lubricant is specified on the order.

Type IRA

Motor rpm 1750

Exact ratio rpm, hp and Torque: IRA reducers

Output speed (rpm)	Reduction ratio	6 GW(V)		6 GWB		20 GW(V)	
230	**7.1**	7.5 3.63	**6 GW(V)** 888				
190	**9**	9.0 3.42	**6 GW(V)** 996			10.0 9.4	**20 GW(V)** 3082
155	**11.2**	11.25 2.79	**6 GW(V)** 994				
125	**14**	14.0 2.37	**6 GW(V)** 1026			15.0 7.0	**20 GW(V)** 3316
100	**18**	17.6 1.99	**6 GW(V)** 1056	17.0 3.63	**6 GWB** 1969	18.0 6.0	**20 GW(V)** 3418
84	**20**	21.0 1.77	**6 GW(V)** 1083	20.3 3.42	**6 GWB** 2212	20.0 5.6	**20 GW(V)** 3459
68	**25**	26.0 1.50	**6 GW(V)** 1076	25.4 2.79	**6GWB** 2199	25.0 4.6	**20 GW(V)** 3411
56	**31.5**	31.0 1.30	**6 GW(V)** 1244	31.0 2.36	**6GWB** 2317	30.0 4.0	**20 GW(V)** 3469
45	**40**	39.0 1.09	**6 GW(V)** 1067	36.6 2.01	**6GWB** 2332	40.0 3.1	**20 GW(V)** 3368
37	**45**	47.0 0.94	**6 GW(V)** 1041	45.8 1.65	**6GWB** 2297	50.0 2.5	**20 GW(V)** 3232
30	**56**	58.0 0.78	**6 GW(V)** 981	57.0 1.38	**6GWB** 2307	60.0 2.1	**20 GW(V)** 3112
25	**71**	70.0 0.64	**6 GW(V)** 889	71.9 1.14	**6GWB** 2316		
20	**90**	87.0 0.50	**6 GW(V)** 726	85.5 1.00	**6GWB** 2365		
16.5	**112**			106.0 0.84	**6GWB** 2360		
13.5	**125**			126.0 0.74	**6GWB** 2358		
11.0	**160**			159.0 0.64	**6GWB** 2342		
9.0	**200**			191.0 0.57	**6GWB** 2407		
7.5	**250**			236.0 0.50	**6GWB** 2378		
6.0	**280**			285.0 0.50	**6GWB** 2684		
5.0	**355**			354.0 0.41	**6GWB** 2416		
4.0	**450**						
3.25	**560**						

If shaded, mechanical hp may exceed thermal hp limit.
Refer to page C-48.

Exact Ratio	Size/Type
Max Input (hp)	Max. Output (in.lbs.)

Type IRA

Motor rpm 1450

Exact ratio rpm, hp and Torque: IRA reducers

Output speed (rpm)	Reduction ratio	6 GW(V)		6GWB		20 GW(V)	
193	**7.1**	7.5	**6 GW(V)**				
		3.33	979				
161	**9**	9.0	**6 GW(V)**			10.0	**20 GW(V)**
		3.14	1098			8.68	3414
132	**11.2**	11.25	**6 GW(V)**				
		2.56	1093				
104	**14**	14.0	**6 GW(V)**			15.0	**20 GW(V)**
		2.17	1128			6.44	3674
81	**18**	17.6	**6 GW(V)**	17.0	**6GWB**	18.0	**20 GW(V)**
		1.83	1156	3.33	2168	5.63	3781
69	**20**	21.0	**6 GW(V)**	20.3	**6GWB**	20.0	**20 GW(V)**
		1.63	1190	3.14	2431	5.22	3832
56	**25**	26.0	**6 GW(V)**	25.4	**6GWB**	25.0	**20 GW(V)**
		1.36	1182	2.56	2422	4.25	3773
47	**31.5**	31.0	**6 GW(V)**	31.0	**6GWB**	30.0	**20 GW(V)**
		1.20	1184	2.00	2327	3.72	3838
37	**40**	39.0	**6 GW(V)**	36.6	**6GWB**	40.0	**20 GW(V)**
		1.00	1173	1.74	2338	2.88	3723
31	**45**	47.0	**6 GW(V)**	45.8	**6GWB**	50.0	**20 GW(V)**
		0.87	1144	1.39	2305	2.43	3710
25	**56**	58 .0	**6 GW(V)**	57.0	**6GWB**	60.0	**20 GW(V)**
		0.72	1079	1.16	2314	1.98	3439
21	**71**	70.0	**6 GW(V)**	71.9	**6GWB**		
		0.59	993	0.96	2323		
17	**90**	87.0	**6 GW(V)**	85.5	**6GWB**		
		0.44	798	0.85	2365		
14	**112**			106.0	**6GWB**		
				0.73	2386		
12	**125**			126.0	**6GWB**		
				0.66	2378		
9	**160**			159.0	**6GWB**		
				0.54	2347		
8	**200**			191.0	**6GWB**		
				0.49	2396		
6	**250**			236.0	**6GWB**		
				0.43	2405		
5	**280**			285.0	**6GWB**		
				0.38	2359		
4	**355**			354.0	**6GWB**		
				0.37	2457		
3	**450**						
1	**560**						

If shaded, mechanical hp may exceed thermal hp limit.
Refer to page C-48.

Exact Ratio	Size/Type
Max Input (hp)	Max. Output (in.lbs.)

Type IRA

Motor rpm 1160

Exact ratio rpm, hp and Torque: IRA reducers

Output speed (rpm)	Reduction ratio	6 GW(V)		6GWB		20 GW(V)	
155	**7.1**	7.5	**6 GW(V)**				
		2.98	1090				
129	**9**	9.0	**6 GW(V)**			10.0	**20 GW(V)**
		2.81	1220			7.9	3845
105	**11.2**	11.25	**6 GW(V)**				
		2.29	1212				
83	**14**	14.0	**6 GW(V)**			15.0	**20 GW(V)**
		1.94	1249			5.8	4128
64	**18**	17.6	**6 GW(V)**	17.0	**6GWB**	18.0	**20 GW(V)**
		1.64	1283	2.98	2420	5.0	4244
55	**20**	21.0	**6 GW(V)**	20.3	**6GWB**	20.0	**20 GW(V)**
		1.46	1315	2.81	2698	4.7	4302
45	**25**	26.0	**6 GW(V)**	25.4	**6GWB**	25.0	**20 GW(V)**
		1.22	1306	2.29	2681	3.9	4228
37	**31.5**	31.0	**6 GW(V)**	31.0	**6GWB**	30.0	**20 GW(V)**
		1.07	1308	1.60	2336	3.4	4301
30	**40**	39.0	**6 GW(V)**	36.6	**6GWB**	40.0	**20 GW(V)**
		0.90	1294	1.36	2344	2.6	4165
25	**45**	47.0	**6 GW(V)**	45.8	**6GWB**	50.0	**20 GW(V)**
		0.78	1263	1.13	2315	2.2	4006
20	**56**	58.0	**6 GW(V)**	57.0	**6GWB**	60.0	**20 GW(V)**
		0.65	1190	0.94	2323	1.8	3848
17	**71**	70.0	**6 GW(V)**	71.9	**6GWB**		
		0.53	1078	0.78	2330		
13	**90**	87.0	**6 GW(V)**	85.5	**6GWB**		
		0.40	880	0.68	2364		
11	**112**			106.0	**6GWB**		
				0.59	2411		
9	**125**			126.0	**6GWB**		
				0.51	2397		
7	**160**			159.0	**6GWB**		
				0.44	2352		
6	**200**			191.0	**6GWB**		
				0.40	2385		
5	**250**			236.0	**6GWB**		
				0.35	2431		
4	**280**			285.0	**6GWB**		
				0.32	2363		
3.2	**355**			354.0	**6GWB**		
				0.30	2497		
2.6	**450**						
2	**560**						

If shaded, mechanical hp may exceed thermal hp limit.
Refer to page C-48.

Exact Ratio	Size/Type
Max Input (hp)	Max. Output (in.lbs.)

Type IRA

Motor rpm 870

Exact ratio rpm, hp and Torque: IRA reducers

Output speed (rpm)	Reduction ratio	6 GW(V)		6GWB		20 GW(V)	
117	**7.1**	7.5 2.52	**6 GW(V)** 1212				
97	**9**	9.0 2.37	**6 GW(V)** 1352			10.0 6.9	**20 GW(V)** 4413
80	**11.2**	11.25 1.92	**6 GW(V)** 1337				
62	**14**	14.0 1.63	**6 GW(V)** 1374			15.0 5.1	**20 GW(V)** 4725
49	**18**	17.6 .38	**6 GW(V)** 1409	17.0 2.52	**6GWB** 2693	18.0 4.4	**20 GW(V)** 4842
42	**20**	21.0 1.23	**6 GW(V)** 1433	20.3 2.17	**6GWB** 2793	20.0 4.2	**20 GW(V)** 4919
34	**25**	26.0 1.03	**6 GW(V)** 1432	25.4 1.79	**6GWB** 2805	25.0 3.4	**20 GW(V)** 4808
28	**31.5**	31.0 0.91	**6 GW(V)** 1433	31.0 1.23	**6GWB** 2351	30.0 3.0	**20 GW(V)** 4893
22	**40**	39.0 0.77	**6 GW(V)** 1418	36.6 1.05	**6GWB** 2370	40.0 2.3	**20 GW(V)** 4714
19	**45**	47.0 0.67	**6 GW(V)** 1382	45.8 0.87	**6GWB** 2325	50.0 1.9	**20 GW(V)** 4554
15	**56**	58.0 0.56	**6 GW(V)** 1303	57.0 0.72	**6GWB** 2332	60.0 1.6	**20 GW0I)** 4352
12	**71**	70.0 0.46	**6 GW(V)** 1180	71.9 0.60	**6GWB** 2339		
10	**90**	87.0 0.34	**6 GW(V)** 964	85.5 0.53	**6GWB** 2394		
8	**112**			106.0 0.44	**6GWB** 2364		
7	**125**			126.0 0.39	**6GWB** 2359		
6	**160**			159.0 0.34	**6GWB** 2358		
5	**200**			191.0 0.32	**6GWB** 2478		
4	**250**			236.0 0.27	**6GWB** 2374		
3	**280**			285.0 0.25	**6GWB** 2367		
2.4	**355**			354.0 0.22	**6GWB** 2295		
1.9	**450**						
1.6	**560**						

If shaded, mechanical hp may exceed thermal hp limit.
Refer to page C-48.

Exact Ratio	Size/Type
Max Input (hp)	Max. Output (in.lbs.)

Type IRA

Thermal Power Ratings (hp)

Motor rpm 1750

Output (RPM)	Reduction Ratio	6 GW(V)	6 GWB	20 GW(V)
230	7.1	2.67	-	-
190	9	2.46	-	9.0
155	11.2	2.08	-	-
125	14	2.00	-	6.7
100	18	1.51	2.67	5.0
84	20	1.50	2.46	5.0
68	25	1.50	2.08	3.1
56	31.5	1.00	-	-
45	40	1.00	-	2.1
37	45	0.76	-	-
30	56	0.68	-	-
25	71	0.61	-	-
20	90	-	-	-

Motor rpm 1450

Output (RPM)	Reduction Ratio	6 GW(V)	6 GWB	20 GW(V)
193	7.1	2.66	-	-
161	9	2.45	-	8.68
132	11.2	2.07	-	-
104	14	1.78	-	-
81	18	1.50	2.66	-
69	20	1.32	2.45	-
56	25	1.13	2.07	-
47	31.5	1.00	-	-
37	40	0.85	-	-
31	45	0.76	-	-
25	56	0.67	-	-

Motor rpm 1160

Output (RPM)	Reduction Ratio	6 GW(V)	6 GWB	20 GW(V)
155	7.1	2.61	-	-
129	9	2.39	-	-
105	11.2	2.02	-	-
83	14	1.90	-	-
64	18	1.46	2.61	-
55	20	1.40	2.39	-
45	25	-	2.02	-
37	31.5	0.97	-	-
30	40	-	-	-
25	45	0.74	-	-

Motor rpm 870

Output (RPM)	Reduction Ratio	6 GW(V)	6 GWB	20 GW(V)
117	7.1	2.49	-	-
97	9	2.28	-	-
80	11.2	1.93	-	-
49	18	-	2.49	-

Modifications

Gear Modifications

G1 Food Grade Lubricant

When this modification is specified, the IRA gear sump will be filled with the required volume of a synthetic lubricant classified as a Polyglycol (PAG), 460 series that is approved for USDA H-1 food grade use.

G2 Normally Closed Breather

For applications involving very dusty environments specify this breather design. The breather has a protected spring loaded valve construction opening only to relieve any pressure built up greater than 3 PSI and then closing.

G3 Double Extended Output Shafts

Double end output shafts are available on single reduction type GW worm-only units.

G5 Special Nameplates

Units can be provided with limited additional special information on the standard product nameplate. When requested, a special nameplate may be provided, stamped with custom markings.

G6 Low Ambient Temperature

Gearmotors can be supplied for low ambient down to -20F. Refer complete details of the applications to the Applications Department for review.

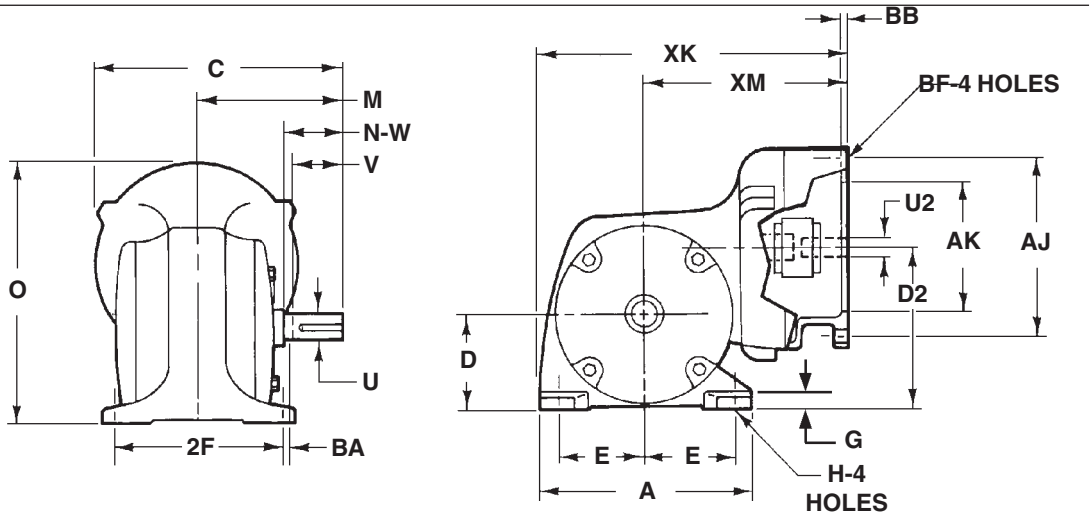
G7 Washdown Duty Reducer

This reducer design combines special features required for washdown duty. These include: special “protected” gearcase breather design, tandem double lipped oil seals at any shaft extension, exterior surfaces of the reducer receive Corroduty Stainless Steel paint (option for epoxy white at no added cost).

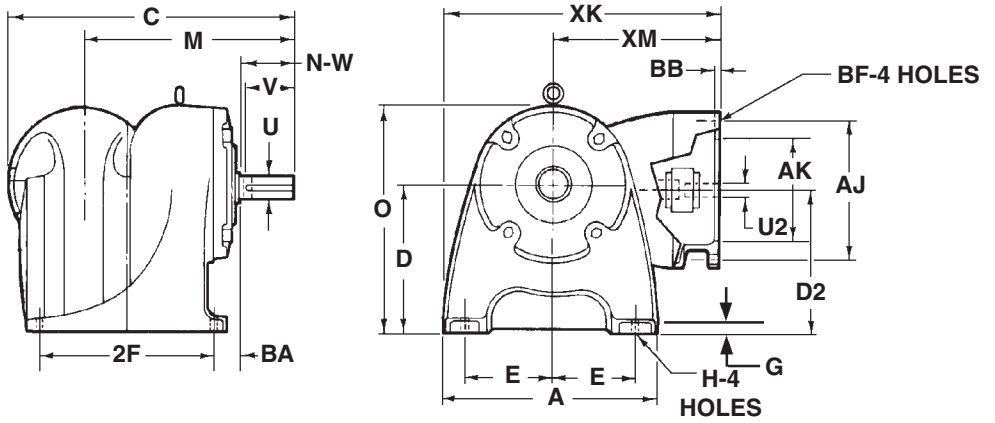
If it is required that food grade lubricant be supplied, specify G1

G8 Export Boxing

Export boxing can be provided for "underdeck" transport. When the quantity of IRA gearmotors exceeds five(5) units, refer to the International Sales department for most economical accommodations



Worm-Helical (GWB)



Gear Frame	Gear Type	A	C	D	D2	E	2F	G	H	M	N-W	O	U[1]	V Min.	BA	Key
6	GW	7.00	8.22	3.25	5.81	3	5.00	0.63	0.406	5.00	2.00	9.09	1.00	1.940	1.38	1/4 Sq.
6	GWB	9.38	13.34	6.31	5.88	3.75	7.50	0.75	0.562	1.03	3.00	9.69	1.500	2.906	1.375	3/8 Sq.
20	GW	10.25	12.88	4.50	8.25	4.375	8.00	1.00	0.688	8.13	3.25	12.75	1.625	2.938	0.906	3/8 Sq.

Gear Frame	Gear Type	Motor Frame	XK	XM
6	GW	56C	12.81	9.31
		143TC , 145TC	12.81	9.31
6	GWB	56C	12.81	9.31
		143TC , 145TC	12.81	9.31
20	GW	182TC, 184TC	17.47	12.22

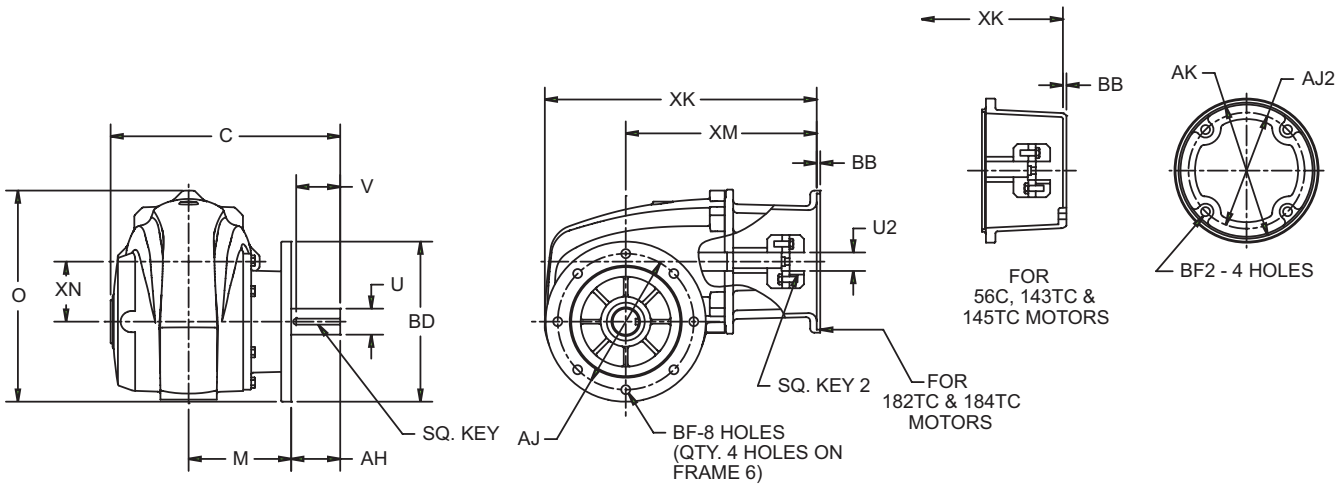
Motor Frame	U2 +.001	AJ	AK	BB	BF	Key
56C	0.625	5.875	4.50	0.219	0.438	3/16 Sq.
143TC , 145TC	0.875	5.875	4.50	0.219	0.438	3/16 Sq.
182TC, 184TC	1.125	7.250	8.50	0.219	0.438	1/4 Sq.

Dimension "D" is the maximum value, but may be less than values shown. When exact dimensions are required, shims up to 1/16" may be necessary.

All rough casting dimensions may vary by 1/4" due to casting variations.

[1] Shaft diameter tolerances: .0000"; -.0005" up to 1-1/2" diameter inclusive. Larger diameters: +.000"; -.001.

C-Face Reducer
Flange Mounted



Gear Frame	C	M	U[1]	V Min.	AH	AJ	BB	BD ■	BF	Key
6	9.28	4.00	1.00	2.00	2.00	6.88	0.22	7.63	0.406	1/4 Sq.
20	15.38	6.44	1.63	2.94	3.06	8.50	0.22	10.00	0.560	3/8 Sq.

Gear Frame	Gear Type	Motor Frame	O	XK	XM	XN
6	GWV	56C	9.69	13.13	9.31	2.47
		143TC , 145TC	9.69	13.13	9.31	2.47
20	GWV	182TC, 184TC	13.28	17.03	12.03	3.75

Gear Frame	U2 +.001	AJ2	AK	BB	BF2	Key 2
56C	0.625	5.875	4.50	0.219	0.438	3/16 Sq.
143TC , 145TC	0.875	5.875	4.50	0.219	0.438	3/16 Sq.
182TC, 184TC	1.125	7.250	8.50	0.219	0.438	1/4 Sq.

■ "BD" diameter is not machined.

[1] Shaft diameter tolerances: +.0000"; -.0005" up to 1-1/2" diameter inclusive. Larger diameters: +.000"; -.001".

All rough casting dimensions may vary by 1/4" due to casting variations.

Notes:

Typical Motor Performance Data

Motor Input Code HT24, IT24, IGS2, IG2, IG4

TEFC Three Phase 230/460V

HP	Frame Size	Full Load RPM	FL Amps[5] @ 460V	NEMA Nom. Efficiency	Guar. Efficiency	Power Factor	Torque			KVA Code	NEMA Design	Note(s)
							Full Load	% Full Load				
				4/4 Load	4/4 Load	4/4 Load	(Ft. Lbs.)	Locked	Breakdown			
0.33	56	1746	0.64	75.5	74.0	64.7	1	339	462	M	B	
0.5	56	1745	0.88	80.0	78.5	66.7	1.5	344	437	L	B	
0.75	56	1735	1.21	80.0	78.5	72.3	2.25	326	444	K	B	
1	143T	1747	1.52	84.0	81.5	73.4	3	438	509	M	C	1
1.5	145T	1733	2.14	84.0	81.5	76.3	4.5	380	450	L	C	
2	145T	1740	2.91	85.5	82.5	74.8	6	482	491	L	C	1
3	182T	1757	3.83	89.5	87.5	81.4	9	276	425	K	B	2
5	184T	1756	6.2	89.5	87.5	83.9	15	229	353	J	B	2
7.5	213T	1765	9.2	91.0	89.5	84.3	22.5	220	290	J	B	1,4
10	215T	1760	12	91.0	89.5	86.1	30	210	270	G	B	1,4
15	254T	1775	18.4	92.4	91.0	82.7	44.4	231	247	G	B	2,4
20	256T	1770	24	93.0	91.7	84.9	60	229	232	G	B	2,4
25	284T	1775	29.3	93.6	92.4	85.9	75	180	250	G	B	1,3,4
30	286T	1775	35	94.1	93.0	86.9	90	190	250	G	B	1,3,4
40	324T	1775	46	93.6	92.4	87.3	120	170	228	F	B	1,3,4
50	326T	1775	56	94.1	93.0	88.3	150	189	239	F	B	1,3,4

Motor Input Code HT5, IT5

TEFC Three Phase 575V

HP	Frame Size	Full Load RPM	FL Amps	NEMA Nom. Efficiency	Guar. Efficiency	Power Factor	Torque			KVA Code	NEMA Design	Note(s)
							Full Load	% Full Load				
				4/4 Load	4/4 Load	4/4 Load	(Ft. Lbs.)	Locked	Breakdown			
0.33	56	1740	0.53	75.5	74.0	64.7	1	334	470	M	B	
0.50	56	1735	0.73	80.0	78.5	66.7	1.5	315	424	L	B	
0.75	56	1736	0.95	80.0	78.5	72.3	2.25	313	379	J	B	
1	143T	1747	1.2	84.0	81.5	74.5	3	424	489	M	C	1
1.5	145T	1745	1.69	84.0	81.5	76.9	4.5	385	415	L	C	
2	145T	1751	2.29	85.5	82.5	76.4	6	406	422	M	C	1
3	182T	1772	2.93	89.5	87.5	84.2	9	270	355	K	B	2
5	184T	1758	4.92	89.5	87.5	84.8	15	244	300	J	B	2
7.5	213T	1760	7.3	91.0	89.5	84.6	22.5	230	300	H	B	1,4
10	215T	1760	9.6	91.0	89.5	85.9	30	220	280	H	B	1,4
15	254T	1775	14.6	92.4	91.0	83.4	44.4	226	241	G	B	2,4
20	256T	1770	19	93.0	91.7	84.9	59.3	229	231	G	B	2,4
25	284T	1775	23.4	93.0	91.7	85.9	75	180	250	G	B	1,3,4
30	286T	1775	27.6	93.6	92.4	86.9	90	190	250	G	B	1,3,4
40	324T	1775	37	93.6	92.4	87.2	120	180	237	F	B	1,3,4
50	326T	1775	45	94.1	93.0	88.3	150	180	280	G	A	1,3,4

Motor Input Code PT24

TEFC Three Phase 230/460V

HP	Frame Size	Full Load RPM	FL Amps[5] @ 460V	NEMA Nom. Efficiency	Guar. Efficiency	Power Factor	Torque			KVA Code	NEMA Design	Note(s)
							Full Load	% Full Load				
				4/4 Load	4/4 Load	4/4 Load	(Ft. Lbs.)	Locked	Breakdown			
3	182T	1757	3.83	89.5	87.5	81.4	9	276	425	K	B	
5	184T	1756	6.2	89.5	87.5	83.9	15	229	353	J	B	
7.5	213T	1765	9.3	91.7	90.2	82.8	22.5	247	324	H	B	3,4
10	215T	1760	12	91.7	90.2	85.3	30	235	301	H	B	3,4
15	254T	1775	18.4	92.4	91.0	82.7	45	231	247	G	B	4
20	256T	1770	23.7	93.0	91.7	84.9	60	229	232	G	B	4
25	284T	1775	28.9	93.6	92.4	86.6	75	203	270	G	B	3,4
30	286T	1775	35.5	93.6	92.4	86.9	90	195	257	G	B	3,4
40	324T	1780	45	94.1	93.0	88.0	120	193	251	G	B	3,4
50	326T	1780	56	94.5	93.6	88.3	150	209	264	G	B	3,4

Note(s)

1 — This design exceed standards for a “High Efficiency” motor
2 — This design meets standards for a “Premium Efficiency” motor
3 — This motor is an all cast-iron Corro-Duty motor
4 — Motor has three N/C winding thermostats with leads terminating in the main outlet box
5 — For FL amps at 230V, multiply value shown x2

Browning®

Gearmotor

Typical Motor Performance Data

SERIES 2000 3000

Motor Input Code PT5
TEFC Three Phase 575V

HP	Frame Size	Full Load RPM	FL Amps	NEMA Nom. Efficiency	Guar. Efficiency	Power Factor	Torque			KVA Code	NEMA Design	Note(s)
							Full Load	% Full Load				
				4/4 Load	4/4 Load	4/4 Load	(Ft. Lbs.)	Locked	Breakdown			
3	182T	1772	2.93	89.5	87.5	84.2	9	270	355	K	B	
5	184T	1758	4.92	89.5	87.5	84.8	15	244	300	J	B	
7.5	213T	1765	7.5	91.7	90.2	82.4	22.5	251	330	H	B	3,4
10	215T	1760	9.6	91.7	90.2	85.4	30	234	299	H	B	3,4
15	254T	1775	14.6	92.4	91.0	83.4	45	231	247	G	B	4
20	256T	1770	19	93.0	91.7	84.9	60	229	231	G	B	4
25	284T	1775	23	93.6	92.4	86.9	75	194	259	G	B	3,4
30	286T	1775	27.6	93.6	92.4	87.0	90	194	256	G	B	3,4
40	324T	1780	36	94.1	93.0	88.0	120	189	245	G	B	3,4
50	326T	1780	45	94.5	93.6	88.3	150	210	264	G	A	3,4

Motor Input Code HC24, IC24
Corro-Duty® Three Phase 230/460V

HP	Frame Size	Full Load RPM	FL Amps[5] @ 460V	NEMA Nom. Efficiency	Guar. Efficiency	Power Factor	Torque			KVA Code	NEMA Design	Note(s)
							Full Load	% Full Load				
				4/4 Load	4/4 Load	4/4 Load	(Ft. Lbs.)	Locked	Breakdown			
0.33	56	1746	0.64	77.0	74.0	64.7	1	339	462	M	B	
0.5	56	1745	0.88	81.5	78.5	66.7	1.5	344	437	L	B	
0.75	56	1735	1.21	81.5	78.5	72.3	2.25	326	444	K	B	
1	143T	1747	1.52	84.0	81.5	73.4	3	438	509	M	C	1
1.5	145T	1733	2.14	84.0	81.5	76.3	4.5	380	450	L	C	
2	145T	1740	2.91	85.5	82.5	74.8	6	482	491	L	C	1
3	182T	1757	3.83	89.5	87.5	81.4	9	276	425	K	B	2
5	184T	1756	6.2	89.5	87.5	83.9	15	229	353	J	B	2
7.5	213T	1765	9.2	91.0	89.5	84.3	22.3	240	310	H	B	4
10	215T	1760	11.9	91.7	90.2	85.7	30	220	280	H	B	4
15	254T	1775	18.4	92.4	91.0	82.8	45	230	134	G	B	4
20	256T	1770	23.7	93.0	91.7	84.9	60	227	230	F'	B	4
25	284T	1775	29.3	93.6	92.4	85.9	75	180	250	G	B	4
30	286T	1775	35	94.1	93.0	86.9	90	190	250	G	B	4
40	324T	1775	46	93.6	92.4	87.3	120	170	228	F	B	4
50	326T	1775	56	94.1	93.0	88.3	150	189	239	F	B	4

Motor Input Code HC5, IC5
Corro-Duty® Three Phase 575V

HP	Frame Size	Full Load RPM	FL Amps	NEMA Nom. Efficiency	Guar. Efficiency	Power Factor	Torque			KVA Code	NEMA Design	Note(s)
							Full Load	% Full Load				
				4/4 Load	4/4 Load	4/4 Load	(Ft. Lbs.)	Locked	Breakdown			
0.33	56	1740	0.53	77.0	74.0	64.7	1	334	470	M	B	
0.50	56	1735	0.73	81.5	78.5	66.7	1.5	315	424	L	B	
0.75	56	1736	0.95	81.5	78.5	72.3	2.25	313	379	J	B	
1	143T	1747	1.2	84.0	81.5	74.5	3	424	489	M	C	1
1.5	145T	1745	1.69	84.0	81.5	76.9	4.5	385	415	L	C	
2	145T	1751	2.29	85.5	82.5	76.4	6	406	422	M	C	1
3	182T	1772	2.93	89.5	87.5	84.2	9	270	355	K	B	2
5	184T	1758	4.92	89.5	87.5	84.8	15	244	300	J	B	2
7.5	213T	1760	7.3	91.0	89.5	84.6	22.3	220	280	H	B	4
10	215T	1760	9.6	91.0	89.5	85.9	30	210	270	H	B	4
15	254T	1775	14.6	92.4	91.0	83.2	45	224	239	G	B	4
20	256T	1770	19.0	93.0	91.7	85.0	60	226	230	F	B	4
25	284T	1775	23.4	93.0	91.7	85.9	75	180	250	G	B	4
30	286T	1775	27.6	93.6	92.4	86.9	90	190	250	G	B	4
40	324T	1775	37	93.6	92.4	87.2	120	180	237	F	B	4
50	326T	1775	45	94.1	93.0	88.3	150	180	280	F	B	4

Note(s)
1 — This design exceed standards for a “High Efficiency” motor
2 — This design meets standards for a “Premium Efficiency” motor
3 — This motor is an all cast-iron Corro-Duty motor
4 — Motor has three N/C winding thermostats with leads terminating in the main outlet box
5 — For FL amps at 230V, multiply value shown x2

Typical Motor Performance Data

Motor Input Code PC24
Corro-Duty® Premium Efficiency Three Phase 230/460V

HP	Frame Size	Full Load RPM	FL Amps[4] @ 460V	NEMA Nom. Efficiency	Guar. Efficiency	Power Factor	Torque			KVA Code	NEMA Design	Note(s)
				4/4 Load	4/4 Load	4/4 Load	Full Load (Ft. Lbs.)	% Full Load Locked	% Full Load Breakdown			
3	182T	1757	3.83	89.5	87.5	81.4	9	276	425	K	B	
5	184T	1756	6.2	89.5	87.5	83.9	15	229	353	J	B	
7.5	213T	1765	9.3	91.7	90.2	82.8	22.5	247	324	H	B	3
10	215T	1760	12	91.7	90.2	85.3	30	235	301	H	B	3
15	254T	1775	18.4	92.4	91.0	82.8	45	230	134	G	B	3
20	256T	1770	23.7	93.0	91.7	84.9	60	227	230	F'	B	3
25	284T	1775	28.9	93.6	92.4	86.6	75	203	270	G	B	3
30	286T	1775	35.5	93.6	92.4	86.9	90	195	257	G	B	3
40	324T	1780	45	94.1	93.0	88.0	120	193	251	G	B	3
50	326T	1780	56	94.5	93.6	88.3	150	209	264	G	B	3

Motor Input Code PC5
Corro-Duty® Premium Efficiency Three Phase 575V

HP	Frame Size	Full Load RPM	FL Amps	NEMA Nom. Efficiency	Guar. Efficiency	Power Factor	Torque			KVA Code	NEMA Design	Note(s)
				4/4 Load	4/4 Load	4/4 Load	Full Load (Ft. Lbs.)	% Full Load Locked	% Full Load Breakdown			
3	182T	1772	2.93	89.5	87.5	84.2	9	270	355	K	B	
5	184T	1758	4.92	89.5	87.5	84.8	15	244	300	J	B	
7.5	213T	1765	7.5	91.7	90.2	82.4	22.5	251	330	H	B	3
10	215T	1760	9.6	91.7	90.2	85.4	30	234	299	H	B	3
15	254T	1775	14.6	92.4	91.0	83.2	45	224	239	G	B	3
20	256T	1770	19.0	93.0	91.7	85.0	60	226	230	F	B	3
25	284T	1775	23	93.6	92.4	86.9	75	194	259	G	B	3
30	286T	1775	27.6	93.6	92.4	87.0	90	194	256	G	B	3
40	324T	1780	36	94.1	93.0	88.0	120	189	245	G	B	3
50	326T	1780	45	94.5	93.6	88.3	150	210	264	G	A	3

Motor Input Code T24
TEFC Three Phase 230/460V

HP	Frame Size	Full Load RPM	FL Amps[4] @ 460V	NEMA Nom. Efficiency	Power Factor	Torque			KVA Code	NEMA Design	Note(s)
				4/4 Load	4/4 Load	Full Load (Ft. Lbs.)	% Full Load Locked	% Full Load Breakdown			
0.33	56	1746	0.64	75.5	64.7	1	339	462	M	B	1
0.50	56	1745	0.88	80.0	66.7	1.5	344	437	L	B	1
0.75	56	1735	1.21	80.0	72.3	2.25	326	444	K	B	1
1	B56	1730	1.56	81.5	74.0	3	352	434	L	C	1
1.5	145T	1733	2.18	82.5	76.7	4.5	380	450	L	C	2
2	145T	1728	2.89	82.5	77.0	6	430	459	L	C	2
3	182T	1745	4.2	84.0	80.0	9	246	344	J	B	3
5	184T	1745	6.8	84.0	81.7	15	220	323	J	B	2
7.5	213T	1750	10.1	86.5	80.4	22.5	230	290	H	B	2
10	215T	1755	13.2	88.5	80.1	30	230	280	H	B	2

Motor Input Code T5
TEFC Three Phase 575V

HP	Frame Size	Full Load RPM	FL Amps	NEMA Nom. Efficiency	Power Factor	Torque			KVA Code	NEMA Design	Note(s)
				4/4 Load	4/4 Load	Full Load (Ft. Lbs.)	% Full Load Locked	% Full Load Breakdown			
0.33	56	1740	0.53	75.5	64.7	1	334	470	M	B	1
0.50	56	1735	0.73	80.0	66.7	1.5	315	424	L	B	1
0.75	56	1736	0.95	80.0	72.3	2.25	313	379	J	B	1
1	B56	1730	1.21	81.5	76.4	3	337	372	L	C	1

Note(s)
1 — Motor frame exempt from NRCan 2011 definition requiring High Efficiency
2 — Refer to HT24 and/or HT5 for designs meeting or exceeding NRCan 2011
3 — Motor has three N/C winding thermostats with leads terminating in the main outlet box
4 — For FL amps at 230V, multiply value shown x2

Browning®

Gearmotor

Typical Motor Performance Data

SERIES 2000 3000

Motor Input Code W24, WP24
Washdown Three Phase 230/460V

HP	Frame Size	Full Load RPM	FL Amps[4] @ 460V	NEMA Nom. Efficiency	Power Factor	Torque			KVA Code	NEMA Design	Note(s)
						Full Load	% Full Load				
				4/4 Load	4/4 Load	(Ft. Lbs.)	Locked	Breakdown			
0.33	56	1746	0.64	75.5	64.7	1	339	462	M	B	1
0.50	56	1745	0.88	80.0	66.7	1.5	344	437	L	B	1
0.75	56	1735	1.21	80.0	72.3	2.25	326	444	K	B	1
1	B56	1730	1.56	81.5	74.0	3	352	434	L	C	1
1.5	145T	1733	2.14	85.5	76.8	4.5	380	450	L	C	2
2	145T	1740	2.91	85.5	81.4	6	482	491	L	C	2

Motor Input Code W5, WP5
Washdown Three Phase 230/460V

HP	Frame Size	Full Load RPM	FL Amps	NEMA Nom. Efficiency	Power Factor	Torque			KVA Code	NEMA Design	Note(s)
						Full Load	% Full Load				
				4/4 Load	4/4 Load	(Ft. Lbs.)	Locked	Breakdown			
0.33	56	1740	0.53	75.5	64.7	1	334	470	M	B	1
0.50	56	1735	0.73	80.0	66.7	1.5	315	424	L	B	1
0.75	56	1736	0.95	80.0	72.3	2.25	313	379	J	B	1
1	B56	1730	1.21	81.5	76.4	3	337	372	L	C	1
1.5	145T	1745	2.29	84.0	76.9	4.5	385	415	L	C	2
2	145T	1751	2.93	85.5	76.4	6	406	422	M	C	2

Motor Input Code TS12 & TS12B
TEFC Single Phase 115/230V

HP	Frame	Full Load RPM	FL Amps[2] @ 230V	Efficiency	Torque			Design	Brake Option		
					Full Load	% Full Load			Type/Encl	Std. Rating (Ft. Lbs.)	Manual Release
				4/4 Load	(FT. Lbs.)	Locked	Breakdown	Start/Run			
0.33	56	1730	3.2	58.7	1	366	262	Cap Start/Ind. Run	AC/IP21	1.5	Yes
	48	1744	2.5	61.4	1	279	229	Cap Start/Ind. Run	AC/IP21	1.5	Yes
0.5	56	1751	3.8	67.5	1.5	300	240	Cap Start/Ind. Run	AC/IP21	1.5	Yes
	48	1740	3.6	69.0	1.5	302	245	Cap Start/Ind. Run	AC/IP21	1.5	Yes
0.75	56	1744	4.9	71.7	2.3	325	255	Cap. Start/Cap. Run	AC/IP21	3	Yes
	48	1750	3.7	79.8	2.3	338	298	Cap. Start/Cap. Run	AC/IP21	3	Yes
1	143T	1739	6.7	72.9	3	315	250	Cap. Start/Cap. Run	AC/IP21	3	Yes
1.5	145TY	1750	6.5	81.7	4.5	288	290	Cap. Start/Cap. Run	AC/IP21	6	Yes
2	145TY	1755	8.1	89.7	6	247	320	Cap. Start/Cap. Run	AC/IP21	6	Yes

Motor Input Code TS2 and TS2B
TEFC Single Phase 230V

HP	Frame	Full Load RPM	FL Amps @ 230V	Efficiency	Torque			Design	Brake Option		
					Full Load	% Full Load			Type/ Encl	Std. Rating (Ft. Lbs.)	Manual Release
				4/4 Load	(FT. Lbs.)	Locked	Breakdown	Start/Run			
3	184T	1760	17	78.1	9	453	330	Cap. Start/Cap. Run	AC/IP21	10	Yes
5	184T	1740	24	79.4	15	404	275	Cap. Start/Cap. Run	AC/IP21	15	Yes

Note(s)
1 — Motor frame exempt from NRCan 2011 definition requiring High Efficiency
2 — This motor meets NRCan 2011 for High Efficiency
3 — For FL amps at 115V, multiply value shown x2
4 — For FL amps at 230V, multiply value shown x2

Typical Motor Performance Data

Brakemotor Input Code T24B
TEFC Three Phase 230/460V

HP	Frame Size	Full Load RPM	FL Amps[6] @ 460V	NEMA Nom. Efficiency	Power Factor	Torque			KVA Code	NEMA Design	Brake			Note(s)
						Full Load	% Full Load							
				4/4 Load	4/4 Load	(FT. Lbs.)	Locked	Breakdown			Type/Encl	Std. Rating (Ft. Lbs.)	Manual Release	
0.33	56	1746	0.64	75.5	64.7	1	339	462	M	B	DC/IP 55	2.2	Std	1,2
0.50	56	1745	0.88	80.0	66.7	1.5	344	437	L	B	DC/IP 55	3.3	Std	1,2
0.75	56	1735	1.21	80.0	72.3	2.25	326	444	K	B	DC/IP 55	4.4	Std	1,2
1	B56	1730	1.56	81.5	74.0	3	352	434	L	C	DC/IP 55	5.9	Std	1,2
1.5	145T	1733	2.18	82.5	76.7	4.5	380	450	L	C	DC/IP 55	7.4	Std	1,2
2	145T	1728	2.89	82.5	77.0	6	430	459	L	C	DC/IP 55	8.85	Std	1,2
3	182T	1757	3.83	89.5	81.4	9	276	425	K	B	DC/IP 55	15	Std	1,2,4
5	184T	1756	6.2	89.5	83.9	15	229	353	K	B	DC/IP 55	23	Std	1,2,4
7.5	213T	1750	10.1	86.5	80.4	22.5	230	290	H	B	AC/IP21	25	Std	
10	215T	1755	13.2	88.5	80.1	30	230	280	H	B	AC/IP21	35	Std	

Brakemotor Input Code T5B
TEFC Three Phase 575V

HP	Frame Size	Full Load RPM	FL Amps	NEMA Nom. Efficiency	Power Factor	Torque			KVA Code	NEMA Design	Brake			Note(s)
						Full Load	% Full Load							
				4/4 Load	4/4 Load	(Ft. Lbs.)	Locked	Breakdown			Type/Encl	Std. Rating (Ft. Lbs.)	Manual Release	
0.33	56	1740	0.53	75.5	64.7	1	334	470	M	B	DC/IP 55	2.2	Std	1,2
0.50	56	1735	0.73	80.0	66.7	1.5	315	424	L	B	DC/IP 55	3.3	Std	1,2
0.75	56	1736	0.95	80.0	72.3	2.25	313	379	J	B	DC/IP 55	4.4	Std	1,2
1	B56	1730	1.21	81.5	76.4	3	337	372	L	C	DC/IP 55	5.9	Std	1,2
1.5	145T	1730	1.71	82.5	78.6	4.5	316	403	L	C	DC/IP 55	7.4	Std	1,2
2	145T	1730	2.33	82.5	78.9	6	362	420	L	C	DC/IP 55	8.85	Std	1,2
3	182T	1772	2.93	88.5	84.2	9	270	355	K	B	DC/IP 55	15	Std	1,2,3
5	184T	1758	4.92	88.5	84.8	15	244	300	K	B	DC/IP 55	23	Std	1,2,3

Brakemotor Input Code HT24B, IT24B[5]
High Efficiency,TEFC Three Phase 230/460V

HP	Frame Size	Full Load RPM	FL Amps[6] @ 460V	NEMA Nom. Efficiency	Power Factor	Torque			KVA Code	NEMA Design	Brake			Note(s)
						Full Load	% Full Load							
				4/4 Load	4/4 Load	(FT. Lbs.)	Locked	Breakdown			Type/Encl	Std. Rating (Ft. Lbs.)	Manual Release	
0.33	56	1746	0.64	75.5	64.7	1	339	462	M	B	DC/IP 55	2.2	Std	1,2
0.50	56	1745	0.88	80.0	66.7	1.5	344	437	L	B	DC/IP 55	3.3	Std	1,2
0.75	56	1735	1.21	80.0	72.3	2.25	326	444	K	B	DC/IP 55	4.4	Std	1,2
1	B56	1747	1.52	84.0	73.4	3	438	509	M	C	DC/IP 55	5.9	Std	1,2,5
1.5	145T	1733	2.14	84.0	77.0	4.5	380	450	L	C	DC/IP 55	7.4	Std	1,2
2	145T	1740	2.91	85.5	74.8	6	482	491	L	C	DC/IP 55	8.85	Std	1,2,5
3	182T	1757	3.83	89.5	81.4	9	276	425	K	B	DC/IP 55	15	Std	1,2,4
5	184T	1756	6.2	89.5	83.9	15	229	353	J	B	DC/IP 55	23	Std	1,2,4
7.5	213T	1760	12	91.0	86.1	30	210	270	G	B	AC/IP21	25	Std	3
10	215T	1775	18.4	92.4	82.7	45	231	247	G	B	AC/IP21	35	Std	3

Brakemotor Input Code HT5B, IT5B[5]
High Efficiency,TEFC Three Phase 575V

HP	Frame Size	Full Load RPM	FL Amps	NEMA Nom. Efficiency	Power Factor	Torque			KVA Code	NEMA Design	Brake			Note(s)
						Full Load	% Full Load							
				4/4 Load	4/4 Load	(FT. Lbs.)	Locked	Breakdown			Type/Encl	Std. Rating (Ft. Lbs.)	Manual Release	
0.33	56	1740	0.53	77.0	64.7	1	334	470	M	B	DC/IP 55	2.2	Std	1,2
0.50	56	1735	0.73	81.5	66.7	1.5	315	424	L	B	DC/IP 55	3.3	Std	1,2
0.75	56	1736	0.95	81.5	72.3	2.25	313	379	J	B	DC/IP 55	4.4	Std	1,2
1	B56	1730	1.21	81.5	76.4	3	337	372	L	C	DC/IP 55	5.9	Std	1,2
1.5	145T	1730	1.71	85.5	78.6	4.5	316	403	L	C	DC/IP 55	7.4	Std	1,2
2	145T	1730	2.33	85.5	78.9	6	362	420	L	C	DC/IP 55	8.85	Std	1,2
3	182T	1772	2.93	88.5	84.2	9	270	355	K	B	DC/IP 55	15	Std	1,2,4
5	184T	1758	4.92	88.5	84.8	15	244	300	K	B	DC/IP 55	23	Std	1,2,4
7.5	213T	1760	7.3	92.1	84.6	22.5	230	300	H	B	AC/IP21	25	Std	3
10	215T	1760	9.6	92.6	85.9	30	220	280	H	B	AC/IP21	35	Std	3

Note(s)

1 — Brake actuated by motor or separate 1/230V power is standard. For inverter applications, specify 1/115V separate supply
2 — Manual release lever removable in field
3 — Motor efficiency exceeds "High Efficiency" requirements
4 — Motor efficiency meets NEMA Premium
5 — IT24B and IT5B designs are arranged for 1/115V or 1/230V separate actuation
6 — For FL amps at 230V, multiply value shown x2

Browning®

Gearmotor

Typical Motor Performance Data

SERIES 2000 3000

Motor Input Code T53
TEFC Three Phase 380V 50 HZ

HP	Frame Size	FL RPM	FL Amps @ 380V	S.F.	Insul. Class	4/4 Load Effic	4/4 Load P.F.	FL Torque (Ft. Lbs.)	KVA Code	Note(s)
0.33	56	1433	0.69	1.0	F	75.5	71.9	1.2	M	1,2
0.50	56	1430	0.96	1.0	F	80.0	74.1	1.8	L	1.2
0.75	56	1415	1.37	1.0	F	78.5	79.1	2.7	K	1.2
1	B56	1413	1.76	1.0	F	80.0	80.1	3.6	K	1.2
1.5	145T	1410	2.54	1.0	F	81.5	82.4	5.4	L	1.2
2	145T	1407	3.35	1.0	F	81.5	82.7	7.2	L	1.2
3	182T	1450	4.5	1.0	F	87.5	86.2	10.8	H	1.2
5	184T	1440	6.28	1.0	F	88.5	86.8	18	J	1.2
7.5	213T	1450	11.1	1.0	F	88.7	86.2	27	F	1,2,3
10	215T	1435	14.9	1.0	F	87.2	87.1	36.6	E	1,2,3

Motor Input Code T53C
TEFC Three Phase 380V 50 Hz with CCC

Motor Power		Frame Size	FL RPM min- 1	FL Amps @380V	S.F.	Insul. Class	4/4 Load			KVA Code	Design	Notes
HP	kW						Effic. %	P.F	Torque (Nm)			
0.33	0.25	56	1433	0.69	1.0	F	75.5	0.719	1.63	M	B	4,5
0.50	0.37	56	1430	0.96	1.0	F	80.0	0.741	2.44	L	B	4,5
0.75	0.56	56	1415	1.37	1.0	F	78.5	0.791	3.66	K	B	4,5
1	0.75	B56	1413	1.76	1.0	F	80.0	0.801	4.88	K	B	4,5
1.5	1.1	145T	1410	2.54	1.0	F	81.5	0.824	7.32	L	B	4,5
2	1.5	145T	1407	3.35	1.0	F	81.5	0.827	9.76	L	B	5
3	2.2	182T	1450	4.5	1.0	F	87.5	0.862	14.64	H	B	5
5	3.7	184T	1440	6.28	1.0	F	88.5	0.868	24.4	J	B	5

Brakemotor Input Code T53BC
TEFC Three Phase 380V 50 Hz with CCC

Motor Power		Frame Size	FL RPM min- 1	FL Amps @380V	S.F.	Insul. Class	Motor @ 4/4 Load			KVA Code	Design	Brake			Notes
kW	HP						Effic. %	P.F	Torque (Nm)			Type/ Encl	Std. rating (Nm)	Duty Rating	
0.25	0.33	56	1433	0.69	1.0	F	75.5	0.719	1.63	M	B	DC/IP55	2.98	S1	4,5,6
0.37	0.5	56	1430	0.96	1.0	F	80.0	0.741	2.44	L	B	DC/IP55	4,47	S1	4,5, 6
0.56	0.75	56	1415	1.37	1.0	F	78.5	0.791	3.66	K	B	DC/IP55	5.96	S1	4,5,6
0.75	1	B56	1413	1.76	1.0	F	80.0	0.801	4.88	K	B	DC/IP55	8	S1	4,5,6
1.1	1.5	145T	1410	2.54	1.0	F	81.5	0.824	7.32	L	B	DC/IP55	10	S1	4,5,6
1.5	2	145T	1407	3.35	1.0	F	81.5	0.827	9.76	L	B	DC/IP55	12	S1	5,6
2.2	3	182T	1450	4.5	1.0	F	87.5	0.862	14.64	H	B	DC/IP55	20.3	S1	5,6
3.7	5	184T	1440	6.28	1.0	F	88.5	0.868	24.4	J	B	DC/IP55	31.2	S1	5,6

Motor Input Code T54
TEFC Three Phase 415V 50 HZ

HP	Frame Size	FL RPM	FL Amps @ 415V	S.F.	Insul. Class	4/4 Load Effic	4/4 Load P.F.	FL Torque (Ft. Lbs.)	KVA Code	Note(s)
0.33	56	1435	0.68	1.0	F	72.0	69.7	1.2	K	1,2
0.50	56	1433	0.94	1.0	F	80.0	74.1	1.8	J	1.2
0.75	56	1440	1.3	1.0	F	78.5	74.6	2.7	J	1.2
1	143T	1428	1.62	1.0	F	81.5	77.9	3.6	K	1.2
1.5	145T	1433	2.27	1.0	F	82.5	80.8	5.4	J	1.2
2	145T	1435	3.13	1.0	F	84.0	78.8	7.2	K	1.2
3	182T	1458	4.05	1.0	F	87.5	85.4	10.8	H	1.2
5	184T	1445	6.75	1.0	F	86.5	87.2	18	G	1.2
7.5	213T	1460	10.4	1.0	F	89.9	83.4	27	G	1,2,3
10	215T	1450	13.5	1.0	F	89.4	86.1	36.2	F	1,2,3

Note(s)
1 — Design is for X-line starting
2 — Motor is self certified for CE
3 — Motor has three N/C winding thermostats with leads terminating in the main outlet box
4 — Motor is approved for CCC (Chinese Compulsary Certification) and bears logo on nameplate
5 — Nameplate text is in Chinese, with most values in metric
6 — Manual release lever supplied loose for optional mounting in field

FCR Brake

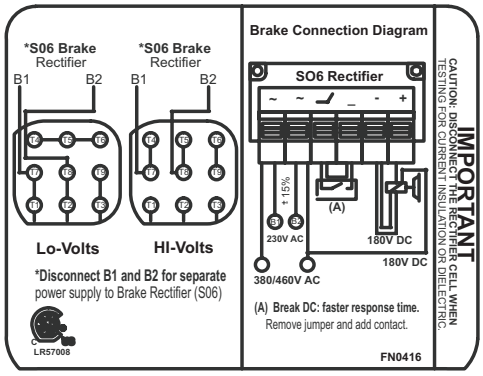
Wiring Diagrams

1.) Fixed Frequency

Three phase brake motors operated from a fixed frequency power supply are supplied with onboard rectifiers in the conduit box to allow powering the brake rectifier directly from the motor. Two versions of rectifiers (SO6 and SO8) can be used interchangeably. Note the rectifier in the motor being wired.

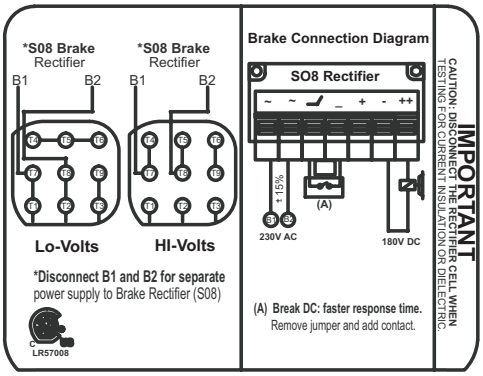
A) Three phase 230/460, 190/380V

SO6 Rectifier

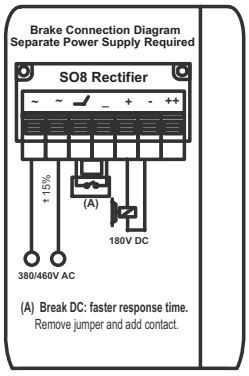


230v or 460v or 380v

SO8 Rectifier



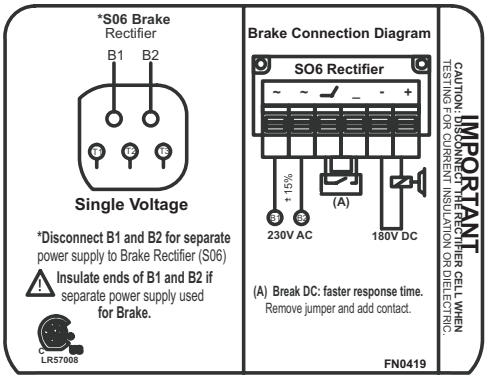
230v



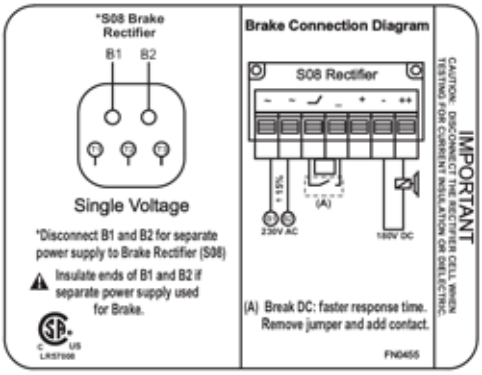
460v or 380v

B) Three phase 575V

SO6 Rectifier



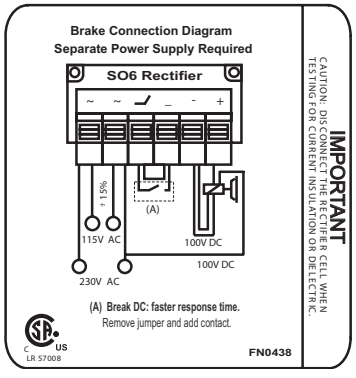
SO8 Rectifier



2) Variable Frequency

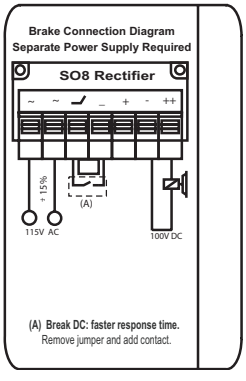
Three phase brake motors operated from a variable frequency power supply are designed with onboard rectifiers in the conduit box to allow powering the brake rectifier from a 115V or 230V fixed frequency single phase power separate from the motor/VFD but interlocked with that power source such that both motor and brake get powered simultaneously.

A1) SO6 Rectifier

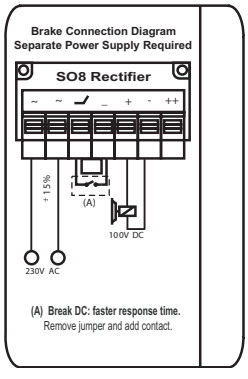


115V or 230V

A2) SO8 Rectifier



115V



230V

General Information

1 - General Information

1.1 - General operating principle

The IntelliGear Plus variable speed gearmotor is a combination of a 3-phase induction motor and an integrated open loop vector variable speed drive. The motor can be combined with many gear types from Emerson Power Transmission's range.

In the standard product version, the integrated drive does not require any connection other than the power supply. The options may be used to broaden the application range of the IntelliGear Plus motor. Based on the advanced technology of the IGBT power module, very high efficiency and reduced noise levels are achieved.

1.2 - Product name

IntelliGear Plus Range							
115V Single Phase Power Supply		230V Single Phase Power Supply		230V Three Phase Power Supply		460V Three Phase Power Supply	
Catalog Number	Motor HP	Catalog Number	Motor HP	Catalog Number	Motor HP	Catalog Number	Motor HP
310 M 033	0.33	31 M 033	0.33	31 TL 033	0.33	31 T 033	0.33
310 M 050	0.50	31 M 050	0.50	31 TL 050	0.50	31 T 050	0.50
32 M 075	0.75	31 M 075	0.75	31 TL 075	0.75	31 T 075	0.75
		31 M 100	1	31 TL 100	1	31 T 100	1
		32 M 150	1.5	32 TL 150	1.5	31 T 150	1.5
		32 M 200	2	32 TL 200	2	31 T 200	2
				33 TL 300	3	32 T 300	3
				33 TL 500	5	32 T 500	5
						33 T 750	7.5
						33 T 1000	10

IntelliGear Plus Speed Controlling Options	
Designation	Description
PD	Digital keypad on enclosure For./Rev./stop/speed-up/speed-down/speed display
P1	Run/Stop/Control knob mounted on enclosure
P2	For./Rev./Stop/Control knob mounted on enclosure
P3	Control knob (only) mounted on enclosure
P4	Control knob (only) mounted inside enclosure w/trim potentiometers
R	Remore signal following (either 0-10 vDC or 4-20 mA)

IntelliGear Plus Options	
Part ID	Description
KEYPAD LCD	Parameter setting console w/cable to locally to customize parameters
PX KEY	Drive parameter set-up key storage Fob
AEM904KA006	DC Braking resistors 100W
AEM904KA007	DC Braking resistors 200W
VMA30SOFT	CD w/cable and USB to locally to customize parameters

1.3 - Characteristics

1.3.1 - Electrical Data

Single Phase Design

Power supply	115 V ± 10%, 50 - 60 Hz	230 V ± 10%, 50 - 60 Hz
Output voltage	From input voltage down to (input voltage/speed range)	
Power range	0.33, 0.50, 0.75 HP	0.33, 0.50, 0.75. 1.0, 1.5, 2.0 HP
Maximum numbers of power-ups per hour	10	

Three Phase Design

Power supply	230 V ± 10%, 50 - 60 Hz	460 V ± 10%, 50 - 60 Hz
Output voltage	From input voltage down to (input voltage/speed range)	
Power range	0.33, 0.50, 0.75. 1.0, 1.5, 2.0, 3, 5 HP	0.33, 0.50, 0.75. 1.0, 1.5, 2.0, 3.0, 5.0, 7.5, 10 HP
Maximum numbers of power-ups per hour	150	

1.3.2 - Characteristics and Functions

Characteristic	**IntelliGear Plus**	
Overload	150 % of full load setting for 60 seconds, 10 times per hour	
Motor Frequency Variation Ranges	Standard	60 to 10 Hz 6:1 constant torque up through 3 HP
		74 to 12 Hz 6:1 constant torque for 5 through 10 HP
	Optional	60 to 6 Hz 10:1 constant torque up through 1.5 HP
		90 to 9 Hz 10:1 constant torque for 2 through 10 HP
	Special	120 to 2 Hz depending on thermal and mechanical limits
Efficiency	97.5 % x motor efficiency x gear efficiency (if applicable)	

Drive Control	**IntelliGear Plus**	
Speed Reference	• Analog reference	(0V or 4mA = minimum speed) (10V or 20mA = maximum speed)
		- 0 to 10V with integral potentiometer on enclosure (P1,P2 and P3)
		- 0 to 10V with integral potentiometer in enclosure (P4)
		- 4 to mA with external reference
		- Digital references
Speed regulation	- Speed regulation with encoder feedback option (only size 33)	
	- Regulation of a reference with integrated PI loop	

1.3.2 - Characteristics and Functions (cont'd.)

Drive Control	IntelliGear Plus
Run/Stop	- With power supply - With remote volt-free contact - With local run/stop control
Forward/Reverse	- With internal connection on the terminal block - With remote volt-free contact - With local For./Rev. controls
Stop Mode	- On ramps (using volt-free contact of integrated control) - Freewheel - With electromechanical brake
Ramps	- Ramps are adjustable from 3 to 600 seconds

Protection	IntelliGear Plus
Power	- Undervoltage - Overvoltage - Overloads • thermal of motor or drive • protection from locked rotor - Short-circuit • motor windings - Overspeed
Control	- Short circuit on 0 - 10V/24V inputs or outputs
Drive reset	- By switching off the IntelliGear Plus or by opening/closing the connection between the 24V and ENA (size 31 and 32) terminals, or SD1 and SDI 2 (size 33)

1.4 - Environmental Characteristics

Characteristics	Level - IntelliGear Plus	
Degree of protection	TEFC	TEFC motor and NEMA 4/12 Controller
Storage temperature	-40 °C to +70 °C	
Transport temperature	-40 °C to +70 °C	
Ambient operating temperature	-20 °C to +40 °C (above 40 °C requires derating 1% per °C	
Altitude	Up to 3000 feet above sea level without derating	
Ambient humidity	95% non-condensing	
Humidity during storage	93%, 40 °C, 4 days	
Vibration	- Exposed product: 0.01 g2 /Hz 1 hr. in accordance with IEC 60068-2-34	
	- Sinusoidal vibration: 2-9 Hz 3.5 ms-2 - 9-200 Hz 10 ms-2 in accordance with IEC 60068-2-6	
Shocks	Packaged product: 15 g, 6 ms, 500 times/direction in all 6 directions in accordance with Standard IEC 600068-2-29	
Immunity	Conforming to EN61000-6-2	
Radiated and conducted emissions	Conforming to EN500081-2 with internal filters	
UL and cUL Standards	Conforming to UL 508 C (E211799)	

* C-Face motors

2 - Faults - Diagnostics

Information relating to the status of the IntelliGear Plus variable speed gearmotor is provided by two indicator lamps located on the control options P1, P2 or P3 or by the internal LED in 31/32.

Color and state of indicator lamp	IntelliGear Plus	Checks to be performed
Steady green	No trip Mains present	
Flashing green	Current limiting	• Check that the motor is not overloaded or stalled.
Flashing red	IGBT temperature alarm Motor overload Braking resistor option overload	• Check that air is able to circulate around the motor fins and IntelliGear Plus casing. • The motor is overloaded: check the motor current using a clamp ammeter. • Check that the deceleration ramp is long enough for applications with high inertia.
Steady red	• Short-circuit of a motor winding • Locked motor rotor • Faulty insulation of a winding • (I2T) overheating • Internal fault • Undervoltage • Overvoltage	• Check that no incident has occurred. • Switch off and then on again to clear the fault. • Check the main voltage. • Check that the deceleration ramp is long enough for applications with high inertia. • If the fault remains, consult Emerson Power Transmission Application Engineering.

The fault is cleared by switching off the IntelliGear Plus or by opening/closing the connection between terminals 12: ENA and 11: +24V (31/32) or SDI1 and SDI2 (33).

3 - Operating Extensions

3.1 - Digital Keypad on enclosure with For./Rev./Stop/ Speedup and down/Speed display/Fault Display (PD)

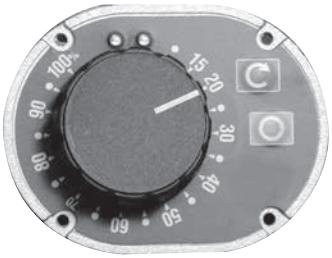


Ref.	Function
A	Display comprising 4 x 7 segment digits for indicating: - the drive operating status - certain operating data - the adjustment parameters (01 to 80) and their value
B	LED providing a sign for the data (the lit LED corresponds to the “”-”” sign)
C	Keys which can be used to scroll up and down through the parameters or their value. These keys can also be used to vary the speed.
D	Keys which can be used to switch from standard mode to parameter-setting mode. In parameter-setting mode, the parameter number and value are displayed alternately on the display.
E F G	In keypad mode, these buttons are used for the following commands: -Reverse (standerly disabled) - Stop, clear fault - Forward

3.2 - Control knob with integrated run/stop control option (P1)

In addition to speed control, a run button and a stop button make it possible to control the IntelliGear Plus locally, once it is has been switched on, as required. For a run command to be taken into account, the button must be held down for one second.

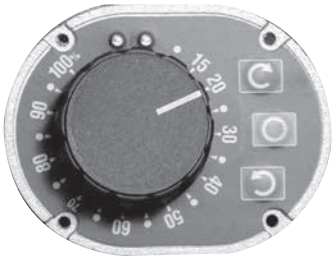
- It is connected on the P2 connector.
- Has two indicator lights.



3.3 - Control knob with forward/reverse/stop control option (P2)

In addition to speed control, a forward button, a reverse button and a stop button make it possible to control the IntelliGear Plus locally, once it has been switched on, as required. For a run command to be taken into account, the button must be held down for one second.

- Connected on the P2 connector
- Has two indicator lights



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IntelliGear® Plus
Variable Speed Gearmotors

3.4 - Speed control knob option (P3)

The speed is set using a knob with graduations from 15 to 100 percent. Has two indicator lamps. It is connected on the P2 connector.



3.5 - Internal speed control option (P4)

The speeds are set on potentiometers, which are accessible once the cover has been removed.
- a max. spd potentiometer: calibration of the maximum speed
- a min. spd potentiometer: calibration of the minimum speed
- an int. spd potentiometer: speed control, which replaces control via the control knob.

There are also two indicator lights.



3.6 - Braking resistor option (RF100 - RF200)

For operation in four quadrants and energy dissipation, resistors are mounted directly onto the IntelliGear Plus motor.



	RF100	RF200 (2x100)		Minimum ohmic value
	P peak kW	P peak kW	Resistor connection	
I31	5.6	2.8	series	100Ω
I31M	1.3	2.6	parallel	50Ω
I32	5.6	11.2	parallel	50Ω

RF100 = thermal power 100W
RF200 = thermal power 200W

External resistors with greater thermal power can be used, provided that the minimum ohmic value is maintained.

3.7 - Parameter-setting console option (Keypad LCD)

The console option provides access to the drive Internet settings (terminal block configuration, ramp, speed and P1 settings, etc.).

See IntelliGear Plus parameter-setting manual included.

Description of the option:
1 Keypad LCD console
1 cable (3m long)



3.8 - Programming CD (VMA30SOFT)

This CD with manual provides access to the drive internal settings (terminal block configuration, range, speed and PI settings, etc.).
Descriptions of the option:
1 CD in case
1 cable (3m long)

3.9 - XPress Key (PX Key)

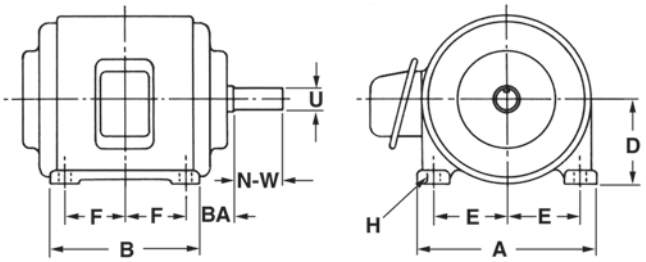
The XPress Key option is used to save a copy of all the IntelliGear Plus parameters so that they can be duplicated very simply in another drive.

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General Information

SERIES 2000 3000

A Guide to NEMA Motor Frames and Shaft Dimensions



Motor ratings and dimensions shown in Table No. 1, below, are for general purpose motors as indicated. Frames for the 1952 - 1953 and the 1964 rerates are shown. All dimensions are subject to change without notice. Those shown are intended as a guide only. Certified dimension drawings from the motor manufacturer should be used.

Table No. 1 **Specifications**

Frame No.	Dimensions									Keyseat		Key Length	HP for Various Motor RPM			
	A Max.	B Max.	D	E	F	H	BA	N-W	U	Width	Depth		3600	1800	1200	900
Fractional Horsepower Motors																
48	5 3/8"	3 1/2"	3"	2 1/8"	1 3/8"	11/32 "s ▲	2 1/2"	1 1/2"	1/2"	Flat	3/64"	-	1/8-1/2	1/8-1/3	1/6	-
56	6 1/2	4 1/2	3 1/2	2 7/16	1 1/2	11/32 ▲	2 3/4	17/8	5/8	3/16"	3/32	1 3/8"	3/4-1	1/3-1	1/8-1/2	-
1952-53 Rerate -- Designs A, B and C -- Open Type -- Squirrel Cage -- Integral H.P. Motors																
182	9	6 1/2	4 1/2	3 3/4	2 1/4	13/32	2 3/4	2 1/4	7/8	3/16	3/32	1 3/8	1 1/2	1	3/4	1/2
184	9	7 1/2	4 1/2	3 3/4	2 3/4	13/32	2 3/4	2 1/4	7/8	3/16	3/32	1 3/8	3,2	2,1 1/2	1 1/2,1	3/4
213	10 1/2	7 1/2	5 1/4	4 1/4	2 3/4	13/32	3 1/2	3	1 1/8	1/4	1/8	2	5	3	2	1 1/2,1
215	10 1/2	9	5 1/4	4 1/4	3 1/2	13/32	3 1/2	3	1 1/8	1/4	1/8	2	7 1/2	5	3	2
254U	12 1/2	10 3/4	6 1/4	5	4 1/8	17/32	4 1/4	3 3/4	1 3/8	5/16	5/32	2 3/4	10	7 1/2	5	3
256U	12 1/2	12 1/2	6 1/4	5	5	17/32	4 1/4	3 3/4	1 3/8	5/16	5/32	2 3/4	15	10	7 1/2	5
284U	14	12 1/2	7	5 1/2	4 3/4	17/32	4 3/4	4 7/8	1 5/8	3/8	3/16	3 3/4	20	15	10	7 1/2
286U	14	14	7	5 1/2	5 1/2	17/32	4 3/4	4 7/8	1 5/8	3/8	3/16	3 3/4	25	20	-	10
324U	16	14	8	6 1/4	5 1/4	21/32	5 1/4	5 5/8	1 7/8	1/2	1/4	4 1/4	-	25	15	-
324S*	16	14	8	6 1/4	5 1/4	21/32	5 1/4	3 1/4	1 5/8	3/8	3/16	1 7/8	30	-	-	-
326U	16	15 1/2	8	6 1/4	6	21/32	5 1/4	5 5/8	1 7/8	1/2	1/4	4 1/4	-	30	20	15
326S*	16	15 1/2	8	6 1/4	6	21/32	5 1/4	3 1/4	1 5/8	3/8	3/16	1 7/8	40	-	-	-
364U	18	15 1/4	9	7	5 5/8	21/32	5 7/8	6 3/8	2 1/8	1/2	1/4	5	-	40	25	20
364US*	18	15 1/4	9	7	5 5/8	21/32	5 7/8	3 3/4	1 7/8	1/2	1/4	2	50	-	-	-
365U	18	16 1/4	9	7	6 1/8	21/32	5 7/8	6 3/8	2 1/8	1/2	1/4	5	-	-	30	25
365US*	18	16 1/4	9	7	6 1/8	21/32	5 7/8	3 3/4	1 7/8	1/2	1/4	2	60	50	-	-
404U	20	16 1/4	10	8	6 1/8	13/16	6 5/8	7 1/8	2 3/8	5/8	5/16	5 1/2	-	-	40	30
404US*	20	16 1/4	10	8	6 1/8	13/16	6 5/8	4 1/4	2 1/8	1/2	1/4	2 3/4	75	60	-	-
405U	20	17 3/4	10	8	6 7/8	13/16	6 5/8	7 1/8	2 3/8	5/8	5/16	5 1/2	-	-	50	40
405US*	20	17 3/4	10	8	6 7/8	13/16	6 5/8	4 1/4	2 1/8	1/2	1/4	2 3/4	100	75	-	-
444U	22	1	11	9	7 1/4	13/16	7 1/2	8 5/8	2 3/8	3/4	3/8	7	-	-	60	50
444US*	22	18 1/2	11	9	7 1/4	13/16	7 1/2	4 1/4	2 1/8	1/2	1/4	2 3/4	125	100	-	-
445U	22	20 1/2	11	9	8 1/4	13/16	7 1/2	8 5/8	2 3/8	3/4	3/8	7	-	-	75	60
445US*	22	20 1/2	11	9	8 1/4	13/16	7 1/2	4 1/4	2 1/8	1/2	1/4	2 3/4	150	125	-	-
1964 Rerate -- Designs A, B and C -- Open Type -- Squirrel Cage -- Integral H.P. Motors																
H143T	7	6	3 1/2	2 3/4	2	11/32	2 1/4	2 1/4	7/8	3/16	3/32	1 3/8	1 1/2	1	3/4	1/2
H145T	7	6	3 1/2	2 3/4	2 1/4	11/32	2 1/4	2 1/4	7/8	3/16	3/32	1 3/8	-	1 1/2	1	3/4
K145T	7	6	3 1/2	2 3/4	2 1/2	11/32	2 1/4	2 1/4	7/8	3/16	3/32	1 3/8	3,2	2	-	-
182T	9	6 1/2	4 1/2	3 3/4	2 1/4	13/32	2 3/4	2 3/4	1 1/8	1/4	1/8	1 3/4	5	3	1 1/2	1
184T	9	7 1/2	4 1/2	3 3/4	2 3/4	13/32	2 3/4	2 3/4	1 1/8	1/4	1/8	1 3/4	7 1/2	5	2	1 1/2
213T	10 1/2	7 1/2	5 1/4	4 1/4	2 3/4	13/32	3 1/2	33/8	1 3/8	5/16	5/32	2 3/8	10	7 1/2	3	2
215T	10 1/2	9	5 1/4	4 1/4	3 1/2	13/32	3 1/2	33/8	1 3/8	5/16	5/32	2 3/8	15	10	5	3
254T	12 1/2	10 3/4	6 1/4	5	41/8	17/32	4 1/4	4	1 5/8	3/8	3/16	2 7/8	20	15	7 1/2	5
256T	12 1/2	12 1/2	6 1/4	5	5	17/32	4 1/4	4	1 5/8	3/8	3/16	2 7/8	25	20	10	7 1/2
284T	14	12 1/2	7	5 1/2	4 3/4	17/32	4 3/4	4 5/8	1 7/8	1/2	1/4	3 1/4	-	25	15	10
284TS*	14	12 1/2	7	5 1/2	4 3/4	17/32	4 3/4	3 1/4	1 5/8	3/8	3/16	1 7/8	30	-	-	-
286T	14	14	7	5 1/2	5 1/2	17/32	4 3/4	4 5/8	1 7/8	1/2	1/4	3 1/4	-	30	20	15
286TS*	14	14	7	5 1/2	5 1/2	17/32	4 3/4	3 1/4	1 5/8	3/8	3/16	1 7/8	40	-	-	-
324T	16	14	8	6 1/4	5 1/4	21/32	5 1/4	5 1/4	2 1/8	1/2	1/4	3 7/8	-	40	25	20
324TS*	16	14	8	6 1/4	5 1/4	21/32	5 1/4	3 3/4	1 7/8	1/2	1/4	2	50	-	-	-
326T	16	15 1/2	8	6 1/4	6	21/32	5 1/4	5 1/4	2 1/8	1/2	1/4	3 7/8	-	50	30	25
326TS*	16	15 1/2	8	6 1/4	6	21/32	5 1/4	3 3/4	1 7/8	1/2	1/4	2	60	-	-	-
364T	18	15 1/4	9	7	5 5/8	21/32	5 7/8	5 7/8	2 3/8	5/8	5/16	4 1/4	-	60	40	30
364TS*	18	15 1/4	9	7	5 5/8	21/32	5 7/8	3 3/4	1 7/8	1/2	1/4	2	75	-	-	-
365T	18	16 1/4	9	7	6 1/8	21/32	5 7/8	5 7/8	2 3/8	5/8	5/16	4 1/4	-	75	50	40
365TS*	18	16 1/4	9	7	6 1/8	21/32	5 7/8	3 3/4	1 7/8	1/2	1/4	2	100	-	-	-
404T	20	16 1/4	10	8	6 1/8	13/16	6 5/8	7 1/4	2 7/8	3/4	3/8	5 5/8	-	100	60	50
404TS*	20	16 1/4	10	8	6 1/8	13/16	6 5/8	4 1/4	2 1/8	1/2	1/4	2 3/4	125	-	-	-
405T	20	17 3/4	10	8	6 7/8	13/16	6 5/8	7 1/4	2 7/8	3/4	3/8	5 5/8	-	125	75	60
405TS*	20	17 3/4	10	8	6 7/8	13/16	6 5/8	4 1/4	2 1/8	1/2	1/4	2 3/4	150	-	-	-
444T	22	18 1/2	11	9	7 1/4	13/16	7 1/2	8 1/2	3 3/8	7/8	7/16	6 7/8	-	-	100	75
444TS*	22	18 1/2	11	9	7 1/4	13/16	7 1/2	4 3/4	2 3/8	5/8	5/16	3	200	150	-	-
445T	22	20 1/2	11	9	8 1/4	13/16	7 1/2	8 1/2	3 3/8	7/8	7/16	6 7/8	-	-	125	100
445TS*	22	20 1/2	11	9	8 1/4	13/16	7 1/2	4 3/4	2 3/8	5/8	5/16	3	250	200	-	-

* These motors are for direct coupled service only.
▲ Slots.

Decimal - Millimeter Equivalents

Fractional	Decimal	M.M.
1/64	.015625	.397
1/32	.03125	.794
3/64	.046875	1.191
1/16	.0625	1.588
5/64	.078125	1.985
3/32	.09375	2.381
7/64	.109375	2.778
1/8	.125	3.175
9/64	.140625	3.572
5/32	.15625	3.969
11/64	.171875	4.366
3/16	.1875	4.763
13/64	.203125	5.159
7/32	.21875	5.556
15/64	.234375	5.953
1/4	.250	6.350
17/64	.265625	6.747
9/32	.28125	7.144
19/64	.296875	7.541
5/16	.3125	7.938
21/64	.328125	8.334
11/32	.34375	8.731
23/64	.359375	9.128
3/8	.375	9.525
25/64	.390625	9.922
13/32	.40625	10.319
27/64	.421875	10.716
7/16	.4375	11.113
29/64	.453125	11.509
15/32	.46875	11.906
31/64	.484375	12.303
1/2	.500	12.700
33/64	.515625	13.097
17/32	.53125	13.494
35/64	.546875	13.891
9/16	.5625	14.288
37/64	.578125	14.684
19/32	.59375	15.081
39/64	.609375	15.478
5/8	.625	15.875
41/64	.640625	16.272
21/32	.65625	16.669
43/64	.671875	17.066
11/16	.6875	17.463
45/64	.703125	17.859
23/32	.71875	18.256
47/64	.734375	18.653
3/4	.750	19.050
49/64	.765625	19.447
25/32	.78125	19.844
51/64	.796875	20.241
13/16	.8125	20.638
53/64	.828125	21.034
27/32	.84375	21.431
55/64	.859375	21.828
7/8	.875	22.225
57/64	.890625	22.622
29/32	.90625	23.019
59/64	.921875	23.416
15/16	.9375	23.813
61/64	.953125	24.209
31/32	.96875	24.606
63/64	.984375	25.003
1	1.000	25.400

HP and Torque

HP is the common unit of mechanical power.

$$HP = \frac{\text{Force x Feet per Minute}}{33000}$$

$$HP = \frac{\text{Torque in In.-Lbs. x rpm}}{63025}$$

One HP = .746 kilowatt

One kilowatt = 1.34 HP

Torque is a twisting moment or turning effort.

Torque in inch-pounds = Force x Lever Arm (Inches)

$$\text{Torque in inch-pounds} = \frac{63025 \times HP}{rpm}$$

The following table gives the torque in Inch-Pounds for one HP at various speeds.

Torque at One HP

R.P.M.	In.-Lbs.	R.P.M.	In.-Lbs.	R.P.M.	In.-Lbs.	R.P.M.	In.-Lbs.
3500	18	580	109	90	700	14	4502
3000	21	500	126	80	788	12	5252
2400	26	400	158	70	900	10	6300
2000	32	300	210	60	1050	8	7878
1750	36	200	315	50	1260	6	10504
1600	39	180	350	40	1576	5	12605
1200	53	160	394	30	2101	4	15756
1160	54	140	450	20	3151	3	21008
1000	63	120	525	18	3501	2	31513
870	72	100	630	16	3939	1	63025

Minimum Sheave Sizes NEMA Standards

The National Electrical Manufacturers Association recommends certain limitations on sheave diameter and width for satisfactory motor operation. The selected sheave diameter should not be smaller nor the width greater than the dimensions below. These dimensions are from NEMA Standard MG1-14.42.

Frame	Horsepower at Sync. Speed, RPM				V-Belt Sheave (Inches)			
					Conventional A, B, C, D, and E Sections		358 3V, 5V and 8V Sections	
	3600	1800	1200	900	Min. Pitch Dia.	Max. Width	Min. Outside Dia.	Max Width
143T	1 1/2	1	3/4	1/2	2.2	4 1/4	2.2	2 1/4
145T	2-3	1 1/2-2	1	3/4	2.4	4 1/4	2.4	2 1/4
182T	3	3	1 1/2	1	2.4	5 1/4	2.4	2 3/4
182T	5	-	-	-	2.6	5 1/4	2.4	2 3/4
184T	-	-	2	1 1/2	2.4	5 1/4	2.4	2 3/4
184T	5	-	-	-	2.6	5 1/4	2.4	2 3/4
184T	7 1/2	5	-	-	3.0	5 1/4	3.0	2 3/4
213T	7 1/2-10	7 1/2	3	2	3.0	6 1/2	3.0	3 3/8
215T	10	-	5	3	3.0	6 1/2	3.0	3 3/8
215T	15	10	-	-	3.8	6 1/2	3.8	3 3/8
254T	15	-	7 1/2	5	3.8	6 1/2	3.8	4
254T	20	15	-	-	4.4	6 1/2	4.4	4
256T	20-25	-	10	7 1/2	4.4	6 1/2	4.4	4
256T	-	20	-	-	4.6	6 1/2	4.4	4
284T	-	-	15	10	4.6	9	4.4	4 5/8
284T	-	25	-	-	5.0	9	4.4	4 5/8
286T	-	30	20	15	5.4	9	5.2	4 5/8
324T	-	40	25	20	6.0	10 1/4	6.0	5 1/4
326T	-	50	30	25	6.8	10 1/4	6.8	5 1/4
364T	-	-	40	30	6.8	11 1/2	6.8	5 7/8
364T	-	60	-	-	7.4	11 1/2	7.4	5 7/8
365T	-	-	50	40	8.2	11 1/2	8.2	5 7/8
365T	-	75	-	-	9.0	11 1/2	8.6	5 7/8
404T	-	-	60	-	9.0	14 1/4	8.0	7 1/4
404T	-	-	-	50	9.0	14 1/4	8.4	7 1/4
404T	-	100	-	-	10.0	14 1/4	8.6	7 1/4
405T	-	-	75	60	10.0	14 1/4	10.0	7 1/4
405T	-	100	-	-	10.0	14 1/4	8.6	7 1/4
405T	-	125	-	-	11.5	14 1/4	10.5	7 1/4
444T	-	-	100	-	11.0	16 3/4	10.0	8 1/2
444T	-	-	-	75	10.5	16 3/4	9.5	8 1/2
444T	-	125	-	-	11.0	16 3/4	9.5	8 1/2
444T	-	150	-	-	-	-	10.5	8 1/2
445T	-	-	125	-	12.5	16 3/4	12.0	8 1/2
445T	-	-	-	100	10.5	16 3/4	12.0	8 1/2
445T	-	150	-	-	-	-	10.5	8 1/2
445T	-	200	-	-	-	-	13.2	8 1/2

To obtain the minimum pitch diameters for flat belt, gearbelt, Poly-V*, chain or gear drives, multiply the 358 sheave pitch diameters in the table above by the following factors:

Drive	Factor
Chain	0.7
Flat Belt (Single Ply)	1.33
Gearbelt	0.9
Helical Gear	0.85
Poly-V	1.00
Spur Gear	0.75

* Poly-V is believed to be the trademark and/or trade name of Veyance Technologies, Inc., and is not owned or controlled by Emerson Power Transmission.

Notes:

All sales are made on our STANDARD TERMS AND CONDITIONS OF SALE in effect at the time a customer's order is accepted. The current Terms and Conditions are set forth below:

STANDARD TERMS AND CONDITIONS OF SALE (September 2, 2009)

These Terms and Conditions, the attendant quotation or acknowledgment and all documents incorporated by specific reference therein, will be the complete and exclusive statement of the terms of the agreement governing the sale of goods ("Goods") by Emerson Power Transmission Corporation and its divisions and subsidiaries ("Seller") to Customer ("Buyer"). Buyer's acceptance of the Goods will manifest Buyer's assent to these Terms and Conditions. If these Terms and Conditions differ in any way from the terms and conditions of Buyer's order, or other documentation, this document will be construed as a counteroffer and will not be deemed an acceptance of Buyer's terms and conditions which conflict herewith.

1. PRICES: Unless otherwise specified in writing by Seller, Seller's price for the goods shall remain in effect for thirty (30) days after the date of Seller's quotation or acknowledgment of Buyer's order for the Goods, whichever occurs first, provided an unconditional, complete authorization for the immediate shipment of the Goods is received and accepted by Seller within such time period. If such authorization is not received by Seller within such thirty (30) day period, Seller shall have the right to change the price for the Good to Seller's price for the Goods at the time of shipment.

2. TAXES: Any tax or governmental charge or increase in same hereafter becoming effective increasing the cost to Seller of producing, selling or delivering the Goods or of procuring material used therein, and any tax now in effect or increase in same payable by the Seller because of the manufacture, sale or delivery of the Goods, may at Seller's option, be added to the price.

3. TERMS OF PAYMENT: Subject to the approval of Seller's Credit Department, terms are net thirty (30) days from date of Seller's invoice in U.S. currency. If any payment owed to Seller is not paid when due, it shall bear interest, at a rate to be determined by Seller, which shall not exceed the maximum rate permitted by law, from the date on which it is due until it is paid. Seller shall have the right, among other remedies, either to terminate the Agreement or to suspend further performance under this and/or other agreements with Buyer in the event Buyer fails to make any payment when due. Buyer shall be liable for all expenses, including attorneys' fees, relating to the collection of past due amounts.

4. SHIPMENT AND DELIVERY: Shipments are made F.O.B. Seller's shipping point. Any claims for shortages or damages suffered in transit shall be submitted by the Buyer directly to the carrier. While Seller will use all reasonable commercial efforts to maintain the delivery date acknowledged or quoted by Seller, all shipping dates are approximate. Seller reserves the right to make partial shipments and to segregate "specials" and made-to-order Goods from normal stock Goods. Seller shall not be bound to tender delivery of any Goods for which Buyer has not provided shipping instructions.

5. QUANTITY: Buyer agrees to accept overruns of up to ten percent (10%) of the order on "made-to-order" Goods, including parts. Any such additional items shall be priced at the price per item charged for the specific quantity ordered.

6. LIMITED WARRANTY: Subject to the limitations of Section 7, Seller warrants that the Goods will be free from defects in material and workmanship under normal use, service and maintenance for a period of one year (unless otherwise specified by Seller in writing) from the date of shipment of the Goods by Seller. **THIS IS THE SOLE AND EXCLUSIVE WARRANTY GIVEN BY SELLER WITH RESPECT TO THE GOODS AND IS IN LIEU OF AND EXCLUDES ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, ARISING BY OPERATION OF LAW OR OTHERWISE, INCLUDING WITHOUT LIMITATION, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOS WHETHER OR NOT THE PURPOSE OR USE HAS BEEN DISCLOSED TO SELLER IN SPECIFICATIONS, DRAWINGS OR OTHERWISE, AND WHETHER OR NOT SELLER'S PRODUCTS ARE SPECIFICALLY DESIGNED AND/OR MANUFACTURED BY SELLER FOR BUYER'S USE OR PURPOSE**.
This warranty does not extend to any losses or damages due to misuse, accident, abuse, neglect, normal wear and tear, unauthorized modification or alteration, use beyond rated capacity, or improper installation, maintenance or application. To the extent that Buyer or its agents has supplied specifications, information, representation of operating conditions or other data to Seller in the selection or design of the Goods and the preparation of Seller's quotation, and in the event that actual operating conditions or other conditions differ from those represented by Buyer, any warranties or other provisions contained herein which are affected by such conditions shall be null and void. If within thirty (30) days after Buyer's discovery of any warranty defects within the warranty period, Buyer notifies Seller thereof in writing, Seller shall, at its option, repair or replace F.O.B. point of manufacture, or refund the purchase price for, that portion of the goods found by Seller to be defective. Failure by Buyer to give such written notice within the applicable time period shall be deemed an absolute and unconditional waiver of Buyer's claim for such defects. Goods repaired or replaced during the warranty period shall be covered by the foregoing warranty for the remainder of the original warranty period or ninety (90) days, whichever is longer. Buyer assumes all other responsibility for any loss, damage, or injury to persons or property arising out of, connected with, or resulting from the use of Goods, either alone or in combination with other products/components.
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9. CANCELLATIONS AND DELAYS: The Buyer may cancel orders only upon written notice and upon payment to Seller of cancellation charges which include, among other things, all costs and expenses incurred and commitments made by the Seller and a reasonable profit thereon. Any request by Buyer to extend the delivery schedule must be agreed to in writing by the Seller. If agreement cannot be reached, Seller may deliver product to the last known ship to address and invoice the Buyer upon completion of the product or prior delivery date, whichever is later.

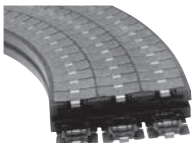
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11. TOOLING: Tool, die, and pattern charges, if any, are in addition to the price of the Goods and are due and payable upon completion of the tooling. All such tools, dies and patterns shall be and remain the property of Seller. Charges for tools, dies, and patterns do not convey to Buyer, title, ownership interests in, or rights to possession or removal, nor prevent their use by Seller for other purchasers, except as otherwise expressly provided by Seller and Buyer in writing with reference to this provision.

12. ASSIGNMENT: Buyer shall not assign its rights or delegate its duties hereunder or any interest therein or any rights hereunder without the prior written consent of the Seller, and any such assignment, without such consent, shall be void.

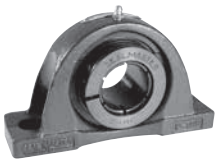
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14. MISCELLANEOUS: These terms and conditions set forth the entire understanding and agreement between Seller and Buyer, and supersede all other communications, negotiations and prior oral or written statements regarding the subject matter of these terms and conditions. No change, modification, rescission, discharge, abandonment, or waiver of these terms and conditions of Sale shall be binding upon the Seller unless made in writing and signed on its behalf by an officer of the Seller. No conditions, usage or trade, course of dealing or performance, understanding or agreement purporting to modify, vary, explain, or supplement these Terms and Conditions shall be binding unless hereafter made in writing and signed by the party to be bound, and no modification shall be affected by the acceptance of purchase orders or shipping instruction forms containing terms at variance with or in addition to those set forth herein. Any such modifications or additional terms are specifically rejected by Seller. No waiver by Seller with respect to any breach or default or any right or remedy and no course of dealing, shall be deemed to constitute a continuing waiver of any other breach or default or of any other right or remedy, unless such waiver be expressed in writing and signed by the party to be bound. Seller is not responsible for typographical or clerical errors made in any quotation, orders or publications. All such errors are subject to correction. The validity, performance, and all other matters relating to the interpretation and effect of this contract shall be governed by the law of the state of New York. The United Nations Convention on the International Sale of Goods shall not apply to
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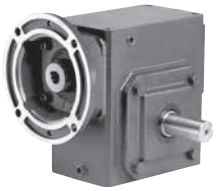
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