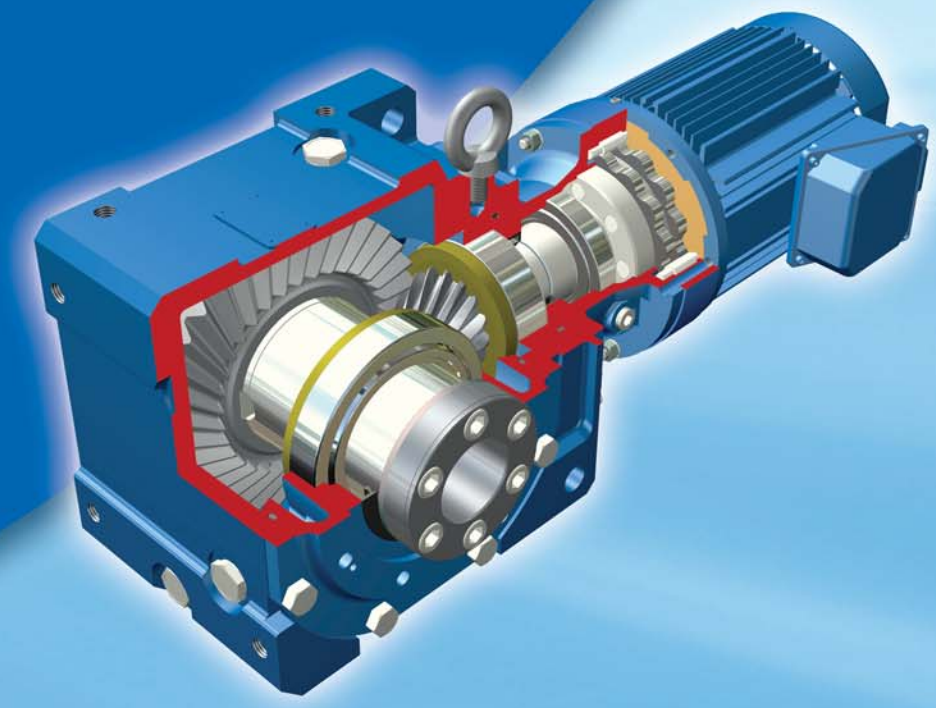
Sumitomo Drive Technologies

Always on the Move

Cyclo® BBB BEVEL BUDDYBOX

Speed Reducers and Gearmotors

featuring Keyless Taper-Grip® Bushing



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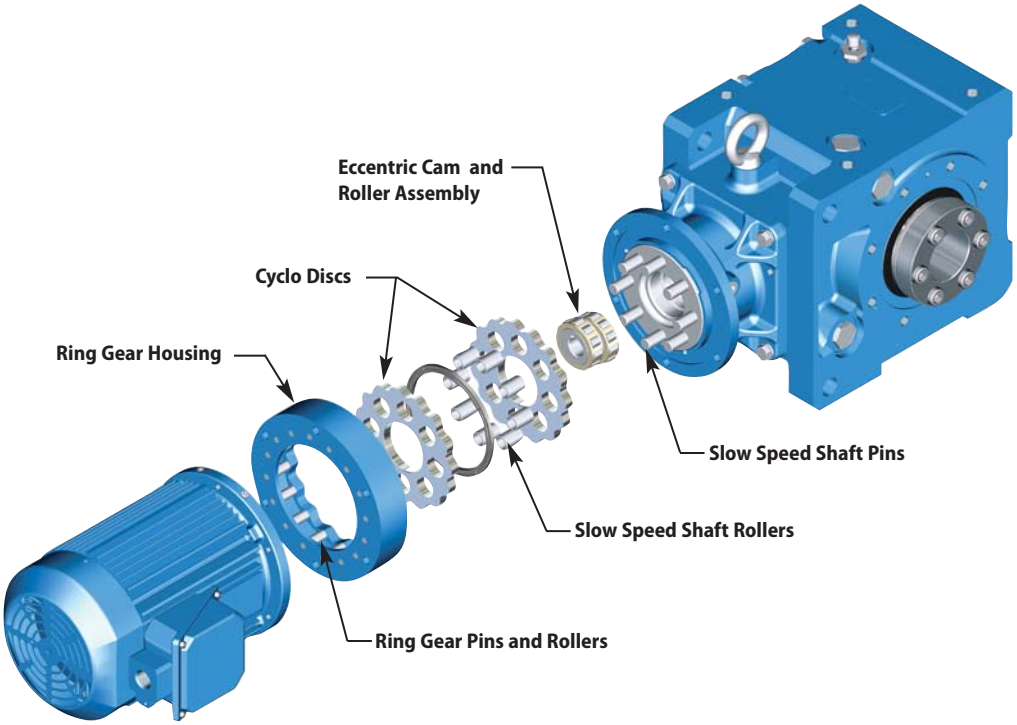
Cyclo® BBB Bevel Buddybox

- Rugged Spiral Bevel Output
- Modular Cyclo® Input
- Compact Size
- Two-Year Warranty



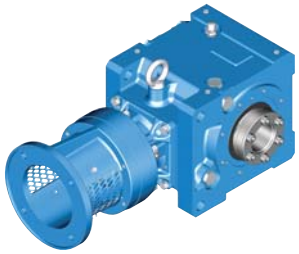
Right Angle Drives Designed for Demanding Applications

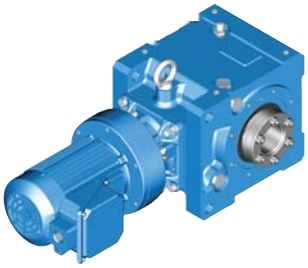
In less than 20 minutes, 96 Sumitomo Cyclo® Bevel Buddybox gearmotors help retract the 13,000-ton roof on Seattle's Safeco Field.

The Sumitomo gearmotors, on eight travel truck assemblies, turn 128 36" wheels.

To request a catalog, or for more information on any of our high quality products, please visit our Website:

Speed Reducers and Gearmotors





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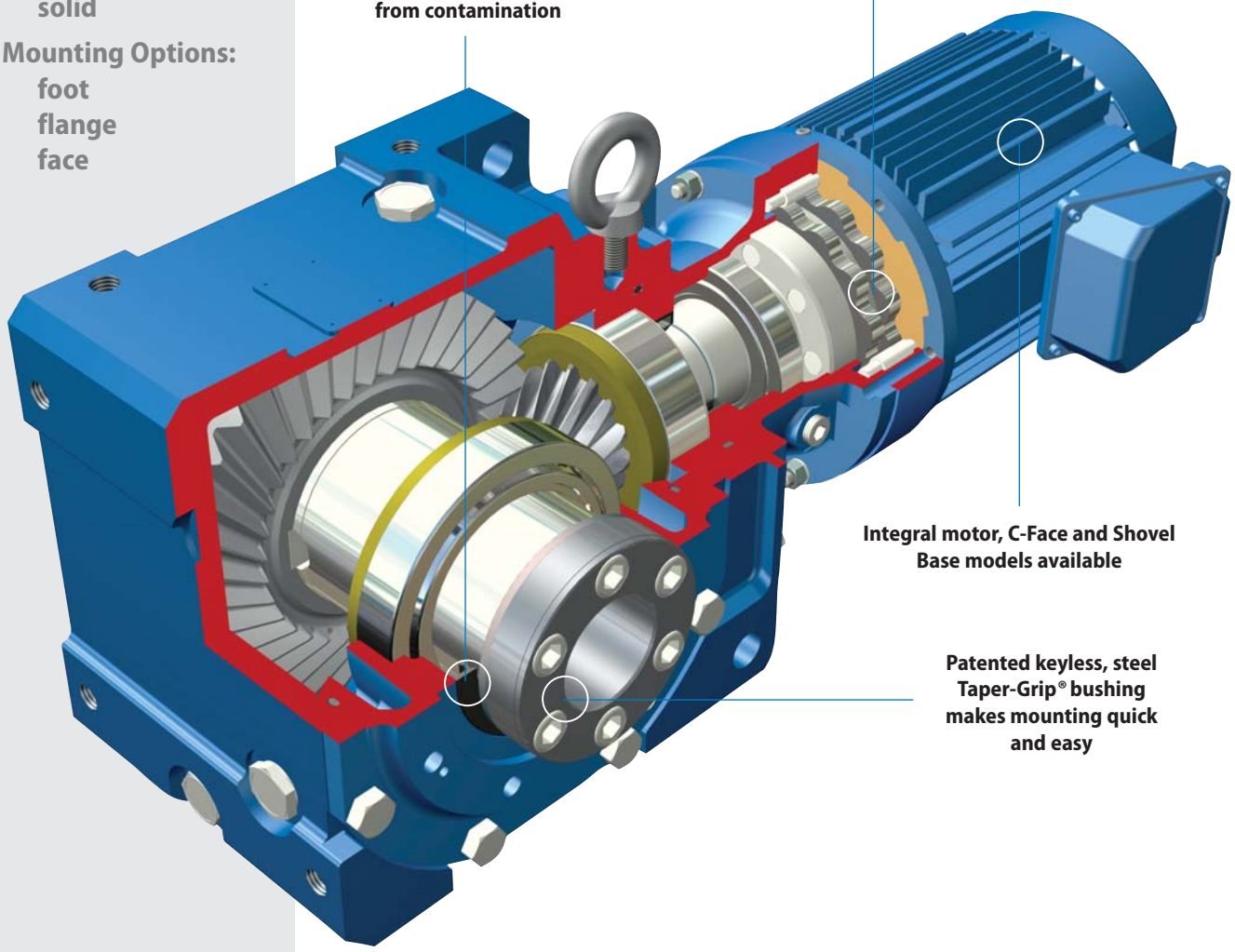
Cyclo® BBB Bevel Buddybox

Flexible configurations

- Shaft Options:
  - hollow
  - solid
- Mounting Options:
  - foot
  - flange
  - face



Cyclo® Quality and Reliability, Right Angle Design

- High performance steel gearing components deliver **up to 94% efficiency**

Product Description

Sumitomo's Cyclo® Bevel Buddybox (Cyclo® BBB) speed reducers and gearmotors are the **ultimate right angle drives for challenging applications.** The Cyclo® BBB combines the quiet, efficient and reliable performance of the Cyclo® technology input with the **rugged spiral bevel** gearbox output. The **modular design** provides a compact, torque-dense product with the most flexible range of output speed and torque combinations available. The Cyclo® BBB easily adapts to shaft-mounted as well as solid shaft mounting arrangements. Sumitomo's patented Taper Grip® bushing system enhances the Cyclo® BBB value by offering a simple shaft-mounting device that **provides self-aligning, backlash-free torque transmission** to the driven shaft. The Cyclo® BBB and Taper Grip® bushing system provide solutions for the most demanding applications.

Features & Benefits

- **Cycloidal speed reduction technology**
  - ~ Quiet, efficient and reliable operation with high torque density and compact size
- **Modular design**
  - ~ Interchangeable cast iron housings in foot, flanged or face mount configurations
- **High performance steel spiral bevel gearing**
  - ~ Deliver efficiencies of up to 94% across the entire product range
- **Double output seals**
  - ~ Virtually leak-free operation and optimal protection from lubrication contamination
- **Taper Grip® Bushing**
  - ~ Simple, steel, keyless shaft mounting system resists fretting and eases unit installation and removal from driven shaft

Specifications Summary

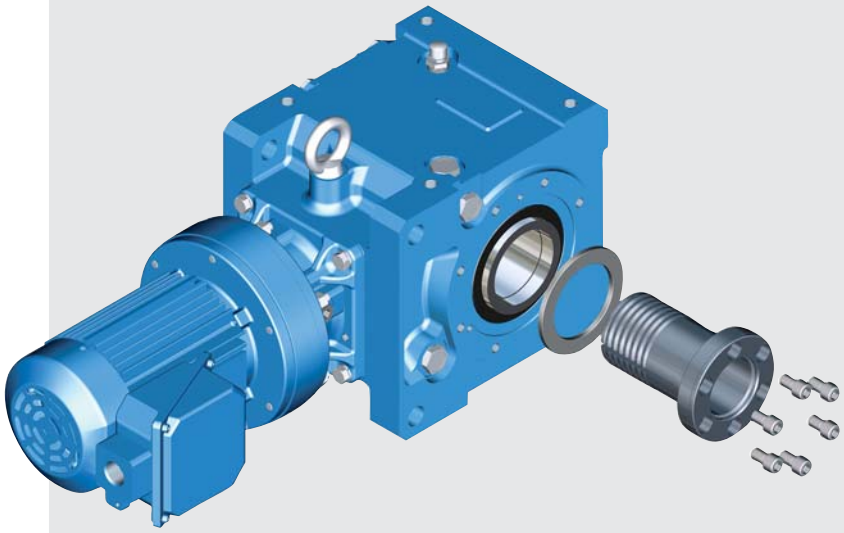
Ratios:	11:1 to 26,000:1 and greater
Torque Capacity:	94,700 in. lbs.
HP:	1/8 to 40
Mounting:	Hollow Shaft, Solid Shaft with Foot, Flange, Face
Options:	Integral Motor, C-Face and Shovel Base
Motor Standards:	NEMA, IEC, JIS, UL, CSA, CE

Keyless, steel Taper-Grip® bushing makes mounting of hollow shaft units easy and economical

The Sumitomo **Taper-Grip®** bushing is a keyless, torque transmission device integrated into the shaft mounted, right angle Cyclo® BBB reducer and gearmotor product lines.

The **unique, patented design** has a number of benefits:

- Easy mounting and removal of the unit to and from the driven shaft
- Standard bore sizes require no shaft preparation such as a keyway, undercut, or keeper plate
- Backlash free torque transmission
- Works with standard shafting, no special tolerances required
- Automatic shaft center alignment
- Resistant to fretting and corrosion
- Multiple stock bore sizes for quick delivery.



Applications

- Material Handling
- Asphalt Mixers
- Capstan Drive
- Rolling Mill Table
- Wire Drawing Machines
- Food Processing
- Belt Filter Presses
- Shredders/Compactors

Product Range (Standard Motor and Reducer Combinations)

Single Reduction Ratios 11 – 305

Combinations with 1750 RPM motor

Ratio	11	18	21	28	39	46	53	60	74	88	102	123	151	179	207	249	305	417
Output Speed RPM (60 Hz)	159	97.2	83.3	62.5	44.9	38	33	29.2	23.6	19.9	17.2	14.2	11.6	9.8	8.45	7.03	5.74	4.20
1/4															●	●	●	●
1/3														●	●	●	●	●
1/2													●	●	●	●	●	
3/4										●	●	●	●	●	●	●	●	
1										●	●	●	●	●	●	●	●	
1.5	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
3	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
5	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
7.5	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
10	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			
15	●	●	●	●	●	●	●	●	●	●	●	●	●					
20	●	●	●	●	●	●	●	●	●	●	●							
25	●	●	●	●	●	●	●	●	●									
30	●	●	●	●	●	●	●	●										
40	●	●	●	●	●	●	●											

Double Reduction Ratios 364 – 5177

Combinations with 1750 RPM motor

Ratio	364	424	501	578	683	809	956	1117	1320	1656	1957	2272	2559	2944	3511	4365	5177	7228	10658
Output Speed RPM (60 Hz)	4.81	4.13	3.5	3.03	2.56	2.16	1.83	1.57	1.33	1.06	0.894	0.77	0.684	0.595	0.499	0.401	0.338	0.242	0.164
Motor HP 1/8	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
1/4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
1/3	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●				
1/2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
3/4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●				
1	●	●	●	●	●	●	●	●	●	●	●	●	●						
1.5	●	●	●	●	●	●	●	●	●	●	●								
2	●	●	●	●	●	●	●	●	●										
3	●	●	●	●	●	●	●												
5	●	●	●	●															
7.5	●																		

FAQs

How do I select a Cyclo® BBB speed reducer or gearmotor?
Selection is based on the actual horsepower and/or torque requirements at the output shaft. The Cyclo® BBB speed reducer has particularly high efficiencies over a wide range of reduction ratios, which frequently permits the use of reduced input power requirements (smaller HP motor) without sacrificing output shaft torque. The selection procedures in this catalog will guide you in choosing the most efficient reducer for your application.

What information do I need to get started in the selection process?
To select the proper reducer for your application, you will need to know:

- Application: type of driven machine
- Hours of operation per day
- Motor horsepower (HP) and speed (RPM)
- Mounting position

If there are any special environmental factors or operation requirements, they must also be noted. This information will be important in determining the Service Factor of your application.

What are Service Factors and how are they used?
In general, reducers and gearmotors are rated for the specific conditions and operating requirements of the application by the use of AGMA-defined Service Factors. There are three AGMA load classifications for reducers: uniform (U), moderate shock (M) and heavy shock (H) (page 2.6) and three AGMA load classifications for gearmotors: I, II and III (pages 3.6–3.7). The Service Factors are used in the product selection process to adjust for the specific conditions and operating requirements of your application.

What do I do if my application has particularly severe operating conditions?
The standard ratings for Cyclo® BBB are based on 10-hour daily service under conditions of uniform loads (equivalent to AGMA service factor 1.0). By following the product selection process, you will determine and apply the Service Factors to compensate for the severe operating conditions.

How can I be sure that the reducer can withstand periodic excessive overloads?
Cyclo® BBB Speed Reducers provide 300% momentary intermittent shock load capacity. For applications with shock loads greater than 300%, consult a Sumitomo Application Engineer.

What are the standard input speeds?
In general terms, the speeds are 1750 and 1165 RPM. The selection tables in this catalog are based on 1750 RPM. When non-standard input speeds are used, the horsepower and torque ratings also vary.

What thermal capacity limitations does the Cyclo® BBB have?
The Cyclo® speed reducer, by virtue of its smooth, almost frictionless operation (unlike traditional helical gears), has a thermal rating that far exceeds its mechanical capacity and all but eliminates the conventional limitations due to heat.

What are the advantages of the Taper-Grip® bushing?
The Taper-Grip® bushing is integral to the Cyclo® BBB and provides for easy mounting and removal to and from the shaft of the driven machine. Because it requires no key way, the shaft isn't weakened and maximum torque is transmitted.

What are the advantages of the new Steel Taper-Grip® bushing?
With an increased torque capacity, the new Steel Taper-Grip® bushing can be used in reversing and/or high start-up applications. The new Steel Taper-Grip® bushing can be used on all Taper-Grip® products.

What kind of torque arm do I specify? At what position should I mount it?
The standard torque arm assembly supplied is a turnbuckle type as shown on page 4.4. The torque arm should be mounted at 90 degrees to a line from the point of attachment to the reducer and the center of the output bore with up to 30 degrees plus or minus variance. A bracket type torque arm is also offered as a non-stock option.

Standard Specifications

		Standard Specifications	Standard Specifications with Built-In Brake
3-Phase Integral Motor	**Capacity Range:**	1/8 HP ~ 40 HP, 4P	1/8 HP ~ 15 HP, 4P: FB Brake 20 HP, 4P: CMB Brake 25 HP ~ 40 HP, 4P: ESB Brake
	Enclosure:	Totally enclosed fan cooled type (1/8 HP, 4P Totally enclosed non ventilated)	Totally enclosed fan cooled type (1/8 HP, 4P Totally enclosed non ventilated)
	Power Supply:	230/460 Volts, 60 Hz 575 Volts, 60 Hz	230/460 Volts, 60 Hz 575 Volts, 60 Hz
	Insulation:	3/4 ~ 30 HP: Class B 40 HP: Class F	3/4 ~ 20 HP: Class B
	Time Rating	Continuous	Continuous

Reducer	**Reduction:**	Combination of Cyclo input and right angle spiral bevel gear output.
	Lubrication:	Cyclo portion is grease or oil lubricated; Bevel portion is oil lubricated.
	Seals:	Nitrile material, dual lipped, double output seals.
	Material:	Rugged cast iron housings
	Paint Color:	Blue, Muenters color number 6.5PB 3.6/8.2
	Bearings:	Tapered roller bearings on geared output; ball bearings on Cyclo input.

Ambient Conditions	**Installation Location:**	Indoors (Minimal dust and humidity)
	Ambient Temperature:	14°~104° F (-10° ~ 40° C)
	Ambient Humidity:	Under 85%
	Elevation:	Under 3,281 ft. (1000 meters)
	Atmosphere:	Well ventilated location, free of corrosive gases, explosive gases, vapors and dust.

Shaft Rotation

On single reduction Cyclo BBB speed reducers, ratios 11 through 305, the slow speed shaft rotates in a reverse direction to that of the high speed shaft.

On double reduction units, ratios 357 through 26,492, both the high speed and the slow speed shaft rotate in the same direction.

Input Speeds

In general terms, the standard input speeds of single reduction units are 1750 and 1165 RPM. When non-standard input speeds are used, the horsepower and torque ratings will also vary.

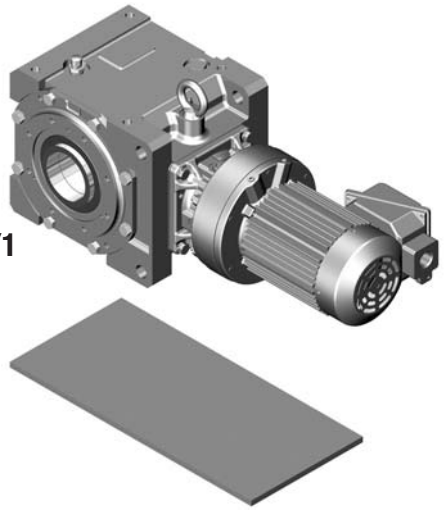
Thermal Capacity

The Cyclo BBB speed reducer's smooth, almost frictionless operation all but eliminates the conventional limitations due to heat. In all sizes, Cyclo BBB speed reducers have thermal ratings that exceed their mechanical capacity.

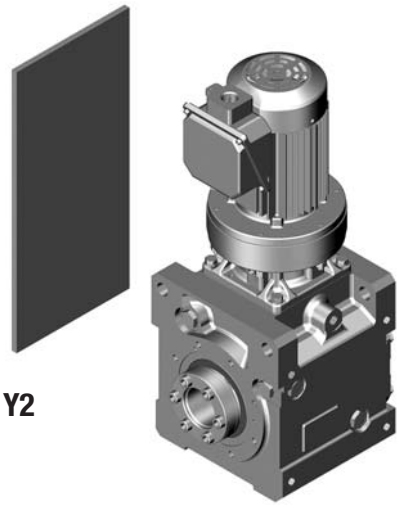
Mounting Positions

Please see the appendix for additional mounting configurations.

Y1



Y2



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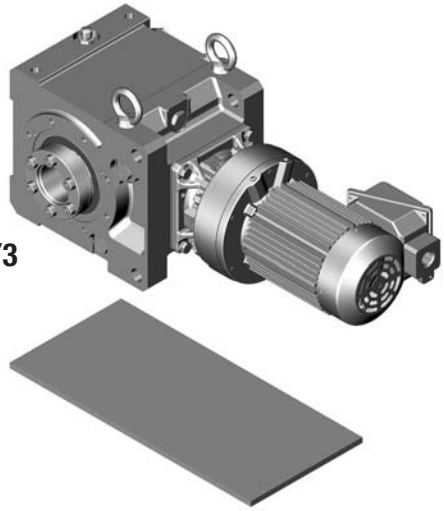
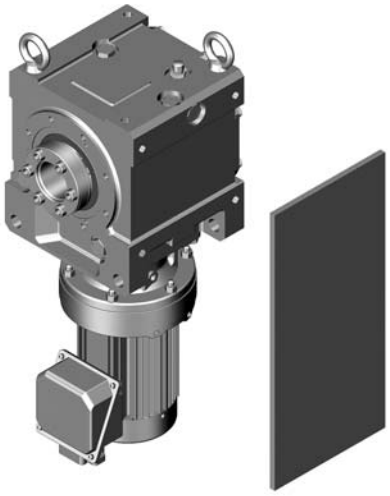
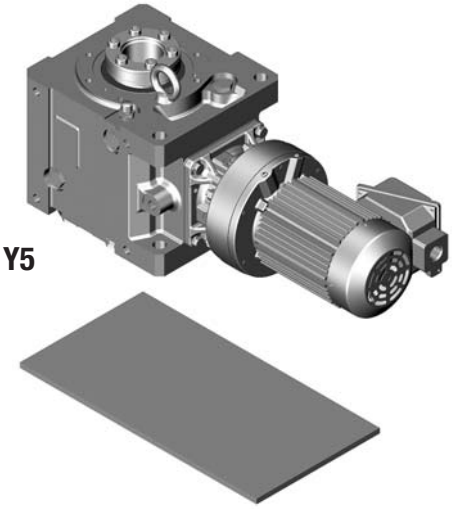


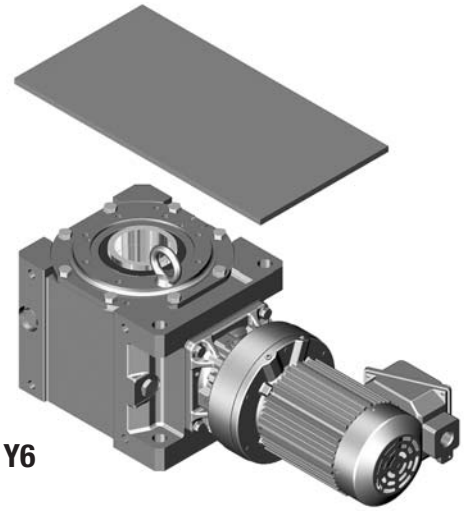
Y4



Y5



Y6



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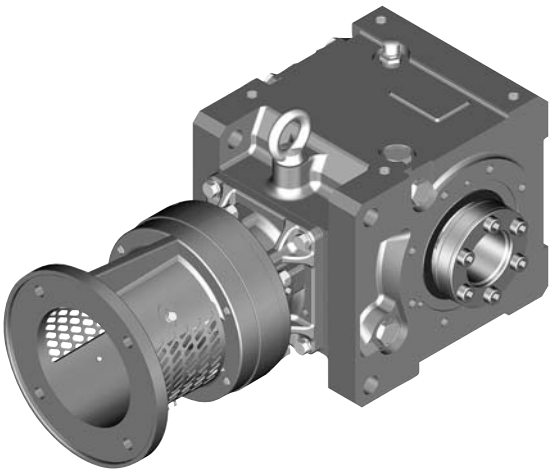
2

Speed Reducers



How to select a Speed Reducer

Step 1: Collect data about your application

Before starting you need to know the:

- **Application (e.g. Conveyor, Mixer, etc.)**
- **Hours of Operation per day**
- **Motor Horsepower (HP) and Speed (RPM)**
- **Desired Output Speed**
- **Mounting Position and Style**
- **Overhung or Thrust Loads**
- **Bore Dimensions, inch or metric**

Step 2: Choose a Mounting Position

Find the correct Mounting Position from the *Mounting Positions Table* on the right.

Step 3: Select a Frame Size

3A: Find the **Load Classification** of your application in the *AGMA Load Classification Table* on page 2.6.

3B: Find the recommended **Service Factor** using the *Recommended Reducer Service Factor Table* on the right.

3C: Determine the **Selection Horsepower** by multiplying the Motor Horsepower by the Service Factor.

3D: Select a **Frame size** from the Reducer Selection Tables on pages 2.8–2.21 by matching both the Selection Horsepower and Desired Output Speed (RPMs) to a frame size model number. Note: For Mounting Positions Y1, Y3, Y5, Y6 see pages 2.8–2.11. For Mounting Positions Y2 and Y4 see pages 2.12–2.15.) For all Double Reduction Mounting Positions see pages 2.16–2.21.

Step 4: Verify Dimensions

Use the Dimensions information on pages 2.22–2.25 to verify that the selected Frame Size is appropriate.

Step 5: Choose a Bushing Bore Size

Choose a Taper Grip Bushing Bore Size from the *Stock Bushing Bore Size Table*.

STOCK BUSHING BORES

Size	Inch Sizes	Metric Sizes	Min. Bore
A	$1\frac{15}{16}$, $2\frac{3}{16}$	50, 55	$1\frac{11}{16}$
B	$2\frac{3}{16}$, $2\frac{7}{16}$	60, 65	$1\frac{15}{16}$
C	$2\frac{7}{16}$, $2\frac{15}{16}$	65, 75	$2\frac{3}{16}$
D	$2\frac{15}{16}$, $3\frac{7}{16}$	75, 85	$2\frac{7}{16}$
E	$3\frac{7}{16}$, $3\frac{15}{16}$	90, 100	$2\frac{15}{16}$

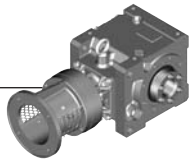
**Min. Bore is also stock but needs slitting.

Step 6: Choose Options

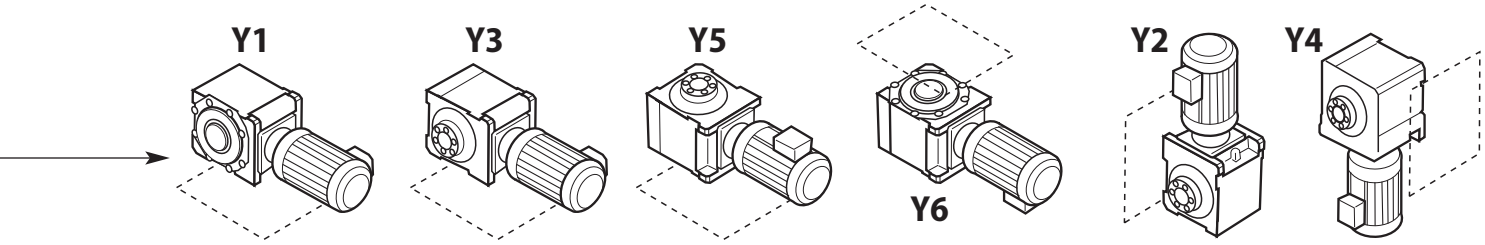
The following options may apply:
Washdown Modification
Breather
Cover Guard
Please see the Cyclo BBB pricelist, or visit our website at www.smcyclo.com for available modifications.

Step 7: Configure a Model Number

Go to page 2.4 to configure a model number.
Note: You will use the information you gather from the procedure on this page to Configure a Model Number.



Mounting Positions



Recommended Reducer Service Factors

		AGMA Load Classifications		
		Uniform (U)	**Moderate Shock (M)**	**Heavy Shock (H)**
Duration of Service	**1/2 hr. per day** (Occasional)	0.50*	0.80*	1.25
	3 hrs. per day (Intermittent)	0.80*	1.00	1.50
	Up to 10 hrs. per day	1.00	1.25	1.75
	24 hrs. per day	1.20	1.50	2.00

*Maximum momentary or starting load must not exceed 300% of gear reducer rating (rating meaning service factor of 1.0). Time specified for occasional and intermittent service refers to total operating time per day.

Determine Selection Horsepower (HP)

Motor HP X Service Factor = Selection HP

Example: 10 Motor HP X 1.25 Service Factor = 12.5 Selection HP

Select a Frame Size

1 **Match your OUTPUT RPM (or RATIO)...**

Output RPM	19.9	17.2	14.2	11.6	9.8	8.45	7.03	5.74	Frame Size
Ratio	88	102	123	151	179	207	249	305	
Input HP	**1.70**	**1.62**		**1.05**	**0.75**	**0.69**	**0.58**	**0.58**	**3A100**
Output Torque (in•lbs)	4953	5461		5248	4447	4735	4791	5859	
Hollow Shaft OHL (lbs)	1120	1120		1120	1120	1120	1120	1120	
Solid Shaft OHL (lbs)	990	990		990	990	990	990	990	
Input HP	**2.24**	**2.13**					**0.75**	**0.76**	**3A105**
Output Torque (in•lbs)	6527	7180					95	7677	
Hollow Shaft OHL (lbs)	1120	1120					20	1120	
Solid Shaft OHL (lbs)	990	990					0	990	
Input HP	**2.56**	**2.55**	**2.01**						**3A110**
Output Torque (in•lbs)	7459	8596					34	8990	
Hollow Shaft OHL (lbs)	1120	1120	1120				20	1120	
Solid Shaft OHL (lbs)	990	990	990				0	990	
Input HP	**2.98**	**2.81**	**2.33**	**1.89**	**1.49**	**1.35**	**1.02**	**0.94**	**3A115**
Output Torque (in•lbs)	8683	9473	9514	9447	8834	9264	8425	9495	
Hollow Shaft OHL (lbs)	1120	1120	1120	1120	1120	1120	1120	1120	
Solid Shaft OHL (lbs)	990	990	990	990	990	990	990	990	

2 **...to your SELECTION HP...**

3 **...to find your FRAME SIZE**

If Overhung Load is present, it must be checked against the capacity of the selection.

For special circumstances in selecting a **Frame Size** such as:

- Overhung Load
- Thrust Loads
- Radial Loads
- Shock Loading

Consult Appendix, pages 5.2–5.5.

Configure a Model Number

Output Shaft Orientation

Type	Prefix
Horizontal	**H**
Vertical	**V**
Vertical Up (Solid Shaft)	**W**

Mounting Style

Type	Prefix
Shaft Mount (Hollow Shaft)	**Y**
Flange (Solid Shaft)	**F**
Foot (Solid Shaft)	**H**

Input Connection

Input Connection	Prefix	
	Reducer	Gearmotor
Integral Motor		
Free input Shaft		
C-Face Adaptor	**J**	**JM**
Hollow Input Shaft	**X**	**XM**

Modification

	Prefix
Special	**S**
Standard	

Gearmotor HP
(applies only to 1750 RPM)

HP	Prefix
1/8	**01**
1/4	**02**
1/3	**03**
1/2	**05**
3/4	**08**
1	**1**
1 1/2	**1H**
2	**2**
3	**3**
5	**5**
7 1/2	**8**
10	**10**
15	**15**
20	**20**
25	**25**
30	**30**
40	**40**

Frame Size

Single Reduction

3A100	3A140	3B145	3C160	3D165
3A105	3A145	3B160	3C165	3D170
3A110	3B120	3B165	3C170	3D175
3A115	3B125	3C140	3C175	3E170
3A120	3B140	3C145	3D160	3E175
3A125				

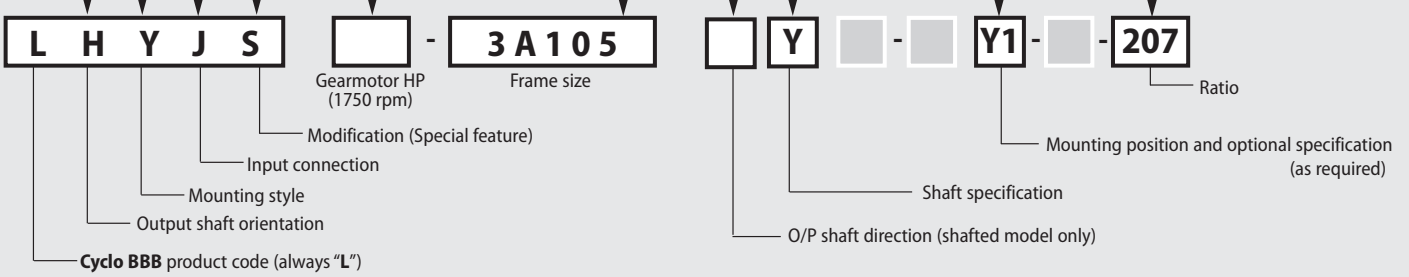
Double Reduction

3A10DA	3B14DA	3C14DC	3D16DB	3D17DC
3A12DA	3B14DB	3C16DA	3D16DC	3E17DA
3A12DB	3C14DA	3C16DB	3D17DA	3E17DB
3B12DA	3C14DB	3D16DA	3D17DB	3E17DC
3B12DB				

When ordering, the following information should be included:

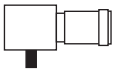
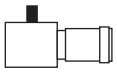
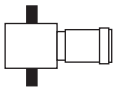
- Motor Specification (230/460 VAC 60 Hz is supplied, unless otherwise specified)
- NEMA frame size for C-face adaptor
- Bushing Bore size must be supplied

Optional conduit box positions must be specified, otherwise Y1 is supplied.



Nomenclature

Output Shaft Direction (Shafted Model Only)

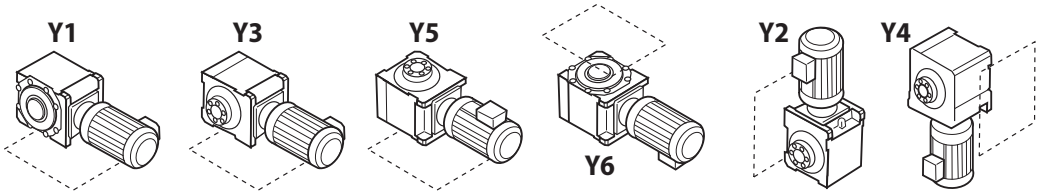
Projects to Left Side	**L**	
Projects to Right Side	**R**	
Projects to Both Left/Right Sides	**T**	

Note: When viewed from motor end.

Shaft Specifications

Input Shaft	OUTPUT SHAFT Hollow	Solid	Suffix
mm	Key (mm)	mm	
Inch	Key (Inch)	Inch	**K**
mm	Taper Grip		**M**
Inch	Taper Grip		**Y**

Mounting Positions



Nominal and Exact Ratio

BBB with Planetary Input

Input Ratio	Nominal Ratio	BBB Frame Sz.	Exact Ratio
3	**11**	3A10	**10.500**
N/A	**N/A**	3A11	**N/A**
3	**11**	3A12	**10.500**
3	**11**	3A14	**10.885**
3	**11**	3B12	**10.500**
3	**11**	3B14	**10.885**
3	**11**	3B16	**10.850**
3	**11**	3C14	**10.885**
3	**11**	3C17	**10.850**
3	**11**	3D16	**10.850**
3	**11**	3E17	**10.850**
5	**18**	3A10	**16.800**
N/A	**N/A**	3A11	**N/A**
5	**18**	3A12	**17.115**
5	**18**	3A14	**17.500**
5	**18**	3B12	**17.115**
5	**18**	3B14	**17.500**
5	**18**	3B16	**17.780**
5	**18**	3C14	**17.500**
5	**18**	3C17	**17.675**
5	**18**	3D16	**17.780**
5	**18**	3E17	**17.675**

BBB with Cyclo Input

Single Reduction

Input Ratio	Nominal Ratio	BBB Frame Sz.	Exact Ratio
6	**21**		**21.0**
8	**28**		**28.0**
11	**39**		**38.5**
13	**46**		**45.5**
15	**53**		**52.5**
17	**60**		**59.5**
21	**74**		**73.5**
25	**88**	ALL	**87.5**
29	**102**		**101.5**
35	**123**		**122.5**
43	**151**		**150.5**
51	**179**		**178.5**
59	**207**		**206.5**
71	**249**		**248.5**
87	**305**		**304.5**

Double Reduction

Input Ratio	Nominal Ratio	BBB Frame Sz.	Exact Ratio
104	**364**		**364.0**
121	**424**		**423.5**
143	**501**		**500.5**
165	**578**		**577.5**
195	**683**		**682.5**
231	**809**		**808.5**
273	**956**		**955.5**
319	**1117**		**1116.5**
377	**1320**		**1319.5**
473	**1656**		**1655.5**
559	**1957**		**1956.5**
649	**2272**		**2271.5**
731	**2559**	ALL	**2558.5**
841	**2944**		**2943.5**
1003	**3511**		**3510.5**
1247	**4365**		**4364.5**
1479	**5177**		**5176.5**
1849	**6472**		**6471.5**
2065	**7228**		**7227.5**
2537	**8880**		**8879.5**
3045	**10568**		**10657.5**
3481	**12184**		**12183.5**
4437	**15530**		**15529.5**
5133	**17966**		**17965.5**
6177	**21620**		**21619.5**
7569	**26492**		**26491.5**

Nominal and Exact Ratio

Nomenclature Example:

LHYJ – 3B125Y – Y1 – 60

L – Cyclo Bevel Buddybox
H – Horizontal O/P
Y – Shaft Mount (Hollow Shaft)
J – C-Face Input

3B125 – Frame Size
Y1 – Installation Position
60 – Ratio

AGMA Load Classifications

TYPE OF APPLICATION	TYPE OF LOAD
Agitators	
Pure liquids	U
Liquids and solids	M
Variable-density liquids	M
Blowers	
Centrifugal	U
Lobe	M
Vane	U
Brewing and Distilling	
Bottling machinery	U
Brew kettles, cont. duty	U
Cookers, cont. duty	U
Mash tubs, cont. duty	U
Scale hopper, frequent starts	M
Can Filling Machines	U
Cane Knives	M
Car Dumpers	H
Car Pullers	M
Clarifiers	U
Classifiers	M
Clay Working Machinery	
Brick press	H
Briquette machine	H
Clay working machinery	M
Pug mill	M
Compressors	
Centrifugal	U
Lobe	M
Reciprocating, multi-cylinder	M
Reciprocating, single-cylinder	H
Conveyors — Uniformly Loaded or Fed	
Apron	U
Assembly	U
Belt	U
Bucket	U
Chain	U
Flight	U
Oven	U
Screw	U
Conveyors — Heavy Duty, Not Uniformly Fed	
Apron	M
Assembly	M
Belt	M
Bucket	M
Chain	M
Flight	M
Live roll oven	M
Reciprocating	H
Screw	M
Shaker	H
Cranes (Except for Dry Dock Cranes)	
Main hoists	U
Bridge travel	S
Trolley travel	S
Crusher	
Ore	H
Stone	H
Sugar	M
Dredges	
Cable reels	M
Conveyors	M
Cutter head drives	H
Jig drives	H
Maneuvering winches	M
Pumps	M
Screen drive	H
Stackers	M
Utility winches	M
Dry Dock Cranes	S
Elevators	
Bucket, uniform load	U
Bucket, heavy load	M
Bucket, cont.	U
Centrifugal discharge	U
Escalators	U
Freight	M
Gravity discharge	U
Man lifts	S
Passenger	S
Extruders (Plastics)	
Blow molders	M
Coating	U
Film	U
Pipe	U
Pre-plasticizers	M
Rods	U
Sheet	U
Tubing	U
Fans	
Centrifugal	U
Cooling towers	S
Forced draft	S
Induced draft	M
Large (mine, etc.)	M
Large (industrial)	M
Light (small diameter)	U
Feeders	
Apron	M
Belt	M
Disc	U
Reciprocating	H
Screw	M
Food Industry	
Beet slicer	M
Cereal cooker	U
Dough mixer	M
Meat grinders	M
Generators (Not Welding)	U
Hammer Mills	H
Hoists	
Heavy duty	H
Medium duty	M
Skip	M
Laundry Washers — Reversing	M
Laundry Tumblers	M
Line Shaft	
Drive processing equipment	M
Light	U
Other line shafts	U
Lumber Industry	
Barkers — hydraulic and mechanical	S
Burner conveyor	M
Chain Saw and Drag Saw	H
Chain transfer	H
Craneway transfer	H
De-barking drum	S
Edger feed	H
Gang feed	M
Geen chain	M
Live rolls	H
Log haul-lockline	H
Log turning device	H
Main log conveyor	H
Off bearing rolls	M
Planer feed chains	M
Planer floor chains	M
Planer tilting hoist	M
Re-saw merry-go-round conveyor	M
Roll cases	H
Slab conveyor	H
Small waste-conveyor-belt	U
Small waste-conveyor-chain	M
Sorting table	M
Tipple hoist conveyor	M
Tipple hoist drive	M
Transfer conveyors	M
Transfer rolls	M
Tray drive	M
Trimmer feed	M
Waste conveyor	M
Machine Tools	
Bending roll	M
Notching press, belt driven	S
Plate planer	H
Punch press, gear driven	H
Tapping machine	H
Other machine tools	
Main drives	M
Auxiliary drives	U
Metal Mills	
Draw bench carriage and main drive	M
Forming machines	H
Pinch, dryer and scrubber rolls, reversing	S
Slitters	M
Table conveyors, nonreversing	
Group drives	M
Individual drives	H
Table conveyors, reversing	S
Wire drawing and flattening machine	M
Wire winding machine	M
Mills, Rotary Type	
Ball	M
Cement kilns	M
Dryers and coolers	M
Kilns	M
Pebble	M
Rod, plain and wedge bar	M
Tumbling barrels	H
Mixers	
Concrete mixers, cont.	M
Concrete mixers, intermittent	M
Constant density	U
Variable density	M
Oil Industry	
Chillers	M
Oil well pumps	S
Paraffin filter press	M
Rotary kilns	M
Paper Mills	
Agitators (mixers)	M
Barker, hydraulic	S
Barker, mechanical	S
Barking drum	S
Beater and pulper	M
Bleacher	U
Calenders	M
Calenders, super	H
Converting machine (except cutters, platers)	M
Conveyors	U
Couch	M
Cutters, platers	H
Cylinders	M
Dryers	M
Felt stretcher	M
Felt whipper	H
Jordans	H
Log haul	H
Presses	U
Pulp machine reel	M
Stock chest	M
Suction roll	U
Washers and thickeners	M
Winders	U
Printing Presses	S
Pullers, Barge Haul	H
Pumps	
Centrifugal	U
Proportioning	M
Reciprocating	
Single acting, 3 or more cylinders	M
Double acting, 2 or more cylinders	M
Rotary-gear type	U
Rubber and Plastics Industries	
Crackers	H
Laboratory equipment	M
Mixing mills	H
Refiners	M
Rubber calenders	M
Rubber mill (2 on line)	M
Rubber mill (3 on line)	U
Sheeter	M
Tire building machines	S
Tire and tube press openers	S
Tubers and strainers	M
Warming mills	M
Sand Muller	M
Screens	
Air washing	U
Rotary, stone or gravel	M
Traveling water intake	U
Sewage Disposal Equipment	
Bar screens	U
Chemical fenders	U
Collectors, circuline or straightline	U
Dewatering screens	M
Grit collectors	U
Scum breakers	M
Slow or rapid mixers	M
Sludge collectors	U
Thickeners	M
Vacuum filters	M
Slab Pushers	M
Steering Gear	S
Stokers	
U	
Sugar Industry	
Cane knives	M
Crushers	M
Mills	H
Textile Industry	
Batchers	M
Calenders	M
Cards	M
Dry cans	M
Dryers	M
Dyeing machinery	M
Knitting machines	S
Looms	M
Mangles	M
Nappers	M
Pads	M
Range drives	S
Slashers	M
Soapers	M
Spinners	M
Tenter frames	M
Washers	M
Winders	M
Windlass	S

U = Uniform Load H = Heavy Shock
M = Moderate Shock S = Contact

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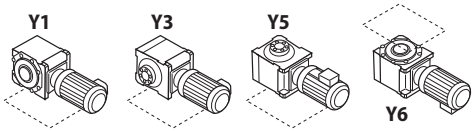
Frame Size Selection Tables 60 Hz, 1750 RPM

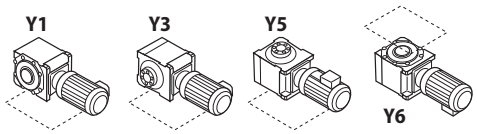
Single Reduction
Y1, Y3, Y5, Y6 Mounting Positions



Dimensions on pages 2.22–2.23

Output RPM	159	97.2	83.3	62.5	44.9	38.0	33.0	29.2	23.6	Frame Size
Ratio	11	18	21	28	39	46	53	60	74	
Input HP	**3.15**	**3.15**	**3.15**	**3.15**	**3.15**	**3.15**	**3.15**	**2.67**	**2.59**	**3A100**
Output Torque (in•lbs)	1149	1879	2193	2922	4068	4806	5535	5302	6363	
Hollow Shaft OHL (lbs)	1120	1120	1120	1120	1120	1120	1120	1120	1120	
Solid Shaft OHL (lbs)	990	990	990	990	990	990	990	990	990	
Input HP	**4.26**	**4.26**	**4.26**	**4.26**	**4.26**	**4.26**	**4.26**	**3.30**	**3.14**	**3A105**
Output Torque (in•lbs)	1554	2541	2965	3952	5501	6500	7485	6553	7715	
Hollow Shaft OHL (lbs)	1120	1120	1120	1120	1120	1120	1120	1120	1120	
Solid Shaft OHL (lbs)	990	990	990	990	990	990	990	990	990	
Input HP	**–**	**–**	**4.76**	**4.76**	**4.76**	**4.76**	**4.76**	**4.26**	**3.65**	**3A110**
Output Torque (in•lbs)	–	–	3313	4416	6147	7263	8364	8459	8968	
Hollow Shaft OHL (lbs)	–	–	1120	1120	1120	1120	1120	1120	1120	
Solid Shaft OHL (lbs)	–	–	990	990	990	990	990	990	990	
Input HP	**–**	**–**	**5.26**	**5.26**	**5.26**	**5.23**	**5.23**	**4.79**	**3.88**	**3A115**
Output Torque (in•lbs)	–	–	3661	4880	6793	7980	9189	9512	9533	
Hollow Shaft OHL (lbs)	–	–	1120	1120	1120	1120	1120	1120	1120	
Solid Shaft OHL (lbs)	–	–	990	990	990	990	990	990	990	
Input HP	**6.80**	**6.80**	**6.80**	**6.80**	**6.80**	**–**	**–**	**–**	**–**	**3A120**
Output Torque (in•lbs)	2480	4056	4733	6309	8781	–	–	–	–	
Hollow Shaft OHL (lbs)	1120	1120	1120	1120	1120	–	–	–	–	
Solid Shaft OHL (lbs)	990	990	990	990	990	–	–	–	–	
Input HP	**7.79**	**7.79**	**7.79**	**9.32**	**7.40**	**6.26**	**5.43**	**–**	**–**	**3A125**
Output Torque (in•lbs)	2841	4647	5422	8646	9556	9552	9541	–	–	
Hollow Shaft OHL (lbs)	1120	1120	1120	1120	1120	1120	1120	–	–	
Solid Shaft OHL (lbs)	990	990	990	990	990	990	990	–	–	
Input HP	**17.4**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**3A140**
Output Torque (in•lbs)	6345	–	–	–	–	–	–	–	–	
Hollow Shaft OHL (lbs)	1120	–	–	–	–	–	–	–	–	
Solid Shaft OHL (lbs)	990	–	–	–	–	–	–	–	–	
Input HP	**20.2**	**14.8**	**12.3**	**10.1**	**–**	**–**	**–**	**–**	**–**	**3A145**
Output Torque (in•lbs)	7366	8829	8562	9370	–	–	–	–	–	
Hollow Shaft OHL (lbs)	1120	1120	1120	1120	–	–	–	–	–	
Solid Shaft OHL (lbs)	990	990	990	990	–	–	–	–	–	
Input HP	**–**	**–**	**–**	**–**	**–**	**6.80**	**6.80**	**6.80**	**5.31**	**3B120**
Output Torque (in•lbs)	–	–	–	–	–	10376	11948	13503	13046	
Hollow Shaft OHL (lbs)	–	–	–	–	–	2070	2070	2070	2070	
Solid Shaft OHL (lbs)	–	–	–	–	–	1640	1640	1640	1640	
Input HP	**–**	**–**	**–**	**–**	**7.94**	**7.94**	**7.94**	**7.59**	**6.54**	**3B125**
Output Torque (in•lbs)	–	–	–	–	10254	12115	13951	15072	16068	
Hollow Shaft OHL (lbs)	–	–	–	–	2070	2070	2070	2070	2070	
Solid Shaft OHL (lbs)	–	–	–	–	1640	1640	1640	1640	1640	
Input HP	**–**	**17.4**	**17.4**	**17.4**	**–**	**–**	**–**	**–**	**–**	**3B140**
Output Torque (in•lbs)	–	10380	12112	16142	–	–	–	–	–	
Hollow Shaft OHL (lbs)	–	2070	2070	2070	–	–	–	–	–	
Solid Shaft OHL (lbs)	–	1640	1640	1640	–	–	–	–	–	
Input HP	**–**	**20.2**	**20.2**	**20.1**	**14.7**	**12.5**	**10.8**	**9.5**	**7.72**	**3B145**
Output Torque (in•lbs)	–	12050	14061	18647	18983	19073	18976	18864	18967	
Hollow Shaft OHL (lbs)	–	2070	2070	2070	2070	2070	2070	2070	2070	
Solid Shaft OHL (lbs)	–	1640	1640	1640	1640	1640	1640	1640	1640	
Input HP	**27.2**	**27.2**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**3B160**
Output Torque (in•lbs)	9919	16226	–	–	–	–	–	–	–	
Hollow Shaft OHL (lbs)	2070	2070	–	–	–	–	–	–	–	
Solid Shaft OHL (lbs)	1640	1640	–	–	–	–	–	–	–	

60 Hz, 1750 RPM Frame Size Selection Tables



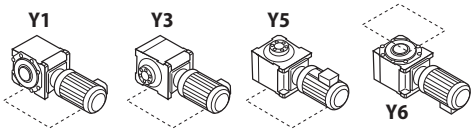
Single Reduction
Y1, Y3, Y5, Y6 Mounting Positions

Dimensions on pages 2.22–2.23

Output RPM	19.9	17.2	14.2	11.6	9.8	8.45	7.03	5.74	Frame Size
Ratio	88	102	123	151	179	207	249	305	
Input HP	**1.70**	**1.62**	**1.31**	**1.05**	**0.75**	**0.69**	**0.58**	**0.58**	**3A100**
Output Torque (in•lbs)	4953	5461	5349	5248	4447	4735	4791	5859	
Hollow Shaft OHL (lbs)	1120	1120	1120	1120	1120	1120	1120	1120	
Solid Shaft OHL (lbs)	990	990	990	990	990	990	990	990	
Input HP	**2.24**	**2.13**	**1.61**	**1.45**	**1.04**	**0.95**	**0.75**	**0.76**	**3A105**
Output Torque (in•lbs)	6527	7180	6574	7248	6166	6519	6195	7677	
Hollow Shaft OHL (lbs)	1120	1120	1120	1120	1120	1120	1120	1120	
Solid Shaft OHL (lbs)	990	990	990	990	990	990	990	990	
Input HP	**2.56**	**2.55**	**2.01**	**1.74**	**1.27**	**1.15**	**0.90**	**0.89**	**3A110**
Output Torque (in•lbs)	7459	8596	8207	8697	7529	7891	7434	8990	
Hollow Shaft OHL (lbs)	1120	1120	1120	1120	1120	1120	1120	1120	
Solid Shaft OHL (lbs)	990	990	990	990	990	990	990	990	
Input HP	**2.98**	**2.81**	**2.33**	**1.89**	**1.49**	**1.35**	**1.02**	**0.94**	**3A115**
Output Torque (in•lbs)	8683	9473	9514	9447	8834	9264	8425	9495	
Hollow Shaft OHL (lbs)	1120	1120	1120	1120	1120	1120	1120	1120	
Solid Shaft OHL (lbs)	990	990	990	990	990	990	990	990	
Input HP	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**3A120**
Output Torque (in•lbs)	–	–	–	–	–	–	–	–	
Hollow Shaft OHL (lbs)	–	–	–	–	–	–	–	–	
Solid Shaft OHL (lbs)	–	–	–	–	–	–	–	–	
Input HP	**3.26**	**–**	**–**	**–**	**1.60**	**1.38**	**1.15**	**–**	**3A125**
Output Torque (in•lbs)	9499	–	–	–	9486	9469	9499	–	
Hollow Shaft OHL (lbs)	1120	–	–	–	1120	1120	1120	–	
Solid Shaft OHL (lbs)	990	–	–	–	990	990	990	–	
Input HP	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**3A140**
Output Torque (in•lbs)	–	–	–	–	–	–	–	–	
Hollow Shaft OHL (lbs)	–	–	–	–	–	–	–	–	
Solid Shaft OHL (lbs)	–	–	–	–	–	–	–	–	
Input HP	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**3A145**
Output Torque (in•lbs)	–	–	–	–	–	–	–	–	
Hollow Shaft OHL (lbs)	–	–	–	–	–	–	–	–	
Solid Shaft OHL (lbs)	–	–	–	–	–	–	–	–	
Input HP	**4.14**	**4.01**	**3.34**	**2.56**	**2.31**	**1.74**	**1.28**	**1.27**	**3B120**
Output Torque (in•lbs)	12063	13518	13638	12796	13695	11940	10572	12829	
Hollow Shaft OHL (lbs)	2070	2070	2070	2070	2070	2070	2070	2070	
Solid Shaft OHL (lbs)	1640	1640	1640	1640	1640	1640	1640	1640	
Input HP	**5.31**	**5.06**	**4.26**	**3.19**	**3.06**	**2.17**	**1.61**	**1.52**	**3B125**
Output Torque (in•lbs)	15472	17058	17395	15945	18142	14890	13298	15354	
Hollow Shaft OHL (lbs)	2070	2070	2070	2070	2070	2070	2070	2070	
Solid Shaft OHL (lbs)	1640	1640	1640	1640	1640	1640	1640	1640	
Input HP	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**3B140**
Output Torque (in•lbs)	–	–	–	–	–	–	–	–	
Hollow Shaft OHL (lbs)	–	–	–	–	–	–	–	–	
Solid Shaft OHL (lbs)	–	–	–	–	–	–	–	–	
Input HP	**6.49**	**5.59**	**4.63**	**3.77**	**3.18**	**2.75**	**2.28**	**1.86**	**3B145**
Output Torque (in•lbs)	18910	18844	18906	18844	18853	18870	18832	18789	
Hollow Shaft OHL (lbs)	2070	2070	2070	2070	2070	2070	2070	2070	
Solid Shaft OHL (lbs)	1640	1640	1640	1640	1640	1640	1640	1640	
Input HP	–	–	–	–	–	–	–	–	**3B160**
Output Torque (in•lbs)	–	–	–	–	–	–	–	–	
Hollow Shaft OHL (lbs)	–	–	–	–	–	–	–	–	
Solid Shaft OHL (lbs)	–	–	–	–	–	–	–	–	

Frame Size Selection Tables 60 Hz, 1750 RPM

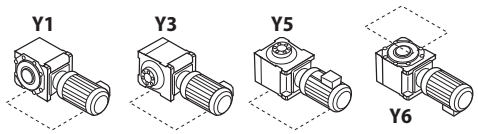
Single Reduction
Y1, Y3, Y5, Y6 Mounting Positions



Dimensions on pages 2.22–2.23

Output RPM	159	97.2	83.3	62.5	44.9	38.0	33.0	29.2	23.6	Frame Size
Ratio	11	18	21	28	39	46	53	60	74	
Input HP	**29.4**	**29.5**	**24.8**	**–**	**–**	**–**	**–**	**–**	**–**	**3B165**
Output Torque (in•lbs)	10721	17598	17263	–	–	–	–	–	–	
Hollow Shaft OHL (lbs)	2070	2070	2070	–	–	–	–	–	–	
Solid Shaft OHL (lbs)	1640	1640	1640	–	–	–	–	–	–	
Input HP	**–**	**–**	**–**	**–**	**17.4**	**17.4**	**16.1**	**13.5**	**11.6**	**3C140**
Output Torque (in•lbs)	–	–	–	–	22470	26550	28289	26807	28500	
Hollow Shaft OHL (lbs)	–	–	–	–	3480	3480	3480	3480	3480	
Solid Shaft OHL (lbs)	–	–	–	–	2850	2850	2850	2850	2850	
Input HP	**–**	**–**	**–**	**20.2**	**20.2**	**20.2**	**19.6**	**16.1**	**14.8**	**3C145**
Output Torque (in•lbs)	–	–	–	18740	26086	30823	34438	31970	36362	
Hollow Shaft OHL (lbs)	–	–	–	3480	3480	3480	3480	3480	3480	
Solid Shaft OHL (lbs)	–	–	–	2850	2850	2850	2850	2850	2850	
Input HP	**–**	**–**	**27.2**	**26.4**	**26.4**	**–**	**–**	**17.6**	**–**	**3C160**
Output Torque (in•lbs)	–	–	18933	24492	34092	–	–	34949	–	
Hollow Shaft OHL (lbs)	–	–	3480	3480	3480	–	–	3480	–	
Solid Shaft OHL (lbs)	–	–	2850	2850	2850	–	–	2850	–	
Input HP	**–**	**–**	**32.3**	**32.3**	**32.3**	**24.9**	**21.6**	**19.1**	**15.4**	**3C165**
Output Torque (in•lbs)	–	–	22483	29966	41712	37994	37953	37927	37836	
Hollow Shaft OHL (lbs)	–	–	3480	3480	3480	3480	3480	3480	3480	
Solid Shaft OHL (lbs)	–	–	2850	2850	2850	2850	2850	2850	2850	
Input HP	**37.0**	**37.0**	**37.0**	**37.0**	**–**	**–**	**–**	**–**	**–**	**3C170**
Output Torque (in•lbs)	13493	22072	25755	34326	–	–	–	–	–	
Hollow Shaft OHL (lbs)	3480	3480	3480	3480	–	–	–	–	–	
Solid Shaft OHL (lbs)	2850	2850	2850	2850	–	–	–	–	–	
Input HP	**40.2**	**40.3**	**40.3**	**40.2**	**–**	**–**	**–**	**–**	**–**	**3C175**
Output Torque (in•lbs)	14660	24040	28052	37295	–	–	–	–	–	
Hollow Shaft OHL (lbs)	3480	3480	3480	3480	–	–	–	–	–	
Solid Shaft OHL (lbs)	2850	2850	2850	2850	–	–	–	–	–	
Input HP	**–**	**–**	**–**	**–**	**–**	**26.4**	**25.1**	**–**	**17.3**	**3D160**
Output Torque (in•lbs)	–	–	–	–	–	40283	44102	–	42504	
Hollow Shaft OHL (lbs)	–	–	–	–	–	4810	4810	–	4810	
Solid Shaft OHL (lbs)	–	–	–	–	–	3930	3930	–	3930	
Input HP	**–**	**–**	**–**	**–**	**32.3**	**30.3**	**30.1**	**25.2**	**21.6**	**3D165**
Output Torque (in•lbs)	–	–	–	–	41712	46234	52888	50040	53069	
Hollow Shaft OHL (lbs)	–	–	–	–	4810	4810	4810	4810	4810	
Solid Shaft OHL (lbs)	–	–	–	–	3930	3930	3930	3930	3930	
Input HP	**–**	**–**	**–**	**–**	**37.0**	**36.6**	**34.2**	**26.4**	**–**	**3D170**
Output Torque (in•lbs)	–	–	–	–	47781	55847	60091	52423	–	
Hollow Shaft OHL (lbs)	–	–	–	–	4810	4810	4810	4810	–	
Solid Shaft OHL (lbs)	–	–	–	–	3930	3930	3930	3930	–	
Input HP	**–**	**–**	**40.4**	**40.4**	**40.2**	**40.2**	**36.7**	**32.3**	**26.2**	**3D175**
Output Torque (in•lbs)	–	–	28121	37480	51914	61340	64484	64139	64371	
Hollow Shaft OHL (lbs)	–	–	4810	4810	4810	4810	4810	4810	4810	
Solid Shaft OHL (lbs)	–	–	3930	3930	3930	3930	3930	3930	3930	
Input HP	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**3E170**
Output Torque (in•lbs)	–	–	–	–	–	–	–	–	–	
Hollow Shaft OHL (lbs)	–	–	–	–	–	–	–	–	–	
Solid Shaft OHL (lbs)	–	–	–	–	–	–	–	–	–	
Input HP	**–**	**–**	**–**	**–**	**40.4**	**40.4**	**40.2**	**32.3**	**29.5**	**3E175**
Output Torque (in•lbs)	–	–	–	–	52172	61645	70634	64139	72479	
Hollow Shaft OHL (lbs)	–	–	–	–	5170	5170	5170	5170	5170	
Solid Shaft OHL (lbs)	–	–	–	–	4110	4110	4110	4110	4110	

60 Hz, 1750 RPM Frame Size Selection Tables



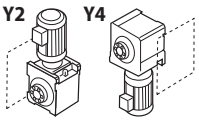
Single Reduction
Y1, Y3, Y5, Y6 Mounting Positions

Dimensions on pages 2.22–2.23

Output RPM	19.9	17.2	14.2	11.6	9.8	8.45	7.03	5.74	Frame Size
Ratio	88	102	123	151	179	207	249	305	
Input HP	–	–	–	–	–	–	–		3B165
Output Torque (in•lbs)	–	–	–	–	–	–	–	–	
Hollow Shaft OHL (lbs)	–	–	–	–	–	–	–	–	
Solid Shaft OHL (lbs)	–	–	–	–	–	–	–	–	
Input HP	**9.24**	**7.98**	**6.99**	**5.28**	**4.60**	**3.97**	**3.26**	**2.66**	3C140
Output Torque (in•lbs)	26923	26901	28542	26392	27272	27242	26888	26870	
Hollow Shaft OHL (lbs)	3480	3480	3480	3480	3480	3480	3480	3480	
Solid Shaft OHL (lbs)	2850	2850	2850	2850	2850	2850	2850	2850	
Input HP	**10.6**	**10.1**	**9.27**	**7.23**	**5.66**	**4.89**	**4.06**	**3.33**	3C145
Output Torque (in•lbs)	30885	34048	37852	36139	33557	33555	33487	33638	
Hollow Shaft OHL (lbs)	3480	3480	3480	3480	3480	3480	3480	3480	
Solid Shaft OHL (lbs)	2850	2850	2850	2850	2850	2850	2850	2850	
Input HP	–	–	–	–	–	–	–	–	3C160
Output Torque (in•lbs)	–	–	–	–	–	–	–	–	
Hollow Shaft OHL (lbs)	–	–	–	–	–	–	–	–	
Solid Shaft OHL (lbs)	–	–	–	–	–	–	–	–	
Input HP	**13.0**	**11.2**	**9.27**	**7.54**	**6.36**	**5.50**	**4.57**	**3.73**	3C165
Output Torque (in•lbs)	37878	37756	37852	37689	37707	37740	37693	37679	
Hollow Shaft OHL (lbs)	3480	3480	3480	3480	3480	3480	3480	3480	
Solid Shaft OHL (lbs)	2850	2850	2850	2850	2850	2850	2850	2850	
Input HP	–	–	–	–	–	–	–	–	3C170
Output Torque (in•lbs)	–	–	–	–	–	–	–	–	
Hollow Shaft OHL (lbs)	–	–	–	–	–	–	–	–	
Solid Shaft OHL (lbs)	–	–	–	–	–	–	–	–	
Input HP	–	–	–	–	–	–	–	–	3C175
Output Torque (in•lbs)	–	–	–	–	–	–	–	–	
Hollow Shaft OHL (lbs)	–	–	–	–	–	–	–	–	
Solid Shaft OHL (lbs)	–	–	–	–	–	–	–	–	
Input HP	**13.2**	**14.1**	**13.0**	**10.0**	**7.71**	**5.93**	**4.65**	**4.65**	3D160
Output Torque (in•lbs)	38461	47533	53083	49985	45711	40691	38353	46972	
Hollow Shaft OHL (lbs)	4810	4810	4810	4810	4810	4810	4810	4810	
Solid Shaft OHL (lbs)	3930	3930	3930	3930	3930	3930	3930	3930	
Input HP	**20.2**	**14.9**	**15.3**	**10.6**	**10.1**	**7.71**	**7.58**	**5.23**	3D165
Output Torque (in•lbs)	58857	50229	62475	52984	59880	52905	62519	52831	
Hollow Shaft OHL (lbs)	4810	4810	4810	4810	4810	4810	4810	4810	
Solid Shaft OHL (lbs)	3930	3930	3930	3930	3930	3930	3930	3930	
Input HP	**21.2**	–	–	–	–	–	–	–	3D170
Output Torque (in•lbs)	61771	–	–	–	–	–	–	–	
Hollow Shaft OHL (lbs)	4810	–	–	–	–	–	–	–	
Solid Shaft OHL (lbs)	3930	–	–	–	–	–	–	–	
Input HP	**22.0**	**19.0**	**15.7**	**12.8**	**10.8**	**9.33**	**7.75**	**6.32**	3D175
Output Torque (in•lbs)	64102	64051	64108	63981	64030	64021	63922	63842	
Hollow Shaft OHL (lbs)	4810	4810	4810	4810	4810	4810	4810	4810	
Solid Shaft OHL (lbs)	3930	3930	3930	3930	3930	3930	3930	3930	
Input HP	–	**19.2**	**16.1**	**13.1**	**11.3**	**9.59**	**7.94**	**6.45**	3E170
Output Torque (in•lbs)	–	64725	65741	65481	66995	65806	65489	65155	
Hollow Shaft OHL (lbs)	–	5170	5170	5170	5170	5170	5170	5170	
Solid Shaft OHL (lbs)	–	4110	4110	4110	4110	4110	4110	4110	
Input HP	**24.8**	**21.4**	**20.2**	**15.2**	**14.4**	**11.1**	**9.59**	**7.54**	3E175
Output Torque (in•lbs)	72260	72142	82483	75978	85374	76167	79098	76166	
Hollow Shaft OHL (lbs)	5170	5170	5170	5170	5170	5170	5170	5170	
Solid Shaft OHL (lbs)	4110	4110	4110	4110	4110	4110	4110	4110	

Frame Size Selection Tables 60 Hz, 1750 RPM

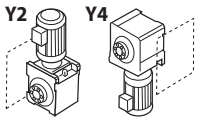
Single Reduction
Y2, Y4 Mounting Positions



Dimensions on pages 2.22–2.23

Output RPM	159	97.2	83.3	62.5	44.9	38.0	33.0	29.2	23.6	Frame Size
Ratio	11	18	21	28	39	46	53	60	74	
Input HP	**3.15**	**3.15**	**3.15**	**3.15**	**3.15**	**3.15**	**3.15**	**2.67**	**2.59**	**3A100**
Output Torque (in•lbs)	1149	1879	2193	2922	4068	4806	5535	5302	6363	
Hollow Shaft OHL (lbs)	1120	1120	1120	1120	1120	1120	1120	1120	1120	
Solid Shaft OHL (lbs)	990	990	990	990	990	990	990	990	990	
Input HP	**4.26**	**4.26**	**4.26**	**4.26**	**4.26**	**4.26**	**4.26**	**3.30**	**3.14**	**3A105**
Output Torque (in•lbs)	1554	2541	2965	3952	5501	6500	7485	6553	7715	
Hollow Shaft OHL (lbs)	1120	1120	1120	1120	1120	1120	1120	1120	1120	
Solid Shaft OHL (lbs)	990	990	990	990	990	990	990	990	990	
Input HP	**–**	**–**	**4.76**	**4.76**	**4.76**	**4.76**	**4.76**	**4.26**	**3.65**	**3A110**
Output Torque (in•lbs)	–	–	3313	4416	6147	7263	8364	8459	8968	
Hollow Shaft OHL (lbs)	–	–	1120	1120	1120	1120	1120	1120	1120	
Solid Shaft OHL (lbs)	–	–	990	990	990	990	990	990	990	
Input HP	**–**	**–**	**5.26**	**5.26**	**5.26**	**5.23**	**5.23**	**4.79**	**3.88**	**3A115**
Output Torque (in•lbs)	–	–	3661	4880	6793	7980	9189	9512	9533	
Hollow Shaft OHL (lbs)	–	–	1120	1120	1120	1120	1120	1120	1120	
Solid Shaft OHL (lbs)	–	–	990	990	990	990	990	990	990	
Input HP	**6.80**	**6.80**	**6.80**	**6.80**	**6.80**	**–**	**–**	**–**	**–**	**3A120**
Output Torque (in•lbs)	2480	4056	4733	6309	8781	–	–	–	–	
Hollow Shaft OHL (lbs)	1120	1120	1120	1120	1120	–	–	–	–	
Solid Shaft OHL (lbs)	990	990	990	990	990	–	–	–	–	
Input HP	**7.79**	**7.79**	**7.79**	**9.32**	**7.40**	**6.26**	**5.43**	**–**	**–**	**3A125**
Output Torque (in•lbs)	2841	4647	5422	8646	9556	9552	9541	–	–	
Hollow Shaft OHL (lbs)	1120	1120	1120	1120	1120	1120	1120	–	–	
Solid Shaft OHL (lbs)	990	990	990	990	990	990	990	–	–	
Input HP	**12.7**	**12.7**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**3A140**
Output Torque (in•lbs)	4631	7576	–	–	–	–	–	–	–	
Hollow Shaft OHL (lbs)	1120	1120	–	–	–	–	–	–	–	
Solid Shaft OHL (lbs)	990	990	–	–	–	–	–	–	–	
Input HP	**14.8**	**14.8**	**12.3**	**10.1**	**–**	**–**	**–**	**–**	**–**	**3A145**
Output Torque (in•lbs)	5397	8829	8562	9370	–	–	–	–	–	
Hollow Shaft OHL (lbs)	1120	1120	1120	1120	–	–	–	–	–	
Solid Shaft OHL (lbs)	990	990	990	990	–	–	–	–	–	
Input HP	**–**	**–**	**–**	**–**	**–**	**6.80**	**6.80**	**6.80**	**5.31**	**3B120**
Output Torque (in•lbs)	–	–	–	–	–	10376	11948	13503	13046	
Hollow Shaft OHL (lbs)	–	–	–	–	–	2070	2070	2070	2070	
Solid Shaft OHL (lbs)	–	–	–	–	–	1640	1640	1640	1640	
Input HP	**–**	**–**	**–**	**–**	**7.94**	**7.94**	**7.94**	**7.59**	**6.54**	**3B125**
Output Torque (in•lbs)	–	–	–	–	10254	12115	13951	15072	16068	
Hollow Shaft OHL (lbs)	–	–	–	–	2070	2070	2070	2070	2070	
Solid Shaft OHL (lbs)	–	–	–	–	1640	1640	1640	1640	1640	
Input HP	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**3B140**
Output Torque (in•lbs)	–	–	–	–	–	–	–	–	–	
Hollow Shaft OHL (lbs)	–	–	–	–	–	–	–	**–**	**–**	
Solid Shaft OHL (lbs)	–	–	–	–	–	–	–	**–**	**–**	
Input HP	**–**	**–**	**14.9**	**14.9**	**14.7**	**10.2**	**10.2**	**7.46**	**7.46**	**3B145**
Output Torque (in•lbs)	–	–	10372	13823	18983	15564	17922	14813	18329	
Hollow Shaft OHL (lbs)	–	–	2070	2070	2070	2070	2070	2070	2070	
Solid Shaft OHL (lbs)	–	–	1640	1640	1640	1640	1640	1640	1640	
Input HP	**16.9**	**16.9**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**3B160**
Output Torque (in•lbs)	6163	10081	–	–	–	–	–	–	–	
Hollow Shaft OHL (lbs)	2070	2070	–	–	–	–	–	–	–	
Solid Shaft OHL (lbs)	1640	1640	–	–	–	–	–	–	–	

60 Hz, 1750 RPM Frame Size Selection Tables



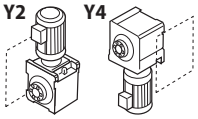
Single Reduction
Y2, Y4 Mounting Positions

Dimensions on pages 2.22–2.23

Output RPM	19.9	17.2	14.2	11.6	9.8	8.45	7.03	5.74	Frame Size
Ratio	88	102	123	151	179	207	249	305	
Input HP	**1.70**	**1.62**	**1.31**	**1.05**	**0.751**	**0.692**	**0.585**	**0.581**	**3A100**
Output Torque (in•lbs)	4953	5461	5349	5248	4452	4748	4825	5866	
Hollow Shaft OHL (lbs)	1120	1120	1120	1120	1120	1120	1120	1120	
Solid Shaft OHL (lbs)	990	990	990	990	990	990	990	990	
Input HP	**2.24**	**2.13**	**1.61**	**1.45**	**1.04**	**0.950**	**0.750**	**0.760**	**3A105**
Output Torque (in•lbs)	6527	7180	6574	7248	6166	6519	6186	7673	
Hollow Shaft OHL (lbs)	1120	1120	1120	1120	1120	1120	1120	1120	
Solid Shaft OHL (lbs)	990	990	990	990	990	990	990	990	
Input HP	**2.56**	**2.55**	**2.01**	**1.74**	**1.27**	**1.15**	**0.900**	**0.890**	**3A110**
Output Torque (in•lbs)	7459	8596	8207	8697	7529	7891	7423	8986	
Hollow Shaft OHL (lbs)	1120	1120	1120	1120	1120	1120	1120	1120	
Solid Shaft OHL (lbs)	990	990	990	990	990	990	990	990	
Input HP	**2.98**	**2.81**	**2.33**	**1.89**	**1.49**	**1.35**	**1.02**	**0.940**	**3A115**
Output Torque (in•lbs)	8683	9473	9514	9447	8834	9264	8413	9491	
Hollow Shaft OHL (lbs)	1120	1120	1120	1120	1120	1120	1120	1120	
Solid Shaft OHL (lbs)	990	990	990	990	990	990	990	990	
Input HP	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**3A120**
Output Torque (in•lbs)	–	–	–	–	–	–	–	–	
Hollow Shaft OHL (lbs)	–	–	–	–	–	–	–	–	
Solid Shaft OHL (lbs)	–	–	–	–	–	–	–	–	
Input HP	**3.26**	**–**	**–**	**–**	**1.60**	**1.38**	**1.15**	**–**	**3A125**
Output Torque (in•lbs)	9499	–	–	–	9486	9469	9485	–	
Hollow Shaft OHL (lbs)	1120	–	–	–	1120	1120	1120	–	
Solid Shaft OHL (lbs)	990	–	–	–	990	990	990	–	
Input HP	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**3A140**
Output Torque (in•lbs)	–	–	–	–	–	–	–	–	
Hollow Shaft OHL (lbs)	–	–	–	–	–	–	–	–	
Solid Shaft OHL (lbs)	–	–	–	–	–	–	–	–	
Input HP	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**3A145**
Output Torque (in•lbs)	–	–	–	–	–	–	–	–	
Hollow Shaft OHL (lbs)	–	–	–	–	–	–	–	–	
Solid Shaft OHL (lbs)	–	–	–	–	–	–	–	–	
Input HP	**4.14**	**4.01**	**3.34**	**2.56**	**2.31**	**1.74**	**1.28**	**1.27**	**3B120**
Output Torque (in•lbs)	12063	13518	13638	12796	13695	11940	10557	12822	
Hollow Shaft OHL (lbs)	2070	2070	2070	2070	2070	2070	2070	2070	
Solid Shaft OHL (lbs)	1640	1640	1640	1640	1640	1640	1640	1640	
Input HP	**5.31**	**5.06**	**4.26**	**3.19**	**3.06**	**2.17**	**1.61**	**1.52**	**3B125**
Output Torque (in•lbs)	15472	17058	17395	15945	18142	14890	13279	15346	
Hollow Shaft OHL (lbs)	2070	2070	2070	2070	2070	2070	2070	2070	
Solid Shaft OHL (lbs)	1640	1640	1640	1640	1640	1640	1640	1640	
Input HP	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**3B140**
Output Torque (in•lbs)	–	–	–	–	–	–	–	–	
Hollow Shaft OHL (lbs)	–	–	–	–	–	–	–	–	
Solid Shaft OHL (lbs)	–	–	–	–	–	–	–	–	
Input HP	**6.49**	**–**	**4.63**	**–**	**–**	**2.75**	**2.04**	**1.86**	**3B145**
Output Torque (in•lbs)	18910	–	18910	–	–	18870	16826	18779	
Hollow Shaft OHL (lbs)	2070	–	2070	–	–	2070	2070	2070	
Solid Shaft OHL (lbs)	1640	–	1640	–	–	1640	1640	1640	
Input HP	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**3B160**
Output Torque (in•lbs)	–	–	–	–	–	–	–	–	
Hollow Shaft OHL (lbs)	–	–	–	–	–	–	–	–	
Solid Shaft OHL (lbs)	–	–	–	–	–	–	–	–	

Frame Size Selection Tables 60 Hz, 1750 RPM

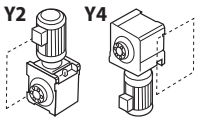
Single Reduction
Y2, Y4 Mounting Positions



Dimensions on pages 2.22–2.23

Output RPM	159	97.2	83.3	62.5	44.9	38.0	33.0	29.2	23.6	Frame Size
Ratio	11	18	21	28	39	46	53	60	74	
Input HP	**20.1**	**20.1**	**–**	**20.1**	**–**	**12.5**	**10.8**	**9.54**	**7.72**	**3B165**
Output Torque (in•lbs)	7330	11990	–	18647	–	19073	18976	18944	18967	
Hollow Shaft OHL (lbs)	2070	2070	–	2070	–	2070	2070	2070	2070	
Solid Shaft OHL (lbs)	1640	1640	–	1640	–	1640	1640	1640	1640	
Input HP	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**3C140**
Output Torque (in•lbs)	–	–	–	–	–	–	–	–	–	
Hollow Shaft OHL (lbs)	–	–	–	–	–	–	–	–	–	
Solid Shaft OHL (lbs)	–	–	–	–	–	–	–	–	–	
Input HP	**–**	**–**	**14.9**	**–**	**14.9**	**–**	**–**	**–**	**–**	**3C145**
Output Torque (in•lbs)	–	–	10372	–	19242	–	–	–	–	
Hollow Shaft OHL (lbs)	–	–	3480	–	3480	–	–	–	–	
Solid Shaft OHL (lbs)	–	–	2850	–	2850	–	–	–	–	
Input HP	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**3C160**
Output Torque (in•lbs)	–	–	–	–	–	–	–	–	–	
Hollow Shaft OHL (lbs)	–	–	–	–	–	–	–	–	–	
Solid Shaft OHL (lbs)	–	–	–	–	–	–	–	–	–	
Input HP	**–**	**–**	**–**	**20.4**	**20.4**	**14.9**	**14.9**	**14.9**	**10.2**	**3C165**
Output Torque (in•lbs)	–	–	–	18926	26344	22735	26180	29587	25060	
Hollow Shaft OHL (lbs)	–	–	–	3480	3480	3480	3480	3480	3480	
Solid Shaft OHL (lbs)	–	–	–	2850	2850	2850	2850	2850	2850	
Input HP	**27.1**	**27.1**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**3C170**
Output Torque (in•lbs)	9883	16166	–	–	–	–	–	–	–	
Hollow Shaft OHL (lbs)	3480	3480	–	–	–	–	–	–	–	
Solid Shaft OHL (lbs)	2850	2850	–	–	–	–	–	–	–	
Input HP	**29.5**	**29.5**	**–**	**–**	**–**	**24.9**	**16.1**	**–**	**13.0**	**3C175**
Output Torque (in•lbs)	10758	17598	–	–	–	37994	28289	–	31940	
Hollow Shaft OHL (lbs)	3480	3480	–	–	–	3480	3480	–	3480	
Solid Shaft OHL (lbs)	2850	2850	–	–	–	2850	2850	–	2850	
Input HP	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**3D160**
Output Torque (in•lbs)	–	–	–	–	–	–	–	–	–	
Hollow Shaft OHL (lbs)	–	–	–	–	–	–	–	–	–	
Solid Shaft OHL (lbs)	–	–	–	–	–	–	–	–	–	
Input HP	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**3D165**
Output Torque (in•lbs)	–	–	–	–	–	–	–	–	–	
Hollow Shaft OHL (lbs)	–	–	–	–	–	–	–	–	–	
Solid Shaft OHL (lbs)	–	–	–	–	–	–	–	–	–	
Input HP	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**3D170**
Output Torque (in•lbs)	–	–	–	–	–	–	–	–	–	
Hollow Shaft OHL (lbs)	–	–	–	–	–	–	–	–	–	
Solid Shaft OHL (lbs)	–	–	–	–	–	–	–	–	–	
Input HP	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**3D175**
Output Torque (in•lbs)	–	–	–	–	–	–	–	–	–	
Hollow Shaft OHL (lbs)	–	–	–	–	–	–	–	–	–	
Solid Shaft OHL (lbs)	–	–	–	–	–	–	–	–	–	
Input HP	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**3E170**
Output Torque (in•lbs)	–	–	–	–	–	–	–	–	–	
Hollow Shaft OHL (lbs)	–	–	–	–	–	–	–	–	–	
Solid Shaft OHL (lbs)	–	–	–	–	–	–	–	–	–	
Input HP	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**3E175**
Output Torque (in•lbs)	–	–	–	–	–	–	–	–	–	
Hollow Shaft OHL (lbs)	–	–	–	–	–	–	–	–	–	
Solid Shaft OHL (lbs)	–	–	–	–	–	–	–	–	–	

60 Hz, 1750 RPM Frame Size Selection Tables



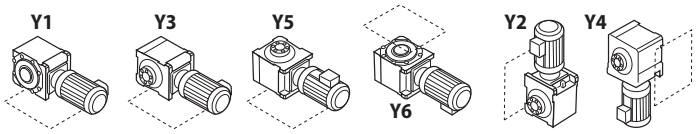
Single Reduction
Y2, Y4 Mounting Positions

Dimensions on pages 2.22–2.23

Output RPM	19.9	17.2	14.2	11.6	9.8	8.45	7.03	5.74	Frame Size
Ratio	88	102	123	151	179	207	249	305	
Input HP	**–**	**5.59**	**–**	**3.77**	**3.18**	**–**	**2.28**	**–**	**3B165**
Output Torque (in•lbs)	–	18844	–	18844	18853	–	18805	–	
Hollow Shaft OHL (lbs)	–	2070	–	2070	2070	–	2070	–	
Solid Shaft OHL (lbs)	–	1640	–	1640	1640	–	1640	–	
Input HP	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**3C140**
Output Torque (in•lbs)	–	–	–	–	–	–	–	–	
Hollow Shaft OHL (lbs)	–	–	–	–	–	–	–	–	
Solid Shaft OHL (lbs)	–	–	–	–	–	–	–	–	
Input HP	**7.46**	**–**	**5.02**	**–**	**–**	**2.98**	**–**	**2.04**	**3C145**
Output Torque (in•lbs)	21736	–	20498	–	–	20448	–	20607	
Hollow Shaft OHL (lbs)	3480	–	3480	–	–	3480	–	3480	
Solid Shaft OHL (lbs)	2850	–	2850	–	–	2850	–	2850	
Input HP	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**3C160**
Output Torque (in•lbs)	–	–	–	–	–	–	–	–	
Hollow Shaft OHL (lbs)	–	–	–	–	–	–	–	–	
Solid Shaft OHL (lbs)	–	–	–	–	–	–	–	–	
Input HP	**10.2**	**10.2**	**9.27**	**5.02**	**5.02**	**5.02**	**2.98**	**2.98**	**3C165**
Output Torque (in•lbs)	29720	34385	37852	25093	29762	34447	24579	30103	
Hollow Shaft OHL (lbs)	3480	3480	3480	3480	3480	3480	3480	3480	
Solid Shaft OHL (lbs)	2850	2850	2850	2850	2850	2850	2850	2850	
Input HP	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**3C170**
Output Torque (in•lbs)	–	–	–	–	–	–	–	–	
Hollow Shaft OHL (lbs)	–	–	–	–	–	–	–	–	
Solid Shaft OHL (lbs)	–	–	–	–	–	–	–	–	
Input HP	**13.0**	**11.2**	**–**	**7.54**	**6.36**	**5.50**	**4.57**	**3.73**	**3C175**
Output Torque (in•lbs)	37878	37756	–	37689	37707	37740	37693	37679	
Hollow Shaft OHL (lbs)	3480	3480	–	3480	3480	3480	3480	3480	
Solid Shaft OHL (lbs)	2850	2850	–	2850	2850	2850	2850	2850	
Input HP	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**3D160**
Output Torque (in•lbs)	–	–	–	–	–	–	–	–	
Hollow Shaft OHL (lbs)	–	–	–	–	–	–	–	–	
Solid Shaft OHL (lbs)	–	–	–	–	–	–	–	–	
Input HP	**–**	**–**	**10.2**	**–**	**–**	**–**	**–**	**–**	**3D165**
Output Torque (in•lbs)	–	–	41650	–	–	–	–	–	
Hollow Shaft OHL (lbs)	–	–	4810	–	–	–	–	–	
Solid Shaft OHL (lbs)	–	–	3930	–	–	–	–	–	
Input HP	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**3D170**
Output Torque (in•lbs)	–	–	–	–	–	–	–	–	
Hollow Shaft OHL (lbs)	–	–	–	–	–	–	–	–	
Solid Shaft OHL (lbs)	–	–	–	–	–	–	–	–	
Input HP	**14.9**	**14.9**	**–**	**10.2**	**7.46**	**7.46**	**5.02**	**5.02**	**3D175**
Output Torque (in•lbs)	43414	50229	–	50985	44228	51190	41405	50710	
Hollow Shaft OHL (lbs)	4810	4810	–	4810	4810	4810	4810	4810	
Solid Shaft OHL (lbs)	3930	3930	–	3930	3930	3930	3930	3930	
Input HP	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**3E170**
Output Torque (in•lbs)	–	–	–	–	–	–	–	–	
Hollow Shaft OHL (lbs)	–	–	–	–	–	–	–	–	
Solid Shaft OHL (lbs)	–	–	–	–	–	–	–	–	
Input HP	**14.9**	**14.9**	**10.2**	**10.2**	**7.46**	**7.46**	**5.02**	**5.02**	**3E175**
Output Torque (in•lbs)	43414	50229	41650	50985	44228	51190	41405	50710	
Hollow Shaft OHL (lbs)	5170	5170	5170	5170	5170	5170	5170	5170	
Solid Shaft OHL (lbs)	4110	4110	4110	4110	4110	4110	4110	4110	

Frame Size Selection Tables 60 Hz, 1750 RPM

Double Reduction
Y1, Y2, Y3, Y4, Y5, Y6 Mounting Positions

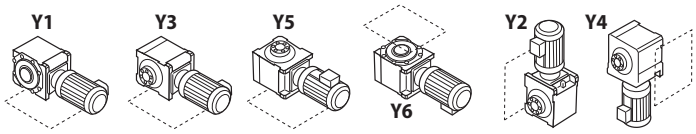


Dimensions on pages 2.24–2.25

Output RPM	4.81	4.13	3.50	3.03	2.56	2.16	1.83	1.57	1.33	1.06	0.894	0.770	0.684	Frame Size
Ratio	364	424	501	578	683	809	956	1117	1320	1656	1957	2272	2559	
Input HP	**0.576**	**0.576**	**0.573**	**0.496**	**0.420**	**0.355**	**0.300**	**0.257**	**0.217**	**0.173**	**0.147**	0.134	0.134	**3A10DA**
Output Torque (in•lbs)	6603	7682	9028	9028	9028	9028	9028	9028	9028	9028	9028	8939	9028	
Hollow Shaft OHL (lbs)	1120	1120	1120	1120	1120	1120	1120	1120	1120	1120	1120	1120	1120	
Solid Shaft OHL (lbs)	990	990	990	990	990	990	990	990	990	990	990	990	990	
Input HP	**–**	**–**	**0.576**	**0.576**	**0.531**	**0.448**	**0.379**	**0.324**	**0.275**	**0.219**	**0.185**	**0.159**	**0.142**	**3A12DA**
Output Torque (in•lbs)	–	–	9116	10444	11417	11417	11417	11417	11417	11417	11417	11417	11417	
Hollow Shaft OHL (lbs)	–	–	1120	1120	1120	1120	1120	1120	1120	1120	1120	1120	1120	
Solid Shaft OHL (lbs)	–	–	990	990	990	990	990	990	990	990	990	990	990	
Input HP	**0.995**	**0.855**	**0.724**	**0.627**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**3A12DB**
Output Torque (in•lbs)	11417	11417	11417	11417	–	–	–	–	–	–	–	–	–	
Hollow Shaft OHL (lbs)	1120	1120	1120	1120	–	–	–	–	–	–	–	–	–	
Solid Shaft OHL (lbs)	990	990	990	990	–	–	–	–	–	–	–	–	–	
Input HP	**–**	**–**	**–**	**–**	**0.576**	**0.576**	**0.576**	**0.539**	**0.456**	**0.364**	**0.308**	**0.265**	**0.235**	**3B12DA**
Output Torque (in•lbs)	–	–	–	–	12391	14692	17347	18940	18940	18940	18940	18940	18940	
Hollow Shaft OHL (lbs)	–	–	–	–	2060	2060	2060	2060	2060	2060	2060	2060	2060	
Solid Shaft OHL (lbs)	–	–	–	–	1640	1640	1640	1640	1640	1640	1640	1640	1640	
Input HP	**1.65**	**1.40**	**1.20**	**1.04**	**0.88**	**0.74**	**0.63**	**–**	**–**	**–**	**–**	**–**	**–**	**3B12DB**
Output Torque (in•lbs)	18940	18763	18940	18940	18940	18940	18940	–	–	–	–	–	–	
Hollow Shaft OHL (lbs)	2060	2060	2060	2060	2060	2060	2060	–	–	–	–	–	–	
Solid Shaft OHL (lbs)	1640	1640	1640	1640	1640	1640	1640	–	–	–	–	–	–	
Input HP	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**0.576**	**0.547**	**0.436**	**0.369**	**0.318**	**0.282**	**3B14DA**
Output Torque (in•lbs)	–	–	–	–	–	–	–	20268	22746	22746	22746	22746	22746	
Hollow Shaft OHL (lbs)	–	–	–	–	–	–	–	2060	2060	2060	2060	2060	2060	
Solid Shaft OHL (lbs)	–	–	–	–	–	–	–	1640	1640	1640	1640	1640	1640	
Input HP	**1.983**	**1.704**	**1.442**	**1.250**	**1.058**	**0.893**	**0.755**	**0.646**	**–**	**–**	**–**	**–**	**–**	**3B14DB**
Output Torque (in•lbs)	22746	22746	22746	22746	22746	22746	22746	22746	–	–	–	–	–	
Hollow Shaft OHL (lbs)	2060	2060	2060	2060	2060	2060	2060	2060	–	–	–	–	–	
Solid Shaft OHL (lbs)	1640	1640	1640	1640	1640	1640	1640	1640	–	–	–	–	–	

NOTE: Motor HP in GRAY is to overcome breakaway torque requirements in cold temperatures or high inertia applications. A torque limiting device is recommended to protect the unit or driven machine.

60 Hz, 1750 RPM Frame Size Selection Tables



Double Reduction
Y1, Y2, Y3, Y4, Y5, Y6 Mounting Positions

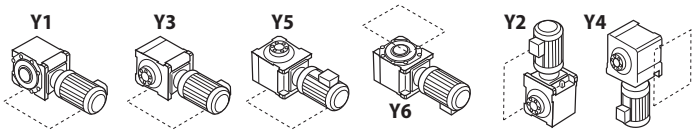
Dimensions on pages 2.24–2.25

Output RPM	0.595	0.499	0.401	0.338	0.270	0.242	0.197	0.164	0.144	0.113	0.0974	0.0809	0.0661	Frame Size
Ratio	2944	3511	4365	5177	6472	7228	8880	10658	12184	15530	17966	21620	26492	
Input HP	0.134	0.134	0.134	0.134	0.134	0.134	0.134	0.134	0.134	0.134	0.134	–	–	3A10DA
Output Torque (in•lbs)	9028	8939	9028	9028	9028	8939	8939	9028	8939	9028	9028	–	–	
Hollow Shaft OHL (lbs)	1120	120	1120	1120	1120	1120	1120	1120	1120	1120	1120	–	–	
Solid Shaft OHL (lbs)	990	990	990	990	990	990	990	990	990	990	–	–		
Input HP	0.134	0.134	0.134	0.134	0.134	0.134	0.134	0.134	0.134	0.134	0.134	–	–	3A12DA
Output Torque (in•lbs)	11417	11417	11417	11417	11417	11417	11417	11417	11417	11417	11417	–	–	
Hollow Shaft OHL (lbs)	1120	1120	1120	1120	1120	1120	1120	1120	1120	1120	1120	–	–	
Solid Shaft OHL (lbs)	990	990	990	990	990	990	990	990	990	990	990	–	–	
Input HP	–	–	–	–	–	–	–	–	–	–	–	0.134	0.134	3A12DB
Output Torque (in•lbs)	–	–	–	–	–	–	–	–	–	–	–	11417	11417	
Hollow Shaft OHL (lbs)	–	–	–	–	–	–	–	–	–	–	–	1120	1120	
Solid Shaft OHL (lbs)	–	–	–	–	–	–	–	–	–	–	–	990	990	
Input HP	0.205	0.171	0.138	0.134	0.134	0.134	0.134	0.134	0.134	0.134	0.134	–	–	3B12DA
Output Torque (in•lbs)	18940	18940	18940	18940	18940	18940	18940	18940	18940	18940	18940	–	–	
Hollow Shaft OHL (lbs)	2060	2060	2060	2060	2060	2060	2060	2060	2060	2060	2060	–	–	
Solid Shaft OHL (lbs)	1640	1640	1640	1640	1640	1640	1640	1640	1640	1640	1640	–	–	
Input HP	–	–	–	–	–	–	–	–	–	–	–	0.138	0.134	3B12DB
Output Torque (in•lbs)	–	–	–	–	–	–	–	–	–	–	–	18940	18940	
Hollow Shaft OHL (lbs)	–	–	–	–	–	–	–	–	–	–	–	2060	2060	
Solid Shaft OHL (lbs)	–	–	–	–	–	–	–	–	–	–	–	1640	1640	
Input HP	0.268	0.268	0.268	0.268	0.268	0.268	0.268	0.268	0.268	0.268	0.268	–	–	3B14DA
Output Torque (in•lbs)	22746	22746	22746	22746	22746	22746	22746	22746	22746	22746	22746	–	–	
Hollow Shaft OHL (lbs)	2060	2060	2060	2060	2060	2060	2060	2060	2060	2060	2060	–	–	
Solid Shaft OHL (lbs)	1640	1640	1640	1640	1640	1640	1640	1640	1640	1640	1640	–	–	
Input HP	–	–	–	–	–	–	–	–	–	–	–	0.268	0.268	3B14DB
Output Torque (in•lbs)	–	–	–	–	–	–	–	–	–	–	–	22746	22746	
Hollow Shaft OHL (lbs)	–	–	–	–	–	–	–	–	–	–	–	2060	2060	
Solid Shaft OHL (lbs)	–	–	–	–	–	–	–	–	–	–	–	1640	1640	

NOTE: Motor HP in GRAY is to overcome breakaway torque requirements in cold temperatures or high inertia applications. A torque limiting device is recommended to protect the unit or driven machine.

Frame Size Selection Tables 60 Hz, 1750 RPM

Double Reduction
Y1, Y2, Y3, Y4, Y5, Y6 Mounting Positions

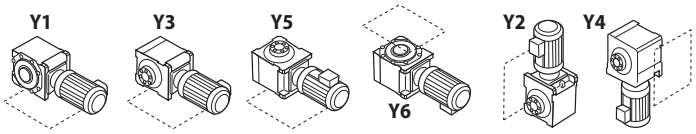


Dimensions on pages 2.24–2.25

Output RPM	4.81	4.13	3.50	3.03	2.56	2.16	1.83	1.57	1.33	1.06	0.894	0.770	0.684	Frame Size
Ratio	364	424	501	578	683	809	956	1117	1320	1656	1957	2272	2559	
Input HP	–	–	–	–	–	–	–	–	**0.576**	**0.576**	**0.576**	**0.576**	**0.512**	**3C14DA**
Output Torque (in•lbs)	–	–	–	–	–	–	–	–	23985	30004	35491	41244	41244	
Hollow Shaft OHL (lbs)	–	–	–	–	–	–	–	–	3480	3480	3480	3480	3480	
Solid Shaft OHL (lbs)	–	–	–	–	–	–	–	–	2850	2850	2850	2850	2850	
Input HP	**2.14**	**2.14**	**2.14**	**2.14**	**1.90**	**1.58**	**1.34**	**1.17**	**0.992**	**0.791**	**0.669**	–	–	**3C14DB**
Output Torque (in•lbs)	24605	28588	33810	39032	40890	40271	40271	41244	41244	41244	41244	–	–	
Hollow Shaft OHL (lbs)	3480	3480	3480	3480	3480	3480	3480	3480	3480	3480	3480	–	–	
Solid Shaft OHL (lbs)	2850	2850	2850	2850	2850	2850	2850	2850	2850	2850	2850	–	–	
Input HP	**3.60**	**2.92**	**2.62**	**2.25**	–	–	–	–	–	–	–	–	–	**3C14DC**
Output Torque (in•lbs)	41244	38943	41244	40890	–	–	–	–	–	–	–	–	–	
Hollow Shaft OHL (lbs)	3480	3480	3480	3480	–	–	–	–	–	–	–	–	–	
Solid Shaft OHL (lbs)	2850	2850	2850	2850	–	–	–	–	–	–	–	–	–	
Input HP	–	–	–	–	**2.12**	**1.79**	**1.51**	**1.29**	**1.09**	**0.872**	**0.738**	**0.635**	**0.564**	**3C16DA**
Output Torque (in•lbs)	–	–	–	–	45493	45493	45493	45493	45493	45493	45493	45493	45493	
Hollow Shaft OHL (lbs)	–	–	–	–	3480	3480	3480	3480	3480	3480	3480	3480	3480	
Solid Shaft OHL (lbs)	–	–	–	–	2850	2850	2850	2850	2850	2850	2850	2850	2850	
Input HP	**3.97**	**3.41**	**2.88**	**2.50**	–	–	–	–	–	–	–	–	–	**3C16DB**
Output Torque (in•lbs)	45493	45493	45493	45493	–	–	–	–	–	–	–	–	–	
Hollow Shaft OHL (lbs)	3480	3480	3480	3480	–	–	–	–	–	–	–	–	–	
Solid Shaft OHL (lbs)	2850	2850	2850	2850	–	–	–	–	–	–	–	–	–	
Input HP	–	–	–	–	**2.14**	**2.14**	**2.10**	**1.80**	**1.52**	**1.21**	**1.03**	**0.883**	**0.784**	**3D16DA**
Output Torque (in•lbs)	–	–	–	–	46112	54609	63283	63283	63283	63283	63283	63283	63283	
Hollow Shaft OHL (lbs)	–	–	–	–	4810	4810	4810	4810	4810	4810	4810	4810	4810	
Solid Shaft OHL (lbs)	–	–	–	–	3930	3930	3930	3930	3930	3930	3930	3930	3930	
Input HP	**4.50**	**4.50**	**4.01**	**3.48**	**2.94**	**2.48**	–	–	–	–	–	–	–	**3D16DB**
Output Torque (in•lbs)	51600	60096	63283	63283	63283	63283	–	–	–	–	–	–	–	
Hollow Shaft OHL (lbs)	4810	4810	4810	4810	4810	4810	–	–	–	–	–	–	–	
Solid Shaft OHL (lbs)	3930	3930	3930	3930	3930	3930	–	–	–	–	–	–	–	

NOTE: Motor HP in **GRAY** is to overcome breakaway torque requirements in cold temperatures or high inertia applications. A torque limiting device is recommended to protect the unit or driven machine.

60 Hz, 1750 RPM Frame Size Selection Tables



Double Reduction
Y1, Y2, Y3, Y4, Y5, Y6 Mounting Positions

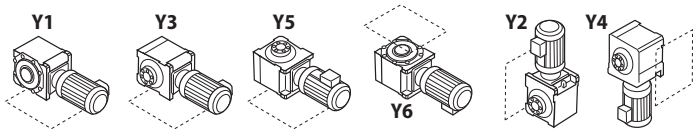
Dimensions on pages 2.24–2.25

Output RPM	0.595	0.499	0.401	0.338	0.270	0.242	0.197	0.164	0.144	0.113	0.0974	0.0809	0.0661	Frame Size
Ratio	2944	3511	4365	5177	6472	7228	8880	10658	12184	15530	17966	21620	26492	
Input HP	**0.405**	**0.373**	**0.300**	0.268	0.268	0.268	0.268	0.268	0.268	0.268	0.268	–	–	**3C14DA**
Output Torque (in•lbs)	37615	41244	41244	37615	41244	41244	41244	37615	41244	37615	37615	–	–	
Hollow Shaft OHL (lbs)	3480	3480	3480	3480	3480	3480	3480	3480	3480	3480	3480	–	–	
Solid Shaft OHL (lbs)	2850	2850	2850	2850	2850	2850	2850	2850	2850	2850	2850	–	–	
Input HP	**0.445**	**0.445**	–	–	–	–	–	–	–	–	–	0.268	0.268	**3C14DB**
Output Torque (in•lbs)	41244	41244	–	–	–	–	–	–	–	–	–	37615	37615	
Hollow Shaft OHL (lbs)	3480	3480	–	–	–	–	–	–	–	–	–	3480	3480	
Solid Shaft OHL (lbs)	2850	2850	–	–	–	–	–	–	–	–	–	2850	2850	
Input HP	–	–	–	–	–	–	–	–	–	–	–	–	–	**3C14DC**
Output Torque (in•lbs)	–	–	–	–	–	–	–	–	–	–	–	–	–	
Hollow Shaft OHL (lbs)	–	–	–	–	–	–	–	–	–	–	–	–	–	
Solid Shaft OHL (lbs)	–	–	–	–	–	–	–	–	–	–	–	–	–	
Input HP	0.536	0.536	0.536	0.536	0.536	0.536	0.268	0.268	0.268	0.268	0.268	0.268	0.268	**3C16DA**
Output Torque (in•lbs)	45493	45493	45493	45493	45493	45493	45493	45493	45493	45493	45493	45493	45493	
Hollow Shaft OHL (lbs)	3480	3480	3480	3480	3480	3480	3480	3480	3480	3480	3480	3480	3480	
Solid Shaft OHL (lbs)	2850	2850	2850	2850	2850	2850	2850	2850	2850	2850	2850	2850	2850	
Input HP	–	–	–	–	–	–	–	0.268	–	–	–	–	–	**3C16DB**
Output Torque (in•lbs)	–	–	–	–	–	–	–	45493	–	–	–	–	–	
Hollow Shaft OHL (lbs)	–	–	–	–	–	–	–	3480	–	–	–	–	–	
Solid Shaft OHL (lbs)	–	–	–	–	–	–	–	2850	–	–	–	–	–	
Input HP	**0.682**	**0.572**	0.536	0.536	0.536	0.536	0.268	0.268	0.268	0.268	0.268	0.268	0.268	**3D16DA**
Output Torque (in•lbs)	63283	63283	63283	61778	63283	63283	63283	61778	63283	61778	61778	61778	61778	
Hollow Shaft OHL (lbs)	4810	4810	4810	4810	4810	4810	4810	4810	4810	4810	4810	4810	4810	
Solid Shaft OHL (lbs)	3930	3930	3930	3930	3930	3930	3930	3930	3930	3930	3930	3930	3930	
Input HP	–	–	–	–	–	–	–	–	–	–	–	–	–	**3D16DB**
Output Torque (in•lbs)	–	–	–	–	–	–	–	–	–	–	–	–	–	
Hollow Shaft OHL (lbs)	–	–	–	–	–	–	–	–	–	–	–	–	–	
Solid Shaft OHL (lbs)	–	–	–	–	–	–	–	–	–	–	–	–	–	

NOTE: Motor HP in GRAY is to overcome breakaway torque requirements in cold temperatures or high inertia applications. A torque limiting device is recommended to protect the unit or driven machine.

Frame Size Selection Tables 60 Hz, 1750 RPM

Double Reduction
Y1, Y2, Y3, Y4, Y5, Y6 Mounting Positions

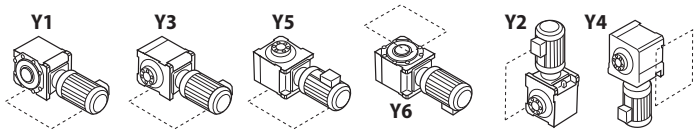


Dimensions on pages 2.24–2.25

Output RPM	4.81	4.13	3.50	3.03	2.56	2.16	1.83	1.57	1.33	1.06	0.894	0.770	0.684	Frame Size
Ratio	364	424	501	578	683	809	956	1117	1320	1656	1957	2272	2559	
Input HP	**5.51**	**4.74**	–	–	–	–	–	–	–	–	–	–	–	3D16DC
Output Torque (in•lbs)	63283	63283	–	–	–	–	–	–	–	–	–	–	–	
Hollow Shaft OHL (lbs)	4810	4810	–	–	–	–	–	–	–	–	–	–	–	
Solid Shaft OHL (lbs)	3930	3930	–	–	–	–	–	–	–	–	–	–	–	
Input HP	–	–	–	–	–	–	**2.14**	**2.14**	**1.86**	**1.48**	**1.25**	**1.08**	**0.957**	3D17DA
Output Torque (in•lbs)	–	–	–	–	–	–	64610	75496	77178	77178	77178	77178	77178	
Hollow Shaft OHL (lbs)	–	–	–	–	–	–	4810	4810	4810	4810	4810	4810	4810	
Solid Shaft OHL (lbs)	–	–	–	–	–	–	3930	3930	3930	3930	3930	3930	3930	
Input HP	–	–	**4.50**	**4.24**	**3.59**	**3.03**	**2.56**	**2.19**	–	–	–	–	–	3D17DB
Output Torque (in•lbs)	–	–	70983	77178	77178	77178	77178	77178	–	–	–	–	–	
Hollow Shaft OHL (lbs)	–	–	4810	4810	4810	4810	4810	4810	–	–	–	–	–	
Solid Shaft OHL (lbs)	–	–	3930	3930	3930	3930	3930	3930	–	–	–	–	–	
Input HP	**6.73**	**5.78**	–	–	–	–	–	–	–	–	–	–	–	3D17DC
Output Torque (in•lbs)	77178	77178	–	–	–	–	–	–	–	–	–	–	–	
Hollow Shaft OHL (lbs)	4810	4810	–	–	–	–	–	–	–	–	–	–	–	
Solid Shaft OHL (lbs)	3930	3930	–	–	–	–	–	–	–	–	–	–	–	
Input HP	–	–	–	–	–	–	–	–	**2.14**	**1.82**	**1.54**	**1.33**	**1.18**	3E17DA
Output Torque (in•lbs)	–	–	–	–	–	–	–	–	89392	94702	94702	94702	94702	
Hollow Shaft OHL (lbs)	–	–	–	–	–	–	–	–	5170	5170	5170	5170	5170	
Solid Shaft OHL (lbs)	–	–	–	–	–	–	–	–	4110	4110	4110	4110	4110	
Input HP	–	–	–	**4.50**	**4.41**	**3.72**	**3.15**	**2.70**	**2.28**	–	–	–	–	3E17DB
Output Torque (in•lbs)	–	–	–	81957	94702	94702	94702	94702	94702	–	–	–	–	
Hollow Shaft OHL (lbs)	–	–	–	5170	5170	5170	5170	5170	5170	–	–	–	–	
Solid Shaft OHL (lbs)	–	–	–	4110	4110	4110	4110	4110	4110	–	–	–	–	
Input HP	**8.27**	**7.11**	**6.01**	**5.21**	–	–	–	–	–	–	–	–	–	3E17DC
Output Torque (in•lbs)	94702	94702	94702	94702	–	–	–	–	–	–	–	–	–	
Hollow Shaft OHL (lbs)	5170	5170	5170	5170	–	–	–	–	–	–	–	–	–	
Solid Shaft OHL (lbs)	4110	4110	4110	4110	–	–	–	–	–	–	–	–	–	

NOTE: Motor HP in **GRAY** is to overcome breakaway torque requirements in cold temperatures or high inertia applications. A torque limiting device is recommended to protect the unit or driven machine.

60 Hz, 1750 RPM Frame Size Selection Tables



Double Reduction
Y1, Y2, Y3, Y4, Y5, Y6 Mounting Positions

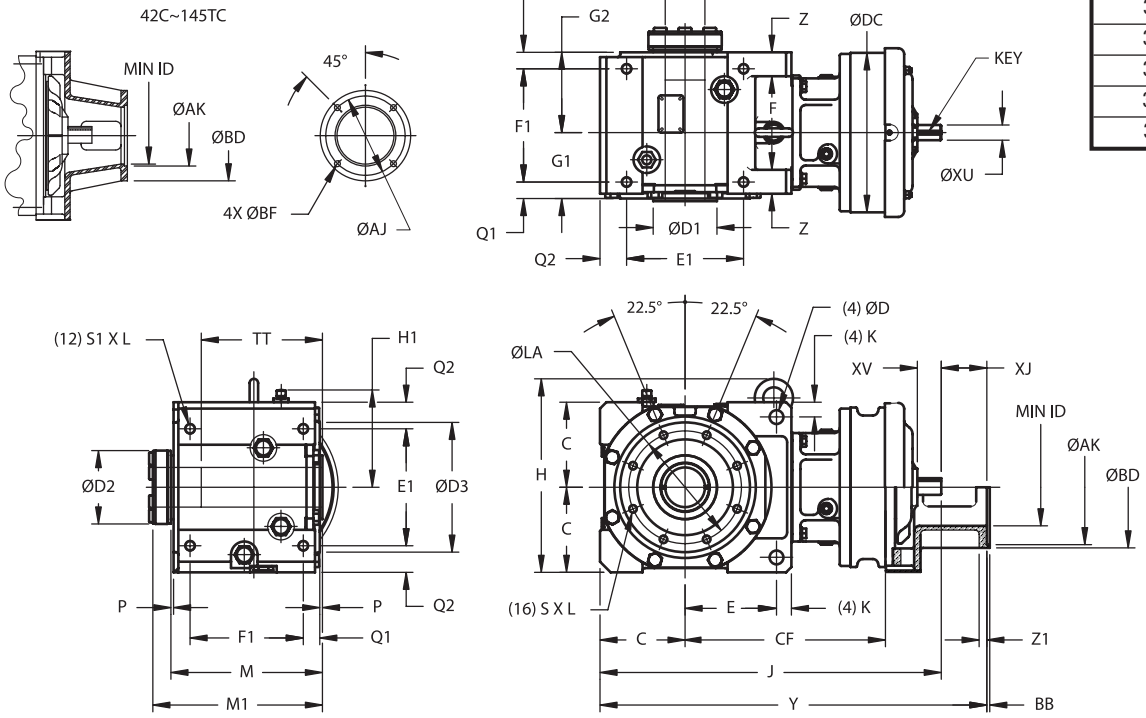
Dimensions on pages 2.24–2.25

Output RPM	0.595	0.499	0.401	0.338	0.270	0.242	0.197	0.164	0.144	0.113	0.0974	0.0809	0.0661	Frame Size
Ratio	2944	3511	4365	5177	6472	7228	8880	10658	12184	15530	17966	21620	26492	
Input HP	–	–	–	–	–	–	–	–	–	–	–	–	–	3D16DC
Output Torque (in•lbs)	–	–	–	–	–	–	–	–	–	–	–	–	–	
Hollow Shaft OHL (lbs)	–	–	–	–	–	–	–	–	–	–	–	–	–	
Solid Shaft OHL (lbs)	–	–	–	–	–	–	–	–	–	–	–	–	–	
Input HP	**0.832**	**0.698**	**0.561**	–	–	–	–	0.536	0.268	0.268	0.268	0.268	0.268	3D17DA
Output Torque (in•lbs)	77178	77178	77178	–	–	–	–	77178	77178	77178	77178	77178	77178	
Hollow Shaft OHL (lbs)	4810	4810	4810	–	–	–	–	4810	4810	4810	4810	4810	4810	
Solid Shaft OHL (lbs)	3930	3930	3930	–	–	–	–	3930	3930	3930	3930	3930	3930	
Input HP	–	–	–	–	–	–	–	–	–	–	–	–	–	3D17DB
Output Torque (in•lbs)	–	–	–	–	–	–	–	–	–	–	–	–	–	
Hollow Shaft OHL (lbs)	–	–	–	–	–	–	–	–	–	–	–	–	–	
Solid Shaft OHL (lbs)	–	–	–	–	–	–	–	–	–	–	–	–	–	
Input HP	–	–	–	–	–	–	–	–	–	–	–	–	–	3D17DC
Output Torque (in•lbs)	–	–	–	–	–	–	–	–	–	–	–	–	–	
Hollow Shaft OHL (lbs)	–	–	–	–	–	–	–	–	–	–	–	–	–	
Solid Shaft OHL (lbs)	–	–	–	–	–	–	–	–	–	–	–	–	–	
Input HP	**1.02**	**0.857**	**0.690**	**0.582**	0.536	0.536	0.536	0.536	0.268	0.268	0.268	0.268	0.268	3E17DA
Output Torque (in•lbs)	94702	94702	94702	94702	94702	94702	94702	94702	94702	94702	94702	94702	94702	
Hollow Shaft OHL (lbs)	5170	5170	5170	5170	5170	5170	5170	5170	5170	5170	5170	5170	5170	
Solid Shaft OHL (lbs)	4110	4110	4110	4110	4110	4110	4110	4110	4110	4110	4110	4110	4110	
Input HP	–	–	–	–	–	–	–	–	–	–	–	–	–	3E17DB
Output Torque (in•lbs)	–	–	–	–	–	–	–	–	–	–	–	–	–	
Hollow Shaft OHL (lbs)	–	–	–	–	–	–	–	–	–	–	–	–	–	
Solid Shaft OHL (lbs)	–	–	–	–	–	–	–	–	–	–	–	–	–	
Input HP	–	–	–	–	–	–	–	–	–	–	–	–	–	3E17DC
Output Torque (in•lbs)	–	–	–	–	–	–	–	–	–	–	–	–	–	
Hollow Shaft OHL (lbs)	–	–	–	–	–	–	–	–	–	–	–	–	–	
Solid Shaft OHL (lbs)	–	–	–	–	–	–	–	–	–	–	–	–	–	

NOTE: Motor HP in GRAY is to overcome breakaway torque requirements in cold temperatures or high inertia applications. A torque limiting device is recommended to protect the unit or driven machine.

Dimensions

Single Reduction
LHY(J)-3A100Y~3E175Y



Min. Engagement	
FRAME SIZE	TT
3A	7.79
3B	9.33
3C	10.16
3D	11.82
3E	13.94

All dimensions are in inches.

Model	C	E	F	K	Z	ØD	E1	F1	Q1	Q2	S1 x L	M
3A100, 3A105 3A110, 3A115 3A120, 3A125 3A140, 3A145	4.33	4.49	7.24	0.71	1.38	0.71	5.91	6.30	0.91	1.38	M12x0.79	8.50
3B120, 3B125 3B140, 3B145 3B160, 3B165	5.12	5.59	8.43	0.91	1.58	0.87	7.48	7.68	1.06	1.38	M16x1.02	10.20
3C140, 3C145 3C160, 3C165 3C170, 3C175	6.30	6.77	10.39	1.10	1.77	1.02	8.66	8.39	1.22	1.97	M20x1.30	11.22
3D160, 3D165 3D170, 3D175	7.48	7.60	12.21	1.38	2.17	1.30	9.84	10.00	1.42	2.56	M24x1.57	13.39
3E170, 3E175	8.46	9.06	14.17	1.38	2.17	1.30	11.81	11.14	1.50	2.56	M24x1.57	14.69

											ØU	
Model	P	G1	G2	H	H1	ØLA	ØD3	S x L	M1	ØD1	ØD2	Std & Max	Min
3A100, 3A105 3A110, 3A115 3A120, 3A125 3A140, 3A145	0.20	3.78	4.33	10.87	5.16	6.10	6.89	M10x0.67	9.84	3.35	4.09	2-3/16	1-11/16
3B120, 3B125 3B140, 3B145 3B160, 3B165	0.20	4.80	5.00	12.13	5.94	6.89	7.83	M12x0.79	11.54	3.94	4.49	2-7/16	1-15/16
3C140, 3C145 3C160, 3C165 3C170, 3C175	0.20	4.88	5.94	14.33	7.20	8.35	9.61	M16x1.02	12.83	4.72	5.43	2-15/16	2-3/16
3D160, 3D165 3D170, 3D175	0.28	5.83	7.01	16.69	8.39	10.04	11.61	M20x1.30	15.00	5.51	5.98	3-7/16	2-7/16
3E170, 3E175	0.28	6.14	7.99	19.61	9.37	11.02	12.60	M20x1.38	16.30	6.30	6.69	3-15/16	2-15/16

Dimensions shown are for reference only and are subject to change without notice, unless certified.
Certified prints are available after receipt of an order; consult factory.

Single Reduction LHY(J)-3A100~3E175 Dimensions

With C-Face Adapter						
Model	NEMA C-Face	Y	Z1	Min. ID	XJ	Wt (lb)
3A100, 3A105	48C	17.87	0.47	2.44	2.16	111
	56C-145TC	18.33	0.47	4.21	2.63	113
	182TC-184TC	19.16	0.47	5.43	3.45	117
3A110, 3A115	56C	18.6	0.47	3.93	2.62	126
	143TC-145TC	18.6	0.47	3.93	2.62	126
	182TC-184TC	19.4	0.47	3.93	3.44	131
3A120, 3A125	143TC-145TC	19.40	0.47	4.21	2.63	133
	182TC-184TC	20.14	0.47	5.43	3.37	137
	213TC-215TC	21.14	1.47	5.43	4.37	147
3A140, 3A145	182TC-184TC	21.33	0.47	5.43	3.37	155
	213TC-215TC	21.95	1.10	5.43	4.00	161
	254TC-256TC	22.88	0.57	5.08	4.93	163
3B120, 3B125	56C-145TC	21.64	0.47	4.21	2.63	197
	182TC-184TC	22.39	0.47	5.43	3.37	201
	213TC-215TC	23.39	1.47	5.43	4.37	211
3B140, 3B145	143TC-145TC	22.63	0.47	4.21	2.63	217
	182TC-184TC	23.37	0.47	5.43	3.37	221
	213TC-215TC	24.00	1.10	5.43	4.00	227
	254TC-256TC	24.93	0.57	5.08	4.93	230
3B160, 3B165	182TC-184TC	25.46	0.57	5.71	3.37	304
	213TC-215TC	26.09	1.20	5.71	4.00	310
	254TC-256TC	26.84	0.57	5.71	4.75	306
	284TC-286TC	27.52	0.57	7.09	5.44	300
	324TC-326TC	28.59	0.57	7.87	6.50	311
3C140, 3C145	143TC-145TC	26.13	0.47	4.21	2.63	321
	182TC-184TC	26.88	0.47	5.43	3.37	325
	213TC-215TC	27.50	1.10	5.43	4.00	331
	254TC-256TC	28.43	0.57	5.08	4.93	333
3C160, 3C165	143TC-145TC	27.90	0.47	4.21	2.63	401
	182TC-184TC	28.65	0.57	5.71	3.37	405
	213TC-215TC	29.28	1.20	5.71	4.00	412
	254TC-256TC	30.03	0.57	5.71	4.75	408
	284TC-286TC	30.71	0.57	7.09	5.44	402
	324TC-326TC	31.78	0.57	7.87	6.50	412
3C170, 3C175	182TC-184TC	30.07	0.57	5.71	3.38	448
	213TC-215TC	30.70	1.20	5.71	4.00	454
	254TC-256TC	31.44	0.57	5.71	4.75	450
	284TC-286TC	32.13	0.57	7.87	5.44	461
	324TC-326TC	32.70	0.57	7.87	6.00	456
3D160, 3D165	143TC-145TC	31.92	0.47	4.21	2.63	549
	182TC-184TC	32.67	0.57	5.71	3.37	553
	213TC-215TC	33.29	1.20	5.71	4.00	559
	254TC-256TC	34.04	0.57	5.71	4.75	556
	284TC-286TC	34.73	0.57	7.09	5.44	549
	324TC-326TC	35.79	0.57	7.87	6.50	560
3D170, 3D175	182TC-184TC	33.22	0.57	5.71	3.38	587
	213TC-215TC	33.85	1.20	5.71	4.00	593
	254TC-256TC	34.59	0.57	5.71	4.75	589
	284TC-286TC	35.28	0.57	7.87	5.44	600
	324TC-326TC	35.85	0.57	7.87	6.00	594
3E170, 3E175	182TC-184TC	35.19	0.57	5.71	3.38	750
	213TC-215TC	35.81	1.20	5.71	4.00	756
	254TC-256TC	36.56	0.57	5.71	4.75	752
	284TC-286TC	37.25	0.57	7.87	5.44	763
	324TC-326TC	37.81	0.57	7.87	6.00	758

Free Shaft Input							
Model	ØXU	ØXV	Key	CF	ØDC	J	Wt (lb)
3A100, 3A105	0.625	0.98	3/16x3/16x0.75	9.33	5.91	15.71	106
3A110, 3A115	0.625	0.98	3/16x3/16x0.75	9.76	6.38	15.98	119
3A120, 3A125	0.750	1.38	3/16x3/16x1.02	9.57	8.03	16.77	123
3A140, 3A145	0.875	1.57	3/16x3/16x1.38	10.43	9.06	17.95	139
3B120, 3B125	0.750	1.38	3/16x3/16x1.02	11.02	8.03	19.02	187
3B140, 3B145	0.875	1.57	3/16x3/16x1.38	11.69	9.06	20.00	205
3B160, 3B165	1.125	1.77	1/4x1/4x1.77	12.83	11.81	22.09	258
3C140, 3C145	0.875	1.57	3/16x3/16x1.38	14.02	9.06	23.50	309
3C160, 3C165	1.125	1.77	1/4x1/4x1.77	14.84	11.81	25.28	359
3C170, 3C175	1.375	2.17	5/16x5/16x2.16	15.47	13.39	26.69	410
3D160, 3D165	1.125	1.77	1/4x1/4x1.77	17.68	11.81	29.29	507
3D170, 3D175	1.375	2.17	5/16x5/16x2.16	17.44	13.39	29.84	549
3E170, 3E175	1.375	2.17	5/16x5/16x2.16	18.43	13.39	31.81	712

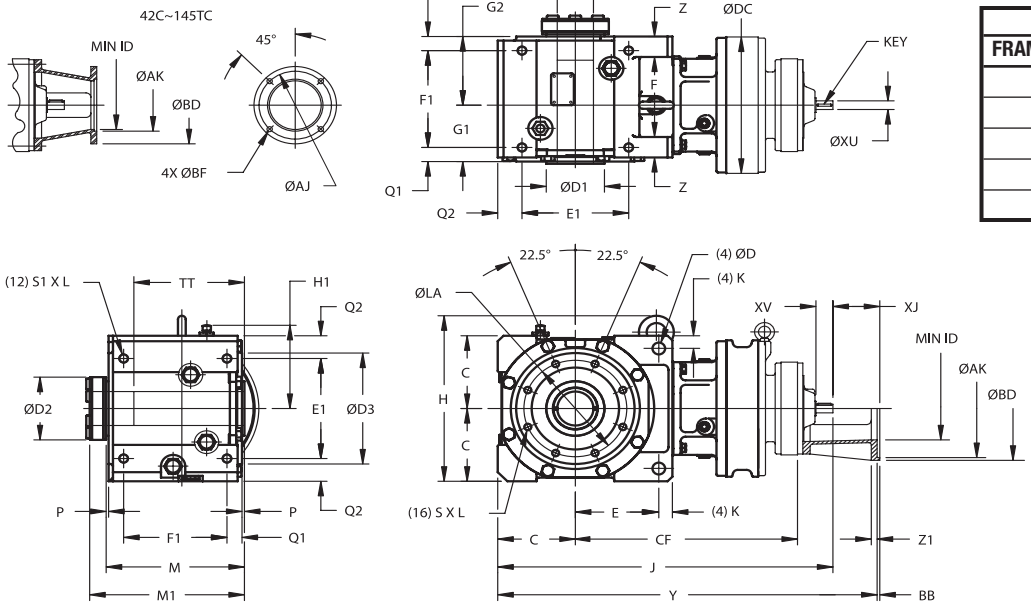
NEMA C-Face Adapter	ØAJ	ØAK	ØBD	BB	ØBF
42C-48C	3.75	3.00	4.33	-	0.28
56C-145TC	5.87	4.50	6.69	-	0.43
182TC-256TC	7.25	8.50	8.98	0.22	0.55
284TC-286TC	9.00	10.50	11.10	0.22	0.55
324TC-326TC	11.00	12.50	14.17	0.22	0.71

All dimensions are in inches.

Dimensions shown are for reference only and are subject to change without notice, unless certified. Certified prints are available after receipt of an order; consult factory.

Dimensions

Double Reduction
LHY(J)-3A10DAY~3E17DCY



Min. Engagement	
FRAME SIZE	TT
3A	7.79
3B	9.33
3C	10.16
3D	11.82
3E	13.94

Dimensions shown are for reference only and are subject to change without notice, unless certified.

Certified prints are available after receipt of an order; consult factory.

All dimensions are in inches.

Model	C	E	F	K	Z	ØD	E1	F1	Q1	Q2	S1 x L	M
3A10DA 3A12DA 3A12DB	4.33	4.49	7.24	0.71	1.38	0.71	5.91	6.30	0.91	1.38	M12x0.79	8.50
3B12DA 3B12DB 3B14DA 3B14DB	5.12	5.59	8.43	0.91	1.58	0.87	7.48	7.68	1.06	1.38	M16x1.02	10.20
3C14DA 3C14DB 3C14DC 3C16DA 3C16DB	6.30	6.77	10.39	1.10	1.77	1.02	8.66	8.39	1.22	1.97	M20x1.30	11.22
3D16DA 3D16DB 3D16DC 3D17DA 3D17DB 3D17DC	7.48	7.60	12.21	1.38	2.17	1.30	9.84	10.00	1.42	2.56	M24x1.57	13.39
3E17DA 3E17DB 3E17DC	8.46	9.06	14.17	1.38	2.17	1.30	11.81	11.14	1.50	2.56	M24x1.57	14.69

											ØU	
Model	P	G1	G2	H	H1	ØLA	ØD3	S x L	M1	ØD1	ØD2	Std & Max	Min
3A10DA 3A12DA 3A12DB	0.20	3.78	4.33	10.87	5.16	6.10	6.89	M10x0.67	9.84	3.35	4.09	2-3/16	1-11/16
3B12DA 3B12DB 3B14DA 3B14DB	0.20	4.80	5.00	12.13	5.94	6.89	7.83	M12x0.79	11.54	3.94	4.49	2-7/16	1-15/16
3C14DA 3C14DB 3C14DC 3C16DA	0.20	4.88	5.94	14.33	7.20	8.35	9.61	M16x1.02	12.83	4.72	5.43	2-15/16	2-3/16
3D16DA 3D16DB 3D16DC 3D17DA 3D17DB 3D17DC	0.28	5.83	7.01	16.69	8.39	10.04	11.61	M20x1.30	15.00	5.51	5.98	3-7/16	2-7/16
3E17DA 3E17DB	0.28	6.14	7.99	19.61	9.37	11.02	12.60	M20x1.38	16.30	6.30	6.69	3-15/16	2-15/16

Double Reduction LHY(J)-3C10DAY~3E17DCY Dimensions

All dimensions are in inches.

With C-Face Adapter						
Model	NEMA C-Face	Y	Z1	Min. ID	XJ	Wt (lb)
3A10DA	42C	19.42	0.47	2.44	1.78	113
	48C	19.80	0.47	2.44	2.16	113
	56C	20.20	0.47	3.15	2.56	116
3A12DA	42C	19.89	0.47	2.44	1.78	131
	48C	20.27	0.47	2.44	2.16	131
	56C	20.67	0.47	3.15	2.56	133
3A12DB	48C	21.02	0.47	2.44	2.16	139
	56C-145TC	21.48	0.47	4.21	2.63	142
3B12DA	42C	22.13	0.47	2.44	1.78	195
	48C	22.51	0.47	2.44	2.16	195
	56C	22.91	0.47	3.15	2.56	197
3B12DB	48C	23.26	0.47	2.44	2.16	203
	56C-145TC	23.73	0.47	4.21	2.63	206
3B14DA	48C	23.18	0.47	2.44	2.16	202
	56C	23.58	0.47	3.15	2.56	204
3B14DB	48C	23.81	0.47	2.44	2.16	212
	56C-145TC	24.28	0.47	4.21	2.63	215
3C14DA	48C	26.69	0.47	2.44	2.16	305
	56C	27.09	0.47	3.15	2.56	308
3C14DB	48C	27.31	0.47	2.44	2.16	316
	56C-145TC	27.78	0.47	4.21	2.63	318
3C14DC	143TC-145TC	28.02	0.47	4.21	2.63	320
	182TC-184TC	28.84	0.47	5.43	3.45	324
3C16DA	56C-145TC	28.69	0.47	4.21	2.63	369
3D16DA	48C	32.24	0.47	2.44	2.16	514
	56C-145TC	32.70	0.47	4.21	2.63	517
3D16DB	143TC-145TC	32.94	0.47	4.21	2.63	521
	182TC-184TC	33.76	0.47	5.43	3.45	525
3D16DC	182TC-184TC	34.16	0.47	5.43	3.37	542
	213TC-215TC	35.16	1.47	5.43	4.37	544
3D17DA	56C-145TC	32.51	0.47	4.21	2.63	548
3D17DB	143TC-145TC	32.74	0.47	4.21	2.63	552
	182TC-184TC	33.57	0.47	5.43	3.45	556
3D17DC	182TC-184TC	34.47	0.47	5.43	3.37	569
	213TC-215TC	35.47	1.47	5.43	4.37	579
3E17DA	48C	34.01	0.47	2.44	2.16	708
	56C-145TC	34.48	0.47	4.21	2.63	711
3E17DB	143TC-145TC	34.71	0.47	4.21	2.63	715
	182TC-184TC	35.54	0.47	5.43	3.45	719
3E17DC	182TC-184TC	36.44	0.47	5.43	3.37	732
	213TC-215TC	37.44	1.47	5.43	4.37	743

Free Shaft Input							
Model	ØXU	ØXV	Key	CF	ØDC	J	Wt (lb)
3A10DA	0.500	0.98	1/8x1/8x0.71	11.22	5.91	17.64	110
3A12DA	0.500	0.98	1/8x1/8x0.71	11.69	8.03	18.11	128
3A12DB	0.625	0.98	3/16x3/16x0.75	12.17	8.03	18.86	135
3B12DA	0.500	0.98	1/8x1/8x0.71	13.15	8.03	20.35	192
3B12DB	0.625	0.98	3/16x3/16x0.75	13.62	8.03	21.10	198
3B14DA	0.500	0.98	1/8x1/8x0.71	13.82	9.06	21.02	198
3B14DB	0.625	0.98	3/16x3/16x0.75	14.17	9.06	21.65	207
3C14DA	0.500	0.98	1/8x1/8x0.71	16.14	9.06	24.53	302
3C14DB	0.625	0.98	3/16x3/16x0.75	16.50	9.06	25.16	311
3C14DC	0.625	0.98	3/16x3/16x0.75	17.05	9.06	25.39	313
3C16DA	0.625	0.98	3/16x3/16x0.75	17.40	11.81	26.06	362
3D16DA	0.625	0.98	3/16x3/16x0.75	20.24	11.81	30.08	509
3D16DB	0.625	0.98	3/16x3/16x0.75	20.79	11.81	30.31	514
3D16DC	0.750	1.38	3/16x3/16x1.02	20.87	11.81	31.22	529
3D17DA	0.625	0.98	3/16x3/16x0.75	20.04	13.39	29.88	540
3D17DB	0.625	0.98	3/16x3/16x0.75	20.59	13.39	30.12	545
3D17DC	0.750	1.38	3/16x3/16x1.02	20.75	13.39	31.10	556
3E17DA	0.625	0.98	3/16x3/16x0.75	21.02	13.39	31.85	703
3E17DB	0.625	0.98	3/16x3/16x0.75	21.57	13.39	32.09	708
3E17DC	0.750	1.38	3/16x3/16x1.02	21.73	13.39	33.07	719

NEMA C-Face Adapter	ØAJ	ØAK	ØBD	BB	ØBF
42C-48C	3.75	3.00	4.33	-	0.28
56C-145TC	5.87	4.50	6.69	-	0.43
182TC-256TC	7.25	8.50	8.98	0.22	0.55

Dimensions shown are for reference only and are subject to change without notice, unless certified.
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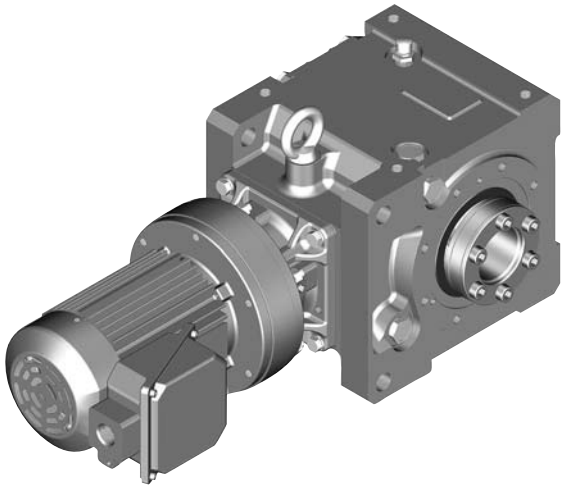
3

Gearmotors



How to select a Gearmotor

Step 1: Collect data about your application

Before starting you need to know the:

- **Application (e.g. Conveyor, Mixer, etc.)**
- **Hours of Operation per day**
- **Motor Horsepower (HP) and Speed (RPM)**
- **Desired Output Speed**
- **Mounting Position and Style**
- **Overhung or Thrust Loads**
- **Bore Dimensions, inch or metric**
- **Electrical Specifications**

Step 2: Choose a Mounting Position

Find the correct Mounting Position from the *Mounting Positions Table* on the right.

Step 3: Select a Frame Size

3A: Find the **Load Classification** of your application in the *AGMA Load Classification Tables* on pages 3.6 and 3.7.

3B: Go to the *Gearmotor Selection Table* that corresponds to the desired **Mounting Position** and **Motor HP**. Find the **Output Speed** closest to the desired output speed.

3C: Locate the **Service Class** in the *Gearmotor Selection Table* for your application and select the **Frame Size SELECTION** that matches the HP, Output Speed, and Service Class.

Step 4: Verify Dimensions

Use the Dimensions information on pages 3.38–3.45 to verify that the selected Frame Size is appropriate.

Step 5: Choose a Bushing Bore Size

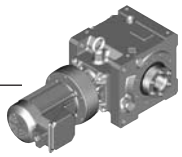
Choose a Taper Grip® Bushing Bore Size from the *Stock Bushing Bore Size Table*.

Step 6: Choose Options

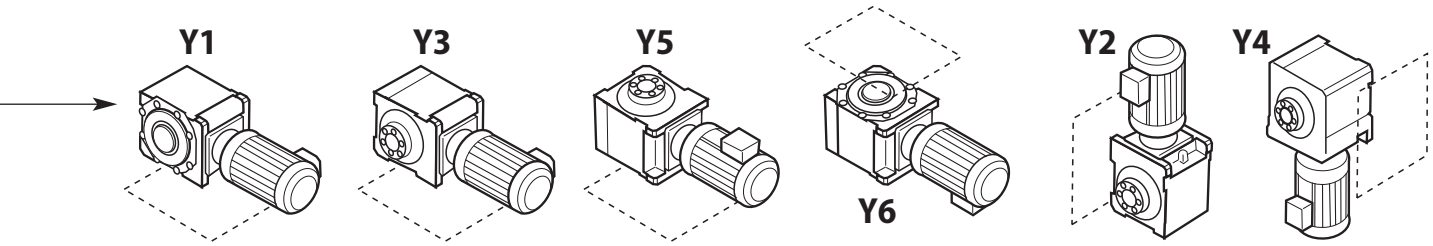
The following options may apply:
Brakemotor
Washdown Modifications
Breather
Bushing Cover
Please see the Cyclo BBB pricelist, or visit our website at www.smcyclo.com for available modifications.

Step 7: Configure a Model Number

Go to page 3.4 to configure a model number.
Note: You will use the information you gather from the procedure on this page to Configure a Model Number.



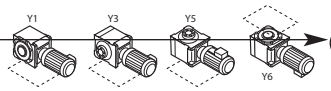
Mounting Positions



Select a Frame Size

Gearmotors

60 Hz, 1750 RPM Gearmotor Selection Tables

• Mounting Position →  **Horizontal Motor Shaft Y1, Y3, Y5, Y6 Mounting Positions**

• Motor HP → **1/4 HP**

• Output Speed

• Service Class

• SELECTION

Output Speed RPM	Output Torque in•lb	Service Factor SF	Service Factor AGMA Class	SELECTION HP Symbol	SELECTION Frame Size	SELECTION Ratio	Overhung Load (lbs) Hollow Shaft	Overhung Load (lbs) Solid Shaft	Dimension Page LHYM
2.56	5350	1.57	II	02	**3A10DA**	683	1120	990	3.42–43
		1.64	II	02	**3A12DA**	683	1120	990	3.42–43
		2.15	III	02	**3B12DA**	683	2070	1640	3.42–43
2.56	5350	1.32	I	02	**3A10DA**	809	1120	990	3.42–43
		1.38	I	02	**3A12DA**	809	1120	990	3.42–43
		2.15	III	02	**3B12DA**	809	2070	1640	3.42–43
1.83	7490	1.12	I	02	**3A10DA**	956	1120	990	3.42–43
		1.17	I	02	**3A12DA**	956	1120	990	3.42–43
		2.15	III	02	**3B12DA**	956	2070	1640	3.42–43
1.57	8730	1.00	I	02	**3A12DA**	1117	1120	990	3.42–43
		2.00	III	02	**3B12DA**	1117	2070	1640	3.42–43
		2.00	III	02	**3B14DA**	1117	2070	1640	3.42–43
1.33	10300	0.85	-	02	**3A12DA**	1320	1120	990	3.42–43
		1.69	II	02	**3B12DA**	1320	2070	1640	3.42–43
		1.69	II	02	**3B14DA**	1320	2070	1640	3.42–43
		2.15	III	02	**3C14DA**	1320	3480	2850	3.42–43
1.06	12930	1.35	I	02	**3B12DA**	1656	2070	1640	3.42–43
		1.35	I	02	**3B14DA**	1656	2070	1640	3.42–43
		2.15	III	02	**3C14DA**	1656	3480	2850	3.42–43

STOCK BUSHING BORES

Size	Inch Sizes	Metric Sizes	Min. Bore
A	$1^{15}/_{16}$, $2^{3}/_{16}$	50, 55	$1^{11}/_{16}$
B	$2^{3}/_{16}$, $2^{7}/_{16}$	60, 65	$1^{15}/_{16}$
C	$2^{7}/_{16}$, $2^{15}/_{16}$	65, 75	$2^{3}/_{16}$
D	$2^{15}/_{16}$, $3^{7}/_{16}$	75, 85	$2^{7}/_{16}$
E	$3^{7}/_{16}$, $3^{15}/_{16}$	90, 100	$2^{15}/_{16}$

**Min. Bore is also stock but needs slitting.

For special circumstances in selecting a **Frame Size** such as:

- Overhung Load
- Thrust Loads
- Radial Loads
- Shock Loading

Consult Appendix, pages 5.2–5.5.

If Overhung Load is present, any Overhung Load must be checked against the capacity of the selection.

Configure a Model Number

When ordering, the following information should be included:

- Motor Specification (230/460 VAC 60 Hz is supplied, unless otherwise specified
- NEMA frame size for C-face adaptor
- Bushing Bore size must be supplied

Optional conduit box positions must be specified, otherwise Y1 is supplied.

Output Shaft Orientation

Type	Prefix
Horizontal	**H**
Vertical	**V**
Vertical Up (Solid Shaft)	**W**

Mounting Style

Type	Prefix
Shaft Mount (Hollow Shaft)	**Y**
Flange (Solid Shaft)	**F**
Foot (Solid Shaft)	**H**

Input Connection

Input Connection	Prefix	
	Reducer	Gearmotor
Integral Motor		**M**
Free input Shaft		
C-Face Adaptor		
Hollow Input Shaft		

Frame Size

Single Reduction

3A100	3A140	3B145	3C160	3D165
3A105	3A145	3B160	3C165	3D170
3A110	3B120	3B165	3C170	3D175
3A115	3B125	3C140	3C175	3E170
3A120	3B140	3C145	3D160	3E175
3A125				

Double Reduction

3A10DA	3B14DA	3C14DC	3D16DB	3D17DC
3A12DA	3B14DB	3C16DA	3D16DC	3E17DA
3A12DB	3C14DA	3C16DB	3D17DA	3E17DB
3B12DA	3C14DB	3D16DA	3D17DB	3E17DC
3B12DB				

Modification

	Prefix
Special	**S**
Standard	

Gearmotor HP
(applies only to 1750 RPM)

HP	Prefix
1/8	**01**
1/4	**02**
1/3	**03**
1/2	**05**
3/4	**08**
1	**1**
1 1/2	**1H**
2	**2**
3	**3**
5	**5**
7 1/2	**8**
10	**10**
15	**15**
20	**20**
25	**25**
30	**30**
40	**40**

AGMA Class

Class	Suffix
I	**A**
II	**B**
III	**C**

Motor Specification

Specification	Suffix
AF Motor (Adj. Frequency)	**AV**
Single Phase Motor	**SG**
Servo Motor	**SV**
Three Phase Motor	

Brake

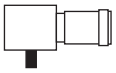
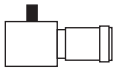
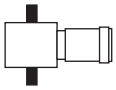
	Suffix
With Brake	B
No Brake	–

L H Y M S — **5** - **3A125** — ☐ **Y** **B** - ☐ **Y1** - **B** - **28**

- **L** — **Cyclo BBB** product code (always "**L**")
- **H** — Output shaft orientation
- **Y** — Mounting style
- **M** — Input connection
- **S** — Modification (Special feature)
- **5** — Gearmotor HP (1750 rpm)
- **3A125** — Frame size
- ☐ — O/P shaft direction (shafted model only)
- **Y** — Shaft specification
- **B** — AGMA class
- ☐ — Motor Specification
- **Y1** — Mounting position and optional specification (as required)
- **B** — Brake
- **28** — Ratio

Nomenclature

Output Shaft Direction (Shafted Model Only)

Projects to Left Side	**L**	
Projects to Right Side	**R**	
Projects to Both Left/Right Sides	**T**	

Note: When viewed from motor end.

Shaft Specifications

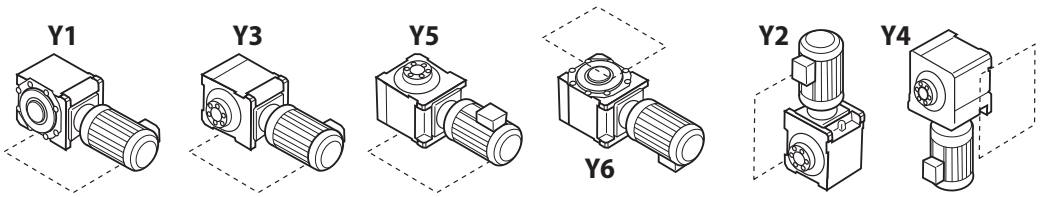
Input Shaft	OUTPUT SHAFT Hollow	Solid	Suffix
mm	Key (mm)	mm	
Inch	Key (Inch)	Inch	**K**
mm	Taper Grip		**M**
Inch	Taper Grip		**Y**

Nominal and Exact Ratio

BBB with Planetary Input			
Input Ratio	**Nominal Ratio**	BBB Frame Sz.	**Exact Ratio**
3	**11**	3A10	**10.500**
N/A	**N/A**	3A11	**N/A**
3	**11**	3A12	**10.500**
3	**11**	3A14	**10.885**
3	**11**	3B12	**10.500**
3	**11**	3B14	**10.885**
3	**11**	3B16	**10.850**
3	**11**	3C14	**10.885**
3	**11**	3C17	**10.850**
3	**11**	3D16	**10.850**
3	**11**	3E17	**10.850**
5	**18**	3A10	**16.800**
N/A	**N/A**	3A11	**N/A**
5	**18**	3A12	**17.115**
5	**18**	3A14	**17.500**
5	**18**	3B12	**17.115**
5	**18**	3B14	**17.500**
5	**18**	3B16	**17.780**
5	**18**	3C14	**17.500**
5	**18**	3C17	**17.675**
5	**18**	3D16	**17.780**
5	**18**	3E17	**17.675**

BBB with Cyclo Input Single Reduction			
Input Ratio	Nominal Ratio	BBB Frame Sz.	Exact Ratio
6	**21**		**21.0**
8	**28**		**28.0**
11	**39**		**38.5**
13	**46**		**45.5**
15	**53**		**52.5**
17	**60**		**59.5**
21	**74**		**73.5**
25	**88**	ALL	**87.5**
29	**102**		**101.5**
35	**123**		**122.5**
43	**151**		**150.5**
51	**179**		**178.5**
59	**207**		**206.5**
71	**249**		**248.5**
87	**305**		**304.5**
Double Reduction			
Input Ratio	**Nominal Ratio**	BBB Frame Sz.	**Exact Ratio**
104	**364**		**364.0**
121	**424**		**423.5**
143	**501**		**500.5**
165	**578**		**577.5**
195	**683**		**682.5**
231	**809**		**808.5**
273	**956**		**955.5**
319	**1117**		**1116.5**
377	**1320**		**1319.5**
473	**1656**		**1655.5**
559	**1957**		**1956.5**
649	**2272**		**2271.5**
731	**2559**	ALL	**2558.5**
841	**2944**		**2943.5**
1003	**3511**		**3510.5**
1247	**4365**		**4364.5**
1479	**5177**		**5176.5**
1849	**6472**		**6471.5**
2065	**7228**		**7227.5**
2537	**8880**		**8879.5**
3045	**10568**		**10657.5**
3481	**12184**		**12183.5**
4437	**15530**		**15529.5**
5133	**17966**		**17965.5**
6177	**21620**		**21619.5**
7569	**26492**		**26491.5**

Y1 **Y3** **Y5** **Y6** **Y2** **Y4**



Mounting Positions

Nominal and Exact Ratio

Nomenclature Example:

LVYM – 3B125YB –AVY5 – 53

L – Cyclo Bevel Buddybox
V – Vertical
Y – Shaft Mount (Hollow Shaft)
M – Integral Motor
5 – 5 HP, 1750 RPM
3B125 – Frame Size
B – AGMA Class II
AV – Adj. Frequency Motor
Y5 – Installation Position
53 – Ratio

AGMA Load Classifications: Gearmotors

Gearmotor Classification

DURATION OF SERVICE	GEARMOTOR CLASS UNIFORM LOAD	MODERATE SHOCK LOAD	HEAVY SHOCK LOAD
Intermittent 3 Hr. per day	Class I	Class I	Class II
Up to 10 Hr. per day	Class I	Class II	Class III
24 Hr. per day	Class II	Class III	—

Class I For steady loads not exceeding normal motor rating, 8 to 10 hours a day. Moderate shock loads where service is intermittent (AGMA Service Factor: 1.0).

Class II For steady loads not exceeding normal motor rating and 24 hours a day service. Moderate shock loads for 8 hours a day (AGMA Service Factor: 1.4).

Class III For moderate shock loads for 24 hours a day. Heavy shock loads for 8 hours a day (AGMA Service Factor: 2.0).

Load Classification by INDUSTRY

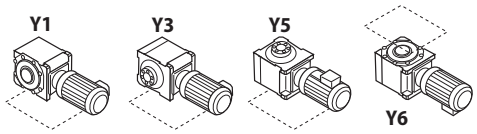
Application	Class: Up to 10 Hr. per day	Class: 24 Hr. per day
Brewing & Distilling		
Bottling Machinery	I	II
Brew Kettles, Cont. Duty	–	II
Can Filling Machines	I	II
Cookers–Cont. Duty	–	II
Mash Tubs–Cont. Duty	–	II
Scale Hoppers–Frequent Starts	II	II
Clay Working Industry		
Brick Press	III	III
Briquette Machines	III	III
Clay Working Machinery	II	II
Pug Mills	II	II
Distilling (See Brewing)		
Dredges		
Cable Reels	II	–
Conveyors	II	II
Cutter Head Drives	III	III
Jig Drives	III	III
Maneuvering Winches	II	–
Pumps	II	II
Screen Drives	III	III
Stackers	II	II
Utility Winches	II	–
Food Industry		
Beet Slicers	II	II
Bottlings, Can Filling Mach.	I	II
Cereal Cookers	I	II
Dough Mixers	II	II
Meat Grinders	II	II
Lumber Industry		
Barkers–Spindle Feed	Refer to Factory	
Barkers–Main Drive	Refer to Factory	
Carriage Drive	Refer to Factory	
Conveyors		
Burner	II	III
Main or Heavy Duty	II	III
Main Log	III	III
Re-Saw Merry-Go-Round	II	III
Slab	III	III
Transfer	II	III
Chains–Floor	II	III
Chains–Green	II	III
Cut-Off Saws–Chain	II	III
Cut-Off Saws–Drag	II	III
Debarking Drums	Refer to Factory	
Feeds–Edger	II	III
Feeds–Gang	III	III
Feeds–Trimmer	II	III
Log Deck	III	III
Log Hauls–Incline, Well Type	III	III
Log Turning Devices	III	III
Planer Feed	II	III
Planer Tilting Hoists	II	III
Rolls–Live–Off Bearing–Roll Cases	III	III
Sorting Table	II	III
Tipple Hoist	II	III
Transfers–Chain	II	III
Transfers–Craneway	II	III
Tray Drives	II	III
Oil Industry		
Chillers	II	II
Oil Well Pumping	Refer to Factory	
Paraffin Filter Press	II	II
Rotary Kilns	II	II
Paper Mills		
Agitators (Mixers)	II	II
Barker–Auxiliaries–Hyd.	Refer to Factory	
Barker, Mechanical	Refer to Factory	
Barking Drum	Refer to Factory	
Beater & Pulper	–	II
Bleacher	–	II
Calenders	–	II
Calenders–Super	–	II
Converting Mach.–Except Cutters–Platers	–	II
Conveyors	–	II
Couch	–	II
Cutters, Platers	–	III
Cylinders	–	II
Dryers	–	II
Felt Stretchers	–	II
Felt Whippers	–	III
Jordans	–	II
Log Haul	–	III
Presses	–	II
Pulp Machine Reels	–	II
Stock Chests	–	II
Suction Rolls	–	II
Washers & Thickeners	–	II
Winders	–	II
Rubber Industry		
Mixer	III	III
Rubber Calender	II	II
Rubber Mill (2 or more)	II	II
Sheeter	II	II
Tire Building Machines	Refer to Factory	
Tire, Tube Press Openers	Refer to Factory	
Tubers & Stainers	II	II
Sewage Disposal		
Aerators	Refer to Factory	
Bar Screens	I	II
Chemical Feeders	I	II
Collectors	I	II
Dewatering Screens	II	II
Grit Collectors	I	II
Scum Breakers	II	II
Slow or Rapid Mixers	II	II
Sludge Collectors	I	II
Thickeners	II	II
Vacuum Filters	II	II
Textile Industry		
Batchers	II	II
Calenders	II	II
Card Machines	II	II
Cloth Finishing Machines (Calenders, Dryers, Pads, Tenters, Washers)	II	II
Dry Cans	II	II
Dyeing Machinery	II	II
Knitting Machinery	Refer to Factory	
Looms, Mangles, Nappers	II	II
Range Drives	Refer to Factory	
Soapers, Spinners	II	II
Tenter Frames	II	II
Winders	II	II
Yarn Preparatory Machinery (Cards, Spinners, Slashers)	II	II

Load Classification by APPLICATION

Application	Class: Up to 10 Hr. per day	Class: 24 Hr. per day
Agitators		
Pure Liquids	I	II
Liquids and Solids	II	II
Liquids – Variable Density	II	II
Semi-liquids – Variable Density	II	II
Blowers		
Centrifugal	I	II
Lobe	II	II
Vane	I	II
Brewing and Distilling		
Bottling Machinery	I	II
Brew Kettles – Continuous Duty	–	II
Cookers – Continuous Duty	–	II
Mash Tubs – Continuous Duty	–	II
Scale Hopper Frequent Starts	II	II
Can Filling Machines	I	II
Cane Knives	II	II
Car Dumpers	III	–
Car Pullers – Intermittent Duty	I	–
Clarifiers	I	II
Classifiers	II	II
Clay Working Machinery		
Brick Press	III	III
Briquette Machine	III	III
Clay Working Machinery	II	II
Pug Mill	II	II
Compressors		
Centrifugal	I	II
Lobe	II	II
Reciprocating Multi-Cylinder	II	II
Reciprocating Single Cylinder	III	III
Conveyors – Uniformly Loaded or Fed		
Apron	I	II
Assembly	I	II
Belt	I	II
Bucket	I	II
Chain	I	II
Flight	I	II
Oven	I	II
Screw	I	II
Conveyors – Heavy Duty Not Uniformly Fed		
Apron	II	II
Assembly	II	II
Belt	II	II
Bucket	II	II
Chain	II	II
Flight	II	II
Live Roll (Package)	I	II
Oven	II	II
Reciprocating	III	III
Screw	II	II
Shaker	III	III
Cranes and Hoists		
Main Hoists	III	III
Heavy Duty	III	III
Medium Duty	II	II
Reversing	II	II
Skip Hoists	II	II
Trolley Drive	II	II
Bridge Drive	II	II
Crushers		
Ore	III	III
Stone	III	III
Dredges		
Cable Reels	II	–
Conveyors	II	II
Cutter Head Drives	III	III
Jig Drives	III	III
Maneuvering Winches	II	–
Pumps	II	II
Screen Drive	III	III
Stackers	II	II
Utility Winches	II	–
Elevators		
Bucket – Uniform Load	I	II
Bucket – Heavy Load	II	II
Bucket – Continous	I	II
Centrifugal Discharge	I	II
Escalators	I	II
Freight	I	II
Gravity Discharge	I	II
Man Lifts	Refer to Factory	
Passenger Service – Hand Lift	III	–
Fans		
Centrifugal	II	II
Cooling Towers Induced Draft	II	II
Forced Draft	Refer to Factory	
Induced Draft	II	II
Large (Mine, etc.)	II	II
Large Industrial	II	II
Light (Small Diameter)	I	II
Feeders		
Apron	II	II
Belt	II	II
Disc	I	II
Reciprocating	III	III
Screw	II	II
Food Industry		
Beet Slicer	II	II
Cereal Cooker	I	II
Dough Mixer	II	II
Meat Grinders	II	II
Generators – (Not Welding)	I	II
Hammer Mills	III	III
Laundry Washers		
Reversing	II	II
Laundry Tumblers	II	II
Line Shafts		
Heavy Shock Load	III	III
Moderate Shock Load	II	II
Uniform Load	I	II
Lumber Industry		
Barkers – Spindle Feed	Refer to Factory	
Barkers – Main Drive	Refer to Factory	
Carriage Drive	Refer to Factory	
Conveyors – Burner	II	III
Conveyors – Main or Heavy Duty	II	III
Conveyors – Main Log	III	III
Conveyors – Merry-Go-Round	II	III
Conveyors – Slab	III	III
Conveyors – Transfer	II	III
Conveyors – Waste	II	II
Chains – Floor	II	III
Chains – Green	II	III
Cut-Off Saws – Chain	II	III
Cut-Off Saws – Drag	II	III
Debarking Drums	Refer to Factory	
Feeds – Edger	II	III
Feeds – Gang	III	III
Feeds – Trimmer	II	III
Log Deck	III	III
Log Hauls – Incline Well Type	III	III
Log Turning Devices	III	III
Planer Feed	II	III
Planer Tilting Hoists	II	III
Rolls – Live – Off Brg. – Roll Cases	III	III
Sorting Table	II	III
Tipple Hoist	II	III
Transfers – Chain	II	III
Transfers – Craneway	II	III
Tray Drives	II	III
Veneer Lathe Drives	Refer to Factory	
Machine Tools		
Bending Roll	II	II
Notching Press – Belt Driven	Refer to Factory	
Plate Planer	III	III
Punch Press – Gear Driven	III	III
Tapping Machines	III	III
Other Machine Tools Main Drives	II	II
Other Machine Tools Auxiliary Drives	I	II
Metal Mills		
Bridle Roll Drives	III	III
Draw Bench – Carriage	III	III
Draw Bench – Main Drive	III	III
Forming Machines	III	III
Pinch Dryer & Scrubber Rolls, Reversing	Refer to Factory	
Slitters	II	II
Table Conveyors Non-Reversing	II	III
Table Conveyors Reversing	–	III
Winding Reels – Strip	–	III
Wire Drawing & Flattening Machine	II	III
Wire Winding Machine	II	II
Mills, Rotary Type		
Ball	III	III
Cement Kilns		
Dryers & Coolers	II	II
Kilns	II	II
Pebble	III	III
Rod	III	III
Tumbling Barrels	III	III
Mixers		
Concrete Mixers, Continuous	II	II
Concrete Mixers, Intermittent	I	–
Constant Density	I	II
Variable Density	II	II
Oil Industry		
Chillers	II	II
Oil Well Pumping	Refer to Factory	
Paraffin Filter Press	II	II
Rotary Kilns	II	II
Paper Mills		
Aerators	Refer to Factory	
Agitators (Mixers)	II	II
Barker Auxiliaries, Hydraulic	Refer to Factory	
Barker, Mechanical	Refer to Factory	
Barking Drum	Refer to Factory	
Beater & Pulper	–	II
Bleacher	–	II
Calenders	–	II
Calenders – Super	–	II
Converting Machines, except Cutters, Platers	–	II
Conveyors	–	II
Conveyors, Log	–	III
Couch	–	II
Cutters, Platers	–	III
Cylinders	–	II
Dryers	–	II
Felt Stretcher	–	II
Felt Whipper	–	III
Jordans	–	II
Presses	–	II
Pulp Machines, Reel	–	II
Stock Chests	–	II
Suction Roll	–	II
Washers and Thickeners	–	II
Winders	–	II
Printing Presses	I	II
Pullers		
Barge Haul	III	III
Pumps		
Centrifugal	I	II
Proportioning	II	II
Reciprocating Single Acting 3 or more Cylinders	II	II
Reciprocating Double Acting 2 or more Cylinders	II	II
Reciprocating Single Acting 1 or 2 Cylinders	Refer to Factory	
Reciprocating Double Acting Single Cylinder	Refer to Factory	
Rotary – Gear Type	I	II
Rotary – Lobe, Vane	I	II
Rubber Industry		
Mixer	III	III
Rubber Calender	II	II
Rubber Mill (2 or more)	II	II
Sheeter	II	II
Tire Building Machines	Refer to Factory	
Tire & Tube Press Openers	Refer to Factory	
Tubers & Strainers	II	II
Sewage Disposal Equipment		
Aerators	Refer to Factory	
Bar Screens	I	II
Chemical Feeders	I	II
Collectors, Circuline or Straightline	I	II
Dewatering Screens	II	II
Grit Collectors	I	II
Scum Breakers	II	II
Slow or Rapid Mixers	II	II
Sludge Collectors	I	II
Thickeners	II	II
Vacuum Filters	II	II
Screens		
Air Washing	I	II
Rotary – Stone or Gravel	II	II
Traveling Water Intake	I	II
Slab Pushers	II	II
Steering Gear	II	II
Stokers	I	II
Textile Industry		
Batchers	II	II
Calenders	II	II
Card Machines	II	II
Cloth Finishing Machines (Washers, Pads, Tenters) (Dryers, Calenders, etc.)	II	II
Dry Cans	II	II
Dryers	II	II
Dyeing Machinery	II	II
Knitting Machines (Looms, etc.)	Refer to Factory	
Looms	II	II
Mangles	II	II
Nappers	II	II
Pads	II	II
Range Drives	Refer to Factory	
Slashers	II	II
Soapers	II	II
Spinners	II	II
Teneter Frames	II	II
Washers	II	II
Winders (Other than Batchers)	II	II
Yarn Preparatory Machines (Cards, Spinners, Slashers, etc.)	II	II
Windlass	II	II

Gearmotor Selection Tables 60 Hz, 1750 RPM

Horizontal Motor Shaft
Y1, Y3, Y5, Y6 Mounting Positions



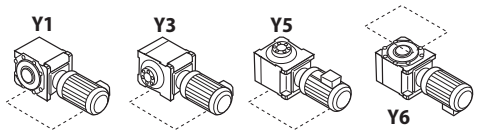
1/8 HP

Output Speed RPM	Output Torque in•lb	Service Factor SF	Service Factor AGMA Class	SELECTION HP Symbol	SELECTION Frame Size	SELECTION Ratio	Overhung Load (lbs) Hollow Shaft	Overhung Load (lbs) Solid Shaft	Dimension Page LHYM
4.81	1425	4.29	III	01	**3A10DA**	364	1120	990	3.42–43
4.13	1660	4.29	III	01	**3A10DA**	424	1120	990	3.42–43
3.49	1960	4.27	III	01	**3A10DA**	501	1120	990	3.42–43
3.03	2260	3.70	III	01	**3A10DA**	578	1120	990	3.42–43
2.56	2670	3.13	III	01	**3A10DA**	683	1120	990	3.42–43
2.16	3170	2.64	III	01	**3A10DA**	809	1120	990	3.42–43
1.83	3745	2.24	III	01	**3A10DA**	956	1120	990	3.42–43
1.57	4365	1.91	II	01	**3A10DA**	1117	1120	990	3.42–43
		2.00	III	01	**3A12DA**	1117	1120	990	3.42–43
1.33	5150	1.62	II	01	**3A10DA**	1320	1120	990	3.42–43
		1.70	II	01	**3A12DA**	1320	1120	990	3.42–43
		3.38	III	01	**3B12DA**	1320	2070	1640	3.42–43
1.06	6465	1.29	I	01	**3A10DA**	1656	1120	990	3.42–43
		1.35	I	01	**3A12DA**	1656	1120	990	3.42–43
		2.69	III	01	**3B12DA**	1656	2070	1640	3.42–43
0.894	7665	1.09	I	01	**3A10DA**	1957	1120	990	3.42–43
		1.14	I	01	**3A12DA**	1957	1120	990	3.42–43
		2.28	III	01	**3B12DA**	1957	2070	1640	3.42–43
0.770	8900	0.99	-	01	**3A12DA**	2272	1120	990	3.42–43
		1.96	II	01	**3B12DA**	2272	2070	1640	3.42–43
0.684	10020	0.87	-	01	**3A12DA**	2559	1120	990	3.42–43
		1.74	II	01	**3B12DA**	2559	2070	1640	3.42–43
0.585	11715	1.52	II	01	**3B12DA**	2944	2070	1640	3.42–43
0.498	13760	1.27	I	01	**3B12DA**	3511	2070	1640	3.42–43
0.401	17090	1.02	I	01	**3B12DA**	4365	2070	1640	3.42–43

1/4 HP

Output Speed RPM	Output Torque in•lb	Service Factor SF	Service Factor AGMA Class	SELECTION HP Symbol	SELECTION Frame Size	SELECTION Ratio	Overhung Load (lbs) Hollow Shaft	Overhung Load (lbs) Solid Shaft	Dimension Page LHYM
8.45	1715	3.54	III	02	**3A105**	207	1120	990	3.38–39
7.03	2061	2.81	III	02	**3A105**	249	1120	990	3.38–39
5.74	2525	2.83	III	02	**3A105**	305	1120	990	3.38–39
4.81	2850	2.15	III	02	**3A10DA**	364	1120	990	3.42–43
4.20	3451	1.05	I	02	**3A100**	417	1120	990	3.38–39
		1.43	II	02	**3A105**	417	1120	990	3.38–39
4.13	3319	2.15	III	02	**3A10DA**	424	1120	990	3.42–43
3.49	3925	2.14	III	02	**3A10DA**	501	1120	990	3.42–43
3.03	4525	1.85	II	02	**3A10DA**	578	1120	990	3.42–43
		1.94	II	02	**3A12DA**	578	1120	990	3.42–43

60 Hz, 1750 RPM Gearmotor Selection Tables



Horizontal Motor Shaft
Y1, Y3, Y5, Y6 Mounting Positions

1/4 HP

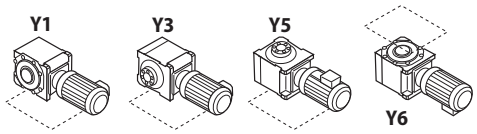
Output Speed RPM	Output Torque in•lb	Service Factor SF	Service Factor AGMA Class	SELECTION HP Symbol	SELECTION Frame Size	SELECTION Ratio	Overhung Load (lbs) Hollow Shaft	Overhung Load (lbs) Solid Shaft	Dimension Page LHYM
2.56	5350	1.57	II	02	**3A10DA**	683	1120	990	3.42–43
		1.64	II	02	**3A12DA**	683	1120	990	3.42–43
		2.15	III	02	**3B12DA**	683	2070	1640	3.42–43
2.56	5350	1.32	I	02	**3A10DA**	809	1120	990	3.42–43
		1.38	I	02	**3A12DA**	809	1120	990	3.42–43
		2.15	III	02	**3B12DA**	809	2070	1640	3.42–43
1.83	7490	1.12	I	02	**3A10DA**	956	1120	990	3.42–43
		1.17	I	02	**3A12DA**	956	1120	990	3.42–43
		2.15	III	02	**3B12DA**	956	2070	1640	3.42–43
1.57	8730	1.00	I	02	**3A12DA**	1117	1120	990	3.42–43
		2.00	III	02	**3B12DA**	1117	2070	1640	3.42–43
		2.00	III	02	**3B14DA**	1117	2070	1640	3.42–43
1.33	10300	0.85	-	02	**3A12DA**	1320	1120	990	3.42–43
		1.69	II	02	**3B12DA**	1320	2070	1640	3.42–43
		1.69	II	02	**3B14DA**	1320	2070	1640	3.42–43
		2.15	III	02	**3C14DA**	1320	3480	2850	3.42–43
1.06	12930	1.35	I	02	**3B12DA**	1656	2070	1640	3.42–43
		1.35	I	02	**3B14DA**	1656	2070	1640	3.42–43
		2.15	III	02	**3C14DA**	1656	3480	2850	3.42–43
0.894	15330	1.14	I	02	**3B12DA**	1957	2070	1640	3.42–43
		1.14	I	02	**3B14DA**	1957	2070	1640	3.42–43
		2.15	III	02	**3C14DA**	1957	3480	2850	3.42–43
0.770	17800	0.98	-	02	**3B12DA**	2272	2070	1640	3.42–43
		1.96	II	02	**3C14DA**	2272	3480	2850	3.42–43
0.684	20040	0.87	-	02	**3B14DA**	2559	2070	1640	3.42–43
		1.74	II	02	**3C14DA**	2559	3480	2850	3.42–43
0.594	23075	1.51	II	02	**3C14DA**	2944	3480	2850	3.42–43
0.498	27525	1.27	I	02	**3C14DA**	3511	3480	2850	3.42–43
0.401	34180	1.02	I	02	**3C14DA**	4365	3480	2850	3.42–43
0.242	56640	1.04	I	02	**3D16DA**	7228	4810	3930	3.44–45
0.164	83585	0.94	-	02	**3E17DA**	10658	5170	4110	3.44–45

1/3 HP

Output Speed RPM	Output Torque in•lb	Service Factor SF	Service Factor AGMA Class	SELECTION HP Symbol	SELECTION Frame Size	SELECTION Ratio	Overhung Load (lbs) Hollow Shaft	Overhung Load (lbs) Solid Shaft	Dimension Page LHYM
9.78	1956	3.10	III	03	**3A105**	179	1120	990	3.38–39
8.45	2264	2.72	III	03	**3A105**	207	1120	990	3.38–39
7.03	2721	1.74	II	03	**3A100**	249	1120	990	3.38–39
		2.18	III	03	**3A105**	249	1120	990	3.38–39
5.74	3333	1.73	II	03	**3A100**	305	1120	990	3.38–39
		2.26	III	03	**3A105**	305	1120	990	3.38–39

Gearmotor Selection Tables 60 Hz, 1750 RPM

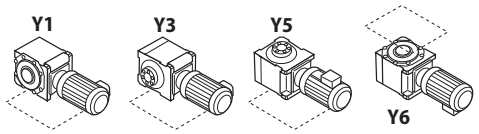
Horizontal Motor Shaft
Y1, Y3, Y5, Y6 Mounting Positions



1/3 HP

Output Speed RPM	Output Torque in•lb	Service Factor SF	Service Factor AGMA Class	SELECTION HP Symbol	SELECTION Frame Size	SELECTION Ratio	Overhung Load (lbs) Hollow Shaft	Overhung Load (lbs) Solid Shaft	Dimension Page LHYM
4.81	3760	1.72	II	03	**3A10DA**	364	1120	990	3.42–43
		2.46	III	03	**3A12DB**	364	1120	990	3.42–43
4.20	4555	0.84	-	03	**3A100**	417	1120	990	3.38–39
		1.14	I	03	**3A105**	417	1120	990	3.38–39
4.13	4380	1.72	II	03	**3A10DA**	424	1120	990	3.42–43
		2.11	III	03	**3A12DB**	424	1120	990	3.42–43
3.49	5180	1.71	II	03	**3A10DA**	501	1120	990	3.42–43
		1.72	II	03	**3A12DA**	501	1120	990	3.42–43
		1.79	II	03	**3A12DB**	501	1120	990	3.42–43
3.03	5970	1.48	II	03	**3A10DA**	578	1120	990	3.42–43
		1.55	II	03	**3A12DA**	578	1120	990	3.42–43
		1.72	II	03	**3B12DA**	578	2070	1640	3.42–43
		3.09	III	03	**3B12DB**	578	2070	1640	3.42–43
2.56	7070	1.25	I	03	**3A10DA**	683	1120	990	3.42–43
		1.31	I	03	**3A12DA**	683	1120	990	3.42–43
		1.72	II	03	**3B12DA**	683	2070	1640	3.42–43
		2.61	III	03	**3B12DB**	683	2070	1640	3.42–43
2.16	8375	1.06	I	03	**3A10DA**	809	1120	990	3.42–43
		1.11	I	03	**3A12DA**	809	1120	990	3.42–43
		1.72	II	03	**3B12DA**	809	2070	1640	3.42–43
		2.21	III	03	**3B12DB**	809	2070	1640	3.42–43
1.83	9885	0.94	-	03	**3A12DA**	956	1120	990	3.42–43
		1.72	II	03	**3B12DA**	956	2070	1640	3.42–43
		1.72	II	03	**3B14DA**	956	2070	1640	3.42–43
		1.87	II	03	**3B14DB**	956	2070	1640	3.42–43
1.57	11525	0.80	-	03	**3A12DA**	1117	1120	990	3.42–43
		1.60	II	03	**3B12DA**	1117	2070	1640	3.42–43
		1.60	II	03	**3B14DA**	1117	2070	1640	3.42–43
		3.20	III	03	**3C14DB**	1117	3480	2850	3.42–43
1.33	13600	1.35	I	03	**3B12DA**	1320	2070	1640	3.42–43
		1.35	I	03	**3B14DA**	1320	2070	1640	3.42–43
		1.72	II	03	**3C14DA**	1320	3480	2850	3.42–43
		2.70	III	03	**3C14DB**	1320	3480	2850	3.42–43
1.06	17070	1.08	I	03	**3B12DA**	1656	2070	1640	3.42–43
		1.08	I	03	**3B14DA**	1656	2070	1640	3.42–43
		1.72	II	03	**3C14DA**	1656	3480	2850	3.42–43
		2.16	III	03	**3C14DB**	1656	3480	2850	3.42–43
0.894	20240	1.1	I	03	**3B14DA**	1957	2070	1640	3.42–43
		1.72	II	03	**3C14DA**	1957	3480	2850	3.42–43
0.770	23500	1.57	II	03	**3C14DA**	2272	3480	2850	3.42–43
0.684	26450	1.39	I	03	**3C14DA**	2559	3480	2850	3.42–43
0.594	30460	1.21	I	03	**3C14DA**	2944	3480	2850	3.42–43
0.498	36330	1.02	I	03	**3C14DA**	3511	3480	2850	3.42–43

60 Hz, 1750 RPM Gearmotor Selection Tables



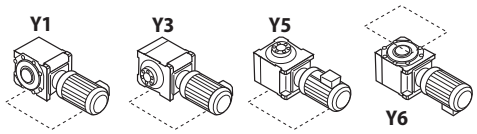
Horizontal Motor Shaft
Y1, Y3, Y5, Y6 Mounting Positions

1/2 HP

Output Speed RPM	Output Torque in•lb	Service Factor SF	Service Factor AGMA Class	SELECTION HP Symbol	SELECTION Frame Size	SELECTION Ratio	Overhung Load (lbs) Hollow Shaft	Overhung Load (lbs) Solid Shaft	Dimension Page LHYM
11.6	2500	2.70	III	05	**3A105**	151	1120	990	3.38–39
9.78	2964	1.40	II	05	**3A100**	179	1120	990	3.38–39
		2.08	III	05	**3A105**	179	1120	990	3.38–39
8.45	3430	1.38	I	05	**3A100**	207	1120	990	3.38–39
		1.90	II	05	**3A105**	207	1120	990	3.38–39
		2.30	III	05	**3A110**	207	1120	990	3.38–39
7.03	4123	1.16	I	05	**3A100**	249	1120	990	3.38–39
		1.50	II	05	**3A105**	249	1120	990	3.38–39
		2.04	III	05	**3A115**	249	1120	990	3.38–39
5.74	5050	1.16	I	05	**3A100**	305	1120	990	3.38–39
		1.52	II	05	**3A105**	305	1120	990	3.38–39
		2.54	III	05	**3B120**	305	2070	1640	3.38–39
4.81	5700	1.07	I	05	**3A10DA**	364	1120	990	3.42–43
		1.54	II	05	**3A12DB**	364	1120	990	3.42–43
		3.06	III	05	**3B12DB**	364	2070	1640	3.42–43
4.13	6635	1.07	I	05	**3A10DA**	424	1120	990	3.42–43
		1.32	I	05	**3A12DB**	424	1120	990	3.42–43
		2.62	III	05	**3B12DB**	424	2070	1640	3.42–43
3.49	7855	1.07	I	05	**3A10DA**	501	1120	990	3.42–43
		1.07	I	05	**3A12DA**	501	1120	990	3.42–43
		2.23	III	05	**3B12DB**	501	2070	1640	3.42–43
3.03	9050	1.07	I	05	**3A12DA**	578	2070	1640	3.42–43
		1.25	I	05	**3A12DB**	578	2070	1640	3.42–43
		2.08	III	05	**3B12DB**	578	2070	1640	3.42–43
2.56	10710	1.06	I	05	**3A12DA**	683	1120	990	3.42–43
		1.63	II	05	**3B12DB**	683	2070	1640	3.42–43
		2.11	III	05	**3B14DB**	683	2070	1640	3.42–43
		3.27	III	05	**3C14DB**	683	3480	2850	3.42–43
2.16	12690	1.07	I	05	**3B12DA**	809	2070	1640	3.42–43
		1.48	II	05	**3B12DB**	809	2070	1640	3.42–43
		2.76	III	05	**3C14DB**	809	3480	2850	3.42–43
1.83	14980	1.07	I	05	**3B12DA**	956	2070	1640	3.42–43
		1.51	II	05	**3B14DB**	956	2070	1640	3.42–43
		2.33	III	05	**3C14DB**	956	3480	2850	3.42–43
1.57	17460	1.00	I	05	**3B12DA**	1117	2070	1640	3.42–43
		1.29	I	05	**3B14DB**	1117	2070	1640	3.42–43
		2.00	III	05	**3C14DB**	1117	3480	2855	3.42–43
1.33	20610	1.07	I	05	**3C14DA**	1320	3480	2850	3.42–43
		1.69	II	05	**3C14DB**	1320	3480	2850	3.42–43
		2.18	III	05	**3C16DA**	1320	3480	2850	3.44–45
1.06	25860	1.07	I	05	**3C14DA**	1656	3480	2850	3.42–43
		1.74	II	05	**3C16DA**	1656	3480	2850	3.42–43
		2.26	III	05	**3D16DA**	1656	4810	3930	3.44–45

Gearmotor Selection Tables 60 Hz, 1750 RPM

Horizontal Motor Shaft
Y1, Y3, Y5, Y6 Mounting Positions



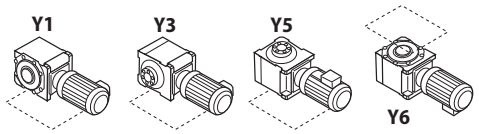
1/2 HP

Output Speed RPM	Output Torque in•lb	Service Factor SF	Service Factor AGMA Class	SELECTION HP Symbol	SELECTION Frame Size	SELECTION Ratio	Overhung Load (lbs) Hollow Shaft	Overhung Load (lbs) Solid Shaft	Dimension Page LHYM
0.894	30660	1.07	I	05	**3C14DA**	1957	3480	2850	3.42–43
		1.91	II	05	**3D16DA**	1957	4810	3930	3.44–45
		1.93	II	05	**3D17DA**	1957	4810	3930	3.44–45
0.770	35600	1.65	II	05	**3D16DA**	2272	4810	3930	3.44–45
		1.67	II	05	**3D17DA**	2272	4810	3930	3.44–45
		2.22	III	05	**3E17DA**	2272	5170	4110	3.44–45
0.684	40080	1.46	II	05	**3D16DA**	2559	4810	3930	3.44–45
		1.48	II	05	**3D17DA**	2559	4810	3930	3.44–45
		1.97	II	05	**3E17DB**	2559	5170	4110	3.44–45
0.594	46150	1.27	I	05	**3D16DA**	2944	4810	3930	3.44–45
		1.71	II	05	**3E17DA**	2944	5170	4110	3.44–45
0.498	55050	1.07	I	05	**3D16DB**	3511	4810	3930	3.44–45
		1.08	I	05	**3D17DA**	3511	4810	3930	3.44–45
		1.43	II	05	**3E17DA**	3511	5170	4110	3.44–45
0.401	68370	1.15	I	05	**3E17DA**	4365	5170	4110	3.44–45
0.338	81100	0.97	-	05	**3E17DA**	5177	5170	4110	3.44–45

3/4 HP

Output Speed RPM	Output Torque in•lb	Service Factor SF	Service Factor AGMA Class	SELECTION HP Symbol	SELECTION Frame Size	SELECTION Ratio	Overhung Load (lbs) Hollow Shaft	Overhung Load (lbs) Solid Shaft	Dimension Page LHYM
19.9	2185	2.26	III	08	**3A105**	88	1120	990	3.38–39
17.2	2528	2.16	III	08	**3A105**	102	1120	990	3.38–39
14.2	3062	2.14	III	08	**3A105**	123	1120	990	3.38–39
11.6	3748	1.40	II	08	**3A100**	151	1120	990	3.38–39
		2.32	III	08	**3A110**	151	1120	990	3.38–39
9.78	4446	1.00	I	08	**3A100**	179	1120	990	3.38–39
		1.38	I	08	**3A105**	179	1120	990	3.38–39
		1.67	II	08	**3A110**	179	1120	990	3.38–39
		2.13	III	08	**3A125**	179	1120	990	3.38–39
8.45	5146	1.29	I	08	**3A105**	207	1120	990	3.38–39
		1.53	II	08	**3A110**	207	1120	990	3.38–39
		2.32	III	08	**3B120**	207	2070	1640	3.38–39
7.03	6185	1.00	I	08	**3A105**	249	1120	990	3.38–39
		1.22	I	08	**3A110**	249	1120	990	3.38–39
		1.38	I	08	**3A115**	249	1120	990	3.38–39
		1.53	II	08	**3A125**	249	1120	990	3.38–39
		2.07	III	08	**3B125**	249	2070	1640	3.38–39
5.74	7576	1.01	I	08	**3A105**	305	1120	990	3.38–39
		1.27	I	08	**3A115**	305	1120	990	3.38–39
		1.69	II	08	**3B120**	305	2070	1640	3.38–39
		2.02	III	08	**3B125**	305	2070	1640	3.38–39

60 Hz, 1750 RPM Gearmotor Selection Tables



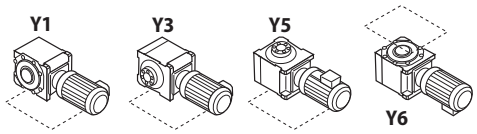
Horizontal Motor Shaft
Y1, Y3, Y5, Y6 Mounting Positions

3/4 HP

Output Speed RPM	Output Torque in•lb	Service Factor SF	Service Factor AGMA Class	SELECTION HP Symbol	SELECTION Frame Size	SELECTION Ratio	Overhung Load (lbs) Hollow Shaft	Overhung Load (lbs) Solid Shaft	Dimension Page LHYM
4.81	8550	1.12	I	08	**3A12DB**	364	1120	990	3.42–43
		2.23	III	08	**3B12DB**	364	2070	1640	3.42–43
4.13	9955	1.90	II	08	**3B12DB**	424	2070	1640	3.42–43
		1.91	II	08	**3B14DB**	424	2070	1640	3.42–43
3.49	11780	1.62	II	08	**3B12DB**	501	2070	1640	3.42–43
		1.62	II	08	**3B14DB**	501	2070	1640	3.42–43
		2.91	III	08	**3C14DB**	501	3480	2850	3.42–43
3.03	13570	1.40	II	08	**3B12DB**	578	2070	1640	3.42–43
		1.40	II	08	**3B14DB**	578	2070	1640	3.42–43
		2.81	III	08	**3C14DB**	578	3480	2850	3.42–43
2.56	16060	1.19	I	08	**3B12DB**	683	2070	1640	3.42–43
		1.19	I	08	**3B14DB**	683	2070	1640	3.42–43
		2.38	III	08	**3C14DB**	683	3480	2850	3.42–43
2.16	19040	1.00	I	08	**3B12DB**	809	2070	1640	3.42–43
		1.00	I	08	**3B14DB**	809	2070	1640	3.42–43
		2.01	III	08	**3C14DB**	809	3480	2850	3.42–43
1.83	22470	1.70	II	08	**3C14DB**	956	3480	2850	3.42–43
		1.70	II	08	**3C16DA**	956	3480	2850	3.42–43
		2.85	III	08	**3D16DA**	956	4810	3930	3.44–45
1.57	26190	1.45	II	08	**3C14DB**	1117	3480	2850	3.42–43
		2.44	III	08	**3D16DA**	1117	4810	3930	3.44–45
1.33	30920	1.23	I	08	**3C14DB**	1320	3480	2850	3.42–43
		2.06	III	08	**3D16DA**	1320	4810	3090	3.44–45
		2.08	III	08	**3D17DA**	1320	4810	3090	3.44–45
1.06	38795	1.64	II	08	**3D16DA**	1656	4810	3930	3.44–45
		1.66	II	08	**3D17DA**	1656	4810	3930	3.44–45
		2.21	III	08	**3E17DA**	1656	5170	4110	3.44–45
0.894	46000	1.39	I	08	**3D16DA**	1957	4810	3930	3.44–45
		1.41	II	08	**3D17DA**	1957	4810	3930	3.44–45
		1.87	II	08	**3E17DA**	1957	5170	4110	3.44–45
0.770	53400	1.20	I	08	**3D16DA**	2272	4810	3930	3.44–45
		1.21	I	08	**3D17DA**	2272	4810	3930	3.44–45
		1.61	II	08	**3E17DA**	2272	5170	4110	3.44–45
0.684	60120	1.06	I	08	**3D16DA**	2559	4810	3930	3.44–45
		1.08	I	08	**3D17DA**	2559	4810	3930	3.44–45
		1.43	II	08	**3E17DA**	2559	5170	4110	3.44–45
0.594	69230	1.24	I	08	**3E17DA**	2944	5170	4110	3.44–45
0.498	82580	1.04	I	08	**3E17DA**	3511	5170	4110	3.44–45

Gearmotor Selection Tables 60 Hz, 1750 RPM

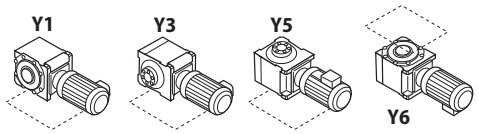
Horizontal Motor Shaft
Y1, Y3, Y5, Y6 Mounting Positions



1 HP

Output Speed RPM	Output Torque in•lb	Service Factor SF	Service Factor AGMA Class	SELECTION HP Symbol	SELECTION Frame Size	SELECTION Ratio	Overhung Load (lbs) Hollow Shaft	Overhung Load (lbs) Solid Shaft	Dimension Page LHYM
19.9	2913	1.69	II	1	**3A100**	88	1120	990	3.38–39
		2.23	III	1	**3A105**	88	1120	990	3.38–39
17.2	3371	1.61	II	1	**3A100**	102	1120	990	3.38–39
		2.12	III	1	**3A105**	102	1120	990	3.38–39
14.2	4083	1.30	I	1	**3A100**	123	1120	990	3.38–39
		1.60	II	1	**3A105**	123	1120	990	3.38–39
		2.01	III	1	**3A110**	123	1120	990	3.38–39
11.6	5000	1.04	I	1	**3A100**	151	1120	990	3.38–39
		1.44	II	1	**3A105**	151	1120	990	3.38–39
		2.56	III	1	**3B120**	151	2070	1640	3.38–39
9.78	5928	1.03	I	1	**3A105**	179	1120	990	3.38–39
		1.48	II	1	**3A115**	179	1120	990	3.38–39
		2.31	III	1	**3B120**	179	2070	1640	3.38–39
8.45	6861	1.15	I	1	**3A110**	207	1120	990	3.38–39
		1.73	II	1	**3B120**	207	2070	1640	3.38–39
		2.16	III	1	**3B125**	207	2070	1640	3.38–39
7.03	8243	1.01	I	1	**3A115**	249	1120	990	3.38–39
		1.60	II	1	**3B125**	249	2070	1640	3.38–39
		2.27	III	1	**3B145**	249	2070	1640	3.38–39
5.74	10101	1.26	I	1	**3B120**	305	2070	1640	3.38–39
		1.51	II	1	**3B125**	305	2070	1640	3.38–39
		1.85	II	1	**3B145**	305	2070	1640	3.38–39
4.81	11400	1.63	II	1	**3B12DB**	364	2070	1640	3.42–43
		1.63	II	1	**3B14DB**	364	2070	1640	3.42–43
		2.13	III	1	**3C14DB**	364	3480	2850	3.42–43
4.13	13275	1.40	II	1	**3B12DB**	424	2070	1640	3.42–43
		1.40	II	1	**3B14DB**	424	2070	1640	3.42–43
		2.13	III	1	**3C14DB**	424	3480	2850	3.42–43
3.49	15710	1.19	I	1	**3B12DB**	501	2070	1640	3.42–43
		1.19	I	1	**3B14DB**	501	2070	1640	3.42–43
		2.13	III	1	**3C14DB**	501	3480	2850	3.42–43
3.03	18100	1.03	I	1	**3B12DB**	578	2070	1640	3.42–43
		1.03	I	1	**3B14DB**	578	2070	1640	3.42–43
		2.06	III	1	**3C14DB**	578	3480	2850	3.42–43
2.56	21410	1.74	II	1	**3C14DB**	683	3480	2850	3.42–43
		1.74	II	1	**3C16DA**	683	3480	2850	3.42–43
		2.13	III	1	**3D16DA**	683	4810	3930	3.44–45
2.16	25380	1.47	II	1	**3C14DB**	809	3480	2850	3.42–43
		2.13	III	1	**3D16DA**	809	4810	3930	3.44–45
1.83	29960	1.24	I	1	**3C14DB**	956	3480	2850	3.42–43
		2.09	III	1	**3D16DA**	956	4810	3930	3.44–45
		2.13	III	1	**3E17DA**	956	5170	4110	3.44–45

60 Hz, 1750 RPM Gearmotor Selection Tables



Horizontal Motor Shaft
Y1, Y3, Y5, Y6 Mounting Positions

1 HP

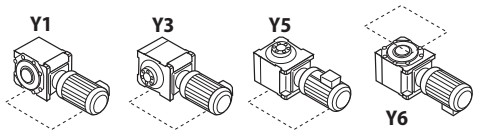
Output Speed RPM	Output Torque in•lb	Service Factor SF	Service Factor AGMA Class	SELECTION HP Symbol	SELECTION Frame Size	SELECTION Ratio	Overhung Load (lbs) Hollow Shaft	Overhung Load (lbs) Solid Shaft	Dimension Page LHYM
1.57	34925	1.07	I	1	**3C14DB**	1117	3480	2850	3.42–43
		1.07	I	1	**3C16DA**	1117	3480	2850	3.42–43
		1.79	II	1	**3D16DA**	1117	4810	3930	3.44–45
		1.81	II	1	**3D17DA**	1117	4810	3930	3.44–45
1.33	41225	1.51	II	1	**3D16DA**	1320	4810	3930	3.44–45
		1.53	II	1	**3D17DA**	1320	4810	3930	3.44–45
		2.03	III	1	**3E17DA**	1320	5170	4110	3.44–45
1.06	51725	1.21	I	1	**3D16DA**	1656	4810	3930	3.44–45
		1.62	II	1	**3E17DA**	1656	5170	4110	3.44–45
0.894	61330	1.02	I	1	**3D16DA**	1957	4810	3930	3.44–45
		1.03	I	1	**3D17DA**	1957	4810	3930	3.44–45
0.770	71210	1.18	I	1	**3E17DA**	2272	5170	4110	3.44–45
0.684	80160	1.05	I	1	**3E17DA**	2559	5170	4110	3.44–45

1.5 HP

Output Speed RPM	Output Torque in•lb	Service Factor SF	Service Factor AGMA Class	SELECTION HP Symbol	SELECTION Frame Size	SELECTION Ratio	Overhung Load (lbs) Hollow Shaft	Overhung Load (lbs) Solid Shaft	Dimension Page LHYM
159	547	2.10	III	1H	**3A100**	11	1120	990	3.38–39
97.2	895	2.10	III	1H	**3A100**	18	1120	990	3.38–39
83.3	1044	2.10	III	1H	**3A100**	21	1120	990	3.38–39
62.5	1390	2.10	III	1H	**3A100**	28	1120	990	3.38–39
44.9	1937	2.10	III	1H	**3A100**	39	1120	990	3.38–39
38.0	2290	2.10	III	1H	**3A100**	46	1120	990	3.38–39
33.0	2635	2.10	III	1H	**3A100**	53	1120	990	3.38–39
29.2	2980	1.74	II	1H	**3A100**	60	1120	990	3.38–39
		2.24	III	1H	**3A105**	60	1120	990	3.38–39
23.6	3685	1.75	II	1H	**3A100**	74	1120	990	3.38–39
		2.13	III	1H	**3A105**	74	1120	990	3.38–39
19.9	4370	1.15	I	1H	**3A100**	88	1120	990	3.38–39
		1.52	II	1H	**3A105**	88	1120	990	3.38–39
		2.17	III	1H	**3A125**	88	1120	990	3.38–39
17.2	5055	1.10	I	1H	**3A100**	102	1120	990	3.38–39
		1.42	II	1H	**3A105**	102	1120	990	3.38–39
		2.67	III	1H	**3B120**	102	2070	1640	3.38–39
14.2	6125	1.09	I	1H	**3A105**	123	1120	990	3.38–39
		1.57	II	1H	**3A115**	123	1120	990	3.38–39
		2.22	III	1H	**3B120**	123	2070	1640	3.38–39
11.6	7500	1.16	I	1H	**3A110**	151	1120	990	3.38–39
		1.70	II	1H	**3B120**	151	2070	1640	3.38–39
		2.13	III	1H	**3B125**	151	2070	1640	3.38–39

Gearmotor Selection Tables 60 Hz, 1750 RPM

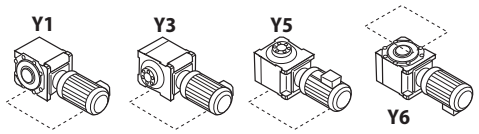
Horizontal Motor Shaft
Y1, Y3, Y5, Y6 Mounting Positions



1.5 HP

Output Speed RPM	Output Torque in•lb	Service Factor SF	Service Factor AGMA Class	SELECTION HP Symbol	SELECTION Frame Size	SELECTION Ratio	Overhung Load (lbs) Hollow Shaft	Overhung Load (lbs) Solid Shaft	Dimension Page LHYM
9.78	8890	1.06	I	1H	**3A125**	179	1120	990	3.38–39
		1.56	II	1H	**3B120**	179	2070	1640	3.38–39
		2.04	III	1H	**3B125**	179	2070	1640	3.38–39
8.45	10295	1.18	I	1H	**3B120**	207	2070	1640	3.38–39
		1.47	II	1H	**3B125**	207	2070	1640	3.38–39
		2.64	III	1H	**3C140**	207	3480	2850	3.40–41
7.03	12370	1.09	I	1H	**3B125**	249	2070	1640	3.38–39
		1.55	II	1H	**3B145**	249	2070	1640	3.38–39
		2.17	III	1H	**3C140**	249	3480	2850	3.40–41
5.74	15150	1.01	I	1H	**3B125**	305	2070	1640	3.38–39
		1.26	I	1H	**3B145**	305	2070	1640	3.38–39
		1.77	II	1H	**3C140**	305	3480	2850	3.40–41
		2.25	III	1H	**3C145**	305	3480	2850	3.40–41
4.81	17100	1.11	I	1H	**3B12DB**	364	2070	1640	3.42–43
		1.11	I	1H	**3B14DB**	364	2070	1640	3.42–43
		1.45	II	1H	**3C14DB**	364	3480	2850	3.42–43
		2.23	III	1H	**3C14DC**	364	3480	2850	3.42–43
4.13	19910	1.45	II	1H	**3C14DB**	424	3480	2850	3.42–43
		1.91	II	1H	**3C14DC**	424	3480	2850	3.42–43
		1.91	II	1H	**3C16DB**	424	3480	2850	3.42–43
3.49	23560	1.45	II	1H	**3C14DB**	501	3480	2850	3.42–43
		1.62	II	1H	**3C16DB**	501	3480	2850	3.42–43
		2.72	III	1H	**3D16DB**	501	4810	3930	3.44–45
3.03	27140	1.40	II	1H	**3C14DB**	578	3480	2850	3.42–43
		1.40	II	1H	**3C16DA**	578	3480	2850	3.42–43
		2.36	III	1H	**3D16DB**	578	4810	3930	3.44–45
2.56	32125	1.19	I	1H	**3C14DB**	683	3480	2850	3.42–43
		1.45	II	1H	**3D16DA**	683	4810	3930	3.44–45
		1.99	II	1H	**3D16DB**	683	4810	3930	3.44–45
		2.02	III	1H	**3D17DB**	683	4810	3930	3.44–45
2.16	38075	1.00	I	1H	**3C14DB**	809	3480	2850	3.42–43
		1.00	I	1H	**3C16DA**	809	3480	2850	3.42–43
		1.45	II	1H	**3D16DA**	809	4810	3930	3.44–45
		1.70	II	1H	**3D17DB**	809	4810	3930	3.44–45
		2.26	III	1H	**3E17DB**	809	5170	4110	3.44–45
1.83	44940	1.42	II	1H	**3D16DA**	956	4810	3930	3.44–45
		1.44	II	1H	**3D17DA**	956	4810	3930	3.44–45
		1.92	II	1H	**3E17DB**	956	5170	4110	3.44–45
1.57	52385	1.22	I	1H	**3D16DA**	1117	4810	3930	3.44–45
		1.45	II	1H	**3E17DA**	1117	5170	4110	3.44–45
1.33	61840	1.03	I	1H	**3D16DA**	1320	4810	3930	3.44–45
		1.04	I	1H	**3D17DA**	1320	4810	3930	3.44–45
1.06	77590	1.11	I	1H	**3E17DA**	1656	5170	4110	3.44–45
0.894	92000	0.94	-	1H	**3E17DA**	1957	5170	4110	3.44–45

60 Hz, 1750 RPM Gearmotor Selection Tables



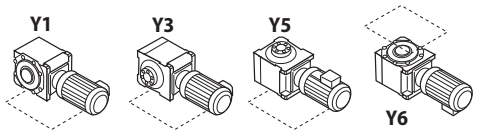
Horizontal Motor Shaft
Y1, Y3, Y5, Y6 Mounting Positions

2 HP

Output Speed RPM	Output Torque in•lb	Service Factor SF	Service Factor AGMA Class	SELECTION HP Symbol	SELECTION Frame Size	SELECTION Ratio	Overhung Load (lbs) Hollow Shaft	Overhung Load (lbs) Solid Shaft	Dimension Page LHYM
159	730	1.57	II	2	**3A100**	11	1120	990	3.38–39
		2.12	III	2	**3A105**	11	1120	990	3.38–39
97.2	1190	1.57	II	2	**3A100**	18	1120	990	3.38–39
		2.12	III	2	**3A105**	18	1120	990	3.38–39
83.3	1390	1.57	II	2	**3A100**	21	1120	990	3.38–39
		2.12	III	2	**3A105**	21	1120	990	3.38–39
62.5	1855	1.57	II	2	**3A100**	28	1120	990	3.38–39
		2.12	III	2	**3A105**	28	1120	990	3.38–39
45.0	2580	1.57	II	2	**3A100**	39	1120	990	3.38–39
		2.12	III	2	**3A105**	39	1120	990	3.38–39
38.0	3050	1.57	II	2	**3A100**	46	1120	990	3.38–39
		2.12	III	2	**3A105**	46	1120	990	3.38–39
33.0	3515	1.57	II	2	**3A100**	53	1120	990	3.38–39
		2.12	III	2	**3A105**	53	1120	990	3.38–39
29.2	3970	1.33	I	2	**3A100**	60	1120	990	3.38–39
		1.64	II	2	**3A105**	60	1120	990	3.38–39
		2.13	III	2	**3A110**	60	1120	990	3.38–39
23.6	4910	1.29	I	2	**3A100**	74	1120	990	3.38–39
		1.56	II	2	**3A105**	74	1120	990	3.38–39
		2.66	III	2	**3B120**	74	2070	1640	3.38–39
19.9	5830	1.11	I	2	**3A105**	88	1120	990	3.38–39
		1.48	II	2	**3A115**	88	1120	990	3.38–39
		2.07	III	2	**3B120**	88	2070	1640	3.38–39
17.2	6740	1.06	I	2	**3A105**	102	1120	990	3.38–39
		1.40	II	2	**3A115**	102	1120	990	3.38–39
		2.00	III	2	**3B120**	102	2070	1640	3.38–39
14.2	8165	1.00	I	2	**3A110**	123	1120	990	3.38–39
		1.66	II	2	**3B120**	123	2070	1640	3.38–39
		2.12	III	2	**3B125**	123	2070	1640	3.38–39
11.6	10000	1.27	I	2	**3B120**	151	2070	1640	3.38–39
		1.59	II	2	**3B125**	151	2070	1640	3.38–39
		2.64	III	2	**3C140**	151	3480	2850	3.38–39
9.78	11860	1.15	I	2	**3B120**	179	2070	1640	3.38–39
		1.53	II	2	**3B125**	179	2070	1640	3.38–39
		2.30	III	2	**3C140**	179	3480	2850	3.40–41
8.45	13725	1.08	I	2	**3B125**	207	2070	1640	3.38–39
		1.98	II	2	**3C140**	207	3480	2850	3.40–41
		2.43	III	2	**3C145**	207	3480	2850	3.40–41
7.03	16495	1.13	I	2	**3B145**	249	2070	1640	3.38–39
		1.62	II	2	**3C140**	249	3480	2850	3.40–41
		2.02	III	2	**3C145**	249	3480	2850	3.40–41
5.74	20200	1.33	I	2	**3C140**	305	3480	2850	3.40–41
		1.54	II	2	**3C145**	305	3480	2850	3.40–41
		2.33	III	2	**3D160**	305	4810	3930	3.40–41

Gearmotor Selection Tables 60 Hz, 1750 RPM

Horizontal Motor Shaft
Y1, Y3, Y5, Y6 Mounting Positions



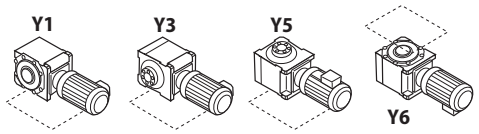
2 HP

Output Speed RPM	Output Torque in•lb	Service Factor SF	Service Factor AGMA Class	SELECTION HP Symbol	SELECTION Frame Size	SELECTION Ratio	Overhung Load (lbs) Hollow Shaft	Overhung Load (lbs) Solid Shaft	Dimension Page LHYM
4.81	22800	1.07	I	2	**3C14DB**	364	3480	2850	3.42–43
		1.63	II	2	**3C14DC**	364	3480	2850	3.42–43
		1.63	II	2	**3C16DB**	364	3480	2850	3.42–43
		2.24	III	2	**3D16DB**	364	4810	3930	3.44–45
4.13	26550	1.07	I	2	**3C14DB**	424	3480	2850	3.42–43
		1.40	II	2	**3C16DB**	424	3480	2850	3.42–43
		2.24	III	2	**3D16DB**	424	4810	3930	3.44–45
3.49	31420	1.07	I	2	**3C14DB**	501	3480	2850	3.42–43
		1.99	II	2	**3D16DB**	501	4810	3930	3.44–45
		2.02	III	2	**3D17DB**	501	4810	3930	3.44–45
3.03	36190	1.03	I	2	**3C14DB**	578	3480	2850	3.42–43
		1.03	I	2	**3C16DA**	578	3480	2850	3.42–43
		1.73	II	2	**3D16DB**	578	4810	3930	3.44–45
		1.75	II	2	**3D17DB**	578	4810	3930	3.44–45
2.56	42835	1.07	I	2	**3D16DA**	683	4810	3930	3.44–45
		1.48	II	2	**3D17DB**	683	4810	3930	3.44–45
		1.97	II	2	**3E17DB**	683	5170	4110	3.44–45
2.16	50770	1.07	I	2	**3D16DA**	809	4810	3930	3.44–45
		1.66	II	2	**3E17DB**	809	5170	4110	3.44–45
1.83	59925	1.04	I	2	**3D16DA**	956	4810	3930	3.44–45
		1.06	I	2	**3D17DA**	956	4810	3930	3.44–45
		1.40	II	2	**3E17DB**	956	5170	4110	3.44–45
1.57	69850	1.07	I	2	**3E17DA**	1117	5170	4110	3.44–45
1.33	82450	1.02	I	2	**3E17DA**	1320	5170	4110	3.44–45

3 HP

Output Speed RPM	Output Torque in•lb	Service Factor SF	Service Factor AGMA Class	SELECTION HP Symbol	SELECTION Frame Size	SELECTION Ratio	Overhung Load (lbs) Hollow Shaft	Overhung Load (lbs) Solid Shaft	Dimension Page LHYM
159	1095	1.07	I	3	**3A100**	11	1120	990	3.38–39
		1.42	II	3	**3A105**	11	1120	990	3.38–39
		2.27	III	3	**3A120**	11	1120	990	3.38–39
97.2	1790	1.07	I	3	**3A100**	18	1120	990	3.38–39
		1.45	II	3	**3A105**	18	1120	990	3.38–39
		2.27	III	3	**3A120**	18	1120	990	3.38–39
83.3	2090	1.07	I	3	**3A100**	21	1120	990	3.38–39
		1.42	II	3	**3A105**	21	1120	990	3.38–39
		1.61	II	3	**3A110**	21	1120	990	3.38–39
		2.27	III	3	**3A120**	21	1120	990	3.38–39
62.5	2780	1.07	I	3	**3A100**	28	1120	990	3.38–39
		1.42	II	3	**3A105**	28	1120	990	3.38–39
		1.58	II	3	**3A110**	28	1120	990	3.38–39
		2.27	III	3	**3A120**	28	1120	990	3.38–39

60 Hz, 1750 RPM Gearmotor Selection Tables



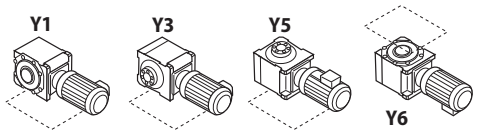
Horizontal Motor Shaft
Y1, Y3, Y5, Y6 Mounting Positions

3 HP

Output Speed RPM	Output Torque in•lb	Service Factor SF	Service Factor AGMA Class	SELECTION HP Symbol	SELECTION Frame Size	SELECTION Ratio	Overhung Load (lbs) Hollow Shaft	Overhung Load (lbs) Solid Shaft	Dimension Page LHYM
44.9	3875	1.07	I	3	**3A100**	39	1120	990	3.38–39
		1.42	II	3	**3A105**	39	1120	990	3.38–39
		1.58	II	3	**3A110**	39	1120	990	3.38–39
		2.27	III	3	**3A120**	39	1120	990	3.38–39
38.0	4575	1.07	I	3	**3A100**	46	1120	990	3.38–39
		1.42	II	3	**3A105**	46	1120	990	3.38–39
		1.58	II	3	**3A110**	46	1120	990	3.38–39
		2.09	III	3	**3A125**	46	1120	990	3.38–39
33.0	5270	1.07	I	3	**3A100**	53	1120	990	3.38–39
		1.42	II	3	**3A105**	53	1120	990	3.38–39
		1.58	II	3	**3A110**	53	1120	990	3.38–39
		2.27	III	3	**3B120**	53	2070	1640	3.38–39
29.2	5955	1.10	I	3	**3A105**	60	1120	990	3.38–39
		1.42	II	3	**3A110**	60	1120	990	3.38–39
		1.62	II	3	**3A115**	60	1120	990	3.38–39
		2.27	III	3	**3B120**	60	2070	1640	3.38–39
23.6	7370	1.05	I	3	**3A105**	74	1120	990	3.38–39
		1.77	II	3	**3B120**	74	2070	1640	3.38–39
		2.18	III	3	**3B125**	74	2070	1640	3.38–39
19.9	8740	1.08	I	3	**3A125**	88	1120	990	3.38–39
		1.77	II	3	**3B125**	88	2070	1640	3.38–39
		2.16	III	3	**3B145**	88	2070	1640	3.38–39
17.2	10110	1.33	I	3	**3B120**	102	2070	1640	3.38–39
		1.71	II	3	**3B125**	102	2070	1640	3.38–39
		2.66	III	3	**3C140**	102	3480	2850	3.40–41
14.2	12250	1.13	I	3	**3B120**	123	2070	1640	3.38–39
		1.42	II	3	**3B125**	123	2070	1640	3.38–39
		2.33	III	3	**3C140**	123	3480	2850	3.40–41
11.6	14995	1.08	I	3	**3B125**	151	2070	1640	3.38–39
		1.76	II	3	**3C140**	151	3480	2850	3.40–41
		2.45	III	3	**3C145**	151	3480	2850	3.40–41
9.78	17785	1.04	I	3	**3B125**	179	2070	1640	3.38–39
		1.08	I	3	**3B145**	179	2070	1640	3.38–39
		1.56	II	3	**3C140**	179	3480	2850	3.40–41
		1.92	II	3	**3C145**	179	3480	2850	3.40–41
		2.12	III	3	**3C165**	179	3480	2850	3.40–41
8.45	20585	1.32	I	3	**3C140**	207	3480	2850	3.40–41
		1.55	II	3	**3C145**	207	3480	2850	3.40–41
		2.57	III	3	**3D165**	207	4810	3930	3.40–41
7.03	24740	1.08	I	3	**3C140**	249	3480	2850	3.40–41
		1.55	II	3	**3C165**	249	3480	2850	3.40–41
		2.52	III	3	**3D160**	249	4810	3930	3.40–41

Gearmotor Selection Tables 60 Hz, 1750 RPM

Horizontal Motor Shaft
Y1, Y3, Y5, Y6 Mounting Positions



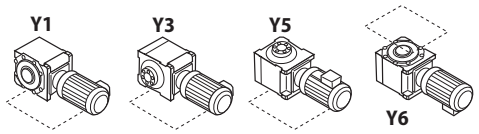
3 HP

Output Speed RPM	Output Torque in•lb	Service Factor SF	Service Factor AGMA Class	SELECTION HP Symbol	SELECTION Frame Size	SELECTION Ratio	Overhung Load (lbs) Hollow Shaft	Overhung Load (lbs) Solid Shaft	Dimension Page LHYM
5.74	30300	1.11	I	3	**3C145**	305	3480	2850	3.40–41
		1.58	II	3	**3D160**	305	4810	3930	3.40–41
		1.77	II	3	**3D165**	305	4810	3930	3.40–41
4.81	34200	1.11	I	3	**3C14DC**	364	3480	2850	3.42–43
		1.53	II	3	**3D16DB**	364	4810	3930	3.44–45
		1.89	II	3	**3D17DC**	364	4810	3930	3.44–45
4.13	39830	0.96	-	3	**3C14DC**	424	3480	2850	3.42–43
		1.53	II	3	**3D16DB**	424	4810	3930	3.44–45
		1.62	II	3	**3D17DC**	424	4810	3930	3.44–45
		2.16	III	3	**3E17DC**	424	5170	4110	3.44–45
3.49	47130	0.81	-	3	**3C16DB**	501	3480	2850	3.42–43
		1.36	I	3	**3D16DB**	501	4810	3930	3.44–45
		1.37	I	3	**3D17DB**	501	4810	3930	3.44–45
		1.83	II	3	**3E17DC**	501	5170	4110	3.44–45
3.03	54285	1.18	I	3	**3D16DB**	578	4810	3930	3.44–45
		1.19	I	3	**3D17DB**	578	4810	3930	3.44–45
		1.53	II	3	**3E17DB**	578	5170	4110	3.44–45
2.56	64255	1.00	I	3	**3D16DB**	683	4810	3930	3.44–45
		1.01	I	3	**3D17DB**	683	4810	3930	3.44–45
2.16	76155	1.01	I	3	**3D17DB**	809	4810	3930	3.44–45
		1.24	I	3	**3E17DB**	809	5170	4110	3.44–45
1.83	89885	1.05	I	3	**3E17DB**	956	5170	4110	3.44–45

5 HP

Output Speed RPM	Output Torque in•lb	Service Factor SF	Service Factor AGMA Class	SELECTION HP Symbol	SELECTION Frame Size	SELECTION Ratio	Overhung Load (lbs) Hollow Shaft	Overhung Load (lbs) Solid Shaft	Dimension Page LHYM
159	1820	1.37	I	5	**3A120**	11	1120	990	3.38–39
		1.56	II	5	**3A125**	11	1120	990	3.38–39
97.2	2980	1.37	I	5	**3A120**	18	1120	990	3.38–39
		1.56	II	5	**3A125**	18	1120	990	3.38–39
		2.96	III	5	**3A145**	18	1120	990	3.38–39
83.3	3480	1.06	I	5	**3A115**	21	1120	990	3.38–39
		1.56	II	5	**3A125**	21	1120	990	3.38–39
		2.46	III	5	**3A145**	21	1120	990	3.38–39
62.5	4635	1.06	I	5	**3A115**	28	1120	990	3.38–39
		1.86	II	5	**3A125**	28	1120	990	3.38–39
		2.02	III	5	**3A145**	28	1120	990	3.38–39
44.9	6455	1.06	I	5	**3A115**	39	1120	990	3.38–39
		1.37	I	5	**3A120**	39	1120	990	3.38–39
		1.48	II	5	**3A125**	39	1120	990	3.38–39
		2.96	III	5	**3B145**	39	2070	1640	3.38–39

60 Hz, 1750 RPM Gearmotor Selection Tables



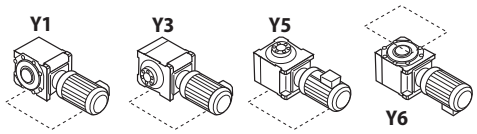
Horizontal Motor Shaft
Y1, Y3, Y5, Y6 Mounting Positions

5 HP

Output Speed RPM	Output Torque in•lb	Service Factor SF	Service Factor AGMA Class	SELECTION HP Symbol	SELECTION Frame Size	SELECTION Ratio	Overhung Load (lbs) Hollow Shaft	Overhung Load (lbs) Solid Shaft	Dimension Page LHYM
38.0	7630	1.05	I	5	**3A115**	46	1120	990	3.38–39
		1.37	I	5	**3B120**	46	2070	1640	3.38–39
		1.60	II	5	**3B125**	46	2070	1640	3.38–39
		2.51	III	5	**3B145**	46	2070	1640	3.38–39
33.0	8785	1.05	I	5	**3A115**	53	1120	990	3.38–39
		1.58	II	5	**3B125**	53	2070	1640	3.38–39
		2.18	III	5	**3B145**	53	2070	1640	3.38–39
29.2	9930	1.36	I	5	**3B120**	60	2070	1640	3.38–39
		1.53	II	5	**3B125**	60	2070	1640	3.38–39
		2.70	III	5	**3C140**	60	3480	2850	3.40–41
23.6	12285	1.06	I	5	**3B120**	74	2070	1640	3.38–39
		1.56	II	5	**3B145**	74	2070	1640	3.38–39
		2.32	III	5	**3C140**	74	3480	2850	3.40–41
19.9	14570	1.07	I	5	**3B125**	88	2070	1640	3.38–39
		1.85	II	5	**3C140**	88	3480	2850	3.40–41
		2.14	III	5	**3C145**	88	3480	2850	3.40–41
17.2	16855	1.02	I	5	**3B125**	102	2070	1640	3.38–39
		1.13	I	5	**3B145**	102	2070	1640	3.38–39
		1.61	II	5	**3C140**	102	3480	2850	3.40–41
		2.04	III	5	**3C145**	102	3480	2850	3.40–41
14.2	20415	1.39	I	5	**3C140**	123	3480	2850	3.40–41
		1.85	II	5	**3C145**	123	3480	2850	3.40–41
		2.60	III	5	**3D160**	123	4810	3930	3.40–41
11.6	24990	1.05	I	5	**3C140**	151	3480	2850	3.40–41
		1.44	II	5	**3C145**	151	3480	2850	3.40–41
		2.00	III	5	**3D160**	151	4810	3930	3.40–41
9.78	29640	1.14	I	5	**3C145**	179	3480	2850	3.40–41
		1.55	II	5	**3D160**	179	4810	3930	3.40–41
		2.04	III	5	**3D165**	179	4810	3930	3.40–41
8.45	34310	1.11	I	5	**3C165**	207	3480	2850	3.40–41
		1.55	II	5	**3D165**	207	4810	3930	3.40–41
		2.22	III	5	**3E175**	207	5170	4110	3.40–41
7.03	41240	1.51	II	5	**3D165**	249	4810	3930	3.40–41
		1.93	II	5	**3E175**	249	5170	4110	3.40–41
5.74	50510	1.05	I	5	**3D165**	305	4810	3930	3.40–41
		1.52	II	5	**3E175**	305	5170	4110	3.40–41
4.81	57000	1.11	I	5	**3D16DC**	364	4810	3930	3.44–45
		1.12	I	5	**3D17DC**	364	4810	3930	3.44–45
		1.49	II	5	**3E17DC**	364	5170	4110	3.44–45
4.13	66380	0.97	-	5	**3D17DC**	424	4810	3930	3.44–45
		1.28	I	5	**3E17DC**	424	5170	4110	3.44–45
3.49	78550	0.82	-	5	**3D17DC**	501	4810	3930	3.44–45
		1.09	I	5	**3E17DC**	501	5170	4110	3.44–45
3.03	90480	0.94	-	5	**3E17DC**	578	5170	4110	3.44–45

Gearmotor Selection Tables 60 Hz, 1750 RPM

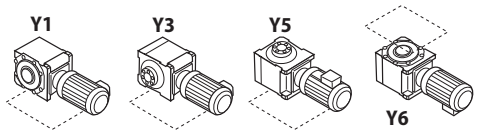
Horizontal Motor Shaft
Y1, Y3, Y5, Y6 Mounting Positions



7.5 HP

Output Speed RPM	Output Torque in•lb	Service Factor SF	Service Factor AGMA Class	SELECTION HP Symbol	SELECTION Frame Size	SELECTION Ratio	Overhung Load (lbs) Hollow Shaft	Overhung Load (lbs) Solid Shaft	Dimension Page LHYM
159	2735	1.06	I	8	**3A125**	11	1120	990	3.38–39
		2.32	III	8	**3A140**	11	1120	990	3.38–39
97.2	4475	1.06	I	8	**3A125**	18	1120	990	3.38–39
		1.97	II	8	**3A145**	18	1120	990	3.38–39
		2.32	III	8	**3B140**	18	2070	1640	3.38–39
83.3	5220	1.06	I	8	**3A125**	21	1120	990	3.38–39
		1.67	II	8	**3A145**	21	1120	990	3.38–39
		2.32	III	8	**3B140**	21	2070	1640	3.38–39
62.5	6960	1.26	I	8	**3A125**	28	1120	990	3.38–39
		1.36	I	8	**3A145**	28	1120	990	3.38–39
		2.32	III	8	**3B140**	28	2070	1640	3.38–39
44.9	9685	1.06	I	8	**3B125**	39	2070	1640	3.38–39
		1.97	II	8	**3B145**	39	2070	1640	3.38–39
		2.32	III	8	**3C140**	39	3480	2850	3.40–41
38.0	11445	1.08	I	8	**3B125**	46	2070	1640	3.38–39
		1.69	II	8	**3B145**	46	2070	1640	3.38–39
		2.32	III	8	**3C140**	46	3480	2850	3.40–41
33.0	13175	1.08	I	8	**3B125**	53	2070	1640	3.38–39
		1.44	II	8	**3B145**	53	2070	1640	3.38–39
		2.14	III	8	**3C140**	53	3480	2850	3.40–41
29.2	14890	1.03	I	8	**3B125**	60	2070	1640	3.38–39
		1.81	II	8	**3C140**	60	3480	2850	3.40–41
		2.18	III	8	**3C145**	60	3480	2850	3.40–41
23.6	18425	1.03	I	8	**3B145**	74	2070	1640	3.38–39
		1.57	II	8	**3C140**	74	3480	2850	3.40–41
		1.97	II	8	**3C145**	74	3480	2850	3.40–41
		2.05	III	8	**3C165**	74	3480	2850	3.40–41
19.9	21850	1.25	I	8	**3C140**	88	3480	2850	3.40–41
		1.41	II	8	**3C145**	88	3480	2850	3.40–41
		2.70	III	8	**3D165**	88	4810	3930	3.40–41
17.2	25280	1.08	I	8	**3C140**	102	3480	2850	3.40–41
		1.37	I	8	**3C145**	102	3480	2850	3.40–41
		1.49	II	8	**3C165**	102	3480	2850	3.40–41
		2.53	III	8	**3D175**	102	4810	3930	3.40–41
14.2	30625	1.23	I	8	**3C145**	123	3480	2850	3.40–41
		1.73	II	8	**3D160**	123	4810	3930	3.40–41
		2.04	III	8	**3D165**	123	4810	3930	3.40–41
11.6	37490	1.02	I	8	**3C165**	151	3480	2850	3.40–41
		1.41	II	8	**3D165**	151	4810	3930	3.40–41
		1.70	II	8	**3D175**	151	4810	3930	3.40–41
		2.02	III	8	**3E175**	151	5170	4110	3.40–41

60 Hz, 1750 RPM Gearmotor Selection Tables



Horizontal Motor Shaft
Y1, Y3, Y5, Y6 Mounting Positions

7.5 HP

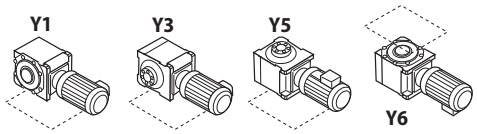
Output Speed RPM	Output Torque in•lb	Service Factor SF	Service Factor AGMA Class	SELECTION HP Symbol	SELECTION Frame Size	SELECTION Ratio	Overhung Load (lbs) Hollow Shaft	Overhung Load (lbs) Solid Shaft	Dimension Page LHYM
9.78	44465	1.02	I	8	**3D160**	179	4810	3930	3.40–41
		1.44	II	8	**3D175**	179	4810	3930	3.40–41
		1.92	II	8	**3E175**	179	5170	4110	3.40–41
8.45	51465	1.05	I	8	**3D165**	207	4810	3930	3.40–41
		1.48	II	8	**3E175**	207	5170	4110	3.40–41
7.03	61860	1.03	I	8	**3D165**	249	4810	3930	3.40–41
		1.27	I	8	**3E175**	249	5170	4110	3.40–41
5.74	75760	1.02	I	8	**3E175**	305	5170	4110	3.40–41
4.81	85500	1.01	I	8	**3E17DC**	364	5170	4110	3.44–45

10 HP

Output Speed RPM	Output Torque in•lb	Service Factor SF	Service Factor AGMA Class	SELECTION HP Symbol	SELECTION Frame Size	SELECTION Ratio	Overhung Load (lbs) Hollow Shaft	Overhung Load (lbs) Solid Shaft	Dimension Page LHYM
159	3645	1.73	II	10	**3A140**	11	1120	990	3.38–39
		2.00	III	10	**3A145**	11	1120	990	3.38–39
97.2	5965	1.47	II	10	**3A145**	18	1120	990	3.38–39
		1.73	II	10	**3B140**	18	2070	1640	3.38–39
		2.01	III	10	**3B145**	18	2070	1640	3.38–39
83.3	6960	1.22	I	10	**3A145**	21	1120	990	3.38–39
		1.73	II	10	**3B140**	21	2070	1640	3.38–39
		2.01	III	10	**3B145**	21	2070	1640	3.38–39
62.5	9275	1.00	I	10	**3A145**	28	1120	990	3.38–39
		1.73	II	10	**3B140**	28	2070	1640	3.38–39
		2.00	III	10	**3B145**	28	2070	1640	3.38–39
44.9	12910	1.47	II	10	**3B145**	39	2070	1640	3.38–39
		1.73	II	10	**3C140**	39	3480	2850	3.40–41
		2.01	III	10	**3C145**	39	3480	2850	3.40–41
38.0	15255	1.24	I	10	**3B145**	46	2070	1640	3.38–39
		1.73	II	10	**3C140**	46	3480	2850	3.40–41
		2.01	III	10	**3C145**	46	3480	2850	3.40–41
33.0	17570	1.07	I	10	**3B145**	53	2070	1640	3.38–39
		1.60	II	10	**3C140**	53	3480	2850	3.40–41
		2.16	III	10	**3C165**	53	3480	2850	3.40–41
29.2	19855	1.35	I	10	**3C140**	60	3480	2850	3.40–41
		1.60	II	10	**3C145**	60	3480	2850	3.40–41
		2.52	III	10	**3D165**	60	4810	3930	3.40–41
23.6	24570	1.16	I	10	**3C140**	74	3480	2820	3.40–41
		1.48	II	10	**3C145**	74	3480	2850	3.40–41
		2.15	III	10	**3D165**	74	4810	3930	3.40–41
19.9	29140	1.05	I	10	**3C145**	88	3480	2850	3.40–41
		2.01	III	10	**3D165**	88	4810	3930	3.40–41

Gearmotor Selection Tables 60 Hz, 1750 RPM

Horizontal Motor Shaft
Y1, Y3, Y5, Y6 Mounting Positions



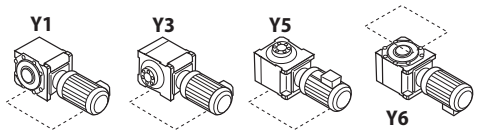
10 HP

Output Speed RPM	Output Torque in•lb	Service Factor SF	Service Factor AGMA Class	SELECTION HP Symbol	SELECTION Frame Size	SELECTION Ratio	Overhung Load (lbs) Hollow Shaft	Overhung Load (lbs) Solid Shaft	Dimension Page LHYM
17.2	33710	1.00	I	10	**3C145**	102	3480	2850	3.40–41
		1.41	II	10	**3D160**	102	4810	3930	3.40–41
		2.14	III	10	**3E175**	102	5170	4110	3.40–41
14.2	40830	1.30	I	10	**3D160**	123	4810	3930	3.40–41
		1.53	II	10	**3D165**	123	4810	3930	3.40–41
		2.01	III	10	**3E175**	123	5170	4110	3.40–41
11.6	49985	1.00	I	10	**3D160**	151	4810	3930	3.40–41
		1.52	II	10	**3E175**	151	5170	4110	3.40–41
9.78	59285	1.00	I	10	**3D165**	179	4810	3930	3.40–41
		1.07	I	10	**3D175**	179	4810	3930	3.40–41
		1.44	II	10	**3E175**	179	5170	4110	3.40–41
8.45	68620	1.11	I	10	**3E175**	207	5170	4110	3.40–41

15 HP

Output Speed RPM	Output Torque in•lb	Service Factor SF	Service Factor AGMA Class	SELECTION HP Symbol	SELECTION Frame Size	SELECTION Ratio	Overhung Load (lbs) Hollow Shaft	Overhung Load (lbs) Solid Shaft	Dimension Page LHYM
159	5470	1.18	I	15	**3A140**	11	1120	990	3.38–39
		1.36	I	15	**3A145**	11	1120	990	3.38–39
97.2	8950	1.16	I	15	**3B140**	18	2070	1640	3.38–39
		1.37	I	15	**3B145**	18	2070	1640	3.38–39
		1.81	II	15	**3B160**	18	2070	1640	3.38–39
83.3	10440	1.18	I	15	**3B140**	21	2070	1640	3.38–39
		1.37	I	15	**3B145**	21	2070	1640	3.38–39
		1.68	II	15	**3B165**	21	2070	1640	3.38–39
		2.15	III	15	**3C165**	21	3480	2850	3.40–41
62.5	13910	1.16	I	15	**3B140**	28	2070	1640	3.38–39
		1.76	II	15	**3C160**	28	3480	2850	3.40–41
		2.15	III	15	**3C165**	28	3480	2850	3.40–41
44.9	19370	1.16	I	15	**3C140**	39	3480	2850	3.40–41
		1.76	II	15	**3C160**	39	3480	2850	3.40–41
		2.15	III	15	**3C165**	39	3480	2850	3.40–41
38.0	22880	1.16	I	15	**3C140**	46	3480	2850	3.40–41
		1.37	I	15	**3C145**	46	3480	2850	3.40–41
		1.66	II	15	**3C165**	46	3480	2850	3.40–41
		2.02	III	15	**3D165**	46	4810	3930	3.40–41
33.0	26355	1.09	I	15	**3C140**	53	3480	2850	3.40–41
		1.33	I	15	**3C145**	53	3480	2850	3.40–41
		1.44	II	15	**3C165**	53	3480	2850	3.40–41
		2.00	III	15	**3D165**	53	4810	3930	3.40–41

60 Hz, 1750 RPM Gearmotor Selection Tables



Horizontal Motor Shaft
Y1, Y3, Y5, Y6 Mounting Positions

15 HP

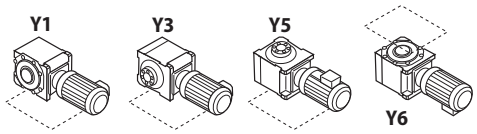
Output Speed RPM	Output Torque in•lb	Service Factor SF	Service Factor AGMA Class	SELECTION HP Symbol	SELECTION Frame Size	SELECTION Ratio	Overhung Load (lbs) Hollow Shaft	Overhung Load (lbs) Solid Shaft	Dimension Page LHYM
29.2	29785	1.09	I	15	**3C145**	60	3480	2850	3.40–41
		1.71	II	15	**3D165**	60	4810	3930	3.40–41
		2.15	III	15	**3D175**	60	4810	3930	3.40–41
23.6	36850	1.05	I	15	**3C165**	74	3480	2850	3.40–41
		1.46	II	15	**3D165**	74	4810	3930	3.40–41
		1.96	II	15	**3D175**	74	4810	3930	3.40–41
19.9	43700	1.34	I	15	**3D165**	88	4810	3930	3.40–41
		1.41	II	15	**3D170**	88	4810	3930	3.40–41
		1.68	II	15	**3E175**	88	5170	4110	3.40–41
17.2	50565	1.26	I	15	**3D175**	102	4810	3930	3.40–41
		1.42	II	15	**3E175**	102	5170	4110	3.40–41
14.2	61250	1.02	I	15	**3D165**	123	4810	3930	3.40–41
		1.06	I	15	**3D175**	123	4810	3930	3.40–41
		1.34	I	15	**3E175**	123	5170	4110	3.40–41
11.6	74975	1.03	I	15	**3E175**	151	5170	4110	3.40–41

20 HP

Output Speed RPM	Output Torque in•lb	Service Factor SF	Service Factor AGMA Class	SELECTION HP Symbol	SELECTION Frame Size	SELECTION Ratio	Overhung Load (lbs) Hollow Shaft	Overhung Load (lbs) Solid Shaft	Dimension Page LHYM
159	7290	1.00	I	20	**3A145**	11	1120	990	3.38–39
		1.47	II	20	**3B165**	11	2070	1640	3.38–39
		2.01	III	20	**3C175**	11	3480	2850	3.40–41
97.2	11930	1.01	I	20	**3B145**	18	2070	1640	3.38–39
		1.47	II	20	**3B165**	18	2070	1640	3.38–39
		2.01	III	20	**3C175**	18	3480	2850	3.40–41
83.3	13920	1.01	I	20	**3B145**	21	2070	1640	3.38–39
		1.35	I	20	**3C160**	21	3480	2850	3.40–41
		1.60	II	20	**3C165**	21	3480	2850	3.40–41
		2.01	III	20	**3C175**	21	3480	2850	3.40–41
62.5	18555	1.00	I	20	**3B145**	28	2070	1640	3.38–39
		1.31	I	20	**3C160**	28	3480	2850	3.40–41
		1.61	II	20	**3C165**	28	3480	2850	3.40–41
		2.01	III	20	**3C175**	28	3480	2850	3.40–41
44.9	25825	1.01	I	20	**3C145**	39	3480	2850	3.40–41
		1.42	II	20	**3C165**	39	3480	2850	3.40–41
		1.61	II	20	**3D165**	39	4810	3930	3.40–41
		2.01	III	20	**3D175**	39	4810	3930	3.40–41
38.0	30515	1.01	I	20	**3C145**	46	3480	2850	3.40–41
		1.51	II	20	**3D165**	46	4810	3930	3.40–41
		2.00	III	20	**3D175**	46	4810	3930	3.40–41

Gearmotor Selection Tables 60 Hz, 1750 RPM

Horizontal Motor Shaft
Y1, Y3, Y5, Y6 Mounting Positions



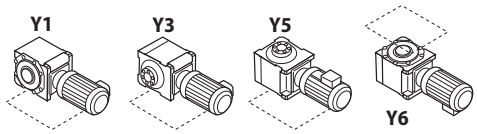
20 HP

Output Speed RPM	Output Torque in•lb	Service Factor SF	Service Factor AGMA Class	SELECTION HP Symbol	SELECTION Frame Size	SELECTION Ratio	Overhung Load (lbs) Hollow Shaft	Overhung Load (lbs) Solid Shaft	Dimension Page LHYM
33.0	35140	1.07	I	20	**3C165**	53	3480	2850	3.40–41
		1.51	II	20	**3D165**	53	4810	3930	3.40–41
		1.70	II	20	**3D170**	53	4810	3930	3.40–41
		2.01	III	20	**3E175**	53	5170	4110	3.40–41
29.2	39700	1.25	I	20	**3D165**	60	4810	3930	3.40–41
		1.31	I	20	**3D170**	60	4810	3930	3.40–41
		1.61	II	20	**3D175**	60	4810	3930	3.40–41
23.6	49100	1.07	I	20	**3D165**	74	4810	3930	3.40–41
		1.47	II	20	**3E175**	74	5170	4110	3.40–41
19.9	58275	1.01	I	20	**3D165**	88	4810	3930	3.40–41
		1.24	I	20	**3E175**	88	5170	4110	3.40–41
17.2	67400	1.07	I	20	**3E175**	102	5170	4110	3.40–41

25 HP

Output Speed RPM	Output Torque in•lb	Service Factor SF	Service Factor AGMA Class	SELECTION HP Symbol	SELECTION Frame Size	SELECTION Ratio	Overhung Load (lbs) Hollow Shaft	Overhung Load (lbs) Solid Shaft	Dimension Page LHYM
159	9100	1.08	I	25	**3B160**	11	2070	1640	3.38–39
		1.49	II	25	**3C170**	11	3480	2850	3.40–41
		1.61	II	25	**3C175**	11	3480	2850	3.40–41
97.2	14900	1.08	I	25	**3B160**	18	2070	1640	3.38–39
		1.48	II	25	**3C170**	18	3480	2850	3.40–41
83.3	17400	1.08	I	25	**3C160**	21	3480	2850	3.40–41
		1.48	II	25	**3C170**	21	3480	2850	3.40–41
62.5	23190	1.06	I	25	**3C160**	28	3480	2850	3.40–41
		1.30	I	25	**3C165**	28	3480	2850	3.40–41
		1.48	II	25	**3C170**	28	3480	2850	3.40–41
44.9	32285	1.05	I	25	**3C160**	39	3480	2850	3.40–41
		1.30	I	25	**3D165**	39	4810	3930	3.40–41
		1.48	II	25	**3D170**	39	4810	3930	3.40–41
38.0	38145	1.05	I	25	**3D160**	46	4810	3930	3.40–41
		1.46	II	25	**3D170**	46	4810	3930	3.40–41
33.0	43900	1.00	I	25	**3D160**	53	4810	3930	3.40–41
		1.48	II	25	**3D175**	53	4810	3930	3.40–41
		1.62	II	25	**3E175**	53	5170	4110	3.40–41
29.2	49600	1.02	I	25	**3D165**	60	4810	3930	3.40–41
		1.29	I	25	**3D175**	60	4810	3930	3.40–41
23.6	61400	1.05	I	25	**3D175**	74	4810	3930	3.40–41

60 Hz, 1750 RPM Gearmotor Selection Tables



Horizontal Motor Shaft
Y1, Y3, Y5, Y6 Mounting Positions

30 HP

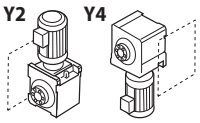
Output Speed RPM	Output Torque in•lb	Service Factor SF	Service Factor AGMA Class	SELECTION HP Symbol	SELECTION Frame Size	SELECTION Ratio	Overhung Load (lbs) Hollow Shaft	Overhung Load (lbs) Solid Shaft	Dimension Page LHYM
159	10900	1.34	I	30	**3C175**	11	3480	2850	3.40–41
97.2	17850	1.34	I	30	**3C175**	18	3480	2850	3.40–41
83.3	20880	1.10	I	30	**3C165**	21	3480	2850	3.40–41
		1.34	I	30	**3C175**	21	3480	2850	3.40–41
62.5	27800	1.10	I	30	**3C165**	28	3480	2850	3.40–41
		1.34	I	30	**3C175**	28	3480	2850	3.40–41
44.9	38700	1.08	I	30	**3D165**	39	4810	3930	3.40–41
		1.34	I	30	**3D175**	39	4810	3930	3.40–41
38.0	45700	1.01	I	30	**3D165**	46	4810	3930	3.40–41
		1.34	I	30	**3D175**	46	4810	3930	3.40–41
33.0	52700	1.00	I	30	**3D165**	53	4810	3930	3.40–41
		1.36	I	30	**3E175**	53	5170	4110	3.40–41
29.2	59500	1.10	I	30	**3D175**	60	4810	3930	3.40–41

40 HP

Output Speed RPM	Output Torque in•lb	Service Factor SF	Service Factor AGMA Class	SELECTION HP Symbol	SELECTION Frame Size	SELECTION Ratio	Overhung Load (lbs) Hollow Shaft	Overhung Load (lbs) Solid Shaft	Dimension Page LHYM
159	14500	1.00	I	40	**3C175**	11	3480	2850	3.40–41
97.2	23800	1.00	I	40	**3C175**	18	3480	2850	3.40–41
83.3	27800	1.00	I	40	**3C175**	21	3480	2850	3.40–41
62.5	37100	1.00	I	40	**3C175**	28	3480	2850	3.40–41
44.9	51600	1.00	I	40	**3D175**	39	4810	3930	3.40–41
38.0	61000	1.00	I	40	**3D175**	46	4810	3930	3.40–41
33.0	70200	1.00	I	40	**3E175**	53	5170	4110	3.40–41

Gearmotor Selection Tables 60 Hz, 1750 RPM

Vertical Motor Shaft
Y2, Y4 Mounting Positions



1/4 HP

Output Speed RPM	Output Torque in•lb	Service Factor SF	Service Factor AGMA Class	SELECTION HP Symbol	SELECTION Frame Size	SELECTION Ratio	Overhung Load (lbs) Hollow Shaft	Overhung Load (lbs) Solid Shaft	Dimension Page LHYM
8.45	1714	2.76	III	02	**3A100**	207	1120	990	3.38–39
7.03	2062	2.32	III	02	**3A100**	249	1120	990	3.38–39
5.74	2525	2.32	III	02	**3A100**	305	1120	990	3.38–39

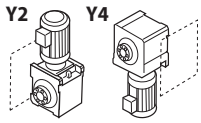
1/3 HP

Output Speed RPM	Output Torque in•lb	Service Factor SF	Service Factor AGMA Class	SELECTION HP Symbol	SELECTION Frame Size	SELECTION Ratio	Overhung Load (lbs) Hollow Shaft	Overhung Load (lbs) Solid Shaft	Dimension Page LHYM
9.78	1956	2.27	III	03	**3A100**	179	1120	990	3.38–39
8.45	2264	2.09	III	03	**3A100**	207	1120	990	3.38–39
7.03	2722	1.75	II	03	**3A100**	249	1120	990	3.38–39
		2.27	III	03	**3A105**	249	1120	990	3.38–39
5.74	3334	1.75	II	03	**3A100**	305	1120	990	3.38–39
		2.30	III	03	**3A105**	305	1120	990	3.38–39

1/2 HP

Output Speed RPM	Output Torque in•lb	Service Factor SF	Service Factor AGMA Class	SELECTION HP Symbol	SELECTION Frame Size	SELECTION Ratio	Overhung Load (lbs) Hollow Shaft	Overhung Load (lbs) Solid Shaft	Dimension Page LHYM
11.6	2499	2.10	III	05	**3A100**	151	1120	990	3.38–39
9.78	2964	1.50	II	05	**3A100**	179	1120	990	3.38–39
		2.10	III	05	**3A105**	179	1120	990	3.38–39
8.45	3431	1.38	I	05	**3A100**	207	1120	990	3.38–39
		1.90	II	05	**3A105**	207	1120	990	3.38–39
		2.30	III	05	**3A110**	207	1120	990	3.38–39
7.03	4124	1.16	I	05	**3A100**	249	1120	990	3.38–39
		1.50	II	05	**3A105**	249	1120	990	3.38–39
		2.04	III	05	**3A115**	249	1120	990	3.38–39
5.74	5051	1.16	I	05	**3A100**	305	1120	990	3.38–39
		1.52	II	05	**3A105**	305	1120	990	3.38–39
		2.54	III	05	**3B120**	305	2070	1640	3.38–39

60 Hz, 1750 RPM Gearmotor Selection Tables



Vertical Motor Shaft
Y2, Y4 Mounting Positions

3/4 HP

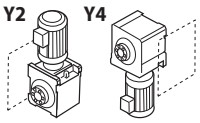
Output Speed RPM	Output Torque in•lb	Service Factor SF	Service Factor AGMA Class	SELECTION HP Symbol	SELECTION Frame Size	SELECTION Ratio	Overhung Load (lbs) Hollow Shaft	Overhung Load (lbs) Solid Shaft	Dimension Page LHYM
19.9	2185	2.26	III	08	**3A100**	88	1120	990	3.38–39
17.2	2528	2.16	III	08	**3A100**	102	1120	990	3.38–39
14.3	3041	1.75	II	08	**3A100**	123	1120	990	3.38–39
		2.14	III	08	**3A105**	123	1120	990	3.38–39
11.6	3749	1.40	II	08	**3A100**	151	1120	990	3.38–39
		2.32	III	08	**3A110**	151	1120	990	3.38–39
9.78	4447	1.00	I	08	**3A100**	179	1120	990	3.38–39
		1.69	II	08	**3A110**	179	1120	990	3.38–39
		2.13	III	08	**3A125**	179	1120	990	3.38–39
8.45	5146	1.27	I	08	**3A105**	207	1120	990	3.38–39
		1.53	II	08	**3A110**	207	1120	990	3.38–39
		2.32	III	08	**3B120**	207	2070	1640	3.38–39
7.03	6186	1.00	I	08	**3A105**	249	1120	990	3.38–39
		1.53	II	08	**3A125**	249	1120	990	3.38–39
		2.14	III	08	**3B125**	249	2070	1640	3.38–39
5.74	7576	1.01	I	08	**3A105**	305	1120	990	3.38–39
		1.69	II	08	**3B120**	305	2070	1640	3.38–39
		2.02	III	08	**3B125**	305	2070	1640	3.38–39

1 HP

Output Speed RPM	Output Torque in•lb	Service Factor SF	Service Factor AGMA Class	SELECTION HP Symbol	SELECTION Frame Size	SELECTION Ratio	Overhung Load (lbs) Hollow Shaft	Overhung Load (lbs) Solid Shaft	Dimension Page LHYM
19.9	2914	1.70	II	1	**3A100**	88	1120	990	3.38–39
		2.24	III	1	**3A105**	88	1120	990	3.38–39
17.2	3371	1.62	II	1	**3A100**	102	1120	990	3.38–39
		2.13	III	1	**3A105**	102	1120	990	3.38–39
14.2	4083	1.31	I	1	**3A100**	123	1120	990	3.38–39
		1.61	II	1	**3A105**	123	1120	990	3.38–39
		2.01	III	1	**3A110**	123	1120	990	3.38–39
11.6	4999	1.05	I	1	**3A100**	151	1120	990	3.38–39
		1.45	II	1	**3A105**	151	1120	990	3.38–39
		2.56	III	1	**3B120**	151	1120	990	3.38–39
9.78	5929	1.04	I	1	**3A105**	179	1120	990	3.38–39
		1.49	II	1	**3A115**	179	1120	990	3.38–39
		2.31	III	1	**3B120**	179	2070	1640	3.38–39
8.45	6862	1.15	I	1	**3A110**	207	1120	990	3.38–39
		1.74	II	1	**3B120**	207	2070	1640	3.38–39
		2.17	III	1	**3B125**	207	2070	1640	3.38–39
7.03	8248	1.02	I	1	**3A115**	249	1120	990	3.38–39
		1.61	II	1	**3B125**	249	2070	1640	3.38–39
		2.04	III	1	**3B145**	249	2070	1640	3.38–39
5.74	10102	1.27	I	1	**3B120**	305	2070	1640	3.38–39
		1.52	II	1	**3B125**	305	2070	1640	3.38–39
		1.86	II	1	**3B145**	305	2070	1640	3.38–39

Gearmotor Selection Tables 60 Hz, 1750 RPM

Vertical Motor Shaft
Y2, Y4 Mounting Positions

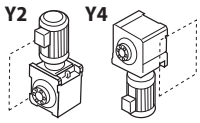


1.5 HP

Output Speed RPM	Output Torque in•lb	Service Factor SF	Service Factor AGMA Class	SELECTION HP Symbol	SELECTION Frame Size	SELECTION Ratio	Overhung Load (lbs) Hollow Shaft	Overhung Load (lbs) Solid Shaft	Dimension Page LHYM
159	547	2.10	III	1H*	**3A100**	11	1120	990	3.38–39
97.2	895	2.10	III	1H*	**3A100**	18	1120	990	3.38–39
83.3	1044	2.10	III	1H	**3A100**	21	1120	990	3.38–39
62.5	1392	2.10	III	1H	**3A100**	28	1120	990	3.38–39
44.9	1937	2.10	III	1H	**3A100**	39	1120	990	3.38–39
38.0	2289	2.10	III	1H	**3A100**	46	1120	990	3.38–39
33.0	2636	2.10	III	1H	**3A100**	53	1120	990	3.38–39
29.2	2979	1.78	II	1H	**3A100**	60	1120	990	3.38–39
		2.20	III	1H	**3A105**	60	1120	990	3.38–39
23.6	3685	1.72	II	1H	**3A100**	74	1120	990	3.38–39
		2.09	III	1H	**3A105**	74	1120	990	3.38–39
19.9	4371	1.13	I	1H	**3A100**	88	1120	990	3.38–39
		1.49	II	1H	**3A105**	88	1120	990	3.38–39
		2.17	III	1H	**3A125**	88	1120	990	3.38–39
17.2	5057	1.08	I	1H	**3A100**	102	1120	990	3.38–39
		1.42	II	1H	**3A105**	102	1120	990	3.38–39
		2.67	III	1H	**3B120**	102	2070	1640	3.38–39
14.2	6125	1.07	I	1H	**3A105**	123	1120	990	3.38–39
		1.55	II	1H	**3A115**	123	1120	990	3.38–39
		2.22	III	1H	**3B120**	123	2070	1640	3.38–39
11.6	7498	1.16	I	1H	**3A110**	151	1120	990	3.38–39
		1.70	II	1H	**3B120**	151	2070	1640	3.38–39
		2.13	III	1H	**3B125**	151	2070	1640	3.38–39
9.78	8893	1.06	I	1H	**3A125**	179	1120	990	3.38–39
		1.54	II	1H	**3B120**	179	2070	1640	3.38–39
		2.04	III	1H	**3B125**	179	2070	1640	3.38–39
8.45	10293	1.16	I	1H	**3B120**	207	2070	1640	3.38–39
		1.44	II	1H	**3B125**	207	2070	1640	3.38–39
		1.83	II	1H	**3B145**	207	2070	1640	3.38–39
7.03	12372	1.07	I	1H	**3B125**	249	2070	1640	3.38–39
		1.52	II	1H	**3B165**	249	2070	1640	3.38–39
		1.98	II	1H	**3C165**	249	3480	2850	3.40–41
5.74	15152	1.01	I	1H	**3B125**	305	2070	1640	3.38–39
		1.24	I	1H	**3B145**	305	2070	1640	3.38–39
		1.36	I	1H	**3C145**	305	3480	2850	3.40–41

* These Models are not available for Y4 Mounting Position

60 Hz, 1750 RPM Gearmotor Selection Tables



Vertical Motor Shaft
Y2, Y4 Mounting Positions

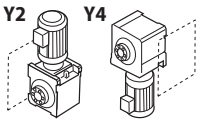
2 HP

Output Speed RPM	Output Torque in•lb	Service Factor SF	Service Factor AGMA Class	SELECTION HP Symbol	SELECTION Frame Size	SELECTION Ratio	Overhung Load (lbs) Hollow Shaft	Overhung Load (lbs) Solid Shaft	Dimension Page LHYM
159	729	1.57	II	2*	**3A100**	11	1120	990	3.38–39
		2.13	III	2*	**3A105**	11	1120	990	3.38–39
97.2	1193	1.57	II	2*	**3A100**	18	1120	990	3.38–39
		2.13	III	2*	**3A105**	18	1120	990	3.38–39
83.3	1392	1.57	II	2	**3A100**	21	1120	990	3.38–39
		2.13	III	2	**3A105**	21	1120	990	3.38–39
62.5	1855	1.57	II	2	**3A100**	28	1120	990	3.38–39
		2.13	III	2	**3A105**	28	1120	990	3.38–39
44.9	2583	1.57	II	2	**3A100**	39	1120	990	3.38–39
		2.13	III	2	**3A105**	39	1120	990	3.38–39
38.0	3052	1.57	II	2	**3A100**	46	1120	990	3.38–39
		2.13	III	2	**3A105**	46	1120	990	3.38–39
33.0	3514	1.57	II	2	**3A100**	53	1120	990	3.38–39
		2.13	III	2	**3A105**	53	1120	990	3.38–39
29.2	3971	1.33	I	2	**3A100**	60	1120	990	3.38–39
		1.65	II	2	**3A105**	60	1120	990	3.38–39
		2.13	III	2	**3A110**	60	1120	990	3.38–39
23.6	4914	1.29	I	2	**3A100**	74	1120	990	3.38–39
		1.57	II	2	**3A105**	74	1120	990	3.38–39
		2.65	III	2	**3B120**	74	2070	1640	3.38–39
19.9	5827	1.12	I	2	**3A105**	88	1120	990	3.38–39
		1.49	II	2	**3A115**	88	1120	990	3.38–39
		2.07	III	2	**3B120**	88	2070	1640	3.38–39
17.2	6742	1.06	I	2	**3A105**	102	1120	990	3.38–39
		1.40	II	2	**3A115**	102	1120	990	3.38–39
		2.00	III	2	**3B120**	102	2070	1640	3.38–39
14.2	8167	1.00	I	2	**3A110**	123	1120	990	3.38–39
		1.67	II	2	**3B120**	123	2070	1640	3.38–39
		2.13	III	2	**3B125**	123	2070	1640	3.38–39
11.6	9997	1.28	I	2	**3B120**	151	2070	1640	3.38–39
		1.59	II	2	**3B125**	151	2070	1640	3.38–39
		2.51	III	2	**3C165**	151	3480	2850	3.40–41
9.78	11857	1.15	I	2	**3B120**	179	2070	1640	3.38–39
		1.53	II	2	**3B125**	179	2070	1640	3.38–39
		2.51	III	2	**3C165**	179	3480	2850	3.40–41
8.45	13724	1.08	I	2	**3B125**	207	2070	1640	3.38–39
		1.49	II	2	**3C145**	207	3480	2850	3.40–41
		2.51	III	2	**3C165**	207	3480	2850	3.40–41
7.03	16496	1.02	I	2	**3B145**	249	2070	1640	3.38–39
		1.49	II	2	**3C165**	249	3480	2850	3.40–41
5.74	20203	1.02	I	2	**3C145**	305	3480	2850	3.40–41
		1.49	II	2	**3C165**	305	3480	2850	3.40–41

* These Models are not available for Y4 Mounting Position

Gearmotor Selection Tables 60 Hz, 1750 RPM

Vertical Motor Shaft
Y2, Y4 Mounting Positions

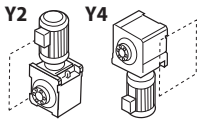


3 HP

Output Speed RPM	Output Torque in•lb	Service Factor SF	Service Factor AGMA Class	SELECTION HP Symbol	SELECTION Frame Size	SELECTION Ratio	Overhung Load (lbs) Hollow Shaft	Overhung Load (lbs) Solid Shaft	Dimension Page LHYM
159	1094	1.05	I	3*	**3A100**	11	1120	990	3.38–39
		1.42	II	3*	**3A105**	11	1120	990	3.38–39
		2.26	III	3*	**3A120**	11	1120	990	3.38–39
97.2	1790	1.05	I	3*	**3A100**	18	1120	990	3.38–39
		1.42	II	3*	**3A105**	18	1120	990	3.38–39
		2.26	III	3*	**3A120**	18	1120	990	3.38–39
83.3	2088	1.05	I	3	**3A100**	21	1120	990	3.38–39
		1.42	II	3	**3A105**	21	1120	990	3.38–39
		2.26	III	3	**3A120**	21	1120	990	3.38–39
62.5	2783	1.05	I	3	**3A100**	28	1120	990	3.38–39
		1.42	II	3	**3A105**	28	1120	990	3.38–39
		2.26	III	3	**3A120**	28	1120	990	3.38–39
44.9	3874	1.05	I	3	**3A100**	39	1120	990	3.38–39
		1.42	II	3	**3A105**	39	1120	990	3.38–39
		2.26	III	3	**3A120**	39	1120	990	3.38–39
38.0	4578	1.05	I	3	**3A100**	46	1120	990	3.38–39
		1.42	II	3	**3A105**	46	1120	990	3.38–39
		2.08	III	3	**3A125**	46	1120	990	3.38–39
33.0	5271	1.05	I	3	**3A100**	53	1120	990	3.38–39
		1.42	II	3	**3A105**	53	1120	990	3.38–39
		2.26	III	3	**3B120**	53	2070	1640	3.38–39
29.2	5957	1.10	I	3	**3A105**	60	1120	990	3.38–39
		1.42	II	3	**3A110**	60	1120	990	3.38–39
		2.26	III	3	**3B120**	60	2070	1640	3.38–39
23.6	7371	1.04	I	3	**3A105**	74	1120	990	3.38–39
		1.77	II	3	**3B120**	74	2070	1640	3.38–39
		2.18	III	3	**3B125**	74	2070	1640	3.38–39
19.9	8741	1.08	I	3	**3A125**	88	1120	990	3.38–39
		1.77	II	3	**3B125**	88	2070	1640	3.38–39
		2.16	III	3	**3B145**	88	2070	1640	3.38–39
17.2	10113	1.33	I	3	**3B120**	102	2070	1640	3.38–39
		1.68	II	3	**3B125**	102	2070	1640	3.38–39
		1.86	II	3	**3B165**	102	2070	1640	3.38–39
14.2	12250	1.11	I	3	**3B120**	123	2070	1640	3.38–39
		1.42	II	3	**3B125**	123	2070	1640	3.38–39
		1.67	II	3	**3C145**	123	3480	2850	3.40–41
11.6	14996	1.06	I	3	**3B125**	151	2070	1640	3.38–39
		1.67	II	3	**3C165**	151	3480	2850	3.40–41
9.78	17786	1.02	I	3	**3B125**	179	2070	1640	3.38–39
		1.67	II	3	**3C165**	179	3480	2850	3.40–41
8.45	20586	1.67	II	3	**3C165**	207	3480	2850	3.40–41

* These Models are not available for Y4 Mounting Position

60 Hz, 1750 RPM Gearmotor Selection Tables



Vertical Motor Shaft
Y2, Y4 Mounting Positions

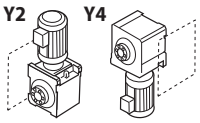
5 HP

Output Speed RPM	Output Torque in•lb	Service Factor SF	Service Factor AGMA Class	SELECTION HP Symbol	SELECTION Frame Size	SELECTION Ratio	Overhung Load (lbs) Hollow Shaft	Overhung Load (lbs) Solid Shaft	Dimension Page LHYM
159	1823	1.36	I	5*	**3A120**	11	1120	990	3.38–39
		1.55	II	5*	**3A125**	11	1120	990	3.38–39
		2.54	III	5*	**3A140**	11	1120	990	3.38–39
97.2	2983	1.36	I	5*	**3A120**	18	1120	990	3.38–39
		1.55	II	5*	**3A125**	18	1120	990	3.38–39
		2.54	III	5*	**3A140**	18	1120	990	3.38–39
83.3	3480	1.05	I	5	**3A115**	21	1120	990	3.38–39
		1.86	II	5	**3A125**	21	1120	990	3.38–39
		2.46	III	5	**3A145**	21	1120	990	3.38–39
62.5	4639	1.05	I	5	**3A115**	28	1120	990	3.38–39
		1.86	II	5	**3A125**	28	1120	990	3.38–39
		2.02	III	5	**3A145**	28	1120	990	3.38–39
44.9	6457	1.05	I	5	**3A115**	39	1120	990	3.38–39
		1.58	II	5	**3A125**	39	1120	990	3.38–39
		2.94	III	5	**3B145**	39	2070	1640	3.38–39
38.0	7629	1.04	I	5	**3A115**	46	1120	990	3.38–39
		1.58	II	5	**3B125**	46	2070	1640	3.38–39
		2.04	III	5	**3B145**	46	2070	1640	3.38–39
33.0	8785	1.05	I	5	**3A115**	53	1120	990	3.38–39
		1.58	II	5	**3B125**	53	2070	1640	3.38–39
		2.18	III	5	**3B145**	53	2070	1640	3.38–39
29.2	9929	1.36	I	5	**3B120**	60	2070	1640	3.38–39
		1.51	II	5	**3B125**	60	2070	1640	3.38–39
		2.98	III	5	**3C165**	60	3480	2850	3.40–41
23.6	12285	1.06	I	5	**3B120**	74	2070	1640	3.38–39
		1.51	II	5	**3B125**	74	2070	1640	3.38–39
		2.04	III	5	**3C165**	74	3480	2850	3.40–41
19.9	14569	1.06	I	5	**3B125**	88	2070	1640	3.38–39
		1.49	II	5	**3C145**	88	3480	2850	3.40–41
		2.04	III	5	**3C165**	88	3480	2850	3.40–41
17.2	16856	1.01	I	5	**3B125**	102	2070	1640	3.38–39
		2.04	III	5	**3C165**	102	3480	2850	3.40–41
14.2	20417	1.00	I	5	**3C145**	123	3480	2850	3.40–41
		1.85	II	5	**3C165**	123	3480	2850	3.40–41
		2.04	III	5	**3D165**	123	4810	3930	3.40–41
11.6	24993	1.00	I	5	**3C165**	151	3480	2850	3.40–41
		1.50	II	5	**3C175**	151	3480	2850	3.40–41
		2.04	III	5	**3D175**	151	4810	3930	3.40–41
9.78	29644	1.00	I	5	**3C165**	179	3480	2850	3.40–41
		1.49	II	5	**3D175**	179	4810	3930	3.40–41
8.45	34309	1.00	I	5	**3C165**	207	3480	2850	3.40–41
		1.49	II	5	**3D175**	207	4810	3930	3.40–41
7.03	41240	1.00	I	5	**3D175**	249	4810	3930	3.40–41
5.74	50508	1.00	I	5	**3D175**	305	4810	3930	3.40–41

* These Models are not available for Y4 Mounting Position

Gearmotor Selection Tables 60 Hz, 1750 RPM

Vertical Motor Shaft
Y2, Y4 Mounting Positions

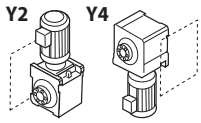


7.5 HP

Output Speed RPM	Output Torque in•lb	Service Factor SF	Service Factor AGMA Class	SELECTION HP Symbol	SELECTION Frame Size	SELECTION Ratio	Overhung Load (lbs) Hollow Shaft	Overhung Load (lbs) Solid Shaft	Dimension Page LHYM
159	2735	1.03	I	8*	**3A125**	11	1120	990	3.38–39
		1.69	II	8*	**3A140**	11	1120	990	3.38–39
		2.25	III	8*	**3B160**	11	2070	1640	3.38–39
97.2	4474	1.03	I	8*	**3A125**	18	1120	990	3.38–39
		1.69	II	8*	**3A140**	18	1120	990	3.38–39
		2.25	III	8*	**3B160**	18	2070	1640	3.38–39
83.3	5221	1.03	I	8	**3A125**	21	1120	990	3.38–39
		1.64	II	8	**3A145**	21	1120	990	3.38–39
62.5	6958	1.24	I	8	**3A125**	28	1120	990	3.38–39
		1.98	II	8	**3B145**	28	2070	1640	3.38–39
		2.68	III	8	**3B165**	28	2070	1640	3.38–39
44.9	9685	1.05	I	8	**3B125**	39	2070	1640	3.38–39
		1.96	II	8	**3B145**	39	2070	1640	3.38–39
		2.72	III	8	**3C165**	39	3480	2850	3.40–41
38.0	11444	1.05	I	8	**3B125**	46	2070	1640	3.38–39
		1.66	II	8	**3B165**	46	2070	1640	3.38–39
33.0	13178	1.05	I	8	**3B125**	53	2070	1640	3.38–39
		1.44	II	8	**3B165**	53	2070	1640	3.38–39
		2.14	III	8	**3C175**	53	3480	2850	3.40–41
29.2	14893	1.01	I	8	**3B125**	60	2070	1640	3.38–39
		1.98	II	8	**3C165**	60	3480	2850	3.40–41
23.6	18427	1.02	I	8	**3B165**	74	2070	1640	3.38–39
		1.73	II	8	**3C175**	74	3480	2850	3.40–41
19.9	21853	1.36	I	8	**3C165**	88	3480	2850	3.40–41
		1.73	II	8	**3C175**	88	3480	2850	3.40–41
17.2	25283	1.36	I	8	**3C165**	102	3480	2850	3.40–41
		1.49	II	8	**3C175**	102	3480	2850	3.40–41
		1.98	II	8	**3D175**	102	4810	3930	3.40–41
14.2	30625	1.23	I	8	**3C165**	123	3480	2850	3.40–41
		1.36	I	8	**3D165**	123	4810	3930	3.40–41
11.6	37489	1.00	I	8	**3C175**	151	3480	2850	3.40–41
		1.36	I	8	**3D175**	151	4810	3930	3.40–41

* These Models are not available for Y4 Mounting Position

60 Hz, 1750 RPM Gearmotor Selection Tables



Vertical Motor Shaft
Y2, Y4 Mounting Positions

10 HP

Output Speed RPM	Output Torque in•lb	Service Factor SF	Service Factor AGMA Class	SELECTION HP Symbol	SELECTION Frame Size	SELECTION Ratio	Overhung Load (lbs) Hollow Shaft	Overhung Load (lbs) Solid Shaft	Dimension Page LHYM
159	3647	1.27	I	10*	**3A140**	11	1120	990	3.38–39
		1.48	II	10*	**3A145**	11	1120	990	3.38–39
		2.01	III	10*	**3B165**	11	2070	1640	3.38–39
97.2	5965	1.27	I	10*	**3A140**	18	1120	990	3.38–39
		1.48	II	10*	**3A145**	18	1120	990	3.38–39
		2.01	III	10*	**3B165**	18	2070	1640	3.38–39
83.3	6961	1.23	I	10	**3A145**	21	1120	990	3.38–39
		1.49	II	10	**3B145**	21	2070	1640	3.38–39
62.5	9277	1.01	I	10	**3A145**	28	1120	990	3.38–39
		1.49	II	10	**3B145**	28	2070	1640	3.38–39
		2.01	III	10	**3B165**	28	2070	1640	3.38–39
44.9	12914	1.47	II	10	**3B145**	39	2070	1640	3.38–39
		2.04	III	10	**3C165**	39	3480	2850	3.40–41
38.0	15259	1.02	I	10	**3B145**	46	2070	1640	3.38–39
		1.49	II	10	**3C165**	46	3480	2850	3.40–41
		2.49	III	10	**3C175**	46	3480	2850	3.40–41
33.0	17571	1.02	I	10	**3B145**	53	2070	1640	3.38–39
		1.49	II	10	**3C165**	53	3480	2850	3.40–41
29.2	19857	1.49	II	10	**3C165**	60	3480	2850	3.40–41
23.6	24569	1.02	I	10	**3C165**	74	3480	2850	3.40–41
19.9	29137	1.02	I	10	**3C165**	88	3480	2850	3.40–41
		1.49	II	10	**3D175**	88	4810	3930	3.40–41
17.2	33711	1.02	I	10	**3C165**	102	3480	2850	3.40–41
		1.49	II	10	**3D175**	102	4810	3930	3.40–41
14.2	40833	1.02	I	10	**3D165**	123	4810	3930	3.40–41
11.6	49985	1.02	I	10	**3D175**	151	4810	3930	3.40–41

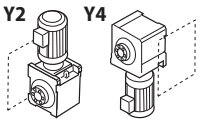
15 HP

Output Speed RPM	Output Torque in•lb	Service Factor SF	Service Factor AGMA Class	SELECTION HP Symbol	SELECTION Frame Size	SELECTION Ratio	Overhung Load (lbs) Hollow Shaft	Overhung Load (lbs) Solid Shaft	Dimension Page LHYM
159	5470	1.12	I	15*	**3B160**	11	2070	1640	3.38–39
		1.80	II	15*	**3C170**	11	3480	2850	3.40–41
97.2	8948	1.12	I	15*	**3B160**	18	2070	1640	3.38–39
		1.80	II	15*	**3C170**	18	3480	2850	3.40–41
62.5	13916	1.34	I	15	**3B165**	28	2070	1640	3.38–39
44.9	19371	1.36	I	15	**3C165**	39	3480	2850	3.40–41
38.0	22888	1.66	II	15	**3C175**	46	3480	2850	3.40–41
33.0	26356	1.07	I	15	**3C175**	53	3480	2850	3.40–41

* These Models are not available for Y4 Mounting Position

Gearmotor Selection Tables 60 Hz, 1750 RPM

Vertical Motor Shaft
Y2, Y4 Mounting Positions



20 HP

Output Speed RPM	Output Torque in•lb	Service Factor SF	Service Factor AGMA Class	SELECTION HP Symbol	SELECTION Frame Size	SELECTION Ratio	Overhung Load (lbs) Hollow Shaft	Overhung Load (lbs) Solid Shaft	Dimension Page LHYM
159	7293	1.00	I	20*	**3B165**	11	2070	1640	3.38–39
		1.47	II	20*	**3C175**	11	3480	2850	3.40–41
97.2	11931	1.00	I	20*	**3B165**	18	2070	1640	3.38–39
		1.47	II	20*	**3C175**	18	3480	2850	3.40–41
62.5	18555	1.00	I	20	**3B165**	28	2070	1640	3.38–39
44.9	25828	1.02	I	20	**3C165**	39	3480	2850	3.40–41
38.0	30517	1.24	I	20	**3C175**	46	3480	2850	3.40–41

25 HP

Output Speed RPM	Output Torque in•lb	Service Factor SF	Service Factor AGMA Class	SELECTION HP Symbol	SELECTION Frame Size	SELECTION Ratio	Overhung Load (lbs) Hollow Shaft	Overhung Load (lbs) Solid Shaft	Dimension Page LHYM
159	9117	1.08	I	25*	**3C170**	11	3480	2850	3.40–41
97.2	14913	1.08	I	25*	**3C170**	18	3480	2850	3.40–41

* These Models are not available for Y4 Mounting Position

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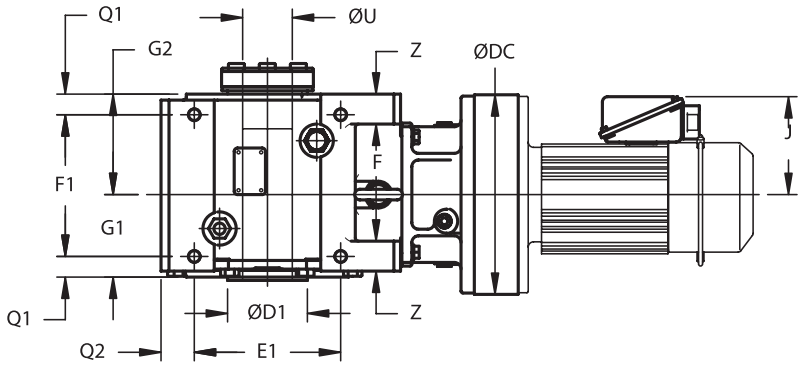
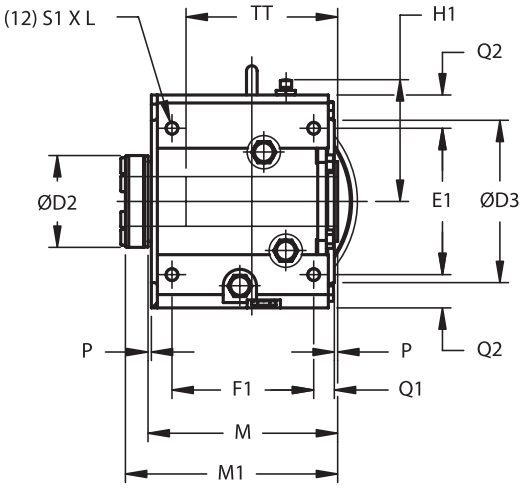
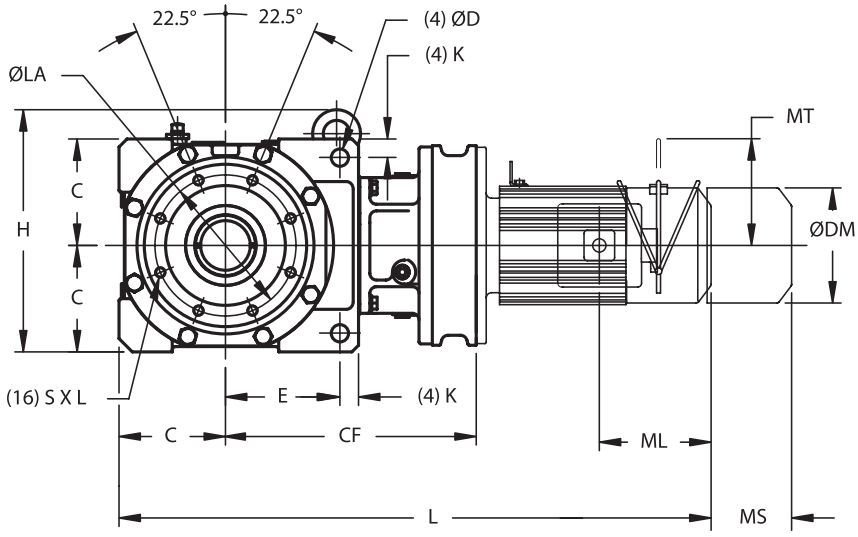
Dimensions Gearmotors

Single Reduction
LHYM-3A100~3B165

Min. Engagement	
FRAME SIZE	TT
3A	7.79
3B	9.33
3C	10.16
3D	11.82
3E	13.94







All dimensions are in inches.

Model	CF	ØDC	C	E	F	K	Z	ØD	E1	F1	Q1	Q2	S1 x L
3A100, 3A105	9.33	5.91	4.33	4.49	7.24	0.71	1.38	0.71	5.91	6.30	0.91	1.38	M12 x 0.79
3A110, 3A115	9.76	6.38											
3A120, 3A125	9.57	8.03											
3A140, 3A145	10.43	9.06											
3B120, 3B125	11.02	8.03	5.12	5.59	8.43	0.91	1.58	0.87	7.48	7.68	1.06	1.38	M16 x 1.02
3B140, 3B145	11.69	9.06											
3B160, 3B165	12.83	11.81											

												ØU	
Model	M	P	G1	G2	H	H1	ØLA	ØD3	S x L	M1	ØD1	ØD2	Std & Max	Min
3A100, 3A105	8.50	0.20	3.78	4.33	10.87	5.16	6.10	6.89	M10 x 0.67	9.84	3.35	4.09	2-3/16	1-11/16
3A110, 3A115														
3A120, 3A125														
3A140, 3A145														
3B120, 3B125	10.20	0.20	4.80	5.00	12.13	5.94	6.89	7.83	M12 x 0.79	11.54	3.94	4.49	2-7/16	1-15/16
3B140, 3B145														
3B160, 3B165														

Dimensions shown are for reference only and are subject to change without notice, unless certified.
Certified prints are available after receipt of an order; consult factory.

Single Reduction LHYM-3A100~3B165 Dimensions

All dimensions are in inches.

Model	4 Pole Motor	Without Brake					With Brake						
	HP	L	ØDM	J	ML	W (lb)	L	ØDM	J	ML	MS	MT	W (lb)
3A100, 3A105	1/4	20.61	4.88	5.04	2.32	115	21.85	4.88	5.04	3.58	2.40	-	117
	1/3	20.61	4.88	5.04	2.32	115	21.85	4.88	5.04	3.58	2.40	-	117
	1/2	21.39	4.88	5.04	2.32	117	22.64	4.88	5.04	3.58	2.40	-	121
	3/4	23.01	5.83	5.43	3.82	126	24.69	5.83	5.43	5.51	3.66	4.17	132
	1	23.01	5.83	5.43	3.82	126	24.69	5.83	5.43	5.51	3.66	4.17	132
	1.5	24.31	6.30	5.63	3.94	135	26.73	6.30	5.63	6.38	4.53	4.49	146
	2	24.31	6.30	5.63	3.94	135	26.73	6.30	5.63	6.38	4.53	4.49	146
	3	25.09	6.81	5.91	4.13	143	27.56	6.81	5.91	6.61	4.76	4.88	159
3A110, 3A115	1/2	21.70	4.88	5.04	2.32	126	22.91	4.88	5.04	3.58	2.40	-	130
	3/4	23.28	5.83	5.43	3.82	132	25.20	5.83	5.43	5.51	3.66	4.17	139
	1	23.28	5.83	5.43	3.82	132	25.20	5.83	5.43	5.51	3.66	4.17	139
	1.5	24.58	6.30	5.63	3.94	141	26.81	6.30	5.63	6.38	4.53	4.49	152
	2	24.58	6.30	5.63	3.94	141	26.81	6.30	5.63	6.38	4.53	4.49	152
	3	25.37	6.81	5.91	4.13	150	27.83	6.81	5.91	6.61	4.76	4.88	165
	5	26.74	8.35	6.54	5.00	170	29.57	8.35	6.54	7.83	5.20	6.18	192
3A120, 3A125	1.5	24.53	6.30	5.63	3.94	150	26.97	6.30	5.63	6.38	4.53	4.49	161
	2	24.53	6.30	5.63	3.94	150	26.97	6.30	5.63	6.38	4.53	4.49	161
	3	25.31	6.81	5.91	4.13	159	27.80	6.81	5.91	6.61	4.76	4.88	174
	5	26.22	8.35	6.54	5.00	181	29.06	8.35	6.54	7.83	5.20	6.18	203
	7.5	27.95	8.35	6.54	5.00	196	30.79	8.35	6.54	7.83	5.20	6.18	218
3A140, 3A145	7.5	28.81	8.35	6.54	5.00	212	31.65	8.35	6.54	7.83	5.20	6.18	234
	10	29.73	9.49	8.31	5.63	243	33.46	9.49	8.31	9.37	6.69	7.17	282
	15	32.09	9.88	8.31	5.63	273	35.83	9.88	8.31	9.37	6.69	7.17	313
	20	35.63	12.76	10.31	11.61	395	39.76	12.76	10.31	15.16	8.66	-	467
3B120, 3B125	3/4	25.49	5.83	5.43	3.82	203	27.17	5.83	5.43	5.51	3.66	4.17	209
	1	25.49	5.83	5.43	3.82	203	27.17	5.83	5.43	5.51	3.66	4.17	209
	1.5	26.79	6.30	5.63	3.94	212	29.21	6.30	5.63	6.38	4.53	4.49	223
	2	26.79	6.30	5.63	3.94	212	29.21	6.30	5.63	6.38	4.53	4.49	223
	3	27.57	6.81	5.91	4.13	221	30.04	6.81	5.91	6.61	4.76	4.88	236
	5	28.48	8.35	6.54	5.00	243	31.30	8.35	6.54	7.83	5.20	6.18	265
	7.5	30.21	8.35	6.54	5.00	258	33.03	8.35	6.54	7.83	5.20	6.18	280
3B140, 3B145	1	26.14	5.83	5.43	3.82	221	27.83	5.83	5.43	5.51	3.66	4.17	227
	1.5	27.44	6.30	5.63	3.94	229	29.88	6.30	5.63	6.38	4.53	4.49	240
	2	27.44	6.30	5.63	3.94	229	29.88	6.30	5.63	6.38	4.53	4.49	240
	3	28.23	6.81	5.91	4.13	236	30.71	6.81	5.91	6.61	4.76	4.88	251
	5	29.13	8.35	6.54	5.00	258	31.97	8.35	6.54	7.83	5.20	6.18	280
	7.5	30.87	8.35	6.54	5.00	273	33.70	8.35	6.54	7.83	5.20	6.18	295
	10	31.77	9.49	8.31	5.63	304	35.51	9.49	8.31	9.37	6.69	7.17	344
	15	34.13	9.88	8.31	5.63	335	37.87	9.88	8.31	9.37	6.69	7.17	375
	20	37.68	12.76	10.31	11.61	456	41.81	12.76	10.31	15.16	8.66	-	529
3B160, 3B165	5	30.29	8.35	6.54	5.00	304	33.11	8.35	6.54	7.83	5.20	6.18	326
	7.5	32.02	8.35	6.54	5.00	320	34.84	8.35	6.54	7.83	5.20	6.18	342
	10	33.12	9.49	8.31	5.63	353	36.85	9.49	8.31	9.37	6.69	7.17	392
	15	35.48	9.88	8.31	5.63	384	39.21	9.88	8.31	9.37	6.69	7.17	421
	20	38.83	12.76	10.31	11.61	503	42.95	12.76	10.31	15.16	8.66	-	576
	25	42.56	15.51	13.46	13.39	657	49.06	15.51	13.46	21.65	14.45	-	770
	30	42.56	15.51	13.46	13.39	657	49.06	15.51	13.46	21.65	14.45	-	770

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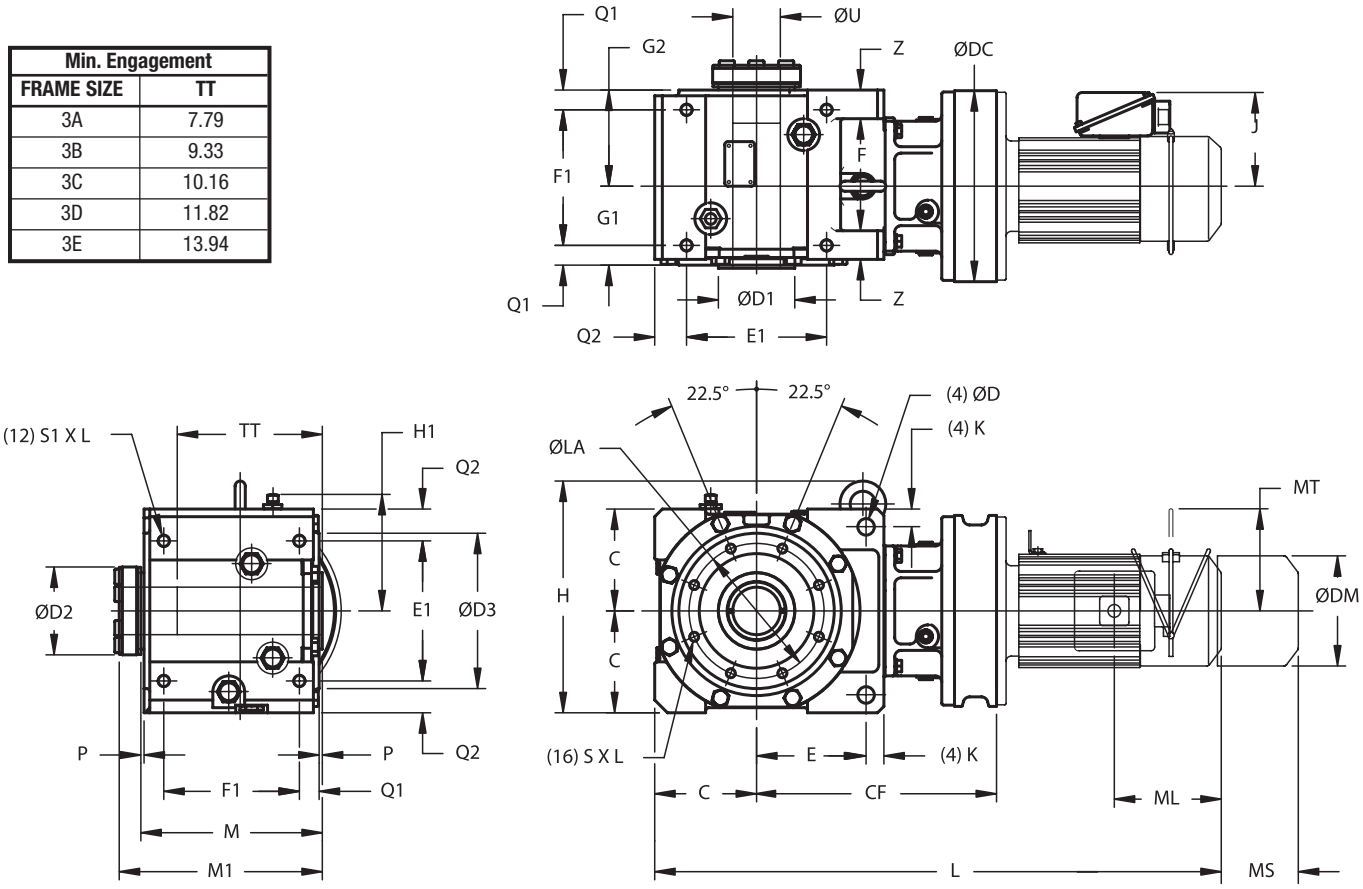
Certified prints are available after receipt of an order; consult factory.

Dimensions

Single Reduction
LHYM-3C140~3E175

Min. Engagement	
FRAME SIZE	TT
3A	7.79
3B	9.33
3C	10.16
3D	11.82
3E	13.94



All dimensions are in inches.

Model	CF	ØDC	C	E	F	K	Z	ØD	E1	F1	Q1	Q2	S1 x L
3C140, 3C145	14.02	9.06											
3C160, 3C165	14.84	11.81	6.30	6.77	10.39	1.10	1.77	1.02	8.66	8.39	1.22	1.97	M20 x 1.30
3C170, 3C175	15.47	13.39											
3D160, 3D165	17.68	11.81	7.48	7.60	12.21	1.38	2.17	1.30	9.84	10.00	1.42	2.56	M24 x 1.57
3D170, 3D175	17.44	13.39											
3E170, 3E175	18.43	13.39	8.46	9.06	14.17	1.38	2.17	1.30	11.81	11.14	1.50	2.56	M24 x 1.57

												ØU	
Model	M	P	G1	G2	H	H1	ØLA	ØD3	S x L	M1	ØD1	ØD2	Std & Max	Min
3C140, 3C145														
3C160, 3C165	11.22	0.20	4.88	5.94	14.33	7.20	8.35	9.61	M16 x 1.02	12.83	4.72	5.43	2-15/16	2-3/16
3C170, 3C175														
3D160, 3D165	13.39	0.28	5.83	7.01	16.69	8.39	10.04	11.61	M20 x 1.30	15.00	5.51	5.98	3-7/16	2-7/16
3D170, 3D175														
3E170, 3E175	14.69	0.28	6.14	7.99	19.61	9.37	11.02	12.60	M20 x 1.38	16.30	6.30	6.69	3-15/16	2-15/16

Dimensions shown are for reference only and are subject to change without notice, unless certified.
Certified prints are available after receipt of an order; consult factory.

Single Reduction LHYM-3C140~3E175 Dimensions

All dimensions are in inches.

Model	4 Pole Motor	Without Brake					With Brake						
	HP	L	ØDM	J	ML	W (lb)	L	ØDM	J	ML	MS	MT	W (lb)
3C140, 3C145	1.5	30.94	6.30	5.63	3.94	333	33.39	6.30	5.63	6.38	4.53	4.49	344
	2	30.94	6.30	5.63	3.94	333	33.39	6.30	5.63	6.38	4.53	4.49	344
	3	31.73	6.81	5.91	4.13	340	34.21	6.81	5.91	6.61	4.76	4.88	355
	5	32.64	8.35	6.54	5.00	362	35.47	8.35	6.54	7.83	5.20	6.18	384
	7.5	34.37	8.35	6.54	5.00	377	37.20	8.35	6.54	7.83	5.20	6.18	399
	10	35.28	9.88	8.31	5.63	408	39.02	9.88	8.31	9.37	6.69	7.17	448
	15	37.64	9.88	8.31	5.63	439	41.38	9.88	8.31	9.37	6.69	7.17	478
	20	41.18	12.76	10.31	11.61	560	45.31	12.76	10.31	15.16	8.66	-	635
3C160, 3C165	2	31.97	6.30	5.63	3.94	379	34.41	6.30	5.63	6.38	4.53	4.49	390
	3	32.56	6.81	5.91	4.13	386	35.04	6.81	5.91	6.61	4.76	4.88	401
	5	33.46	8.35	6.54	5.00	406	36.30	8.35	6.54	7.83	5.20	6.18	428
	7.5	35.20	8.35	6.54	5.00	421	38.03	8.35	6.54	7.83	5.20	6.18	443
	10	36.30	9.88	8.31	5.63	454	40.04	9.88	8.31	9.37	6.69	7.17	494
	15	38.66	9.88	8.31	5.63	485	42.40	9.88	8.31	9.37	6.69	7.17	523
	20	42.01	12.76	10.31	11.61	604	46.14	12.76	10.31	15.16	8.66	-	679
	25	45.75	15.51	13.46	13.39	759	52.24	15.51	13.46	21.65	14.45	-	871
	30	45.75	15.51	13.46	13.39	759	52.24	15.51	13.46	21.65	14.45	-	871
3C170, 3C175	5	34.69	8.35	6.54	5.00	456	37.52	8.35	6.54	7.83	5.20	6.18	478
	7.5	36.42	8.35	6.54	5.00	472	39.25	8.35	6.54	7.83	5.20	6.18	494
	10	37.13	9.88	8.31	5.63	505	40.87	9.88	8.31	9.37	6.69	7.17	545
	15	39.49	9.88	8.31	5.63	536	43.23	9.88	8.31	9.37	6.69	7.17	576
	20	42.64	12.76	10.31	11.61	655	46.77	12.76	10.31	15.16	8.66	-	730
	25	46.38	15.51	13.46	13.39	584	52.87	15.51	13.46	21.65	14.45	-	917
	30	46.38	15.51	13.46	13.39	584	52.87	15.51	13.46	21.65	14.45	-	917
	40	46.38	15.51	13.46	13.39	856	52.87	15.51	13.46	21.65	14.57	-	950
3D160, 3D165	3	36.57	6.81	5.91	4.13	534	39.06	6.81	5.91	6.61	4.76	4.88	549
	5	37.48	8.35	6.54	5.00	553	40.31	8.35	6.54	7.83	5.20	6.18	576
	7.5	39.21	8.35	6.54	5.00	569	42.05	8.35	6.54	7.83	5.20	6.18	591
	10	40.31	9.88	8.31	5.63	602	44.06	9.88	8.31	9.37	6.69	7.17	642
	15	42.68	9.88	8.31	5.63	633	46.42	9.88	8.31	9.37	6.69	7.17	670
	20	46.02	12.76	10.31	11.61	752	50.16	12.76	10.31	15.16	8.66	-	827
	25	49.76	15.51	13.46	13.39	906	56.26	15.51	13.46	21.65	14.45	-	1019
	30	49.76	15.51	13.46	13.39	906	56.26	15.51	13.46	21.65	14.45	-	1019
3D170, 3D175	5	37.83	8.35	6.54	5.00	595	40.67	8.35	6.54	7.83	5.20	6.18	617
	7.5	39.57	8.35	6.54	5.00	611	42.40	8.35	6.54	7.83	5.20	6.18	633
	10	40.28	9.88	8.31	5.63	644	44.02	9.88	8.31	9.37	6.69	7.17	684
	15	42.64	9.88	8.31	5.63	675	46.38	9.88	8.31	9.37	6.69	7.17	714
	20	45.79	12.76	10.31	11.61	794	49.92	12.76	10.31	15.16	8.66	-	869
	25	49.53	15.51	13.46	13.39	944	56.02	15.51	13.46	21.65	14.45	-	1056
	30	49.53	15.51	13.46	13.39	944	56.02	15.51	13.46	21.65	14.45	-	1056
	40	49.53	15.51	13.46	13.39	994	56.02	15.51	13.46	21.65	14.57	-	1089
3E170, 3E175	5	39.80	8.35	6.54	5.00	759	42.64	8.35	6.54	7.83	5.20	6.18	781
	7.5	41.54	8.35	6.54	5.00	774	44.37	8.35	6.54	7.83	5.20	6.18	796
	10	42.24	9.88	8.31	5.63	807	45.98	9.88	8.31	9.37	6.69	7.17	847
	15	44.61	9.88	8.31	5.63	838	48.35	9.88	8.31	9.37	6.69	7.17	878
	20	47.76	12.76	10.31	11.61	957	51.89	12.76	10.31	15.16	8.66	-	1032
	25	51.50	15.51	13.46	13.39	1107	57.99	15.51	13.46	21.65	14.45	-	1219
	30	51.50	15.51	13.46	13.39	1107	57.99	15.51	13.46	21.65	14.45	-	1219
	40	51.50	15.51	13.46	13.39	1158	57.99	15.51	13.46	21.65	14.57	-	1252

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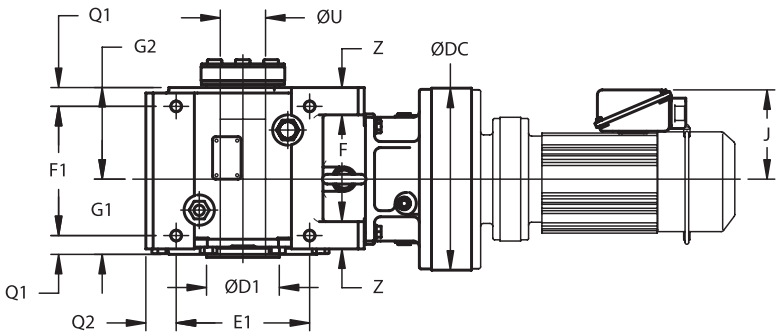
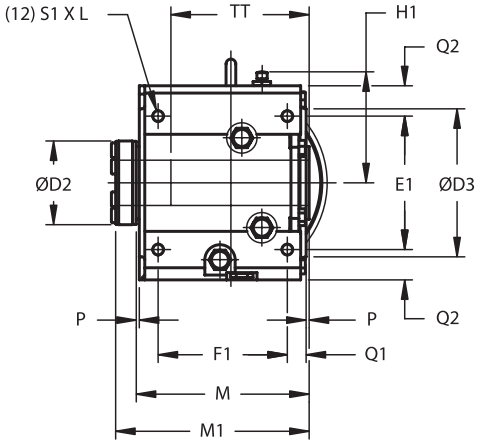
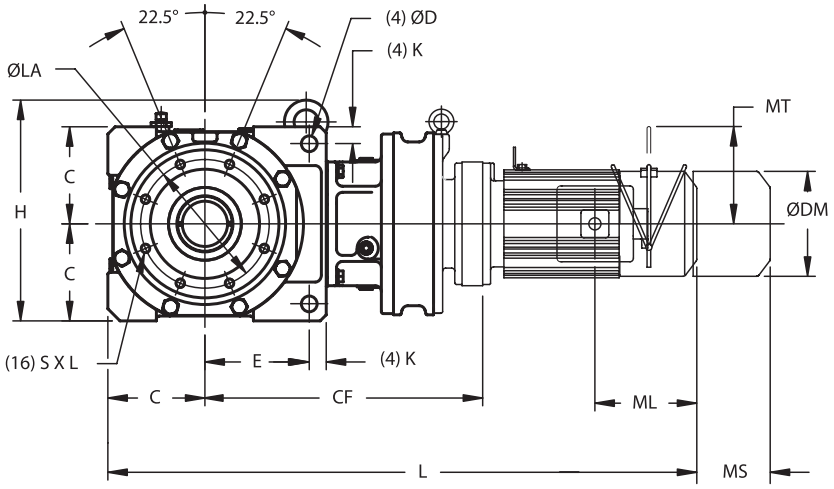
Dimensions

Double Reduction
LHYM-3A10DA~3C16DB

Min. Engagement	
FRAME SIZE	TT
3A	7.79
3B	9.33
3C	10.16
3D	11.82
3E	13.94







All dimensions are in inches.

Model	CF	ØDC	C	E	F	K	Z	ØD	E1	F1	Q1	Q2	S1 x L	M
3A10DA	11.22	5.91	4.33	4.49	7.24	0.71	1.38	0.71	5.91	6.30	0.91	1.38	M12x0.79	8.50
3A12DA	11.69	8.03												
3A12DB	12.17	8.03												
3B12DA	13.15	8.03	5.12	5.59	8.43	0.91	1.58	0.87	7.48	7.68	1.06	1.38	M16x1.02	10.20
3B12DB	13.62	8.03												
3B14DA	13.82	9.06												
3B14DB	14.17	9.06												
3C14DA	16.14	9.06	6.30	6.77	10.39	1.10	1.77	1.02	8.66	8.39	1.22	1.97	M20x1.30	11.22
3C14DB	16.50	9.06												
3C14DC	17.05	9.06												
3C16DA	17.40	11.81												
3C16DB	17.95	11.81												

												ØU	
Model	P	G1	G2	H	H1	ØLA	ØD3	S x L	M1	ØD1	ØD2	Std & Max	Min
3A10DA	0.20	3.78	4.33	10.87	5.16	6.10	6.89	M10 x 0.67	9.84	3.35	4.09	2-3/16	1-11/16
3A12DA													
3A12DB													
3B12DA	0.20	4.80	5.00	12.13	5.94	6.89	7.83	M12 x 0.79	11.54	3.94	4.49	2-7/16	1-15/16
3B12DB													
3B14DA													
3B14DB													
3C14DA	0.20	4.88	5.94	14.33	7.20	8.35	9.61	M16 x 1.02	12.83	4.72	5.43	2-15/16	2-3/16
3C14DB													
3C14DC													
3C16DA													
3C16DB													

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Double Reduction LHYM-3A10DA~3C16DB Dimensions

All dimensions are in inches.

Model	4 Pole Motor	Without Brake					With Brake						
	HP	L	ØDM	J	ML	W (lb)	L	ØDM	J	ML	MS	MT	W (lb)
3A10DA	1/8	20.83	4.88	5.04	1.38	117	22.20	4.88	5.04	2.76	2.40	-	119
	1/4	22.48	4.88	5.04	2.32	119	23.74	4.88	5.04	3.58	2.40	-	121
	1/3	22.48	4.88	5.04	2.32	119	23.74	4.88	5.04	3.58	2.40	-	121
	1/2	23.27	4.88	5.04	2.32	121	24.53	4.88	5.04	3.58	2.40	-	123
3A12DA	1/8	21.30	4.88	5.04	1.38	135	22.68	4.88	5.04	2.76	2.40	-	137
	1/4	22.95	4.88	5.04	2.32	137	24.21	4.88	5.04	3.58	2.40	-	139
	1/3	22.95	4.88	5.04	2.32	137	24.21	4.88	5.04	3.58	2.40	-	139
	1/2	23.74	4.88	5.04	2.32	139	25.00	4.88	5.04	3.58	2.40	-	141
3A12DB	1/3	23.43	4.88	5.04	2.32	143	24.69	4.88	5.04	3.58	2.40	-	148
	1/2	24.21	4.88	5.04	2.32	146	25.47	4.88	5.04	3.58	2.40	-	150
	3/4	25.83	5.83	5.43	3.82	154	27.52	5.83	5.43	5.51	3.66	4.17	161
	1	25.83	5.83	5.43	3.82	154	27.52	5.83	5.43	5.51	3.66	4.17	161
3B12DA	1/8	23.54	4.88	5.04	1.38	198	24.92	4.88	5.04	2.76	2.40	-	201
	1/4	25.20	4.88	5.04	2.32	201	26.46	4.88	5.04	3.58	2.40	-	203
	1/3	25.20	4.88	5.04	2.32	201	26.46	4.88	5.04	3.58	2.40	-	203
	1/2	25.98	4.88	5.04	2.32	203	27.24	4.88	5.04	3.58	2.40	-	205
3B12DB	1/3	25.67	4.88	5.04	2.32	207	26.93	4.88	5.04	3.58	2.40	-	212
	1/2	26.46	4.88	5.04	2.32	209	27.72	4.88	5.04	3.58	2.40	-	214
	3/4	28.07	5.83	5.43	3.82	218	29.76	5.83	5.43	5.51	3.66	4.17	225
	1	28.07	5.83	5.43	3.82	218	29.76	5.83	5.43	5.51	3.66	4.17	225
	1.5	29.37	6.30	5.63	3.94	225	31.81	6.30	5.63	6.38	4.53	4.49	236
3B14DA	1/4	25.87	4.88	5.04	2.32	209	27.13	4.88	5.04	3.58	2.40	-	212
	1/3	25.87	4.88	5.04	2.32	209	27.13	4.88	5.04	3.58	2.40	-	212
	1/2	26.65	4.88	5.04	2.32	212	27.91	4.88	5.04	3.58	2.40	-	214
3B14DB	1/4	26.22	4.88	5.04	2.32	214	27.48	4.88	5.04	3.58	2.40	-	218
	1/2	27.01	4.88	5.04	2.32	216	28.27	4.88	5.04	3.58	2.40	-	221
	3/4	28.62	5.83	5.43	3.82	225	30.31	5.83	5.43	5.51	3.66	4.17	232
	1	28.62	5.83	5.43	3.82	225	30.31	5.83	5.43	5.51	3.66	4.17	232
	1.5	29.92	6.30	5.63	3.94	232	32.36	6.30	5.63	6.38	4.53	4.49	243
	2	29.92	6.30	5.63	3.94	232	32.36	6.30	5.63	6.38	4.53	4.49	243
3C14DA	1/4	29.37	4.88	5.04	2.32	313	30.63	4.88	5.04	3.58	2.40	-	315
	1/3	29.37	4.88	5.04	2.32	313	30.63	4.88	5.04	3.58	2.40	-	315
	1/2	30.16	4.88	5.04	2.32	315	31.42	4.88	5.04	3.58	2.40	-	318
3C14DB	1/4	29.72	4.88	5.04	2.32	318	30.98	4.88	5.04	3.58	2.40	-	322
	1/3	29.72	4.88	5.04	2.32	318	30.98	4.88	5.04	3.58	2.40	-	322
	1/2	30.51	4.88	5.04	2.32	320	31.77	4.88	5.04	3.58	2.40	-	324
	3/4	32.13	5.83	5.43	3.82	329	33.82	5.83	5.43	5.51	3.66	4.17	335
	1	32.13	5.83	5.43	3.82	329	33.82	5.83	5.43	5.51	3.66	4.17	335
	1.5	33.43	6.30	5.63	3.94	335	35.87	6.30	5.63	6.38	4.53	4.49	346
	2	33.43	6.30	5.63	3.94	335	35.87	6.30	5.63	6.38	4.53	4.49	346
3C14DC	1.5	33.98	6.30	5.63	3.94	342	36.42	6.30	5.63	6.38	4.53	4.49	353
	2	33.98	6.30	5.63	3.94	342	36.42	6.30	5.63	6.38	4.53	4.49	353
	3	34.76	6.81	5.91	4.13	351	37.24	6.81	5.91	6.61	4.76	4.88	364
3C16DA	1/2	31.42	4.88	5.04	2.32	373	32.68	4.88	5.04	3.58	2.40	-	377
	3/4	33.03	5.83	5.43	3.82	381	34.72	5.83	5.43	5.51	3.66	4.17	388
	1	33.03	5.83	5.43	3.82	381	34.72	5.83	5.43	5.51	3.66	4.17	388
	1.5	34.33	6.30	5.63	3.94	390	32.83	6.30	5.63	6.38	4.53	4.49	401
	2	34.33	6.30	5.63	3.94	390	32.83	6.30	5.63	6.38	4.53	4.49	401
3C16DB	1.5	34.88	6.30	5.63	3.94	395	37.32	6.30	5.63	6.38	4.53	4.49	406
	2	34.88	6.30	5.63	3.94	395	37.32	6.30	5.63	6.38	4.53	4.49	406
	3	35.67	6.81	5.91	4.13	481	38.15	6.81	5.91	6.61	4.76	4.88	494

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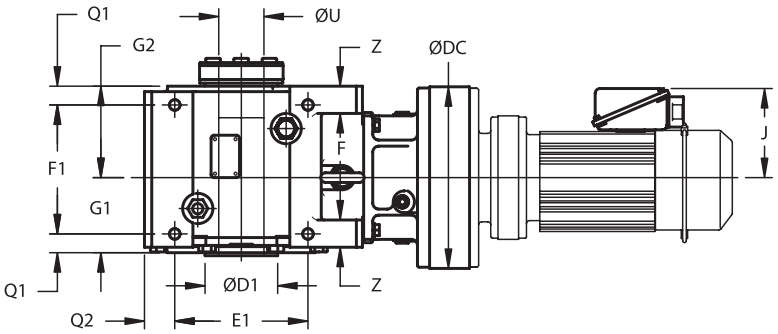
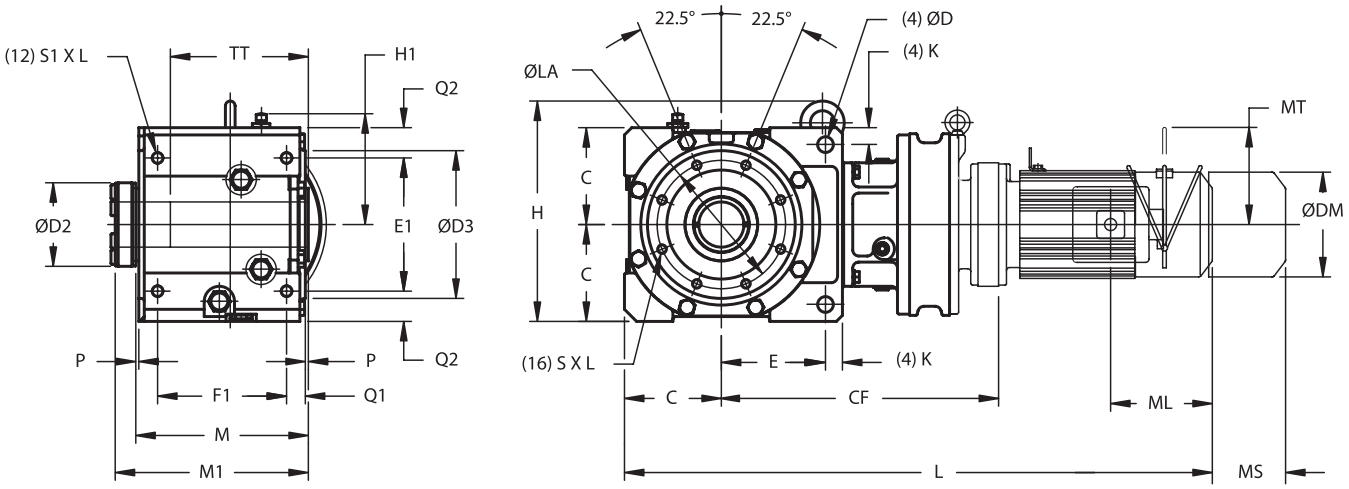
Dimensions

Double Reduction
LHYM-3D16DA~3E17DC

Min. Engagement	
FRAME SIZE	TT
3A	7.79
3B	9.33
3C	10.16
3D	11.82
3E	13.94





All dimensions are in inches.

Model	CF	ØDC	C	E	F	K	Z	ØD	E1	F1	Q1	Q2	S1 x L	M
3D16DA	20.24	11.81	7.48	7.60	12.21	1.38	2.17	1.30	9.84	10.00	1.42	2.56	M24x1.57	13.39
3D16DB	20.79	11.81												
3D16DC	20.87	11.81												
3D17DA	20.04	13.39												
3D17DB	20.59	13.39												
3D17DC	20.75	13.39												
3E17DA	21.02	13.39	8.46	9.06	14.17	1.38	2.17	1.30	11.81	11.14	1.50	2.56	M24x1.57	14.69
3E17DB	21.57	13.39												
3E17DC	21.73	13.39												

												ØU	
Model	P	G1	G2	H	H1	ØLA	ØD3	S x L	M1	ØD1	ØD2	Std & Max	Min
3D16DA	0.28	5.83	7.01	16.69	8.39	10.04	11.61	M20x1.30	15.00	5.51	5.98	3-7/16	2-7/16
3D16DB													
3D16DC													
3D17DA													
3D17DB													
3D17DC													
3E17DA	0.28	6.14	7.99	19.61	9.37	11.02	12.60	M20x1.38	16.30	6.30	6.69	3-15/16	2-15/16
3E17DB													
3E17DC													

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Double Reduction LHYM-3D16DA~3E17DC Dimensions

All dimensions are in inches.

Model	4 Pole Motor	Without Brake					With Brake						
	HP	L	ØDM	J	ML	W (lb)	L	ØDM	J	ML	MS	MT	W (lb)
3D16DA	1/4	33.46	4.88	5.04	2.32	518	34.72	4.88	5.04	3.58	2.40	-	523
	1/3	33.46	4.88	5.04	2.32	518	34.72	4.88	5.04	3.58	2.40	-	523
	1/2	34.25	4.88	5.04	2.32	520	35.51	4.88	5.04	3.58	2.40	-	525
	3/4	35.87	5.83	5.43	3.82	529	37.56	5.83	5.43	5.51	3.66	4.17	536
	1	35.87	5.83	5.43	3.82	529	37.56	5.83	5.43	5.51	3.66	4.17	536
	1.5	37.17	6.30	5.63	3.94	538	39.61	6.30	5.63	6.38	4.53	4.49	549
	2	37.17	6.30	5.63	3.94	538	39.61	6.30	5.63	6.38	4.53	4.49	549
3D16DB	1.5	37.72	6.30	5.63	3.94	542	40.16	6.30	5.63	6.38	4.53	4.49	553
	2	37.72	6.30	5.63	3.94	542	40.98	6.30	5.63	6.38	4.53	4.49	553
	3	38.50	6.81	5.91	4.13	551	40.98	6.81	5.91	6.61	4.76	4.88	564
3D16DC	5	40.67	8.35	6.54	5.00	587	43.50	8.35	6.54	7.83	5.20	6.18	609
3D17DA	1/2	34.06	4.88	5.04	2.32	549	35.31	4.88	5.04	3.58	2.40	-	553
	3/4	35.67	5.83	5.43	3.82	558	37.36	5.83	5.43	5.51	3.66	4.17	564
	1	35.67	5.83	5.43	3.82	558	37.36	5.83	5.43	5.51	3.66	4.17	564
	1.5	36.97	6.30	5.63	3.94	564	39.41	6.30	5.63	6.38	4.53	4.49	576
	2	36.97	6.30	5.63	3.94	564	39.41	6.30	5.63	6.38	4.53	4.49	576
3D17DB	2	37.52	6.30	5.63	3.94	571	38.31	6.30	5.63	6.38	4.53	4.49	582
	3	39.96	6.81	5.91	4.13	580	40.79	6.81	5.91	6.61	4.76	4.88	593
3D17DC	3	38.46	6.81	5.91	4.13	591	409.45	6.81	5.91	6.61	4.76	4.88	606
	4	39.37	8.35	6.54	5.00	613	42.20	8.35	6.54	7.83	5.20	6.18	635
	5	39.37	8.35	6.54	5.00	613	42.20	8.35	6.54	7.83	5.20	6.18	635
3E17DA	1/4	36.42	4.88	5.04	2.32	710	37.68	4.88	5.04	3.58	2.40	-	714
	1/3	36.42	4.88	5.04	2.32	710	37.68	4.88	5.04	3.58	2.40	-	714
	1/2	37.20	4.88	5.04	2.32	712	38.46	4.88	5.04	3.58	2.40	-	717
	3/4	38.82	5.83	5.43	3.82	721	40.51	5.83	5.43	5.51	3.66	4.17	728
	1	38.82	5.83	5.43	3.82	721	40.51	5.83	5.43	5.51	3.66	4.17	728
	1.5	40.12	6.30	5.63	3.94	728	42.56	6.30	5.63	6.38	4.53	4.49	739
	2	40.12	6.30	5.63	3.94	728	42.56	6.30	5.63	6.38	4.53	4.49	739
3E17DB	1.5	40.67	6.30	5.63	3.94	734	43.11	6.30	5.63	6.38	4.53	4.49	745
	2	40.67	6.30	5.63	3.94	734	43.11	6.30	5.63	6.38	4.53	4.49	745
	3	43.11	6.81	5.91	4.13	743	43.94	6.81	5.91	6.61	4.76	4.88	756
3E17DC	3	41.61	6.81	5.91	4.13	754	44.09	6.81	5.91	6.61	4.76	4.88	770
	4	42.52	8.35	6.54	5.00	776	45.35	8.35	6.54	7.83	5.20	6.18	798
	5	42.52	8.35	6.54	5.00	776	45.35	8.35	6.54	7.83	5.20	6.18	798
	7.5	44.25	8.35	6.54	5.00	792	47.09	8.35	6.54	7.83	5.20	6.18	814

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4 Options

Options

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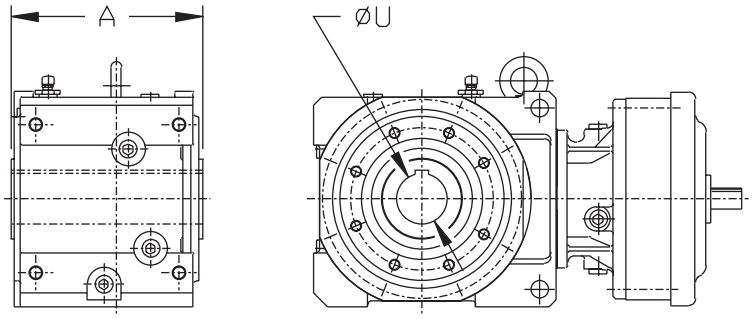
Keyed Hollow Shaft

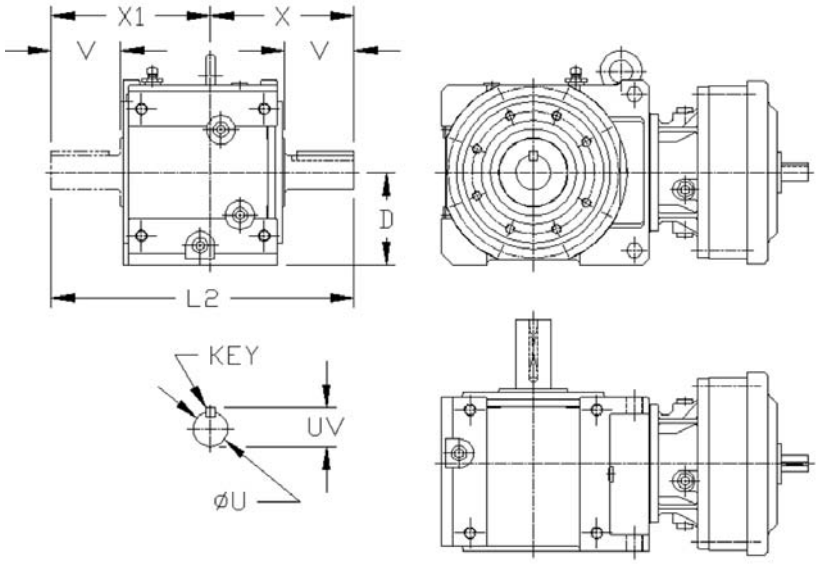


Frame Size	ØU	A	Keyway	TK*
3A	2.000	8.50	1/2 x 1/4	6.50
3B	2.375	10.20	5/8 x 5/16	7.87
3C	2.750	11.22	5/8 x 5/16	9.76
3D	3.250	13.39	3/4 X 3/8	11.93

**Recommended minimum shaft engagement*

Frame Size	Available Bore Sizes			
	Inch		Metric (mm)	
	Min.	Max.	Min.	Max.
3A	1-3/4	2-3/16	45	55
3B	2-3/16	2-5/8	55	65
3C	2-7/16	3	60	75
3D	2-3/4	3-7/16	70	85
3E	3-3/16	3-15/16	80	100

Solid Output Shaft



Frame Size	ØU	UV	D	V	X	Key	X1	L2
3A	2.000	2.22	4.33	3.54	7.48	1/2 x 1/2 x 2.76	8.11	15.59
3B	2.875	3.20	5.12	4.53	9.53	3/4 x 3/4 x 3.15	9.72	19.25
3C	3.125	3.45	6.30	5.71	10.79	3/4 x 3/4 x 4.72	11.85	22.64
3D	3.625	4.01	7.48	6.69	12.80	7/8 x 7/8 x 5.51	13.98	26.77
3E	4.375	4.82	8.46	7.87	14.29	1 x 1 x 6.30	16.14	30.43

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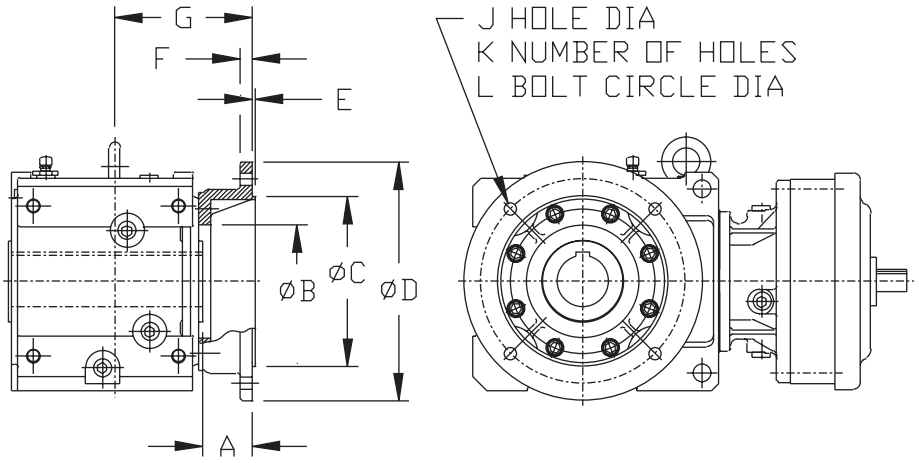
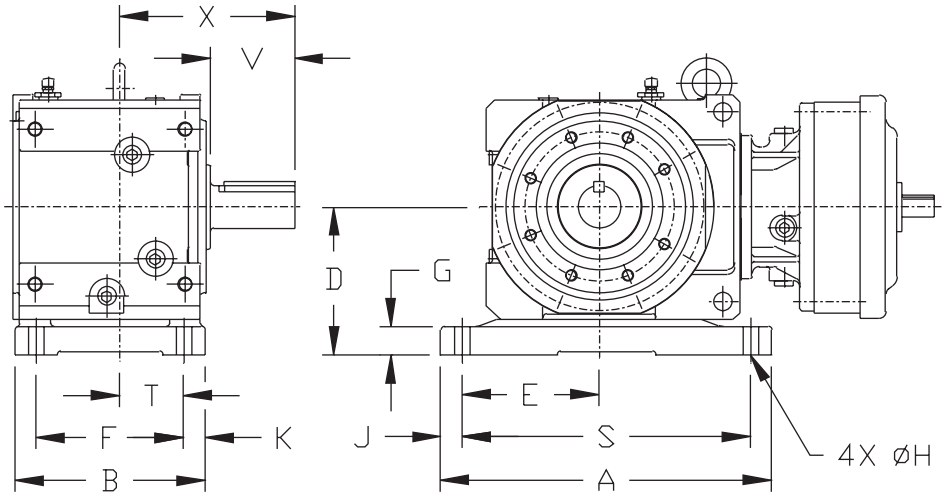
Options

Output Flange



Frame Size	A	B	C	D	E	F	G	J	K	L
3A	2.36	4.72	7.09	9.84	0.16	0.59	6.30	0.55	4	8.46
3B	2.40	5.51	9.06	11.81	0.16	0.63	7.40	0.55	4	10.43
3C	2.87	6.50	9.84	13.78	0.20	0.71	7.95	0.71	4	11.81
3D	3.15	7.68	13.78	17.72	0.20	0.87	9.25	0.71	8	15.75
3E	3.15	8.66	13.78	17.72	0.20	0.87	9.57	0.71	8	15.75

Foot Mounted

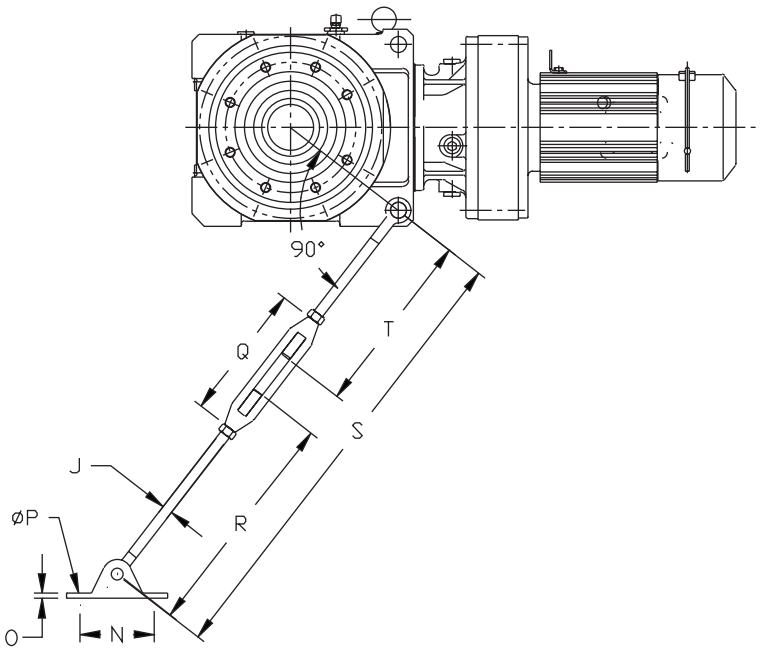


Frame Size	A	B	D	E	F	G	H	J	K	S	T	V	X
3A	12.60	7.95	5.51	5.31	6.30	0.98	0.55	0.79	0.83	11.02	2.83	3.54	7.48
3B	15.16	9.65	6.69	6.30	7.68	1.38	0.71	0.79	0.98	13.58	3.74	4.53	9.53
3C	19.88	10.63	8.27	7.68	8.27	1.57	0.87	1.18	1.18	17.52	3.58	5.71	10.79
3D	22.05	12.60	9.65	9.25	10.24	1.77	1.02	1.18	1.18	19.69	4.53	6.69	12.80

Options

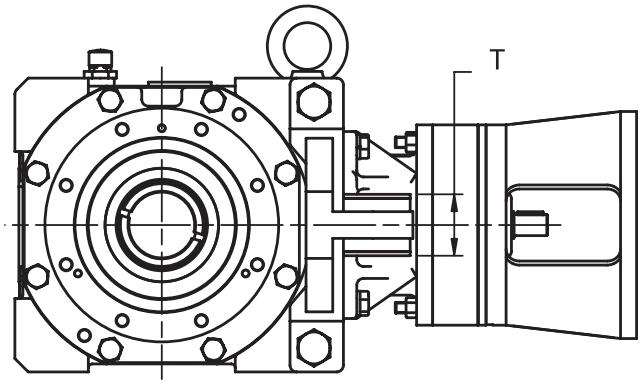
All dimensions are in inches. Dimensions shown are for reference only and are subject to change without notice, unless certified. Certified prints are available after receipt of an order; consult factory.

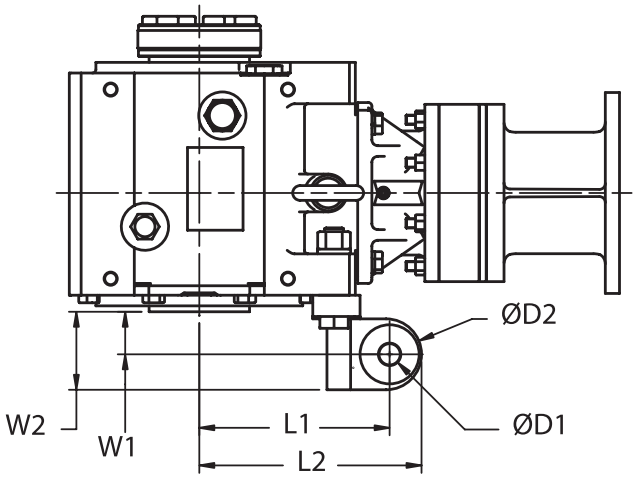
Torque Arm TURNBUCKLE TYPE



Turnbuckle Type											T-Type (optional)								
Frame Size	J	M	N	O	P	Q	R	S Min	S Max	T	Frame Size	L1	L2	W1	W2	T	ØD1	ØD2	Bolt Size
A	M20	0.71	3.94	0.47	0.63	8.50	14.76	25.20	31.10	10.43	A	6.34	7.40	1.42	2.60	1.81	0.71	2.36	M16
B	M20	0.87	3.94	0.47	0.63	8.50	14.76	25.79	31.69	11.02	B	7.68	8.98	1.89	3.31	2.05	0.87	2.83	M20
C	M24	1.02	4.72	0.71	0.63	8.74	14.76	26.57	32.48	11.81	C	9.13	10.79	2.40	4.17	2.20	1.02	3.54	M24
D	M24	1.30	4.72	0.71	0.63	8.74	14.76	27.95	33.86	13.19	D	10.98	12.95	2.91	5.08	2.44	1.30	3.94	M30
E	M24	1.30	4.72	0.71	0.63	8.74	14.76	27.95	33.86	13.19	E	12.05	14.21	2.91	5.08	2.44	1.30	4.33	M30

Torque Arm T-Type (Optional)





5 Appendix

Special Load Guidelines Overhung Load

Reducer/Gearmotor Allowable Overhung Load

When a sprocket, sheave, or gear is mounted on the slow speed shaft of a reducer, an overhung load is applied on that shaft. It is necessary to check if the shaft of the Cyclo BBB Speed Reducer will allow the overhung load. Calculate the overhung load using this formula:

$$\textit{Overhung Load} = \frac{126{,}000 \times HP \times Cf \times Lf \times Sf}{D \times N}$$

LEGEND
- **HP:** Horsepower transmitted by shaft
- **Cf:** Load connection factor (Fig. 5.1)
- **Lf:** Load location factor (Fig. 5.3 Output Shaft; Fig. 5.7 Input Shaft)
- **Sf:** Service factor (Determine from Fig. 5.2 and "How to Select," pages 2.4 and 3.4)
- **D:** Pitch diameter of sprocket, etc.
- **N:** Shaft speed (rpm)

Table 5.1 Load Connection Factor

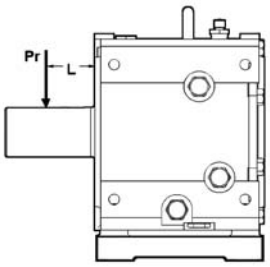
Type of Connection	Cf
General Purpose Chain	1.0
Machined Gear, Pinion or Synchronous Belt	1.25
V–Belt	1.5
Flat Belt	2.5

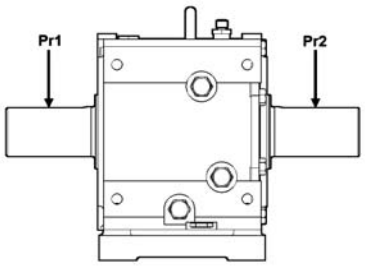
Table 5.2 Service Factor

Shock Factor	Sf
No Shock	1.0
Moderate Shock	1.5
Heavy Shock	2.0

Figure 5.1
Centerline of Load, Output

"L" indicates the distance from the hollow shaft end to the mid-point of the radial load.





For double extended output shafts, Pr1 + Pr2 must be less than the Allowable Overhung Load.

Table 5.3 Overhung Load Location Factor of Output Shaft, Lf (Keyed Hollow Bore, Tapered Grip Bushing)

Frame Size	L (inches)											
	1	1 1/4	1 1/2	1 3/4	2	2 1/2	3	3 1/2	4	4 1/2	5	6
3A100, 3A105, 3A110, 3A115, 3A120, 3A125, 3A140, 3A145,	1.04	1.08	1.12	1.16	1.19	1.27	1.35	1.42	–	–	–	–
3B120, 3B125, 3B140, 3B145, 3B160, 3B165	1.03	1.06	1.09	1.13	1.15	1.22	1.28	1.34	1.40	1.46	–	–
3C140, 3C145, 3C160, 3C165, 3C170, 3C175	1.02	1.06	1.08	1.11	1.14	1.20	1.25	1.31	1.37	1.42	1.48	–
3D160, 3D165, 3D170, 3D175,	1.02	1.05	1.07	1.09	1.11	1.16	1.21	1.26	1.31	1.35	1.39	1.49
3E170, 3E175	1.02	1.04	1.06	1.09	1.10	1.15	1.19	1.24	1.27	1.31	1.35	1.44

Table 5.4 Allowable Overhung Load for Output Shaft (Keyed Hollow Bore, Tapered Grip Bushing) (Lf, Cf, Sf = 1) Unit: lbs.

Frame Size	Output Shaft Speed (RPM)									
	5	10	20	30	35	45	50	60	75	90
3A100, 3A105, 3A110, 3A115, 3A120, 3A125, 3A140, 3A145,	1124	1124	1124	1124	1124	1124	1124	1124	1124	1124
3B120, 3B125, 3B140, 3B145, 3B160, 3B165	2068	2068	2068	2068	2068	2068	2068	2068	2068	2068
3C140, 3C145, 3C160, 3C165, 3C170, 3C175	3484	3484	3484	3484	3484	3484	3484	3484	3484	3215
3D160, 3D165, 3D170, 3D175,	4811	4811	4811	4811	4811	4811	4811	4811	4811	3799
3E170, 3E175	5170	5170	5170	5170	5170	5170	5170	5170	5170	5170

Special Load Guidelines Overhung Load continued

Table 5.5 Overhung Load Location Factor, Lf (Solid Output Shaft)

Frame Size	L (inches)											
	1	1 1/4	1 1/2	1 3/4	2	2 1/2	3	3 1/2	4	4 1/2	5	6
3A100, 3A105, 3A110, 3A115, 3A120, 3A125, 3A140, 3A145,	0.87	0.91	0.90	1.00	1.14	1.42	1.70	1.98	–	–	–	–
3B120, 3B125, 3B140, 3B145, 3B160, 3B165	0.83	0.87	0.90	0.94	0.97	1.11	1.33	1.55	1.77	1.99	–	–
3C140, 3C145, 3C160, 3C165, 3C170, 3C175	0.81	0.84	0.86	0.89	0.91	0.97	1.09	1.27	1.45	1.64	1.82	–
3D160, 3D165, 3D170, 3D175,	0.79	0.82	0.84	0.87	0.89	0.94	0.98	1.12	1.27	1.43	1.59	1.91
3E170, 3E175	0.78	0.81	0.83	0.85	0.87	0.91	0.95	1.00	1.14	1.28	1.42	1.70

Table 5.6 Allowable Overhung Load for Output Shaft: (Solid Output Shaft) (Lf, Cf, Fs =1) **Unit: lbs.**

Frame Size	Output Shaft Speed (RPM)									
	5	10	20	30	35	45	50	60	75	90
3A100, 3A105, 3A110, 3A115, 3A120, 3A125, 3A140, 3A145,	989	989	989	989	989	989	989	989	989	989
3B120, 3B125, 3B140, 3B145, 3B160, 3B165	1641	1641	1641	1641	1641	1641	1641	1641	1641	1641
3C140, 3C145, 3C160, 3C165, 3C170, 3C175	2855	2855	2855	2855	2855	2855	2855	2855	2855	2405
3D160, 3D165, 3D170, 3D175,	3934	3934	3934	3934	3934	3934	3934	3934	3754	2788
3E170, 3E175	4114	4114	4114	4114	4114	4114	4114	4114	4114	4114

Table 5.7 Input Shaft Load Location Factor

Single Reduction Frame Size	L (inch)											
	1/4	1/2	3/4	1	1 1/4	1 1/2	1 3/4	2	2 1/2	3	3 1/2	4
3A100, 3A105, 3A110, 3A115	0.93	1.09	1.52	2.03	—	—	—	—	—	—	—	—
3A120, 3A125 3B120, 3B125	—	0.87	1.10	1.43	1.77	2.12	—	—	—	—	—	—
3A140, 3A145 3B140, 3B124 3C140, 3C145	—	0.84	0.98	1.25	1.53	1.83	2.11	—	—	—	—	—
3B160, 3B165 3C160, 3C165 3D160, 3D165	—	0.94	0.97	1.06	1.22	1.36	1.51	1.66	—	—	—	—
3C170, 3C175 3D170, 3D175 3E170, 3E175	—	—	0.95	0.99	1.09	1.23	1.38	1.51	1.79	2.08	—	—

Figure 5.2

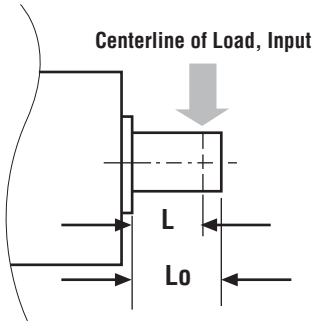


Table 5.8 Input Shaft Overhung Load Capacity (Lf, Cf, Sf = 1) **Unit: lbs.**

Single Reduction Frame Size	Ratio	Input Speed RPM						
		1750	1450	1165	980	870	720	580
3A100, 3A105	11~39, 60~417 46, 53	99 99	99 77	110 99	121 110	132 110	132 121	132 132
3A110, 3A115	21, 28, 74~305 39~60	99 44	77 44	99 44	110 44	110 55	121 55	132 66
3A120, 3A125 3B120, 3B125	21~60 74~305	133 121	155 99	166 110	175 121	198 133	198 198	198 198
3A140, 3A145 3B140, 3B145 3C140, 3C145	21, 28 39~74 88 102~305	308 277 243 121	308 220 254 133	308 243 265 133	342 265 288 155	364 277 297 155	387 297 308 155	418 330 330 243
3B160, 3B165 3C160, 3C165, 3D160, 3D165	28~88, 179, 207 102~151, 249, 305	398 243	398 265	441 288	463 308	486 308	486 353	486 398
3C170, 3C175, 3D170, 3D175, 3E170, 3E175	39~305	463	463	508	508	528	551	596

Special Load Guidelines **Inertia**

Table 5.9 ***Moment of Inertia on Motor Shaft of Gearmotor***[1] Units: lbs•inch²

	Reduction Ratio								
Frame Size	**11**	**18**	**21**	**28**	**39**	**46**	**53**	**60**	**74**
3A100, 3A105	1.53	0.636	0.461	0.301	0.175	0.162	0.141	0.101	0.104
3A110, 3A115	–	–	0.697	0.485	0.345	0.302	0.276	0.258	0.224
3A120, 3A125	3.59	1.48	1.23	0.960	0.584	0.619	0.581	0.434	0.489
3A140, 3A145	7.59	3.16	3.37	2.27	1.60	1.29	1.16	1.03	0.875
3B120, 3B125	4.99	2.00	1.59	1.16	0.690	0.697	0.636	0.479	0.520
3B140, 3B145	9.06	3.69	3.73	2.47	1.71	1.36	1.22	1.07	0.906
3B160, 3B165	23.0	9.67	8.78	6.08	4.00	3.62	3.28	2.80	2.58
3C140, 3C145	13.2	5.20	4.79	3.06	2.02	1.59	1.38	1.20	0.991
3C160, 3C165	27.2	11.2	9.84	6.70	4.31	3.86	3.45	2.93	2.67
3C170, 3C175	50.2	21.8	23.6	17.4	13.4	12.2	10.8	10.3	9.57
3D160, 3D165	38.6	15.3	12.7	8.3	5.16	4.44	3.90	3.28	2.90
3D170, 3D175	61.5	25.8	26.5	19.0	14.2	12.8	11.2	10.7	9.81
3E170, 3E175	76.9	31.3	30.3	21.2	15.4	13.6	11.8	11.1	10.1

Note: [1] Table 5.9 does not include the inertia of the integral motors. Total unit inertia is obtained by adding the reducer inertia to the motor inertia.

	Reduction Ratio							
Frame Size	**88**	**102**	**123**	**151**	**179**	**207**	**249**	**305**
3A100, 3A105	0.092	0.064	0.058	0.053	0.070	0.047	0.067	0.045
3A110, 3A115	0.214	0.206	0.196	0.191	0.185	0.183	0.181	0.179
3A120, 3A125	0.451	0.318	0.301	0.285	0.393	0.271	0.383	0.260
3A140, 3A145	0.813	0.745	0.718	0.673	0.656	0.653	0.639	0.632
3B120, 3B125	0.472	0.333	0.311	0.292	0.400	0.275	0.386	0.262
3B140, 3B145	0.834	0.759	0.728	0.680	0.660	0.660	0.639	0.636
3B160, 3B165	2.43	2.17	2.09	2.00	1.97	1.98	1.89	1.87
3C140, 3C145	0.892	0.803	0.759	0.701	0.677	0.670	0.649	0.639
3C160, 3C165	2.49	2.21	2.12	2.02	1.99	1.99	1.90	1.87
3C170, 3C175	9.19	8.75	8.58	8.37	8.27	8.17	8.13	8.10
3D160, 3D165	2.66	2.33	2.20	2.07	2.02	2.02	1.92	1.88
3D170, 3D175	9.37	8.89	8.65	8.44	8.31	8.20	8.17	8.10
3E170, 3E175	9.60	9.06	8.78	8.51	8.37	8.24	8.20	8.13

Table 5.10 Moment of Inertia on Motor Shaft of 3-Phase Integral Motor Units: lbs•inch²

1/8 HP x 4 Pole		1/4 HP x 4 Pole		1/3 HP x 4 pole		1/2 HP x 4 pole		3/4 HP x 4 pole		1 HP x 4 pole	
Standard	w/ Brake	Standard	w/ Brake	Standard	w/ Brake	Standard	w/ Brake	Standard	w/ Brake	Standard	w/ Brake
1.11	**1.20**	**1.71**	**1.88**	**1.71**	**1.88**	**2.22**	**2.31**	**3.45**	**3.79**	**4.10**	**4.44**
1/5 HP x 4 Pole		**2 HP x 4 Pole**		**3 HP x 4 pole**		**5 HP x 4 pole**		**7.5 HP x 4 pole**		**10 HP x 4 pole**	
Standard	w/ Brake	Standard	w/ Brake	Standard	w/ Brake	Standard	w/ Brake	Standard	w/ Brake	Standard	w/ Brake
6.32	**7.11**	**7.28**	**8.03**	**11.4**	**12.7**	**29.0**	**32.7**	**39.0**	**42.7**	**91.6**	**104**
15 HP x 4 Pole		**20 HP x 4 Pole**		**25 HP x 4 pole**		**30 HP x 4 pole**		**40 HP x 4 pole**		**50 HP x 4 pole**	
Standard	w/ Brake	Standard	w/ Brake	Standard	w/ Brake	Standard	w/ Brake	Standard	w/ Brake	Standard	w/ Brake
128	**140**	**307**	**455**	**769**	**793**	**769**	**793**	**855**	**878**	**1053**	**1097**

Table 5.11 Moment of Inertia on Motor Shaft of 3 Phase, Inverter Duty, Integral Motor Units: lbs•inch²

1/8 HP x 4 Pole		1/4 HP x 4 Pole		1/2 HP x 4 pole		1 HP x 4 pole		2 HP x 4 pole		3 HP x 4 pole	
Standard	w/ Brake	Standard	w/ Brake	Standard	w/ Brake	Standard	w/ Brake	Standard	w/ Brake	Standard	w/ Brake
1.71	**1.88**	**2.22**	**2.31**	**4.10**	**4.44**	**7.28**	**8.03**	**11.4**	**12.7**	**29.0**	**32.7**
5 HP x 4 Pole		**7.5 HP x 4 Pole**		**10 HP x 4 pole**		**15 HP x 4 pole**		**20 HP x 4 pole**		**25 HP x 4 pole**	
Standard	w/ Brake	Standard	w/ Brake	Standard	w/ Brake	Standard	w/ Brake	Standard	w/ Brake	Standard	w/ Brake
39.0	**42.7**	**91.6**	**104**	**128**	**140**	**307**	**455**	**769**	-	**769**	**793**
30 HP x 4 Pole		**40 HP x 4 Pole**									
Standard	w/ Brake	Standard	w/ Brake								
855	**878**	**1053**	**1097**								

Special Load Guidelines **Inertia** continued

Table 5.12 ***Moment of Inertia on High Speed Shaft of Reducer*** Units: lbs•inch²

	Reduction Ratio								
Frame Size	**11**	**18**	**21**	**28**	**39**	**46**	**53**	**60**	**74**
3A100, 3A105	1.54	0.649	0.482	0.281	0.196	0.140	0.120	0.125	0.083
3A110, 3A115	—	—	0.718	0.506	0.366	0.323	0.296	0.279	0.244
3A120, 3A125	3.62	1.54	1.35	0.841	0.704	0.499	0.461	0.554	0.369
3A140, 3A145	7.76	3.33	3.73	2.55	1.86	1.51	1.37	1.26	1.09
3B120, 3B125	5.06	2.06	1.71	1.04	0.810	0.578	0.520	0.598	0.400
3B140, 3B145	9.23	3.86	4.07	2.76	1.97	1.59	1.43	1.30	1.12
3B160, 3B165	31.3	18.0	12.9	10.1	8.03	7.66	7.31	6.84	6.63
3C140, 3C145	13.4	5.37	5.13	3.35	2.28	1.81	1.60	1.43	1.20
3C160, 3C165	35.5	19.6	13.9	10.7	8.34	7.90	7.49	6.97	6.70
3C170, 3C175	57.4	29.2	28.0	21.8	17.7	16.5	15.1	14.7	13.8
3D160, 3D165	46.8	27.1	16.7	12.3	9.16	8.48	7.93	7.31	6.94
3D170, 3D175	69.0	33.3	30.8	23.4	18.6	17.2	15.6	15.0	14.1
3E170, 3E175	84.4	39.0	34.5	25.6	19.8	18.0	16.2	15.5	14.4

	Reduction Ratio							
Frame Size	**88**	**102**	**123**	**151**	**179**	**207**	**249**	**305**
3A100, 3A105	0.071	0.085	0.079	0.074	0.049	0.068	0.046	0.066
3A110, 3A115	0.234	0.227	0.217	0.211	0.205	0.204	0.201	0.200
3A120, 3A125	0.332	0.438	0.420	0.407	0.275	0.390	0.265	0.379
3A140, 3A145	1.04	0.964	0.937	0.882	0.875	0.872	0.855	0.851
3B120, 3B125	0.352	0.451	0.431	0.414	0.280	0.393	0.267	0.383
3B140, 3B145	1.06	0.978	0.947	0.889	0.878	0.878	0.858	0.851
3B160, 3B165	6.46	6.19	6.12	6.02	6.02	6.02	5.91	5.91
3C140, 3C145	1.11	1.03	0.978	0.909	0.892	0.889	0.865	0.855
3C160, 3C165	6.53	6.25	6.15	6.05	6.02	6.02	5.95	5.91
3C170, 3C175	13.6	13.1	12.9	12.7	12.6	12.5	12.5	12.4
3D160, 3D165	6.70	6.36	6.22	6.02	6.05	6.05	5.95	5.91
3D170, 3D175	13.7	13.2	13.0	12.7	12.6	12.5	12.5	12.4
3E170, 3E175	13.9	13.4	13.1	12.8	12.7	12.5	12.5	12.4

Special Load Guidelines **Misc.**

Excessive Overloads

Cyclo BBB Speed Reducers provide 300% momentary intermittent shock load capacity and are warranted for 2 years from date of shipment. Refer to our standard terms and conditions for our complete warranty.

Selection for Applications Involving Shock Loading

For applications involving frequent start-stop, braking or reversing, or quick starting of load having large inertia, consult factory for model selection or recommended modifications.

Allowable Radial and Thrust Loads

The loads imposed on the slow speed shaft vary with the method of connecting the shaft to the driven machine. Frequently, in addition to torsional forces, radial and thrust loads are applied to the slow speed shaft at the same time. For example, coupling connections normally involve torsional forces only. However, when power is transmitted through spur gears, belts, pulleys or chains, both torsional and radial forces may be applied to the slow speed shaft. When driving through helical or bevel gears, all three conditions (torsional, radial and thrust load) may be referred to the reducer shaft.

The slow speed shaft and bearings must have sufficient strength to withstand these loads, and it is, therefore, necessary to determine the allowable limits for each condition.

Load Centering

The radial load capacities are calculated with the load concentrated at the midpoint of the slow speed shaft extension. Radial load capacities decrease if the center of the load is moved farther from the reducer and the values obtained from the charts must be adjusted accordingly.

Taper Grip® Bushing

Introduction

The keyless Taper-Grip® bushing system provides simple and reliable shaft attachment for Sumitomo Speed reducers and gearmotors. This system allows bi-directional shaft rotation and stop-start operation with a powerful, slip-free grip. To assure peak performance of your equipment, please read, understand and follow these installation instructions.

Safety

Disconnect all power sources from the equipment before beginning this installation procedure. Handle the components with care and avoid all sharp or machined edges to prevent personal injury or damage to the components.

Before Installing Unit on Driven Shaft (Steps 1-5)

Carefully inspect the driven equipment shaft. Remove all burrs, corrosion, lubricants, and foreign matter from the shaft surface. Verify the shaft diameter is within the dimensional tolerances shown in this table:

Table 5.13 Driven Shaft Tolerances

Shaft Diameter (inches)	Shaft Tolerance (inches)
3/4" – 1 1/8"	+0" – 0.005"
1 3/16" – 2"	+0" – 0.006"
2 1/16" – 3 1/8"	+0" – 0.007"
3 3/16" – 4 3/4"	+0" – 0.008"
4 13/16" – 6 1/2"	+0" – 0.009"

Clean all surfaces of the shaft, the bushing, the thrust collar and the unit bore with solvent to remove all grease and oil. **Do not apply lubricants, corrosion preventatives, anti-sieze compounds or coatings to the mating surfaces of the shaft, bushing, thrust collar or unit bore.**

Step 1 – Remove the capscrews from the bushing. Lightly oil the threads of the capscrews and partially re-insert them into the threaded holes in the bushing flange. The ends of the capscrews should not extend beyond the rear face of the bushing flange.

Step 2 – Slide the thrust collar onto the Taper-Grip® bushing (see Fig. 5.4).

Step 3 – Carefully thread the Taper-Grip® bushing into the hub of the speed reducer or gearmotor until the thrust collar solidly engages the unit hub surface and the bushing flange (see Fig. 5.5). **Caution: Do not cross-thread. Bushing should thread easily into hub.**

Step 4 – Unscrew the Taper-Grip® bushing to create a 1mm (0.04") gap between the thrust collar and the bushing flange.

Step 5 – Hand-tighten the cap screws until they firmly press the thrust collar against the unit hub surface. The unit is ready for installation on the driven shaft.

Fig. 5.3 Taper-Grip® Bushing Parts

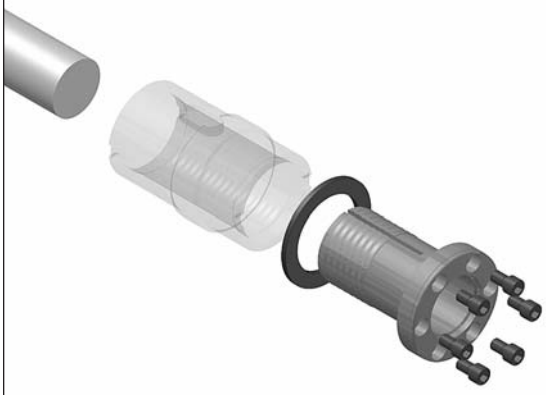


Fig. 5.4 Slide Thrust Collar on Bushing

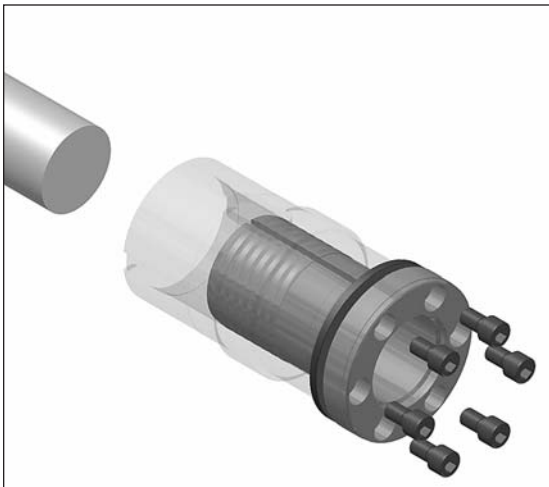


Fig. 5.5 Thread Bushing into Hub

Taper Grip® Bushing continued

Unit Installation

Step 6 – Position unit with the bushing flange located on the outboard side of the unit. Align the bushing with the driven shaft. Slide the unit onto the driven shaft as close to the driven shaft support bearing as possible. Ideally, the driven shaft should extend beyond the bushing flange face (see Fig. 5.7). Refer to Fig. 5.6 and Table 5.14 below for minimum shaft to engagement.

Table 5.14 Minimum Shaft Engagement

BBB Model	Minimum Shaft Engagement	
	mm	inches
A	208	8.19
B	242	9.53
C	279	10.98
D	326	12.83
E	359	14.13

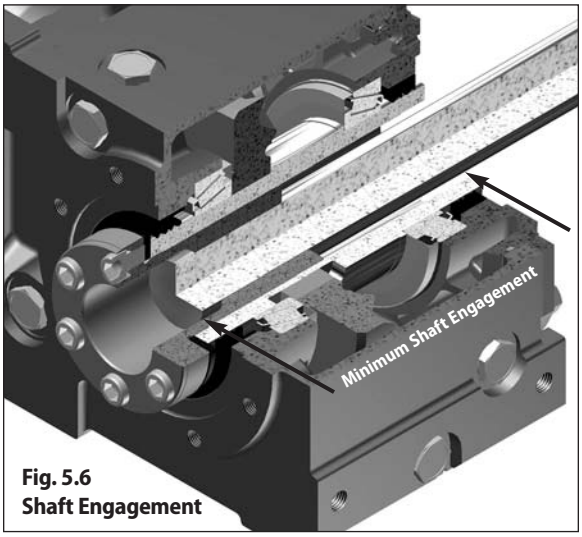


Fig. 5.6
Shaft Engagement

Step 7 – With a torque wrench, gradually tighten the capscrews to engage the bushing system. Use the appropriate tightening pattern ("star-pattern" see Fig. 5.7) to assure complete bushing engagement. Tighten each capscrew to the torque values shown in this table:

Table 5.15 Capscrew Tightening Torques

BBB Model	Capscrews (JIS Grade 12.9)		CapscrewTorque	
	Qty.	Size	Nm	Lb.Ft.
A	6	M12x16	75	56
B	6	M12x16	140	104
C	6	M16x20	250	185
D	6	M16x20	250	185
E	8	M16x20	250	185

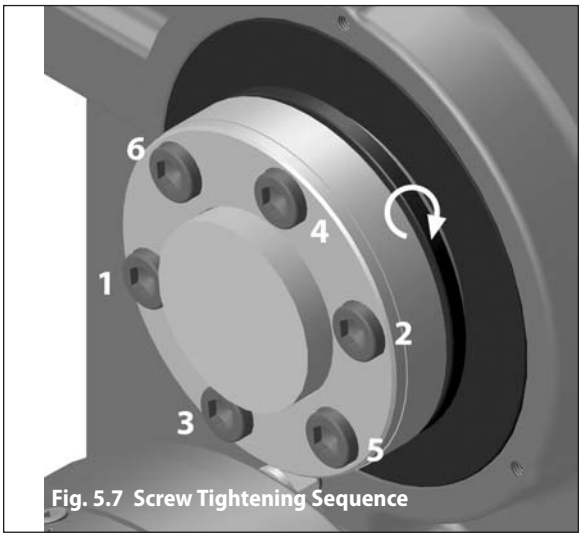


Fig. 5.7 Screw Tightening Sequence

If the shaft is recessed in the bushing, fill the void with grease to prevent corrosion and fouling.

Step 8 – Please read, understand and follow the instructions shown in the reducer/gearmotor installation and operating manual to complete the unit installation and attach the torque arm.

Taper Grip® Bushing continued

Removal Procedure

Step 1 – Before removing the reducer/gearmotor from the driven shaft, externally support the unit so that all its weight is removed from the driven shaft (see Fig. 5.8). **Caution: Do not raise the unit too high. It may cause the shaft to bind.**

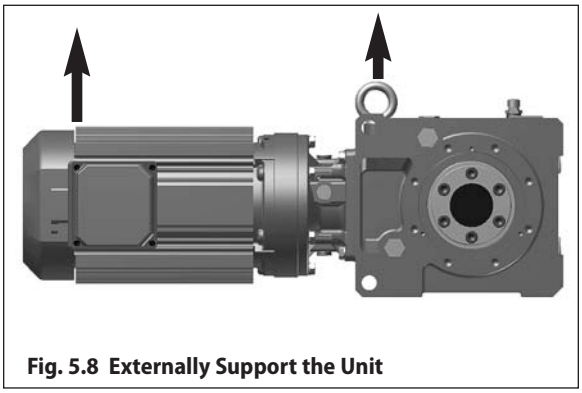


Fig. 5.8 Externally Support the Unit

Step 2 – Check the Taper-Grip® Bushing to assure that there is a gap between the thrust collar and the bushing flange. If no gap exists, unit removal may be difficult (see Fig 5.9).

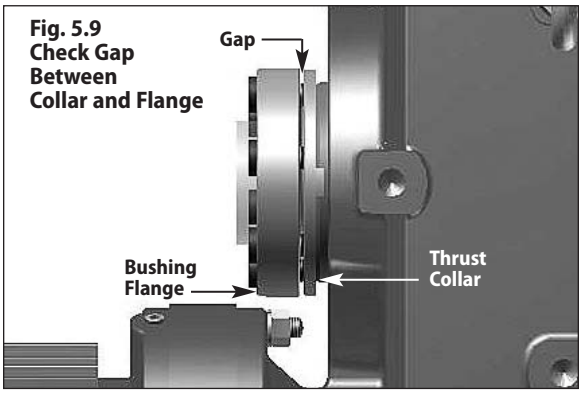


Fig. 5.9 Check Gap Between Collar and Flange

Step 3 – Spray a liquid penetrant onto each of the Taper-Grip® Bushing capscrews. Allow time for the penetrant to settle into the threads of the capscrews. (see Fig 5.10).

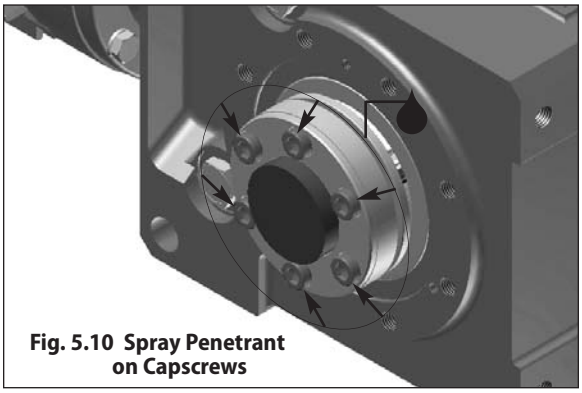


Fig. 5.10 Spray Penetrant on Capscrews

Step 4 – After the liquid penetrant has been allowed to settle, remove the capscrews one at a time (see Fig 5.11).

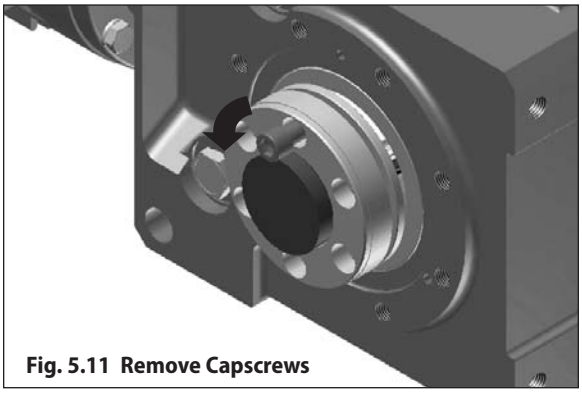


Fig. 5.11 Remove Capscrews

Step 5 – Place a copper or brass bar against the flange of the Taper-Grip® Bushing and carefully strike end of bar with a hammer to release bushing (see Fig 5.12).

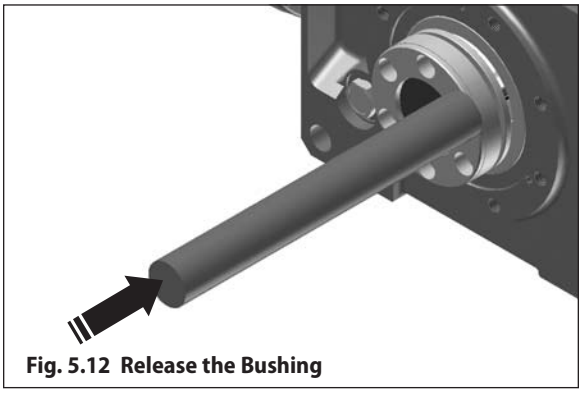


Fig. 5.12 Release the Bushing

Step 6 – After releasing the bushing, apply a liquid penetrant to the shaft where it contacts the bushing. Allow time for the liquid to penetrate between the bushing and the shaft, then carefully slide the unit off of the shaft. (see Fig 5.13). **Note: If the bushing releases, but the unit cannot be removed from the shaft, apply a puller to the bushing to push the shaft free.**

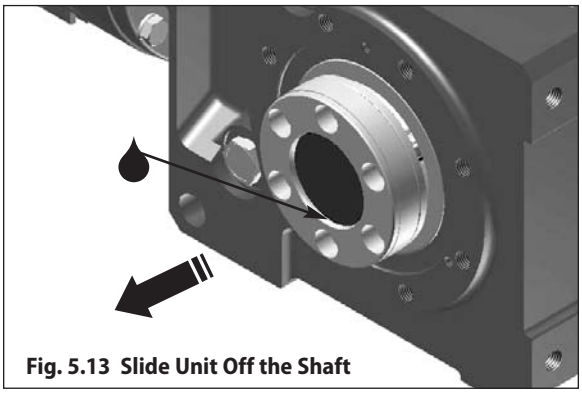


Fig. 5.13 Slide Unit Off the Shaft

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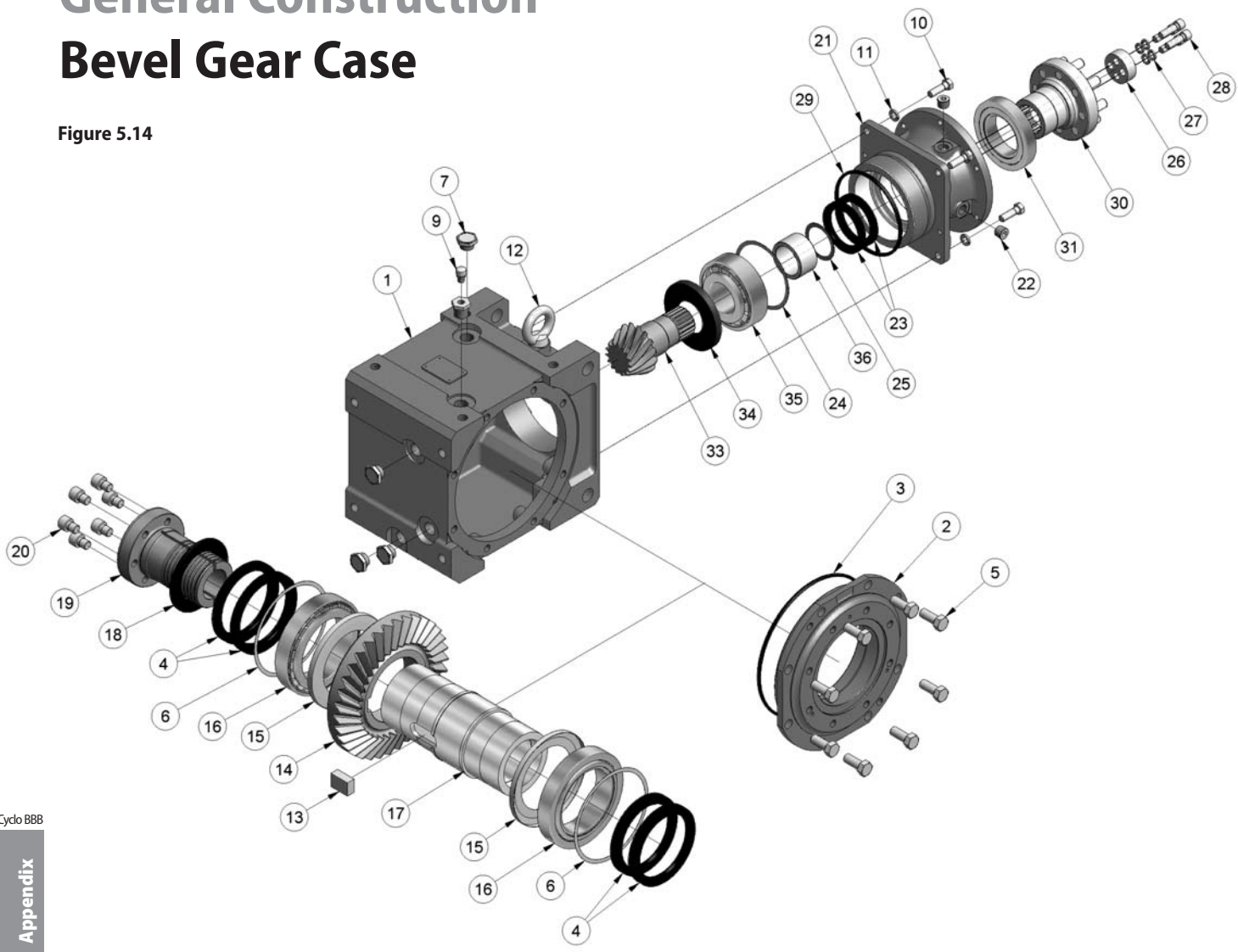
Parts List

General Construction

Bevel Gear Case

Figure 5.14



Parts List continued

Table 5.16 Parts Code Numbers

			Unit Size				
Item No.	Description	QTY	A	B	C	D	E
1	Gear Housing	1	AE983LG	AE984LG	AE985LG	AE986LG	AE987LG
2	Output Cover	1	BL520LG	BL531LG	BL542LG	BL550LG	BL554LG
3	O-Ring	1	540NG1701-A-G	540NG2101-A-G	540NG2601-A-G	541N5.7-3258G	541N5.7-3757G
4	Oil Seal	4	531N8511013-G	531N10012513G	531N12015014G	531N14017014G	531N16019016G
5	Hex Head Bolt	8	001M010R030NG	001M012R030NG	001M016R040NG	001M020R050NG	001M020R050NG
6[2]	Shim	Varies	As required	As required	As required	As required	As required
7	Plug	8	343C008R- - -NG	343C008R- - -NG	343C012R- - -NG	343C012R- - -NG	343C012R- - -NG
9	Air Vent	1	DT206LG	DT206LG	DT206LG	DT206LG	DT206LG
10	Hex Head Bolt	4	001M010R030NG	001M010R030NG	001M012R040NG	001M016R050NG	001M016R050NG
11	Spring Washer	4	062W010- - - -NG	062W010- - - -NG	062W012- - - -NG	062W016- - - -NG	062W016- - - -NG
12	Eye Bolt	1	006C016R- - -NG	006C016R- - -NG	006C020R- - -NG	006C020R- - -NG	006C024R- - -NG
13	Key	1	233M2214021NG	233M2514028NG	233M2816040NG	233M3218050NG	233M3620060NG
14	Bevel Gear	1	AP0646G	AP0647G	AP0648G	AP0649G	AP0650G
15	Nilos Ring	2	50532017XAV-G	50532020XAV-G	50532024XAV-G	50532028XAV-G	50532032XAV-G
16	Tapered Roller Bearing	2	503T32017XU-G	503T32020XU-G	503T32024XU-G	503T32028XU-G	503T32032XU-G
17	Taper-Grip® Output Hub	1	BL937LG	BL938LG	BL939LG	BL940LG	BL941LG
18[3]	Thrust Plate	1	—	—	—	—	—
19	Taper-Grip® Bushing	1	As required	As required	As required	As required	As required
20[3]	Taper-Grip® Bushing Screws	Varies	—	—	—	—	—
21[4]	Flanged Casing	1	As required	As required	As required	As required	As required
22	Hex Socket Plug	Varies	As required	343C008R- - -NG	343C008R- - -NG	343C008R- - -NG	343C008R- - -NG
23	Oil Seal	2	530N50689- - -G	530N60759- - -G	530N709513- -G	530N9011513-G	530N9011513-G
24[2]	Shim	Varies	As required	As required	As required	As required	As required
25[2]	Shim	Varies	As required	As required	As required	As required	As required
26	End Plate	1	AW7028G	AW7030G	AW7032G	As required	AW7036G
27	Lock Washer	4	EU593WW-05	EU593WW-05	EU593WW-07	As required	EU593WW-09
28	Hex. Soc. Hd. Cap Screw	4	009M008R030NG	009M010R035NG	009M012R040NG	As required	009M016R055NG
29	O-Ring	1	540NG1101-A-G	540NG1301-A-G	540NG1501-A-G	540NG1751-A-G	540NG1851-A-G
30[5]	Pin Carrier	1	As required	As required	As required	As required	As required
31	Tapered Roller Bearing	1	As required	As required	As required	As required	As required
33	Bevel Pinion Shaft	1	BL513LG	BL525LG	BL536LG	As required	BL553LG
34	Nilos Ring	1	50532308AV- -G	50532310AV- -G	50532312AV- -G	50532314AV- -G	50532315AV- -G
35	Tapered Roller Bearing	1	503T32308U- -G	503T32310U- -G	503T32312U- -G	503T32314U- -G	503T32315U- -G
36	Collar	1	AW7027G	AW7029G	AW7031G	As required	AW7034G

Notes: [1] When ordering replacement parts, please indicate the complete unit model number, ratio and serial number.
[2] Shims are not available individually. They may be ordered as a complete set only.
[3] Item Numbers 18 and 20 are not available as individual parts. They come complete with the Taper-Grip® Bushing.
[4] The Flange Casing is determined based on the associated input Cyclo size.

Cyclo Parts List

Cyclo Reducer Input Section

Single Reduction

Figure 5.15

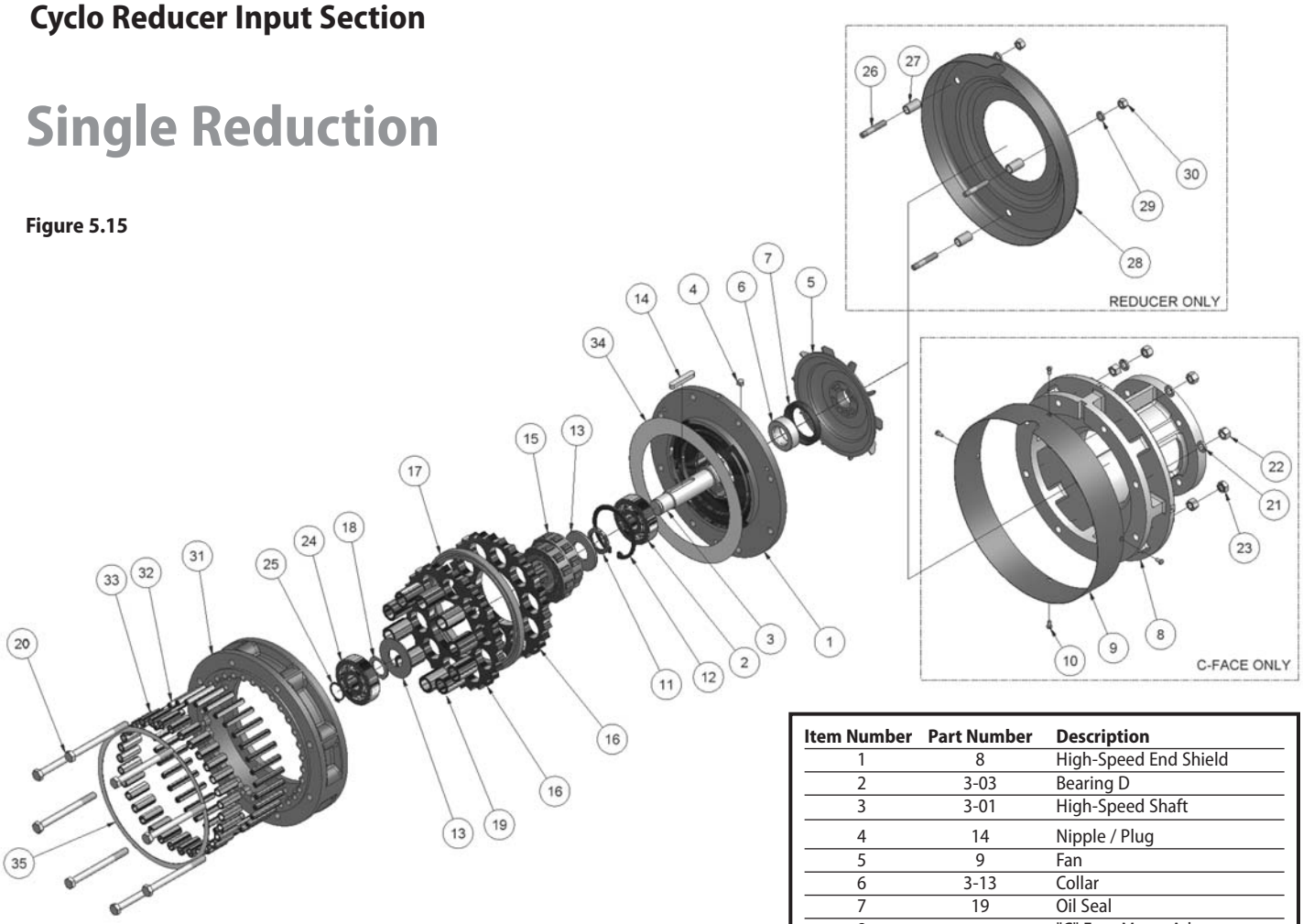


Table 5.17 Single Reduction Input Section Main Parts

Item Number	Part Number	Description
1	8	High-Speed End Shield
2	3-03	Bearing D
3	3-01	High-Speed Shaft
4	14	Nipple / Plug
5	9	Fan
6	3-13	Collar
7	19	Oil Seal
8	—	"C" Face Motor Adapter
9	—	Fan Shroud
10	—	Shroud Bolts/Screws
11	3-08	Spacer
12	3-11	Snap Ring
13	3-07	Endplate
14	3-05	Eccentric Key
15	3-04	Eccentric Cam Assembly
16	2-04	Cycloid Discs
17	2-05	Disc Spacer
18	3-09	Spacer
19	1-06	Slow Speed Shaft Rollers
20	7	Housing Bolts
21	—	Washers
22	—	Nuts
23	—	Locknut
24	3-02	Bearing C
25	3-10	Snap Ring
26	—	Tap-End Stud
27	13	Fan Spacer
28	10	Fan Cover
29	7	Washers
30	7	Nuts
31	2-01	Ring Gear Housing
32	2-02	Ring Gear Pins
33	2-03	Ring Gear Rollers
34	6	Gasket*
35	6	Gasket*

**Supplied as a set only*

Cyclo Parts List continued

Cyclo Reducer Input Section

Double Reduction

Figure 5.16

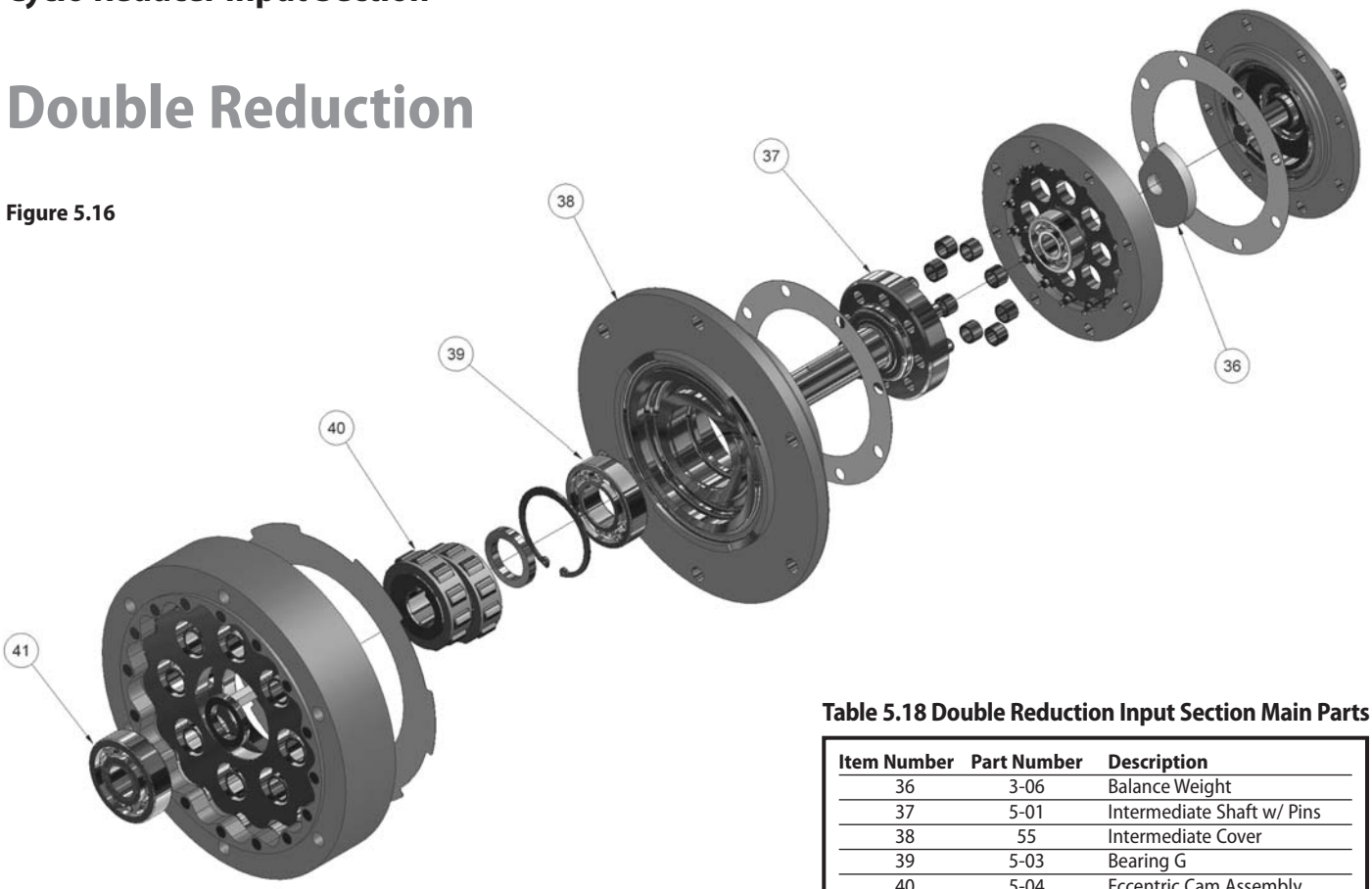


Table 5.18 Double Reduction Input Section Main Parts

Item Number	Part Number	Description
36	3-06	Balance Weight
37	5-01	Intermediate Shaft w/ Pins
38	55	Intermediate Cover
39	5-03	Bearing G
40	5-04	Eccentric Cam Assembly
41	5-02	Bearing F

NOTE: The parts listed are a general representation of the components found in a single and double reduction Cyclo.

Specific units may or may not contain all shown here.

Please consult the factory for specific part questions.

Motor

Standard Motor Data

Table 5.19 Single Phase, 115/230V, Synchronous Speed, 1800 RPM, 60 Hz, TEFC

HP	RPM	Frame Size	Full Load Amp.		Inertia WR²
			115V	230V	lb•in²
1/8	1750	S-71S	3.8	1.9	5.13
1/4		S-71S	4.8	2.4	5.13
1/3		S-71	6.5	3.2	7.69
1/2		S-71	7.8	3.9	7.69
3/4		S-90	10.8	5.4	20.5
1		S-90	12.8	6.4	20.5

Table 5.20 230/460V, Synchronous Speed 1800 RPM, 60 Hz, Continuous Duty, TEFC

HP	Frame Size	Full Load		Current (A)			Starting Torque	Breakdown Torque	Efficiency	Power Factor	NEMA Code	Inertia WR²
		Rated RPM	Torque in•lbs	Full Load		Starting	(% of FL)	(% of FL)	%	%	Letter	lb•in²
				230V	460V	% of FL						
1/8**	F-63S	1730	4.54	0.66	0.33	424%	326%	329%	64.0%	59.5%	K	1.11
1/4	F-63M	1730	9.11	1.1	0.56	468%	300%	293%	69.7%	64.8%	K	1.71
1/3	F-63M	1710	12.2	1.2	0.61	433%	237%	232%	72.1%	70.9%	G	1.71
1/2	F-71M	1740	18.1	2.1	1.1	471%	295%	280%	72.8%	69.6%	J	2.22
3/4	F-80S	1730	27.4	2.5	1.2	500%	266%	245%	76.9%	73.0%	H	3.45
1	F-80M	1750	36.0	3.4	1.7	522%	278%	303%	77.3%	72.3%	H	4.10
1.5	F-90S	1730	54.7	4.6	2.3	611%	263%	281%	80.0%	74.4%	J	6.32
2	F-90L	1740	72.4	6.0	3.0	609%	263%	270%	82.4%	75.6%	J	7.28
3	F-100L	1730	109	8.4	4.2	643%	269%	262%	84.1%	77.8%	J	11.4
5	F-112M	1730	181	13.1	6.5	695%	283%	281%	86.6%	82.2%	J	29.0
7.5	F-132S	1710	276	18.1	9.0	661%	223%	221%	86.7%	88.2%	H	39.0
10	F-132M	1740	361	23.6	11.8	623%	212%	214%	89.6%	88.9%	G	91.6
15	F-160M	1740	541	34.3	17.2	673%	248%	221%	90.4%	89.0%	G	128
20	G-160L	1740	722	45.8	22.9	594%	222%	220%	91.6%	89.9%	F	307
25	F-180MG	1730	912	56.0	28.2	630%	230%	212%	90.7%	90.7%	G	769
30	F-180MG	1740	1088	67.0	33.7	793%	303%	275%	90.9%	89.5%	J	769
40	F-180L	1750	1440	93.0	46.3	757%	310%	274%	92.2%	88.3%	H	854

Note: ** 1/8 HP is TENV.

Table 5.21 230/460V, Synchronous Speed 1200 RPM, 60 Hz, Continuous Duty, TEFC

HP	Frame Size	Full Load		Current (A)			Starting Torque	Breakdown Torque	Efficiency	Power Factor	NEMA Code	Inertia WR²
		Rated RPM	Torque in•lbs	Full Load		Starting	(% of FL)	(% of FL)	%	%	Letter	lb•in²
				230V	460V	% of FL						
20	F-180MG	1160	1088	52	25.9	629%	263%	254%	91.3%	79.5%	H	1090
25	F-180L	1160	1360	59	29.7	698%	261%	286%	90.9%	86.0%	H	1240
30	F-180L	1170	1618	71	35.6	713%	273%	297%	92.4%	83.8%	H	1240
40	F-200L	1180	2138	95	47.6	740%	318%	305%	93.1%	85.0%	H	1620

CSA Approved Motor Data

Table 5.22 CSA Approved Motors
230/460V, Synchronous Speed 1800 RPM, 60 Hz, Continuous Duty, TEFC

HP	Frame Size	Full Load		Current (A)				Starting Torque	Breakdown Torque	Efficiency	Power Factor	NEMA Code	Inertia WR²
		Rated RPM	Torque in•lbs	Full Load 230V	Full Load 460V	No Load % of FL	Starting % of FL	(% of FL)	(% of FL)	%	%	Letter	lb•in²
1/8**	F-63S	1720	4.59	0.71	0.35	90%	451%	378%	393%	65.5%	54.1%	M	1.11
1/4	F-63M	1730	9.10	1.20	0.60	86%	450%	309%	343%	69.4%	60%	K	1.71
1/3	F-63M	1710	12.20	1.30	0.65	79%	415%	244%	272%	71.3%	67.4%	H	1.71
1/2	F-71M	1700	18.60	2.10	1.10	81%	481%	343%	331%	75.2%	63.1%	J	2.22
3/4	F-80S	1700	28.20	2.60	1.30	71%	512%	263%	272%	75.4%	71.4%	H	3.45
1	F-80M	1700	37.10	3.60	1.80	75%	572%	341%	315%	78.0%	66.8%	K	4.10

Note: ** 1/8 HP is TENV.

Dimensions for CSA units may be different than those specified in Section 3, please consult factory.

Table 5.23 EPACT/EEV Efficiency Motors, CSA Approved
230/460V, Synchronous Speed 1800 RPM, 60 Hz, Continuous Duty, TEFC

HP	Frame Size	Full Load		Current (A)				Starting Torque	Breakdown Torque	Efficiency	Power Factor	NEMA Code	Inertia WR²
		Rated RPM	Torque in•lbs	Full Load 230V	Full Load 460V	No Load % of FL	Starting % of FL	(% of FL)	(% of FL)	%	%	Letter	lb•in²
1	FA-80M	1740	36.3	3.24	1.62	67%	676%	331%	378%	84.5%	68.7%	K	7.28
1.5	FA-90S	1740	54.4	4.58	2.29	65%	679%	319%	364%	85.7%	71.1%	K	11.4
2	FA-90L	1730	72.8	5.81	2.91	60%	714%	271%	306%	86.6%	74.9%	K	11.4
3	FA-100L	1750	108	8.1	4.05	57%	879%	310%	406%	89.1%	76.4%	L	29.0
5	FA-112M	1740	181	12.7	6.35	45%	781%	302%	330%	89.5%	81.6%	J	39.0
7.5	FA-132S	1750	269	18.5	9.23	46%	795%	309%	345%	90.7%	82.5%	J	91.6
10	FA-132M	1750	359	24.5	12.2	39%	824%	284%	303%	90.4%	85.1%	K	128
15	G-160L	1770	532	35.9	18.0	42%	928%	335%	335%	92.9%	82.7%	K	307
20	G-160L	1770	710	48.7	24.3	41%	982%	351%	354%	92.8%	83.5%	L	307
25	F-180L	1780	884	60.8	30.4	40%	803%	336%	305%	92.4%	82.7%	J	854
30	F-180L	1780	1063	70.8	35.4	34%	689%	282%	256%	92.4%	84.5%	H	854
40	F-200L	1780	1415	98.1	49.1	38%	739%	288%	279%	93.4%	82.1%	J	1052

Motor continued

CSA Approved Motor Data continued

Table 5.24 CSA Approved Motors
575V, Synchronous Speed 1800 RPM, 60 Hz, Continuous Duty, TEFC

HP	Frame Size	Full Load		Current (A)			Starting Torque	Breakdown Torque	Efficiency	Power Factor	NEMA Code	Inertia WR²
		Rated RPM	Torque in•lbs	Full Load	No Load % of FL	Starting % of FL	(% of FL)	(% of FL)	%	%	Letter	lb•in2
1/8**	F-63S	1720	4.59	0.28	90%	458%	376%	391%	65.3%	54.1%	M	1.11
1/4	F-63M	1720	9.17	0.48	86%	459%	316%	340%	69.4%	60.3%	K	1.71
1/3	F-63M	1710	12.20	0.52	79%	422%	250%	270%	71.3%	67.4%	H	1.71
1/2	F-71M	1700	18.60	0.79	76%	468%	309%	300%	75.8%	67.4%	J	2.22
3/4	F-80S	1700	28.20	1.00	74%	530%	260%	268%	75.1%	71.6%	H	3.45
1	F-80M	1680	37.60	1.30	65%	508%	252%	256%	78.1%	74.9%	H	4.10

Dimensions for 575 and CSA units may be different than those specified in Section 3, please consult factory.

Table 5.25 EPACT/EEV Efficiency Motors, CSA Approved
575V, Synchronous Speed 1800 RPM, 60 Hz, Continuous Duty, TEFC

HP	Frame Size	Full Load		Current (A)			Starting Torque	Breakdown Torque	Efficiency	Power Factor	NEMA Code	Inertia WR²
		Rated RPM	Torque in•lbs	Full Load	No Load % of FL	Starting % of FL	(% of FL)	(% of FL)	%	%	Letter	lb•in2
1	FA-80M	1740	36.1	1.29	70%	690%	320%	379%	84.8%	68.2%	K	7.28
1.5	FA-90S	1740	54.4	1.84	63%	674%	319%	364%	85.7%	71.1%	K	11.4
2	FA-90L	1730	72.7	2.36	59%	703%	326%	371%	86.1%	73.6%	K	11.4
3	FA-100L	1750	108	3.26	50%	844%	354%	417%	87.9%	78.5%	L	29.0
5	FA-112M	1740	181	5.17	39%	774%	295%	346%	88.7%	81.7%	J	39.0
7.5	FA-132S	1750	269	7.47	47%	712%	288%	331%	89.9%	83.6%	H	91.6
10	FA-132M	1760	358	9.68	40%	851%	314%	340%	91.5%	84.5%	K	128
15	G-160L	1770	532	14.7	41%	925%	338%	338%	92.8%	82.7%	L	307
20	G-160L	1770	711	19.2	39%	927%	327%	330%	93.0%	84.5%	K	307
25	F-180L	1780	884	24.5	39%	776%	330%	285%	92.7%	82.9%	J	854
30	F-180L	1780	1063	28.9	33%	657%	275%	237%	92.5%	84.5%	H	854
40	F-200L	1780	1414	38.8	38%	714%	283%	274%	93.5%	83.0%	H	1052

Motor continued

Standard Wiring Diagrams

Illustrated below are the wiring diagrams for our standard motors, for additional information please refer to the motor name plate. Due to changes in design features, this diagram may not always agree with that on the motor. If different, the motor diagram found inside the conduit box cover is correct.

3-Phase Motors (230/460 V)

Figure 5.17 Y-Connected (5 HP and smaller)

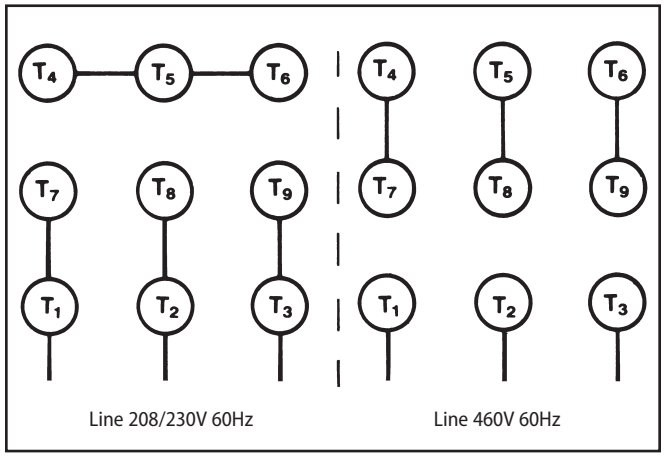
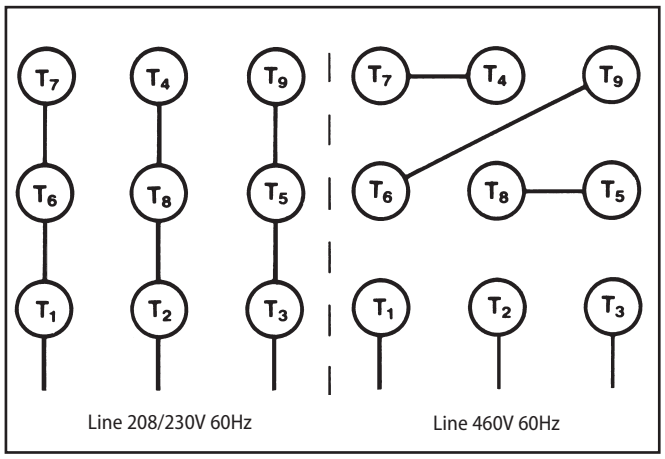
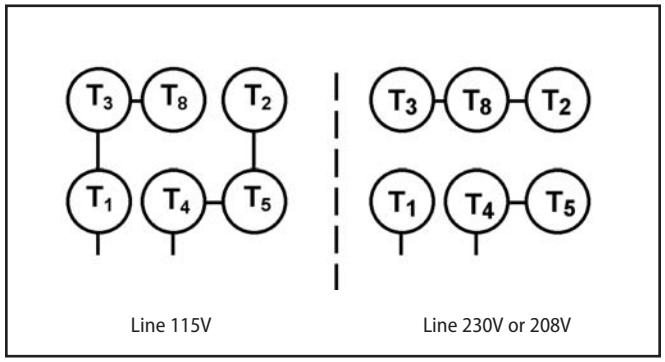


Figure 5.18 Delta-Connected (7.5 HP and larger)



Single Phase Motors

Figure 5.19 Single Phase Motor Wiring Diagram



Motor continued

Motor Thermal Rating (C x Z)

Table 5.26 Motor Thermal Rating (C x Z)

Motor Power HP	Allowable C x Z				Motor Moment of Inertia lb•in²	
	35% ED[1]	35%~50% ED[1]	50~80% ED[1]	80~100% ED[1]	Standard	with Brake
1/8	3200	3000	2000	1200	1.11	1.20
1/4	2200	2800	2800	2500	1.71	1.88
1/3	2200	2800	2800	2500	1.71	1.88
1/2	1800	2200	1500	1500	2.22	2.31)
3/4	1800	2200	1500	1500	3.45	3.79
1	1400	1400	800	500	4.10	4.44
1.5	1400	1400	800	500	6.32	7.11
2	1200	1200	500	400	7.28	8.03
3	1000	900	400	200	11.4	12.8
5	800	800	800	700	29.0	32.7
7.5	300	300	200	150	39.0	42.7
10	400	350	300	300	91.6	104
15	200	200	150	150	128	140

Note: [1] % ED = duty cycle.

The calculated C x Z value (steps 1 – 3 outlined below) should be less than the allowable value listed in Motor Thermal Rating table above.

1. **Obtain the C value:**

$$C = \frac{I_M + I_L}{I_M}$$

I_M = Moment of Inertia of Motor.
I_L = Total Moment of Inertia of Load as seen from the motor.

2. **Obtain the Z value (number of starts per hour):**

(a) Assume that one operating period consists of "on-time" ta (sec.), "off-time" tb (sec.) and the motor is started nr (times/sec.).

$$Zr = \frac{3600nr}{ta + tb} \text{ (times/hour)}$$

(b) When inching, ni (times/cycle) is included in 1 cycle (ta + tb), the number of inching times per hour Zi, is then included in the number of starts.

$$Zi = \frac{3600ni}{ta + tb} \text{ (times/hour)}$$

(c) Calculate Z by adding Zr to Zi.

$$Z = Zr + \frac{1}{2}\ Zi = \frac{3600}{ta + tb} \cdot \left(nr + \frac{1}{2}\ ni \right) \text{ (times/hour)}$$

3. **Calculate C multiplied by Z:**

Use the value of C obtained in step (1) and Z from step (2)

4. **Obtain the duty cycle %ED** and check with Motor Thermal Rating table above.

$$\%ED = \frac{ta}{ta + tb} \times 100$$

ta = on-time
tb = off-time

Brakemotor Characteristics

The brakemotor on Cyclo® BBB gearmotors operates with direct current supplied by a dual voltage rectifier mounted in the motor conduit box.

The standard brake input voltage is 208V OR 230V OR 460V at 60 Hz.

When used for outdoor installations, our standard brakemotor must be protected with some type of covering. Such type of coverings are available from the factory, please inquire when ordering.

Note: Advise the factory when ordering if you require larger or smaller brake torque than those shown as standard in the Brakemotor Characteristics table below.

Table 5.27 Brakemotor Characteristics

HP	Type		Brake Torque		Inertia WR2	Brake Delay Time (sec)		Coil Current (AC Amperage)		
			Standard	Maximum		Normal Braking Action	Fast Braking Action	208V	230V	460V
	Frame	Model	ft•lbs	ft•lbs	lb•in2					
1/8	F-63S	FB-01A	0.7	1.0	1.20	0.15~0.2	0.015~0.02	0.06	0.06	0.04
1/4	F-63M	FB-02A	1.5	2.0	1.88	0.15~0.2	0.015~0.02	0.1	0.1	0.06
1/3	F-63M	FB-02A	1.5	2.9	1.88	0.15~0.2	0.015~0.02	0.1	0.1	0.06
1/2	F-71M	FB-05A	3.0	2.9	2.31	0.1~0.15	0.01~0.015	0.1	0.1	0.06
3/4	F-80S	FB-1B	5.5	7.7	3.79	0.2~0.3	0.01~0.02	0.1	0.1	0.1
1	F-80M	FB-1B	5.5	7.7	4.44	0.2~0.3	0.01~0.02	0.1	0.1	0.1
1.5	F-90S	FB-2B	11	14.0	7.11	0.2~0.3	0.01~0.02	0.3	0.3	0.2
2	F-90L	FB-2B	11	14.0	8.03	0.2~0.3	0.01~0.02	0.3	0.3	0.2
3	F-100L	FB-3B	16	21.0	12.7	0.3~0.4	0.01~0.02	0.4	0.4	0.2
5	F-112M	FB-5B	27	36.0	32.7	0.4~0.5	0.01~0.02	0.4	0.5	0.3
7.5	F-132S	FB-8B	41	53.0	42.7	0.3~0.4	0.01~0.02	0.4	0.5	0.3
10	F-132M	FB-10B	55	72.0	104	0.7~0.8	0.03~0.04	0.7	0.8	0.5
15	F-160M	FB-15B	81	81.0	140	0.5~0.6	0.03~0.04	0.7	0.8	0.5
20	G-160L	CMB-20	74	80.0	455	0.6~0.8	0.1~0.15	1.5	1.7	1.9
25	F-180L	ESB220	92	—	793	0.075	—	—	0.947	—
30	F-180L	ESB220	111	—	793	0.075	—	—	0.947	—
40	F-180L	ESB220	148	—	878	0.075	—	—	0.947	—

Motor continued

Brakemotor Standard Wiring Connection, Dual Voltage

Models FB-01A through FB-15B

Figure 5.20 Normal Brake Action, 230V, 575V

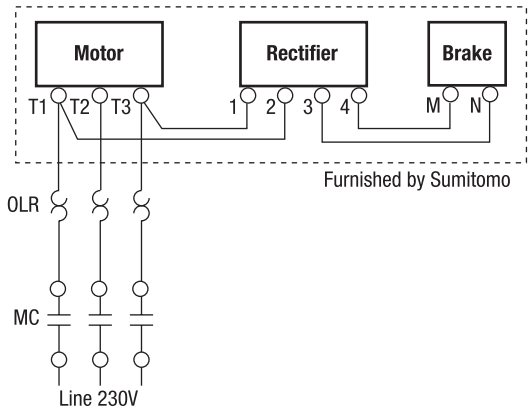


Figure 5.21 Fast Brake Action, 230V

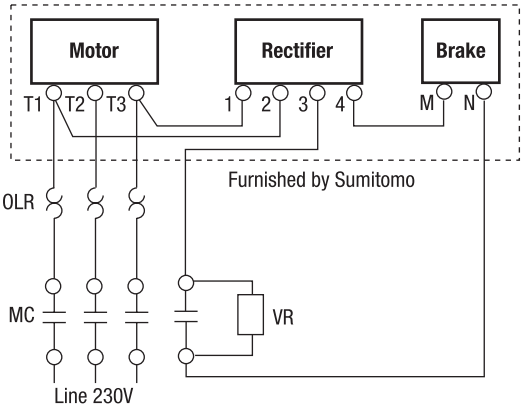


Figure 5.22 Normal Brake Action, 460V

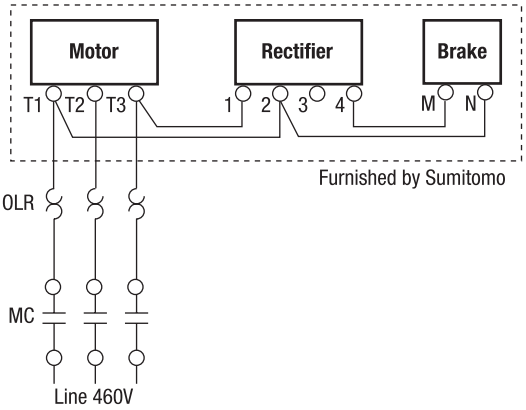
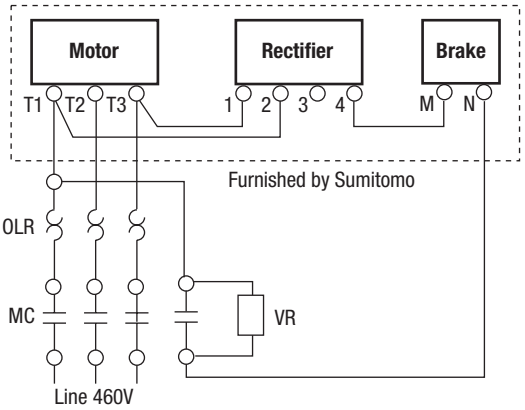


Figure 5.23 Fast Brake Action, 460V, 575V



MC: Electromagnetic Relay
MCB: Magnetic Circuit Breaker
OLR: Overload or Thermal Relay
VR: Varistor (protective device)[1]

Note: [1] Refer to Varistor Specifications Table

Table 5.28 Varistor Specifications Table

Operating Voltage		190-230V	380-460V	575V
Varistor Rated Voltage		AC260-300V	AC510V	AC604V
Varistor Voltage		430-470V	820V	1000V
Rated Watt	FB01A, 02A	Over 0.4W	Over 0.4W	Over 0.4W
	FB-05A	Over 0.4W	Over 0.4W	Over 0.4W
	FB-1B	Over 0.6W	Over 0.6W	Over 0.4W
	FB-2B, 3B	Over 1.5W	Over 1.5W	Over 0.6W
	FB-5B, 8B	Over 1.5W	Over 1.5W	Over 1.5W
	FB10B, 15B	Over 1.5W	Over 1.5W	Over 1.5W

Brakemotor Standard Wiring Connection, Dual Voltage continued

Models CMB-20

Figure 5.24 Normal Brake Action, 230V

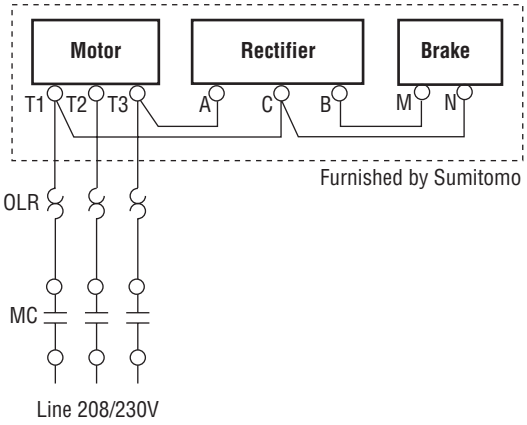


Figure 5.25 Fast Brake Action, 230V

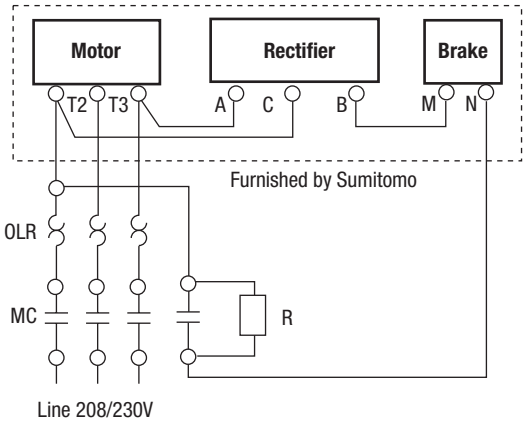


Figure 5.26 Normal Brake Action, 460V

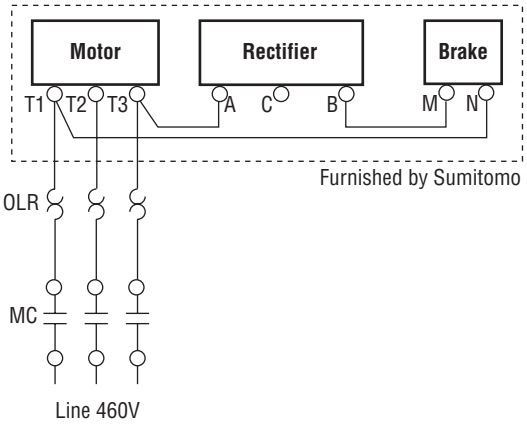


Figure 5.27 Fast Brake Action, 460V

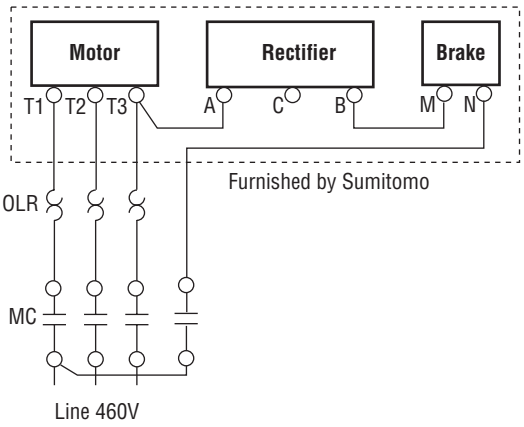


Figure 5.28 Normal Brake Action, 575V

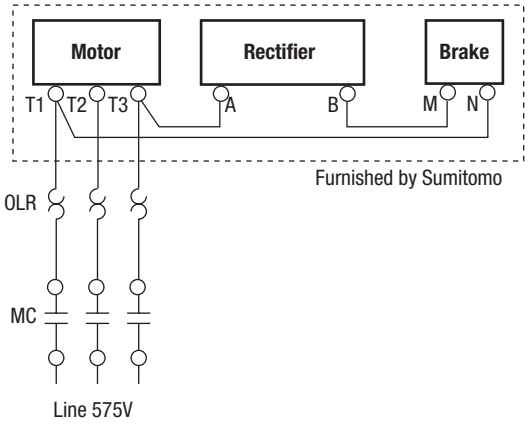
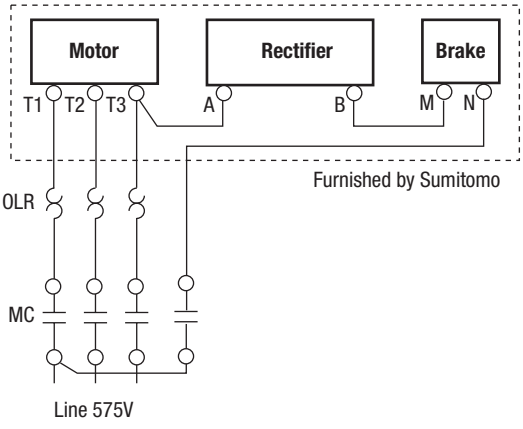


Figure 5.29 Fast Brake Action, 575V



Motor continued

Brakemotor Standard Wiring Connection, Dual Voltage continued

FB Brake (1/8 to 15 HP) with Inverter

Figure 5.30 Normal Brake Action, 230V, 575V

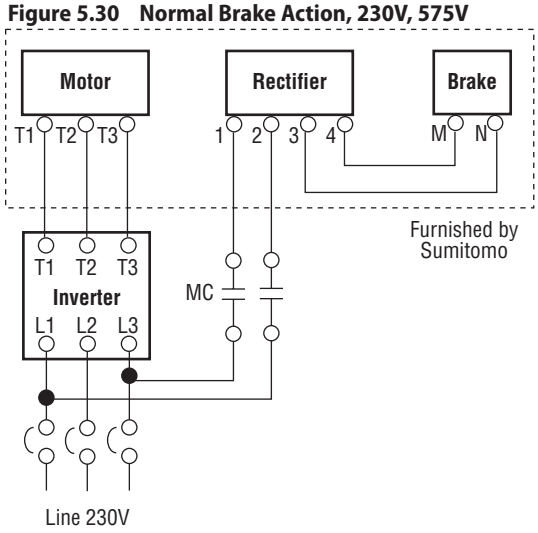


Figure 5.31 Fast Brake Action, 230V, 575V

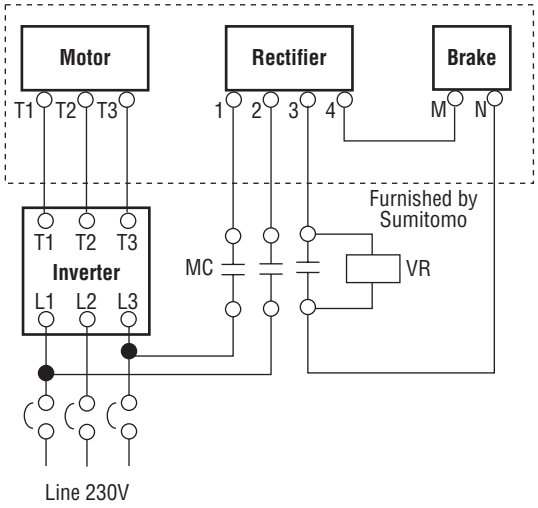


Figure 5.32 Normal Brake Action, 460V

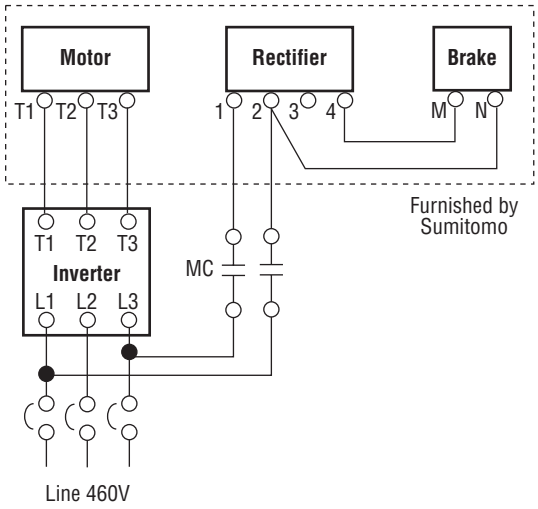
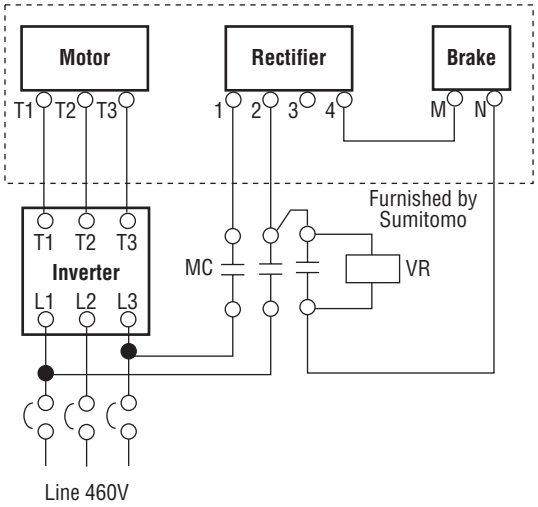


Figure 5.33 Fast Brake Action, 460V



MC: Electromagnetic Relay
MCB: Magnetic Circuit Breaker
VR: Varistor (protective device)[1]

Note: [1] Refer to Varistor Specifications Table on pg. 5.20

Motor continued

Table 5.29 Rectifier Data

Brake Type	Motor (HP X P)	Rectifier Model 230V/460V	Rectifier P. N. Number	Rectifier Model 575V	Rectifier P. N. Number
FB-01A	1/8 x 4	25FW - 4FB	EU986WW-01	05F-5U	EU459WW-01
FB-02A	1/4 x 4 1/3 x 4	25FW - 4FB	EU986WW-01	05F-5U	EU459WW-01
FB-05A	1/2 x 4	25FW - 4FB	EU986WW-01	05F-5U	EU459WW-01
FB-1B	3/4 x 4 1 x 4	25FW - 4FB	EU986WW-01	05F-5U	EU459WW-01
FB-2B	1.5 x 4 1 x 4	25FW - 4FB	EU986WW-01	05F-5U	EU459WW-01
FB-3B	3 x 4	25FW - 4FB	EU986WW-01	05F-5U	EU459WW-01
FB-5B	5 x 4	25FW - 4FB	EU986WW-01	05F-5U	EU459WW-01
FB-8B	7.5 x 4	25FW - 4FB	EU986WW-01	05F-5U	EU459WW-01
FB-10B	10 x 4	25FW - 4FB	EU986WW-01	10F-6FBU	EU452WW-01
FB-15B	15 x 4	25FW - 4FB	EU986WW-01	10F-6FBU	EU452WW-01
CMB-20	20 x 4	SB25F-3HS	DN937WW-G01	SB25-6H	DN934WW-G01

Lubrication

Oil lubricated models are not filled with oil prior to shipping.

Before operating, fill the unit with the appropriate amount of the correct lubricant for the mounting position (see Table 5.31 and Figure 5.28). When operating in winter or other relatively low ambient temperatures, use the lower viscosity oil specified for each ambient temperature range. Please consult the factory if the unit will be operated consistently in ambient temperatures other than 32°F–104°F.

Table 5.30 Lubrication Type Per Unit Size

Unit Size	Output (Gear Side)	Input (Cyclo Side)	
		Motor Horizontal	Motor Vertical
3A100, 3A105, 3A110, 3A115 3A120, 3A125, 3B120, 3B125	Oil Bath	Grease	Grease
3A140, 3A145 3B140, 3B145, 3C140, 3C145, 3B160, 3B165, 3C160, 3C165, 3D160, 3D165, 3C170, 3C175, 3D170, 3D175 3E170, 3E175		Oil Bath	Grease

Table 5.31 Standard Oils

Ambient Temperature (°F)	ChevronTexaco	Exxon Oil	Mobil Oil	Shell Oil	BP Oil
14 to 41°	EP Gear Compound 68	Spartan EP 68	Mobilgear 600 XP 68 (ISO VG 68)	Omala Oil 68	Energol GR-XP 68
32 to 95°	EP Gear Compound 100, 150	Spartan EP 100 EP 150	Mobilgear 600 XP 100, 150 (ISO VG 100, 150)	Omala Oil 100, 150	Energol GR-XP 100 GR-XP 150
86 to 122°	EP Gear Compound 220, 320, 460	Spartan EP 220 EP 320 EP 460	Mobilgear 600 XP 200 320, 460 (ISO VG 220–460)	Omala Oil 220, 320 460	Energol GR-XP 220 GR-XP 320 GR-XP 460

Grease lubricated models are lubricated with grease prior to shipment from the factory.

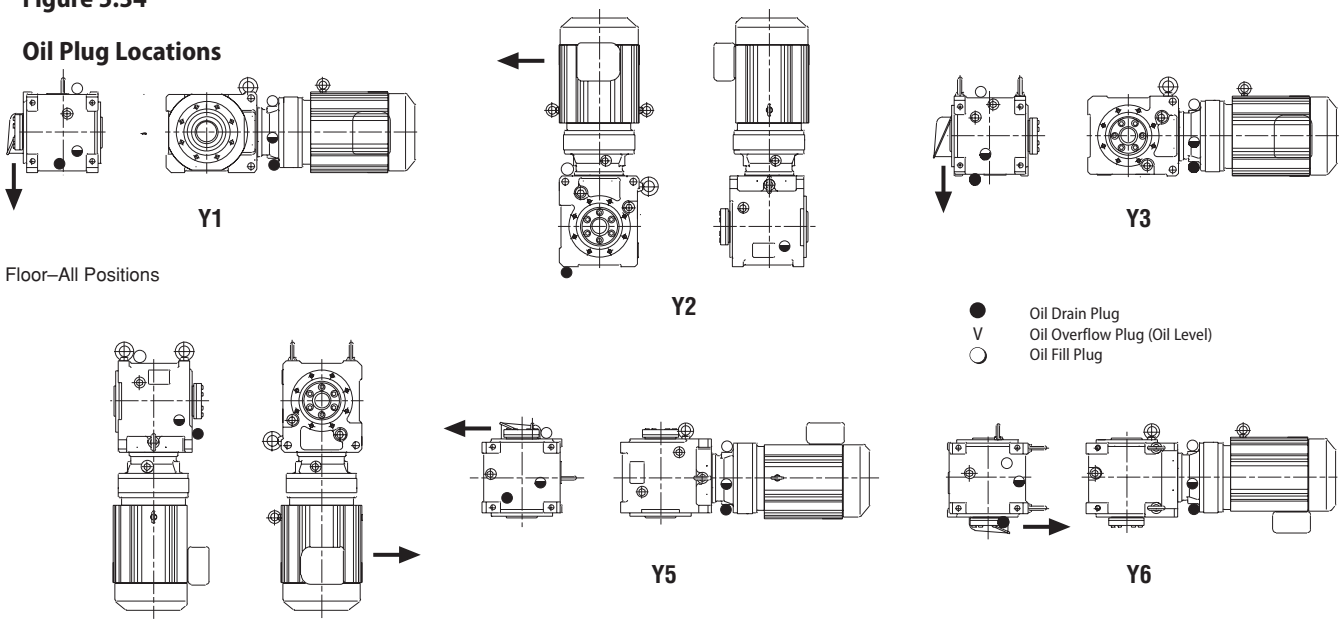
Adding grease prior to initial start-up is not required. If grease must be replenished or changed (see Grease Lubrication section), avoid using greases other than those shown in the Table 5.32. Please consult the factory when the units will be used in widely fluctuating temperatures, ambient temperatures other than those specified in Table 5.32, or when other special conditions exist for the application. When motors from another manufacturer will be used, please consult and adhere to the associated motor maintenance manual for the appropriate lubrication instructions.

Table 5.32 Standard Greases

Ambient Temperature (°F)	Reduction Ratio	Input (Cyclo Side)
14 to 122°	11, 18:1	Shell Alvania EP R0
	21:1 and higher	Exxon Unirex N2

Figure 5.34

Oil Plug Locations



Lubrication continued

Table 5.33 Oil Fill Quantities Unit: **U.S. Gallons**

*G = Grease

Frame Size	Mounting Configuration											
	Y1		Y2		Y3		Y4		Y5		Y6	
	Output	Input*	Output	Input*	Output	Input*	Output	Input*	Output	Input*	Output	Input*
3A100, 3A105	0.29	G	0.26	G	0.29	G	0.26	G	0.45	G	0.42	G
3A110, 3A115		G		G		G		G		G		G
3A120, 3A125		G		G		G		G		G		G
3A140, 3A145		0.08		G		0.08		G		0.08		0.08
3B120, 3B125	0.48	G	0.37	G	0.48	G	0.48	G	0.61	G	0.66	G
3B140, 3B145		0.12		G		0.12		G		0.12		0.12
3B160, 3B165		0.20		G		0.20		G		0.20		0.20
3C140, 3C145	0.87	0.12	0.92	G	0.87	0.12	1.16	G	0.95	0.12	1.4	0.12
3C160, 3C165		0.20		G		0.20		G		0.20		0.20
3C170, 3C175		0.28		G		0.28		G		0.28		0.28
3D160, 3D165	1.16	0.18	1.32	G	1.16	0.18	1.11	G	1.48	0.18	1.59	0.18
3D170, 3D175		0.24		G		0.24		G		0.24		0.24
3E170, 3E175	1.95	0.24	1.93	G	1.95	0.24	1.59	G	1.90	0.24	2.80	0.24

Oil lubricated units are shipped without oil. Prior to initial start-up, the unit must be filled with the correct amount of oil (see Table 5.33). For those units where both the gear and Cyclo portions are oil lubricated, the oil must be filled in two separate locations, one on the gear housing and one on the Cyclo housing.

Grease lubricated models are lubricated at the factory. Additional grease does not need to be added prior to initial start-up.

Oil Replenishment and Change Interval

A. Maintain proper oil levels at all times.

B. An oil change after the first 500 hours of operation is highly recommended.

C. Sumitomo recommends an oil change every 2500 hours, or six months, whichever comes first. If a proper preventive maintenance program is implemented and maintained, a longer change period may be acceptable.

D. If the unit is running in a high ambient, high humidity, or corrosive environment, the lubricant will have to be changed more frequently. Consult the factory for recommendations.

E. Note: The Cyclo portion and Bevel portion, where applicable, must be filled with oil separately. Oil does not flow from one section to the other.

Grease Replenishment and Change Interval

A. On single reduction Cyclo Bevel Buddybox (Cyclo BBB) sizes 3A100~125 and 3B120~125, the Cyclo portion is grease lubricated as standard and therefore maintenance free. Consult the operations and maintenance manual for the grease change interval.

B. When mounting Cyclo BBB sizes 3A140~145, 3B140~145, 3B160~165, and all sizes of 3C, 3D, and 3E in the Y2 and Y4 positions, please consult the maintenance and operations manual for the proper grease replenishment and change interval for the Cyclo portion.

Additional Mounting Configurations

Fig. 5.35 Keyed Hollow Output Bore – Output Flange Left

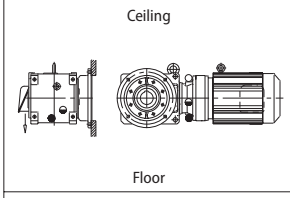
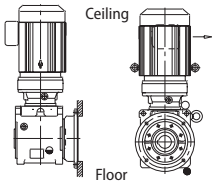
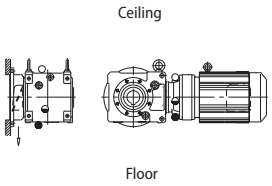
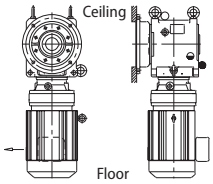
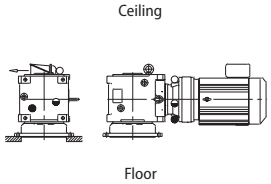
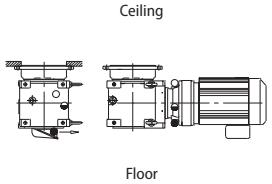
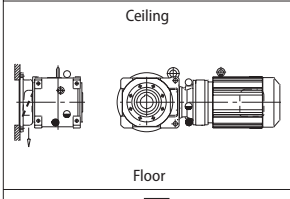
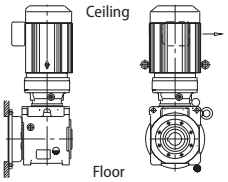
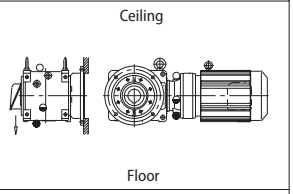
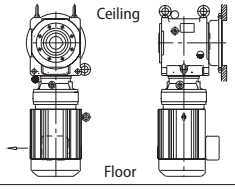
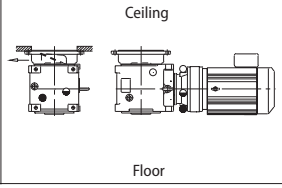
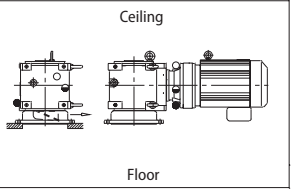
LHY□ - □ [K] - F1 - □	LHY□ - □ [K] - F2 - □	LHY□ - □ [K] - F3 - □
		
LHY□ - □ [K] - F4 - □	**LVY □ - □ [K] - F5 - □**	**LVY □ - □ [K] - F6 - □**
		

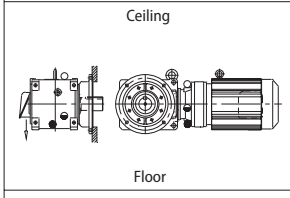
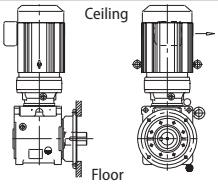
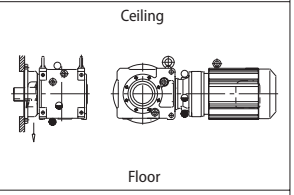
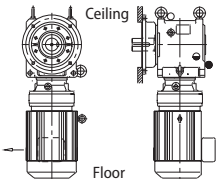
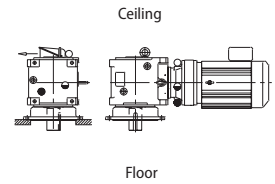
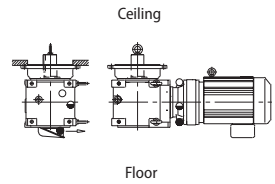
Fig. 5.36 Keyed Hollow Output Bore - Output Flange Right

LHY□ - □ [K] - G1 - □	LHY□ - □ [K] - G2 - □	LHY□ - □ [K] - G3 - □
		
LHY□ - □ [K] - G4 - □	**LVY □ - □ [K] - G5 - □**	**LVY □ - □ [K] - G6 - □**
		

Cyclo BBB

Appendix

Fig. 5.37 Solid Output Shaft Left (L) – Output Flange Left

LHF□ - □L [K] - F1 - □	LHF□ - □L [K] - F2 - □	LHF□ - □L [K] - F3 - □
		
LHF□ - □L [K] - F4 - □	**LVF □ - □L [K] - F5 - □**	**LWF□ - □L [K] - F6 - □**
		

Notes: **[1] K =** inch diameter shaft or keyed hollow bore; **blank =** metric diameter shaft or keyed hollow bore.
[2] ○ = Oil Fill Location; ◒ = Oil Level Location; ● = Oil Drain Location.
[3] ⊣— = direction of lead wires out of terminal box.

Additional Mounting Configurations continued

Fig. 5.38 Solid Output Shaft Right (R) – Output Flange Right

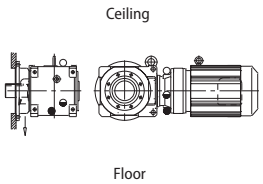
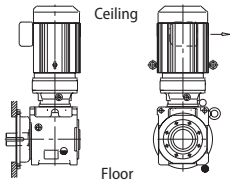
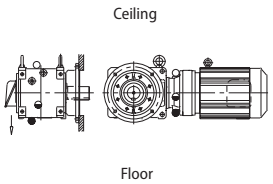
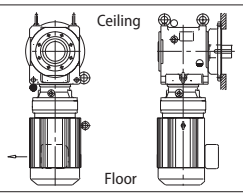
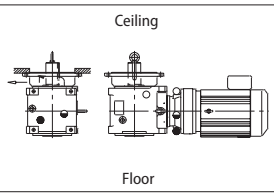
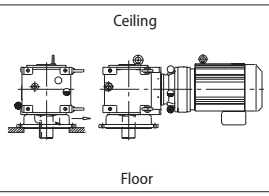
LHF□-□R[K]-G1-□	LHF□-□R[K]-G2-□	LHF□-□R[K]-G3-□
		
LHF□-□R[K]-G4-□	**LWF□-□R[K]-G5-□**	**LVF□-□R[K]-G6-□**
		

Fig. 5.39 Double Extended Solid Output Shaft (T) – Output Flange Left

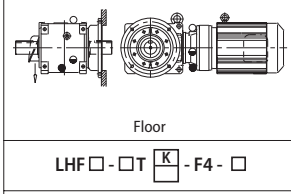
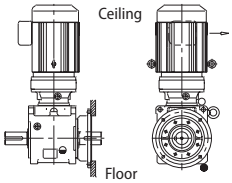
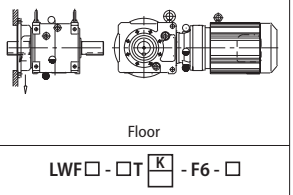
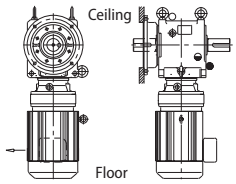
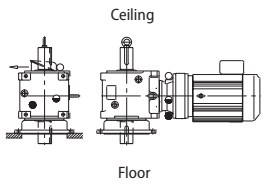
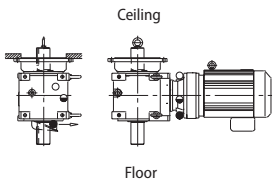
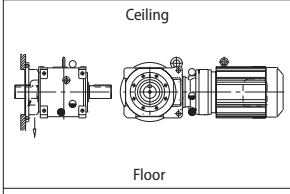
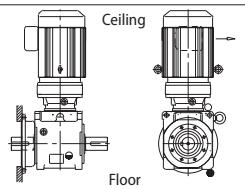
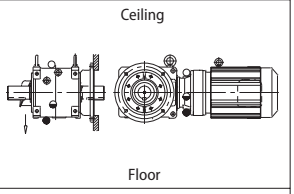
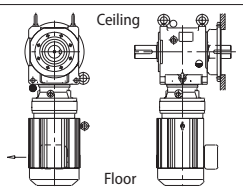
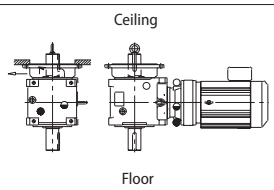
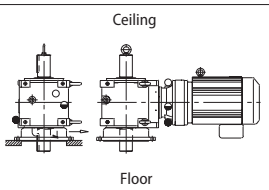
LHF□-□T[K]-F1-□	LHF□-□T[K]-F2-□	LHF□-□T[K]-F3-□
		
LHF□-□T[K]-F4-□	**LVF□-□T[K]-F5-□**	**LWF□-□T[K]-F6-□**
		

Fig. 5.40 Double Extended Solid Output Shaft (T) – Output Flange Right

LHF□-□T[K]-G1-□	LHF□-□T[K]-G2-□	LHF□-□T[K]-G3-□
		
LHF□-□T[K]-G4-□	**LWF□-□T[K]-G5-□**	**LVF□-□T[K]-G6-□**
		

Notes: **[1] K =** inch diameter shaft or keyed hollow bore; **blank =** metric diameter shaft or keyed hollow bore.
[2] ○ = Oil Fill Location; ◒ = Oil Level Location; ● = Oil Drain Location.
[3] ⊸ = direction of lead wires out of terminal box.

Additional Mounting Configurations continued

Fig. 5.41 Solid Output Shaft Left (L) – Output Flange Right

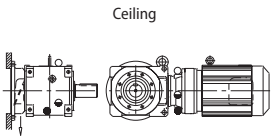
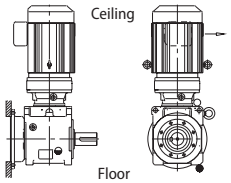
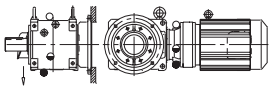
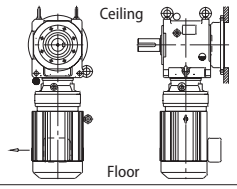
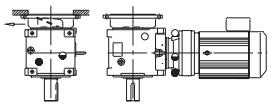
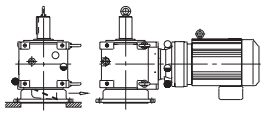
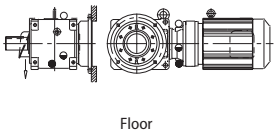
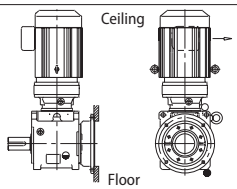
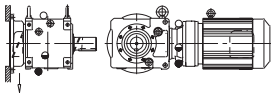
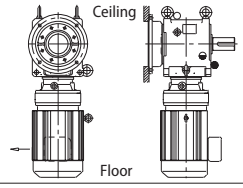
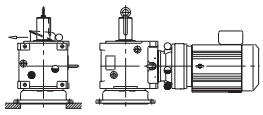
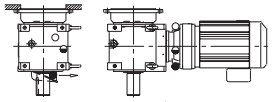
LHF□-□L[K]-G1-□	LHF□-□L[K]-G2-□	LHF□-□L[K]-G3-□
		
LHF□-□L[K]-G4-□	LVF□-□L[K]-G5-□	LWF□-□L[K]-G6-□
		

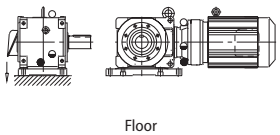
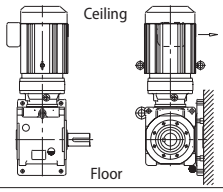
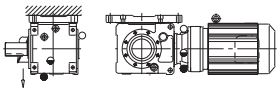
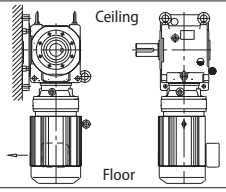
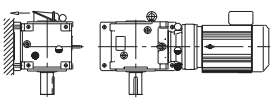
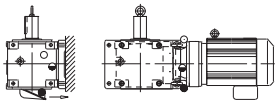
Fig. 5.42 Solid Output Shaft Right (R) – Output Flange Left

LHF□-□R[K]-F1-□	LHF□-□R[K]-F2-□	LHF□-□R[K]-F3-□
		
LHF□-□R[K]-F4-□	LWF□-□R[K]-F5-□	LVF□-□R[K]-F6-□
		

Cyclo BBB

Appendix

Fig. 5.43 Solid Output Shaft Left (L) – Mounting Foot Bottom

LHH□-□L[K]-K1-□	LHH□-□L[K]-K2-□	LHH□-□L[K]-K3-□
		
LHH□-□L[K]-K4-□	LVH□-□L[K]-K5-□	LWH□-□L[K]-K6-□
		

Notes: **[1] K** = inch diameter shaft or keyed hollow bore; **blank** = metric diameter shaft or keyed hollow bore.
[2] ○ = Oil Fill Location; ◒ = Oil Level Location; ● = Oil Drain Location.
[3] ⊣— = direction of lead wires out of terminal box.

Additional Mounting Configurations continued

Fig. 5.44 Solid Output Shaft Right (R) – Mounting Foot Bottom

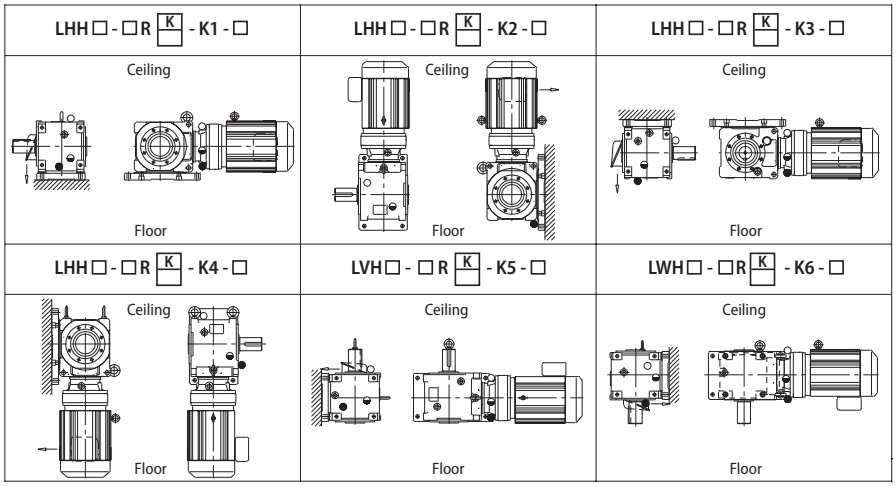


Fig. 5.45 Double Extended Solid Output Shaft (T) – Mounting Foot Bottom

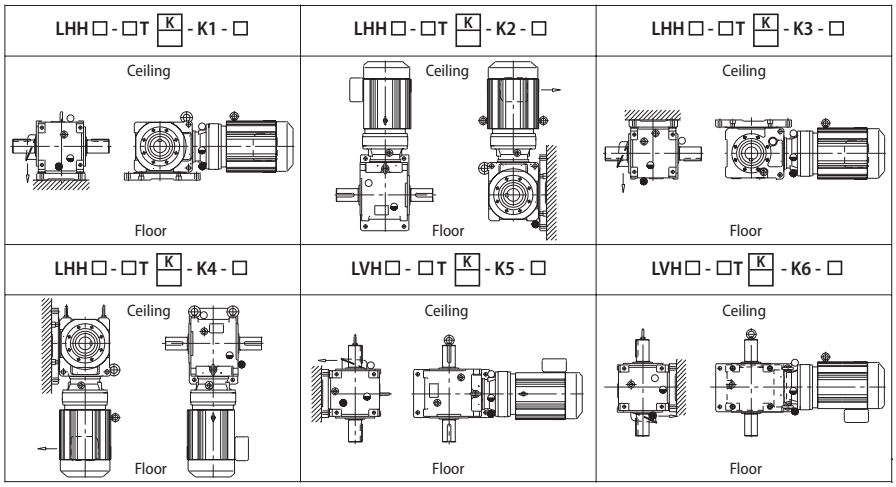
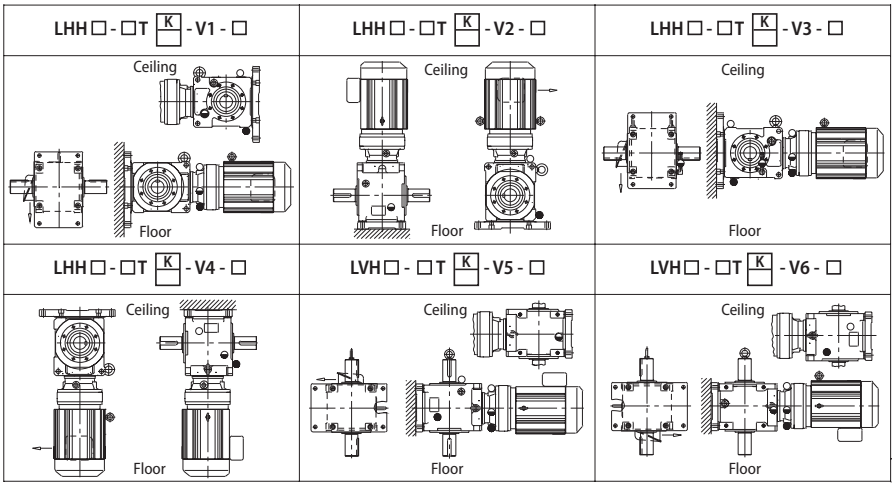


Fig. 5.46 Double Extended Solid Output Shaft (T) – Mounting Foot Side



Notes: **[1] K =** inch diameter shaft or keyed hollow bore; **blank =** metric diameter shaft or keyed hollow bore.
[2] ○ = Oil Fill Location; ◒ = Oil Level Location; ● = Oil Drain Location.
[3] ⊣— = direction of lead wires out of terminal box.

Additional Mounting Configurations continued

Fig. 5.47 Solid Output Shaft Left (L) – Mounting Foot Side

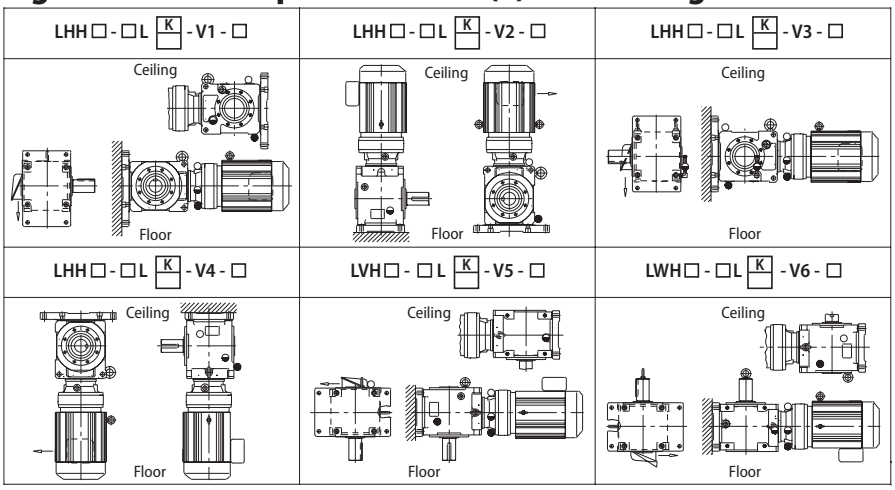
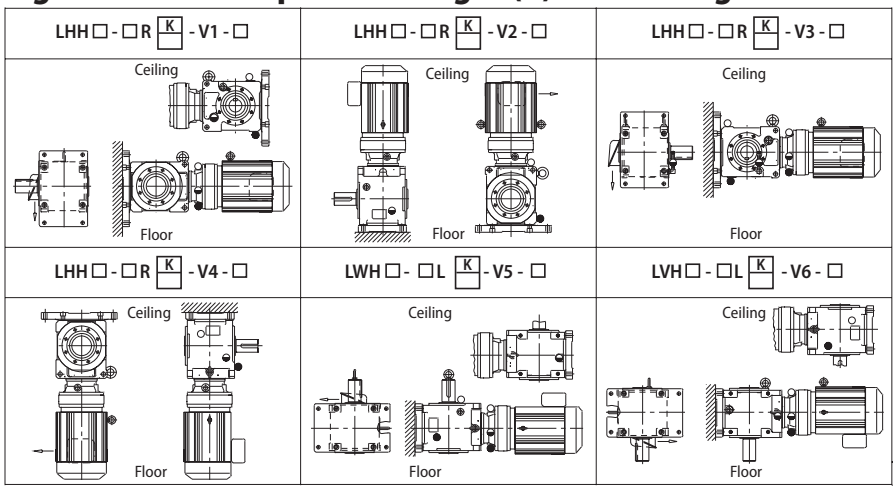


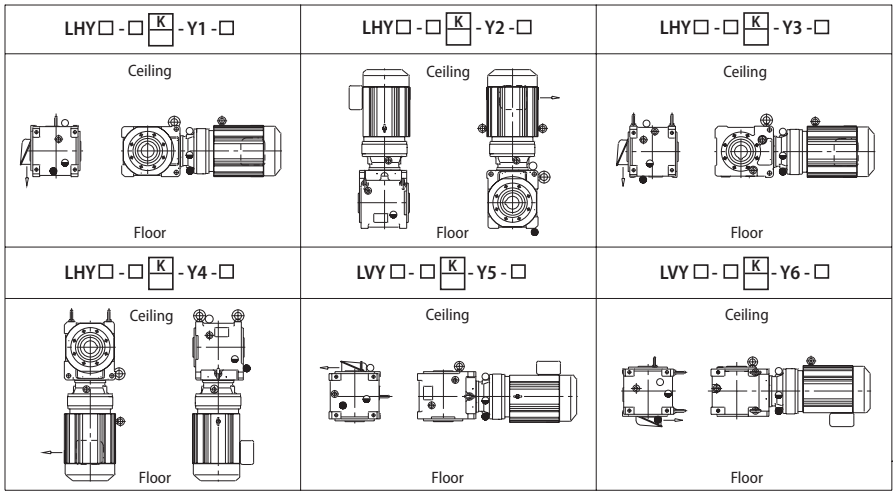
Fig. 5.48 Solid Output Shaft Right (R) – Mounting Foot Side



Cyclo BBB

Appendix

Fig. 5.49 Keyed Hollow Output Bore



Notes: **[1] K =** inch diameter shaft or keyed hollow bore; **blank =** metric diameter shaft or keyed hollow bore.
[2] ○ = Oil Fill Location; ◒ = Oil Level Location; ● = Oil Drain Location.
[3] ⊣— = direction of lead wires out of terminal box.

Installation

Shaft Connections
Pulley, sprocket or sheave connection – When using any of these connections, mount as close to the unit housing as possible, never beyond the midpoint of the shaft projection, to avoid undue bearing load and shaft deflection. Never overtighten belts or chains. Careful and accurate installation is essential for best results and for trouble-free operation. Before installing, the shafts should be checked to make sure that they are parallel and level. Perfect alignment after mounting can be checked with a string or straight edge held against the sides of the sprocket or pulley base.

Couplings should be properly aligned to the limits specified by the manufacturer. On coupled speed reducers coupling alignment should be checked prior to initial startup.

Shaft Rotation
On single reduction Cyclo BBB speed reducers, ratios 11 through 305, the slow speed shaft rotates in a reverse direction to that of the high speed shaft.

On double reduction units, ratios 357 through 26,492, both the high speed and the slow speed shaft rotate in the same direction.

Input Speeds
In general terms, the standard input speeds of single reduction units are 1750 and 1165 RPM.

When non-standard input speeds are used, the horsepower and torque ratings will also vary.

Thermal Capacity
The Cyclo BBB speed reducer's smooth, almost frictionless operation all but eliminates the conventional limitations due to heat. In all sizes, Cyclo BBB speed reducers have thermal ratings that exceed their mechanical capacity.

Mounting Tips
Horizontal and vertical oil-lubricated units should be mounted in exact planes whenever possible. When they are mounted on inclined surfaces, minor modifications are necessary, since an inclined mounting could lower the oil to a level that will starve reduction parts and bearings. On the other hand, overfilling a unit with oil may cause leakage through the air vent, foaming and churning and consequently overheating. Any of the above could result in damage to the unit. In many cases we can provide grease lubrication to solve this problem.

Installation
Be sure to install and operate Cyclo BBB speed reducers in compliance with applicable local and national safety codes. Appropriate guards for rotating shafts should be used and are available from local stocks.

Dimensions
All dimensions in this catalog are for reference purposes only. Consult factory for certified dimensions.

Installation: Keyed Hollow Shaft

Mounting procedure:

1. Smear the surface of the shaft (e) with molybdenum disulfide compound. See Fig. 5.50.
2. Turn nut (b) and slide the reducer over the driven shaft. Install spacer (c) if necessary.
3. After mounting the reducer on the shaft, install bolt (f) and washer. See Fig. 5.51.

NOTE: The bore should be protected by a cover (g).

4. If the driven shaft does not have a shoulder, a spacer (h) should be used. See Fig. 5.52.

Removal procedure:

1. Remove mount bolt (n). Attach bolt (j) to spacer (d) and turn bolt (j) to remove the hollow shaft from the driven shaft. See Fig. 5.53.

NOTE: Parts a through j and n are not provided by Sumitomo.

Fig. 5.50

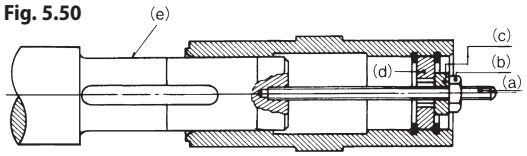


Fig. 5.51

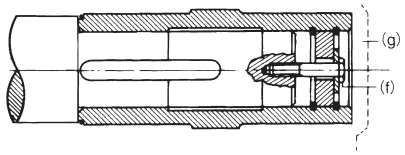


Fig. 5.52

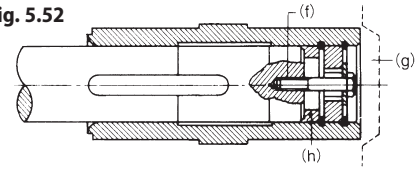
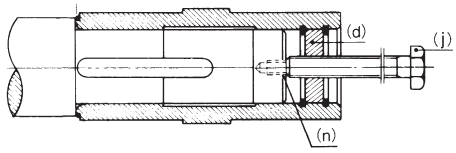


Fig. 5.53



Warranty

Sumitomo warrants that its Cyclo BBB Speed Reducers will deliver their continuous catalog ratings and up to 300% intermittent SHOCK LOAD CAPACITY, provided they are properly installed, maintained and operated within the limits of speed, torque or other load conditions under which they were sold. Sumitomo further states that Cyclo BBB Speed Reducers are warranted to be free from defects in material or workmanship for a period of two years from the date of shipment. Sumitomo assumes no liability beyond product repair or replacement under this limited warranty.

For construction purposes, be sure to obtain certified dimension sheets or drawings. Although we take every precaution to include accurate data in our catalog, we cannot guarantee such accuracy. If performance guarantees are required, they should be obtained in writing from the factory. Full consideration will be given to such requests when complete details are given of the proposed installation.

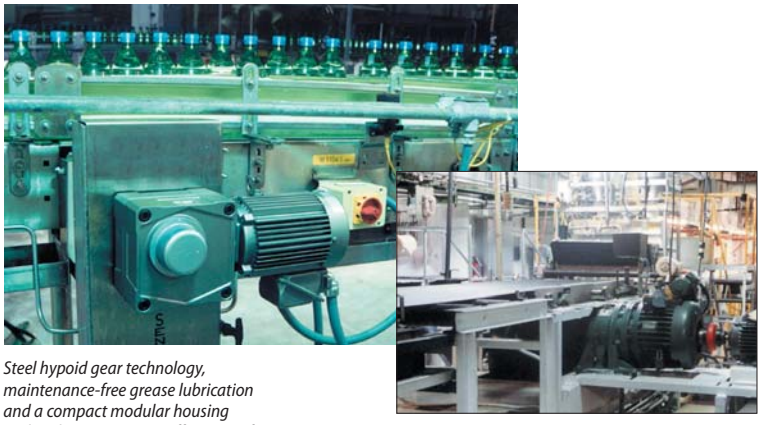
Notes

Notes

Notes

Notes

Bottling/Baking



Steel hypoid gear technology, maintenance-free grease lubrication and a compact modular housing makes the Hyponic® an efficient performer in the food industry.

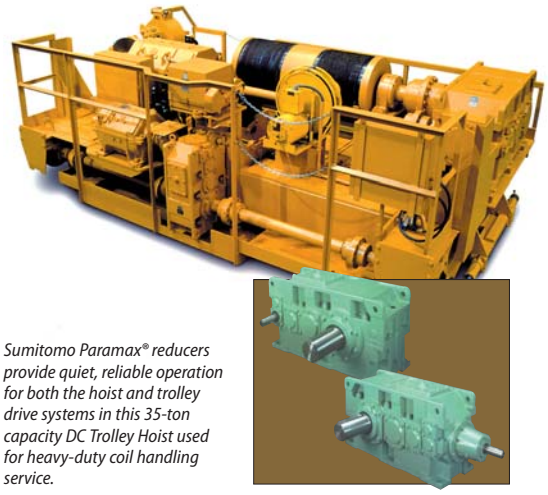
A 15-hp Beier mechanical variable speed drive with electric remote control provides an adjustable, steady speed range for this 350-ft. oven band conveyor.

Water Treatment

Each of these Sumitomo Paramax® speed reducers helps pump up to 13 million gallons a day at this state-of-the-art waste-water treatment facility in the City of Clearwater, Florida.

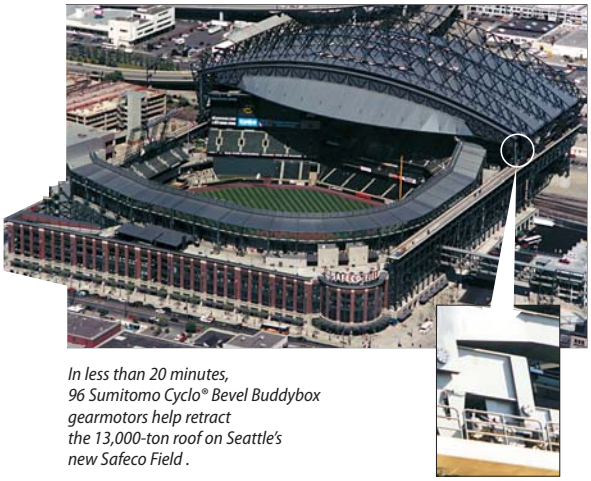
Cyclo® mixer drives are a key component of this award-winning water treatment facility in Hillsborough County, Florida.

Material Handling



Sumitomo Paramax® reducers provide quiet, reliable operation for both the hoist and trolley drive systems in this 35-ton capacity DC Trolley Hoist used for heavy-duty coil handling service.

Custom Designs



In less than 20 minutes, 96 Sumitomo Cyclo® Bevel Buddybox gearmotors help retract the 13,000-ton roof on Seattle's new Safeco Field .

The Sumitomo gearmotors, on eight travel truck assemblies, turn 128 36" wheels.

Wood Products

Sumitomo Cyclo® drives are an integral part of this manufacturing plant which produces 150,000 board feet of unfinished strip and plank hardwood flooring each week.

Once flooring is side-matched, it is inspected for defects. This conveyor, driven by Sumitomo Cyclo® drives, carries defective material to the hammer mill.

Steel

After molten steel is formed in the five-strand continuous caster at this steel mill, it is conveyed by Sumitomo Cyclo® drives on the auto-torch conveyors where the steel is cut into billets.

WORLDWIDE LOCATIONS

Sumitomo Machinery Corporation of America

Headquarters & Manufacturing

4200 Holland Boulevard
Chesapeake, VA 23323
Tel: 757-485-3355 • Fax: 757-485-7490

www.sumitomodrive.com
E-mail: customercare@suminet.com

U.S. Sales and Support

Mid-West
Sumitomo Machinery Corporation of America
175 West Lake Drive
Glendale Heights, IL 60139
Tel: 630-752-0200 • Fax: 630-752-0208

West
Sumitomo Machinery Corporation of America
2375 Railroad Street
Corona, CA 92880-5411
Tel: 951-340-4100 • Fax: 951-340-4108

Southwest
Sumitomo Machinery Corporation of America
1420 Halsey Way #130
Carrollton, TX 75007
Tel: 972-323-9600 • Fax: 972-323-9308

Canada

Toronto (East)
SM-Cyclo of Canada, Ltd.
870 Equestrian Court
Oakville, Ontario, Canada L6L 6L7
Tel: 905-469-1050 • Fax: 905-469-1055

Vancouver (West)
SM-Cyclo of Canada, Ltd.
740 Chester Road, Annacis Island, Delta
B.C., Canada V3M 6J1
Tel: 604-525-5403 • Fax: 604-525-0879

Montreal
SM-Cyclo of Canada, Ltd.
2862 Blvd. Daniel-Johnson
Laval, Quebec, Canada H7P 5Z7
Tel: 450-686-8808 • Fax: 450-686-8000

Mexico

Monterrey
SM-Cyclo de Mexico, S.A. de C.V.
Calle "C" No. 506A
Parque Industrial Almacentro
Apodaca, N.L., Mexico 66600
Tel: 011-52-81-8144-5130 • Fax: 011-52-81-8369-3699

Mexico City
SM-Cyclo de Mexico, S.A. de C.V.
Privada Ceylan No. 59-B Bis
Colonia Industrial Vallejo
Delegacion Azcapotzalco, DF Mexico 02300
Tel: 011-52-55-5368-7172 • Fax: 011-52-55-5368-6699

South America

Brazil
SM-Cyclo Redutores do Brasil Ltda.
Av. Fagundes Filho, 191
Ed. Houston Office Center–c j. H123
CEP: 04304-010–São Paulo, Brazil
Tel: 011-55-11-5585-3600 • Fax: 011-55-11-5585-9990

Chile
SM-Cyclo de Chile Ltda.
San Pablo 3507
Comuna de Quinta Normal - Santiago, Chile
Tel: 011-562-786-6963 • Fax: 011-562-786-6964

Argentina
SM-Cyclo de Argentina SA
Manuel Montes de Oca 6719
B1606 BMG, Munro
Buenos Aires, Argentina
Tel: 011-54-11-4765-5332 • Fax: 011-54-11-4765-5517

Europe

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Taiwan
Thailand

Other Locations

Australia
India
New Zealand

World Headquarters

Japan
Sumitomo Heavy Industries, Ltd.
Power Transmission & Controls Group
ThinkPark Tower, 1-1, Osaki 2-chome,
Shinagawa-ku, Tokyo 141-6025 Japan
Tel: 011-813-6737-2511 • Fax: 011-813-6866-5160

For Worldwide contact information:
www.sumitomodrive.com