

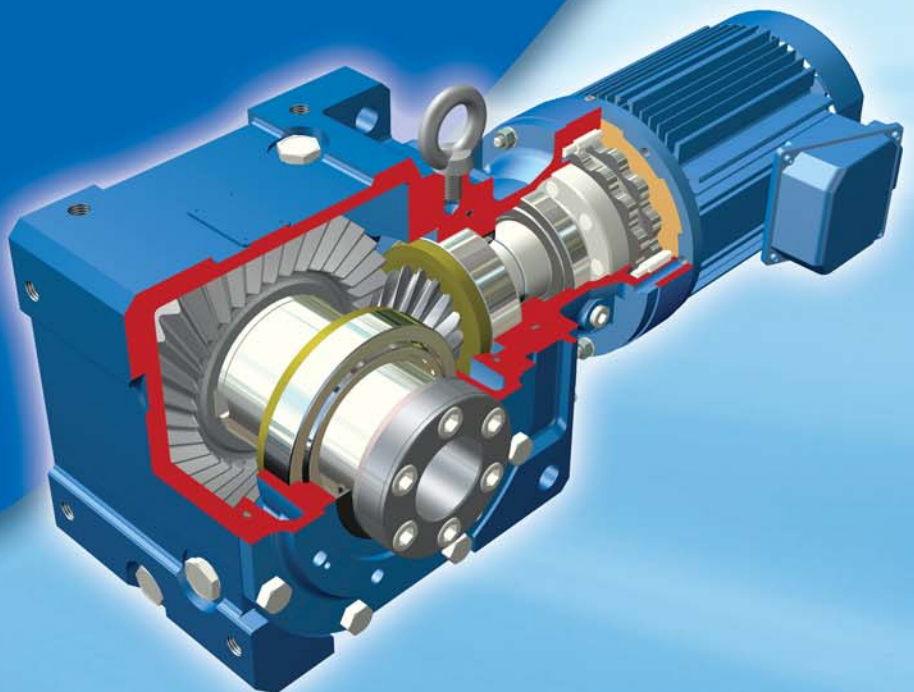
Sumitomo Drive Technologies
Always on the Move

Cyclo[®] BBB

BEVEL BUDDYBOX

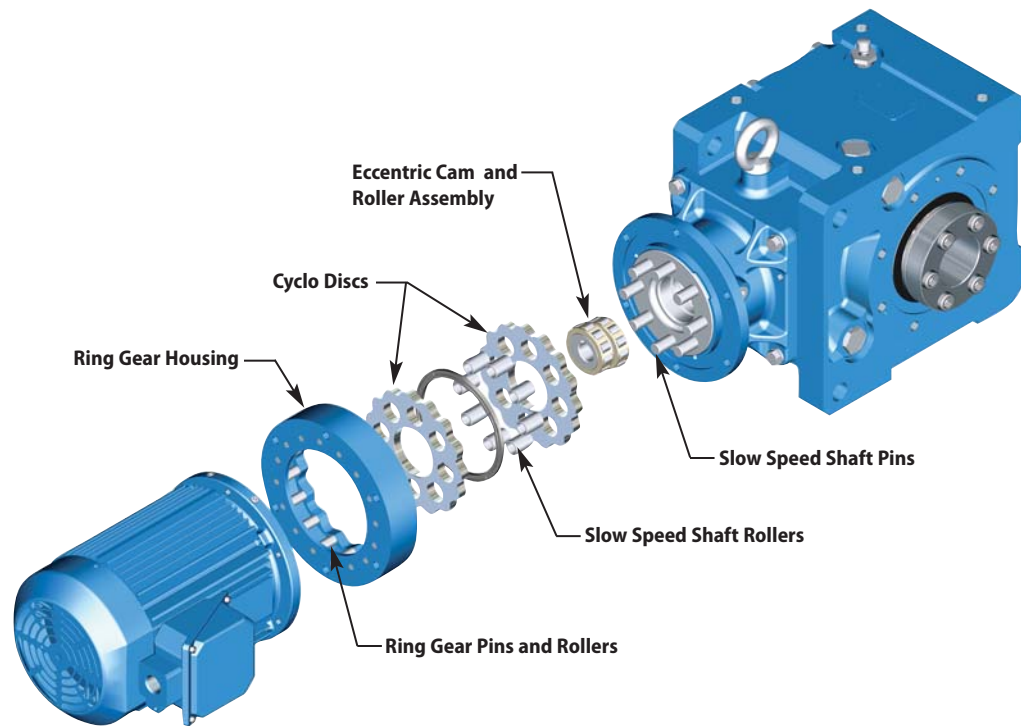
Speed Reducers and Gearmotors

featuring Keyless Taper-Grip[®] Bushing



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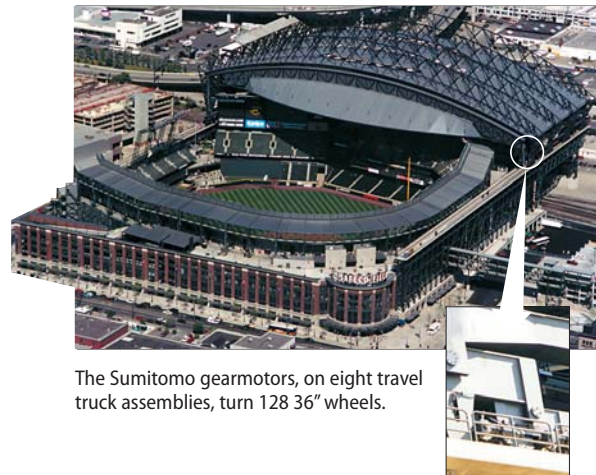
- ▶ Rugged Spiral Bevel Output
- ▶ Modular Cyclo® Input
- ▶ Compact Size
- ▶ Two-Year Warranty



Right Angle Drives Designed for Demanding Applications

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

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



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

Speed Reducers and Gearmotors

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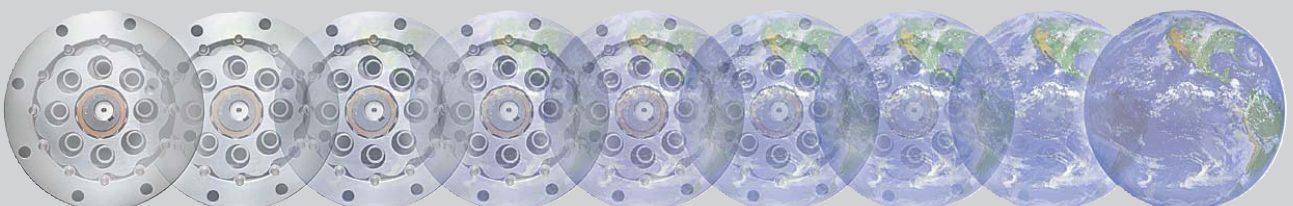
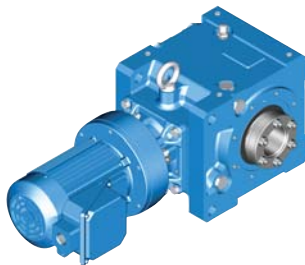
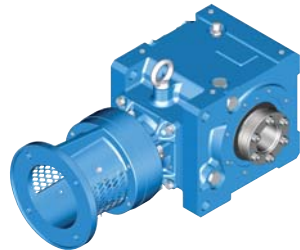
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► Flexible configurations

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

Double output seals prevent
lubricant leaks and protect
from contamination

Cyclo[®] input provides high
overload capacity and
exceptional reliability over long life

Integral motor, C-Face and Shovel
Base models available

Patented keyless, steel
Taper-Grip[®] bushing
makes mounting quick
and easy

Cyclo[®] Quality and Reliability, Right Angle Design

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



Product Description

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

Features & Benefits

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

Specifications Summary

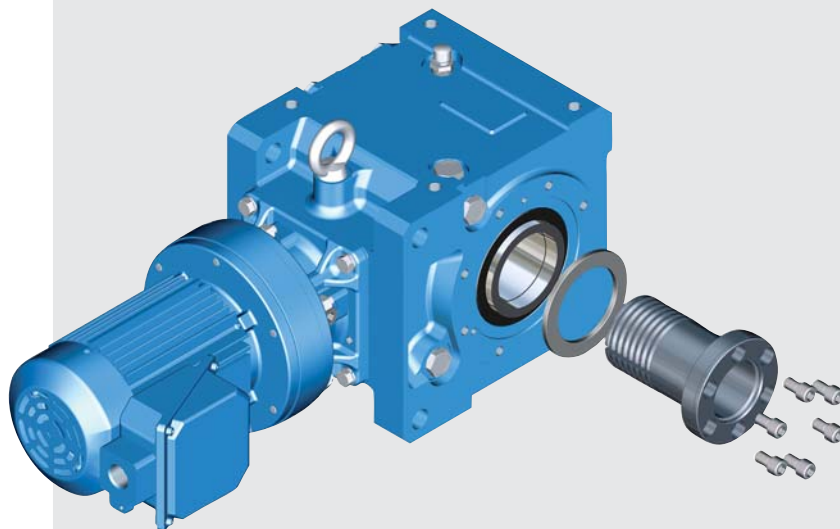
Ratios:	11:1 to 26,000:1 and greater
Torque Capacity:	94,700 in. lbs.
HP:	1/8 to 40
Mounting:	Hollow Shaft, Solid Shaft with Foot, Flange, Face
Options:	Integral Motor, C-Face and Shovel Base
Motor Standards:	NEMA, IEC, JIS, UL, CSA, CE

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

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

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

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



► **Applications**

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

Product Range (Standard Motor and Reducer Combinations)

Single Reduction Ratios 11 – 305 Combinations with 1750 RPM motor

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

Double Reduction Ratios 364 – 5177 Combinations with 1750 RPM motor

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

How do I select a Cyclo® BBB speed reducer or gearmotor?

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

What information do I need to get started in the selection process?

To select the proper reducer for your application, you will need to know:

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

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

What are Service Factors and how are they used?

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

What do I do if my application has particularly severe operating conditions?

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

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

Cyclo® BBB Speed Reducers provide 300% momentary intermittent shock load capacity. For applications with shock loads greater than 300%, consult a Sumitomo Application Engineer.

What are the standard input speeds?

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

What thermal capacity limitations does the Cyclo® BBB have?

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

What are the advantages of the Taper-Grip® bushing?

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

What are the advantages of the new Steel Taper-Grip® bushing?

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

What kind of torque arm do I specify? At what position should I mount it?

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

Standard Specifications

		Standard Specifications	Standard Specifications with Built-In Brake
3-Phase Integral Motor	Capacity Range:	1/8 HP ~ 40 HP, 4P	1/8 HP ~ 15 HP, 4P: FB Brake 20 HP, 4P: CMB Brake 25 HP ~ 40 HP, 4P: ESB Brake
	Enclosure:	Totally enclosed fan cooled type (1/8 HP, 4P Totally enclosed non ventilated)	Totally enclosed fan cooled type (1/8 HP, 4P Totally enclosed non ventilated)
	Power Supply:	230/460 Volts, 60 Hz 575 Volts, 60 Hz	230/460 Volts, 60 Hz 575 Volts, 60 Hz
	Insulation:	3/4 ~ 30 HP: Class B 40 HP: Class F	3/4 ~ 20 HP: Class B
	Time Rating	Continuous	Continuous
Reducer	Reduction:	Combination of Cyclo input and right angle spiral bevel gear output.	
	Lubrication:	Cyclo portion is grease or oil lubricated; Bevel portion is oil lubricated.	
	Seals:	Nitrile material, dual lipped, double output seals.	
	Material:	Rugged cast iron housings	
	Paint Color:	Blue, Muenters color number 6.5PB 3.6/8.2	
	Bearings:	Tapered roller bearings on geared output; ball bearings on Cyclo input.	
Ambient Conditions	Installation Location:	Indoors (Minimal dust and humidity)	
	Ambient Temperature:	14°~104° F (-10° ~ 40° C)	
	Ambient Humidity:	Under 85%	
	Elevation:	Under 3,281 ft. (1000 meters)	
	Atmosphere:	Well ventilated location, free of corrosive gases, explosive gases, vapors and dust.	

Shaft Rotation

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

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

Input Speeds

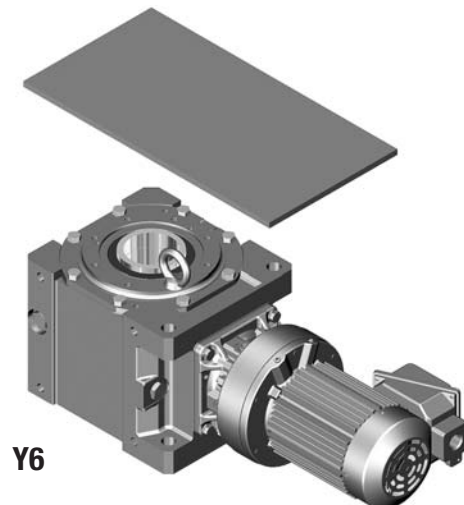
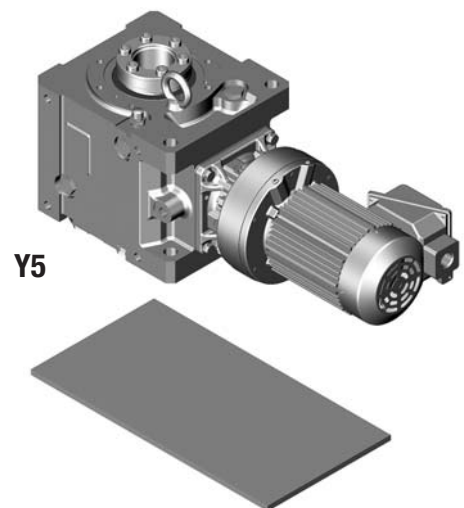
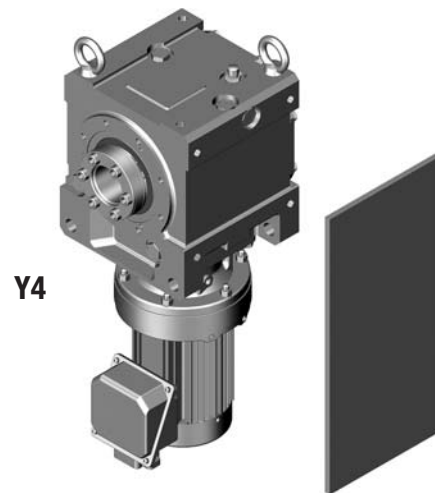
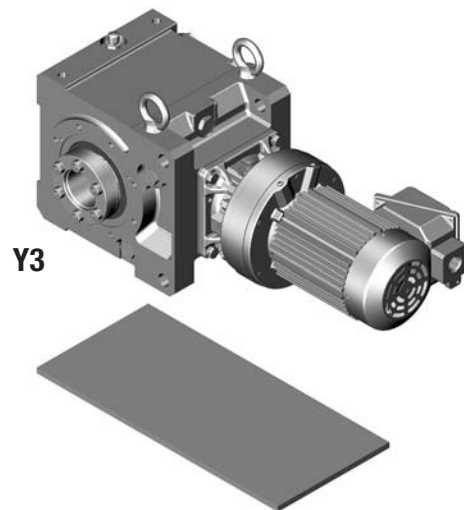
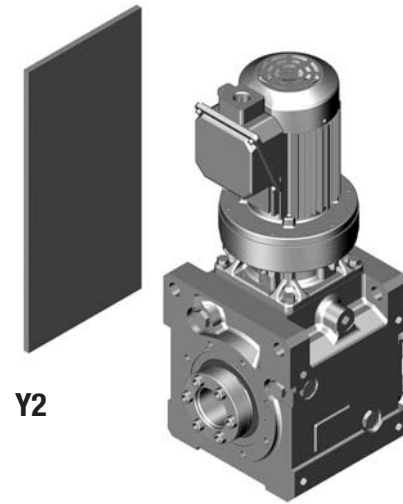
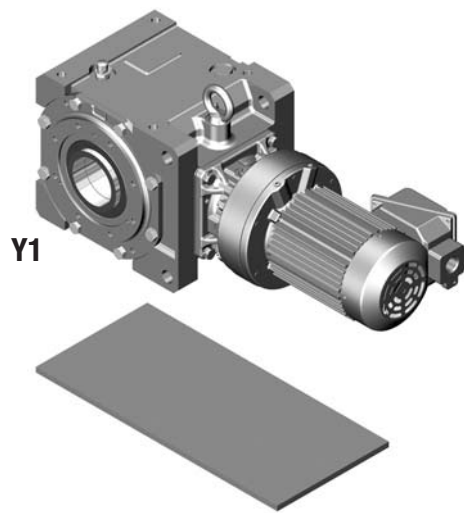
In general terms, the standard input speeds of single reduction units are 1750 and 1165 RPM. When non-standard input speeds are used, the horsepower and torque ratings will also vary.

Thermal Capacity

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

Mounting Positions

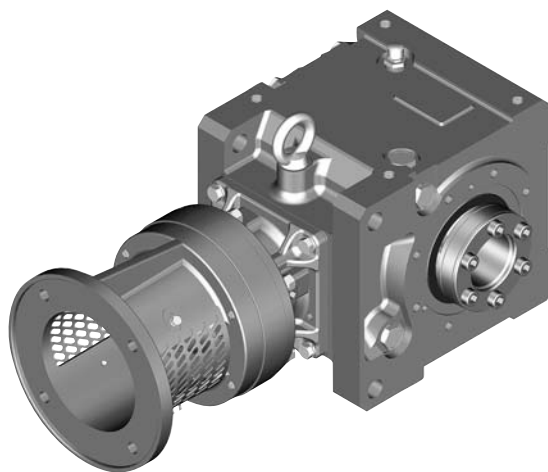
For additional mounting configurations, please check the
SMA Website at www.sumitomodrive.com or consult the factory.



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

Step 4: Verify Dimensions

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

Step 5: Choose a Bushing Bore Size

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

Step 6: Choose Options

The following options may apply:

Washdown Modification

Breather

Cover Guard

Please see the *Cyclo BBB pricelist*, or visit our website at www.smcyclo.com for available modifications.

Step 7: Configure a Model Number

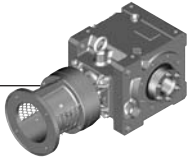
Go to page 2.4 to configure a model number.

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

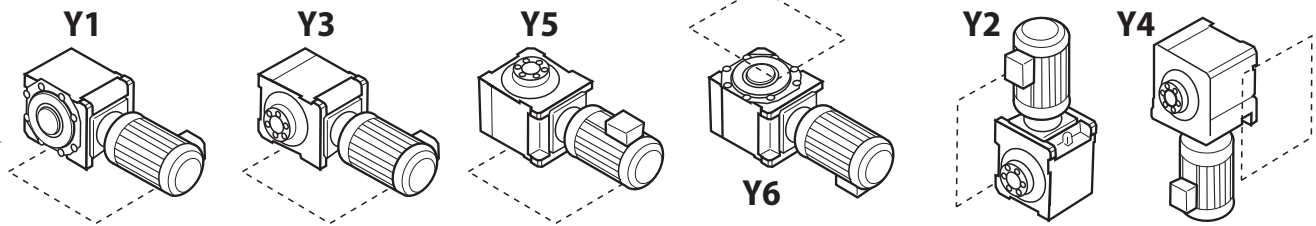
STOCK BUSHING BORES

Size	Inch Sizes	Metric Sizes	Min. Bore
A	1 ¹³ / 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 ¹ / 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	19.9	17.2	14.2	11.6	9.8	8.45	7.03	5.74	Frame Size
Ratio	88	102	123	151	179	207	249	305	
Input HP	1.70	1.62	1.42	1.05	0.75	0.69	0.58	0.58	3A100
Output Torque (in•lbs)	4953	5461	6287	5248	4447	4735	4791	5859	
Hollow Shaft OHL (lbs)	1120	1120	1120	1120	1120	1120	1120	1120	
Solid Shaft OHL (lbs)	990	990	990	990	990	990	990	990	
Input HP	2.24	2.13	2.01	1.75	1.55	1.40	1.20	0.76	3A105
Output Torque (in•lbs)	6527	7180	8201	6527	5520	5040	4200	7677	
Hollow Shaft OHL (lbs)	1120	1120	1120	1120	1120	1120	1120	1120	
Solid Shaft OHL (lbs)	990	990	990	990	990	990	990	990	
Input HP	2.56	2.55	2.33	1.89	1.49	1.35	1.02	0.94	3A110
Output Torque (in•lbs)	7459	8596	9514	7459	5834	5264	4225	8990	
Hollow Shaft OHL (lbs)	1120	1120	1120	1120	1120	1120	1120	1120	
Solid Shaft OHL (lbs)	990	990	990	990	990	990	990	990	
Input HP	2.98	2.81	2.33	1.89	1.49	1.35	1.02	0.94	3A115
Output Torque (in•lbs)	8683	9473	9514	7459	5834	5264	4225	8990	
Hollow Shaft OHL (lbs)	1120	1120	1120	1120	1120	1120	1120	1120	
Solid Shaft OHL (lbs)	990	990	990	990	990	990	990	990	

2 ...to your SELECTION HP...

3 ...to find your FRAME SIZE

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



For special circumstances in selecting a Frame Size such as:

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

Consult Appendix, pages 5.2–5.5.

Configure a Model Number

Nomenclature

Speed Reducers

Output Shaft Orientation

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

Mounting Style

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

Input Connection

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

Modification

	Prefix
Special	S
Standard	

Gearmotor HP
(applies only to 1750 RPM)

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

When ordering, the following information should be included:

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

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

Frame Size

Single Reduction

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

Double Reduction

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

L H Y J S

Gearmotor HP
(1750 rpm)

3 A 105

Frame size

Y

Y1

207

Ratio

Cyclo BBB product code (always "L")

Output shaft orientation

Mounting style

Input connection

Modification (Special feature)

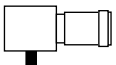
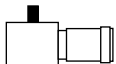
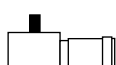
O/P shaft direction (shafted model only)

Shaft specification

Mounting position and optional specification
(as required)

Nomenclature

Output Shaft Direction (Shafted Model Only)

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

Note: When viewed from motor end.

Shaft Specifications

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

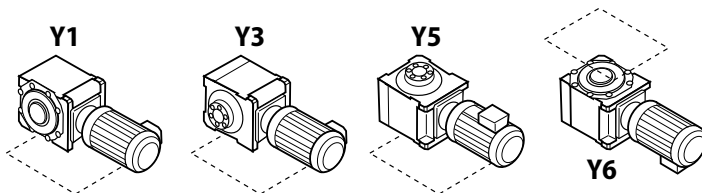
Nominal and Exact Ratio

BBB with Planetary Input			
Input Ratio	Nominal Ratio	BBB Frame Sz.	Exact Ratio
3	11	3A10	10.500
N/A	N/A	3A11	N/A
3	11	3A12	10.500
3	11	3A14	10.885
3	11	3B12	10.500
3	11	3B14	10.885
3	11	3B16	10.850
3	11	3C14	10.885
3	11	3C16	10.850
3	11	3C17	10.850
3	11	3D16	10.850
3	11	3D17	10.850
3	11	3E17	10.850
5	18	3A10	16.800
N/A	N/A	3A11	N/A
5	18	3A12	17.115
5	18	3A14	17.500
5	18	3B12	17.115
5	18	3B14	17.500
5	18	3B16	17.780
5	18	3C14	17.500
5	18	3C16	17.780
5	18	3C17	17.675
5	18	3D16	17.780
5	18	3D17	17.675
5	18	3E17	17.675

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

Speed Reducers

Nomenclature



Mounting Positions

Nominal and Exact Ratio

Nomenclature Example:

LHYJ – 3B125Y – Y1 – 60

L – Cyclo Bevel Buddybox

H – Horizontal O/P

Y – Shaft Mount (Hollow Shaft)

J – C-Face Input

3B125 – Frame Size

Y1 – Installation Position

60 – Ratio

AGMA Load Classifications

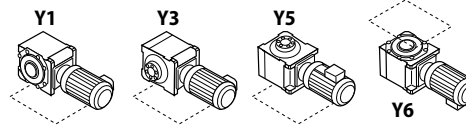
TYPE OF APPLICATION	TYPE OF LOAD	TYPE OF APPLICATION	TYPE OF LOAD	TYPE OF APPLICATION	TYPE OF LOAD
Agitators		Large (industrial)	M	Paper Mills	
Pure liquids	U	Light (small diameter)	U	Agitators (mixers)	M
Liquids and solids	M	Feeders		Barker, hydraulic	M
Variable-density liquids	M	Apron	M	Barker, mechanical	M
Blowers		Belt	M	Barking drum	H
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	H	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

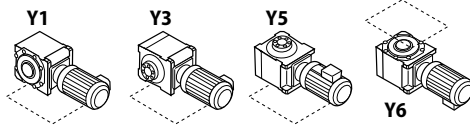
Single Reduction Y1, Y3, Y5, Y6 Mounting Positions



Dimensions on pages 2.22–2.23

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

60 Hz, 1750 RPM Frame Size Selection Tables



Single Reduction Y1, Y3, Y5, Y6 Mounting Positions

Dimensions on pages 2.22–2.23

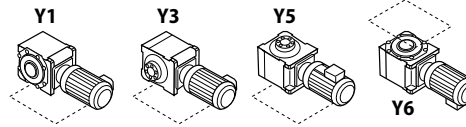
Output RPM	19.9	17.2	14.2	11.6	9.8	8.45	7.03	5.74	Frame Size
Ratio	88	102	123	151	179	207	249	305	
Input HP	1.70	1.62	1.31	1.05	0.75	0.69	0.58	0.58	3A100
Output Torque (in•lbs)	4953	5461	5349	5248	4447	4735	4791	5859	
Hollow Shaft OHL (lbs)	1120	1120	1120	1120	1120	1120	1120	1120	
Solid Shaft OHL (lbs)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

Speed Reducers

Selection Tables

Frame Size Selection Tables 60 Hz, 1750 RPM

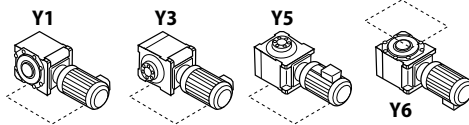
Single Reduction Y1, Y3, Y5, Y6 Mounting Positions



Dimensions on pages 2.22–2.23

Output RPM	159	97.2	83.3	62.5	44.9	38.0	33.0	29.2	23.6	Frame Size
Ratio	11	18	21	28	39	46	53	60	74	
Input HP	29.4	29.5	24.8	–	–	–	–	–	–	3B165
Output Torque (in•lbs)	10721	17598	17263	–	–	–	–	–	–	
Hollow Shaft OHL (lbs)	2070	2070	2070	–	–	–	–	–	–	
Solid Shaft OHL (lbs)	1640	1640	1640	–	–	–	–	–	–	
Input HP	–	–	–	–	17.4	17.4	16.1	13.5	11.6	3C140
Output Torque (in•lbs)	–	–	–	–	22470	26550	28289	26807	28500	
Hollow Shaft OHL (lbs)	–	–	–	–	3480	3480	3480	3480	3480	
Solid Shaft OHL (lbs)	–	–	–	–	2850	2850	2850	2850	2850	
Input HP	–	–	–	20.2	20.2	20.2	19.6	16.1	14.8	3C145
Output Torque (in•lbs)	–	–	–	18740	26086	30823	34438	31970	36362	
Hollow Shaft OHL (lbs)	–	–	–	3480	3480	3480	3480	3480	3480	
Solid Shaft OHL (lbs)	–	–	–	2850	2850	2850	2850	2850	2850	
Input HP	–	–	27.2	26.4	26.4	–	–	17.6	–	3C160
Output Torque (in•lbs)	–	–	18933	24492	34092	–	–	34949	–	
Hollow Shaft OHL (lbs)	–	–	3480	3480	3480	–	–	3480	–	
Solid Shaft OHL (lbs)	–	–	2850	2850	2850	–	–	2850	–	
Input HP	32.3	32.3	32.3	32.3	32.3	24.9	21.6	19.1	15.4	3C165
Output Torque (in•lbs)	11779	19268	22483	29966	41712	37994	37953	37927	37836	
Hollow Shaft OHL (lbs)	3480	3480	3480	3480	3480	3480	3480	3480	3480	
Solid Shaft OHL (lbs)	2850	2850	2850	2850	2850	2850	2850	2850	2850	
Input HP	37.0	37.0	37.0	37.0	–	–	–	–	–	3C170
Output Torque (in•lbs)	13493	22072	25755	34326	–	–	–	–	–	
Hollow Shaft OHL (lbs)	3480	3480	3480	3480	–	–	–	–	–	
Solid Shaft OHL (lbs)	2850	2850	2850	2850	–	–	–	–	–	
Input HP	40.2	40.3	40.3	40.2	–	–	–	–	–	3C175
Output Torque (in•lbs)	14660	24040	28052	37295	–	–	–	–	–	
Hollow Shaft OHL (lbs)	3480	3480	3480	3480	–	–	–	–	–	
Solid Shaft OHL (lbs)	2850	2850	2850	2850	–	–	–	–	–	
Input HP	–	–	–	–	–	26.4	25.1	–	17.3	3D160
Output Torque (in•lbs)	–	–	–	–	–	40283	44102	–	42504	
Hollow Shaft OHL (lbs)	–	–	–	–	–	4810	4810	–	4810	
Solid Shaft OHL (lbs)	–	–	–	–	–	3930	3930	–	3930	
Input HP	–	–	–	–	32.3	30.3	30.1	25.2	21.6	3D165
Output Torque (in•lbs)	–	–	–	–	41712	46234	52888	50040	53069	
Hollow Shaft OHL (lbs)	–	–	–	–	4810	4810	4810	4810	4810	
Solid Shaft OHL (lbs)	–	–	–	–	3930	3930	3930	3930	3930	
Input HP	–	–	–	–	37.0	36.6	34.2	26.4	–	3D170
Output Torque (in•lbs)	–	–	–	–	47781	55847	60091	52423	–	
Hollow Shaft OHL (lbs)	–	–	–	–	4810	4810	4810	4810	–	
Solid Shaft OHL (lbs)	–	–	–	–	3930	3930	3930	3930	–	
Input HP	40.4	40.4	40.4	40.4	40.2	40.2	36.7	32.3	26.2	3D175
Output Torque (in•lbs)	14733	24100	28121	37480	51914	61340	64484	64139	64371	
Hollow Shaft OHL (lbs)	4810	4810	4810	4810	4810	4810	4810	4810	4810	
Solid Shaft OHL (lbs)	3930	3930	3930	3930	3930	3930	3930	3930	3930	
Input HP	–	–	–	–	–	–	–	–	–	3E170
Output Torque (in•lbs)	–	–	–	–	–	–	–	–	–	
Hollow Shaft OHL (lbs)	–	–	–	–	–	–	–	–	–	
Solid Shaft OHL (lbs)	–	–	–	–	–	–	–	–	–	
Input HP	–	–	–	–	40.4	40.4	40.2	32.3	29.5	3E175
Output Torque (in•lbs)	–	–	–	–	52172	61645	70634	64139	72479	
Hollow Shaft OHL (lbs)	–	–	–	–	5170	5170	5170	5170	5170	
Solid Shaft OHL (lbs)	–	–	–	–	4110	4110	4110	4110	4110	

60 Hz, 1750 RPM Frame Size Selection Tables



Single Reduction Y1, Y3, Y5, Y6 Mounting Positions

Dimensions on pages 2.22–2.23

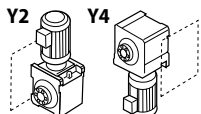
Output RPM	19.9	17.2	14.2	11.6	9.8	8.45	7.03	5.74	Frame Size
Ratio	88	102	123	151	179	207	249	305	
Input HP	–	–	–	–	–	–	–	–	3B165
Output Torque (in•lbs)	–	–	–	–	–	–	–	–	
Hollow Shaft OHL (lbs)	–	–	–	–	–	–	–	–	
Solid Shaft OHL (lbs)	–	–	–	–	–	–	–	–	
Input HP	9.24	7.98	6.99	5.28	4.60	3.97	3.26	2.66	3C140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

Speed Reducers

Selection Tables

Frame Size Selection Tables 60 Hz, 1750 RPM

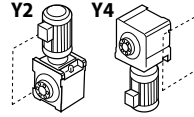
Single Reduction Y2, Y4 Mounting Positions



Dimensions on pages 2.22–2.23

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

60 Hz, 1750 RPM Frame Size Selection Tables



Single Reduction Y2, Y4 Mounting Positions

Dimensions on pages 2.22–2.23

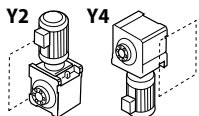
Output RPM	19.9	17.2	14.2	11.6	9.8	8.45	7.03	5.74	Frame Size
Ratio	88	102	123	151	179	207	249	305	
Input HP	1.70	1.62	1.31	1.05	0.751	0.692	0.585	0.581	3A100
Output Torque (in•lbs)	4953	5461	5349	5248	4452	4748	4825	5866	
Hollow Shaft OHL (lbs)	1120	1120	1120	1120	1120	1120	1120	1120	
Solid Shaft OHL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

Speed Reducers

Selection Tables

Frame Size Selection Tables 60 Hz, 1750 RPM

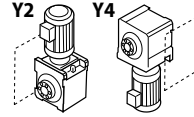
Single Reduction Y2, Y4 Mounting Positions



Dimensions on pages 2.22–2.23

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

60 Hz, 1750 RPM Frame Size Selection Tables



Single Reduction Y2, Y4 Mounting Positions

Dimensions on pages 2.22–2.23

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

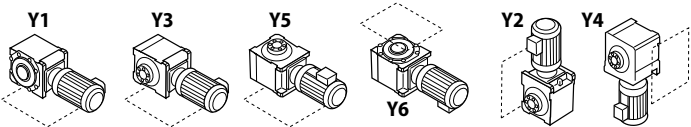
Speed Reducers

Selection
Tables

Frame Size Selection Tables 60 Hz, 1750 RPM

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

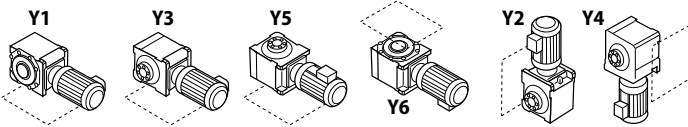
Dimensions on pages 2.24–2.25



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

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

60 Hz, 1750 RPM Frame Size Selection Tables



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

Dimensions on pages 2.24–2.25

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

Speed Reducers

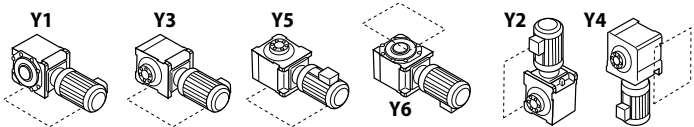
Selection Tables

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

Frame Size Selection Tables 60 Hz, 1750 RPM

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

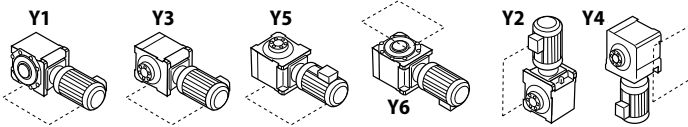
Dimensions on pages 2.24–2.25



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

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

60 Hz, 1750 RPM Frame Size Selection Tables



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

Dimensions on pages 2.24–2.25

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

Speed Reducers

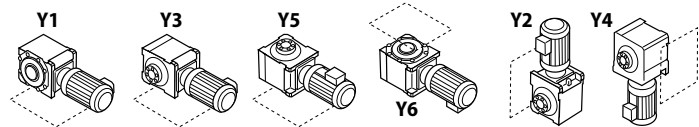
Selection Tables

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

Frame Size Selection Tables 60 Hz, 1750 RPM

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

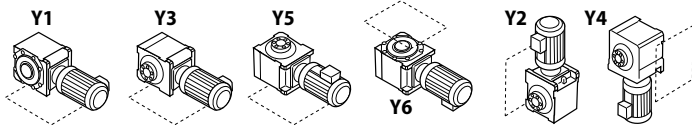
Dimensions on pages 2.24–2.25



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

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

60 Hz, 1750 RPM Frame Size Selection Tables



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

Dimensions on pages 2.24–2.25

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

Speed Reducers

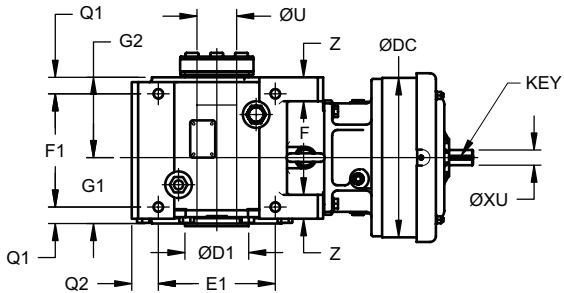
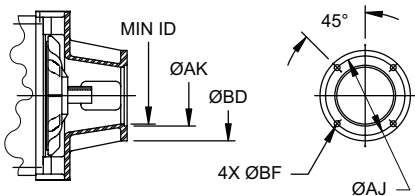
Selection Tables

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

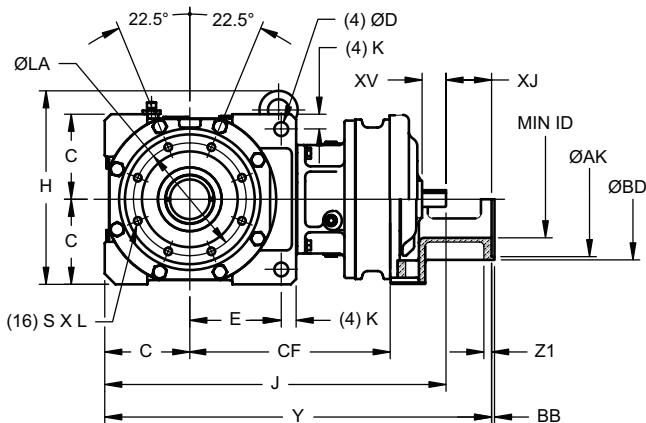
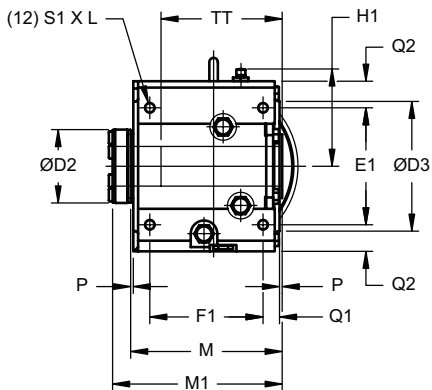
Dimensions

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

42C~145TC



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



All dimensions are in inches.

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

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

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

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

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

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

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

All dimensions are in inches.

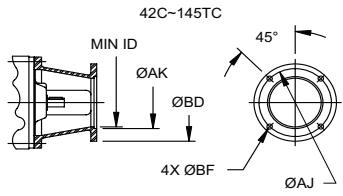
Dimensions shown are for reference only and are subject to change without notice, unless certified. Certified prints are available after receipt of an order; consult factory.

Speed Reducers

Dimensions

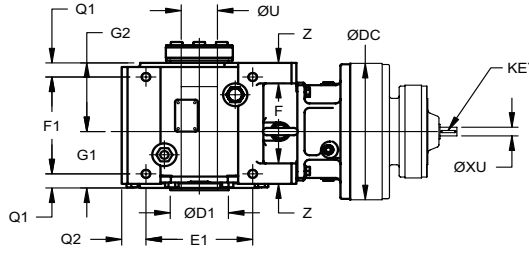
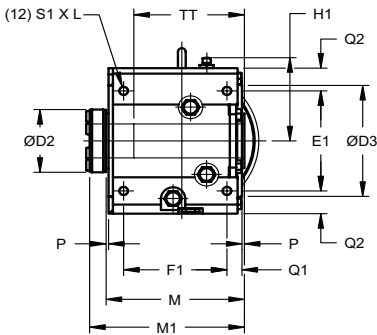
Dimensions

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

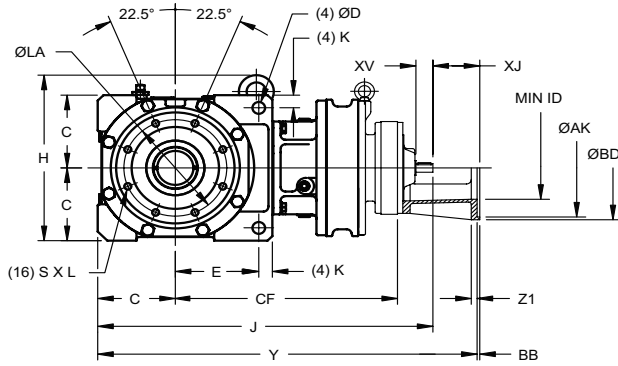


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Certified prints are available after receipt of an order; consult factory.



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



All dimensions are in inches.

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

												ØU	
Model	P	G1	G2	H	H1	ØLA	ØD3	S x L	M1	ØD1	ØD2	Std & Max	Min
3A10DA 3A12DA 3A12DB	0.20	3.78	4.33	10.87	5.16	6.10	6.89	M10x0.67	9.84	3.35	4.09	2-3/16	1-11/16
3B12DA 3B12DB 3B14DA 3B14DB	0.20	4.80	5.00	12.13	5.94	6.89	7.83	M12x0.79	11.54	3.94	4.49	2-7/16	1-15/16
3C14DA 3C14DB 3C14DC 3C16DA	0.20	4.88	5.94	14.33	7.20	8.35	9.61	M16x1.02	12.83	4.72	5.43	2-15/16	2-3/16
3D16DA 3D16DB 3D16DC 3D17DA 3D17DB 3D17DC	0.28	5.83	7.01	16.69	8.39	10.04	11.61	M20x1.30	15.00	5.51	5.98	3-7/16	2-7/16
3E17DA 3E17DB 3E17DC	0.28	6.14	7.99	19.61	9.37	11.02	12.60	M20x1.38	16.30	6.30	6.69	3-15/16	2-15/16

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

All dimensions are in inches.

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

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

Speed Reducers

Dimensions

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

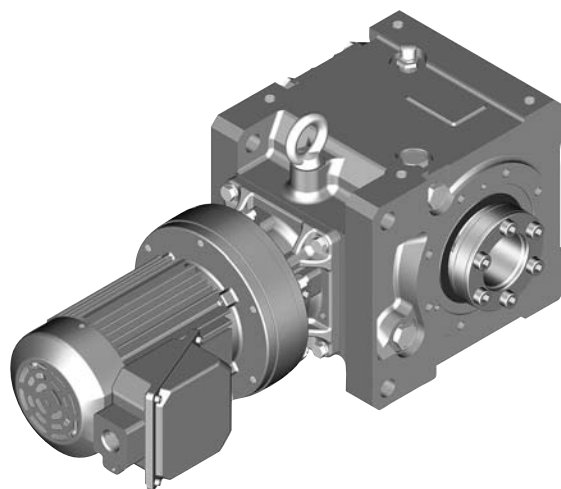
Dimensions shown are for reference only and are subject to change without notice, unless certified.
 Certified prints are available after receipt of an order; consult factory.

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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 3.38–3.45 to verify that the selected Frame Size is appropriate.

Step 5: Choose a Bushing Bore Size

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

Step 6: Choose Options

The following options may apply:

Brakemotor

Washdown Modifications

Breather

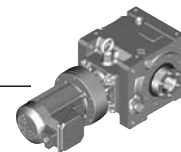
Bushing Cover

Please see the *Cyclo BBB pricelist*, or visit our website at www.smcyclo.com for available modifications.

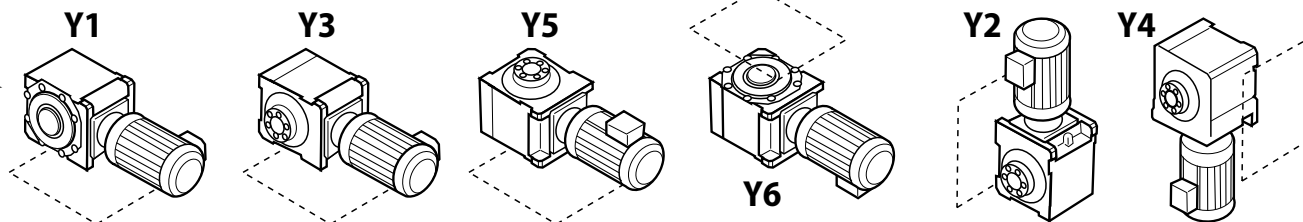
Step 7: Configure a Model Number

Go to page 3.4 to configure a model number.

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



Mounting Positions

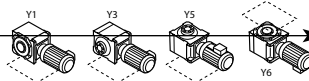


Select a Frame Size

Gearmotors

60 Hz, 1750 RPM Gearmotor Selection Tables

• Mounting Position

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

• Motor HP

1/4 HP

• Output Speed

• Service Class

• SELECTION

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

Gearmotors

Selection
Tables

STOCK BUSHING BORES

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

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

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

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

Consult Appendix, pages 5.2–5.5.

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



Configure a Model Number

Output Shaft Orientation

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

Mounting Style

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

Input Connection

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

Modification

	Prefix
Special	S
Standard	

Gearmotor HP
(applies only to 1750 RPM)

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

Frame Size

Single Reduction

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

Double Reduction

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

When ordering, the following information should be included:

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

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

Nomenclature

L H Y M S

Gearmotor HP
(1750 rpm)

Modification (Special feature)

Input connection

Mounting style

Output shaft orientation

Cyclo BBB product code (always "L")

5 - 3 A 1 2 5

Frame size

Y B - Y1 - B - 28

AGMA Class

Class	Suffix
I	A
II	B
III	C

AGMA class

Shaft specification

O/P shaft direction (shafted model only)

Motor Specification

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

Brake

	Suffix
With Brake	B
No Brake	-

Brake

Mounting position and optional specification
(as required)

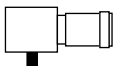
Motor Specification

Ratio

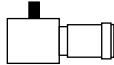
Nomenclature

Output Shaft Direction (Shafted Model Only)

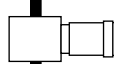
Projects to Left Side

L

Projects to Right Side

R

Projects to Both Left/Right Sides

T*Note: When viewed from motor end.*

Shaft Specifications

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

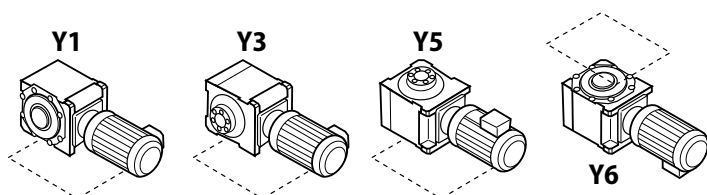
Nominal and Exact Ratio

BBB with Planetary Input			
Input Ratio	Nominal Ratio	BBB Frame Sz.	Exact Ratio
3	11	3A10	10.500
N/A	N/A	3A11	N/A
3	11	3A12	10.500
3	11	3A14	10.885
3	11	3B12	10.500
3	11	3B14	10.885
3	11	3B16	10.850
3	11	3C14	10.885
3	11	3C16	10.850
3	11	3C17	10.850
3	11	3D16	10.850
3	11	3D17	10.850
3	11	3E17	10.850
5	18	3A10	16.800
N/A	N/A	3A11	N/A
5	18	3A12	17.115
5	18	3A14	17.500
5	18	3B12	17.115
5	18	3B14	17.500
5	18	3B16	17.780
5	18	3C14	17.500
5	18	3C16	17.780
5	18	3C17	17.675
5	18	3D16	17.780
5	18	3D17	17.675
5	18	3E17	17.675

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

Gearmotors

Nomenclature



Mounting Positions

Nominal and Exact Ratio

Nomenclature Example:

LVYM – 3B125YB – AVY5 – 53**L** – Cyclo Bevel Buddybox**V** – Vertical**Y** – Shaft Mount (Hollow Shaft)**M** – Integral Motor**5** – 5 HP, 1750 RPM**3B125** – Frame Size**B** – AGMA Class II**AV** – Adj. Frequency Motor**Y5** – Installation Position**53** – Ratio

GEARMOTOR CLASS

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

Gearmotors

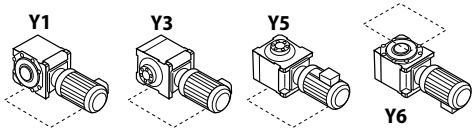
Application	Class		Application	Class		Application	Class		Application	Class	
	Up to 10 Hr. per day	24 Hr. per day		Up to 10 Hr. per day	24 Hr. per day		Up to 10 Hr. per day	24 Hr. per day		Up to 10 Hr. per day	24 Hr. per day
Brewing & Distilling			Lumber Industry			Oil Well Pumping	Refer to	Factory	Tire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

AGMA Tables

AGMA Tables

Gearmotor Selection Tables 60 Hz, 1750 RPM

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



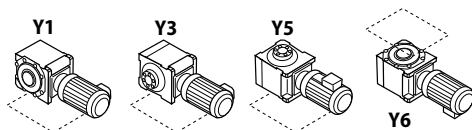
1/8 HP

Output Speed RPM	Output Torque in•lb	Service Factor		SELECTION			Overhung Load (lbs)		Dimension Page LHYM
		SF	AGMA Class	HP Symbol	Frame Size	Ratio	Hollow Shaft	Solid Shaft	
4.81	1425	4.29	III	01	3A10DA	364	1120	990	3.42–43
4.13	1660	4.29	III	01	3A10DA	424	1120	990	3.42–43
3.49	1960	4.27	III	01	3A10DA	501	1120	990	3.42–43
3.03	2260	3.70	III	01	3A10DA	578	1120	990	3.42–43
2.56	2670	3.13	III	01	3A10DA	683	1120	990	3.42–43
2.16	3170	2.64	III	01	3A10DA	809	1120	990	3.42–43
1.83	3745	2.24	III	01	3A10DA	956	1120	990	3.42–43
1.57	4365	1.91	II	01	3A10DA	1117	1120	990	3.42–43
		2.00	III	01	3A12DA	1117	1120	990	3.42–43
1.33	5150	1.62	II	01	3A10DA	1320	1120	990	3.42–43
		1.70	II	01	3A12DA	1320	1120	990	3.42–43
		3.38	III	01	3B12DA	1320	2070	1640	3.42–43
1.06	6465	1.29	I	01	3A10DA	1656	1120	990	3.42–43
		1.35	I	01	3A12DA	1656	1120	990	3.42–43
		2.69	III	01	3B12DA	1656	2070	1640	3.42–43
0.894	7665	1.09	I	01	3A10DA	1957	1120	990	3.42–43
		1.14	I	01	3A12DA	1957	1120	990	3.42–43
		2.28	III	01	3B12DA	1957	2070	1640	3.42–43
0.770	8900	0.99	-	01	3A12DA	2272	1120	990	3.42–43
		1.96	II	01	3B12DA	2272	2070	1640	3.42–43
0.684	10020	0.87	-	01	3A12DA	2559	1120	990	3.42–43
		1.74	II	01	3B12DA	2559	2070	1640	3.42–43
0.585	11715	1.52	II	01	3B12DA	2994	2070	1640	3.42–43
0.498	13760	1.27	I	01	3B12DA	3511	2070	1640	3.42–43
0.401	17090	1.02	I	01	3B12DA	4365	2070	1640	3.42–43

1/4 HP

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

60 Hz, 1750 RPM Gearmotor Selection Tables



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

1/4 HP

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

Gearmotors

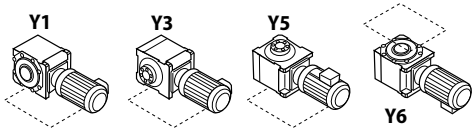
 Selection
Tables

1/3 HP

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

Gearmotor Selection Tables 60 Hz, 1750 RPM

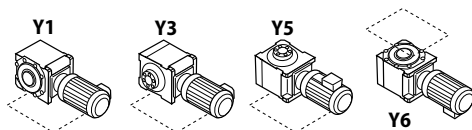
Horizontal Motor Shaft Y1, Y3, Y5, Y6 Mounting Positions



1/3 HP

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

60 Hz, 1750 RPM Gearmotor Selection Tables



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

1/2 HP

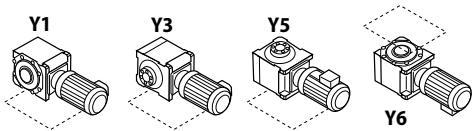
Output Speed RPM	Output Torque in•lb	Service Factor		SELECTION			Overhung Load (lbs)		Dimension Page LHYM
		SF	AGMA Class	HP Symbol	Frame Size	Ratio	Hollow Shaft	Solid Shaft	
11.6	2500	2.70	III	05	3A105	151	1120	990	3.38–39
9.78	2964	1.40	II	05	3A100	179	1120	990	3.38–39
		2.08	III	05	3A105	179	1120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

Gearmotors

 Selection
Tables

Gearmotor Selection Tables 60 Hz, 1750 RPM

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



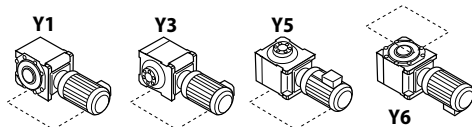
1/2 HP

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

3/4 HP

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

60 Hz, 1750 RPM Gearmotor Selection Tables



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

3/4 HP

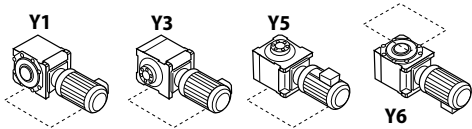
Output Speed RPM	Output Torque in•lb	Service Factor		SELECTION			Overhung Load (lbs)		Dimension Page LHYM
		SF	AGMA Class	HP Symbol	Frame Size	Ratio	Hollow Shaft	Solid Shaft	
4.81	8550	1.12	I	08	3A12DB	364	1120	990	3.42–43
		2.23	III	08	3B12DB	364	2070	1640	3.42–43
4.13	9955	1.90	II	08	3B12DB	424	2070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

Gearmotors

 Selection
Tables

Gearmotor Selection Tables 60 Hz, 1750 RPM

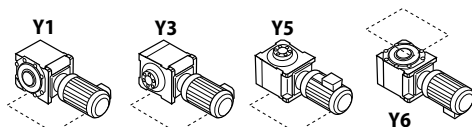
Horizontal Motor Shaft Y1, Y3, Y5, Y6 Mounting Positions



1 HP

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

60 Hz, 1750 RPM Gearmotor Selection Tables



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

1 HP

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

Gearmotors

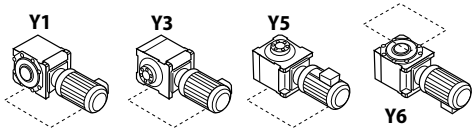
 Selection
Tables

1.5 HP

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

Gearmotor Selection Tables 60 Hz, 1750 RPM

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

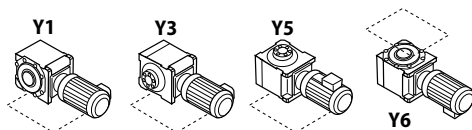


1.5 HP		Service Factor		SELECTION			Overhung Load (lbs)		Dimension Page LHYM
Output Speed RPM	Output Torque in•lb	SF	AGMA Class	HP Symbol	Frame Size	Ratio	Hollow Shaft	Solid Shaft	
9.78	8890	1.06	I	1H	3A125	179	1120	990	3.38–39
		1.56	II	1H	3B120	179	2070	1640	3.38–39
		2.04	III	1H	3B125	179	2070	1640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

Gearmotors

Selection
Tables

60 Hz, 1750 RPM Gearmotor Selection Tables



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

2 HP

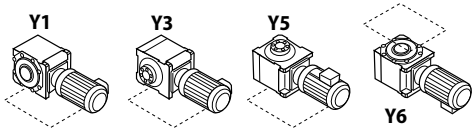
Output Speed RPM	Output Torque in•lb	Service Factor		SELECTION			Overhung Load (lbs)		Dimension Page LHYM
		SF	AGMA Class	HP Symbol	Frame Size	Ratio	Hollow Shaft	Solid Shaft	
159	730	1.57	II	2	3A100	11	1120	990	3.38–39
		2.12	III	2	3A105	11	1120	990	3.38–39
97.2	1190	1.57	II	2	3A100	18	1120	990	3.38–39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

Gearmotors

 Selection
Tables

Gearmotor Selection Tables 60 Hz, 1750 RPM

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



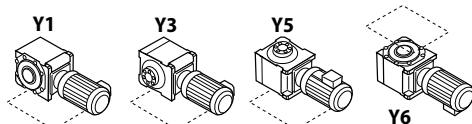
2 HP

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

3 HP

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

60 Hz, 1750 RPM Gearmotor Selection Tables



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

3 HP

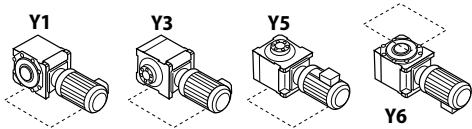
Output Speed RPM	Output Torque in•lb	Service Factor		SELECTION			Overhung Load (lbs)		Dimension Page LHYM
		SF	AGMA Class	HP Symbol	Frame Size	Ratio	Hollow Shaft	Solid Shaft	
44.9	3875	1.07	I	3	3A100	39	1120	990	3.38–39
		1.42	II	3	3A105	39	1120	990	3.38–39
		1.58	II	3	3A110	39	1120	990	3.38–39
		2.27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

Gearmotors

 Selection
Tables

Gearmotor Selection Tables 60 Hz, 1750 RPM

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



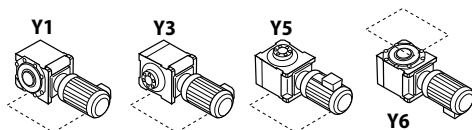
3 HP

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

5 HP

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

60 Hz, 1750 RPM Gearmotor Selection Tables



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

5 HP

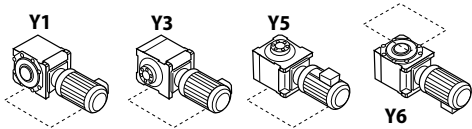
Output Speed RPM	Output Torque in•lb	Service Factor		SELECTION			Overhung Load (lbs)		Dimension Page LHYM
		SF	AGMA Class	HP Symbol	Frame Size	Ratio	Hollow Shaft	Solid Shaft	
38.0	7630	1.05	I	5	3A115	46	1120	990	3.38–39
		1.37	I	5	3B120	46	2070	1640	3.38–39
		1.60	II	5	3B125	46	2070	1640	3.38–39
		2.51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

Gearmotors

 Selection
Tables

Gearmotor Selection Tables 60 Hz, 1750 RPM

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

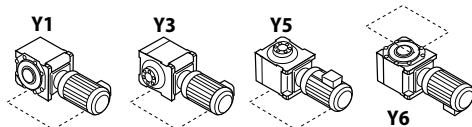


7.5 HP		Service Factor		SELECTION			Overhung Load (lbs)		Dimension Page LHYM
Output Speed RPM	Output Torque in•lb	SF	AGMA Class	HP Symbol	Frame Size	Ratio	Hollow Shaft	Solid Shaft	
159	2735	1.06	I	8	3A125	11	1120	990	3.38–39
		2.32	III	8	3A140	11	1120	990	3.38–39
97.2	4475	1.06	I	8	3A125	18	1120	990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

Gearmotors

Selection
Tables

60 Hz, 1750 RPM Gearmotor Selection Tables



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

7.5 HP

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

10 HP

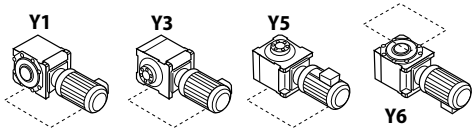
Output Speed RPM	Output Torque in•lb	Service Factor		SELECTION			Overhung Load (lbs)		Dimension Page LHYM
		SF	AGMA Class	HP Symbol	Frame Size	Ratio	Hollow Shaft	Solid Shaft	
159	3645	1.73	II	10	3A140	11	1120	990	3.38–39
		2.00	III	10	3A145	11	1120	990	3.38–39
97.2	5965	1.47	II	10	3A145	18	1120	990	3.38–39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

Gearmotors

Selection
Tables

Gearmotor Selection Tables 60 Hz, 1750 RPM

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



10 HP

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

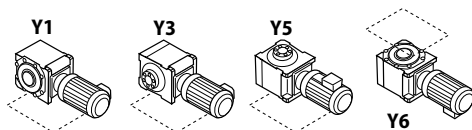
Gearmotors

Selection
Tables

15 HP

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

60 Hz, 1750 RPM Gearmotor Selection Tables



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

15 HP

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

Gearmotors

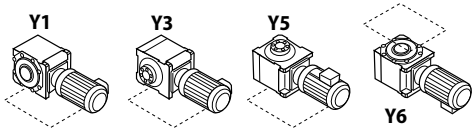
 Selection
Tables

20 HP

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

Gearmotor Selection Tables 60 Hz, 1750 RPM

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



20 HP

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

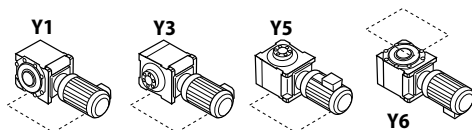
Gearmotors

Selection
Tables

25 HP

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

60 Hz, 1750 RPM Gearmotor Selection Tables



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

30 HP

Output Speed RPM	Output Torque in•lb	Service Factor		SELECTION			Overhung Load (lbs)		Dimension Page LHYM
		SF	AGMA Class	HP Symbol	Frame Size	Ratio	Hollow Shaft	Solid Shaft	
159	10900	1.07	I	30	3C165	11	3480	2850	3.40–41
		1.34	I	30	3C175	11	3480	2850	3.40–41
97.2	17850	1.07	I	30	3C165	18	3480	2850	3.40–41
		1.34	I	30	3C175	18	3480	2850	3.40–41
83.3	20880	1.10	I	30	3C165	21	3480	2850	3.40–41
		1.34	I	30	3C175	21	3480	2850	3.40–41
62.5	27800	1.10	I	30	3C165	28	3480	2850	3.40–41
		1.34	I	30	3C175	28	3480	2850	3.40–41
44.9	38700	1.08	I	30	3D165	39	4810	3930	3.40–41
		1.34	I	30	3D175	39	4810	3930	3.40–41
38.0	45700	1.01	I	30	3D165	46	4810	3930	3.40–41
		1.34	I	30	3D175	46	4810	3930	3.40–41
33.0	52700	1.00	I	30	3D165	53	4810	3930	3.40–41
		1.36	I	30	3E175	53	5170	4110	3.40–41
29.2	59500	1.10	I	30	3D175	60	4810	3930	3.40–41

Gearmotors

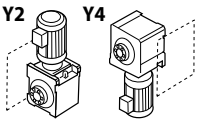
Selection
Tables

40 HP

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

Gearmotor Selection Tables 60 Hz, 1750 RPM

Vertical Motor Shaft Y2, Y4 Mounting Positions



1/4 HP

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

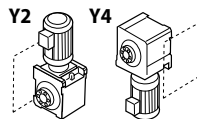
1/3 HP

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

1/2 HP

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

60 Hz, 1750 RPM Gearmotor Selection Tables



Vertical Motor Shaft Y2, Y4 Mounting Positions

3/4 HP

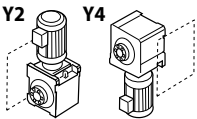
Output Speed RPM	Output Torque in•lb	Service Factor		SELECTION			Overhung Load (lbs)		Dimension Page LHYM
		SF	AGMA Class	HP Symbol	Frame Size	Ratio	Hollow Shaft	Solid Shaft	
19.9	2185	2.26	III	08	3A100	88	1120	990	3.38–39
17.2	2528	2.16	III	08	3A100	102	1120	990	3.38–39
14.3	3041	1.75	II	08	3A100	123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

1 HP

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

Gearmotor Selection Tables 60 Hz, 1750 RPM

Vertical Motor Shaft Y2, Y4 Mounting Positions

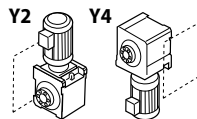


1.5 HP

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

* These Models are not available for Y4 Mounting Position

60 Hz, 1750 RPM Gearmotor Selection Tables



Vertical Motor Shaft Y2, Y4 Mounting Positions

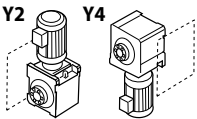
2 HP

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

* These Models are not available for Y4 Mounting Position

Gearmotor Selection Tables 60 Hz, 1750 RPM

Vertical Motor Shaft Y2, Y4 Mounting Positions

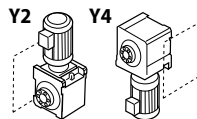


3 HP

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

* These Models are not available for Y4 Mounting Position

60 Hz, 1750 RPM Gearmotor Selection Tables



Vertical Motor Shaft Y2, Y4 Mounting Positions

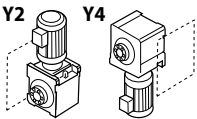
5 HP

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

* These Models are not available for Y4 Mounting Position

Gearmotor Selection Tables 60 Hz, 1750 RPM

Vertical Motor Shaft Y2, Y4 Mounting Positions

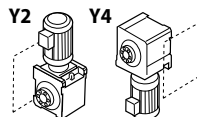


7.5 HP

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

* These Models are not available for Y4 Mounting Position

60 Hz, 1750 RPM Gearmotor Selection Tables



Vertical Motor Shaft Y2, Y4 Mounting Positions

10 HP

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

Gearmotors

 Selection
Tables

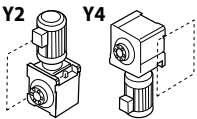
15 HP

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

* These Models are not available for Y4 Mounting Position

Gearmotor Selection Tables 60 Hz, 1750 RPM

Vertical Motor Shaft Y2, Y4 Mounting Positions



20 HP

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

25 HP

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

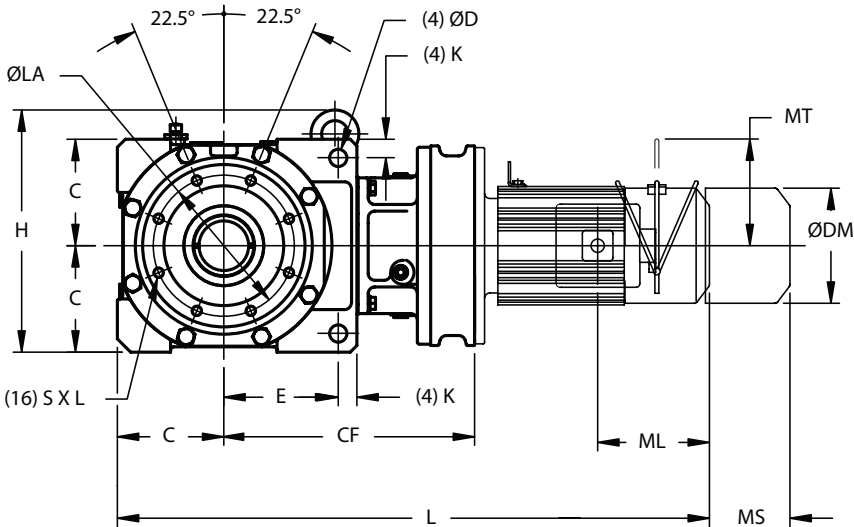
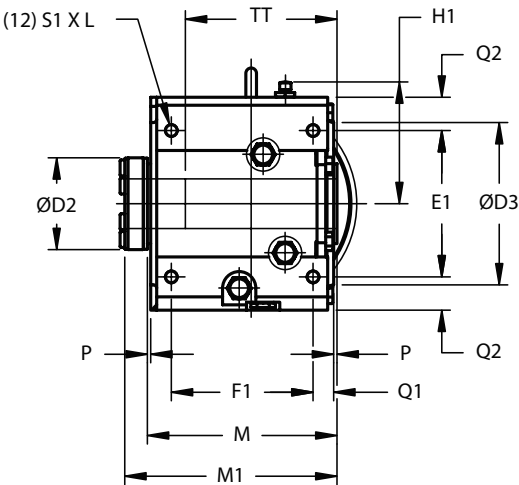
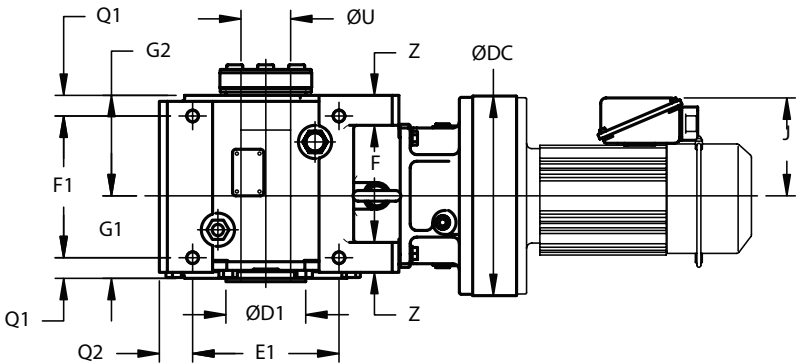
* These Models are not available for Y4 Mounting Position

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Dimensions Gearmotors

Single Reduction LHYM-3A100~3B165

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



All dimensions are in inches.

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

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

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

Single Reduction LHYM-3A100~3B165 Dimensions

All dimensions are in inches.

Model	4 Pole Motor HP	Without Brake					With Brake						
		L	ØDM	J	ML	W (lb)	L	ØDM	J	ML	MS	MT	W (lb)
3A100, 3A105	1/4	20.61	4.88	5.04	2.32	115	21.85	4.88	5.04	3.58	2.40	-	117
	1/3	20.61	4.88	5.04	2.32	115	21.85	4.88	5.04	3.58	2.40	-	117
	1/2	21.39	4.88	5.04	2.32	117	22.64	4.88	5.04	3.58	2.40	-	121
	3/4	23.01	5.83	5.43	3.82	126	24.69	5.83	5.43	5.51	3.66	4.17	132
	1	23.01	5.83	5.43	3.82	126	24.69	5.83	5.43	5.51	3.66	4.17	132
	1.5	24.31	6.30	5.63	3.94	135	26.73	6.30	5.63	6.38	4.53	4.49	146
	2	24.31	6.30	5.63	3.94	135	26.73	6.30	5.63	6.38	4.53	4.49	146
	3	25.09	6.81	5.91	4.13	143	27.56	6.81	5.91	6.61	4.76	4.88	159
3A110, 3A115	1/2	21.70	4.88	5.04	2.32	126	22.91	4.88	5.04	3.58	2.40	-	130
	3/4	23.28	5.83	5.43	3.82	132	25.20	5.83	5.43	5.51	3.66	4.17	139
	1	23.28	5.83	5.43	3.82	132	25.20	5.83	5.43	5.51	3.66	4.17	139
	1.5	24.58	6.30	5.63	3.94	141	26.81	6.30	5.63	6.38	4.53	4.49	152
	2	24.58	6.30	5.63	3.94	141	26.81	6.30	5.63	6.38	4.53	4.49	152
	3	25.37	6.81	5.91	4.13	150	27.83	6.81	5.91	6.61	4.76	4.88	165
	5	26.74	8.35	6.54	5.00	170	29.57	8.35	6.54	7.83	5.20	6.18	192
3A120, 3A125	1.5	24.53	6.30	5.63	3.94	150	26.97	6.30	5.63	6.38	4.53	4.49	161
	2	24.53	6.30	5.63	3.94	150	26.97	6.30	5.63	6.38	4.53	4.49	161
	3	25.31	6.81	5.91	4.13	159	27.80	6.81	5.91	6.61	4.76	4.88	174
	5	26.22	8.35	6.54	5.00	181	29.06	8.35	6.54	7.83	5.20	6.18	203
	7.5	27.95	8.35	6.54	5.00	196	30.79	8.35	6.54	7.83	5.20	6.18	218
3A140, 3A145	7.5	28.81	8.35	6.54	5.00	212	31.65	8.35	6.54	7.83	5.20	6.18	234
	10	29.73	9.49	8.31	5.63	243	33.46	9.49	8.31	9.37	6.69	7.17	282
	15	32.09	9.88	8.31	5.63	273	35.83	9.88	8.31	9.37	6.69	7.17	313
	20	35.63	12.76	9.13	11.61	395	39.76	12.76	9.13	15.16	8.66	-	467
3B120, 3B125	3/4	25.49	5.83	5.43	3.82	203	27.17	5.83	5.43	5.51	3.66	4.17	209
	1	25.49	5.83	5.43	3.82	203	27.17	5.83	5.43	5.51	3.66	4.17	209
	1.5	26.79	6.30	5.63	3.94	212	29.21	6.30	5.63	6.38	4.53	4.49	223
	2	26.79	6.30	5.63	3.94	212	29.21	6.30	5.63	6.38	4.53	4.49	223
	3	27.57	6.81	5.91	4.13	221	30.04	6.81	5.91	6.61	4.76	4.88	236
	5	28.48	8.35	6.54	5.00	243	31.30	8.35	6.54	7.83	5.20	6.18	265
	7.5	30.21	8.35	6.54	5.00	258	33.03	8.35	6.54	7.83	5.20	6.18	280
3B140, 3B145	1	26.14	5.83	5.43	3.82	221	27.83	5.83	5.43	5.51	3.66	4.17	227
	1.5	27.44	6.30	5.63	3.94	229	29.88	6.30	5.63	6.38	4.53	4.49	240
	2	27.44	6.30	5.63	3.94	229	29.88	6.30	5.63	6.38	4.53	4.49	240
	3	28.23	6.81	5.91	4.13	236	30.71	6.81	5.91	6.61	4.76	4.88	251
	5	29.13	8.35	6.54	5.00	258	31.97	8.35	6.54	7.83	5.20	6.18	280
	7.5	30.87	8.35	6.54	5.00	273	33.70	8.35	6.54	7.83	5.20	6.18	295
	10	31.77	9.49	8.31	5.63	304	35.51	9.49	8.31	9.37	6.69	7.17	344
	15	34.13	9.88	8.31	5.63	335	37.87	9.88	8.31	9.37	6.69	7.17	375
	20	37.68	12.76	9.13	11.61	456	41.81	12.76	9.13	15.16	8.66	-	529
3B160, 3B165	5	30.29	8.35	6.54	5.00	304	33.11	8.35	6.54	7.83	5.20	6.18	326
	7.5	32.02	8.35	6.54	5.00	320	34.84	8.35	6.54	7.83	5.20	6.18	342
	10	33.12	9.49	8.31	5.63	353	36.85	9.49	8.31	9.37	6.69	7.17	392
	15	35.48	9.88	8.31	5.63	384	39.21	9.88	8.31	9.37	6.69	7.17	421
	20	38.83	12.76	9.13	11.61	503	42.95	12.76	9.13	15.16	8.66	-	576
	25	42.56	15.51	11.69	13.39	657	49.06	15.51	11.69	21.65	14.45	-	770
	30	42.56	15.51	11.69	13.39	657	49.06	15.51	11.69	21.65	14.45	-	770

Gearmotors

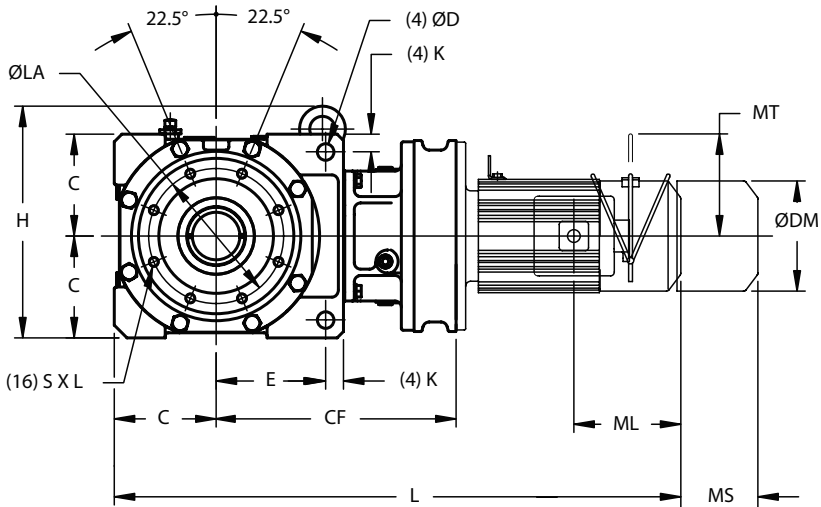
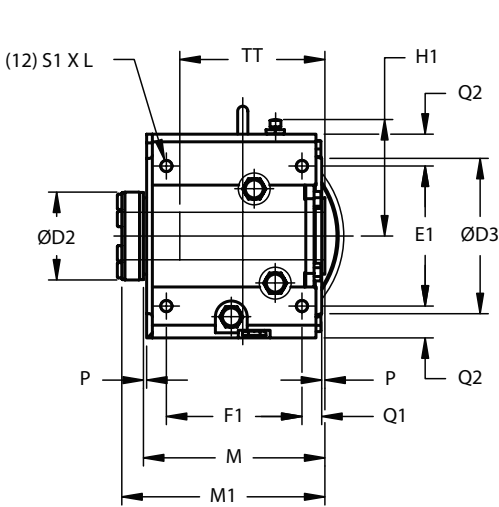
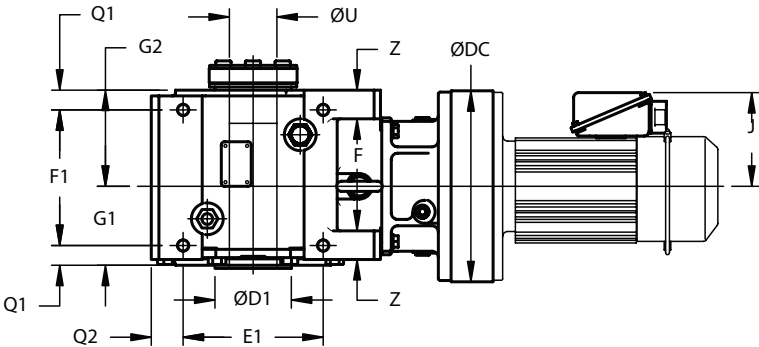
Dimensions

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Dimensions

Single Reduction LHYM-3C140~3E175

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



All dimensions are in inches.

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

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

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Single Reduction LHYM-3C140~3E175 Dimensions

All dimensions are in inches.

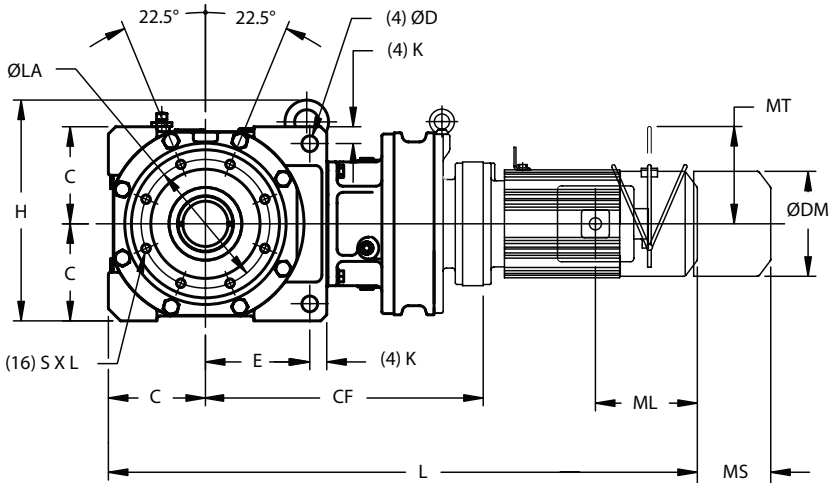
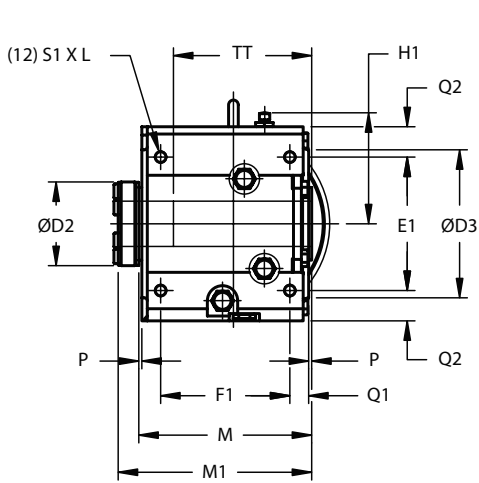
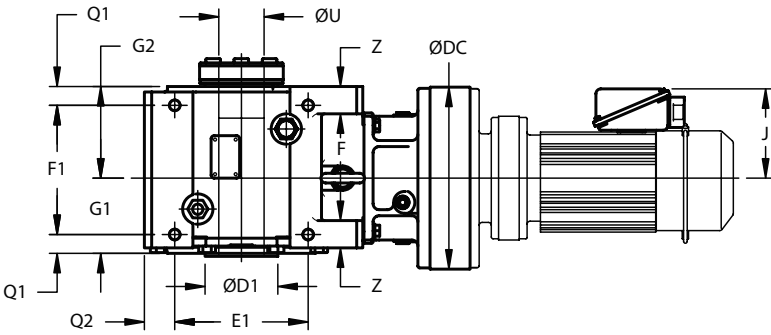
Model	4 Pole Motor HP	Without Brake					With Brake						
		L	ØDM	J	ML	W (lb)	L	ØDM	J	ML	MS	MT	W (lb)
3C140, 3C145	1.5	30.94	6.30	5.63	3.94	333	33.39	6.30	5.63	6.38	4.53	4.49	344
	2	30.94	6.30	5.63	3.94	333	33.39	6.30	5.63	6.38	4.53	4.49	344
	3	31.73	6.81	5.91	4.13	340	34.21	6.81	5.91	6.61	4.76	4.88	355
	5	32.64	8.35	6.54	5.00	362	35.47	8.35	6.54	7.83	5.20	6.18	384
	7.5	34.37	8.35	6.54	5.00	377	37.20	8.35	6.54	7.83	5.20	6.18	399
	10	35.28	9.88	8.31	5.63	408	39.02	9.88	8.31	9.37	6.69	7.17	448
	15	37.64	9.88	8.31	5.63	439	41.38	9.88	8.31	9.37	6.69	7.17	478
	20	41.18	12.76	9.13	11.61	560	45.31	12.76	9.13	15.16	8.66	-	635
3C160, 3C165	2	31.97	6.30	5.63	3.94	379	34.41	6.30	5.63	6.38	4.53	4.49	390
	3	32.56	6.81	5.91	4.13	386	35.04	6.81	5.91	6.61	4.76	4.88	401
	5	33.46	8.35	6.54	5.00	406	36.30	8.35	6.54	7.83	5.20	6.18	428
	7.5	35.20	8.35	6.54	5.00	421	38.03	8.35	6.54	7.83	5.20	6.18	443
	10	36.30	9.88	8.31	5.63	454	40.04	9.88	8.31	9.37	6.69	7.17	494
	15	38.66	9.88	8.31	5.63	485	42.40	9.88	8.31	9.37	6.69	7.17	523
	20	42.01	12.76	9.13	11.61	604	46.14	12.76	9.13	15.16	8.66	-	679
	25	45.75	15.51	11.69	13.39	759	52.24	15.51	11.69	21.65	14.45	-	871
	30	45.75	15.51	11.69	13.39	759	52.24	15.51	11.69	21.65	14.45	-	871
3C170, 3C175	5	34.69	8.35	6.54	5.00	456	37.52	8.35	6.54	7.83	5.20	6.18	478
	7.5	36.42	8.35	6.54	5.00	472	39.25	8.35	6.54	7.83	5.20	6.18	494
	10	37.13	9.88	8.31	5.63	505	40.87	9.88	8.31	9.37	6.69	7.17	545
	15	39.49	9.88	8.31	5.63	536	43.23	9.88	8.31	9.37	6.69	7.17	576
	20	42.64	12.76	9.13	11.61	655	46.77	12.76	9.13	15.16	8.66	-	730
	25	46.38	15.51	11.69	13.39	584	52.87	15.51	11.69	21.65	14.45	-	917
	30	46.38	15.51	11.69	13.39	584	52.87	15.51	11.69	21.65	14.45	-	917
	40	46.38	15.51	11.69	13.39	856	52.87	15.51	11.69	21.65	14.57	-	950
3D160, 3D165	3	36.57	6.81	5.91	4.13	534	39.06	6.81	5.91	6.61	4.76	4.88	549
	5	37.48	8.35	6.54	5.00	553	40.31	8.35	6.54	7.83	5.20	6.18	576
	7.5	39.21	8.35	6.54	5.00	569	42.05	8.35	6.54	7.83	5.20	6.18	591
	10	40.31	9.88	8.31	5.63	602	44.06	9.88	8.31	9.37	6.69	7.17	642
	15	42.68	9.88	8.31	5.63	633	46.42	9.88	8.31	9.37	6.69	7.17	670
	20	46.02	12.76	9.13	11.61	752	50.16	12.76	9.13	15.16	8.66	-	827
	25	49.76	15.51	11.69	13.39	906	56.26	15.51	11.69	21.65	14.45	-	1019
	30	49.76	15.51	11.69	13.39	906	56.26	15.51	11.69	21.65	14.45	-	1019
3D170, 3D175	5	37.83	8.35	6.54	5.00	595	40.67	8.35	6.54	7.83	5.20	6.18	617
	7.5	39.57	8.35	6.54	5.00	611	42.40	8.35	6.54	7.83	5.20	6.18	633
	10	40.28	9.88	8.31	5.63	644	44.02	9.88	8.31	9.37	6.69	7.17	684
	15	42.64	9.88	8.31	5.63	675	46.38	9.88	8.31	9.37	6.69	7.17	714
	20	45.79	12.76	9.13	11.61	794	49.92	12.76	9.13	15.16	8.66	-	869
	25	49.53	15.51	11.69	13.39	944	56.02	15.51	11.69	21.65	14.45	-	1056
	30	49.53	15.51	11.69	13.39	944	56.02	15.51	11.69	21.65	14.45	-	1056
	40	49.53	15.51	11.69	13.39	994	56.02	15.51	11.69	21.65	14.57	-	1089
3E170, 3E175	5	39.80	8.35	6.54	5.00	759	42.64	8.35	6.54	7.83	5.20	6.18	781
	7.5	41.54	8.35	6.54	5.00	774	44.37	8.35	6.54	7.83	5.20	6.18	796
	10	42.24	9.88	8.31	5.63	807	45.98	9.88	8.31	9.37	6.69	7.17	847
	15	44.61	9.88	8.31	5.63	838	48.35	9.88	8.31	9.37	6.69	7.17	878
	20	47.76	12.76	9.13	11.61	957	51.89	12.76	9.13	15.16	8.66	-	1032
	25	51.50	15.51	11.69	13.39	1107	57.99	15.51	11.69	21.65	14.45	-	1219
	30	51.50	15.51	11.69	13.39	1107	57.99	15.51	11.69	21.65	14.45	-	1219
	40	51.50	15.51	11.69	13.39	1158	57.99	15.51	11.69	21.65	14.57	-	1252

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Dimensions

Double Reduction LHYM-3A10DA~3C16DB

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



All dimensions are in inches.

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

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

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

Double Reduction LHYM-3A10DA~3C16DB Dimensions

All dimensions are in inches.

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

Gearmotors

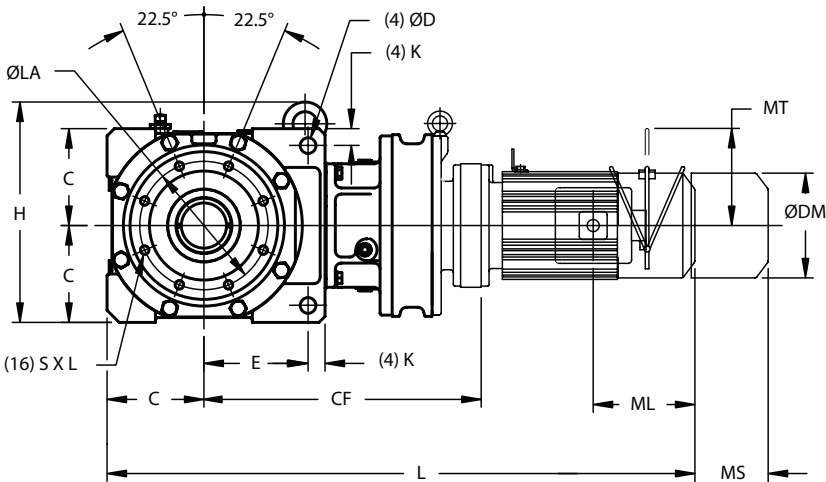
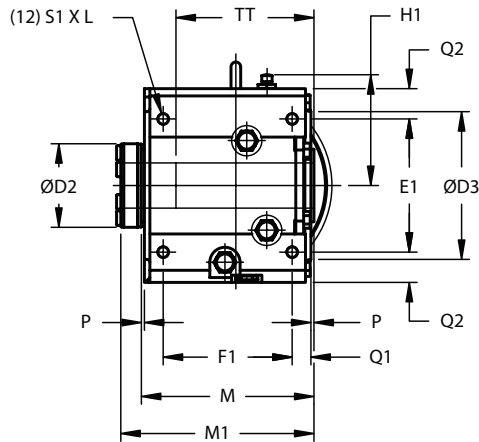
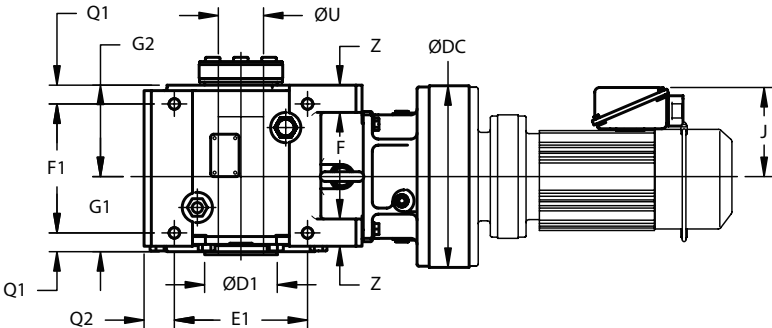
Dimensions

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

Dimensions

Double Reduction LHYM-3D16DA~3E17DC

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



All dimensions are in inches.

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

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

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

Double Reduction LHYM-3D16DA~3E17DC Dimensions

All dimensions are in inches.

Model	4 Pole Motor HP	Without Brake					With Brake						
		L	ØDM	J	ML	W (lb)	L	ØDM	J	ML	MS	MT	W (lb)
3D16DA	1/4	33.46	4.88	5.04	2.32	518	34.72	4.88	5.04	3.58	2.40	-	523
	1/3	33.46	4.88	5.04	2.32	518	34.72	4.88	5.04	3.58	2.40	-	523
	1/2	34.25	4.88	5.04	2.32	520	35.51	4.88	5.04	3.58	2.40	-	525
	3/4	35.87	5.83	5.43	3.82	529	37.56	5.83	5.43	5.51	3.66	4.17	536
	1	35.87	5.83	5.43	3.82	529	37.56	5.83	5.43	5.51	3.66	4.17	536
	1.5	37.17	6.30	5.63	3.94	538	39.61	6.30	5.63	6.38	4.53	4.49	549
	2	37.17	6.30	5.63	3.94	538	39.61	6.30	5.63	6.38	4.53	4.49	549
3D16DB	1.5	37.72	6.30	5.63	3.94	542	40.16	6.30	5.63	6.38	4.53	4.49	553
	2	37.72	6.30	5.63	3.94	542	40.98	6.30	5.63	6.38	4.53	4.49	553
	3	38.50	6.81	5.91	4.13	551	40.98	6.81	5.91	6.61	4.76	4.88	564
3D16DC	5	40.67	8.35	6.54	5.00	587	43.50	8.35	6.54	7.83	5.20	6.18	609
3D17DA	1/2	34.06	4.88	5.04	2.32	549	35.31	4.88	5.04	3.58	2.40	-	553
	3/4	35.67	5.83	5.43	3.82	558	37.36	5.83	5.43	5.51	3.66	4.17	564
	1	35.67	5.83	5.43	3.82	558	37.36	5.83	5.43	5.51	3.66	4.17	564
	1.5	36.97	6.30	5.63	3.94	564	39.41	6.30	5.63	6.38	4.53	4.49	576
	2	36.97	6.30	5.63	3.94	564	39.41	6.30	5.63	6.38	4.53	4.49	576
3D17DB	2	37.52	6.30	5.63	3.94	571	38.31	6.30	5.63	6.38	4.53	4.49	582
	3	39.96	6.81	5.91	4.13	580	40.79	6.81	5.91	6.61	4.76	4.88	593
3D17DC	3	38.46	6.81	5.91	4.13	591	40.94	6.81	5.91	6.61	4.76	4.88	606
	4	39.37	8.35	6.54	5.00	613	42.20	8.35	6.54	7.83	5.20	6.18	635
	5	39.37	8.35	6.54	5.00	613	42.20	8.35	6.54	7.83	5.20	6.18	635
3E17DA	1/4	36.42	4.88	5.04	2.32	710	37.68	4.88	5.04	3.58	2.40	-	714
	1/3	36.42	4.88	5.04	2.32	710	37.68	4.88	5.04	3.58	2.40	-	714
	1/2	37.20	4.88	5.04	2.32	712	38.46	4.88	5.04	3.58	2.40	-	717
	3/4	38.82	5.83	5.43	3.82	721	40.51	5.83	5.43	5.51	3.66	4.17	728
	1	38.82	5.83	5.43	3.82	721	40.51	5.83	5.43	5.51	3.66	4.17	728
	1.5	40.12	6.30	5.63	3.94	728	42.56	6.30	5.63	6.38	4.53	4.49	739
	2	40.12	6.30	5.63	3.94	728	42.56	6.30	5.63	6.38	4.53	4.49	739
3E17DB	1.5	40.67	6.30	5.63	3.94	734	43.11	6.30	5.63	6.38	4.53	4.49	745
	2	40.67	6.30	5.63	3.94	734	43.11	6.30	5.63	6.38	4.53	4.49	745
	3	43.11	6.81	5.91	4.13	743	43.94	6.81	5.91	6.61	4.76	4.88	756
3E17DC	3	41.61	6.81	5.91	4.13	754	44.09	6.81	5.91	6.61	4.76	4.88	770
	4	42.52	8.35	6.54	5.00	776	45.35	8.35	6.54	7.83	5.20	6.18	798
	5	42.52	8.35	6.54	5.00	776	45.35	8.35	6.54	7.83	5.20	6.18	798
	7.5	44.25	8.35	6.54	5.00	792	47.09	8.35	6.54	7.83	5.20	6.18	814

Gearmotors

Dimensions

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Gearmotors



4

Options

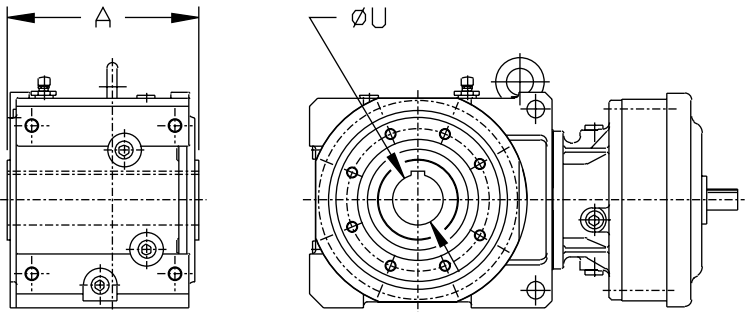
Cyclo BBB

Options

Options

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

Keyed Hollow Shaft



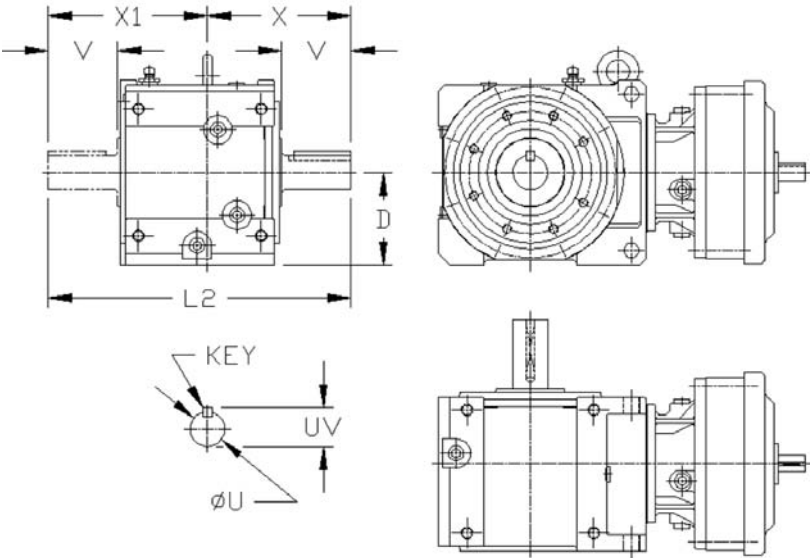
Frame Size	ØU	A	Keyway	TK*
3A	2.000	8.50	1/2 x 1/4	6.50
3B	2.375	10.20	5/8 x 5/16	7.87
3C	2.750	11.22	5/8 x 5/16	9.76
3D	3.250	13.39	3/4 X 3/8	11.93
3E	4.000	14.69	1 X 1/2	10.24

*Recommended minimum shaft engagement

Cyclo BBB

Options

Solid Output Shaft

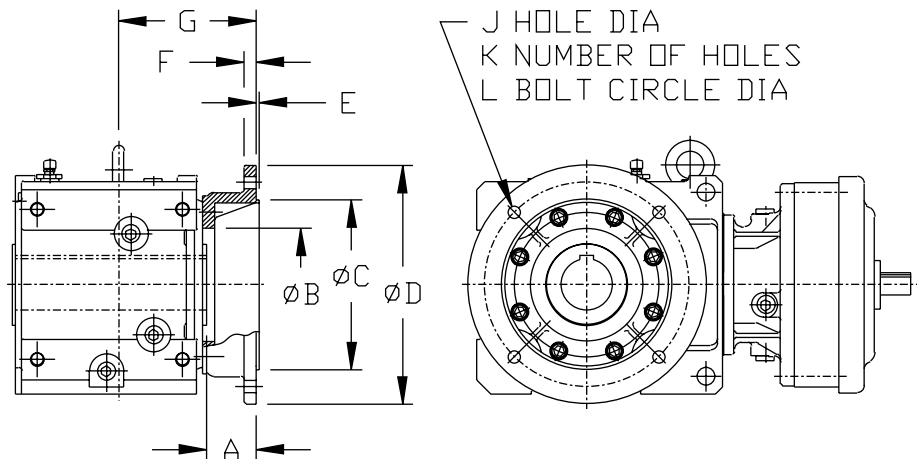


Frame Size	ØU	UV	D	V	X	Key	X1	L2
3A	2.000	2.22	4.33	3.54	7.48	1/2 x 1/2 x 2.76	8.11	15.59
3B	2.875	3.20	5.12	4.53	9.53	3/4 x 3/4 x 3.15	9.72	19.25
3C	3.125	3.45	6.30	5.71	10.79	3/4 x 3/4 x 4.72	11.85	22.64
3D	3.625	4.01	7.48	6.69	12.80	7/8 x 7/8 x 5.51	13.98	26.77
3E	4.375	4.82	8.46	7.87	14.29	1 x 1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

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

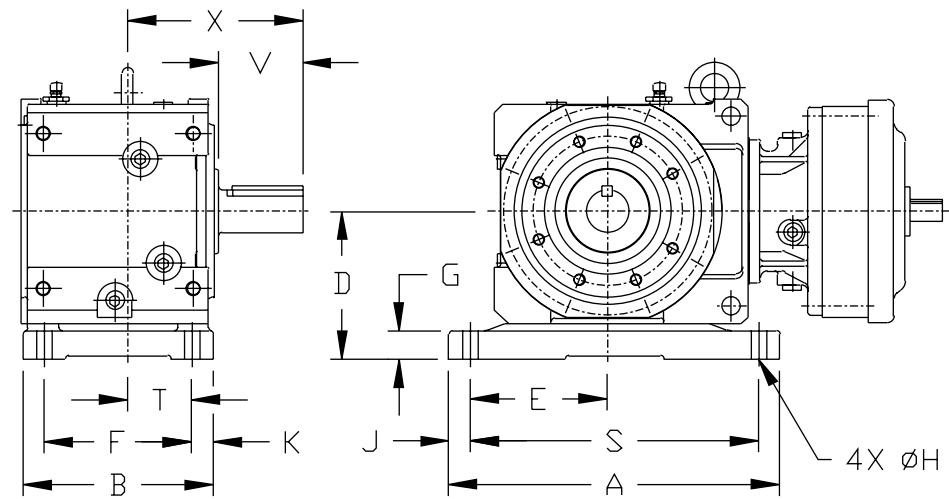
Options

Output Flange



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

Foot Mounted

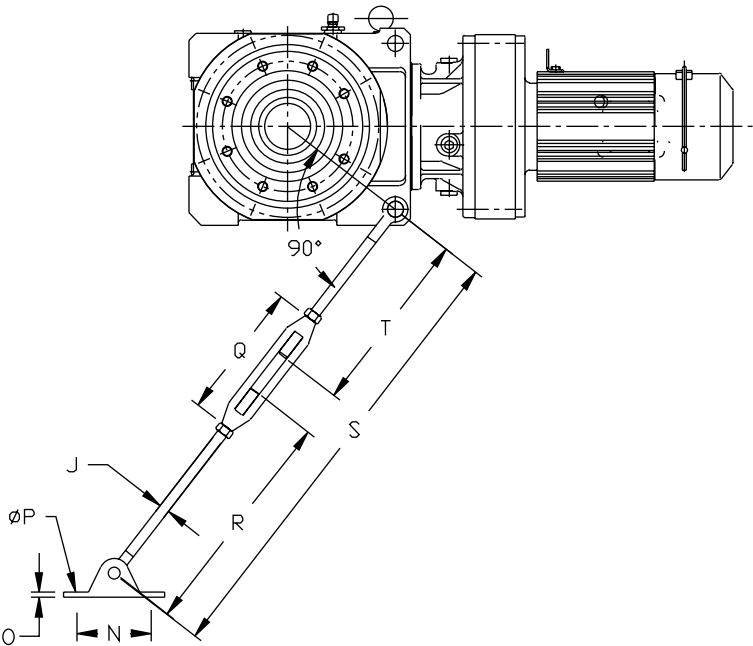


Frame Size	E	J	S	A	G	D	T	K	F	B	H	V	X
3A	5.31	0.79	11.02	12.60	0.98	5.51	2.83	0.83	6.30	7.95	0.55	3.54	7.48
3B	6.30	0.79	13.58	15.16	1.38	6.69	3.74	0.98	7.68	9.65	0.71	4.53	9.53
3C	7.68	1.18	17.52	19.88	1.57	8.27	3.58	1.18	8.27	10.63	0.87	5.71	10.79
3D	9.25	1.18	19.69	22.05	1.77	9.65	4.53	1.18	10.24	12.60	1.02	6.69	12.80
3E	10.63	1.38	22.83	25.59	1.77	10.83	4.57	1.50	11.02	13.98	1.30	7.87	14.29

Options

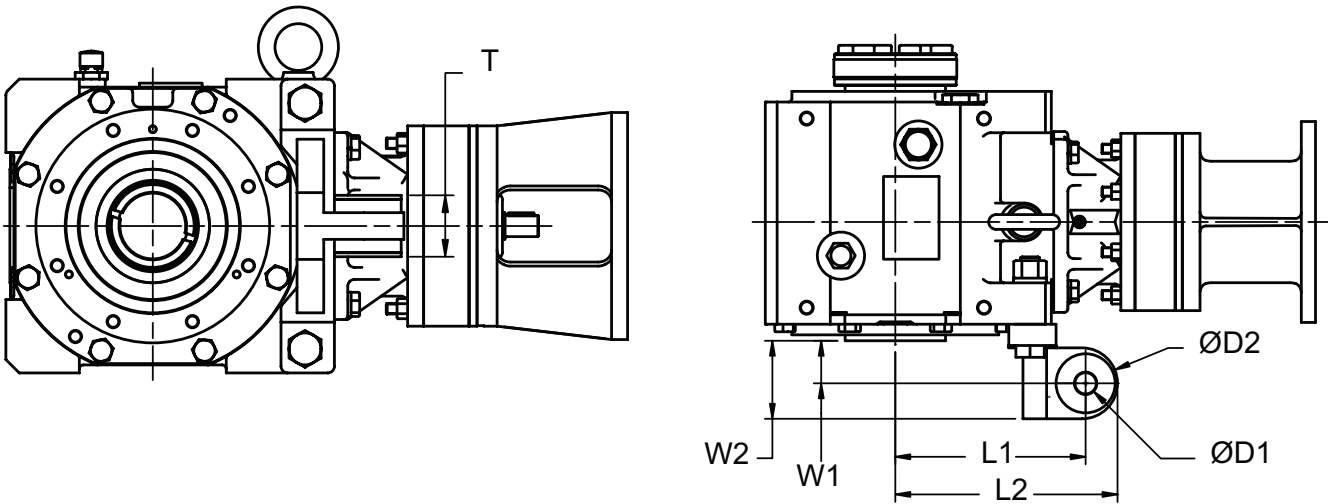
All dimensions are in inches. Dimensions shown are for reference only and are subject to change without notice, unless certified. Certified prints are available after receipt of an order; consult factory.

Torque Arm TURNBUCKLE TYPE



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

Torque Arm T-TYPE (Optional)



5

Appendix

Cyclo BBB

Appendix

Special Load Guidelines Overhung Load

Reducer/Gearmotor Allowable Overhung Load

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

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

LEGEND

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

Table 5.1 Load Connection Factor

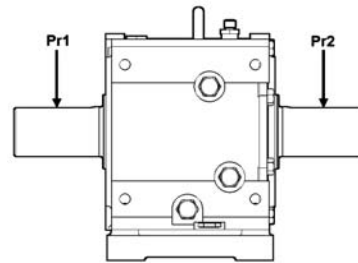
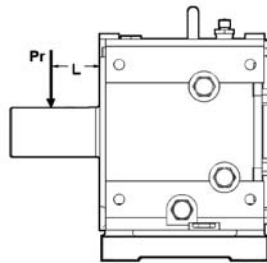
Type of Connection	Cf
General Purpose Chain	1.0
Machined Gear, Pinion or Synchronous Belt	1.25
V-Belt	1.5
Flat Belt	2.5

Table 5.2 Service Factor

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

Figure 5.1 Centerline of Load, Output

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



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

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

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

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

Unit: lbs.

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

Special Load Guidelines Overhung Load continued

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

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

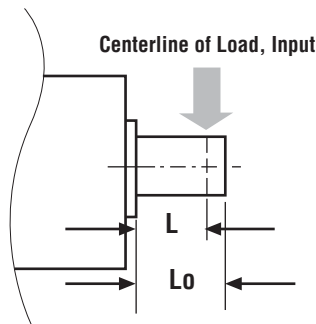
Table 5.6 Allowable Overhung Load for Output Shaft: (Solid Output Shaft) (Lf, Cf, Fs =1)

Unit: lbs.

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

Table 5.7 Input Shaft Load Location Factor

Single Reduction Frame Size	L (inch)											
	1/4	1/2	3/4	1	1 1/4	1 1/2	1 3/4	2	2 1/2	3	3 1/2	4
3A100, 3A105, 3A110, 3A115	0.93	1.09	1.52	2.03	—	—	—	—	—	—	—	—
3A120, 3A125 3B120, 3B125	—	0.87	1.10	1.43	1.77	2.12	—	—	—	—	—	—
3A140, 3A145 3B140, 3B145 3C140, 3C145	—	0.84	0.98	1.25	1.53	1.83	2.11	—	—	—	—	—
3B160, 3B165 3C160, 3C165 3D160, 3D165	—	0.94	0.97	1.06	1.22	1.36	1.51	1.66	—	—	—	—
3C170, 3C175 3D170, 3D175 3E170, 3E175	—	—	0.95	0.99	1.09	1.23	1.38	1.51	1.79	2.08	—	—

Figure 5.2

Table 5.8 Input Shaft Overhung Load Capacity (Lf, Cf, Sf = 1)

Unit: lbs.

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

Special Load Guidelines Inertia

Table 5.9 Moment of Inertia on Motor Shaft of Gearmotor¹Units: lbs·inch²

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

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

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

Table 5.10 Moment of Inertia on Motor Shaft of 3-Phase Integral Motor

Units: lbs·inch²

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

Table 5.11 Moment of Inertia on Motor Shaft of 3 Phase, Inverter Duty, Integral Motor

Units: lbs·inch²

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

Cyclo BBB

Special Load Guidelines Inertia continued

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

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

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

Special Load Guidelines Misc.

Excessive Overloads

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

Selection for Applications Involving Shock Loading

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

Allowable Radial and Thrust Loads

The loads imposed on the slow speed shaft vary with the method of connecting the shaft to the driven machine. Frequently, in addition to torsional forces, radial

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

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

Load Centering

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

Cyclo BBB

Appendix

Taper Grip® Bushing

Introduction

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

Safety

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

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

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

Table 5.13 Driven Shaft Tolerances

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

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

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

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

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

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

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



Fig. 5.3 Taper-Grip® Bushing Parts

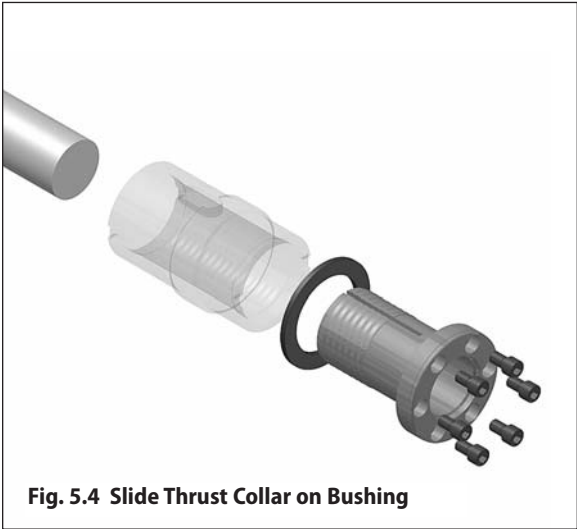


Fig. 5.4 Slide Thrust Collar on Bushing

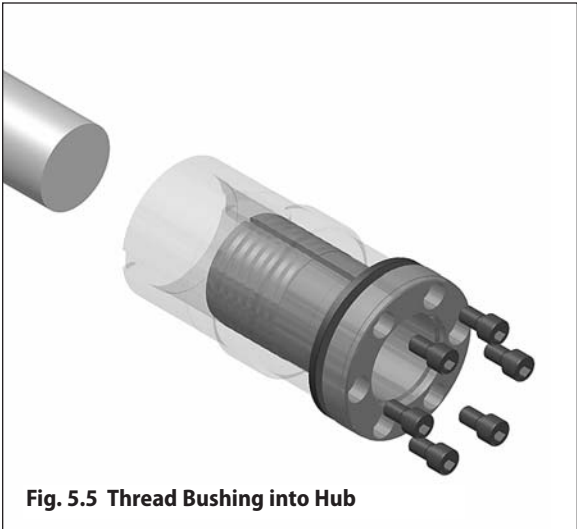


Fig. 5.5 Thread Bushing into Hub

Taper Grip® Bushing continued

Unit Installation

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

Table 5.14 Minimum Shaft Engagement

BBB Model	Minimum Shaft Engagement	
	mm	inches
A	95	7.79
B	100	9.33
C	130	10.16
D	146	11.82
E	145	13.94

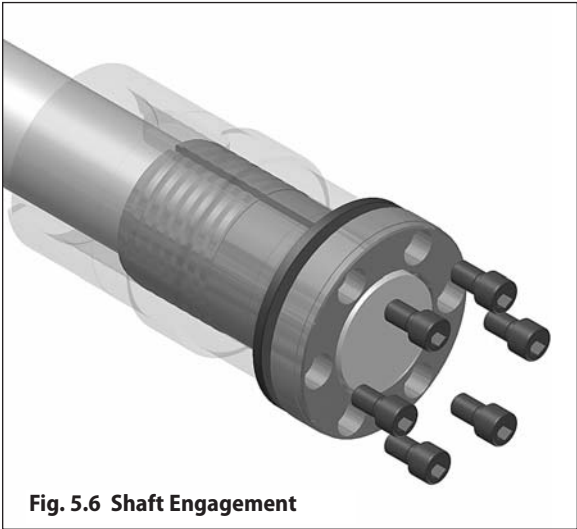


Fig. 5.6 Shaft Engagement

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

Table 5.15 Capscrew Tightening Torques

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

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.

Removal Procedure

Step 1 – Support the unit prior to beginning the removal procedure. Loosen all capscrews in the bushing until they are free from contact with the thrust collar.

Step 2 – With a soft mallet, sharply strike the flange of the Taper-Grip® bushing to release the taper engagement with the unit.

Step 3 – Hand-tighten at least two (2) capscrews until they contact the thrust collar. This will prevent accidental taper engagement between the bushing and the hub during removal of the unit from the shaft.

Step 4 – Slide the unit from the shaft. If unit removal is difficult due to corrosion or fouling, employ a puller on the bushing to remove the unit from the shaft.

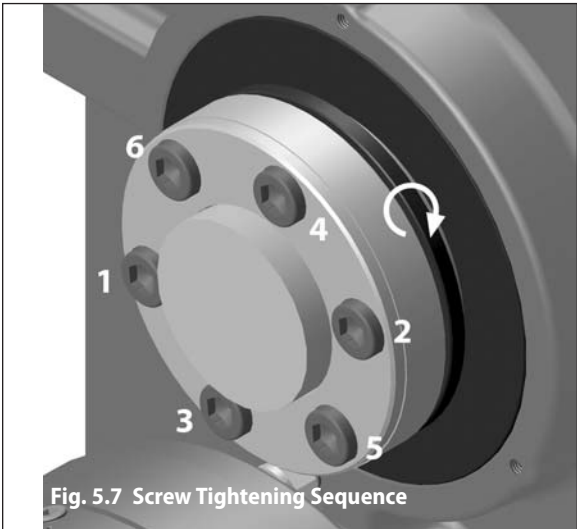


Fig. 5.7 Screw Tightening Sequence

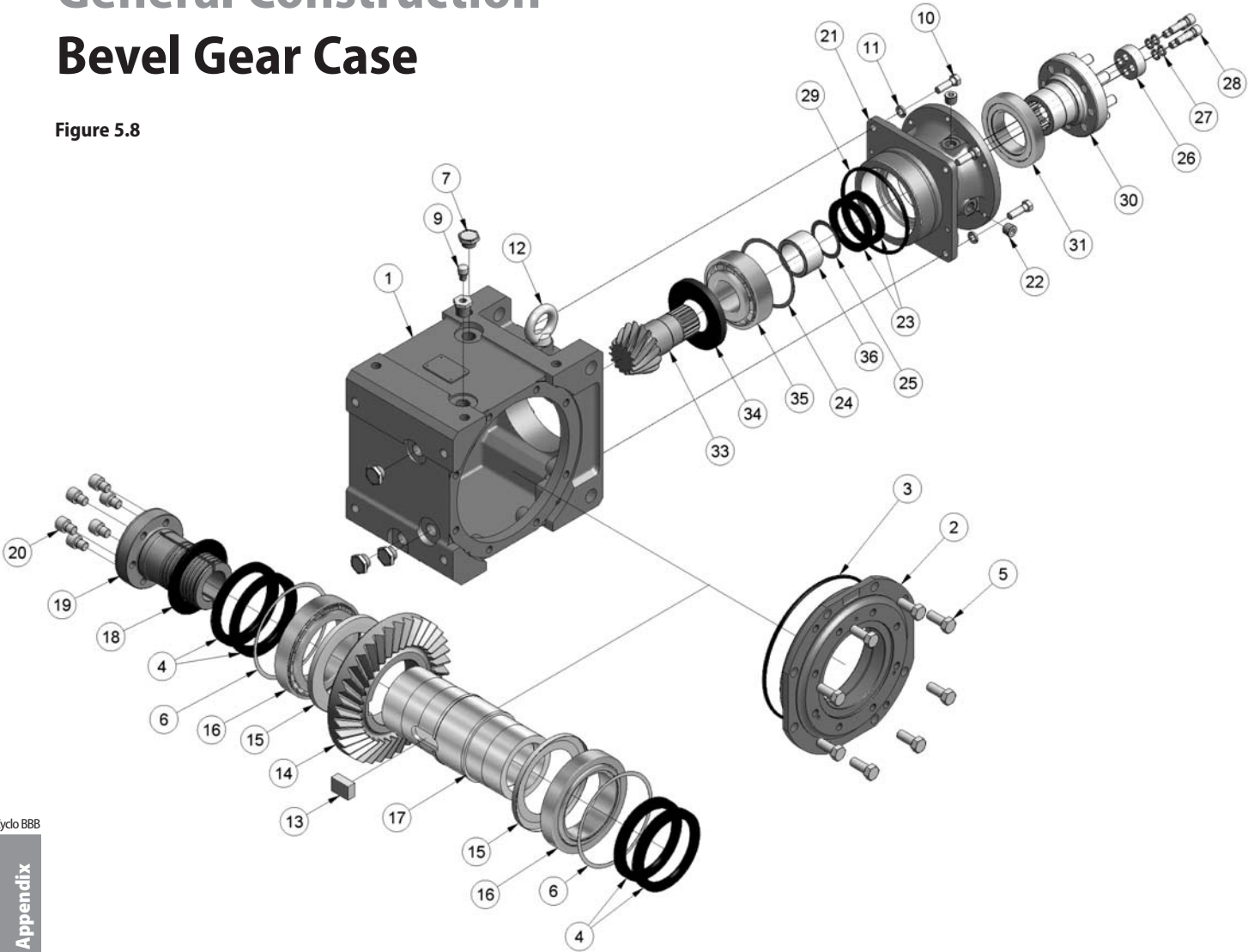
Cyclo BBB

Appendix

Parts List

General Construction Bevel Gear Case

Figure 5.8



Cyclo BBB

Appendix

Parts List continued

Table 5.16 Parts Code Numbers

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

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

Cyclo Parts List

Cyclo Reducer Input Section

Single Reduction

Figure 5.9

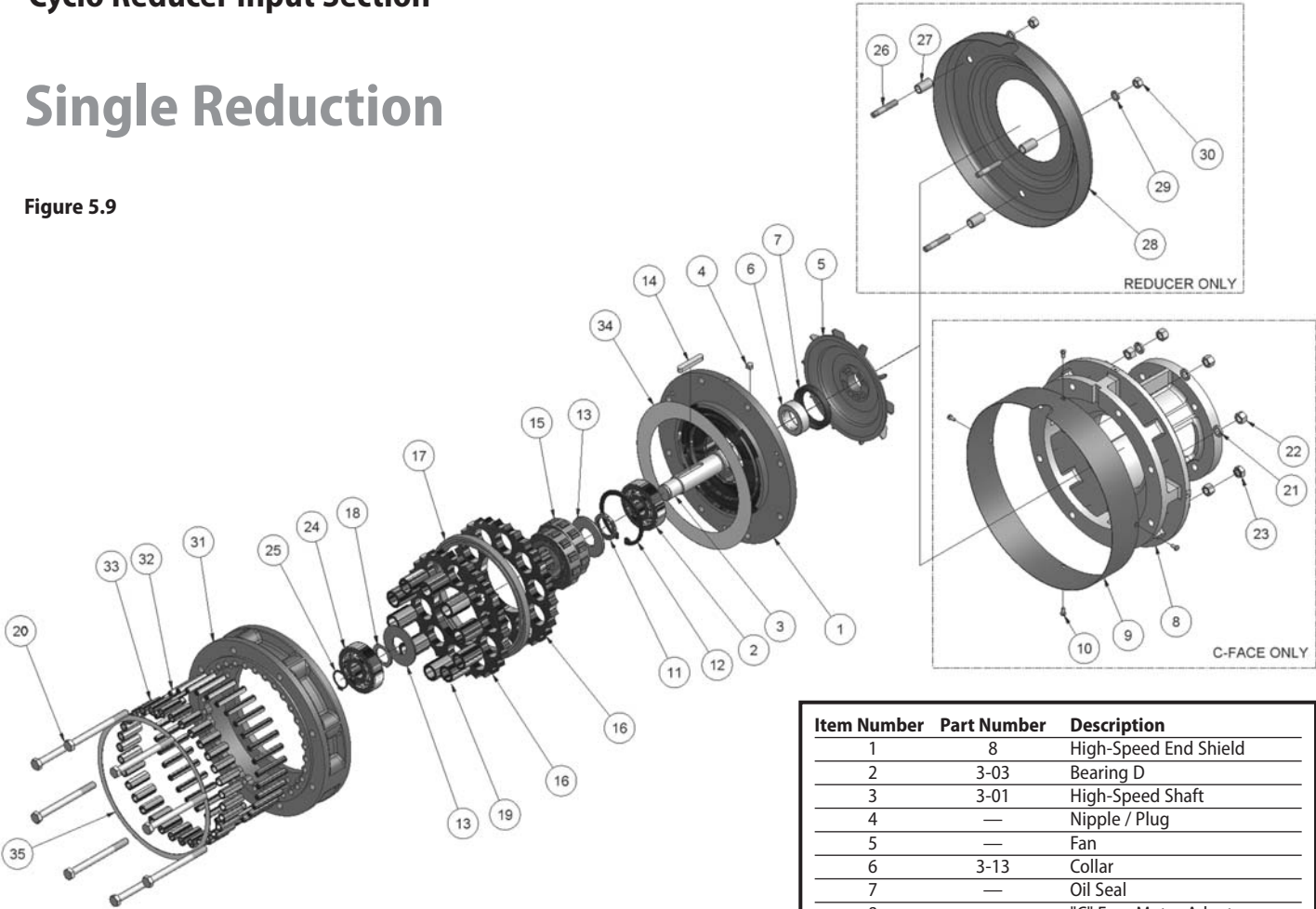


Table 5.17 Single Reduction Input Section Main Parts

Item Number	Part Number	Description
1	8	High-Speed End Shield
2	3-03	Bearing D
3	3-01	High-Speed Shaft
4	—	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 Parts List continued

Cyclo Reducer Input Section

Double Reduction

Figure 5.10

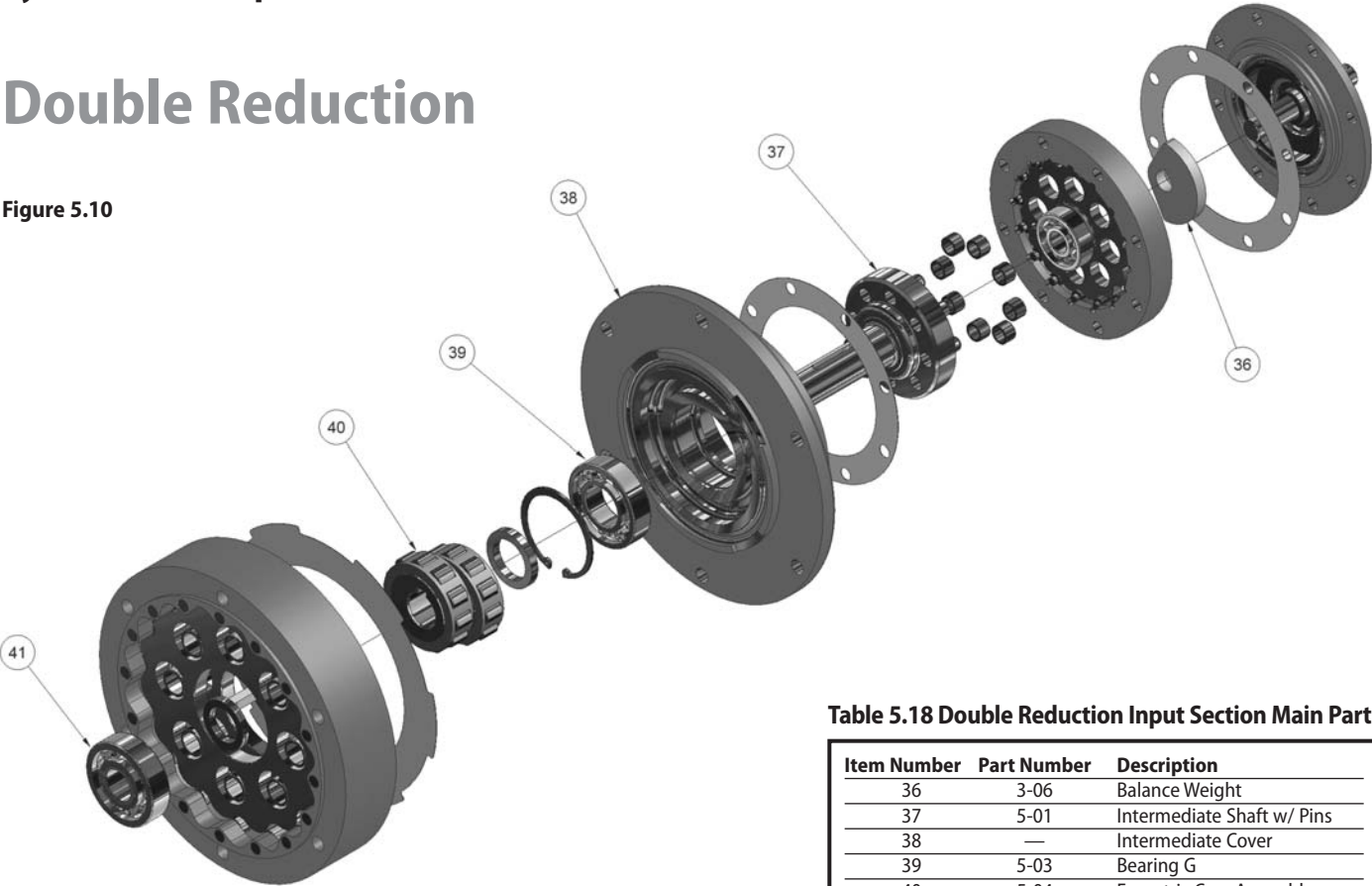


Table 5.18 Double Reduction Input Section Main Parts

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

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

Specific units may or may not contain all shown here.

Please consult the factory for specific part questions.

Motor

Standard Motor Data

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

HP	RPM	Frame Size	Full Load Amp.		Inertia 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 5.20 230/460V, Synchronous Speed 1800 RPM, 60 Hz, Continuous Duty, TEFC

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

Note: ** 1/8 HP is TENV.

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

HP	Frame Size	Full Load		Current (A)			Starting Breakdown		Power		NEMA	Inertia WR²
		Rated RPM	Torque in-lbs	Full Load		Starting % of FL	Torque (% of FL)	Torque (% of FL)	Efficiency %	Factor %	Code Letter	
				230V	460V							
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

Motor continued

CSA Approved Motor Data

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

HP	Frame Size	Full Load		Current (A)				Starting 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 5.23 EPACT/EEV Efficiency Motors, CSA Approved
230/460V, Synchronous Speed 1800 RPM, 60 Hz, Continuous Duty, TEFC

HP	Frame Size	Full Load		Current (A)				Starting 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 BBB

Motor continued

CSA Approved Motor Data continued

Table 5.24 CSA Approved Motors

575V, Synchronous Speed 1800 RPM, 60 Hz, Continuous Duty, TEFC

HP	Frame Size	Full Load		Current (A)			Starting 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 5.25 EPACT/EEV Efficiency Motors, CSA Approved

575V, Synchronous Speed 1800 RPM, 60 Hz, Continuous Duty, TEFC

HP	Frame Size	Full Load		Current (A)			Starting 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 BBB

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)

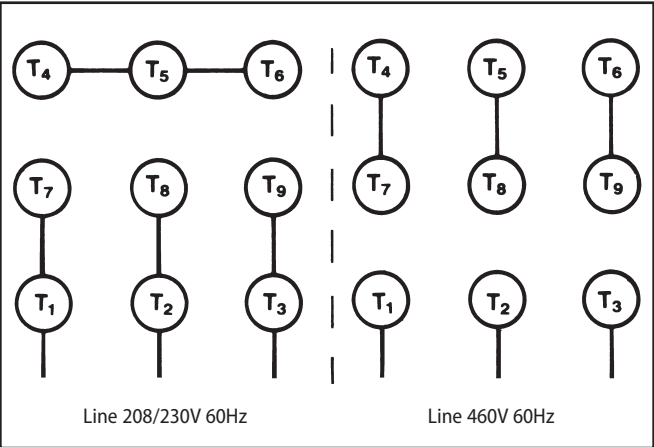
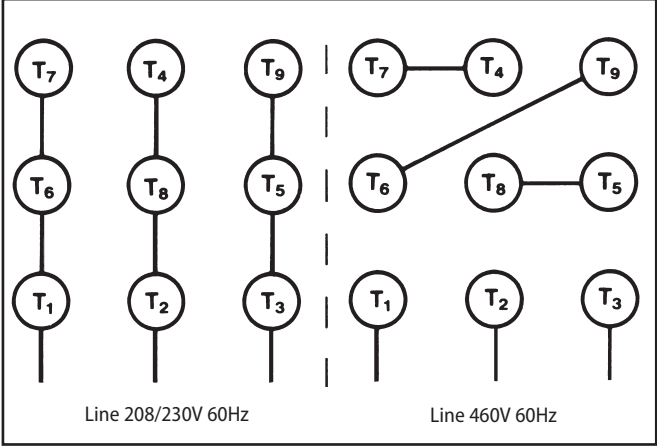
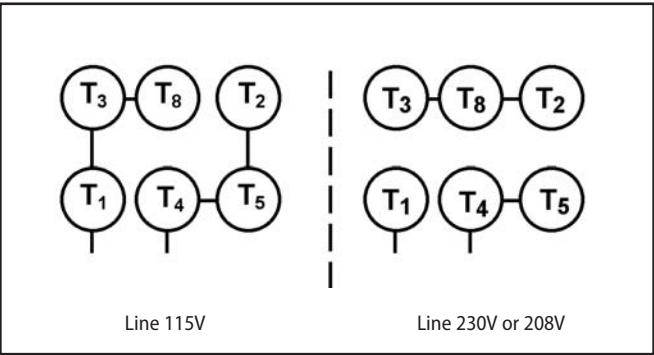


Figure 5.12 Delta-Connected (7.5 HP and larger)



Single Phase Motors

Figure 5.13 Single Phase Motor Wiring Diagram



Cyclo BBB

Motor continued

Motor Thermal Rating (C x Z)

Table 5.26 Motor Thermal Rating (C x Z)

Motor Power HP	Allowable C x Z				Motor Moment of Inertia lb-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® BBB gearmotors operates with direct current supplied by a dual voltage rectifier mounted in the motor conduit box.

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

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

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

Table 5.27 Brakemotor Characteristics

HP	Type		Brake Torque		Inertia WR2 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 BBB

Motor continued

Brakemotor Standard Wiring Connection, Dual Voltage

Models FB-01A through FB-15B

Figure 5.14 Normal Brake Action, 230V, 575V

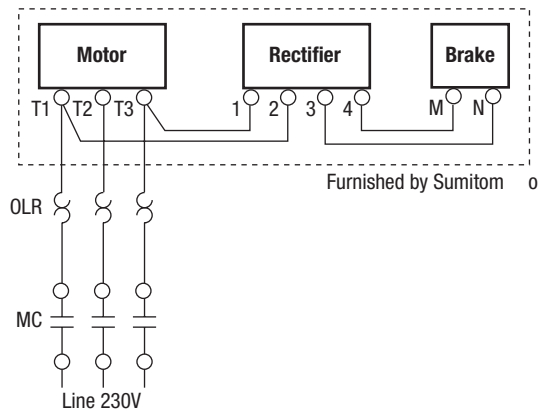


Figure 5.15 Fast Brake Action, 230V

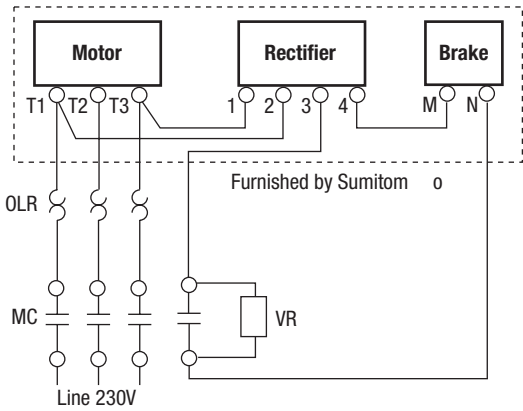


Figure 5.16 Normal Brake Action, 460V

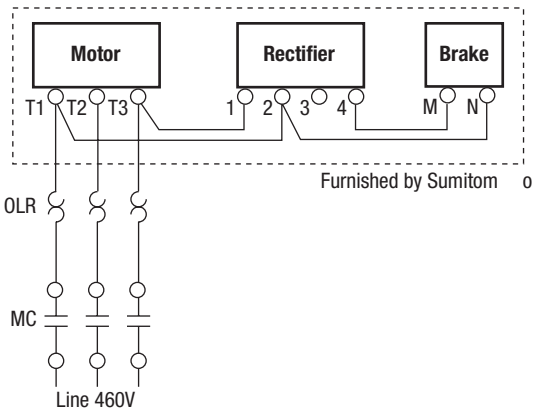
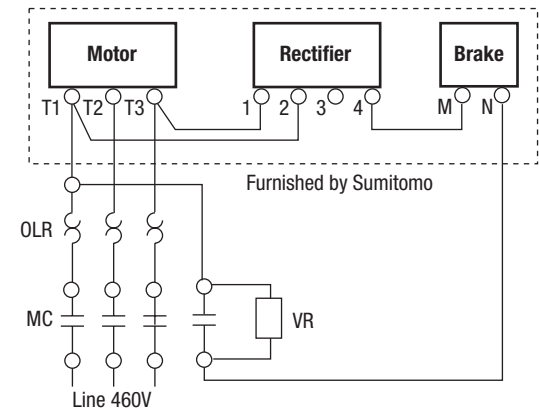


Figure 5.17 Fast Brake Action, 460V, 575V



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 5.28 Varistor Specifications Table

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

Brakemotor Standard Wiring Connection, Dual Voltage continued

Models CMB-20

Figure 5.18 Normal Brake Action, 230V

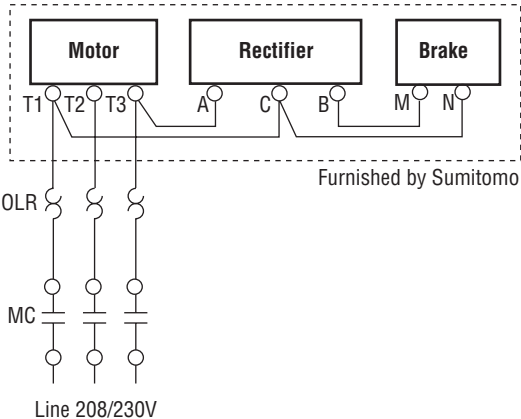


Figure 5.19 Fast Brake Action, 230V

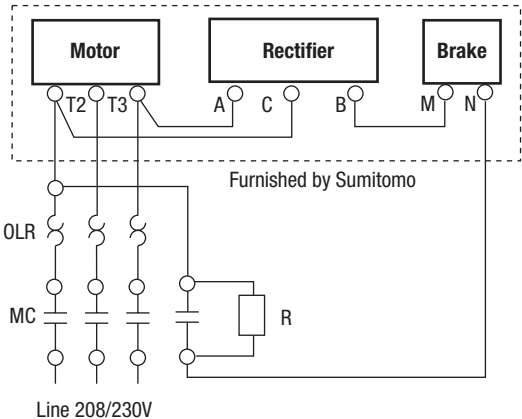


Figure 5.20 Normal Brake Action, 460V

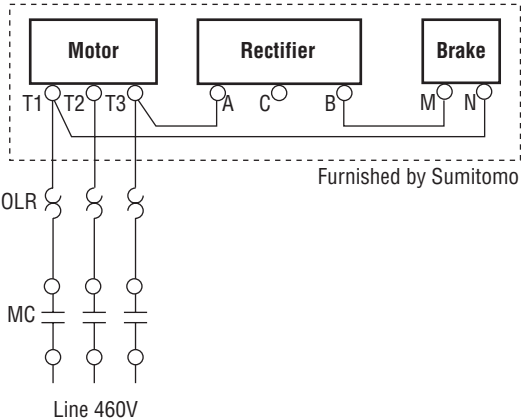


Figure 5.21 Fast Brake Action, 460V

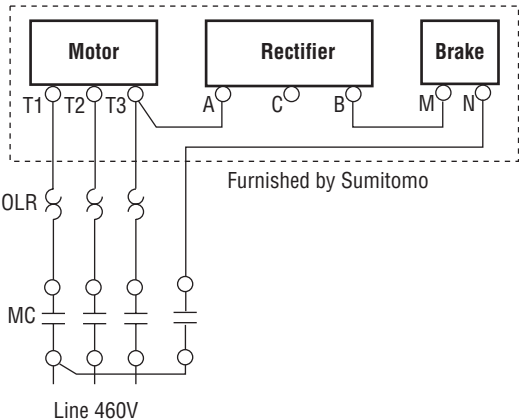


Figure 5.22 Normal Brake Action, 575V

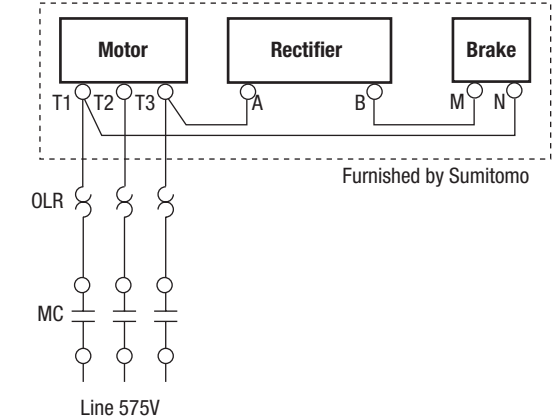
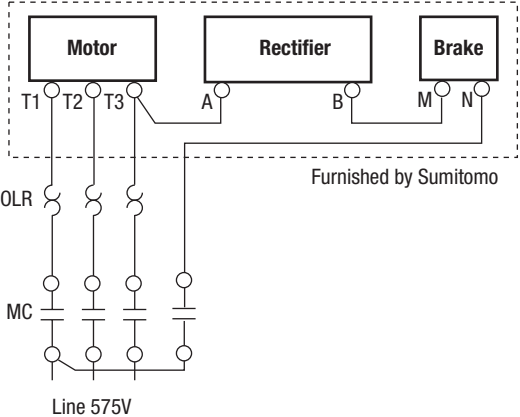


Figure 5.23 Fast Brake Action, 575V



Motor continued

Brakemotor Standard Wiring Connection, Dual Voltage continued

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

Figure 5.24 Normal Brake Action, 230V, 575V

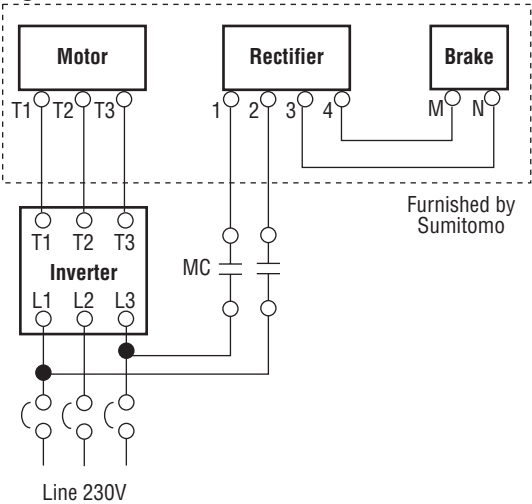


Figure 5.25 Fast Brake Action, 230V

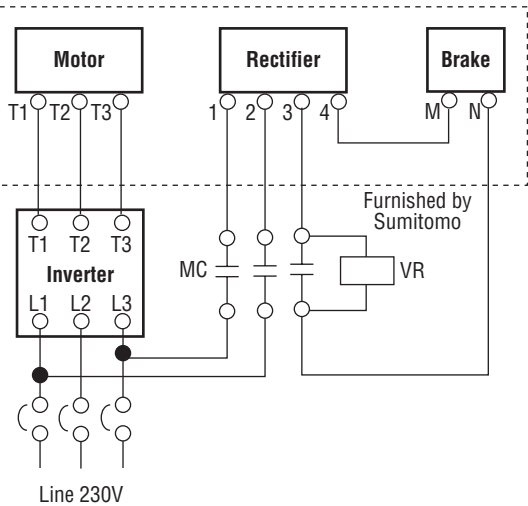


Figure 5.26 Normal Brake Action, 460V

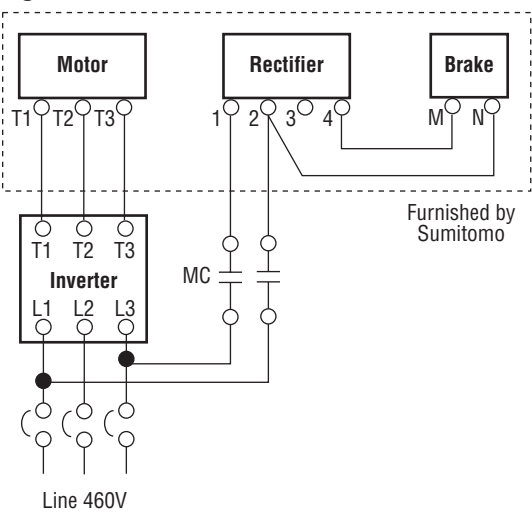
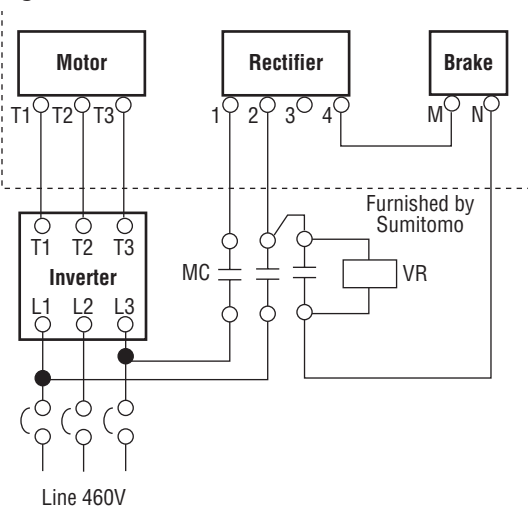


Figure 5.27 Fast Brake Action, 230V, 575V



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

Note: [1] Refer to Varistor Specifications Table on pg. 5.18

Table 5.29 Rectifier Data

Brake Type	Motor (HP X P)	Rectifier Model 230V/460V	Rectifier P. N. Number	Rectifier Model 575V	Rectifier P. N. Number
FB-01A	1/8 x 4	25FW - 4FB	DX527WW-01	O5F-5	DT574WW-01
FB-02A	1/4 x 4 1/3 x 4	25FW - 4FB	DX527WW-01	O5F-5	DT574WW-01
FB-05A	1/2 x 4	25FW - 4FB	DX527WW-01	O5F-5	DT574WW-01
FB-1B	3/4 x 4 1 x 4	25FW - 4FB	DX527WW-01	O5F-5	DT574WW-01
FB-2B	1.5 x 4 1 x 4	25FW - 4FB	DX527WW-01	O5F-5	DT574WW-01
FB-3B	3 x 4	25FW - 4FB	DX527WW-01	O5F-5	DT574WW-01
FB-5B	5 x 4	25FW - 4FB	DX527WW-01	O5F-5	DT574WW-01
FB-8B	7.5 x 4	25FW - 4FB	DX527WW-01	O5F-5	DT574WW-01
FB-10B	10 x 4	25FW - 4FB	DX527WW-01	10F-6FB	DW141WW-01
FB-15B	15 x 4	25FW - 4FB	DX527WW-01	10F-6FB	DW141WW-01
CMB-20	20 x 4	SB25F-3HS	DN937WW-G01	SB25-6H	DN934WW-G01

Lubrication

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

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

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

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

Table 5.30 Lubrication Type Per Unit Size

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

Table 5.31 Standard Oils

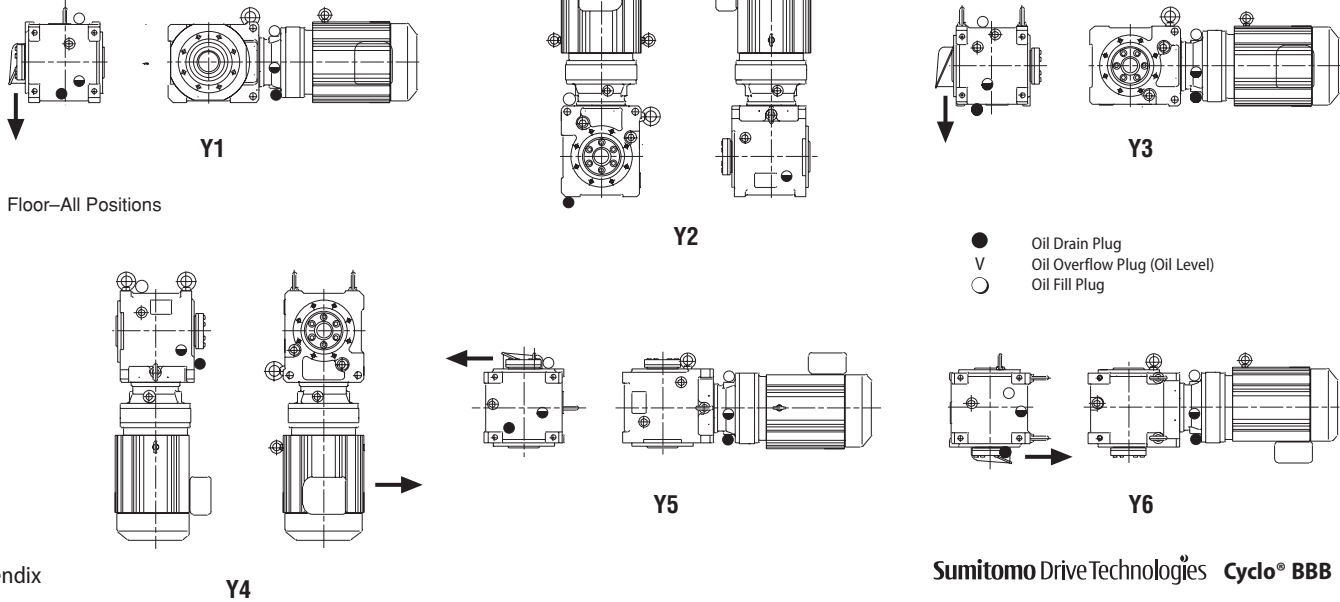
Ambient Temperature (°F)	ChevronTexaco	Exxon Oil	Mobil Oil	Shell Oil	BP Oil
14 to 41°	EP Gear Compound 68	Spartan EP 68	Mobilgear 600 XP 68 (ISO VG 68)	Omala Oil 68	Energol GR-XP 68
32 to 95°	EP Gear Compound 100, 150	Spartan EP 100 EP 150	Mobilgear 600 XP 100, 150 (ISO VG 100, 150)	Omala Oil 100, 150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

Table 5.32 Standard Greases

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

Figure 5.28

Oil Plug Locations



Lubrication continued

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

*G = Grease

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

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

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

Oil Replenishment and Change Interval

A. Maintain proper oil levels at all times.

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

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

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

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

Grease Replenishment and Change Interval

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

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

Cyclo BBB

Appendix

Installation

Shaft Connections

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

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

Shaft Rotation

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

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

Input Speeds

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

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

Thermal Capacity

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

Mounting Tips

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

Installation

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

Dimensions

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

Installation: Keyed Hollow Shaft

Mounting procedure:

1. Smear the surface of the shaft (e) with molybdenum disulfide compound. See Fig. 5.38.
2. Turn nut (b) and slide the reducer over the driven shaft. Install spacer (c) if necessary.
3. After mounting the reducer on the shaft, install bolt (f) and washer. See Fig. 5.39.

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

4. If the driven shaft does not have a shoulder, a spacer (h) should be used. See Fig. 5.40.

Removal procedure:

1. Remove mount bolt (n). Attach bolt (j) to spacer (d) and turn bolt (j) to remove the hollow shaft from the driven shaft. See Fig. 5.41.

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

Fig. 5.29

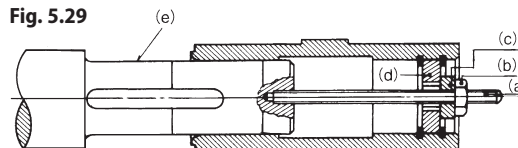


Fig. 5.30

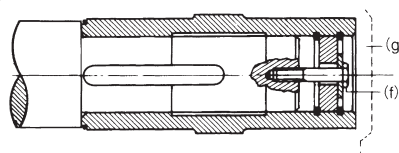


Fig. 5.31

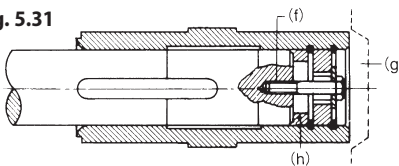
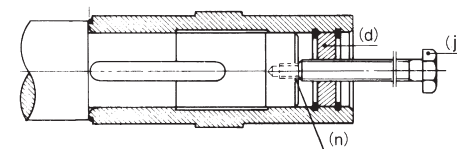


Fig. 5.32



Warranty

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

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

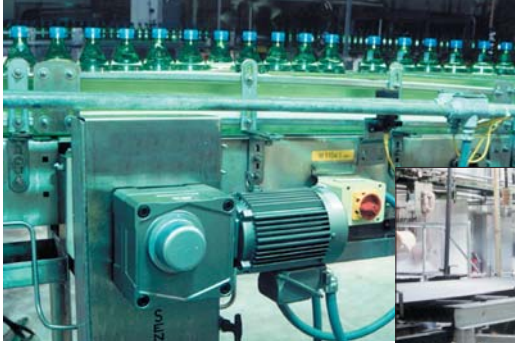
Cyclo BBB

Appendix

Notes

This image shows a full page of blank graph paper. The grid consists of thin, light gray horizontal and vertical lines that intersect to form small squares across the entire surface. There are no margins, text, or other markings on the paper.

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.

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.



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.

Water Treatment

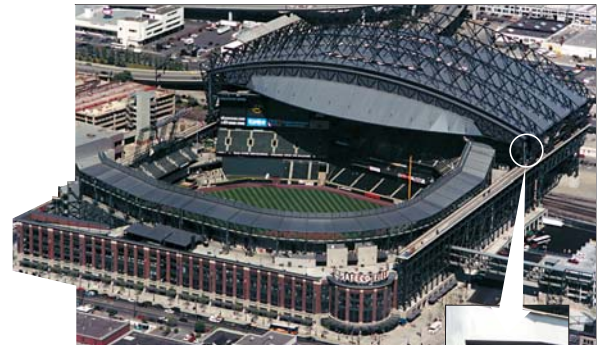


Each of these Sumitomo Paramax® speed reducers helps pump up to 13 million gallons a day at this state-of-the-art waste-water treatment facility in the City of Clearwater, Florida.



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

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.

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.

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