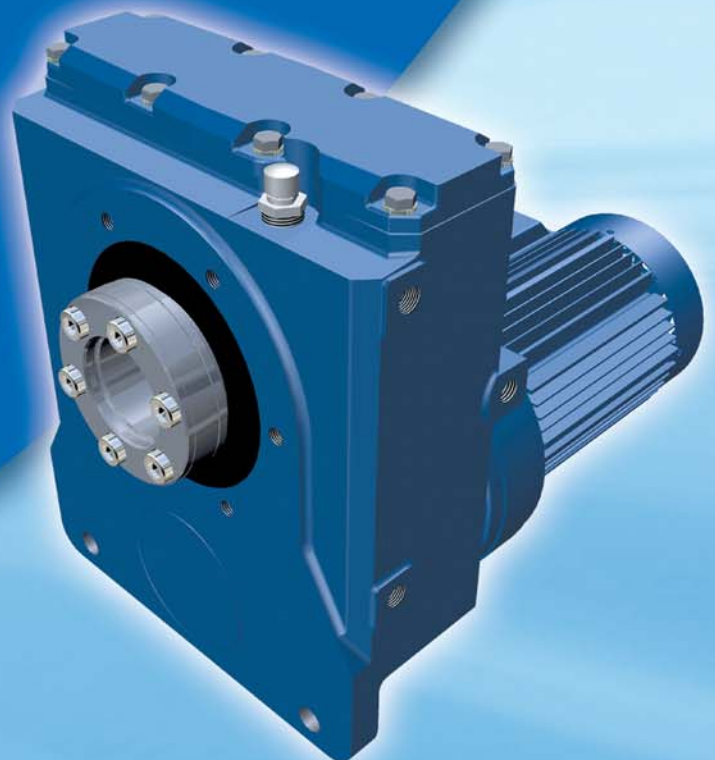


Sumitomo Drive Technologies
Always on the Move

Cyclo[®] HBB HELICAL BUDDYBOX

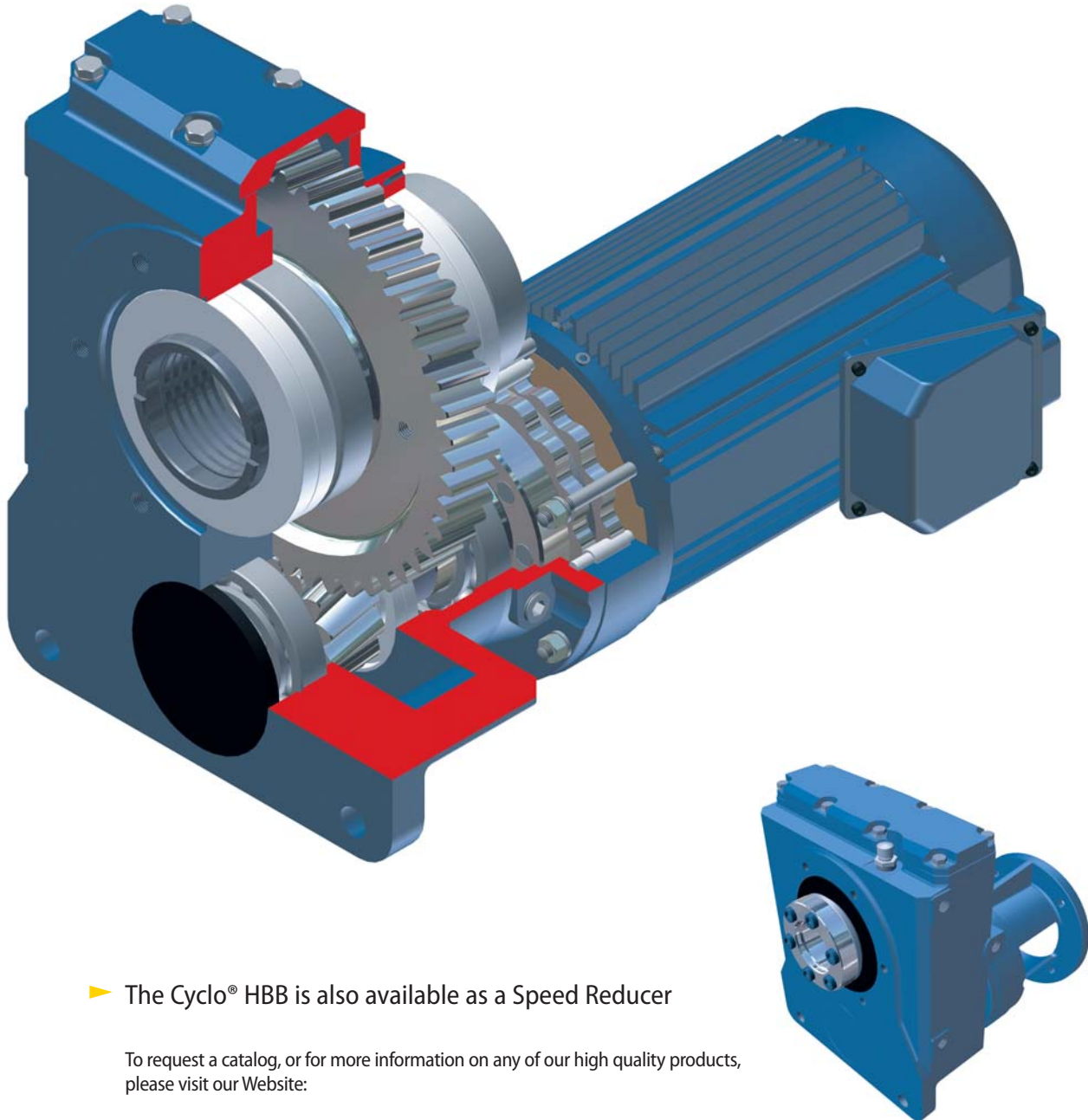
Speed Reducers and Gearmotors

featuring Keyless Taper-Grip[®] Bushing



CATALOG 07.601.50.003

Rugged Helical Output, Modular Cyclo® Input, Compact Size



▶ The Cyclo® HBB is also available as a Speed Reducer

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

www.sumitomodrive.com

Speed Reducers and Gearmotors

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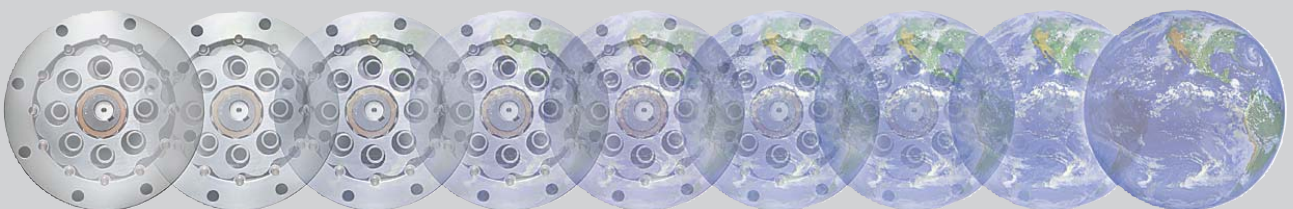
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► Flexible configurations

- Shaft Options:
hollow
- Mounting Options:
flange
face

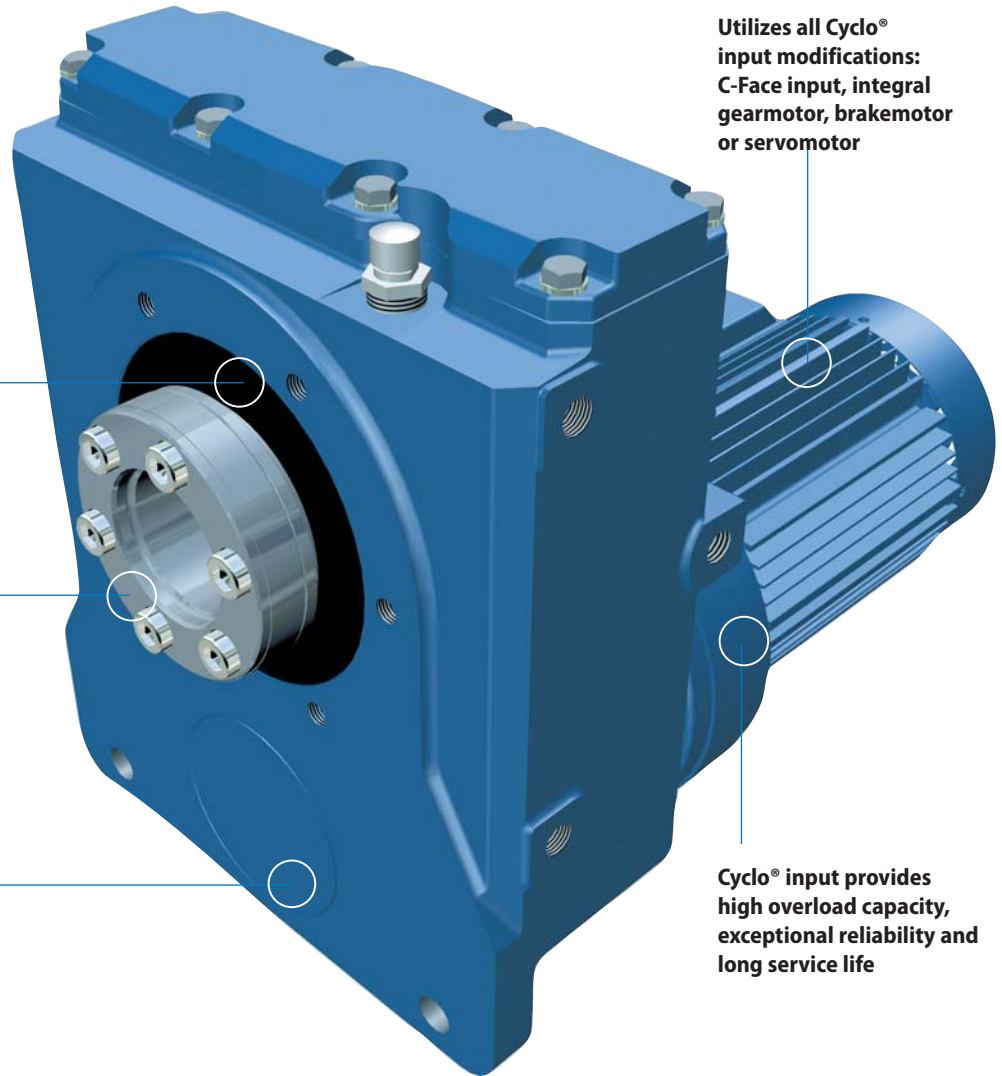
Double output seals
prevent lubricant
leaks and protect
from contamination

Patented keyless, steel
Taper-Grip® bushing
allows for quick and easy
mounting and removal.
Installs from either side

Patented universal
housing design

Utilizes all Cyclo®
input modifications:
C-Face input, integral
gearmotor, brakemotor
or servomotor

Cyclo® input provides
high overload capacity,
exceptional reliability and
long service life



Cyclo® Quality and Reliability, Shaft Mount Design

- High performance steel gearing components
deliver **85-90% efficiency**



Product Description

Sumitomo's Cyclo® Helical Buddybox (Cyclo® HBB) speed reducers and gearmotors provide **innovative shaft mounted drive solutions for demanding services**. The Cyclo® HBB combines the quiet, efficient and reliable performance of the Cyclo® technology input with the **rugged helical gear output**. The **modular design** provides a compact, efficient product and the most flexible range of output speed and torque combinations available. Sumitomo's patented Taper Grip® bushing system enhances the Cyclo® HBB value by offering a simple shaft-mounting device that provides **self-aligning, backlash-free torque transmission** to the driven shaft. The Cyclo® HBB design is flexible and easily adapts to CEMA Screw Conveyor Drive applications with a modular conversion kit.

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
- **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
- **CEMA Screw Conveyor Drive option**
 - ~ Quick and simple conversion for Cyclo® HBB units to fit CEMA standard dimensions

Specifications

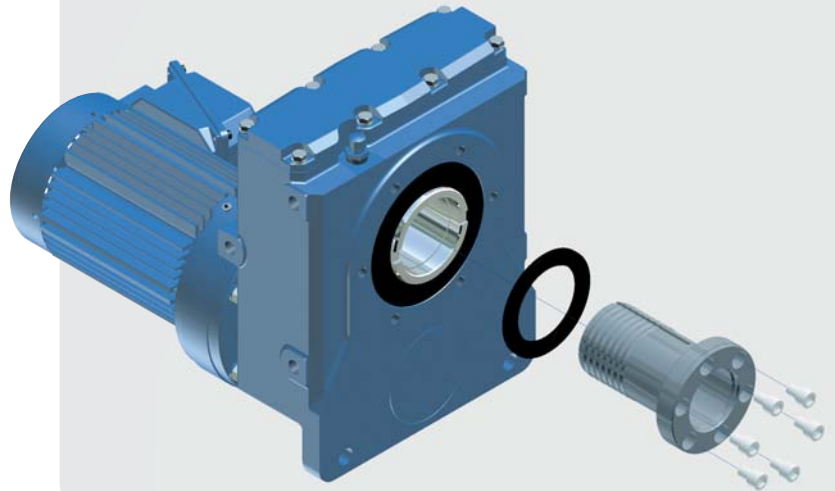
Ratios:	11:1 up to 26,000:1 and greater
Torque Capacity:	Up to 75,800 in. lbs.
HP:	1/8 to 40
Mounting:	Hollow Shaft, Flange, Face
Options:	Integral Motor, C-Face
Motor Standards:	NEMA, IEC, JIS, UL, CSA, CE

► 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, offset parallel Cyclo® HBB 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
- Conveyors
- Baggage Handling
- Shredders
- Belt Filter Press
- Mixer/Blender
- Rolling Mill Table
- Screw Conveyors
- Elevators
- Hoist Drives
- Climber Screens
- Food Processing

Product Range (Standard Motor and Reducer Combinations)

Single Reduction Ratios Ratios 11 — 417 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
Motor HP	1/8																	
	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 — 4365 Combinations with 1750 RPM motor

Ratios available up to 26,492:1

Ratio	364	424	501	578	683	809	956	1117	1320	1656	1957	2272	2559	2944	3511	4365
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
Motor HP	1/8															
	1/4															
	1/3															
	1/2															
	3/4															
	1															
	1.5															
	2															
	3															
	5															
	7.5															

How do I select a Cyclo® HBB reducer or gearmotor?

Selection is based on the actual horsepower and/or torque requirements at the output shaft. The Cyclo® HBB 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, Speed Reducers pages 2.2 - 2.3 and Gearmotors pages 3.2 - 3.3, 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)
- Loading Conditions
- 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 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® HBB 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 severe operating conditions.

How can I be sure that the reducer can withstand periodic excessive overloads?

Cyclo® HBB speed reducers provide 300% momentary intermittent shock loads capacity. For applications with shock loads greater than 300%, consult an SMA 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 other input speeds are used, the horsepower and torque ratings will vary.

What are the thermal limitations of the Cyclo® HBB?

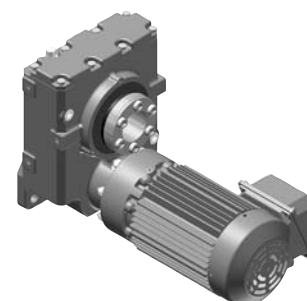
The Cyclo® speed reducer, by virtue of its smooth, almost frictionless operation (unlike traditional helical gears), has a thermal rating that far exceeds its mechanical capacity and all but eliminates the conventional limitations due to heat.

Why is a Taper-Grip® bushing used? What is its material?

The Taper-Grip® bushing is integral to the Cyclo® HBB and provides for easy mounting and removal to and from the shaft of the driven machine. Because it requires no keyway, the shaft isn't weakened and maximum torque is transmitted. With the added strength of steel, the Taper-Grip® bushing can be used in reversing and/or high start-up applications. The steel Taper-Grip® bushing can be used on all Taper-Grip® products.

What kind of torque arm do you supply? At what position should it be mounted?

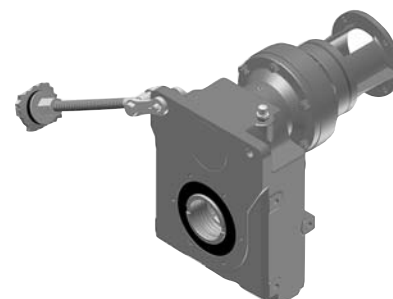
The standard torque arm assembly is shown in the reducer dimensions, pages 2.14 - 2.21 and the gearmotor dimensions, pages 3.52 - 3.63. The torque arm should be mounted at 90 degrees to a line from the point of attachment to the reducer and the center of the output bore with up to 30 degrees plus or minus variance. It should always be mounted in tension, not compression. A bracket type torque arm is also offered as a non-stock option.

Common Configurations

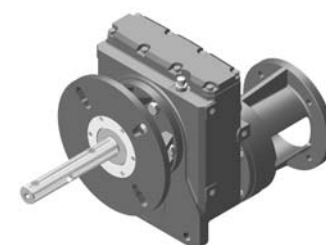
Single Reduction Gearmotor



Single Reduction Reducer with C-Face Adapter



Double Reduction, C-Face Reducer with Torque Arm



C-Face Reducer with Screw Conveyor Adapter

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:	1/8 ~ 30 HP: Class B 40 HP: Class F	1/8 ~ 20 HP: Class B
	Time Rating	Continuous	Continuous
Reducer	Reduction:	Combination of Cyclo input and helical gear output.	
	Lubrication:	Cyclo portion is grease or oil lubricated; helical 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:	Ball bearings on geared output; ball bearings on Cyclo input. Tapered roller bearings optional.	
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 HBB speed reducers, ratios 11 through 417, the slow speed shaft rotates in a reverse direction to that of the high speed shaft.

On double reduction units, ratios 364 through 26,492, both the high speed and the slow speed shaft rotate in the same direction.

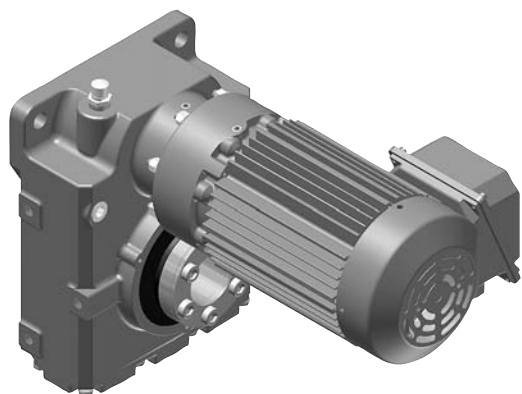
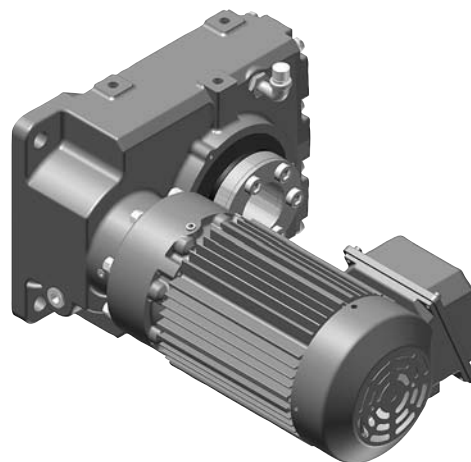
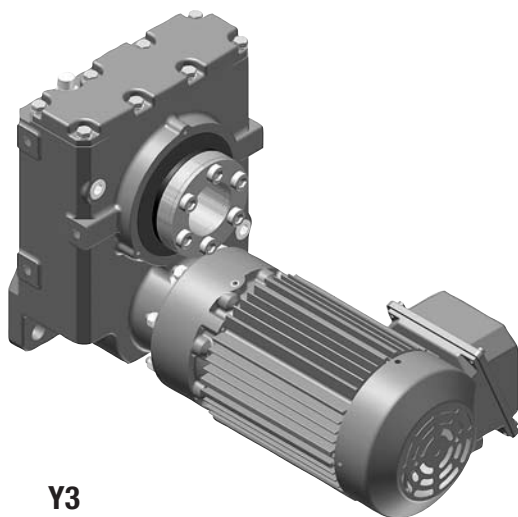
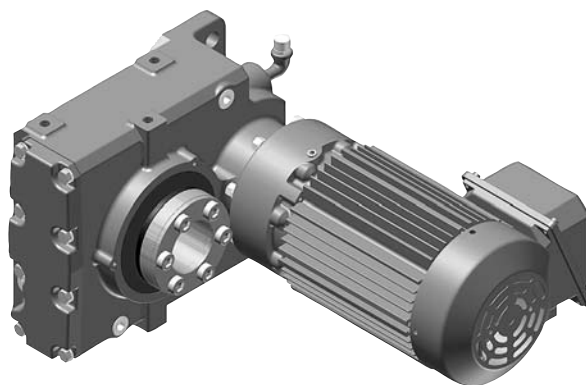
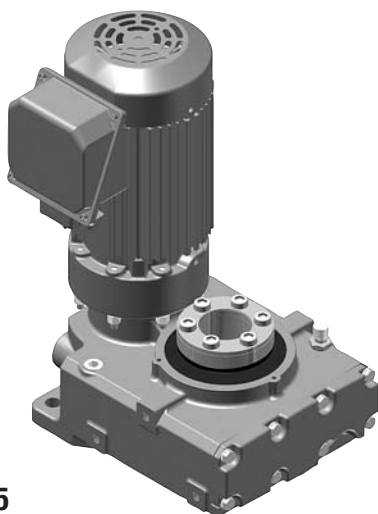
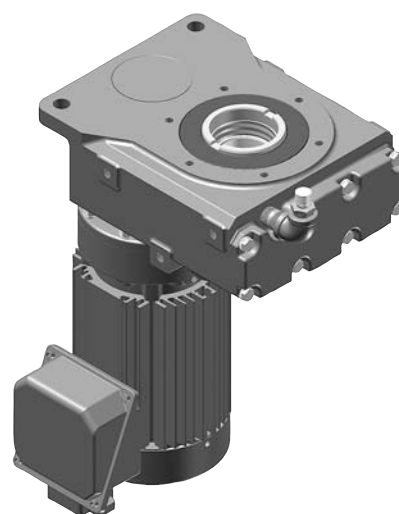
Input Speeds

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

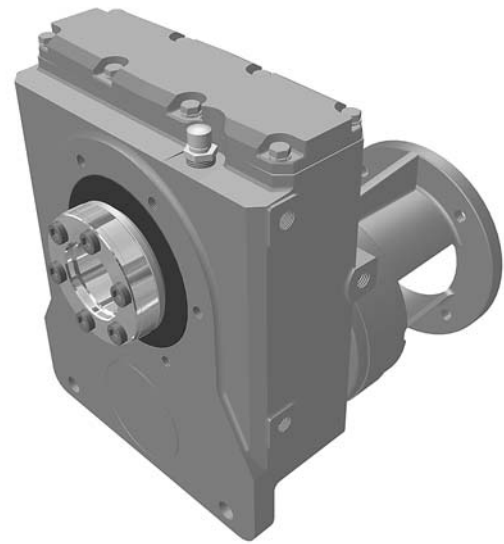
Mounting Positions

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

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2

Speed Reducers



Speed
Reducers

How to
Select

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 2.8–2.13 by matching both the Selection Horsepower and Desired Output Speed (RPMs) to a frame size model number. Note: For Mounting Positions Y1, Y3, Y2, Y4 see pages 2.8–2.9. For Mounting Positions Y5 and Y6 see pages 2.10–2.11.) For all Double Reduction Mounting Positions see pages 2.12–2.13.

Step 4: Verify Dimensions

Use the Dimensions information on pages 2.14–2.21 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:

Washdown Modification

Screw Conveyor Kit

Bushing Guard

Please see the Cyclo® HBB pricelist for available modifications, and refer to Section 4 of this catalog for dimension drawings of selected popular options .

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.

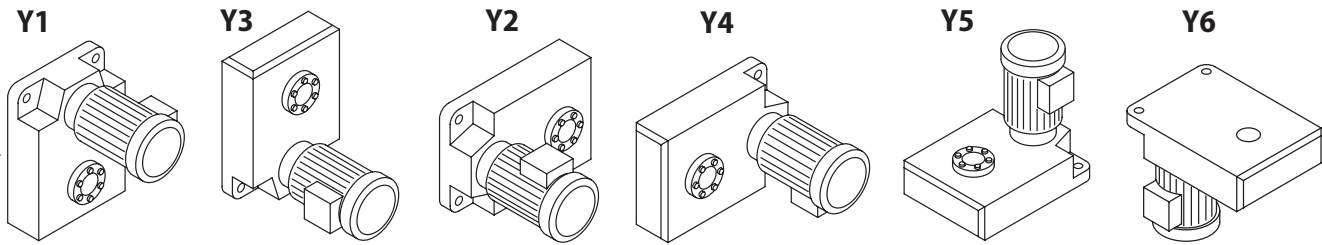
STOCK BUSHING BORES

Size	Inch Sizes	Metric Sizes	Min. Bore*
Z	1 ³ / ₁₆ , 1 ⁷ / ₁₆ ,	30, 40	1 ³ / ₁₆
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.



Mounting Positions



Recommended Reducer Service Factors

AGMA Load Classifications

	Uniform (U)	Moderate Shock (M)	Heavy Shock (H)
1/2 hr. per day (Occasional)	0.50*	0.80*	1.25
Duration of Service 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.

Speed Reducers

How to Select

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	167	100	83.3	62.5	45.5	38.5	33.3	29.4	23.8	Frame Size
Ratio	11	18	21	28	39	46	53	60	74	
Input HP	—	—	1.54	1.54	1.54	1.54	1.54	1.54	1.02	Z6090
Output Torque in-lbs	—	—	1430	1970	2330	2690	3050	2480		
Input HP	—	—	2.04	2.04	2.04	2.04	1.96	1.58		Z6095
Output Torque in-lbs	—	—	3870	3870	3870	3870	3870	3870		
Input HP	3.15	3.15	2.67	2.59						A6100
Output Torque in-lbs	1100	1830	5270	6320						
Input HP	4.26	4.26	6.80	7.660						A6105
Output Torque in-lbs	1490	2480	6320	7660						
Input HP	6.80	6.80	9.32	8.690						B6120
Output Torque in-lbs	2370	3950	10300	11900						
Input HP	7.79	7.79	7.79	7.94						B6125

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 affecting Frame Size selection such as:

- Overhung Load
- Shock Loading

Consult Appendix, pages 5.2–5.4.

Configure a Model Number

Speed Reducers

Nomenclature

Output Shaft Orientation

Type	Prefix
Horizontal	H
Vertical	V

Mounting Style

Type	Prefix
Shaft Mount (Hollow Shaft)	Y
Flange (Keyed Hollow Bore)	F

Input Connection

Input Connection	Prefix
C-Face Adapter	J
Hollow Input Shaft	X

Modification

	Prefix
Special	S
Standard	

Include the following information when ordering:

- 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.

Frame Size

Single Reduction		
Z6090	B6120	D6160
Z6095	B6125	D6165
A6100	C6140	E6170
A6105	C6145	E6175
Double Reduction		
Z609DA	C614DB	D616DC
A610DA	C614DC	E617DA
B612DA	D616DA	E617DB
B612DB	D616DB	E617DC
C614DA		

E H Y J - Z6090

Y - [] - Y1 - 21

Cyclo® HBB product code (always “E”)

Output shaft orientation

Mounting style

Input connection

Modification (Special feature)

Frame size

Shaft specification

Reducer specification

Mounting position and optional specification
(as required)

Ratio

Nomenclature

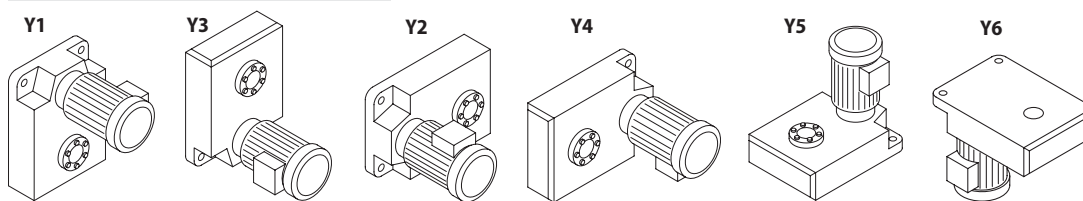
Shaft Specifications

Input Shaft	Hollow Output Shaft	Suffix
mm	Key (mm)	
DIN	Key (DIN)	E
Inch	Key (Inch)	K
mm	Taper-Grip®	M
DIN	Taper-Grip®	G
Inch	Taper-Grip®	Y

Reducer Specification

Type	Suffix
Standard	
High Capacity Bearing (Required for Screw Conveyor)	R1
Baseplate	BP
Shovel Base	SB
Top Mount	Center Right Left
	– PR PL
Low Backlash	LB
Torque Limiter	TL

Mounting Positions



Nominal Total Ratio

Single Reduction		Double Reduction	
Input Ratio	Total Ratio	Input Ratio	Total Ratio
3	11	104	364
5	18	121	424
6	21	143	501
8	28	165	578
11	39	195	683
13	46	231	809
15	53	273	956
17	60	319	1117
21	74	377	1320
25	88	473	1656
29	102	559	1957
35	123	649	2272
43	151	731	2559
51	179	841	2944
59	207	1003	3511
71	249	1247	4365
87	305	1479	5177
119	417	1849	6472
		2065	7228
		2537	8880
		3045	10568
		3481	12184
		4437	15530
		5133	17966
		6177	21620
		7569	26492

Nomenclature Example:

EHYJ – Z6090Y – Y1 – 21

E – Cyclo® Helical Buddybox

H – Horizontal O/P

Y – Shaft Mount (Hollow Shaft)

J – C-Face Input

Z6090 – Frame Size

Y – Inch Shaft Specification

Y1 – Installation Position

21 – Ratio

Speed
Reducers

Nomenclature

AGMA Load Classifications

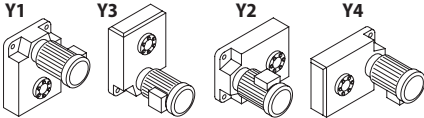
TYPE OF APPLICATION		TYPE OF LOAD	TYPE OF APPLICATION		TYPE OF LOAD	TYPE OF APPLICATION		TYPE OF LOAD
Speed Reducers	Agitators		Large (industrial)		M	Paper Mills		
	Pure liquids	U	Light (small diameter)		U	Agitators (mixers)		M
	Liquids and solids	M	Feeders			Barker, hydraulic		S
	Variable-density liquids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

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

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Frame Size Selection Tables 60 Hz, 1750 RPM

Single Reduction Y1, Y3, Y2, Y4 Mounting Positions



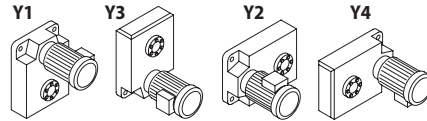
Dimensions on pages 2.14–2.17

Output RPM	167	100	83.3	62.5	45.5	38.5	33.3	29.4	23.8	Frame Size
Ratio	11	18	21	28	39	46	53	60	74	
Input HP	–	–	1.54	1.54	1.54	1.54	1.54	1.54	1.02	Z6090
Output Torque in-lbs	–	–	1080	1430	1970	2330	2690	3050	2480	
Input HP	–	–	2.04	2.04	2.04	2.04	2.04	1.96	1.58	Z6095
Output Torque in-lbs	–	–	1420	1900	2610	3080	3550	3870	3870	
Input HP	3.15	3.15	3.15	3.15	3.15	3.15	3.15	2.67	2.59	A6100
Output Torque in-lbs	1100	1830	2200	2930	4030	4760	5490	5270	6320	
Input HP	4.26	4.26	4.26	4.26	4.26	4.26	4.26	3.30	3.14	A6105
Output Torque in-lbs	1490	2480	2970	3960	5450	6440	7430	6520	7660	
Input HP	6.80	6.80	6.80	6.80	6.80	6.80	6.80	6.80	5.31	B6120
Output Torque in-lbs	2370	3950	4740	6320	8690	10300	11900	13400	13000	
Input HP	7.79	7.79	7.79	9.32	7.94	7.94	7.94	7.59	6.42	B6125
Output Torque in-lbs	2720	4530	5430	8670	10100	12000	13800	15000	15700	
Input HP	17.4	17.4	17.4	17.4	17.4	17.4	16.1	13.5	11.6	C6140
Output Torque in-lbs	6080	10100	12200	16200	22300	26300	28100	26800	28300	
Input HP	20.2	20.2	20.2	20.2	20.2	20.2	18.0	15.9	12.8	C6145
Output Torque in-lbs	7060	11800	14100	18800	25900	30600	31300	31300	31300	
Input HP	27.2	27.2	27.2	26.4	26.4	26.4	25.1	17.6	17.3	D6160
Output Torque in-lbs	9490	15800	19000	24600	33800	39900	43700	34700	42200	
Input HP	32.3	32.3	32.3	32.3	32.3	30.3	30.3	25.2	21.6	D6165
Output Torque in-lbs	11300	18800	22500	30000	41300	45800	52800	49800	52700	
Input HP	37.0	37.0	37.0	37.0	37.0	36.6	34.2	26.4	26.1	E6170
Output Torque in-lbs	12900	21500	25800	34400	47300	55300	59600	52200	63800	
Input HP	40.3	40.3	40.3	40.3	40.3	40.3	40.3	32.3	31.1	E6175
Output Torque in-lbs	14100	23500	28100	37500	51600	61000	70400	63900	75800	

Speed
Reducers

Selection
Tables

60 Hz, 1750 RPM Frame Size Selection Tables



Single Reduction Y1, Y3, Y2, Y4 Mounting Positions

Dimensions on pages 2.14–2.17

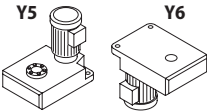
Output RPM	20.0	17.2	14.3	11.6	9.80	8.47	7.04	5.75	4.20	Frame Size
Ratio	88	102	123	151	179	207	249	305	417	
Input HP	0.899	0.838	0.820	0.583	0.445	0.414	0.338	0.283	0.168	Z6090
Output Torque in-lbs	2610	2820	3340	2920	2640	2840	2790	2860	2320	
Input HP	1.16	1.05	0.950	0.774	0.566	0.500	0.403	0.382	0.202	Z6095
Output Torque in-lbs	3370	3540	3870	3870	3350	3430	3330	3870	2800	
Input HP	1.70	1.62	1.31	1.05	0.751	0.692	0.584	0.580	0.282	A6100
Output Torque in-lbs	4950	5470	5320	5230	4450	4740	4820	5870	3890	
Input HP	2.24	2.13	1.61	1.45	1.04	0.949	0.752	0.757	0.383	A6105
Output Torque in-lbs	6510	7190	6550	7240	6170	6510	6210	7660	5300	
Input HP	4.14	4.01	3.34	2.56	2.31	1.74	1.28	1.27	–	B6120
Output Torque in-lbs	12000	13500	13600	12800	13700	12000	10600	12800	–	
Input HP	5.31	4.65	3.85	3.13	2.64	2.17	1.61	1.51	–	B6125
Output Torque in-lbs	15400	15700	15700	15700	15700	14900	13300	15300	–	
Input HP	9.24	7.98	6.98	5.28	4.60	3.97	3.26	2.65	–	C6140
Output Torque in-lbs	26800	26900	28400	26400	27300	27200	26900	26800	–	
Input HP	10.6	9.29	7.70	6.27	5.28	4.57	3.80	3.10	–	C6145
Output Torque in-lbs	30800	31300	31300	31300	31300	31300	31300	31300	–	
Input HP	13.2	14.1	13.0	9.99	7.71	5.92	4.65	4.65	–	D6160
Output Torque in-lbs	38400	47500	52700	49900	45700	40600	38400	47000	–	
Input HP	18.7	15.3	13.4	10.6	9.16	7.71	6.58	5.23	–	D6165
Output Torque in-lbs	54300	51500	54300	53000	54300	52900	54300	52900	–	
Input HP	21.2	19.2	16.1	13.1	11.2	9.58	7.94	6.45	–	E6170
Output Torque in-lbs	61600	64600	65500	65300	66700	65700	65500	65200	–	
Input HP	26.1	22.5	18.6	15.1	12.8	11.1	9.19	7.50	–	E6175
Output Torque in-lbs	75800	75800	75800	75700	75800	75800	75800	75800	–	

Speed Reducers

Selection Tables

Frame Size Selection Tables 60 Hz, 1750 RPM

Single Reduction Y5, Y6 Mounting Positions

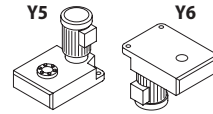


Dimensions on pages 2.14–2.17

Output RPM	167	100	83.3	62.5	45.5	38.5	33.3	29.4	23.8	Frame Size
Ratio	11 ^[1]	18 ^[1]	21	28	39	46	53	60	74	
Input HP	–	–	1.54	1.54	1.54	1.54	1.54	1.54	1.02	Z6090
Output Torque in-lbs	–	–	1080	1430	1970	2330	2690	3050	2480	
Input HP	–	–	2.04	2.04	2.04	2.04	2.04	1.96	1.58	Z6095
Output Torque in-lbs	–	–	1420	1900	2610	3080	3550	3870	3870	
Input HP	3.15	3.15	3.15	3.15	3.15	3.15	3.15	2.67	2.59	A6100
Output Torque in-lbs	1100	1830	2200	2930	4030	4760	5490	5270	6320	
Input HP	4.26	4.26	4.26	4.26	4.26	4.26	4.26	3.30	3.14	A6105
Output Torque in-lbs	1490	2480	2970	3960	5450	6440	7430	6520	7660	
Input HP	6.80	6.80	6.80	6.80	6.80	6.80	6.80	6.80	5.31	B6120
Output Torque in-lbs	2370	3950	4740	6320	8690	10300	11800	13400	12900	
Input HP	7.79	7.79	7.79	9.32	7.94	7.94	7.94	7.59	6.42	B6125
Output Torque in-lbs	2720	4530	5430	8670	10100	11900	13800	15000	15700	
Input HP	12.7	12.7	14.9	14.9	14.9	10.2	10.2	7.45	7.45	C6140
Output Torque in-lbs	4430	7380	10400	13800	19000	15300	17700	14700	18100	
Input HP	14.7	14.7	14.9	14.9	14.9	10.2	10.2	7.45	7.45	C6145
Output Torque in-lbs	5140	8570	10400	13800	19000	15300	17700	14700	18100	
Input HP	16.9	16.9	–	20.4	20.4	14.9	14.9	14.9	10.2	D6160
Output Torque in-lbs	5890	9740	–	18900	26000	22500	25900	29400	24800	
Input HP	20.1	20.1	–	20.4	20.4	14.9	14.9	14.9	10.2	D6165
Output Torque in-lbs	7010	11700	–	18900	26000	22500	25900	29400	24800	
Input HP	27.1	27.1	–	–	19.0	19.0	16.1	13.0	13.0	E6170
Output Torque in-lbs	9380	15700	–	–	24300	28800	28000	25700	31800	
Input HP	29.5	29.5	–	–	19.0	19.0	16.1	13.0	13.0	E6175
Output Torque in-lbs	10300	17100	–	–	24300	28800	28000	25700	31800	

Note: [1] Y6 position is not available for ratio 11 and 18.

60 Hz, 1750 RPM Frame Size Selection Tables



Single Reduction Y5, Y6 Mounting Positions

Dimensions on pages 2.14–2.17

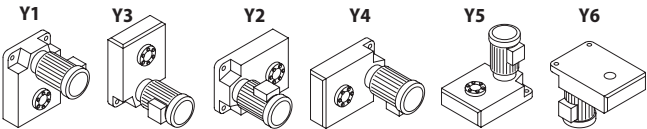
Output RPM	20.0	17.2	14.3	11.6	9.80	8.47	7.04	5.75	4.20	Frame Size
Ratio	88	102	123	151	179	207	249	305	417	
Input HP	0.899	0.838	0.820	0.583	0.445	0.414	0.338	0.283	0.168	Z6090
Output Torque in-lbs	2610	2820	3340	2920	2640	2840	2790	2860	2320	
Input HP	1.16	1.05	0.950	0.774	0.566	0.500	0.403	0.382	0.202	Z6095
Output Torque in-lbs	3370	3540	3870	3870	3350	3430	3330	3870	2800	
Input HP	1.70	1.62	1.31	1.05	0.751	0.692	0.584	0.580	0.282	A6100
Output Torque in-lbs	4950	5470	5320	5230	4450	4740	4820	5870	3890	
Input HP	2.24	2.13	1.61	1.45	1.04	0.949	0.752	0.757	0.383	A6105
Output Torque in-lbs	6510	7190	6550	7240	6170	6510	6210	7660	5300	
Input HP	4.14	4.01	3.34	2.56	2.31	1.74	1.28	1.27	–	B6120
Output Torque in-lbs	12000	13500	13500	12700	13600	11900	10500	12700	–	
Input HP	5.31	4.65	3.85	3.13	2.64	2.17	1.61	1.51	–	B6125
Output Torque in-lbs	15400	15700	15700	15700	15700	14900	13300	15300	–	
Input HP	7.45	5.01	5.01	2.98	2.98	2.98	2.04	2.04	–	C6140
Output Torque in-lbs	21600	16900	20400	14900	17600	20400	16800	20500	–	
Input HP	7.45	5.01	5.01	2.98	2.98	2.98	2.04	2.04	–	C6145
Output Torque in-lbs	21600	16900	20400	14900	17600	20400	16800	20500	–	
Input HP	10.2	10.2	10.2	5.01	5.01	5.01	2.98	2.98	–	D6160
Output Torque in-lbs	29500	34200	41300	25000	29600	34300	24500	30100	–	
Input HP	10.2	10.2	10.2	5.01	5.01	5.01	2.98	2.98	–	D6165
Output Torque in-lbs	29500	34200	41300	25000	29600	34300	24500	30100	–	
Input HP	14.9	14.9	10.2	10.2	7.45	7.45	5.01	5.01	–	E6170
Output Torque in-lbs	43200	50100	41300	50700	44200	51100	41300	50700	–	
Input HP	14.9	14.9	10.2	10.2	7.45	7.45	5.01	5.01	–	E6175
Output Torque in-lbs	43200	50100	41300	50700	44200	51100	41300	50700	–	

Speed
Reducers

Selection
Tables

Frame Size Selection Tables 60 Hz, 1750 RPM

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

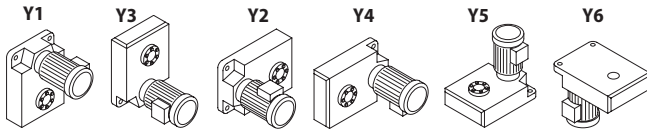


Dimensions on pages 2.18–2.21

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
Ratio	364	424	501	578	683	809	956	1117	1320	1656	1957	2272	2559	Size
Input HP	0.337	0.290	0.245	0.212	0.180	0.152	0.125 breakaway HP required for cold temp. or high inertia applications ^[1]							Z609DA
Output Torque in-lbs	3870	3870	3870	3870	3870	3870	3870	3870	3870	3870	3870	3870	3870	
Input HP	0.576	0.576	0.496	0.430	0.364	0.307	0.260	0.222	0.188	0.150	0.125 breakaway HP required for cold temp. or high inertia applications ^[1]			A610DA
Output Torque in-lbs	6600	7680	7820	7820	7820	7820	7820	7820	7820	7820	7820	7820	7820	
Input HP	0.576	0.576	0.576	0.576	0.576	0.576	0.520	0.445	0.377	0.300	0.254	0.219	0.194	B612DA
Output Torque in-lbs	6600	7680	9120	10400	12400	14700	15700	15700	15700	15700	15700	15700	15700	
Input HP	1.37	1.17	0.993	0.860	0.728	0.615	0.520	0.445	0.377	0.300	0.254	0.219	0.194	B612DB
Output Torque in-lbs	15700	15700	15700	15700	15700	15700	15700	15700	15700	15700	15700	15700	15700	
Input HP	0.576	0.576	0.576	0.576	0.576	0.576	0.576	0.576	0.576	0.576	0.508	0.438	0.388	C614DA
Output Torque in-lbs	6600	7680	9120	10400	12400	14700	17300	20300	24000	30000	31300	31300	31300	
Input HP	2.14	2.14	1.99	1.72	1.46	1.23	1.04	0.890	0.753	0.600	0.508	0.438	0.388	C614DB
Output Torque in-lbs	24600	28600	31300	31300	31300	31300	31300	31300	31300	31300	31300	31300	31300	
Input HP	2.73	2.35	1.99	1.72	1.46	1.23	1.04	0.890	0.753	0.600	0.508	0.438	0.388	C614DC
Output Torque in-lbs	31300	31300	31300	31300	31300	31300	31300	31300	31300	31300	31300	31300	31300	
Input HP	2.14	2.14	2.14	2.14	2.14	2.13	1.80	1.54	1.31	1.04	0.881	0.759	0.674	D616DA
Output Torque in-lbs	24600	28600	33800	39000	46100	54300	54300	54300	54300	54300	54300	54300	54300	
Input HP	4.50	4.07	3.44	2.98	2.53	2.13	1.80	1.54	1.31	1.04	0.881	0.759	0.674	D616DB
Output Torque in-lbs	51600	54300	54300	54300	54300	54300	54300	54300	54300	54300	54300	54300	54300	
Input HP	4.74	4.07	3.44	2.98	2.53	2.13	1.80	1.54	1.31	1.04	0.881	0.759	0.674	D616DC
Output Torque in-lbs	54300	54300	54300	54300	54300	54300	54300	54300	54300	54300	54300	54300	54300	
Input HP	2.14	2.14	2.14	2.14	2.14	2.14	2.14	2.14	1.82	1.45	1.23	1.06	0.940	E617DA
Output Torque in-lbs	24600	28600	33800	39000	46100	54600	64600	75500	75800	75800	75800	75800	75800	
Input HP	4.50	4.50	4.50	4.17	3.53	2.98	2.52	2.15	1.82	1.45	1.23	1.06	0.940	E617DB
Output Torque in-lbs	51600	60100	71000	75800	75800	75800	75800	75800	75800	75800	75800	75800	75800	
Input HP	6.61	5.68	4.81	4.17	3.53	2.98	2.52	2.15	1.82	1.45	1.23	1.06	0.940	E617DC
Output Torque in-lbs	75800	75800	75800	75800	75800	75800	75800	75800	75800	75800	75800	75800	75800	

Note: [1] A torque limiting device is recommended to protect the unit or driven machine.

60 Hz, 1750 RPM Frame Size Selection Tables



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

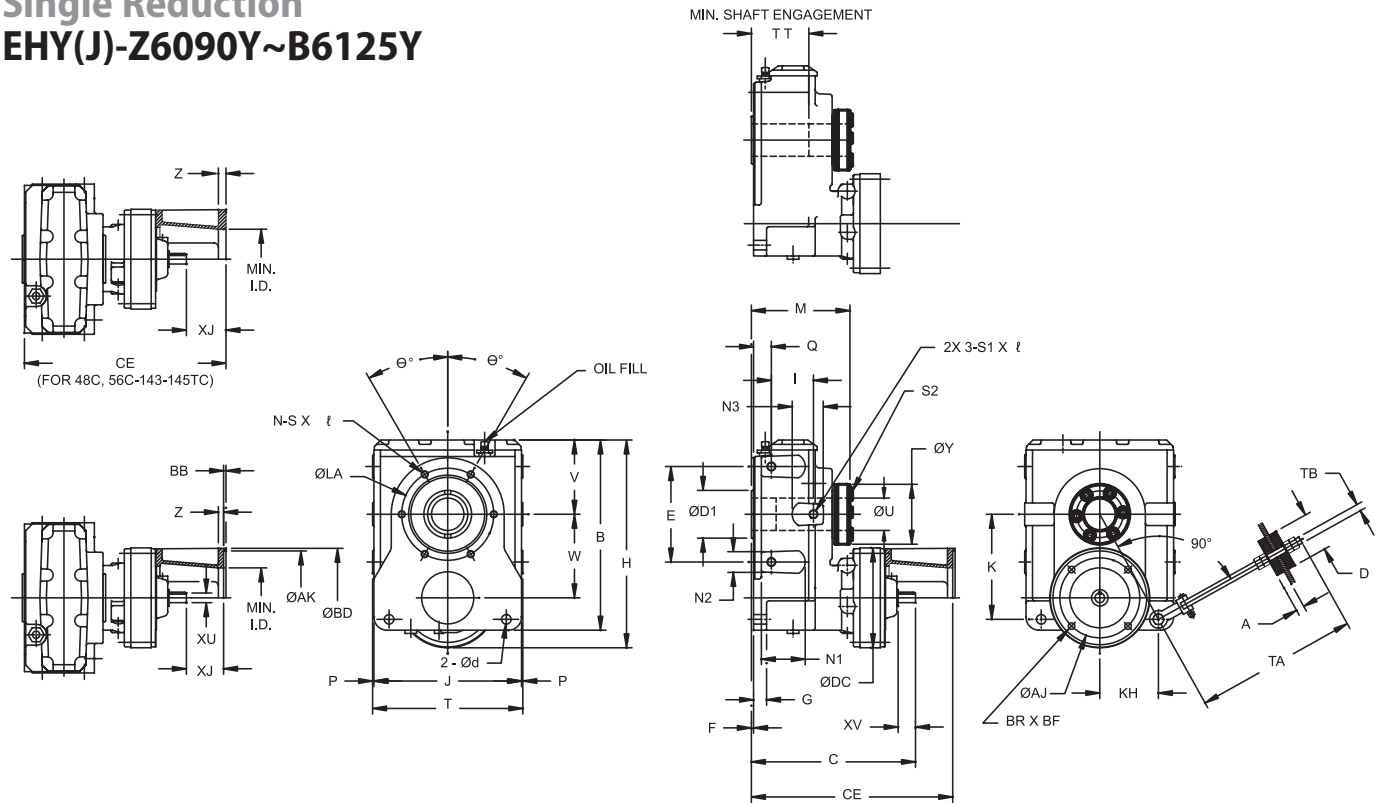
Dimensions on pages 2.18–2.21

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
Ratio	2944	3511	4365	5177	6472	7228	8880	10658	12184	15530	17966	21620	26492	Size
Input HP	0.125 breakaway HP required for cold temp. or high inertia applications ^[1]													Z609DA
Output Torque in-lbs	3870	3870	3870	3870	3870	3870	3870	3870	3870	3870	3870	3870		
Input HP	0.125 breakaway HP required for cold temp. or high inertia applications ^[1]													A610DA
Output Torque in-lbs	7820	7820	7820	7820	7820	7820	7820	7820	7820	7820	7820	7820		
Input HP	0.169	0.142	0.125 breakaway HP required for cold temp. or high inertia applications ^[1]											B612DA
Output Torque in-lbs	15700	15700	15700	15700	15700	15700	15700	15700	15700	15700	15700	15700		
Input HP	0.169	0.142	0.125 breakaway HP required for cold temp. or high inertia applications ^[1]											B612DB
Output Torque in-lbs	15700	15700	15700	15700	15700	15700	15700	15700	15700	15700	15700	15700	15700	
Input HP	0.338	0.283	0.25 breakaway HP required for cold temp. or high inertia applications ^[1]											C614DA
Output Torque in-lbs	31300	31300	31300	31300	31300	31300	31300	31300	31300	31300	31300	31300		
Input HP	0.338	0.283	0.25 breakaway HP required for cold temp. or high inertia applications ^[1]											C614DB
Output Torque in-lbs	31300	31300	31300	31300	31300	31300	31300	31300	31300	31300	31300	31300	31300	
Input HP	0.338	0.283	0.25 breakaway HP required for cold temp. or high inertia applications ^[1]											C614DC
Output Torque in-lbs	31300	31300	31300	31300	31300	31300	31300	31300	31300	31300	31300	31300	31300	
Input HP	0.586	0.5 breakaway HP required for cold temp. or high inertia applications ^[1]				0.25 breakaway HP required for cold temp. or high inertia applications ^[1]								D616DA
Output Torque in-lbs	54300	54300	54300	54300	54300	54300	54300	54300	54300	54300	54300	54300	54300	
Input HP	0.586	0.5 breakaway HP required for cold temp. or high inertia applications ^[1]				0.25 breakaway HP required for cold temp. or high inertia applications ^[1]								D616DB
Output Torque in-lbs	54300	54300	54300	54300	54300	54300	54300	54300	54300	54300	54300	54300	54300	
Input HP	0.586	0.5 breakaway HP required for cold temp. or high inertia applications ^[1]				0.25 breakaway HP required for cold temp. or high inertia applications ^[1]								D616DC
Output Torque in-lbs	54300	54300	54300	54300	54300	54300	54300	54300	54300	54300	54300	54300	54300	
Input HP	0.817	0.685	0.551	0.5 breakaway HP required for cold temp. or high inertia applications ^[1]				0.25 breakaway HP required for cold temp. or high inertia applications ^[1]						E617DA
Output Torque in-lbs	75800	75800	75800	75800	75800	75800	75800	75800	75800	75800	75800	75800	75800	
Input HP	0.817	0.685	0.551	0.5 breakaway HP required for cold temp. or high inertia applications ^[1]				0.25 breakaway HP required for cold temp. or high inertia applications ^[1]						E617DB
Output Torque in-lbs	75800	75800	75800	75800	75800	75800	75800	75800	75800	75800	75800	75800	75800	
Input HP	0.817	0.685	0.551	0.5 breakaway HP required for cold temp. or high inertia applications ^[1]				0.25 breakaway HP required for cold temp. or high inertia applications ^[1]						E617DC
Output Torque in-lbs	75800	75800	75800	75800	75800	75800	75800	75800	75800	75800	75800	75800	75800	

Note: [1] A torque limiting device is recommended to protect the unit or driven machine.

Dimensions

Single Reduction EHY(J)-Z6090Y~B6125Y



All dimensions are in inches.

Model	NEMA C-Face	B	C	E	F	G	H	I	J	K	M	P	Q	T	TT	ØU	
																Max (Std)	Min
Z6090 Z6095	42C						11.87										
	48C	11.02	9.09	5.51	0.20	0.79	11.87	2.20	8.30	6.18	6.06	0.12	1.06	8.54	3.96	1-7/16	1-3/16
	56C~145TC						12.26 ^[1]										
A6100 A6105	48C						12.70										
	56C~145TC	11.83	9.92	5.91	0.20	0.79	13.09 ^[1]	2.60	9.17	6.44	6.61	0.12	1.14	9.41	4.57	2-3/16	1-11/16
	182~184TC						14.23 ^[1]										
B6120 B6125	56C~145TC						16.10										
	182~184TC	14.47	12.05	7.48	0.20	0.98	16.57 ^[1]	3.39	11.41	7.97	7.64	0.12	1.22	11.65	5.43	2-7/16	1-15/16
	213~215TC						16.57 ^[1]										

Model	NEMA C-Face	V	W	ØY	Ød	ØD1	ØDC	KH	N1	N2	N3	S2	TA	A	D	TB
Z6090 Z6095	42C															
	48C	4.25	4.69	3.23	0.55	2.56	5.91	3.54	1.02	1.02	N/A	M10	17.50	0.63	2.36	M20
	56C~145TC															
A6100 A6105	48C															
	56C~145TC	4.61	5.14	4.09	0.71	3.35	5.91	3.74	1.10	1.10	N/A	M12	17.50	0.63	2.36	M20
	182~184TC															
B6120 B6125	56C~145TC															
	182~184TC	5.71	6.40	4.49	0.71	3.94	8.03	4.33	1.34	1.26	N/A	M12	17.87	0.63	2.36	M20
	213~215TC															

Note: [1] Dimension is to C, motor mounting flange.

Dimensions

Single Reduction EHY(J)-Z6090Y~B6125Y (cont.)

All dimensions are in inches.

Model	NEMA C-Face	ØLA	θ °	N	S x ℓ	S1 x ℓ	XU	XV	Key	Unit Weight (lb)
Z6090 Z6095	42C 48C 56C~145TC	4.72	0	4	M10x0.79	M10x0.79	0.625	0.98	3/16 x 3/16 x .75	66
A6100 A6105	48C 56C~145TC 182~184TC	6.10	30	6	M12x0.79	M12x0.87	0.625	0.98	3/16 x 3/16 x .75	80
B6120 B6125	56C~145TC 182~184TC 213~215TC	6.89	30	6	M12x0.87	M16x1.02	0.75	1.38	3/16 x 3/16 x 1.02	148

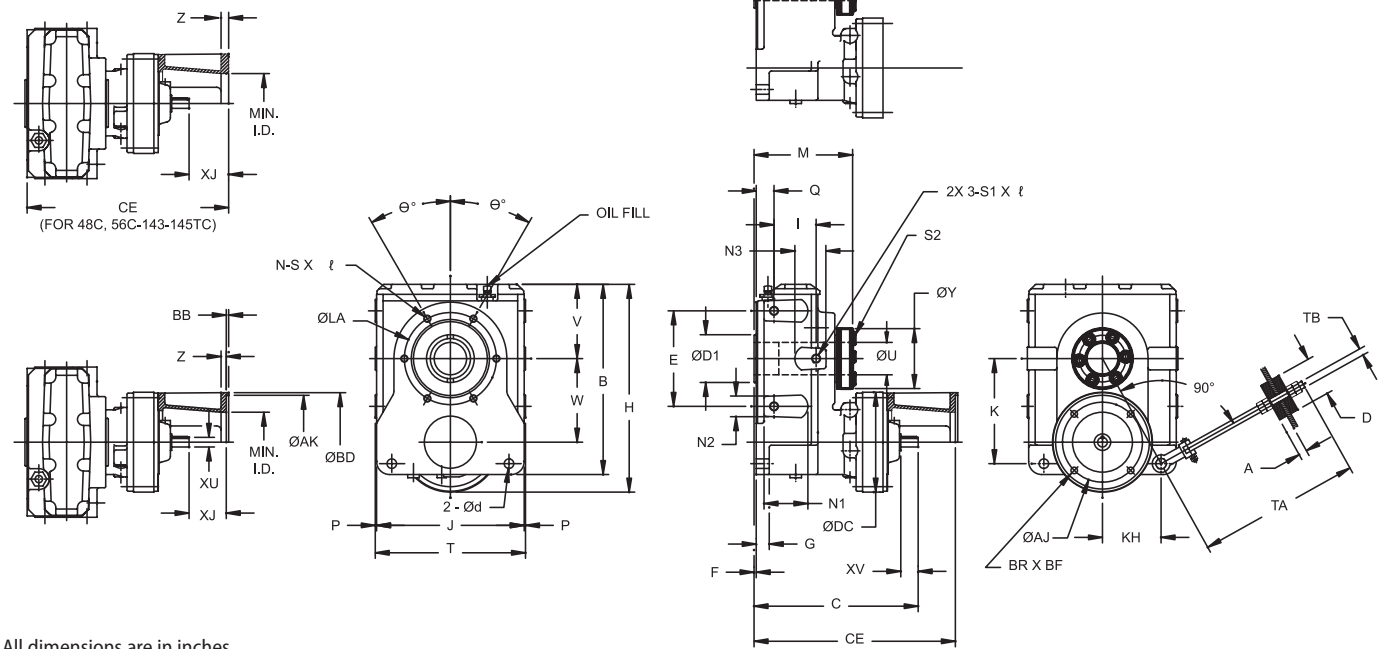
Model	NEMA C-Face	C-Face Dimensions										Unit + C-Face Weight (lb)
		ØAJ	ØAK	ØBD	BB	BF	BR	CE	XJ	Z	Min. ID	
Z6090 Z6095	42C	3.75	3.00	4.33	0.00	0.28	4	10.88	1.79	0.47	2.44	71
	48C	3.75	3.00	4.33	0.00	0.28	4	11.25	2.16	0.47	2.44	72
	56C~145TC	5.88	4.50	6.69	0.00	0.43	4	11.72	2.63	0.47	4.21	74
A6100 A6105	48C	3.75	3.00	4.33	0.00	0.28	4	12.08	2.16	0.47	2.44	85
	56C~145TC	5.88	4.50	6.69	0.00	0.43	4	12.55	2.63	0.47	4.21	87
	182~184TC	7.25	8.50	8.98	0.22	0.55	4	13.34	3.42	0.69	5.43	91
B6120 B6125	56C~145TC	5.88	4.50	6.69	0.00	0.43	4	14.68	2.63	0.47	4.21	158
	182~184TC	7.25	8.50	8.98	0.22	0.55	4	15.39	3.34	0.47	5.43	161
	213~215TC	7.25	8.50	8.98	0.22	0.55	4	16.04	4.30	1.47	5.43	170

Speed Reducers

Dimensions

Dimensions

Single Reduction
EHY(J)-C6140Y~E6175Y



All dimensions are in inches.

Model	NEMA C-Face	B	C	E	F	G	H	I	J	K	M	P	Q	T	TT	ØU	
																Max (Std)	Min
C6140 C6145	56C~145TC	17.24	14.88	8.66	0.20	1.18	18.84	3.82	13.38	9.53	9.17	0.12	1.61	13.62	6.50	2-15/16	2-3/16
	182~184TC																
	213~215TC																
	254~256TC																
D6160 D6165	56C~145TC	21.22	17.87	9.84	0.28	1.38	24.30 ^[1]	4.49	16.77	11.54	10.20	0.20	1.77	17.17	7.01	3-7/16	2-7/16
	182~184TC																
	213~215TC																
	245~256TC																
E6170 E6175	182~184TC	24.02	20.00	11.81	0.28	1.77	27.30 ^[1]	5.00	18.89	13.07	10.98	0.20	1.97	19.29	8.62	3-15/16	2-15/16
	213~215TC																
	254~256TC																
	284~286TC																
	324~326TC																

Model	NEMA C-Face	V	W	ØY	Ød	ØD1	ØDC	KH	N1	N2	N3	S2	TA	A	D	TB
C6140 C6145	56C~145TC	6.73	7.58	5.43	0.87	4.33	9.06	5.31	3.98	2.05	2.83	M16	18.37	0.75	3.54	M24
	182~184TC															
	213~215TC															
	254~256TC															
D6160 D6165	56C~145TC	8.43	9.61	5.98	1.02	5.12	11.81	6.38	3.62	2.36	3.62	M16	19.50	0.75	3.54	M24
	182~184TC															
	213~215TC															
	245~256TC															
E6170 E6175	182~184TC	9.45	10.71	6.69	1.30	5.91	13.39	7.09	3.82	2.44	3.94	M16	20.25	0.75	3.54	M24
	213~215TC															
	254~256TC															
	284~286TC															
	324~326TC															

Note: [1] Dimension is to Cyclo® fan cover.

Dimensions

Single Reduction EHY(J)-C6140Y~E6175Y (cont.)

All dimensions are in inches.

Model	NEMA C-Face	ØLA	θ °	N	S x ℓ	S1 x ℓ	XU	XV	Key	Unit Weight (lb)
C6140 C6145	56C~145TC 182~184TC 213~215TC 254~256TC	8.35	30	6	M16x1.18	M20x1.38	0.875	1.57	3/16 X 3/16 X 1.38	245
D6160 D6165	56C~145TC 182~184TC 213~215TC 254~256TC 284~286TC	10.04	30	6	M20x1.38	M24x1.57	1.125	1.77	1/4 X 1/4 X 1.77	450
E6170 E6175	182~184TC 213~215TC 254~256TC 284~286TC 324~326TC	11.02	22.5	8	M20x1.38	M24x1.57	1.375	2.17	5/16 X 5/16 X 2.16	615

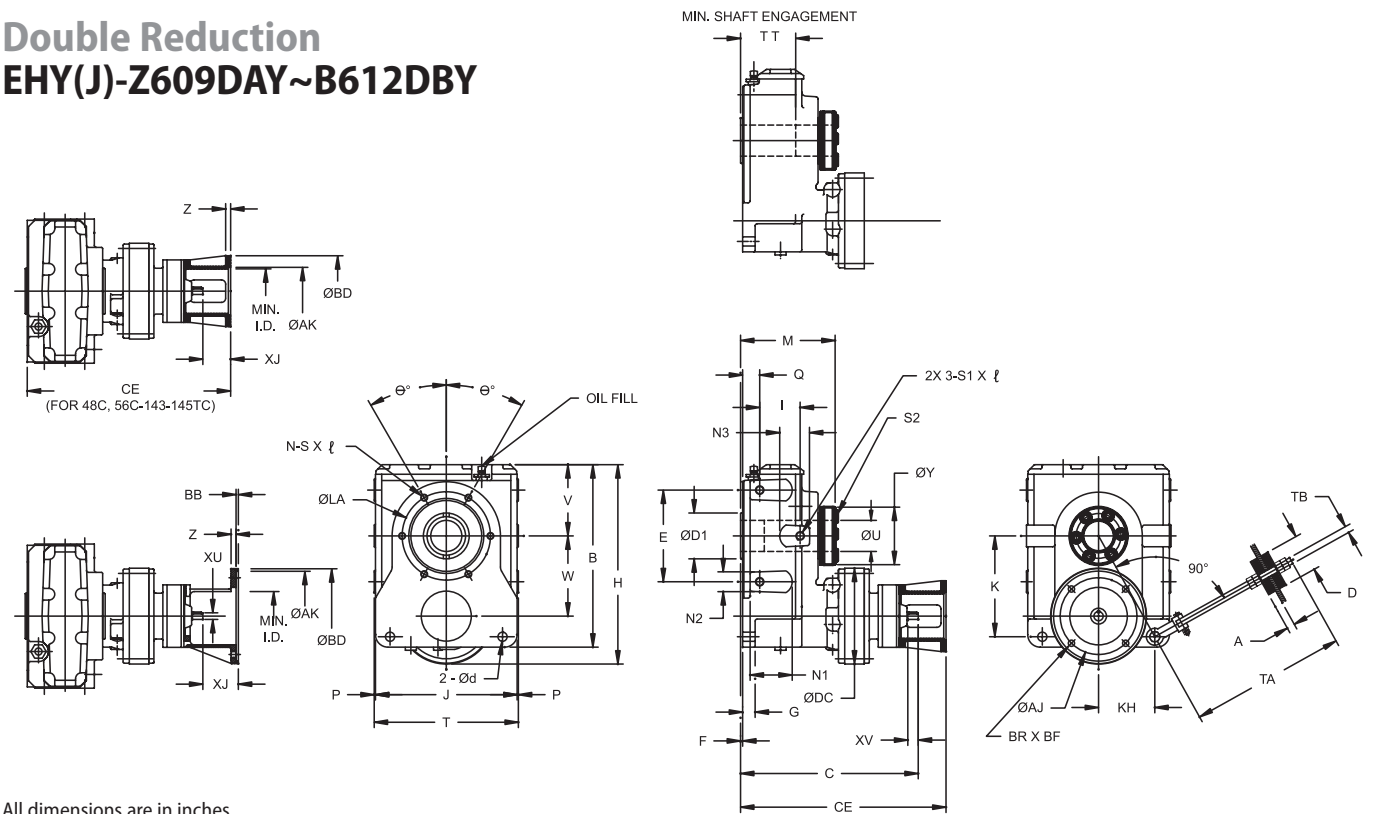
Speed
Reducers

Dimensions

Model	NEMA C-Face	C-Face Dimensions										Unit + C-Face Weight (lb)
		ØAJ	ØAK	ØBD	BB	BF	BR	CE	XJ	Z	MIN. ID	
C6140 C6145	56C~145TC	5.88	4.50	6.69	0.00	0.43	4	17.51	2.63	0.47	4.21	257
	182~184TC	7.25	8.50	8.98	0.22	0.59	4	18.22	3.34	0.47	5.43	261
	213~215TC	7.25	8.50	8.98	0.22	0.59	4	19.00	4.12	1.10	5.43	268
	254~256TC	7.25	8.50	8.98	0.22	0.55	4	19.81	4.93	0.57	5.08	269
D6160 D6165	56C~145TC	5.88	4.50	6.69	0.00	0.43	4	20.50	2.63	0.47	4.21	492
	182~184TC	7.25	8.50	8.98	0.22	0.55	4	21.21	3.34	0.57	5.71	496
	213~215TC	7.25	8.50	8.98	0.22	0.55	4	21.87	4.00	1.10	5.71	504
	254~256TC	7.25	8.50	8.98	0.22	0.55	4	22.62	4.75	0.57	5.71	499
	284~286TC	9.00	10.50	11.10	0.22	0.55	4	23.31	5.44	0.57	6.50	492
E6170 E6175	182~184TC	7.25	8.50	8.98	0.22	0.55	4	23.38	3.38	0.57	5.71	653
	213~215TC	7.25	8.50	8.98	0.22	0.55	4	24.00	4.00	1.10	5.71	660
	254~256TC	7.25	8.50	8.98	0.22	0.55	4	24.75	4.75	0.57	5.71	655
	284~286TC	9.00	10.50	11.10	0.22	0.55	4	25.44	5.44	0.57	7.87	666
	324~326TC	11.00	12.50	14.17	0.22	0.71	4	26.00	6.00	0.57	7.87	686

Dimensions

Double Reduction EHY(J)-Z609DAY~B612DBY



All dimensions are in inches.

Model	NEMA C-FACE	B	C	E	F	G	H	I	J	K	M	P	Q	T	TT	U	
																Max (Std)	MIN
Z609DA	42C						11.87										
	48C	11.02	10.73	5.51	0.20	0.79	11.87	2.20	8.3	6.18	6.06	0.12	1.06	8.54	3.96	1-7/16	1-3/16
	56C						12.26 ^[1]										
A610DA	42C						12.70										
	48C	11.83	11.87	5.91	0.2	0.79	12.70	2.60	9.17	6.44	6.61	0.12	1.14	9.41	4.57	2-3/16	1-11/16
	56C						13.09 ^[1]										
B612DA	42C																
	48C	14.47	13.39	7.48	0.20	0.98	16.10	3.39	11.41	7.97	7.64	0.12	1.22	11.65	5.43	2-7/16	1-15/16
	56C																
B612DB	48C	14.47	14.11	7.48	0.20	0.98	16.10	3.39	11.41	7.97	7.64	0.12	1.22	11.65	5.43	2-7/16	1-15/16
	56C~145TC																

Model	NEMA C-FACE	V	W	ØY	Ød	ØD1	ØDC	KH	N1	N2	N3	S2	TA	A	D	TB
Z609DA	42C															
	48C	4.25	4.69	3.23	0.55	2.56	5.91	3.54	1.02	1.02	N/A	M10	17.50	0.63	2.36	M20
	56C															
A610DA	42C															
	48C	4.61	5.14	4.09	0.71	3.35	5.91	3.74	1.10	1.10	N/A	M12	17.50	0.63	2.36	M20
	56C															
B612DA	42C															
	48C	5.71	6.40	4.49	0.71	3.94	8.03	4.33	1.34	1.26	N/A	M12	17.87	0.63	2.36	M20
	56C															
B612DB	48C	5.71	6.40	4.49	0.71	3.94	8.03	4.33	1.34	1.26	N/A	M12	17.87	0.63	2.36	M20
	56C~145TC															

Note: [1] Dimension is to C, motor mounting flange.

Dimensions

Double Reduction EHY(J)-Z609DAY~B612DBY (cont.)

All dimensions are in inches.

Model	NEMA C-Face	ØLA	θ °	N	S x ℓ	S1 x ℓ	XU	XV	KEY	Unit Weight (lb)
Z609DA	42C	4.72	0	4	M10x0.79	M10x0.79	0.500	0.98	3/16 X 3/16 X .71	62
	48C									
	56C									
A610DA	42C	6.10	30	6	M12x0.79	M12x0.87	0.500	0.98	3/16 X 3/16 X .71	83
	48C									
	56C									
B612DA	42C	6.89	30	6	M12x0.87	M16x1.02	0.500	0.98	1/8 X 1/8 X .71	145
	48C									
	56C									
B612DB	48C 56C~145TC	6.89	30	6	M12x0.87	M16x1.02	0.625	0.98	3/16 X 3/16 X .75	152

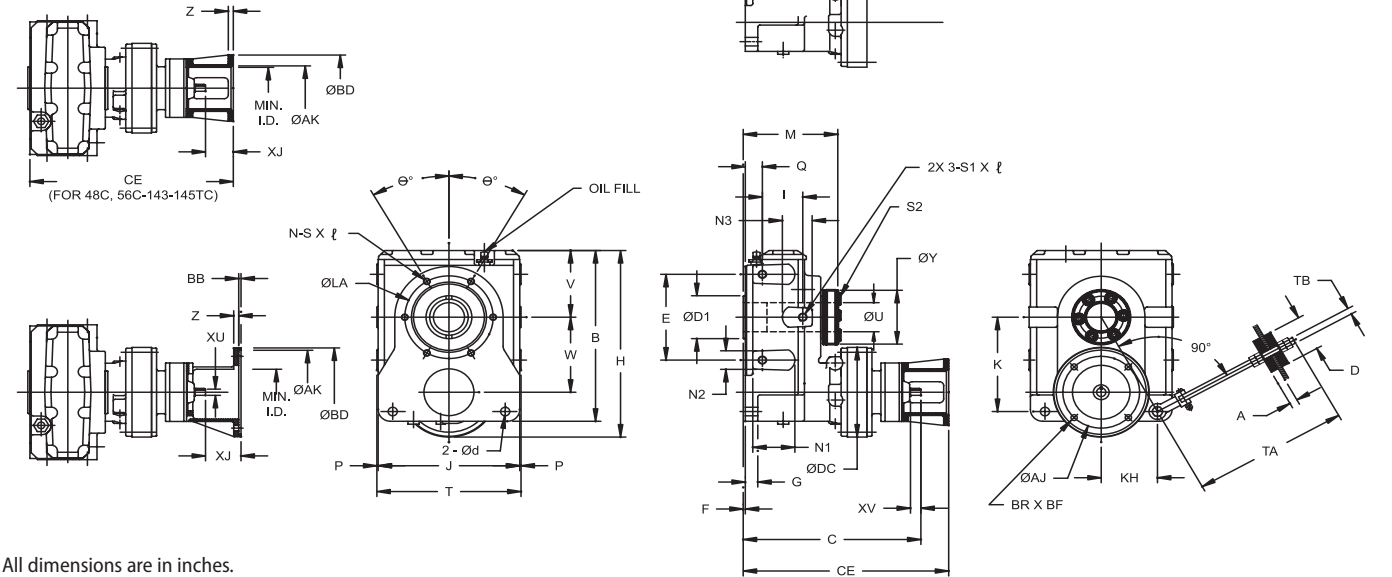
Speed Reducers

Dimensions

Model	NEMA C-Face	C-Face Dimensions										Unit + C-Face Weight (lb)
		ØAJ	ØAK	ØBD	BB	BF	BR	CE	XJ	Z	Min. ID	
Z609DA	42C	3.75	3.00	4.33	0.00	0.28	4	12.52	1.79	0.47	2.44	66
	48C	3.75	3.00	4.33	0.00	0.28	4	12.89	2.16	0.47	2.44	66
	56C	5.88	4.50	6.69	0.00	0.43	4	13.29	2.56	0.47	3.15	68
A610DA	42C	3.75	3.00	4.33	0.00	0.28	4	13.66	1.79	0.47	2.44	87
	48C	3.75	3.00	4.33	0.00	0.28	4	14.03	2.16	0.47	2.44	87
	56C	5.88	4.50	6.69	0.00	0.43	4	14.43	2.56	0.47	3.15	89
B612DA	42C	3.75	3.00	4.33	0.00	0.28	4	15.18	1.79	0.47	2.44	149
	48C	3.75	3.00	4.33	0.00	0.28	4	15.55	2.16	0.47	2.44	149
	56C	5.88	4.50	6.69	0.00	0.43	4	16.02	2.63	0.47	3.15	151
B612DB	48C	3.75	3.00	4.33	0.00	0.28	4	16.27	2.16	0.47	2.44	158
	56C~145TC	5.88	4.50	6.69	0.00	0.43	4	16.74	2.63	0.47	4.21	160

Dimensions

Double Reduction EHY(J)-C614DAY~E617DCY



All dimensions are in inches.

Model	NEMA C-FACE	B	C	E	F	G	H	I	J	K	M	P	Q	T	TT	U	
																Max (Std)	MIN
C614DA	48C 56C	17.24	15.93	8.66	0.20	1.18	18.84	3.82	13.38	9.53	9.17	0.12	1.61	13.62	6.50	2-15/16	2-3/16
C614DB	48C 56C~145TC	17.24	16.56	8.66	0.20	1.18	18.84	3.82	13.38	9.53	9.17	0.12	1.61	13.62	6.50	2-15/16	2-3/16
C614DC	56~145TC 182~184TC	17.24	16.80	8.66	0.2	1.18	18.84	3.82	13.38	9.53	9.17	0.12	1.61	13.62	6.5	2-15/16	2-3/16
D616DA	56C~145TC	21.22	18.66	9.84	0.28	1.38	23.94	4.49	16.77	11.54	10.20	0.20	1.77	17.17	7.01	3-7/16	2-7/16
D616DB	56C~145TC 182~184TC	21.22	18.90	9.84	0.28	1.38	23.94	4.49	16.77	11.54	10.20	0.20	1.77	17.17	7.01	3-7/16	2-7/16
D616DC	56~145TC 182~184TC	21.22	19.88	9.84	0.28	1.38	23.94	4.49	16.77	11.54	10.2	0.2	1.77	17.17	7.01	3-7/16	2-7/16
E617DA	56C~145TC	24.02	20.06	11.81	0.28	1.77	26.85	5.00	18.89	13.07	10.98	0.20	1.97	19.29	8.62	3-15/16	2-15/16
E617DB	56C~145TC 182~184TC	24.02	20.30	11.81	0.28	1.77	26.85	5.00	18.89	13.07	10.98	0.20	1.97	19.29	8.62	3-15/16	2-15/16
E617DC	182~184TC	24.02	21.26	11.81	0.28	1.77	26.85	5.00	18.89	13.07	10.98	0.20	1.97	19.29	8.62	3-15/16	2-15/16

Model	NEMA C-FACE	V	W	ØY	Ød	ØD1	ØDC	KH	N1	N2	N3	S2	TA	A	D	TB
C614DA	48C 56C	6.73	7.58	5.43	0.87	4.33	9.06	5.31	3.98	2.05	2.83	M16	18.37	0.75	3.54	M24
C614DB	48C 56C~145TC	6.73	7.58	5.43	0.87	4.33	9.06	5.31	3.98	2.05	2.83	M16	18.37	0.75	3.54	M24
C614DC	56~145TC 182~184TC	6.73	7.58	5.43	0.87	4.33	9.06	5.31	3.98	2.05	2.83	M16	18.37	0.75	3.54	M24
D616DA	56C~145TC	8.43	9.61	5.98	1.02	5.12	11.81	6.38	3.62	2.36	3.62	M16	19.50	0.75	3.54	M24
D616DB	56C~145TC 182~184TC	8.43	9.61	5.98	1.02	5.12	11.81	6.38	3.62	2.36	3.62	M16	19.50	0.75	3.54	M24
D616DC	56~145TC 182~184TC	8.43	9.61	5.98	1.02	5.12	11.81	6.38	3.62	2.36	3.62	M16	19.5	0.75	3.54	M24
E617DA	56C~145TC	9.45	10.71	6.69	1.30	5.91	13.39	7.09	3.82	2.44	3.94	M16	20.25	0.75	3.54	M24
E617DB	56C~145TC 182~184TC	9.45	10.71	6.69	1.30	5.91	13.39	7.09	3.82	2.44	3.94	M16	20.25	0.75	3.54	M24
E617DC	182~184TC	9.45	10.71	6.69	1.30	5.91	13.39	7.09	3.82	2.44	3.94	M16	20.25	0.75	3.54	M24

Dimensions

Double Reduction EHY(J)-C614DAY~E617DCY (cont.)

All dimensions are in inches.

Model	NEMA C-Face	ØLA	O °	N	S x ℓ	S1 x ℓ	XU	XV	KEY	Unit
										Weight (lb)
C614DA	48C 56C	8.35	30	6	M16x1.18	M20x1.38	0.500	0.98	1/8 X 1/8 X .71	244
C614DB	48C 182~184TC	8.35	30	6	M16x1.18	M20x1.38	0.625	0.98	3/16 X3/16 X .75	250
C614DC	56~145TC 182~184TC	8.35	30	6	M16x1.18	M20x1.38	0.625	0.98	3/16 X3/16 X .75	255
D616DA	56C~145TC	10.04	30	6	M20x1.38	M24x1.57	0.625	0.98	3/16 X 3/16 X .75	453
D616DB	56C~145TC 182~184TC	10.04	30	6	M20x1.38	M24x1.57	0.625	0.98	3/16 X 3/16 X .75	458
D616DC	56~145TC 182~184TC	10.04	30	6	M20x1.38	M24x1.57	0.75	1.38	3/16 X 3/16 X 1.02	483
E617DA	56C~145TC	11.02	22.5	8	M20x1.38	M24x1.57	0.625	0.98	3/16 X 3/16 X .75	600
E617DB	56C~145TC 182~184TC	11.02	22.5	8	M20x1.38	M24x1.57	0.625	0.98	3/16 X 3/16 X .75	605
E617DC	182~184TC	11.02	22.5	8	M20x1.38	M24x1.57	0.75	1.38	3/16 X 3/16 X 1.02	618

Speed
Reducers

Selection
Tables

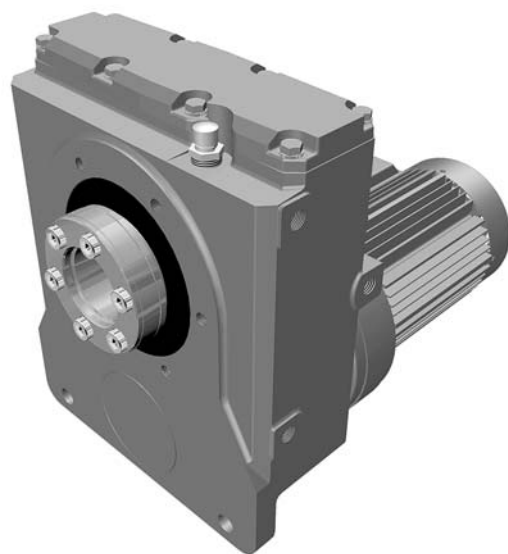
Model	NEMA C-Face	C-Face Dimensions										Unit + C-Face
		AJ	AK	BD	BB	BF	BR	CE	XJ	Z	Min. ID	Weight (lb)
C614DA	48C	3.75	3.00	4.33	0.00	0.28	4	18.09	2.16	0.47	2.44	248
	56C	5.88	4.50	6.69	0.00	0.43	4	18.49	2.56	0.47	3.15	250
C614DB	48C	3.75	3.00	4.33	0.00	0.28	4	18.72	2.16	0.47	2.44	256
	56C~145TC	5.88	4.50	6.69	0.00	0.43	4	19.19	2.63	0.47	4.21	258
C614DC	56~145TC	5.88	4.5	6.69	0	0.43	4	19.43	2.63	0.47	4.21	266
	182~184TC	7.25	8.5	8.98	0.22	0.55	4	20.47	3.67	0.47	5.43	275
D616DA	56C~145TC	5.88	4.50	6.69	0.00	0.43	4	21.29	2.63	0.47	4.13	461
D616DB	56C~145TC	5.88	4.50	6.69	0.00	0.43	4	21.53	2.63	0.47	4.13	465
	182~184TC	7.25	8.50	8.98	0.00	0.55	4	22.32	3.42	0.47	5.43	469
D616DC	56~145TC	5.88	4.5	6.69	0	0.43	4	22.51	2.63	0.47	4.21	522
	182~184TC	7.25	8.5	8.98	0.22	0.55	4	23.25	3.37	0.47	5.43	525
E617DA	56C~145TC	5.88	4.50	6.69	0.00	0.43	4	22.69	2.63	0.47	4.21	608
E617DB	56C~145TC	5.88	4.50	6.69	0.00	0.43	4	22.93	2.63	0.47	4.21	612
	182~184TC	7.25	8.50	8.98	0.22	0.55	4	23.72	3.42	0.47	5.43	616
E617DC	182~184TC	7.25	8.50	8.98	0.22	0.55	4	24.60	3.34	0.47	5.43	631

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Speed
Reducers

3

Gearmotors



Gearmotors

How to
Select

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 3.52–3.63 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

Screw Conveyor Kit

Bushing Cover

Please see the Cyclo® HBB pricelist for available modifications, and refer to Section 4 of this catalog for dimension drawings of selected popular options.

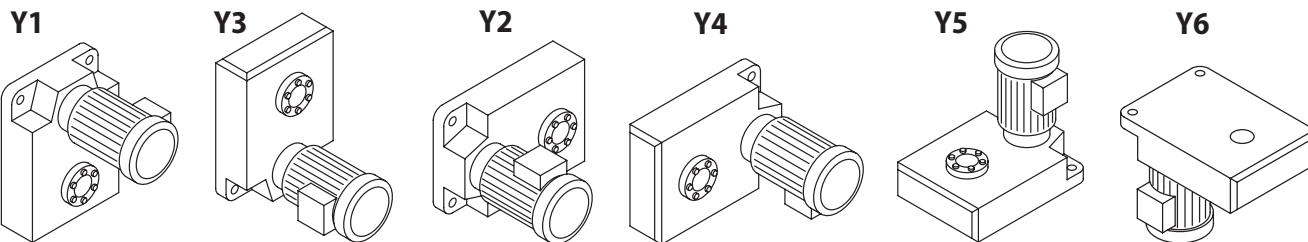
Step 7: Configure a Model Number

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

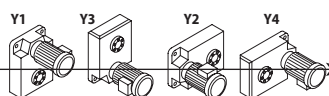


Select a Frame Size

Gearmotors

60 Hz, 1750 RPM, Single Reduction Selection Tables

• Mounting Position



Horizontal Motor Shaft
Y1, Y3, Y2, Y4 Mounting Positions

Dimensions on pages 3.52–3.57

• Motor HP

1/3 HP

• Output Speed

8.47

• Service Class

7.04

• SELECTION

Output Speed RPM	Output Torque in-lbs	Service Factor	AGMA Class	HP Symbol	SELECTION	
					Frame Size	Ratio
8.47	2300	1.24	I	03	Z6090	207
		1.49	II	03	Z6095	207
		2.06	III	03	A6100	207
		2.83	III	03	A6105	207
7.04	2770	1.01	I	03	Z6090	249
		1.20	I	03	Z6095	249
		1.74	II	03	A6100	249
		2.24	III	03	A6105	249
5.75	3390	0.84	-	03	Z6090	305
		1.14	I	03	Z6095	305
		1.73	II	03	A6100	305
		2.26	III	03	A6105	305
4.20	4640	0.84	-	03	A6100	417
		1.14	I	03	A6105	417

STOCK BUSHING BORES

Size	Inch Sizes	Metric Sizes	Min. Bore*
Z	1 ³ / ₁₆ , 1 ⁷ / ₁₆ ,	30, 40	1 ³ / ₁₆
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 affecting **Frame Size** selection such as:

- Overhung Load
- Shock Loading

Consult Appendix, pages 5.2–5.4.

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



Gearmotors

How to
Select

Configure a Model Number

Gearmotors
Nomenclature

Output Shaft Orientation

Type	Prefix
Horizontal	H
Vertical	V

Mounting Style

Type	Prefix
Shaft Mount (Hollow Shaft)	Y
Flange (Keyed Hollow Bore)	F

Input Connection

Input Connection	Prefix
Integral Motor	M
C-Face Adapter	JM
Hollow Input Shaft	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

Z6090	B6120	D6160
Z6095	B6125	D6165
A6100	C6140	E6170
A6105	C6145	E6175

Double Reduction

Z609DA	C614DB	D616DC
A610DA	C614DC	E617DA
B612DA	D616DA	E617DB
B612DB	D616DB	E617DC
C614DA		

AGMA Class

Class	Suffix
I	A
II	B
III	C

Gearmotor Specification

Specification	Suffix
Three-Phase Motor	
Single-Phase Motor	SG
AF Motor (Adj. Frequency)	AV
Single-Phase Motor	SG
Servo Motor	SV
DC Motor	DV
High Capacity Bearing (Required for Screw Conveyor)	R1
Torque Limiter	TL

Brake

	Suffix
With Brake	B
No Brake	-

Include the following information when ordering:

- 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.

E V Y M 5 - B 6 1 2 5 Y B - Y1 - B - 28

Gearmotor HP
(1750 rpm)

Frame size

AGMA
class

Brake

Ratio

Modification (Special feature)

Input connection

Mounting style

Output shaft orientation

Cyclo® HBB product code (always "E")

Shaft specification

Mounting position and optional specification
(as required)

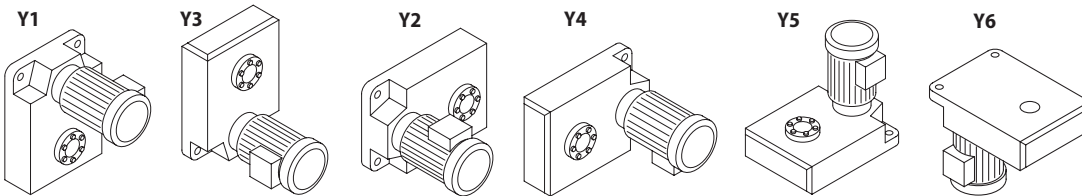
Gearmotor Specification

Nomenclature

Shaft Specifications

Input Shaft	Hollow Output Shaft	Suffix
mm	Key (mm)	
DIN	Key (DIN)	E
Inch	Key (Inch)	K
mm	Taper-Grip®	M
DIN	Taper-Grip®	G
Inch	Taper-Grip®	Y

Mounting Positions



Nominal Total Ratio

Single Reduction		Double Reduction	
Input Ratio	Total Ratio	Input Ratio	Total Ratio
3	11	104	364
5	18	121	424
6	21	143	501
8	28	165	578
11	39	195	683
13	46	231	809
15	53	273	956
17	60	319	1117
21	74	377	1320
25	88	473	1656
29	102	559	1957
35	123	649	2272
43	151	731	2559
51	179	841	2944
59	207	1003	3511
71	249	1247	4365
87	305	1479	5177
119	417	1849	6472
		2065	7228
		2537	8880
		3045	10568
		3481	12184
		4437	15530
		5133	17966
		6177	21620
		7569	26492

Nomenclature Example:

EVYM5 – B6125YB – AV Y5 – 53

E – Cyclo Helical Buddybox

V – Vertical

Y – Shaft Mount (Hollow Shaft)

M – Integral Motor

5 – 5 HP, 1750 RPM

B6125 – Frame Size

Y – Inch Shaft Specification

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).

Gearmotors

Load Classification by INDUSTRY

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



Load Classification by APPLICATION

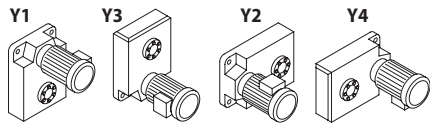
Application	Class		Application	Class		Application	Class		Application	Class	
	Up to 10 Hr. per day	24 Hr. per day		Up to 10 Hr. per day	24 Hr. per day		Up to 10 Hr. per day	24 Hr. per day		Up to 10 Hr. per day	24 Hr. per day
Agitators Pure Liquids Liquids and Solids Liquids – Variable Density Semi-liquids – Variable Density	I II II II	II II II II	Jig Drives Maneuvering Winches Pumps Screen Drive Stackers Utility Winches	III II II III III II	III – II III III –	Tray Drives Veneer Lathe Drives	II Refer to Factory	III III	Pullers Barge Haul	III	III
Blowers Centrifugal Lobe Vane	I II I	II II II	Elevators Bucket – Uniform Load Bucket – Heavy Load Bucket – Continuous Centrifugal Discharge Escalators Freight Gravity Discharge Man Lifts Passenger Service – Hand Lift	I II I I I I I Refer to Factory III	II II II II II II II –	Machine Tools Bending Roll Notching Press – Belt Driven Plate Planer Punch Press – Gear Driven Tapping Machines Other Machine Tools Main Drives Auxiliary Drives	II Refer to Factory III III III III II I	II III III III III II II	Pumps Centrifugal Proportioning Reciprocating Single Acting 3 or more Cylinders Double Acting 2 or more Cylinders Single Acting 1 or 2 Cylinders Double Acting Single Cylinder Rotary – Gear Type – Lobe, Vane	I II II II II II II Refer to Factory Refer to Factory I II	II II II II II II II II II
Brewing and Distilling Bottling Machinery Brew Kettles – Continuous Duty Cookers – Continuous Duty Mash Tubs – Continuous Duty Scale Hopper Frequent Starts	I – – – II II	II II II II II II	Fans Centrifugal Cooling Towers Induced Draft Forced Draft Induced Draft Large (Mine, etc.) Large Industrial Light (Small Diameter)	II II II Refer to Factory II II II I	II II II II II II II II	Metal Mills Bridle Roll Drives Draw Bench – Carriage Draw Bench – Main Drive Forming Machines Pinch Dryer & Scrubber Rolls, Reversing Slitters Table Conveyors Non-Reversing Reversing Winding Reels – Strip Wire Drawing & Flattening Machine Wire Winding Machine	III III III III III Refer to Factory II II II – – II II	III III III III III III III III III III – III	Rubber Industry Mixer Rubber Calender Rubber Mill (2 or more) Sheeter Tire Building Machines Tire & Tube Press Openers Tubers & Strainers	III II II II Refer to Factory Refer to Factory II II	III II II II II II II II
Can Filling Machines	I	II	Feeders Apron Belt Disc Reciprocating Screw	II II I III II	II II II II III	Mills, Rotary Type Ball Cement Kilns Dryers & Coolers Kilns Pebble Rod Tumbling Barrels	III III II II III III III	III III II II III III III	Sewage Disposal Equipment Aerators Bar Screens Chemical Feeders Collectors, Circuline or Straightline Dewatering Screens Grit Collectors Scum Breakers Slow or Rapid Mixers Sludge Collectors Thickeners Vacuum Filters	Refer to Factory I I I I I II II I II II	II II II II II II II II II
Cane Knives	II	II	Food Industry Beet Slicer Cereal Cooker Dough Mixer Meat Grinders	II I II II II	II II II II II	Mixers Concrete Mixers, Continuous Concrete Mixers, Intermittent Constant Density Variable Density	II I I II	II – II II	Screens Air Washing Rotary – Stone or Gravel Traveling Water Intake	I II II I	II II II II
Car Dumpers	III	–	Generators – (Not Welding)	I	II	Oil Industry Chillers Oil Well Pumping Paraffin Filter Press Rotary Kilns	II Refer to Factory II II	II II II II	Slab Pushers Steering Gear Stokers	II II I	II II II
Car Pullers – Intermittent Duty	I	–	Hammer Mills	III	III	Paper Mills Aerators Agitators (Mixers) Barker Auxiliaries, Hydraulic Barker, Mechanical Barking Drum Beater & Pulper Bleacher Calenders Calenders – Super Converting Machines, except Cutters, Platers Conveyors Conveyors, Log Couch Cutters, Platers Cylinders Dryers Felt Stretcher Felt Whipper Jordans Presses Pulp Machines, Reel Stock Chests Suction Roll Washers and Thickeners Winders	II II I I II –	II II	Textile Industry Batchers Calenders Card Machines Cloth Finishing Machines (Washers, Pads, Tenters) (Dryers, Calenders, etc.) Dry Cans Dryers Dyeing Machinery Knitting Machines (Looms, etc.) Looms Mangles Nappers Pads Range Drives Slashers Soapers Spinners Teneter Frames Washers Winders (Other than Batchers) Yarn Preparatory Machines (Cards, Spinners, Slashers, etc.)	II II	

Gearmotors

AGMA
Tables

Selection Tables 60 Hz, 1750 RPM, Single Reduction

Horizontal Motor Shaft Y1, Y3, Y2, Y4 Mounting Positions



Dimensions on pages 3.52–3.57

1/8 HP

Output Speed RPM	Output Torque in·lbs	Service Factor	AGMA Class	HP Symbol	SELECTION	
					Frame Size	Ratio
7.04	1110	2.52	III	01	Z6090	249
		2.11	III	01	Z6090	305
5.75	1360	2.85	III	01	Z6095	305
		1.25	I	01	Z6090	417
4.20	1850	1.51	II	01	Z6095	417

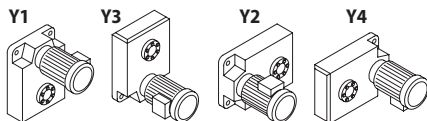
1/4 HP

Output Speed RPM	Output Torque in·lbs	Service Factor	AGMA Class	HP Symbol	SELECTION	
					Frame Size	Ratio
11.6	1340	2.18	III	02	Z6090	151
		2.89	III	02	Z6095	151
9.80	1590	1.66	II	02	Z6090	179
		2.11	III	02	Z6095	179
		2.80	III	02	A6100	179
8.47	1840	1.55	II	02	Z6090	207
		1.87	II	02	Z6095	207
		2.58	III	02	A6100	207
7.04	2210	1.26	I	02	Z6090	249
		1.51	II	02	Z6095	249
		2.18	III	02	A6100	249
		2.81	III	02	A6105	249
5.75	2710	1.06	I	02	Z6090	305
		1.43	II	02	Z6095	305
		2.17	III	02	A6100	305
		2.82	III	02	A6105	305
4.20	3710	1.05	I	02	A6100	417
		1.43	II	02	A6105	417

1/3 HP

Output Speed RPM	Output Torque in·lbs	Service Factor	AGMA Class	HP Symbol	SELECTION	
					Frame Size	Ratio
20.0	974	2.68	III	03	Z6090	88
		2.50	III	03	Z6090	102
14.3	1360	2.45	III	03	Z6090	123
		2.84	III	03	Z6095	123
11.6	1680	1.74	II	03	Z6090	151
		2.31	III	03	Z6095	151
9.80	1990	1.33	I	03	Z6090	179
		1.69	II	03	Z6095	179
		2.24	III	03	A6100	179

60 Hz, 1750 RPM, Single Reduction Selection Tables



Horizontal Motor Shaft Y1, Y3, Y2, Y4 Mounting Positions

Dimensions on pages 3.52–3.57

Output Speed RPM	Output Torque in-lbs	Service Factor	AGMA Class	HP Symbol	SELECTION	
					Frame Size	Ratio
8.47	2300	1.24	I	03	Z6090	207
		1.49	II	03	Z6095	207
		2.06	III	03	A6100	207
		2.83	III	03	A6105	207
7.04	2770	1.01	I	03	Z6090	249
		1.20	I	03	Z6095	249
		1.74	II	03	A6100	249
		2.24	III	03	A6105	249
5.75	3390	0.84	—	03	Z6090	305
		1.14	I	03	Z6095	305
		1.73	II	03	A6100	305
		2.26	III	03	A6105	305
4.20	4640	0.84	—	03	A6100	417
		1.14	I	03	A6105	417

1/3 HP

Output Speed RPM	Output Torque in-lbs	Service Factor	AGMA Class	HP Symbol	SELECTION	
					Frame Size	Ratio
83.3	374	2.88	III	05	Z6090	21
62.5	499	2.88	III	05	Z6090	28
45.5	686	2.88	III	05	Z6090	39
38.5	810	2.88	III	05	Z6090	46
33.3	935	2.88	III	05	Z6090	53
29.4	1060	2.88	III	05	Z6090	60
23.8	1310	1.90	II	05	Z6090	74
		2.95	III	05	Z6095	74
20.0	1560	1.68	II	05	Z6090	88
		2.16	III	05	Z6095	88
17.2	1810	1.56	II	05	Z6090	102
		1.96	II	05	Z6095	102
14.3	2180	1.53	II	05	Z6090	123
		1.77	II	05	Z6095	123
		2.44	III	05	A6100	123
11.6	2680	1.09	I	05	Z6090	151
		1.44	II	05	Z6095	151
		1.95	II	05	A6100	151
		2.70	III	05	A6105	151
9.80	3180	0.83	—	05	Z6090	179
		1.06	I	05	Z6095	179
		1.40	II	05	A6100	179
		1.94	II	05	A6105	179

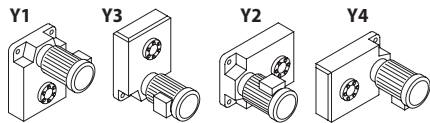
1/2 HP

Gearmotors

Selection
Tables

Selection Tables 60 Hz, 1750 RPM, Single Reduction

Horizontal Motor Shaft Y1, Y3, Y2, Y4 Mounting Positions



Dimensions on pages 3.52–3.57

1/2 HP

Output Speed RPM	Output Torque in·lbs	Service Factor	AGMA Class	HP Symbol	SELECTION	
					Frame Size	Ratio
8.47	3680	0.93	–	05	Z6095	207
		1.29	I	05	A6100	207
		1.77	II	05	A6105	207
7.04	4430	1.09	I	05	A6100	249
		1.40	II	05	A6105	249
		2.39	III	05	B6120	249
5.75	5420	1.08	I	05	A6100	305
		1.41	II	05	A6105	305
		2.36	III	05	B6120	305
		2.82	III	05	B6125	305

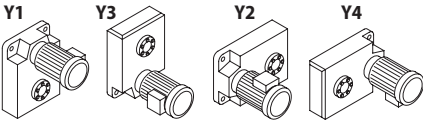
Gearmotors

3/4 HP

Output Speed RPM	Output Torque in·lbs	Service Factor	AGMA Class	HP Symbol	SELECTION	
					Frame Size	Ratio
83.3	514	2.09	III	08	Z6090	21
		2.76	III	08	Z6095	21
62.5	686	2.09	III	08	Z6090	28
		2.76	III	08	Z6095	28
45.5	943	2.09	III	08	Z6090	39
		2.76	III	08	Z6095	39
38.5	1110	2.09	III	08	Z6090	46
		2.76	III	08	Z6095	46
33.3	1290	2.09	III	08	Z6090	53
		2.76	III	08	Z6095	53
29.4	1460	2.09	III	08	Z6090	60
		2.65	III	08	Z6095	60
23.8	1800	1.38	I	08	Z6090	74
		2.15	III	08	Z6095	74
20.0	2140	1.22	I	08	Z6090	88
		1.57	II	08	Z6095	88
		2.31	III	08	A6100	88
17.2	2490	1.14	I	08	Z6090	102
		1.43	II	08	Z6095	102
		2.20	III	08	A6100	102
		2.89	III	08	A6105	102
14.3	3000	1.11	I	08	Z6090	123
		1.29	I	08	Z6095	123
		1.77	II	08	A6100	123
		2.18	III	08	A6105	123

Selection
Tables

60 Hz, 1750 RPM, Single Reduction Selection Tables



Horizontal Motor Shaft Y1, Y3, Y2, Y4 Mounting Positions

Dimensions on pages 3.52–3.57

Output Speed RPM	Output Torque in-lbs	Service Factor	AGMA Class	HP Symbol	SELECTION	
					Frame Size	Ratio
11.6	3690	1.05	I	08	Z6095	151
		1.42	II	08	A6100	151
		1.96	II	08	A6105	151
9.80	4370	1.02	I	08	A6100	179
		1.41	II	08	A6105	179
8.47	5060	0.94	—	08	A6100	207
		1.29	I	08	A6105	207
		2.36	III	08	B6120	207
		2.95	III	08	B6125	207
7.04	6090	1.02	I	08	A6105	249
		1.74	II	08	B6120	249
		2.18	III	08	B6125	249
5.75	7460	1.03	I	08	A6105	305
		1.72	II	08	B6120	305
		2.05	III	08	B6125	305

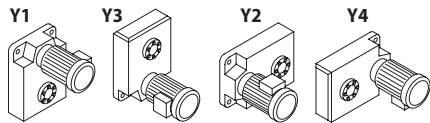
3/4 HP

Output Speed RPM	Output Torque in-lbs	Service Factor	AGMA Class	HP Symbol	SELECTION	
					Frame Size	Ratio
83.3	701	1.53	II	1	Z6090	21
		2.03	III	1	Z6095	21
62.5	935	1.53	II	1	Z6090	28
		2.03	III	1	Z6095	28
45.5	1290	1.53	II	1	Z6090	39
		2.03	III	1	Z6095	39
38.5	1520	1.53	II	1	Z6090	46
		2.03	III	1	Z6095	46
33.3	1750	1.53	II	1	Z6090	53
		2.03	III	1	Z6095	53
29.4	1990	1.53	II	1	Z6090	60
		1.95	II	1	Z6095	60
		2.65	III	1	A6100	60
23.8	2450	1.01	I	1	Z6090	74
		1.58	II	1	Z6095	74
		2.57	III	1	A6100	74
20.0	2920	0.89	—	1	Z6090	88
		1.15	I	1	Z6095	88
		1.69	II	1	A6100	88
		2.23	III	1	A6105	88

1 HP

Selection Tables 60 Hz, 1750 RPM, Single Reduction

Horizontal Motor Shaft Y1, Y3, Y2, Y4 Mounting Positions



Dimensions on pages 3.52–3.57

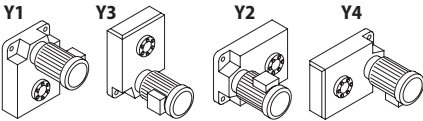
1 HP

Output Speed RPM	Output Torque in·lbs	Service Factor	AGMA Class	HP Symbol	SELECTION	
					Frame Size	Ratio
17.2	3390	0.83	–	1	Z6090	102
		1.05	I	1	Z6095	102
		1.61	II	1	A6100	102
		2.12	III	1	A6105	102
14.3	4090	0.82	–	1	Z6090	123
		0.95	–	1	Z6095	123
		1.30	I	1	A6100	123
		1.60	II	1	A6105	123
11.6	5030	1.04	I	1	A6100	151
		1.44	II	1	A6105	151
		2.55	III	1	B6120	151
9.80	5960	1.03	I	1	A6105	179
		2.29	III	1	B6120	179
		2.63	III	1	B6125	179
8.47	6900	0.94	–	1	A6105	207
		1.73	II	1	B6120	207
		2.16	III	1	B6125	207
7.04	8300	1.28	I	1	B6120	249
		1.60	II	1	B6125	249
5.75	10200	1.26	I	1	B6120	305
		1.51	II	1	B6125	305
		2.64	III	1	C6140	305

1.5 HP

Output Speed RPM	Output Torque in·lbs	Service Factor	AGMA Class	HP Symbol	SELECTION	
					Frame Size	Ratio
167	514	2.14	III	1H	A6100	11
		2.89	III	1H	A6105	11
100	857	2.14	III	1H	A6100	18
		2.89	III	1H	A6105	18
83.3	1030	1.05	I	1H	Z6090	21
		1.38	I	1H	Z6095	21
		2.14	III	1H	A6100	21
		2.89	III	1H	A6105	21
62.5	1370	1.05	I	1H	Z6090	28
		1.38	I	1H	Z6095	28
		2.14	III	1H	A6100	28
		2.89	III	1H	A6105	28
45.5	1890	1.05	I	1H	Z6090	39
		1.38	I	1H	Z6095	39
		2.14	III	1H	A6100	39
		2.89	III	1H	A6105	39

60 Hz, 1750 RPM, Single Reduction Selection Tables



Horizontal Motor Shaft Y1, Y3, Y2, Y4 Mounting Positions

Dimensions on pages 3.52–3.57

1.5 HP

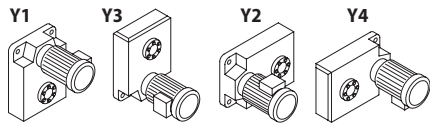
Output Speed RPM	Output Torque in·lbs	Service Factor	AGMA Class	HP Symbol	SELECTION	
					Frame Size	Ratio
38.5	2230	1.05	I	1H	Z6090	46
		1.38	I	1H	Z6095	46
		2.14	III	1H	A6100	46
		2.89	III	1H	A6105	46
33.3	2570	1.05	I	1H	Z6090	53
		1.38	I	1H	Z6095	53
		2.14	III	1H	A6100	53
		2.89	III	1H	A6105	53
29.4	2910	1.05	I	1H	Z6090	60
		1.33	I	1H	Z6095	60
		1.81	II	1H	A6100	60
		2.24	III	1H	A6105	60
23.8	3600	1.07	I	1H	Z6095	74
		1.75	II	1H	A6100	74
		2.13	III	1H	A6105	74
20.0	4290	1.15	I	1H	A6100	88
		1.52	II	1H	A6105	88
		2.81	III	1H	B6120	88
17.2	4970	1.10	I	1H	A6100	102
		1.45	II	1H	A6105	102
		2.72	III	1H	B6120	102
14.3	6000	0.89	–	1H	A6100	123
		1.09	I	1H	A6105	123
		2.26	III	1H	B6120	123
		2.61	III	1H	B6125	123
11.6	7370	0.98	–	1H	A6105	151
		1.74	II	1H	B6120	151
		2.12	III	1H	B6125	151
9.80	8740	1.56	II	1H	B6120	179
		1.79	II	1H	B6125	179
8.47	10100	1.18	I	1H	B6120	207
		1.47	II	1H	B6125	207
		2.69	III	1H	C6140	207
7.04	12200	0.87	–	1H	B6120	249
		1.09	I	1H	B6125	249
		2.21	III	1H	C6140	249
		2.57	III	1H	C6145	249
5.75	14900	0.86	–	1H	B6120	305
		1.03	I	1H	B6125	305
		1.80	II	1H	C6140	305
		2.10	III	1H	C6145	305

Gearmotors

Selection
Tables

Selection Tables 60 Hz, 1750 RPM, Single Reduction

Horizontal Motor Shaft Y1, Y3, Y2, Y4 Mounting Positions



Dimensions on pages 3.52–3.57

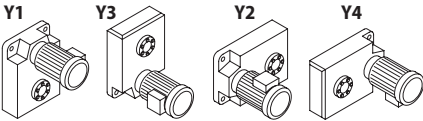
2 HP

Output Speed RPM	Output Torque in·lbs	Service Factor	AGMA Class	SELECTION		
				HP Symbol	Frame Size	Ratio
167	701	1.57	II	2	A6100	11
		2.12	III	2	A6105	11
100	1170	1.57	II	2	A6100	18
		2.12	III	2	A6105	18
83.3	1400	1.01	I	2	Z6095	21
		1.57	II	2	A6100	21
		2.12	III	2	A6105	21
62.5	1870	1.01	I	2	Z6095	28
		1.57	II	2	A6100	28
		2.12	III	2	A6105	28
45.5	2570	1.01	I	2	Z6095	39
		1.57	II	2	A6100	39
		2.12	III	2	A6105	39
38.5	3040	1.01	I	2	Z6095	46
		1.57	II	2	A6100	46
		2.12	III	2	A6105	46
33.3	3510	1.01	I	2	Z6095	53
		1.57	II	2	A6100	53
		2.12	III	2	A6105	53
29.4	3970	0.97	-	2	Z6095	60
		1.33	I	2	A6100	60
		1.64	II	2	A6105	60
23.8	4910	1.29	I	2	A6100	74
		1.56	II	2	A6105	74
		2.64	III	2	B6120	74
20.0	5840	0.85	-	2	A6100	88
		1.11	I	2	A6105	88
		2.06	III	2	B6120	88
		2.64	III	2	B6125	88
17.2	6780	0.81	-	2	A6100	102
		1.06	I	2	A6105	102
		1.99	II	2	B6120	102
		2.31	III	2	B6125	102
14.3	8180	0.80	-	2	A6105	123
		1.66	II	2	B6120	123
		1.91	II	2	B6125	123
11.6	10100	1.27	I	2	B6120	151
		1.56	II	2	B6125	151
		2.63	III	2	C6140	151
9.80	11900	1.15	I	2	B6120	179
		1.31	I	2	B6125	179
		2.29	III	2	C6140	179
		2.63	III	2	C6145	179

Gearmotors

Selection
Tables

60 Hz, 1750 RPM, Single Reduction Selection Tables



Horizontal Motor Shaft Y1, Y3, Y2, Y4 Mounting Positions

Dimensions on pages 3.52–3.57

Output Speed RPM	Output Torque in-lbs	Service Factor	AGMA Class	HP Symbol	SELECTION	
					Frame Size	Ratio
8.47	13800	0.87	–	2	B6120	207
8.47	13800	1.08	I	2	B6125	207
8.47	13800	1.97	II	2	C6140	207
8.47	13800	2.27	III	2	C6145	207
8.47	13800	2.95	III	2	D6160	207
7.04	16600	0.80	–	2	B6125	249
7.04	16600	1.62	II	2	C6140	249
7.04	16600	1.89	II	2	C6145	249
7.04	16600	2.31	III	2	D6160	249
5.75	20300	1.32	I	2	C6140	305
5.75	20300	1.54	II	2	C6145	305
5.75	20300	2.31	III	2	D6160	305
5.75	20300	2.60	III	2	D6165	305

2 HP

Output Speed RPM	Output Torque in-lbs	Service Factor	AGMA Class	HP Symbol	SELECTION	
					Frame Size	Ratio
167	1030	1.07	I	3	A6100	11
		1.45	II	3	A6105	11
		2.30	III	3	B6120	11
		2.64	III	3	B6125	11
100	1710	1.07	I	3	A6100	18
		1.45	II	3	A6105	18
		2.30	III	3	B6120	18
		2.64	III	3	B6125	18
83.3	2060	1.07	I	3	A6100	21
		1.45	II	3	A6105	21
		2.30	III	3	B6120	21
		2.64	III	3	B6125	21
62.5	2740	1.07	I	3	A6100	28
		1.45	II	3	A6105	28
		2.30	III	3	B6120	28
45.5	3770	1.07	I	3	A6100	39
		1.45	II	3	A6105	39
		2.30	III	3	B6120	39
		2.69	III	3	B6125	39
38.5	4460	1.07	I	3	A6100	46
		1.45	II	3	A6105	46
		2.30	III	3	B6120	46
		2.69	III	3	B6125	46

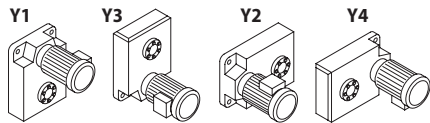
3 HP

Gearmotors

Selection
Tables

Selection Tables 60 Hz, 1750 RPM, Single Reduction

Horizontal Motor Shaft Y1, Y3, Y2, Y4 Mounting Positions



Dimensions on pages 3.52–3.57

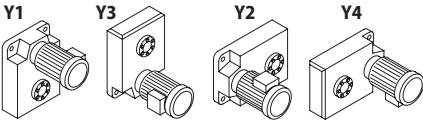
3 HP

Output Speed RPM	Output Torque in·lbs	Service Factor	AGMA Class	SELECTION		
				HP Symbol	Frame Size	Ratio
33.3	5140	1.07	I	3	A6100	53
		1.45	II	3	A6105	53
		2.30	III	3	B6120	53
		2.69	III	3	B6125	53
29.4	5830	0.90	–	3	A6100	60
		1.12	I	3	A6105	60
		2.30	III	3	B6120	60
		2.57	III	3	B6125	60
23.8	7200	0.88	–	3	A6100	74
		1.06	I	3	A6105	74
		1.80	II	3	B6120	74
		2.18	III	3	B6125	74
20.0	8570	1.40	II	3	B6120	88
		1.80	II	3	B6125	88
17.2	9940	1.36	I	3	B6120	102
		1.58	II	3	B6125	102
		2.70	III	3	C6140	102
14.3	12000	1.13	I	3	B6120	123
		1.31	I	3	B6125	123
		2.37	III	3	C6140	123
		2.61	III	3	C6145	123
11.6	14700	0.87	–	3	B6120	151
		1.06	I	3	B6125	151
		1.79	II	3	C6140	151
		2.12	III	3	C6145	151
9.80	17500	0.90	–	3	B6125	179
		1.56	II	3	C6140	179
		1.79	II	3	C6145	179
		2.61	III	3	D6160	179
8.47	20200	1.35	I	3	C6140	207
		1.55	II	3	C6145	207
		2.01	III	3	D6160	207
		2.61	III	3	D6165	207
7.04	24300	1.10	I	3	C6140	249
		1.29	I	3	C6145	249
		1.58	II	3	D6160	249
		2.23	III	3	D6165	249
5.75	29800	0.90	–	3	C6140	305
		1.05	I	3	C6145	305
		1.58	II	3	D6160	305
		1.77	II	3	D6165	305

Gearmotors

Selection
Tables

60 Hz, 1750 RPM, Single Reduction Selection Tables



Horizontal Motor Shaft Y1, Y3, Y2, Y4 Mounting Positions

Dimensions on pages 3.52–3.57

5 HP

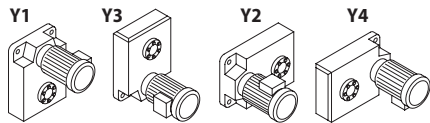
Output Speed RPM	Output Torque in·lbs	Service Factor	AGMA Class	HP Symbol	SELECTION	
					Frame Size	Ratio
167	1730	1.37	I	5	B6120	11
		1.57	II	5	B6125	11
100	2880	1.37	I	5	B6120	18
		1.57	II	5	B6125	18
83.3	3460	1.37	I	5	B6120	21
		1.57	II	5	B6125	21
62.5	4610	1.37	I	5	B6120	28
		1.88	II	5	B6125	28
45.5	6340	1.37	I	5	B6120	39
		1.60	II	5	B6125	39
38.5	7500	1.37	I	5	B6120	46
		1.60	II	5	B6125	46
33.3	8650	1.37	I	5	B6120	53
		1.60	II	5	B6125	53
29.4	9800	1.37	I	5	B6120	60
		1.53	II	5	B6125	60
		2.73	III	5	C6140	60
23.8	12100	1.07	I	5	B6120	74
		1.29	I	5	B6125	74
		2.34	III	5	C6140	74
		2.59	III	5	C6145	74
20.0	14400	0.84	–	5	B6120	88
		1.07	I	5	B6125	88
		1.86	II	5	C6140	88
		2.14	III	5	C6145	88
		2.66	III	5	D6160	88
17.2	16700	0.81	–	5	B6120	102
		0.94	–	5	B6125	102
		1.61	II	5	C6140	102
		1.87	II	5	C6145	102
		2.84	III	5	D6160	102
14.3	20200	1.41	II	5	C6140	123
		1.55	II	5	C6145	123
		2.61	III	5	D6160	123
		2.69	III	5	D6165	123
11.6	24800	1.06	I	5	C6140	151
		1.26	I	5	C6145	151
		2.01	III	5	D6160	151
		2.14	III	5	D6165	151
		2.64	III	5	E6170	151

Gearmotors

Selection
Tables

Selection Tables 60 Hz, 1750 RPM, Single Reduction

Horizontal Motor Shaft Y1, Y3, Y2, Y4 Mounting Positions

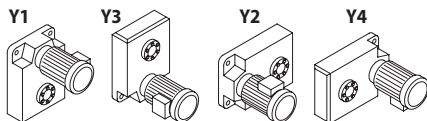


Dimensions on pages 3.52–3.57

5 HP	Output Speed RPM	Output Torque in·lbs	Service Factor	AGMA Class	SELECTION	
					HP Symbol	Ratio
9.80	29400		0.93	–	5	C6140
			1.07	I	5	C6145
			1.55	II	5	D6160
			1.85	II	5	D6165
			2.27	III	5	E6170
			2.58	III	5	E6175
8.47	34000		0.80	–	5	C6140
			0.92	–	5	C6145
			1.19	I	5	D6160
			1.55	II	5	D6165
			1.93	II	5	E6170
			2.23	III	5	E6175
7.04	40900		0.94	–	5	D6160
			1.33	I	5	D6165
			1.60	II	5	E6170
			1.85	II	5	E6175
5.75	50200		0.94	–	5	D6160
			1.05	I	5	D6165
			1.30	I	5	E6170
			1.51	II	5	E6175

7.5 HP	Output Speed RPM	Output Torque in·lbs	Service Factor	AGMA Class	SELECTION	
					HP Symbol	Ratio
167	2570		0.92	–	8	B6120
			1.06	I	8	B6125
			2.36	III	8	C6140
			2.75	III	8	C6145
100	4290		0.92	–	8	B6120
			1.06	I	8	B6125
			2.36	III	8	C6140
			2.75	III	8	C6145
83.3	5140		0.92	–	8	B6120
			1.06	I	8	B6125
			2.36	III	8	C6140
			2.75	III	8	C6145
62.5	6860		0.92	–	8	B6120
			1.26	I	8	B6125
			2.36	III	8	C6140
			2.75	III	8	C6145

60 Hz, 1750 RPM, Single Reduction Selection Tables



Horizontal Motor Shaft Y1, Y3, Y2, Y4 Mounting Positions

Dimensions on pages 3.52–3.57

7.5 HP

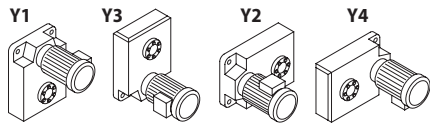
Output Speed RPM	Output Torque in-lbs	Service Factor	AGMA Class	HP Symbol	SELECTION	
					Frame Size	Ratio
45.5	9430	0.92	–	8	B6120	39
		1.08	I	8	B6125	39
		2.36	III	8	C6140	39
		2.75	III	8	C6145	39
38.5	11100	0.92	–	8	B6120	46
		1.08	I	8	B6125	46
		2.36	III	8	C6140	46
		2.75	III	8	C6145	46
33.3	12900	0.92	–	8	B6120	53
		1.08	I	8	B6125	53
		2.18	III	8	C6140	53
		2.44	III	8	C6145	53
29.4	14600	0.92	–	8	B6120	60
		1.03	I	8	B6125	60
		1.84	II	8	C6140	60
		2.15	III	8	C6145	60
		2.38	III	8	D6160	60
23.8	18000	0.87	–	8	B6125	74
		1.57	II	8	C6140	74
		1.74	II	8	C6145	74
		2.35	III	8	D6160	74
		2.93	III	8	D6165	74
20.0	21400	1.25	I	8	C6140	88
		1.44	II	8	C6145	88
		1.79	II	8	D6160	88
		2.54	III	8	D6165	88
		2.87	III	8	E6170	88
17.2	24900	1.08	I	8	C6140	102
		1.26	I	8	C6145	102
		1.91	II	8	D6160	102
		2.07	III	8	D6165	102
		2.60	III	8	E6170	102
14.3	30000	0.95	–	8	C6140	123
		1.04	I	8	C6145	123
		1.76	II	8	D6160	123
		1.81	II	8	D6165	123
		2.18	III	8	E6170	123
		2.53	III	8	E6175	123
11.6	36900	0.85	–	8	C6145	151
		1.35	I	8	D6160	151
		1.44	II	8	D6165	151
		1.77	II	8	E6170	151
		2.05	III	8	E6175	151

Gearmotors

Selection
Tables

Selection Tables 60 Hz, 1750 RPM, Single Reduction

Horizontal Motor Shaft Y1, Y3, Y2, Y4 Mounting Positions



Dimensions on pages 3.52–3.57

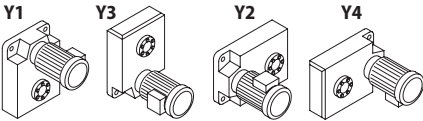
Output Speed RPM	Output Torque in•lbs	Service Factor	AGMA Class	HP Symbol	SELECTION	
					Frame Size	Ratio
9.80	43700	1.05	I	8	D6160	179
		1.24	I	8	D6165	179
		1.53	II	8	E6170	179
		1.73	II	8	E6175	179
8.47	50600	0.80	–	8	D6160	207
		1.05	I	8	D6165	207
		1.30	I	8	E6170	207
		1.50	II	8	E6175	207
7.04	60900	0.89	–	8	D6165	249
		1.08	I	8	E6170	249
		1.25	I	8	E6175	249
5.75	74600	0.87	–	8	E6170	305
		1.02	I	8	E6175	305

Gearmotors

Selection
Tables

Output Speed RPM	Output Torque in•lbs	Service Factor	AGMA Class	HP Symbol	SELECTION	
					Frame Size	Ratio
167	3510	1.73	II	10	C6140	11
		2.01	III	10	C6145	11
		2.71	III	10	D6160	11
100	5840	1.73	II	10	C6140	18
		2.01	III	10	C6145	18
		2.71	III	10	D6160	18
83.3	7010	1.73	II	10	C6140	21
		2.01	III	10	C6145	21
		2.71	III	10	D6160	21
62.5	9350	1.73	II	10	C6140	28
		2.01	III	10	C6145	28
		2.63	III	10	D6160	28
45.5	12900	1.73	II	10	C6140	39
		2.01	III	10	C6145	39
		2.63	III	10	D6160	39
38.5	15200	1.73	II	10	C6140	46
		2.01	III	10	C6145	46
		2.63	III	10	D6160	46
33.3	17500	1.60	II	10	C6140	53
		1.79	II	10	C6145	53
		2.49	III	10	D6160	53

60 Hz, 1750 RPM, Single Reduction Selection Tables



Horizontal Motor Shaft Y1, Y3, Y2, Y4 Mounting Positions

Dimensions on pages 3.52–3.57

10 HP

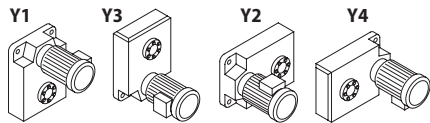
Output Speed RPM	Output Torque in·lbs	Service Factor	AGMA Class	HP Symbol	SELECTION	
					Frame Size	Ratio
29.4	19900	1.35	I	10	C6140	60
		1.58	II	10	C6145	60
		1.75	II	10	D6160	60
		2.51	III	10	D6165	60
		2.63	III	10	E6170	60
23.8	24500	1.15	I	10	C6140	74
		1.28	I	10	C6145	74
		1.72	II	10	D6160	74
		2.15	III	10	D6165	74
		2.60	III	10	E6170	74
20.0	29200	0.92	–	10	C6140	88
		1.05	I	10	C6145	88
		1.31	I	10	D6160	88
		1.86	II	10	D6165	88
		2.11	III	10	E6170	88
		2.60	III	10	E6175	88
17.2	33900	0.92	–	10	C6145	102
		1.40	II	10	D6160	102
		1.52	II	10	D6165	102
		1.91	II	10	E6170	102
		2.24	III	10	E6175	102
14.3	40900	1.29	I	10	D6160	123
		1.33	I	10	D6165	123
		1.60	II	10	E6170	123
		1.85	II	10	E6175	123
11.6	50300	0.99	–	10	D6160	151
		1.05	I	10	D6165	151
		1.30	I	10	E6170	151
		1.51	II	10	E6175	151
9.80	59600	0.91	–	10	D6165	179
		1.12	I	10	E6170	179
		1.27	I	10	E6175	179
8.47	69000	0.95	–	10	E6170	207
		1.10	I	10	E6175	207
7.04	83000	0.91	–	10	E6175	249

Gearmotors

Selection
Tables

Selection Tables 60 Hz, 1750 RPM, Single Reduction

Horizontal Motor Shaft Y1, Y3, Y2, Y4 Mounting Positions



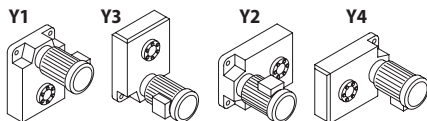
Dimensions on pages 3.52–3.57

15 HP	Output Speed RPM	Output Torque in•lbs	Service Factor	AGMA Class	SELECTION	
					HP Symbol	Frame Size Ratio
167	5140	1.18	I	15	C6140	11
		1.37	I	15	C6145	11
		1.85	II	15	D6160	11
		2.19	III	15	D6165	11
		2.51	III	15	E6170	11
		2.74	III	15	E6175	11
100	8570	1.18	I	15	C6140	18
		1.37	I	15	C6145	18
		1.85	II	15	D6160	18
		2.19	III	15	D6165	18
		2.51	III	15	E6170	18
		2.74	III	15	E6175	18
83.3	10300	1.18	I	15	C6140	21
		1.37	I	15	C6145	21
		1.85	II	15	D6160	21
		2.19	III	15	D6165	21
		2.51	III	15	E6170	21
		2.74	III	15	E6175	21
62.5	13700	1.18	I	15	C6140	28
		1.37	I	15	C6145	28
		1.79	II	15	D6160	28
		2.19	III	15	D6165	28
		2.51	III	15	E6170	28
		2.74	III	15	E6175	28
45.5	18900	1.18	I	15	C6140	39
		1.37	I	15	C6145	39
		1.79	II	15	D6160	39
		2.19	III	15	D6165	39
		2.51	III	15	E6170	39
		2.74	III	15	E6175	39
38.5	22300	1.18	I	15	C6140	46
		1.37	I	15	C6145	46
		1.79	II	15	D6160	46
		2.05	III	15	D6165	46
		2.48	III	15	E6170	46
		2.74	III	15	E6175	46
33.3	25700	1.09	I	15	C6140	53
		1.22	I	15	C6145	53
		1.70	II	15	D6160	53
		2.05	III	15	D6165	53
		2.32	III	15	E6170	53
		2.74	III	15	E6175	53

Gearmotors

Selection
Tables

60 Hz, 1750 RPM, Single Reduction Selection Tables



Horizontal Motor Shaft Y1, Y3, Y2, Y4 Mounting Positions

Dimensions on pages 3.52–3.57

15 HP

Output Speed RPM	Output Torque in-lbs	Service Factor	AGMA Class	SELECTION		
				HP Symbol	Frame Size	Ratio
29.4	29100	0.92	–	15	C6140	60
		1.07	I	15	C6145	60
		1.19	I	15	D6160	60
		1.71	II	15	D6165	60
		1.79	II	15	E6170	60
		2.19	III	15	E6175	60
23.8	36000	0.87	–	15	C6145	74
		1.17	I	15	D6160	74
		1.46	II	15	D6165	74
		1.77	II	15	E6170	74
		2.11	III	15	E6175	74
20.0	42900	0.90	–	15	D6160	88
		1.27	I	15	D6165	88
		1.44	II	15	E6170	88
		1.77	II	15	E6175	88
17.2	49700	0.95	–	15	D6160	102
		1.04	I	15	D6165	102
		1.30	I	15	E6170	102
		1.53	II	15	E6175	102
14.3	60000	0.88	–	15	D6160	123
		0.91	–	15	D6165	123
		1.09	I	15	E6170	123
		1.26	I	15	E6175	123
11.6	73700	0.89	–	15	E6170	151
		1.03	I	15	E6175	151
9.80	87400	0.87	–	15	E6175	179

Gearmotors

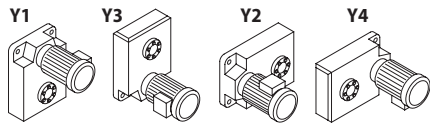
Selection
Tables

20 HP

Output Speed RPM	Output Torque in-lbs	Service Factor	AGMA Class	SELECTION		
				HP Symbol	Frame Size	Ratio
167	7010	0.87	–	20	C6140	11
		1.01	I	20	C6145	11
		1.35	I	20	D6160	11
		1.61	II	20	D6165	11
		1.84	II	20	E6170	11
		2.01	III	20	E6175	11
100	11700	0.87	–	20	C6140	18
		1.01	I	20	C6145	18
		1.35	I	20	D6160	18
		1.61	II	20	D6165	18
		1.84	II	20	E6170	18
		2.01	III	20	E6175	18

Selection Tables 60 Hz, 1750 RPM, Single Reduction

Horizontal Motor Shaft Y1, Y3, Y2, Y4 Mounting Positions



Dimensions on pages 3.52–3.57

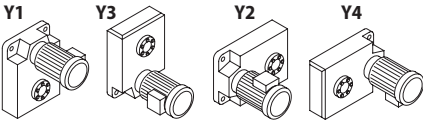
20 HP

Output Speed RPM	Output Torque in-lbs	Service Factor	AGMA Class	HP Symbol	SELECTION	
					Frame Size	Ratio
83.3	14000	0.87	–	20	C6140	21
		1.01	I	20	C6145	21
		1.35	I	20	D6160	21
		1.61	II	20	D6165	21
		1.84	II	20	E6170	21
		2.01	III	20	E6175	21
		62.5	18700	0.87	–	20
1.01	I			20	C6145	28
1.31	I			20	D6160	28
1.61	II			20	D6165	28
1.84	II			20	E6170	28
2.01	III			20	E6175	28
45.5	25700			0.87	–	20
		1.01	I	20	C6145	39
		1.31	I	20	D6160	39
		1.61	II	20	D6165	39
		1.84	II	20	E6170	39
		2.01	III	20	E6175	39
		38.5	30400	0.87	–	20
1.01	I			20	C6145	46
1.31	I			20	D6160	46
1.51	II			20	D6165	46
1.82	II			20	E6170	46
2.01	III			20	E6175	46
33.3	35100			0.80	–	20
		0.89	–	20	C6145	53
		1.25	I	20	D6160	53
		1.51	II	20	D6165	53
		1.70	II	20	E6170	53
		2.01	III	20	E6175	53
		29.4	39700	0.87	–	20
1.25	I			20	D6165	60
1.31	I			20	E6170	60
1.61	II			20	E6175	60
23.8	49100	0.86	–	20	D6160	74
		1.07	I	20	D6165	74
		1.30	I	20	E6170	74
		1.54	II	20	E6175	74
20.0	58400	0.93	–	20	D6165	88
		1.05	I	20	E6170	88
		1.30	I	20	E6175	88
17.2	67800	0.95	–	20	E6170	102
		1.12	I	20	E6175	102
14.3	81800	0.80	–	20	E6170	123
		0.93	–	20	E6175	123

Gearmotors

Selection
Tables

60 Hz, 1750 RPM, Single Reduction Selection Tables



Horizontal Motor Shaft Y1, Y3, Y2, Y4 Mounting Positions

Dimensions on pages 3.52–3.57

25 HP

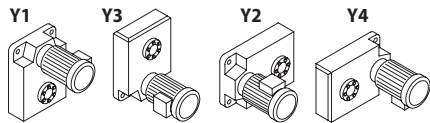
Output Speed RPM	Output Torque in-lbs	Service Factor	AGMA Class	SELECTION		
				HP Symbol	Frame Size	Ratio
167	8650	1.10	I	25	D6160	11
		1.30	I	25	D6165	11
		1.49	II	25	E6170	11
		1.63	II	25	E6175	11
100	14400	1.10	I	25	D6160	18
		1.30	I	25	D6165	18
		1.49	II	25	E6170	18
		1.63	II	25	E6175	18
83.3	17300	1.10	I	25	D6160	21
		1.30	I	25	D6165	21
		1.49	II	25	E6170	21
		1.63	II	25	E6175	21
62.5	23100	1.06	I	25	D6160	28
		1.30	I	25	D6165	28
		1.49	II	25	E6170	28
		1.63	II	25	E6175	28
45.5	31700	1.06	I	25	D6160	39
		1.30	I	25	D6165	39
		1.49	II	25	E6170	39
		1.63	II	25	E6175	39
38.5	37500	1.06	I	25	D6160	46
		1.22	I	25	D6165	46
		1.48	II	25	E6170	46
		1.63	II	25	E6175	46
33.3	43200	1.01	I	25	D6160	53
		1.22	I	25	D6165	53
		1.38	I	25	E6170	53
		1.63	II	25	E6175	53
29.4	49000	1.02	I	25	D6165	60
		1.06	I	25	E6170	60
		1.30	I	25	E6175	60
23.8	60500	0.87	–	25	D6165	74
		1.05	I	25	E6170	74
		1.25	I	25	E6175	74
20.0	72100	0.85	–	25	E6170	88
		1.05	I	25	E6175	88
17.2	83600	0.91	–	25	E6175	102

Gearmotors

Selection
Tables

Selection Tables 60 Hz, 1750 RPM, Single Reduction

Horizontal Motor Shaft Y1, Y3, Y2, Y4 Mounting Positions



Dimensions on pages 3.52–3.57

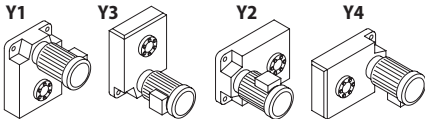
30 HP

Output Speed RPM	Output Torque in•lbs	Service Factor	AGMA Class	SELECTION		
				HP Symbol	Frame Size	Ratio
167	10300	0.92	–	30	D6160	11
		1.10	I	30	D6165	11
		1.25	I	30	E6170	11
		1.37	I	30	E6175	11
100	17100	0.92	–	30	D6160	18
		1.10	I	30	D6165	18
		1.25	I	30	E6170	18
		1.37	I	30	E6175	18
83.3	20600	0.92	–	30	D6160	21
		1.10	I	30	D6165	21
		1.25	I	30	E6170	21
		1.37	I	30	E6175	21
62.5	27400	0.90	–	30	D6160	28
		1.10	I	30	D6165	28
		1.25	I	30	E6170	28
		1.37	I	30	E6175	28
45.5	37700	0.90	–	30	D6160	39
		1.10	I	30	D6165	39
		1.25	I	30	E6170	39
		1.37	I	30	E6175	39
38.5	44600	0.90	–	30	D6160	46
		1.03	I	30	D6165	46
		1.24	I	30	E6170	46
		1.37	I	30	E6175	46
33.3	51400	0.85	–	30	D6160	53
		1.03	I	30	D6165	53
		1.16	I	30	E6170	53
		1.37	I	30	E6175	53
29.4	58300	0.85	–	30	D6165	60
		0.90	–	30	E6170	60
		1.10	I	30	E6175	60
23.8	72000	0.89	–	30	E6170	74
		1.05	I	30	E6175	74
20.0	85700	0.88	–	30	E6175	88

Gearmotors

Selection
Tables

60 Hz, 1750 RPM, Single Reduction **Selection Tables**



Horizontal Motor Shaft
Y1, Y3, Y2, Y4 Mounting Positions

Dimensions on pages 3.52–3.57

Output Speed RPM	Output Torque in·lbs	Service Factor	AGMA Class	HP Symbol	SELECTION	
					Frame Size	Ratio
167	14000	0.92	–	40	E6170	11
		1.00	I	40	E6175	11
100	23400	0.92	–	40	E6170	18
		1.00	I	40	E6175	18
83.3	28100	0.92	–	40	E6170	21
		1.00	I	40	E6175	21
62.5	37400	0.92	–	40	E6170	28
		1.00	I	40	E6175	28
45.5	51400	0.92	–	40	E6170	39
		1.00	I	40	E6175	39
38.5	60800	0.91	–	40	E6170	46
		1.00	I	40	E6175	46
33.3	70100	0.85	–	40	E6170	53
		1.00	I	40	E6175	53
29.4	79500	0.80	–	40	E6175	60

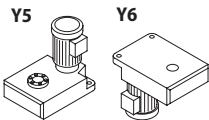
40 HP

Gearmotors

Selection
Tables

Selection Tables 60 Hz, 1750 RPM, Single Reduction

Vertical Motor Shaft Y5, Y6 Mounting Positions



Dimensions on pages 3.52–3.57

1/8 HP

Output Speed RPM	Output Torque in·lbs	Service Factor	AGMA Class	HP Symbol	SELECTION	
					Frame Size	Ratio
7.04	1110	2.52	III	01	Z6090	249
5.75	1360	2.11	III	01	Z6090	305
		2.85	III	01	Z6095	305
4.20	1850	1.25	I	01	Z6090	417
		1.51	II	01	Z6095	417

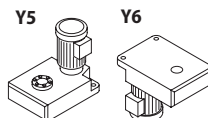
1/4 HP

Output Speed RPM	Output Torque in·lbs	Service Factor	AGMA Class	HP Symbol	SELECTION	
					Frame Size	Ratio
11.6	1340	2.18	III	02	Z6090	151
		2.89	III	02	Z6095	151
9.80	1590	1.66	II	02	Z6090	179
		2.11	III	02	Z6095	179
		2.80	III	02	A6100	179
8.47	1840	1.55	II	02	Z6090	207
		1.87	II	02	Z6095	207
		2.58	III	02	A6100	207
7.04	2210	1.26	I	02	Z6090	249
		1.51	II	02	Z6095	249
		2.18	III	02	A6100	249
		2.81	III	02	A6105	249
5.75	2710	1.06	I	02	Z6090	305
		1.43	II	02	Z6095	305
		2.17	III	02	A6100	305
		2.82	III	02	A6105	305
4.20	3710	1.05	I	02	A6100	417
		1.43	II	02	A6105	417

1/3 HP

Output Speed RPM	Output Torque in·lbs	Service Factor	AGMA Class	HP Symbol	SELECTION	
					Frame Size	Ratio
20.0	974	2.68	III	03	Z6090	88
17.2	1130	2.50	III	03	Z6090	102
14.3	1360	2.45	III	03	Z6090	123
		2.84	III	03	Z6095	123
11.6	1680	1.74	II	03	Z6090	151
		2.31	III	03	Z6095	151
9.80	1990	1.33	I	03	Z6090	179
		1.69	II	03	Z6095	179
		2.24	III	03	A6100	179

60 Hz, 1750 RPM, Single Reduction Selection Tables



Vertical Motor Shaft Y5, Y6 Mounting Positions

Dimensions on pages 3.52–3.57

Output Speed RPM	Output Torque in-lbs	Service Factor	AGMA Class	HP Symbol	SELECTION	
					Frame Size	Ratio
8.47	2300	1.24	I	03	Z6090	207
		1.49	II	03	Z6095	207
		2.06	III	03	A6100	207
		2.83	III	03	A6105	207
7.04	2770	1.01	I	03	Z6090	249
		1.20	I	03	Z6095	249
		1.74	II	03	A6100	249
		2.24	III	03	A6105	249
5.75	3390	0.84	-	03	Z6090	305
		1.14	I	03	Z6095	305
		1.73	II	03	A6100	305
		2.26	III	03	A6105	305
4.20	4640	0.84	-	03	A6100	417
		1.14	I	03	A6105	417

1/3 HP

Output Speed RPM	Output Torque in-lbs	Service Factor	AGMA Class	HP Symbol	SELECTION	
					Frame Size	Ratio
83.3	374	2.88	III	05	Z6090	21
62.5	499	2.88	III	05	Z6090	28
45.5	686	2.88	III	05	Z6090	39
38.5	810	2.88	III	05	Z6090	46
33.3	935	2.88	III	05	Z6090	53
29.4	1060	2.88	III	05	Z6090	60
23.8	1310	1.90	II	05	Z6090	74
		2.95	III	05	Z6095	74
20.0	1560	1.68	II	05	Z6090	88
		2.16	III	05	Z6095	88
17.2	1810	1.56	II	05	Z6090	102
		1.96	II	05	Z6095	102
14.3	2180	1.53	II	05	Z6090	123
		1.77	II	05	Z6095	123
		2.44	III	05	A6100	123
11.6	2680	1.09	I	05	Z6090	151
		1.44	II	05	Z6095	151
		1.95	II	05	A6100	151
		2.70	III	05	A6105	151
9.80	3180	0.83	-	05	Z6090	179
		1.06	I	05	Z6095	179
		1.40	II	05	A6100	179
		1.94	II	05	A6105	179

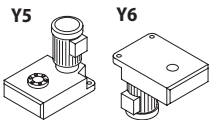
1/2 HP

Gearmotors

Selection
Tables

Selection Tables 60 Hz, 1750 RPM, Single Reduction

Vertical Motor Shaft Y5, Y6 Mounting Positions



Dimensions on pages 3.52–3.57

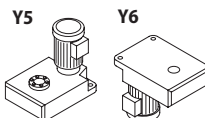
1/2 HP

Output Speed RPM	Output Torque in-lbs	Service Factor	AGMA Class	HP Symbol	SELECTION	
					Frame Size	Ratio
8.47	3680	0.93	–	05	Z6095	207
		1.29	I	05	A6100	207
		1.77	II	05	A6105	207
7.04	4430	1.09	I	05	A6100	249
		1.40	II	05	A6105	249
		2.39	III	05	B6120	249
5.75	5420	1.08	I	05	A6100	305
		1.41	II	05	A6105	305
		2.36	III	05	B6120	305
		2.82	III	05	B6125	305

3/4 HP

Output Speed RPM	Output Torque in-lbs	Service Factor	AGMA Class	HP Symbol	SELECTION	
					Frame Size	Ratio
83.3	514	2.09	III	08	Z6090	21
		2.76	III	08	Z6095	21
62.5	686	2.09	III	08	Z6090	28
		2.76	III	08	Z6095	28
45.5	943	2.09	III	08	Z6090	39
		2.76	III	08	Z6095	39
38.5	1110	2.09	III	08	Z6090	46
		2.76	III	08	Z6095	46
33.3	1290	2.09	III	08	Z6090	53
		2.76	III	08	Z6095	53
29.4	1460	2.09	III	08	Z6090	60
		2.65	III	08	Z6095	60
23.8	1800	1.38	I	08	Z6090	74
		2.15	III	08	Z6095	74
20.0	2140	1.22	I	08	Z6090	88
		1.57	II	08	Z6095	88
		2.31	III	08	A6100	88
17.2	2490	1.14	I	08	Z6090	102
		1.43	II	08	Z6095	102
		2.20	III	08	A6100	102
		2.89	III	08	A6105	102
14.3	3000	1.11	I	08	Z6090	123
		1.29	I	08	Z6095	123
		1.77	II	08	A6100	123
		2.18	III	08	A6105	123

60 Hz, 1750 RPM, Single Reduction Selection Tables



Vertical Motor Shaft Y5, Y6 Mounting Positions

Dimensions on pages 3.52–3.57

Output Speed RPM	Output Torque in-lbs	Service Factor	AGMA Class	HP Symbol	SELECTION	
					Frame Size	Ratio
11.6	3690	1.05	I	08	Z6095	151
		1.42	II	08	A6100	151
		1.96	II	08	A6105	151
9.80	4370	1.02	I	08	A6100	179
		1.41	II	08	A6105	179
8.47	5060	0.94	–	08	A6100	207
		1.29	I	08	A6105	207
		2.36	III	08	B6120	207
		2.95	III	08	B6125	207
7.04	6090	1.02	I	08	A6105	249
		1.74	II	08	B6120	249
		2.18	III	08	B6125	249
5.75	7460	1.03	I	08	A6105	305
		1.72	II	08	B6120	305
		2.05	III	08	B6125	305

3/4 HP

Output Speed RPM	Output Torque in-lbs	Service Factor	AGMA Class	HP Symbol	SELECTION	
					Frame Size	Ratio
83.3	701	1.53	II	1	Z6090	21
		2.03	III	1	Z6095	21
62.5	935	1.53	II	1	Z6090	28
		2.03	III	1	Z6095	28
45.5	1290	1.53	II	1	Z6090	39
		2.03	III	1	Z6095	39
38.5	1520	1.53	II	1	Z6090	46
		2.03	III	1	Z6095	46
33.3	1750	1.53	II	1	Z6090	53
		2.03	III	1	Z6095	53
29.4	1990	1.53	II	1	Z6090	60
		1.95	II	1	Z6095	60
		2.65	III	1	A6100	60
23.8	2450	1.01	I	1	Z6090	74
		1.58	II	1	Z6095	74
		2.57	III	1	A6100	74
20.0	2920	0.89	–	1	Z6090	88
		1.15	I	1	Z6095	88
		1.69	II	1	A6100	88
		2.23	III	1	A6105	88

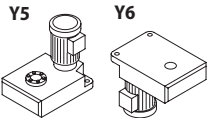
1 HP

Gearmotors

Selection
Tables

Selection Tables 60 Hz, 1750 RPM, Single Reduction

Vertical Motor Shaft Y5, Y6 Mounting Positions



Dimensions on pages 3.52–3.57

1 HP

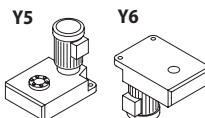
Output Speed RPM	Output Torque in·lbs	Service Factor	AGMA Class	HP Symbol	SELECTION	
					Frame Size	Ratio
17.2	3390	0.83	–	1	Z6090	102
		1.05	I	1	Z6095	102
		1.61	II	1	A6100	102
		2.12	III	1	A6105	102
14.3	4090	0.82	–	1	Z6090	123
		0.95	–	1	Z6095	123
		1.30	I	1	A6100	123
		1.60	II	1	A6105	123
11.6	5030	1.04	I	1	A6100	151
		1.44	II	1	A6105	151
		2.55	III	1	B6120	151
		2.96	III	1	C6145	151
9.80	5960	1.03	I	1	A6105	179
		2.29	III	1	B6120	179
		2.63	III	1	B6125	179
		2.96	III	1	C6145	179
8.47	6900	0.94	–	1	A6105	207
		1.73	II	1	B6120	207
		2.16	III	1	B6125	207
		2.96	III	1	C6145	207
7.04	8300	1.28	I	1	B6120	249
		1.60	II	1	B6125	249
		2.03	III	1	C6145	249
5.75	10200	1.26	I	1	B6120	305
		1.51	II	1	B6125	305
		2.03	III	1	C6145	305

1.5 HP

Output Speed RPM	Output Torque in·lbs	Service Factor	AGMA Class	HP Symbol	SELECTION	
					Frame Size	Ratio
167	514	2.14	III	1H	A6100	11 ^[1]
		2.89	III	1H	A6105	11 ^[1]
100	857	2.14	III	1H	A6100	18 ^[1]
		2.89	III	1H	A6105	18 ^[1]
83.3	1030	1.05	I	1H	Z6090	21
		1.38	I	1H	Z6095	21
		2.14	III	1H	A6100	21
		2.89	III	1H	A6105	21
62.5	1370	1.05	I	1H	Z6090	28
		1.38	I	1H	Z6095	28
		2.14	III	1H	A6100	28
		2.89	III	1H	A6105	28

Note: [1] Y6 position is not available for ratio 11 and 18.

60 Hz, 1750 RPM, Single Reduction Selection Tables



Vertical Motor Shaft Y5, Y6 Mounting Positions

Dimensions on pages 3.52–3.57

1.5 HP

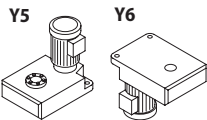
Output Speed RPM	Output Torque in·lbs	Service Factor	AGMA Class	HP Symbol	SELECTION	
					Frame Size	Ratio
45.5	1890	1.05	I	1H	Z6090	39
		1.38	I	1H	Z6095	39
		2.14	III	1H	A6100	39
		2.89	III	1H	A6105	39
38.5	2230	1.05	I	1H	Z6090	46
		1.38	I	1H	Z6095	46
		2.14	III	1H	A6100	46
		2.89	III	1H	A6105	46
33.3	2570	1.05	I	1H	Z6090	53
		1.38	I	1H	Z6095	53
		2.14	III	1H	A6100	53
		2.89	III	1H	A6105	53
29.4	2910	1.05	I	1H	Z6090	60
		1.33	I	1H	Z6095	60
		1.81	II	1H	A6100	60
		2.24	III	1H	A6105	60
23.8	3600	1.07	I	1H	Z6095	74
		1.75	II	1H	A6100	74
		2.13	III	1H	A6105	74
20.0	4290	1.15	I	1H	A6100	88
		1.52	II	1H	A6105	88
		2.81	III	1H	B6120	88
17.2	4970	1.10	I	1H	A6100	102
		1.45	II	1H	A6105	102
		2.72	III	1H	B6120	102
14.3	6000	0.89	-	1H	A6100	123
		1.09	I	1H	A6105	123
		2.26	III	1H	B6120	123
		2.61	III	1H	B6125	123
11.6	7370	0.98	-	1H	A6105	151
		1.74	II	1H	B6120	151
		2.02	III	1H	C6145	151
		2.12	III	1H	B6125	151
9.80	8740	1.56	II	1H	B6120	179
		1.79	II	1H	B6125	179
		2.02	III	1H	C6145	179
8.47	10100	1.18	I	1H	B6120	207
		1.47	II	1H	B6125	207
		2.02	III	1H	C6145	207
7.04	12200	0.87	-	1H	B6120	249
		1.09	I	1H	B6125	249
		1.38	I	1H	C6145	249
5.75	14900	0.86	-	1H	B6120	305
		1.03	I	1H	B6125	305
		1.38	I	1H	C6145	305

Gearmotors

Selection
Tables

Selection Tables 60 Hz, 1750 RPM, Single Reduction

Vertical Motor Shaft Y5, Y6 Mounting Positions



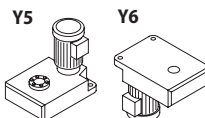
Dimensions on pages 3.52–3.57

2 HP

Output Speed RPM	Output Torque in-lbs	Service Factor	AGMA Class	SELECTION		
				HP Symbol	Frame Size	Ratio
167	701	1.57	II	2	A6100	11 ^[1]
		2.12	III	2	A6105	11 ^[1]
100	1170	1.57	II	2	A6100	18 ^[1]
		2.12	III	2	A6105	18 ^[1]
83.3	1400	1.01	I	2	Z6095	21
		1.57	II	2	A6100	21
		2.12	III	2	A6105	21
62.5	1870	1.01	I	2	Z6095	28
		1.57	II	2	A6100	28
		2.12	III	2	A6105	28
45.5	2570	1.01	I	2	Z6095	39
		1.57	II	2	A6100	39
		2.12	III	2	A6105	39
38.5	3040	1.01	I	2	Z6095	46
		1.57	II	2	A6100	46
		2.12	III	2	A6105	46
33.3	3510	1.01	I	2	Z6095	53
		1.57	II	2	A6100	53
		2.12	III	2	A6105	53
29.4	3970	0.97	–	2	Z6095	60
		1.33	I	2	A6100	60
		1.64	II	2	A6105	60
		1.29	I	2	A6100	74
23.8	4910	1.56	II	2	A6105	74
		2.64	III	2	B6120	74
20.0	5840	0.85	–	2	A6100	88
		1.11	I	2	A6105	88
		2.06	III	2	B6120	88
		2.64	III	2	B6125	88
17.2	6780	0.81	–	2	A6100	102
		1.06	I	2	A6105	102
		1.99	II	2	B6120	102
		2.31	III	2	B6125	102
		2.49	III	2	C6145	102
14.3	8180	0.80	–	2	A6105	123
		1.66	II	2	B6120	123
		1.91	II	2	B6125	123
		2.49	III	2	C6145	123
11.6	10100	1.27	I	2	B6120	151
		1.48	II	2	C6145	151
		1.56	II	2	B6125	151
		2.49	III	2	D6165	151

Note: [1] Y6 position is not available for ratio 11 and 18.

60 Hz, 1750 RPM, Single Reduction Selection Tables



Vertical Motor Shaft Y5, Y6 Mounting Positions

Dimensions on pages 3.52–3.57

Output Speed RPM	Output Torque in-lbs	Service Factor	AGMA Class	HP Symbol	SELECTION	
					Frame Size	Ratio
9.80	11900	1.15	I	2	B6120	179
		1.31	I	2	B6125	179
		1.48	II	2	C6145	179
		2.49	III	2	D6165	179
8.47	13800	0.87	–	2	B6120	207
		1.08	I	2	B6125	207
		1.48	II	2	C6145	207
		2.49	III	2	D6165	207
7.04	16600	0.80	–	2	B6125	249
		1.01	I	2	C6145	249
		1.48	II	2	D6165	249
5.75	20300	1.01	I	2	C6145	305
		1.48	II	2	D6165	305

2 HP

Output Speed RPM	Output Torque in-lbs	Service Factor	AGMA Class	HP Symbol	SELECTION	
					Frame Size	Ratio
167	1030	1.07	I	3	A6100	11 ^[1]
		1.45	II	3	A6105	11 ^[1]
		2.30	III	3	B6120	11 ^[1]
		2.64	III	3	B6125	11 ^[1]
100	1710	1.07	I	3	A6100	18 ^[1]
		1.45	II	3	A6105	18 ^[1]
		2.30	III	3	B6120	18 ^[1]
		2.64	III	3	B6125	18 ^[1]
83.3	2060	1.07	I	3	A6100	21
		1.45	II	3	A6105	21
		2.30	III	3	B6120	21
		2.64	III	3	B6125	21
62.5	2740	1.07	I	3	A6100	28
		1.45	II	3	A6105	28
		2.30	III	3	B6120	28
45.5	3770	1.07	I	3	A6100	39
		1.45	II	3	A6105	39
		2.30	III	3	B6120	39
		2.69	III	3	B6125	39
38.5	4460	1.07	I	3	A6100	46
		1.45	II	3	A6105	46
		2.30	III	3	B6120	46
		2.69	III	3	B6125	46

Note: [1] Y6 position is not available for ratio 11 and 18.

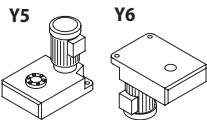
Gearmotors

Selection
Tables

3 HP

Selection Tables 60 Hz, 1750 RPM, Single Reduction

Vertical Motor Shaft Y5, Y6 Mounting Positions



Dimensions on pages 3.52–3.57

3 HP

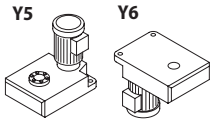
Output Speed RPM	Output Torque in·lbs	Service Factor	AGMA Class	HP Symbol	SELECTION	
					Frame Size	Ratio
33.3	5140	1.07	I	3	A6100	53
		1.45	II	3	A6105	53
		2.30	III	3	B6120	53
		2.69	III	3	B6125	53
29.4	5830	0.90	–	3	A6100	60
		1.12	I	3	A6105	60
		2.30	III	3	B6120	60
		2.53	III	3	C6145	60
		2.57	III	3	B6125	60
23.8	7200	0.88	–	3	A6100	74
		1.06	I	3	A6105	74
		1.80	II	3	B6120	74
		2.18	III	3	B6125	74
		2.53	III	3	C6145	74
20.0	8570	1.40	II	3	B6120	88
		1.80	II	3	B6125	88
		2.53	III	3	C6145	88
17.2	9940	1.36	I	3	B6120	102
		1.58	II	3	B6125	102
		1.70	II	3	C6145	102
14.3	12000	1.13	I	3	B6120	123
		1.31	I	3	B6125	123
		1.70	II	3	C6145	123
11.6	14700	0.87	–	3	B6120	151
		1.01	I	3	C6145	151
		1.06	I	3	B6125	151
		1.70	II	3	D6165	151
9.80	17500	0.90	–	3	B6125	179
		1.01	I	3	C6145	179
		1.70	II	3	D6165	179
8.47	20200	1.01	I	3	C6145	207
		1.70	II	3	D6165	207
7.04	24300	1.01	I	3	D6165	249
5.75	29800	1.01	I	3	D6165	305

5 HP

Output Speed RPM	Output Torque in·lbs	Service Factor	AGMA Class	HP Symbol	SELECTION	
					Frame Size	Ratio
167	1730	1.37	I	5	B6120	11 ^[1]
		1.57	II	5	B6125	11 ^[1]
		2.56	III	5	C6140	11 ^[1]
		2.97	III	5	C6145	11 ^[1]

Note: [1] Y6 position is not available for ratio 11 and 18.

60 Hz, 1750 RPM, Single Reduction Selection Tables



Vertical Motor Shaft Y5, Y6 Mounting Positions

Dimensions on pages 3.52–3.57

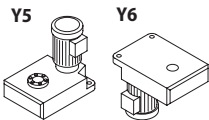
5 HP

Output Speed RPM	Output Torque in-lbs	Service Factor	AGMA Class	HP Symbol	SELECTION	
					Frame Size	Ratio
100	2880	1.37	I	5	B6120	18 ^[1]
		1.57	II	5	B6125	18 ^[1]
		2.56	III	5	C6140	18 ^[1]
		2.97	III	5	C6145	18 ^[1]
83.3	3460	1.37	I	5	B6120	21
		1.57	II	5	B6125	21
62.5	4610	1.37	I	5	B6120	28
		1.88	II	5	B6125	28
45.5	6340	1.37	I	5	B6120	39
		1.60	II	5	B6125	39
38.5	7500	1.37	I	5	B6120	46
		1.60	II	5	B6125	46
		2.05	III	5	C6145	46
33.3	8650	1.37	I	5	B6120	53
		1.60	II	5	B6125	53
		2.05	III	5	C6145	53
29.4	9800	1.37	I	5	B6120	60
		1.50	II	5	C6145	60
		1.53	II	5	B6125	60
23.8	12100	1.07	I	5	B6120	74
		1.29	I	5	B6125	74
		1.50	II	5	C6145	74
		2.05	III	5	D6165	74
		2.62	III	5	E6175	74
20.0	14400	0.84	-	5	B6120	88
		1.07	I	5	B6125	88
		1.50	II	5	C6145	88
		2.05	III	5	D6165	88
17.2	16700	0.81	-	5	B6120	102
		0.94	-	5	B6125	102
		1.01	I	5	C6145	102
		2.05	III	5	D6165	102
14.3	20200	1.01	I	5	C6145	123
		2.05	III	5	D6165	123
11.6	24800	1.01	I	5	D6165	151
		2.05	III	5	E6175	151
9.80	29400	1.01	I	5	D6165	179
		1.50	II	5	E6175	179
8.47	34000	1.01	I	5	D6165	207
		1.50	II	5	E6175	207
7.04	40900	1.01	I	5	E6175	249
5.75	50200	1.01	I	5	E6175	305

Note: [1] Y6 position is not available for ratio 11 and 18.

Selection Tables 60 Hz, 1750 RPM, Single Reduction

Vertical Motor Shaft Y5, Y6 Mounting Positions



Dimensions on pages 3.52–3.57

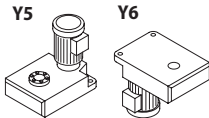
7.5 HP	Output Speed RPM	Output Torque in•lbs	Service Factor	AGMA Class	SELECTION	
					HP Symbol	Frame Size Ratio
167	2570	0.92	–	8	B6120	11 ^[1]
		1.06	I	8	B6125	11 ^[1]
		1.72	II	8	C6140	11 ^[1]
		2.00	III	8	C6145	11 ^[1]
		2.29	III	8	D6160	11 ^[1]
		2.73	III	8	D6165	11 ^[1]
100	4290	0.92	–	8	B6120	18 ^[1]
		1.06	I	8	B6125	18 ^[1]
		1.72	II	8	C6140	18 ^[1]
		2.00	III	8	C6145	18 ^[1]
		2.29	III	8	D6160	18 ^[1]
		2.73	III	8	D6165	18 ^[1]
83.3	5140	0.92	–	8	B6120	21
		1.06	I	8	B6125	21
		2.02	III	8	C6145	21
62.5	6860	0.92	–	8	B6120	28
		1.26	I	8	B6125	28
		2.02	III	8	C6145	28
		2.76	III	8	D6165	28
45.5	9430	0.92	–	8	B6120	39
		1.08	I	8	B6125	39
		2.02	III	8	C6145	39
		2.76	III	8	D6165	39
38.5	11100	0.92	–	8	B6120	46
		1.08	I	8	B6125	46
		1.38	I	8	C6145	46
		2.02	III	8	D6165	46
		2.58	III	8	E6175	46
33.3	12900	0.92	–	8	B6120	53
		1.08	I	8	B6125	53
		1.38	I	8	C6145	53
		2.02	III	8	D6165	53
		2.18	III	8	E6175	53
29.4	14600	0.92	–	8	B6120	60
		1.01	I	8	C6145	60
		1.03	I	8	B6125	60
		2.02	III	8	D6165	60
23.8	18000	0.87	–	8	B6125	74
		1.01	I	8	C6145	74
		1.38	I	8	D6165	74
		1.77	II	8	E6175	74
20.0	21400	1.01	I	8	C6145	88
		1.38	I	8	D6165	88
		2.02	III	8	E6175	88

Note: [1] Y6 position is not available for ratio 11 and 18.

Gearmotors

Selection
Tables

60 Hz, 1750 RPM, Single Reduction Selection Tables



Vertical Motor Shaft Y5, Y6 Mounting Positions

Dimensions on pages 3.52–3.57

Output Speed RPM	Output Torque in·lbs	Service Factor	AGMA Class	HP Symbol	SELECTION	
					Frame Size	Ratio
17.2	24900	1.38	I	8	D6165	102
		2.02	III	8	E6175	102
14.3	30000	1.38	I	8	D6165	123
11.6	36900	1.38	I	8	E6175	151
9.80	43700	1.01	I	8	E6175	179
8.47	50600	1.01	I	8	E6175	207

7.5 HP

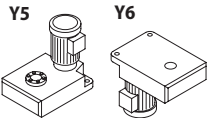
Output Speed RPM	Output Torque in·lbs	Service Factor	AGMA Class	HP Symbol	SELECTION	
					Frame Size	Ratio
167	3510	1.26	I	10	C6140	11 ^[1]
		1.47	II	10	C6145	11 ^[1]
		1.68	II	10	D6160	11 ^[1]
		2.00	III	10	D6165	11 ^[1]
		2.69	III	10	E6170	11 ^[1]
		2.93	III	10	E6175	11 ^[1]
100	5840	1.26	I	10	C6140	18 ^[1]
		1.47	II	10	C6145	18 ^[1]
		1.68	II	10	D6160	18 ^[1]
		2.00	III	10	D6165	18 ^[1]
		2.69	III	10	E6170	18 ^[1]
		2.93	III	10	E6175	18 ^[1]
83.3	7010	1.48	II	10	C6145	21
62.5	9350	1.48	II	10	C6145	28
		2.03	III	10	D6165	28
45.5	12900	1.48	II	10	C6145	39
		2.03	III	10	D6165	39
38.5	15200	1.01	I	10	C6145	46
		1.48	II	10	D6165	46
		1.89	II	10	E6175	46
33.3	17500	1.01	I	10	C6145	53
		1.48	II	10	D6165	53
		1.60	II	10	E6175	53
29.4	19900	1.48	II	10	D6165	60
23.8	24500	1.01	I	10	D6165	74
		1.29	I	10	E6175	74
20.0	29200	1.01	I	10	D6165	88
		1.48	II	10	E6175	88
17.2	33900	1.01	I	10	D6165	102
		1.48	II	10	E6175	102
14.3	40900	1.01	I	10	D6165	123
11.6	50300	1.01	I	10	E6175	151

10 HP

Note: [1] Y6 position is not available for ratio 11 and 18.

Selection Tables 60 Hz, 1750 RPM, Single Reduction

Vertical Motor Shaft Y5, Y6 Mounting Positions



Dimensions on pages 3.52–3.57

15 HP

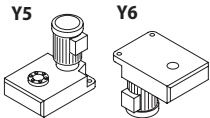
Output Speed RPM	Output Torque in•lbs	Service Factor	AGMA Class	HP Symbol	SELECTION	
					Frame Size	Ratio
167	5140	0.86	–	15	C6140	11 ^[1]
		1.00	I	15	C6145	11 ^[1]
		1.15	I	15	D6160	11 ^[1]
		1.36	I	15	D6165	11 ^[1]
		1.84	II	15	E6170	11 ^[1]
		2.00	III	15	E6175	11 ^[1]
100	8570	0.86	–	15	C6140	18 ^[1]
		1.00	I	15	C6145	18 ^[1]
		1.15	I	15	D6160	18 ^[1]
		1.36	I	15	D6165	18 ^[1]
		1.84	II	15	E6170	18 ^[1]
		2.00	III	15	E6175	18 ^[1]
83.3	10300	1.01	I	15	C6145	21
62.5	13700	1.01	I	15	C6145	28
		1.38	I	15	D6165	28
45.5	18900	1.01	I	15	C6145	39
		1.38	I	15	D6165	39
38.5	22300	1.01	I	15	D6165	46
		1.29	I	15	E6175	46
33.3	25700	1.01	I	15	D6165	53
		1.09	I	15	E6175	53
29.4	29100	1.01	I	15	D6165	60
23.8	36000	0.88	–	15	E6175	74
20.0	42900	1.01	I	15	E6175	88
17.2	49700	1.01	I	15	E6175	102

20 HP

Output Speed RPM	Output Torque in•lbs	Service Factor	AGMA Class	HP Symbol	SELECTION	
					Frame Size	Ratio
167	7010	0.84	–	20	D6160	11 ^[1]
		1.00	I	20	D6165	11 ^[1]
		1.35	I	20	E6170	11 ^[1]
		1.47	II	20	E6175	11 ^[1]
100	11700	0.84	–	20	D6160	18 ^[1]
		1.00	I	20	D6165	18 ^[1]
		1.35	I	20	E6170	18 ^[1]
		1.47	II	20	E6175	18 ^[1]
62.5	18700	1.01	I	20	D6165	28
45.5	25700	1.01	I	20	D6165	39
38.5	30400	0.95	–	20	E6175	46
33.3	35100	0.80	–	20	E6175	53

Note: [1] Y6 position is not available for ratio 11 and 18.

60 Hz, 1750 RPM, Single Reduction **Selection Tables**



**Vertical Motor Shaft
Y5, Y6 Mounting Positions**

Dimensions on pages 3.52–3.57

Output Speed RPM	Output Torque in·lbs	Service Factor	AGMA Class	HP Symbol	SELECTION	
					Frame Size	Ratio
167	8650	0.81	–	25	D6165	11 ^[1]
		1.09	I	25	E6170	11 ^[1]
		1.19	I	25	E6175	11 ^[1]
100	14400	0.81	–	25	D6165	18 ^[1]
		1.09	I	25	E6170	18 ^[1]
		1.19	I	25	E6175	18 ^[1]
62.5	23100	0.82	–	25	D6165	28
45.5	31700	0.82	–	25	D6165	39

25 HP

Output Speed RPM	Output Torque in·lbs	Service Factor	AGMA Class	HP Symbol	SELECTION	
					Frame Size	Ratio
167	10300	0.92	–	30	E6170	11 ^[1]
		1.00	I	30	E6175	11 ^[1]
100	17100	0.92	–	30	E6170	18 ^[1]
		1.00	I	30	E6175	18 ^[1]

30 HP

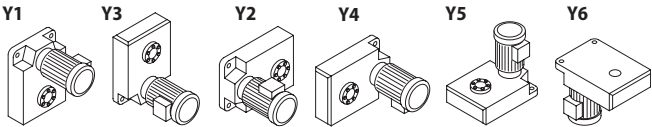
Note: [1] Y6 position is not available for ratio 11 and 18.

Gearmotors

Selection
Tables

Selection Tables 60 Hz, 1750 RPM, Double Reduction

Horizontal or Vertical Motor Shaft Y1, Y3, Y2, Y4, Y5, Y6 Mounting Positions



Dimensions on pages 3.58–3.63

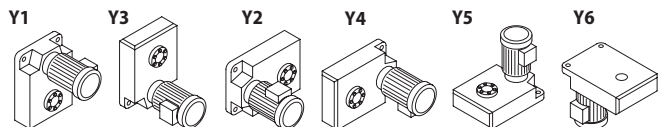
1/8 HP

Output Speed RPM	Output Torque in·lbs	Service Factor	AGMA Class	HP Symbol	SELECTION	
					Frame Size	Ratio
4.81	1540	2.51	III	01	Z609DA	364
4.13	1790	2.16	III	01	Z609DA	424
3.50	2120	1.83	II	01	Z609DA	501
3.03	2440	1.58	II	01	Z609DA	578
2.56	2880	1.34	I	01	Z609DA	683
		2.71	III	01	A610DA	683
2.16	3420	1.13	I	01	Z609DA	809
		2.29	III	01	A610DA	809
1.83	4040	0.96	–	01	Z609DA	956
		1.94	II	01	A610DA	956
1.57	4720	0.82	–	01	Z609DA	1117
		1.66	II	01	A610DA	1117
1.33	5580	1.40	II	01	A610DA	1320
		2.81	III	01	B612DA	1320
1.06	7000	1.12	I	01	A610DA	1656
		2.24	III	01	B612DA	1656
0.894	8270	0.95	–	01	A610DA	1957
		1.89	II	01	B612DA	1957
0.770	9600	0.82	–	01	A610DA	2272
		1.63	II	01	B612DA	2272
0.684	10800	1.45	II	01	B612DA	2559
		2.90	III	01	C614DA	2559
0.595	12400	1.26	I	01	B612DA	2944
		2.52	III	01	C614DA	2944
0.499	14800	1.06	I	01	B612DA	3511
		2.11	III	01	C614DA	3511
0.401	18400	0.85	–	01	B612DA	4365

1/4 HP

Output Speed RPM	Output Torque in·lbs	Service Factor	AGMA Class	HP Symbol	SELECTION	
					Frame Size	Ratio
4.81	3080	1.26	I	02	Z609DA	364
		2.15	III	02	A610DA	364
4.13	3580	1.08	I	02	Z609DA	424
		2.15	III	02	A610DA	424
3.50	4230	0.91	–	02	Z609DA	501
		1.85	II	02	A610DA	501
		2.15	III	02	B612DA	501
3.03	4880	1.60	II	02	A610DA	578
		2.15	III	02	B612DA	578
2.56	5770	1.36	I	02	A610DA	683
		2.15	III	02	B612DA	683
		2.72	III	02	B612DB	683

60 Hz, 1750 RPM, Double Reduction Selection Tables



Horizontal or Vertical Motor Shaft Y1, Y3, Y2, Y4, Y5, Y6 Mounting Positions

Dimensions on pages 3.58–3.63

1/4 HP

Output Speed RPM	Output Torque in-lbs	Service Factor	AGMA Class	HP Symbol	SELECTION	
					Frame Size	Ratio
2.16	6830	1.14	I	02	A610DA	809
		2.15	III	02	B612DA	809
		2.29	III	02	B612DB	809
1.83	8080	0.97	–	02	A610DA	956
		1.94	II	02	B612DA	956
		2.15	III	02	C614DA	956
1.57	9440	0.83	–	02	A610DA	1117
		1.66	II	02	B612DA	1117
		2.15	III	02	C614DA	1117
1.33	11200	1.40	II	02	B612DA	1320
		2.15	III	02	C614DA	1320
		2.81	III	02	C614DB	1320
1.06	14000	1.12	I	02	B612DA	1656
		2.15	III	02	C614DA	1656
		2.24	III	02	C614DB	1656
0.894	16500	0.95	–	02	B612DA	1957
		1.89	II	02	C614DA	1957
0.770	19200	0.82	–	02	B612DA	2272
		1.63	II	02	C614DA	2272
		2.83	III	02	D616DA	2272
0.684	21600	1.45	II	02	C614DA	2559
		2.51	III	02	D616DA	2559
0.595	24900	1.26	I	02	C614DA	2944
		2.18	III	02	D616DA	2944
0.499	29700	1.06	I	02	C614DA	3511
		2.56	III	02	E617DA	3511
0.401	36900	0.85	–	02	C614DA	4365
		2.06	III	02	E617DA	4365
0.242	61100	0.89	–	02	D616DA	7228
0.164	90100	0.84	–	02	E617DA	10658

Gearmotors

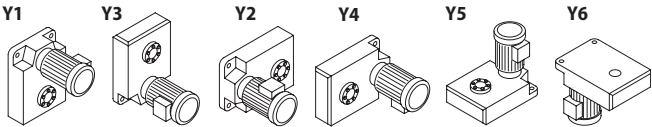
Selection
Tables

1/3 HP

Output Speed RPM	Output Torque in-lbs	Service Factor	AGMA Class	HP Symbol	SELECTION	
					Frame Size	Ratio
4.81	3850	1.01	I	03	Z609DA	364
		1.72	II	03	A610DA	364
4.13	4470	0.86	–	03	Z609DA	424
		1.72	II	03	A610DA	424
3.50	5290	1.48	II	03	A610DA	501
		1.72	II	03	B612DA	501
		2.96	III	03	B612DB	501

Selection Tables 60 Hz, 1750 RPM, Double Reduction

Horizontal or Vertical Motor Shaft Y1, Y3, Y2, Y4, Y5, Y6 Mounting Positions



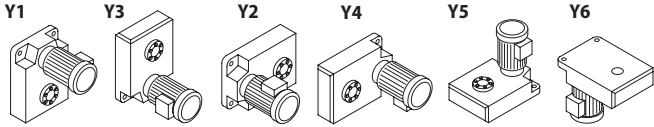
Dimensions on pages 3.58–3.63

1/3 HP	Output Speed RPM	Output Torque in•lbs	Service Factor	AGMA Class	HP Symbol	SELECTION	
						Frame Size	Ratio
3.03	6100	6100	1.28	I	03	A610DA	578
			1.72	II	03	B612DA	578
			2.57	III	03	B612DB	578
2.56	7210	7210	1.09	I	03	A610DA	683
			1.72	II	03	B612DA	683
			2.17	III	03	B612DB	683
2.16	8540	8540	0.92	–	03	A610DA	809
			1.72	II	03	B612DA	809
			1.83	II	03	B612DB	809
1.83	10100	10100	1.55	II	03	B612DA	956
			1.72	II	03	C614DA	956
1.57	11800	11800	1.33	I	03	B612DA	1117
			1.72	II	03	C614DA	1117
			2.66	III	03	C614DB	1117
1.33	13900	13900	1.12	I	03	B612DA	1320
			1.72	II	03	C614DA	1320
			2.25	III	03	C614DB	1320
1.06	17500	17500	0.90	–	03	B612DA	1656
			1.72	II	03	C614DA	1656
			1.79	II	03	C614DB	1656
0.894	20700	20700	1.52	II	03	C614DA	1957
			2.63	III	03	D616DA	1957
0.770	24000	24000	1.31	I	03	C614DA	2272
			2.26	III	03	D616DA	2272
0.684	27000	27000	1.16	I	03	C614DA	2559
			2.01	III	03	D616DA	2559
			2.81	III	03	E617DA	2559
0.595	31100	31100	1.01	I	03	C614DA	2944
			1.75	II	03	D616DA	2944
			2.44	III	03	E617DA	2944
0.499	37100	37100	0.84	–	03	C614DA	3511
			2.05	III	03	E617DA	3511
0.401	46100	46100	1.64	II	03	E617DA	4365

Gearmotors

Selection
Tables

60 Hz, 1750 RPM, Double Reduction Selection Tables



Horizontal or Vertical Motor Shaft Y1, Y3, Y2, Y4, Y5, Y6 Mounting Positions

Dimensions on pages 3.58–3.63

1/2 HP

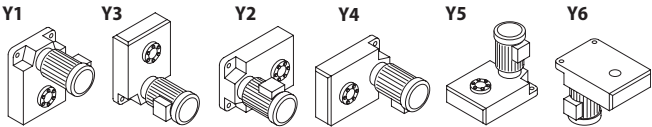
Output Speed RPM	Output Torque in·lbs	Service Factor	AGMA Class	HP Symbol	SELECTION	
					Frame Size	Ratio
4.81	6150	1.07	I	05	A610DA	364
		2.55	III	05	B612DB	364
4.13	7160	1.07	I	05	A610DA	424
		2.19	III	05	B612DB	424
3.50	8460	0.92	–	05	A610DA	501
		1.07	I	05	B612DA	501
		1.85	II	05	B612DB	501
3.03	9760	0.80	–	05	A610DA	578
		1.07	I	05	B612DA	578
		1.60	II	05	B612DB	578
2.56	11500	1.07	I	05	B612DA	683
		1.36	I	05	B612DB	683
		2.72	III	05	C614DB	683
2.16	13700	1.07	I	05	B612DA	809
		1.15	I	05	B612DB	809
		2.29	III	05	C614DB	809
1.83	16200	0.97	–	05	B612DA	956
		1.07	I	05	C614DA	956
		1.94	II	05	C614DB	956
1.57	18900	0.83	–	05	B612DA	1117
		1.07	I	05	C614DA	1117
		1.66	II	05	C614DB	1117
		2.88	III	05	D616DA	1117
1.33	22300	1.07	I	05	C614DA	1320
		1.40	II	05	C614DB	1320
		2.44	III	05	D616DA	1320
1.06	28000	1.07	I	05	C614DA	1656
		1.12	I	05	C614DB	1656
		1.94	II	05	D616DA	1656
		2.71	III	05	E617DA	1656
0.894	33100	0.95	–	05	C614DA	1957
		1.64	II	05	D616DA	1957
		2.29	III	05	E617DA	1957
0.770	38400	0.82	–	05	C614DA	2272
		1.42	II	05	D616DA	2272
		1.98	II	05	E617DA	2272
0.684	43200	1.26	I	05	D616DA	2559
		1.75	II	05	E617DA	2559
0.595	49800	1.09	I	05	D616DA	2944
		1.52	II	05	E617DA	2944
0.499	59300	0.92	–	05	D616DA	3511
		1.28	I	05	E617DA	3511
0.401	73800	1.03	I	05	E617DA	4365
0.338	87500	0.87	–	05	E617DA	5177

Gearmotors

Selection
Tables

Selection Tables 60 Hz, 1750 RPM, Double Reduction

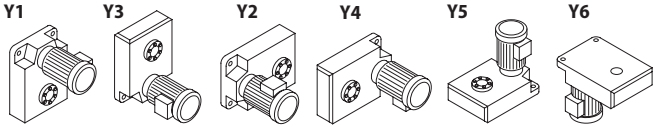
Horizontal or Vertical Motor Shaft Y1, Y3, Y2, Y4, Y5, Y6 Mounting Positions



Dimensions on pages 3.58–3.63

Output Speed RPM	Output Torque in•lbs	Service Factor	AGMA Class	HP Symbol	SELECTION	
					Frame Size	Ratio
4.81	8460	1.85	II	08	B612DB	364
		2.91	III	08	C614DB	364
4.13	9840	1.59	II	08	B612DB	424
		2.91	III	08	C614DB	424
3.50	11600	1.35	I	08	B612DB	501
		2.69	III	08	C614DB	501
		2.91	III	08	D616DA	501
3.03	13400	1.17	I	08	B612DB	578
		2.33	III	08	C614DB	578
		2.91	III	08	D616DA	578
2.56	15900	0.99	–	08	B612DB	683
		1.97	II	08	C614DB	683
		2.91	III	08	D616DA	683
2.16	18800	0.83	–	08	B612DB	809
		1.67	II	08	C614DB	809
		2.89	III	08	D616DA	809
1.83	22200	1.41	II	08	C614DB	956
		2.45	III	08	D616DA	956
		2.91	III	08	E617DA	956
1.57	26000	1.21	I	08	C614DB	1117
		2.09	III	08	D616DA	1117
		2.91	III	08	E617DA	1117
1.33	30700	1.02	I	08	C614DB	1320
		1.77	II	08	D616DA	1320
		2.47	III	08	E617DA	1320
1.06	38500	0.81	–	08	C614DB	1656
		1.41	II	08	D616DA	1656
		1.97	II	08	E617DA	1656
0.894	45500	1.19	I	08	D616DA	1957
		1.67	II	08	E617DA	1957
0.770	52800	1.03	I	08	D616DA	2272
		1.44	II	08	E617DA	2272
0.684	59500	0.91	–	08	D616DA	2559
		1.28	I	08	E617DA	2559
0.595	68400	1.11	I	08	E617DA	2944
0.499	81600	0.93	–	08	E617DA	3511

60 Hz, 1750 RPM, Double Reduction Selection Tables



Horizontal or Vertical Motor Shaft Y1, Y3, Y2, Y4, Y5, Y6 Mounting Positions

Dimensions on pages 3.58–3.63

1 HP

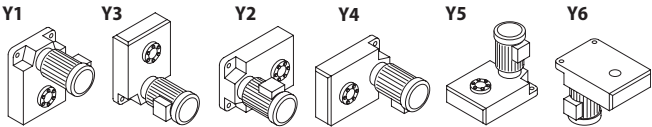
Output Speed RPM	Output Torque in·lbs	Service Factor	AGMA Class	HP Symbol	SELECTION	
					Frame Size	Ratio
4.81	11500	1.36	I	1	B612DB	364
		2.13	III	1	C614DB	364
		2.72	III	1	C614DC	364
4.13	13400	1.17	I	1	B612DB	424
		2.13	III	1	C614DB	424
		2.33	III	1	C614DC	424
3.50	15900	0.99	–	1	B612DB	501
		1.97	II	1	C614DB	501
		2.13	III	1	D616DA	501
3.03	18300	0.86	–	1	B612DB	578
		1.71	II	1	C614DB	578
		2.13	III	1	D616DA	578
		2.97	III	1	D616DB	578
2.56	21600	1.45	II	1	C614DB	683
		2.13	III	1	D616DA	683
		2.51	III	1	D616DB	683
2.16	25600	1.22	I	1	C614DB	809
		2.12	III	1	D616DA	809
		2.96	III	1	E617DB	809
1.83	30300	1.03	I	1	C614DB	956
		1.79	II	1	D616DA	956
		2.13	III	1	E617DA	956
		2.50	III	1	E617DB	956
1.57	35400	0.89	–	1	C614DB	1117
		1.54	II	1	D616DA	1117
		2.13	III	1	E617DA	1117
1.33	41800	1.30	I	1	D616DA	1320
		1.81	II	1	E617DA	1320
1.06	52500	1.04	I	1	D616DA	1656
		1.45	II	1	E617DA	1656
0.894	62000	0.88	–	1	D616DA	1957
		1.22	I	1	E617DA	1957
0.770	72000	1.05	I	1	E617DA	2272
0.684	81100	0.94	–	1	E617DA	2559
0.595	93300	0.81	–	1	E617DA	2944

Gearmotors

Selection
Tables

Selection Tables 60 Hz, 1750 RPM, Double Reduction

Horizontal or Vertical Motor Shaft
Y1, Y3, Y2, Y4, Y5, Y6 Mounting Positions



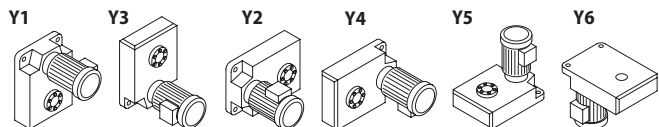
Dimensions on pages 3.58–3.63

1.5 HP	Output Speed RPM	Output Torque in•lbs	Service Factor	AGMA Class	SELECTION	
					HP Symbol	Ratio
	4.81	16900	0.93	–	1H	B612DB 364
			1.45	II	1H	C614DB 364
			1.85	II	1H	C614DC 364
	4.13	19700	1.45	II	1H	C614DB 424
			1.59	II	1H	C614DC 424
			2.76	III	1H	D616DB 424
	3.50	23300	1.35	I	1H	C614DB 501
			1.45	II	1H	D616DA 501
			2.34	III	1H	D616DB 501
	3.03	26800	1.17	I	1H	C614DB 578
			1.45	II	1H	D616DA 578
			2.02	III	1H	D616DB 578
			2.83	III	1H	E617DB 578
			2.83	III	1H	E617DC 578
	2.56	31700	0.99	–	1H	C614DB 683
			1.45	II	1H	D616DA 683
			1.71	II	1H	D616DB 683
			2.39	III	1H	E617DB 683
	2.16	37600	0.83	–	1H	C614DB 809
			1.45	II	1H	D616DA 809
			2.02	III	1H	E617DB 809
	1.83	44400	1.22	I	1H	D616DA 956
			1.45	II	1H	E617DA 956
			1.71	II	1H	E617DB 956
	1.57	51900	1.05	I	1H	D616DA 1117
			1.45	II	1H	E617DA 1117
	1.33	61300	0.89	–	1H	D616DA 1320
			1.24	I	1H	E617DA 1320
	1.06	77000	0.99	–	1H	E617DA 1656
	0.894	90900	0.83	–	1H	E617DA 1957

Gearmotors

Selection
Tables

60 Hz, 1750 RPM, Double Reduction Selection Tables



Horizontal or Vertical Motor Shaft Y1, Y3, Y2, Y4, Y5, Y6 Mounting Positions

Dimensions on pages 3.58–3.63

2 HP

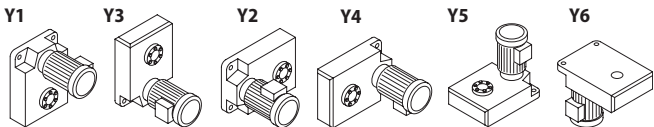
Output Speed RPM	Output Torque in-lbs	Service Factor	AGMA Class	HP Symbol	SELECTION	
					Frame Size	Ratio
4.81	23100	1.07	I	2	C614DB	364
		1.36	I	2	C614DC	364
		2.24	III	2	D616DB	364
		2.36	III	2	D616DC	364
4.13	26800	1.07	I	2	C614DB	424
		1.17	I	2	C614DC	424
		2.02	III	2	D616DB	424
		2.24	III	2	E617DB	424
		2.83	III	2	E617DC	424
3.50	31700	0.99	–	2	C614DB	501
		1.07	I	2	D616DA	501
		1.71	II	2	D616DB	501
		2.24	III	2	E617DB	501
		2.39	III	2	E617DC	501
3.03	36600	0.86	–	2	C614DB	578
		1.07	I	2	D616DA	578
		1.48	II	2	D616DB	578
		2.07	III	2	E617DB	578
		2.07	III	2	E617DC	578
2.56	43300	1.07	I	2	D616DA	683
		1.26	I	2	D616DB	683
		1.75	II	2	E617DB	683
2.16	51200	1.06	I	2	D616DA	809
		1.48	II	2	E617DB	809
1.83	60600	0.90	–	2	D616DA	956
		1.07	I	2	E617DA	956
		1.25	I	2	E617DB	956
1.57	70800	1.07	I	2	E617DA	1117
1.33	83600	0.91	–	2	E617DA	1320

Gearmotors

Selection
Tables

Selection Tables 60 Hz, 1750 RPM, Double Reduction

Horizontal or Vertical Motor Shaft
Y1, Y3, Y2, Y4, Y5, Y6 Mounting Positions



Dimensions on pages 3.58–3.63

3 HP

Output Speed RPM	Output Torque in·lbs	Service Factor	AGMA Class	HP Symbol	SELECTION	
					Frame Size	Ratio
4.81	33800	0.93	–	3	C614DC	364
		1.53	II	3	D616DB	364
		1.61	II	3	D616DC	364
		2.24	III	3	E617DC	364
4.13	39400	1.38	I	3	D616DB	424
		1.53	II	3	E617DB	424
		1.93	II	3	E617DC	424
3.50	46500	1.17	I	3	D616DB	501
		1.53	II	3	E617DB	501
		1.63	II	3	E617DC	501
3.03	53700	1.01	I	3	D616DB	578
		1.41	II	3	E617DB	578
		1.41	II	3	E617DC	578
2.56	63500	0.86	–	3	D616DB	683
		1.20	I	3	E617DB	683
2.16	75200	1.01	I	3	E617DB	809
1.83	88800	0.85	–	3	E617DB	956

5 HP

Output Speed RPM	Output Torque in·lbs	Service Factor	AGMA Class	HP Symbol	SELECTION	
					Frame Size	Ratio
4.81	56900	0.95	–	5	D616DC	364
		1.33	I	5	E617DC	364
4.13	66200	1.15	I	5	E617DC	424
3.50	78300	0.97	–	5	E617DC	501
3.03	90300	0.84	–	5	E617DC	578

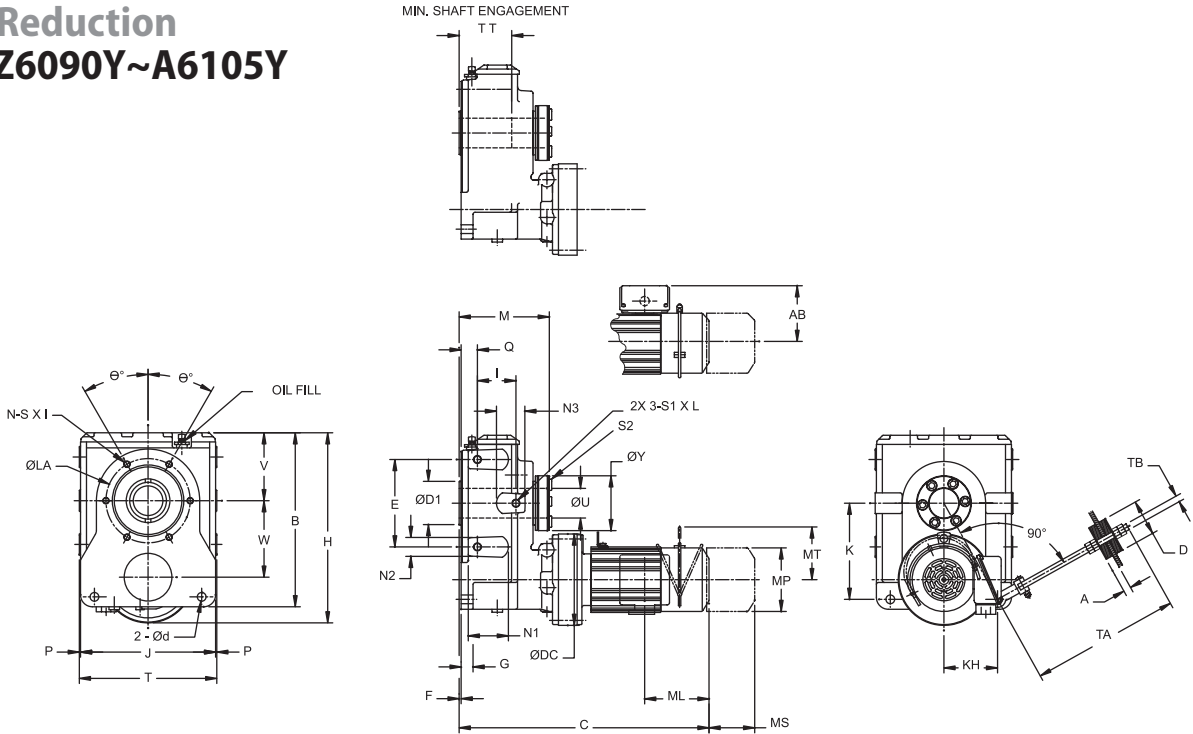
7.5 HP

Output Speed RPM	Output Torque in·lbs	Service Factor	AGMA Class	HP Symbol	SELECTION	
					Frame Size	Ratio
4.81	84600	0.90	–	8	E617DC	364

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Dimensions

Single Reduction EHYM-Z6090Y~A6105Y



Gearmotors All dimensions are in inches.

Dimensions

Model	Motor HP	B	E	F	G	H	I	J	K	M	P	Q	T	TT	ϕU	
		Max (Std)	Min													
Z6090 Z6095	1/8															
	1/4															
	1/3															
	1/2															
	3/4	11.02	5.51	0.20	0.79	11.89	2.20	8.30	6.18	6.06	0.12	1.06	8.54	3.96	1-7/16	1-3/16
	1															
A6100 A6105	1-1/2															
	2															
	3															
	1/4															
	1/3															
	1/2															
	3/4	11.83	5.91	0.2	0.79	12.7	2.60	9.17	6.44	6.61	0.12	1.14	9.41	4.57	2-3/16	1-11/16
	1															
	1-1/2															
	2															
	3															

Model	Motor HP	V	W	ϕY	ϕd	$\phi D1$	ϕDC	KH	N1	N2	N3	S2	TA	A	D	TB
Z6090 Z6095	1/8															
	1/4															
	1/3															
	1/2															
	3/4	4.25	4.69	3.23	0.55	2.56	5.91	3.54	1.02	1.02	N/A	M10	17.50	0.63	2.36	M20
	1															
A6100 A6105	1-1/2															
	2															
	3															
	1/4															
	1/3															
	1/2															
	3/4	4.61	5.14	4.09	0.71	3.35	5.91	3.74	1.10	1.10	N/A	M12	17.50	0.63	2.36	M20
	1															
	1-1/2															
	2															
	3															

Dimensions

Single Reduction EHYM-Z6090Y~A6105Y (cont.)

All dimensions are in inches.

Model	Motor HP	ØLA	ØP	N	S x L	S1 X L	With Standard Motor				Weight (lb)
							C	AB	ML	MP	
Z6090 Z6095	1/8	4.72	0	4	M10x0.79	M10x0.79	12.01	5.04	1.48	4.15	64
	1/4						13.66	5.04	2.32	4.61	66
	1/3						13.66	5.04	2.32	4.61	66
	1/2						14.45	5.04	2.32	4.61	68
	3/4						16.06	5.32	3.23	5.98	77
	1						16.06	5.32	3.23	5.98	77
	1-1/2						17.36	5.52	3.35	6.49	86
	2						17.36	5.52	3.35	6.49	86
A6100 A6105	1/4	6.10	30	6	M12x0.79	M12x0.87	14.80	5.04	2.32	4.61	88
	1/3						14.80	5.04	2.32	4.61	88
	1/2						15.60	5.04	2.32	4.61	90
	3/4						17.20	5.32	3.23	5.98	99
	1						17.20	5.32	3.23	5.98	99
	1-1/2						18.50	5.52	3.35	6.49	108
	2						18.50	5.52	3.35	6.49	108
	3						19.29	5.79	4.17	6.99	117

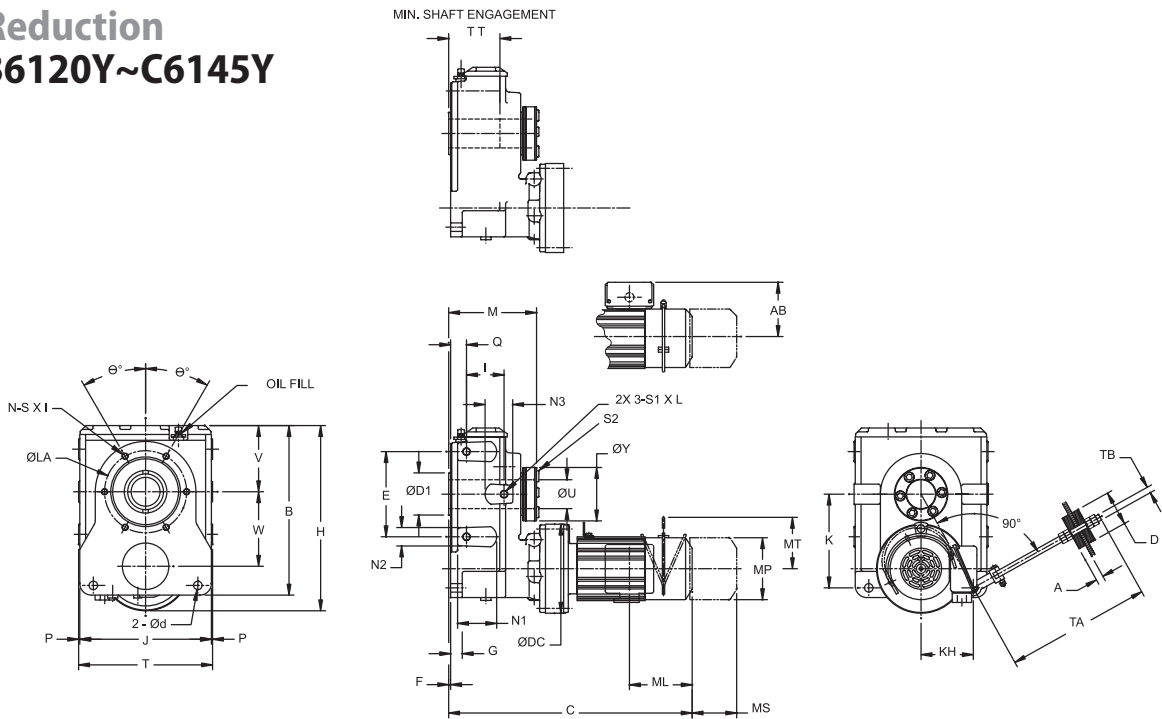
Gearmotors

Dimensions

Model	Motor HP	With Standard Motor & Brake						Weight (lb)
		C	AB	ML	MP	MS	MT	
Z6090 Z6095	1/8	13.39	5.04	1.48	4.15	1.93	—	68
	1/4	14.92	5.04	2.32	4.61	2.40	—	71
	1/3	14.92	5.04	2.32	4.61	2.40	—	71
	1/2	15.71	5.04	2.32	4.61	2.40	—	73
	3/4	17.76	5.32	3.23	5.98	3.66	4.17	84
	1	17.76	5.32	3.23	5.98	3.66	4.17	84
	1-1/2	19.80	5.52	3.35	6.49	4.53	4.49	97
	2	19.80	5.52	3.35	6.49	4.53	4.49	97
A6100 A6105	1/4	16.06	5.04	2.32	4.61	2.40	—	90
	1/3	16.06	5.04	2.32	4.61	2.40	—	90
	1/2	16.85	5.04	2.32	4.61	2.40	—	93
	3/4	18.90	5.32	3.23	5.98	3.66	4.17	106
	1	18.90	5.32	3.23	5.98	3.66	4.17	106
	1-1/2	20.95	5.52	3.35	6.49	4.53	4.49	119
	2	20.95	5.52	3.35	6.49	4.53	4.49	119
	3	21.77	5.79	4.17	6.99	4.76	4.88	132

Dimensions

Single Reduction
EHYM-B6120Y~C6145Y



All dimensions are in inches.

Gearmotors

Dimensions

Model	Motor HP	B	E	F	G	H	I	J	K	M	P	Q	T	TT	ØU	
		Max (Std)	Min													
B6120 B6125	1/2															
	3/4															
	1															
	1.5	14.47	7.48	0.20	0.98	16.10	3.39	11.41	7.97	7.64	0.12	1.22	11.65	5.43	2-7/16	1-15/16
	2															
	3															
C6140 C6145	5															
	7-1/2															
	3/4															
	1															
	1-1/2															
	2	17.24	8.66	0.20	1.18	18.84	3.82	13.38	9.53	9.17	0.12	1.61	13.62	6.50	2-15/16	2-3/16

Model	Motor HP	V	W	ØY	Ød	ØD1	ØDC	KH	N1	N2	N3	S2	TA	A	D	TB
B6120 B6125	1/2															
	3/4															
	1															
	1.5	5.71	6.40	4.49	0.71	3.94	8.03	4.33	1.34	1.26	N/A	M12	17.87	0.63	2.36	M20
	2															
	3															
C6140 C6145	5															
	7-1/2															
	3/4															
	1															
	1-1/2															
	2	6.73	7.58	5.43	0.87	4.33	9.06	5.31	3.98	2.05	2.83	M16	18.37	0.75	3.54	M24

Dimensions

Single Reduction EHYM-B6120Y~C6145Y (cont.)

All dimensions are in inches.

Model	Motor HP	ØLA	ØP	N	S x L	S1 X L	With Standard Motor				Weight (lb)
							C	AB	ML	MP	
B6120 B6125	1/2	6.89	30	6	M12x0.87	M16x1.02	17.09	5.04	2.32	4.61	159
	3/4						18.50	5.32	3.23	5.98	163
	1						18.50	5.32	3.23	5.98	163
	1-1/2						19.80	5.52	3.35	6.49	172
	2						19.80	5.52	3.35	6.49	172
	3						20.59	5.79	4.17	6.99	181
	5						21.50	6.46	5.00	8.73	203
	7-1/2						23.23	6.46	5.00	8.73	218
C6140 C6145	3/4	8.35	30	6	M16x1.18	M20x1.38	21.02	5.32	3.23	5.98	260
	1						21.02	5.32	3.23	5.98	260
	1-1/2						22.32	5.52	3.35	6.49	269
	2						22.32	5.52	3.35	6.49	269
	3						23.11	5.79	4.17	6.99	276
	5						24.02	6.46	5.00	8.73	298
	7-1/2						25.75	6.46	5.00	8.73	313
	10						26.65	8.11	5.63	10.23	344
	15						29.02	8.11	5.63	10.23	375
	20						32.56	9.13	11.61	12.76	496

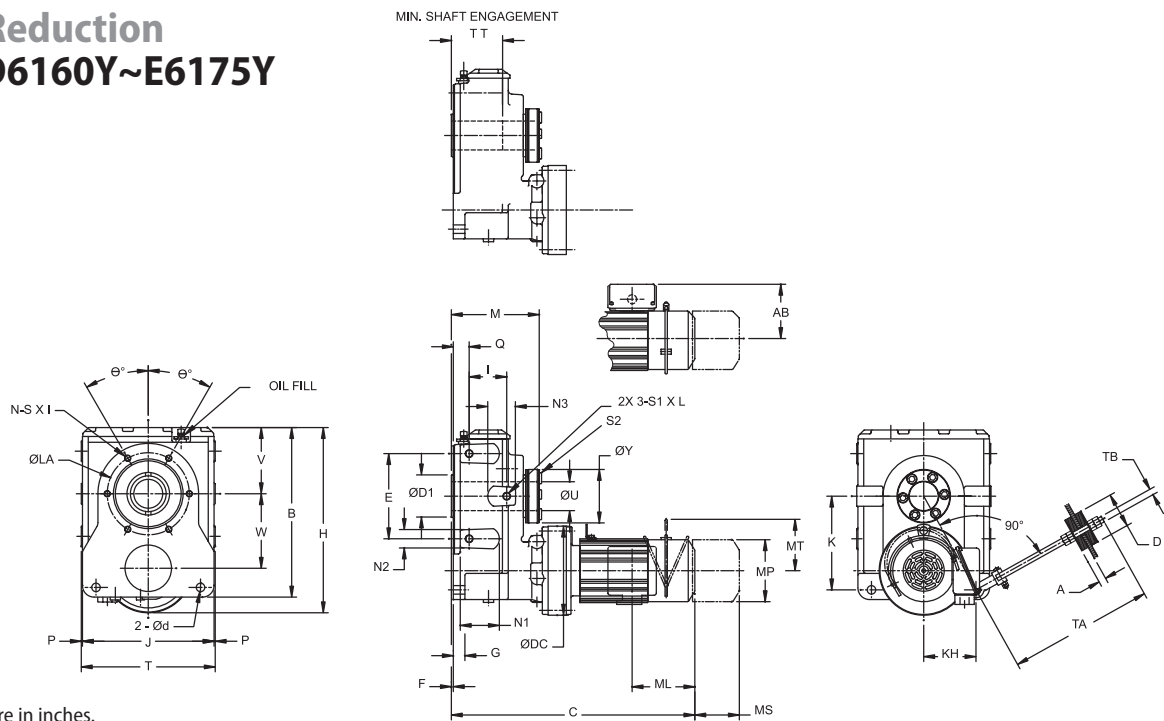
Gearmotors

Dimensions

Model	Motor HP	With Standard Motor & Brake						Weight (lb)
		C	AB	ML	MP	MS	MT	
B6120 B6125	1/2	18.35	5.04	2.32	4.61	2.40	—	161
	3/4	20.20	5.32	3.23	5.98	3.66	4.17	170
	1	20.20	5.32	3.23	5.98	3.66	4.17	170
	1-1/2	22.24	5.52	3.35	6.49	4.53	4.49	183
	2	22.24	5.52	3.35	6.49	4.53	4.49	183
	3	23.07	5.79	4.17	6.99	4.76	4.88	196
	5	24.33	6.46	5.00	8.73	5.20	6.18	225
	7-1/2	26.06	6.46	5.00	8.73	5.20	6.18	240
C6140 C6145	3/4	22.72	5.32	3.23	5.98	3.66	4.17	267
	1	22.72	5.32	3.23	5.98	3.66	4.17	267
	1-1/2	24.76	5.52	3.35	6.49	4.53	4.49	280
	2	24.76	5.52	3.35	6.49	4.53	4.49	280
	3	25.59	5.79	4.17	6.99	4.76	4.88	291
	5	26.85	6.46	5.00	8.73	5.20	6.18	320
	7-1/2	28.58	6.46	5.00	8.73	5.20	6.18	335
	10	30.39	8.11	5.63	10.23	6.69	7.17	384
	15	32.76	8.11	5.63	10.23	6.69	7.17	414
	20	36.10	9.13	11.61	12.76	8.66	—	571

Dimensions

Single Reduction
EHYM-D6160Y~E6175Y



All dimensions are in inches.

Model	Motor HP	B	E	F	G	H	I	J	K	M	P	Q	T	TT	ØU	
		Max (Std)	Min													
D6160 D6165	1-1/2															
	2															
	3															
	5															
	7-1/2	21.22	9.84	0.28	1.38	23.94	4.49	16.77	11.54	10.2	0.20	1.77	17.17	7.01	3-7/16	2-7/16
	10															
E6170 E6175	15															
	20	24.02	11.81	0.28	1.77	26.85	5.00	18.89	13.07	10.98	0.20	1.97	19.29	8.62	3-15/16	2-15/16
	25															
	30															
	40															

Model	Motor HP	V	W	ØY	Ød	ØD1	ØDC	KH	N1	N2	N3	S2	TA	A	D	TB
D6160 D6165	1-1/2															
	2															
	3															
	5															
	7-1/2	8.43	9.61	5.98	1.02	5.12	11.81	6.38	3.62	2.36	3.62	M16	19.50	0.75	3.54	M24
	10															
E6170 E6175	15															
	20	9.45	10.71	6.69	1.30	5.91	13.39	7.09	3.82	2.44	3.94	M16	20.25	0.75	3.54	M24
	25															
	30															
	40															

Dimensions

Single Reduction EHYM-D6160Y~E6175Y (cont.)

All dimensions are in inches.

Model	Motor HP	ØLA	ØP	N	S x L	S1 X L	With Standard Motor				Weight (lb)
							C	AB	ML	MP	
D6160 D6165	1-1/2	10.04	30	6	M20x1.38	M24x1.57	24.57	5.52	3.35	6.49	470
	2						24.57	5.52	3.35	6.49	470
	3						25.16	5.79	4.17	6.99	476
	5						26.06	6.46	5.00	8.73	496
	7-1/2						27.80	6.46	5.00	8.73	511
	10						28.90	8.11	5.63	10.23	545
	15						31.26	8.11	5.63	10.23	575
	20						34.61	9.13	11.61	12.76	694
	25						38.35	11.69	13.39	15.51	849
	30						38.35	11.69	13.39	15.51	849
E6170 E6175	5	11.02	22.5	8	M20x1.38	M24x1.57	27.99	6.46	5.00	8.73	661
	7-1/2						29.72	6.46	5.00	8.73	667
	10						30.43	8.11	5.63	10.23	710
	15						32.80	8.11	5.63	10.23	741
	20						35.94	9.13	11.61	12.76	860
	25						39.69	11.69	13.39	15.51	1010
	30						39.69	11.69	13.39	15.51	1010
	40						39.69	11.69	13.39	15.51	1060

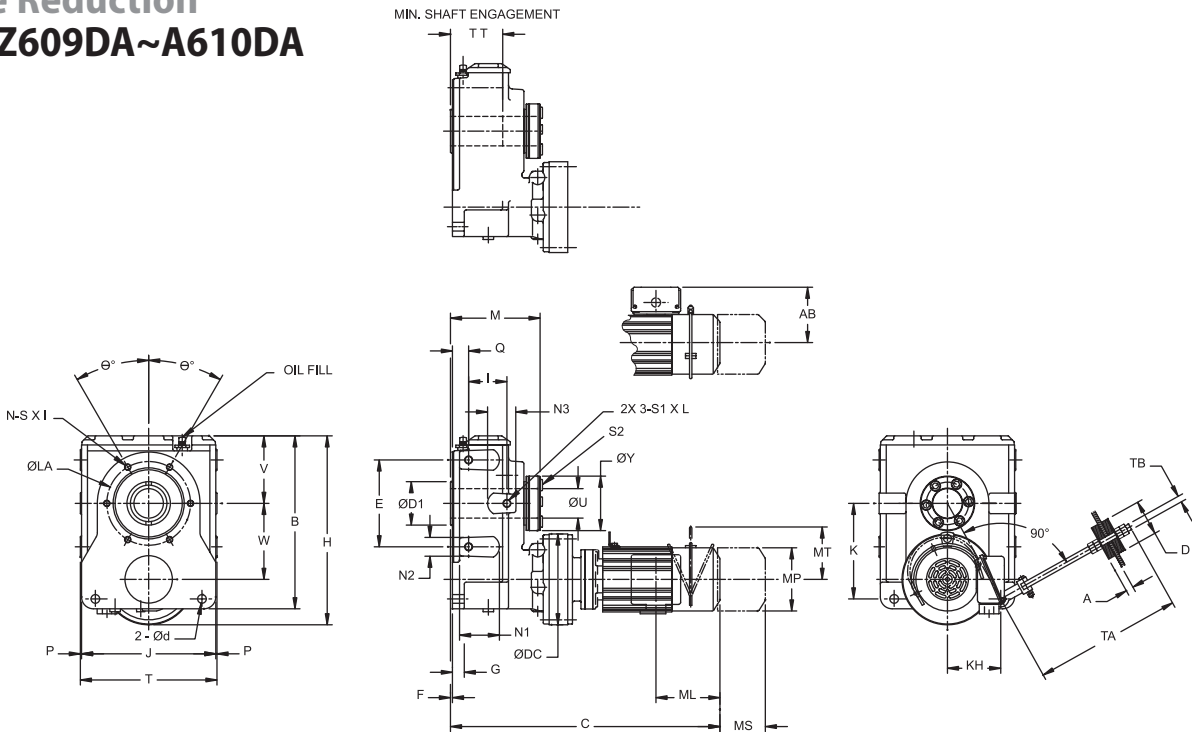
Gearmotors

Dimensions

Model	Motor HP	With Standard Motor & Brake						Weight (lb)
		C	AB	ML	MP	MS	MT	
D6160 D6165	1-1/2	27.00	5.52	3.35	6.49	4.53	4.49	481
	2	27.00	5.52	3.35	6.49	4.53	4.49	481
	3	27.63	5.79	4.17	6.99	4.76	4.88	492
	5	30.63	6.46	5.00	8.73	5.20	6.18	518
	7-1/2	32.64	6.46	5.00	8.73	5.20	6.18	533
	10	35.00	8.11	5.63	10.23	6.69	7.17	584
	15	38.15	8.11	5.63	10.23	6.69	7.17	613
	20	46.61	9.13	11.61	12.76	8.66	—	549
	25	46.61	11.69	13.39	15.51	14.45	—	961
	30	30.83	11.69	13.39	15.51	14.45	—	961
E6170 E6175	5	32.56	6.46	5.00	8.73	5.20	6.18	683
	7-1/2	34.17	6.46	5.00	8.73	5.20	6.18	699
	10	36.54	8.11	5.63	10.23	6.69	7.17	750
	15	39.49	8.11	5.63	10.23	6.69	7.17	780
	20	47.95	9.13	11.61	12.76	8.66	—	935
	25	47.95	11.69	13.39	15.51	14.45	—	1122
	30	47.95	11.69	13.39	15.51	14.45	—	1122
	40	47.95	11.69	13.39	15.51	14.57	—	1155

Dimensions

Double Reduction EHYM-Z609DA~A610DA



All dimensions are in inches.

Model	Motor HP	B	E	F	G	H	I	J	K	M	P	Q	T	TT	ØU	
															Max (Std)	Min
Z609DA	1/8	11.02	5.51	0.20	0.79	11.89	2.20	8.3	6.18	6.06	0.12	1.06	8.54	3.96	1-7/16	1-3/16
	1/4															
	1/3															
A610DA	1/8	11.85	5.91	0.2	0.79	12.7	2.60	9.17	6.44	6.61	0.12	1.14	9.41	4.57	2-3/16	1-11/16
	1/4															
	1/3															
	1/2															

Model	Motor HP	V	W	ØY	Ød	ØD1	ØDC	KH	N1	N2	N3	S2	TA	A	D	TB
Z609DA	1/8	4.25	4.69	3.23	0.55	2.56	5.91	3.54	1.02	1.02	N/A	M10	17.50	0.63	2.36	M20
	1/4															
	1/3															
A610DA	1/8	4.61	5.14	4.09	0.71	3.35	5.91	3.74	1.10	1.10	N/A	M12	17.50	0.63	2.36	M20
	1/4															
	1/3															
	1/2															

Dimensions

Double Reduction EHYM-Z609DA~A610DA (cont.)

All dimensions are in inches.

Model	Motor HP	ØLA	ØP	N	S x L	S1 X L	With Standard Motor				Weight (lb)
							C	AB	ML	MP	
Z609DA	1/8	4.72	0	4	M10x0.79	M10x0.79	13.88	5.04	1.48	4.15	75
	1/4						15.56	5.04	2.32	4.61	77
	1/3						15.56	5.04	2.32	4.61	77
A610DA	1/8	6.10	30	6	M12x0.79	M12x0.87	15.00	5.04	2.32	4.61	90
	1/4						16.70	5.04	2.32	4.61	93
	1/3						9.53	5.04	2.32	4.61	93
	1/2						17.48	5.32	3.23	5.98	203

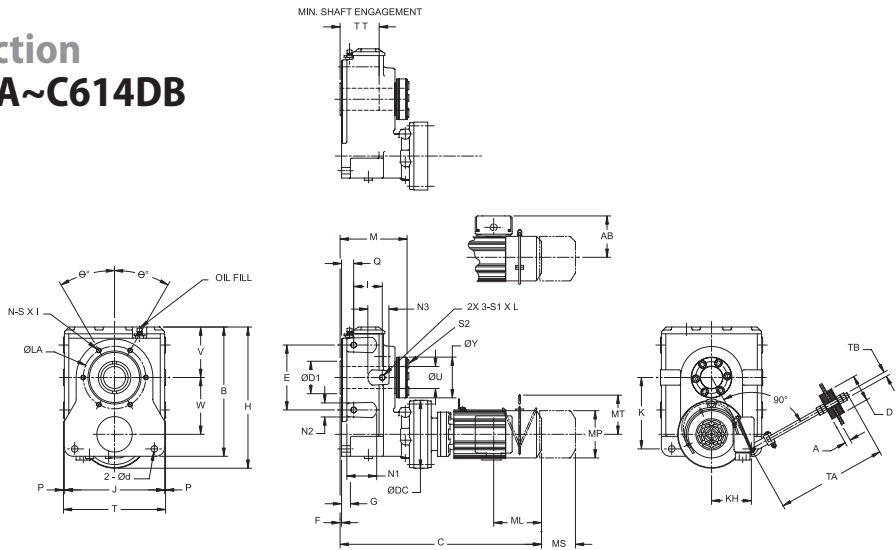
Model	Motor HP	With Standard Motor & Brake						Weight (lb)
		C	AB	ML	MP	MS	MT	
Z609DA	1/8	15.28	5.04	1.48	4.15	1.93	—	77
	1/4	16.81	5.04	2.32	4.61	2.40	—	79
	1/3	16.81	5.04	2.32	4.61	2.40	—	79
A610DA	1/8	16.42	5.04	2.32	4.61	2.40	—	93
	1/4	17.95	5.04	2.32	4.61	2.40	—	95
	1/3	17.95	5.04	2.32	4.61	2.40	—	95
	1/2	18.74	5.32	3.23	5.98	3.66	—	97

Gearmotors

Dimensions

Dimensions

Double Reduction
EHYM-B612DA~C614DB



All dimensions are in inches.

Model	Motor HP	B	E	F	G	H	I	J	K	M	P	Q	T	TT	ØU	
															Max (Std)	Min
B612DA	1/8	14.47	7.48	0.20	0.98	16.10	3.39	11.41	7.97	7.64	0.12	1.22	11.65	5.43	2-7/16	1-15/16
	1/4															
	1/3															
	1/2															
B612DB	1/3	14.47	7.48	0.20	0.98	16.10	3.39	11.41	7.97	7.64	0.12	1.22	11.65	5.43	2-7/16	1-15/16
	1/2															
	3/4															
	1															
C614DA	1/4	17.24	8.66	0.20	1.18	18.84	3.82	13.38	9.53	9.17	0.12	1.61	13.62	6.5	2-15/16	2-3/16
	1/3															
	1/2															
	1															
C614DB	1/3	17.24	8.66	0.20	1.18	18.84	3.82	13.38	9.53	9.17	0.12	1.61	13.62	6.5	2-15/16	2-3/16
	1/2															
	3/4															
	1															
C614DC	1/4	17.24	8.66	0.20	1.18	18.84	3.82	13.38	9.53	9.17	0.12	1.61	13.62	6.5	2-15/16	2-3/16
	1/3															
	1/2															
	1															

Model	Motor HP	V	W	ØY	Ød	ØD1	ØDC	KH	N1	N2	N3	S2	TA	A	D	TB
B612DA	1/8	5.71	6.40	4.49	0.71	3.94	8.03	4.33	1.34	1.26	N/A	M16	17.87	0.63	2.36	M20
	1/4															
	1/3															
	1/2															
B612DB	1/3	5.71	6.40	4.49	0.71	3.94	8.03	4.33	1.34	1.26	N/A	M16	17.87	0.63	2.36	M20
	1/2															
	3/4															
	1															
C614DA	1/4	6.73	7.58	5.43	0.87	4.33	9.06	5.31	3.98	2.05	2.83	M16	18.37	0.75	3.54	M24
	1/3															
	1/2															
	1															
C614DB	1/3	6.73	7.58	5.43	0.87	4.33	9.06	5.31	3.98	2.05	2.83	M16	18.37	0.75	3.54	M24
	1/2															
	3/4															
	1															
C614DC	1/4	6.73	7.58	5.43	0.87	4.33	9.06	5.31	3.98	2.05	2.83	M16	18.37	0.75	3.54	M24
	1/3															
	1/2															
	1															

Gearmotors
Selection
Tables

Dimensions

Double Reduction EHYM-B612DA~C614DB (cont.)

All dimensions are in inches.

Model	Motor HP	ØLA	OP	N	S x L	S1 X L	With Standard Motor				
							C	AB	ML	MP	Weight (lb)
B612DA	1/8	6.89	30	6	M12x0.87	M16x1.02	16.57	5.04	2.32	4.61	159
	1/4						18.23	5.32	3.23	5.98	161
	1/3						18.23	5.32	3.23	5.98	161
	1/2						19.01	5.52	3.35	6.49	163
B612DB	1/3	6.89	30	6	M12x0.87	M16x1.02	18.70	5.52	3.35	6.49	168
	1/2						19.49	5.79	4.17	6.99	170
	3/4						21.10	6.46	5.00	8.73	179
	1						21.10	6.46	5.00	8.73	179
C614DA	1/4	8.35	30	6	M16x1.18	M20x1.38	20.75	5.32	3.23	5.98	249
	1/3						20.75	5.32	3.23	5.98	249
	1/2						21.53	5.32	3.23	5.98	251
C614DB	1/3	8.35	30	6	M16x1.18	M20x1.38	21.10	5.79	4.17	6.99	254
	1/2						21.89	6.46	5.00	8.73	256
	3/4						23.50	6.46	5.00	8.73	265
	1						23.50	8.11	5.63	10.23	265
	1-1/2						24.80	8.11	5.63	10.23	271
	2						24.80	9.13	11.61	12.76	271
C614DC	1/4	8.35	30	6	M16X1.18	M20X1.38	21.80	5.04	2.32	4.61	258
	1/3						21.80	5.04	2.32	4.61	258
	1/2						22.43	5.04	2.32	4.61	260
	3/4						24.05	5.32	3.23	5.98	269
	1						24.05	5.32	3.23	5.98	269
	1-1/2						25.35	5.52	3.35	6.49	278
	2						25.35	5.52	3.35	6.49	278

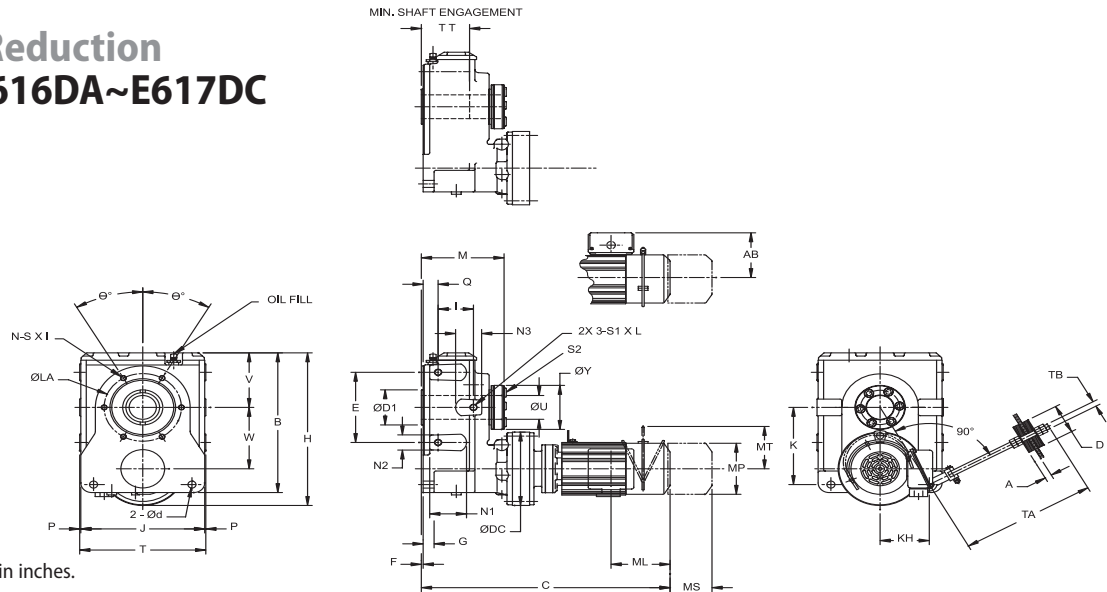
Gearmotors

Selection
Tables

Model	Motor HP	With Standard Motor & Brake						
		C	AB	ML	MP	MS	MT	Weight (lb)
B612DA	1/8	17.95	5.04	2.32	4.61	2.40	—	161
	1/4	19.49	5.32	3.23	5.98	3.66	—	163
	1/3	19.49	5.32	3.23	5.98	3.66	—	163
	1/2	20.28	5.52	3.35	6.49	4.53	—	165
B612DB	1/3	19.96	5.52	3.35	6.49	4.53	—	172
	1/2	20.75	5.79	4.17	6.99	4.76	—	174
	3/4	22.80	6.46	5.00	8.73	5.20	4.17	185
	1	22.80	6.46	5.00	8.73	5.20	4.17	185
C614DA	1/4	22.00	5.32	3.23	5.98	3.66	—	251
	1/3	22.00	5.32	3.23	5.98	3.66	—	251
	1/2	22.80	5.32	3.23	5.98	3.66	—	254
C614DB	1/3	22.36	5.79	4.17	6.99	4.76	—	258
	1/2	23.15	6.46	5.00	8.73	5.20	—	260
	3/4	25.20	6.46	5.00	8.73	5.20	4.17	271
	1	25.20	8.11	5.63	10.23	6.69	4.17	271
	1-1/2	27.24	8.11	5.63	10.23	6.69	4.49	282
	2	27.24	9.13	11.61	12.76	8.66	4.49	282
C614DC	1/4	22.91	5.04	2.32	4.61	2.4	—	262
	1/3	22.91	5.04	2.32	4.61	2.4	—	262
	1/2	23.70	5.04	2.32	4.61	2.4	—	264
	3/4	25.75	5.32	3.23	5.98	3.66	4.17	275
	1	25.75	5.32	3.23	5.98	3.66	4.17	275
	1-1/2	27.79	5.52	3.35	6.49	4.53	4.49	289
	2	27.79	5.52	3.35	6.49	4.53	4.49	289
	3	28.58	5.79	4.17	6.49	4.76	4.88	300

Dimensions

Double Reduction
EHYM-D616DA~E617DC



All dimensions are in inches.

Model	Motor HP	B	E	F	G	H	I	J	K	M	P	Q	T	TT	ØU	
															Max (Std)	Min
D616DA	1/2	21.22	9.84	0.28	1.38	23.94	4.49	16.77	11.54	10.20	0.20	1.77	17.17	7.01	3-7/16	2-7/16
	3/4															
	1															
	1-1/2															
D616DB	2	21.22	9.84	0.28	1.38	23.94	4.49	16.77	11.54	10.20	0.20	1.77	17.17	7.01	3-7/16	2-7/16
	3															
	1/2															
	3/4															
D616DC	1	21.22	9.84	0.28	1.38	23.94	4.49	16.77	11.54	10.20	0.20	1.77	17.17	7.01	3-7/16	2-7/16
	1.5															
	2															
	3															
E617DA	1/2	24.02	11.81	0.28	1.77	26.85	5.00	18.89	13.07	10.98	0.20	1.97	19.29	8.62	3-15/16	2-15/16
	3/4															
	1															
	1-1/2															
E617DB	2	24.02	11.81	0.28	1.77	26.85	5.00	18.89	13.07	10.98	0.20	1.97	19.29	8.62	3-15/16	2-15/16
	3															
	1-1/2															
	2															
E617DC	3/5	24.02	11.81	0.28	1.77	26.85	5.00	18.89	13.07	10.98	0.20	1.97	19.29	8.62	3-15/16	2-15/16
Model	Motor HP	V	W	ØY	Ød	ØD1	ØDC	KH	N1	N2	N3	S2	TA	A	D	TB
D616DA	1/2	8.43	9.61	5.98	1.02	5.12	11.81	6.38	3.62	2.36	3.62	M16	19.50	0.75	3.54	M24
	3/4															
	1															
	1-1/2															
D616DB	2	8.43	9.61	5.98	1.02	5.12	11.81	6.38	3.62	2.36	3.62	M16	19.50	0.75	3.54	M24
	3															
	1/2															
	3/4															
D616DC	1	8.43	9.61	5.98	1.02	5.12	11.81	6.38	3.62	2.36	3.62	M16	19.50	0.75	3.54	M24
	1.5															
	2															
	3															
E617DA	1/2	9.45	10.71	6.69	1.30	5.91	13.39	7.09	3.82	2.44	3.94	M16	20.25	0.75	3.54	M24
	3/4															
	1															
	1-1/2															
E617DB	2	9.45	10.71	6.69	1.30	5.91	13.39	7.09	3.82	2.44	3.94	M16	20.25	0.75	3.54	M24
	3															
	1-1/2															
	2															
E617DC	3/5	9.45	10.71	6.69	1.30	5.91	13.39	7.09	3.82	2.44	3.94	M16	20.25	0.75	3.54	M24

Dimensions

Double Reduction EHYM-D616DA~E617DC (cont.)

All dimensions are in inches.

Model	Motor HP	ØLA	OP	N	S x L	S1 X L	With Standard Motor				
							C	AB	ML	MP	Weight (lb)
D616DA	1/2	10.04	30	6	M20x1.38	M24x1.57	24.01	5.52	3.35	6.49	463
	3/4						25.63	5.52	3.35	6.49	472
	1						25.63	5.79	4.17	6.99	472
	1-1/2						26.93	6.46	5.00	8.73	481
	2						26.93	6.46	5.00	8.73	481
D616DB	1-1/2	10.04	30	6	M20x1.38	M24x1.57	27.48	8.11	5.63	10.23	485
	2						27.48	8.11	5.63	10.23	485
	3						28.27	8.11	5.63	10.23	494
D616DC	1/2	10.04	30	6	M20x1.38	M24x1.57	24.81	5.04	2.32	4.61	480
	3/4						26.22	5.32	3.23	5.98	489
	1						26.22	5.32	3.23	5.98	489
	1.5						27.52	5.52	3.35	6.49	498
	2						27.52	5.52	3.35	6.49	498
	3						28.35	5.79	4.17	6.99	507
E617DA	1/2	11.02	22.5	8	M20x1.38	M24x1.57	25.39	6.46	5.00	8.73	615
	3/4						27.00	6.46	5.00	8.73	624
	1						27.00	8.11	5.63	10.23	624
	1-1/2						28.30	8.11	5.63	10.23	631
	2						28.30	9.13	11.61	12.76	631
E617DB	1-1/2	11.02	22.5	8	M20x1.38	M24x1.57	28.86	11.69	13.39	15.51	637
	2						28.86	11.69	13.39	15.51	637
	3						29.64	11.69	13.39	15.51	646
E617DC	3	11.02	22.5	8	M20x1.38	M24x1.57	29.80	11.69	13.39	15.51	657
	5						30.70	11.69	13.39	15.51	679

Gearmotors

Selection
Tables

Model	Motor HP	With Standard Motor & Brake						
		C	AB	ML	MP	MS	MT	Weight (lb)
D616DA	1/2	25.28	5.52	3.35	6.49	4.53	—	467
	3/4	27.32	5.52	3.35	6.49	4.53	4.17	478
	1	27.32	5.79	4.17	6.99	4.76	4.17	478
	1-1/2	29.37	6.46	5.00	8.73	5.20	4.49	514
	2	29.37	6.46	5.00	8.73	5.20	4.49	514
D616DB	1-1/2	29.92	8.11	5.63	10.23	6.69	4.49	496
	2	29.92	8.11	5.63	10.23	6.69	4.49	496
	3	30.75	8.11	5.63	10.23	6.69	4.88	507
D616DC	1/2	26.06	5.04	2.32	4.61	2.40	—	485
	3/4	27.92	5.32	3.23	5.98	3.66	4.17	496
	1	27.92	5.32	3.23	5.98	3.66	4.17	496
	1.5	30.00	5.52	3.35	6.49	4.53	4.49	509
	2	30.00	5.52	3.35	6.49	4.53	4.49	509
	3	30.83	5.79	4.17	6.99	4.76	4.88	520
E617DA	1/2	26.65	6.46	5.00	8.73	5.20	—	619
	3/4	28.70	6.46	5.00	8.73	5.20	4.17	631
	1	28.70	8.11	5.63	10.23	6.69	4.17	631
	1-1/2	30.75	8.11	5.63	10.23	6.69	4.49	642
	2	30.75	9.13	11.61	12.76	8.66	4.49	642
E617DB	1-1/2	31.30	11.69	13.39	15.51	14.45	4.49	648
	2	31.30	11.69	13.39	15.51	14.45	4.49	648
	3	32.13	11.69	13.39	15.51	14.45	4.88	659
E617DC	3	32.28	11.69	13.39	15.51	14.45	4.88	672
	5	33.54	11.69	13.39	15.51	14.57	6.18	701

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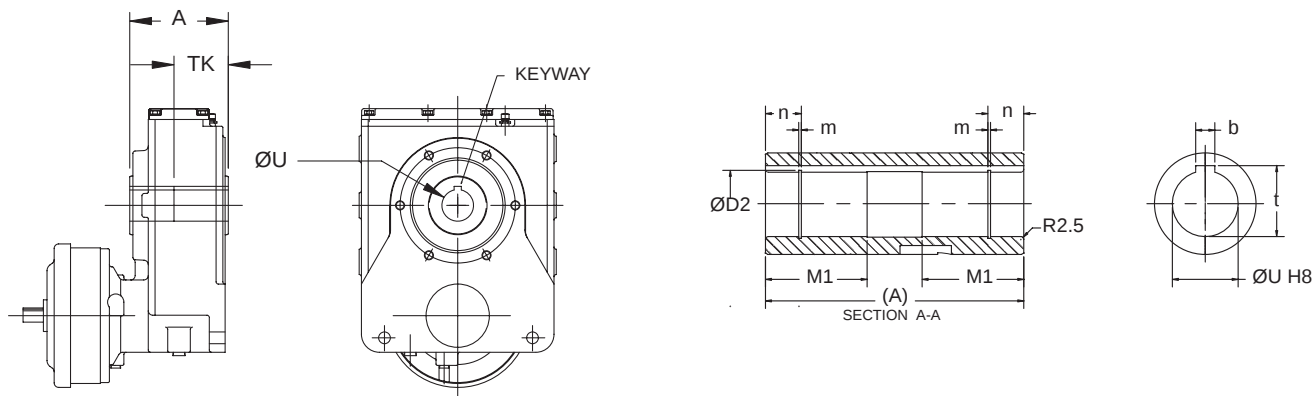


4

Options

Options

Keyed Hollow Bore



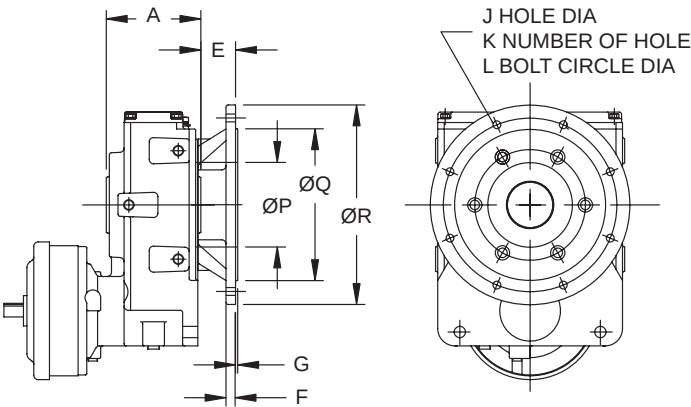
All dimensions are in millimeters.

Model	ØU	A	b	t	M1	Ø D2	n	m	TK*
Z	40	120	12	43.3	57	42.5	24	1.95	76
A	55	134	16	59.3	63	58	30	2.20	84
B	65	160	18	69.4	75	68	30	2.70	98
C	75	192	20	79.9	90	78	37	2.70	140
D	85	218	22	90.4	100	88.5	37	3.20	194
E	100	238	28	106.4	110	103.5	37	3.20	195

*Recommended minimum shaft engagement for shaft material 1045 steel with hardness Hb 225 - 265

Model	Available Bore Sizes			
	Inch Min.	Inch Max.	Metric (mm) Min.	Metric (mm) Max.
Z	1-3/16	1-1/2	30	40
A	1-3/4	2-3/16	45	55
B	2-3/16	2-5/8	55	65
C	2-7/16	3	60	75
D	2-3/4	3-7/16	70	85
E	3-3/16	3-15/16	80	100

Output Flange

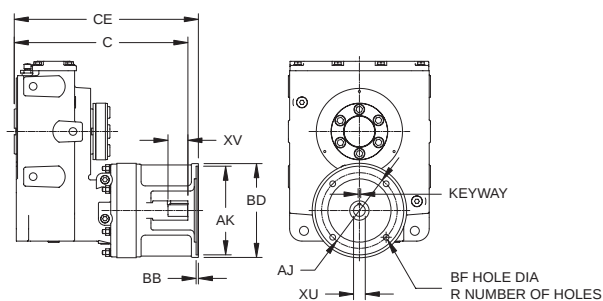


All dimensions are in inches.

Model	A	E	F	G	J	K	L	P	Q	R
Z	4.72	1.24	0.47	0.14	0.43	4	6.50	3.54	5.12	7.87
A	5.28	1.30	0.59	0.16	0.55	4	8.46	4.72	7.09	10.00
B	6.30	1.61	0.59	0.16	0.55	4	8.46	5.51	7.09	10.00
C	7.56	2.28	0.79	0.20	0.71	4	11.81	6.50	9.84	13.98
D	8.58	3.15	0.87	0.20	0.71	8	15.75	7.68	13.78	18.11
E	9.37	3.15	0.87	0.20	0.71	8	15.75	12.60	13.78	17.72

Options

Hollow Input



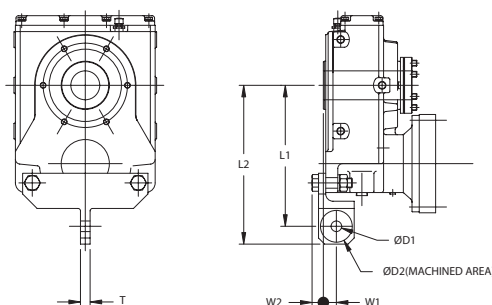
All dimensions are in inches.

Model	NEMA C-FACE ADAPTOR	AJ	AK	BB	BD	BF	C	CE	R	XU	XV	Keyway
Z6090/5Y	56C	5.875	4.50	0.20	6.69	0.43	9.06	10.08	4	0.625 +0.0007 -0.0000	1.18	3/16 x 3/32
	143TC-145TC	5.875	4.50	0.20	6.69	0.43	9.45	10.08	4	0.875 +0.0008 -0.0000	1.57	3/16 x 3/32
A6100/5Y	56C	5.875	4.50	0.20	6.69	0.43	9.96	11.02	4	0.625 +0.0007 -0.0000	1.18	3/16 x 3/32
	143TC-145TC	5.875	4.50	0.20	6.69	0.43	10.43	11.02	4	0.875 +0.0008 -0.0000	1.65	3/16 x 3/32
B6120/5Y	56C	5.875	4.50	0.22	6.69	0.43	12.09	13.23	4	0.625 +0.0007 -0.0000	1.18	3/16 x 3/32
	143TC-145TC	5.875	4.50	0.22	6.69	0.43	12.28	13.23	4	0.875 +0.0016 -0.0008	1.50	3/16 x 3/32
	182TC-184TC	7.25	8.50	0.22	8.98	0.55	13.39	14.45	4	1.125 +0.0016 -0.0008	1.97	1/4 x 1/8
	213TC-215TC	7.25	8.50	0.22	8.98	0.55	13.50	14.45	4	1.375 +0.0020 -0.0010	2.64	5/16 x 5/32
C6140/5Y	143TC-145TC	5.875	4.50	0.20	6.69	0.43	15.20	15.75	4	0.875 +0.0008 -0.0000	1.61	3/16 x 3/32
	182TC-184TC	7.25	8.50	0.22	9.00	0.55	16.65	17.66	4	1.125 +0.0016 -0.0008	1.91	1/4 x 1/8
	213TC-215TC	7.25	8.50	0.22	9.00	0.55	16.30	17.66	4	1.375 +0.0020 -0.0010	2.68	5/16 x 5/32
	254TC-256TC	7.25	8.50	0.22	9.00	0.55	16.30	17.66	4	1.625 +0.0020 -0.0010	2.99	3/8 x 3/8
D6160/5Y	182TC-184TC	7.25	8.50	0.22	8.98	0.55	18.07	19.02	4	1.125 +0.0016 -0.0008	2.01	1/4 x 1/8
	213TC-215TC	7.25	8.50	0.22	8.98	0.55	18.07	19.02	4	1.375 +0.0020 -0.0010	2.48	5/16 x 5/32
	254TC-256TC	7.25	8.50	0.22	8.98	0.55	18.07	19.02	4	1.625 +0.0020 -0.0010	3.11	3/8 x 3/8
E6170/5Y	(Not Available in Hollow Input. See Pages 2.14 – 2.21 For C-face Dimensions.)											

Cyclo HBB

Options

"T" Type Torque Arm

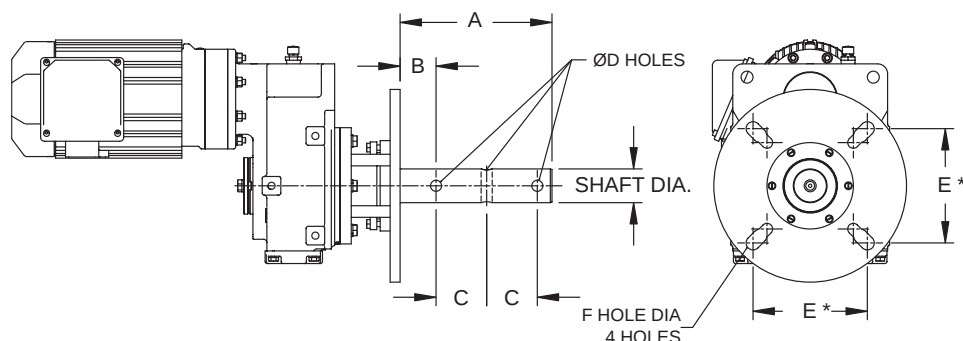


All dimensions are in inches.

Model	L1	L2	W1	W2	T	D1	D2	Bolt Size
Z	8.94	9.92	0.71	0.59	0.47	0.55	1.70	M12
A	9.39	10.57	0.91	0.67	0.63	0.71	2.09	M16
B	11.52	12.97	1.06	0.75	0.79	0.87	2.60	M20
C	14.06	15.83	1.26	1.02	1.02	1.02	3.27	M24
D	17.05	18.82	1.57	1.18	1.18	1.02	3.27	M24
E	18.98	21.14	2.20	1.50	1.42	1.30	4.06	M30

Options

Screw Conveyor Drive



- Complete Cyclo® HBB screw conveyor drive consists of reducer, CEMA drive shaft assembly and mounting adapter kit. The CEMA drive shaft and mounting adapter kit require customer assembly.
- All Cyclo® HBB reducers used as screw conveyor drives require R1 high capacity bearings.
- CEMA drive shafts are three hole style.

All dimensions are in inches.

Model	Shaft Dia.	A	B	C	ØD	E	F
Z, A, B	1-1/2	9	2.13	3	17/32	4	0.531
	2	9	2.13	3	21/32	5.13	0.669
	2-7/16	9.69	2.75	3	21/32	5.63	0.669
	3	9.88	2.88	3	25/32	6	0.827
C, D, E	2	9	2.13	3	21/32	5.13	0.669
	2-7/16	9.69	2.75	3	21/32	5.63	0.669
	3	9.88	2.88	3	25/32	6	0.827
	3-7/16	13.13	3.88	4	29/32	6.75	0.827

HBB Reducer Model	Drive Shaft Diameter (in.)	To Fit Screw Diameter (in.)	CEMA Steel Drive Shaft Assembly P/N	CEMA Stainless Drive Shaft Assembly P/N	Mounting Adapter Kit P/N
Z	1-1/2	6, 9	117Z4108-C3	117Z4108-S3	117Z4040
	2	9, 12	117Z4200-C3	117Z4200-S3	117Z4040
	2-7/16	12, 14	117Z4207-C3	117Z4207-S3	117Z4040
	3	12-20	117Z4300-C3	117Z4300-S3	117Z4040
A	1-1/2	6, 9	116E4108-C3	116E4108-S3	117A4041
	2	9, 12	116E4200-C3	116E4200-S3	117A4040
	2-7/16	12, 14	116E4207-C3	116E4207-S3	117A4040
	3	12-20	116E4300-C3	116E4300-S3	117A4040
B	1-1/2	6, 9	116F4108-C3	116F4108-S3	117B4041
	2	9, 12	116F4200-C3	116F4200-S3	117B4040
	2-7/16	12, 14	116F4207-C3	116F4207-S3	117B4040
	3	12-20	116F4300-C3	116F4300-S3	117B4040
C	2	9, 12	116G4200-C3	116G4200-S3	117C4040
	2-7/16	12, 14	116G4207-C3	116G4207-S3	117C4040
	3	12-20	116G4300-C3	116G4300-S3	117C4040
	3-7/16	18-24	116G4307-C3	116G4307-S3	117C4040
D	2	9, 12	116H4200-C3	116H4200-S3	117D4040
	2-7/16	12, 14	116H4207-C3	116H4207-S3	117D4040
	3	12-20	116H4300-C3	116H4300-S3	117D4040
	3-7/16	18-24	116H4307-C3	116H4307-S3	117D4040
E	2-7/16	12, 14	116J4207-C3	116J4207-S3	117E4040
	3	12-20	116J4300-C3	116J4300-S3	117E4040
	3-7/16	18-24	116J4307-C3	116J4307-S3	117E4040

5

Appendix

Cyclo® HBB

Appendix

Special Load Guidelines Overhung Load

Reducer/Gearmotor Allowable Overhung Load

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

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

- LEGEND
- HP:** Horsepower transmitted by shaft
 - Cf:** Load connection factor (Table. 5.1)
 - Lf:** Load location factor (Table 5.3 Input Shaft; Fig. 5.1 Input Shaft)
 - Sf:** Service factor (Determine from Table 5.2 and "How to Select," pages 2.2 and 3.2)
 - 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

Table 5.3 Input Shaft Overhung Load Location Factor, Lf

Model	L (inches)									
	0.25	0.50	0.75	1.00	1.25	1.50	1.75	2.00	2.50	3.00
Z6090, Z6095	0.90	1.09	1.52	2.03						
A6100, A6105	0.93	1.09	1.52	2.03						
B6120, B6125		0.87	1.10	1.43	1.77	2.12				
C6140, C6145		0.84	0.98	1.25	1.53	1.83	2.11			
D6160, D6165		0.94	0.97	1.06	1.22	1.36	1.51	1.66		
E6170, E6175			0.95	0.99	1.09	1.23	1.38	1.51	1.79	2.08

Figure 5.1

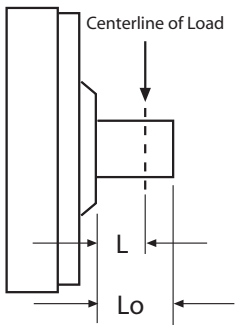


Table 5.4 Input Shaft Allowable Overhung Load (Lf, Cf, Fs =1)

Unit: lbs.

Model	Ratio	Shaft Speed (RPM)							
		1750	1450	1165	980	870	720	580	
Z6090, Z6095	6~17, 25~71, 119	66	66	66	66	66	66	66	
	21, 87	44	44	44	44	55	55	66	
A6100, A6105	6~11, 17~119	99	99	110	121	132	132	132	
	13, 15	99	77	99	110	110	121	132	
B6120, B6125	6~17	133	155	166	175	198	198	198	
	21~87	121	99	110	121	133	198	198	
C6140, C6145	6, 8	308	308	308	342	364	387	418	
	11~21	277	220	243	265	277	297	330	
	25	243	254	265	288	297	308	330	
	29~87	121	133	133	155	155	155	243	
D6160, D6165	8~25, 51, 59	398	398	441	463	486	486	486	
	29~43, 71, 87	243	265	288	308	308	353	398	
E6170, E6175	11~87	463	463	508	508	528	551	596	

Special Load Guidelines Inertia

Table 5.6 Moment of Inertia on Motor Shaft of Gearmotor⁽¹⁾

Units: lbs·inch²

Model	Reduction Ratio								
	11	18	21	28	39	46	53	60	74
Z6090, Z6095	–	–	0.475	0.337	0.247	0.245	0.231	0.200	0.150
A6100, A6105	1.737	0.711	0.513	0.331	0.191	0.173	0.149	0.108	0.108
B6120, B6125	5.609	2.213	17.408	1.245	0.735	0.728	0.660	0.496	0.530
C6140, C6145	14.638	5.711	5.130	3.263	2.124	1.662	1.443	1.245	1.019
D6160, D6165	41.724	16.382	13.441	8.721	5.369	4.617	4.036	3.379	2.965
E6170, E6175	87.210	35.226	32.866	22.640	16.142	14.159	12.244	11.457	10.328

Model	Reduction Ratio							
	88	102	123	151	179	207	249	305
Z6090, Z6095	0.142	0.118	0.091	0.088	0.085	0.063	0.083	0.062
A6100, A6105	0.095	0.066	0.059	0.054	0.071	0.048	0.067	0.045
B6120, B6125	0.482	0.340	0.316	0.295	0.400	0.276	0.386	0.263
C6140, C6145	0.913	0.821	0.770	0.708	0.681	0.674	0.650	0.643
D6160, D6165	2.698	2.370	2.226	2.090	2.035	2.028	1.925	1.888
E6170, E6175	9.747	9.166	8.858	8.550	8.413	8.276	8.208	8.140

Table 5.7 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 5.8 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								

Note: [1] Table 5.7 does not include the inertia of the integral motors. Total unit inertia is obtained by adding the reducer inertia to the motor inertia.

Special Load Guidelines Misc.

Table 5.9 Actual Reduction Ratio

Model	Nominal Reduction Ratio								
	11	18	21	28	39	46	53	60	74
Z6090, Z6095	–	–	21.80	27.73	38.13	45.07	52.00	58.93	72.80
A6100, A6105	10.50	16.80	21.00	28.00	38.50	45.50	52.50	59.50	73.50
B6120, B6125	10.50	17.12	21.00	28.00	38.50	45.50	52.50	59.50	73.50
C6140, C6145	10.89	17.50	21.00	28.00	38.50	45.50	52.50	59.50	73.50
D6160, D6165	10.75	17.61	20.80	27.73	38.13	45.07	52.00	58.93	72.80
E6170, E6175	10.75	17.51	20.80	27.73	38.13	45.07	52.00	58.93	72.80

Model	Nominal Reduction Ratio							
	88	102	123	151	179	207	249	305
Z6090, Z6095	86.67	100.5	121.3	149.1	176.8	204.5	246.1	301.6
A6100, A6105	87.50	101.5	122.5	150.5	178.5	206.5	248.5	304.5
B6120, B6125	87.50	101.5	122.5	150.5	178.5	206.5	248.5	304.5
C6140, C6145	87.50	101.5	122.5	150.5	178.5	206.5	248.5	304.5
D6160, D6165	86.67	100.5	121.3	149.1	176.8	204.5	246.1	301.6
E6170, E6175	86.67	100.5	121.3	149.1	176.8	204.5	246.1	301.6

Excessive Overloads

Cyclo® HBB 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.

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 5.10 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. 5.3).

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. 5.4). **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. 5.2 Taper-Grip® Bushing Parts

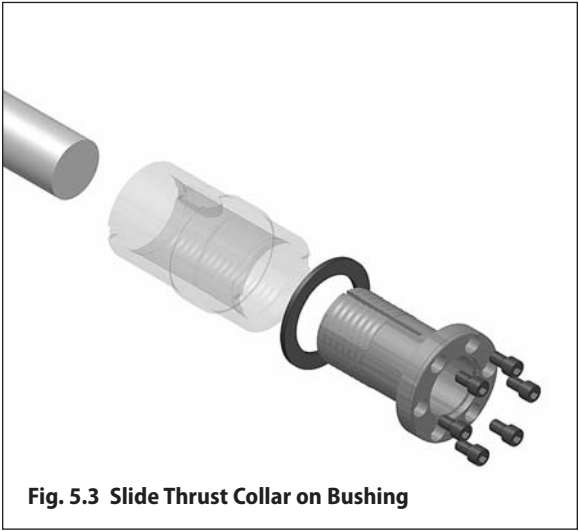


Fig. 5.3 Slide Thrust Collar on Bushing

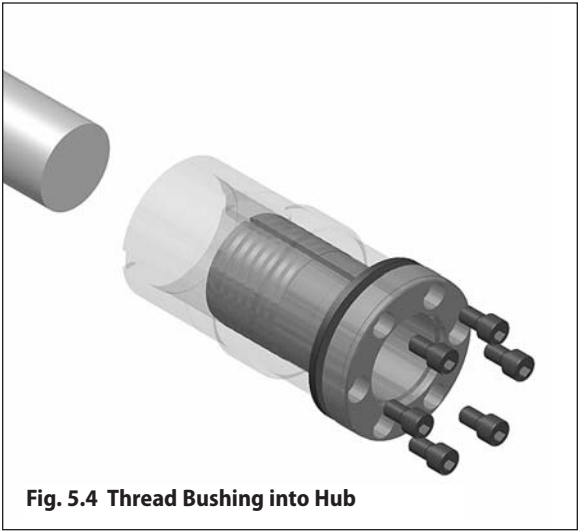


Fig. 5.4 Thread Bushing into Hub

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. 5.6). Refer to Fig. 5.5 and Table 5.11 below for minimum shaft to engagement.

Table 5.11 Minimum Shaft to Bushing Engagement

HBB Model	Minimum Shaft Engagement	
	mm	inches
Z	112.5	4.43
A	126	4.96
B	143	5.63
C	186	7.32
D	204	8.03
E	224	8.82

Step 7 – With a torque wrench, gradually tighten the capscrews to engage the bushing system. Use the appropriate tightening pattern ("star-pattern" see Fig. 5.6) to assure complete bushing engagement. Tighten each capscrew to the torque values shown in this Table 5.12.

Table 5.12 Capscrew Tightening Torques

HBB Model	Capscrews (JIS Grade 12.9)		Capscrew Torque	
	Qty.	Size	Nm	Lb.Ft.
Z	6	M10x14	50	37
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

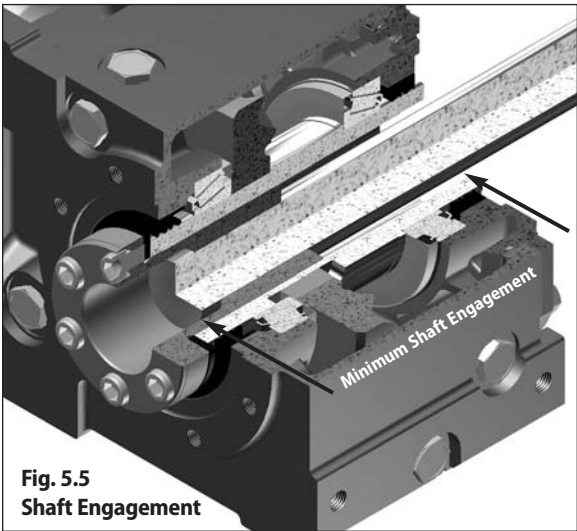


Fig. 5.5 Shaft Engagement

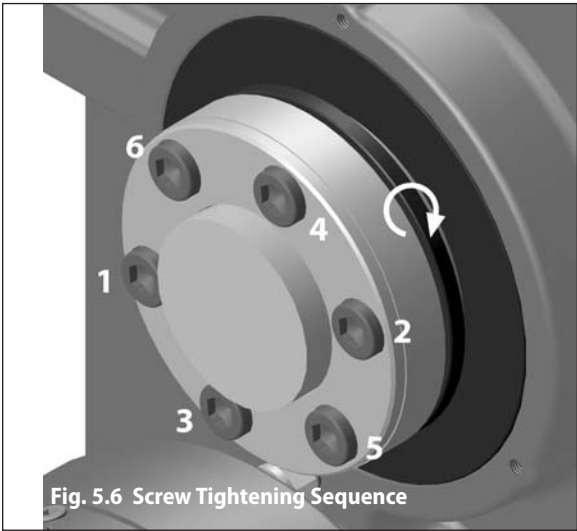


Fig. 5.6 Screw Tightening Sequence

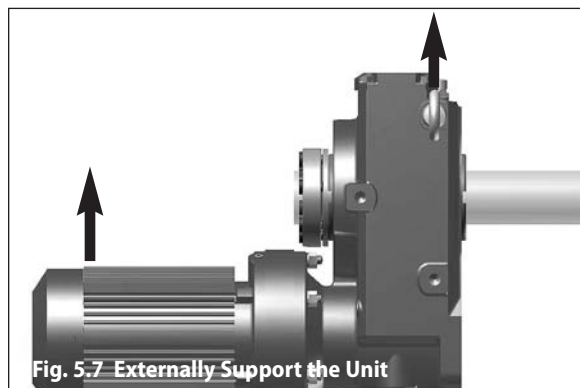
If the shaft is recessed in the bushing, fill the void with grease to prevent corrosion and fouling.

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.

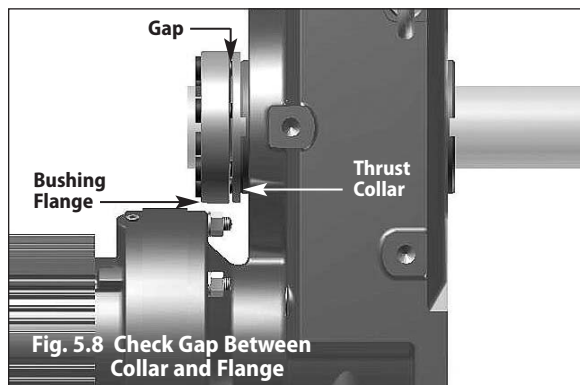
Taper Grip® Bushing continued

Removal Procedure

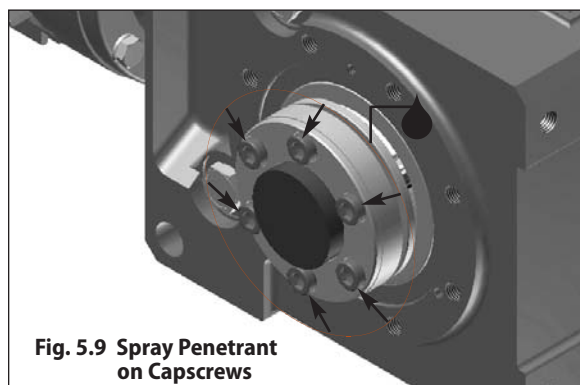
Step 1 – Before removing the reducer/gearmotor from the driven shaft, externally support the unit so that all its weight is removed from the driven shaft (see Fig. 5.7). **Caution: Do not raise the unit too high. It may cause the shaft to bind.**



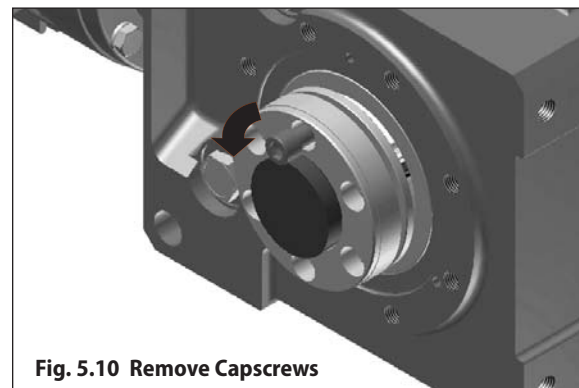
Step 2 – Check the Taper-Grip® Bushing to assure that there is a gap between the thrust collar and the bushing flange. If no gap exists, unit removal may be difficult (see Fig 5.8).



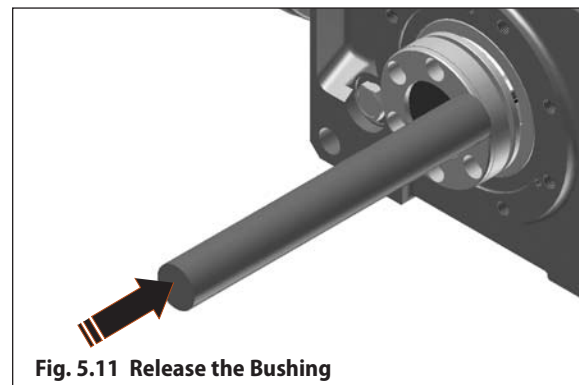
Step 3 – Spray a liquid penetrant onto each of the Taper-Grip® Bushing capscrews. Allow time for the penetrant to settle into the threads of the capscrews. (see Fig 5.9).



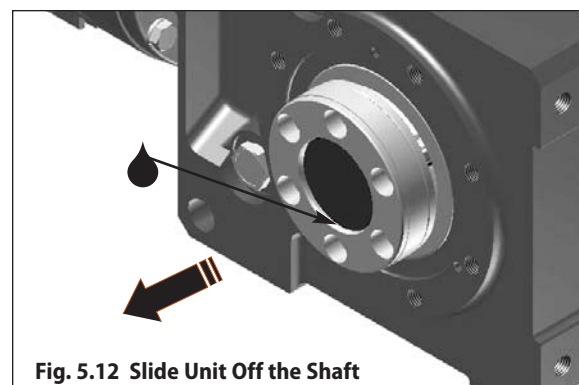
Step 4 – After the liquid penetrant has been allowed to settle, remove the capscrews one at a time (see Fig 5.10).



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 5.11).



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 5.12). **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.**



Cyclo® HBB

Appendix

General Construction

Helical Gear Output Section

Figure 5.7 Helical Gear Output Section

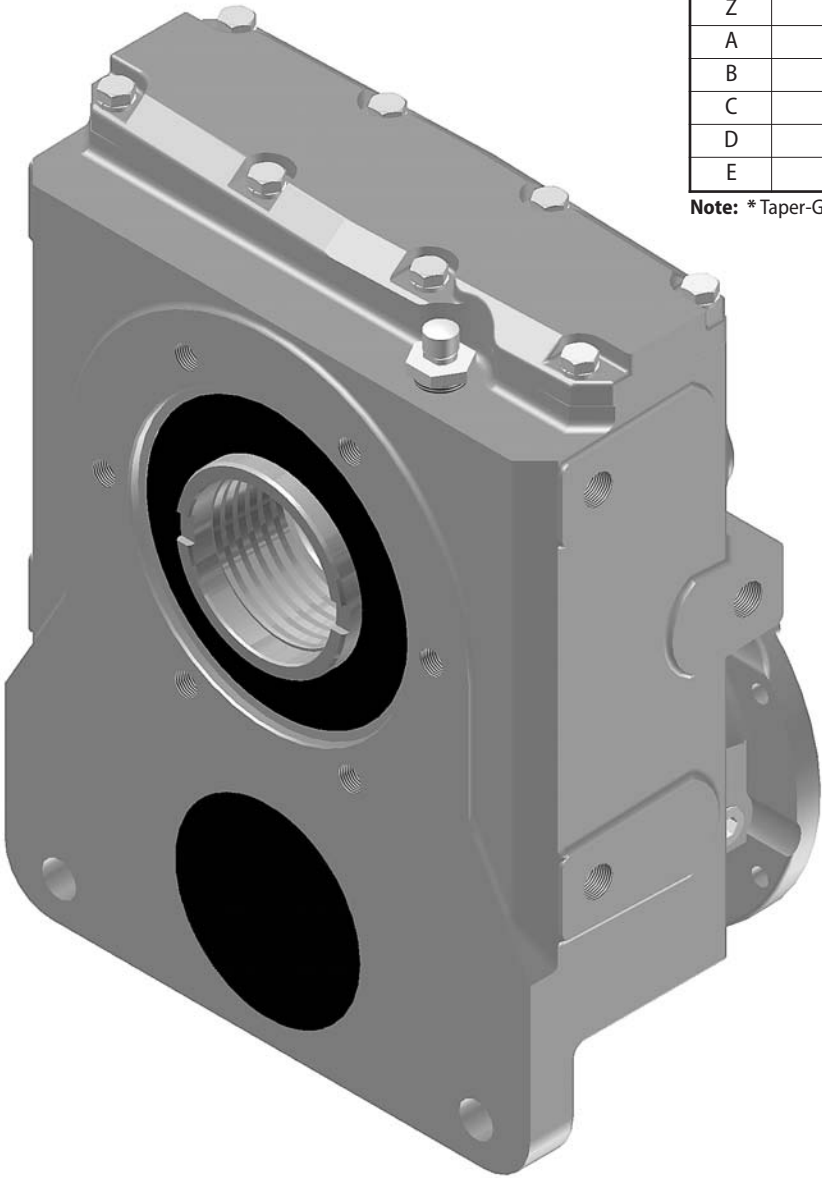


Table 5.13 Helical Gear Output Assembly Part Numbers

Unit	Output Assembly
Size	Part Number*
Z	037L0004
A	037A0004
B	037B0004
C	037C0004
D	037D0004
E	037E0004

Note: * Taper-Grip® Bushing not included.

Cyclo® HBB

Appendix

Cyclo® Parts List

Cyclo® Reducer Input Section

Single Reduction

Figure 5.9 Single Reduction Cyclo® Reducer Input Section Exploded View

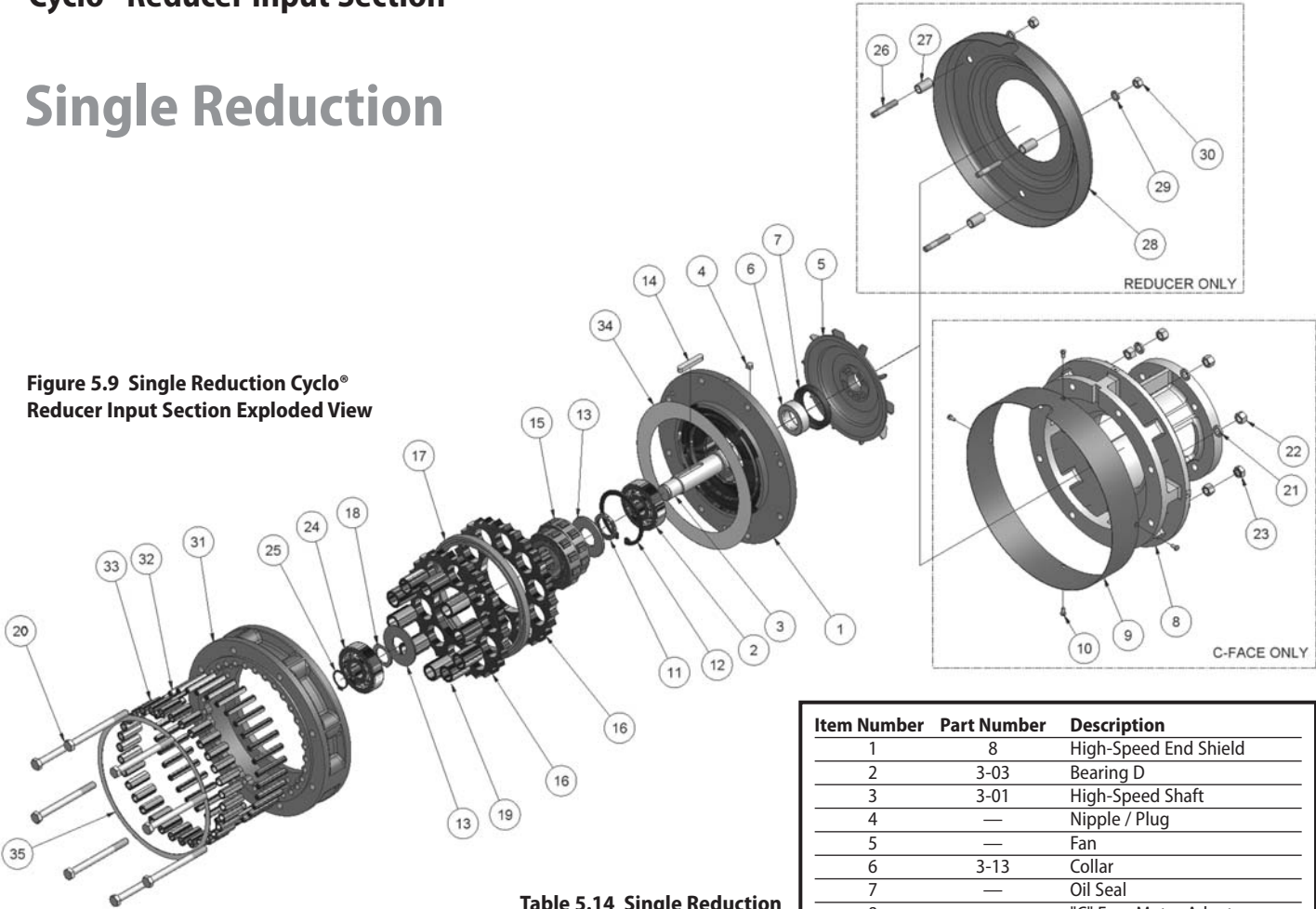


Table 5.14 Single Reduction Input Section Main Parts

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

*Supplied as a set only

Cyclo® Reducer Input Section

Double Reduction

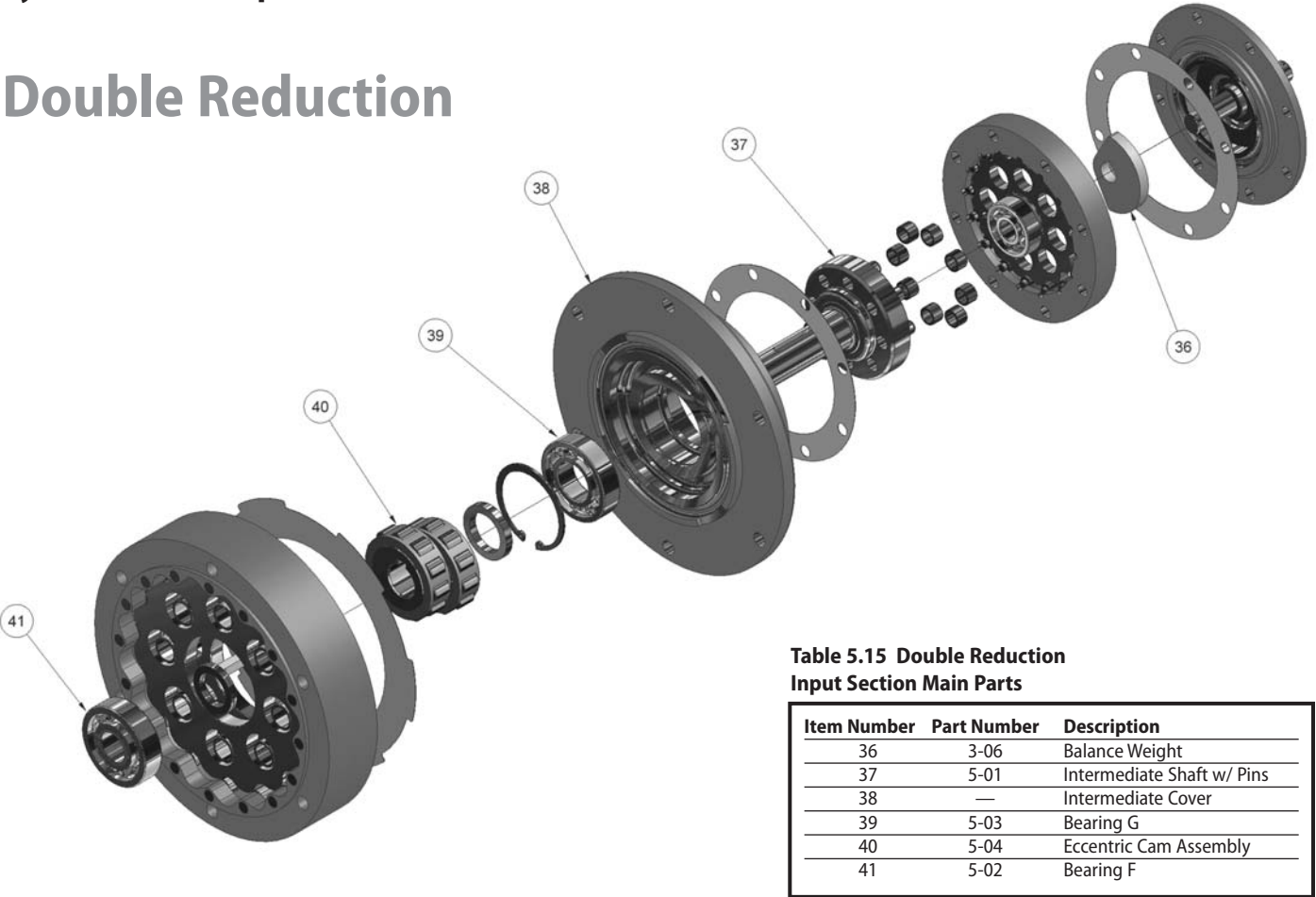


Figure 5.10 Double Reduction Cyclo® Reducer Input Section Exploded View

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

HP	RPM	Frame Size	Full Load Amp.		Inertia WR ² lb·in ²
			115V	230V	
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 5.17 230/460V, Synchronous Speed 1800 RPM, 60 Hz, Continuous Duty, TEFC

HP	Frame Size	Full Load		Current (A)			Starting Breakdown		Efficiency %	Power Factor %	NEMA Code Letter	Inertia WR ² lb·in ²
		Rated RPM	Torque in·lbs	Full Load 230V	460V	Starting % of FL	Torque (% of FL)	Torque (% 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 5.18 230/460V, Synchronous Speed 1200 RPM, 60 Hz, Continuous Duty, TEFC

HP	Frame Size	Full Load		Current (A)			Starting Breakdown		Efficiency %	Power Factor %	NEMA Code Letter	Inertia WR ² lb·in ²
		Rated RPM	Torque in·lbs	Full Load 230V	460V	Starting % of FL	Torque (% of FL)	Torque (% 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 5.19 CSA Approved Motors
230/460V, Synchronous Speed 1800 RPM, 60 Hz, Continuous Duty, TEFC

HP	Frame Size	Full Load		Current (A)				Starting Breakdown		Efficiency %	Power Factor %	NEMA Code Letter	Inertia WR ² lb·in ²
		Rated RPM	Torque in·lbs	Full Load 230V	Full Load 460V	No Load % of FL	Starting % of FL	Torque (% of FL)	Torque (% of FL)				
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 5.20 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 Breakdown		Efficiency %	Power Factor %	NEMA Code Letter	Inertia WR ² lb·in ²
		Rated RPM	Torque in·lbs	Full Load 230V	Full Load 460V	No Load % of FL	Starting % of FL	Torque (% of FL)	Torque (% of FL)				
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

Cyclo® HBB

Motor continued

CSA Approved Motor Data continued

Table 5.21 CSA Approved Motors
575V, Synchronous Speed 1800 RPM, 60 Hz, Continuous Duty, TEFC

HP	Frame Size	Full Load		Current (A)			Starting Breakdown		Efficiency %	Power Factor %	NEMA Code Letter	Inertia WR ² lb-in2
		Rated RPM	Torque in-lbs	Full Load	No Load % of FL	Starting % of FL	Torque (% of FL)	Torque (% of FL)				
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 5.22 EPACT/EEV Efficiency Motors, CSA Approved
575V, Synchronous Speed 1800 RPM, 60 Hz, Continuous Duty, TEFC

HP	Frame Size	Full Load		Current (A)			Starting Breakdown		Efficiency %	Power Factor %	NEMA Code Letter	Inertia WR ² lb-in2
		Rated RPM	Torque in-lbs	Full Load	No Load % of FL	Starting % of FL	Torque (% of FL)	Torque (% of FL)				
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

Cyclo® HBB

Appendix

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 5.11 Y-Connected (5 HP and smaller)

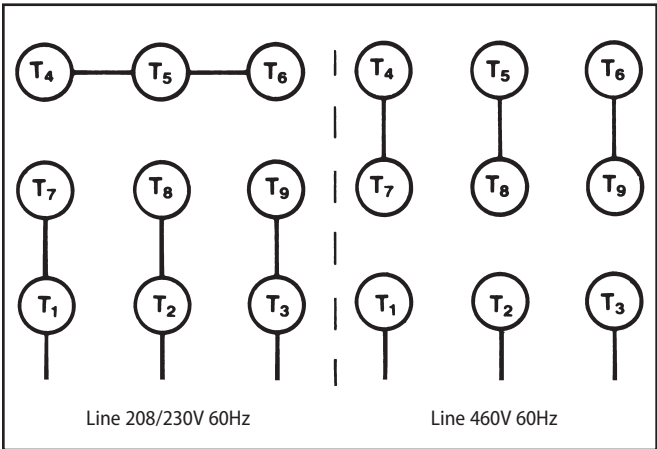
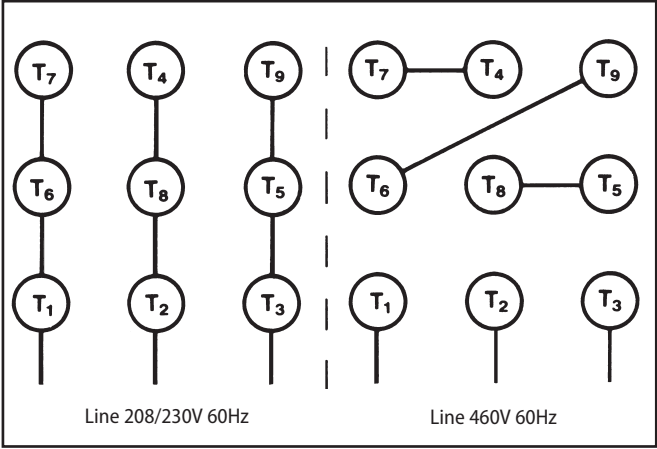
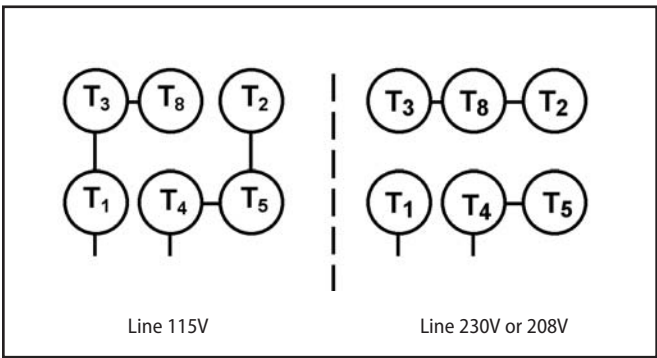


Figure 5.12 Delta-Connected (7.5 HP and larger)



Single Phase Motors

Figure 5.13 Single Phase Motor Wiring Diagram



Cyclo® HBB

Appendix

Motor continued

Motor Thermal Rating (C x Z)

Table 5.23 Motor Thermal Rating (C x Z)

Motor Power HP	Allowable C x Z				Motor Moment of Inertia lb·in ²	
	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” t_a (sec.), “off-time” t_b (sec.) and the motor is started nr (times/sec.).

$$Z_r = \frac{3600nr}{t_a + t_b} \text{ (times/hour)}$$

(b) When inching, ni (times/cycle) is included in 1 cycle ($t_a + t_b$), the number of inching times per hour Z_i , is then included in the number of starts.

$$Z_i = \frac{3600ni}{t_a + t_b} \text{ (times/hour)}$$

(c) Calculate Z by adding Z_r to Z_i .

$$Z = Z_r + \frac{1}{2} Z_i = \frac{3600}{t_a + t_b} \cdot \left(nr + \frac{1}{2} ni \right) \text{ (times/hour)}$$

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.

$$\%ED = \frac{t_a}{t_a + t_b} \times 100 \quad \begin{matrix} t_a = \text{on-time} \\ t_b = \text{off-time} \end{matrix}$$

Brakemotor Characteristics

The brakemotor on Cyclo® HBB 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 5.24 Brakemotor Characteristics

HP	Type		Brake Torque		Inertia WR2 lb-in2	Brake Delay Time (sec)		Coil Current (AC Amperage)		
	Frame	Model	Standard ft-lbs	Maximum ft-lbs		Normal Braking Action	Fast Braking Action	208V	230V	460V
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	—

Cyclo® HBB

Motor continued

Brakemotor Standard Wiring Connection, Dual Voltage

Models FB-01A through FB-15B

Figure 5.14 Normal Brake Action, 230V, 575V

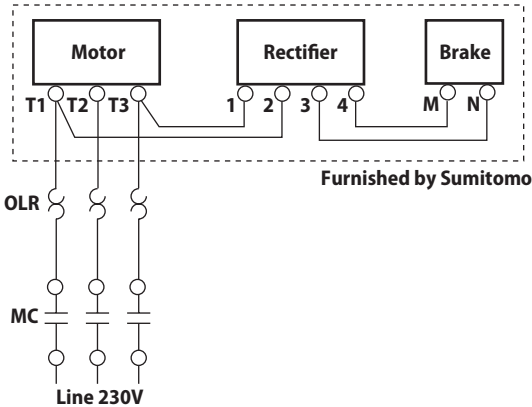


Figure 5.15 Fast Brake Action, 230V

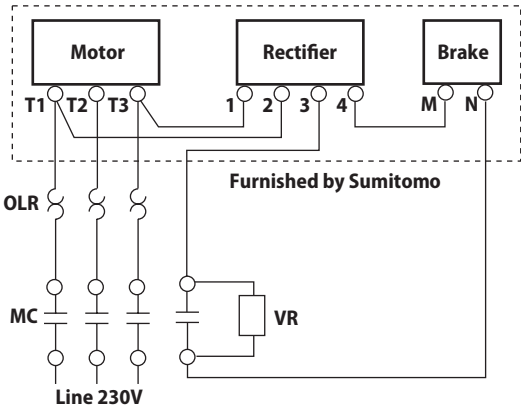


Figure 5.16 Normal Brake Action, 460V

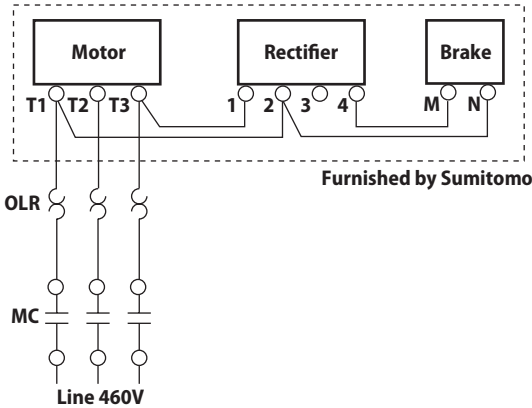
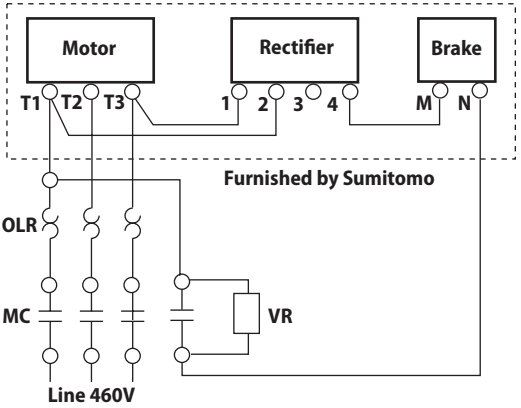


Figure 5.17 Fast Brake Action, 460V, 575V



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 5.25 Varistor Specifications Table

Operating Voltage		220-230V	380-460V	575V
Varistor Rated Voltage		AC260-300V	AC510V	AC604V
Varistor Voltage		430-470V	820V	1000V
Rated Watt	FB01A, 02A	Over 0.2W	Over 0.4W	Over 0.4W
	FB-05A	Over 0.2W	Over 0.4W	Over 0.4W
	FB-1B	Over 0.4W	Over 0.6W	Over 0.4W
	FB-2B, 3B	Over 0.6W	Over 1.5W	Over 0.6W
	FB-5B, 8B	Over 0.6W	Over 1.5W	Over 1.5W
	FB10B, 15B	Over 1.0 W	Over 1.5W	Over 1.5W

Brakemotor Standard Wiring Connection, Dual Voltage continued

Models CMB-20

Figure 5.18 Normal Brake Action, 230V, 575V

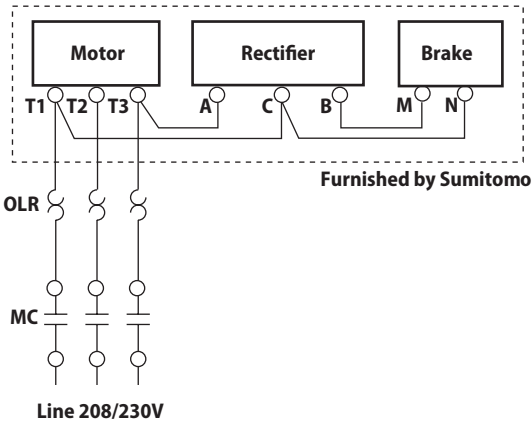


Figure 5.19 Fast Brake Action, 230V

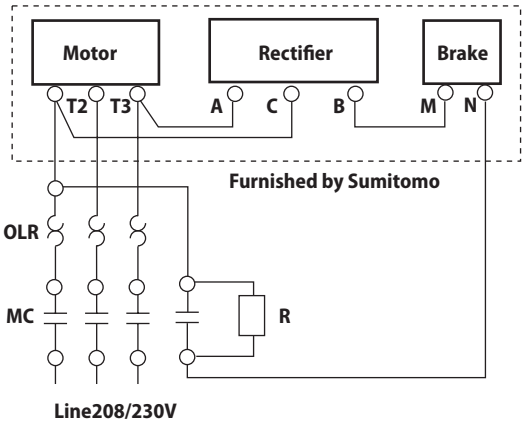


Figure 5.20 Normal Brake Action, 460V

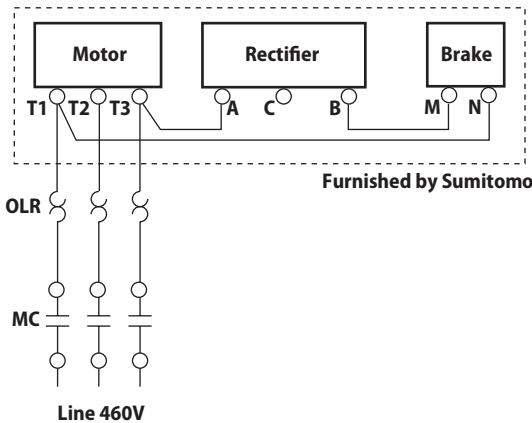
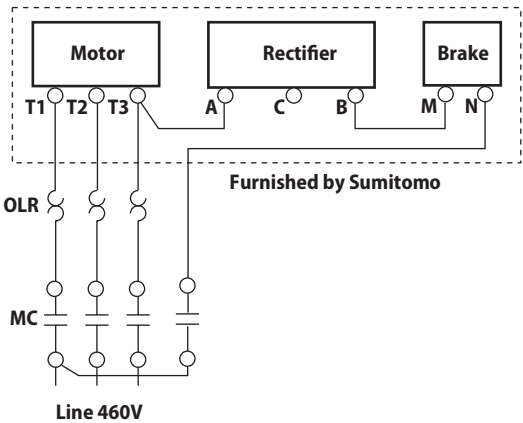


Figure 5.21 Fast Brake Action, 460V



Cyclo® HBB

Appendix

Motor continued

Brakemotor Standard Wiring Connection, Dual Voltage continued

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

Figure 5.22 Normal Brake Action, 230V, 575V

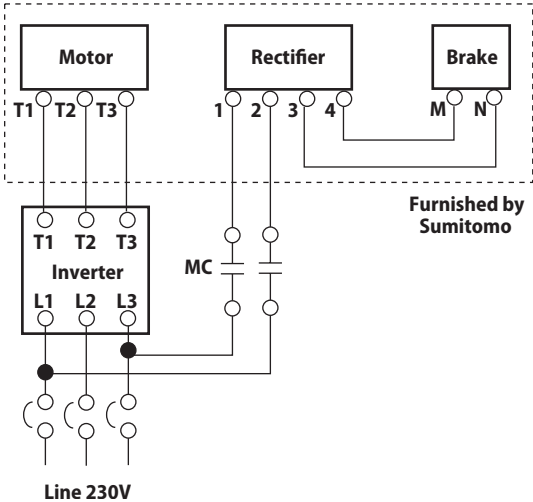


Figure 5.23 Fast Brake Action, 230V, 575V

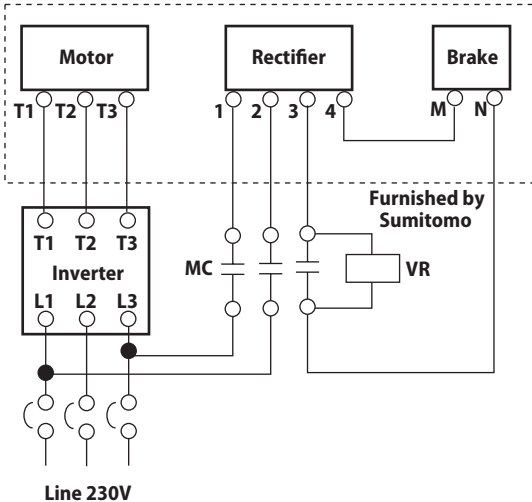


Figure 5.24 Normal Brake Action, 460V

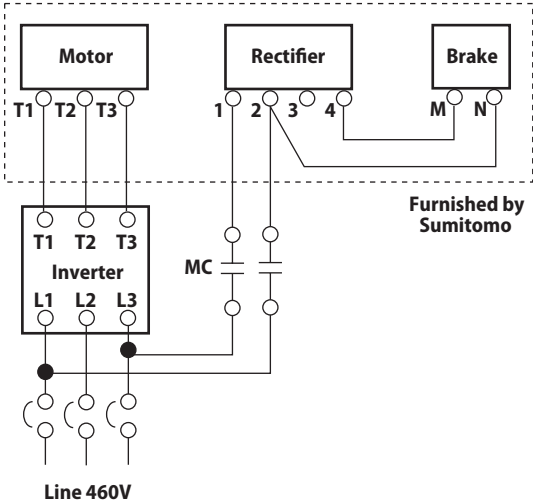
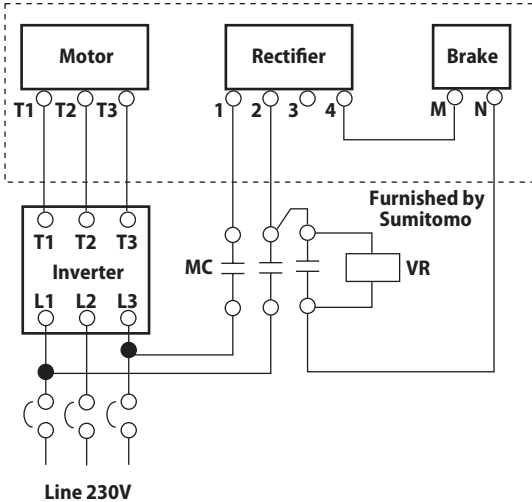


Figure 5.25 Fast Brake Action, 460V



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

Note: [1] Refer to Varistor Specifications Table on pg. 5.16

Table 5.26 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 5.27 and 5.29). 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.

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 5.28. Please consult the factory when the units will be used in widely fluctuating temperatures, ambient temperatures other than those specified in Table 5.28, 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 5.27 Standard Oils

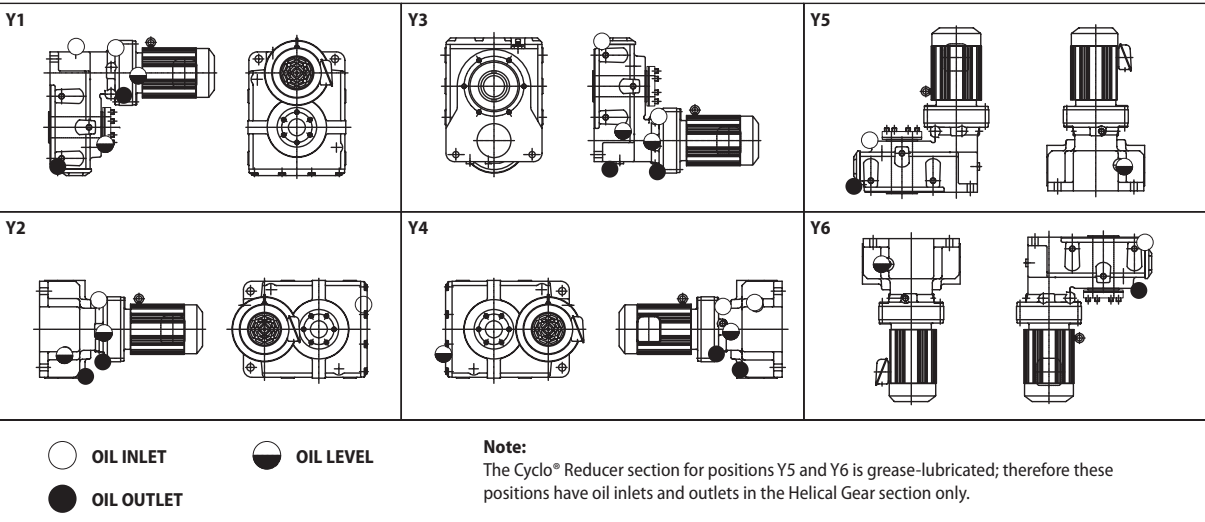
Ambient Temperature (°F)	ChevronTexaco	Exxon Oil	Mobil Oil	Shell Oil	BP Oil
14 to 41°	EP Gear Compound 68	Spartan EP 68	Mobilgear 626 (ISO VG 68)	Omala Oil 68	Energol GR-XP 68
32 to 95°	EP Gear Compound 100, 150	Spartan EP 100 EP 150	Mobilgear 627, 629 (ISO VG 100, 150)	Omala Oil 100, 150	Energol GR-XP 100 GR-XP 150
86 to 122°	EP Gear Compound 220, 320, 460	Spartan EP 220 EP 320 EP 460	Mobilgear 630, 632 633, 634 (ISO VG 220–460)	Omala Oil 220, 320 460	Energol GR-XP 220 GR-XP 320 GR-XP 460

Table 5.28 Standard Greases

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

Figure 5.26

Oil Plug Locations



Cyclo® HBB

Table 5.29 Oil Fill Quantities

Unit: U.S. Gallons

*G = Grease

Model	Y1		Y2		Y3		Y4		Y5		Y6	
	Output	Input*	Output	Input*	Output	Input*	Output	Input*	Output	Input*	Output	Input*
Z6090/95	0.16	G	0.16	G	0.13	G	0.16	G	0.29	G	0.26	G
A6100/05	0.21	G	0.24	G	0.18	G	0.24	G	0.40	G	0.37	G
B6120/25	0.26	G	0.40	G	0.26	G	0.40	G	0.53	G	0.48	G
C6140/45	0.45	0.11	0.55	0.11	0.34	0.11	0.55	0.11	1.24	G	0.92	G
D6160/65	0.71	0.18	0.92	0.18	0.53	0.18	0.92	0.18	1.85	G	1.45	G
E6170/75	0.92	0.24	1.11	0.24	0.66	0.24	1.11	0.24	2.38	G	1.85	G

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 5.29). 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.

The geared (output) portion of all **double reduction units** is oil lubricated and must be filled by the customer with the correct amount of oil (see Table 5.29) prior to initial start-up.

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

The Cyclo® (Input) portion of all **double reduction units** are grease lubricated at the factory. Additional grease does not need to be added prior to initial start-up.

Grease Replenishment and Change Interval

- On single reduction Cyclo® Helical Buddybox (Cyclo® HBB) sizes Z6090/95, A6100/05 and B6120/25, the Cyclo® portion is grease lubricated as standard and therefore maintenance free. Consult the operations and maintenance manual for the grease change interval.
- When mounting Cyclo® HBB sizes C6140/45, D6160/65 and E6170/75 in the Y5 and Y6 positions, please consult the maintenance and operations manual for the proper grease replenishment and change interval for the Cyclo® portion.

Oil Replenishment and Change Interval

- Maintain proper oil levels at all times.
- An oil change after the first 500 hours of operation is highly recommended.
- 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.
- 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.
- Note: The Cyclo® portion and Helical portion, where applicable, must be filled with oil separately. Oil does not flow from one section to the other.

Cyclo® HBB

Warranty

Sumitomo warrants that its Cyclo® HBB 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® HBB 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.

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 wastewater treatment facility in the City of Clearwater, Florida.

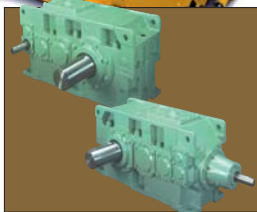


Cyclo® mixer drives are a key component of this award-winning water treatment facility in Hillsborough County, Florida.

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.

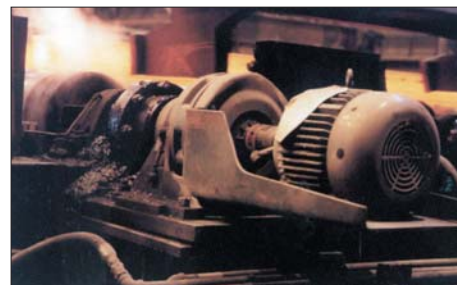
Wood Products

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: 757-485-3075

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.
226 Migneron Street
St. Laurent, Quebec, Canada H4T 1Y7
Tel: 514-340-1300 • Fax: 514-340-1343

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

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World Headquarters

Japan
Sumitomo Heavy Industries, Ltd.
Power Transmission & Controls Group
5-9-11, KITA-Shinagawa, Shinagawa-Ku
Tokyo 141-8686 Japan
Tel: 011-813-5488-8363 • Fax: 011-813-5488-8365

For Worldwide contact information:
www.sumitomodrive.com