

Sumitomo Drive Technologies

Sumitomo Machinery Corporation of America
Headquarters & Manufacturing
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Sumitomo Drive Technologies

CYCLO® BBB4 BEVEL BUDDYBOX®

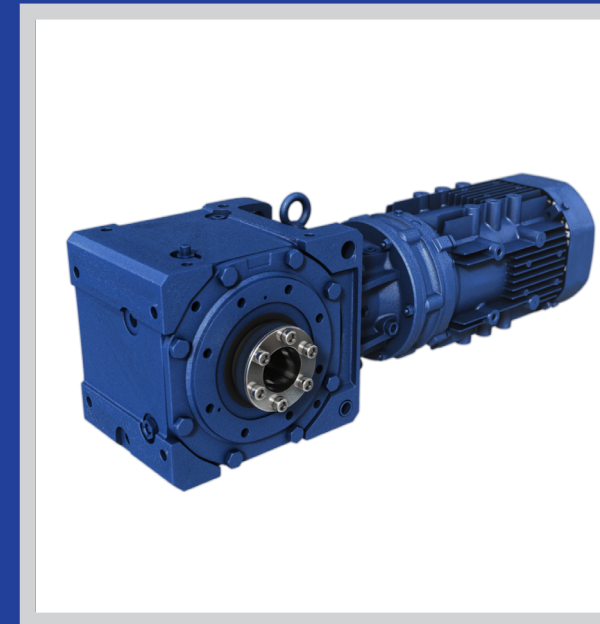
Gearmotors

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Sumitomo Drive Technologies



**CYCLO® BBB4
BEVEL BUDDYBOX®**
Gearmotors



EPNA Motors (1 HP+)

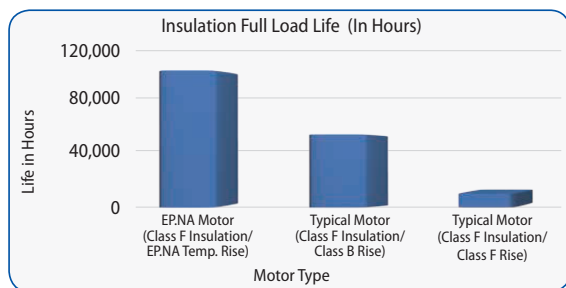
Enhanced Performance (EP,NA) integral motors represent exceptional value to customers. To maximize the performance of the motors, a host of advanced features has been developed providing tangible benefits to the users.

All in one

To simplify transactions throughout the continent, North American version (.NA) features standard multiple listings including DOE, UL and CSA, along with CE marking. Other versions are available for premium performance with European 50 Hz voltages.

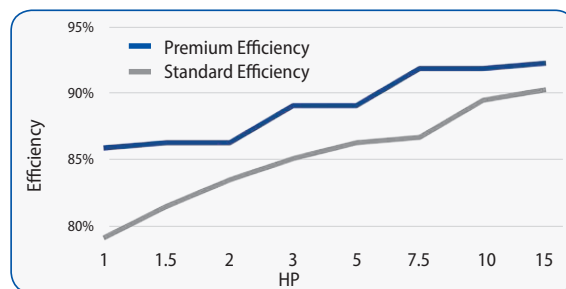
Exceptionally long life

Our Premium Efficient Motors feature lower temperature rise and robust class "F" insulation. The combination of those attributes yield reduced motor operating temperatures that exponentially increase the thermal life of the insulation.



Eco friendly

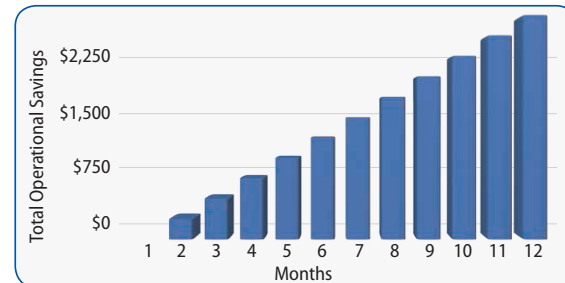
Premium efficiency, mandated by the DOE, shrinks the carbon footprint by delivering more torque at the same level of energy consumption. Higher starting torques may allow smaller motors to be selected for some applications.



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Cost-effective

The premium efficiency design is cost-effective in reducing energy consumption throughout the full speed range, resulting in a lower total lifecycle cost.



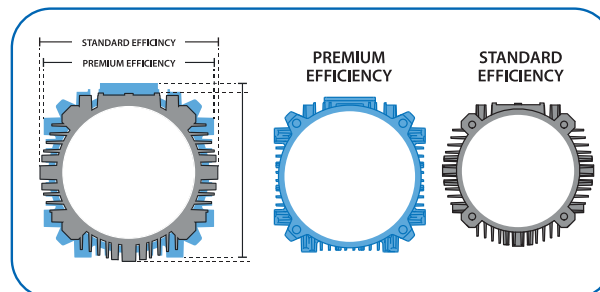
The assumptions for the study are as follows:
9.8 cents of a dollar per kWh • 8600 operating hours annually • A 7.5 kilowatt motor (10 HP) • IE3 motor costing 25% more than the IE1 motor • IE3 premium efficiency motor being 2.8% more efficient than the IE1 standard efficiency motor

Inverter duty

All of the motors feature corona resistant magnet wire that resists the voltage spikes that are inherent to the widely applied IGBT inverters and extends insulation life. Inverter duty brake motors are also available. The non-brake motors are suitable for a 10:1 turndown. The advanced fan design helps to keep the motor running cool at lower input speeds.

Optimized Geometry

Increasing motor size is one of several techniques to reduce losses and achieve premium efficiency. Sumitomo optimized its existing external envelope while still accommodating a large motor core. The result is a compact premium efficient motor.



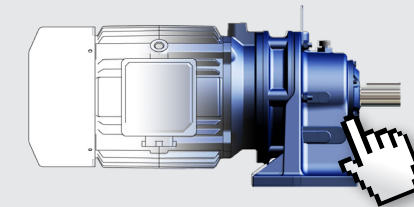
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Product Configurator: www.sumitomodrive.com/Configurator

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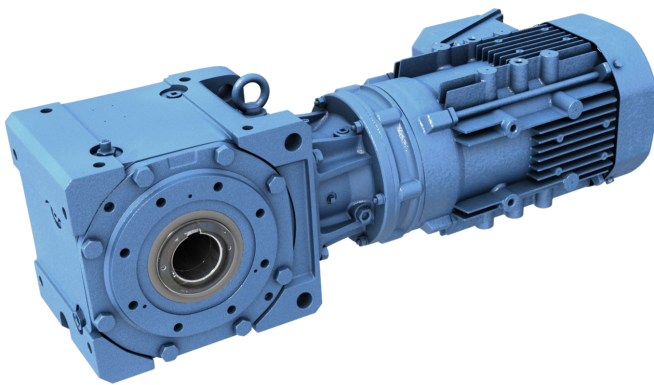
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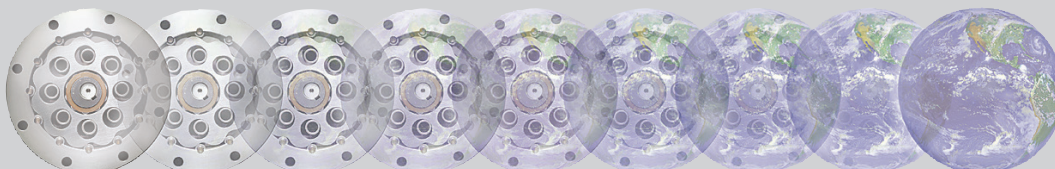
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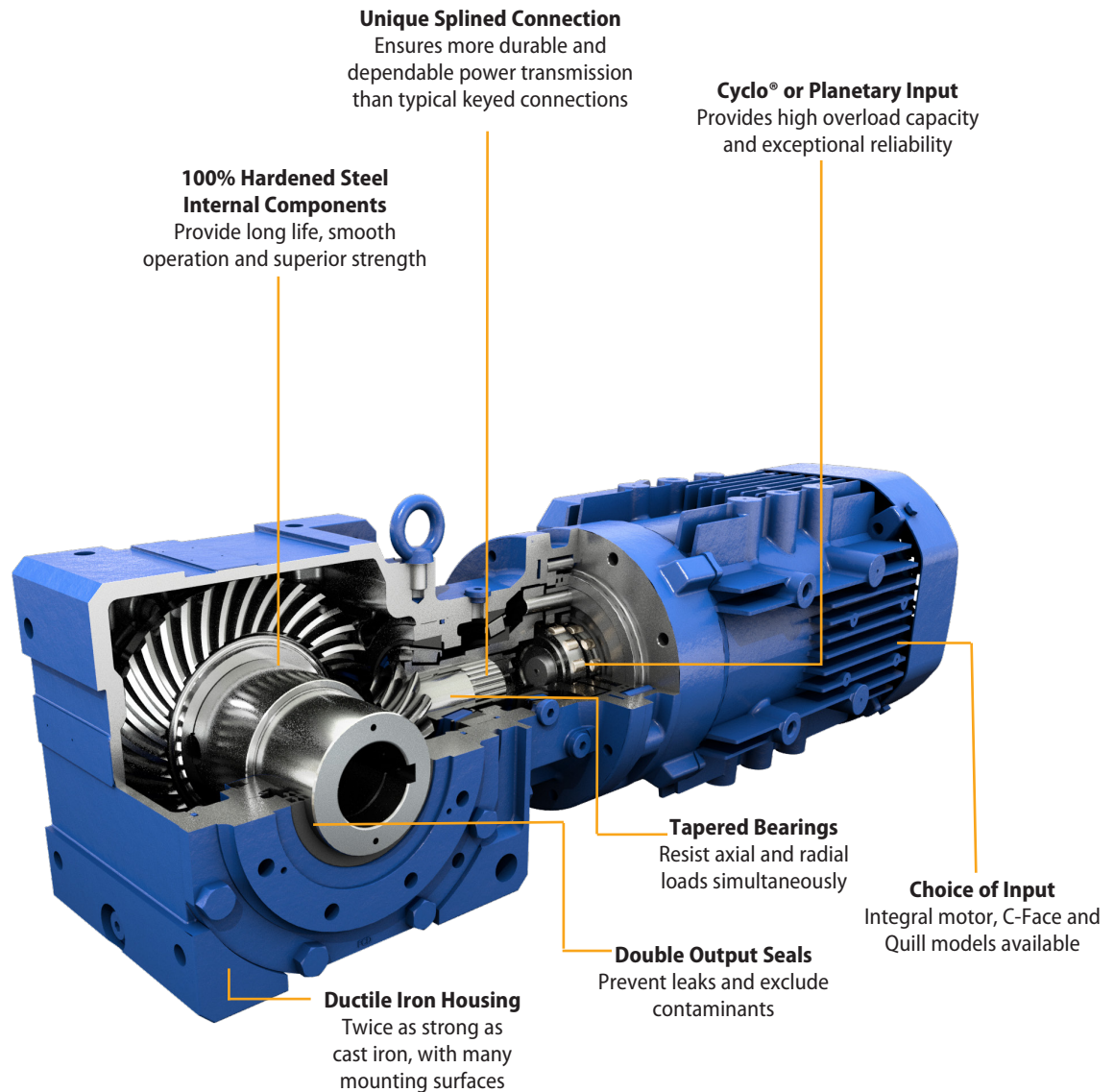
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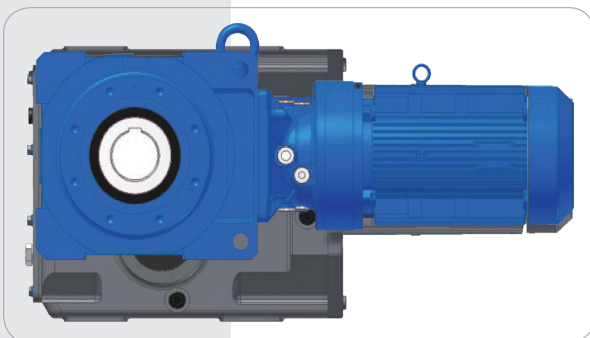
Cyclo® BBB4 Bevel Buddybox

► Flexible configurations

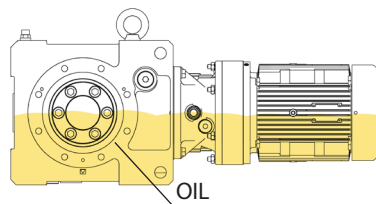
- Output Shaft Options:
 - Keyed Hollow
 - Shrink Disc
 - Solid Shaft
 - (Keyless) Taper-Grip® Bushing
- Mounting Options:
 - Flange
 - Foot
 - Shaft



More Compact, Space-Saving Design Than Typical Right-Angle Gearboxes



Simple, Single Reservoir Oil Lubrication for Easy Maintenance and Higher Performance



Product Description

The Cyclo® Bevel Buddy Box 4 (Cyclo® BBB4) built by Sumitomo is a robust, state of the art mid-sized all steel family of speed reducers and gearmotors. Building on more than 75 years of successful Cyclo® experience in virtually every application and industry, the result is an extremely compact, efficient and reliable unit in a very power-dense package. The Cyclo® BBB4 is a unique combination of features that results in a highly reliable, efficient and durable gearbox. The all-steel internal construction, in conjunction with the Cyclo® or planetary gear inputs, and ductile iron housing provide unmatched ruggedness.

In addition, the full array of output mounting styles provides an amazing ability to customize the product to fit nearly any requirement. These options include solid shaft, hollow bore, and shrink disc.

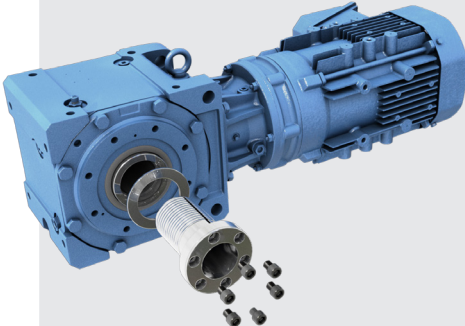
Features & Benefits

- **100% Hardened Steel Rotating Components**
~ Provide high efficiency, long life and exceptional reliability
- **Cycloidal or Planetary Input**
~ Unmatched capability to handle overloads
- **Double Output Seals**
~ Eight lip seals on every unit virtually eliminates the possibility of leaks
- **Dimensionally Interchangeable with BBB3**
~ Simple, economical retrofits
- **Patented Taper-Grip® Bushing**
~ Simple, keyless shaft mounting
- **Two year warranty**
~ Not limited by hours of operation or duty cycles

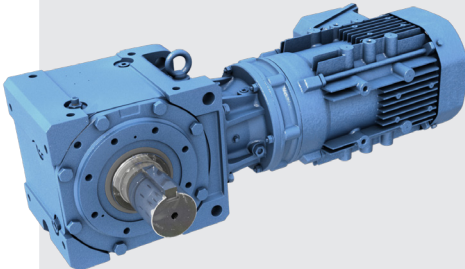
General Specifications Summary

Ratios: 11:1 to 26,000:1 and greater
Torque Capacity: 159,983 in. lbs. (17,400N·m)
HP: 1/8 to 60 Hp (0.10 to 45 kW)
Mounting: Hollow Shaft, Foot, Flange, Face
Input Options: Integral Motor, C-Face, Quill, and Shovel Base
Motor Standards: NEMA, IEC, JIS, UL, CSA, CE

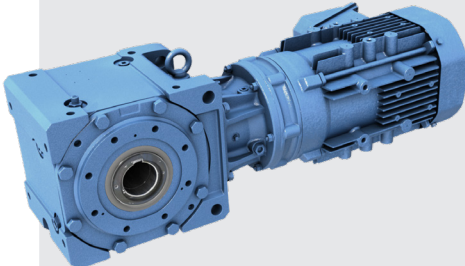
Popular Output Options



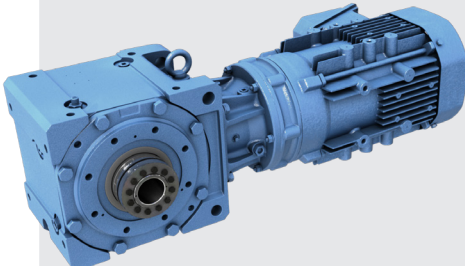
Taper-Grip® Bushing
Inch and Metric Sizes



Solid Output Shaft
Inch and Metric Sizes

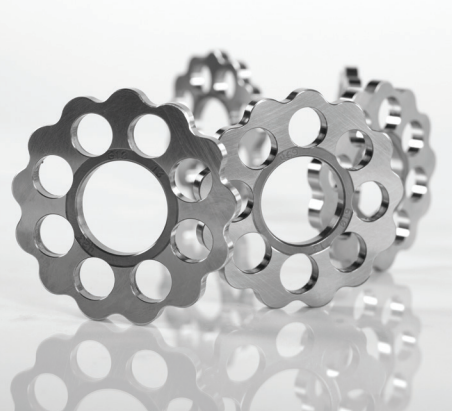


Keyed Hollow Bore
Inch and Metric Sizes



Shrink Disc
Inch and Metric Sizes

For additional BBB4 information, please visit www.sumitomodrive.com



Cyclo® Quality and Reliability, Right Angle Design

- ▶ High performance steel input components deliver **up to 94% efficiency**
- ▶ Cycloidal technology offers **reliable operation, long life and high shock load capacity**



Product Range (Standard Motor and Reducer Combinations)

Single Reduction Ratios 11 - 417 Combinations with 1450 and 1750 RPM motor

Input Type	Planetary					Cyclo																								
	11	13	14	16	18	21	22	25	28	35	39	46	53	60	67	74	80	88	102	112	123	151	179	207	249	305	417			
	Nominal Ratio	*	*	*	*	*	21	22.4	24.5	28	35.2	38.5	45.5	52.5	59.5	67.2	73.5	80	87.5	101.5	112	122.5	150.5	178.5	206.5	248.5	304.5	416.5		
Actual Output RPM	1450	50 Hz	138	113	104	90.6	82.9	69.0	64.7	59.2	51.8	41.2	37.7	31.9	27.6	24.4	21.6	19.7	18.1	16.6	14.3	12.9	11.8	9.63	8.12	7.02	5.84	4.76	3.48	
	1750	60 Hz	167	137	125	109	100	83.3	78.1	71.4	62.5	49.7	45.5	38.5	33.3	29.4	26.0	23.8	21.9	20.0	17.2	15.6	14.3	11.6	9.80	8.47	7.04	5.75	4.20	
Motor Power HP (kW)	1/8 (0.1)																													
	1/4 (0.2)																													
	1/3 (0.25)																													
	1/2 (0.4)																													
	3/4 (0.55)																													
	1 (0.75)																													
	1.5 (1.1)	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	2 (1.5)	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	3 (2.2)	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	5 (3.7)	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	7.5 (5.5)	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	10 (7.5)	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	15 (11)	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	20 (15)	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	25 (18.5)	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	30 (22)	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
40 (30)	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
50 (37)	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
60 (45)	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	

* Refer to the table shown at the bottom of this page

Double Reduction Ratios 364 - 10658 Combinations with 1450 and 1750 RPM motor

Input Type	Cyclo																						
	364	424	501	578	683	809	956	1117	1320	1656	1957	2272	2559	2944	3511	4365	5177	6472	7228	8880	10658		
	Nominal Ratio	364	423.5	500.5	577.5	682.5	808.5	955.5	1116.5	1319.5	1655.5	1956.5	2271.5	2558.5	2943.5	3510.5	4364.5	5176.5	6471.5	7227.5	8879.5	10657.5	
Actual Output RPM	1450	50 Hz	3.98	3.42	2.90	2.51	2.12	1.79	1.52	1.30	1.10	0.876	0.741	0.638	0.567	0.493	0.413	0.332	0.280	0.224	0.201	0.163	0.136
	1750	60 Hz	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	0.595	0.499	0.401	0.338	0.270	0.242	0.197	0.164
Motor Power HP (kW)	1/8 (0.1)			●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	1/4 (0.2)	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	1/3 (0.25)	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	1/2 (0.4)	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	3/4 (0.55)	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	1 (0.75)	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	1.5 (1.1)	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	2 (1.5)	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	3 (2.2)	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	5 (3.7)	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	7.5 (5.5)	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	10.5 (7.5)	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

- Standard efficiency motor
- Premium efficiency or IE3 motor

* Planetary Actual Ratio

Nominal Ratio	BBB Frame Size												
	4A10	4A12	4A14	4B14	4B16	4C16	4D16	4D17	4E17	4E18	4F18	4E19	4F19
11	10.50		10.89		10.85				10.50		10.82		
13	12.99	12.80	12.95		12.80			13.09			13.01		
14	14.21	14.00	14.16		14.00			14.32			14.23		
16	15.36	15.65	16.00		16.26			16.17		15.63		15.47	
18	16.80	17.12	17.50		17.78			17.68		17.10		16.92	

How do I select a Cyclo® BBB4 speed reducer or gearmotor?

Selection is based on the actual horsepower and/or torque requirements at the output shaft. The Cyclo® BBB4 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 or kW 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 power (HP or kW) and speed (RPM)
- Mounting position
- Environmental conditions
- Ambient temperature range

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 is the difference between BBB4 and BBB5?

The BBB4 is more rugged by virtue of its stronger ductile iron housing, which has multiple mounting surfaces and is offered in numerous variants, including foot mount and solid shaft. The BBB5 is optimized for a minimal space envelope and shaft mounted applications.

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 gearmotors: I, II and III (pages 2.6–2.7). 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® BBB4 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® BBB4 Speed Reducers can provide solutions with extraordinary shock load capabilities. For applications with high shock loads, consult a Sumitomo Applications Engineer.

What are the standard input speeds?

In general terms, the speeds are 1750 and 1450 RPM. The selection tables in this catalog are based on 1750 and 1450 RPM. When non-standard input speeds are used, the horsepower and torque ratings also vary.

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

The Taper-Grip® bushing is integral to the Cyclo® BBB4 and provides for easy mounting and removal to and from the shaft of the driven machine. Because it requires no keyway, the shaft isn't weakened and maximum torque is transmitted. Allows easy changing of bore diameters and reduces spare reducer requirements.

What are the advantages of a shrink disc?

The shrink disc provides for easy mounting and removal to and from the shaft of the driven machine. Because it requires no keyway, the shaft isn't weakened and maximum torque is transmitted.

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

The standard torque arm assembly available is a Turnbuckle type as shown on page 3.8. It should operate in tension. 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.

Enhanced Performance (EP) Motors FAQs

What efficiency level are these Enhanced Performance (EP) motors?

The EP motor (applies to 1HP and above) is a Premium efficiency class, or International Efficiency 3 (IE3) design. Our integral fractional (less than 1HP) motors are not EP and are classified as standard efficiency IE1 motors.

What standards do these motors meet?

All Sumitomo motors are compliant with the Energy Policy and Conservation Act (EPA), as recently amended by the Department of Energy with a new ruling.

EP Sumitomo motors meet the efficiency levels promoted by the Consortium for Energy Efficiency (CEE) and meet the Canadian efficiency levels specified by NRCan.

The IE3 efficiency ratings conform to both the IEC Standard 60034-30:2009 and eco-design directive 2005/32/EC.

Will Sumitomo motors work with inverters?

All current EP motors feature corona resistant magnet wire that extends the life of the insulation and enables the motors to resist the voltage spikes common with IGBT variable frequency drives.

What agency listings apply?

All EP motors in this product line are UL recognized, CSA certified and CE marked.

Can the motor be nameplated to operate at 50 hertz?

The motor can be nameplated and will operate at 50 hertz, but depending on the export destination, it may not meet that country's energy efficiency requirements. For areas requiring IE3 performance at 50 hertz, like Asia and Europe, other 50 hertz specific versions can be provided. Conformance with energy efficiency requirements in destination country is the responsibility of the customer.

Is the selection procedure the same as previous gearmotors?

Similar, the difference is restricted to applications with a large number of across the line starts and stops. Because the EP motors have more inertia and higher inrush current than previous integral motors, a supplemental service factor is applied to these applications using EP motors. The selection procedure for fractional HP units is unchanged.

Are the brakes the same?

The brakes are the same direct acting, fast response types used previously. For motors 1 HP and above they are a new larger model that has been redesigned to match the new motor profiles. Because the EP motor inertia is significantly higher, it may be necessary to adjust external trigger points or limit switches. Since the brake assembly shapes are different, old and new kits are not interchangeable.

What is the standard insulation system?

The motors continue with the Class F system, which limits the temperature rise to a Class B rise, where it bounds the allowable temperature rise to 80°C. It utilizes an insulation system capable of handling a 105°C rise to significantly extend insulation life.

Are EP motors interchangeable with old AF-motors?

The new EP motors without brake have the same 10:1 constant torque speed range as the AF-motor. Motors are dimensionally and performance-wise different so VFD re-programming may be required. For EP brakemotor with use on VFDs, the applicable speed range may be limited. Please consult the factory for options for EP brakemotors.

Will old motors continue to be available?

For motor powers 1 HP and above, EP motors have replaced the standard efficiency motors. (does not apply to fractional HP). 1HP+ Older motors do not meet the federally mandated efficiency requirements that went into effect on June 1, 2016. Non-compliant motors cannot be manufactured or imported into the United States.

Should I be concerned if I am replacing an older motor with the new EP motor?

For most applications, the use of the new EP motor will result in a more efficient, cooler-running and energy-saving motor. However, for applications with certain performance constraints, you may need to review the impact of the following:

- larger dimension and weight
- larger moment of inertia
- higher starting current and torque.

If taking an old standard efficiency motor off a gearmotor and replacing it with the same HP new EP motor, the EP motor will bolt to the old gearmotor. The motor flange diameters, pilot diameters, bolt patterns and shaft diameters all match. Motor body dimensions and weight will change.

Standard Specifications

	Standard Specifications	Standard Specifications with Built-In Brake	
3 Phase Integral Motor	Capacity Range:	1/8 ~ 60HP (0.1 ~ 45 kW), 4P	1/8 ~ 40HP (0.1 ~ 30 kW), 4P, FB Brake 37 ~ 45 kW (50 ~ 60HP), 4P, ESB Brake
	Power Supply:	Motor Power: 230/460V, 60Hz, 3Phase 575V, 60Hz, 3Phase	Brake Power: 1/8 ~ 15HP (0.1 ~ 11kW): 230/460V, 60Hz, 3Ph 575V, 60Hz, 3Ph 20 ~ 40HP (15 ~ 30kW): 200 ~ 240V, 60Hz, 3Ph 380 ~ 480V 60Hz, 3Ph 575V, 60Hz, 3Ph
	Motor Standard:	NEMA	NEMA
	Efficiency:	Premium Efficiency (IE3) (1 HP+)	Premium Efficiency (IE3) (1 HP+)
	Protection:	IP55	IP55 (1 ~ 15HP) IP54 (20 ~ 60HP)
	Certification:	CE Mark, UL Recognized, CSA Approval	CE Mark, UL Recognized, CSA Approval
	Conduit Box:	Diecast Aluminum, NPT Conduit Thread	Diecast Aluminum, NPT Conduit Thread
	Inverter Operation:	10:1 Constant Torque Speed Range Insulation Meets NEMA MG1, Part 31	4:1 Constant Torque Speed Range or better. Insulation Meets NEMA MG1, Part 31
	Enclosure:	Totally Enclosed Fan Cooled Type except 1/8HP is TENV	Totally Enclosed Fan Cooled Type
	Motor Type:	Induction Motor, Squirrel Cage Rotor	Induction Motor, Squirrel Cage Rotor
Frame Material:	1/8 ~ 20HP (0.1 ~ 15kW), 4P: diecast Al 25HP ~ 60HP (18.5 ~ 45kW), 4P: cast iron	1/8 ~ 20HP (0.1 ~ 15kW), 4P: diecast Al 25HP ~ 60HP (18.5 ~ 45kW), 4P: cast iron	
Bearings:	Deep Groove, Ball Bearing, CM Clearance	Deep Groove, Ball Bearing, CM Clearance	
Insulation:	Class F with a Class B Rise	Motor: Class F with a Class B Rise Brake: Class F	
Time Rating:	Continuous	Continuous	
BBB4 Reducer	Reduction:	Combination of Cyclo or Planetary input and right angle spiral bevel gear output	
	Lubrication:	In all mounting configurations except Y4, the Cyclo and Bevel portions are oil lubricated. For the Y4 mounting configuration, the Cyclo portion is grease lubricated and the bevel portion is oil lubricated	
	Seals:	Nitrile material, dual lipped, tandem output seals	
	Material:	Rugged ductile cast iron housings in all sizes	
	Paint Color:	Blue, Munsell color number 6.5PB 3.6/8.2	
	Bearings:	Tapered roller bearings on geared output of all sizes. Deep groove ball bearings on Cyclo input	
Ambient Conditions	Installation Location:	Indoor (Minimal dust and humidity)	
	Ambient Temperature:	14° ~ 104° F (-10° ~ 40° C)	
	Ambient Humidity:	Under 85%	
	Elevation:	Under 3300 feet (1000 meters)	
	Atmosphere:	Well ventilated location, free of corrosive gases, explosive gases, vapors, and dust	

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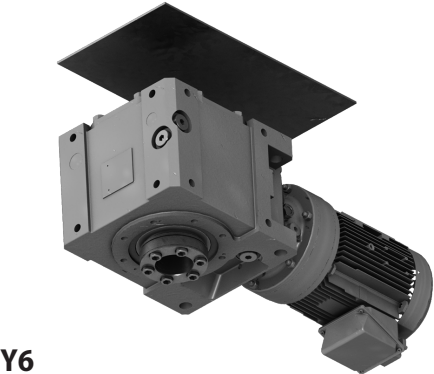
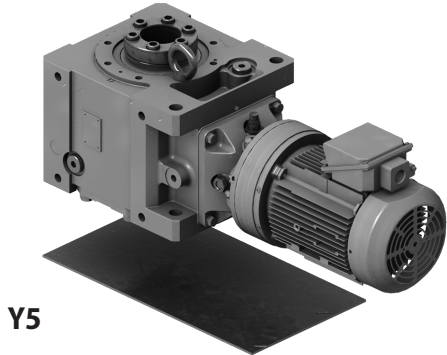
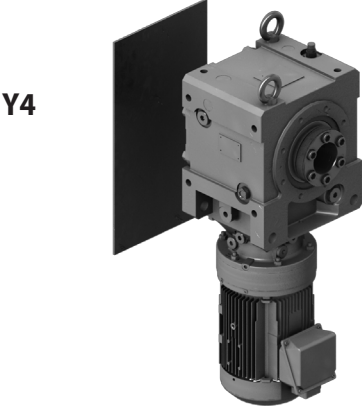
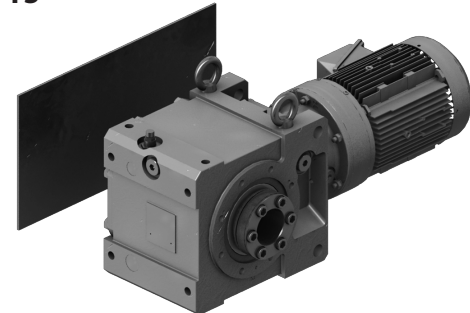
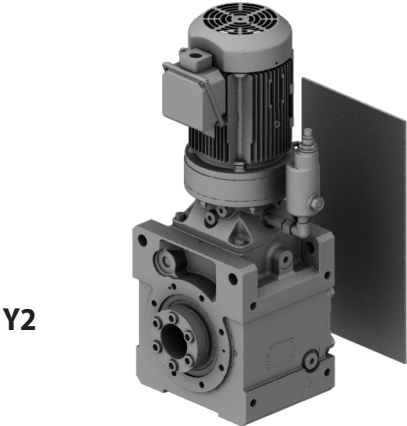
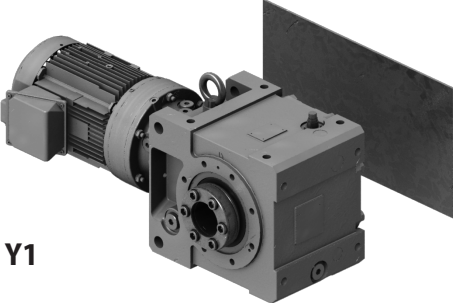
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Mounting Positions

Note: 1. Mounting positions are shown with standard (Taper Grip Bushing) output option.
2. The plane of reference represents the location of customer's equipment.



Additional Mounting Positions

Figure 1.1 Keyed Hollow Output Bore - Output Flange Left^[1]

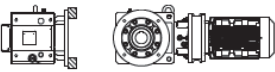
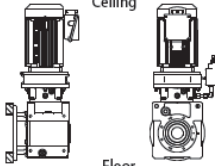

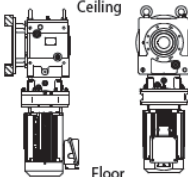

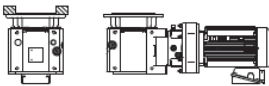
LHY □ - □ K - F1 - □	LHY □ - □ K - F2 - □	LHY □ - □ K - F3 - □
Ceiling  Floor	Ceiling  Floor	Ceiling  Floor
LHY □ - □ K - F4 - □	LVY □ - □ K - F5 - □	LVY □ - □ K - F6 - □
Ceiling  Floor	Ceiling  Floor	Ceiling  Floor

Figure 1.2 Keyed Hollow Output Bore - Output Flange Right^[1]

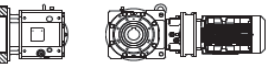
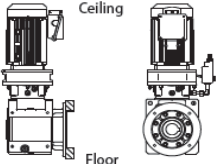
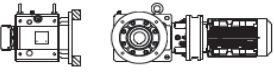
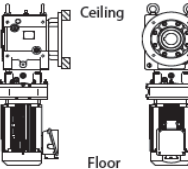

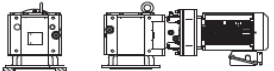

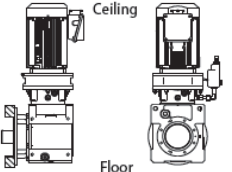

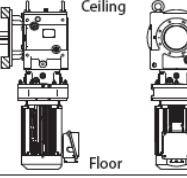
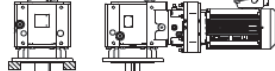
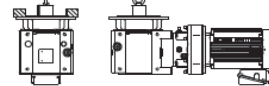
LHY □ - □ K - G1 - □	LHY □ - □ K - G2 - □	LHY □ - □ K - G3 - □
Ceiling  Floor	Ceiling  Floor	Ceiling  Floor
LHY □ - □ K - G4 - □	LVY □ - □ K - G5 - □	LVY □ - □ K - G6 - □
Ceiling  Floor	Ceiling  Floor	Ceiling  Floor

Figure 1.3 Solid Output Shaft (L) - Output Flange Left^[1]

LHF □ - □ L K - F1 - □	LHF □ - □ L K - F2 - □	LHF □ - □ L K - F3 - □
Ceiling  Floor	Ceiling  Floor	Ceiling  Floor
LHF □ - □ L K - F4 - □	LVF □ - □ L K - F5 - □	LWF □ - □ L K - F6 - □
Ceiling  Floor	Ceiling  Floor	Ceiling  Floor

Note: [1] K = inch diameter shaft or keyed hollow bore in Model Number; blank = metric diameter shaft or key
Refer to page 2.4 for configure Model Number.

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Additional Mounting Positions continued

Figure 1.4 Solid Output Shaft Right (R) - Output Flange Right

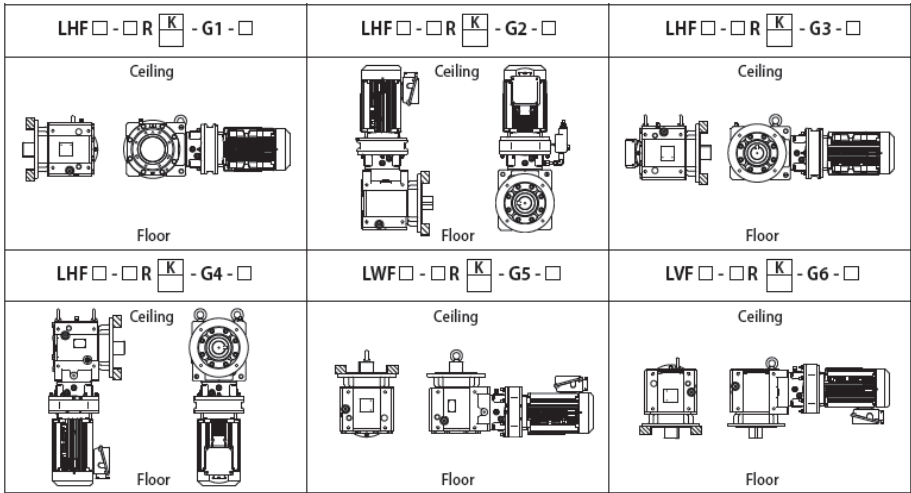


Figure 1.5 Double Extended Solid Output Shaft (T) - Output Flange Left

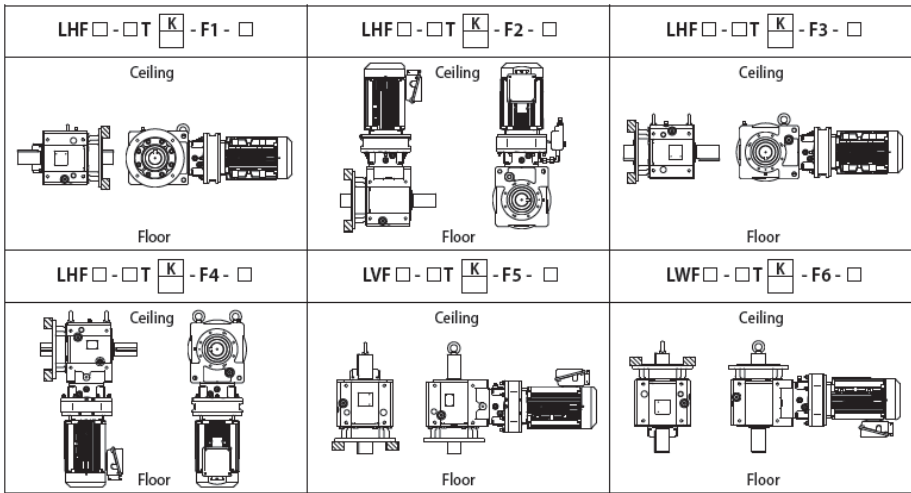
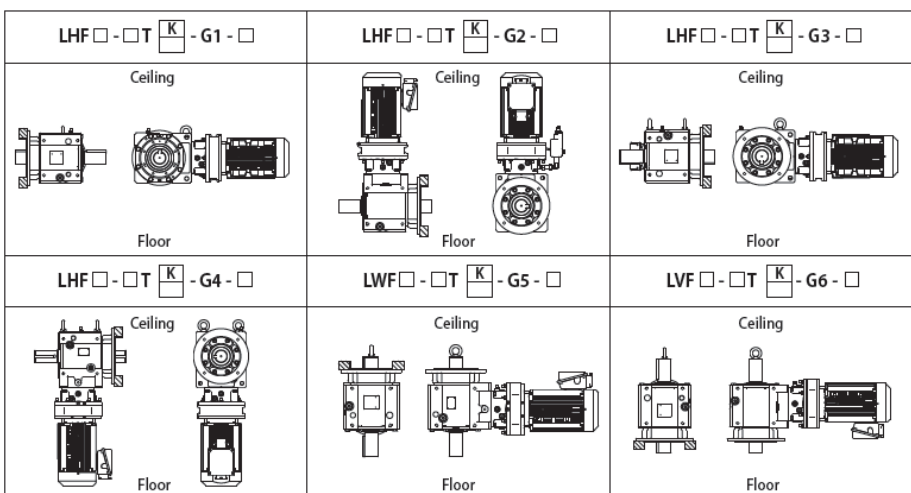


Figure 1.6 Double Extended Solid Output Shaft (T) - Output Flange Right



Notes: [1] K = inch diameter shaft or keyed hollow bore; blank = metric diameter shaft or keyed hollow bore.

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Additional Mounting Positions continued

Figure 1.7 Solid Output Shaft Left (L) - Output Flange Right


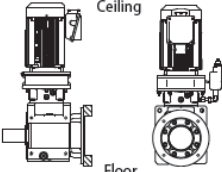
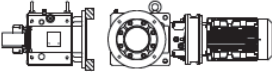
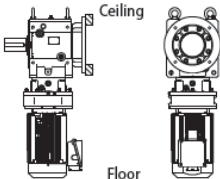
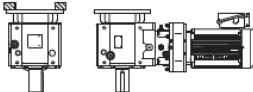
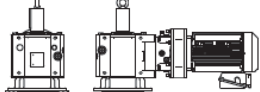
LHF □ - □ L K - G1 - □	LHF □ - □ L K - G2 - □	LHF □ - □ L K - G3 - □
Ceiling  Floor	Ceiling  Floor	Ceiling  Floor
LHF □ - □ L K - G4 - □	LVF □ - □ L K - G5 - □	LWF □ - □ L K - G6 - □
Ceiling  Floor	Ceiling  Floor	Ceiling  Floor

Figure 1.8 Solid Output Shaft Right (R) - Output Flange Left

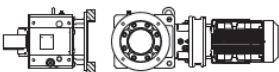
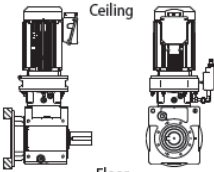

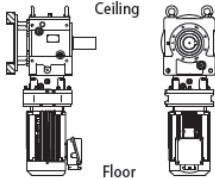
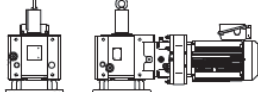
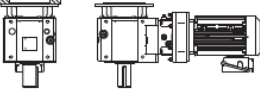
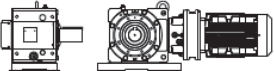
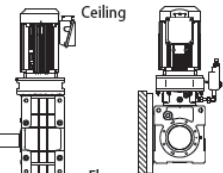

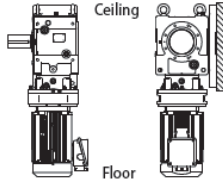
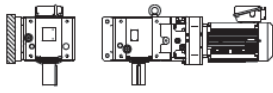
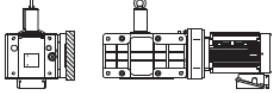
LHF □ - □ R K - F1 - □	LHF □ - □ R K - F2 - □	LHF □ - □ R K - F3 - □
Ceiling  Floor	Ceiling  Floor	Ceiling  Floor
LHF □ - □ R K - F4 - □	LWF □ - □ R K - F5 - □	LVF □ - □ R K - F6 - □
Ceiling  Floor	Ceiling  Floor	Ceiling  Floor

Figure 1.9 Solid Output Shaft Left (L) - Mounting Foot Bottom

LHH □ - □ L K - K1 - □	LHH □ - □ L K - K2 - □	LHH □ - □ L K - K3 - □
Ceiling  Floor	Ceiling  Floor	Ceiling  Floor
LHH □ - □ L K - K4 - □	LVH □ - □ L K - K5 - □	LWH □ - □ L K - K6 - □
Ceiling  Floor	Ceiling  Floor	Ceiling  Floor

Notes: [1] K = inch diameter shaft or keyed hollow bore; blank = metric diameter shaft or keyed hollow bore.

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Additional Mounting Positions continued

Figure 1.10 Solid Output Shaft Right (R) - Mounting Foot Bottom

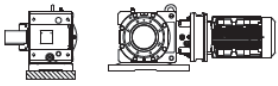
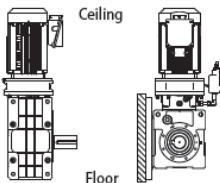
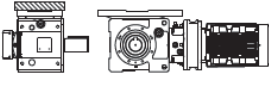
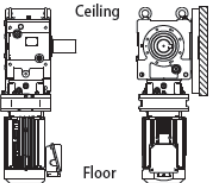
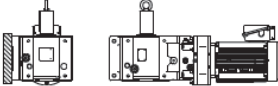
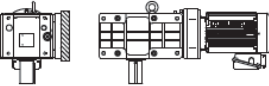
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Ceiling  Floor	Ceiling  Floor	Ceiling  Floor
LHH □ - □ R <input type="checkbox"/> K - K4 - □	LWH □ - □ R <input type="checkbox"/> K - K5 - □	LVH □ - □ R <input type="checkbox"/> K - K6 - □
Ceiling  Floor	Ceiling  Floor	Ceiling  Floor

Figure 1.11 Double Extended Solid Output Shaft (T) - Mounting Foot Bottom

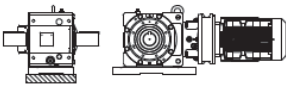
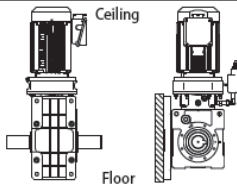
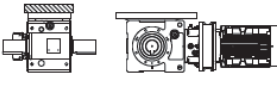
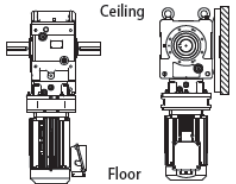
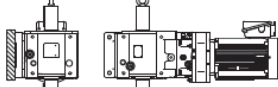
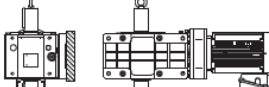
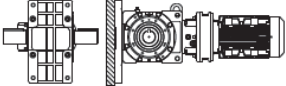
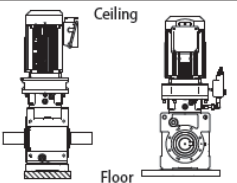
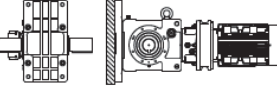
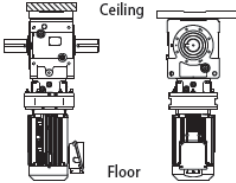
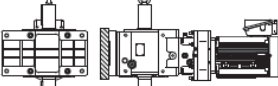
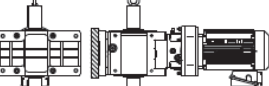
LHH □ - □ T <input type="checkbox"/> K - K1 - □	LHH □ - □ T <input type="checkbox"/> K - K2 - □	LHH □ - □ T <input type="checkbox"/> K - K3 - □
Ceiling  Floor	Ceiling  Floor	Ceiling  Floor
LHH □ - □ T <input type="checkbox"/> K - K4 - □	LVH □ - □ T <input type="checkbox"/> K - K5 - □	LVH □ - □ T <input type="checkbox"/> K - K6 - □
Ceiling  Floor	Ceiling  Floor	Ceiling  Floor

Figure 1.12 Double Extended Solid Output Shaft (T) - Mounting Foot Side

LHH □ - □ T <input type="checkbox"/> K - V1 - □	LHH □ - □ T <input type="checkbox"/> K - V2 - □	LHH □ - □ T <input type="checkbox"/> K - V3 - □
Ceiling  Floor	Ceiling  Floor	Ceiling  Floor
LHH □ - □ T <input type="checkbox"/> K - V4 - □	LVH □ - □ T <input type="checkbox"/> K - V5 - □	LVH □ - □ T <input type="checkbox"/> K - V6 - □
Ceiling  Floor	Ceiling  Floor	Ceiling  Floor

Notes: [1] K = inch diameter shaft or keyed hollow bore; blank = metric diameter shaft or keyed hollow bore.

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Additional Mounting Positions continued

Figure 1.13 Solid Output Shaft Left (L) - Mounting Foot Side

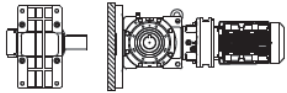
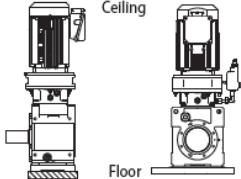
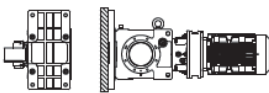
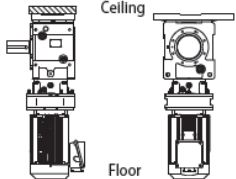
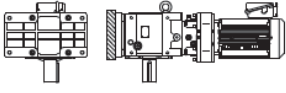
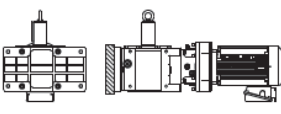
LHH □ - □ L K - V1 - □	LHH □ - □ L K - V2 - □	LHH □ - □ L K - V3 - □
Ceiling	Ceiling	Ceiling
		
Floor	Floor	Floor
LHH □ - □ L K - V4 - □	LVH □ - □ L K - V5 - □	LWH □ - □ L K - V6 - □
Ceiling	Ceiling	Ceiling
		
Floor	Floor	Floor

Figure 1.14 Solid Output Shaft Right (R) - Mounting Foot Side

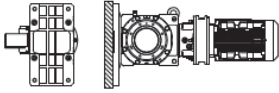
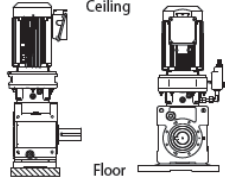
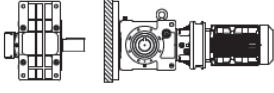
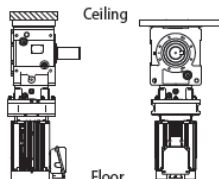
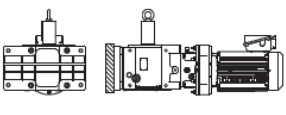
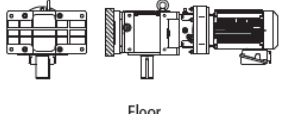

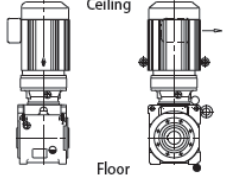

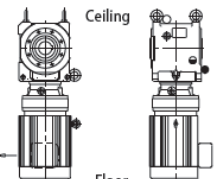

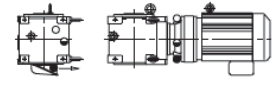
LHH □ - □ R K - V1 - □	LHH □ - □ R K - V2 - □	LHH □ - □ R K - V3 - □
Ceiling	Ceiling	Ceiling
		
Floor	Floor	Floor
LHH □ - □ R K - V4 - □	LWH □ - □ R K - V5 - □	LVH □ - □ R K - V6 - □
Ceiling	Ceiling	Ceiling
		
Floor	Floor	Floor

Figure 1.15 Keyed Hollow Bore Output Bore

LHY □ - □ K - Y1 - □	LHY □ - □ K - Y2 - □	LHY □ - □ K - Y3 - □
Ceiling	Ceiling	Ceiling
		
Floor	Floor	Floor
LHY □ - □ K - Y4 - □	LVY □ - □ K - Y5 - □	LVY □ - □ K - Y6 - □
Ceiling	Ceiling	Ceiling
		
Floor	Floor	Floor

Notes: [1] K = inch diameter shaft or keyed hollow bore; blank = metric diameter shaft or keyed hollow bore.

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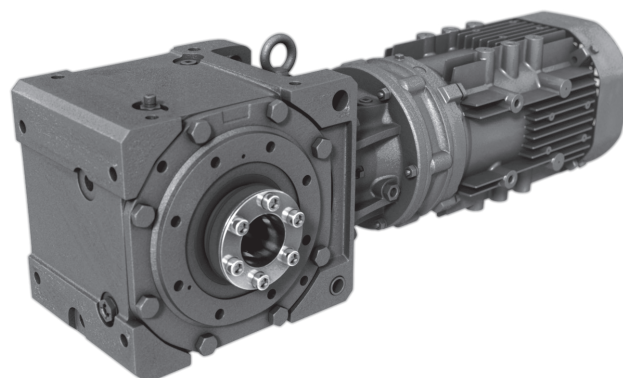
Optional Ratios

Single Reduction												
Nominal Ratio	Overall	19	26	42	48	54	93	138	163	189	227	278
	Input	6	8	13	15	17	29	43	51	59	71	87
Exact Ratio	Overall	19.2	25.6	41.6	48	54.4	92.8	137.6	163.2	188.8	227.2	278.4
	Output	3.2										
	Input	6	8	13	15	17	29	43	51	59	71	87

Double Reduction															
Nominal Ratio	Overall	387	403	420	435	441	458	476	525	528	538	541	557	588	598
	Input	121	126	120	136	126	143	136	150	165	168	169	174	168	187
Exact Ratio	Overall	387.2	403.2	420.0	435.2	441.0	457.6	476.0	525.0	528.0	537.6	540.8	556.8	588.0	598.4
	Output	3.2	3.2	3.5	3.2	3.5	3.2	3.5	3.5	3.2	3.2	3.2	3.2	3.5	3.2
	Input	(11 x 11)	(21 x 6)	(15 x 8)	(17 x 8)	(21 x 6)	(13 x 11)	(17 x 8)	(25 x 6)	(15 x 11)	(21 x 8)	(13 x 13)	(29 x 6)	(21 x 8)	(17 x 11)
Nominal Ratio	Overall	609	624	640	655	672	707	720	739	774	788	812	816	826	874
	Input	174	195	200	187	210	221	225	231	221	225	232	255	258	273
Exact Ratio	Overall	609.0	624.0	640.0	654.5	672.0	707.2	720.0	739.2	773.5	787.5	812.0	816.0	825.6	873.6
	Output	3.5	3.2	3.2	3.5	3.2	3.2	3.2	3.2	3.5	3.5	3.5	3.2	3.2	3.2
	Input	(29 x 6)	(15 x 13)	(25 x 8)	(17 x 11)	(35 x 6)	(17 x 13)	(15 x 15)	(21 x 11)	(17 x 13)	(15 x 15)	(29 x 8)	(17 x 15)	(43 x 6)	(21 x 13)
Nominal Ratio	Overall	893	896	903	925	963	980	1008	1012	1021	1040	1071	1103	1138	1142
	Input	255	280	258	289	275	280	315	289	319	325	306	315	325	357
Exact Ratio	Overall	892.5	896.0	903.0	924.8	962.5	980.0	1008.0	1011.5	1020.8	1040.0	1071.0	1102.5	1137.5	1142.4
	Output	3.5	3.2	3.5	3.2	3.5	3.5	3.2	3.5	3.2	3.2	3.5	3.5	3.5	3.2
	Input	(17 x 15)	(35 x 8)	(43 x 6)	(17 x 17)	(25 x 11)	(35 x 8)	(21 x 15)	(17 x 17)	(29 x 11)	(25 x 13)	(51 x 6)	(21 x 15)	(25 x 13)	(21 x 17)
Nominal Ratio	Overall	1200	1204	1206	1232	1239	1250	1306	1313	1348	1360	1392	1411	1428	1456
	Input	375	344	377	385	354	357	408	375	385	425	435	441	408	455
Exact Ratio	Overall	1200.0	1204.0	1206.4	1232.0	1239.0	1249.5	1305.6	1312.5	1347.5	1360.0	1392.0	1411.2	1428.0	1456.0
	Output	3.2	3.5	3.2	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.2	3.2	3.5	3.2
	Input	(25 x 15)	(43 x 8)	(29 x 13)	(35 x 11)	(59 x 6)	(21 x 17)	(51 x 8)	(25 x 15)	(35 x 11)	(25 x 17)	(29 x 15)	(21 x 21)	(51 x 8)	(35 x 13)
Nominal Ratio	Overall	1488	1510	1514	1523	1544	1578	1593	1652	1670	1680	1726	1789	1795	1818
	Input	425	472	473	435	441	493	455	472	522	525	493	559	561	568
Exact Ratio	Overall	1487.5	1510.4	1513.6	1522.5	1543.5	1577.6	1592.5	1652.0	1670.4	1680.0	1725.5	1788.8	1795.2	1817.6
	Output	3.5	3.2	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.2	3.5	3.2	3.2	3.2
	Input	(25 x 17)	(59 x 8)	(43 x 11)	(29 x 15)	(21 x 21)	(29 x 17)	(35 x 13)	(59 x 8)	(87 x 6)	(35 x 15)	(29 x 17)	(43 x 13)	(51 x 11)	(71 x 8)
Nominal Ratio	Overall	1827	1838	1904	1949	1964	1988	2000	2064	2077	2083	2132	2188	2227	2258
	Input	522	525	595	609	561	568	625	645	649	595	609	625	696	645
Exact Ratio	Overall	1827.0	1837.5	1904.0	1948.8	1963.5	1988.0	2000.0	2064.0	2076.8	2082.5	2131.5	2187.5	2227.2	2257.5
	Output	3.5	3.5	3.2	3.2	3.5	3.5	3.2	3.2	3.2	3.5	3.5	3.5	3.2	3.5
	Input	(87 x 6)	(35 x 15)	(35 x 17)	(29 x 21)	(51 x 11)	(71 x 8)	(25 x 25)	(43 x 15)	(59 x 11)	(35 x 17)	(29 x 21)	(25 x 25)	(87 x 8)	(43 x 15)
Nominal Ratio	Overall	2320	2339	2352	2436	2448	2454	2499	2538	2573	2678	2685	2691	2734	2774
	Input	725	731	735	696	765	767	781	725	735	765	767	841	781	867
Exact Ratio	Overall	2320.0	2339.2	2352.0	2436.0	2448.0	2454.4	2499.2	2537.5	2572.5	2677.5	2684.5	2691.2	2733.5	2774.4
	Output	3.2	3.2	3.2	3.5	3.2	3.2	3.2	3.5	3.5	3.5	3.5	3.2	3.5	3.2
	Input	(29 x 25)	(43 x 17)	(35 x 21)	(87 x 8)	(51 x 15)	(59 x 13)	(71 x 11)	(29 x 25)	(35 x 21)	(51 x 15)	(59 x 13)	(29 x 29)	(71 x 11)	(51 x 17)
Nominal Ratio	Overall	2800	2832	2890	2954	3035	3062	3063	3098	3161	3210	3231	3248	3350	3408
	Input	875	885	903	923	867	957	875	885	903	1003	923	1015	957	1065
Exact Ratio	Overall	2800.0	2832.0	2889.6	2953.6	3034.5	3062.4	3062.5	3097.5	3160.5	3209.6	3230.5	3248.0	3349.5	3408.0
	Output	3.2	3.2	3.2	3.2	3.5	3.2	3.5	3.5	3.5	3.2	3.5	3.2	3.5	3.2
	Input	(35 x 25)	(59 x 15)	(43 x 21)	(71 x 13)	(51 x 17)	(87 x 11)	(35 x 25)	(59 x 15)	(43 x 21)	(59 x 17)	(71 x 13)	(35 x 29)	(87 x 11)	(71 x 15)
Nominal Ratio	Overall	3427	3440	3553	3619	3728	3749	3763	3862	3920	3965	3990	4080	4176	4225
	Input	1071	1075	1015	1131	1065	1071	1075	1207	1225	1239	1247	1275	1305	1207
Exact Ratio	Overall	3427.2	3440.0	3552.5	3619.2	3727.5	3748.5	3762.5	3862.4	3920.0	3964.8	3990.4	4080.0	4176.0	4224.5
	Output	3.2	3.2	3.5	3.2	3.5	3.5	3.5	3.2	3.2	3.2	3.2	3.2	3.2	3.5
	Input	(51 x 21)	(43 x 25)	(35 x 29)	(87 x 13)	(71 x 15)	(51 x 21)	(43 x 25)	(71 x 17)	(35 x 35)	(59 x 21)	(43 x 29)	(51 x 25)	(87 x 15)	(71 x 17)
Nominal Ratio	Overall	4288	4337	4463	4568	4720	4771	4816	5163	5219	5268	5475	5680	5712	5846
	Input	1225	1239	1275	1305	1475	1491	1505	1475	1491	1505	1711	1775	1785	1827
Exact Ratio	Overall	4287.5	4336.5	4462.5	4567.5	4720.0	4771.2	4816.0	5162.5	5218.5	5267.5	5475.2	5680.0	5712.0	5846.4
	Output	3.5	3.5	3.5	3.5	3.2	3.2	3.2	3.5	3.5	3.5	3.2	3.2	3.2	3.2
	Input	(35 x 35)	(59 x 21)	(51 x 25)	(87 x 15)	(59 x 25)	(71 x 21)	(43 x 35)	(59 x 25)	(71 x 21)	(43 x 35)	(59 x 29)	(71 x 25)	(51 x 35)	(87 x 21)
Nominal Ratio	Overall	5917	5989	6213	6248	6395	6589	6608	6960	7018	7207	7613	7676	7952	8074
	Input	1849	1711	1775	1785	1827	2059	2065	2175	2193	2059	2175	2193	2485	2523
Exact Ratio	Overall	5916.8	5988.5	6212.5	6247.5	6394.5	6588.8	6608.0	6960.0	7017.6	7206.5	7612.5	7675.5	7952.0	8073.6
	Output	3.2	3.5	3.5	3.5	3.5	3.2	3.2	3.2	3.2	3.5	3.5	3.5	3.2	3.2
	Input	(43 x 43)	(59 x 29)	(71 x 25)	(51 x 35)	(87 x 21)	(71 x 29)	(59 x 35)	(87 x 25)	(51 x 43)	(71 x 29)	(87 x 25)	(51 x 43)	(71 x 35)	(87 x 29)
Nominal Ratio	Overall	8118	8323	8698	8831	9104	9629	9744	9770	10532	10686	11139	11587	11971	
	Input	2537	2601	2485	2523	2601	3009	3045	3053	3009	3053	3481	3621	3741	
Exact Ratio	Overall	8118.4	8323.2	8697.5	8830.5	9103.5	9628.8	9744.0	9769.6	10531.5	10685.5	11139.2	11587.2	11971.2	
	Output	3.2	3.2	3.5	3.5	3.5	3.2	3.2	3.2	3.5	3.5	3.2	3.2	3.2	
	Input	(59 x 43)	(51 x 51)	(71 x 35)	(87 x 29)	(51 x 51)	(59 x 51)	(87 x 35)	(71 x 43)	(59 x 51)	(71 x 43)	(59 x 59)	(71 x 51)	(87 x 43)	
Nominal Ratio	Overall	12674	13094	13405	14198	14662	16131	16426	17644	19766	24221				
	Input	3621	3741	4189	4437	4189	5041	5133	5041	6177	7569				
Exact Ratio	Overall	12673.5	13093.5	13404.8	14198.4	14661.5	16131.2	16425.6	17643.5	19766.4	24220.8				
	Output	3.5	3.5	3.2	3.2	3.5	3.2	3.2	3.5	3.2	3.2				
	Input	(71 x 51)	(87 x 43)	(71 x 59)	(87 x 51)	(71 x 59)	(71 x 71)	(87 x 59)	(71 x 71)	(87 x 71)	(87 x 87)				

2

How to Select



Cyclo® BBB4

How to
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sales@electromate.com

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 Power (HP or kW) 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 Drawing* on the right (larger images on page 1.8), additional positions on pages 1.9 to 1.13.

Step 3: Select Frame Size

3A: Find the Load Classification of your application in the *AGMA Load Classification Tables* on pages 2.6 to 2.7.

3B: Go to the *Gearmotor Selection Table* (starts on page 2.9) that corresponds to the desired **Mounting Position** and **Motor Power**. Find the **Output Speed** closest to the desired output speed.

3C: Locate the **Service Class** in the *Gearmotor Selection Table* (starts on page 2.9) for your application and select the **Frame Size Selection** that matches the HP or kW, Output Speed, and Service Class.

Step 4: Verify Dimensions

Use the Dimensions information starting on page 2.131 to verify that the selected Frame Size is appropriate.

Step 5: If Selecting a Unit with a Taper Grip Bushing or Keyed Hollow Bore

Please specify desired bore size. Refer to page 3.11 for availability.

Step 6: Choose Options

Please refer to Option section 3.1 and for additional available options please refer to our online Product Configurator at www.sumitomodrive.com/configurator

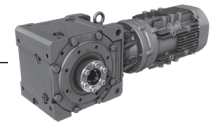
Step 7: Configure a Model Number

Go to pages 2.4 thru 2.5 to configure a model number.

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

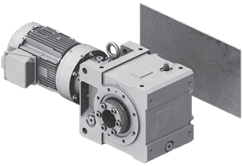
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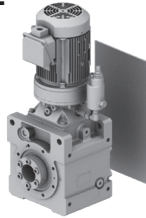


Mounting Positions

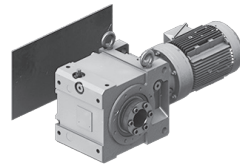
Y1



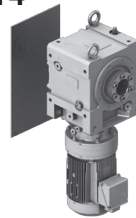
Y2



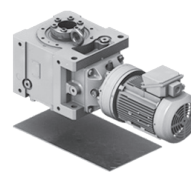
Y3



Y4



Y5



Y6



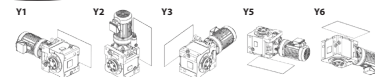
Select a Frame Size

Selection Tables

• Mounting Position

Y1, Y2, Y3, Y5, Y6 Mounting Positions™

Dimension Pages:
 Single Reduction 3.282 - 3.295
 Single Reduction, AF-Motor 3.296 - 3.307
 Single Reduction, Y2 3.308-3.309
 Double Reduction 3.310- 3.327
 Double Reduction, AF-Motor 3.328 - 3.341
 Double Reduction, Y2 3.342 - 3.343



• Motor Power (HP or kW)

Frequency	Hz	50	60	1HP (0.75kW)
Number of Poles	p			
Input Speed	RPM	1450	1750	

• Output Speed

• Service Class

• SELECTION

50Hz					60Hz					Selection			
Output Speed (RPM)	Output Torque in-lbs (N-m)	Service Factor SF	AGMA Class	Solid Shaft Overhung Load lbs (N)	Output Speed (RPM)	Output Torque in-lbs (N-m)	Service Factor SF	AGMA Class	Solid Shaft Overhung Load lbs (N)	Motor Power Code	Base Frame Size	Ratio	VFD
24.4	2400 (271)	2.65	III	6050 (26900)	29.4	1990 (225)	2.65	III	6090 (27100)	1	4A100	60	•
21.6	2710 (306)	2.53	III	6020 (26800)	26.0	2250 (254)	2.57	III	6070 (27000)	1	4A100	67	•
19.7	2960 (335)	2.39	III	6000 (26700)	23.8	2450 (277)	2.57	III	6050 (26900)	1	4A100	74	•
18.1	3220 (364)	1.69	II	5960 (26500)	21.9	2670 (302)	1.69	II	6020 (26800)	1	4A100	80	•
		2.23	III	5960 (26500)			2.23	III	6020 (26800)	1	4A105	80	•
		2.55	III	5960 (26500)			2.55	III	6020 (26800)	1	4A110	80	•
		2.96	III	5960 (26500)			2.96	III	6020 (26800)	1	4A115	80	•
16.6	3530 (399)	1.69	II	5930 (26400)	20.0	2920 (330)	1.69	II	6000 (26700)	1	4A100	88	•
		2.23	III	5930 (26400)			2.23	III	6000 (26700)	1	4A105	88	•
		2.55	III	5930 (26400)			2.55	III	6000 (26700)	1	4A110	88	•
		2.96	III	5930 (26400)			2.96	III	6000 (26700)	1	4A115	88	•
14.3	4090 (462)	1.61	II	5850 (26000)	17.2	3390 (383)	1.61	II	5960 (26500)	1	4A100	102	•
		2.12	III	5850 (26000)			2.12	III	5960 (26500)	1	4A105	102	•
		2.53	III	5850 (26000)			2.53	III	5960 (26500)	1	4A110	102	•
		2.79	III	5850 (26000)			2.79	III	5960 (26500)	1	4A115	102	•

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How to Select

STOCK BUSHING BORES

Size	Stock Bushing Bores Inch (mm)		Minimum Bores Inch (mm)	
4A	1 ¹⁵ / ₁₆ , 2 ³ / ₁₆	(50, 55)	1 ¹⁵ / ₁₆	(35)
4B	2 ³ / ₁₆ , 2 ⁷ / ₁₆	(60, 65)	1 ¹⁵ / ₁₆	(45)
4C	2 ⁷ / ₁₆ , 2 ¹⁵ / ₁₆	(65, 75)	2 ⁷ / ₁₆	(50)
4D	2 ¹⁵ / ₁₆ , 3 ¹ / ₁₆	(75, 85)	2 ⁷ / ₁₆	(60)
4E	3 ¹ / ₁₆ , 3 ¹⁵ / ₁₆	(90, 100)	2 ¹⁵ / ₁₆	(75)
4F	3 ¹⁵ / ₁₆ , 4 ⁷ / ₁₆ , 4 ¹⁵ / ₁₆	(110, 120)	3 ¹ / ₂	(90)

For special circumstances in selecting a Frame Size such as:

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

Consult Technical Information Section 4.1.

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	Code
Horizontal	H
Vertical	V
Vertical Up (Solid Shaft)	W

Note: V and H units have the same dimensions as H base units. V and W are only used for mounting positions *F5, *G5, *K5, *V5, *Y5, *F6, *G6, *K6, *V6, *Y6

Mounting Style

Type	Code
Shaft Mount (Hollow Shaft) page 3.2	Y
Housing Mount (Solid Shaft) page 3.3	U
Flange (Solid Shaft) page 3.4	F
Foot (Solid Shaft) page 3.4	H

Input Connection

Type of Input	Code
Gearmotor	M

Modification

Type	Code
Unit built with special modifications including, Shrink Disc	S
No special modifications applied	

Motor Power

(applies only to 1750 RPM)

HP	kW	Code
1/8		01
1/4		02
1/3		03
1/2		05
3/4		08
1	(0.75)	1
1 1/2	(1.1)	1H
2	(1.5)	2
3	(2.2)	3
5	(3.7)	5
7 1/2	(5.5)	8
EP 10	(7.5)	10
15	(11)	15
20	(15)	20
25	(18.5)	25
30	(22)	30
40	(30)	40
50	(37)	50
60	(45)	60

Frame Size

Single Reduction Input			
4A100	4B125	4C170	4E175
4A105	4B140	4C175	4E180
4A110	4B145	4D160	4E185
4A115	4B160	4D165	4E190
4A120	4B165	4D170	4E195
4A125	4C140	4D175	4F180
4A140	4C145	4D180	4F185
4A145	4C160	4D185	4F190
4B120	4C165	4E170	4F195
Double Reduction Input			
4A10DA	4B16DA	4C17DC	4E17DC
4A12DA	4B16DB	4D16DA	4E18DA
4A12DB	4B16DC	4D16DB	4E18DB
4A14DA	4C14DA	4D16DC	4E19DA
4A14DB	4C14DB	4D17DA	4E19DB
4A14DC	4C14DC	4D17DB	4F18DA
4B12DA	4C16DA	4D17DC	4F18DB
4B12DB	4C16DB	4D18DA	4F19DA
4B14DA	4C16DC	4D18DB	4F19DB
4B14DB	4C17DA	4E17DA	
4B14DC	4C17DB	4E17DB	

Required to be added at end of model number when ordering:

- Motor specifications (230/460 VAC 60 Hz is supplied, unless otherwise specified)
- Taper Grip Bushing or Keyed Hollow Bore or Output Shaft or Shrink Disc diameter must be specified (refer to pages 3.11 to 3.13 for diameters), example on page 3.14
- Optional Industry Package SSC code, refer to page 3.14

Optional conduit box positions available, please reference pages 4.26 to 4.28 for details.

AGMA Class

Class	Code
I	A
II	B
III	C

Motor Specification

Specification	Code
AF Motor (Inverter Duty 1/8 HP to 3/4 HP)	AV
Inverter Ready Motor Premium Efficiency (1+HP), IE3	EP
*DC Motor	DV
*Low Backlash	LB
*Servo Motor	SV
Torque Limiter	TL

*For Technical Information please contact customer service.

Note: When there are multiple suffices, sequence them alphabetically. Ex.: EPTL

Brake

Code	
With Brake	B
No Brake	-

L H Y M S **5** - **4 A 1 2 5** **Y B - EP Y1 - B - 28**

Gearmotor HP (1750 rpm)

Frame size

AGMA class

Brake

Ratio

Mounting position and optional specification (as required)

Motor Specification

Shaft specification

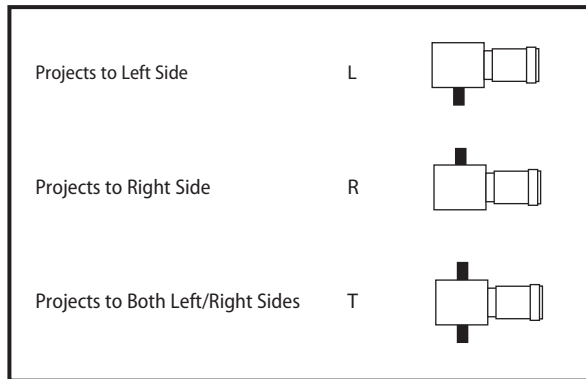
Driven shaft direction (shafted model only)

Cyclo BBB4 product code (always "L")

Nomenclature

Nomenclature

Driven Shaft Direction (Shafted Model Only)



Shaft Specifications

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

Mounting Positions

For selection refer to page 1.8 to 1.14

F1	G1	K1	V1	Y1
F2	G2	K2	V2	Y2
F3	G3	K3	V3	Y3
F4	G4	K4	V4	Y4
F5*	G5*	K5*	V5*	Y5*
F6*	G6*	K6*	V6*	Y6*

Note: * = Only available for vertical output shaft orientations (LV or LW).

Nominal Ratios

BBB4 with Planetary Input
Overall Nominal Ratio
11
13
14
16
18

BBB4 with Cyclo Input	
Single Reduction Input	Double Reduction Input
Overall Nominal Ratio	Overall Nominal Ratio
21	364
22	424
25	501
28	578
35	683
39	809
46	956
53	1117
60	1320
67	1656
74	1957
80	2272
88	2559
102	2944
112	3511
123	4365
151	5177
179	6472
207	7228
249	8880
305	10658
417	12184

Cyclo® BBB4

Nomenclature

Nomenclature Example:

LHYMS5 – 4A125YB – EPY1 – B – 28

L – Cyclo Bevel Buddybox	4A125 – Frame Size
H – Horizontal	Y – Taper-Grip® Bushing output
Y – Shaft Mount (Hollow Shaft)	B – AGMA Class II
M – Integral Motor	EP – Three-Phase Motor Premium Efficiency
S – Modification (Special Feature)	Y1 – Installation Position
5 – 5 HP (3 kW), 1750 RPM	B – Brake
	28 – Ratio

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Step 3A - AGMA Load Classifications: Gearmotors

Select Service factor by Method A or B or C:

Method A - Gearmotor Classification by LOAD

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

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

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

Class III = Moderate shock loads for 24 hours a day or heavy shock loads for 8 hours a day (AGMA Service Factor: 2.0)

Note: Selections without an AGMA Class designation are torque based selections generally used for intermittent service.

Method B - Recommended Service Factors for Frequent Start-Stop Applications for EP Motors

For frequent start-stop applications with motor operated across the line, use the table below to determine the recommended service factor, and check the Motor Thermal Rating (Table 4.30) in Section 4. For determination of moment of inertia, see page 4.30.

Number of start-stops (Times/hour)	~ 10 hours/day			~24 hours/day			
	I	II	III	I	II	III	
~10	1	1.1	1.35	1.2	1.25	1.5	Three-phase motors from 1/8 HP to 3/4 (0.1 to 0.55 kW)
~200	1.1	1.3	1.5	1.25	1.5	1.65	
~500	1.15	1.45	1.6	1.3	1.6	1.75	
1	1	1.1	1.35	1.2	1.25	1.5	Premium Efficiency three-phase motors 1HP to 75 HP (0.75 to 55 kW), high-efficiency three-phase motors from 1/4 HP to 1/2 HP (0.2 to 0.4 kW)
~3	1	1.2	1.45	1.2	1.35	1.55	
~10	1	1.3	1.5	1.2	1.45	1.65	
~60	1	1.4	1.6	1.2	1.65	1.8	

$$\text{Inertia (Moment of Inertia } WR^2) \text{ Ratio} = \frac{\text{Total Moment of Inertia } (WR^2) \text{ as seen from motor shaft}}{\text{Moment of Inertia } (WR^2) \text{ of motor}}$$

I = Allowable Inertia (WR^2) Ratio: Inertia Ratio \leq 0.3

II = Allowable Inertia (WR^2) Ratio: 0.3 < Inertia Ratio \leq 3.0

III = Allowable Inertia (WR^2) Ratio: 3.0 < Inertia Ratio \leq 10.0

- Note:**
- The number of start-stops includes brake or clutch operation times.
 - Consult us when starting under loaded conditions such as torque or radial load.
 - Consult us when start-stop frequency or Moment of Inertia Ratio exceeds that shown above.

Specification Inspection Items

- if there is a shoulder bolt or knockpin used on mating surface of reducer
- change in case material
- if using high frequency brake

Method C - Load Classification by INDUSTRY

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

...table continued on next page.

Method C continued - Load Classification by APPLICATION

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

Cyclo® BBB4

AGMA Tables

Constant Torque Speed Ranges: Gearmotors

Table 2.8 Turn Down Ratio (CTSR) for Integral Motors in CONSTANT TORQUE Applications Powered by Variable Frequency Drives.

Motor Specification:	Motor without brake	Motor with Brake	AF Motor (AV suffix)	AF Motor with Brake (AV-B suffix)
1/8 HP (0.1 kW)	3:1	3:1	10:1	10:1
1/4 HP (0.2 kW)	3:1	3:1	10:1	10:1
1/3 HP (0.25 kW)	3:1	3:1	10:1	10:1
1/2 HP (0.4 kW)	3:1	3:1	10:1	10:1
3/4 HP (0.55 kW)	2:1	2:1	10:1	10:1
1 HP (0.75 kW)	10:1	10:1	10:1	10:1
1.5 HP (1.1 kW)	10:1	5:1	10:1	10:1
2 HP (1.5 kW)	10:1	4:1	10:1	10:1
3 HP (2.2 kW)	10:1	4:1	10:1	10:1
5 HP (3.7 kW)	10:1	4:1	10:1	10:1
7.5 HP (5.5 kW)	10:1	4:1	10:1	10:1
10 HP (7.5 kW)	10:1	6:1	10:1	10:1
15 HP (11 kW)	10:1	6:1	10:1	10:1
20 HP (15 kW)	10:1	10:1	10:1	10:1
25 HP (18.5 kW)	10:1	10:1	10:1	10:1
30 HP (22 kW)	10:1	10:1	10:1	10:1
40 HP (30 kW)	10:1	10:1	10:1	10:1
50 HP (37 kW)	10:1	10:1	10:1	10:1
60 HP (45 kW)	10:1	10:1	10:1	10:1

Cyclo® BBB4

CTSR Table

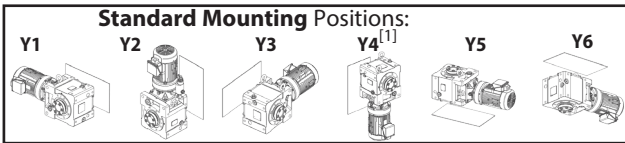
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Standard Mounting Selection Tables

**1/8 HP
(0.1 kW)**



Dimension Pages:
 Single Reduction 2.132-2.143
 Single Reduction, Y2 2.144
 Double Reduction 2.146-2.161
 Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz						60 Hz						Selection					
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Base			VFD ^[2]
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code	Frame Size	Ratio	
3.48	2240 (253)		2.10	III	6060 (27000)	4.20	1850 (210)		2.10	III	6090 (27100)	01	4A100	417	(*)		
			2.86	III	6060 (27000)				2.86	III	6090 (27100)	01	4A105	417	(*)		
2.12	3480 (393)		2.60	III	5910 (26300)	2.56	2880 (326)		3.13	III	5990 (26600)	01	4A10DA	683	(a)		
1.79	4120 (466)		2.19	III	5810 (25900)	2.16	3420 (386)		2.64	III	5920 (26300)	01	4A10DA	809	(a)		
			2.77	III	5810 (25900)				3.34	III	5920 (26300)	01	4A12DB	809	(a)		
1.52	4870 (551)		1.85	II	5670 (25200)	1.83	4040 (456)		2.24	III	5830 (25900)	01	4A10DA	956	(a)		
			2.34	III	5670 (25200)				2.83	III	5830 (25900)	01	4A12DB	956	(a)		
1.30	5690 (643)		1.59	II	5490 (24400)	1.57	4720 (533)		1.91	II	5700 (25400)	01	4A10DA	1117	(a)		
			2.00	III	5490 (24400)				2.42	III	5700 (25400)	01	4A12DB	1117	(a)		
1.10	6730 (760)		1.34	I	5200 (23100)	1.33	5580 (630)		1.62	II	5510 (24500)	01	4A10DA	1320	(a)		
			1.70	II	5200 (23100)				2.05	III	5510 (24500)	01	4A12DA	1320	(a)		
			2.82	III	9710 (43200)				3.40	III	9820 (43700)	01	4B12DA	1320	(a)		
0.876	8440 (954)		1.07	I	4560 (20300)	1.06	7000 (791)		1.29	I	5110 (22700)	01	4A10DA	1656	(a)		
			1.35	I	4560 (20300)				1.63	II	5110 (22700)	01	4A12DA	1656	(a)		
			2.25	III	9510 (42300)				2.71	III	9680 (43100)	01	4B12DA	1656	(a)		
			2.69	III	9510 (42300)				3.25	III	9680 (43100)	01	4B14DA	1656	(a)		
0.741	9980 (1130)		0.91	-	3750 (16700)	0.894	8270 (934)		1.09	I	4640 (20600)	01	4A10DA	1957	(a)		
			1.14	I	3750 (16700)				1.38	I	4640 (20600)	01	4A12DA	1957	(a)		
			1.90	II	9290 (41300)				2.29	III	9540 (42400)	01	4B12DA	1957	(a)		
			2.28	III	9290 (41300)				2.75	III	9540 (42400)	01	4B14DA	1957	(a)		
0.638	11600 (1310)		0.99	-	2400 (10700)	0.770	9600 (1080)		1.19	I	3980 (17700)	01	4A12DA	2272	(a)		
			1.64	II	9020 (40100)				1.98	II	9350 (41600)	01	4B12DA	2272	(a)		
			1.96	II	9020 (40100)				2.37	III	9350 (41600)	01	4B14DA	2272	(a)		
0.567	13000 (1470)		1.45	II	8720 (38800)	0.684	10800 (1220)		1.75	II	9160 (40700)	01	4B12DA	2559	(a)		
			1.74	II	8720 (38800)				2.10	III	9160 (40700)	01	4B14DA	2559	(a)		
0.493	15000 (1700)		1.26	I	8240 (36700)	0.595	12400 (1410)		1.53	II	8850 (39400)	01	4B12DA	2944	(a)		
			2.75	III	15500 (68900)				2.86	III	15700 (69800)	01	4C14DA	2944	(a)		
0.413	17900 (2020)		1.06	I	7350 (32700)	0.499	14800 (1680)		1.28	I	8290 (36900)	01	4B12DA	3511	(a)		
			2.30	III	15200 (67600)				2.78	III	15500 (69000)	01	4C14DA	3511	(a)		
0.332	22300 (2520)		0.85	-	5330 (23700)	0.401	18400 (2080)		1.03	I	7150 (31800)	01	4B12DA	4365	(a)		
			1.85	II	14700 (65200)				2.24	III	15100 (67300)	01	4C14DA	4365	(a)		

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Selection Tables

Notes: [1] For Y4 Double Reductions (4XXXDX) refer to the above table; for Y4 single reduction refer to tables on pages 2.91-2.130.

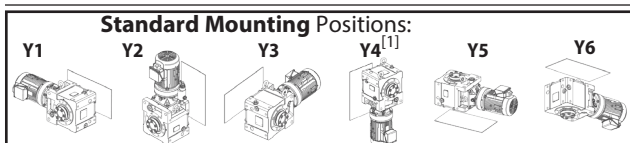
[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

(*) = AV motor required for selection (AV suffix required on model number, see page 2.4)

(a) = Both AV and non-AV motors can be used for selection.

Standard Mounting Selection Tables

**1/4 HP
(0.2 kW)**



Dimension Pages:
 Single Reduction 2.132-2.143
 Single Reduction, Y2 2.144
 Double Reduction 2.146-2.161
 Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz					60 Hz					Selection							
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor		Base			VFD ^[2]		
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code		Frame Size	Ratio
8.12	1920	(217)	2.80	III	6090	(27100)	9.80	1590	(180)	2.80	III	6110	(27200)	02	4A100	179	(a)
7.02	2220	(251)	2.58	III	6070	(27000)	8.47	1840	(208)	2.58	III	6090	(27100)	02	4A100	207	(a)
5.84	2670	(302)	2.18	III	6030	(26800)	7.04	2210	(250)	2.18	III	6070	(27000)	02	4A100	249	(a)
			2.53	III	6030	(26800)				2.81	III	6070	(27000)	02	4A105	249	(a)
4.76	3270	(370)	2.17	III	5960	(26500)	5.75	2710	(306)	2.17	III	6020	(26800)	02	4A100	305	(a)
			2.51	III	5960	(26500)				2.83	III	6020	(26800)	02	4A105	305	(a)
3.98	3710	(420)	2.03	III	5880	(26100)	4.81	3080	(348)	2.03	III	5970	(26500)	02	4A10DA	364	(a)
3.48	4480	(506)	1.05	I	5790	(25800)	4.20	3710	(419)	1.05	I	5910	(26300)	02	4A100	417	(a)
			1.43	II	5790	(25800)				1.43	II	5910	(26300)	02	4A105	417	(a)
3.42	4320	(488)	2.03	III	5780	(25700)	4.13	3580	(404)	2.03	III	5900	(26200)	02	4A10DA	424	(a)
			2.64	III	5780	(25700)				3.19	III	5900	(26200)	02	4A12DB	424	(a)
2.90	5110	(577)	1.77	II	5620	(25000)	3.50	4230	(478)	2.03	III	5790	(25800)	02	4A10DA	501	(a)
			2.24	III	5620	(25000)				2.70	III	5790	(25800)	02	4A12DB	501	(a)
2.51	5890	(666)	1.53	II	5440	(24200)	3.03	4880	(552)	1.85	II	5670	(25200)	02	4A10DA	578	(a)
			1.94	II	5440	(24200)				2.34	III	5670	(25200)	02	4A12DB	578	(a)
			3.22	III	9790	(43600)				3.89	III	9870	(43900)	02	4B12DB	578	(a)
2.12	6960	(787)	1.30	I	5120	(22800)	2.56	5770	(652)	1.57	II	5470	(24300)	02	4A10DA	683	(a)
			1.64	II	5120	(22800)				1.98	II	5470	(24300)	02	4A12DB	683	(a)
			2.03	III	9690	(43100)				2.03	III	9800	(43600)	02	4B12DA	683	(a)
			2.73	III	9690	(43100)				3.29	III	9800	(43600)	02	4B12DB	683	(a)
			1.79	8250	(932)	1.10				I	4650	(20700)	2.16	6830	(772)	1.32	I
1.38	I	4650	(20700)	1.67	II	5170	(23000)	02	4A12DB	809	(a)						
2.03	III	9540	(42400)	2.03	III	9700	(43200)	02	4B12DA	809	(a)						
2.30	III	9540	(42400)	2.78	III	9700	(43200)	02	4B12DB	809	(a)						
2.76	III	9540	(42400)	3.33	III	9700	(43200)	02	4B14DB	809	(a)						
1.52	9750	(1100)	0.93	-	3890	(17300)	1.83	8080	(913)	1.12	I	4720	(21000)	02	4A10DA	956	(a)
			1.17	I	3890	(17300)				1.41	II	4720	(21000)	02	4A12DB	956	(a)
			1.95	II	9330	(41500)				2.35	III	9560	(42500)	02	4B12DB	956	(a)
			2.33	III	9330	(41500)				2.82	III	9560	(42500)	02	4B14DB	956	(a)
1.30	11400	(1290)	1.00	I	2610	(11600)	1.57	9440	(1070)	1.21	I	4070	(18100)	02	4A12DB	1117	(a)
			1.67	II	9050	(40300)				2.01	III	9380	(41700)	02	4B12DB	1117	(a)
			2.00	III	9050	(40300)				2.41	III	9380	(41700)	02	4B14DB	1117	(a)
1.10	13500	(1520)	1.41	II	8630	(38400)	1.33	11200	(1260)	1.70	II	9100	(40500)	02	4B12DA	1320	(a)
			1.69	II	8630	(38400)				2.04	III	9100	(40500)	02	4B14DB	1320	(a)

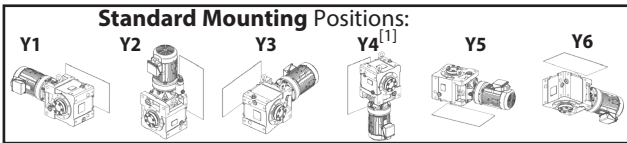
Notes: [1] For Y4 Double Reductions (4XXXDX) refer to the above table; for Y4 single reduction refer to tables on pages 2.91-2.130.

[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

(a) = Both AV and non-AV motors can be used for selection.

Standard Mounting Selection Tables

**1/4 HP
(0.2 kW)**



Dimension Pages:
 Single Reduction, Y2 2.132-2.143
 Single Reduction, Y2 2.144
 Double Reduction 2.146-2.161
 Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz					60 Hz					Selection							
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor		Base			VFD ^[2]		
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code		Frame Size	Ratio
0.876	16900	(1910)	1.12	I	7690	(34200)	1.06	14000	(1580)	1.36	I	8500	(37800)	02	4B12DA	1656	(a)
			1.35	I	7690	(34200)				1.63	II	8500	(37800)	02	4B14DB	1656	(a)
			2.03	III	15300	(68100)				2.03	III	15600	(69300)	02	4C14DA	1656	(a)
			2.44	III	15300	(68100)				2.95	III	15600	(69300)	02	4C14DB	1656	(a)
			2.69	III	15300	(68100)				3.25	III	15600	(69300)	02	4C16DA	1656	(a)
0.741	20000	(2260)	0.95	-	6530	(29000)	0.894	16500	(1870)	1.15	I	7800	(34700)	02	4B12DA	1957	(a)
			1.14	I	6530	(29000)				1.38	I	7800	(34700)	02	4B14DB	1957	(a)
			2.07	III	15000	(66600)				2.50	III	15300	(68200)	02	4C14DB	1957	(a)
			2.28	III	15000	(66600)				2.75	III	15300	(68200)	02	4C16DA	1957	(a)
0.638	23200	(2620)	0.98	-	4730	(21000)	0.770	19200	(2170)	1.18	I	6850	(30500)	02	4B14DB	2272	(a)
			1.78	II	14500	(64600)				2.15	III	15100	(67000)	02	4C14DB	2272	(a)
			1.96	II	14500	(64600)				2.37	III	15100	(67000)	02	4C16DA	2272	(a)
			2.73	III	21300	(94700)				3.29	III	21500	(95900)	02	4D16DA	2272	(a)
0.567	26100	(2950)	0.87	-	1100	(4890)	0.684	21600	(2440)	1.05	I	5700	(25400)	02	4B14DA	2559	(a)
			1.58	II	14100	(62600)				1.91	II	14700	(65600)	02	4C14DA	2559	(a)
			1.74	II	14100	(62600)				2.10	III	14700	(65600)	02	4C16DA	2559	(a)
			2.42	III	21100	(93700)				2.92	III	21400	(95200)	02	4D16DA	2559	(a)
			2.96	III	21100	(93700)				3.57	III	21400	(95200)	02	4D17DA	2559	(a)
0.493	30000	(3390)	1.37	I	13300	(59300)	0.595	24900	(2810)	1.66	II	14300	(63500)	02	4C14DB	2944	(a)
			2.11	III	20700	(92100)				2.54	III	21200	(94100)	02	4D16DA	2944	(a)
0.413	35800	(4050)	1.15	I	11900	(53100)	0.499	29700	(3350)	1.39	I	13400	(59600)	02	4C14DA	3511	(a)
			1.77	II	20100	(89300)				2.13	III	20700	(92200)	02	4D16DA	3511	(a)
			2.16	III	20100	(89300)				2.60	III	20700	(92200)	02	4D17DA	3511	(a)
			2.65	III	22000	(97800)				3.20	III	22300	(99200)	02	4E17DA	3511	(a)
0.332	44500	(5030)	0.93	-	8830	(39300)	0.401	36900	(4170)	1.12	I	11600	(51700)	02	4C14DA	4365	(a)
			1.73	II	18900	(84000)				2.09	III	19900	(88700)	02	4D17DA	4365	(a)
			2.13	III	21500	(95900)				2.57	III	21900	(97600)	02	4E17DA	4365	(a)
0.280	52800	(5970)	1.80	II	21100	(94000)	0.338	43800	(4940)	2.17	III	21600	(96000)	02	4E17DA	5177	(a)
0.201	73700	(8330)	0.86	-	11200	(49700)	0.242	61100	(6900)	1.04	I	15500	(68800)	02	4D16DA	7228	(a)
0.136	109000	(12300)	0.87	-	15100	(67000)	0.164	90100	(10200)	1.05	I	19200	(85600)	02	4E17DA	10658	(a)

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Selection Tables

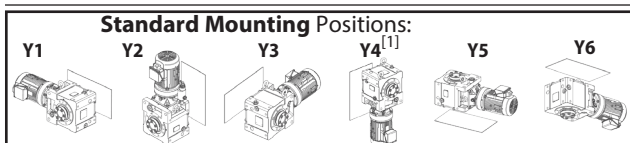
Notes: [1] For Y4 Double Reductions (4XXXDX) refer to the above table; for Y4 single reduction refer to tables on pages 2.91-2.130.

[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

(a) = Both AV and non-AV motors can be used for selection.

Standard Mounting Selection Tables

**1/3 HP
(0.25 kW)**



Dimension Pages:
 Single Reduction 2.132-2.143
 Single Reduction, Y2 2.144
 Double Reduction 2.146-2.161
 Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz					60 Hz					Selection							
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor		Base			VFD ^[2]		
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code		Frame Size	Ratio
8.12	2400	(271)	2.24	III	6050	(26900)	9.80	1990	(225)	2.24	III	6080	(27100)	03	4A100	179	(a)
7.02	2770	(313)	2.06	III	6020	(26800)	8.47	2300	(260)	2.06	III	6060	(27000)	03	4A100	207	(a)
			2.72	III	6020	(26800)				2.83	III	6060	(27000)	03	4A105	207	(a)
5.84	3340	(377)	1.74	II	5950	(26500)	7.04	2770	(313)	1.74	II	6020	(26800)	03	4A100	249	(a)
			2.02	III	5950	(26500)				2.24	III	6020	(26800)	03	4A105	249	(a)
			2.68	III	5950	(26500)				2.68	III	6020	(26800)	03	4A110	249	(*)
4.76	4090	(462)	1.73	II	5850	(26000)	5.75	3390	(383)	1.73	II	5950	(26500)	03	4A100	305	(a)
			2.01	III	5850	(26000)				2.26	III	5950	(26500)	03	4A105	305	(a)
			2.64	III	5850	(26000)				2.64	III	5950	(26500)	03	4A110	305	(*)
			2.79	III	5850	(26000)				2.79	III	5950	(26500)	03	4A115	305	(*)
3.98	4640	(524)	1.63	II	5720	(25400)	4.81	3850	(435)	1.63	II	5860	(26100)	03	4A10DA	364	(a)
			2.46	III	5720	(25400)				2.97	III	5860	(26100)	03	4A12DB	364	(a)
3.48	5600	(632)	1.14	I	5580	(24800)	4.20	4640	(524)	1.14	I	5760	(25600)	03	4A105	417	(a)
3.42	5400	(610)	1.63	II	5560	(24700)	4.13	4470	(506)	1.63	II	5750	(25600)	03	4A10DA	424	(a)
			2.11	III	5560	(24700)				2.55	III	5750	(25600)	03	4A12DB	424	(a)
2.90	6380	(721)	1.42	II	5300	(23600)	3.50	5290	(597)	1.63	II	5580	(24800)	03	4A10DA	501	(a)
			1.79	II	5300	(23600)				2.16	III	5580	(24800)	03	4A12DB	501	(a)
			2.97	III	9750	(43400)				3.59	III	9840	(43800)	03	4B12DB	501	(a)
2.51	7360	(832)	1.23	I	4990	(22200)	3.03	6100	(689)	1.48	II	5380	(23900)	03	4A10DA	578	(a)
			1.55	II	4990	(22200)				1.87	II	5380	(23900)	03	4A12DB	578	(a)
			2.58	III	9640	(42900)				3.11	III	9770	(43500)	03	4B12DB	578	(a)
2.12	8700	(983)	1.04	I	4440	(19800)	2.56	7210	(815)	1.25	I	5040	(22400)	03	4A10DA	683	(a)
			1.31	I	4440	(19800)				1.58	II	5040	(22400)	03	4A12DB	683	(a)
			1.63	II	9480	(42200)				1.63	II	9660	(43000)	03	4B12DA	683	(a)
			2.18	III	9480	(42200)				2.63	III	9660	(43000)	03	4B12DB	683	(a)
			2.61	III	9480	(42200)				3.15	III	9660	(43000)	03	4B14DB	683	(a)
1.79	10300	(1160)	0.88	-	3530	(15700)	2.16	8540	(965)	1.06	I	4520	(20100)	03	4A10DA	809	(a)
			1.11	I	3530	(15700)				1.34	I	4520	(20100)	03	4A12DB	809	(a)
			1.63	II	9240	(41100)				1.63	II	9500	(42300)	03	4B12DA	809	(a)
			1.84	II	9240	(41100)				2.22	III	9500	(42300)	03	4B12DB	809	(a)
			2.21	III	9240	(41100)				2.66	III	9500	(42300)	03	4B14DB	809	(a)
1.52	12200	(1380)	0.94	-	1530	(6830)	1.83	10100	(1140)	1.13	I	3670	(16300)	03	4A12DB	956	(a)
			1.56	II	8900	(39600)				1.88	II	9280	(41300)	03	4B12DB	956	(a)
			1.87	II	8900	(39600)				2.25	III	9280	(41300)	03	4B14DB	956	(a)
1.30	14200	(1610)	1.33	I	8440	(37600)	1.57	11800	(1330)	1.61	II	8980	(39900)	03	4B12DB	1117	(a)
			1.60	II	8440	(37600)				1.93	II	8980	(39900)	03	4B14DB	1117	(a)
			2.90	III	15600	(69200)				3.50	III	15700	(70000)	03	4C14DB	1117	(a)

Notes: [1] For Y4 Double Reductions (4XXXDX) refer to the above table; for Y4 single reduction refer to tables on pages 2.91-2.130.

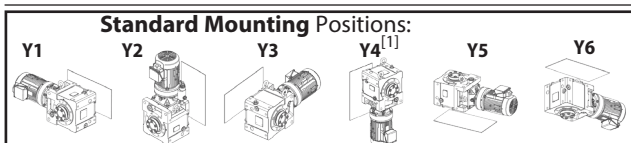
[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

(*) = AV motor required for selection (AV suffix required on model number, see page 2.4)

(a) = Both AV and non-AV motors can be used for selection.

Standard Mounting Selection Tables

**1/3 HP
(0.25 kW)**



Dimension Pages:
 Single Reduction 2.132-2.143
 Single Reduction, Y2 2.144
 Double Reduction 2.146-2.161
 Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz					60 Hz					Selection							
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor		Base			VFD ^[2]		
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code		Frame Size	Ratio
1.10	16800 (1900)		1.13	I	7710	(34300)	1.33	13900 (1580)		1.36	I	8510	(37900)	03	4B12DA	1320	(a)
			1.35	I	7710	(34300)				1.63	II	8510	(37900)	03	4B14DB	1320	(a)
			2.45	III	15300	(68100)				2.96	III	15600	(69300)	03	4C14DB	1320	(a)
			2.70	III	15300	(68100)				3.26	III	15600	(69300)	03	4C16DA	1320	(a)
0.876	21100 (2390)		0.90	-	5980	(26600)	1.06	17500 (1980)		1.08	I	7490	(33300)	03	4B12DA	1656	(a)
			1.08	I	5980	(26600)				1.30	I	7490	(33300)	03	4B14DB	1656	(a)
			1.63	II	14800	(65900)				1.63	II	15200	(67800)	03	4C14DA	1656	(a)
			1.95	II	14800	(65900)				2.36	III	15200	(67800)	03	4C14DB	1656	(a)
			2.16	III	14800	(65900)				2.60	III	15200	(67800)	03	4C16DA	1656	(a)
			3.00	III	21400	(95300)				3.62	III	21600	(96300)	03	4D16DA	1656	(a)
0.741	24900 (2820)		0.91	-	3130	(13900)	0.894	20700 (2340)		1.10	I	6200	(27600)	03	4B14DB	1957	(a)
			1.65	II	14300	(63400)				2.00	III	14900	(66200)	03	4C14DB	1957	(a)
			1.82	II	14300	(63400)				2.20	III	14900	(66200)	03	4C16DA	1957	(a)
			2.54	III	21100	(94100)				3.06	III	21500	(95400)	03	4D16DA	1957	(a)
0.638	29000 (3270)		1.42	II	13500	(60200)	0.770	24000 (2710)		1.72	II	14400	(64100)	03	4C14DB	2272	(a)
			1.57	II	13500	(60200)				1.90	II	14400	(64100)	03	4C16DA	2272	(a)
			2.18	III	20800	(92500)				2.64	III	21200	(94400)	03	4D16DA	2272	(a)
			2.66	III	20800	(92500)				3.22	III	21200	(94400)	03	4D17DA	2272	(a)
0.567	32600 (3690)		1.26	I	12700	(56700)	0.684	27000 (3050)		1.53	II	13900	(61800)	03	4C14DA	2559	(a)
			1.39	I	12700	(56700)				1.68	II	13900	(61800)	03	4C16DA	2559	(a)
			1.94	II	20400	(90900)				2.34	III	21000	(93300)	03	4D16DA	2559	(a)
			2.37	III	20400	(90900)				2.86	III	21000	(93300)	03	4D17DA	2559	(a)
			2.91	III	22200	(98500)				3.51	III	22400	(99800)	03	4E17DA	2559	(a)
0.493	37500 (4240)		1.10	I	11400	(50900)	0.595	31100 (3510)		1.33	I	13100	(58200)	03	4C14DB	2944	(a)
			1.69	II	19900	(88400)				2.03	III	20600	(91600)	03	4D16DA	2944	(a)
			2.06	III	19900	(88400)				2.48	III	20600	(91600)	03	4D17DA	2944	(a)
			2.53	III	21900	(97400)				3.05	III	22200	(98900)	03	4E17DA	2944	(a)
			2.74	III	21900	(97400)				3.30	III	22200	(98900)	03	4E18DA	2944	(a)
0.413	44800 (5060)		0.92	-	8720	(38800)	0.499	37100 (4190)		1.11	I	11600	(51500)	03	4C14DA	3511	(a)
			1.41	II	18800	(83800)				1.71	II	19900	(88600)	03	4D16DA	3511	(a)
			1.72	II	18800	(83800)				2.08	III	19900	(88600)	03	4D17DA	3511	(a)
			2.12	III	21500	(95800)				2.56	III	21900	(97500)	03	4E17DA	3511	(a)
0.332	55700 (6290)		1.39	I	16800	(74600)	0.401	46100 (5210)		1.67	II	18600	(82800)	03	4D17DA	4365	(a)
			1.70	II	21000	(93300)				2.06	III	21500	(95500)	03	4E17DA	4365	(a)
			2.71	III	29800	(132000)				3.27	III	30200	(134000)	03	4F18DA	4365	(a)
			2.77	III	29800	(132000)				3.34	III	30200	(134000)	03	4F19DA	4365	(*)
0.280	66000 (7460)		1.44	II	20500	(91000)	0.338	54700 (6180)		1.73	II	21000	(93600)	03	4E17DA	5177	(a)

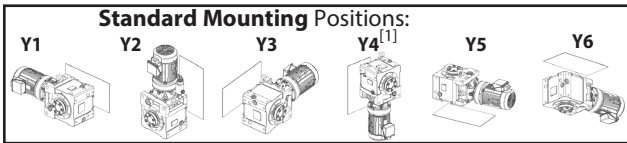
Cyclo® BBB4

Selection Tables

Notes: [1] For Y4 Double Reductions (4XXXDX) refer to the above table; for Y4 single reduction refer to tables on pages 2.91-2.130.
 [2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):
 (*) = AV motor required for selection (AV suffix required on model number, see page 2.4)
 (a) = Both AV and non-AV motors can be used for selection.

Standard Mounting Selection Tables

**1/2 HP
(0.4 kW)**



Dimension Pages:
 Single Reduction 2.132-2.143
 Single Reduction, Y2 2.144
 Double Reduction 2.146-2.161
 Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz					60 Hz					Selection							
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor		Base			VFD ^[2]		
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code		Frame Size	Ratio
12.9	2410	(272)	2.44	III	6050	(26900)	15.6	2000	(225)	2.44	III	6080	(27100)	05	4A100	112	(a)
			3.00	III	6050	(26900)				3.00	III	6080	(27100)	05	4A105	112	(a)
11.8	2630	(298)	2.44	III	6030	(26800)	14.3	2180	(247)	2.44	III	6070	(27000)	05	4A100	123	(a)
			3.00	III	6030	(26800)				3.00	III	6070	(27000)	05	4A105	123	(a)
9.63	3240	(366)	1.95	II	5970	(26500)	11.6	2680	(303)	1.95	II	6020	(26800)	05	4A100	151	(a)
			2.70	III	5970	(26500)				2.70	III	6020	(26800)	05	4A105	151	(a)
8.12	3840	(434)	1.40	II	5890	(26200)	9.80	3180	(359)	1.40	II	5970	(26600)	05	4A100	179	(a)
			1.94	II	5890	(26200)				1.94	II	5970	(26600)	05	4A105	179	(a)
			2.36	III	5890	(26200)				2.36	III	5970	(26600)	05	4A110	179	(a)
			2.78	III	5890	(26200)				2.78	III	5970	(26600)	05	4A115	179	(a)
			2.98	III	5890	(26200)				2.98	III	5970	(26600)	05	4A120	179	(a)
7.02	4440	(502)	1.29	I	5800	(25800)	8.47	3680	(416)	1.29	I	5910	(26300)	05	4A100	207	(a)
			1.70	II	5800	(25800)				1.77	II	5910	(26300)	05	4A105	207	(a)
			2.15	III	5800	(25800)				2.15	III	5910	(26300)	05	4A110	207	(a)
			2.53	III	5800	(25800)				2.53	III	5910	(26300)	05	4A115	207	(a)
			2.57	III	5800	(25800)				2.57	III	5910	(26300)	05	4A120	207	(a)
5.84	5340	(604)	1.09	I	5630	(25000)	7.04	4430	(500)	1.09	I	5800	(25800)	05	4A100	249	(a)
			1.26	I	5630	(25000)				1.40	II	5800	(25800)	05	4A105	249	(a)
			1.67	II	5630	(25000)				1.67	II	5800	(25800)	05	4A110	249	(a)
			1.90	II	5630	(25000)				1.90	II	5800	(25800)	05	4A115	249	(a)
			2.14	III	5630	(25000)				2.14	III	5800	(25800)	05	4A120	249	(a)
			2.39	III	9860	(43900)				2.39	III	9920	(44100)	05	4B120	249	(a)
2.84	III	9860	(43900)	3.00	III	9920	(44100)	05	4B125	249	(a)						
4.76	6550	(740)	1.08	I	5350	(23800)	5.75	5420	(613)	1.08	I	5610	(25000)	05	4A100	305	(a)
			1.26	I	5350	(23800)				1.41	II	5610	(25000)	05	4A105	305	(a)
			1.65	II	5350	(23800)				1.65	II	5610	(25000)	05	4A110	305	(a)
			1.74	II	5350	(23800)				1.74	II	5610	(25000)	05	4A115	305	(a)
			2.36	III	9760	(43400)				2.36	III	9850	(43800)	05	4B120	305	(a)
			2.57	III	9760	(43400)				2.83	III	9850	(43800)	05	4B125	305	(a)
3.98	7430	(839)	1.02	I	4970	(22100)	4.81	6150	(695)	1.02	I	5370	(23900)	05	4A10DA	364	C.F.
			1.54	II	4970	(22100)				1.86	II	5370	(23900)	05	4A12DB	364	(a)
			2.55	III	9640	(42900)				3.08	III	9770	(43500)	05	4B12DB	364	(a)
3.42	8640	(976)	1.02	I	4470	(19900)	4.13	7160	(809)	1.02	I	5060	(22500)	05	4A10DA	424	C.F.
			1.32	I	4470	(19900)				1.59	II	5060	(22500)	05	4A12DB	424	(a)
			2.17	III	9490	(42200)				2.62	III	9670	(43000)	05	4B12DB	424	(a)
			2.63	III	9490	(42200)				3.18	III	9670	(43000)	05	4B14DB	424	(a)

Notes: [1] For Y4 Double Reductions (4XXXDX) refer to the above table; for Y4 single reduction refer to tables on pages 2.91-2.130.

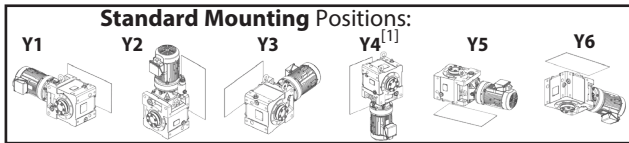
[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

C.F. = Consult Factory with ambient temperature data for VFD operation.

(a) = Both AV and non-AV motors can be used for selection.

Standard Mounting Selection Tables

**1/2 HP
(0.4 kW)**



Dimension Pages:
 Single Reduction 2.132-2.143
 Single Reduction, Y2 2.144
 Double Reduction 2.146-2.161
 Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz					60 Hz					Selection						
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor		Base			VFD ^[2]	
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code		Frame Size
2.90	10200 (1150)		0.88	-	3590 (16000)	3.50	8460 (956)			1.02	I	4550 (20300)	05	4A10DA	501	C.F.
			1.12	I	3590 (16000)					1.35	I	4550 (20300)	05	4A12DB	501	(a)
			1.86	II	9260 (41200)					2.24	III	9510 (42300)	05	4B12DB	501	(a)
			2.23	III	9260 (41200)					2.69	III	9510 (42300)	05	4B14DB	501	(a)
2.51	11800 (1330)		0.97	-	2160 (9600)	3.03	9760 (1100)			1.17	I	3880 (17300)	05	4A12DB	578	(a)
			1.61	II	8980 (39900)					1.94	II	9330 (41500)	05	4B12DB	578	(a)
			1.93	II	8980 (39900)					2.33	III	9330 (41500)	05	4B14DB	578	(a)
2.12	13900 (1570)		1.02	I	8520 (37900)	2.56	11500 (1300)			1.02	I	9030 (40100)	05	4B12DA	683	C.F.
			1.36	I	8520 (37900)					1.64	II	9030 (40100)	05	4B12DB	683	(a)
			1.63	II	8520 (37900)					1.97	II	9030 (40100)	05	4B14DB	683	(a)
			2.94	III	15600 (69300)					3.54	III	15800 (70100)	05	4C14DB	683	(a)
1.79	16500 (1860)		1.02	I	7820 (34800)	2.16	13700 (1540)			1.02	I	8580 (38200)	05	4B12DA	809	C.F.
			1.15	I	7820 (34800)					1.39	I	8580 (38200)	05	4B12DB	809	(a)
			1.38	I	7820 (34800)					1.66	II	8580 (38200)	05	4B14DB	809	(a)
			2.44	III	15300 (68300)					2.95	III	15600 (69400)	05	4C14DB	809	(a)
			2.76	III	15300 (68300)					3.33	III	15600 (69400)	05	4C16DA	809	(a)
1.52	19500 (2200)		0.97	-	6730 (29900)	1.83	16200 (1830)			1.17	I	7920 (35200)	05	4B12DB	956	(a)
			1.17	I	6730 (29900)					1.41	II	7920 (35200)	05	4B14DB	956	(a)
			2.07	III	15000 (66800)					2.49	III	15400 (68400)	05	4C14DB	956	(a)
			2.33	III	15000 (66800)					2.82	III	15400 (68400)	05	4C16DA	956	(a)
1.30	22800 (2570)		0.83	-	5000 (22200)	1.57	18900 (2130)			1.01	I	6990 (31100)	05	4B12DB	1117	(a)
			1.00	I	5000 (22200)					1.21	I	6990 (31100)	05	4B14DB	1117	(a)
			1.81	II	14600 (64900)					2.19	III	15100 (67100)	05	4C14DB	1117	(a)
			2.00	III	14600 (64900)					2.41	III	15100 (67100)	05	4C16DA	1117	(a)
			2.78	III	21300 (94800)					3.35	III	21600 (95900)	05	4D16DA	1117	(a)
1.10	26900 (3040)		1.02	I	13900 (61900)	1.33	22300 (2520)			1.02	I	14700 (65200)	05	4C14DA	1320	C.F.
			1.53	II	13900 (61900)					1.85	II	14700 (65200)	05	4C14DB	1320	(a)
			1.69	II	13900 (61900)					2.04	III	14700 (65200)	05	4C16DA	1320	(a)
			2.35	III	21000 (93400)					2.84	III	21300 (95000)	05	4D16DA	1320	(a)
			2.87	III	21000 (93400)					3.46	III	21300 (95000)	05	4D17DA	1320	(a)
0.876	33800 (3820)		1.02	I	12500 (55500)	1.06	28000 (3160)			1.02	I	13700 (61100)	05	4C14DA	1656	C.F.
			1.22	I	12500 (55500)					1.47	II	13700 (61100)	05	4C14DB	1656	(a)
			1.35	I	12500 (55500)					1.63	II	13700 (61100)	05	4C16DA	1656	(a)
			1.87	II	20300 (90400)					2.26	III	20900 (92900)	05	4D16DA	1656	(a)
			2.28	III	20300 (90400)					2.76	III	20900 (92900)	05	4D17DA	1656	(a)
			2.81	III	22100 (98300)					3.39	III	22400 (99600)	05	4E17DA	1656	(a)

Cyclo® BBB4

Selection Tables

Notes: [1] For Y4 Double Reductions (4XXXDX) refer to the above table; for Y4 single reduction refer to tables on pages 2.91-2.130.

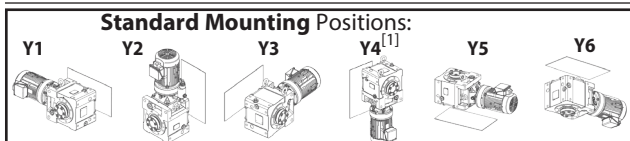
[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

C.F. = Consult Factory with ambient temperature data for VFD operation.

(a) = Both AV and non-AV motors can be used for selection.

Standard Mounting Selection Tables

**1/2 HP
(0.4 kW)**



Dimension Pages:
 Single Reduction 2.132-2.143
 Single Reduction, Y2 2.144
 Double Reduction 2.146-2.161
 Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz					60 Hz					Selection							
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Base			VFD ^[2]
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code	Frame Size	Ratio	
0.741	39900	(4510)	1.03	I	10700	(47500)	0.894	33100	(3740)	1.25	I	12600	(56200)	05	4C14DB	1957	(a)
			1.14	I	10700	(47500)				1.38	I	12600	(56200)	05	4C16DA	1957	(a)
			1.58	II	19600	(87000)				1.91	II	20400	(90700)	05	4D16DA	1957	(a)
			1.93	II	19600	(87000)				2.33	III	20400	(90700)	05	4D17DA	1957	(a)
			2.38	III	21800	(96900)				2.87	III	22100	(98400)	05	4E17DA	1957	(a)
			2.57	III	21800	(96900)				3.10	III	22100	(98400)	05	4E18DA	1957	(-)
0.638	46300	(5240)	0.89	-	7920	(35200)	0.770	38400	(4340)	1.07	I	11200	(49700)	05	4C14DB	2272	(a)
			0.98	-	7920	(35200)				1.18	I	11200	(49700)	05	4C16DA	2272	(a)
			1.36	I	18600	(82600)				1.65	II	19800	(87900)	05	4D16DA	2272	(a)
			1.67	II	18600	(82600)				2.01	III	19800	(87900)	05	4D17DA	2272	(a)
			2.05	III	21500	(95400)				2.47	III	21900	(97200)	05	4E17DA	2272	(a)
			2.22	III	21500	(95400)				2.67	III	21900	(97200)	05	4E18DA	2272	(-)
0.567	52200	(5900)	0.87	-	3100	(13800)	0.684	43300	(4890)	1.05	I	9390	(41800)	05	4C16DA	2559	(a)
			1.21	I	17500	(77900)				1.46	II	19100	(84800)	05	4D16DA	2559	(a)
			1.48	II	17500	(77900)				1.78	II	19100	(84800)	05	4D17DA	2559	(a)
			1.82	II	21200	(94100)				2.19	III	21600	(96100)	05	4E17DA	2559	(a)
			1.97	II	21200	(94100)				2.37	III	21600	(96100)	05	4E18DA	2559	(a)
			2.88	III	29900	(133000)				3.48	III	30300	(135000)	05	4F18DA	2559	(a)
0.493	60100	(6790)	1.05	I	15700	(70000)	0.595	49800	(5620)	1.27	I	18000	(80000)	05	4D16DA	2944	(a)
			1.29	I	15700	(70000)				1.55	II	18000	(80000)	05	4D17DA	2944	(a)
			1.58	II	20800	(92400)				1.91	II	21300	(94700)	05	4E17DA	2944	(a)
			1.71	II	20800	(92400)				2.06	III	21300	(94700)	05	4E18DA	2944	(a)
			2.56	III	29600	(132000)				3.09	III	30000	(134000)	05	4F19DA	2944	(-)
			0.413	71600	(8090)	0.88				-	12100	(53600)	0.499	59300	(6710)	1.07	I
1.08	I	12100				(53600)	1.30	I	15900	(70800)	05	4D17DA				3511	(a)
1.32	I	20200				(89700)	1.60	II	20800	(92500)	05	4E17DA				3511	(a)
2.10	III	29100				(129000)	2.54	III	29600	(132000)	05	4F18DA				3511	(a)
2.15	III	29100				(129000)	2.60	III	29600	(132000)	05	4F19DA				3511	(a)
0.332	89000	(10100)				1.07	I	19300	(85800)	0.401	73800	(8340)				1.29	I
			1.69	II	28300	(126000)	2.04	III	29000				(129000)	05	4F18DA	4365	(a)
			1.73	II	28300	(126000)	2.09	III	29000				(129000)	05	4F19DA	4365	(-)
0.280	106000	(11900)	0.90	-	16100	(71600)	0.338	87500	(9890)	1.08	I	19400	(86200)	05	4E17DA	5177	(a)

Notes: [1] For Y4 Double Reductions (4XXXDX) refer to the above table; for Y4 single reduction refer to tables on pages 2.91-2.130.

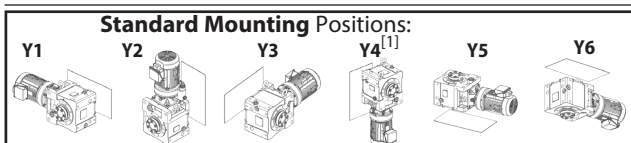
[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

(-) = For Inverter Operation, starting condition may require ambient temperature of 5° C or higher.

(a) = Both AV and non-AV motors can be used for selection.

Standard Mounting Selection Tables

3/4 HP
(0.55 kW)



Dimension Pages:
Single Reduction 2.132-2.143
Single Reduction, Y2 2.144
Double Reduction 2.146-2.161
Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz					60 Hz					Selection							
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor		Base			VFD ^[2]		
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code		Frame Size	Ratio
18.1	2360	(267)	2.31	III	6050	(26900)	21.9	1960	(221)	2.31	III	6080	(27100)	08	4A100	80	(a)
16.6	2590	(292)	2.31	III	6030	(26800)	20.0	2140	(242)	2.31	III	6070	(27000)	08	4A100	88	(a)
14.3	3000	(339)	2.20	III	5990	(26700)	17.2	2490	(281)	2.20	III	6040	(26900)	08	4A100	102	(a)
			2.89	III	5990	(26700)				2.89	III	6040	(26900)	08	4A105	102	(a)
12.9	3310	(374)	1.77	II	5960	(26500)	15.6	2740	(310)	1.77	II	6020	(26800)	08	4A100	112	(a)
			2.18	III	5960	(26500)				2.18	III	6020	(26800)	08	4A105	112	(a)
			2.73	III	5960	(26500)				2.73	III	6020	(26800)	08	4A110	112	(a)
11.8	3620	(409)	1.77	II	5920	(26300)	14.3	3000	(339)	1.77	II	5990	(26700)	08	4A100	123	(a)
			2.18	III	5920	(26300)				2.18	III	5990	(26700)	08	4A105	123	(a)
			2.73	III	5920	(26300)				2.73	III	5990	(26700)	08	4A110	123	(a)
9.63	4450	(503)	1.42	II	5800	(25800)	11.6	3690	(416)	1.42	II	5910	(26300)	08	4A100	151	(a)
			1.96	II	5800	(25800)				1.96	II	5910	(26300)	08	4A105	151	(a)
			2.36	III	5800	(25800)				2.36	III	5910	(26300)	08	4A110	151	(a)
			2.57	III	5800	(25800)				2.57	III	5910	(26300)	08	4A115	151	(a)
8.12	5280	(596)	1.02	I	5640	(25100)	9.80	4370	(494)	1.02	I	5810	(25800)	08	4A100	179	(a)
			1.41	II	5640	(25100)				1.41	II	5810	(25800)	08	4A105	179	(a)
			1.72	II	5640	(25100)				1.72	II	5810	(25800)	08	4A110	179	(a)
			2.02	III	5640	(25100)				2.02	III	5810	(25800)	08	4A115	179	(a)
			2.16	III	5640	(25100)				2.16	III	5810	(25800)	08	4A120	179	(a)
			2.96	III	9860	(43900)				3.13	III	9920	(44100)	08	4B120	179	(a)
7.02	6100	(690)	1.24	I	5460	(24300)	8.47	5060	(571)	1.29	I	5690	(25300)	08	4A105	207	(a)
			1.56	II	5460	(24300)				1.56	II	5690	(25300)	08	4A110	207	(a)
			1.84	II	5460	(24300)				1.84	II	5690	(25300)	08	4A115	207	(a)
			1.87	II	5460	(24300)				1.87	II	5690	(25300)	08	4A120	207	(a)
			2.36	III	9800	(43600)				2.36	III	9880	(43900)	08	4B120	207	(a)
			2.95	III	9800	(43600)				2.95	III	9880	(43900)	08	4B125	207	(a)
5.84	7350	(830)	0.92	-	5120	(22800)	7.04	6090	(688)	1.02	I	5470	(24300)	08	4A105	249	(a)
			1.22	I	5120	(22800)				1.22	I	5470	(24300)	08	4A110	249	(a)
			1.38	I	5120	(22800)				1.38	I	5470	(24300)	08	4A115	249	(a)
			1.55	II	5120	(22800)				1.55	II	5470	(24300)	08	4A120	249	(a)
			1.74	II	9690	(43100)				1.74	II	9800	(43600)	08	4B120	249	(a)
			2.07	III	9690	(43100)				2.18	III	9800	(43600)	08	4B125	249	(a)
4.76	9000	(1020)	0.91	-	4520	(20100)	5.75	7460	(843)	1.03	I	5090	(22600)	08	4A105	305	(a)
			1.20	I	4520	(20100)				1.20	I	5090	(22600)	08	4A110	305	(a)
			1.27	I	4520	(20100)				1.27	I	5090	(22600)	08	4A115	305	(a)
			1.72	II	9500	(42300)				1.72	II	9680	(43000)	08	4B120	305	(a)
			1.87	II	9500	(42300)				2.05	III	9680	(43000)	08	4B125	305	(a)
			2.53	III	9500	(42300)				2.53	III	9680	(43000)	08	4B140	305	(a)

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Selection Tables

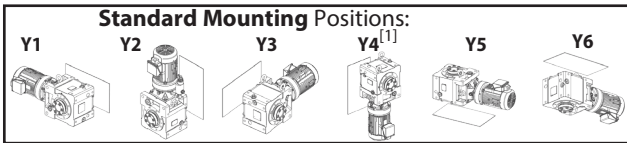
Notes: [1] For Y4 Double Reductions (4XXXDX) refer to the above table; for Y4 single reduction refer to tables on pages 2.91-2.130.

[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

(a) = Both AV and non-AV motors can be used for selection.

Standard Mounting Selection Tables

3/4 HP
(0.55 kW)



Dimension Pages:
Single Reduction 2.132-2.143
Single Reduction, Y2 2.144
Double Reduction 2.146-2.161
Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz					60 Hz					Selection							
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor		Base			VFD ^[2]		
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code		Frame Size	Ratio
3.98	10200	(1150)	1.12	I	3590	(16000)	4.81	8460	(956)	1.35	I	4550	(20300)	08	4A12DB	364	(a)
			1.86	II	9260	(41200)				2.24	III	9510	(42300)	08	4B12DB	364	(a)
			2.23	III	9260	(41200)				2.69	III	9510	(42300)	08	4B14DB	364	(a)
			2.75	III	15800	(70500)				2.75	III	15900	(70900)	08	4C14DB	364	(a)
3.42	11900	(1340)	0.96	-	2030	(9010)	4.13	9840	(1110)	1.16	I	3830	(17000)	08	4A12DB	424	(a)
			1.58	II	8960	(39900)				1.90	II	9310	(41400)	08	4B12DB	424	(a)
			1.91	II	8960	(39900)				2.31	III	9310	(41400)	08	4B14DB	424	(a)
			2.75	III	15700	(70000)				2.75	III	15900	(70600)	08	4C14DB	424	(a)
2.90	14000	(1590)	1.35	I	8490	(37800)	3.50	11600	(1310)	1.63	II	9010	(40100)	08	4B12DB	501	(a)
			1.62	II	8490	(37800)				1.96	II	9010	(40100)	08	4B14DB	501	(a)
			2.75	III	15600	(69300)				2.75	III	15800	(70100)	08	4C14DB	501	(a)
			2.94	III	15600	(69300)				3.55	III	15800	(70100)	08	4C14DC	501	(-)
2.51	16200	(1830)	1.17	I	7910	(35200)	3.03	13400	(1520)	1.41	II	8640	(38400)	08	4B12DB	578	(a)
			1.40	II	7910	(35200)				1.69	II	8640	(38400)	08	4B14DB	578	(a)
			2.52	III	15400	(68400)				2.75	III	15600	(69500)	08	4C14DB	578	(a)
			2.81	III	15400	(68400)				3.39	III	15600	(69500)	08	4C16DC	578	(-)
2.12	19100	(2160)	0.99	-	6880	(30600)	2.56	15900	(1790)	1.20	I	8010	(35600)	08	4B12DB	683	(a)
			1.19	I	6880	(30600)				1.43	II	8010	(35600)	08	4B14DB	683	(a)
			2.14	III	15100	(67000)				2.58	III	15400	(68500)	08	4C14DB	683	(a)
			2.38	III	15100	(67000)				2.75	III	15400	(68500)	08	4C16DA	683	(a)
1.79	22700	(2560)	0.84	-	5060	(22500)	2.16	18800	(2120)	1.01	I	7020	(31200)	08	4B12DB	809	(a)
			1.00	I	5060	(22500)				1.21	I	7020	(31200)	08	4B14DB	809	(a)
			1.78	II	14600	(64900)				2.14	III	15100	(67200)	08	4C14DB	809	(a)
			2.01	III	14600	(64900)				2.42	III	15100	(67200)	08	4C16DA	809	(a)
			2.79	III	21300	(94800)				3.37	III	21600	(96000)	08	4D16DB	809	(-)
1.52	26800	(3030)	1.50	II	13900	(62000)	1.83	22200	(2510)	1.81	II	14700	(65200)	08	4C14DB	956	(a)
			1.70	II	13900	(62000)				2.05	III	14700	(65200)	08	4C16DA	956	(a)
			2.36	III	21000	(93400)				2.75	III	21400	(95000)	08	4D16DA	956	(a)
			2.88	III	21000	(93400)				3.47	III	21400	(95000)	08	4D17DC	956	(a)
1.30	31300	(3540)	1.32	I	13000	(58000)	1.57	26000	(2930)	1.59	II	14100	(62700)	08	4C14DB	1117	(a)
			1.45	II	13000	(58000)				1.75	II	14100	(62700)	08	4C16DA	1117	(a)
			2.02	III	20600	(91500)				2.44	III	21100	(93700)	08	4D16DA	1117	(a)
			2.46	III	20600	(91500)				2.75	III	21100	(93700)	08	4D17DA	1117	(a)

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Selection Tables

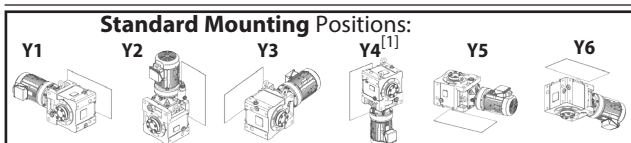
Notes: [1] For Y4 Double Reductions (4XXXDX) refer to the above table; for Y4 single reduction refer to tables on pages 2.91-2.130.

[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

(a) = Both AV and non-AV motors can be used for selection.

Standard Mounting Selection Tables

3/4 HP
(0.55 kW)



Dimension Pages:
 Single Reduction 2.132-2.143
 Single Reduction, Y2 2.144
 Double Reduction 2.146-2.161
 Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz					60 Hz					Selection							
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor		Base			VFD ^[2]		
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code		Frame Size	Ratio
1.10	37000	(4180)	1.11	I	11600	(51600)	1.33	30700	(3470)	1.35	I	13200	(58700)	08	4C14DB	1320	(a)
			1.23	I	11600	(51600)				1.48	II	13200	(58700)	08	4C16DA	1320	(a)
			1.71	II	19900	(88700)				2.06	III	20600	(91800)	08	4D16DA	1320	(a)
			2.08	III	19900	(88700)				2.52	III	20600	(91800)	08	4D17DA	1320	(a)
			2.56	III	21900	(97500)				2.75	III	22300	(99000)	08	4E17DA	1320	(a)
			2.77	III	21900	(97500)				3.35	III	22300	(99000)	08	4E18DA	1320	(a)
0.876	46400	(5250)	0.89	-	7870	(35000)	1.06	38500	(4350)	1.07	I	11100	(49600)	08	4C14DB	1656	(a)
			0.98	-	7870	(35000)				1.18	I	11100	(49600)	08	4C16DA	1656	(a)
			1.36	I	18600	(82600)				1.64	II	19700	(87800)	08	4D16DA	1656	(a)
			1.66	II	18600	(82600)				2.01	III	19700	(87800)	08	4D17DA	1656	(a)
			2.04	III	21500	(95400)				2.47	III	21900	(97200)	08	4E17DA	1656	(a)
			2.21	III	21500	(95400)				2.67	III	21900	(97200)	08	4E18DA	1656	(-)
0.741	54900	(6200)	1.15	I	16900	(75400)	0.894	45500	(5140)	1.39	I	18700	(83300)	08	4D16DA	1957	(a)
			1.41	II	16900	(75400)				1.70	II	18700	(83300)	08	4D17DA	1957	(a)
			1.73	II	21000	(93500)				2.09	III	21500	(95600)	08	4E17DA	1957	(a)
			1.87	II	21000	(93500)				2.26	III	21500	(95600)	08	4E18DA	1957	(a)
			2.74	III	29800	(133000)				3.31	III	30200	(134000)	08	4F18DA	1957	(a)
			2.81	III	29800	(133000)				3.39	III	30200	(134000)	08	4F19DA	1957	(a)
0.638	63700	(7200)	0.99	-	14700	(65500)	0.770	52800	(5970)	1.20	I	17400	(77300)	08	4D16DA	2272	(a)
			1.21	I	14700	(65500)				1.46	II	17400	(77300)	08	4D17DA	2272	(a)
			1.49	II	20600	(91500)				1.80	II	21100	(94000)	08	4E17DA	2272	(a)
			1.61	II	20600	(91500)				1.94	II	21100	(94000)	08	4E18DA	2272	(-)
			2.36	III	29400	(131000)				2.85	III	29900	(133000)	08	4F18DA	2272	(-)
			2.42	III	29400	(131000)				2.92	III	29900	(133000)	08	4F19DA	2272	(-)
0.567	71800	(8110)	0.88	-	12000	(53300)	0.684	59500	(6720)	1.06	I	15900	(70600)	08	4D16DA	2559	(a)
			1.08	I	12000	(53300)				1.30	I	15900	(70600)	08	4D17DA	2559	(a)
			1.32	I	20200	(89700)				1.60	II	20800	(92500)	08	4E17DA	2559	(a)
			1.43	II	20200	(89700)				1.73	II	20800	(92500)	08	4E18DA	2559	(a)
			2.10	III	29100	(129000)				2.53	III	29600	(132000)	08	4F18DA	2559	(a)
			2.15	III	29100	(129000)				2.59	III	29600	(132000)	08	4F19DA	2559	(a)
0.493	82600	(9330)	0.93	-	5670	(25200)	0.595	68400	(7730)	1.13	I	13200	(58900)	08	4D17DA	2944	(a)
			1.15	I	19600	(87300)				1.39	I	20300	(90500)	08	4E17DA	2944	(a)
			1.24	I	19600	(87300)				1.50	II	20300	(90500)	08	4E18DA	2944	(a)
			1.82	II	28600	(127000)				2.20	III	29200	(130000)	08	4F18DA	2944	(a)
			1.87	II	28600	(127000)				2.25	III	29200	(130000)	08	4F19DA	2944	(a)
0.413	98500	(11100)	0.96	-	18200	(80800)	0.499	81600	(9220)	1.16	I	19700	(87500)	08	4E17DA	3511	(a)
			1.53	II	27900	(124000)				1.85	II	28600	(127000)	08	4F18DA	3511	(a)
			1.56	II	27900	(124000)				1.89	II	28600	(127000)	08	4F19DA	3511	(a)

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Selection Tables

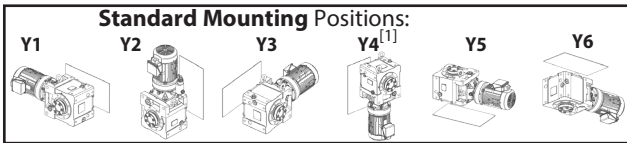
Notes: [1] For Y4 Double Reductions (4XXXDX) refer to the above table; for Y4 single reduction refer to tables on pages 2.91-2.130.

[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

(a) = Both AV and non-AV motors can be used for selection.

Standard Mounting Selection Tables

**3/4 HP
(0.55 kW)**



Dimension Pages:
 Single Reduction 2.132-2.143
 Single Reduction, Y2 2.144
 Double Reduction 2.146-2.161
 Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz					60 Hz					Selection						
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor		Base			VFD ^[2]	
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code		Frame Size
0.332	122000 (13800)		1.23	I	26900 (120000)	0.401	101000 (11500)			1.48	II	27800 (124000)	08	4F18DA	4365	(a)
			1.26	I	26900 (120000)					1.52	II	27800 (124000)	08	4F19DA	4365	(a)

Cyclo® BBB4

Selection Tables

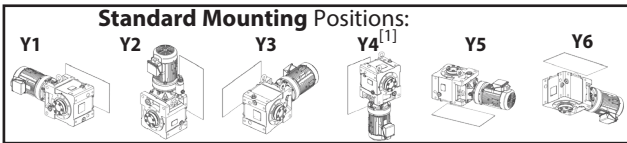
Notes: [1] For Y4 Double Reductions (4XXXDX) refer to the above table; for Y4 single reduction refer to tables on pages 2.91-2.130.

[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

(a) = Both AV and non-AV motors can be used for selection.

Standard Mounting Selection Tables

**1 HP
(0.75 kW)**



Dimension Pages:
 Single Reduction 2.132-2.143
 Single Reduction, Y2 2.144
 Double Reduction 2.146-2.161
 Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz					60 Hz					Selection							
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor		Base			VFD ^[2]		
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code		Frame Size	Ratio
24.4	2400	(271)	2.65	III	6050	(26900)	29.4	1990	(225)	2.65	III	6080	(27100)	1	4A100	60	
21.6	2710	(306)	2.54	III	6020	(26800)	26.0	2240	(254)	2.57	III	6060	(27000)	1	4A100	67	
19.7	2960	(335)	2.54	III	6000	(26700)	23.8	2450	(277)	2.57	III	6050	(26900)	1	4A100	74	
18.1	3220	(364)	1.69	II	5970	(26500)	21.9	2670	(302)	1.69	II	6030	(26800)	1	4A100	80	
			2.23	III	5970	(26500)				2.23	III	6030	(26800)	1	4A105	80	
			2.55	III	5970	(26500)				2.55	III	6030	(26800)	1	4A110	80	
			2.96	III	5970	(26500)				2.96	III	6030	(26800)	1	4A115	80	
16.6	3530	(399)	1.69	II	5930	(26400)	20.0	2920	(330)	1.69	II	6000	(26700)	1	4A100	88	
			2.23	III	5930	(26400)				2.23	III	6000	(26700)	1	4A105	88	
			2.55	III	5930	(26400)				2.55	III	6000	(26700)	1	4A110	88	
			2.96	III	5930	(26400)				2.96	III	6000	(26700)	1	4A115	88	
14.3	4090	(462)	1.61	II	5850	(26000)	17.2	3390	(383)	1.61	II	5950	(26500)	1	4A100	102	
			2.12	III	5850	(26000)				2.12	III	5950	(26500)	1	4A105	102	
			2.53	III	5850	(26000)				2.53	III	5950	(26500)	1	4A110	102	
			2.79	III	5850	(26000)				2.79	III	5950	(26500)	1	4A115	102	
12.9	4510	(510)	1.30	I	5780	(25700)	15.6	3740	(423)	1.30	I	5900	(26300)	1	4A100	112	
			1.60	II	5780	(25700)				1.60	II	5900	(26300)	1	4A105	112	
			2.00	III	5780	(25700)				2.00	III	5900	(26300)	1	4A110	112	
			2.41	III	5780	(25700)				2.41	III	5900	(26300)	1	4A115	112	
			2.53	III	5780	(25700)				2.53	III	5900	(26300)	1	4A120	112	
11.8	4940	(558)	1.30	I	5710	(25400)	14.3	4090	(462)	1.30	I	5850	(26000)	1	4A100	123	
			1.60	II	5710	(25400)				1.60	II	5850	(26000)	1	4A105	123	
			2.00	III	5710	(25400)				2.00	III	5850	(26000)	1	4A110	123	
			2.31	III	5710	(25400)				2.31	III	5850	(26000)	1	4A115	123	
9.63	6070	(685)	1.04	I	5470	(24300)	11.6	5030	(568)	1.04	I	5690	(25300)	1	4A100	151	
			1.44	II	5470	(24300)				1.44	II	5690	(25300)	1	4A105	151	
			1.88	II	5470	(24300)				1.88	II	5690	(25300)	1	4A115	151	
			2.55	III	9800	(43600)				2.55	III	9880	(44000)	1	4B120	151	
8.12	7200	(813)	1.03	I	5170	(23000)	9.80	5960	(674)	1.03	I	5490	(24400)	1	4A105	179	
			1.26	I	5170	(23000)				1.26	I	5490	(24400)	1	4A110	179	
			1.48	II	5170	(23000)				1.48	II	5490	(24400)	1	4A115	179	
			1.59	II	5170	(23000)				1.59	II	5490	(24400)	1	4A120	179	
			2.17	III	9700	(43200)				2.29	III	9810	(43600)	1	4B120	179	
			2.63	III	9700	(43200)				3.04	III	9810	(43600)	1	4B125	179	

Cyclo® BBB4

Selection Tables

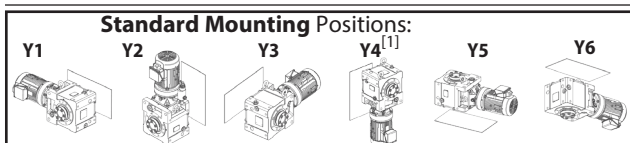
Notes: [1] For Y4 Double Reductions (4XXXDX) refer to the above table; for Y4 single reduction refer to tables on pages 2.91-2.130..

[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

All 1HP+ motors require EP suffix in model number and can be used with a VFD, unless noted.

Standard Mounting Selection Tables

**1 HP
(0.75 kW)**



Dimension Pages:
 Single Reduction 2.132-2.143
 Single Reduction, Y2 2.144
 Double Reduction 2.146-2.161
 Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz						60 Hz						Selection			VFD ^[2]	
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Base		
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code	Frame Size	Ratio
7.02	8320	(940)	0.91	-	4790	(21300)	8.47	6900	(779)	0.94	-	5250	(23400)	1	4A105	207
			1.15	I	4790	(21300)				1.15	I	5250	(23400)	1	4A110	207
			1.35	I	4790	(21300)				1.35	I	5250	(23400)	1	4A115	207
			1.73	II	9580	(42600)				1.73	II	9730	(43300)	1	4B120	207
			2.16	III	9580	(42600)				2.16	III	9730	(43300)	1	4B125	207
			2.73	III	9580	(42600)				2.73	III	9730	(43300)	1	4B140	207
5.84	10000	(1130)	1.01	I	4030	(17900)	7.04	8300	(938)	1.01	I	4800	(21300)	1	4A115	249
			1.14	I	4030	(17900)				1.14	I	4800	(21300)	1	4A120	249
			1.28	I	9370	(41700)				1.28	I	9590	(42600)	1	4B120	249
			1.52	II	9370	(41700)				1.60	II	9590	(42600)	1	4B125	249
			2.27	III	9370	(41700)				2.27	III	9590	(42600)	1	4B145	249
4.76	12300	(1390)	0.93	-	2330	(10300)	5.75	10200	(1150)	0.93	-	3950	(17600)	1	4A115	305
			1.26	I	9000	(40100)				1.26	I	9340	(41600)	1	4B120	305
			1.37	I	9000	(40100)				1.51	II	9340	(41600)	1	4B125	305
			1.85	II	9000	(40100)				1.85	II	9340	(41600)	1	4B145	305
			2.64	III	15700	(70100)				2.64	III	15900	(70600)	1	4C140	305
3.98	13900	(1570)	1.36	I	8520	(37900)	4.81	11500	(1300)	1.64	II	9030	(40100)	1	4B12DB	364
			1.63	II	8520	(37900)				1.97	II	9030	(40100)	1	4B14DB	364
			2.02	III	15600	(69300)				2.02	III	15800	(70100)	1	4C14DB	364
			2.96	III	15600	(69300)				3.58	III	15800	(70100)	1	4C14DC	364
3.42	16200	(1830)	1.16	I	7910	(35200)	4.13	13400	(1520)	1.40	II	8640	(38400)	1	4B12DB	424
			1.40	II	7910	(35200)				1.69	II	8640	(38400)	1	4B14DB	424
			2.02	III	15400	(68400)				2.02	III	15600	(69500)	1	4C14DB	424
			2.40	III	15400	(68400)				2.90	III	15600	(69500)	1	4C14DC	424
			2.81	III	15400	(68400)				3.39	III	15600	(69500)	1	4C16DB	424
2.90	19100	(2160)	0.99	-	6880	(30600)	3.50	15900	(1790)	1.20	I	8010	(35600)	1	4B12DB	501
			1.19	I	6880	(30600)				1.43	II	8010	(35600)	1	4B14DB	501
			2.02	III	15100	(67000)				2.02	III	15400	(68500)	1	4C14DB	501
			2.38	III	15100	(67000)				2.87	III	15400	(68500)	1	4C16DB	501
2.51	22100	(2500)	0.86	-	5430	(24200)	3.03	18300	(2070)	1.04	I	7200	(32000)	1	4B12DB	578
			1.03	I	5430	(24200)				1.24	I	7200	(32000)	1	4B14DB	578
			1.85	II	14700	(65300)				2.02	III	15200	(67400)	1	4C14DB	578
			2.06	III	14700	(65300)				2.49	III	15200	(67400)	1	4C16DB	578
			2.86	III	21400	(95000)				3.46	III	21600	(96100)	1	4D16DB	578

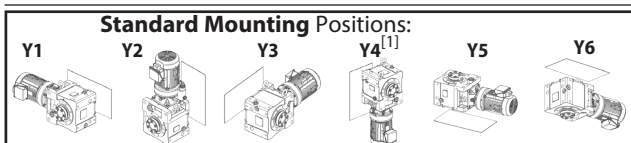
Notes: [1] For Y4 Double Reductions (4XXXDX) refer to the above table; for Y4 single reduction refer to tables on pages 2.91-2.130.

[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

All 1HP+ motors require EP suffix in model number and can be used with a VFD, unless noted.

Standard Mounting Selection Tables

**1 HP
(0.75 kW)**



Dimension Pages:
 Single Reduction, Y2 2.132-2.143
 Single Reduction, Y5 2.144
 Double Reduction 2.146-2.161
 Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz					60 Hz					Selection			VFD ^[2]			
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor		Base				
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code	Frame Size	Ratio
2.12	26100	(2950)	0.87	-	1070	(4750)	2.56	21600	(2440)	1.05	I	5690	(25300)	1	4B14DB	683
			1.57	II	14100	(62600)				1	4C14DB	683				
			1.74	II	14100	(62600)				1	4C16DA	683				
			2.02	III	21100	(93700)				1	4D16DA	683				
			2.42	III	21100	(93700)				1	4D16DB	683				
			2.96	III	21100	(93700)				1	4D17DB	683				
1.79	30900	(3490)	1.30	I	13100	(58400)	2.16	25600	(2900)	1.57	II	14100	(62900)	1	4C14DB	809
			2.02	III	20600	(91700)				1	4D16DA	809				
			2.50	III	20600	(91700)				1	4D17DB	809				
1.52	36600	(4130)	1.10	I	11700	(52200)	1.83	30300	(3420)	1.33	I	13300	(59000)	1	4C14DB	956
			1.24	I	11700	(52200)				1	4C16DA	956				
			1.73	II	20000	(88900)				1	4D16DA	956				
			2.02	III	22000	(97700)				1	4E17DA	956				
			2.60	III	22000	(97700)				1	4E17DB	956				
			2.81	III	22000	(97700)				1	4E18DA	956				
1.30	42700	(4830)	0.97	-	9620	(42800)	1.57	35400	(4000)	1.17	I	12100	(53600)	1	4C14DB	1117
			1.07	I	9620	(42800)				1	4C16DA	1117				
			1.48	II	19200	(85200)				1	4D16DA	1117				
			1.81	II	19200	(85200)				1	4D17DA	1117				
			2.02	III	21600	(96300)				1	4E17DA	1117				
			2.02	III	21600	(96300)				1	4E17DB	1117				
			2.22	III	21600	(96300)				1	4E18DA	1117				
			2.40	III	21600	(96300)				1	4E18DA	1117				
1.10	50500	(5700)	0.82	-	5090	(22600)	1.33	41800	(4730)	0.99	-	9970	(44400)	1	4C14DB	1320
			1.25	I	17800	(79400)				1	4D16DA	1320				
			1.53	II	17800	(79400)				1	4D17DA	1320				
			1.88	II	21200	(94500)				1	4E17DA	1320				
			2.03	III	21200	(94500)				1	4E18DA	1320				
			2.98	III	30000	(133000)				1	4F18DA	1320				
0.876	63300	(7160)	1.00	I	14800	(66000)	1.06	52500	(5930)	1.21	I	17500	(77600)	1	4D16DA	1656
			1.22	I	14800	(66000)				1	4D17DA	1656				
			1.50	II	20600	(91600)				1	4E17DA	1656				
			1.62	II	20600	(91600)				1	4E18DA	1656				
			2.38	III	29400	(131000)				1	4F18DA	1656				
			2.43	III	29400	(131000)				1	4F19DA	1656				
			2.93	III	29900	(133000)				1	4F19DA	1656				

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Selection Tables

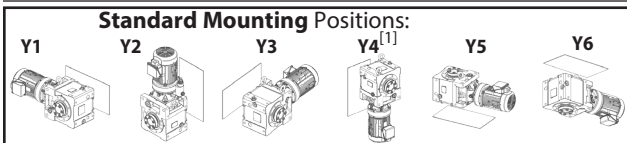
Notes: [1] For Y4 Double Reductions (4XXXDX) refer to the above table; for Y4 single reduction refer to tables on pages 2.91-2.130..

[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

All 1HP+ motors require EP suffix in model number and can be used with a VFD, unless noted.

Standard Mounting Selection Tables

**1 HP
(0.75 kW)**



Dimension Pages:
 Single Reduction, Y2 2.132-2.143
 Single Reduction, Y2 2.144
 Double Reduction 2.146-2.161
 Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz					60 Hz					Selection			VFD ^[2]			
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Service Factor		Solid Shaft Overhung Load		Base				
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code	Frame Size	Ratio
0.741	74800	(8460)	0.85	-	10700	(47400)	0.894	62000	(7010)	1.02	I	15200	(67700)	1	4D16DA	1957
			1.03	I	10700	(47400)				1.24	I	15200	(67700)	1	4D17DA	1957
			1.27	I	20000	(89000)				1.53	II	20700	(91900)	1	4E17DA	1957
			1.37	I	20000	(89000)				1.66	II	20700	(91900)	1	4E18DA	1957
			2.01	III	28900	(129000)				2.43	III	29500	(131000)	1	4F18DA	1957
			2.06	III	28900	(129000)				2.48	III	29500	(131000)	1	4F19DA	1957
0.638	86900	(9820)	1.09	I	19400	(86300)	0.770	72000	(8130)	1.32	I	20200	(89700)	1	4E17DA	2272
			1.18	I	19400	(86300)				1.43	II	20200	(89700)	1	4E18DA	2272
			1.73	II	28400	(126000)				2.09	III	29100	(129000)	1	4F18DA	2272
			1.77	II	28400	(126000)				2.14	III	29100	(129000)	1	4F19DA	2272
0.567	97900	(11100)	0.97	-	18300	(81500)	0.684	81100	(9160)	1.17	I	19700	(87600)	1	4E17DA	2559
			1.05	I	18300	(81500)				1.27	I	19700	(87600)	1	4E18DA	2559
			1.54	II	27900	(124000)				1.86	II	28700	(127000)	1	4F18DA	2559
			1.57	II	27900	(124000)				1.90	II	28700	(127000)	1	4F19DA	2559
0.493	113000	(12700)	0.84	-	13600	(60500)	0.595	93300	(10500)	1.02	I	19100	(84900)	1	4E17DA	2944
			0.91	-	13600	(60500)				1.10	I	19100	(84900)	1	4E18DA	2944
			1.34	I	27300	(121000)				1.61	II	28100	(125000)	1	4F18DA	2944
			1.37	I	27300	(121000)				1.65	II	28100	(125000)	1	4F19DA	2944
0.413	134000	(15200)	1.12	I	26400	(117000)	0.499	111000	(12600)	1.35	I	27400	(122000)	1	4F18DA	3511
			1.15	I	26400	(117000)				1.38	I	27400	(122000)	1	4F19DA	3511
0.332	167000	(18900)	0.90	-	25000	(111000)	0.401	138000	(15600)	1.09	I	26200	(116000)	1	4F18DA	4365
			0.92	-	25000	(111000)				1.11	I	26200	(116000)	1	4F19DA	4365

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Selection Tables

Sold & Serviced By:



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sales@electromate.com

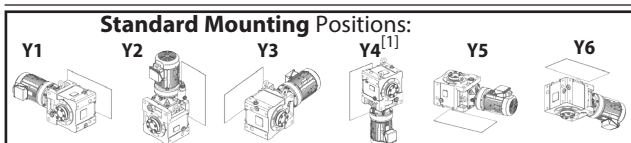
Notes: [1] For Y4 Double Reductions (4XXXDX) refer to the above table; for Y4 single reduction refer to tables on pages 2.91-2.130.

[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

All 1HP+ motors require EP suffix in model number and can be used with a VFD, unless noted.

Standard Mounting Selection Tables

1.5 HP
(1.1 kW)



Dimension Pages:
Single Reduction, Y2 2.132-2.143
Single Reduction, Y5 2.144
Double Reduction 2.146-2.161
Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz						60 Hz						Selection					
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Base			VFD ^[2]
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code	Frame Size	Ratio	
138	621	(70)	2.13	III	4010	(17800)	167	514	(58)	2.13	III	3800	(16900)	1H	4A100	11	
			2.89	III	4010	(17800)				2.89	III	3800	(16900)	1H	4A105	11	
113	757	(86)	2.13	III	4240	(18900)	137	627	(71)	2.13	III	4020	(17900)	1H	4A100	13	
			2.89	III	4240	(18900)				2.89	III	4020	(17900)	1H	4A105	13	
104	828	(94)	2.13	III	4350	(19400)	125	686	(78)	2.13	III	4130	(18400)	1H	4A100	14	
			2.89	III	4350	(19400)				2.89	III	4130	(18400)	1H	4A105	14	
90.6	946	(107)	2.13	III	4520	(20100)	109	784	(89)	2.13	III	4280	(19100)	1H	4A100	16	
			2.89	III	4520	(20100)				2.89	III	4280	(19100)	1H	4A105	16	
82.9	1030	(117)	2.13	III	4630	(20600)	100.0	857	(97)	2.13	III	4390	(19500)	1H	4A100	18	
			2.89	III	4630	(20600)				2.89	III	4390	(19500)	1H	4A105	18	
69.0	1240	(140)	2.14	III	4870	(21700)	83.3	1030	(116)	2.14	III	4620	(20600)	1H	4A100	21	
			2.89	III	4870	(21700)				2.89	III	4620	(20600)	1H	4A105	21	
51.8	1660	(187)	2.14	III	5270	(23400)	62.5	1370	(155)	2.14	III	5010	(22300)	1H	4A100	28	
			2.89	III	5270	(23400)				2.89	III	5010	(22300)	1H	4A105	28	
41.2	2080	(235)	2.14	III	5600	(24900)	49.7	1720	(195)	2.14	III	5330	(23700)	1H	4A100	35	
			2.89	III	5600	(24900)				2.89	III	5330	(23700)	1H	4A105	35	
37.7	2280	(257)	2.14	III	5740	(25500)	45.5	1890	(213)	2.14	III	5460	(24300)	1H	4A100	39	
			2.89	III	5740	(25500)				2.89	III	5460	(24300)	1H	4A105	39	
31.9	2690	(304)	2.14	III	5990	(26600)	38.5	2230	(252)	2.14	III	5700	(25400)	1H	4A100	46	
			2.89	III	5990	(26600)				2.89	III	5700	(25400)	1H	4A105	46	
27.6	3100	(351)	2.14	III	5980	(26600)	33.3	2570	(291)	2.14	III	5920	(26300)	1H	4A100	53	
			2.89	III	5980	(26600)				2.89	III	5920	(26300)	1H	4A105	53	
24.4	3520	(397)	1.81	II	5930	(26400)	29.4	2910	(329)	1.81	II	6000	(26700)	1H	4A100	60	
			2.24	III	5930	(26400)				2.24	III	6000	(26700)	1H	4A105	60	
			2.89	III	5930	(26400)				2.89	III	6000	(26700)	1H	4A110	60	
21.6	3970	(449)	1.73	II	5870	(26100)	26.0	3290	(372)	1.75	II	5960	(26500)	1H	4A100	67	
			2.08	III	5870	(26100)				2.13	III	5960	(26500)	1H	4A105	67	
			2.47	III	5870	(26100)				2.47	III	5960	(26500)	1H	4A110	67	
			2.83	III	5870	(26100)				2.83	III	5960	(26500)	1H	4A115	67	
			2.87	III	5870	(26100)				2.87	III	5960	(26500)	1H	4A120	67	
19.7	4350	(491)	1.73	II	5810	(25900)	23.8	3600	(407)	1.75	II	5920	(26300)	1H	4A100	74	
			2.08	III	5810	(25900)				2.13	III	5920	(26300)	1H	4A105	74	
			2.47	III	5810	(25900)				2.47	III	5920	(26300)	1H	4A110	74	
			2.63	III	5810	(25900)				2.63	III	5920	(26300)	1H	4A120	74	

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Selection Tables

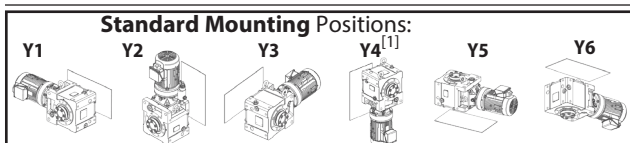
Notes: [1] For Y4 Double Reductions (4XXXDX) refer to the above table; for Y4 single reduction refer to tables on pages 2.91-2.130.

[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

All 1HP+ motors require EP suffix in model number and can be used with a VFD, unless noted.

Standard Mounting Selection Tables

1.5 HP
(1.1 kW)



Dimension Pages:
Single Reduction 2.132-2.143
Single Reduction, Y2 2.144
Double Reduction 2.146-2.161
Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz					60 Hz					Selection			VFD ^[2]			
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor		Base				
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code	Frame Size	Ratio
18.1	4730	(534)	1.15	I	5750	(25600)	21.9	3920	(443)	1.15	I	5880	(26100)	1H	4A100	80
			1.52	II	5750	(25600)				1.52	II	5880	(26100)	1H	4A105	80
			1.74	II	5750	(25600)				1.74	II	5880	(26100)	1H	4A110	80
			2.02	III	5750	(25600)				2.02	III	5880	(26100)	1H	4A115	80
			2.41	III	5750	(25600)				2.41	III	5880	(26100)	1H	4A120	80
			2.81	III	9650	(42900)				2.81	III	9180	(40800)	1H	4B120	80
16.6	5170	(584)	1.15	I	5660	(25200)	20.0	4290	(484)	1.15	I	5820	(25900)	1H	4A100	88
			1.52	II	5660	(25200)				1.52	II	5820	(25900)	1H	4A105	88
			1.74	II	5660	(25200)				1.74	II	5820	(25900)	1H	4A110	88
			2.02	III	5660	(25200)				2.02	III	5820	(25900)	1H	4A115	88
			2.21	III	5660	(25200)				2.21	III	5820	(25900)	1H	4A120	88
			2.81	III	9870	(43900)				2.81	III	9400	(41800)	1H	4B120	88
14.3	6000	(678)	1.10	I	5490	(24400)	17.2	4970	(562)	1.10	I	5700	(25400)	1H	4A100	102
			1.45	II	5490	(24400)				1.45	II	5700	(25400)	1H	4A105	102
			1.73	II	5490	(24400)				1.73	II	5700	(25400)	1H	4A110	102
			1.90	II	5490	(24400)				1.90	II	5700	(25400)	1H	4A115	102
			2.61	III	9810	(43600)				2.72	III	9770	(43500)	1H	4B120	102
12.9	6620	(748)	0.89	-	5330	(23700)	15.6	5490	(620)	0.89	-	5600	(24900)	1H	4A100	112
			1.09	I	5330	(23700)				1.09	I	5600	(24900)	1H	4A105	112
			1.36	I	5330	(23700)				1.36	I	5600	(24900)	1H	4A110	112
			1.65	II	5330	(23700)				1.65	II	5600	(24900)	1H	4A115	112
			1.72	II	5330	(23700)				1.72	II	5600	(24900)	1H	4A120	112
			2.16	III	9760	(43400)				2.26	III	9850	(43800)	1H	4B120	112
			2.61	III	9760	(43400)				2.89	III	9850	(43800)	1H	4B125	112
11.8	7240	(818)	0.89	-	5150	(22900)	14.3	6000	(678)	0.89	-	5490	(24400)	1H	4A100	123
			1.09	I	5150	(22900)				1.09	I	5490	(24400)	1H	4A105	123
			1.36	I	5150	(22900)				1.36	I	5490	(24400)	1H	4A110	123
			1.58	II	5150	(22900)				1.58	II	5490	(24400)	1H	4A115	123
			2.16	III	9700	(43100)				2.26	III	9810	(43600)	1H	4B120	123
			2.61	III	9700	(43100)				2.89	III	9810	(43600)	1H	4B125	123
9.63	8900	(1010)	0.98	-	4560	(20300)	11.6	7370	(833)	0.98	-	5110	(22700)	1H	4A105	151
			1.18	I	4560	(20300)				1.18	I	5110	(22700)	1H	4A110	151
			1.28	I	4560	(20300)				1.28	I	5110	(22700)	1H	4A115	151
			1.74	II	9510	(42300)				1.74	II	9680	(43100)	1H	4B120	151
			2.13	III	9510	(42300)				2.16	III	9680	(43100)	1H	4B125	151
			2.56	III	9510	(42300)				2.56	III	9680	(43100)	1H	4B140	151

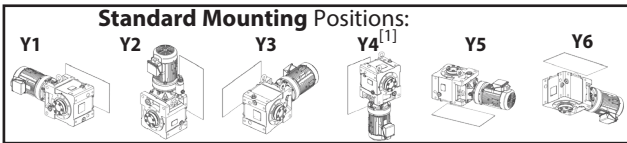
Notes: [1] For Y4 Double Reductions (4XXXDX) refer to the above table; for Y4 single reduction refer to tables on pages 2.91-2.130.

[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

All 1HP+ motors require EP suffix in model number and can be used with a VFD, unless noted.

Standard Mounting Selection Tables

**1.5 HP
(1.1 kW)**



Dimension Pages:
 Single Reduction 2.132-2.143
 Single Reduction, Y2 2.144
 Double Reduction 2.146-2.161
 Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz					60 Hz					Selection						
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor		Base			VFD ^[2]	
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code		Frame Size
8.12	10600	(1190)	1.01	I	3720	(16600)	9.80	8740	(988)	1.01	I	4620	(20600)	1H	4A115	179
			1.08	I	3720	(16600)				1.08	I	4620	(20600)	1H	4A120	179
			1.48	II	9290	(41300)				1.56	II	9530	(42400)	1H	4B120	179
			1.79	II	9290	(41300)				2.07	III	9530	(42400)	1H	4B125	179
			2.16	III	9290	(41300)				2.16	III	9530	(42400)	1H	4B140	179
			7.02	12200	(1380)	0.92				-	2400	(10700)	8.47	10100	(1140)	0.92
7.02	12200	(1380)	0.94	-	2400	(10700)	8.47	10100	(1140)	0.94	-	3980	(17700)	1H	4A125	207
			1.18	I	9020	(40100)				1.18	I	9350	(41600)	1H	4B120	207
			1.47	II	9020	(40100)				1.47	II	9350	(41600)	1H	4B125	207
			1.86	II	9020	(40100)				1.86	II	9350	(41600)	1H	4B145	207
			2.69	III	15800	(70100)				2.69	III	15900	(70600)	1H	4C140	207
			2.89	III	15800	(70100)				3.32	III	15900	(70600)	1H	4C145	207
5.84	14700	(1660)	1.03	I	8510	(37900)	7.04	12200	(1380)	1.09	I	9020	(40100)	1H	4B125	249
			1.55	II	8510	(37900)				1.55	II	9020	(40100)	1H	4B145	249
			2.21	III	15600	(69300)				2.21	III	15800	(70100)	1H	4C140	249
			2.38	III	15600	(69300)				2.75	III	15800	(70100)	1H	4C145	249
4.76	18000	(2030)	0.93	-	7630	(33900)	5.75	14900	(1690)	1.03	I	8460	(37600)	1H	4B125	305
			1.26	I	7630	(33900)				1.26	I	8460	(37600)	1H	4B145	305
			1.80	II	15300	(68000)				1.80	II	15600	(69200)	1H	4C140	305
			1.96	II	15300	(68000)				2.25	III	15600	(69200)	1H	4C145	305
			2.46	III	15300	(68000)				2.53	III	15600	(69200)	1H	4C160	305
3.98	20400	(2310)	0.93	-	6320	(28100)	4.81	16900	(1910)	1.12	I	7680	(34200)	1H	4B12DB	364
			1.11	I	6320	(28100)				1.34	I	7680	(34200)	1H	4B14DB	364
			1.38	I	14900	(66300)				1.38	I	15300	(68100)	1H	4C14DB	364
			2.02	III	14900	(66300)				2.44	III	15300	(68100)	1H	4C14DC	364
			2.23	III	14900	(66300)				2.69	III	15300	(68100)	1H	4C16DB	364
3.42	23800	(2680)	0.96	-	4280	(19000)	4.13	19700	(2220)	1.16	I	6650	(29600)	1H	4B14DB	424
			1.38	I	14400	(64200)				1.38	I	15000	(66700)	1H	4C14DB	424
			1.64	II	14400	(64200)				1.98	II	15000	(66700)	1H	4C14DC	424
			1.91	II	14400	(64200)				2.31	III	15000	(66700)	1H	4C16DB	424
			2.66	III	21200	(94500)				2.89	III	21500	(95700)	1H	4D16DB	424
			2.89	III	21200	(94500)				2.89	III	21500	(95700)	1H	4D17DB	424
2.90	28100	(3170)	1.38	I	13700	(61000)	3.50	23300	(2630)	1.38	I	14500	(64600)	1H	4C14DB	501
			1.62	II	13700	(61000)				1.96	II	14500	(64600)	1H	4C16DB	501
			2.25	III	20900	(92900)				2.72	III	21300	(94600)	1H	4D16DB	501
			2.89	III	22400	(99600)				2.89	III	22600	(101000)	1H	4E17DB	501

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Selection Tables

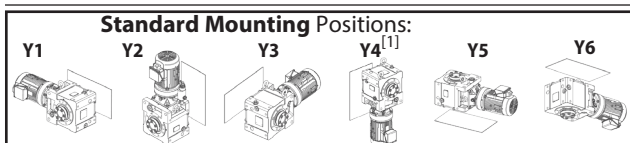
Notes: [1] For Y4 Double Reductions (4XXXDX) refer to the above table; for Y4 single reduction refer to tables on pages 2.91-2.130.

[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

All 1HP+ motors require EP suffix in model number and can be used with a VFD, unless noted.

Standard Mounting Selection Tables

1.5 HP
(1.1 kW)



Dimension Pages:
 Single Reduction 2.132-2.143
 Single Reduction, Y2 2.144
 Double Reduction 2.146-2.161
 Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz					60 Hz					Selection			VFD ^[2]			
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor		Base				
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code	Frame Size	Ratio
2.51	32400	(3660)	1.26	I	12800	(56900)	3.03	26800	(3030)	1.38	I	13900	(62000)	1H	4C14DB	578
			1.38	I	12800	(56900)				1.38	I	13900	(62000)	1H	4C16DA	578
			1.95	II	20500	(91000)				2.36	III	21000	(93400)	1H	4D16DB	578
			2.38	III	20500	(91000)				2.87	III	21000	(93400)	1H	4D17DB	578
			2.89	III	22200	(98600)				2.89	III	22400	(99800)	1H	4E17DB	578
2.12	38300	(4330)	1.07	I	11200	(49800)	2.56	31700	(3580)	1.29	I	13000	(57600)	1H	4C14DB	683
			1.19	I	11200	(49800)				1.38	I	13000	(57600)	1H	4C16DA	683
			1.38	I	19800	(87900)				1.38	I	20500	(91300)	1H	4D16DA	683
			1.65	II	19800	(87900)				1.99	II	20500	(91300)	1H	4D16DB	683
			2.02	III	19800	(87900)				2.43	III	20500	(91300)	1H	4D17DB	683
			2.48	III	21900	(97300)				2.89	III	22200	(98700)	1H	4E17DB	683
			2.68	III	21900	(97300)				3.24	III	22200	(98700)	1H	4E18DB	683
1.79	45400	(5130)	0.89	-	8430	(37500)	2.16	37600	(4250)	1.07	I	11400	(50800)	1H	4C14DB	809
			1.00	I	8430	(37500)				1.21	I	11400	(50800)	1H	4C16DA	809
			1.38	I	18700	(83400)				1.38	I	19900	(88300)	1H	4D16DA	809
			1.70	II	18700	(83400)				2.05	III	19900	(88300)	1H	4D17DB	809
			2.09	III	21500	(95700)				2.52	III	21900	(97400)	1H	4E17DB	809
			2.26	III	21500	(95700)				2.73	III	21900	(97400)	1H	4E18DA	809
			2.89	III	30200	(134000)				2.89	III	30500	(136000)	1H	4F18DA	809
1.52	53600	(6060)	1.18	I	17200	(76600)	1.83	44400	(5020)	1.38	I	18900	(84000)	1H	4D16DA	956
			1.38	I	17200	(76600)				1.38	I	18900	(84000)	1H	4D17DA	956
			1.44	II	17200	(76600)				1.74	II	18900	(84000)	1H	4D17DB	956
			1.77	II	21100	(93800)				2.14	III	21600	(95900)	1H	4E17DB	956
			1.92	II	21100	(93800)				2.31	III	21600	(95900)	1H	4E18DA	956
			2.81	III	29900	(133000)				2.89	III	30200	(135000)	1H	4F18DA	956
			2.81	III	29900	(133000)				3.39	III	30200	(135000)	1H	4F18DB	956
			2.87	III	29900	(133000)				3.47	III	30200	(135000)	1H	4F19DA	956
1.30	62600	(7080)	1.01	I	15000	(66900)	1.57	51900	(5860)	1.22	I	17600	(78100)	1H	4D16DA	1117
			1.23	I	15000	(66900)				1.38	I	17600	(78100)	1H	4D17DA	1117
			1.38	I	20600	(91800)				1.38	I	21200	(94200)	1H	4E17DA	1117
			1.51	II	20600	(91800)				1.83	II	21200	(94200)	1H	4E17DB	1117
			1.64	II	20600	(91800)				1.98	II	21200	(94200)	1H	4E18DA	1117
			2.40	III	29500	(131000)				2.89	III	29900	(133000)	1H	4F18DA	1117
			2.40	III	29500	(131000)				2.90	III	29900	(133000)	1H	4F18DB	1117
			2.46	III	29500	(131000)				2.97	III	29900	(133000)	1H	4F19DA	1117

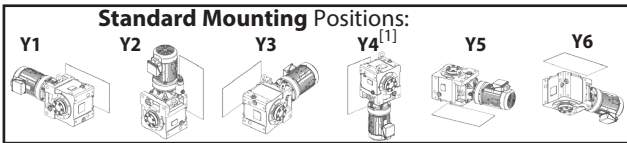
Notes: [1] For Y4 Double Reductions (4XXXDX) refer to the above table; for Y4 single reduction refer to tables on pages 2.91-2.130.

[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

All 1HP+ motors require EP suffix in model number and can be used with a VFD, unless noted.

Standard Mounting Selection Tables

**1.5 HP
(1.1 kW)**



Dimension Pages:
 Single Reduction, Y2 2.132-2.143
 Single Reduction, Y2 2.144
 Double Reduction 2.146-2.161
 Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz					60 Hz					Selection			VFD ^[2]			
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor		Base				
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code	Frame Size	Ratio
1.10	74000	(8360)	0.85	-	11000	(49100)	1.33	61300	(6930)	1.03	I	15400	(68500)	1H	4D16DA	1320
			1.04	I	11000	(49100)				1.26	I	15400	(68500)	1H	4D17DA	1320
			1.28	I	20100	(89200)				1.38	I	20700	(92100)	1H	4E17DA	1320
			1.39	I	20100	(89200)				1.67	II	20700	(92100)	1H	4E18DA	1320
			2.03	III	29000	(129000)				2.45	III	29500	(131000)	1H	4F18DA	1320
			2.08	III	29000	(129000)				2.51	III	29500	(131000)	1H	4F19DA	1320
0.876	92900	(10500)	1.02	I	19100	(85000)	1.06	77000	(8700)	1.23	I	19900	(88500)	1H	4E17DA	1656
			1.11	I	19100	(85000)				1.33	I	19900	(88500)	1H	4E18DA	1656
			1.62	II	28200	(125000)				1.96	II	28800	(128000)	1H	4F18DA	1656
			1.66	II	28200	(125000)				2.00	III	28800	(128000)	1H	4F19DA	1656
0.741	110000	(12400)	0.86	-	14700	(65300)	0.894	91000	(10300)	1.04	I	19200	(85400)	1H	4E17DA	1957
			0.94	-	14700	(65300)				1.13	I	19200	(85400)	1H	4E18DA	1957
			1.37	I	27400	(122000)				1.66	II	28200	(126000)	1H	4F18DA	1957
			1.40	II	27400	(122000)				1.69	II	28200	(126000)	1H	4F19DA	1957
0.638	127000	(14400)	0.81	-	3570	(15900)	0.770	106000	(11900)	0.97	-	16100	(71600)	1H	4E18DA	2272
			1.18	I	26700	(119000)				1.43	II	27600	(123000)	1H	4F18DA	2272
			1.21	I	26700	(119000)				1.46	II	27600	(123000)	1H	4F19DA	2272
0.567	144000	(16200)	1.05	I	26000	(115000)	0.684	119000	(13400)	1.27	I	27000	(120000)	1H	4F18DA	2559
			1.07	I	26000	(115000)				1.29	I	27000	(120000)	1H	4F19DA	2559
0.493	165000	(18700)	0.91	-	25000	(111000)	0.595	137000	(15500)	1.10	I	26300	(117000)	1H	4F18DA	2944
			0.93	-	25000	(111000)				1.13	I	26300	(117000)	1H	4F19DA	2944

Cyclo® BBB4

Selection Tables

Sold & Serviced By:



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sales@electromate.com

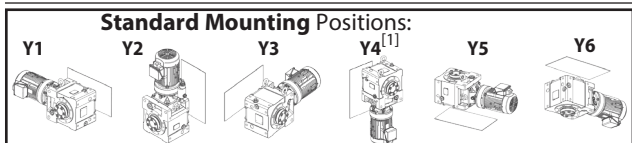
Notes: [1] For Y4 Double Reductions (4XXXDX) refer to the above table; for Y4 single reduction refer to tables on pages 2.91-2.130..

[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

All 1HP+ motors require EP suffix in model number and can be used with a VFD, unless noted.

Standard Mounting Selection Tables

2 HP
(1.5 kW)



Dimension Pages:
Single Reduction 2.132-2.143
Single Reduction, Y2 2.144
Double Reduction 2.146-2.161
Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz						60 Hz						Selection					
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Base			VFD ^[2]
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code	Frame Size	Ratio	
138	847	(96)	1.56	II	3980	(17700)	167	701	(79)	1.56	II	3770	(16800)	2	4A100	11	
			2.12	III	3980	(17700)				2.12	III	3770	(16800)	2	4A105	11	
113	1030	(117)	1.56	II	4200	(18700)	137	855	(97)	1.56	II	3990	(17800)	2	4A100	13	
			2.12	III	4200	(18700)				2.12	III	3990	(17800)	2	4A105	13	
104	1130	(128)	1.56	II	4310	(19200)	125	935	(106)	1.56	II	4090	(18200)	2	4A100	14	
			2.12	III	4310	(19200)				2.12	III	4090	(18200)	2	4A105	14	
90.6	1290	(146)	1.56	II	4470	(19900)	109	1070	(121)	1.56	II	4250	(18900)	2	4A100	16	
			2.12	III	4470	(19900)				2.12	III	4250	(18900)	2	4A105	16	
82.9	1410	(159)	1.56	II	4580	(20400)	100.0	1170	(132)	1.56	II	4350	(19400)	2	4A100	18	
			2.12	III	4580	(20400)				2.12	III	4350	(19400)	2	4A105	18	
69.0	1690	(191)	1.57	II	4810	(21400)	83.3	1400	(158)	1.57	II	4570	(20300)	2	4A100	21	
			2.12	III	4810	(21400)				2.12	III	4570	(20300)	2	4A105	21	
			2.61	III	4810	(21400)				2.61	III	4570	(20300)	2	4A115	21	
51.8	2260	(255)	1.57	II	5190	(23100)	62.5	1870	(211)	1.57	II	4940	(22000)	2	4A100	28	
			2.12	III	5190	(23100)				2.12	III	4940	(22000)	2	4A105	28	
			2.61	III	5190	(23100)				2.61	III	4940	(22000)	2	4A115	28	
41.2	2840	(321)	1.57	II	5500	(24500)	49.7	2350	(266)	1.57	II	5240	(23300)	2	4A100	35	
			2.12	III	5500	(24500)				2.12	III	5240	(23300)	2	4A105	35	
			2.61	III	5500	(24500)				2.61	III	5240	(23300)	2	4A115	35	
37.7	3100	(351)	1.57	II	5620	(25000)	45.5	2570	(291)	1.57	II	5360	(23900)	2	4A100	39	
			2.12	III	5620	(25000)				2.12	III	5360	(23900)	2	4A105	39	
			2.61	III	5620	(25000)				2.61	III	5360	(23900)	2	4A115	39	
31.9	3670	(414)	1.57	II	5860	(26000)	38.5	3040	(343)	1.57	II	5590	(24900)	2	4A100	46	
			2.12	III	5860	(26000)				2.12	III	5590	(24900)	2	4A105	46	
			2.60	III	5860	(26000)				2.60	III	5590	(24900)	2	4A115	46	
27.6	4230	(478)	1.57	II	5830	(25900)	33.3	3510	(396)	1.57	II	5790	(25800)	2	4A100	53	
			2.12	III	5830	(25900)				2.12	III	5790	(25800)	2	4A105	53	
			2.60	III	5830	(25900)				2.60	III	5790	(25800)	2	4A115	53	
			2.70	III	5830	(25900)				2.70	III	5790	(25800)	2	4A120	53	
24.4	4800	(542)	1.33	I	5740	(25500)	29.4	3970	(449)	1.33	I	5870	(26100)	2	4A100	60	
			1.64	II	5740	(25500)				1.64	II	5870	(26100)	2	4A105	60	
			2.38	III	5740	(25500)				2.38	III	5870	(26100)	2	4A115	60	
21.6	5420	(612)	1.27	I	5610	(25000)	26.0	4490	(507)	1.29	I	5790	(25700)	2	4A100	67	
			1.52	II	5610	(25000)				1.56	II	5790	(25700)	2	4A105	67	
			2.07	III	5610	(25000)				2.07	III	5790	(25700)	2	4A115	67	
			2.11	III	5610	(25000)				2.11	III	5790	(25700)	2	4A120	67	
			2.64	III	9050	(40300)				2.64	III	8630	(38400)	2	4B120	67	

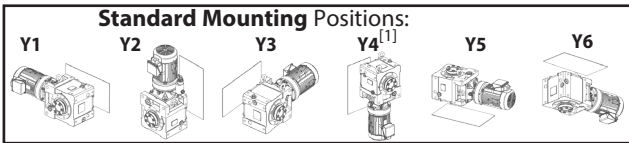
Notes: [1] For Y4 Double Reductions (4XXXDX) refer to the above table; for Y4 single reduction refer to tables on pages 2.91-2.130.

[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

All 1HP+ motors require EP suffix in model number and can be used with a VFD, unless noted.

Standard Mounting Selection Tables

**2 HP
(1.5 kW)**



Dimension Pages:
 Single Reduction 2.132-2.143
 Single Reduction, Y2 2.144
 Double Reduction 2.146-2.161
 Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz					60 Hz					Selection						
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor		Base			VFD ^[2]	
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code		Frame Size
19.7	5930	(669)	1.27	I	5500	(24500)	23.8	4910	(555)	1.29	I	5710	(25400)	2	4A100	74
			1.52	II	5500	(24500)				1.56	II	5710	(25400)	2	4A105	74
			1.93	II	5500	(24500)				1.93	II	5710	(25400)	2	4A115	74
			2.64	III	9260	(41200)				2.64	III	8830	(39300)	2	4B120	74
18.1	6450	(729)	1.11	I	5370	(23900)	21.9	5340	(604)	1.11	I	5630	(25000)	2	4A105	80
			1.48	II	5370	(23900)				1.48	II	5630	(25000)	2	4A115	80
			1.77	II	5370	(23900)				1.77	II	5630	(25000)	2	4A120	80
			2.06	III	9460	(42100)				2.06	III	9020	(40100)	2	4B120	80
			2.64	III	9460	(42100)				2.64	III	9020	(40100)	2	4B125	80
16.6	7050	(797)	1.11	I	5210	(23200)	20.0	5840	(660)	1.11	I	5520	(24600)	2	4A105	88
			1.48	II	5210	(23200)				1.48	II	5520	(24600)	2	4A115	88
			1.62	II	5210	(23200)				1.62	II	5520	(24600)	2	4A120	88
			2.06	III	9670	(43000)				2.06	III	9230	(41100)	2	4B120	88
			2.64	III	9670	(43000)				2.64	III	9230	(41100)	2	4B125	88
14.3	8180	(925)	1.06	I	4840	(21500)	17.2	6780	(766)	1.06	I	5290	(23500)	2	4A105	102
			1.40	II	4840	(21500)				1.40	II	5290	(23500)	2	4A115	102
			1.91	II	9600	(42700)				1.99	II	9580	(42600)	2	4B120	102
			2.31	III	9600	(42700)				2.51	III	9580	(42600)	2	4B125	102
			2.78	III	9600	(42700)				2.78	III	9580	(42600)	2	4B140	102
12.9	9030	(1020)	1.00	I	4500	(20000)	15.6	7480	(845)	1.00	I	5080	(22600)	2	4A110	112
			1.26	I	4500	(20000)				1.26	I	5080	(22600)	2	4A120	112
			1.58	II	9500	(42200)				1.66	II	9670	(43000)	2	4B120	112
			1.92	II	9500	(42200)				2.12	III	9670	(43000)	2	4B125	112
			2.52	III	9500	(42200)				2.52	III	9670	(43000)	2	4B140	112
11.8	9880	(1120)	0.80	-	4100	(18300)	14.3	8180	(925)	0.80	-	4840	(21500)	2	4A105	123
			1.00	I	4100	(18300)				1.00	I	4840	(21500)	2	4A110	123
			1.16	I	4100	(18300)				1.16	I	4840	(21500)	2	4A115	123
			1.58	II	9390	(41800)				1.66	II	9600	(42700)	2	4B120	123
			1.92	II	9390	(41800)				2.12	III	9600	(42700)	2	4B125	123
			2.30	III	9390	(41800)				2.30	III	9600	(42700)	2	4B140	123
9.63	12100	(1370)	0.94	-	2480	(11000)	11.6	10100	(1140)	0.94	-	4010	(17800)	2	4A115	151
			1.27	I	9030	(40200)				1.27	I	9360	(41600)	2	4B120	151
			1.56	II	9030	(40200)				1.59	II	9360	(41600)	2	4B125	151
			1.87	II	9030	(40200)				1.87	II	9360	(41600)	2	4B140	151
			2.63	III	15700	(69900)				2.63	III	15000	(66700)	2	4C140	151

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Selection Tables

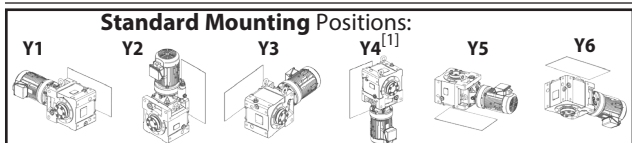
Notes: [1] For Y4 Double Reductions (4XXXDX) refer to the above table; for Y4 single reduction refer to tables on pages 2.91-2.130..

[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

All 1HP+ motors require EP suffix in model number and can be used with a VFD, unless noted.

Standard Mounting Selection Tables

**2 HP
(1.5 kW)**



Dimension Pages:
 Single Reduction 2.132-2.143
 Single Reduction, Y2 2.144
 Double Reduction 2.146-2.161
 Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz					60 Hz					Selection						
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor		Base			VFD ^[2]	
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code		Frame Size
8.12	14400	(1630)	1.09	I	8580	(38200)	9.80	11900	(1350)	1.15	I	9070	(40300)	2	4B120	179
			1.32	I	8580	(38200)				1.52	II	9070	(40300)	2	4B125	179
			1.58	II	8580	(38200)				1.58	II	9070	(40300)	2	4B140	179
			2.29	III	15600	(69400)				2.29	III	15700	(69600)	2	4C140	179
			2.47	III	15600	(69400)				2.81	III	15700	(69600)	2	4C145	179
7.02	16600	(1880)	1.08	I	8030	(35700)	8.47	13800	(1560)	1.08	I	8710	(38700)	2	4B125	207
			1.37	I	8030	(35700)				1.37	I	8710	(38700)	2	4B140	207
			1.97	II	15400	(68600)				1.97	II	15600	(69600)	2	4C140	207
			2.12	III	15400	(68600)				2.43	III	15600	(69600)	2	4C145	207
			2.66	III	15400	(68600)				2.73	III	15600	(69600)	2	4C160	207
			2.95	III	21700	(96700)				2.95	III	21900	(97200)	2	4D160	207
5.84	20000	(2260)	1.14	I	6930	(30800)	7.04	16600	(1880)	1.14	I	8040	(35800)	2	4B140	249
			1.62	II	15100	(67100)				1.62	II	15400	(68600)	2	4C140	249
			1.75	II	15100	(67100)				2.02	III	15400	(68600)	2	4C145	249
			2.21	III	15100	(67100)				2.27	III	15400	(68600)	2	4C160	249
			2.31	III	21600	(95900)				2.31	III	21700	(96700)	2	4D160	249
4.76	24500	(2770)	0.93	-	4640	(20600)	5.75	20300	(2300)	0.93	-	6810	(30300)	2	4B140	305
			1.44	II	14500	(64500)				1.65	II	15000	(66900)	2	4C145	305
			1.81	II	14500	(64500)				1.85	II	15000	(66900)	2	4C160	305
			2.15	III	21300	(94600)				2.31	III	21500	(95800)	2	4D160	305
			2.51	III	21300	(94600)				2.60	III	21500	(95800)	2	4D165	305
3.98	27800	(3150)	1.01	I	13800	(61200)	4.81	23100	(2610)	1.01	I	14500	(64700)	2	4C14DB	364
			1.48	II	13800	(61200)				1.79	II	14500	(64700)	2	4C14DC	364
			1.63	II	13800	(61200)				1.97	II	14500	(64700)	2	4C16DB	364
			2.12	III	20900	(93000)				2.12	III	21300	(94700)	2	4D16DB	364
			2.27	III	20900	(93000)				2.74	III	21300	(94700)	2	4D16DC	364
			2.77	III	20900	(93000)				3.34	III	21300	(94700)	2	4D17DC	364
3.42	32400	(3660)	1.01	I	12800	(56900)	4.13	26800	(3030)	1.01	I	13900	(62000)	2	4C14DB	424
			1.40	II	12800	(56900)				1.69	II	13900	(62000)	2	4C16DB	424
			1.95	II	20500	(91000)				2.12	III	21000	(93400)	2	4D16DB	424
			2.12	III	20500	(91000)				2.12	III	21000	(93400)	2	4D17DB	424
			2.93	III	22200	(98600)				3.53	III	22400	(99800)	2	4E17DC	424
2.90	38300	(4330)	1.01	I	11200	(49800)	3.50	31700	(3580)	1.01	I	13000	(57600)	2	4C14DB	501
			1.19	I	11200	(49800)				1.43	II	13000	(57600)	2	4C16DB	501
			1.65	II	19800	(87900)				1.99	II	20500	(91300)	2	4D16DB	501
			2.02	III	19800	(87900)				2.12	III	20500	(91300)	2	4D17DB	501
			2.48	III	21900	(97300)				2.99	III	22200	(98700)	2	4E17DC	501
			2.68	III	21900	(97300)				3.24	III	22200	(98700)	2	4E18DB	501

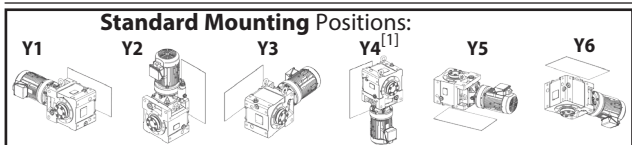
Notes: [1] For Y4 Double Reductions (4XXXDX) refer to the above table; for Y4 single reduction refer to tables on pages 2.91-2.130.

[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

All 1HP+ motors require EP suffix in model number and can be used with a VFD, unless noted.

Standard Mounting Selection Tables

**2 HP
(1.5 kW)**



Dimension Pages:
 Single Reduction 2.132-2.143
 Single Reduction, Y2 2.144
 Double Reduction 2.146-2.161
 Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz					60 Hz					Selection						
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor		Base			VFD ^[2]	
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code		Frame Size
2.51	44200	(4990)	0.93	-	8990	(40000)	3.03	36600	(4140)	1.01	I	11700	(52100)	2	4C14DB	578
			1.01	I	8990	(40000)				2	4C16DA	578				
			1.43	II	18900	(84200)				2	4D16DB	578				
			1.75	II	18900	(84200)				2	4D17DB	578				
			2.15	III	21600	(95900)				2	4E17DC	578				
			2.32	III	21600	(95900)				2	4E18DB	578				
2.12	52200	(5900)	0.87	-	3070	(13700)	2.56	43300	(4890)	1.01	I	9390	(41800)	2	4C16DA	683
			1.01	I	17500	(77900)				2	4D16DA	683				
			1.48	II	17500	(77900)				2	4D17DB	683				
			1.82	II	21200	(94100)				2	4E17DB	683				
			1.97	II	21200	(94100)				2	4E18DB	683				
			2.84	III	29900	(133000)				2	4F18DB	683				
			2.95	III	29900	(133000)				2	4F19DA	683				
1.79	61900	(6990)	1.01	I	15300	(67800)	2.16	51300	(5790)	1.01	I	17700	(78700)	2	4D16DA	809
			1.25	I	15300	(67800)				2	4D17DB	809				
			1.53	II	20700	(91900)				2	4E17DB	809				
			1.66	II	20700	(91900)				2	4E18DA	809				
			2.12	III	29500	(131000)				2	4F18DA	809				
			2.43	III	29500	(131000)				2	4F18DB	809				
			2.49	III	29500	(131000)				2	4F19DA	809				
			1.52	73100	(8260)	0.87				-	11400	(50900)	1.83	60600	(6840)	1.01
1.01	I	11400				(50900)	2	4D17DA	956							
1.30	I	20100				(89400)	2	4E17DB	956							
1.40	II	20100				(89400)	2	4E18DA	956							
2.06	III	29000				(129000)	2	4F18DA	956							
2.06	III	29000				(129000)	2	4F18DB	956							
2.11	III	29000				(129000)	2	4F19DA	956							
1.30	85400	(9650)	0.90	-	272	(1210)	1.57	70800	(8000)	1.01	I	12400	(55100)	2	4D17DA	1117
			1.01	I	19500	(86600)				2	4E17DA	1117				
			1.11	I	19500	(86600)				2	4E17DB	1117				
			1.20	I	19500	(86600)				2	4E18DA	1117				
			1.76	II	28500	(127000)				2	4F18DA	1117				
			1.76	II	28500	(127000)				2	4F18DB	1117				
			1.80	II	28500	(127000)				2	4F19DA	1117				
			1.10	101000	(11400)	0.94				-	17500	(77800)	1.33	83600	(9450)	1.01
1.02	I	17500				(77800)	2	4E18DA	1320							
1.49	II	27800				(124000)	2	4F18DA	1320							
1.53	II	27800				(124000)	2	4F19DA	1320							

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Selection Tables

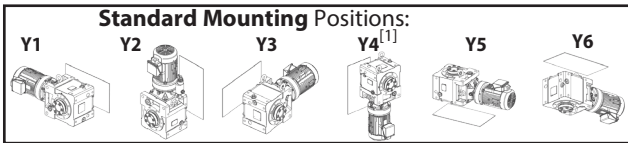
Notes: [1] For Y4 Double Reductions (4XXXDX) refer to the above table; for Y4 single reduction refer to tables on pages 2.91-2.130..

[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

All 1HP+ motors require EP suffix in model number and can be used with a VFD, unless noted.

Standard Mounting Selection Tables

**2 HP
(1.5 kW)**



Dimension Pages:
 Single Reduction 2.132-2.143
 Single Reduction, Y2 2.144
 Double Reduction 2.146-2.161
 Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz					60 Hz					Selection			VFD ^[2]		
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor		Base			
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code	Frame Size
0.876	127000 (14300)		0.81	-	4740 (21100)	1.06	105000 (11900)			0.98	-	16300 (72500)	2	4E18DA	1656
			1.19	I	26700 (119000)					1.43	II	27600 (123000)	2	4F18DA	1656
			1.22	I	26700 (119000)					1.47	II	27600 (123000)	2	4F19DA	1656
0.741	150000 (16900)		1.01	I	25700 (114000)	0.894	124000 (14000)			1.21	I	26800 (119000)	2	4F18DA	1957
			1.03	I	25700 (114000)					1.24	I	26800 (119000)	2	4F19DA	1957
0.638	174000 (19600)		0.87	-	24500 (109000)	0.770	144000 (16300)			1.05	I	25900 (115000)	2	4F18DA	2272
			0.89	-	24500 (109000)					1.07	I	25900 (115000)	2	4F19DA	2272

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Selection Tables

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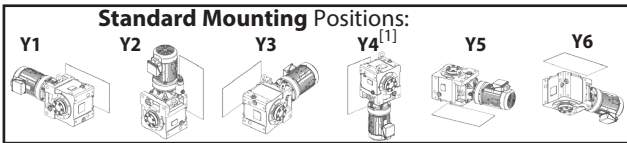
Notes: [1] For Y4 Double Reductions (4XXXDX) refer to the above table; for Y4 single reduction refer to tables on pages 2.91-2.130.

[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

All 1HP+ motors require EP suffix in model number and can be used with a VFD, unless noted.

Standard Mounting Selection Tables

**3 HP
(2.2 kW)**



Dimension Pages:
 Single Reduction, Y2 2.132-2.143
 Single Reduction, Y5 2.144
 Double Reduction 2.146-2.161
 Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz						60 Hz						Selection					
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Base			VFD ^[2]
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code	Frame Size	Ratio	
138	1240	(140)	1.07	I	3930	(17500)	167	1030	(116)	1.07	I	3730	(16600)	3	4A100	11	
			1.45	II	3930	(17500)				1.45	II	3730	(16600)	3	4A105	11	
			4.36	III	3930	(17500)				4.36	III	3730	(16600)	3	4A120	11	
113	1510	(171)	1.07	I	4140	(18400)	137	1250	(142)	1.07	I	3940	(17500)	3	4A100	13	
			1.45	II	4140	(18400)				1.45	II	3940	(17500)	3	4A105	13	
			4.36	III	4140	(18400)				4.36	III	3940	(17500)	3	4A120	13	
104	1660	(187)	1.07	I	4240	(18900)	125	1370	(155)	1.07	I	4030	(17900)	3	4A100	14	
			1.45	II	4240	(18900)				1.45	II	4030	(17900)	3	4A105	14	
			4.36	III	4240	(18900)				4.36	III	4030	(17900)	3	4A120	14	
90.6	1890	(214)	1.07	I	4390	(19500)	109	1570	(177)	1.07	I	4180	(18600)	3	4A100	16	
			1.45	II	4390	(19500)				1.45	II	4180	(18600)	3	4A105	16	
			4.36	III	4360	(19400)				4.36	III	4150	(18500)	3	4A120	16	
82.9	2070	(234)	1.07	I	4490	(20000)	100.0	1710	(194)	1.07	I	4280	(19000)	3	4A100	18	
			1.45	II	4490	(20000)				1.45	II	4280	(19000)	3	4A105	18	
			4.36	III	4470	(19900)				4.36	III	4250	(18900)	3	4A120	18	
69.0	2480	(281)	1.07	I	4700	(20900)	83.3	2060	(232)	1.07	I	4480	(19900)	3	4A100	21	
			1.45	II	4700	(20900)				1.45	II	4480	(19900)	3	4A105	21	
			1.61	II	4700	(20900)				1.61	II	4480	(19900)	3	4A110	21	
			1.78	II	4700	(20900)				1.78	II	4480	(19900)	3	4A115	21	
			2.97	III	4700	(20900)				2.97	III	4480	(19900)	3	4A120	21	
64.7	2650	(299)	2.97	III	4780	(21200)	78.1	2190	(248)	2.97	III	4560	(20300)	3	4A120	22	
59.2	2900	(327)	2.97	III	4880	(21700)	71.4	2400	(271)	2.97	III	4660	(20700)	3	4A120	25	
51.8	3310	(374)	1.07	I	5040	(22400)	62.5	2740	(310)	1.07	I	4820	(21400)	3	4A100	28	
			1.45	II	5040	(22400)				1.45	II	4820	(21400)	3	4A105	28	
			1.61	II	5040	(22400)				1.61	II	4820	(21400)	3	4A110	28	
			1.78	II	5040	(22400)				1.78	II	4820	(21400)	3	4A115	28	
			2.97	III	5040	(22400)				2.97	III	4820	(21400)	3	4A120	28	
41.2	4160	(470)	1.07	I	5320	(23600)	49.7	3450	(390)	1.07	I	5090	(22600)	3	4A100	35	
			1.45	II	5320	(23600)				1.45	II	5090	(22600)	3	4A105	35	
			1.61	II	5320	(23600)				1.61	II	5090	(22600)	3	4A110	35	
			1.78	II	5320	(23600)				1.78	II	5090	(22600)	3	4A115	35	
			2.30	III	5320	(23600)				2.30	III	5090	(22600)	3	4A120	35	
			2.69	III	5320	(23600)				2.69	III	5090	(22600)	3	4A125	35	
			2.74	III	5320	(23600)				2.74	III	5090	(22600)	3	4A140	35	

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Selection Tables

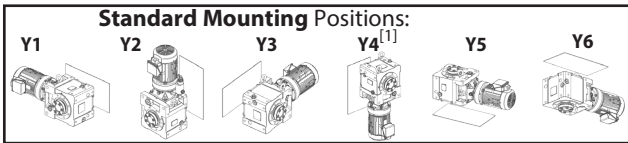
Notes: [1] For Y4 Double Reductions (4XXXDX) refer to the above table; for Y4 single reduction refer to tables on pages 2.91-2.130..

[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

All 1HP+ motors require EP suffix in model number and can be used with a VFD, unless noted.

Standard Mounting Selection Tables

**3 HP
(2.2 kW)**



Dimension Pages:
 Single Reduction 2.132-2.143
 Single Reduction, Y2 2.144
 Double Reduction 2.146-2.161
 Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz					60 Hz					Selection							
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Base			VFD ^[2]
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code	Frame Size	Ratio	
37.7	4550	(514)	1.07	I	5420	(24100)	45.5	3770	(426)	1.07	I	5200	(23100)	3	4A100	39	
			1.45	II	5420	(24100)				1.45	II	5200	(23100)	3	4A105	39	
			1.61	II	5420	(24100)				1.61	II	5200	(23100)	3	4A110	39	
			1.78	II	5420	(24100)				1.78	II	5200	(23100)	3	4A115	39	
			2.30	III	5420	(24100)				2.30	III	5200	(23100)	3	4A120	39	
			2.51	III	5420	(24100)				2.51	III	5200	(23100)	3	4A125	39	
			2.69	III	7660	(34100)				2.69	III	7300	(32500)	3	4B125	39	
31.9	5380	(608)	1.07	I	5620	(25000)	38.5	4460	(504)	1.07	I	5400	(24000)	3	4A100	46	
			1.45	II	5620	(25000)				1.45	II	5400	(24000)	3	4A105	46	
			1.61	II	5620	(25000)				1.61	II	5400	(24000)	3	4A110	46	
			1.77	II	5620	(25000)				1.77	II	5400	(24000)	3	4A115	46	
			2.12	III	5620	(25000)				2.12	III	5400	(24000)	3	4A120	46	
			2.30	III	7990	(35600)				2.30	III	7620	(33900)	3	4B120	46	
			2.69	III	7990	(35600)				2.69	III	7620	(33900)	3	4B125	46	
27.6	6210	(701)	1.07	I	5440	(24200)	33.3	5140	(581)	1.07	I	5570	(24800)	3	4A100	53	
			1.45	II	5440	(24200)				1.45	II	5570	(24800)	3	4A105	53	
			1.61	II	5440	(24200)				1.61	II	5570	(24800)	3	4A110	53	
			1.77	II	5440	(24200)				1.77	II	5570	(24800)	3	4A115	53	
			1.84	II	5440	(24200)				1.84	II	5570	(24800)	3	4A120	53	
			2.30	III	8280	(36800)				2.30	III	7900	(35200)	3	4B120	53	
			2.69	III	8280	(36800)				2.69	III	7900	(35200)	3	4B125	53	
24.4	7040	(795)	1.12	I	5210	(23200)	29.4	5830	(659)	1.12	I	5530	(24600)	3	4A105	60	
			1.45	II	5210	(23200)				1.45	II	5530	(24600)	3	4A110	60	
			1.62	II	5210	(23200)				1.62	II	5530	(24600)	3	4A115	60	
			2.22	III	8530	(38000)				2.30	III	8150	(36300)	3	4B120	60	
			2.57	III	8530	(38000)				2.57	III	8150	(36300)	3	4B125	60	
21.6	7950	(898)	1.04	I	4920	(21900)	26.0	6580	(744)	1.06	I	5340	(23800)	3	4A105	67	
			1.24	I	4920	(21900)				1.24	I	5340	(23800)	3	4A110	67	
			1.44	II	4920	(21900)				1.44	II	5340	(23800)	3	4A120	67	
			1.80	II	8780	(39100)				1.80	II	8400	(37400)	3	4B120	67	
			2.18	III	8780	(39100)				2.22	III	8400	(37400)	3	4B125	67	
			2.86	III	8780	(39100)				2.86	III	8400	(37400)	3	4B140	67	
19.7	8690	(982)	1.04	I	4650	(20700)	23.8	7200	(814)	1.06	I	5170	(23000)	3	4A105	74	
			1.31	I	4650	(20700)				1.31	I	5170	(23000)	3	4A115	74	
			2.18	III	8960	(39900)				2.22	III	8580	(38200)	3	4B125	74	
			2.62	III	8960	(39900)				2.62	III	8580	(38200)	3	4B140	74	

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Selection Tables

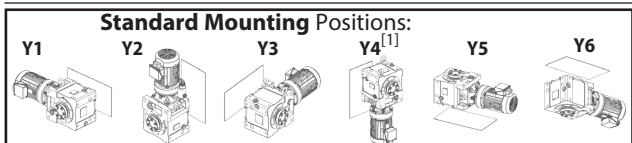
Notes: [1] For Y4 Double Reductions (4XXXDX) refer to the above table; for Y4 single reduction refer to tables on pages 2.91-2.130.

[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

All 1HP+ motors require EP suffix in model number and can be used with a VFD, unless noted.

Standard Mounting Selection Tables

**3 HP
(2.2 kW)**



Dimension Pages:
 Single Reduction 2.132-2.143
 Single Reduction, Y2 2.144
 Double Reduction 2.146-2.161
 Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz						60 Hz						Selection					
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Base			VFD ^[2]
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code	Frame Size	Ratio	
18.1	9460	(1070)	0.87	-	4310	(19200)	21.9	7840	(886)	0.87	-	4960	(22100)	3	4A110	80	
			1.01	I	4310	(19200)				1.01	I	4960	(22100)	3	4A115	80	
			1.21	I	4310	(19200)				1.21	I	4960	(22100)	3	4A120	80	
			1.40	II	9140	(40600)				1.40	II	8750	(38900)	3	4B120	80	
			1.80	II	9140	(40600)				1.80	II	8750	(38900)	3	4B125	80	
			2.40	III	9140	(40600)				2.40	III	8750	(38900)	3	4B140	80	
16.6	10300	(1170)	0.87	-	3850	(17100)	20.0	8570	(969)	0.87	-	4690	(20900)	3	4A110	88	
			1.01	I	3850	(17100)				1.01	I	4690	(20900)	3	4A115	88	
			1.10	I	3850	(17100)				1.10	I	4690	(20900)	3	4A120	88	
			1.40	II	9320	(41400)				1.40	II	8940	(39800)	3	4B120	88	
			1.80	II	9320	(41400)				1.80	II	8940	(39800)	3	4B125	88	
			2.20	III	9320	(41400)				2.20	III	8940	(39800)	3	4B140	88	
14.3	12000	(1360)	0.95	-	2610	(11600)	17.2	9940	(1120)	0.95	-	4070	(18100)	3	4A115	102	
			1.30	I	9050	(40300)				1.36	I	9240	(41100)	3	4B120	102	
			1.58	II	9050	(40300)				1.71	II	9240	(41100)	3	4B125	102	
			1.90	II	9050	(40300)				1.90	II	9240	(41100)	3	4B140	102	
			2.70	III	13900	(61600)				2.70	III	13200	(58800)	3	4C140	102	
12.9	13200	(1500)	1.08	I	8820	(39200)	15.6	11000	(1240)	1.13	I	9220	(41000)	3	4B120	112	
			1.31	I	8820	(39200)				1.45	II	9220	(41000)	3	4B125	112	
			1.72	II	8820	(39200)				1.72	II	9220	(41000)	3	4B140	112	
			2.84	III	14200	(63100)				3.42	III	13600	(60300)	3	4C145	112	
11.8	14500	(1640)	1.08	I	8560	(38100)	14.3	12000	(1360)	1.13	I	9050	(40300)	3	4B120	123	
			1.31	I	8560	(38100)				1.45	II	9050	(40300)	3	4B125	123	
			1.57	II	8560	(38100)				1.57	II	9050	(40300)	3	4B140	123	
			2.37	III	14500	(64500)				2.37	III	13900	(61600)	3	4C140	123	
			2.84	III	14500	(64500)				3.14	III	13900	(61600)	3	4C145	123	
9.63	17800	(2010)	1.06	I	7690	(34200)	11.6	14700	(1670)	1.08	I	8500	(37800)	3	4B125	151	
			1.28	I	7690	(34200)				1.28	I	8500	(37800)	3	4B140	151	
			1.79	II	15200	(67600)				1.79	II	14600	(64700)	3	4C140	151	
			2.12	III	15200	(67600)				2.45	III	14600	(64700)	3	4C145	151	
			2.49	III	15200	(67600)				2.56	III	14600	(64700)	3	4C160	151	
			2.93	III	21700	(96400)				3.39	III	21800	(97000)	3	4D160	151	
8.12	21100	(2380)	0.90	-	6500	(28900)	9.80	17500	(1980)	1.04	I	7790	(34600)	3	4B125	179	
			1.08	I	6500	(28900)				1.08	I	7790	(34600)	3	4B140	179	
			1.56	II	15000	(66500)				1.56	II	15100	(67300)	3	4C140	179	
			1.68	II	15000	(66500)				1.92	II	15100	(67300)	3	4C145	179	
			2.10	III	15000	(66500)				2.16	III	15100	(67300)	3	4C160	179	
			2.99	III	21500	(95600)				3.42	III	21700	(96500)	3	4D165	179	

Cyclo® BBB4

Selection Tables

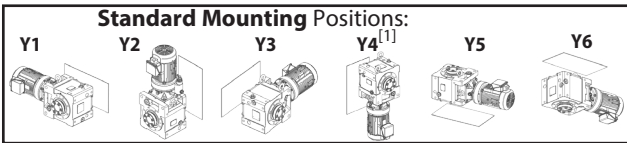
Notes: [1] For Y4 Double Reductions (4XXXDX) refer to the above table; for Y4 single reduction refer to tables on pages 2.91-2.130..

[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

All 1HP+ motors require EP suffix in model number and can be used with a VFD, unless noted.

Standard Mounting Selection Tables

**3 HP
(2.2 kW)**



Dimension Pages:
 Single Reduction 2.132-2.143
 Single Reduction, Y2 2.144
 Double Reduction 2.146-2.161
 Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz						60 Hz						Selection					
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Base			VFD ^[2]
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code	Frame Size	Ratio	
7.02	24400	(2760)	0.93	-	4730	(21000)	8.47	20200	(2290)	0.93	-	6850	(30500)	3	4B140	207	
			1.35	I	14500	(64600)				1.35	I	15100	(67000)	3	4C140	207	
			1.45	II	14500	(64600)				1.66	II	15100	(67000)	3	4C145	207	
			1.82	II	14500	(64600)				1.86	II	15100	(67000)	3	4C160	207	
			2.01	III	21300	(94700)				2.01	III	21500	(95900)	3	4D160	207	
			2.59	III	21300	(94700)				2.61	III	21500	(95900)	3	4D165	207	
5.84	29400	(3320)	1.10	I	13700	(61100)	7.04	24300	(2750)	1.10	I	14500	(64700)	3	4C140	249	
			1.19	I	13700	(61100)				1.38	I	14500	(64700)	3	4C145	249	
			1.51	II	13700	(61100)				1.55	II	14500	(64700)	3	4C160	249	
			2.15	III	20900	(93000)				2.57	III	21300	(94700)	3	4D165	249	
4.76	36000	(4070)	0.90	-	12400	(55000)	5.75	29800	(3370)	0.90	-	13700	(60800)	3	4C140	305	
			0.98	-	12400	(55000)				1.13	I	13700	(60800)	3	4C145	305	
			1.23	I	12400	(55000)				1.26	I	13700	(60800)	3	4C160	305	
			1.47	II	20300	(90200)				1.58	II	20900	(92800)	3	4D160	305	
			1.71	II	20300	(90200)				1.77	II	20900	(92800)	3	4D165	305	
3.98	40800	(4610)	1.01	I	10300	(46000)	4.81	33800	(3820)	1.22	I	12500	(55400)	3	4C14DC	364	
			1.11	I	10300	(46000)				1.34	I	12500	(55400)	3	4C16DB	364	
			1.89	II	19400	(86400)				2.28	III	20300	(90300)	3	4D17DC	364	
			2.32	III	21700	(96700)				2.80	III	22100	(98300)	3	4E17DC	364	
			2.51	III	21700	(96700)				3.03	III	22100	(98300)	3	4E18DB	364	
3.42	47500	(5370)	0.82	-	7250	(32200)	4.13	39400	(4450)	0.99	-	10900	(48300)	3	4C14DC	424	
			0.96	-	7250	(32200)				1.16	I	10900	(48300)	3	4C16DB	424	
			1.33	I	18400	(81700)				1.45	II	19600	(87300)	3	4D16DB	424	
			1.62	II	18400	(81700)				1.96	II	19600	(87300)	3	4D17DC	424	
			2.00	III	21400	(95200)				2.41	III	21800	(97000)	3	4E17DC	424	
			2.16	III	21400	(95200)				2.61	III	21800	(97000)	3	4E18DB	424	
2.90	56200	(6350)	1.13	I	16700	(74100)	3.50	46500	(5260)	1.36	I	18500	(82500)	3	4D16DB	501	
			1.37	I	16700	(74100)				1.45	II	18500	(82500)	3	4D17DB	501	
			1.45	II	21000	(93200)				1.45	II	21400	(95400)	3	4E17DB	501	
			1.69	II	21000	(93200)				2.04	III	21400	(95400)	3	4E17DC	501	
			1.83	II	21000	(93200)				2.21	III	21400	(95400)	3	4E18DB	501	
			2.63	III	29700	(132000)				3.17	III	30200	(134000)	3	4F18DB	501	
			2.74	III	29700	(132000)				3.31	III	30200	(134000)	3	4F19DB	501	

Cyclo® BBB4

Selection Tables

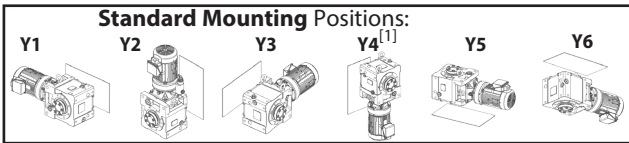
Notes: [1] For Y4 Double Reductions (4XXXDX) refer to the above table; for Y4 single reduction refer to tables on pages 2.91-2.130.

[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

All 1HP+ motors require EP suffix in model number and can be used with a VFD, unless noted.

Standard Mounting Selection Tables

**3 HP
(2.2 kW)**



Dimension Pages:
 Single Reduction 2.132-2.143
 Single Reduction, Y2 2.144
 Double Reduction 2.146-2.161
 Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz					60 Hz					Selection							
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Base			VFD ^[2]
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code	Frame Size	Ratio	
2.51	64800 (7320)		0.98	-	14400 (64100)	3.03	53700 (6070)			1.18	I	17200 (76500)	3	4D16DB	578		
			1.19	I	14400 (64100)					1.44	II	17200 (76500)	3	4D17DB	578		
			1.45	II	20500 (91300)					1.45	II	21100 (93800)	3	4E17DB	578		
			1.58	II	20500 (91300)					1.91	II	21100 (93800)	3	4E18DB	578		
			2.29	III	29400 (131000)					2.76	III	29800 (133000)	3	4F18DB	578		
			2.38	III	29400 (131000)					2.87	III	29800 (133000)	3	4F19DB	578		
2.12	76600 (8650)		0.83	-	9800 (43600)	2.56	63500 (7170)			1.00	I	14800 (65900)	3	4D16DB	683		
			1.01	I	9800 (43600)					1.22	I	14800 (65900)	3	4D17DB	683		
			1.24	I	19900 (88600)					1.45	II	20600 (91600)	3	4E17DB	683		
			1.34	I	19900 (88600)					1.62	II	20600 (91600)	3	4E18DB	683		
			1.94	II	28900 (128000)					2.34	III	29400 (131000)	3	4F18DB	683		
			2.01	III	28900 (128000)					2.43	III	29400 (131000)	3	4F19DB	683		
1.79	90700 (10300)		1.05	I	19200 (85400)	2.16	75200 (8490)			1.26	I	20000 (88900)	3	4E17DB	809		
			1.13	I	19200 (85400)					1.37	I	20000 (88900)	3	4E18DA	809		
			1.45	II	28200 (126000)					1.45	II	28900 (129000)	3	4F18DA	809		
			1.66	II	28200 (126000)					2.00	III	28900 (129000)	3	4F18DB	809		
			1.70	II	28200 (126000)					2.05	III	28900 (129000)	3	4F19DA	809		
1.52	107000 (12100)		0.88	-	15600 (69300)	1.83	88800 (10000)			1.07	I	19300 (85900)	3	4E17DB	956		
			0.96	-	15600 (69300)					1.16	I	19300 (85900)	3	4E18DA	956		
			1.40	II	27500 (122000)					1.45	II	28300 (126000)	3	4F18DA	956		
			1.40	II	27500 (122000)					1.70	II	28300 (126000)	3	4F18DB	956		
			1.44	II	27500 (122000)					1.73	II	28300 (126000)	3	4F19DA	956		
1.30	125000 (14200)		0.82	-	6260 (27800)	1.57	104000 (11700)			0.99	-	16700 (74100)	3	4E18DA	1117		
			1.20	I	26800 (119000)					1.45	II	27700 (123000)	3	4F18DA	1117		
			1.20	I	26800 (119000)					1.45	II	27700 (123000)	3	4F18DB	1117		
			1.23	I	26800 (119000)					1.48	II	27700 (123000)	3	4F19DA	1117		
1.10	148000 (16700)		1.02	I	25800 (115000)	1.33	123000 (13900)			1.23	I	26900 (120000)	3	4F18DA	1320		
			1.04	I	25800 (115000)					1.26	I	26900 (120000)	3	4F19DA	1320		
0.876	186000 (21000)		0.81	-	20300 (90200)	1.06	154000 (17400)			0.98	-	25500 (113000)	3	4F18DA	1656		
			0.83	-	20300 (90200)					1.00	I	25500 (113000)	3	4F19DA	1656		

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Selection Tables

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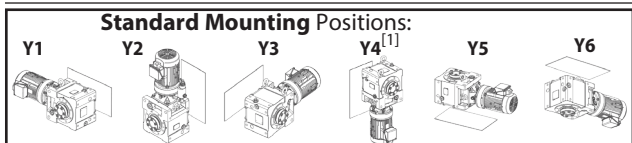
Notes: [1] For Y4 Double Reductions (4XXXDX) refer to the above table; for Y4 single reduction refer to tables on pages 2.91-2.130..

[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

All 1HP+ motors require EP suffix in model number and can be used with a VFD, unless noted.

Standard Mounting Selection Tables

**5 HP
(3.7 kW)**



Dimension Pages:
 Single Reduction 2.132-2.143
 Single Reduction, Y2 2.144
 Double Reduction 2.146-2.161
 Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz						60 Hz						Selection					
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Base			VFD ^[2]
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code	Frame Size	Ratio	
138	2090 (236)		2.59	III	3810 (16900)	167	1730 (195)		2.59	III	3630 (16200)	5	4A120	11			
			2.98	III	3810 (16900)				2.98	III	3630 (16200)						
113	2550 (288)		2.59	III	4000 (17800)	137	2110 (238)		2.59	III	3820 (17000)	5	4A120	13			
			2.98	III	4000 (17800)				2.98	III	3820 (17000)						
104	2780 (315)		2.59	III	4080 (18200)	125	2310 (261)		2.59	III	3900 (17400)	5	4A120	14			
			2.98	III	4080 (18200)				2.98	III	3900 (17400)						
90.6	3180 (359)		2.59	III	4190 (18600)	109	2640 (298)		2.59	III	4010 (17800)	5	4A120	16			
			2.98	III	4190 (18600)				2.98	III	4010 (17800)						
82.9	3480 (393)		2.59	III	4280 (19000)	100.0	2880 (326)		2.59	III	4100 (18200)	5	4A120	18			
			2.98	III	4280 (19000)				2.98	III	4100 (18200)						
69.0	4180 (472)		1.06	I	4470 (19900)	83.3	3460 (391)		1.06	I	4290 (19100)	5	4A115	21			
			1.77	II	4470 (19900)				1.77	II	4290 (19100)						
			2.03	III	4470 (19900)				2.03	III	4290 (19100)						
			2.73	III	4470 (19900)				2.73	III	4290 (19100)						
64.7	4450 (503)		1.77	II	4530 (20100)	78.1	3690 (417)		1.77	II	4350 (19400)	5	4A120	22			
			2.03	III	4530 (20100)				2.03	III	4350 (19400)						
			2.56	III	4530 (20100)				2.56	III	4350 (19400)						
59.2	4870 (550)		1.77	II	4610 (20500)	71.4	4040 (456)		1.77	II	4440 (19700)	5	4A120	25			
			2.03	III	4610 (20500)				2.03	III	4440 (19700)						
			2.34	III	4610 (20500)				2.34	III	4440 (19700)						
51.8	5570 (629)		1.06	I	4730 (21100)	62.5	4610 (521)		1.06	I	4560 (20300)	5	4A115	28			
			1.77	II	4730 (21100)				1.77	II	4560 (20300)						
			2.03	III	4730 (21100)				2.03	III	4560 (20300)						
41.2	7000 (791)		1.06	I	4930 (21900)	49.7	5800 (655)		1.06	I	4770 (21200)	5	4A115	35			
			1.37	I	4930 (21900)				1.37	I	4770 (21200)						
			1.60	II	4930 (21900)				1.60	II	4770 (21200)						
			1.63	II	4930 (21900)				1.63	II	4770 (21200)						
			3.25	III	7180 (32000)				3.25	III	6880 (30600)						
37.7	7660 (865)		1.06	I	5000 (22200)	45.5	6340 (717)		1.06	I	4850 (21600)	5	4A115	39			
			1.37	I	5000 (22200)				1.37	I	4850 (21600)						
			1.49	II	5000 (22200)				1.49	II	4850 (21600)						
			1.60	II	7330 (32600)				1.60	II	7020 (31200)						
			2.97	III	7330 (32600)				2.97	III	7020 (31200)						
31.9	9050 (1020)		1.05	I	4500 (20000)	38.5	7500 (847)		1.05	I	4980 (22200)	5	4A115	46			
			1.26	I	4500 (20000)				1.26	I	4980 (22200)						
			1.37	I	7600 (33800)				1.37	I	7300 (32500)						
			1.60	II	7600 (33800)				1.60	II	7300 (32500)						
			2.51	III	7600 (33800)				2.51	III	7300 (32500)						

Notes: [1] For Y4 Double Reductions (4XXXDX) refer to the above table; for Y4 single reduction refer to tables on pages 2.91-2.130.

[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

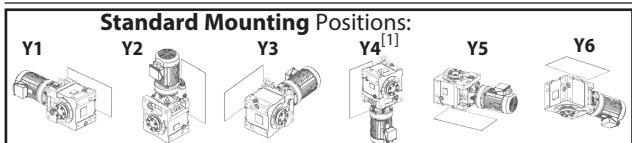
All 1HP+ motors require EP suffix in model number and can be used with a VFD, unless noted.

Cyclo® BBB4

Selection Tables

Standard Mounting Selection Tables

**5 HP
(3.7 kW)**



Dimension Pages:
 Single Reduction 2.132-2.143
 Single Reduction, Y2 2.144
 Double Reduction 2.146-2.161
 Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz					60 Hz					Selection						
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor		Base			VFD ^[2]	
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code		Frame Size
27.6	10400	(1180)	1.05	I	3790	(16900)	33.3	8650	(977)	1.05	I	4660	(20700)	5	4A115	53
			1.09	I	3790	(16900)				1.09	I	4660	(20700)	5	4A120	53
			1.37	I	7820	(34800)				1.37	I	7530	(33500)	5	4B120	53
			1.60	II	7820	(34800)				1.60	II	7530	(33500)	5	4B125	53
			2.18	III	7820	(34800)				2.18	III	7530	(33500)	5	4B140	53
24.4	11800	(1340)	0.96	-	2780	(12300)	29.4	9800	(1110)	0.96	-	4140	(18400)	5	4A115	60
			1.32	I	8020	(35700)				1.32	I	7730	(34400)	5	4B120	60
			1.53	II	8020	(35700)				1.53	II	7730	(34400)	5	4B125	60
			1.92	II	8020	(35700)				1.92	II	7730	(34400)	5	4B140	60
			2.73	III	11700	(51800)				2.73	III	11100	(49600)	5	4C140	60
21.6	13400	(1510)	1.07	I	8200	(36500)	26.0	11100	(1250)	1.07	I	7910	(35200)	5	4B120	67
			1.30	I	8200	(36500)				1.30	I	7910	(35200)	5	4B125	67
			1.70	II	8200	(36500)				1.70	II	7910	(35200)	5	4B140	67
			2.34	III	12000	(53300)				2.34	III	11500	(51000)	5	4C140	67
			2.56	III	12000	(53300)				2.56	III	11500	(51000)	5	4C145	67
19.7	14600	(1650)	1.07	I	8320	(37000)	23.8	12100	(1370)	1.07	I	8050	(35800)	5	4B120	74
			1.30	I	8320	(37000)				1.30	I	8050	(35800)	5	4B125	74
			1.56	II	8320	(37000)				1.56	II	8050	(35800)	5	4B140	74
			2.34	III	12200	(54400)				2.34	III	11700	(52100)	5	4C140	74
			2.56	III	12200	(54400)				2.56	III	11700	(52100)	5	4C145	74
18.1	15900	(1800)	1.07	I	8220	(36600)	21.9	13200	(1490)	1.07	I	8180	(36400)	5	4B125	80
			1.43	II	8220	(36600)				1.43	II	8180	(36400)	5	4B140	80
			1.86	II	12500	(55400)				1.86	II	11900	(53100)	5	4C140	80
			2.14	III	12500	(55400)				2.14	III	11900	(53100)	5	4C145	80
			2.66	III	12500	(55400)				2.66	III	11900	(53100)	5	4C160	80
			2.86	III	12500	(55400)				2.86	III	11900	(53100)	5	4C165	80
16.6	17400	(1970)	1.07	I	7810	(34700)	20.0	14400	(1630)	1.07	I	8310	(36900)	5	4B125	88
			1.31	I	7810	(34700)				1.31	I	8310	(36900)	5	4B140	88
			1.86	II	12700	(56500)				1.86	II	12200	(54200)	5	4C140	88
			2.14	III	12700	(56500)				2.14	III	12200	(54200)	5	4C145	88
			2.55	III	12700	(56500)				2.55	III	12200	(54200)	5	4C160	88
			2.66	III	19300	(85800)				2.66	III	18400	(81900)	5	4D160	88
14.3	20200	(2280)	0.94	-	6870	(30600)	17.2	16700	(1890)	1.02	I	8000	(35600)	5	4B125	102
			1.13	I	6870	(30600)				1.13	I	8000	(35600)	5	4B140	102
			1.61	II	13100	(58200)				1.61	II	12600	(56000)	5	4C140	102
			2.04	III	13100	(58200)				2.04	III	12600	(56000)	5	4C145	102
			2.20	III	13100	(58200)				2.25	III	12600	(56000)	5	4C160	102
			2.58	III	20000	(89000)				2.84	III	19100	(85000)	5	4D160	102

Cyclo® BBB4

Selection Tables

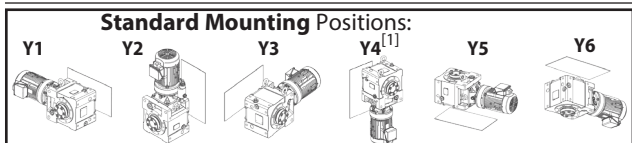
Notes: [1] For Y4 Double Reductions (4XXXDX) refer to the above table; for Y4 single reduction refer to tables on pages 2.91-2.130..

[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

All 1HP+ motors require EP suffix in model number and can be used with a VFD, unless noted.

Standard Mounting Selection Tables

**5 HP
(3.7 kW)**



Dimension Pages:
 Single Reduction 2.132-2.143
 Single Reduction, Y2 2.144
 Double Reduction 2.146-2.161
 Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz				60 Hz				Selection										
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor		Base			VFD ^[2]			
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code		Frame Size	Ratio	
12.9	22300	(2520)	1.02	I	5960	(26500)	15.6	18500	(2090)	1.02	I	7490	(33300)	5	4B140	112		
			1.41	II	13300	(59300)				1.41	II	12800	(57100)	5	4C140	112		
			1.69	II	13300	(59300)				2.04	III	12800	(57100)	5	4C145	112		
			2.04	III	13300	(59300)				2.04	III	12800	(57100)	5	4C160	112		
			2.17	III	20500	(91200)				2.61	III	19600	(87100)	5	4D160	112		
			2.59	III	20500	(91200)				3.08	III	19600	(87100)	5	4D165	112		
11.8	24400	(2750)	0.93	-	4760	(21200)	14.3	20200	(2280)	0.93	-	6870	(30600)	5	4B140	123		
			1.41	II	13600	(60300)				1.41	II	13100	(58200)	5	4C140	123		
			1.69	II	13600	(60300)				1.87	II	13100	(58200)	5	4C145	123		
			1.82	II	13600	(60300)				1.87	II	13100	(58200)	5	4C160	123		
			2.17	III	20900	(93100)				2.61	III	20000	(89000)	5	4D160	123		
			2.59	III	20900	(93100)				3.08	III	20000	(89000)	5	4D165	123		
9.63	29900	(3380)	1.06	I	13600	(60700)	11.6	24800	(2800)	1.06	I	13600	(60500)	5	4C140	151		
			1.26	I	13600	(60700)				1.46	II	13600	(60500)	5	4C145	151		
			1.48	II	13600	(60700)				1.52	II	13600	(60500)	5	4C160	151		
			1.74	II	20900	(92800)				2.01	III	21000	(93500)	5	4D160	151		
			2.11	III	20900	(92800)				2.14	III	21000	(93500)	5	4D165	151		
			2.45	III	20900	(92800)				2.58	III	21000	(93500)	5	4D170	151		
			2.58	III	20900	(92800)				2.58	III	21000	(93500)	5	4D175	151		
			2.58	III	20900	(92800)				3.11	III	21000	(93500)	5	4D180	151		(-)
8.12	35500	(4010)	1.00	I	12500	(55600)	9.80	29400	(3320)	1.14	I	13700	(61100)	5	4C145	179		
			1.25	I	12500	(55600)				1.28	I	13700	(61100)	5	4C160	179		
			1.49	II	20300	(90400)				1.55	II	20900	(93000)	5	4D160	179		
			1.78	II	20300	(90400)				2.04	III	20900	(93000)	5	4D165	179		
			2.07	III	20300	(90400)				2.17	III	20900	(93000)	5	4D170	179		
			2.17	III	20300	(90400)				2.17	III	20900	(93000)	5	4D175	179		
			2.17	III	20300	(90400)				2.62	III	20900	(93000)	5	4D180	179		(-)
			2.67	III	22000	(97900)				2.89	III	22300	(99300)	5	4E175	179		
			2.89	III	22000	(97900)				3.24	III	22300	(99300)	5	4E180	179		(-)
			2.89	III	22000	(97900)				3.49	III	22300	(99300)	5	4E185	179		(-)

Cyclo® BBB4

Selection Tables

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Notes: [1] For Y4 Double Reductions (4XXXDX) refer to the above table; for Y4 single reduction refer to tables on pages 2.91-2.130.

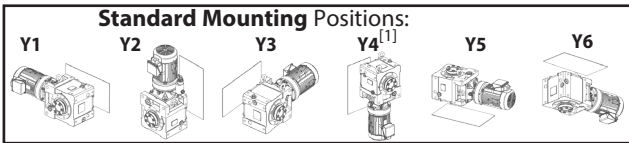
[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

All 1HP+ motors require EP suffix in model number and can be used with a VFD, unless noted.

(-) = For Inverter Operation, starting condition may require ambient temperature of 5° C or higher.

Standard Mounting Selection Tables

**5 HP
(3.7 kW)**



Dimension Pages:
 Single Reduction 2.132-2.143
 Single Reduction, Y2 2.144
 Double Reduction 2.146-2.161
 Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

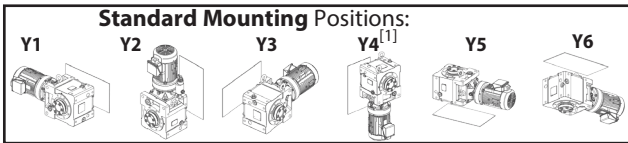
50Hz						60 Hz						Selection												
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Base			VFD ^[2]							
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code	Frame Size	Ratio								
7.02	41100	(4640)	0.86	-	11000	(48900)	8.47	34000	(3840)	0.99	-	12800	(57100)	5	4C145	207								
			1.08	I	11000	(48900)				1.11	I	12800	(57100)	5	4C160	207								
			1.19	I	19700	(87500)				1.19	I	20500	(91100)	5	4D160	207								
			1.54	II	19700	(87500)				1.55	II	20500	(91100)	5	4D165	207								
			1.79	II	19700	(87500)				1.88	II	20500	(91100)	5	4D170	207								
			1.88	II	19700	(87500)				1.88	II	20500	(91100)	5	4D175	207								
			1.88	II	19700	(87500)				2.27	III	20500	(91100)	5	4D180	207		(-)						
			2.24	III	21700	(96600)				2.24	III	22100	(98200)	5	4E175	207								
			2.50	III	21700	(96600)				2.64	III	22100	(98200)	5	4E180	207		(-)						
			2.50	III	21700	(96600)				3.02	III	22100	(98200)	5	4E185	207		(-)						
			2.64	III	30400	(135000)				2.64	III	30700	(137000)	5	4F180	207		(-)						
			5.84	49400	(5580)	0.90				-	7610	(33900)	7.04	40900	(4630)	0.92		-	11000	(49000)	5	4C160	249	
1.28	I	18500				(82200)	1.53	II	19700	(87600)	5	4D165				249								
1.49	II	18500				(82200)	1.56	II	19700	(87600)	5	4D170				249								
1.56	II	18500				(82200)	1.56	II	19700	(87600)	5	4D175				249								
1.56	II	18500				(82200)	1.88	II	19700	(87600)	5	4D180				249	(-)							
1.89	II	21300				(94800)	1.93	II	21700	(96700)	5	4E175				249								
2.08	III	21300				(94800)	2.38	III	21700	(96700)	5	4E180				249	(-)							
2.08	III	21300				(94800)	2.51	III	21700	(96700)	5	4E185				249	(-)							
2.38	III	30000				(134000)	2.38	III	30400	(135000)	5	4F180				249	(-)							
2.65	III	30000				(134000)	2.65	III	30400	(135000)	5	4F185				249	(-)							
4.76	60600	(6840)				0.87	-	16400	(72800)	5.75	50200	(5670)				0.94	-	18400	(81700)	5	4D160	305		
						1.02	I	16400	(72800)							1.05	I	18400	(81700)	5	4D165	305		
			1.27	I	16400	(72800)	1.27	I	18400				(81700)	5	4D175	305								
			1.27	I	16400	(72800)	1.54	II	18400				(81700)	5	4D180	305	(-)							
			1.52	II	20700	(92200)	1.52	II	21300				(94600)	5	4E175	305								
			1.70	II	20700	(92200)	1.93	II	21300				(94600)	5	4E180	305	(-)							
			1.70	II	20700	(92200)	2.05	III	21300				(94600)	5	4E185	305	(-)							
			1.93	II	29600	(131000)	1.93	II	30000				(133000)	5	4F180	305	(-)							
			2.32	III	29600	(131000)	2.32	III	30000				(133000)	5	4F185	305	(-)							
			2.63	III	29600	(131000)	3.18	III	30000				(133000)	5	4F190	305	(-)							
			3.98	68700	(7760)	0.92	-	13100	(58500)				4.81	56900	(6430)	1.11	I	16500	(73400)	5	4D16DC	364		
						1.12	I	13100	(58500)							1.36	I	16500	(73400)	5	4D17DC	364		
1.38	I	20300				(90400)	1.67	II	20900	(93100)	5	4E17DC				364								
1.49	II	20300				(90400)	1.80	II	20900	(93100)	5	4E18DB				364								
2.15	III	29200				(130000)	2.59	III	29700	(132000)	5	4F18DB				364								
2.24	III	29200				(130000)	2.71	III	29700	(132000)	5	4F19DB				364								

Cyclo® BBB4
 Selection Tables

Notes: [1] For Y4 Double Reductions (4XXXDX) refer to the above table; for Y4 single reduction refer to tables on pages 2.91-2.130.
 [2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):
 All 1HP+ motors require EP suffix in model number and can be used with a VFD, unless noted.
 (-) = For Inverter Operation, starting condition may require ambient temperature of 5° C or higher.

Standard Mounting Selection Tables

**5 HP
(3.7 kW)**



Dimension Pages:
 Single Reduction 2.132-2.143
 Single Reduction, Y2 2.144
 Double Reduction 2.146-2.161
 Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz					60 Hz					Selection			VFD ^[2]		
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor		Base			
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code	Frame Size
3.42	79900 (9030)		0.97	-	7810 (34700)	4.13	66200 (7480)			1.17	I	14000 (62100)	5	4D17DC	424
			1.19	I	19800 (87900)					1.43	II	20400 (91000)	5	4E17DC	424
			1.28	I	19800 (87900)					1.55	II	20400 (91000)	5	4E18DB	424
			1.81	II	28700 (128000)					2.19	III	29300 (130000)	5	4F18DB	424
			1.93	II	28700 (128000)					2.33	III	29300 (130000)	5	4F19DB	424
2.90	94500 (10700)		1.00	I	19000 (84600)	3.50	78300 (8840)			1.21	I	19800 (88200)	5	4E17DC	501
			1.09	I	19000 (84600)					1.31	I	19800 (88200)	5	4E18DB	501
			1.56	II	28100 (125000)					1.89	II	28800 (128000)	5	4F18DB	501
			1.63	II	28100 (125000)					1.97	II	28800 (128000)	5	4F19DB	501
2.51	109000 (12300)		0.87	-	15000 (66600)	3.03	90300 (10200)			1.05	I	19200 (85500)	5	4E17DC	578
			0.94	-	15000 (66600)					1.14	I	19200 (85500)	5	4E18DB	578
			1.36	I	27500 (122000)					1.64	II	28300 (126000)	5	4F18DB	578
			1.41	II	27500 (122000)					1.71	II	28300 (126000)	5	4F19DB	578
2.12	129000 (14600)		1.15	I	26600 (118000)	2.56	107000 (12100)			1.39	I	27600 (123000)	5	4F18DB	683
			1.20	I	26600 (118000)					1.44	II	27600 (123000)	5	4F19DA	683
1.79	153000 (17200)		0.99	-	25600 (114000)	2.16	126000 (14300)			1.19	I	26700 (119000)	5	4F18DB	809
			1.01	I	25600 (114000)					1.22	I	26700 (119000)	5	4F19DA	809
1.52	180000 (20400)		0.84	-	22300 (99400)	1.83	149000 (16900)			1.01	I	25700 (114000)	5	4F18DB	956
			0.85	-	22300 (99400)					1.03	I	25700 (114000)	5	4F19DA	956

Cyclo® BBB4

Selection Tables

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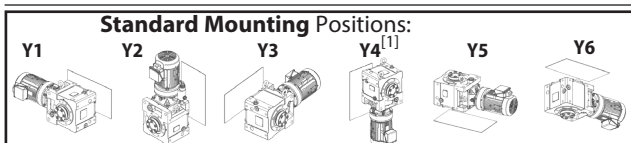
Notes: [1] For Y4 Double Reductions (4XXXDX) refer to the above table; for Y4 single reduction refer to tables on pages 2.91-2.130.

[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

All 1HP+ motors require EP suffix in model number and can be used with a VFD, unless noted.

Standard Mounting Selection Tables

**7.5 HP
(5.5 kW)**



Dimension Pages:
 Single Reduction 2.132-2.143
 Single Reduction, Y2 2.144
 Double Reduction 2.146-2.161
 Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz					60 Hz					Selection			VFD ^[2]			
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor		Base				
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code	Frame Size	Ratio
138	3100	(351)	1.75	II	3670	(16300)	167	2570	(291)	1.75	II	3520	(15600)	8	4A120	11
			2.00	III	3670	(16300)				2.00	III	3520	(15600)	8	4A125	11
			3.33	III	3700	(16500)				3.68	III	3550	(15800)	8	4A145	11
113	3780	(428)	1.75	II	3830	(17000)	137	3140	(354)	1.75	II	3680	(16400)	8	4A120	13
			2.00	III	3830	(17000)				2.00	III	3680	(16400)	8	4A125	13
104	4140	(468)	1.75	II	3900	(17300)	125	3430	(387)	1.75	II	3750	(16700)	8	4A120	14
			2.00	III	3900	(17300)				2.00	III	3750	(16700)	8	4A125	14
			2.76	III	3910	(17400)				2.76	III	3760	(16700)	8	4A140	14
90.6	4730	(534)	1.75	II	3980	(17700)	109	3920	(443)	1.75	II	3840	(17100)	8	4A120	16
			2.00	III	3980	(17700)				2.00	III	3840	(17100)	8	4A125	16
			2.41	III	4000	(17800)				2.41	III	3850	(17100)	8	4A140	16
82.9	5170	(584)	1.75	II	4050	(18000)	100.0	4290	(484)	1.75	II	3910	(17400)	8	4A120	18
			2.00	III	4050	(18000)				2.00	III	3910	(17400)	8	4A125	18
			2.21	III	4060	(18100)				2.21	III	3920	(17500)	8	4A140	18
69.0	6210	(701)	1.19	I	4190	(18600)	83.3	5140	(581)	1.19	I	4060	(18100)	8	4A120	21
			1.37	I	4190	(18600)				1.37	I	4060	(18100)	8	4A125	21
			1.84	II	4190	(18600)				1.84	II	4060	(18100)	8	4A140	21
			2.36	III	6130	(27300)				2.36	III	5870	(26100)	8	4B140	21
			2.75	III	6130	(27300)				2.75	III	5870	(26100)	8	4B145	21
64.7	6620	(748)	1.19	I	4230	(18800)	78.1	5490	(620)	1.19	I	4110	(18300)	8	4A120	22
			1.37	I	4230	(18800)				1.37	I	4110	(18300)	8	4A125	22
			1.72	II	4230	(18800)				1.72	II	4110	(18300)	8	4A140	22
			2.36	III	6220	(27700)				2.36	III	5960	(26500)	8	4B140	22
			2.75	III	6220	(27700)				2.75	III	5960	(26500)	8	4B145	22
59.2	7240	(818)	1.19	I	4290	(19100)	71.4	6000	(678)	1.19	I	4170	(18500)	8	4A120	25
			1.37	I	4290	(19100)				1.37	I	4170	(18500)	8	4A125	25
			1.58	II	4290	(19100)				1.58	II	4170	(18500)	8	4A140	25
			2.36	III	6340	(28200)				2.36	III	6080	(27100)	8	4B140	25
			2.75	III	6340	(28200)				2.75	III	6080	(27100)	8	4B145	25
51.8	8280	(935)	1.19	I	4360	(19400)	62.5	6860	(775)	1.19	I	4250	(18900)	8	4A120	28
			1.37	I	4360	(19400)				1.37	I	4250	(18900)	8	4A125	28
			2.36	III	6520	(29000)				2.36	III	6270	(27900)	8	4B140	28
			2.75	III	6520	(29000)				2.75	III	6270	(27900)	8	4B145	28
41.2	10400	(1180)	1.08	I	3810	(17000)	49.7	8620	(974)	1.08	I	4380	(19500)	8	4A125	35
			1.10	I	3810	(17000)				1.10	I	4380	(19500)	8	4A140	35
			2.19	III	6820	(30300)				2.19	III	6570	(29200)	8	4B140	35
			2.36	III	9930	(44200)				2.36	III	9500	(42200)	8	4C140	35
			2.75	III	9930	(44200)				2.75	III	9500	(42200)	8	4C145	35

Cyclo® BBB4

Selection Tables

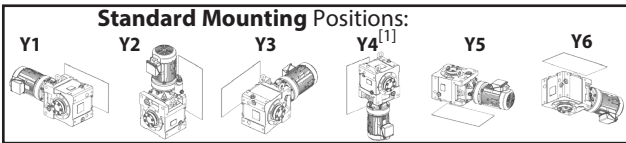
Notes: [1] For Y4 Double Reductions (4XXXDX) refer to the above table; for Y4 single reduction refer to tables on pages 2.91-2.130..

[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

All 1HP+ motors require EP suffix in model number and can be used with a VFD, unless noted.

Standard Mounting Selection Tables

7.5 HP
(5.5 kW)



Dimension Pages:
Single Reduction 2.132-2.143
Single Reduction, Y2 2.144
Double Reduction 2.146-2.161
Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz						60 Hz						Selection					
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Base			VFD ^[2]
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code	Frame Size	Ratio	
37.7	11400	(1290)	1.00	I	3160	(14000)	45.5	9430	(1070)	1.00	I	4320	(19200)	8	4A125	39	
			1.08	I	6930	(30800)				1.08	I	6690	(29800)	8	4B125	39	
			2.00	III	6930	(30800)				2.00	III	6690	(29800)	8	4B140	39	
			2.36	III	10100	(45100)				2.36	III	9700	(43200)	8	4C140	39	
			2.75	III	10100	(45100)				2.75	III	9700	(43200)	8	4C145	39	
31.9	13400	(1520)	1.08	I	7120	(31700)	38.5	11100	(1260)	1.08	I	6900	(30700)	8	4B125	46	
			1.69	II	7120	(31700)				1.69	II	6900	(30700)	8	4B140	46	
			2.36	III	10500	(46800)				2.36	III	10100	(44900)	8	4C140	46	
			2.75	III	10500	(46800)				2.75	III	10100	(44900)	8	4C145	46	
27.6	15500	(1750)	1.08	I	7280	(32400)	33.3	12900	(1450)	1.08	I	7070	(31500)	8	4B125	53	
			1.47	II	7280	(32400)				1.47	II	7070	(31500)	8	4B140	53	
			2.18	III	10800	(48200)				2.18	III	10400	(46300)	8	4C140	53	
			2.63	III	10800	(48200)				2.65	III	10400	(46300)	8	4C145	53	
			2.86	III	10800	(48200)				2.93	III	10400	(46300)	8	4C160	53	
24.4	17600	(1990)	1.03	I	7400	(32900)	29.4	14600	(1650)	1.03	I	7210	(32100)	8	4B125	60	
			1.29	I	7400	(32900)				1.29	I	7210	(32100)	8	4B140	60	
			1.84	II	11100	(49400)				1.84	II	10700	(47600)	8	4C140	60	
			2.18	III	11100	(49400)				2.18	III	10700	(47600)	8	4C145	60	
			2.38	III	11100	(49400)				2.38	III	10700	(47600)	8	4C160	60	
			2.52	III	11100	(49400)				2.59	III	10700	(47600)	8	4C165	60	
21.6	19900	(2240)	1.15	I	6990	(31100)	26.0	16500	(1860)	1.15	I	7330	(32600)	8	4B140	67	
			1.57	II	11400	(50600)				1.57	II	11000	(48800)	8	4C140	67	
			1.72	II	11400	(50600)				1.99	II	11000	(48800)	8	4C145	67	
			2.29	III	11400	(50600)				2.29	III	11000	(48800)	8	4C160	67	
			2.35	III	17500	(77900)				2.35	III	16700	(74500)	8	4D160	67	
			2.91	III	17500	(77900)				2.93	III	16700	(74500)	8	4D165	67	
19.7	21700	(2450)	0.87	-	6220	(27700)	23.8	18000	(2030)	0.89	-	7420	(33000)	8	4B125	74	
			1.05	I	6220	(27700)				1.05	I	7420	(33000)	8	4B140	74	
			1.57	II	11600	(51400)				1.57	II	11200	(49600)	8	4C140	74	
			1.72	II	11600	(51400)				1.99	II	11200	(49600)	8	4C145	74	
			2.04	III	11600	(51400)				2.09	III	11200	(49600)	8	4C160	74	
			2.35	III	17900	(79600)				2.35	III	17100	(76100)	8	4D160	74	
			2.91	III	17900	(79600)				2.93	III	17100	(76100)	8	4D165	74	

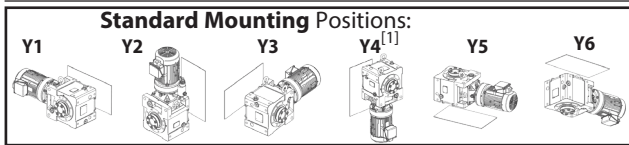
Notes: [1] For Y4 Double Reductions (4XXXDX) refer to the above table; for Y4 single reduction refer to tables on pages 2.91-2.130.

[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

All 1HP+ motors require EP suffix in model number and can be used with a VFD, unless noted.

Standard Mounting Selection Tables

**7.5 HP
(5.5 kW)**



Dimension Pages:
 Single Reduction, Y2 2.132-2.143
 Single Reduction, Y2 2.144
 Double Reduction 2.146-2.161
 Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz					60 Hz					Selection							
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor		Base			VFD ^[2]		
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code		Frame Size	Ratio
18.1	23600	(2670)	1.25	I	11700	(52100)	21.9	19600	(2210)	1.25	I	11300	(50400)	8	4C140	80	
			1.44	II	11700	(52100)				1.44	II	11300	(50400)	8	4C145	80	
			1.79	II	11700	(52100)				1.79	II	11300	(50400)	8	4C160	80	
			1.92	II	11700	(52100)				1.92	II	11300	(50400)	8	4C165	80	
			2.44	III	18200	(81200)				2.75	III	17500	(77700)	8	4D165	80	
			2.83	III	18200	(81200)				2.87	III	17500	(77700)	8	4D170	80	
16.6	25900	(2920)	0.88	-	3570	(15900)	20.0	21400	(2420)	0.88	-	6350	(28300)	8	4B140	88	
			1.25	I	11900	(52900)				1.25	I	11500	(51300)	8	4C140	88	
			1.44	II	11900	(52900)				1.44	II	11500	(51300)	8	4C145	88	
			1.72	II	11900	(52900)				1.76	II	11500	(51300)	8	4C160	88	
			1.79	II	18600	(82800)				1.79	II	17800	(79300)	8	4D160	88	
			2.44	III	18600	(82800)				2.75	III	17800	(79300)	8	4D165	88	
			2.83	III	18600	(82800)				2.87	III	17800	(79300)	8	4D170	88	
			2.98	III	18600	(82800)				2.98	III	17800	(79300)	8	4D175	88	
			2.98	III	18600	(82800)				3.60	III	17800	(79300)	8	4D180	88	
14.3	30000	(3390)	1.08	I	12200	(54000)	17.2	24900	(2810)	1.08	I	11800	(52600)	8	4C140	102	
			1.37	I	12200	(54000)				1.37	I	11800	(52600)	8	4C145	102	
			1.48	II	12200	(54000)				1.52	II	11800	(52600)	8	4C160	102	
			1.74	II	19200	(85500)				1.91	II	18500	(82100)	8	4D160	102	
			2.07	III	19200	(85500)				2.07	III	18500	(82100)	8	4D165	102	
			2.45	III	19200	(85500)				2.57	III	18500	(82100)	8	4D170	102	
			2.57	III	19200	(85500)				2.57	III	18500	(82100)	8	4D175	102	
			2.57	III	19200	(85500)				3.10	III	18500	(82100)	8	4D180	102	
			2.90	III	22300	(99100)				2.90	III	22500	(100000)	8	4E175	102	
			2.90	III	22300	(99100)				3.50	III	22500	(100000)	8	4E180	102	
12.9	33100	(3740)	1.14	I	12300	(54700)	15.6	27400	(3100)	1.37	I	12000	(53300)	8	4C145	112	
			1.37	I	12300	(54700)				1.37	I	12000	(53300)	8	4C160	112	
			1.46	II	19600	(87300)				1.76	II	18900	(83900)	8	4D160	112	
			1.74	II	19600	(87300)				2.07	III	18900	(83900)	8	4D165	112	
			2.03	III	19600	(87300)				2.18	III	18900	(83900)	8	4D170	112	
			2.33	III	19600	(87300)				2.33	III	18900	(83900)	8	4D175	112	
			2.33	III	19600	(87300)				2.81	III	18900	(83900)	8	4D180	112	
			2.62	III	22100	(98400)				2.75	III	22400	(99700)	8	4E175	112	

Cyclo® BBB4

Selection Tables

Notes: [1] For Y4 Double Reductions (4XXXDX) refer to the above table; for Y4 single reduction refer to tables on pages 2.91-2.130..

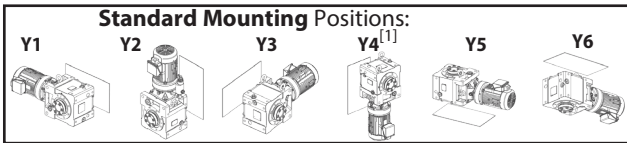
[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

All 1HP+ motors require EP suffix in model number and can be used with a VFD, unless noted.

(-) = For Inverter Operation, starting condition may require ambient temperature of 5° C or higher.

Standard Mounting Selection Tables

7.5 HP
(5.5 kW)



Dimension Pages:
Single Reduction 2.132-2.143
Single Reduction, Y2 2.144
Double Reduction 2.146-2.161
Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz						60 Hz						Selection						
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Base			VFD ^[2]	
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code	Frame Size	Ratio		
11.8	36200	(4090)	0.95	-	12300	(54800)	14.3	30000	(3390)	0.95	-	12200	(54000)	8	4C140	123		
			1.14	I	12300	(54800)				1.26	I	12200	(54000)	8	4C145	123		
			1.46	II	20000	(88900)				1.76	II	19200	(85500)	8	4D160	123		
			1.74	II	20000	(88900)				2.07	III	19200	(85500)	8	4D165	123		
			2.03	III	20000	(88900)				2.13	III	19200	(85500)	8	4D170	123		
			2.13	III	20000	(88900)				2.13	III	19200	(85500)	8	4D175	123		
			2.13	III	20000	(88900)				2.57	III	19200	(85500)	8	4D180	123		(-)
			2.62	III	22000	(97700)				2.75	III	22300	(99100)	8	4E175	123		
			2.84	III	22000	(97700)				3.42	III	22300	(99100)	8	4E180	123		(-)
			2.84	III	22000	(97700)				3.42	III	22300	(99100)	8	4E185	123		(-)
9.63	44500	(5030)	0.85	-	9820	(43700)	11.6	36900	(4160)	0.98	-	12200	(54100)	8	4C145	151		
			1.00	I	9820	(43700)				1.02	I	12200	(54100)	8	4C160	151		
			1.17	I	19200	(85500)				1.35	I	20100	(89200)	8	4D160	151		
			1.42	II	19200	(85500)				1.44	II	20100	(89200)	8	4D165	151		
			1.65	II	19200	(85500)				1.73	II	20100	(89200)	8	4D170	151		
			1.73	II	19200	(85500)				1.73	II	20100	(89200)	8	4D175	151		
			1.73	II	19200	(85500)				2.09	III	20100	(89200)	8	4D180	151		(-)
			2.05	III	21600	(95900)				2.05	III	21900	(97600)	8	4E175	151		
			2.31	III	21600	(95900)				2.75	III	21900	(97600)	8	4E180	151		(-)
			2.31	III	21600	(95900)				2.79	III	21900	(97600)	8	4E185	151		(-)
2.74	III	30200	(135000)	2.75	III	30600	(136000)	8	4F180	151	(-)							
8.12	52800	(5960)	0.84	-	5440	(24200)	9.80	43700	(4940)	0.86	-	10100	(44900)	8	4C160	179		
			1.00	I	17900	(79700)				1.05	I	19300	(86000)	8	4D160	179		
			1.20	I	17900	(79700)				1.37	I	19300	(86000)	8	4D165	179		
			1.39	I	17900	(79700)				1.46	II	19300	(86000)	8	4D170	179		
			1.46	II	17900	(79700)				1.46	II	19300	(86000)	8	4D175	179		
			1.46	II	17900	(79700)				1.77	II	19300	(86000)	8	4D180	179		
			1.79	II	21100	(94000)				1.95	II	21600	(96000)	8	4E175	179		
			1.95	II	21100	(94000)				2.18	III	21600	(96000)	8	4E180	179		
			1.95	II	21100	(94000)				2.35	III	21600	(96000)	8	4E185	179		
			2.18	III	29900	(133000)				2.18	III	30300	(135000)	8	4F180	179		
			2.75	III	29900	(133000)				2.75	III	30300	(135000)	8	4F185	179		

Notes: [1] For Y4 Double Reductions (4XXXDX) refer to the above table; for Y4 single reduction refer to tables on pages 2.91-2.130.

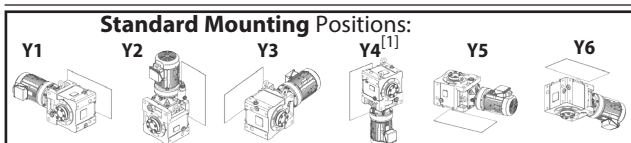
[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

All 1HP+ motors require EP suffix in model number and can be used with a VFD, unless noted.

(-) = For Inverter Operation, starting condition may require ambient temperature of 5° C or higher.

Standard Mounting Selection Tables

7.5 HP
(5.5 kW)



Dimension Pages:
Single Reduction 2.132-2.143
Single Reduction, Y2 2.144
Double Reduction 2.146-2.161
Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz					60 Hz					Selection							
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor		Base			VFD ^[2]		
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code		Frame Size	Ratio
7.02	61000	(6900)	0.80	-	16300	(72300)	8.47	50600	(5710)	0.80	-	18300	(81400)	8	4D160	207	
			1.03	I	16300	(72300)				1.05	I	18300	(81400)	8	4D165	207	
			1.20	I	16300	(72300)				1.26	I	18300	(81400)	8	4D170	207	
			1.26	I	16300	(72300)				1.26	I	18300	(81400)	8	4D175	207	
			1.26	I	16300	(72300)				1.53	II	18300	(81400)	8	4D180	207	
			1.51	II	20700	(92100)				1.51	II	21200	(94500)	8	4E175	207	
			1.68	II	20700	(92100)				1.77	II	21200	(94500)	8	4E180	207	
			1.68	II	20700	(92100)				2.03	III	21200	(94500)	8	4E185	207	
			1.77	II	29500	(131000)				1.77	II	30000	(133000)	8	4F180	207	
			2.18	III	29500	(131000)				2.18	III	30000	(133000)	8	4F185	207	
			2.61	III	29500	(131000)				2.78	III	30000	(133000)	8	4F190	207	(-)
			2.61	III	29500	(131000)				3.15	III	30000	(133000)	8	4F195	207	(-)
5.84	73500	(8300)	0.86	-	12800	(56900)	7.04	60900	(6880)	1.03	I	16300	(72500)	8	4D165	249	
			1.05	I	12800	(56900)				1.05	I	16300	(72500)	8	4D175	249	
			1.05	I	12800	(56900)				1.27	I	16300	(72500)	8	4D180	249	
			1.27	I	20100	(89300)				1.30	I	20700	(92200)	8	4E175	249	
			1.40	II	20100	(89300)				1.60	II	20700	(92200)	8	4E180	249	
			1.40	II	20100	(89300)				1.69	II	20700	(92200)	8	4E185	249	
			1.60	II	29000	(129000)				1.60	II	29500	(131000)	8	4F180	249	
			1.78	II	29000	(129000)				1.78	II	29500	(131000)	8	4F185	249	
			2.17	III	29000	(129000)				2.45	III	29500	(131000)	8	4F190	249	(-)
			2.17	III	29000	(129000)				2.62	III	29500	(131000)	8	4F195	249	(-)
4.76	90000	(10200)	0.86	-	272	(1210)	5.75	74600	(8430)	0.86	-	12400	(55100)	8	4D175	305	
			0.86	-	272	(1210)				1.03	I	12400	(55100)	8	4D180	305	
			1.02	I	19200	(85600)				1.02	I	20000	(89100)	8	4E175	305	
			1.14	I	19200	(85600)				1.30	I	20000	(89100)	8	4E180	305	
			1.14	I	19200	(85600)				1.38	I	20000	(89100)	8	4E185	305	
			1.30	I	28300	(126000)				1.30	I	28900	(129000)	8	4F180	305	
			1.56	II	28300	(126000)				1.56	II	28900	(129000)	8	4F185	305	
			1.77	II	28300	(126000)				2.14	III	28900	(129000)	8	4F190	305	(-)
3.98	102000	(11500)	0.93	-	17200	(76300)	4.81	84600	(9560)	1.12	I	19500	(86800)	8	4E17DC	364	
			1.01	I	17200	(76300)				1.21	I	19500	(86800)	8	4E18DB	364	
			1.45	II	27800	(123000)				1.74	II	28500	(127000)	8	4F18DB	364	
			1.51	II	27800	(123000)				1.82	II	28500	(127000)	8	4F19DB	364	
3.42	119000	(13400)	0.86	-	10800	(47900)	4.13	98400	(11100)	1.04	I	18200	(80800)	8	4E18DB	424	
			1.22	I	27000	(120000)				1.47	II	27900	(124000)	8	4F18DB	424	
			1.30	I	27000	(120000)				1.56	II	27900	(124000)	8	4F19DB	424	

Cyclo® BBB4

Selection Tables

Notes: [1] For Y4 Double Reductions (4XXXDX) refer to the above table; for Y4 single reduction refer to tables on pages 2.91-2.130..

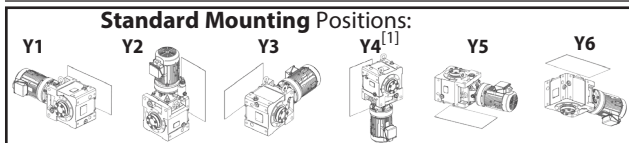
[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

All 1HP+ motors require EP suffix in model number and can be used with a VFD, unless noted.

(-) = For Inverter Operation, starting condition may require ambient temperature of 5° C or higher.

Standard Mounting Selection Tables

**7.5 HP
(5.5 kW)**



Dimension Pages:
 Single Reduction 2.132-2.143
 Single Reduction, Y2 2.144
 Double Reduction 2.146-2.161
 Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz					60 Hz					Selection			VFD ^[2]		
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor		Base			
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code	Frame Size
2.90	140000 (15900)		1.05	I	26100 (116000)	3.50	116000 (13100)			1.27	I	27100 (121000)	8	4F18DB	501
			1.10	I	26100 (116000)					1.32	I	27100 (121000)	8	4F19DB	501
2.51	162000 (18300)		0.92	-	25200 (112000)	3.03	134000 (15200)			1.10	I	26400 (117000)	8	4F18DB	578
			0.95	-	25200 (112000)					1.15	I	26400 (117000)	8	4F19DB	578
2.12	191000 (21600)		0.80	-	17800 (79200)	2.56	159000 (17900)			0.97	-	25300 (113000)	8	4F19DA	683

Cyclo® BBB4

Selection
Tables

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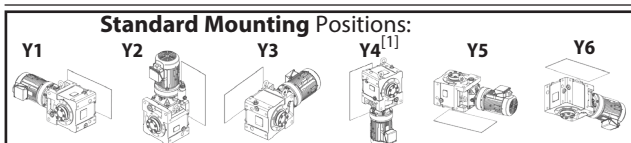
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All 1HP+ motors require EP suffix in model number and can be used with a VFD, unless noted.

Standard Mounting Selection Tables

**10 HP
(7.5 kW)**



Dimension Pages:
 Single Reduction 2.132-2.143
 Single Reduction, Y2 2.144
 Double Reduction 2.146-2.161
 Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz					60 Hz					Selection			VFD ^[2]			
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor		Base				
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code	Frame Size	Ratio
138	4230	(478)	2.44	III	3540	(15700)	167	3510	(396)	2.53	III	3410	(15200)	10	4A140	11
			2.53	III	5110	(22700)				2.53	III	4880	(21700)	10	4B140	11
			2.93	III	5110	(22700)				2.93	III	4880	(21700)	10	4B145	11
113	5160	(583)	2.21	III	3640	(16200)	137	4280	(483)	2.21	III	3530	(15700)	10	4A140	13
			2.53	III	5320	(23700)				2.53	III	5090	(22600)	10	4B140	13
			2.93	III	5320	(23700)				2.93	III	5090	(22600)	10	4B145	13
104	5640	(638)	2.02	III	3700	(16400)	125	4680	(528)	2.02	III	3590	(15900)	10	4A140	14
			2.53	III	5430	(24100)				2.53	III	5200	(23100)	10	4B140	14
			2.93	III	5430	(24100)				2.93	III	5200	(23100)	10	4B145	14
90.6	6450	(729)	1.77	II	3760	(16700)	109	5340	(604)	1.77	II	3660	(16300)	10	4A140	16
			2.53	III	5570	(24800)				2.53	III	5350	(23800)	10	4B140	16
			2.93	III	5570	(24800)				2.93	III	5350	(23800)	10	4B145	16
82.9	7050	(797)	1.62	II	3810	(16900)	100.0	5840	(660)	1.62	II	3710	(16500)	10	4A140	18
			2.53	III	5680	(25300)				2.53	III	5450	(24300)	10	4B140	18
			2.93	III	5680	(25300)				2.93	III	5450	(24300)	10	4B145	18
69.0	8470	(956)	1.35	I	3880	(17300)	83.3	7010	(792)	1.35	I	3800	(16900)	10	4A140	21
			1.73	II	5890	(26200)				1.73	II	5670	(25200)	10	4B140	21
			2.01	III	5890	(26200)				2.01	III	5670	(25200)	10	4B145	21
			2.69	III	5890	(26200)				2.69	III	5670	(25200)	10	4B160	21
64.7	9030	(1020)	1.26	I	3900	(17400)	78.1	7480	(845)	1.26	I	3830	(17000)	10	4A140	22
			1.73	II	5960	(26500)				1.73	II	5740	(25600)	10	4B140	22
			2.01	III	5960	(26500)				2.01	III	5740	(25600)	10	4B145	22
			2.52	III	5960	(26500)				2.52	III	5740	(25600)	10	4B160	22
			2.71	III	8670	(38600)				2.71	III	8300	(36900)	10	4C160	22
59.2	9880	(1120)	1.16	I	3930	(17500)	71.4	8180	(925)	1.16	I	3870	(17200)	10	4A140	25
			1.73	II	6060	(26900)				1.73	II	5850	(26000)	10	4B140	25
			2.01	III	6060	(26900)				2.01	III	5850	(26000)	10	4B145	25
			2.30	III	6060	(26900)				2.30	III	5850	(26000)	10	4B160	25
			2.71	III	8850	(39400)				2.71	III	8480	(37700)	10	4C160	25
51.8	11300	(1280)	1.01	I	3230	(14400)	62.5	9350	(1060)	1.01	I	3910	(17400)	10	4A140	28
			1.73	II	6200	(27600)				1.73	II	6000	(26700)	10	4B140	28
			2.01	III	6200	(27600)				2.01	III	6000	(26700)	10	4B145	28
			2.63	III	9120	(40600)				2.63	III	8740	(38900)	10	4C160	28
41.2	14200	(1600)	1.60	II	6410	(28500)	49.7	11800	(1330)	1.60	II	6230	(27700)	10	4B140	35
			1.73	II	9570	(42600)				1.73	II	9200	(40900)	10	4C140	35
			2.01	III	9570	(42600)				2.01	III	9200	(40900)	10	4C145	35
			2.63	III	9570	(42600)				2.63	III	9200	(40900)	10	4C160	35

Cyclo® BBB4

Selection Tables

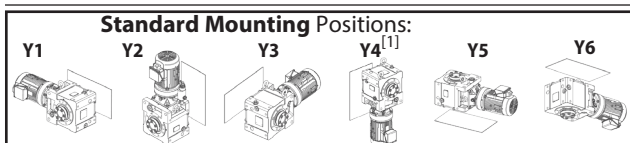
Notes: [1] For Y4 Double Reductions (4XXXDX) refer to the above table; for Y4 single reduction refer to tables on pages 2.91-2.130..

[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

All 1HP+ motors require EP suffix in model number and can be used with a VFD, unless noted.

Standard Mounting Selection Tables

**10 HP
(7.5 kW)**



Dimension Pages:
 Single Reduction, Y2 2.132-2.143
 Single Reduction, Y5 2.144
 Double Reduction, Y2 2.146-2.161
 Double Reduction, Y5 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz					60 Hz					Selection			VFD ^[2]			
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor		Base				
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code	Frame Size	Ratio
37.7	15500	(1750)	1.47	II	6480	(28800)	45.5	12900	(1450)	1.47	II	6320	(28100)	10	4B140	39
			1.73	II	9740	(43300)				1.73	II	9380	(41700)	10	4C140	39
			2.01	III	9740	(43300)				2.01	III	9380	(41700)	10	4C145	39
			2.63	III	9740	(43300)				2.63	III	9380	(41700)	10	4C160	39
			2.86	III	9740	(43300)				2.93	III	9380	(41700)	10	4C165	39
31.9	18300	(2070)	1.24	I	6600	(29300)	38.5	15200	(1720)	1.24	I	6470	(28800)	10	4B140	46
			1.73	II	10000	(44700)				1.73	II	9700	(43100)	10	4C140	46
			2.01	III	10000	(44700)				2.01	III	9700	(43100)	10	4C145	46
			2.42	III	10000	(44700)				2.48	III	9700	(43100)	10	4C160	46
			2.63	III	15500	(69100)				2.63	III	14900	(66100)	10	4D160	46
27.6	21200	(2390)	1.07	I	6470	(28800)	33.3	17500	(1980)	1.07	I	6570	(29200)	10	4B140	53
			1.60	II	10300	(45800)				1.60	II	9970	(44300)	10	4C140	53
			1.93	II	10300	(45800)				1.94	II	9970	(44300)	10	4C145	53
			2.10	III	10300	(45800)				2.15	III	9970	(44300)	10	4C160	53
			2.49	III	16100	(71400)				2.49	III	15400	(68400)	10	4D160	53
			2.98	III	16100	(71400)				3.01	III	15400	(68400)	10	4D165	53
24.4	24000	(2710)	0.95	-	5010	(22300)	29.4	19900	(2250)	0.95	-	6640	(29500)	10	4B140	60
			1.35	I	10500	(46700)				1.35	I	10200	(45300)	10	4C140	60
			1.60	II	10500	(46700)				1.60	II	10200	(45300)	10	4C145	60
			1.75	II	10500	(46700)				1.75	II	10200	(45300)	10	4C160	60
			1.85	II	10500	(46700)				1.90	II	10200	(45300)	10	4C165	60
			2.51	III	16500	(73400)				2.51	III	15800	(70400)	10	4D165	60
21.6	27100	(3060)	1.15	I	10700	(47500)	26.0	22400	(2540)	1.15	I	10400	(46200)	10	4C140	67
			1.26	I	10700	(47500)				1.46	II	10400	(46200)	10	4C145	67
			1.68	II	10700	(47500)				1.68	II	10400	(46200)	10	4C160	67
			1.72	II	16900	(75400)				1.72	II	16300	(72400)	10	4D160	67
			2.13	III	16900	(75400)				2.15	III	16300	(72400)	10	4D165	67
			2.48	III	16900	(75400)				2.60	III	16300	(72400)	10	4D170	67
			2.85	III	16900	(75400)				2.85	III	16300	(72400)	10	4D175	67
			2.85	III	16900	(75400)				3.44	III	16300	(72400)	10	4D180	67

Cyclo® BBB4

Selection Tables

Sold & Serviced By:



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sales@electromate.com

Notes: [1] For Y4 Double Reductions (4XXXDX) refer to the above table; for Y4 single reduction refer to tables on pages 2.91-2.130.

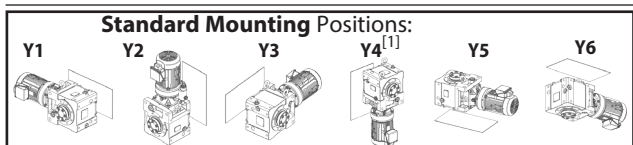
[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

All 1HP+ motors require EP suffix in model number and can be used with a VFD, unless noted.

(-) = For Inverter Operation, starting condition may require ambient temperature of 5° C or higher.

Standard Mounting Selection Tables

**10 HP
(7.5 kW)**



Dimension Pages:
 Single Reduction 2.132-2.143
 Single Reduction, Y2 2.144
 Double Reduction 2.146-2.161
 Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz					60 Hz					Selection								
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor		Base			VFD ^[2]			
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code		Frame Size	Ratio	
19.7	29600	(3350)	1.15	I	10800	(48100)	23.8	24500	(2770)	1.15	I	10500	(46900)	10	4C140	74		
			1.26	I	10800	(48100)				1.46	II	10500	(46900)	10	4C145	74		
			1.50	II	10800	(48100)				1.54	II	10500	(46900)	10	4C160	74		
			1.72	II	17300	(76800)				1.72	II	16600	(73800)	10	4D160	74		
			2.13	III	17300	(76800)				2.15	III	16600	(73800)	10	4D165	74		
			2.48	III	17300	(76800)				2.60	III	16600	(73800)	10	4D170	74		
			2.60	III	17300	(76800)				2.60	III	16600	(73800)	10	4D175	74		
			2.60	III	17300	(76800)				3.14	III	16600	(73800)	10	4D180	74		(-)
			2.94	III	22300	(99200)				2.94	III	22000	(98000)	10	4E175	74		(-)
			2.94	III	22300	(99200)				3.54	III	22000	(98000)	10	4E180	74		
18.1	32200	(3640)	1.05	I	10900	(48500)	21.9	26700	(3020)	1.05	I	10700	(47400)	10	4C145	80		
			1.31	I	10900	(48500)				1.31	I	10700	(47400)	10	4C160	80		
			1.41	II	10900	(48500)				1.41	II	10700	(47400)	10	4C165	80		
			1.79	II	17600	(78100)				2.01	III	16900	(75100)	10	4D165	80		
			2.08	III	17600	(78100)				2.11	III	16900	(75100)	10	4D170	80		
			2.39	III	17600	(78100)				2.39	III	16900	(75100)	10	4D175	80		
			2.39	III	17600	(78100)				2.89	III	16900	(75100)	10	4D180	80		(-)
			2.60	III	22200	(98600)				2.60	III	22500	(99900)	10	4E175	80		(-)
			2.70	III	22200	(98600)				3.21	III	22500	(99900)	10	4E180	80		
			2.70	III	22200	(98600)				3.26	III	22500	(99900)	10	4E185	80		
16.6	35300	(3990)	1.05	I	11000	(48900)	20.0	29200	(3300)	1.05	I	10800	(48000)	10	4C145	88		
			1.26	I	11000	(48900)				1.29	I	10800	(48000)	10	4C160	88		
			1.31	I	17900	(79400)				1.31	I	17200	(76600)	10	4D160	88		
			1.79	II	17900	(79400)				2.01	III	17200	(76600)	10	4D165	88		
			2.08	III	17900	(79400)				2.11	III	17200	(76600)	10	4D170	88		
			2.19	III	17900	(79400)				2.19	III	17200	(76600)	10	4D175	88		
			2.19	III	17900	(79400)				2.64	III	17200	(76600)	10	4D180	88		(-)
			2.47	III	22000	(97900)				2.47	III	22300	(99300)	10	4E175	88		(-)
			2.47	III	22000	(97900)				2.98	III	22300	(99300)	10	4E180	88		
			2.47	III	22000	(97900)				2.98	III	22300	(99300)	10	4E185	88		(-)
			2.47	III	22000	(97900)				2.98	III	22300	(99300)	10	4E190	88		(-)
			2.47	III	22000	(97900)				2.98	III	22300	(99300)	10	4E195	88		(-)

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Selection Tables

Notes: [1] For Y4 Double Reductions (4XXXDX) refer to the above table; for Y4 single reduction refer to tables on pages 2.91-2.130..

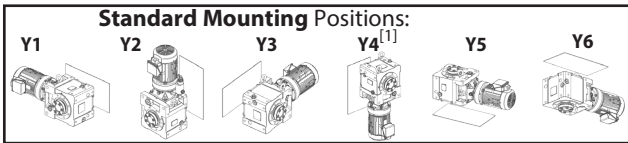
[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

All 1HP+ motors require EP suffix in model number and can be used with a VFD, unless noted.

(-) = For Inverter Operation, starting condition may require ambient temperature of 5° C or higher.

Standard Mounting Selection Tables

**10 HP
(7.5 kW)**



Dimension Pages:
 Single Reduction 2.132-2.143
 Single Reduction, Y2 2.144
 Double Reduction 2.146-2.161
 Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz					60 Hz					Selection									
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Base			VFD ^[2]		
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code	Frame Size	Ratio			
14.3	40900	(4620)	1.00	I	11000	(49100)	17.2	33900	(3830)	1.00	I	11000	(48700)	10	4C145	102			
			1.08	I	11000	(49100)				1.11	I	11000	(48700)	10	4C160	102			
			1.27	I	18300	(81600)				1.40	II	17700	(78800)	10	4D160	102			
			1.52	II	18300	(81600)				1.52	II	17700	(78800)	10	4D165	102			
			1.79	II	18300	(81600)				1.89	II	17700	(78800)	10	4D170	102			
			1.89	II	18300	(81600)				1.89	II	17700	(78800)	10	4D175	102			
			1.89	II	18300	(81600)				2.28	III	17700	(78800)	10	4D180	102		(-)	
			2.13	III	21700	(96700)				2.13	III	22100	(98300)	10	4E175	102			
			2.13	III	21700	(96700)				2.57	III	22100	(98300)	10	4E180	102			(-)
			2.13	III	21700	(96700)				2.57	III	22100	(98300)	10	4E185	102			(-)
			2.13	III	21700	(96700)				2.57	III	22100	(98300)	10	4E190	102			(-)
			2.13	III	21700	(96700)				2.57	III	22100	(98300)	10	4E195	102			(-)
2.60	III	30400	(135000)	2.60	III	30700	(137000)	10	4F180	102	(-)								
12.9	45100	(5100)	1.01	I	9560	(42500)	15.6	37400	(4230)	1.01	I	11000	(49100)	10	4C160	112			
			1.07	I	18700	(83000)				1.29	I	18100	(80300)	10	4D160	112			
			1.28	I	18700	(83000)				1.52	II	18100	(80300)	10	4D165	112			
			1.49	II	18700	(83000)				1.60	II	18100	(80300)	10	4D170	112			
			1.71	II	18700	(83000)				1.71	II	18100	(80300)	10	4D175	112			
			1.71	II	18700	(83000)				2.06	III	18100	(80300)	10	4D180	112		(-)	
			1.92	II	21500	(95700)				2.01	III	21900	(97500)	10	4E175	112			
			2.27	III	21500	(95700)				2.51	III	21900	(97500)	10	4E180	112			(-)
			2.27	III	21500	(95700)				2.74	III	21900	(97500)	10	4E185	112			(-)
			2.47	III	30200	(134000)				2.51	III	30600	(136000)	10	4F180	112			(-)
11.8	49400	(5580)	0.83	-	7640	(34000)	14.3	40900	(4620)	0.92	-	11000	(49100)	10	4C145	123			
			1.07	I	18500	(82200)				1.29	I	18300	(81600)	10	4D160	123			
			1.28	I	18500	(82200)				1.52	II	18300	(81600)	10	4D165	123			
			1.49	II	18500	(82200)				1.56	II	18300	(81600)	10	4D170	123			
			1.56	II	18500	(82200)				1.56	II	18300	(81600)	10	4D175	123			
			1.56	II	18500	(82200)				1.89	II	18300	(81600)	10	4D180	123		(-)	
			1.92	II	21300	(94800)				2.01	III	21700	(96700)	10	4E175	123			
			2.08	III	21300	(94800)				2.51	III	21700	(96700)	10	4E180	123			(-)
			2.08	III	21300	(94800)				2.51	III	21700	(96700)	10	4E185	123			(-)
			2.47	III	30000	(134000)				2.51	III	30400	(135000)	10	4F180	123			(-)

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Selection Tables

Notes: [1] For Y4 Double Reductions (4XXXDX) refer to the above table; for Y4 single reduction refer to tables on pages 2.91-2.130.

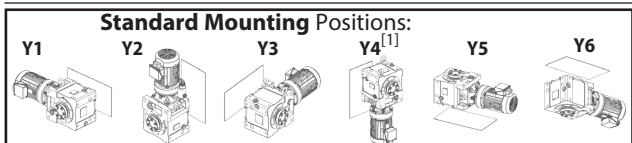
[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

All 1HP+ motors require EP suffix in model number and can be used with a VFD, unless noted.

(-) = For Inverter Operation, starting condition may require ambient temperature of 5° C or higher.

Standard Mounting Selection Tables

**10 HP
(7.5 kW)**



Dimension Pages:
 Single Reduction, Y2 2.132-2.143
 Single Reduction, Y2 2.144
 Double Reduction 2.146-2.161
 Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz					60 Hz					Selection								
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor		Base			VFD ^[2]			
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code		Frame Size	Ratio	
9.63	60700	(6850)	0.86	-	16300	(72700)	11.6	50300	(5680)	0.99	-	18300	(81600)	10	4D160	151		
			1.04	I	16300	(72700)				1.05	I	18300	(81600)	10	4D165	151		
			1.21	I	16300	(72700)				1.27	I	18300	(81600)	10	4D170	151		
			1.27	I	16300	(72700)				1.27	I	18300	(81600)	10	4D175	151		
			1.27	I	16300	(72700)				1.54	II	18300	(81600)	10	4D180	151		(-)
			1.51	II	20700	(92200)				1.51	II	21300	(94600)	10	4E175	151		
			1.69	II	20700	(92200)				2.01	III	21300	(94600)	10	4E180	151		(-)
			1.69	II	20700	(92200)				2.04	III	21300	(94600)	10	4E185	151		(-)
			2.01	III	29500	(131000)				2.01	III	30000	(133000)	10	4F180	151		(-)
			2.48	III	29500	(131000)				2.51	III	30000	(133000)	10	4F185	151		(-)
			2.63	III	29500	(131000)				2.79	III	30000	(133000)	10	4F190	151		(-)
			2.63	III	29500	(131000)				3.17	III	30000	(133000)	10	4F195	151		(-)
8.12	72000	(8130)	0.88	-	13300	(59100)	9.80	59600	(6740)	1.00	I	16600	(73700)	10	4D165	179		
			1.02	I	13300	(59100)				1.07	I	16600	(73700)	10	4D170	179		
			1.07	I	13300	(59100)				1.07	I	16600	(73700)	10	4D175	179		
			1.07	I	13300	(59100)				1.29	I	16600	(73700)	10	4D180	179		(-)
			1.32	I	20200	(89700)				1.43	II	20800	(92500)	10	4E175	179		
			1.43	II	20200	(89700)				1.60	II	20800	(92500)	10	4E180	179		(-)
			1.43	II	20200	(89700)				1.72	II	20800	(92500)	10	4E185	179		(-)
			1.60	II	29100	(129000)				1.60	II	29600	(132000)	10	4F180	179		(-)
			2.01	III	29100	(129000)				2.01	III	29600	(132000)	10	4F185	179		(-)
			2.21	III	29100	(129000)				2.43	III	29600	(132000)	10	4F190	179		(-)
			2.21	III	29100	(129000)				2.67	III	29600	(132000)	10	4F195	179		(-)
			7.02	83200	(9400)	0.88				-	8420	(37500)	8.47	69000	(7790)	0.93		-
0.93	-	8420				(37500)	0.93	-	14200	(63200)	10	4D175				207		
0.93	-	8420				(37500)	1.12	I	14200	(63200)	10	4D180				207		
1.11	I	19600				(87100)	1.11	I	20300	(90300)	10	4E175				207		
1.23	I	19600				(87100)	1.30	I	20300	(90300)	10	4E180				207	(-)	
1.23	I	19600				(87100)	1.49	II	20300	(90300)	10	4E185				207	(-)	
1.30	I	28600				(127000)	1.30	I	29200	(130000)	10	4F180				207	(-)	
1.60	II	28600				(127000)	1.60	II	29200	(130000)	10	4F185				207	(-)	
1.91	II	28600				(127000)	2.04	III	29200	(130000)	10	4F190				207	(-)	
1.91	II	28600				(127000)	2.31	III	29200	(130000)	10	4F195				207	(-)	

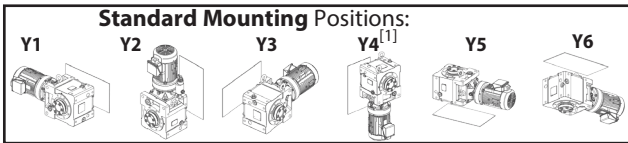
Cyclo® BBB4

Selection Tables

Notes: [1] For Y4 Double Reductions (4XXXDX) refer to the above table; for Y4 single reduction refer to tables on pages 2.91-2.130.
 [2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):
 All 1HP+ motors require EP suffix in model number and can be used with a VFD, unless noted.
 (-) = For Inverter Operation, starting condition may require ambient temperature of 5° C or higher.

Standard Mounting Selection Tables

**10 HP
(7.5 kW)**



Dimension Pages:
 Single Reduction 2.132-2.143
 Single Reduction, Y2 2.144
 Double Reduction 2.146-2.161
 Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz					60 Hz					Selection							
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor		Base			VFD ^[2]		
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code		Frame Size	Ratio
5.84	100000 (11300)		0.93	-	18700	(83300)	7.04	83000 (9380)		0.95	-	19600	(87200)	10	4E175	249	
			1.02	I	18700	(83300)				1.17	I	19600	(87200)	10	4E180	249	(-)
			1.02	I	18700	(83300)				1.24	I	19600	(87200)	10	4E185	249	(-)
			1.17	I	27800	(124000)				1.17	I	28600	(127000)	10	4F180	249	(-)
			1.31	I	27800	(124000)				1.31	I	28600	(127000)	10	4F185	249	(-)
			1.59	II	27800	(124000)				1.80	II	28600	(127000)	10	4F190	249	(-)
			1.59	II	27800	(124000)				1.92	II	28600	(127000)	10	4F195	249	(-)
			4.76	123000 (13900)		0.84				-	11900	(53000)	5.75	102000 (11500)		0.95	-
0.84	-	11900				(53000)	1.01	I	18700	(83000)	10	4E185				305	
0.95	-	26900				(119000)	0.95	-	27800	(124000)	10	4F180				305	
1.15	I	26900				(119000)	1.15	I	27800	(124000)	10	4F185				305	(-)
1.30	I	26900				(119000)	1.57	II	27800	(124000)	10	4F190				305	(-)
3.98	139000 (15700)		1.06	I	26100	(116000)	4.81	115000 (13000)		1.28	I	27200	(121000)	10	4F18DB	364	(-)
			1.11	I	26100	(116000)				1.33	I	27200	(121000)	10	4F19DB	364	(-)
3.42	162000 (18300)		0.89	-	25200	(112000)	4.13	134000 (15200)		1.08	I	26400	(117000)	10	4F18DB	424	
			0.95	-	25200	(112000)				1.15	I	26400	(117000)	10	4F19DB	424	
2.90	191000 (21600)		0.80	-	17800	(79200)	3.50	159000 (17900)		0.97	-	25300	(113000)	10	4F19DB	501	

Cyclo® BBB4

Selection Tables

Sold & Serviced By:



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www.electromate.com
sales@electromate.com

Notes: [1] For Y4 Double Reductions (4XXXDX) refer to the above table; for Y4 single reduction refer to tables on pages 2.91-2.130.

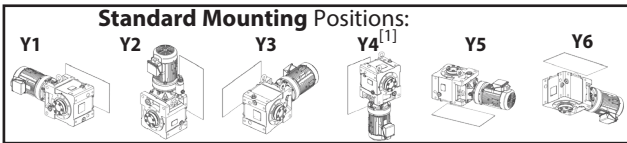
[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

All 1HP+ motors require EP suffix in model number and can be used with a VFD, unless noted.

(-) = For Inverter Operation, starting condition may require ambient temperature of 5° C or higher.

Standard Mounting Selection Tables

**15 HP
(11 kW)**



Dimension Pages:
 Single Reduction 2.132-2.143
 Single Reduction, Y2 2.144
 Double Reduction 2.146-2.161
 Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz						60 Hz						Selection					
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Base			VFD ^[2]
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code	Frame Size	Ratio	
138	6210	(701)	1.66	II	3260	(14500)	167	5140	(581)	1.84	II	3180	(14200)	15	4A145	11	
			2.00	III	4890	(21700)				2.00	III	4700	(20900)	15	4B145	11	
			2.30	III	4890	(21700)				2.30	III	4700	(20900)	15	4B160	11	
			2.64	III	4890	(21700)				2.64	III	4700	(20900)	15	4B165	11	
			2.73	III	7060	(31400)				2.73	III	6740	(30000)	15	4C165	11	
113	7570	(855)	1.50	II	3310	(14700)	137	6270	(708)	1.51	II	3250	(14500)	15	4A140	13	
			1.73	II	5050	(22500)				1.73	II	4870	(21700)	15	4B140	13	
			2.00	III	5050	(22500)				2.00	III	4870	(21700)	15	4B145	13	
			2.30	III	5040	(22400)				2.30	III	4860	(21600)	15	4B160	13	
			2.64	III	5040	(22400)				2.64	III	4860	(21600)	15	4B165	13	
104	8280	(935)	1.38	I	3330	(14800)	125	6860	(775)	1.38	I	3280	(14600)	15	4A140	14	
			1.73	II	5140	(22900)				1.73	II	4960	(22100)	15	4B140	14	
			2.00	III	5140	(22900)				2.00	III	4960	(22100)	15	4B145	14	
			2.30	III	5130	(22800)				2.30	III	4950	(22000)	15	4B160	14	
			2.54	III	5130	(22800)				2.54	III	4950	(22000)	15	4B165	14	
90.6	9460	(1070)	1.21	I	3350	(14900)	109	7840	(886)	1.21	I	3320	(14700)	15	4A140	16	
			1.73	II	5250	(23300)				1.73	II	5080	(22600)	15	4B140	16	
			2.00	III	5250	(23300)				2.00	III	5080	(22600)	15	4B145	16	
			2.27	III	5260	(23400)				2.27	III	5090	(22600)	15	4B160	16	
			2.27	III	5260	(23400)				2.40	III	5090	(22600)	15	4B165	16	
82.9	10300	(1170)	1.10	I	3350	(14900)	100.0	8570	(969)	1.10	I	3340	(14800)	15	4A140	18	
			1.73	II	5320	(23700)				1.73	II	5160	(23000)	15	4B140	18	
			2.00	III	5320	(23700)				2.00	III	5160	(23000)	15	4B145	18	
			2.15	III	5330	(23700)				2.20	III	5170	(23000)	15	4B160	18	
			2.30	III	7890	(35100)				2.30	III	7580	(33700)	15	4C160	18	
69.0	12400	(1400)	0.92	-	2160	(9600)	83.3	10300	(1160)	0.92	-	3350	(14900)	15	4A140	21	
			1.18	I	5460	(24300)				1.18	I	5320	(23700)	15	4B140	21	
			1.37	I	5460	(24300)				1.37	I	5320	(23700)	15	4B145	21	
			1.83	II	5460	(24300)				1.83	II	5320	(23700)	15	4B160	21	
			2.30	III	8170	(36300)				2.30	III	7860	(35000)	15	4C160	21	
2.73	III	8170	(36300)	2.73	III	7860	(35000)	15	4C165	21							

Cyclo® BBB4

Selection Tables

Notes: [1] For Y4 Double Reductions (4XXXDX) refer to the above table; for Y4 single reduction refer to tables on pages 2.91-2.130..

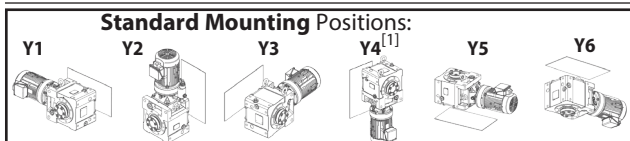
[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

All 1HP+ motors require EP suffix in model number and can be used with a VFD, unless noted.

(-) = For Inverter Operation, starting condition may require ambient temperature of 5° C or higher.

Standard Mounting Selection Tables

15 HP
(11 kW)



Dimension Pages:
Single Reduction 2.132-2.143
Single Reduction, Y2 2.144
Double Reduction 2.146-2.161
Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz						60 Hz						Selection					
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Base			VFD ^[2]
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code	Frame Size	Ratio	
64.7	13200	(1500)	0.86	-	290	(1290)	78.1	11000	(1240)	0.86	-	3350	(14900)	15	4A140	22	
			1.18	I	5500	(24500)				1.18	I	5370	(23900)	15	4B140	22	
			1.37	I	5500	(24500)				1.37	I	5370	(23900)	15	4B145	22	
			1.72	II	5500	(24500)				1.72	II	5370	(23900)	15	4B160	22	
			1.85	II	8270	(36800)				1.85	II	7970	(35400)	15	4C160	22	
			2.19	III	8270	(36800)				2.19	III	7970	(35400)	15	4C165	22	
59.2	14500	(1640)	1.18	I	5560	(24700)	71.4	12000	(1360)	1.18	I	5440	(24200)	15	4B140	25	
			1.37	I	5560	(24700)				1.37	I	5440	(24200)	15	4B145	25	
			1.57	II	5560	(24700)				1.57	II	5440	(24200)	15	4B160	25	
			1.85	II	8420	(37400)				1.85	II	8110	(36100)	15	4C160	25	
			2.19	III	8420	(37400)				2.19	III	8110	(36100)	15	4C165	25	
			2.94	III	8420	(37400)				3.14	III	8110	(36100)	15	4C175	25	
51.8	16600	(1870)	1.18	I	5630	(25000)	62.5	13700	(1550)	1.18	I	5530	(24600)	15	4B140	28	
			1.37	I	5630	(25000)				1.37	I	5530	(24600)	15	4B145	28	
			1.79	II	8620	(38300)				1.79	II	8330	(37100)	15	4C160	28	
			2.19	III	8620	(38300)				2.19	III	8330	(37100)	15	4C165	28	
			2.67	III	8620	(38300)				2.75	III	8330	(37100)	15	4C170	28	
			41.2	20800	(2350)	1.09				I	5690	(25300)	49.7	17200	(1950)	1.09	
1.18	I	8940	(39800)	1.18	I	8680	(38600)	15	4C140	35							
1.37	I	8940	(39800)	1.37	I	8680	(38600)	15	4C145	35							
1.79	II	8940	(39800)	1.79	II	8680	(38600)	15	4C160	35							
2.19	III	14100	(62600)	2.19	III	13500	(60000)	15	4D165	35							
2.51	III	14100	(62600)	2.51	III	13500	(60000)	15	4D170	35							
2.74	III	14100	(62600)	2.74	III	13500	(60000)	15	4D175	35							
37.7	22800	(2570)	1.00	I	5700	(25400)	45.5	18900	(2130)	1.00	I	5670	(25200)	15	4B140	39	
			1.18	I	9050	(40300)				1.18	I	8810	(39200)	15	4C140	39	
			1.37	I	9050	(40300)				1.37	I	8810	(39200)	15	4C145	39	
			1.79	II	9050	(40300)				1.79	II	8810	(39200)	15	4C160	39	
			1.95	II	9050	(40300)				2.00	III	8810	(39200)	15	4C165	39	
			2.19	III	14300	(63800)				2.19	III	13800	(61300)	15	4D165	39	
			2.51	III	14300	(63800)				2.51	III	13800	(61300)	15	4D170	39	
			2.74	III	14300	(63800)				2.74	III	13800	(61300)	15	4D175	39	

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Selection Tables

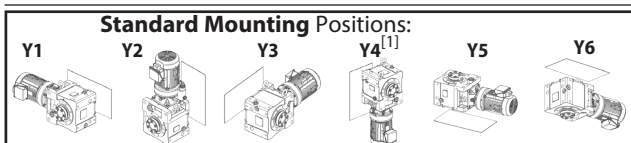
Notes: [1] For Y4 Double Reductions (4XXXDX) refer to the above table; for Y4 single reduction refer to tables on pages 2.91-2.130.

[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

All 1HP+ motors require EP suffix in model number and can be used with a VFD, unless noted.

Standard Mounting Selection Tables

**15 HP
(11 kW)**



Dimension Pages:
 Single Reduction, Y2 2.132-2.143
 Single Reduction, Y4 2.144
 Double Reduction 2.146-2.161
 Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz					60 Hz					Selection								
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor		Base			VFD ^[2]			
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code		Frame Size	Ratio	
31.9	26900	(3040)	0.85	-	2350	(10500)	38.5	22300	(2520)	0.85	-	5700	(25400)	15	4B140	46		
			1.18	I	9240	(41100)				1.18	I	9030	(40200)	15	4C140	46		
			1.37	I	9240	(41100)				1.37	I	9030	(40200)	15	4C145	46		
			1.65	II	9240	(41100)				1.69	II	9030	(40200)	15	4C160	46		
			1.79	II	14800	(66000)				1.79	II	14300	(63500)	15	4D160	46		
			2.05	III	14800	(66000)				2.05	III	14300	(63500)	15	4D165	46		
			2.48	III	14800	(66000)				2.48	III	14300	(63500)	15	4D170	46		
			2.74	III	14800	(66000)				2.74	III	14300	(63500)	15	4D175	46		
			2.87	III	14800	(66000)				3.38	III	14300	(63500)	15	4D180	46		(-)
27.6	31000	(3510)	1.09	I	9360	(41600)	33.3	25700	(2910)	1.09	I	9190	(40900)	15	4C140	53		
			1.32	I	9360	(41600)				1.33	I	9190	(40900)	15	4C145	53		
			1.43	II	9360	(41600)				1.47	II	9190	(40900)	15	4C160	53		
			1.70	II	15300	(67900)				1.70	II	14700	(65500)	15	4D160	53		
			2.03	III	15300	(67900)				2.05	III	14700	(65500)	15	4D165	53		
			2.32	III	15300	(67900)				2.32	III	14700	(65500)	15	4D170	53		
			2.49	III	15300	(67900)				2.49	III	14700	(65500)	15	4D175	53		
			2.49	III	15300	(67900)				2.95	III	14700	(65500)	15	4D180	53		(-)
			2.73	III	20500	(91200)				2.74	III	19700	(87400)	15	4E175	53		
			2.80	III	20500	(91200)				2.95	III	19700	(87400)	15	4E180	53		(-)
			2.80	III	20500	(91200)				3.38	III	19700	(87400)	15	4E185	53		(-)
			2.95	III	30800	(137000)				2.95	III	31100	(138000)	15	4F180	53		(-)
24.4	35200	(3970)	1.09	I	9440	(42000)	29.4	29100	(3290)	1.09	I	9310	(41400)	15	4C145	60		
			1.19	I	9440	(42000)				1.19	I	9310	(41400)	15	4C160	60		
			1.26	I	9440	(42000)				1.29	I	9310	(41400)	15	4C165	60		
			1.71	II	15600	(69400)				1.71	II	15100	(67100)	15	4D165	60		
			1.79	II	15600	(69400)				1.79	II	15100	(67100)	15	4D170	60		
			2.19	III	15600	(69400)				2.19	III	15100	(67100)	15	4D175	60		
			2.19	III	15600	(69400)				2.65	III	15100	(67100)	15	4D180	60		(-)
			2.47	III	21100	(93800)				2.78	III	20200	(90000)	15	4E180	60		(-)
			2.47	III	21100	(93800)				2.99	III	20200	(90000)	15	4E185	60		(-)
			2.47	III	21100	(93800)				2.99	III	20200	(90000)	15	4E190	60		(-)
			2.47	III	21100	(93800)				2.99	III	20200	(90000)	15	4E195	60		(-)
			2.78	III	30600	(136000)				2.78	III	30900	(137000)	15	4F180	60		(-)

Cyclo® BBB4

Selection Tables

Notes: [1] For Y4 Double Reductions (4XXXDX) refer to the above table; for Y4 single reduction refer to tables on pages 2.91-2.130..

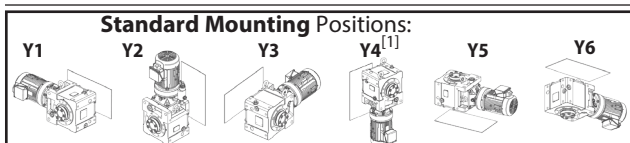
[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

All 1HP+ motors require EP suffix in model number and can be used with a VFD, unless noted.

(-) = For Inverter Operation, starting condition may require ambient temperature of 5° C or higher.

Standard Mounting Selection Tables

**15 HP
(11 kW)**



Dimension Pages:
 Single Reduction 2.132-2.143
 Single Reduction, Y2 2.144
 Double Reduction 2.146-2.161
 Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz					60 Hz					Selection								
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor		Base			VFD ^[2]			
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code		Frame Size	Ratio	
21.6	39700	(4490)	1.15	I	9480	(42200)	26.0	32900	(3720)	1.15	I	9400	(41800)	15	4C160	67		
			1.45	II	15900	(70800)				1.46	II	15400	(68600)	15	4D165	67		
			1.69	II	15900	(70800)				1.77	II	15400	(68600)	15	4D170	67		
			1.94	II	15900	(70800)				1.94	II	15400	(68600)	15	4D175	67		
			1.94	II	15900	(70800)				2.34	III	15400	(68600)	15	4D180	67		(-)
			2.14	III	21600	(96200)				2.19	III	20800	(92400)	15	4E175	67		
			2.19	III	21600	(96200)				2.64	III	20800	(92400)	15	4E180	67		(-)
			2.19	III	21600	(96200)				2.64	III	20800	(92400)	15	4E185	67		(-)
			2.19	III	21600	(96200)				2.64	III	20800	(92400)	15	4E190	67		(-)
			2.19	III	21600	(96200)				2.64	III	20800	(92400)	15	4E195	67		(-)
2.73	III	30500	(135000)	2.73	III	30700	(137000)	15	4F180	67	(-)							
19.7	43500	(4910)	0.86	-	9490	(42200)	23.8	36000	(4070)	1.00	I	9450	(42000)	15	4C145	74		
			1.02	I	9490	(42200)				1.05	I	9450	(42000)	15	4C160	74		
			1.17	I	16100	(71800)				1.17	I	15700	(69700)	15	4D160	74		
			1.45	II	16100	(71800)				1.46	II	15700	(69700)	15	4D165	74		
			1.69	II	16100	(71800)				1.77	II	15700	(69700)	15	4D170	74		
			1.78	II	16100	(71800)				1.78	II	15700	(69700)	15	4D175	74		
			1.78	II	16100	(71800)				2.14	III	15700	(69700)	15	4D180	74		(-)
			2.00	III	21600	(96100)				2.00	III	21200	(94200)	15	4E175	74		
			2.00	III	21600	(96100)				2.42	III	21200	(94200)	15	4E180	74		(-)
			2.00	III	21600	(96100)				2.42	III	21200	(94200)	15	4E185	74		(-)
			2.00	III	21600	(96100)				2.42	III	21200	(94200)	15	4E190	74		(-)
			2.00	III	21600	(96100)				2.42	III	21200	(94200)	15	4E195	74		(-)
			2.73	III	30300	(135000)				2.73	III	30600	(136000)	15	4F180	74		(-)
18.1	47300	(5340)	0.96	-	8660	(38500)	21.9	39200	(4430)	0.96	-	9480	(42200)	15	4C165	80		
			1.22	I	16300	(72700)				1.37	I	15900	(70700)	15	4D165	80		
			1.42	II	16300	(72700)				1.44	II	15900	(70700)	15	4D170	80		
			1.63	II	16300	(72700)				1.63	II	15900	(70700)	15	4D175	80		
			1.63	II	16300	(72700)				1.97	II	15900	(70700)	15	4D180	80		(-)
			1.77	II	21400	(95200)				1.77	II	21600	(95900)	15	4E175	80		
			1.84	II	21400	(95200)				2.19	III	21600	(95900)	15	4E180	80		(-)
			1.84	II	21400	(95200)				2.22	III	21600	(95900)	15	4E185	80		(-)
			1.84	II	21400	(95200)				2.22	III	21600	(95900)	15	4E190	80		(-)
			1.84	II	21400	(95200)				2.22	III	21600	(95900)	15	4E195	80		(-)
			2.19	III	30100	(134000)				2.19	III	30500	(136000)	15	4F180	80		(-)
			2.74	III	30100	(134000)				2.74	III	30500	(136000)	15	4F185	80		(-)

Notes: [1] For Y4 Double Reductions (4XXXDX) refer to the above table; for Y4 single reduction refer to tables on pages 2.91-2.130.

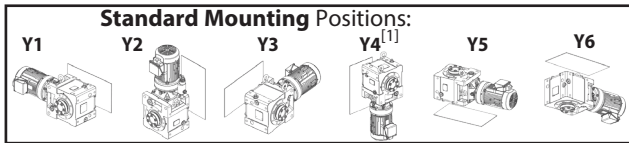
[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

All 1HP+ motors require EP suffix in model number and can be used with a VFD, unless noted.

(-) = For Inverter Operation, starting condition may require ambient temperature of 5° C or higher.

Standard Mounting Selection Tables

**15 HP
(11 kW)**



Dimension Pages:
 Single Reduction 2.132-2.143
 Single Reduction, Y2 2.144
 Double Reduction 2.146-2.161
 Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

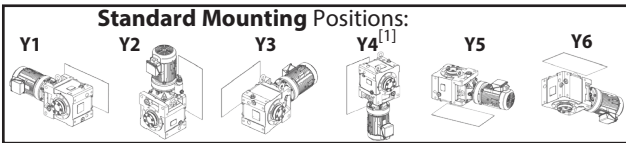
50Hz					60 Hz					Selection							
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor		Base			VFD ^[2]		
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code		Frame Size	Ratio
16.6	51700	(5840)	0.86	-	6210	(27600)	20.0	42900	(4840)	0.88	-	9490	(42200)	15	4C160	88	
			1.22	I	16500	(73600)				1.37	I	16100	(71700)	15	4D165	88	
			1.42	II	16500	(73600)				1.44	II	16100	(71700)	15	4D170	88	
			1.49	II	16500	(73600)				1.49	II	16100	(71700)	15	4D175	88	
			1.49	II	16500	(73600)				1.80	II	16100	(71700)	15	4D180	88	
			1.68	II	21200	(94200)				1.68	II	21600	(96200)	15	4E175	88	
			1.68	II	21200	(94200)				2.03	III	21600	(96200)	15	4E180	88	
			1.68	II	21200	(94200)				2.03	III	21600	(96200)	15	4E185	88	
			1.68	II	21200	(94200)				2.03	III	21600	(96200)	15	4E190	88	(-)
			1.68	II	21200	(94200)				2.03	III	21600	(96200)	15	4E195	88	(-)
			2.19	III	29900	(133000)				2.19	III	30300	(135000)	15	4F180	88	
			2.74	III	29900	(133000)				2.74	III	30300	(135000)	15	4F185	88	
			14.3	60000	(6780)	1.04				I	16500	(73300)	17.2	49700	(5620)	1.04	I
1.22	I	16500				(73300)	1.29	I	16500	(73200)	15	4D170				102	
1.29	I	16500				(73300)	1.29	I	16500	(73200)	15	4D175				102	
1.29	I	16500				(73300)	1.55	II	16500	(73200)	15	4D180				102	
1.45	II	20800				(92400)	1.45	II	21300	(94700)	15	4E175				102	
1.45	II	20800				(92400)	1.75	II	21300	(94700)	15	4E180				102	
1.45	II	20800				(92400)	1.75	II	21300	(94700)	15	4E185				102	
1.45	II	20800				(92400)	1.75	II	21300	(94700)	15	4E190				102	(-)
1.45	II	20800				(92400)	1.75	II	21300	(94700)	15	4E195				102	(-)
1.77	II	29600				(132000)	1.77	II	30000	(134000)	15	4F180				102	
2.19	III	29600				(132000)	2.19	III	30000	(134000)	15	4F185				102	
2.65	III	29600				(132000)	2.79	III	30000	(134000)	15	4F190				102	(-)
2.65	III	29600				(132000)	3.20	III	30000	(134000)	15	4F195				102	(-)
12.9	66200	(7480)	0.87	-	15000	(66600)	15.6	54900	(6200)	1.04	I	16600	(74100)	15	4D165	112	
			1.01	I	15000	(66600)				1.09	I	16600	(74100)	15	4D170	112	
			1.17	I	15000	(66600)				1.17	I	16600	(74100)	15	4D175	112	
			1.17	I	15000	(66600)				1.41	II	16600	(74100)	15	4D180	112	
			1.31	I	20400	(91000)				1.37	I	21000	(93500)	15	4E175	112	
			1.55	II	20400	(91000)				1.71	II	21000	(93500)	15	4E180	112	
			1.55	II	20400	(91000)				1.87	II	21000	(93500)	15	4E185	112	
			1.68	II	29300	(130000)				1.71	II	29800	(133000)	15	4F180	112	
			2.05	III	29300	(130000)				2.05	III	29800	(133000)	15	4F185	112	
			2.21	III	29300	(130000)				2.21	III	29800	(133000)	15	4F190	112	(-)
			2.41	III	29300	(130000)				2.74	III	29800	(133000)	15	4F195	112	(-)

Cyclo® BBB4
 Selection Tables

Notes: [1] For Y4 Double Reductions (4XXXDX) refer to the above table; for Y4 single reduction refer to tables on pages 2.91-2.130.
 [2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):
 All 1HP+ motors require EP suffix in model number and can be used with a VFD, unless noted.
 (-) = For Inverter Operation, starting condition may require ambient temperature of 5° C or higher.

Standard Mounting Selection Tables

**15 HP
(11 kW)**



Dimension Pages:
 Single Reduction 2.132-2.143
 Single Reduction, Y2 2.144
 Double Reduction 2.146-2.161
 Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz					60 Hz					Selection						
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor		Base			VFD ^[2]	
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code		Frame Size
11.8	72400 (8180)		0.87	-	13100 (58400)	14.3	60000 (6780)			1.04	I	16500 (73300)	15	4D165	123	
			1.01	I	13100 (58400)					1.07	I	16500 (73300)	15	4D170	123	
			1.07	I	13100 (58400)					1.07	I	16500 (73300)	15	4D175	123	
			1.07	I	13100 (58400)					1.29	I	16500 (73300)	15	4D180	123	
			1.31	I	20100 (89600)					1.37	I	20800 (92400)	15	4E175	123	
			1.42	II	20100 (89600)					1.71	II	20800 (92400)	15	4E180	123	
			1.42	II	20100 (89600)					1.71	II	20800 (92400)	15	4E185	123	
			1.68	II	29000 (129000)					1.71	II	29600 (132000)	15	4F180	123	
			2.05	III	29000 (129000)					2.05	III	29600 (132000)	15	4F185	123	
			2.20	III	29000 (129000)					2.21	III	29600 (132000)	15	4F190	123	(-)
			2.20	III	29000 (129000)					2.65	III	29600 (132000)	15	4F195	123	(-)
9.63	89000 (10100)		0.87	-	3350 (14900)	11.6	73700 (8330)			0.87	-	12700 (56400)	15	4D175	151	
			0.87	-	3350 (14900)					1.05	I	12700 (56400)	15	4D180	151	
			1.03	I	19300 (85800)					1.03	I	20100 (89300)	15	4E175	151	
			1.15	I	19300 (85800)					1.37	I	20100 (89300)	15	4E180	151	
			1.15	I	19300 (85800)					1.39	I	20100 (89300)	15	4E185	151	
			1.37	I	28300 (126000)					1.37	I	29000 (129000)	15	4F180	151	
			1.69	II	28300 (126000)					1.71	II	29000 (129000)	15	4F185	151	
			1.79	II	28300 (126000)					1.90	II	29000 (129000)	15	4F190	151	(-)
			1.79	II	28300 (126000)					2.16	III	29000 (129000)	15	4F195	151	(-)
8.12	106000 (11900)		0.90	-	17700 (78800)	9.80	87400 (9880)			0.97	-	19400 (86200)	15	4E175	179	
			0.97	-	17700 (78800)					1.09	I	19400 (86200)	15	4E180	179	
			0.97	-	17700 (78800)					1.17	I	19400 (86200)	15	4E185	179	
			1.09	I	27600 (123000)					1.09	I	28400 (126000)	15	4F180	179	
			1.37	I	27600 (123000)					1.37	I	28400 (126000)	15	4F185	179	
			1.51	II	27600 (123000)					1.65	II	28400 (126000)	15	4F190	179	
			1.51	II	27600 (123000)					1.82	II	28400 (126000)	15	4F195	179	
7.02	122000 (13800)		0.84	-	12200 (54300)	8.47	101000 (11400)			0.89	-	18700 (83100)	15	4E180	207	
			0.84	-	12200 (54300)					1.01	I	18700 (83100)	15	4E185	207	
			0.89	-	26900 (120000)					0.89	-	27800 (124000)	15	4F180	207	
			1.09	I	26900 (120000)					1.09	I	27800 (124000)	15	4F185	207	
			1.30	I	26900 (120000)					1.39	I	27800 (124000)	15	4F190	207	
			1.30	I	26900 (120000)					1.57	II	27800 (124000)	15	4F195	207	
5.84	147000 (16600)		0.89	-	25800 (115000)	7.04	122000 (13800)			0.89	-	26900 (120000)	15	4F185	249	
			1.08	I	25800 (115000)					1.23	I	26900 (120000)	15	4F190	249	
			1.08	I	25800 (115000)					1.31	I	26900 (120000)	15	4F195	249	
4.76	180000 (20300)		0.88	-	24400 (108000)	5.75	149000 (16900)	1.07	I	25700 (114000)	15	4F190	305			

Notes: [1] For Y4 Double Reductions (4XXXDX) refer to the above table; for Y4 single reduction refer to tables on pages 2.91-2.130.

[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

All 1HP+ motors require EP suffix in model number and can be used with a VFD, unless noted.

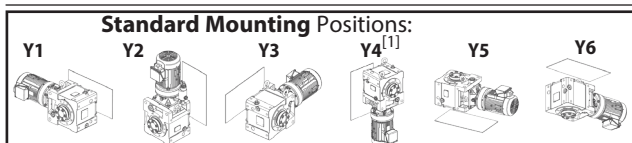
(-) = For Inverter Operation, starting condition may require ambient temperature of 5° C or higher.

Cyclo® BBB4

Selection Tables

Standard Mounting Selection Tables

**20 HP
(15 kW)**



Dimension Pages:
 Single Reduction 2.132-2.143
 Single Reduction, Y2 2.144
 Double Reduction 2.146-2.161
 Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz					60 Hz					Selection							
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor		Base			VFD ^[2]		
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code		Frame Size	Ratio
138	8470	(956)	1.22	I	2940	(13100)	167	7010	(792)	1.35	I	2920	(13000)	20	4A145	11	
			1.47	II	4640	(20600)				1.47	II	4490	(20000)	20	4B145	11	
			1.69	II	4630	(20600)				1.69	II	4490	(20000)	20	4B160	11	
			1.93	II	4630	(20600)				1.93	II	4490	(20000)	20	4B165	11	
			2.00	III	6840	(30400)				2.00	III	6560	(29200)	20	4C165	11	
			2.77	III	6840	(30400)				2.77	III	6560	(29200)	20	4C170	11	(#)
			2.77	III	10400	(46100)				2.77	III	9880	(43900)	20	4D170	11	(#)
			113	10300	(1170)	1.10				I	2930	(13000)	137	8550	(966)	1.11	I
1.27	I	4750				(21100)	1.27	I	4620	(20600)	20	4B140				13	
1.47	II	4750				(21100)	1.47	II	4620	(20600)	20	4B145				13	
1.69	II	4750				(21100)	1.69	II	4620	(20500)	20	4B160				13	
1.93	II	4750				(21100)	1.93	II	4620	(20500)	20	4B165				13	
2.00	III	7080				(31500)	2.00	III	6800	(30300)	20	4C165				13	
2.77	III	7110				(31600)	2.77	III	6840	(30400)	20	4C170				13	(#)
2.77	III	10900				(48300)	2.77	III	10400	(46100)	20	4D170				13	(#)
104	11300	(1280)	1.01	I	2910	(13000)	125	9350	(1060)	1.01	I	2940	(13100)	20	4A140	14	
			1.27	I	4810	(21400)				1.27	I	4690	(20900)	20	4B140	14	
			1.47	II	4810	(21400)				1.47	II	4690	(20900)	20	4B145	14	
			1.69	II	4800	(21400)				1.69	II	4680	(20800)	20	4B160	14	
			1.86	II	4800	(21400)				1.93	II	4680	(20800)	20	4B165	14	
			2.00	III	7210	(32100)				2.00	III	6940	(30900)	20	4C165	14	
			2.77	III	7240	(32200)				2.77	III	6970	(31000)	20	4C170	14	(#)
			2.77	III	11100	(49400)				2.77	III	10600	(47100)	20	4D170	14	(#)
90.6	12900	(1460)	1.27	I	4870	(21700)	109	10700	(1210)	1.27	I	4770	(21200)	20	4B140	16	
			1.47	II	4870	(21700)				1.47	II	4770	(21200)	20	4B145	16	
			1.67	II	4880	(21700)				1.76	II	4780	(21300)	20	4B165	16	
			2.00	III	7410	(33000)				2.00	III	7150	(31800)	20	4C165	16	
			2.77	III	7400	(32900)				2.77	III	7140	(31800)	20	4C170	16	(#)
			2.95	III	7400	(32900)				3.00	III	7140	(31800)	20	4C175	16	(#)
			2.77	III	11400	(50800)				2.77	III	10900	(48600)	20	4D170	16	(#)
			82.9	14100	(1590)	1.27				I	4920	(21900)	100.0	11700	(1320)	1.27	I
1.47	II	4920				(21900)	1.47	II	4820	(21500)	20	4B145				18	
1.58	II	4920				(21900)	1.61	II	4830	(21500)	20	4B160				18	
1.69	II	7530				(33500)	1.69	II	7280	(32400)	20	4C160				18	
2.00	III	7530				(33500)	2.00	III	7280	(32400)	20	4C165				18	
2.76	III	7530				(33500)	2.77	III	7270	(32300)	20	4C170				18	(#)
2.76	III	7530				(33500)	3.00	III	7270	(32300)	20	4C175				18	(#)
2.77	III	11700				(51900)	2.77	III	11200	(49600)	20	4D170				18	(#)

Cyclo® BBB4

Selection Tables

Notes: [1] For Y4 Double Reductions (4XXXDX) refer to the above table; for Y4 single reduction refer to tables on pages 2.91-2.130..

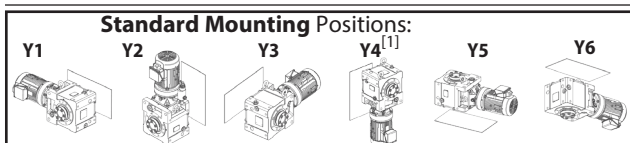
[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

All 1HP+ motors require EP suffix in model number and can be used with a VFD, unless noted.

(#) = Mounting positions Y2, F2, G2, K2, V2, W2 operation is limited to 75 %ED (duty cycle) for a 10 minute total cycle (7.5 minutes max. on time).

Standard Mounting Selection Tables

**20 HP
(15 kW)**



Dimension Pages:
 Single Reduction 2.132-2.143
 Single Reduction, Y2 2.144
 Double Reduction 2.146-2.161
 Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz						60 Hz						Selection						
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Base			VFD ^[2]	
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code	Frame Size	Ratio		
69.0	16900	(1910)	1.01	I	4970	(22100)	83.3	14000	(1580)	1.01	I	4910	(21900)	20	4B145	21		
			1.34	I	4970	(22100)				1.34	I	4910	(21900)	20	4B160	21		
			1.69	II	7740	(34400)				1.69	II	7500	(33400)	20	4C160	21		
			2.00	III	7740	(34400)				2.00	III	7500	(33400)	20	4C165	21		
			2.26	III	7740	(34400)				2.26	III	7500	(33400)	20	4C170	21		
			2.40	III	7740	(34400)				2.40	III	7500	(33400)	20	4C175	21		
			2.77	III	12100	(53900)				2.77	III	11600	(51700)	20	4D180	21		(-),(#)
64.7	18100	(2040)	1.01	I	4980	(22200)	78.1	15000	(1690)	1.01	I	4940	(22000)	20	4B145	22		
			1.26	I	4980	(22200)				1.26	I	4940	(22000)	20	4B160	22		
			1.35	I	7820	(34800)				1.35	I	7590	(33700)	20	4C160	22		
			2.26	III	7820	(34800)				2.26	III	7590	(33700)	20	4C170	22		
			2.34	III	7820	(34800)				2.40	III	7590	(33700)	20	4C175	22		
			2.47	III	12300	(54700)				2.47	III	11800	(52500)	20	4D175	22		
			2.77	III	12300	(54700)				2.77	III	11800	(52500)	20	4D180	22		(-),(#)
59.2	19800	(2230)	1.01	I	4990	(22200)	71.4	16400	(1850)	1.01	I	4970	(22100)	20	4B145	25		
			1.15	I	4990	(22200)				1.15	I	4970	(22100)	20	4B160	25		
			1.35	I	7920	(35200)				1.35	I	7700	(34300)	20	4C160	25		
			1.61	II	7920	(35200)				1.61	II	7700	(34300)	20	4C165	25		
			2.15	III	7920	(35200)				2.30	III	7700	(34300)	20	4C175	25		
			2.26	III	12500	(55800)				2.26	III	12000	(53500)	20	4D170	25		
			2.47	III	12500	(55800)				2.47	III	12000	(53500)	20	4D175	25		
2.77	III	12500	(55800)	2.77	III	12000	(53500)	20	4D180	25	(-),(#)							
51.8	22600	(2550)	1.01	I	4980	(22100)	62.5	18700	(2110)	1.01	I	4990	(22200)	20	4B145	28		
			1.31	I	8050	(35800)				1.31	I	7860	(35000)	20	4C160	28		
			1.61	II	8050	(35800)				1.61	II	7860	(35000)	20	4C165	28		
			1.96	II	8050	(35800)				2.02	III	7860	(35000)	20	4C170	28		
			2.26	III	12900	(57300)				2.26	III	12400	(55100)	20	4D170	28		
			2.47	III	12900	(57300)				2.47	III	12400	(55100)	20	4D175	28		
			2.77	III	12900	(57300)				2.77	III	12400	(55100)	20	4D180	28		(-),(#)
2.77	III	17200	(76600)	2.77	III	16500	(73200)	20	4E180	28	(-),(#)							
41.2	28400	(3210)	1.01	I	8220	(36600)	49.7	23500	(2660)	1.01	I	8080	(36000)	20	4C145	35		
			1.31	I	8220	(36600)				1.31	I	8080	(36000)	20	4C160	35		
			1.60	II	8220	(36600)				1.60	II	8080	(36000)	20	4C165	35		
			1.84	II	13500	(59900)				1.84	II	13000	(57800)	20	4D170	35		
			2.01	III	13500	(59900)				2.01	III	13000	(57800)	20	4D175	35		
			2.65	III	13500	(59900)				2.77	III	13000	(57800)	20	4D180	35		(-),(#)
			2.77	III	18100	(80700)				2.77	III	17400	(77300)	20	4E180	35		(-),(#)

Notes: [1] For Y4 Double Reductions (4XXXDX) refer to the above table; for Y4 single reduction refer to tables on pages 2.91-2.130.

[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

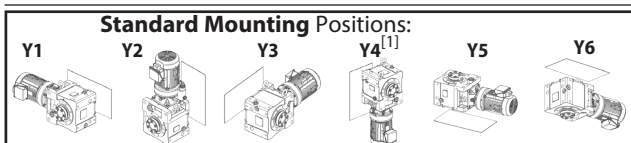
All 1HP+ motors require EP suffix in model number and can be used with a VFD, unless noted.

(-) = For Inverter Operation, starting condition may require ambient temperature of 5° C or higher.

(#) = Mounting positions Y2, F2, G2, K2, V2, W2 operation is limited to 75 %ED (duty cycle) for a 10 minute total cycle (7.5 minutes max. on time).

Standard Mounting Selection Tables

**20 HP
(15 kW)**



Dimension Pages:
 Single Reduction 2.132-2.143
 Single Reduction, Y2 2.144
 Double Reduction 2.146-2.161
 Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz					60 Hz					Selection							
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor		Base			VFD ^[2]		
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code		Frame Size	Ratio
37.7	31000	(3510)	1.01	I	8270	(36800)	45.5	25700	(2910)	1.01	I	8160	(36300)	20	4C145	39	
			1.31	I	8270	(36800)				1.31	I	8160	(36300)	20	4C160	39	
			1.43	II	8270	(36800)				1.47	II	8160	(36300)	20	4C165	39	
			1.61	II	13700	(60900)				1.61	II	13200	(58800)	20	4D165	39	
			1.84	II	13700	(60900)				1.84	II	13200	(58800)	20	4D170	39	
			2.01	III	13700	(60900)				2.01	III	13200	(58800)	20	4D175	39	
			2.44	III	13700	(60900)				2.77	III	13200	(58800)	20	4D180	39	(-)
			2.77	III	18500	(82200)				2.77	III	17700	(78900)	20	4E180	39	(-)
			2.80	III	18500	(82200)				3.00	III	17700	(78900)	20	4E185	39	(-)
			2.80	III	18500	(82200)				3.37	III	17700	(78900)	20	4E190	39	(-)
			2.80	III	18500	(82200)				3.38	III	17700	(78900)	20	4E195	39	(-)
			2.77	III	30800	(137000)	2.77	III	30800	(137000)	20	4F180	39	(-)			
31.9	36700	(4140)	1.01	I	8310	(37000)	38.5	30400	(3430)	1.01	I	8260	(36700)	20	4C145	46	
			1.21	I	8310	(37000)				1.24	I	8260	(36700)	20	4C160	46	
			1.31	I	14100	(62500)				1.31	I	13600	(60600)	20	4D160	46	
			1.51	II	14100	(62500)				1.51	II	13600	(60600)	20	4D165	46	
			1.82	II	14100	(62500)				1.82	II	13600	(60600)	20	4D170	46	
			2.01	III	14100	(62500)				2.01	III	13600	(60600)	20	4D175	46	
			2.10	III	14100	(62500)				2.48	III	13600	(60600)	20	4D180	46	(-)
			2.37	III	19100	(85200)				2.77	III	18400	(81900)	20	4E180	46	(-)
			2.37	III	19100	(85200)				2.86	III	18400	(81900)	20	4E185	46	(-)
			2.37	III	19100	(85200)				2.86	III	18400	(81900)	20	4E190	46	(-)
			2.37	III	19100	(85200)				2.86	III	18400	(81900)	20	4E195	46	(-)
			2.77	III	30600	(136000)	2.77	III	30900	(137000)	20	4F180	46	(-)			
27.6	42300	(4780)	0.96	-	8290	(36900)	33.3	35100	(3960)	0.97	-	8300	(36900)	20	4C145	53	
			1.05	I	8290	(36900)				1.07	I	8300	(36900)	20	4C160	53	
			1.25	I	14400	(63800)				1.25	I	14000	(62100)	20	4D160	53	
			1.49	II	14400	(63800)				1.51	II	14000	(62100)	20	4D165	53	
			1.70	II	14400	(63800)				1.70	II	14000	(62100)	20	4D170	53	
			1.82	II	14400	(63800)				1.82	II	14000	(62100)	20	4D175	53	
			1.82	II	14400	(63800)				2.16	III	14000	(62100)	20	4D180	53	(-)
			2.01	III	19700	(87600)				2.01	III	19000	(84400)	20	4E175	53	
			2.06	III	19700	(87600)				2.16	III	19000	(84400)	20	4E180	53	(-)
			2.06	III	19700	(87600)				2.48	III	19000	(84400)	20	4E185	53	(-)
			2.06	III	19700	(87600)				2.48	III	19000	(84400)	20	4E190	53	(-)
			2.06	III	19700	(87600)				2.48	III	19000	(84400)	20	4E195	53	(-)
			2.16	III	30300	(135000)				2.16	III	30700	(136000)	20	4F180	53	(-)
			2.60	III	30300	(135000)				2.60	III	30700	(136000)	20	4F185	53	(-)

Cyclo® BBB4

Selection Tables

Notes: [1] For Y4 Double Reductions (4XXXDX) refer to the above table; for Y4 single reduction refer to tables on pages 2.91-2.130..

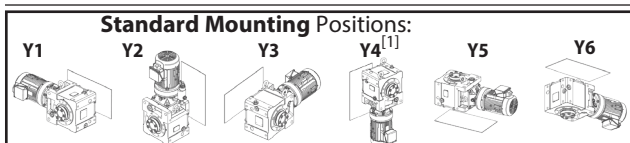
[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

All 1HP+ motors require EP suffix in model number and can be used with a VFD, unless noted.

(-) = For Inverter Operation, starting condition may require ambient temperature of 5° C or higher.

Standard Mounting Selection Tables

**20 HP
(15 kW)**



Dimension Pages:
 Single Reduction 2.132-2.143
 Single Reduction, Y2 2.144
 Double Reduction 2.146-2.161
 Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz					60 Hz					Selection							
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor		Base			VFD ^[2]		
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code		Frame Size	Ratio
24.4	48000	(5420)	1.25	I	14600	(64800)	29.4	39700	(4490)	1.25	I	14200	(63300)	20	4D165	60	
			1.31	I	14600	(64800)				1.31	I	14200	(63300)	20	4D170	60	
			1.61	II	14600	(64800)				1.61	II	14200	(63300)	20	4D175	60	
			1.61	II	14600	(64800)				1.94	II	14200	(63300)	20	4D180	60	
			1.81	II	20100	(89600)				2.04	III	19400	(86500)	20	4E180	60	
			1.81	II	20100	(89600)				2.19	III	19400	(86500)	20	4E185	60	
			1.81	II	20100	(89600)				2.19	III	19400	(86500)	20	4E190	60	(-)
			1.81	II	20100	(89600)				2.19	III	19400	(86500)	20	4E195	60	(-)
			2.04	III	30100	(134000)				2.04	III	30400	(135000)	20	4F180	60	
			2.55	III	30100	(134000)				2.60	III	30400	(135000)	20	4F185	60	
21.6	54200	(6120)	1.07	I	14800	(65700)	26.0	44900	(5070)	1.07	I	14500	(64300)	20	4D165	67	
			1.24	I	14800	(65700)				1.30	I	14500	(64300)	20	4D170	67	
			1.42	II	14800	(65700)				1.42	II	14500	(64300)	20	4D175	67	
			1.42	II	14800	(65700)				1.72	II	14500	(64300)	20	4D180	67	
			1.57	II	20600	(91500)				1.61	II	19900	(88500)	20	4E175	67	
			1.61	II	20600	(91500)				1.94	II	19900	(88500)	20	4E180	67	
			1.61	II	20600	(91500)				1.94	II	19900	(88500)	20	4E185	67	
			1.61	II	20600	(91500)				1.94	II	19900	(88500)	20	4E190	67	(-)
			1.61	II	20600	(91500)				1.94	II	19900	(88500)	20	4E195	67	(-)
			2.00	III	29800	(133000)				2.00	III	30200	(134000)	20	4F180	67	
			2.54	III	29800	(133000)				2.60	III	30200	(134000)	20	4F185	67	
			2.73	III	29800	(133000)				2.73	III	30200	(134000)	20	4F190	67	(-)
2.94	III	29800	(133000)	3.21	III	30200	(134000)	20	4F195	67	(-)						
19.7	59300	(6690)	1.07	I	14900	(66200)	23.8	49100	(5550)	1.07	I	14600	(65000)	20	4D165	74	
			1.24	I	14900	(66200)				1.30	I	14600	(65000)	20	4D170	74	
			1.30	I	14900	(66200)				1.30	I	14600	(65000)	20	4D175	74	
			1.30	I	14900	(66200)				1.57	II	14600	(65000)	20	4D180	74	
			1.47	II	20800	(92500)				1.47	II	20200	(90000)	20	4E175	74	
			1.47	II	20800	(92500)				1.77	II	20200	(90000)	20	4E180	74	
			1.47	II	20800	(92500)				1.77	II	20200	(90000)	20	4E185	74	
			1.47	II	20800	(92500)				1.77	II	20200	(90000)	20	4E190	74	(-)
			1.47	II	20800	(92500)				1.77	II	20200	(90000)	20	4E195	74	(-)
			2.00	III	29600	(132000)				2.00	III	30000	(134000)	20	4F180	74	
			2.54	III	29600	(132000)				2.60	III	30000	(134000)	20	4F185	74	
			2.69	III	29600	(132000)				2.73	III	30000	(134000)	20	4F190	74	(-)
			2.69	III	29600	(132000)				3.21	III	30000	(134000)	20	4F195	74	(-)

Notes: [1] For Y4 Double Reductions (4XXXDX) refer to the above table; for Y4 single reduction refer to tables on pages 2.91-2.130.

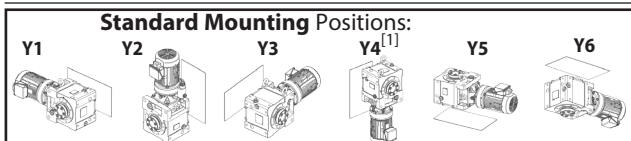
[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

All 1HP+ motors require EP suffix in model number and can be used with a VFD, unless noted.

(-) = For Inverter Operation, starting condition may require ambient temperature of 5° C or higher.

Standard Mounting Selection Tables

**20 HP
(15 kW)**



Dimension Pages:
 Single Reduction 2.132-2.143
 Single Reduction, Y2 2.144
 Double Reduction 2.146-2.161
 Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz					60 Hz					Selection							
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor		Base			VFD ^[2]		
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code		Frame Size	Ratio
18.1	64500	(7290)	1.04	I	15000	(66500)	21.9	53400	(6040)	1.05	I	14700	(65600)	20	4D170	80	
			1.20	I	15000	(66500)				1.20	I	14700	(65600)	20	4D175	80	
			1.20	I	15000	(66500)				1.44	II	14700	(65600)	20	4D180	80	
			1.30	I	20500	(91400)				1.30	I	20500	(91300)	20	4E175	80	
			1.35	I	20500	(91400)				1.61	II	20500	(91300)	20	4E180	80	
			1.35	I	20500	(91400)				1.63	II	20500	(91300)	20	4E185	80	
			1.35	I	20500	(91400)				1.63	II	20500	(91300)	20	4E190	80	(-)
			1.35	I	20500	(91400)				1.63	II	20500	(91300)	20	4E195	80	(-)
			1.61	II	29400	(131000)				1.61	II	29900	(133000)	20	4F180	80	
			2.01	III	29400	(131000)				2.01	III	29900	(133000)	20	4F185	80	
			2.35	III	29400	(131000)				2.35	III	29900	(133000)	20	4F190	80	(-)
			2.47	III	29400	(131000)				2.70	III	29900	(133000)	20	4F195	80	(-)
16.6	70500	(7970)	0.90	-	13700	(61100)	20.0	58400	(6600)	1.01	I	14900	(66100)	20	4D165	88	
			1.04	I	13700	(61100)				1.05	I	14900	(66100)	20	4D170	88	
			1.09	I	13700	(61100)				1.09	I	14900	(66100)	20	4D175	88	
			1.09	I	13700	(61100)				1.32	I	14900	(66100)	20	4D180	88	
			1.23	I	20200	(90000)				1.23	I	20800	(92600)	20	4E175	88	
			1.23	I	20200	(90000)				1.49	II	20800	(92600)	20	4E180	88	
			1.23	I	20200	(90000)				1.49	II	20800	(92600)	20	4E185	88	
			1.23	I	20200	(90000)				1.49	II	20800	(92600)	20	4E190	88	(-)
			1.23	I	20200	(90000)				1.49	II	20800	(92600)	20	4E195	88	(-)
			1.61	II	29100	(130000)				1.61	II	29600	(132000)	20	4F180	88	
			2.01	III	29100	(130000)				2.01	III	29600	(132000)	20	4F185	88	
			2.26	III	29100	(130000)				2.35	III	29600	(132000)	20	4F190	88	(-)
			2.26	III	29100	(130000)				2.70	III	29600	(132000)	20	4F195	88	(-)
			14.3	81800	(9250)	0.94				-	9220	(41000)	17.2	67800	(7660)	0.94	-
0.94	-	9220				(41000)	1.14	I	14500	(64700)	20	4D180				102	
1.06	I	19700				(87400)	1.06	I	20400	(90600)	20	4E175				102	
1.06	I	19700				(87400)	1.28	I	20400	(90600)	20	4E180				102	
1.06	I	19700				(87400)	1.28	I	20400	(90600)	20	4E185				102	
1.06	I	19700				(87400)	1.28	I	20400	(90600)	20	4E190				102	
1.06	I	19700				(87400)	1.28	I	20400	(90600)	20	4E195				102	
1.30	I	28600				(127000)	1.30	I	29200	(130000)	20	4F180				102	
1.61	II	28600				(127000)	1.61	II	29200	(130000)	20	4F185				102	
1.95	II	28600				(127000)	2.05	III	29200	(130000)	20	4F190				102	
1.95	II	28600				(127000)	2.35	III	29200	(130000)	20	4F195				102	

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Selection Tables

Notes: [1] For Y4 Double Reductions (4XXXDX) refer to the above table; for Y4 single reduction refer to tables on pages 2.91-2.130..

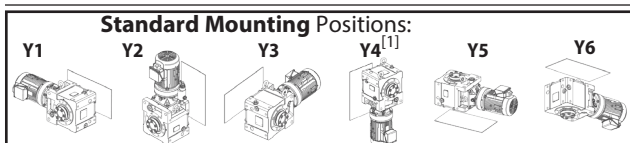
[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

All 1HP+ motors require EP suffix in model number and can be used with a VFD, unless noted.

(-) = For Inverter Operation, starting condition may require ambient temperature of 5° C or higher.

Standard Mounting Selection Tables

**20 HP
(15 kW)**



Dimension Pages:
 Single Reduction 2.132-2.143
 Single Reduction, Y2 2.144
 Double Reduction 2.146-2.161
 Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz						60 Hz						Selection					
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Base			VFD ^[2]
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code	Frame Size	Ratio	
12.9	90300 (10200)		0.85	-	-	-	15.6	74800 (8450)		1.03	I	12300 (54700)	20	4D180	112		
			0.96	-	19200 (85500)	1.01				I	20000 (89000)	20	4E175	112			
			1.14	I	19200 (85500)	1.25				I	20000 (89000)	20	4E180	112			
			1.14	I	19200 (85500)	1.37				I	20000 (89000)	20	4E185	112			
			1.23	I	28300 (126000)	1.25				I	28900 (129000)	20	4F180	112			
			1.51	II	28300 (126000)	1.51				II	28900 (129000)	20	4F185	112			
			1.62	II	28300 (126000)	1.62				II	28900 (129000)	20	4F190	112			
			1.76	II	28300 (126000)	2.01				III	28900 (129000)	20	4F195	112			
11.8	98800 (11200)		0.96	-	18800 (83600)		14.3	81800 (9250)		1.01	I	19700 (87400)	20	4E175	123		
			1.04	I	18800 (83600)	1.25				I	19700 (87400)	20	4E180	123			
			1.04	I	18800 (83600)	1.25				I	19700 (87400)	20	4E185	123			
			1.23	I	27900 (124000)	1.25				I	28600 (127000)	20	4F180	123			
			1.51	II	27900 (124000)	1.51				II	28600 (127000)	20	4F185	123			
			1.61	II	27900 (124000)	1.62				II	28600 (127000)	20	4F190	123			
			1.61	II	27900 (124000)	1.95				II	28600 (127000)	20	4F195	123			
			9.63	121000 (13700)		0.85				-	12500 (55800)		11.6	101000 (11400)			1.01
0.85	-	12500 (55800)				1.02	I	18700 (83200)	20	4E185	151						
1.00	I	26900 (120000)				1.01	I	27800 (124000)	20	4F180	151						
1.24	I	26900 (120000)				1.25	I	27800 (124000)	20	4F185	151						
1.31	I	26900 (120000)				1.39	I	27800 (124000)	20	4F190	151						
1.31	I	26900 (120000)				1.58	II	27800 (124000)	20	4F195	151						
8.12	144000 (16300)		1.01	I	25900 (115000)		9.80	119000 (13500)		1.01	I	27000 (120000)	20	4F185	179		
			1.11	I	25900 (115000)	1.21				I	27000 (120000)	20	4F190	179			
			1.11	I	25900 (115000)	1.34				I	27000 (120000)	20	4F195	179			
7.02	166000 (18800)		0.96	-	25000 (111000)		8.47	138000 (15600)		1.02	I	26200 (117000)	20	4F190	207		
			0.96	-	25000 (111000)	1.15				I	26200 (117000)	20	4F195	207			

Cyclo® BBB4

Selection Tables

Sold & Serviced By:



Toll Free Phone (877) SERV098

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sales@electromate.com

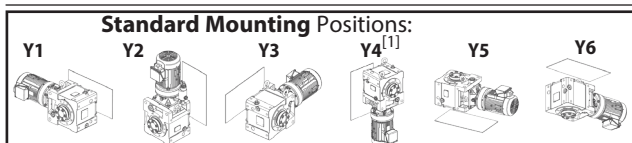
Notes: [1] For Y4 Double Reductions (4XXXDX) refer to the above table; for Y4 single reduction refer to tables on pages 2.91-2.130.

[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

All 1HP+ motors require EP suffix in model number and can be used with a VFD, unless noted.

Standard Mounting Selection Tables

**25 HP
(18.5 kW)**



Dimension Pages:
 Single Reduction, Y2 2.132-2.143
 Single Reduction, Y5 2.144
 Double Reduction 2.146-2.161
 Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz						60 Hz						Selection					
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Base			VFD ^[2]
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code	Frame Size	Ratio	
138	10400	(1180)	1.37	I	4410	(19600)	167	8650	(977)	1.37	I	4310	(19200)	25	4B160	11	
			1.57	II	4410	(19600)				1.57	II	4310	(19200)	25	4B165	11	
			1.62	II	6640	(29600)				1.62	II	6400	(28500)	25	4C165	11	
			2.24	III	6650	(29600)				2.24	III	6400	(28500)	25	4C170	11	(#)
			2.43	III	6650	(29600)				2.43	III	6400	(28500)	25	4C175	11	(#)
			2.24	III	10200	(45400)				2.24	III	9740	(43300)	25	4D170	11	(#)
			2.43	III	10200	(45400)				2.43	III	9740	(43300)	25	4D175	11	(#)
			2.89	III	10100	(45000)				2.89	III	9660	(43000)	25	4D180	11	(-),(#)
113	12700	(1440)	1.37	I	4490	(20000)	137	10500	(1190)	1.37	I	4400	(19600)	25	4B160	13	
			1.57	II	4490	(20000)				1.57	II	4400	(19600)	25	4B165	13	
			1.62	II	6850	(30500)				1.62	II	6610	(29400)	25	4C165	13	
			2.24	III	6880	(30600)				2.24	III	6640	(29500)	25	4C170	13	(#)
			2.43	III	6880	(30600)				2.43	III	6640	(29500)	25	4C175	13	(#)
			2.24	III	10700	(47400)				2.24	III	10200	(45400)	25	4D170	13	(#)
			2.43	III	10700	(47400)				2.43	III	10200	(45400)	25	4D175	13	(#)
			2.89	III	10700	(47400)				2.89	III	10200	(45400)	25	4D180	13	(-),(#)
104	13900	(1570)	1.37	I	4520	(20100)	125	11500	(1300)	1.37	I	4450	(19800)	25	4B160	14	
			1.51	II	4520	(20100)				1.51	II	4450	(19800)	25	4B165	14	
			1.62	II	6960	(30900)				1.62	II	6730	(29900)	25	4C165	14	
			2.24	III	6980	(31100)				2.24	III	6760	(30100)	25	4C170	14	(#)
			2.43	III	6980	(31100)				2.43	III	6760	(30100)	25	4C175	14	(#)
			2.24	III	10900	(48400)				2.24	III	10400	(46300)	25	4D170	14	(#)
			2.43	III	10900	(48400)				2.43	III	10400	(46300)	25	4D175	14	(#)
			2.89	III	10900	(48400)				2.89	III	10400	(46300)	25	4D180	14	(-),(#)
90.6	15900	(1800)	1.35	I	4550	(20200)	109	13200	(1490)	1.43	II	4510	(20000)	25	4B165	16	
			1.62	II	7120	(31700)				1.62	II	6910	(30700)	25	4C165	16	
			2.24	III	7120	(31700)				2.24	III	6900	(30700)	25	4C170	16	(#)
			2.39	III	7120	(31700)				2.43	III	6900	(30700)	25	4C175	16	(#)
			2.24	III	11200	(49700)				2.24	III	10700	(47700)	25	4D170	16	(#)
			2.43	III	11200	(49700)				2.43	III	10700	(47700)	25	4D175	16	(#)
			2.89	III	11100	(49400)				2.89	III	10600	(47300)	25	4D180	16	(-),(#)

Cyclo® BBB4

Selection Tables

Notes: [1] For Y4 Double Reductions (4XXXDX) refer to the above table; for Y4 single reduction refer to tables on pages 2.91-2.130..

[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

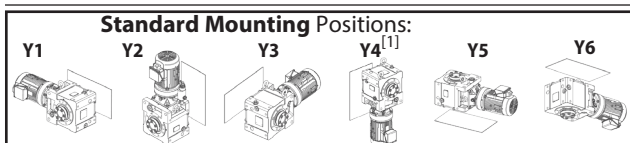
All 1HP+ motors require EP suffix in model number and can be used with a VFD, unless noted.

(-) = For Inverter Operation, starting condition may require ambient temperature of 5° C or higher.

(#) = Mounting positions Y2, F2, G2, K2, V2, W2 operation is limited to 75 %ED (duty cycle) for a 10 minute total cycle (7.5 minutes max. on time).

Standard Mounting Selection Tables

**25 HP
(18.5 kW)**



Dimension Pages:
 Single Reduction 2.132-2.143
 Single Reduction, Y2 2.144
 Double Reduction 2.146-2.161
 Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz						60 Hz						Selection						
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Base			VFD ^[2]	
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code	Frame Size	Ratio		
82.9	17400	(1970)	1.28	I	4560	(20300)	100.0	14400	(1630)	1.31	I	4530	(20200)	25	4B160	18		
			1.37	I	7220	(32100)				1.37	I	7010	(31200)	25	4C160	18		
			1.62	II	7220	(32100)				1.62	II	7010	(31200)	25	4C165	18		
			2.24	III	7210	(32100)				2.24	III	7010	(31200)	25	4C170	18		(#)
			2.24	III	7210	(32100)				2.43	III	7010	(31200)	25	4C175	18		(#)
			2.24	III	11400	(50700)				2.24	III	10900	(48600)	25	4D170	18		(#)
			2.43	III	11400	(50700)				2.43	III	10900	(48600)	25	4D175	18		(#)
			2.89	III	11300	(50300)				2.89	III	10900	(48300)	25	4D180	18		(-),(#)
69.0	20900	(2360)	1.09	I	4550	(20200)	83.3	17300	(1950)	1.09	I	4560	(20300)	25	4B160	21		
			1.37	I	7370	(32800)				1.37	I	7190	(32000)	25	4C160	21		
			1.62	II	7370	(32800)				1.62	II	7190	(32000)	25	4C165	21		
			1.83	II	7370	(32800)				1.83	II	7190	(32000)	25	4C170	21		
			1.95	II	7370	(32800)				1.95	II	7190	(32000)	25	4C175	21		
			2.00	III	11800	(52500)				2.00	III	11400	(50500)	25	4D175	21		
			2.24	III	11800	(52500)				2.24	III	11400	(50500)	25	4D180	21		(-),(#)
			2.43	III	11800	(52500)				2.43	III	11400	(50500)	25	4D185	21		(-),(#)
			2.74	III	15800	(70200)				2.74	III	15100	(67100)	25	4E190	21		(-),(#)
2.97	III	15800	(70200)	2.97	III	15100	(67100)	25	4E195	21	(-),(#)							
64.7	22300	(2520)	1.02	I	4530	(20100)	78.1	18500	(2090)	1.02	I	4560	(20300)	25	4B160	22		
			1.10	I	7420	(33000)				1.10	I	7260	(32300)	25	4C160	22		
			1.30	I	7420	(33000)				1.30	I	7260	(32300)	25	4C165	22		
			1.83	II	7420	(33000)				1.83	II	7260	(32300)	25	4C170	22		
			2.00	III	12000	(53200)				2.00	III	11500	(51200)	25	4D175	22		
			2.24	III	12000	(53200)				2.24	III	11500	(51200)	25	4D180	22		(-),(#)
			2.43	III	12000	(53200)				2.43	III	11500	(51200)	25	4D185	22		(-),(#)
			2.74	III	16000	(71200)				2.74	III	15300	(68200)	25	4E190	22		(-),(#)
			2.97	III	16000	(71200)				2.97	III	15300	(68200)	25	4E195	22		(-),(#)
59.2	24400	(2750)	0.93	-	4490	(20000)	71.4	20200	(2280)	0.93	-	4550	(20300)	25	4B160	25		
			1.10	I	7480	(33300)				1.10	I	7340	(32600)	25	4C160	25		
			1.30	I	7480	(33300)				1.30	I	7340	(32600)	25	4C165	25		
			1.75	II	7480	(33300)				1.87	II	7340	(32600)	25	4C175	25		
			1.83	II	12200	(54100)				1.83	II	11700	(52200)	25	4D170	25		
			2.00	III	12200	(54100)				2.00	III	11700	(52200)	25	4D175	25		
			2.24	III	12200	(54100)				2.24	III	11700	(52200)	25	4D180	25		(-),(#)
			2.43	III	12200	(54100)				2.43	III	11700	(52200)	25	4D185	25		(-),(#)
			2.43	III	16300	(72700)				2.43	III	15700	(69600)	25	4E185	25		(-),(#)
			2.74	III	16300	(72700)				2.74	III	15700	(69600)	25	4E190	25		(-),(#)
			2.97	III	16300	(72700)				2.97	III	15700	(69600)	25	4E195	25		(-),(#)

Notes: [1] For Y4 Double Reductions (4XXXDX) refer to the above table; for Y4 single reduction refer to tables on pages 2.91-2.130.

[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

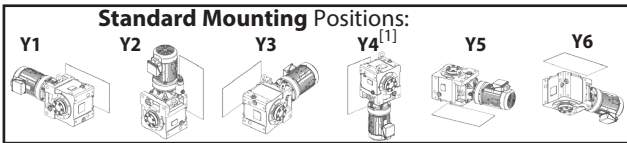
All 1HP+ motors require EP suffix in model number and can be used with a VFD, unless noted.

(-) = For Inverter Operation, starting condition may require ambient temperature of 5° C or higher.

(#) = Mounting positions Y2, F2, G2, K2, V2, W2 operation is limited to 75 %ED (duty cycle) for a 10 minute total cycle (7.5 minutes max. on time).

Standard Mounting Selection Tables

**25 HP
(18.5 kW)**



Dimension Pages:
 Single Reduction 2.132-2.143
 Single Reduction, Y2 2.144
 Double Reduction 2.146-2.161
 Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz					60 Hz					Selection								
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor		Base			VFD ^[2]			
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code		Frame Size	Ratio	
51.8	27800	(3150)	1.06	I	7550	(33600)	62.5	23100	(2610)	1.06	I	7440	(33100)	25	4C160	28		
			1.30	I	7550	(33600)				1.30	I	7440	(33100)	25	4C165	28		
			1.59	II	7550	(33600)				1.63	II	7440	(33100)	25	4C170	28		
			1.83	II	12500	(55400)				1.83	II	12000	(53600)	25	4D170	28		
			2.00	III	12500	(55400)				2.00	III	12000	(53600)	25	4D175	28		
			2.24	III	12500	(55400)				2.24	III	12000	(53600)	25	4D180	28		(-), (#)
			2.43	III	12500	(55400)				2.43	III	12000	(53600)	25	4D185	28		(-), (#)
			2.24	III	16800	(74900)				2.24	III	16100	(71800)	25	4E180	28		(-), (#)
			2.43	III	16800	(74900)				2.43	III	16100	(71800)	25	4E185	28		(-), (#)
			2.74	III	16800	(74900)				2.74	III	16100	(71800)	25	4E190	28		(-), (#)
2.97	III	16800	(74900)	2.97	III	16100	(71800)	25	4E195	28	(-), (#)							
2.97	III	29400	(131000)	2.97	III	28000	(124000)	25	4F195	28	(-), (#)							
41.2	35000	(3950)	1.06	I	7590	(33800)	49.7	29000	(3280)	1.06	I	7560	(33600)	25	4C160	35		
			1.30	I	7590	(33800)				1.30	I	7560	(33600)	25	4C165	35		
			1.49	II	12900	(57500)				1.49	II	12600	(55800)	25	4D170	35		
			1.63	II	12900	(57500)				1.63	II	12600	(55800)	25	4D175	35		
			2.15	III	12900	(57500)				2.24	III	12600	(55800)	25	4D180	35		(#)
			2.24	III	17600	(78500)				2.24	III	17000	(75500)	25	4E180	35		(#)
			2.43	III	17600	(78500)				2.43	III	17000	(75500)	25	4E185	35		(#)
			2.49	III	17600	(78500)				2.74	III	17000	(75500)	25	4E190	35		(-), (#)
			2.49	III	17600	(78500)				2.97	III	17000	(75500)	25	4E195	35		(-), (#)
			2.43	III	30700	(136000)				2.43	III	29700	(132000)	25	4F185	35		(#)
2.74	III	30700	(136000)	2.74	III	29700	(132000)	25	4F190	35	(#)							
2.97	III	30700	(136000)	2.97	III	29700	(132000)	25	4F195	35	(#)							
37.7	38300	(4330)	1.06	I	7580	(33700)	45.5	31700	(3580)	1.06	I	7590	(33800)	25	4C160	39		
			1.16	I	7580	(33700)				1.19	I	7590	(33800)	25	4C165	39		
			1.30	I	13100	(58300)				1.30	I	12700	(56700)	25	4D165	39		
			1.49	II	13100	(58300)				1.49	II	12700	(56700)	25	4D170	39		
			1.63	II	13100	(58300)				1.63	II	12700	(56700)	25	4D175	39		
			1.98	II	13100	(58300)				2.24	III	12700	(56700)	25	4D180	39		
			2.24	III	18000	(79900)				2.24	III	17300	(77000)	25	4E180	39		
			2.27	III	18000	(79900)				2.43	III	17300	(77000)	25	4E185	39		
			2.27	III	18000	(79900)				2.74	III	17300	(77000)	25	4E190	39		(-)
			2.27	III	18000	(79900)				2.74	III	17300	(77000)	25	4E195	39		(-)
			2.24	III	30500	(136000)				2.24	III	30400	(135000)	25	4F180	39		
			2.43	III	30500	(136000)				2.43	III	30400	(135000)	25	4F185	39		
			2.74	III	30500	(136000)				2.74	III	30400	(135000)	25	4F190	39		(-)
			2.97	III	30500	(136000)				2.97	III	30400	(135000)	25	4F195	39		(-)

Cyclo® BBB4

Selection Tables

Notes: [1] For Y4 Double Reductions (4XXXDX) refer to the above table; for Y4 single reduction refer to tables on pages 2.91-2.130..

[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

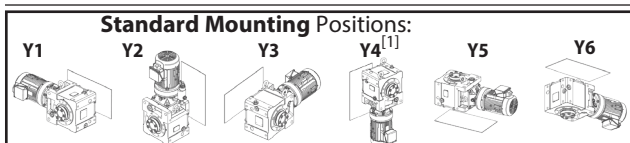
All 1HP+ motors require EP suffix in model number and can be used with a VFD, unless noted.

(-) = For Inverter Operation, starting condition may require ambient temperature of 5° C or higher.

(#) = Mounting positions Y2, F2, G2, K2, V2, W2 operation is limited to 75 %ED (duty cycle) for a 10 minute total cycle (7.5 minutes max. on time).

Standard Mounting Selection Tables

**25 HP
(18.5 kW)**



Dimension Pages:
 Single Reduction 2.132-2.143
 Single Reduction, Y2 2.144
 Double Reduction 2.146-2.161
 Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz					60 Hz					Selection							
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor		Base			VFD ^[2]		
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code		Frame Size	Ratio
31.9	45200	(5110)	0.98	-	7500	(33400)	38.5	37500	(4240)	1.01	I	7590	(33800)	25	4C160	46	
			1.22	I	13400	(59500)				1.22	I	13100	(58100)	25	4D165	46	
			1.48	II	13400	(59500)				1.48	II	13100	(58100)	25	4D170	46	
			1.63	II	13400	(59500)				1.63	II	13100	(58100)	25	4D175	46	
			1.71	II	13400	(59500)				2.01	III	13100	(58100)	25	4D180	46	
			1.92	II	18500	(82400)				2.24	III	17900	(79600)	25	4E180	46	
			1.92	II	18500	(82400)				2.32	III	17900	(79600)	25	4E185	46	
			1.92	II	18500	(82400)				2.32	III	17900	(79600)	25	4E190	46	(-)
			1.92	II	18500	(82400)				2.32	III	17900	(79600)	25	4E195	46	(-)
			2.24	III	30200	(134000)				2.24	III	30500	(136000)	25	4F180	46	
			2.43	III	30200	(134000)				2.43	III	30500	(136000)	25	4F185	46	
			2.74	III	30200	(134000)				2.74	III	30500	(136000)	25	4F190	46	(-)
			2.97	III	30200	(134000)				2.97	III	30500	(136000)	25	4F195	46	(-)
27.6	52200	(5900)	0.85	-	5880	(26100)	33.3	43300	(4890)	0.87	-	7530	(33500)	25	4C160	53	
			1.01	I	13600	(60300)				1.01	I	13300	(59200)	25	4D160	53	
			1.21	I	13600	(60300)				1.22	I	13300	(59200)	25	4D165	53	
			1.38	I	13600	(60300)				1.38	I	13300	(59200)	25	4D170	53	
			1.48	II	13600	(60300)				1.48	II	13300	(59200)	25	4D175	53	
			1.48	II	13600	(60300)				1.75	II	13300	(59200)	25	4D180	53	
			1.63	II	19000	(84400)				1.63	II	18400	(81700)	25	4E175	53	
			1.67	II	19000	(84400)				1.75	II	18400	(81700)	25	4E180	53	
			1.67	II	19000	(84400)				2.01	III	18400	(81700)	25	4E185	53	
			1.67	II	19000	(84400)				2.01	III	18400	(81700)	25	4E190	53	(-)
			1.67	II	19000	(84400)				2.01	III	18400	(81700)	25	4E195	53	(-)
			1.75	II	29900	(133000)				1.75	II	30300	(135000)	25	4F180	53	
			2.11	III	29900	(133000)				2.11	III	30300	(135000)	25	4F185	53	
			2.74	III	29900	(133000)				2.74	III	30300	(135000)	25	4F190	53	(-)
			2.97	III	29900	(133000)				2.97	III	30300	(135000)	25	4F195	53	(-)

Cyclo® BBB4

Selection Tables

Sold & Serviced By:



Toll Free Phone (877) SERV098

www.electromate.com

sales@electromate.com

Notes: [1] For Y4 Double Reductions (4XXXDX) refer to the above table; for Y4 single reduction refer to tables on pages 2.91-2.130.

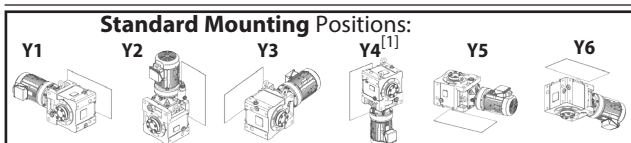
[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

All 1HP+ motors require EP suffix in model number and can be used with a VFD, unless noted.

(-) = For Inverter Operation, starting condition may require ambient temperature of 5° C or higher.

Standard Mounting Selection Tables

25 HP
(18.5 kW)



Dimension Pages:
Single Reduction 2.132-2.143
Single Reduction, Y2 2.144
Double Reduction 2.146-2.161
Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz					60 Hz					Selection							
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor		Base			VFD ^[2]		
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code		Frame Size	Ratio
24.4	59200	(6680)	1.02	I	13700	(60800)	29.4	49000	(5540)	1.02	I	13500	(60000)	25	4D165	60	
			1.06	I	13700	(60800)				1.06	I	13500	(60000)	25	4D170	60	
			1.30	I	13700	(60800)				1.30	I	13500	(60000)	25	4D175	60	
			1.30	I	13700	(60800)				1.57	II	13500	(60000)	25	4D180	60	
			1.47	II	19300	(86000)				1.65	II	18800	(83500)	25	4E180	60	
			1.47	II	19300	(86000)				1.77	II	18800	(83500)	25	4E185	60	
			1.47	II	19300	(86000)				1.77	II	18800	(83500)	25	4E190	60	(-)
			1.47	II	19300	(86000)				1.77	II	18800	(83500)	25	4E195	60	(-)
			1.65	II	29600	(132000)				1.65	II	30000	(134000)	25	4F180	60	
			2.06	III	29600	(132000)				2.11	III	30000	(134000)	25	4F185	60	
			2.69	III	29600	(132000)				2.74	III	30000	(134000)	25	4F190	60	(-)
			2.69	III	29600	(132000)				2.97	III	30000	(134000)	25	4F195	60	(-)
21.6	66800	(7550)	1.00	I	13700	(61100)	26.0	55400	(6260)	1.05	I	13600	(60600)	25	4D170	67	
			1.16	I	13700	(61100)				1.16	I	13600	(60600)	25	4D175	67	
			1.16	I	13700	(61100)				1.39	I	13600	(60600)	25	4D180	67	
			1.27	I	19600	(87400)				1.30	I	19100	(85100)	25	4E175	67	
			1.30	I	19600	(87400)				1.57	II	19100	(85100)	25	4E180	67	
			1.30	I	19600	(87400)				1.57	II	19100	(85100)	25	4E185	67	
			1.30	I	19600	(87400)				1.57	II	19100	(85100)	25	4E190	67	(-)
			1.30	I	19600	(87400)				1.57	II	19100	(85100)	25	4E195	67	(-)
			1.62	II	29300	(130000)				1.62	II	29800	(132000)	25	4F180	67	
			2.06	III	29300	(130000)				2.11	III	29800	(132000)	25	4F185	67	
			2.22	III	29300	(130000)				2.22	III	29800	(132000)	25	4F190	67	(-)
			2.38	III	29300	(130000)				2.60	III	29800	(132000)	25	4F195	67	(-)
19.7	73100	(8260)	0.86	-	12900	(57400)	23.8	60600	(6840)	0.87	-	13700	(60900)	25	4D165	74	
			1.00	I	12900	(57400)				1.05	I	13700	(60900)	25	4D170	74	
			1.06	I	12900	(57400)				1.06	I	13700	(60900)	25	4D175	74	
			1.06	I	12900	(57400)				1.27	I	13700	(60900)	25	4D180	74	
			1.19	I	19900	(88300)				1.19	I	19400	(86200)	25	4E175	74	
			1.19	I	19900	(88300)				1.44	II	19400	(86200)	25	4E180	74	
			1.19	I	19900	(88300)				1.44	II	19400	(86200)	25	4E185	74	
			1.19	I	19900	(88300)				1.44	II	19400	(86200)	25	4E190	74	
			1.19	I	19900	(88300)				1.44	II	19400	(86200)	25	4E195	74	
			1.62	II	29000	(129000)				1.62	II	29600	(131000)	25	4F180	74	
			2.06	III	29000	(129000)				2.11	III	29600	(131000)	25	4F185	74	
			2.18	III	29000	(129000)				2.22	III	29600	(131000)	25	4F190	74	
			2.18	III	29000	(129000)				2.60	III	29600	(131000)	25	4F195	74	

Cyclo® BBB4

Selection Tables

Notes: [1] For Y4 Double Reductions (4XXXDX) refer to the above table; for Y4 single reduction refer to tables on pages 2.91-2.130..

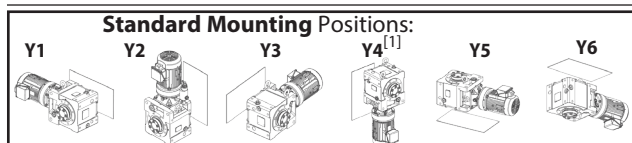
[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

All 1HP+ motors require EP suffix in model number and can be used with a VFD, unless noted.

(-) = For Inverter Operation, starting condition may require ambient temperature of 5° C or higher.

Standard Mounting Selection Tables

25 HP
(18.5 kW)



Dimension Pages:
Single Reduction 2.132-2.143
Single Reduction, Y2 2.144
Double Reduction 2.146-2.161
Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz					60 Hz					Selection						
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor		Base			VFD ^[2]	
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code		Frame Size
18.1	79500	(8990)	0.97	-	10400	(46100)	21.9	65900	(7450)	0.97	-	13700	(61100)	25	4D175	80
			0.97	-	10400	(46100)				1.17	I	13700	(61100)	25	4D180	80
			1.05	I	19800	(88000)				1.05	I	19600	(87200)	25	4E175	80
			1.09	I	19800	(88000)				1.30	I	19600	(87200)	25	4E180	80
			1.09	I	19800	(88000)				1.32	I	19600	(87200)	25	4E185	80
			1.09	I	19800	(88000)				1.32	I	19600	(87200)	25	4E190	80
			1.09	I	19800	(88000)				1.32	I	19600	(87200)	25	4E195	80
			1.30	I	28700	(128000)				1.30	I	29300	(130000)	25	4F180	80
			1.63	II	28700	(128000)				1.63	II	29300	(130000)	25	4F185	80
			1.90	II	28700	(128000)				1.90	II	29300	(130000)	25	4F190	80
			2.00	III	28700	(128000)				2.19	III	29300	(130000)	25	4F195	80
16.6	87000	(9830)	0.89	-	5680	(25300)	20.0	72100	(8140)	1.07	I	13200	(58900)	25	4D180	88
			1.00	I	19400	(86300)				1.00	I	19800	(88200)	25	4E175	88
			1.00	I	19400	(86300)				1.21	I	19800	(88200)	25	4E180	88
			1.00	I	19400	(86300)				1.21	I	19800	(88200)	25	4E185	88
			1.00	I	19400	(86300)				1.21	I	19800	(88200)	25	4E190	88
			1.00	I	19400	(86300)				1.21	I	19800	(88200)	25	4E195	88
			1.30	I	28400	(126000)				1.30	I	29100	(129000)	25	4F180	88
			1.63	II	28400	(126000)				1.63	II	29100	(129000)	25	4F185	88
			1.83	II	28400	(126000)				1.90	II	29100	(129000)	25	4F190	88
			1.83	II	28400	(126000)				2.19	III	29100	(129000)	25	4F195	88
14.3	101000	(11400)	0.86	-	18700	(83100)	17.2	83600	(9450)	0.86	-	19600	(87000)	25	4E175	102
			0.86	-	18700	(83100)				1.04	I	19600	(87000)	25	4E180	102
			0.86	-	18700	(83100)				1.04	I	19600	(87000)	25	4E185	102
			0.86	-	18700	(83100)				1.04	I	19600	(87000)	25	4E190	102
			0.86	-	18700	(83100)				1.04	I	19600	(87000)	25	4E195	102
			1.05	I	27800	(124000)				1.05	I	28600	(127000)	25	4F180	102
			1.30	I	27800	(124000)				1.30	I	28600	(127000)	25	4F185	102
			1.58	II	27800	(124000)				1.66	II	28600	(127000)	25	4F190	102
			1.58	II	27800	(124000)				1.91	II	28600	(127000)	25	4F195	102
12.9	111000	(12600)	0.92	-	16100	(71500)	15.6	92300	(10400)	1.02	I	19100	(85100)	25	4E180	112
			0.92	-	16100	(71500)				1.11	I	19100	(85100)	25	4E185	112
			1.00	I	27400	(122000)				1.02	I	28200	(125000)	25	4F180	112
			1.22	I	27400	(122000)				1.22	I	28200	(125000)	25	4F185	112
			1.31	I	27400	(122000)				1.31	I	28200	(125000)	25	4F190	112
			1.43	II	27400	(122000)				1.63	II	28200	(125000)	25	4F195	112

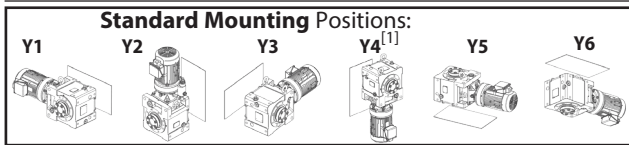
Notes: [1] For Y4 Double Reductions (4XXXDX) refer to the above table; for Y4 single reduction refer to tables on pages 2.91-2.130.

[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

All 1HP+ motors require EP suffix in model number and can be used with a VFD, unless noted.

Standard Mounting Selection Tables

**25 HP
(18.5 kW)**



Dimension Pages:
 Single Reduction 2.132-2.143
 Single Reduction, Y2 2.144
 Double Reduction 2.146-2.161
 Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz					60 Hz					Selection			VFD ^[2]	
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor		Base		
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code
11.8	122000 (13800)		0.84	-	12300 (54900)	14.3	101000 (11400)		1.02	I	18700 (83100)	25	4E180	123
			0.84	-	12300 (54900)				1.02	I	18700 (83100)	25	4E185	123
			1.00	I	26900 (120000)				1.02	I	27800 (124000)	25	4F180	123
			1.22	I	26900 (120000)				1.22	I	27800 (124000)	25	4F185	123
			1.31	I	26900 (120000)				1.31	I	27800 (124000)	25	4F190	123
			1.31	I	26900 (120000)				1.58	II	27800 (124000)	25	4F195	123
9.63	150000 (16900)		0.81	-	25700 (114000)	11.6	124000 (14000)		0.82	-	26800 (119000)	25	4F180	151
			1.00	I	25700 (114000)				1.02	I	26800 (119000)	25	4F185	151
			1.06	I	25700 (114000)				1.13	I	26800 (119000)	25	4F190	151
			1.06	I	25700 (114000)				1.28	I	26800 (119000)	25	4F195	151
8.12	177000 (20100)		0.82	-	24500 (109000)	9.80	147000 (16600)		0.82	-	25800 (115000)	25	4F185	179
			0.90	-	24500 (109000)				0.98	-	25800 (115000)	25	4F190	179
			0.90	-	24500 (109000)				1.08	I	25800 (115000)	25	4F195	179

Cyclo® BBB4

Selection
Tables

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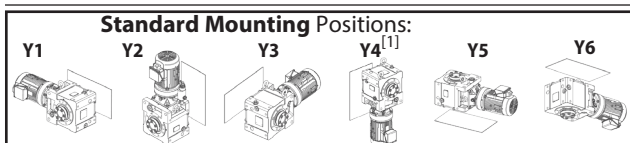
Notes: [1] For Y4 Double Reductions (4XXXDX) refer to the above table; for Y4 single reduction refer to tables on pages 2.91-2.130..

[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

All 1HP+ motors require EP suffix in model number and can be used with a VFD, unless noted.

Standard Mounting Selection Tables

30 HP
(22 kW)



Dimension Pages:
Single Reduction 2.132-2.143
Single Reduction, Y2 2.144
Double Reduction 2.146-2.161
Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz					60 Hz					Selection							
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor		Base			VFD ^[2]		
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code		Frame Size	Ratio
138	12400	(1400)	1.15	I	4190	(18700)	167	10300	(1160)	1.15	I	4130	(18300)	30	4B160	11	
			1.32	I	4190	(18700)				1.32	I	4130	(18300)	30	4B165	11	
			1.36	I	6450	(28700)				1.36	I	6240	(27800)	30	4C165	11	
			1.89	II	6450	(28700)				1.89	II	6240	(27800)	30	4C170	11	(#)
			2.05	III	6450	(28700)				2.05	III	6240	(27800)	30	4C175	11	(#)
			1.89	II	10000	(44600)				1.89	II	9610	(42700)	30	4D170	11	(#)
			2.05	III	10000	(44600)				2.05	III	9610	(42700)	30	4D175	11	(#)
			2.43	III	9960	(44300)				2.43	III	9530	(42400)	30	4D180	11	(-),(#)
2.73	III	9960	(44300)	2.73	III	9530	(42400)	30	4D185	11	(-),(#)						
113	15100	(1710)	1.15	I	4230	(18800)	137	12500	(1420)	1.15	I	4190	(18600)	30	4B160	13	
			1.32	I	4230	(18800)				1.32	I	4190	(18600)	30	4B165	13	
			1.36	I	6620	(29400)				1.36	I	6420	(28600)	30	4C165	13	
			1.89	II	6640	(29500)				1.89	II	6450	(28700)	30	4C170	13	(#)
			2.05	III	6640	(29500)				2.05	III	6450	(28700)	30	4C175	13	(#)
			1.89	II	10500	(46500)				1.89	II	10000	(44600)	30	4D170	13	(#)
			2.05	III	10500	(46500)				2.05	III	10000	(44600)	30	4D175	13	(#)
			2.43	III	10500	(46500)				2.43	III	10000	(44600)	30	4D180	13	(-),(#)
2.73	III	10500	(46500)	2.73	III	10000	(44600)	30	4D185	13	(-),(#)						
104	16600	(1870)	1.15	I	4240	(18800)	125	13700	(1550)	1.15	I	4210	(18700)	30	4B160	14	
			1.27	I	4240	(18800)				1.32	I	4210	(18700)	30	4B165	14	
			1.36	I	6710	(29800)				1.36	I	6520	(29000)	30	4C165	14	
			1.89	II	6730	(29900)				1.89	II	6550	(29100)	30	4C170	14	(#)
			2.05	III	6730	(29900)				2.05	III	6550	(29100)	30	4C175	14	(#)
			1.89	II	10700	(47400)				1.89	II	10200	(45500)	30	4D170	14	(#)
			2.05	III	10700	(47400)				2.05	III	10200	(45500)	30	4D175	14	(#)
			2.43	III	10700	(47400)				2.43	III	10200	(45500)	30	4D180	14	(-),(#)
2.73	III	10700	(47400)	2.73	III	10200	(45500)	30	4D185	14	(-),(#)						
90.6	18900	(2140)	1.14	I	4220	(18800)	109	15700	(1770)	1.15	I	4230	(18800)	30	4B160	16	
			1.14	I	4220	(18800)				1.20	I	4230	(18800)	30	4B165	16	
			1.15	I	6830	(30400)				1.15	I	6670	(29700)	30	4C160	16	
			1.36	I	6830	(30400)				1.36	I	6670	(29700)	30	4C165	16	
			1.89	II	6830	(30400)				1.89	II	6660	(29600)	30	4C170	16	(#)
			2.01	III	6830	(30400)				2.05	III	6660	(29600)	30	4C175	16	(#)
			1.89	II	10900	(48600)				1.89	II	10500	(46800)	30	4D170	16	(#)
			2.05	III	10900	(48600)				2.05	III	10500	(46800)	30	4D175	16	(#)
			2.43	III	10900	(48300)				2.43	III	10400	(46400)	30	4D180	16	(-),(#)
			2.73	III	10900	(48300)				2.73	III	10400	(46400)	30	4D185	16	(-),(#)

Notes: [1] For Y4 Double Reductions (4XXXDX) refer to the above table; for Y4 single reduction refer to tables on pages 2.91-2.130.

[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

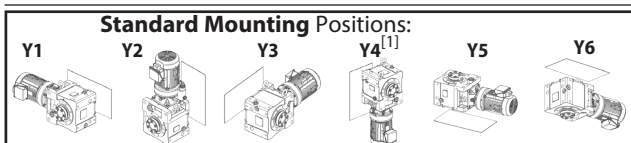
All 1HP+ motors require EP suffix in model number and can be used with a VFD, unless noted.

(-) = For Inverter Operation, starting condition may require ambient temperature of 5° C or higher.

(#) = Mounting positions Y2, F2, G2, K2, V2, W2 operation is limited to 75 %ED (duty cycle) for a 10 minute total cycle (7.5 minutes max. on time).

Standard Mounting Selection Tables

30 HP
(22 kW)



Dimension Pages:
Single Reduction 2.132-2.143
Single Reduction, Y2 2.144
Double Reduction 2.146-2.161
Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz					60 Hz					Selection							
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Base			VFD ^[2]
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code	Frame Size	Ratio	
82.9	20700	(2340)	1.07	I	4200	(18700)	100.0	17100	(1940)	1.10	I	4230	(18800)	30	4B160	18	
			1.15	I	6900	(30700)				1.15	I	6750	(30000)	30	4C160	18	
			1.36	I	6900	(30700)				1.36	I	6750	(30000)	30	4C165	18	
			1.88	II	6890	(30700)				1.89	II	6750	(30000)	30	4C170	18	(#)
			1.88	II	6890	(30700)				2.05	III	6750	(30000)	30	4C175	18	(#)
			1.89	II	11100	(49500)				1.89	II	10700	(47700)	30	4D170	18	(#)
			2.05	III	11100	(49500)				2.05	III	10700	(47700)	30	4D175	18	(#)
			2.43	III	11100	(49200)				2.43	III	10600	(47300)	30	4D180	18	(-),(#)
			2.73	III	11100	(49200)				2.73	III	10600	(47300)	30	4D185	18	(-),(#)
			2.73	III	14800	(65800)				2.73	III	14200	(63000)	30	4E185	18	(-),(#)
69.0	24800	(2810)	1.15	I	6990	(31100)	83.3	20600	(2320)	1.15	I	6880	(30600)	30	4C160	21	
			1.36	I	6990	(31100)				1.36	I	6880	(30600)	30	4C165	21	
			1.54	II	6990	(31100)				1.54	II	6880	(30600)	30	4C170	21	
			1.64	II	6990	(31100)				1.64	II	6880	(30600)	30	4C175	21	
			1.68	II	11500	(51100)				1.68	II	11100	(49300)	30	4D175	21	
			1.89	II	11500	(51100)				1.89	II	11100	(49300)	30	4D180	21	(-),(#)
			2.05	III	11500	(51100)				2.05	III	11100	(49300)	30	4D185	21	(-),(#)
			2.30	III	15500	(68900)				2.30	III	14900	(66100)	30	4E190	21	(-),(#)
			2.50	III	15500	(68900)				2.50	III	14900	(66100)	30	4E195	21	(-),(#)
64.7	26500	(2990)	0.92	-	7020	(31200)	78.1	21900	(2480)	0.92	-	6920	(30800)	30	4C160	22	
			1.10	I	7020	(31200)				1.10	I	6920	(30800)	30	4C165	22	
			1.54	II	7020	(31200)				1.54	II	6920	(30800)	30	4C170	22	
			1.59	II	7020	(31200)				1.64	II	6920	(30800)	30	4C175	22	
			1.68	II	11600	(51700)				1.68	II	11200	(50000)	30	4D175	22	
			1.89	II	11600	(51700)				1.89	II	11200	(50000)	30	4D180	22	(-),(#)
			2.05	III	11600	(51700)				2.05	III	11200	(50000)	30	4D185	22	(-),(#)
			2.30	III	15700	(69900)				2.30	III	15100	(67000)	30	4E190	22	(-),(#)
			2.50	III	15700	(69900)				2.50	III	15100	(67000)	30	4E195	22	(-),(#)
59.2	29000	(3270)	1.10	I	7040	(31300)	71.4	24000	(2710)	1.10	I	6980	(31000)	30	4C165	25	
			1.47	II	7040	(31300)				1.57	II	6980	(31000)	30	4C175	25	
			1.68	II	11800	(52500)				1.68	II	11400	(50800)	30	4D175	25	
			1.89	II	11800	(52500)				1.89	II	11400	(50800)	30	4D180	25	(-),(#)
			2.05	III	11800	(52500)				2.05	III	11400	(50800)	30	4D185	25	(-),(#)
			2.05	III	16000	(71200)				2.05	III	15400	(68400)	30	4E185	25	(-),(#)
			2.30	III	16000	(71200)				2.30	III	15400	(68400)	30	4E190	25	(-),(#)
			2.50	III	16000	(71200)				2.50	III	15400	(68400)	30	4E195	25	(-),(#)

Cyclo® BBB4

Selection Tables

Notes: [1] For Y4 Double Reductions (4XXXDX) refer to the above table; for Y4 single reduction refer to tables on pages 2.91-2.130..

[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

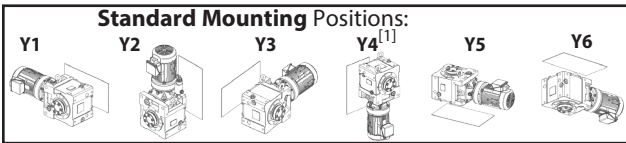
All 1HP+ motors require EP suffix in model number and can be used with a VFD, unless noted.

(-) = For Inverter Operation, starting condition may require ambient temperature of 5° C or higher.

(#) = Mounting positions Y2, F2, G2, K2, V2, W2 operation is limited to 75 %ED (duty cycle) for a 10 minute total cycle (7.5 minutes max. on time).

Standard Mounting Selection Tables

30 HP
(22 kW)



Dimension Pages:
 Single Reduction 2.132-2.143
 Single Reduction, Y2 2.144
 Double Reduction 2.146-2.161
 Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz					60 Hz					Selection							
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Base			VFD ^[2]
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code	Frame Size	Ratio	
51.8	33100	(3740)	1.10	I	7050	(31400)	62.5	27400	(3100)	1.10	I	7030	(31300)	30	4C165	28	
			1.34	I	7050	(31400)				1.37	I	7030	(31300)	30	4C170	28	
			1.54	II	12000	(53600)				1.54	II	11700	(52000)	30	4D170	28	
			1.68	II	12000	(53600)				1.68	II	11700	(52000)	30	4D175	28	
			1.89	II	12000	(53600)				1.89	II	11700	(52000)	30	4D180	28	(-), (#)
			2.05	III	12000	(53600)				2.05	III	11700	(52000)	30	4D185	28	(-), (#)
			1.89	II	16400	(73200)				1.89	II	15800	(70400)	30	4E180	28	(-), (#)
			2.05	III	16400	(73200)				2.05	III	15800	(70400)	30	4E185	28	(-), (#)
			2.30	III	16400	(73200)				2.30	III	15800	(70400)	30	4E190	28	(-), (#)
			2.50	III	16400	(73200)				2.50	III	15800	(70400)	30	4E195	28	(-), (#)
			2.50	III	29000	(129000)	2.50	III	27700	(123000)	30	4F195	28	(-), (#)			
41.2	41600	(4700)	1.09	I	6960	(31000)	49.7	34500	(3900)	1.09	I	7040	(31300)	30	4C165	35	
			1.25	I	12400	(55200)				1.25	I	12100	(53900)	30	4D170	35	
			1.37	I	12400	(55200)				1.37	I	12100	(53900)	30	4D175	35	
			1.81	II	12400	(55200)				1.89	II	12100	(53900)	30	4D180	35	(#)
			1.89	II	17200	(76300)				1.89	II	16600	(73700)	30	4E180	35	(#)
			2.05	III	17200	(76300)				2.05	III	16600	(73700)	30	4E185	35	(#)
			2.09	III	17200	(76300)				2.30	III	16600	(73700)	30	4E190	35	(-), (#)
			2.09	III	17200	(76300)				2.50	III	16600	(73700)	30	4E195	35	(-), (#)
			2.05	III	30400	(135000)				2.05	III	29300	(130000)	30	4F185	35	(#)
			2.30	III	30400	(135000)				2.30	III	29300	(130000)	30	4F190	35	(-), (#)
			2.50	III	30400	(135000)	2.50	III	29300	(130000)	30	4F195	35	(-), (#)			
37.7	45500	(5140)	0.97	-	6900	(30700)	45.5	37700	(4260)	1.00	I	7020	(31200)	30	4C165	39	
			1.10	I	12500	(55700)				1.10	I	12300	(54500)	30	4D165	39	
			1.25	I	12500	(55700)				1.25	I	12300	(54500)	30	4D170	39	
			1.37	I	12500	(55700)				1.37	I	12300	(54500)	30	4D175	39	
			1.67	II	12500	(55700)				1.89	II	12300	(54500)	30	4D180	39	
			1.89	II	17400	(77500)				1.89	II	16900	(75000)	30	4E180	39	
			1.91	II	17400	(77500)				2.05	III	16900	(75000)	30	4E185	39	
			1.91	II	17400	(77500)				2.30	III	16900	(75000)	30	4E190	39	(-)
			1.91	II	17400	(77500)				2.31	III	16900	(75000)	30	4E195	39	(-)
			1.89	II	30200	(134000)				1.89	II	30000	(133000)	30	4F180	39	
			2.05	III	30200	(134000)				2.05	III	30000	(133000)	30	4F185	39	
			2.30	III	30200	(134000)				2.30	III	30000	(133000)	30	4F190	39	(-)
			2.50	III	30200	(134000)				2.50	III	30000	(133000)	30	4F195	39	(-)

Cyclo® BBB4

Selection Tables

Notes: [1] For Y4 Double Reductions (4XXXDX) refer to the above table; for Y4 single reduction refer to tables on pages 2.91-2.130.

[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

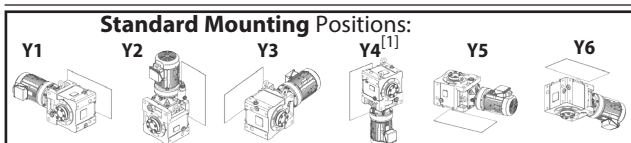
All 1HP+ motors require EP suffix in model number and can be used with a VFD, unless noted.

(-) = For Inverter Operation, starting condition may require ambient temperature of 5° C or higher.

(#) = Mounting positions Y2, F2, G2, K2, V2, W2 operation is limited to 75 %ED (duty cycle) for a 10 minute total cycle (7.5 minutes max. on time).

Standard Mounting Selection Tables

**30 HP
(22 kW)**



Dimension Pages:
 Single Reduction 2.132-2.143
 Single Reduction, Y2 2.144
 Double Reduction 2.146-2.161
 Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz					60 Hz					Selection							
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Base			VFD ^[2]
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code	Frame Size	Ratio	
31.9	53800	(6080)	0.82	-	4520	(20100)	38.5	44600	(5040)	0.85	-	6920	(30800)	30	4C160	46	
			0.82	-	4520	(20100)				0.85	-	6920	(30800)	30	4C165	46	
			1.24	I	12700	(56400)				1.24	I	12500	(55600)	30	4D170	46	
			1.37	I	12700	(56400)				1.37	I	12500	(55600)	30	4D175	46	
			1.43	II	12700	(56400)				1.69	II	12500	(55600)	30	4D180	46	
			1.62	II	17900	(79600)				1.89	II	17400	(77200)	30	4E180	46	
			1.62	II	17900	(79600)				1.95	II	17400	(77200)	30	4E185	46	
			1.62	II	17900	(79600)				1.95	II	17400	(77200)	30	4E190	46	(-)
			1.62	II	17900	(79600)				1.95	II	17400	(77200)	30	4E195	46	(-)
			1.89	II	29800	(133000)				1.89	II	30200	(135000)	30	4F180	46	
			2.05	III	29800	(133000)				2.05	III	30200	(135000)	30	4F185	46	
			2.30	III	29800	(133000)				2.30	III	30200	(135000)	30	4F190	46	(-)
			2.50	III	29800	(133000)				2.50	III	30200	(135000)	30	4F195	46	(-)
			27.6	62100	(7010)	1.02				I	12800	(56800)	33.3	51400	(5810)	1.03	I
1.16	I	12800				(56800)	1.16	I	12600	(56200)	30	4D170				53	
1.24	I	12800				(56800)	1.24	I	12600	(56200)	30	4D175				53	
1.24	I	12800				(56800)	1.47	II	12600	(56200)	30	4D180				53	
1.37	I	18200				(81100)	1.37	I	17800	(79000)	30	4E175				53	
1.40	II	18200				(81100)	1.47	II	17800	(79000)	30	4E180				53	
1.40	II	18200				(81100)	1.69	II	17800	(79000)	30	4E185				53	
1.40	II	18200				(81100)	1.69	II	17800	(79000)	30	4E190				53	(-)
1.40	II	18200				(81100)	1.69	II	17800	(79000)	30	4E195				53	(-)
1.47	II	29500				(131000)	1.47	II	29900	(133000)	30	4F180				53	
1.77	II	29500				(131000)	1.77	II	29900	(133000)	30	4F185				53	
2.30	III	29500				(131000)	2.30	III	29900	(133000)	30	4F190				53	(-)
2.50	III	29500				(131000)	2.50	III	29900	(133000)	30	4F195				53	(-)
24.4	70400	(7950)				0.85	-	12800	(56800)	29.4	58300	(6590)				0.85	-
			1.10	I	12800	(56800)	1.10	I	12700				(56700)	30	4D175	60	
			1.10	I	12800	(56800)	1.32	I	12700				(56700)	30	4D180	60	
			1.24	I	18500	(82300)	1.39	I	18100				(80500)	30	4E180	60	
			1.24	I	18500	(82300)	1.49	II	18100				(80500)	30	4E185	60	
			1.24	I	18500	(82300)	1.49	II	18100				(80500)	30	4E190	60	(-)
			1.24	I	18500	(82300)	1.49	II	18100				(80500)	30	4E195	60	(-)
			1.39	I	29100	(130000)	1.39	I	29600				(132000)	30	4F180	60	
			1.74	II	29100	(130000)	1.77	II	29600				(132000)	30	4F185	60	
			2.26	III	29100	(130000)	2.30	III	29600				(132000)	30	4F190	60	(-)
			2.26	III	29100	(130000)	2.50	III	29600				(132000)	30	4F195	60	(-)

Cyclo® BBB4

Selection Tables

Notes: [1] For Y4 Double Reductions (4XXXDX) refer to the above table; for Y4 single reduction refer to tables on pages 2.91-2.130..

[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

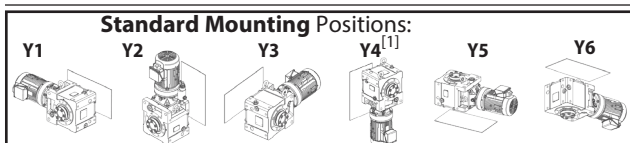
All 1HP+ motors require EP suffix in model number and can be used with a VFD, unless noted.

(-) = For Inverter Operation, starting condition may require ambient temperature of 5° C or higher.

(#) = Mounting positions Y2, F2, G2, K2, V2, W2 operation is limited to 75 %ED (duty cycle) for a 10 minute total cycle (7.5 minutes max. on time).

Standard Mounting Selection Tables

**30 HP
(22 kW)**



Dimension Pages:
 Single Reduction 2.132-2.143
 Single Reduction, Y2 2.144
 Double Reduction 2.146-2.161
 Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz					60 Hz					Selection			VFD ^[2]			
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor		Base				
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code	Frame Size	Ratio
21.6	79500	(8980)	0.97	-	10400	(46200)	26.0	65800	(7440)	0.97	-	12800	(56800)	30	4D175	67
			0.97	-	10400	(46200)				1.17	I	12800	(56800)	30	4D180	67
			1.07	I	18700	(83200)				1.09	I	18400	(81700)	30	4E175	67
			1.09	I	18700	(83200)				1.32	I	18400	(81700)	30	4E180	67
			1.09	I	18700	(83200)				1.32	I	18400	(81700)	30	4E185	67
			1.09	I	18700	(83200)				1.32	I	18400	(81700)	30	4E190	67
			1.09	I	18700	(83200)				1.32	I	18400	(81700)	30	4E195	67
			1.36	I	28700	(128000)				1.36	I	29300	(130000)	30	4F180	67
			1.73	II	28700	(128000)				1.77	II	29300	(130000)	30	4F185	67
			1.86	II	28700	(128000)				1.86	II	29300	(130000)	30	4F190	67
2.00	III	28700	(128000)	2.19	III	29300	(130000)	30	4F195	67						
19.7	86900	(9820)	0.89	-	5760	(25600)	23.8	72000	(8140)	0.89	-	12800	(56800)	30	4D175	74
			0.89	-	5760	(25600)				1.07	I	12800	(56800)	30	4D180	74
			1.00	I	18800	(83800)				1.00	I	18500	(82500)	30	4E175	74
			1.00	I	18800	(83800)				1.21	I	18500	(82500)	30	4E180	74
			1.00	I	18800	(83800)				1.21	I	18500	(82500)	30	4E185	74
			1.00	I	18800	(83800)				1.21	I	18500	(82500)	30	4E190	74
			1.00	I	18800	(83800)				1.21	I	18500	(82500)	30	4E195	74
			1.36	I	28400	(126000)				1.36	I	29100	(129000)	30	4F180	74
			1.73	II	28400	(126000)				1.77	II	29100	(129000)	30	4F185	74
			1.83	II	28400	(126000)				1.86	II	29100	(129000)	30	4F190	74
1.83	II	28400	(126000)	2.19	III	29100	(129000)	30	4F195	74						
18.1	94600	(10700)	0.82	-	-	-	21.9	78400	(8860)	0.98	-	10900	(48400)	30	4D180	80
			0.89	-	18900	(84200)				0.89	-	18700	(83100)	30	4E175	80
			0.92	-	18900	(84200)				1.10	I	18700	(83100)	30	4E180	80
			0.92	-	18900	(84200)				1.11	I	18700	(83100)	30	4E185	80
			0.92	-	18900	(84200)				1.11	I	18700	(83100)	30	4E190	80
			0.92	-	18900	(84200)				1.11	I	18700	(83100)	30	4E195	80
			1.10	I	28100	(125000)				1.10	I	28800	(128000)	30	4F180	80
			1.37	I	28100	(125000)				1.37	I	28800	(128000)	30	4F185	80
			1.60	II	28100	(125000)				1.60	II	28800	(128000)	30	4F190	80
			1.68	II	28100	(125000)				1.84	II	28800	(128000)	30	4F195	80

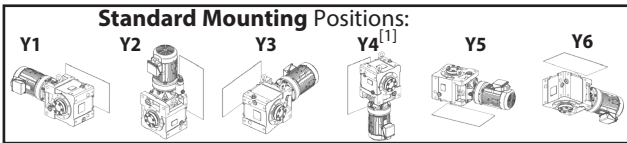
Notes: [1] For Y4 Double Reductions (4XXXDX) refer to the above table; for Y4 single reduction refer to tables on pages 2.91-2.130.

[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

All 1HP+ motors require EP suffix in model number and can be used with a VFD, unless noted.

Standard Mounting Selection Tables

**30 HP
(22 kW)**



Dimension Pages:
 Single Reduction 2.132-2.143
 Single Reduction, Y2 2.144
 Double Reduction 2.146-2.161
 Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz						60 Hz						Selection					
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Base			VFD ^[2]
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code	Frame Size	Ratio	
16.6	103000 (11700)		0.84	-	18200	(81100)	20.0	85700 (9690)		0.84	-	18800	(83700)	30	4E175	88	
			0.84	-	18200	(81100)				1.01	I	18800	(83700)	30	4E180	88	
			0.84	-	18200	(81100)				1.01	I	18800	(83700)	30	4E185	88	
			0.84	-	18200	(81100)				1.01	I	18800	(83700)	30	4E190	88	
			0.84	-	18200	(81100)				1.01	I	18800	(83700)	30	4E195	88	
			1.10	I	27700	(123000)				1.10	I	28500	(127000)	30	4F180	88	
			1.37	I	27700	(123000)				1.37	I	28500	(127000)	30	4F185	88	
			1.54	II	27700	(123000)				1.60	II	28500	(127000)	30	4F190	88	
			1.54	II	27700	(123000)				1.84	II	28500	(127000)	30	4F195	88	
14.3	120000 (13600)		0.89	-	27000	(120000)	17.2	99400 (11200)		0.89	-	27900	(124000)	30	4F180	102	
			1.10	I	27000	(120000)				1.10	I	27900	(124000)	30	4F185	102	
			1.33	I	27000	(120000)				1.40	II	27900	(124000)	30	4F190	102	
			1.33	I	27000	(120000)				1.60	II	27900	(124000)	30	4F195	102	
12.9	132000 (15000)		0.84	-	26400	(118000)	15.6	110000 (12400)		0.85	-	27400	(122000)	30	4F180	112	
			1.03	I	26400	(118000)				1.03	I	27400	(122000)	30	4F185	112	
			1.10	I	26400	(118000)				1.10	I	27400	(122000)	30	4F190	112	
			1.20	I	26400	(118000)				1.37	I	27400	(122000)	30	4F195	112	
11.8	145000 (16400)		0.84	-	25900	(115000)	14.3	120000 (13600)		0.85	-	27000	(120000)	30	4F180	123	
			1.03	I	25900	(115000)				1.03	I	27000	(120000)	30	4F185	123	
			1.10	I	25900	(115000)				1.10	I	27000	(120000)	30	4F190	123	
			1.10	I	25900	(115000)				1.33	I	27000	(120000)	30	4F195	123	
9.63	178000 (20100)		0.84	-	24500	(109000)	11.6	147000 (16700)		0.85	-	25800	(115000)	30	4F185	151	
			0.90	-	24500	(109000)				0.95	-	25800	(115000)	30	4F190	151	
			0.90	-	24500	(109000)				1.08	I	25800	(115000)	30	4F195	151	

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Selection Tables

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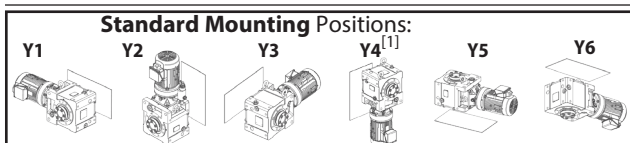
Notes: [1] For Y4 Double Reductions (4XXXDX) refer to the above table; for Y4 single reduction refer to tables on pages 2.91-2.130..

[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

All 1HP+ motors require EP suffix in model number and can be used with a VFD, unless noted.

Standard Mounting Selection Tables

**40 HP
(30 kW)**



Dimension Pages:
 Single Reduction 2.132-2.143
 Single Reduction, Y2 2.144
 Double Reduction 2.146-2.161
 Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz					60 Hz					Selection							
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor		Base			VFD ^[2]		
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code		Frame Size	Ratio
138	16900	(1910)	1.38	I	6010	(26700)	167	14000	(1580)	1.38	I	5870	(26100)	40	4C170	11	(#)
			1.50	II	6010	(26700)				1.50	II	5870	(26100)	40	4C175	11	(#)
			1.38	I	9660	(43000)				1.38	I	9290	(41300)	40	4D170	11	(#)
			1.50	II	9660	(43000)				1.50	II	9290	(41300)	40	4D175	11	(#)
			1.78	II	9590	(42700)				1.78	II	9230	(41000)	40	4D180	11	(-),(#)
			2.00	III	9590	(42700)				2.00	III	9230	(41000)	40	4D185	11	(-),(#)
			2.28	III	12900	(57400)				2.28	III	12400	(54900)	40	4E190	11	(-),(#)
			2.50	III	12900	(57400)				2.50	III	12400	(54900)	40	4E195	11	(-),(#)
113	20600	(2330)	1.38	I	6110	(27200)	137	17100	(1930)	1.38	I	6010	(26700)	40	4C170	13	(#)
			1.50	II	6110	(27200)				1.50	II	6010	(26700)	40	4C175	13	(#)
			1.38	I	10000	(44500)				1.38	I	9660	(43000)	40	4D170	13	(#)
			1.50	II	10000	(44500)				1.50	II	9660	(43000)	40	4D175	13	(#)
			1.78	II	10000	(44500)				1.78	II	9660	(43000)	40	4D180	13	(-),(#)
			2.00	III	10000	(44500)				2.00	III	9660	(43000)	40	4D185	13	(-),(#)
			2.28	III	13500	(59900)				2.28	III	12900	(57400)	40	4E190	13	(-),(#)
			2.50	III	13500	(59900)				2.50	III	12900	(57400)	40	4E195	13	(-),(#)
104	22600	(2550)	1.38	I	6140	(27300)	125	18700	(2110)	1.38	I	6060	(27000)	40	4C170	14	(#)
			1.50	II	6140	(27300)				1.50	II	6060	(27000)	40	4C175	14	(#)
			1.38	I	10200	(45200)				1.38	I	9830	(43700)	40	4D170	14	(#)
			1.50	II	10200	(45200)				1.50	II	9830	(43700)	40	4D175	14	(#)
			1.78	II	10200	(45200)				1.78	II	9830	(43700)	40	4D180	14	(-),(#)
			2.00	III	10200	(45200)				2.00	III	9830	(43700)	40	4D185	14	(-),(#)
			2.28	III	13700	(61000)				2.28	III	13200	(58600)	40	4E190	14	(-),(#)
			2.50	III	13700	(61000)				2.50	III	13200	(58600)	40	4E195	14	(-),(#)
90.6	25800	(2910)	1.38	I	6170	(27400)	109	21400	(2420)	1.38	I	6120	(27200)	40	4C170	16	(#)
			1.47	II	6170	(27400)				1.50	II	6120	(27200)	40	4C175	16	(#)
			1.38	I	10400	(46100)				1.38	I	10000	(44700)	40	4D170	16	(#)
			1.50	II	10400	(46100)				1.50	II	10000	(44700)	40	4D175	16	(#)
			1.78	II	10300	(45900)				1.78	II	9990	(44400)	40	4D180	16	(-),(#)
			2.00	III	10300	(45900)				2.00	III	9990	(44400)	40	4D185	16	(-),(#)
			2.28	III	14000	(62100)				2.28	III	13400	(59700)	40	4E190	16	(-),(#)
			2.50	III	14000	(62100)				2.50	III	13400	(59700)	40	4E195	16	(-),(#)

Cyclo® BBB4

Selection Tables

Notes: [1] For Y4 Double Reductions (4XXXDX) refer to the above table; for Y4 single reduction refer to tables on pages 2.91-2.130.

[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

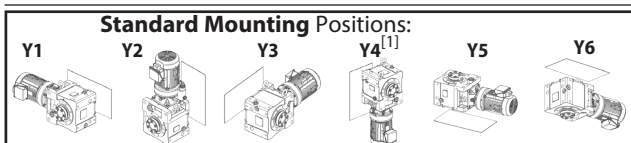
All 1HP+ motors require EP suffix in model number and can be used with a VFD, unless noted.

(-) = For Inverter Operation, starting condition may require ambient temperature of 5° C or higher.

(#) = Mounting positions Y2, F2, G2, K2, V2, W2 operation is limited to 75 %ED (duty cycle) for a 10 minute total cycle (7.5 minutes max. on time).

Standard Mounting Selection Tables

**40 HP
(30 kW)**



Dimension Pages:
 Single Reduction, Y2 2.132-2.143
 Single Reduction, Y5 2.144
 Double Reduction 2.146-2.161
 Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz					60 Hz						Selection						
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Base			VFD ^[2]
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code	Frame Size	Ratio	
82.9	28200 (3190)		1.38	I	6170 (27500)	100.0	23400 (2640)		1.38	I	6150 (27400)	40	4C170	18	(#)		
			1.38	I	6170 (27500)				1.50	II	6150 (27400)	40	4C175	18	(#)		
			1.38	I	10500 (46800)				1.38	I	10200 (45400)	40	4D170	18	(#)		
			1.50	II	10500 (46800)				1.50	II	10200 (45400)	40	4D175	18	(#)		
			1.78	II	10500 (46600)				1.78	II	10100 (45100)	40	4D180	18	(-),(#)		
			2.00	III	10500 (46600)				2.00	III	10100 (45100)	40	4D185	18	(-),(#)		
			2.00	III	14300 (63400)				2.00	III	13700 (61000)	40	4E185	18	(-),(#)		
			2.28	III	14200 (63300)				2.28	III	13700 (60800)	40	4E190	18	(-),(#)		
			2.50	III	14200 (63300)				2.50	III	13700 (60800)	40	4E195	18	(-),(#)		
			2.50	III	25000 (111000)			2.50	III	23900 (106000)	40	4F195	18	(-),(#)			
69.0	33900 (3830)		1.23	I	10800 (47900)	83.3	28100 (3170)		1.23	I	10500 (46700)	40	4D175	21	(#)		
			1.38	I	10800 (47900)				1.38	I	10500 (46700)	40	4D180	21	(-),(#)		
			1.50	II	10800 (47900)				1.50	II	10500 (46700)	40	4D185	21	(-),(#)		
			1.69	II	14800 (66000)				1.69	II	14300 (63600)	40	4E190	21	(-),(#)		
			1.83	II	14800 (66000)				1.83	II	14300 (63600)	40	4E195	21	(-),(#)		
64.7	36100 (4080)		1.13	I	6100 (27100)	78.1	29900 (3380)		1.13	I	6170 (27400)	40	4C170	22	(#)		
			1.17	I	6100 (27100)				1.20	I	6170 (27400)	40	4C175	22	(#)		
			1.23	I	10800 (48200)				1.23	I	10600 (47100)	40	4D175	22	(#)		
			1.38	I	10800 (48200)				1.38	I	10600 (47100)	40	4D180	22	(-),(#)		
			1.50	II	10800 (48200)				1.50	II	10600 (47100)	40	4D185	22	(-),(#)		
			1.69	II	15000 (66700)				1.69	II	14500 (64400)	40	4E190	22	(-),(#)		
			1.83	II	15000 (66700)				1.83	II	14500 (64400)	40	4E195	22	(-),(#)		
59.2	39500 (4460)		1.13	I	10900 (48700)	71.4	32700 (3700)		1.13	I	10700 (47700)	40	4D170	25	(#)		
			1.23	I	10900 (48700)				1.23	I	10700 (47700)	40	4D175	25	(#)		
			1.38	I	10900 (48700)				1.38	I	10700 (47700)	40	4D180	25	(-),(#)		
			1.50	II	10900 (48700)				1.50	II	10700 (47700)	40	4D185	25	(-),(#)		
			1.50	II	15200 (67800)				1.50	II	14700 (65600)	40	4E185	25	(-),(#)		
			1.69	II	15200 (67800)				1.69	II	14700 (65600)	40	4E190	25	(-),(#)		
			1.83	II	15200 (67800)				1.83	II	14700 (65600)	40	4E195	25	(-),(#)		

Cyclo® BBB4

Selection Tables

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Notes: [1] For Y4 Double Reductions (4XXXDX) refer to the above table; for Y4 single reduction refer to tables on pages 2.91-2.130..

[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

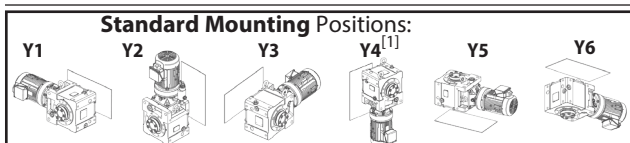
All 1HP+ motors require EP suffix in model number and can be used with a VFD, unless noted.

(-) = For Inverter Operation, starting condition may require ambient temperature of 5° C or higher.

(#) = Mounting positions Y2, F2, G2, K2, V2, W2 operation is limited to 75 %ED (duty cycle) for a 10 minute total cycle (7.5 minutes max. on time).

Standard Mounting Selection Tables

**40 HP
(30 kW)**



Dimension Pages:
 Single Reduction 2.132-2.143
 Single Reduction, Y2 2.144
 Double Reduction 2.146-2.161
 Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz					60 Hz					Selection							
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor		Base			VFD ^[2]		
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code		Frame Size	Ratio
51.8	45100	(5100)	0.98	-	5910	(26300)	62.5	37400	(4230)	1.01	I	6080	(27100)	40	4C170	28	
			1.13	I	11100	(49300)				1.13	I	10900	(48400)	40	4D170	28	
			1.23	I	11100	(49300)				1.23	I	10900	(48400)	40	4D175	28	
			1.38	I	11100	(49300)				1.38	I	10900	(48400)	40	4D180	28	(-),(#)
			1.50	II	11100	(49300)				1.50	II	10900	(48400)	40	4D185	28	(-),(#)
			1.38	I	15600	(69200)				1.38	I	15100	(67100)	40	4E180	28	(-),(#)
			1.50	II	15600	(69200)				1.50	II	15100	(67100)	40	4E185	28	(-),(#)
			1.69	II	15600	(69200)				1.69	II	15100	(67100)	40	4E190	28	(-),(#)
			1.83	II	15600	(69200)				1.83	II	15100	(67100)	40	4E195	28	(-),(#)
			1.83	II	28300	(126000)				1.83	II	27000	(120000)	40	4F195	28	(-),(#)
41.2	56800	(6410)	1.00	I	11200	(49700)	49.7	47000	(5310)	1.00	I	11100	(49400)	40	4D175	35	
			1.33	I	11200	(49700)				1.38	I	11100	(49400)	40	4D180	35	(#)
			1.38	I	16000	(71400)				1.38	I	15700	(69600)	40	4E180	35	(#)
			1.50	II	16000	(71400)				1.50	II	15700	(69600)	40	4E185	35	(#)
			1.53	II	16000	(71400)				1.69	II	15700	(69600)	40	4E190	35	(-),(#)
			1.53	II	16000	(71400)				1.83	II	15700	(69600)	40	4E195	35	(-),(#)
			1.50	II	29700	(132000)				1.50	II	28500	(127000)	40	4F185	35	(#)
			1.69	II	29700	(132000)				1.69	II	28500	(127000)	40	4F190	35	(-),(#)
			1.83	II	29700	(132000)				1.83	II	28500	(127000)	40	4F195	35	(-),(#)
			37.7	62100	(7010)	1.00				I	11200	(49800)	45.5	51400	(5810)	1.00	I
1.22	I	11200				(49800)	1.38	I	11200	(49600)	40	4D180				39	
1.38	I	16200				(72100)	1.38	I	15900	(70500)	40	4E180				39	
1.40	II	16200				(72100)	1.50	II	15900	(70500)	40	4E185				39	
1.40	II	16200				(72100)	1.69	II	15900	(70500)	40	4E190				39	(-)
1.40	II	16200				(72100)	1.69	II	15900	(70500)	40	4E195				39	(-)
1.38	I	29500				(131000)	1.38	I	29100	(129000)	40	4F180				39	
1.50	II	29500				(131000)	1.50	II	29100	(129000)	40	4F185				39	
1.69	II	29500				(131000)	1.69	II	29100	(129000)	40	4F190				39	(-)
1.83	II	29500				(131000)	1.83	II	29100	(129000)	40	4F195				39	(-)

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Selection Tables

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Notes: [1] For Y4 Double Reductions (4XXXDX) refer to the above table; for Y4 single reduction refer to tables on pages 2.91-2.130.

[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

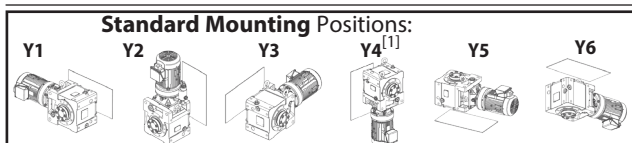
All 1HP+ motors require EP suffix in model number and can be used with a VFD, unless noted.

(-) = For Inverter Operation, starting condition may require ambient temperature of 5° C or higher.

(#) = Mounting positions Y2, F2, G2, K2, V2, W2 operation is limited to 75 %ED (duty cycle) for a 10 minute total cycle (7.5 minutes max. on time).

Standard Mounting Selection Tables

**40 HP
(30 kW)**



Dimension Pages:
 Single Reduction 2.132-2.143
 Single Reduction, Y2 2.144
 Double Reduction 2.146-2.161
 Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz					60 Hz					Selection								
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor		Base			VFD ^[2]			
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code		Frame Size	Ratio	
31.9	73400	(8290)	1.00	I	11100	(49400)	38.5	60800	(6870)	1.00	I	11200	(49800)	40	4D175	46		
			1.05	I	11100	(49400)				1.24	I	11200	(49800)	40	4D180	46		
			1.19	I	16500	(73200)				1.38	I	16200	(72000)	40	4E180	46		
			1.19	I	16500	(73200)				1.43	II	16200	(72000)	40	4E185	46		
			1.19	I	16500	(73200)				1.43	II	16200	(72000)	40	4E190	46		(-)
			1.19	I	16500	(73200)				1.43	II	16200	(72000)	40	4E195	46		(-)
			1.38	I	29000	(129000)				1.38	I	29500	(131000)	40	4F180	46		
			1.50	II	29000	(129000)				1.50	II	29500	(131000)	40	4F185	46		
			1.69	II	29000	(129000)				1.69	II	29500	(131000)	40	4F190	46		(-)
			1.83	II	29000	(129000)				1.83	II	29500	(131000)	40	4F195	46		(-)
27.6	84700	(9560)	0.91	-	7520	(33500)	33.3	70100	(7920)	0.91	-	11100	(49600)	40	4D175	53		
			0.91	-	7520	(33500)				1.08	I	11100	(49600)	40	4D180	53		
			1.00	I	16600	(73800)				1.00	I	16400	(72900)	40	4E175	53		
			1.03	I	16600	(73800)				1.08	I	16400	(72900)	40	4E180	53		
			1.03	I	16600	(73800)				1.24	I	16400	(72900)	40	4E185	53		
			1.03	I	16600	(73800)				1.24	I	16400	(72900)	40	4E190	53		(-)
			1.03	I	16600	(73800)				1.24	I	16400	(72900)	40	4E195	53		(-)
			1.08	I	28500	(127000)				1.08	I	29100	(130000)	40	4F180	53		
			1.30	I	28500	(127000)				1.30	I	29100	(130000)	40	4F185	53		
			1.69	II	28500	(127000)				1.69	II	29100	(130000)	40	4F190	53		(-)
1.83	II	28500	(127000)	1.83	II	29100	(130000)	40	4F195	53	(-)							
24.4	95900	(10800)	0.80	-	16600	(74000)	29.4	79500	(8980)	0.80	-	16500	(73600)	40	4E175	60		
			0.91	-	16600	(74000)				1.02	I	16500	(73600)	40	4E180	60		
			0.91	-	16600	(74000)				1.09	I	16500	(73600)	40	4E185	60		
			0.91	-	16600	(74000)				1.09	I	16500	(73600)	40	4E190	60		(-)
			0.91	-	16600	(74000)				1.09	I	16500	(73600)	40	4E195	60		(-)
			1.02	I	28000	(125000)				1.02	I	28700	(128000)	40	4F180	60		
			1.27	I	28000	(125000)				1.30	I	28700	(128000)	40	4F185	60		
			1.66	II	28000	(125000)				1.69	II	28700	(128000)	40	4F190	60		(-)
			1.66	II	28000	(125000)				1.83	II	28700	(128000)	40	4F195	60		(-)
			21.6	108000	(12200)	0.80				-	16600	(73800)	26.0	89800	(10100)	0.97		-
0.80	-	16600				(73800)	0.97	-	16600	(73900)	40	4E185				67		
0.80	-	16600				(73800)	0.97	-	16600	(73900)	40	4E190				67		
0.80	-	16600				(73800)	0.97	-	16600	(73900)	40	4E195				67		
1.00	I	27500				(122000)	1.00	I	28300	(126000)	40	4F180				67		
1.27	I	27500				(122000)	1.30	I	28300	(126000)	40	4F185				67		
1.37	I	27500				(122000)	1.37	I	28300	(126000)	40	4F190				67		
1.47	II	27500				(122000)	1.60	II	28300	(126000)	40	4F195				67		

Notes: [1] For Y4 Double Reductions (4XXXDX) refer to the above table; for Y4 single reduction refer to tables on pages 2.91-2.130..

[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

All 1HP+ motors require EP suffix in model number and can be used with a VFD, unless noted.

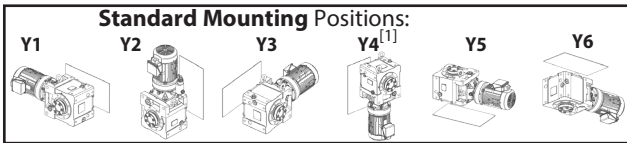
(-) = For Inverter Operation, starting condition may require ambient temperature of 5° C or higher.

Cyclo® BBB4

Selection Tables

Standard Mounting Selection Tables

**40 HP
(30 kW)**



Dimension Pages:
 Single Reduction 2.132-2.143
 Single Reduction, Y2 2.144
 Double Reduction 2.146-2.161
 Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz					60 Hz					Selection			VFD ^[2]		
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor		Base			
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code	Frame Size
19.7	119000 (13400)		1.00	I	27000 (120000)	23.8	98200 (11100)			1.00	I	27900 (124000)	40	4F180	74
			1.27	I	27000 (120000)					1.30	I	27900 (124000)	40	4F185	74
			1.34	I	27000 (120000)					1.37	I	27900 (124000)	40	4F190	74
			1.34	I	27000 (120000)					1.60	II	27900 (124000)	40	4F195	74
18.1	129000 (14600)		0.80	-	26600 (118000)	21.9	107000 (12100)			0.80	-	27500 (123000)	40	4F180	80
			1.00	I	26600 (118000)					1.00	I	27500 (123000)	40	4F185	80
			1.17	I	26600 (118000)					1.17	I	27500 (123000)	40	4F190	80
			1.24	I	26600 (118000)					1.35	I	27500 (123000)	40	4F195	80
16.6	141000 (15900)		0.80	-	26100 (116000)	20.0	117000 (13200)			0.80	-	27100 (121000)	40	4F180	88
			1.00	I	26100 (116000)					1.00	I	27100 (121000)	40	4F185	88
			1.13	I	26100 (116000)					1.17	I	27100 (121000)	40	4F190	88
			1.13	I	26100 (116000)					1.35	I	27100 (121000)	40	4F195	88
14.3	164000 (18500)		0.80	-	25100 (112000)	17.2	136000 (15300)			0.80	-	26300 (117000)	40	4F185	102
			0.97	-	25100 (112000)					1.02	I	26300 (117000)	40	4F190	102
			0.97	-	25100 (112000)					1.17	I	26300 (117000)	40	4F195	102
12.9	181000 (20400)		0.81	-	24400 (108000)	15.6	150000 (16900)			0.81	-	25700 (114000)	40	4F190	112
			0.88	-	24400 (108000)					1.00	I	25700 (114000)	40	4F195	112

Cyclo® BBB4

Selection Tables

Sold & Serviced By:



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www.electromate.com
sales@electromate.com

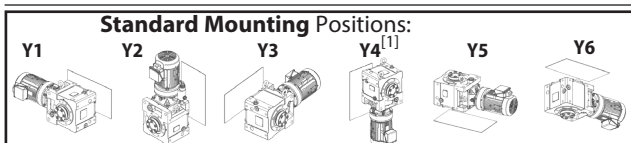
Notes: [1] For Y4 Double Reductions (4XXXDX) refer to the above table; for Y4 single reduction refer to tables on pages 2.91-2.130.

[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

All 1HP+ motors require EP suffix in model number and can be used with a VFD, unless noted.

Standard Mounting Selection Tables

**50 HP
(37 kW)**



Dimension Pages:
 Single Reduction, Y2 2.132-2.143
 Single Reduction, Y2 2.144
 Double Reduction 2.146-2.161
 Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz					60 Hz					Selection							
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor		Base			VFD ^[2]		
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code		Frame Size	Ratio
138	20900	(2360)	1.44	II	9280	(41300)	167	17300	(1950)	1.44	II	8960	(39900)	50	4D180	11	(-),(#)
			1.62	II	9280	(41300)				1.62	II	8960	(39900)	50	4D185	11	(-),(#)
			1.85	II	12600	(56100)				1.85	II	12100	(53800)	50	4E190	11	(-),(#)
			2.03	III	12600	(56100)				2.03	III	12100	(53800)	50	4E195	11	(-),(#)
113	25500	(2880)	1.44	II	9610	(42700)	137	21100	(2380)	1.44	II	9330	(41500)	50	4D180	13	(-),(#)
			1.62	II	9610	(42700)				1.62	II	9330	(41500)	50	4D185	13	(-),(#)
			1.85	II	13100	(58300)				1.85	II	12600	(56100)	50	4E190	13	(-),(#)
			2.03	III	13100	(58300)				2.03	III	12600	(56100)	50	4E195	13	(-),(#)
104	27800	(3150)	1.44	II	9730	(43300)	125	23100	(2610)	1.44	II	9470	(42100)	50	4D180	14	(-),(#)
			1.62	II	9730	(43300)				1.62	II	9470	(42100)	50	4D185	14	(-),(#)
			1.85	II	13300	(59300)				1.85	II	12800	(57100)	50	4E190	14	(-),(#)
			2.03	III	13300	(59300)				2.03	III	12800	(57100)	50	4E195	14	(-),(#)
90.6	31800	(3590)	1.44	II	9840	(43800)	109	26400	(2980)	1.44	II	9600	(42700)	50	4D180	16	(-),(#)
			1.62	II	9840	(43800)				1.62	II	9600	(42700)	50	4D185	16	(-),(#)
			1.85	II	13500	(60200)				1.85	II	13100	(58100)	50	4E190	16	(-),(#)
			2.03	III	13500	(60200)				2.03	III	13100	(58100)	50	4E195	16	(-),(#)
82.9	34800	(3930)	1.44	II	9950	(44200)	100.0	28800	(3260)	1.44	II	9720	(43200)	50	4D180	18	(-),(#)
			1.62	II	9950	(44200)				1.62	II	9720	(43200)	50	4D185	18	(-),(#)
			1.62	II	13800	(61300)				1.62	II	13300	(59200)	50	4E185	18	(-),(#)
			1.85	II	13800	(61200)				1.85	II	13300	(59100)	50	4E190	18	(-),(#)
			2.03	III	13800	(61200)				2.03	III	13300	(59100)	50	4E195	18	(-),(#)
			2.03	III	24600	(110000)				2.03	III	23500	(105000)	50	4F195	18	(-),(#)
69.0	41800	(4720)	1.12	I	10100	(45100)	83.3	34600	(3910)	1.12	I	9970	(44300)	50	4D180	21	(-),(#)
			1.22	I	10100	(45100)				1.22	I	9970	(44300)	50	4D185	21	(-),(#)
			1.37	I	14300	(63400)				1.37	I	13800	(61500)	50	4E190	21	(-),(#)
			1.49	II	14300	(63400)				1.49	II	13800	(61500)	50	4E195	21	(-),(#)
64.7	44500	(5030)	1.12	I	10200	(45200)	78.1	36900	(4170)	1.12	I	10000	(44600)	50	4D180	22	(-),(#)
			1.22	I	10200	(45200)				1.22	I	10000	(44600)	50	4D185	22	(-),(#)
			1.37	I	14400	(64000)				1.37	I	14000	(62200)	50	4E190	22	(-),(#)
			1.49	II	14400	(64000)				1.49	II	14000	(62200)	50	4E195	22	(-),(#)
59.2	48700	(5500)	1.12	I	10200	(45400)	71.4	40400	(4560)	1.12	I	10100	(45000)	50	4D180	25	(-),(#)
			1.22	I	10200	(45400)				1.22	I	10100	(45000)	50	4D185	25	(-),(#)
			1.22	I	14600	(64800)				1.22	I	14200	(63100)	50	4E185	25	(-),(#)
			1.37	I	14600	(64800)				1.37	I	14200	(63100)	50	4E190	25	(-),(#)

Cyclo® BBB4

Selection Tables

Notes: [1] For Y4 Double Reductions (4XXXDX) refer to the above table; for Y4 single reduction refer to tables on pages 2.91-2.130..

[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

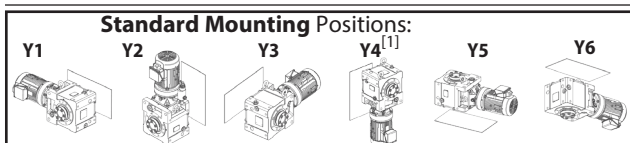
All 1HP+ motors require EP suffix in model number and can be used with a VFD, unless noted.

(-) = For Inverter Operation, starting condition may require ambient temperature of 5° C or higher.

(#) = Mounting positions Y2, F2, G2, K2, V2, W2 operation is limited to 75 %ED (duty cycle) for a 10 minute total cycle (7.5 minutes max. on time).

Standard Mounting Selection Tables

**50 HP
(37 kW)**



Dimension Pages:
 Single Reduction 2.132-2.143
 Single Reduction, Y2 2.144
 Double Reduction 2.146-2.161
 Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz					60 Hz					Selection							
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Base			VFD ^[2]
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code	Frame Size	Ratio	
51.8	55700	(6290)	1.12	I	10200	(45500)	62.5	46100	(5210)	1.12	I	10200	(45300)	50	4D180	28	(-),(#)
			1.22	I	10200	(45500)				1.22	I	10200	(45300)	50	4D185	28	(-),(#)
			1.12	I	14800	(65800)				1.12	I	14500	(64300)	50	4E180	28	(-),(#)
			1.22	I	14800	(65800)				1.22	I	14500	(64300)	50	4E185	28	(-),(#)
			1.37	I	14800	(65800)				1.37	I	14500	(64300)	50	4E190	28	(-),(#)
			1.49	II	14800	(65800)				1.49	II	14500	(64300)	50	4E195	28	(-),(#)
			1.49	II	27600	(123000)				1.49	II	26500	(118000)	50	4F195	28	(-),(#)
41.2	70000	(7910)	1.08	I	10100	(45000)	49.7	58000	(6550)	1.12	I	10200	(45400)	50	4D180	35	(#)
			1.12	I	15100	(67100)				1.12	I	14800	(66100)	50	4E180	35	(#)
			1.22	I	15100	(67100)				1.22	I	14800	(66100)	50	4E185	35	(#)
			1.24	I	15100	(67100)				1.37	I	14800	(66100)	50	4E190	35	(-),(#)
			1.24	I	15100	(67100)				1.49	II	14800	(66100)	50	4E195	35	(-),(#)
			1.22	I	28800	(128000)				1.22	I	27800	(123000)	50	4F185	35	(#)
			1.37	I	28800	(128000)				1.37	I	27800	(123000)	50	4F190	35	(-),(#)
1.49	II	28800	(128000)	1.49	II	27800	(123000)	50	4F195	35	(-),(#)						
37.7	76600	(8650)	0.99	-	10000	(44600)	45.5	63400	(7170)	1.12	I	10200	(45300)	50	4D180	39	
			1.12	I	15200	(67400)				1.12	I	15000	(66600)	50	4E180	39	
			1.14	I	15200	(67400)				1.22	I	15000	(66600)	50	4E185	39	
			1.14	I	15200	(67400)				1.37	I	15000	(66600)	50	4E190	39	(-)
			1.14	I	15200	(67400)				1.37	I	15000	(66600)	50	4E195	39	(-)
			1.12	I	28900	(128000)				1.12	I	28300	(126000)	50	4F180	39	
			1.22	I	28900	(128000)				1.22	I	28300	(126000)	50	4F185	39	
			1.37	I	28900	(128000)				1.37	I	28300	(126000)	50	4F190	39	(-)
			1.49	II	28900	(128000)				1.49	II	28300	(126000)	50	4F195	39	(-)
31.9	90500	(10200)	0.96	-	15200	(67600)	38.5	75000	(8470)	1.12	I	15100	(67300)	50	4E180	46	
			0.96	-	15200	(67600)				1.16	I	15100	(67300)	50	4E185	46	
			0.96	-	15200	(67600)				1.16	I	15100	(67300)	50	4E190	46	(-)
			0.96	-	15200	(67600)				1.16	I	15100	(67300)	50	4E195	46	(-)
			1.12	I	28300	(126000)				1.12	I	28900	(129000)	50	4F180	46	
			1.22	I	28300	(126000)				1.22	I	28900	(129000)	50	4F185	46	
			1.37	I	28300	(126000)				1.37	I	28900	(129000)	50	4F190	46	(-)
			1.49	II	28300	(126000)				1.49	II	28900	(129000)	50	4F195	46	(-)

Notes: [1] For Y4 Double Reductions (4XXXDX) refer to the above table; for Y4 single reduction refer to tables on pages 2.91-2.130.

[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

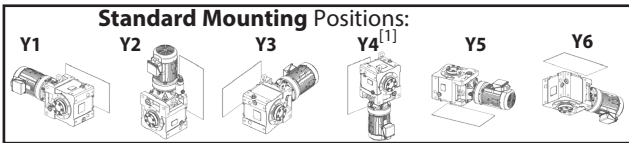
All 1HP+ motors require EP suffix in model number and can be used with a VFD, unless noted.

(-) = For Inverter Operation, starting condition may require ambient temperature of 5° C or higher.

(#) = Mounting positions Y2, F2, G2, K2, V2, W2 operation is limited to 75 %ED (duty cycle) for a 10 minute total cycle (7.5 minutes max. on time).

Standard Mounting Selection Tables

**50 HP
(37 kW)**



Dimension Pages:
 Single Reduction 2.132-2.143
 Single Reduction, Y2 2.144
 Double Reduction 2.146-2.161
 Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz					60 Hz					Selection							
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor		Base			VFD ^[2]		
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code		Frame Size	Ratio
27.6	104000 (11800)		0.83	-	15100 (67300)	33.3	86500 (9770)			0.88	-	15200 (67600)	50	4E180	53		
			0.83	-	15100 (67300)					1.01	I	15200 (67600)	50	4E185	53		
			0.83	-	15100 (67300)					1.01	I	15200 (67600)	50	4E190	53		(-)
			0.83	-	15100 (67300)					1.01	I	15200 (67600)	50	4E195	53		(-)
			0.88	-	27700 (123000)					0.88	-	28400 (126000)	50	4F180	53		
			1.05	I	27700 (123000)					1.05	I	28400 (126000)	50	4F185	53		
			1.37	I	27700 (123000)					1.37	I	28400 (126000)	50	4F190	53		(-)
			1.49	II	27700 (123000)					1.49	II	28400 (126000)	50	4F195	53		(-)
24.4	118000 (13400)		0.83	-	27100 (120000)	29.4	98000 (11100)			0.83	-	27900 (124000)	50	4F180	60		
			1.03	I	27100 (120000)					1.05	I	27900 (124000)	50	4F185	60		
			1.35	I	27100 (120000)					1.37	I	27900 (124000)	50	4F190	60		(-)
			1.35	I	27100 (120000)					1.49	II	27900 (124000)	50	4F195	60		(-)
21.6	134000 (15100)		0.81	-	26400 (117000)	26.0	111000 (12500)			0.81	-	27400 (122000)	50	4F180	67		
			1.03	I	26400 (117000)					1.05	I	27400 (122000)	50	4F185	67		
			1.11	I	26400 (117000)					1.11	I	27400 (122000)	50	4F190	67		
			1.19	I	26400 (117000)					1.30	I	27400 (122000)	50	4F195	67		
19.7	146000 (16500)		0.81	-	25900 (115000)	23.8	121000 (13700)			0.81	-	26900 (120000)	50	4F180	74		
			1.03	I	25900 (115000)					1.05	I	26900 (120000)	50	4F185	74		
			1.09	I	25900 (115000)					1.11	I	26900 (120000)	50	4F190	74		
			1.09	I	25900 (115000)					1.30	I	26900 (120000)	50	4F195	74		
18.1	159000 (18000)		0.81	-	25300 (113000)	21.9	132000 (14900)			0.81	-	26500 (118000)	50	4F185	80		
			0.95	-	25300 (113000)					0.95	-	26500 (118000)	50	4F190	80		
			1.00	I	25300 (113000)					1.09	I	26500 (118000)	50	4F195	80		
16.6	174000 (19700)		0.81	-	24600 (110000)	20.0	144000 (16300)			0.81	-	25900 (115000)	50	4F185	88		
			0.92	-	24600 (110000)					0.95	-	25900 (115000)	50	4F190	88		
			0.92	-	24600 (110000)					1.09	I	25900 (115000)	50	4F195	88		

Cyclo® BBB4

Selection Tables

Sold & Serviced By:



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Notes: [1] For Y4 Double Reductions (4XXXDX) refer to the above table; for Y4 single reduction refer to tables on pages 2.91-2.130..

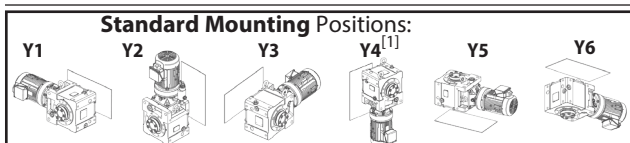
[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

All 1HP+ motors require EP suffix in model number and can be used with a VFD, unless noted.

(-) = For Inverter Operation, starting condition may require ambient temperature of 5° C or higher.

Standard Mounting Selection Tables

**60 HP
(45 kW)**



Dimension Pages:
 Single Reduction 2.132-2.143
 Single Reduction, Y2 2.144
 Double Reduction 2.146-2.161
 Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz					60 Hz					Selection							
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor		Base			VFD ^[2]		
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code		Frame Size	Ratio
138	25400	(2870)	1.52	II	12300	(54600)	167	21000	(2380)	1.52	II	11800	(52600)	60	4E190	11	(#)
			1.67	II	12300	(54600)				1.67	II	11800	(52600)	60	4E195	11	(#)
113	31000	(3500)	1.52	II	12700	(56400)	137	25700	(2900)	1.52	II	12300	(54500)	60	4E190	13	(#)
			1.67	II	12700	(56400)				1.67	II	12300	(54500)	60	4E195	13	(#)
104	33900	(3830)	1.52	II	12900	(57300)	125	28100	(3170)	1.52	II	12500	(55500)	60	4E190	14	(#)
			1.67	II	12900	(57300)				1.67	II	12500	(55500)	60	4E195	14	(#)
90.6	38700	(4370)	1.52	II	13000	(58000)	109	32100	(3620)	1.52	II	12700	(56300)	60	4E190	16	(#)
			1.67	II	13000	(58000)				1.67	II	12700	(56300)	60	4E195	16	(#)
82.9	42300	(4780)	1.52	II	13200	(58800)	100.0	35100	(3960)	1.52	II	12800	(57200)	60	4E190	18	(#)
			1.67	II	13200	(58800)				1.67	II	12800	(57200)	60	4E195	18	(#)
			1.67	II	24100	(107000)				1.67	II	23100	(103000)	60	4F195	18	(#)
69.0	50800	(5740)	1.12	I	13600	(60400)	83.3	42100	(4750)	1.12	I	13300	(59100)	60	4E190	21	(#)
			1.22	I	13600	(60400)				1.22	I	13300	(59100)	60	4E195	21	(#)
64.7	54200	(6120)	1.12	I	13700	(60800)	78.1	44900	(5070)	1.12	I	13400	(59600)	60	4E190	22	(#)
			1.22	I	13700	(60800)				1.22	I	13400	(59600)	60	4E195	22	(#)
59.2	59300	(6690)	1.12	I	13800	(61300)	71.4	49100	(5550)	1.12	I	13500	(60200)	60	4E190	25	(#)
			1.22	I	13800	(61300)				1.22	I	13500	(60200)	60	4E195	25	(#)
51.8	67700	(7650)	1.12	I	13900	(61900)	62.5	56100	(6340)	1.12	I	13700	(61000)	60	4E190	28	(#)
			1.22	I	13900	(61900)				1.22	I	13700	(61000)	60	4E195	28	(#)
			1.22	I	26800	(119000)				1.22	I	25800	(115000)	60	4F195	28	(#)
41.2	85100	(9620)	1.02	I	14000	(62100)	49.7	70500	(7970)	1.12	I	13900	(62000)	60	4E190	35	(#)
			1.02	I	14000	(62100)				1.22	I	13900	(62000)	60	4E195	35	(#)
			1.12	I	27800	(124000)				1.12	I	26900	(120000)	60	4F190	35	(#)
			1.22	I	27800	(124000)				1.22	I	26900	(120000)	60	4F195	35	(#)
37.7	93100	(10500)	0.93	-	13900	(62000)	45.5	77200	(8720)	1.12	I	14000	(62100)	60	4E190	39	
			0.93	-	13900	(62000)				1.13	I	14000	(62100)	60	4E195	39	
			1.12	I	28100	(125000)				1.12	I	27400	(122000)	60	4F190	39	
			1.22	I	28100	(125000)				1.22	I	27400	(122000)	60	4F195	39	
31.9	110000	(12400)	1.12	I	27400	(122000)	38.5	91200	(10300)	1.12	I	28200	(125000)	60	4F190	46	
			1.22	I	27400	(122000)				1.22	I	28200	(125000)	60	4F195	46	
27.6	127000	(14300)	1.12	I	26700	(119000)	33.3	105000	(11900)	1.12	I	27600	(123000)	60	4F190	53	
			1.22	I	26700	(119000)				1.22	I	27600	(123000)	60	4F195	53	
24.4	144000	(16300)	1.11	I	25900	(115000)	29.4	119000	(13500)	1.12	I	27000	(120000)	60	4F190	60	
			1.11	I	25900	(115000)				1.22	I	27000	(120000)	60	4F195	60	
21.6	163000	(18400)	0.91	-	25100	(112000)	26.0	135000	(15200)	0.91	-	26300	(117000)	60	4F190	67	
			0.98	-	25100	(112000)				1.07	I	26300	(117000)	60	4F195	67	
19.7	178000	(20100)	0.90	-	24500	(109000)	23.8	147000	(16600)	0.91	-	25800	(115000)	60	4F190	74	
			0.90	-	24500	(109000)				1.07	I	25800	(115000)	60	4F195	74	
18.1	193000	(21900)	0.82	-	21100	(94000)	21.9	160000	(18100)	0.90	-	25200	(112000)	60	4F195	80	

Notes: [1] For Y4 Double Reductions (4XXXDX) refer to the above table; for Y4 single reduction refer to tables on pages 2.91-2.130.

[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

All 1HP+ motors require EP suffix in model number and can be used with a VFD, unless noted.

(#) = Mounting positions Y2, F2, G2, K2, V2, W2 operation is limited to 75 %ED (duty cycle) for a 10 minute total cycle (7.5 minutes max. on time).

Y4 Mounting Single Reduction Selection Tables

**1/4 HP
(0.2 kW)**

Y4 Mounting Position^[1]:



Dimension Pages:
 Single Reduction 2.132-2.143
 Single Reduction, Y2 2.144
 Double Reduction 2.146-2.161
 Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz					60 Hz					Selection							
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor ^[1]		Base			VFD ^[1]		
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code		Frame Size	Ratio
8.12	1920	(217)	2.80	III	6090	(27100)	9.80	1590	(180)	2.80	III	6110	(27200)	02	4A100	179	(a)
7.02	2220	(251)	2.58	III	6070	(27000)	8.47	1840	(208)	2.58	III	6090	(27100)	02	4A100	207	(a)
5.84	2670	(302)	2.18	III	6030	(26800)	7.04	2210	(250)	2.18	III	6070	(27000)	02	4A100	249	(a)
			2.53	III	6030	(26800)				2.81	III	6070	(27000)	02	4A105	249	(a)
4.76	3270	(370)	2.17	III	5960	(26500)	5.75	2710	(306)	2.17	III	6020	(26800)	02	4A100	305	(a)
			2.51	III	5960	(26500)				2.83	III	6020	(26800)	02	4A105	305	(a)
3.48	4480	(506)	1.05	I	5790	(25800)	4.20	3710	(419)	1.05	I	5910	(26300)	02	4A100	417	(a)
			1.43	II	5790	(25800)				1.43	II	5910	(26300)	02	4A105	417	(a)

Cyclo® BBB4

Selection
Tables

Sold & Serviced By:



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Notes: [1] For double reduction and 1/8 HP single reduction Y4 ratings, refer to selection tables on pages 2.91 thru 2.130.

[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

Y4 Mounting Single Reduction Selection Tables

**1/3 HP
(0.25 kW)**

Y4 Mounting Position^[1]:



Dimension Pages:
 Single Reduction 2.132-2.143
 Single Reduction, Y2 2.144
 Double Reduction 2.146-2.161
 Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz					60 Hz					Selection							
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor ^[1]		Solid Shaft Overhung Load		Base			VFD ^[1]
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code	Frame Size	Ratio	
9.63	2020	(228)	3.12	III	6080	(27000)	11.6	1680	(189)	3.12	III	6100	(27100)	03	4A100	151	(a)
8.12	2400	(271)	2.24	III	6050	(26900)	9.80	1990	(225)	2.24	III	6080	(27100)	03	4A100	179	(a)
			3.10	III	6050	(26900)				3.10	III	6080	(27100)	03	4A105	179	(a)
7.02	2770	(313)	2.06	III	6020	(26800)	8.47	2300	(260)	2.06	III	6060	(27000)	03	4A100	207	(a)
			2.72	III	6020	(26800)				2.83	III	6060	(27000)	03	4A105	207	(a)
5.84	3340	(377)	1.74	II	5950	(26500)	7.04	2770	(313)	1.74	II	6020	(26800)	03	4A100	249	(a)
			2.02	III	5950	(26500)				2.24	III	6020	(26800)	03	4A105	249	(a)
4.76	4090	(462)	1.73	II	5850	(26000)	5.75	3390	(383)	1.73	II	5950	(26500)	03	4A100	305	(a)
			2.01	III	5850	(26000)				2.26	III	5950	(26500)	03	4A105	305	(a)
3.48	5600	(632)	0.84	-	5580	(24800)	4.20	4640	(524)	0.84	-	5760	(25600)	03	4A100	417	(a)
			1.15	I	5580	(24800)				1.15	I	5760	(25600)	03	4A105	417	(a)

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Selection Tables

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Notes: [1] For double reduction and 1/8 HP single reduction Y4 ratings, refer to selection tables on pages 2.91 thru 2.130.

[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

Y4 Mounting Single Reduction Selection Tables

**1/2 HP
(0.4 kW)**

Y4 Mounting Position^[1]:



Dimension Pages:

Single Reduction	2.132-2.143
Single Reduction, Y2	2.144
Double Reduction	2.146-2.161
Double Reduction, Y2	2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz					60 Hz						Selection						
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor ^[1]		Solid Shaft Overhung Load		Base			VFD ^[1]
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code	Frame Size	Ratio	
18.1	1720	(194)	3.17	III	6100	(27100)	21.9	1430	(161)	3.17	III	6120	(27200)	05	4A100	80	(a)
16.6	1880	(213)	3.17	III	6090	(27100)	20.0	1560	(176)	3.17	III	6110	(27200)	05	4A100	88	(a)
14.3	2180	(247)	3.03	III	6070	(27000)	17.2	1810	(204)	3.03	III	6090	(27100)	05	4A100	102	(a)
12.9	2410	(272)	2.44	III	6050	(26900)	15.6	2000	(225)	2.44	III	6080	(27100)	05	4A100	112	(a)
			3.00	III	6050	(26900)				3.00	III	6080	(27100)	05	4A105	112	(a)
11.8	2630	(298)	2.44	III	6030	(26800)	14.3	2180	(247)	2.44	III	6070	(27000)	05	4A100	123	(a)
			3.00	III	6030	(26800)				3.00	III	6070	(27000)	05	4A105	123	(a)
9.63	3240	(366)	1.95	II	5970	(26500)	11.6	2680	(303)	1.95	II	6020	(26800)	05	4A100	151	(a)
			2.71	III	5970	(26500)				2.71	III	6020	(26800)	05	4A105	151	(a)
8.12	3840	(434)	1.40	II	5890	(26200)	9.80	3180	(359)	1.40	II	5970	(26600)	05	4A100	179	(a)
			1.94	II	5890	(26200)				1.94	II	5970	(26600)	05	4A105	179	(a)
			2.36	III	5890	(26200)				2.36	III	5970	(26600)	05	4A110	179	(a)
			2.78	III	5890	(26200)				2.78	III	5970	(26600)	05	4A115	179	(a)
			2.98	III	5890	(26200)				2.98	III	5970	(26600)	05	4A120	179	(a)
7.02	4440	(502)	1.29	I	5800	(25800)	8.47	3680	(416)	1.29	I	5910	(26300)	05	4A100	207	(a)
			1.70	II	5800	(25800)				1.77	II	5910	(26300)	05	4A105	207	(a)
			2.15	III	5800	(25800)				2.15	III	5910	(26300)	05	4A110	207	(a)
			2.53	III	5800	(25800)				2.53	III	5910	(26300)	05	4A115	207	(a)
			2.57	III	5800	(25800)				2.57	III	5910	(26300)	05	4A120	207	(a)
5.84	5340	(604)	1.09	I	5630	(25000)	7.04	4430	(500)	1.09	I	5800	(25800)	05	4A100	249	(a)
			1.26	I	5630	(25000)				1.40	II	5800	(25800)	05	4A105	249	(a)
			1.67	II	5630	(25000)				1.67	II	5800	(25800)	05	4A110	249	(a)
			1.89	II	5630	(25000)				1.89	II	5800	(25800)	05	4A115	249	(a)
			2.14	III	5630	(25000)				2.14	III	5800	(25800)	05	4A120	249	(a)
			2.39	III	9860	(43900)				2.39	III	9920	(44100)	05	4B120	249	(a)
			2.84	III	9860	(43900)				3.00	III	9920	(44100)	05	4B125	249	(a)
4.76	6550	(740)	1.08	I	5350	(23800)	5.75	5420	(613)	1.08	I	5610	(25000)	05	4A100	305	(a)
			1.26	I	5350	(23800)				1.41	II	5610	(25000)	05	4A105	305	(a)
			1.65	II	5350	(23800)				1.65	II	5610	(25000)	05	4A110	305	(a)
			1.74	II	5350	(23800)				1.74	II	5610	(25000)	05	4A115	305	(a)
			2.36	III	9760	(43400)				2.36	III	9850	(43800)	05	4B120	305	(a)
			2.57	III	9760	(43400)				2.83	III	9850	(43800)	05	4B125	305	(a)

Cyclo® BBB4

Selection Tables

Notes: [1] For double reduction and 1/8 HP single reduction Y4 ratings, refer to selection tables on pages 2.91 thru 2.130.

[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

Y4 Mounting Single Reduction Selection Tables

3/4 HP
(0.55 kW)

Y4 Mounting Position^[1]:



Dimension Pages:
Single Reduction 2.132-2.143
Single Reduction, Y2 2.144
Double Reduction 2.146-2.161
Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz						60 Hz						Selection					
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor ^[1]		Solid Shaft Overhung Load		Base			VFD ^[1]
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code	Frame Size	Ratio	
18.1	2360	(267)	2.31	III	6050	(26900)	21.9	1960	(221)	2.31	III	6080	(27100)	08	4A100	80	(a)
			3.04	III	6050	(26900)				3.04	III	6080	(27100)	08	4A105	80	(a)
16.6	2590	(292)	2.31	III	6030	(26800)	20.0	2140	(242)	2.31	III	6070	(27000)	08	4A100	88	(a)
			3.04	III	6030	(26800)				3.04	III	6070	(27000)	08	4A105	88	(a)
14.3	3000	(339)	2.20	III	5990	(26700)	17.2	2490	(281)	2.20	III	6040	(26900)	08	4A100	102	(a)
			2.89	III	5990	(26700)				2.89	III	6040	(26900)	08	4A105	102	(a)
12.9	3310	(374)	1.77	II	5960	(26500)	15.6	2740	(310)	1.77	II	6020	(26800)	08	4A100	112	(a)
			2.18	III	5960	(26500)				2.18	III	6020	(26800)	08	4A105	112	(a)
			2.73	III	5960	(26500)				2.73	III	6020	(26800)	08	4A110	112	(a)
11.8	3620	(409)	1.77	II	5920	(26300)	14.3	3000	(339)	1.77	II	5990	(26700)	08	4A100	123	(a)
			2.18	III	5920	(26300)				2.18	III	5990	(26700)	08	4A105	123	(a)
			2.73	III	5920	(26300)				2.73	III	5990	(26700)	08	4A110	123	(a)
			3.15	III	5920	(26300)				3.15	III	5990	(26700)	08	4A115	123	(a)
9.63	4450	(503)	1.42	II	5800	(25800)	11.6	3690	(416)	1.42	II	5910	(26300)	08	4A100	151	(a)
			1.97	II	5800	(25800)				1.97	II	5910	(26300)	08	4A105	151	(a)
			2.36	III	5800	(25800)				2.36	III	5910	(26300)	08	4A110	151	(a)
			2.57	III	5800	(25800)				2.57	III	5910	(26300)	08	4A115	151	(a)
8.12	5280	(596)	1.02	I	5640	(25100)	9.80	4370	(494)	1.02	I	5810	(25800)	08	4A100	179	(a)
			1.41	II	5640	(25100)				1.41	II	5810	(25800)	08	4A105	179	(a)
			1.72	II	5640	(25100)				1.72	II	5810	(25800)	08	4A110	179	(a)
			2.02	III	5640	(25100)				2.02	III	5810	(25800)	08	4A115	179	(a)
			2.16	III	5640	(25100)				2.16	III	5810	(25800)	08	4A120	179	(a)
2.96	III	9860	(43900)	3.12	III	9920	(44100)	08	4B120	179	(a)						
7.02	6100	(690)	0.94	-	5460	(24300)	8.47	5060	(571)	0.94	-	5690	(25300)	08	4A100	207	(a)
			1.24	I	5460	(24300)				1.29	I	5690	(25300)	08	4A105	207	(a)
			1.56	II	5460	(24300)				1.56	II	5690	(25300)	08	4A110	207	(a)
			1.84	II	5460	(24300)				1.84	II	5690	(25300)	08	4A115	207	(a)
			1.87	II	5460	(24300)				1.87	II	5690	(25300)	08	4A120	207	(a)
			2.37	III	9800	(43600)				2.37	III	9880	(43900)	08	4B120	207	(a)
2.95	III	9800	(43600)	2.95	III	9880	(43900)	08	4B125	207	(a)						
5.84	7350	(830)	0.92	-	5120	(22800)	7.04	6090	(688)	1.02	I	5470	(24300)	08	4A105	249	(a)
			1.22	I	5120	(22800)				1.22	I	5470	(24300)	08	4A110	249	(a)
			1.38	I	5120	(22800)				1.38	I	5470	(24300)	08	4A115	249	(a)
			1.55	II	5120	(22800)				1.55	II	5470	(24300)	08	4A120	249	(a)
			1.74	II	9690	(43100)				1.74	II	9800	(43600)	08	4B120	249	(a)
			2.07	III	9690	(43100)				2.18	III	9800	(43600)	08	4B125	249	(a)
			2.75	III	9690	(43100)				2.75	III	9800	(43600)	08	4B140	249	(a)
			3.10	III	9690	(43100)				3.10	III	9800	(43600)	08	4B160	249	(a), (-)

Notes: [1] For double reduction and 1/8 HP single reduction Y4 ratings, refer to selection tables on pages 2.91 thru 2.130.

[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

Cyclo® BBB4
Selection Tables

Y4 Mounting Single Reduction Selection Tables

**3/4 HP
(0.55 kW)**

Y4 Mounting Position^[1]:



Dimension Pages:
 Single Reduction 2.132-2.143
 Single Reduction, Y2 2.144
 Double Reduction 2.146-2.161
 Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz					60 Hz					Selection							
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor ^[1]		Solid Shaft Overhung Load		Base			VFD ^[1]
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code	Frame Size	Ratio	
4.76	9000	(1020)	0.91	-	4520	(20100)	5.75	7460	(843)	1.03	I	5090	(22600)	08	4A105	305	(a)
			1.20	I	4520	(20100)				1.20	I	5090	(22600)	08	4A110	305	(a)
			1.27	I	4520	(20100)				1.27	I	5090	(22600)	08	4A115	305	(a)
			1.72	II	9500	(42300)				1.72	II	9680	(43000)	08	4B120	305	(a)
			1.87	II	9500	(42300)				2.05	III	9680	(43000)	08	4B125	305	(a)
			2.53	III	9500	(42300)				2.53	III	9680	(43000)	08	4B140	305	(a)

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Selection
Tables

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Notes: [1] For double reduction and 1/8 HP single reduction Y4 ratings, refer to selection tables on pages 2.91 thru 2.130.

[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

Y4 Mounting Single Reduction Selection Tables

1 HP
(0.75 kW)

Y4 Mounting Position^[1]:



Dimension Pages:
Single Reduction 2.132-2.143
Single Reduction, Y2 2.144
Double Reduction 2.146-2.161
Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz					60 Hz					Selection			VFD ^[1]			
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor ^[1]		Base				
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code	Frame Size	Ratio
69.0	847	(96)	3.13	III	4930	(21900)	83.3	701	(79)	3.13	III	4670	(20800)	1	4A100	21
51.8	1130	(128)	3.13	III	5340	(23800)	62.5	935	(106)	3.13	III	5070	(22500)	1	4A100	28
41.2	1420	(160)	3.13	III	5690	(25300)	49.7	1180	(133)	3.13	III	5400	(24000)	1	4A100	35
37.7	1550	(175)	3.13	III	5830	(26000)	45.5	1290	(145)	3.13	III	5540	(24600)	1	4A100	39
31.9	1830	(207)	3.13	III	6090	(27100)	38.5	1520	(172)	3.13	III	5800	(25800)	1	4A100	46
27.6	2120	(239)	3.13	III	6070	(27000)	33.3	1750	(198)	3.13	III	6030	(26800)	1	4A100	53
24.4	2400	(271)	2.65	III	6050	(26900)	29.4	1990	(225)	2.65	III	6080	(27100)	1	4A100	60
21.6	2710	(306)	2.54	III	6020	(26800)	26.0	2240	(254)	2.57	III	6060	(27000)	1	4A100	67
			3.04	III	6020	(26800)				3.11	III	6060	(27000)	1	4A105	67
19.7	2960	(335)	2.54	III	6000	(26700)	23.8	2450	(277)	2.57	III	6050	(26900)	1	4A100	74
			3.04	III	6000	(26700)				3.11	III	6050	(26900)	1	4A105	74
18.1	3220	(364)	1.69	II	5970	(26500)	21.9	2670	(302)	1.69	II	6030	(26800)	1	4A100	80
			2.23	III	5970	(26500)				2.23	III	6030	(26800)	1	4A105	80
			2.55	III	5970	(26500)				2.55	III	6030	(26800)	1	4A110	80
			2.96	III	5970	(26500)				2.96	III	6030	(26800)	1	4A115	80
16.6	3530	(399)	1.69	II	5930	(26400)	20.0	2920	(330)	1.69	II	6000	(26700)	1	4A100	88
			2.23	III	5930	(26400)				2.23	III	6000	(26700)	1	4A105	88
			2.55	III	5930	(26400)				2.55	III	6000	(26700)	1	4A110	88
			2.96	III	5930	(26400)				2.96	III	6000	(26700)	1	4A115	88
14.3	4090	(462)	1.61	II	5850	(26000)	17.2	3390	(383)	1.61	II	5950	(26500)	1	4A100	102
			2.12	III	5850	(26000)				2.12	III	5950	(26500)	1	4A105	102
			2.54	III	5850	(26000)				2.54	III	5950	(26500)	1	4A110	102
			2.79	III	5850	(26000)				2.79	III	5950	(26500)	1	4A115	102
12.9	4510	(510)	1.30	I	5780	(25700)	15.6	3740	(423)	1.30	I	5900	(26300)	1	4A100	112
			1.60	II	5780	(25700)				1.60	II	5900	(26300)	1	4A105	112
			2.00	III	5780	(25700)				2.00	III	5900	(26300)	1	4A110	112
			2.41	III	5780	(25700)				2.41	III	5900	(26300)	1	4A115	112
			2.53	III	5780	(25700)				2.53	III	5900	(26300)	1	4A120	112
			3.17	III	9910	(44100)				3.33	III	9960	(44300)	1	4B120	112
11.8	4940	(558)	1.30	I	5710	(25400)	14.3	4090	(462)	1.30	I	5850	(26000)	1	4A100	123
			1.60	II	5710	(25400)				1.60	II	5850	(26000)	1	4A105	123
			2.00	III	5710	(25400)				2.00	III	5850	(26000)	1	4A110	123
			2.31	III	5710	(25400)				2.31	III	5850	(26000)	1	4A115	123
			3.17	III	9890	(44000)				3.33	III	9940	(44200)	1	4B120	123

Cyclo® BBB4

Selection Tables

Notes: [1] For double reduction and 1/8 HP single reduction Y4 ratings, refer to selection tables on pages 2.91 thru 2.130.

[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

Y4 Mounting Single Reduction Selection Tables

**1 HP
(0.75 kW)**

Y4 Mounting Position^[1]:



Dimension Pages:
 Single Reduction 2.132-2.143
 Single Reduction, Y2 2.144
 Double Reduction 2.146-2.161
 Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz					60 Hz					Selection			VFD ^[1]			
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor ^[1]		Base				
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code	Frame Size	Ratio
9.63	6070	(685)	1.04	I	5470	(24300)	11.6	5030	(568)	1.04	I	5690	(25300)	1	4A100	151
			1.45	II	5470	(24300)				1.45	II	5690	(25300)	1	4A105	151
			1.73	II	5470	(24300)				1.73	II	5690	(25300)	1	4A110	151
			1.88	II	5470	(24300)				1.88	II	5690	(25300)	1	4A115	151
			2.55	III	9800	(43600)				2.55	III	9880	(44000)	1	4B120	151
			3.12	III	9800	(43600)				3.17	III	9880	(44000)	1	4B125	151
8.12	7200	(813)	1.03	I	5170	(23000)	9.80	5960	(674)	1.03	I	5490	(24400)	1	4A105	179
			1.26	I	5170	(23000)				1.26	I	5490	(24400)	1	4A110	179
			1.48	II	5170	(23000)				1.48	II	5490	(24400)	1	4A115	179
			1.59	II	5170	(23000)				1.59	II	5490	(24400)	1	4A120	179
			2.17	III	9700	(43200)				2.29	III	9810	(43600)	1	4B120	179
			2.63	III	9700	(43200)				3.04	III	9810	(43600)	1	4B125	179
			3.16	III	9700	(43200)				3.16	III	9810	(43600)	1	4B160	179
7.02	8320	(940)	0.91	-	4790	(21300)	8.47	6900	(779)	0.94	-	5250	(23400)	1	4A105	207
			1.15	I	4790	(21300)				1.15	I	5250	(23400)	1	4A110	207
			1.35	I	4790	(21300)				1.35	I	5250	(23400)	1	4A115	207
			1.37	I	4790	(21300)				1.37	I	5250	(23400)	1	4A120	207
			1.74	II	9580	(42600)				1.74	II	9730	(43300)	1	4B120	207
			2.16	III	9580	(42600)				2.16	III	9730	(43300)	1	4B125	207
			2.73	III	9580	(42600)				2.73	III	9730	(43300)	1	4B140	207
5.84	10000	(1130)	1.01	I	4030	(17900)	7.04	8300	(938)	1.01	I	4800	(21300)	1	4A115	249
			1.14	I	4030	(17900)				1.14	I	4800	(21300)	1	4A120	249
			1.28	I	9370	(41700)				1.28	I	9590	(42600)	1	4B120	249
			1.52	II	9370	(41700)				1.60	II	9590	(42600)	1	4B125	249
			2.02	III	9370	(41700)				2.02	III	9590	(42600)	1	4B140	249
			2.27	III	9370	(41700)				2.27	III	9590	(42600)	1	4B160	249
4.76	12300	(1390)	0.93	-	2330	(10300)	5.75	10200	(1150)	0.93	-	3950	(17600)	1	4A115	305
			1.26	I	9000	(40100)				1.26	I	9340	(41600)	1	4B120	305
			1.37	I	9000	(40100)				1.51	II	9340	(41600)	1	4B125	305
			1.85	II	9000	(40100)				1.85	II	9340	(41600)	1	4B140	305
			2.02	III	15700	(70100)				2.02	III	15900	(70600)	1	4C140	305

Cyclo® BBB4

Selection Tables

Sold & Serviced By:



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Notes: [1] For double reduction and 1/8 HP single reduction Y4 ratings, refer to selection tables on pages 2.91 thru 2.130.

[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

Y4 Mounting Single Reduction Selection Tables

1.5 HP
(1.1 kW)

Y4 Mounting Position^[1]:



Dimension Pages:
Single Reduction 2.132-2.143
Single Reduction, Y2 2.144
Double Reduction 2.146-2.161
Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz						60 Hz						Selection					
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor ^[1]		Solid Shaft Overhung Load		Base			VFD ^[1]
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code	Frame Size	Ratio	
69.0	1240	(140)	2.13	III	4870	(21700)	83.3	1030	(116)	2.13	III	4620	(20600)	1H	4A100	21	
			2.89	III	4870	(21700)				2.89	III	4620	(20600)	1H	4A105	21	
51.8	1660	(187)	2.13	III	5270	(23400)	62.5	1370	(155)	2.13	III	5010	(22300)	1H	4A100	28	
			2.89	III	5270	(23400)				2.89	III	5010	(22300)	1H	4A105	28	
41.2	2080	(235)	2.13	III	5600	(24900)	49.7	1720	(195)	2.13	III	5330	(23700)	1H	4A100	35	
			2.89	III	5600	(24900)				2.89	III	5330	(23700)	1H	4A105	35	
37.7	2280	(257)	2.13	III	5740	(25500)	45.5	1890	(213)	2.13	III	5460	(24300)	1H	4A100	39	
			2.89	III	5740	(25500)				2.89	III	5460	(24300)	1H	4A105	39	
31.9	2690	(304)	2.13	III	5990	(26600)	38.5	2230	(252)	2.13	III	5700	(25400)	1H	4A100	46	
			2.89	III	5990	(26600)				2.89	III	5700	(25400)	1H	4A105	46	
27.6	3100	(351)	2.13	III	5980	(26600)	33.3	2570	(291)	2.13	III	5920	(26300)	1H	4A100	53	
			2.89	III	5980	(26600)				2.89	III	5920	(26300)	1H	4A105	53	
24.4	3520	(397)	1.81	II	5930	(26400)	29.4	2910	(329)	1.81	II	6000	(26700)	1H	4A100	60	
			2.23	III	5930	(26400)				2.23	III	6000	(26700)	1H	4A105	60	
			2.89	III	5930	(26400)				2.89	III	6000	(26700)	1H	4A110	60	
21.6	3970	(449)	1.73	II	5870	(26100)	26.0	3290	(372)	1.75	II	5960	(26500)	1H	4A100	67	
			2.08	III	5870	(26100)				2.12	III	5960	(26500)	1H	4A105	67	
			2.48	III	5870	(26100)				2.48	III	5960	(26500)	1H	4A110	67	
			2.83	III	5870	(26100)				2.83	III	5960	(26500)	1H	4A115	67	
			2.87	III	5870	(26100)				2.87	III	5960	(26500)	1H	4A120	67	
19.7	4350	(491)	1.73	II	5810	(25900)	23.8	3600	(407)	1.75	II	5920	(26300)	1H	4A100	74	
			2.08	III	5810	(25900)				2.12	III	5920	(26300)	1H	4A105	74	
			2.48	III	5810	(25900)				2.48	III	5920	(26300)	1H	4A110	74	
			2.63	III	5810	(25900)				2.63	III	5920	(26300)	1H	4A115	74	
18.1	4730	(534)	1.15	I	5750	(25600)	21.9	3920	(443)	1.15	I	5880	(26100)	1H	4A100	80	
			1.52	II	5750	(25600)				1.52	II	5880	(26100)	1H	4A105	80	
			1.74	II	5750	(25600)				1.74	II	5880	(26100)	1H	4A110	80	
			2.02	III	5750	(25600)				2.02	III	5880	(26100)	1H	4A115	80	
			2.41	III	5750	(25600)				2.41	III	5880	(26100)	1H	4A120	80	
			2.81	III	9650	(42900)				2.81	III	9180	(40800)	1H	4B120	80	
16.6	5170	(584)	1.15	I	5660	(25200)	20.0	4290	(484)	1.15	I	5820	(25900)	1H	4A100	88	
			1.52	II	5660	(25200)				1.52	II	5820	(25900)	1H	4A105	88	
			1.74	II	5660	(25200)				1.74	II	5820	(25900)	1H	4A110	88	
			2.02	III	5660	(25200)				2.02	III	5820	(25900)	1H	4A115	88	
			2.21	III	5660	(25200)				2.21	III	5820	(25900)	1H	4A120	88	
			2.81	III	9870	(43900)				2.81	III	9400	(41800)	1H	4B120	88	

Notes: [1] For double reduction and 1/8 HP single reduction Y4 ratings, refer to selection tables on pages 2.91 thru 2.130.

[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

Y4 Mounting Single Reduction Selection Tables

1.5 HP
(1.1 kW)

Y4 Mounting Position^[1]:



Dimension Pages:

Single Reduction	2.132-2.143
Single Reduction, Y2	2.144
Double Reduction	2.146-2.161
Double Reduction, Y2	2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz					60 Hz					Selection			VFD ^[1]			
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor ^[1]		Base				
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code	Frame Size	Ratio
14.3	6000	(678)	1.10	I	5490	(24400)	17.2	4970	(562)	1.10	I	5700	(25400)	1H	4A100	102
			1.45	II	5490	(24400)				1.45	II	5700	(25400)	1H	4A105	102
			1.73	II	5490	(24400)				1.73	II	5700	(25400)	1H	4A110	102
			1.90	II	5490	(24400)				1.90	II	5700	(25400)	1H	4A115	102
			2.61	III	9810	(43600)				2.72	III	9770	(43500)	1H	4B120	102
			3.16	III	9810	(43600)				3.42	III	9770	(43500)	1H	4B125	102
12.9	6620	(748)	0.89	-	5330	(23700)	15.6	5490	(620)	0.89	-	5600	(24900)	1H	4A100	112
			1.09	I	5330	(23700)				1.09	I	5600	(24900)	1H	4A105	112
			1.37	I	5330	(23700)				1.37	I	5600	(24900)	1H	4A110	112
			1.64	II	5330	(23700)				1.64	II	5600	(24900)	1H	4A115	112
			1.72	II	5330	(23700)				1.72	II	5600	(24900)	1H	4A120	112
			2.16	III	9760	(43400)				2.27	III	9850	(43800)	1H	4B120	112
			2.61	III	9760	(43400)				2.89	III	9850	(43800)	1H	4B125	112
11.8	7240	(818)	0.89	-	5150	(22900)	14.3	6000	(678)	0.89	-	5490	(24400)	1H	4A100	123
			1.09	I	5150	(22900)				1.09	I	5490	(24400)	1H	4A105	123
			1.37	I	5150	(22900)				1.37	I	5490	(24400)	1H	4A110	123
			1.58	II	5150	(22900)				1.58	II	5490	(24400)	1H	4A115	123
			2.16	III	9700	(43100)				2.27	III	9810	(43600)	1H	4B120	123
			2.61	III	9700	(43100)				2.89	III	9810	(43600)	1H	4B125	123
			3.14	III	9700	(43100)				3.14	III	9810	(43600)	1H	4B140	123
9.63	8900	(1010)	0.99	-	4560	(20300)	11.6	7370	(833)	0.99	-	5110	(22700)	1H	4A105	151
			1.18	I	4560	(20300)				1.18	I	5110	(22700)	1H	4A110	151
			1.28	I	4560	(20300)				1.28	I	5110	(22700)	1H	4A115	151
			1.74	II	9510	(42300)				1.74	II	9680	(43100)	1H	4B120	151
			2.13	III	9510	(42300)				2.16	III	9680	(43100)	1H	4B125	151
			2.56	III	9510	(42300)				2.56	III	9680	(43100)	1H	4B160	151
8.12	10600	(1190)	0.86	-	3720	(16600)	9.80	8740	(988)	0.86	-	4620	(20600)	1H	4A110	179
			1.01	I	3720	(16600)				1.01	I	4620	(20600)	1H	4A115	179
			1.08	I	3720	(16600)				1.08	I	4620	(20600)	1H	4A120	179
			1.48	II	9290	(41300)				1.56	II	9530	(42400)	1H	4B120	179
			1.79	II	9290	(41300)				2.07	III	9530	(42400)	1H	4B125	179
			2.16	III	9290	(41300)				2.16	III	9530	(42400)	1H	4B160	179

Cyclo® BBB4

Selection Tables

Notes: [1] For double reduction and 1/8 HP single reduction Y4 ratings, refer to selection tables on pages 2.91 thru 2.130.

[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

Y4 Mounting Single Reduction Selection Tables

**1.5 HP
(1.1 kW)**

Y4 Mounting Position^[1]:



Dimension Pages:

Single Reduction	2.132-2.143
Single Reduction, Y2	2.144
Double Reduction	2.146-2.161
Double Reduction, Y2	2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz						60 Hz						Selection					
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor ^[1]		Solid Shaft Overhung Load		Base			VFD ^[1]
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code	Frame Size	Ratio	
7.02	12200	(1380)	0.78	-	2400	(10700)	8.47	10100	(1140)	0.78	-	3980	(17700)	1H	4A110	207	
			0.92	-	2400	(10700)				0.92	-	3980	(17700)	1H	4A115	207	
			0.94	-	2400	(10700)				0.94	-	3980	(17700)	1H	4A120	207	
			1.19	I	9020	(40100)				1.19	I	9350	(41600)	1H	4B120	207	
			1.47	II	9020	(40100)				1.47	II	9350	(41600)	1H	4B125	207	
			1.86	II	9020	(40100)				1.86	II	9350	(41600)	1H	4B140	207	
			2.02	III	15800	(70100)				2.02	III	15900	(70600)	1H	4C140	207	
			5.84	14700	(1660)	1.03				I	8510	(37900)	7.04	12200	(1380)	1.09	I
			1.38	I	8510	(37900)				1.38	I	9020	(40100)	1H	4B140	249	
			1.55	II	8510	(37900)				1.55	II	9020	(40100)	1H	4B160	249	
			2.02	III	15600	(69300)				2.02	III	15800	(70100)	1H	4C160	249	
			2.02	III	21800	(97000)				2.02	III	21900	(97500)	1H	4D160	249	
4.76	18000	(2030)	0.93	-	7630	(33900)	5.75	14900	(1690)	1.03	I	8460	(37600)	1H	4B125	305	
			1.26	I	7630	(33900)				1.26	I	8460	(37600)	1H	4B140	305	
			1.38	I	15300	(68000)				1.38	I	15600	(69200)	1H	4C140	305	
			2.02	III	15300	(68000)				2.02	III	15600	(69200)	1H	4C160	305	
			2.02	III	21700	(96400)				2.02	III	21800	(97000)	1H	4D160	305	

Cyclo® BBB4

Selection Tables

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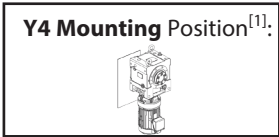
sales@electromate.com

Notes: [1] For double reduction and 1/8 HP single reduction Y4 ratings, refer to selection tables on pages 2.91 thru 2.130.

[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

Y4 Mounting Single Reduction Selection Tables

2 HP
(1.5 kW)



Dimension Pages:
Single Reduction 2.132-2.143
Single Reduction, Y2 2.144
Double Reduction 2.146-2.161
Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz					60 Hz					Selection							
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor ^[1]		Solid Shaft Overhung Load		Base			VFD ^[1]
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code	Frame Size	Ratio	
69.0	1690	(191)	1.56	II	4810	(21400)	83.3	1400	(158)	1.56	II	4570	(20300)	2	4A100	21	
			2.12	III	4810	(21400)				2.12	III	4570	(20300)	2	4A105	21	
			2.37	III	4810	(21400)				2.37	III	4570	(20300)	2	4A110	21	
			2.61	III	4810	(21400)				2.61	III	4570	(20300)	2	4A115	21	
51.8	2260	(255)	1.56	II	5190	(23100)	62.5	1870	(211)	1.56	II	4940	(22000)	2	4A100	28	
			2.12	III	5190	(23100)				2.12	III	4940	(22000)	2	4A105	28	
			2.37	III	5190	(23100)				2.37	III	4940	(22000)	2	4A110	28	
			2.61	III	5190	(23100)				2.61	III	4940	(22000)	2	4A115	28	
41.2	2840	(321)	1.56	II	5500	(24500)	49.7	2350	(266)	1.56	II	5240	(23300)	2	4A100	35	
			2.12	III	5500	(24500)				2.12	III	5240	(23300)	2	4A105	35	
			2.37	III	5500	(24500)				2.37	III	5240	(23300)	2	4A110	35	
			2.61	III	5500	(24500)				2.61	III	5240	(23300)	2	4A115	35	
37.7	3100	(351)	1.56	II	5620	(25000)	45.5	2570	(291)	1.56	II	5360	(23900)	2	4A100	39	
			2.12	III	5620	(25000)				2.12	III	5360	(23900)	2	4A105	39	
			2.37	III	5620	(25000)				2.37	III	5360	(23900)	2	4A110	39	
			2.61	III	5620	(25000)				2.61	III	5360	(23900)	2	4A115	39	
31.9	3670	(414)	1.56	II	5860	(26000)	38.5	3040	(343)	1.56	II	5590	(24900)	2	4A100	46	
			2.12	III	5860	(26000)				2.12	III	5590	(24900)	2	4A105	46	
			2.37	III	5860	(26000)				2.37	III	5590	(24900)	2	4A110	46	
			2.60	III	5860	(26000)				2.60	III	5590	(24900)	2	4A115	46	
			3.11	III	5860	(26000)				3.11	III	5590	(24900)	2	4A120	46	
27.6	4230	(478)	1.56	II	5830	(25900)	33.3	3510	(396)	1.56	II	5790	(25800)	2	4A100	53	
			2.12	III	5830	(25900)				2.12	III	5790	(25800)	2	4A105	53	
			2.37	III	5830	(25900)				2.37	III	5790	(25800)	2	4A110	53	
			2.60	III	5830	(25900)				2.60	III	5790	(25800)	2	4A115	53	
			2.70	III	5830	(25900)				2.70	III	5790	(25800)	2	4A120	53	
24.4	4800	(542)	1.32	I	5740	(25500)	29.4	3970	(449)	1.32	I	5870	(26100)	2	4A100	60	
			1.64	II	5740	(25500)				1.64	II	5870	(26100)	2	4A105	60	
			2.12	III	5740	(25500)				2.12	III	5870	(26100)	2	4A110	60	
			2.38	III	5740	(25500)				2.38	III	5870	(26100)	2	4A115	60	
21.6	5420	(612)	1.27	I	5610	(25000)	26.0	4490	(507)	1.28	I	5790	(25700)	2	4A100	67	
			1.52	II	5610	(25000)				1.56	II	5790	(25700)	2	4A105	67	
			1.82	II	5610	(25000)				1.82	II	5790	(25700)	2	4A110	67	
			2.07	III	5610	(25000)				2.07	III	5790	(25700)	2	4A115	67	
			2.11	III	5610	(25000)				2.11	III	5790	(25700)	2	4A120	67	
			2.64	III	9050	(40300)				2.64	III	8630	(38400)	2	4B120	67	
			3.20	III	9050	(40300)				3.26	III	8630	(38400)	2	4B125	67	

Cyclo® BBB4

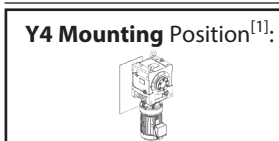
Selection Tables

Notes: [1] For double reduction and 1/8 HP single reduction Y4 ratings, refer to selection tables on pages 2.91 thru 2.130.

[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

Y4 Mounting Single Reduction Selection Tables

2 HP
(1.5 kW)



Dimension Pages:
 Single Reduction 2.132-2.143
 Single Reduction, Y2 2.144
 Double Reduction 2.146-2.161
 Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

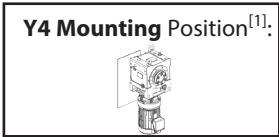
50Hz					60 Hz					Selection							
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor ^[1]		Solid Shaft Overhung Load		Base			VFD ^[1]
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code	Frame Size	Ratio	
19.7	5930	(669)	1.27	I	5500	(24500)	23.8	4910	(555)	1.28	I	5710	(25400)	2	4A100	74	
			1.52	II	5500	(24500)				1.56	II	5710	(25400)	2	4A105	74	
			1.82	II	5500	(24500)				1.82	II	5710	(25400)	2	4A110	74	
			1.93	II	5500	(24500)				1.93	II	5710	(25400)	2	4A115	74	
			2.64	III	9260	(41200)				2.64	III	8830	(39300)	2	4B120	74	
			3.20	III	9260	(41200)				3.26	III	8830	(39300)	2	4B125	74	
18.1	6450	(729)	0.85	-	5370	(23900)	21.9	5340	(604)	0.85	-	5630	(25000)	2	4A100	80	
			1.12	I	5370	(23900)				1.12	I	5630	(25000)	2	4A105	80	
			1.28	I	5370	(23900)				1.28	I	5630	(25000)	2	4A110	80	
			1.48	II	5370	(23900)				1.48	II	5630	(25000)	2	4A115	80	
			1.77	II	5370	(23900)				1.77	II	5630	(25000)	2	4A120	80	
			2.06	III	9460	(42100)				2.06	III	9020	(40100)	2	4B120	80	
16.6	7050	(797)	0.85	-	5210	(23200)	20.0	5840	(660)	0.85	-	5520	(24600)	2	4A100	88	
			1.12	I	5210	(23200)				1.12	I	5520	(24600)	2	4A105	88	
			1.28	I	5210	(23200)				1.28	I	5520	(24600)	2	4A110	88	
			1.48	II	5210	(23200)				1.48	II	5520	(24600)	2	4A115	88	
			1.62	II	5210	(23200)				1.62	II	5520	(24600)	2	4A120	88	
			2.06	III	9670	(43000)				2.06	III	9230	(41100)	2	4B120	88	
14.3	8180	(925)	0.81	-	4840	(21500)	17.2	6780	(766)	0.81	-	5290	(23500)	2	4A100	102	
			1.06	I	4840	(21500)				1.06	I	5290	(23500)	2	4A105	102	
			1.27	I	4840	(21500)				1.27	I	5290	(23500)	2	4A110	102	
			1.40	II	4840	(21500)				1.40	II	5290	(23500)	2	4A115	102	
			1.91	II	9600	(42700)				2.00	III	9580	(42600)	2	4B120	102	
			2.31	III	9600	(42700)				2.51	III	9580	(42600)	2	4B125	102	
12.9	9030	(1020)	0.80	-	4500	(20000)	15.6	7480	(845)	0.80	-	5080	(22600)	2	4A105	112	
			1.00	I	4500	(20000)				1.00	I	5080	(22600)	2	4A110	112	
			1.21	I	4500	(20000)				1.21	I	5080	(22600)	2	4A115	112	
			1.26	I	4500	(20000)				1.26	I	5080	(22600)	2	4A120	112	
			1.58	II	9500	(42200)				1.66	II	9670	(43000)	2	4B120	112	
			1.92	II	9500	(42200)				2.12	III	9670	(43000)	2	4B125	112	
2.49	III	9500	(42200)	2.49	III	9670	(43000)	2	4B140	112							
											2.52	III	9500	(42200)	2.52	III	9670

Cyclo® BBB4
Selection Tables

Notes: [1] For double reduction and 1/8 HP single reduction Y4 ratings, refer to selection tables on pages 2.91 thru 2.130.
 [2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

Y4 Mounting Single Reduction Selection Tables

2 HP
(1.5 kW)



Dimension Pages:
 Single Reduction 2.132-2.143
 Single Reduction, Y2 2.144
 Double Reduction 2.146-2.161
 Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz					60 Hz					Selection			VFD ^[1]			
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor ^[1]		Solid Shaft Overhung Load		Base		
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code	Frame Size	Ratio
11.8	9880	(1120)	0.80	-	4100	(18300)	14.3	8180	(925)	0.80	-	4840	(21500)	2	4A105	123
			1.00	I	4100	(18300)				1.00	I	4840	(21500)	2	4A110	123
			1.16	I	4100	(18300)				1.16	I	4840	(21500)	2	4A115	123
			1.58	II	9390	(41800)				1.66	II	9600	(42700)	2	4B120	123
			1.92	II	9390	(41800)				2.12	III	9600	(42700)	2	4B125	123
			2.30	III	9390	(41800)				2.30	III	9600	(42700)	2	4B140	123
			2.49	III	14900	(66400)				2.49	III	14200	(63200)	2	4C140	123
			9.63	12100	(1370)	0.87				-	2480	(11000)	11.6	10100	(1140)	0.87
0.94	-	2480				(11000)	0.94	-	4010	(17800)	2	4A115				151
1.28	I	9030				(40200)	1.28	I	9360	(41600)	2	4B120				151
1.56	II	9030				(40200)	1.59	II	9360	(41600)	2	4B125				151
1.87	II	9030				(40200)	1.87	II	9360	(41600)	2	4B160				151
2.49	III	15700				(69900)	2.49	III	15000	(66700)	2	4C160				151
2.49	III	21900				(97500)	2.49	III	22000	(97800)	2	4D160				151
8.12	14400	(1630)				1.09	I	8580	(38200)	9.80	11900	(1350)				1.14
			1.32	I	8580	(38200)	1.52	II	9070				(40300)	2	4B125	179
			1.58	II	8580	(38200)	1.58	II	9070				(40300)	2	4B160	179
			2.49	III	15600	(69400)	2.49	III	15700				(69600)	2	4C160	179
			2.49	III	21800	(97100)	2.49	III	21900				(97500)	2	4D160	179
			7.02	16600	(1880)	0.87	-	8030	(35700)				8.47	13800	(1560)	0.87
1.08	I	8030				(35700)	1.08	I	8710	(38700)	2	4B125				207
1.37	I	8030				(35700)	1.37	I	8710	(38700)	2	4B140				207
1.48	II	15400				(68600)	1.48	II	15600	(69600)	2	4C140				207
2.49	III	15400				(68600)	2.49	III	15600	(69600)	2	4C160				207
2.49	III	21700				(96700)	2.49	III	21900	(97200)	2	4D160				207
5.84	20000	(2260)				1.01	I	6930	(30800)	7.04	16600	(1880)				1.01
			1.14	I	6930	(30800)	1.14	I	8040				(35800)	2	4B160	249
			1.48	II	15100	(67100)	1.48	II	15400				(68600)	2	4C160	249
			1.48	II	21600	(95900)	1.48	II	21700				(96700)	2	4D160	249
4.76	24500	(2770)	0.93	-	4640	(20600)	5.75	20300	(2300)	0.93	-	6810	(30300)	2	4B140	305
			1.01	I	14500	(64500)				1.01	I	15000	(66900)	2	4C140	305
			1.48	II	14500	(64500)				1.48	II	15000	(66900)	2	4C160	305
			1.48	II	21300	(94600)				1.48	II	21500	(95800)	2	4D160	305

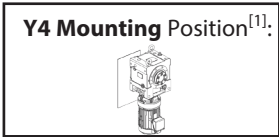
Cyclo® BBB4

Selection Tables

Notes: [1] For double reduction and 1/8 HP single reduction Y4 ratings, refer to selection tables on pages 2.91 thru 2.130.
 [2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

Y4 Mounting Single Reduction Selection Tables

**3 HP
(2.2 kW)**



Dimension Pages:
 Single Reduction 2.132-2.143
 Single Reduction, Y2 2.144
 Double Reduction 2.146-2.161
 Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

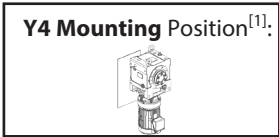
50Hz					60 Hz					Selection							
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor ^[1]		Solid Shaft Overhung Load		Base			VFD ^[1]
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code	Frame Size	Ratio	
69.0	2480	(281)	1.07	I	4700	(20900)	83.3	2060	(232)	1.07	I	4480	(19900)	3	4A100	21	
			1.45	II	4700	(20900)				1.45	II	4480	(19900)	3	4A105	21	
			1.61	II	4700	(20900)				1.61	II	4480	(19900)	3	4A110	21	
			1.78	II	4700	(20900)				1.78	II	4480	(19900)	3	4A115	21	
			2.30	III	4700	(20900)				2.30	III	4480	(19900)	3	4A120	21	
			3.16	III	4700	(20900)				2.64	III	4480	(19900)	3	4A125	21	
			3.16	III	6530	(29100)				2.64	III	6200	(27600)	3	4B125	21	
			64.7	2650	(299)	2.30				III	4780	(21200)	78.1	2190	(248)	2.30	III
3.16	III	4780				(21200)	3.16	III	4560	(20300)	3	4A125				22	
3.16	III	6650				(29600)	3.16	III	6320	(28100)	3	4B125				22	
59.2	2900	(327)	2.30	III	4880	(21700)	71.4	2400	(271)	2.30	III	4660	(20700)	3	4A120	25	
			3.16	III	4880	(21700)				3.16	III	4660	(20700)	3	4A125	25	
			3.16	III	6810	(30300)				3.16	III	6470	(28800)	3	4B125	25	
51.8	3310	(374)	1.07	I	5040	(22400)	62.5	2740	(310)	1.07	I	4820	(21400)	3	4A100	28	
			1.45	II	5040	(22400)				1.45	II	4820	(21400)	3	4A105	28	
			1.61	II	5040	(22400)				1.61	II	4820	(21400)	3	4A110	28	
			1.78	II	5040	(22400)				1.78	II	4820	(21400)	3	4A115	28	
			2.30	III	5040	(22400)				2.30	III	4820	(21400)	3	4A120	28	
			3.16	III	5040	(22400)				3.16	III	4820	(21400)	3	4A125	28	
			3.16	III	7060	(31400)				3.16	III	6710	(29800)	3	4B125	28	
			41.2	4160	(470)	1.07				I	5320	(23600)	49.7	3450	(390)	1.07	I
1.45	II	5320				(23600)	1.45	II	5090	(22600)	3	4A105				35	
1.61	II	5320				(23600)	1.61	II	5090	(22600)	3	4A110				35	
1.78	II	5320				(23600)	1.78	II	5090	(22600)	3	4A115				35	
2.30	III	5320				(23600)	2.30	III	5090	(22600)	3	4A120				35	
2.69	III	5320				(23600)	2.69	III	5090	(22600)	3	4A125				35	
2.74	III	5320				(23600)	2.74	III	5090	(22600)	3	4A140				35	
2.69	III	7490				(33300)	2.69	III	7130	(31700)	3	4B125				35	
37.7	4550	(514)	1.07	I	5420	(24100)	45.5	3770	(426)	1.07	I	5200	(23100)	3	4A100	39	
			1.45	II	5420	(24100)				1.45	II	5200	(23100)	3	4A105	39	
			1.61	II	5420	(24100)				1.61	II	5200	(23100)	3	4A110	39	
			1.78	II	5420	(24100)				1.78	II	5200	(23100)	3	4A115	39	
			2.30	III	5420	(24100)				2.30	III	5200	(23100)	3	4A120	39	
			2.51	III	5420	(24100)				2.51	III	5200	(23100)	3	4A125	39	
			2.69	III	7660	(34100)				2.69	III	7300	(32500)	3	4B125	39	

Cyclo® BBB4
Selection Tables

Notes: [1] For double reduction and 1/8 HP single reduction Y4 ratings, refer to selection tables on pages 2.91 thru 2.130.
 [2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

Y4 Mounting Single Reduction Selection Tables

**3 HP
(2.2 kW)**



Dimension Pages:
 Single Reduction 2.132-2.143
 Single Reduction, Y2 2.144
 Double Reduction 2.146-2.161
 Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz					60 Hz					Selection							
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor ^[1]		Solid Shaft Overhung Load		Base			VFD ^[1]
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code	Frame Size	Ratio	
31.9	5380	(608)	1.07	I	5620	(25000)	38.5	4460	(504)	1.07	I	5400	(24000)	3	4A100	46	
			1.45	II	5620	(25000)				1.45	II	5400	(24000)	3	4A105	46	
			1.61	II	5620	(25000)				1.61	II	5400	(24000)	3	4A110	46	
			1.77	II	5620	(25000)				1.77	II	5400	(24000)	3	4A115	46	
			2.12	III	5620	(25000)				2.12	III	5400	(24000)	3	4A120	46	
			2.30	III	7990	(35600)				2.30	III	7620	(33900)	3	4B120	46	
			2.69	III	7990	(35600)				2.69	III	7620	(33900)	3	4B125	46	
27.6	6210	(701)	1.07	I	5440	(24200)	33.3	5140	(581)	1.07	I	5570	(24800)	3	4A100	53	
			1.45	II	5440	(24200)				1.45	II	5570	(24800)	3	4A105	53	
			1.61	II	5440	(24200)				1.61	II	5570	(24800)	3	4A110	53	
			1.77	II	5440	(24200)				1.77	II	5570	(24800)	3	4A115	53	
			1.84	II	5440	(24200)				1.84	II	5570	(24800)	3	4A120	53	
			2.30	III	8280	(36800)				2.30	III	7900	(35200)	3	4B120	53	
			2.69	III	8280	(36800)				2.69	III	7900	(35200)	3	4B125	53	
24.4	7040	(795)	0.90	-	5210	(23200)	29.4	5830	(659)	0.90	-	5530	(24600)	3	4A100	60	
			1.12	I	5210	(23200)				1.12	I	5530	(24600)	3	4A105	60	
			1.44	II	5210	(23200)				1.44	II	5530	(24600)	3	4A110	60	
			1.62	II	5210	(23200)				1.62	II	5530	(24600)	3	4A115	60	
			2.22	III	8530	(38000)				2.30	III	8150	(36300)	3	4B120	60	
			2.57	III	8530	(38000)				2.57	III	8150	(36300)	3	4B125	60	
			2.53	III	12100	(53900)				2.53	III	11500	(51200)	3	4C140	60	
			2.53	III	12100	(53900)				2.53	III	11500	(51200)	3	4C140	60	
21.6	7950	(898)	0.86	-	4920	(21900)	26.0	6580	(744)	0.88	-	5340	(23800)	3	4A100	67	
			1.04	I	4920	(21900)				1.06	I	5340	(23800)	3	4A105	67	
			1.24	I	4920	(21900)				1.24	I	5340	(23800)	3	4A110	67	
			1.41	II	4920	(21900)				1.41	II	5340	(23800)	3	4A115	67	
			1.44	II	4920	(21900)				1.44	II	5340	(23800)	3	4A120	67	
			1.80	II	8780	(39100)				1.80	II	8400	(37400)	3	4B120	67	
			2.18	III	8780	(39100)				2.22	III	8400	(37400)	3	4B125	67	
			2.53	III	8780	(39100)				2.53	III	8400	(37400)	3	4B140	67	
			2.86	III	8780	(39100)				2.86	III	8400	(37400)	3	4B160	67	
19.7	8690	(982)	0.86	-	4650	(20700)	23.8	7200	(814)	0.88	-	5170	(23000)	3	4A100	74	
			1.04	I	4650	(20700)				1.06	I	5170	(23000)	3	4A105	74	
			1.24	I	4650	(20700)				1.24	I	5170	(23000)	3	4A110	74	
			1.31	I	4650	(20700)				1.31	I	5170	(23000)	3	4A115	74	
			1.80	II	8960	(39900)				1.80	II	8580	(38200)	3	4B120	74	
			2.18	III	8960	(39900)				2.22	III	8580	(38200)	3	4B125	74	
			2.53	III	8960	(39900)				2.53	III	8580	(38200)	3	4B140	74	
			2.62	III	8960	(39900)				2.62	III	8580	(38200)	3	4B160	74	

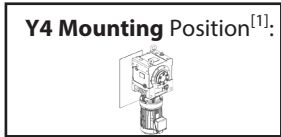
Cyclo® BBB4

Selection Tables

Notes: [1] For double reduction and 1/8 HP single reduction Y4 ratings, refer to selection tables on pages 2.91 thru 2.130.
 [2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

Y4 Mounting Single Reduction Selection Tables

3 HP
(2.2 kW)



Dimension Pages:
 Single Reduction 2.132-2.143
 Single Reduction, Y2 2.144
 Double Reduction 2.146-2.161
 Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

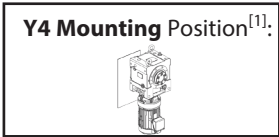
50Hz					60 Hz					Selection							
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor ^[1]		Solid Shaft Overhung Load		Base			VFD ^[1]
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code	Frame Size	Ratio	
18.1	9460	(1070)	0.76	-	4310	(19200)	21.9	7840	(886)	0.76	-	4960	(22100)	3	4A105	80	
			0.87	-	4310	(19200)				0.87	-	4960	(22100)	3	4A110	80	
			1.01	I	4310	(19200)				1.01	I	4960	(22100)	3	4A115	80	
			1.21	I	4310	(19200)				1.21	I	4960	(22100)	3	4A120	80	
			1.40	II	9140	(40600)				1.40	II	8750	(38900)	3	4B120	80	
			1.80	II	9140	(40600)				1.80	II	8750	(38900)	3	4B125	80	
			2.40	III	9140	(40600)				2.40	III	8750	(38900)	3	4B140	80	
			2.53	III	13100	(58100)				2.53	III	12500	(55400)	3	4C140	80	
16.6	10300	(1170)	0.76	-	3850	(17100)	20.0	8570	(969)	0.76	-	4690	(20900)	3	4A105	88	
			0.87	-	3850	(17100)				0.87	-	4690	(20900)	3	4A110	88	
			1.01	I	3850	(17100)				1.01	I	4690	(20900)	3	4A115	88	
			1.10	I	3850	(17100)				1.10	I	4690	(20900)	3	4A120	88	
			1.40	II	9320	(41400)				1.40	II	8940	(39800)	3	4B120	88	
			1.80	II	9320	(41400)				1.80	II	8940	(39800)	3	4B125	88	
			2.20	III	9320	(41400)				2.20	III	8940	(39800)	3	4B140	88	
			2.53	III	13400	(59400)				2.53	III	12700	(56700)	3	4C140	88	
14.3	12000	(1360)	0.87	-	2610	(11600)	17.2	9940	(1120)	0.87	-	4070	(18100)	3	4A110	102	
			0.95	-	2610	(11600)				0.95	-	4070	(18100)	3	4A115	102	
			1.30	I	9050	(40300)				1.36	I	9240	(41100)	3	4B120	102	
			1.58	II	9050	(40300)				1.71	II	9240	(41100)	3	4B125	102	
			1.90	II	9050	(40300)				1.90	II	9240	(41100)	3	4B160	102	
12.9	13200	(1500)	0.82	-	290	(1290)	15.6	11000	(1240)	0.82	-	3450	(15400)	3	4A115	112	
			0.86	-	290	(1290)				0.86	-	3450	(15400)	3	4A120	112	
			1.08	I	8820	(39200)				1.13	I	9220	(41000)	3	4B120	112	
			1.31	I	8820	(39200)				1.45	II	9220	(41000)	3	4B125	112	
			1.70	II	8820	(39200)				1.70	II	9220	(41000)	3	4B140	112	
			1.72	II	8820	(39200)				1.72	II	9220	(41000)	3	4B160	112	
11.8	14500	(1640)	1.08	I	8560	(38100)	14.3	12000	(1360)	1.13	I	9050	(40300)	3	4B120	123	
			1.31	I	8560	(38100)				1.45	II	9050	(40300)	3	4B125	123	
			1.57	II	8560	(38100)				1.57	II	9050	(40300)	3	4B140	123	
			1.70	II	14500	(64500)				1.70	II	13900	(61600)	3	4C140	123	
			3.14	III	14500	(64500)				3.14	III	13900	(61600)	3	4C160	123	
9.63	17800	(2010)	0.87	-	7690	(34200)	11.6	14700	(1670)	0.87	-	8500	(37800)	3	4B120	151	
			1.06	I	7690	(34200)				1.08	I	8500	(37800)	3	4B125	151	
			1.28	I	7690	(34200)				1.28	I	8500	(37800)	3	4B160	151	
			1.70	II	15200	(67600)				1.70	II	14600	(64700)	3	4C160	151	
			2.56	III	15200	(67600)				2.56	III	14600	(64700)	3	4C170	151	

Notes: [1] For double reduction and 1/8 HP single reduction Y4 ratings, refer to selection tables on pages 2.91 thru 2.130.
 [2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

Cyclo® BBB4
Selection Tables

Y4 Mounting Single Reduction Selection Tables

**3 HP
(2.2 kW)**



Dimension Pages:
 Single Reduction 2.132-2.143
 Single Reduction, Y2 2.144
 Double Reduction 2.146-2.161
 Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz					60 Hz					Selection			VFD ^[1]		
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor ^[1]		Base			
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code	Frame Size
8.12	21100 (2380)		0.74	-	6500 (28900)	9.80	17500 (1980)			0.78	-	7790 (34600)	3	4B120	179
			0.90	-	6500 (28900)					1.04	I	7790 (34600)	3	4B125	179
			1.08	I	6500 (28900)					1.08	I	7790 (34600)	3	4B160	179
			1.70	II	15000 (66500)					1.70	II	15100 (67300)	3	4C160	179
			2.16	III	15000 (66500)					2.16	III	15100 (67300)	3	4C170	179
7.02	24400 (2760)		0.93	-	4730 (21000)	8.47	20200 (2290)			0.93	-	6850 (30500)	3	4B140	207
			1.01	I	14500 (64600)					1.01	I	15100 (67000)	3	4C140	207
			1.70	II	14500 (64600)					1.70	II	15100 (67000)	3	4C160	207
			1.86	II	14500 (64600)					1.86	II	15100 (67000)	3	4C170	207
5.84	29400 (3320)		1.01	I	13700 (61100)	7.04	24300 (2750)			1.01	I	14500 (64700)	3	4C160	249
			1.55	II	13700 (61100)					1.55	II	14500 (64700)	3	4C170	249
			1.70	II	20900 (93000)					1.70	II	21300 (94700)	3	4D170	249
			2.53	III	20900 (93000)					2.53	III	21300 (94700)	3	4D180	249 (-)
			2.53	III	22300 (99300)					2.53	III	22600 (100000)	3	4E180	249 (-)
4.76	36000 (4070)		1.01	I	12400 (55000)	5.75	29800 (3370)			1.01	I	13700 (60800)	3	4C160	305
			1.26	I	12400 (55000)					1.26	I	13700 (60800)	3	4C170	305
			1.70	II	20300 (90200)					1.70	II	20900 (92800)	3	4D170	305
			2.14	III	20300 (90200)					2.53	III	20900 (92800)	3	4D180	305 (-)
			2.53	III	22000 (97800)					2.53	III	22300 (99200)	3	4E180	305 (-)

Cyclo® BBB4

Selection Tables

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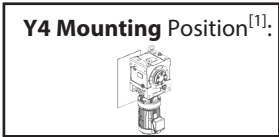
sales@electromate.com

Notes: [1] For double reduction and 1/8 HP single reduction Y4 ratings, refer to selection tables on pages 2.91 thru 2.130.

[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

Y4 Mounting Single Reduction Selection Tables

5 HP
(3.7 kW)



Dimension Pages:
 Single Reduction 2.132-2.143
 Single Reduction, Y2 2.144
 Double Reduction 2.146-2.161
 Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz				60 Hz				Selection									
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor ^[1]		Solid Shaft Overhung Load		Base			VFD ^[1]
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code	Frame Size	Ratio	
69.0	4180	(472)	1.06	I	4470	(19900)	83.3	3460	(391)	1.06	I	4290	(19100)	5	4A115	21	
			1.37	I	4470	(19900)				1.37	I	4290	(19100)	5	4A120	21	
			1.88	II	4470	(19900)				1.57	II	4290	(19100)	5	4A125	21	
			2.73	III	4470	(19900)				2.73	III	4290	(19100)	5	4A140	21	
			1.88	II	6350	(28200)				1.57	II	6050	(26900)	5	4B125	21	
			3.00	III	6350	(28200)				3.00	III	6050	(26900)	5	4B140	21	
			3.00	III	8950	(39800)				3.00	III	8510	(37800)	5	4C140	21	
			64.7	4450	(503)	1.37				I	4530	(20100)	78.1	3690	(417)	1.37	
1.88	II	4530				(20100)	1.88	II	4350	(19400)	5	4A125				22	
2.56	III	4530				(20100)	2.56	III	4350	(19400)	5	4A140				22	
1.88	II	6450				(28700)	1.88	II	6150	(27400)	5	4B125				22	
3.00	III	6450				(28700)	3.00	III	6150	(27400)	5	4B140				22	
3.00	III	9110				(40500)	3.00	III	8660	(38500)	5	4C140				22	
59.2	4870	(550)	1.37	I	4610	(20500)	71.4	4040	(456)	1.37	I	4440	(19700)	5	4A120	25	
			1.88	II	4610	(20500)				1.88	II	4440	(19700)	5	4A125	25	
			2.34	III	4610	(20500)				2.34	III	4440	(19700)	5	4A140	25	
			1.88	II	6600	(29300)				1.88	II	6300	(28000)	5	4B125	25	
			3.00	III	6600	(29300)				3.00	III	6300	(28000)	5	4B140	25	
			3.00	III	9330	(41500)				3.00	III	8870	(39500)	5	4C140	25	
51.8	5570	(629)	1.06	I	4730	(21100)	62.5	4610	(521)	1.06	I	4560	(20300)	5	4A115	28	
			1.37	I	4730	(21100)				1.37	I	4560	(20300)	5	4A120	28	
			1.88	II	4730	(21100)				1.88	II	4560	(20300)	5	4A125	28	
			2.05	III	4730	(21100)				2.05	III	4560	(20300)	5	4A140	28	
			1.88	II	6810	(30300)				1.88	II	6510	(28900)	5	4B125	28	
			3.00	III	6810	(30300)				3.00	III	6510	(28900)	5	4B140	28	
			3.00	III	9660	(43000)				3.00	III	9190	(40900)	5	4C140	28	
41.2	7000	(791)	1.06	I	4930	(21900)	49.7	5800	(655)	1.06	I	4770	(21200)	5	4A115	35	
			1.37	I	4930	(21900)				1.37	I	4770	(21200)	5	4A120	35	
			1.60	II	4930	(21900)				1.60	II	4770	(21200)	5	4A125	35	
			1.63	II	4930	(21900)				1.63	II	4770	(21200)	5	4A140	35	
			1.60	II	7180	(32000)				1.60	II	6880	(30600)	5	4B125	35	
			3.00	III	7180	(32000)				3.00	III	6880	(30600)	5	4B140	35	
			3.00	III	10200	(45600)				3.00	III	9760	(43400)	5	4C140	35	

Cyclo® BBB4

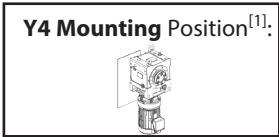
Selection Tables

Notes: [1] For double reduction and 1/8 HP single reduction Y4 ratings, refer to selection tables on pages 2.91 thru 2.130.

[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

Y4 Mounting Single Reduction Selection Tables

**5 HP
(3.7 kW)**



Dimension Pages:
 Single Reduction 2.132-2.143
 Single Reduction, Y2 2.144
 Double Reduction 2.146-2.161
 Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz					60 Hz						Selection			VFD ^[1]			
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor ^[1]		Solid Shaft Overhung Load			Base		
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code	Frame Size	Ratio	
37.7	7660	(865)	1.06	I	5000	(22200)	45.5	6340	(717)	1.06	I	4850	(21600)	5	4A115	39	
			1.37	I	5000	(22200)				1.37	I	4850	(21600)	5	4A120	39	
			1.49	II	5000	(22200)				1.49	II	4850	(21600)	5	4A125	39	
			1.60	II	7330	(32600)				1.60	II	7020	(31200)	5	4B125	39	
			2.97	III	7330	(32600)				2.97	III	7020	(31200)	5	4B140	39	
			3.00	III	10500	(46600)				3.00	III	9990	(44500)	5	4C140	39	
31.9	9050	(1020)	1.05	I	4500	(20000)	38.5	7500	(847)	1.05	I	4980	(22200)	5	4A115	46	
			1.26	I	4500	(20000)				1.26	I	4980	(22200)	5	4A120	46	
			1.37	I	7600	(33800)				1.37	I	7300	(32500)	5	4B120	46	
			1.60	II	7600	(33800)				1.60	II	7300	(32500)	5	4B125	46	
			2.05	III	7600	(33800)				2.05	III	7300	(32500)	5	4B140	46	
			2.51	III	7600	(33800)				2.51	III	7300	(32500)	5	4B160	46	(-)
			3.00	III	10900	(48600)				3.00	III	10400	(46400)	5	4C160	46	(-)
			3.00	III	16300	(72400)				3.00	III	15500	(68800)	5	4D160	46	(-)
27.6	10400	(1180)	1.05	I	3790	(16900)	33.3	8650	(977)	1.05	I	4660	(20700)	5	4A115	53	
			1.09	I	3790	(16900)				1.09	I	4660	(20700)	5	4A120	53	
			1.37	I	7820	(34800)				1.37	I	7530	(33500)	5	4B120	53	
			1.60	II	7820	(34800)				1.60	II	7530	(33500)	5	4B125	53	
			2.05	III	7820	(34800)				2.05	III	7530	(33500)	5	4B140	53	
			2.18	III	7820	(34800)				2.18	III	7530	(33500)	5	4B160	53	
			3.00	III	11300	(50300)				3.00	III	10800	(48100)	5	4C160	53	
			3.00	III	16900	(75200)				3.00	III	16100	(71600)	5	4D160	53	
24.4	11800	(1340)	0.96	-	2780	(12300)	29.4	9800	(1110)	0.96	-	4140	(18400)	5	4A115	60	
			1.32	I	8020	(35700)				1.37	I	7730	(34400)	5	4B120	60	
			1.53	II	8020	(35700)				1.53	II	7730	(34400)	5	4B125	60	
			1.92	II	8020	(35700)				1.92	II	7730	(34400)	5	4B160	60	
			3.00	III	11700	(51800)				3.00	III	11100	(49600)	5	4C160	60	
			3.00	III	17500	(77800)				3.00	III	16600	(74000)	5	4D160	60	
			2.62	III	22800	(101000)				2.62	III	21600	(96300)	5	4E170	60	
21.6	13400	(1510)	1.07	I	8200	(36500)	26.0	11100	(1250)	1.07	I	7910	(35200)	5	4B120	67	
			1.30	I	8200	(36500)				1.32	I	7910	(35200)	5	4B125	67	
			1.50	II	8200	(36500)				1.50	II	7910	(35200)	5	4B140	67	
			1.70	II	8200	(36500)				1.70	II	7910	(35200)	5	4B160	67	
			2.05	III	12000	(53300)				2.05	III	11500	(51000)	5	4C160	67	
			2.62	III	12000	(53300)				2.62	III	11500	(51000)	5	4C170	67	
			2.62	III	18000	(80300)				2.62	III	17200	(76400)	5	4D170	67	
			2.62	III	23100	(103000)				2.62	III	22400	(99600)	5	4E170	67	

Cyclo® BBB4

Selection Tables

Notes: [1] For double reduction and 1/8 HP single reduction Y4 ratings, refer to selection tables on pages 2.91 thru 2.130.
 [2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

Y4 Mounting Single Reduction Selection Tables

5 HP
(3.7 kW)



Dimension Pages:
 Single Reduction 2.132-2.143
 Single Reduction, Y2 2.144
 Double Reduction 2.146-2.161
 Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

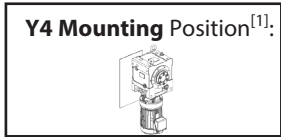
50Hz					60 Hz					Selection								
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor ^[1]		Solid Shaft Overhung Load		Base			VFD ^[1]	
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code	Frame Size	Ratio		
19.7	14600	(1650)	1.07	I	8320	(37000)	23.8	12100	(1370)	1.07	I	8050	(35800)	5	4B120	74		
			1.30	I	8320	(37000)				1.32	I	8050	(35800)	5	4B125	74		
			1.50	II	8320	(37000)				1.50	II	8050	(35800)	5	4B140	74		
			1.56	II	8320	(37000)				1.56	II	8050	(35800)	5	4B160	74		
			2.05	III	12200	(54400)				2.05	III	11700	(52100)	5	4C160	74		
			2.62	III	12200	(54400)				2.62	III	11700	(52100)	5	4C170	74		
			2.62	III	18500	(82100)				2.62	III	17600	(78200)	5	4D170	74		
			2.62	III	23100	(103000)				2.62	III	22900	(102000)	5	4E170	74		
18.1	15900	(1800)	0.83	-	8220	(36600)	21.9	13200	(1490)	0.83	-	8180	(36400)	5	4B120	80		
			1.07	I	8220	(36600)				1.07	I	8180	(36400)	5	4B125	80		
			1.43	II	8220	(36600)				1.43	II	8180	(36400)	5	4B140	80		
			1.50	II	12500	(55400)				1.50	II	11900	(53100)	5	4C140	80		
			2.05	III	12500	(55400)				2.05	III	11900	(53100)	5	4C160	80		
			2.86	III	12500	(55400)				2.86	III	11900	(53100)	5	4C170	80		(-)
			3.00	III	18900	(83900)				3.00	III	18000	(80000)	5	4D170	80		(-)
			3.00	III	23000	(102000)				3.00	III	23100	(103000)	5	4E170	80		(-)
16.6	17400	(1970)	0.83	-	7810	(34700)	20.0	14400	(1630)	0.83	-	8310	(36900)	5	4B120	88		
			1.07	I	7810	(34700)				1.07	I	8310	(36900)	5	4B125	88		
			1.31	I	7810	(34700)				1.31	I	8310	(36900)	5	4B140	88		
			1.50	II	12700	(56500)				1.50	II	12200	(54200)	5	4C140	88		
			2.05	III	12700	(56500)				2.05	III	12200	(54200)	5	4C160	88		
			2.61	III	12700	(56500)				2.61	III	12200	(54200)	5	4C170	88		(-)
			3.00	III	19300	(85800)				3.00	III	18400	(81900)	5	4D170	88		(-)
			3.00	III	22900	(102000)				3.00	III	23100	(103000)	5	4E170	88		(-)
14.3	20200	(2280)	0.77	-	6870	(30600)	17.2	16700	(1890)	0.81	-	8000	(35600)	5	4B120	102		
			0.94	-	6870	(30600)				1.02	I	8000	(35600)	5	4B125	102		
			1.13	I	6870	(30600)				1.13	I	8000	(35600)	5	4B160	102		
			2.05	III	13100	(58200)				2.05	III	12600	(56000)	5	4C160	102		
			2.25	III	13100	(58200)				2.25	III	12600	(56000)	5	4C170	102		(-)
			3.00	III	20000	(89000)				3.00	III	19100	(85000)	5	4D170	102		(-)
			3.00	III	22800	(101000)				3.00	III	23000	(102000)	5	4E170	102		(-)
			2.62	III	31300	(139000)				2.62	III	31400	(140000)	5	4F180	102		

Cyclo® BBB4
Selection Tables

Notes: [1] For double reduction and 1/8 HP single reduction Y4 ratings, refer to selection tables on pages 2.91 thru 2.130.
 [2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

Y4 Mounting Single Reduction Selection Tables

**5 HP
(3.7 kW)**



Dimension Pages:
 Single Reduction 2.132-2.143
 Single Reduction, Y2 2.144
 Double Reduction 2.146-2.161
 Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz					60 Hz					Selection								
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor ^[1]		Solid Shaft Overhung Load		Base			VFD ^[1]	
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code	Frame Size	Ratio		
12.9	22300	(2520)	0.78	-	5960	(26500)	15.6	18500	(2090)	0.86	-	7490	(33300)	5	4B125	112		
			1.01	I	5960	(26500)				1.01	I	7490	(33300)	5	4B140	112		
			1.02	I	5960	(26500)				1.02	I	7490	(33300)	5	4B160	112		
			2.04	III	13300	(59300)				2.04	III	12800	(57100)	5	4C160	112		
			2.05	III	20500	(91200)				2.05	III	19600	(87100)	5	4D160	112		
			2.62	III	20500	(91200)				2.62	III	19600	(87100)	5	4D180	112		
			2.62	III	22700	(101000)				2.62	III	22900	(102000)	5	4E180	112		
			2.62	III	31200	(139000)				2.62	III	31400	(140000)	5	4F180	112		
11.8	24400	(2750)	0.78	-	4760	(21200)	14.3	20200	(2280)	0.86	-	6870	(30600)	5	4B125	123		
			0.93	-	4760	(21200)				0.93	-	6870	(30600)	5	4B140	123		
			1.01	I	13600	(60300)				1.01	I	13100	(58200)	5	4C140	123		
			1.87	II	13600	(60300)				1.87	II	13100	(58200)	5	4C160	123		
			2.05	III	20900	(93100)				2.05	III	20000	(89000)	5	4D160	123		
			2.62	III	20900	(93100)				2.62	III	20000	(89000)	5	4D180	123		
			2.62	III	22600	(100000)				2.62	III	22800	(101000)	5	4E180	123		
			2.62	III	31100	(138000)				2.62	III	31300	(139000)	5	4F180	123		
9.63	29900	(3380)	1.01	I	13600	(60700)	11.6	24800	(2800)	1.01	I	13600	(60500)	5	4C160	151		
			1.52	II	13600	(60700)				1.52	II	13600	(60500)	5	4C170	151		
			2.05	III	20900	(92800)				2.05	III	21000	(93500)	5	4D170	151		
			2.05	III	22300	(99100)				2.05	III	22500	(100000)	5	4E170	151		
			2.62	III	22300	(99100)				2.62	III	22500	(100000)	5	4E190	151		
			2.62	III	30900	(137000)				2.62	III	31100	(138000)	5	4F190	151		
8.12	35500	(4010)	1.01	I	12500	(55600)	9.80	29400	(3320)	1.01	I	13700	(61100)	5	4C160	179		
			1.28	I	12500	(55600)				1.28	I	13700	(61100)	5	4C170	179		
			1.50	II	20300	(90400)				1.50	II	20900	(93000)	5	4D170	179		
			1.50	II	22000	(97900)				1.50	II	22300	(99300)	5	4E170	179		
			1.92	II	22000	(97900)				1.92	II	22300	(99300)	5	4E190	179		
			1.92	II	30600	(136000)				1.92	II	30900	(137000)	5	4F190	179		
7.02	41100	(4640)	1.01	I	11000	(48900)	8.47	34000	(3840)	1.01	I	12800	(57100)	5	4C160	207		
			1.11	I	11000	(48900)				1.11	I	12800	(57100)	5	4C170	207		
			1.50	II	19700	(87500)				1.50	II	20500	(91100)	5	4D170	207		
			1.88	II	19700	(87500)				2.05	III	20500	(91100)	5	4D180	207		(-)
			2.05	III	21700	(96600)				2.05	III	22100	(98200)	5	4E180	207		(-)
			2.05	III	30400	(135000)				2.05	III	30700	(137000)	5	4F180	207		(-)
5.84	49400	(5580)	1.01	I	18500	(82200)	7.04	40900	(4630)	1.01	I	19700	(87600)	5	4D170	249		
			1.50	II	18500	(82200)				1.50	II	19700	(87600)	5	4D180	249		(-)
			1.50	II	21300	(94800)				1.50	II	21700	(96700)	5	4E180	249		(-)
			1.50	II	30000	(134000)				1.50	II	30400	(135000)	5	4F180	249		(-)

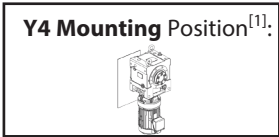
Cyclo® BBB4

Selection Tables

Notes: [1] For double reduction and 1/8 HP single reduction Y4 ratings, refer to selection tables on pages 2.91 thru 2.130.
 [2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

Y4 Mounting Single Reduction Selection Tables

**5 HP
(3.7 kW)**



Dimension Pages:
 Single Reduction 2.132-2.143
 Single Reduction, Y2 2.144
 Double Reduction 2.146-2.161
 Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz					60 Hz					Selection							
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor ^[1]		Solid Shaft Overhung Load		Base			VFD ^[1]
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code	Frame Size	Ratio	
4.76	60600	(6840)	1.01	I	16400	(72800)	5.75	50200	(5670)	1.01	I	18400	(81700)	5	4D170	305	
			1.27	I	16400	(72800)				1.50	II	18400	(81700)	5	4D180	305	(-)
			1.50	II	20700	(92200)				1.50	II	21300	(94600)	5	4E180	305	(-)
			1.50	II	29600	(131000)				1.50	II	30000	(133000)	5	4F180	305	(-)

Cyclo® BBB4

Selection Tables

Sold & Serviced By:

 Toll Free Phone (877) SERV098
www.electromate.com
sales@electromate.com

Notes: [1] For double reduction and 1/8 HP single reduction Y4 ratings, refer to selection tables on pages 2.91 thru 2.130.
 [2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):
 (-) = For inverter operation, starting conditions may require ambient temperature of 5° C or higher.

Y4 Mounting Single Reduction Selection Tables

**7.5 HP
(5.5 kW)**

Y4 Mounting Position^[1]:



Dimension Pages:
 Single Reduction 2.132-2.143
 Single Reduction, Y2 2.144
 Double Reduction 2.146-2.161
 Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz					60 Hz					Selection			VFD ^[1]			
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor ^[1]		Base				
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code	Frame Size	Ratio
69.0	6210	(701)	0.92	-	4190	(18600)	83.3	5140	(581)	0.92	-	4060	(18100)	8	4A120	21
			1.27	I	4190	(18600)				1.06	I	4060	(18100)	8	4A125	21
			1.84	II	4190	(18600)				1.84	II	4060	(18100)	8	4A140	21
			1.27	I	6130	(27300)				1.06	I	5870	(26100)	8	4B125	21
			2.02	III	6130	(27300)				2.02	III	5870	(26100)	8	4B140	21
			2.02	III	8760	(39000)				2.02	III	8350	(37100)	8	4C140	21
64.7	6620	(748)	0.92	-	4230	(18800)	78.1	5490	(620)	0.92	-	4110	(18300)	8	4A120	22
			1.27	I	4230	(18800)				1.27	I	4110	(18300)	8	4A125	22
			1.72	II	4230	(18800)				1.72	II	4110	(18300)	8	4A140	22
			1.27	I	6220	(27700)				1.27	I	5960	(26500)	8	4B125	22
			2.02	III	6220	(27700)				2.02	III	5960	(26500)	8	4B140	22
			2.75	III	6220	(27700)				2.75	III	5960	(26500)	8	4B160	22
			2.75	III	8900	(39600)				2.75	III	8490	(37700)	8	4C160	22
			2.75	III	13200	(58800)				2.75	III	12600	(55900)	8	4D160	22
59.2	7240	(818)	0.92	-	4290	(19100)	71.4	6000	(678)	0.92	-	4170	(18500)	8	4A120	25
			1.27	I	4290	(19100)				1.27	I	4170	(18500)	8	4A125	25
			1.58	II	4290	(19100)				1.58	II	4170	(18500)	8	4A140	25
			1.27	I	6340	(28200)				1.27	I	6080	(27100)	8	4B125	25
			2.02	III	6340	(28200)				2.02	III	6080	(27100)	8	4B140	25
			2.75	III	6340	(28200)				2.75	III	6080	(27100)	8	4B160	25
			2.75	III	9100	(40500)				2.75	III	8680	(38600)	8	4C160	25
			2.75	III	13500	(60300)				2.75	III	12900	(57200)	8	4D160	25
51.8	8280	(935)	0.92	-	4360	(19400)	62.5	6860	(775)	0.92	-	4250	(18900)	8	4A120	28
			1.26	I	4360	(19400)				1.26	I	4250	(18900)	8	4A125	28
			1.38	I	4360	(19400)				1.38	I	4250	(18900)	8	4A140	28
			1.26	I	6520	(29000)				1.26	I	6270	(27900)	8	4B125	28
			2.02	III	6520	(29000)				2.02	III	6270	(27900)	8	4B140	28
			2.75	III	6520	(29000)				2.75	III	6270	(27900)	8	4B160	28
			2.75	III	9400	(41800)				2.75	III	8980	(39900)	8	4C160	28
			2.75	III	14000	(62400)				2.75	III	13300	(59400)	8	4D160	28

Cyclo® BBB4

Selection Tables

Sold & Serviced By:



Toll Free Phone (877) SERV098

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sales@electromate.com

Notes: [1] For double reduction and 1/8 HP single reduction Y4 ratings, refer to selection tables on pages 2.91 thru 2.130.

[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

Y4 Mounting Single Reduction Selection Tables

7.5 HP
(5.5 kW)

Y4 Mounting Position^[1]:



Dimension Pages:

Single Reduction	2.132-2.143
Single Reduction, Y2	2.144
Double Reduction	2.146-2.161
Double Reduction, Y2	2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz					60 Hz					Selection							
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor ^[1]		Solid Shaft Overhung Load		Base			VFD ^[1]
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code	Frame Size	Ratio	
41.2	10400	(1180)	0.92	-	3810	(17000)	49.7	8620	(974)	0.92	-	4380	(19500)	8	4A120	35	
			1.08	I	3810	(17000)				1.08	I	4380	(19500)	8	4A125	35	
			1.10	I	3810	(17000)				1.10	I	4380	(19500)	8	4A140	35	
			1.08	I	6820	(30300)				1.08	I	6570	(29200)	8	4B125	35	
			2.02	III	6820	(30300)				2.02	III	6570	(29200)	8	4B140	35	
			2.19	III	6820	(30300)				2.19	III	6570	(29200)	8	4B160	35	
			2.75	III	9930	(44200)				2.75	III	9500	(42200)	8	4C160	35	
			2.75	III	14900	(66300)				2.75	III	14200	(63100)	8	4D160	35	
			2.59	III	19400	(86500)				2.59	III	18500	(82200)	8	4E170	35	
37.7	11400	(1290)	0.92	-	3160	(14000)	45.5	9430	(1070)	0.92	-	4320	(19200)	8	4A120	39	
			1.00	I	3160	(14000)				1.00	I	4320	(19200)	8	4A125	39	
			1.08	I	6930	(30800)				1.08	I	6690	(29800)	8	4B125	39	
			2.00	III	6930	(30800)				2.00	III	6690	(29800)	8	4B140	39	
			2.02	III	10100	(45100)				2.02	III	9700	(43200)	8	4C140	39	
			2.75	III	10100	(45100)				2.75	III	9700	(43200)	8	4C160	39	
			2.75	III	15300	(67900)				2.75	III	14500	(64600)	8	4D160	39	
			2.59	III	19900	(88700)				2.59	III	18900	(84200)	8	4E170	39	
			31.9	13400	(1520)	0.92				-	7120	(31700)	38.5	11100	(1260)	0.92	
1.08	I	7120				(31700)	1.08	I	6900	(30700)	8	4B125				46	
1.38	I	7120				(31700)	1.38	I	6900	(30700)	8	4B140				46	
1.69	II	7120				(31700)	1.69	II	6900	(30700)	8	4B160				46	
2.02	III	10500				(46800)	2.02	III	10100	(44900)	8	4C160				46	
2.59	III	10500				(46800)	2.59	III	10100	(44900)	8	4C170				46	
2.59	III	15900				(70900)	2.59	III	15200	(67500)	8	4D170				46	
2.59	III	20800				(92700)	2.59	III	19800	(88100)	8	4E170				46	
27.6	15500	(1750)				0.92	-	7280	(32400)	33.3	12900	(1450)				0.92	-
			1.08	I	7280	(32400)	1.08	I	7070				(31500)	8	4B125	53	
			1.38	I	7280	(32400)	1.38	I	7070				(31500)	8	4B140	53	
			1.47	II	7280	(32400)	1.47	II	7070				(31500)	8	4B160	53	
			2.02	III	10800	(48200)	2.02	III	10400				(46300)	8	4C160	53	
			2.18	III	10800	(48200)	2.18	III	10400				(46300)	8	4C170	53	
			2.18	III	16500	(73400)	2.18	III	15700				(70100)	8	4D170	53	
			2.59	III	16500	(73400)	2.59	III	15700				(70100)	8	4D180	53	
			2.59	III	21700	(96300)	2.59	III	20600				(91600)	8	4E180	53	
			2.59	III	31500	(140000)	2.59	III	31600				(141000)	8	4F180	53	

Notes: [1] For double reduction and 1/8 HP single reduction Y4 ratings, refer to selection tables on pages 2.91 thru 2.130.

[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

Cyclo® BBB4

Selection Tables

Y4 Mounting Single Reduction Selection Tables

7.5 HP
(5.5 kW)

Y4 Mounting Position^[1]:



Dimension Pages:

Single Reduction	2.132-2.143
Single Reduction, Y2	2.144
Double Reduction	2.146-2.161
Double Reduction, Y2	2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz					60 Hz					Selection							
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor ^[1]		Solid Shaft Overhung Load		Base			VFD ^[1]
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code	Frame Size	Ratio	
24.4	17600	(1990)	0.89	-	7400	(32900)	29.4	14600	(1650)	0.92	-	7210	(32100)	8	4B120	60	
			1.03	I	7400	(32900)				1.03	I	7210	(32100)	8	4B125	60	
			1.29	I	7400	(32900)				1.29	I	7210	(32100)	8	4B160	60	
			2.02	III	11100	(49400)				2.02	III	10700	(47600)	8	4C160	60	
			2.02	III	17000	(75700)				2.02	III	16300	(72300)	8	4D160	60	
			2.59	III	17000	(75700)				2.59	III	16300	(72300)	8	4D180	60	
			2.59	III	22400	(99500)				2.59	III	21300	(94700)	8	4E180	60	
			2.59	III	31400	(140000)				2.59	III	31500	(140000)	8	4F180	60	
21.6	19900	(2240)	0.87	-	6990	(31100)	26.0	16500	(1860)	0.89	-	7330	(32600)	8	4B125	67	
			1.01	I	6990	(31100)				1.01	I	7330	(32600)	8	4B140	67	
			1.15	I	6990	(31100)				1.15	I	7330	(32600)	8	4B160	67	
			1.38	I	11400	(50600)				1.38	I	11000	(48800)	8	4C160	67	
			1.77	II	11400	(50600)				1.77	II	11000	(48800)	8	4C170	67	
			1.77	II	17500	(77900)				1.77	II	16700	(74500)	8	4D170	67	
			2.59	III	17500	(77900)				2.59	III	16700	(74500)	8	4D180	67	
			2.59	III	22800	(101000)				2.59	III	22000	(97800)	8	4E180	67	
2.59	III	31300	(139000)	2.59	III	31500	(140000)	8	4F180	67							
19.7	21700	(2450)	0.87	-	6220	(27700)	23.8	18000	(2030)	0.89	-	7420	(33000)	8	4B125	74	
			1.01	I	6220	(27700)				1.01	I	7420	(33000)	8	4B140	74	
			1.05	I	6220	(27700)				1.05	I	7420	(33000)	8	4B160	74	
			1.38	I	11600	(51400)				1.38	I	11200	(49600)	8	4C160	74	
			1.77	II	11600	(51400)				1.77	II	11200	(49600)	8	4C170	74	
			1.77	II	17900	(79600)				1.77	II	17100	(76100)	8	4D170	74	
			2.59	III	17900	(79600)				2.59	III	17100	(76100)	8	4D180	74	
			2.59	III	22700	(101000)				2.59	III	22500	(100000)	8	4E180	74	
2.59	III	31200	(139000)	2.59	III	31400	(140000)	8	4F180	74							
18.1	23600	(2670)	0.96	-	5220	(23200)	21.9	19600	(2210)	0.96	-	7090	(31600)	8	4B140	80	
			1.01	I	11700	(52100)				1.01	I	11300	(50400)	8	4C140	80	
			1.38	I	11700	(52100)				1.38	I	11300	(50400)	8	4C160	80	
			1.92	II	11700	(52100)				1.92	II	11300	(50400)	8	4C170	80	
			2.02	III	18200	(81200)				2.02	III	17500	(77700)	8	4D170	80	
			2.18	III	18200	(81200)				2.18	III	17500	(77700)	8	4D180	80	
			2.18	III	22600	(101000)				2.18	III	22800	(101000)	8	4E180	80	
			2.59	III	22600	(101000)				2.59	III	22800	(101000)	8	4E190	80	
2.59	III	31100	(139000)	2.59	III	31300	(139000)	8	4F190	80							

Cyclo® BBB4

Selection Tables

Notes: [1] For double reduction and 1/8 HP single reduction Y4 ratings, refer to selection tables on pages 2.91 thru 2.130.

[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

Y4 Mounting Single Reduction Selection Tables

7.5 HP
(5.5 kW)

Y4 Mounting Position^[1]:



Dimension Pages:

Single Reduction	2.132-2.143
Single Reduction, Y2	2.144
Double Reduction	2.146-2.161
Double Reduction, Y2	2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz					60 Hz					Selection								
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor ^[1]		Solid Shaft Overhung Load		Base			VFD ^[1]	
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code	Frame Size	Ratio		
16.6	25900	(2920)	0.88	-	3570	(15900)	20.0	21400	(2420)	0.88	-	6350	(28300)	8	4B140	88		
			1.01	I	11900	(52900)				1.01	I	11500	(51300)	8	4C140	88		
			1.38	I	11900	(52900)				1.38	I	11500	(51300)	8	4C160	88		
			1.76	II	11900	(52900)				1.76	II	11500	(51300)	8	4C170	88		
			2.02	III	18600	(82800)				2.02	III	17800	(79300)	8	4D170	88		
			2.18	III	18600	(82800)				2.18	III	17800	(79300)	8	4D180	88		
			2.18	III	22500	(100000)				2.18	III	22700	(101000)	8	4E180	88		
			2.59	III	22500	(100000)				2.59	III	22700	(101000)	8	4E190	88		
			2.59	III	31000	(138000)				2.59	III	31200	(139000)	8	4F190	88		
14.3	30000	(3390)	1.38	I	12200	(54000)	17.2	24900	(2810)	1.38	I	11800	(52600)	8	4C160	102		
			1.52	II	12200	(54000)				1.52	II	11800	(52600)	8	4C170	102		
			2.02	III	19200	(85500)				2.02	III	18500	(82100)	8	4D170	102		
			2.02	III	22300	(99100)				2.02	III	22500	(100000)	8	4E170	102		
			2.59	III	22300	(99100)				2.59	III	22500	(100000)	8	4E190	102		
			2.59	III	30900	(137000)				2.59	III	31100	(138000)	8	4F190	102		
12.9	33100	(3740)	1.37	I	12300	(54700)	15.6	27400	(3100)	1.37	I	12000	(53300)	8	4C160	112		
			1.38	I	19600	(87300)				1.38	I	18900	(83900)	8	4D160	112		
			1.77	II	19600	(87300)				1.77	II	18900	(83900)	8	4D180	112		(-)
			1.77	II	22100	(98400)				1.77	II	22400	(99700)	8	4E180	112		(-)
			2.18	III	22100	(98400)				2.18	III	22400	(99700)	8	4E190	112		
			2.18	III	30700	(137000)				2.18	III	31000	(138000)	8	4F190	112		
11.8	36200	(4090)	1.26	I	12300	(54800)	14.3	30000	(3390)	1.26	I	12200	(54000)	8	4C160	123		
			1.38	I	20000	(88900)				1.38	I	19200	(85500)	8	4D160	123		
			1.77	II	20000	(88900)				1.77	II	19200	(85500)	8	4D180	123		(-)
			1.77	II	22000	(97700)				1.77	II	22300	(99100)	8	4E180	123		(-)
			2.18	III	22000	(97700)				2.18	III	22300	(99100)	8	4E190	123		
			2.18	III	30600	(136000)				2.18	III	30900	(137000)	8	4F190	123		
9.63	44500	(5030)	1.02	I	9820	(43700)	11.6	36900	(4160)	1.02	I	12200	(54100)	8	4C170	151		
			1.38	I	19200	(85500)				1.38	I	20100	(89200)	8	4D170	151		
			1.38	I	21600	(95900)				1.38	I	21900	(97600)	8	4E170	151		
			1.77	II	21600	(95900)				1.77	II	21900	(97600)	8	4E190	151		
			1.77	II	30200	(135000)				1.77	II	30600	(136000)	8	4F190	151		
8.12	52800	(5960)	0.86	-	5440	(24200)	9.80	43700	(4940)	0.86	-	10100	(44900)	8	4C170	179		
			1.01	I	17900	(79700)				1.01	I	19300	(86000)	8	4D170	179		
			1.01	I	21100	(94000)				1.01	I	21600	(96000)	8	4E170	179		
			1.29	I	21100	(94000)				1.29	I	21600	(96000)	8	4E190	179		
			1.29	I	29900	(133000)				1.29	I	30300	(135000)	8	4F190	179		

Notes: [1] For double reduction and 1/8 HP single reduction Y4 ratings, refer to selection tables on pages 2.91 thru 2.130.

[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

Cyclo® BBB4

Selection Tables

Y4 Mounting Single Reduction Selection Tables

**7.5 HP
(5.5 kW)**

Y4 Mounting Position^[1]:



Dimension Pages:
 Single Reduction 2.132-2.143
 Single Reduction, Y2 2.144
 Double Reduction 2.146-2.161
 Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz					60 Hz					Selection							
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor ^[1]		Solid Shaft Overhung Load		Base			VFD ^[1]
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code	Frame Size	Ratio	
7.02	61000 (6900)		1.01	I	16300 (72300)	8.47	50600 (5710)			1.01	I	18300 (81400)	8	4D170	207		
			1.26	I	16300 (72300)					1.38	I	18300 (81400)	8	4D180	207		
			1.38	I	20700 (92100)					1.38	I	21200 (94500)	8	4E180	207		
			1.38	I	29500 (131000)					1.38	I	30000 (133000)	8	4F180	207		
5.84	73500 (8300)		1.01	I	12800 (56900)	7.04	60900 (6880)			1.01	I	16300 (72500)	8	4D180	249		
			1.01	I	20100 (89300)					1.01	I	20700 (92200)	8	4E180	249		
			1.01	I	29000 (129000)					1.01	I	29500 (131000)	8	4F180	249		
4.76	90000 (10200)		0.86	-	272 (1210)	5.75	74600 (8430)			1.01	I	12400 (55100)	8	4D180	305		
			1.01	I	19200 (85600)					1.01	I	20000 (89100)	8	4E180	305		
			1.01	I	28300 (126000)					1.01	I	28900 (129000)	8	4F180	305		

Cyclo® BBB4

Selection Tables

Sold & Serviced By:



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Notes: [1] For double reduction and 1/8 HP single reduction Y4 ratings, refer to selection tables on pages 2.91 thru 2.130.

[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

Y4 Mounting Single Reduction Selection Tables

10 HP
(7.5 kW)

Y4 Mounting Position^[1]:



Dimension Pages:
Single Reduction 2.132-2.143
Single Reduction, Y2 2.144
Double Reduction 2.146-2.161
Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz					60 Hz					Selection							
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor ^[1]		Solid Shaft Overhung Load		Base			VFD ^[1]
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code	Frame Size	Ratio	
69.0	8470	(956)	1.35	I	3880	(17300)	83.3	7010	(792)	1.35	I	3800	(16900)	10	4A140	21	
			1.48	II	5890	(26200)				1.48	II	5670	(25200)	10	4B140	21	
			1.48	II	8540	(38000)				1.48	II	8170	(36300)	10	4C140	21	
64.7	9030	(1020)	1.26	I	3900	(17400)	78.1	7480	(845)	1.26	I	3830	(17000)	10	4A140	22	
			1.48	II	5960	(26500)				1.48	II	5740	(25600)	10	4B140	22	
			2.02	III	5960	(26500)				2.02	III	5740	(25600)	10	4B160	22	
			2.02	III	8670	(38600)				2.02	III	8300	(36900)	10	4C160	22	
			2.02	III	13000	(57900)				2.02	III	12400	(55100)	10	4D160	22	
59.2	9880	(1120)	1.16	I	3930	(17500)	71.4	8180	(925)	1.16	I	3870	(17200)	10	4A140	25	
			1.48	II	6060	(26900)				1.48	II	5850	(26000)	10	4B140	25	
			2.02	III	6060	(26900)				2.02	III	5850	(26000)	10	4B160	25	
			2.02	III	8850	(39400)				2.02	III	8480	(37700)	10	4C160	25	
			2.02	III	13300	(59300)				2.02	III	12700	(56500)	10	4D160	25	
51.8	11300	(1280)	1.01	I	3230	(14400)	62.5	9350	(1060)	1.01	I	3910	(17400)	10	4A140	28	
			1.48	II	6200	(27600)				1.48	II	6000	(26700)	10	4B140	28	
			2.02	III	6200	(27600)				2.02	III	6000	(26700)	10	4B160	28	
			2.02	III	9120	(40600)				2.02	III	8740	(38900)	10	4C160	28	
			2.02	III	13800	(61400)				2.02	III	13100	(58500)	10	4D160	28	
41.2	14200	(1600)	1.48	II	6410	(28500)	49.7	11800	(1330)	1.48	II	6230	(27700)	10	4B140	35	
			1.60	II	6410	(28500)				1.60	II	6230	(27700)	10	4B160	35	
			2.02	III	9570	(42600)				2.02	III	9200	(40900)	10	4C160	35	
			2.02	III	14600	(65000)				2.02	III	13900	(62000)	10	4D160	35	
			2.59	III	14600	(65000)				2.59	III	13900	(62000)	10	4D180	35	
			2.59	III	19200	(85300)				2.59	III	18200	(81100)	10	4E180	35	
			3.19	III	19200	(85300)				3.19	III	18200	(81100)	10	4E190	35	
			3.19	III	31600	(140000)				3.19	III	30800	(137000)	10	4F190	35	
37.7	15500	(1750)	1.47	II	6480	(28800)	45.5	12900	(1450)	1.47	II	6320	(28100)	10	4B140	39	
			1.48	II	9740	(43300)				1.48	II	9380	(41700)	10	4C140	39	
			2.02	III	9740	(43300)				2.02	III	9380	(41700)	10	4C160	39	
			2.02	III	14900	(66400)				2.02	III	14300	(63400)	10	4D160	39	
			2.59	III	14900	(66400)				2.59	III	14300	(63400)	10	4D180	39	
			2.59	III	19600	(87300)				2.59	III	18700	(83100)	10	4E180	39	
			3.19	III	19600	(87300)				3.19	III	18700	(83100)	10	4E190	39	
			3.19	III	31500	(140000)				3.19	III	31600	(141000)	10	4F190	39	

Cyclo® BBB4

Selection Tables

Notes: [1] For double reduction and 1/8 HP single reduction Y4 ratings, refer to selection tables on pages 2.91 thru 2.130.

[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

Y4 Mounting Single Reduction Selection Tables

**10 HP
(7.5 kW)**

Y4 Mounting Position^[1]:



Dimension Pages:
 Single Reduction 2.132-2.143
 Single Reduction, Y2 2.144
 Double Reduction 2.146-2.161
 Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz					60 Hz					Selection							
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor ^[1]		Solid Shaft Overhung Load		Base			VFD ^[1]
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code	Frame Size	Ratio	
31.9	18300 (2070)		1.01	I	6600 (29300)	38.5	15200 (1720)	1.01	I	6470 (28800)	10	4B140	46	(-)			
			1.24	I	6600 (29300)			1.24	I	6470 (28800)	10	4B160	46				
			1.48	II	10000 (44700)			1.48	II	9700 (43100)	10	4C160	46				
			1.90	II	10000 (44700)			1.90	II	9700 (43100)	10	4C170	46				
			1.90	II	15500 (69100)			1.90	II	14900 (66100)	10	4D170	46				
			2.59	III	15500 (69100)			2.59	III	14900 (66100)	10	4D180	46				
			2.59	III	20500 (91100)			2.59	III	19500 (86800)	10	4E180	46				
			3.19	III	20500 (91100)			3.19	III	19500 (86800)	10	4E190	46				
			3.19	III	31400 (140000)			3.19	III	31500 (140000)	10	4F190	46				
27.6	21200 (2390)		1.01	I	6470 (28800)	33.3	17500 (1980)	1.01	I	6570 (29200)	10	4B140	53				
			1.07	I	6470 (28800)			1.07	I	6570 (29200)	10	4B160	53				
			1.48	II	10300 (45800)			1.48	II	9970 (44300)	10	4C160	53				
			1.60	II	10300 (45800)			1.60	II	9970 (44300)	10	4C170	53				
			1.60	II	16100 (71400)			1.60	II	15400 (68400)	10	4D170	53				
			1.90	II	16100 (71400)			1.90	II	15400 (68400)	10	4D180	53				
			1.90	II	21200 (94500)			1.90	II	20300 (90100)	10	4E180	53				
			3.19	III	21200 (94500)			3.19	III	20300 (90100)	10	4E190	53				
			3.19	III	31300 (139000)			3.19	III	31400 (140000)	10	4F190	53				
24.4	24000 (2710)		0.95	-	5010 (22300)	29.4	19900 (2250)	0.95	-	6640 (29500)	10	4B160	60				
			1.48	II	10500 (46700)			1.48	II	10200 (45300)	10	4C160	60				
			1.48	II	16500 (73400)			1.48	II	15800 (70400)	10	4D160	60				
			1.90	II	16500 (73400)			1.90	II	15800 (70400)	10	4D180	60				
			1.90	II	21900 (97400)			1.90	II	20900 (93000)	10	4E180	60				
			3.19	III	21900 (97400)			3.19	III	20900 (93000)	10	4E190	60				
			3.19	III	31100 (138000)			3.19	III	31300 (139000)	10	4F190	60				
21.6	27100 (3060)		0.84	-	2050 (9110)	26.0	22400 (2540)	0.84	-	5880 (26100)	10	4B160	67				
			1.01	I	10700 (47500)			1.01	I	10400 (46200)	10	4C160	67				
			1.29	I	10700 (47500)			1.29	I	10400 (46200)	10	4C170	67				
			1.29	I	16900 (75400)			1.29	I	16300 (72400)	10	4D170	67				
			1.90	II	16900 (75400)			1.90	II	16300 (72400)	10	4D180	67				
			1.90	II	22400 (99800)			1.90	II	21500 (95800)	10	4E180	67				
			1.90	II	31000 (138000)			1.90	II	31200 (139000)	10	4F180	67				
19.7	29600 (3350)		1.01	I	10800 (48100)	23.8	24500 (2770)	1.01	I	10500 (46900)	10	4C160	74				
			1.29	I	10800 (48100)			1.29	I	10500 (46900)	10	4C170	74				
			1.29	I	17300 (76800)			1.29	I	16600 (73800)	10	4D170	74				
			1.90	II	17300 (76800)			1.90	II	16600 (73800)	10	4D180	74				
			1.90	II	22300 (99200)			1.90	II	22000 (98000)	10	4E180	74				
			1.90	II	30900 (137000)			1.90	II	31100 (138000)	10	4F180	74				

Cyclo® BBB4

Selection Tables

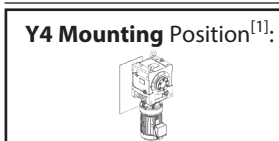
Notes: [1] For double reduction and 1/8 HP single reduction Y4 ratings, refer to selection tables on pages 2.91 thru 2.130.

[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

(-) = For inverter operation, starting conditions may require ambient temperature of 5° C or higher.

Y4 Mounting Single Reduction Selection Tables

**10 HP
(7.5 kW)**



Dimension Pages:
 Single Reduction 2.132-2.143
 Single Reduction, Y2 2.144
 Double Reduction 2.146-2.161
 Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz				60 Hz				Selection									
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor ^[1]		Solid Shaft Overhung Load		Base			VFD ^[1]
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code	Frame Size	Ratio	
18.1	32200	(3640)	1.01	I	10900	(48500)	21.9	26700	(3020)	1.01	I	10700	(47400)	10	4C160	80	(-)
			1.41	II	10900	(48500)				1.41	II	10700	(47400)	10	4C170	80	
			1.48	II	17600	(78100)				1.48	II	16900	(75100)	10	4D170	80	
			1.60	II	17600	(78100)				1.60	II	16900	(75100)	10	4D180	80	
			1.60	II	22200	(98600)				1.60	II	22500	(99900)	10	4E180	80	
			1.90	II	22200	(98600)				1.90	II	22500	(99900)	10	4E190	80	
			1.90	II	30800	(137000)				1.90	II	31000	(138000)	10	4F190	80	
16.6	35300	(3990)	1.01	I	11000	(48900)	20.0	29200	(3300)	1.01	I	10800	(48000)	10	4C160	88	(-)
			1.29	I	11000	(48900)				1.29	I	10800	(48000)	10	4C170	88	
			1.48	II	17900	(79400)				1.48	II	17200	(76600)	10	4D170	88	
			1.60	II	17900	(79400)				1.60	II	17200	(76600)	10	4D180	88	
			1.60	II	22000	(97900)				1.60	II	22300	(99300)	10	4E180	88	
			1.90	II	22000	(97900)				1.90	II	22300	(99300)	10	4E190	88	
			1.90	II	30600	(136000)				1.90	II	30900	(137000)	10	4F190	88	
14.3	40900	(4620)	1.01	I	11000	(49100)	17.2	33900	(3830)	1.01	I	11000	(48700)	10	4C160	102	(-)
			1.11	I	11000	(49100)				1.11	I	11000	(48700)	10	4C170	102	
			1.48	II	18300	(81600)				1.48	II	17700	(78800)	10	4D170	102	
			1.48	II	21700	(96700)				1.48	II	22100	(98300)	10	4E170	102	
			1.90	II	21700	(96700)				1.90	II	22100	(98300)	10	4E190	102	
			1.90	II	30400	(135000)				1.90	II	30700	(137000)	10	4F190	102	
12.9	45100	(5100)	1.01	I	9560	(42500)	15.6	37400	(4230)	1.01	I	11000	(49100)	10	4C160	112	(-)
			1.01	I	18700	(83000)				1.01	I	18100	(80300)	10	4D160	112	
			1.29	I	18700	(83000)				1.29	I	18100	(80300)	10	4D180	112	
			1.29	I	21500	(95700)				1.29	I	21900	(97500)	10	4E180	112	
			1.60	II	21500	(95700)				1.60	II	21900	(97500)	10	4E190	112	
			1.60	II	30200	(134000)				1.60	II	30600	(136000)	10	4F190	112	
11.8	49400	(5580)	0.92	-	7640	(34000)	14.3	40900	(4620)	0.92	-	11000	(49100)	10	4C160	123	(-)
			1.01	I	18500	(82200)				1.01	I	18300	(81600)	10	4D160	123	
			1.29	I	18500	(82200)				1.29	I	18300	(81600)	10	4D180	123	
			1.29	I	21300	(94800)				1.29	I	21700	(96700)	10	4E180	123	
			1.60	II	21300	(94800)				1.60	II	21700	(96700)	10	4E190	123	
			1.60	II	30000	(134000)				1.60	II	30400	(135000)	10	4F190	123	
9.63	60700	(6850)	1.01	I	16300	(72700)	11.6	50300	(5680)	1.01	I	18300	(81600)	10	4D170	151	(-)
			1.01	I	20700	(92200)				1.01	I	21300	(94600)	10	4E170	151	
			1.29	I	20700	(92200)				1.29	I	21300	(94600)	10	4E190	151	
			1.29	I	29500	(131000)				1.29	I	30000	(133000)	10	4F190	151	
8.12	72000	(8130)	0.95	-	20200	(89700)	9.80	59600	(6740)	0.95	-	20800	(92500)	10	4E190	179	(-)
			0.95	-	29100	(129000)				0.95	-	29600	(132000)	10	4F190	179	

Notes: [1] For double reduction and 1/8 HP single reduction Y4 ratings, refer to selection tables on pages 2.91 thru 2.130.
 [2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

(-) = For inverter operation, starting conditions may require ambient temperature of 5° C or higher.

Selection Tables

Y4 Mounting Single Reduction Selection Tables

**10 HP
(7.5 kW)**

Y4 Mounting Position^[1]:



Dimension Pages:

Single Reduction	2.132-2.143
Single Reduction, Y2	2.144
Double Reduction	2.146-2.161
Double Reduction, Y2	2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz				60 Hz				Selection								
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor ^[1]		Base			VFD ^[1]	
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	Motor Power Code	Frame Size	Ratio		
7.02	83200	(9400)	0.93	-	8420	(37500)	8.47	69000	(7790)	1.01	I	14200	(63200)	10	4D180	207
			1.01	I	19600	(87100)				1.01	I	20300	(90300)	10	4E180	207
			1.01	I	28600	(127000)				1.01	I	29200	(130000)	10	4F180	207

Cyclo® BBB4

Selection
Tables

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sales@electromate.com

Notes: [1] For double reduction and 1/8 HP single reduction Y4 ratings, refer to selection tables on pages 2.91 thru 2.130.

[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

Y4 Mounting Single Reduction Selection Tables

15 HP
(11 kW)

Y4 Mounting Position^[1]:



Dimension Pages:

Single Reduction	2.132-2.143
Single Reduction, Y2	2.144
Double Reduction	2.146-2.161
Double Reduction, Y2	2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz						60 Hz						Selection					
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor ^[1]		Solid Shaft Overhung Load		Base			VFD ^[1]
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code	Frame Size	Ratio	
69.0	12400	(1400)	0.92	-	2160	(9600)	83.3	10300	(1160)	0.92	-	3350	(14900)	15	4A140	21	
			1.01	I	5460	(24300)				1.01	I	5320	(23700)	15	4B140	21	
			1.01	I	8170	(36300)				1.01	I	7860	(35000)	15	4C140	21	
64.7	13200	(1500)	0.86	-	290	(1290)	78.1	11000	(1240)	0.86	-	3350	(14900)	15	4A140	22	
			1.01	I	5500	(24500)				1.01	I	5370	(23900)	15	4B140	22	
			1.38	I	5500	(24500)				1.38	I	5370	(23900)	15	4B160	22	
			1.38	I	8270	(36800)				1.38	I	7970	(35400)	15	4C160	22	
			1.38	I	12700	(56400)				1.38	I	12100	(53900)	15	4D160	22	
59.2	14500	(1640)	1.01	I	5560	(24700)	71.4	12000	(1360)	1.01	I	5440	(24200)	15	4B140	25	
			1.38	I	5560	(24700)				1.38	I	5440	(24200)	15	4B160	25	
			1.38	I	8420	(37400)				1.38	I	8110	(36100)	15	4C160	25	
			1.38	I	13000	(57700)				1.38	I	12400	(55100)	15	4D160	25	
51.8	16600	(1870)	1.01	I	5630	(25000)	62.5	13700	(1550)	1.01	I	5530	(24600)	15	4B140	28	
			1.37	I	5630	(25000)				1.37	I	5530	(24600)	15	4B160	28	
			1.38	I	8620	(38300)				1.38	I	8330	(37100)	15	4C160	28	
			1.38	I	13400	(59500)				1.38	I	12800	(56900)	15	4D160	28	
41.2	20800	(2350)	1.01	I	5690	(25300)	49.7	17200	(1950)	1.01	I	5640	(25100)	15	4B140	35	
			1.09	I	5690	(25300)				1.09	I	5640	(25100)	15	4B160	35	
			1.38	I	8940	(39800)				1.38	I	8680	(38600)	15	4C160	35	
			1.38	I	14100	(62600)				1.38	I	13500	(60000)	15	4D160	35	
			1.77	II	14100	(62600)				1.77	II	13500	(60000)	15	4D180	35	
			1.77	II	18700	(83100)				1.77	II	17800	(79400)	15	4E180	35	
			2.18	III	18700	(83100)				2.18	III	17800	(79400)	15	4E190	35	
			2.18	III	31300	(139000)				2.18	III	30500	(135000)	15	4F190	35	
37.7	22800	(2570)	1.00	I	5700	(25400)	45.5	18900	(2130)	1.00	I	5670	(25200)	15	4B140	39	
			1.01	I	9050	(40300)				1.01	I	8810	(39200)	15	4C140	39	
			1.38	I	9050	(40300)				1.38	I	8810	(39200)	15	4C160	39	
			1.38	I	14300	(63800)				1.38	I	13800	(61300)	15	4D160	39	
			1.77	II	14300	(63800)				1.77	II	13800	(61300)	15	4D180	39	
			1.77	II	19100	(84900)				1.77	II	18200	(81100)	15	4E180	39	
			2.18	III	19100	(84900)				2.18	III	18200	(81100)	15	4E190	39	
			2.18	III	31200	(139000)				2.18	III	31200	(139000)	15	4F190	39	

Cyclo® BBB4

Selection Tables

Notes: [1] For double reduction and 1/8 HP single reduction Y4 ratings, refer to selection tables on pages 2.91 thru 2.130.

[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

Y4 Mounting Single Reduction Selection Tables

15 HP
(11 kW)

Y4 Mounting Position^[1]:



Dimension Pages:
Single Reduction 2.132-2.143
Single Reduction, Y2 2.144
Double Reduction 2.146-2.161
Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz					60 Hz					Selection							
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor ^[1]		Solid Shaft Overhung Load		Base			VFD ^[1]
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code	Frame Size	Ratio	
31.9	26900	(3040)	0.85	-	2350	(10500)	38.5	22300	(2520)	0.85	-	5700	(25400)	15	4B160	46	(-)
			1.01	I	9240	(41100)				1.01	I	9030	(40200)	15	4C160	46	
			1.29	I	9240	(41100)				1.29	I	9030	(40200)	15	4C170	46	
			1.29	I	14800	(66000)				1.29	I	14300	(63500)	15	4D170	46	
			1.77	II	14800	(66000)				1.77	II	14300	(63500)	15	4D180	46	
			1.77	II	19900	(88300)				1.77	II	19000	(84500)	15	4E180	46	
			2.18	III	19900	(88300)				2.18	III	19000	(84500)	15	4E190	46	
			2.18	III	31000	(138000)				2.18	III	31200	(139000)	15	4F190	46	
27.6	31000	(3510)	1.01	I	9360	(41600)	33.3	25700	(2910)	1.01	I	9190	(40900)	15	4C160	53	(-)
			1.09	I	9360	(41600)				1.09	I	9190	(40900)	15	4C170	53	
			1.09	I	15300	(67900)				1.09	I	14700	(65500)	15	4D170	53	
			1.29	I	15300	(67900)				1.29	I	14700	(65500)	15	4D180	53	
			1.29	I	20500	(91200)				1.29	I	19700	(87400)	15	4E180	53	
			2.18	III	20500	(91200)				2.18	III	19700	(87400)	15	4E190	53	
			2.18	III	30800	(137000)				2.18	III	31100	(138000)	15	4F190	53	
			24.4	35200	(3970)	1.01				I	9440	(42000)	29.4	29100	(3290)	1.01	
1.01	I	15600				(69400)	1.01	I	15100	(67100)	15	4D160				60	
1.29	I	15600				(69400)	1.29	I	15100	(67100)	15	4D180				60	
1.29	I	21100				(93800)	1.29	I	20200	(90000)	15	4E180				60	
2.18	III	21100				(93800)	2.18	III	20200	(90000)	15	4E190				60	
2.18	III	30600				(136000)	2.18	III	30900	(137000)	15	4F190				60	
21.6	39700	(4490)	0.88	-	9480	(42200)	26.0	32900	(3720)	0.88	-	9400	(41800)	15	4C170	67	(-)
			0.88	-	15900	(70800)				0.88	-	15400	(68600)	15	4D170	67	
			1.29	I	15900	(70800)				1.29	I	15400	(68600)	15	4D180	67	
			1.29	I	21600	(96200)				1.29	I	20800	(92400)	15	4E180	67	
			1.29	I	30500	(135000)				1.29	I	30700	(137000)	15	4F180	67	
19.7	43500	(4910)	0.88	-	9490	(42200)	23.8	36000	(4070)	0.88	-	9450	(42000)	15	4C170	74	(-)
			0.88	-	16100	(71800)				0.88	-	15700	(69700)	15	4D170	74	
			1.29	I	16100	(71800)				1.29	I	15700	(69700)	15	4D180	74	
			1.29	I	21600	(96100)				1.29	I	21200	(94200)	15	4E180	74	
			1.29	I	30300	(135000)				1.29	I	30600	(136000)	15	4F180	74	
18.1	47300	(5340)	0.96	-	8660	(38500)	21.9	39200	(4430)	0.96	-	9480	(42200)	15	4C170	80	(-)
			1.01	I	16300	(72700)				1.01	I	15900	(70700)	15	4D170	80	
			1.09	I	16300	(72700)				1.09	I	15900	(70700)	15	4D180	80	
			1.09	I	21400	(95200)				1.09	I	21600	(95900)	15	4E180	80	
			1.29	I	21400	(95200)				1.29	I	21600	(95900)	15	4E190	80	
			1.29	I	30100	(134000)				1.29	I	30500	(136000)	15	4F190	80	

Cyclo® BBB4

Selection Tables

Notes: [1] For double reduction and 1/8 HP single reduction Y4 ratings, refer to selection tables on pages 2.91 thru 2.130.

[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

Y4 Mounting Single Reduction Selection Tables

**15 HP
(11 kW)**

Y4 Mounting Position^[1]:



Dimension Pages:

Single Reduction	2.132-2.143
Single Reduction, Y2	2.144
Double Reduction	2.146-2.161
Double Reduction, Y2	2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz					60 Hz					Selection			VFD ^[1]			
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor ^[1]		Solid Shaft Overhung Load		Base		
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code	Frame Size	Ratio
16.6	51700 (5840)		0.88	-	6210 (27600)	20.0	42900 (4840)		0.88	-	9490 (42200)	15	4C170	88		
			1.01	I	16500 (73600)				1.01	I	16100 (71700)	15	4D170	88		
			1.09	I	16500 (73600)				1.09	I	16100 (71700)	15	4D180	88		
			1.09	I	21200 (94200)				1.09	I	21600 (96200)	15	4E180	88		
			1.29	I	21200 (94200)				1.29	I	21600 (96200)	15	4E190	88		
			1.29	I	29900 (133000)				1.29	I	30300 (135000)	15	4F190	88		
14.3	60000 (6780)		1.01	I	16500 (73300)	17.2	49700 (5620)		1.01	I	16500 (73200)	15	4D170	102		
			1.01	I	20800 (92400)				1.01	I	21300 (94700)	15	4E170	102		
			1.29	I	20800 (92400)				1.29	I	21300 (94700)	15	4E190	102	(-)	
			1.29	I	29600 (132000)				1.29	I	30000 (134000)	15	4F190	102	(-)	
12.9	66200 (7480)		0.88	-	15000 (66600)	15.6	54900 (6200)		0.88	-	16600 (74100)	15	4D180	112		
			0.88	-	20400 (91000)				0.88	-	21000 (93500)	15	4E180	112		
			1.09	I	20400 (91000)				1.09	I	21000 (93500)	15	4E190	112	(-)	
			1.09	I	29300 (130000)				1.09	I	29800 (133000)	15	4F190	112	(-)	
11.8	72400 (8180)		0.88	-	13100 (58400)	14.3	60000 (6780)		0.88	-	16500 (73300)	15	4D180	123		
			0.88	-	20100 (89600)				0.88	-	20800 (92400)	15	4E180	123		
			1.09	I	20100 (89600)				1.09	I	20800 (92400)	15	4E190	123	(-)	
			1.09	I	29000 (129000)				1.09	I	29600 (132000)	15	4F190	123	(-)	
9.63	89000 (10100)		0.88	-	19300 (85800)	11.6	73700 (8330)		0.88	-	20100 (89300)	15	4E190	151		
			0.88	-	28300 (126000)				0.88	-	29000 (129000)	15	4F190	151		

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Selection Tables

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Notes: [1] For double reduction and 1/8 HP single reduction Y4 ratings, refer to selection tables on pages 2.91 thru 2.130.

[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

Y4 Mounting Single Reduction Selection Tables

20 HP
(15 kW)

Y4 Mounting Position^[1]:



Dimension Pages:
Single Reduction 2.132-2.143
Single Reduction, Y2 2.144
Double Reduction 2.146-2.161
Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz					60 Hz					Selection								
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor ^[1]		Solid Shaft Overhung Load		Base			VFD ^[1]	
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code	Frame Size	Ratio		
64.7	18100	(2040)	1.01	I	4980	(22200)	78.1	15000	(1690)	1.01	I	4940	(22000)	20	4B160	22		
			1.01	I	7820	(34800)				1.01	I	7590	(33700)	20	4C160	22		
			1.01	I	12300	(54700)				1.01	I	11800	(52500)	20	4D160	22		
59.2	19800	(2230)	1.01	I	4990	(22200)	71.4	16400	(1850)	1.01	I	4970	(22100)	20	4B160	25		
			1.01	I	7920	(35200)				1.01	I	7700	(34300)	20	4C160	25		
			1.01	I	12500	(55800)				1.01	I	12000	(53500)	20	4D160	25		
51.8	22600	(2550)	1.01	I	4980	(22100)	62.5	18700	(2110)	1.01	I	4990	(22200)	20	4B160	28		
			1.01	I	8050	(35800)				1.01	I	7860	(35000)	20	4C160	28		
			1.01	I	12900	(57300)				1.01	I	12400	(55100)	20	4D160	28		
41.2	28400	(3210)	1.01	I	8220	(36600)	49.7	23500	(2660)	1.01	I	8080	(36000)	20	4C160	35		
			1.01	I	13500	(59900)				1.01	I	13000	(57800)	20	4D160	35		
			1.29	I	13500	(59900)				1.29	I	13000	(57800)	20	4D180	35		(-)
			1.29	I	18100	(80700)				1.29	I	17400	(77300)	20	4E180	35		(-)
			1.60	II	18100	(80700)				1.60	II	17400	(77300)	20	4E190	35		
			1.60	II	30900	(138000)				1.60	II	30000	(134000)	20	4F190	35		
37.7	31000	(3510)	1.01	I	8270	(36800)	45.5	25700	(2910)	1.01	I	8160	(36300)	20	4C160	39		
			1.01	I	13700	(60900)				1.01	I	13200	(58800)	20	4D160	39		
			1.29	I	13700	(60900)				1.29	I	13200	(58800)	20	4D180	39		(-)
			1.29	I	18500	(82200)				1.29	I	17700	(78900)	20	4E180	39		(-)
			1.60	II	18500	(82200)				1.60	II	17700	(78900)	20	4E190	39		
			1.60	II	30800	(137000)				1.60	II	30800	(137000)	20	4F190	39		
31.9	36700	(4140)	0.95	-	8310	(37000)	38.5	30400	(3430)	0.95	-	8260	(36700)	20	4C170	46		
			0.95	-	14100	(62500)				0.95	-	13600	(60600)	20	4D170	46		
			1.29	I	14100	(62500)				1.29	I	13600	(60600)	20	4D180	46		(-)
			1.29	I	19100	(85200)				1.29	I	18400	(81900)	20	4E180	46		(-)
			1.60	II	19100	(85200)				1.60	II	18400	(81900)	20	4E190	46		
			1.60	II	30600	(136000)				1.60	II	30900	(137000)	20	4F190	46		
27.6	42300	(4780)	0.80	-	8290	(36900)	33.3	35100	(3960)	0.80	-	8300	(36900)	20	4C170	53		
			0.80	-	14400	(63800)				0.80	-	14000	(62100)	20	4D170	53		
			0.95	-	14400	(63800)				0.95	-	14000	(62100)	20	4D180	53		(-)
			0.95	-	19700	(87600)				0.95	-	19000	(84400)	20	4E180	53		(-)
			1.60	II	19700	(87600)				1.60	II	19000	(84400)	20	4E190	53		
			1.60	II	30300	(135000)				1.60	II	30700	(136000)	20	4F190	53		
24.4	48000	(5420)	0.95	-	14600	(64800)	29.4	39700	(4490)	0.95	-	14200	(63300)	20	4D180	60		
			0.95	-	20100	(89600)				0.95	-	19400	(86500)	20	4E180	60		
			1.60	II	20100	(89600)				1.60	II	19400	(86500)	20	4E190	60		
			1.60	II	30100	(134000)				1.60	II	30400	(135000)	20	4F190	60		

Cyclo® BBB4

Selection Tables

Notes: [1] For double reduction and 1/8 HP single reduction Y4 ratings, refer to selection tables on pages 2.91 thru 2.130.

[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

Y4 Mounting Single Reduction Selection Tables

20 HP
(15 kW)

Y4 Mounting Position^[1]:



Dimension Pages:

Single Reduction	2.132-2.143
Single Reduction, Y2	2.144
Double Reduction	2.146-2.161
Double Reduction, Y2	2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz						60 Hz						Selection					
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor ^[1]		Solid Shaft Overhung Load		Base			VFD ^[1]
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code	Frame Size	Ratio	
21.6	54200	(6120)	0.95	-	14800	(65700)	26.0	44900	(5070)	0.95	-	14500	(64300)	20	4D180	67	
			0.95	-	20600	(91500)				0.95	-	19900	(88500)	20	4E180	67	
			0.95	-	29800	(133000)				0.95	-	30200	(134000)	20	4F180	67	
19.7	59300	(6690)	0.95	-	14900	(66200)	23.8	49100	(5550)	0.95	-	14600	(65000)	20	4D180	74	
			0.95	-	20800	(92500)				0.95	-	20200	(90000)	20	4E180	74	
			0.95	-	29600	(132000)				0.95	-	30000	(134000)	20	4F180	74	
18.1	64500	(7290)	0.80	-	15000	(66500)	21.9	53400	(6040)	0.80	-	14700	(65600)	20	4D180	80	
			0.80	-	20500	(91400)				0.80	-	20500	(91300)	20	4E180	80	
			0.95	-	20500	(91400)				0.95	-	20500	(91300)	20	4E190	80	(-)
			0.95	-	29400	(131000)				0.95	-	29900	(133000)	20	4F190	80	(-)
16.6	70500	(7970)	0.80	-	13700	(61100)	20.0	58400	(6600)	0.80	-	14900	(66100)	20	4D180	88	
			0.80	-	20200	(90000)				0.80	-	20800	(92600)	20	4E180	88	
			0.95	-	20200	(90000)				0.95	-	20800	(92600)	20	4E190	88	(-)
			0.95	-	29100	(130000)				0.95	-	29600	(132000)	20	4F190	88	(-)
14.3	81800	(9250)	0.95	-	19700	(87400)	17.2	67800	(7660)	0.95	-	20400	(90600)	20	4E190	102	
			0.95	-	28600	(127000)				0.95	-	29200	(130000)	20	4F190	102	
12.9	90300	(10200)	0.80	-	19200	(85500)	15.6	74800	(8450)	0.80	-	20000	(89000)	20	4E190	112	
			0.80	-	28300	(126000)				0.80	-	28900	(129000)	20	4F190	112	
11.8	98800	(11200)	0.80	-	18800	(83600)	14.3	81800	(9250)	0.80	-	19700	(87400)	20	4E190	123	
			0.80	-	27900	(124000)				0.80	-	28600	(127000)	20	4F190	123	

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Selection Tables

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Notes: [1] For double reduction and 1/8 HP single reduction Y4 ratings, refer to selection tables on pages 2.91 thru 2.130.

[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

Y4 Mounting Single Reduction Selection Tables

25 HP
(18.5 kW)

Y4 Mounting Position^[1]:



Dimension Pages:
Single Reduction 2.132-2.143
Single Reduction, Y2 2.144
Double Reduction 2.146-2.161
Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz						60 Hz						Selection					
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor ^[1]		Solid Shaft Overhung Load		Base			VFD ^[1]
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code	Frame Size	Ratio	
64.7	22300	(2520)	0.82	-	4530	(20100)	78.1	18500	(2090)	0.82	-	4560	(20300)	25	4B160	22	
			0.82	-	7420	(33000)				0.82	-	7260	(32300)	25	4C160	22	
			0.82	-	12000	(53200)				0.82	-	11500	(51200)	25	4D160	22	
59.2	24400	(2750)	0.82	-	4490	(20000)	71.4	20200	(2280)	0.82	-	4550	(20300)	25	4B160	25	
			0.82	-	7480	(33300)				0.82	-	7340	(32600)	25	4C160	25	
			0.82	-	12200	(54100)				0.82	-	11700	(52200)	25	4D160	25	
51.8	27800	(3150)	0.82	-	7550	(33600)	62.5	23100	(2610)	0.82	-	7440	(33100)	25	4C160	28	
			0.82	-	12500	(55400)				0.82	-	12000	(53600)	25	4D160	28	
41.2	35000	(3950)	0.82	-	7590	(33800)	49.7	29000	(3280)	0.82	-	7560	(33600)	25	4C160	35	
			0.82	-	12900	(57500)				0.82	-	12600	(55800)	25	4D160	35	
			1.05	I	12900	(57500)				1.05	I	12600	(55800)	25	4D180	35	
			1.05	I	17600	(78500)				1.05	I	17000	(75500)	25	4E180	35	
			1.29	I	17600	(78500)				1.29	I	17000	(75500)	25	4E190	35	(-)
			1.29	I	30700	(136000)				1.29	I	29700	(132000)	25	4F190	35	(-)
37.7	38300	(4330)	0.82	-	7580	(33700)	45.5	31700	(3580)	0.82	-	7590	(33800)	25	4C160	39	
			0.82	-	13100	(58300)				0.82	-	12700	(56700)	25	4D160	39	
			1.05	I	13100	(58300)				1.05	I	12700	(56700)	25	4D180	39	
			1.05	I	18000	(79900)				1.05	I	17300	(77000)	25	4E180	39	
			1.29	I	18000	(79900)				1.29	I	17300	(77000)	25	4E190	39	(-)
			1.29	I	30500	(136000)				1.29	I	30400	(135000)	25	4F190	39	(-)
31.9	45200	(5110)	0.77	-	7500	(33400)	38.5	37500	(4240)	0.77	-	7590	(33800)	25	4C170	46	
			0.77	-	13400	(59500)				0.77	-	13100	(58100)	25	4D170	46	
			1.05	I	13400	(59500)				1.05	I	13100	(58100)	25	4D180	46	
			1.05	I	18500	(82400)				1.05	I	17900	(79600)	25	4E180	46	
			1.29	I	18500	(82400)				1.29	I	17900	(79600)	25	4E190	46	(-)
			1.29	I	30200	(134000)				1.29	I	30500	(136000)	25	4F190	46	(-)
27.6	52200	(5900)	0.77	-	13600	(60300)	33.3	43300	(4890)	0.77	-	13300	(59200)	25	4D180	53	
			0.77	-	19000	(84400)				0.77	-	18400	(81700)	25	4E180	53	
			1.29	I	19000	(84400)				1.29	I	18400	(81700)	25	4E190	53	(-)
			1.29	I	29900	(133000)				1.29	I	30300	(135000)	25	4F190	53	(-)
24.4	59200	(6680)	0.77	-	13700	(60800)	29.4	49000	(5540)	0.77	-	13500	(60000)	25	4D180	60	
			0.77	-	19300	(86000)				0.77	-	18800	(83500)	25	4E180	60	
			1.29	I	19300	(86000)				1.29	I	18800	(83500)	25	4E190	60	(-)
			1.29	I	29600	(132000)				1.29	I	30000	(134000)	25	4F190	60	(-)
21.6	66800	(7550)	0.77	-	13700	(61100)	26.0	55400	(6260)	0.77	-	13600	(60600)	25	4D180	67	
			0.77	-	19600	(87400)				0.77	-	19100	(85100)	25	4E180	67	
			0.77	-	29300	(130000)				0.77	-	29800	(132000)	25	4F180	67	

Cyclo® BBB4

Selection Tables

Notes: [1] For double reduction and 1/8 HP single reduction Y4 ratings, refer to selection tables on pages 2.91 thru 2.130.

[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

Y4 Mounting Single Reduction Selection Tables

**25 HP
(18.5 kW)**

Y4 Mounting Position^[1]:



Dimension Pages:
 Single Reduction 2.132-2.143
 Single Reduction, Y2 2.144
 Double Reduction 2.146-2.161
 Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz					60 Hz					Selection							
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor ^[1]		Solid Shaft Overhung Load		Base			VFD ^[1]
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code	Frame Size	Ratio	
19.7	73100	(8260)	0.77	-	12900	(57400)	23.8	60600	(6840)	0.77	-	13700	(60900)	25	4D180	74	
			0.77	-	19900	(88300)				0.77	-	19400	(86200)	25	4E180	74	
			0.77	-	29000	(129000)				0.77	-	29600	(131000)	25	4F180	74	
18.1	79500	(8990)	0.77	-	19800	(88000)	21.9	65900	(7450)	0.77	-	19600	(87200)	25	4E190	80	
			0.77	-	28700	(128000)				0.77	-	29300	(130000)	25	4F190	80	
16.6	87000	(9830)	0.77	-	19400	(86300)	20.0	72100	(8140)	0.77	-	19800	(88200)	25	4E190	88	
			0.77	-	28400	(126000)				0.77	-	29100	(129000)	25	4F190	88	
14.3	101000	(11400)	0.77	-	18700	(83100)	17.2	83600	(9450)	0.77	-	19600	(87000)	25	4E190	102	
			0.77	-	27800	(124000)				0.77	-	28600	(127000)	25	4F190	102	

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Selection Tables

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Notes: [1] For double reduction and 1/8 HP single reduction Y4 ratings, refer to selection tables on pages 2.91 thru 2.130.

[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

Y4 Mounting Single Reduction Selection Tables

**30 HP
(22 kW)**

Y4 Mounting Position^[1]:



Dimension Pages:
 Single Reduction 2.132-2.143
 Single Reduction, Y2 2.144
 Double Reduction 2.146-2.161
 Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz					60 Hz					Selection							
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor ^[1]		Solid Shaft Overhung Load		Base			VFD ^[1]
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code	Frame Size	Ratio	
41.2	41600 (4700)		0.88	-	12400 (55200)	49.7	34500 (3900)			0.88	-	12100 (53900)	30	4D180	35		
			0.88	-	17200 (76300)					0.88	-	16600 (73700)	30	4E180	35		
			1.09	I	17200 (76300)					1.09	I	16600 (73700)	30	4E190	35		(-)
			1.09	I	30400 (135000)					1.09	I	29300 (130000)	30	4F190	35		(-)
37.7	45500 (5140)		0.88	-	12500 (55700)	45.5	37700 (4260)			0.88	-	12300 (54500)	30	4D180	39		
			0.88	-	17400 (77500)					0.88	-	16900 (75000)	30	4E180	39		
			1.09	I	17400 (77500)					1.09	I	16900 (75000)	30	4E190	39		(-)
			1.09	I	30200 (134000)					1.09	I	30000 (133000)	30	4F190	39		(-)
31.9	53800 (6080)		0.88	-	12700 (56400)	38.5	44600 (5040)			0.88	-	12500 (55600)	30	4D180	46		
			0.88	-	17900 (79600)					0.88	-	17400 (77200)	30	4E180	46		
			1.09	I	17900 (79600)					1.09	I	17400 (77200)	30	4E190	46		(-)
			1.09	I	29800 (133000)					1.09	I	30200 (135000)	30	4F190	46		(-)
27.6	62100 (7010)		1.09	I	18200 (81100)	33.3	51400 (5810)			1.09	I	17800 (79000)	30	4E190	53	(-)	
			1.09	I	29500 (131000)					1.09	I	29900 (133000)	30	4F190	53	(-)	
24.4	70400 (7950)		1.09	I	18500 (82300)	29.4	58300 (6590)			1.09	I	18100 (80500)	30	4E190	60	(-)	
			1.09	I	29100 (130000)					1.09	I	29600 (132000)	30	4F190	60	(-)	

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Selection Tables

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Notes: [1] For double reduction and 1/8 HP single reduction Y4 ratings, refer to selection tables on pages 2.91 thru 2.130.
 [2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

Y4 Mounting Single Reduction Selection Tables

**40 HP
(30 kW)**

Y4 Mounting Position^[1]:



Dimension Pages:
 Single Reduction 2.132-2.143
 Single Reduction, Y2 2.144
 Double Reduction 2.146-2.161
 Double Reduction, Y2 2.162

Frequency	50 Hz	60 Hz
Input Speed	1450 RPM	1750 RPM
Number of Poles	4	

50Hz					60 Hz					Selection							
Output Speed (RPM)	Output Torque		Service Factor		Solid Shaft Overhung Load		Output Speed (RPM)	Output Torque		Service Factor ^[1]		Solid Shaft Overhung Load		Base			VFD ^[1]
	in-lbs	(N·m)	SF	AGMA Class	lbs	(N)		in-lbs	(N·m)	SF	AGMA Class	lbs	(N)	Motor Power Code	Frame Size	Ratio	
41.2	56800 (6410)		0.80	-	16000 (71400)		49.7	47000 (5310)		0.80	-	15700 (69600)	40	4E190	35	(-)	
			0.80	-	29700 (132000)					0.80	-	28500 (127000)	40	4F190	35	(-)	
37.7	62100 (7010)		0.80	-	16200 (72100)		45.5	51400 (5810)		0.80	-	15900 (70500)	40	4E190	39	(-)	
			0.80	-	29500 (131000)					0.80	-	29100 (129000)	40	4F190	39	(-)	
31.9	73400 (8290)		0.80	-	16500 (73200)		38.5	60800 (6870)		0.80	-	16200 (72000)	40	4E190	46		
			0.80	-	29000 (129000)					0.80	-	29500 (131000)	40	4F190	46		
27.6	84700 (9560)		0.80	-	16600 (73800)		33.3	70100 (7920)		0.80	-	16400 (72900)	40	4E190	53		
			0.80	-	28500 (127000)					0.80	-	29100 (130000)	40	4F190	53		
24.4	95900 (10800)		0.80	-	16600 (74000)		29.4	79500 (8980)		0.80	-	16500 (73600)	40	4E190	60		
			0.80	-	28000 (125000)					0.80	-	28700 (128000)	40	4F190	60		

Cyclo® BBB4

Selection Tables

Sold & Serviced By:



Toll Free Phone (877) SERV098

www.electromate.com

sales@electromate.com

Notes: [1] For double reduction and 1/8 HP single reduction Y4 ratings, refer to selection tables on pages 2.91 thru 2.130.

[2] Variable Frequency Drive (VFD) notes (see page 2.8 for Constant Torque Speed Ranges):

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Sold & Serviced By:

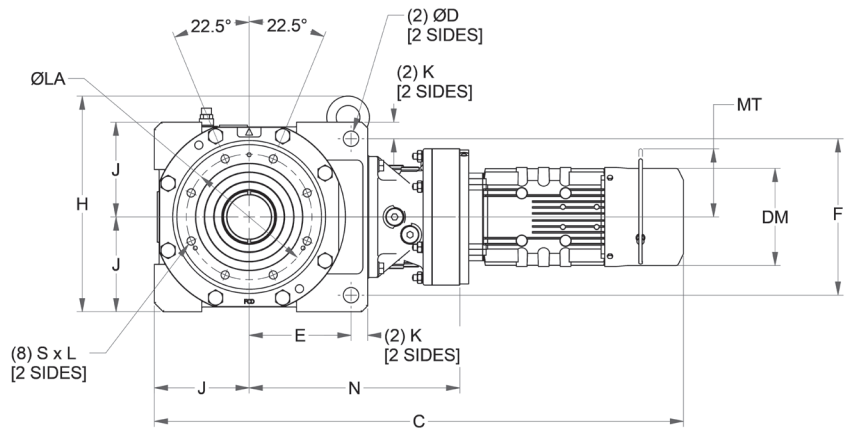
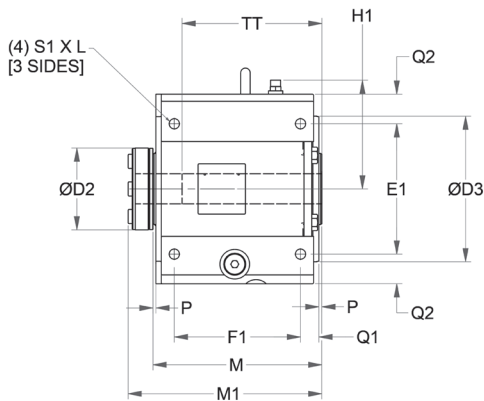
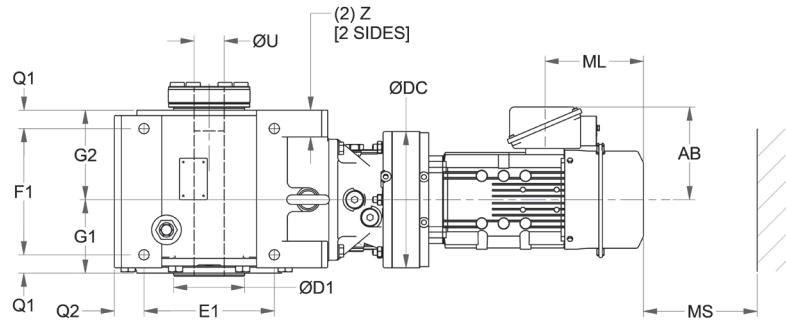
 **ELECTROMATE**

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Dimensions

Single Reduction Cyclo® LHYM-4A100Y~4A125Y

Minimum Engagement		
Frame Size	TT	
	inch	(mm)
4A	8.19	(208)



Cyclo® BBB4

Dimensions

All dimensions are in inches (mm).
For units ordered in the Y2 mounting configuration, please refer to page 2.115 for external lubricant piping dimensions.

Model	N	ØDC	J	E	F	K	Z	ØD	E1	F1	Q1	Q2	S1 x L
4A100, 4A105	9.33 (237)	5.91 (150)	4.33 (110)	4.49 (114)	7.24 (184)	0.71 (18)	1.38 (35)	0.71 (18)	5.91 (150)	6.30 (160)	0.91 (23)	1.38 (35)	M12 x 0.79 (M12 x 20)
4A110, 4A115	9.76 (248)	6.38 (162)											
4A120, 4A125	9.57 (243)	8.03 (204)											

Model	M	P	G1	G2	H	H1	ØLA	ØD3	S x L	M1	ØD1	ØD2	ØU	
													Std & Max	Min
4A100, 4A105 4A110, 4A115 4A120, 4A125	8.50 (216)	0.2 (5)	3.78 (96)	4.33 (110)	10.9 (276)	5.16 (131)	6.10 (155)	6.89 (175)	M10 x 0.67 (M10 x 17)	9.84 (250)	3.4 (85)	4.09 (104)	2-3/16 (55.56)	1-11/16 (42.86)

LHYM01-4A105Y-AV ▶ LHYM2-4A125Y-EP

All dimensions are in inches (mm)

Model	4 Pole Motor HP (kW)	Without Brake					With Brake						
		C	DM ^[1]	AB	ML	Weight lb (kg)	C	DM ^[1]	AB	ML	MS	MT	Weight lb (kg)
LHYM01-4A105Y-AV	1/8 x 4 (0.1 x 4)	20.58 (523)	ø4.88 (ø124)	4.63 (118)	2.32 (59)	117 (53)	21.84 (555)	ø4.88 (ø124)	4.63 (118)	3.58 (91)	2.40 (61)	-	120 (55)
LHYM02-4A105Y	1/4 x 4 (0.2 x 4)	20.58 (523)	ø4.88 (ø124)	4.63 (118)	2.32 (59)	117 (53)	21.84 (555)	ø4.88 (ø124)	4.63 (118)	3.58 (91)	2.40 (61)	-	120 (55)
LHYM02-4A105Y-AV	1/4 x 4 (0.2 x 4)	21.37 (543)	ø4.88 (ø124)	4.63 (118)	2.32 (59)	120 (55)	22.63 (575)	ø4.88 (ø124)	4.63 (118)	3.58 (91)	2.40 (61)	-	123 (56)
LHYM03-4A105Y	1/3 x 4 (0.25 x 4)	20.58 (523)	ø4.88 (ø124)	4.63 (118)	2.32 (59)	117 (53)	21.84 (555)	ø4.88 (ø124)	4.63 (118)	3.58 (91)	2.40 (61)	-	120 (55)
LHYM03-4A105Y-AV	1/3 x 4 (0.25 x 4)	21.37 (543)	ø4.88 (ø124)	4.63 (118)	2.32 (59)	120 (55)	22.63 (575)	ø4.88 (ø124)	4.63 (118)	3.58 (91)	2.40 (61)	-	123 (56)
LHYM05-4A105Y	1/2 x 4 (0.4 x 4)	21.37 (543)	ø4.88 (ø124)	4.63 (118)	2.32 (59)	120 (55)	22.63 (575)	ø4.88 (ø124)	4.63 (118)	3.58 (91)	2.40 (61)	-	123 (56)
LHYM05-4A105Y-AV	1/2 x 4 (0.4 x 4)	22.98 (584)	ø5.94 (ø151)	5.67 (144)	3.82 (97)	127 (58)	24.68 (627)	ø5.94 (ø151)	5.67 (144)	5.51 (140)	3.66 (93)	3.94 (100)	133 (61)
LHYM08-4A105Y	3/4 x 4 (0.55 x 4)	22.98 (584)	ø5.94 (ø151)	5.67 (144)	3.82 (97)	124 (57)	24.68 (627)	ø5.94 (ø151)	5.67 (144)	5.51 (140)	3.66 (93)	3.94 (100)	130 (59)
LHYM08-4A105Y-AV	3/4 x 4 (0.55 x 4)	24.28 (617)	ø6.30 (ø160)	5.86 (149)	3.94 (100)	135 (62)	26.72 (679)	ø6.30 (ø160)	5.86 (149)	6.38 (162)	4.53 (115)	4.29 (109)	146 (66)
LHYM1-4A105Y-EP	1 x 4 (0.75 x 4)	24.72 (628)	6.22 (158)	5.98 (152)	3.82 (97)	140 (64)	27.22 (691)	6.22 (158)	5.98 (152)	6.32 (161)	4.80 (122)	4.25 (108)	150 (68)
LHYM1H-4A105Y-EP	1.5 x 4 (1.1 x 4)	25.78 (655)	6.57 (167)	6.16 (156)	3.82 (97)	148 (67)	28.52 (724)	6.57 (167)	6.16 (156)	6.56 (167)	5.04 (128)	4.61 (117)	159 (72)
LHYM2-4A105Y-EP	2 x 4 (1.5 x 4)	25.78 (655)	6.57 (167)	6.16 (156)	3.82 (97)	150 (69)	28.52 (724)	6.57 (167)	6.16 (156)	6.56 (167)	5.04 (128)	4.61 (117)	162 (74)
LHYM3-4A105Y-EP	3 x 4 (2.2 x 4)	26.61 (676)	7.24 (184)	6.71 (170)	4.53 (115)	167 (76)	29.68 (754)	7.24 (184)	6.71 (170)	7.60 (193)	5.43 (138)	5.04 (128)	183 (83)
LHYM03-4A115Y-AV	1/3 x 4 (0.25 x 4)	21.66 (550)	ø4.88 (ø124)	4.63 (118)	2.32 (59)	135 (62)	22.92 (582)	ø4.88 (ø124)	4.63 (118)	3.58 (91)	2.40 (61)	-	138 (63)
LHYM05-4A115Y	1/2 x 4 (0.4 x 4)	21.66 (550)	ø4.88 (ø124)	4.63 (118)	2.32 (59)	135 (62)	22.92 (582)	ø4.88 (ø124)	4.63 (118)	3.58 (91)	2.40 (61)	-	138 (63)
LHYM05-4A115Y-AV	1/2 x 4 (0.4 x 4)	23.27 (591)	ø5.94 (ø151)	5.67 (144)	3.82 (97)	142 (65)	24.96 (634)	ø5.94 (ø151)	5.67 (144)	5.51 (140)	3.66 (93)	3.94 (100)	148 (67)
LHYM08-4A115Y	3/4 x 4 (0.55 x 4)	23.27 (591)	ø5.94 (ø151)	5.67 (144)	3.82 (97)	139 (63)	24.96 (634)	ø5.94 (ø151)	5.67 (144)	5.51 (140)	3.66 (93)	3.94 (100)	145 (66)
LHYM08-4A115Y-AV	3/4 x 4 (0.55 x 4)	24.57 (624)	ø6.30 (ø160)	5.86 (149)	3.94 (100)	148 (68)	27.01 (686)	ø6.30 (ø160)	5.86 (149)	6.38 (162)	4.53 (115)	4.29 (109)	159 (72)
LHYM1-4A115Y-EP	1 x 4 (0.75 x 4)	25.00 (635)	6.22 (158)	5.98 (152)	3.82 (97)	153 (70)	27.50 (699)	6.22 (158)	5.98 (152)	6.32 (161)	4.80 (122)	4.25 (108)	163 (74)
LHYM1H-4A115Y-EP	1.5 x 4 (1.1 x 4)	26.07 (662)	6.57 (167)	6.16 (156)	3.82 (97)	160 (73)	28.80 (732)	6.57 (167)	6.16 (156)	6.56 (167)	5.04 (128)	4.61 (117)	172 (78)
LHYM2-4A115Y-EP	2 x 4 (1.5 x 4)	26.07 (662)	6.57 (167)	6.16 (156)	3.82 (97)	163 (74)	28.80 (732)	6.57 (167)	6.16 (156)	6.56 (167)	5.04 (128)	4.61 (117)	175 (80)
LHYM3-4A115Y-EP	3 x 4 (2.2 x 4)	25.95 (659)	7.24 (184)	6.71 (170)	4.53 (115)	175 (80)	29.02 (737)	7.24 (184)	6.71 (170)	7.60 (193)	5.43 (138)	5.04 (128)	192 (87)
LHYM5-4A115Y-EP	5 x 4 (3.7 x 4)	27.01 (686)	8.74 (222)	7.34 (186)	4.65 (118)	201 (91)	30.57 (777)	8.74 (222)	7.34 (186)	8.21 (209)	6.02 (153)	6.30 (160)	225 (102)
LHYM1-4A125Y-EP	1 x 4 (0.75 x 4)	24.96 (634)	6.22 (158)	5.98 (152)	3.82 (97)	157 (71)	27.46 (698)	6.22 (158)	5.98 (152)	6.32 (161)	4.80 (122)	4.25 (108)	167 (76)
LHYM1H-4A125Y-EP	1.5 x 4 (1.1 x 4)	26.03 (661)	6.57 (167)	6.16 (156)	3.82 (97)	164 (75)	28.76 (731)	6.57 (167)	6.16 (156)	6.56 (167)	5.04 (128)	4.61 (117)	175 (80)
LHYM2-4A125Y-EP	2 x 4 (1.5 x 4)	26.03 (661)	6.57 (167)	6.16 (156)	3.82 (97)	167 (76)	28.76 (731)	6.57 (167)	6.16 (156)	6.56 (167)	5.04 (128)	4.61 (117)	178 (81)

Cyclo® BBB4

Dimensions

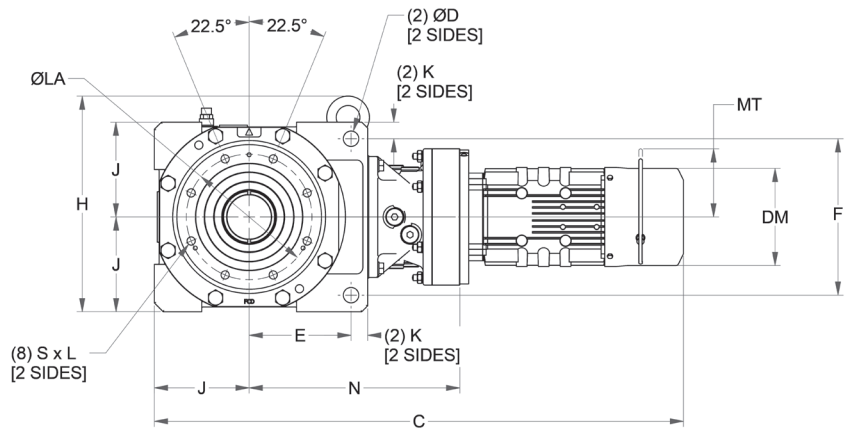
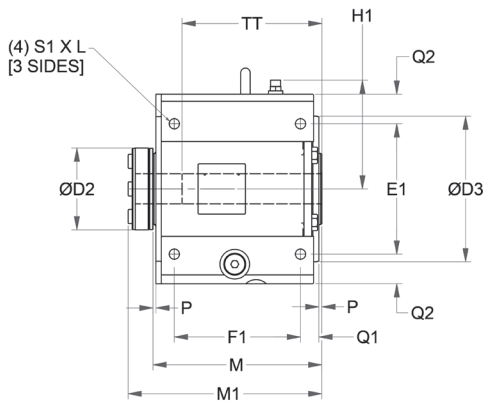
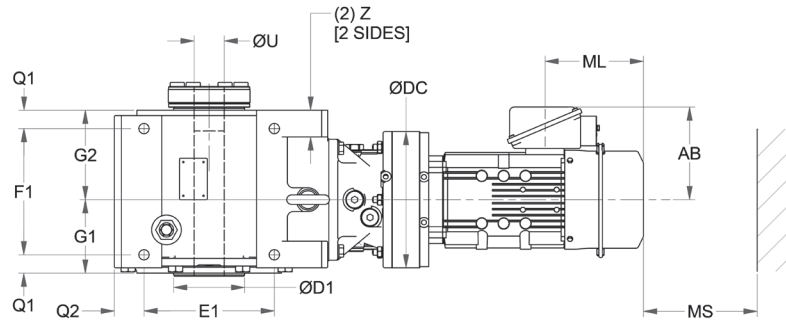
Notes [1]: DM Dimension Symbol ø = Round Fan Cover
DM Dimension Symbol = Square Fan Cover

LXXX-4XX0/4XX5 Frame sizes have equal dimensions, different ratings.

Dimensions

Single Reduction Cyclo® LHYM-4A120Y~4B145Y

Minimum Engagement		
Frame Size	TT	
	inch	(mm)
4A	8.19	(208)
4B	9.53	(242)



Cyclo® BBB4
Dimensions

All dimensions are in inches (mm).
For units ordered in the Y2 mounting configuration, please refer to page 2.115 for external lubricant piping dimensions.

Model	N	ØDC	J	E	F	K	Z	ØD	E1	F1	Q1	Q2	S1 x L
4A120, 4A125	9.57 (243)	8.03 (204)	4.33 (110)	4.49 (114)	7.24 (184)	0.71 (18)	1.38 (25)	0.71 (18)	5.91 (150)	6.30 (160)	0.91 (23)	1.38 (35)	M12 x 0.79 (M12 x 20)
4A140, 4A145	10.2 (265)	9.06 (230)											
4B120, 4B125	11.02 (280)	8.03 (204)	5.12 (130)	5.59 (142)	8.43 (214)	0.91 (23)	1.58 (40)	0.87 (22)	7.48 (190)	7.68 (195)	1.06 (27)	1.38 (35)	M16 x 1.02 (M16 x 26)
4B140, 4B145	11.69 (297)	9.06 (230)											

Model	M	P	G1	G2	H	H1	ØLA	ØD3	S x L	M1	ØD1	ØD2	ØU	
													Std & Max	Min
4B120, 4B125	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
4B140, 4B145	(259)	(5)	(122)	(127)	(308)	(151)	(175)	(199)	(M12 x 20)	(293)	(100)	(114)	(61.91)	(49.21)
4B120, 4B125	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
4B140, 4B145	(259)	(5)	(122)	(127)	(308)	(151)	(175)	(199)	(M12 x 20)	(293)	(100)	(114)	(61.91)	(49.21)

LHYM3-4A125Y-EP ▶ LHYM10-4B145Y-EP

All dimensions are in inches (mm)

Model	4 Pole Motor HP (kW)	Without Brake					With Brake						
		C	DM ^[1]	AB	ML	Weight lb (kg)	C	DM ^[1]	AB	ML	MS	MT	Weight lb (kg)
LHYM3-4A125Y-EP	3 x 4 (2.2 x 4)	25.44 (646)	7.24 (184)	6.71 (170)	4.53 (115)	180 (82)	28.51 (724)	7.24 (184)	6.71 (170)	7.60 (193)	5.43 (138)	5.04 (128)	197 (89)
LHYM5-4A125Y-EP	5 x 4 (3.7 x 4)	26.89 (683)	8.74 (222)	7.34 (186)	4.65 (118)	205 (93)	30.46 (774)	8.74 (222)	7.34 (186)	8.21 (209)	6.02 (153)	6.30 (160)	229 (104)
LHYM8-4A125Y-EP	7.5 x 4 (5.5 x 4)	28.59 (726)	8.74 (222)	7.34 (186)	4.65 (118)	239 (109)	32.15 (817)	8.74 (222)	7.34 (186)	8.21 (209)	6.02 (153)	6.30 (160)	263 (120)
LHYM3-4A145Y-EP	3 x 4 (2.2 x 4)	26.29 (668)	7.24 (184)	6.71 (170)	4.53 (115)	195 (89)	29.36 (746)	7.24 (184)	6.71 (170)	7.60 (193)	5.43 (138)	5.04 (128)	212 (96)
LHYM5-4A145Y-EP	5 x 4 (3.7 x 4)	27.55 (700)	8.74 (222)	7.34 (186)	4.65 (118)	219 (100)	31.11 (790)	8.74 (222)	7.34 (186)	8.21 (209)	6.02 (153)	6.30 (160)	243 (111)
LHYM8-4A145Y-EP	7.5 x 4 (5.5 x 4)	29.24 (743)	8.74 (222)	7.34 (186)	4.65 (118)	253 (115)	32.80 (833)	8.74 (222)	7.34 (186)	8.21 (209)	6.02 (153)	6.30 (160)	277 (126)
LHYM10-4A145Y-EP	10 x 4 (7.5 x 4)	30.74 (781)	10.24 (260)	9.04 (230)	5.43 (138)	280 (127)	34.87 (886)	10.24 (260)	9.04 (230)	9.57 (243)	7.44 (189)	7.32 (186)	324 (147)
LHYM15-4A145Y-EP	15 x 4 (11 x 4)	33.18 (843)	10.24 (260)	9.04 (230)	5.43 (138)	293 (133)	37.31 (948)	10.24 (260)	9.04 (230)	9.57 (243)	7.44 (189)	7.32 (186)	337 (153)
LHYM20-4A145Y-EP	20 x 4 (15 x 4)	35.62 (905)	ø12.49 (ø317)	10.26 (261)	7.01 (178)	373 (170)	40.91 (1039)	ø12.61 (ø320)	10.26 (261)	12.30 (313)	9.53 (242)	-	459 (209)
LHYM05-4B125Y	1/2 x 4 (0.4 x 4)	24.05 (611)	ø4.88 (ø124)	4.63 (118)	2.32 (59)	204 (93)	25.31 (643)	ø4.88 (ø124)	4.63 (118)	3.58 (91)	2.40 (61)	-	207 (94)
LHYM05-4B125Y-AV	1/2 x 4 (0.4 x 4)	25.46 (647)	ø5.94 (ø151)	5.67 (144)	3.82 (97)	211 (96)	27.16 (690)	ø5.94 (ø151)	5.67 (144)	5.51 (140)	3.66 (93)	3.94 (100)	217 (99)
LHYM08-4B125Y	3/4 x 4 (0.55 x 4)	25.46 (647)	ø5.94 (ø151)	5.67 (144)	3.82 (97)	208 (95)	27.16 (690)	ø5.94 (ø151)	5.67 (144)	5.51 (140)	3.66 (93)	3.94 (100)	214 (97)
LHYM08-4B125Y-AV	3/4 x 4 (0.55 x 4)	26.76 (680)	ø6.30 (ø160)	5.86 (149)	3.94 (100)	217 (99)	29.20 (742)	ø6.30 (ø160)	5.86 (149)	6.38 (162)	4.53 (115)	4.29 (109)	227 (103)
LHYM1-4B125Y-EP	1 x 4 (0.75 x 4)	27.20 (691)	6.22 (158)	5.98 (152)	3.82 (97)	222 (101)	29.70 (754)	6.22 (158)	5.98 (152)	6.32 (161)	4.80 (122)	4.25 (108)	231 (105)
LHYM1H-4B125Y-EP	1.5 x 4 (1.1 x 4)	28.26 (718)	6.57 (167)	6.16 (156)	3.82 (97)	228 (104)	31.00 (787)	6.57 (167)	6.16 (156)	6.56 (167)	5.04 (128)	4.61 (117)	240 (109)
LHYM2-4B125Y-EP	2 x 4 (1.5 x 4)	28.26 (718)	6.57 (167)	6.16 (156)	3.82 (97)	231 (105)	31.00 (787)	6.57 (167)	6.16 (156)	6.56 (167)	5.04 (128)	4.61 (117)	243 (111)
LHYM3-4B125Y-EP	3 x 4 (2.2 x 4)	27.67 (703)	7.24 (184)	6.71 (170)	4.53 (115)	245 (111)	30.74 (781)	7.24 (184)	6.71 (170)	7.60 (193)	5.43 (138)	5.04 (128)	261 (119)
LHYM5-4B125Y-EP	5 x 4 (3.7 x 4)	29.13 (740)	8.74 (222)	7.34 (186)	4.65 (118)	270 (123)	32.69 (830)	8.74 (222)	7.34 (186)	8.21 (209)	6.02 (153)	6.30 (160)	294 (134)
LHYM8-4B125Y-EP	7.5 x 4 (5.5 x 4)	30.82 (783)	8.74 (222)	7.34 (186)	4.65 (118)	304 (138)	34.38 (873)	8.74 (222)	7.34 (186)	8.21 (209)	6.02 (153)	6.30 (160)	328 (149)
LHYM1-4B145Y-EP	1 x 4 (0.75 x 4)	27.89 (708)	6.22 (158)	5.98 (152)	3.82 (97)	241 (109)	30.39 (772)	6.22 (158)	5.98 (152)	6.32 (161)	4.80 (122)	4.25 (108)	250 (114)
LHYM1H-4B145Y-EP	1.5 x 4 (1.1 x 4)	28.95 (735)	6.57 (167)	6.16 (156)	3.82 (97)	247 (112)	31.69 (805)	6.57 (167)	6.16 (156)	6.56 (167)	5.04 (128)	4.61 (117)	259 (118)
LHYM2-4B145Y-EP	2 x 4 (1.5 x 4)	28.95 (735)	6.57 (167)	6.16 (156)	3.82 (97)	250 (114)	31.69 (805)	6.57 (167)	6.16 (156)	6.56 (167)	5.04 (128)	4.61 (117)	262 (119)
LHYM3-4B145Y-EP	3 x 4 (2.2 x 4)	28.36 (720)	7.24 (184)	6.71 (170)	4.53 (115)	262 (119)	31.43 (798)	7.24 (184)	6.71 (170)	7.60 (193)	5.43 (138)	5.04 (128)	279 (127)
LHYM5-4B145Y-EP	5 x 4 (3.7 x 4)	29.62 (752)	8.74 (222)	7.34 (186)	4.65 (118)	286 (130)	33.18 (843)	8.74 (222)	7.34 (186)	8.21 (209)	6.02 (153)	6.30 (160)	310 (141)
LHYM8-4B145Y-EP	7.5 x 4 (5.5 x 4)	31.31 (795)	8.74 (222)	7.34 (186)	4.65 (118)	320 (146)	34.88 (886)	8.74 (222)	7.34 (186)	8.21 (209)	6.02 (153)	6.30 (160)	344 (156)
LHYM10-4B145Y-EP	10 x 4 (7.5 x 4)	32.81 (833)	10.24 (260)	9.04 (230)	5.43 (138)	347 (158)	36.94 (938)	10.24 (260)	9.04 (230)	9.57 (243)	7.44 (189)	7.32 (186)	391 (178)
LHYM15-4B145Y-EP	15 x 4 (11 x 4)	35.25 (895)	10.24 (260)	9.04 (230)	5.43 (138)	360 (163)	39.38 (1000)	10.24 (260)	9.04 (230)	9.57 (243)	7.44 (189)	7.32 (186)	404 (184)

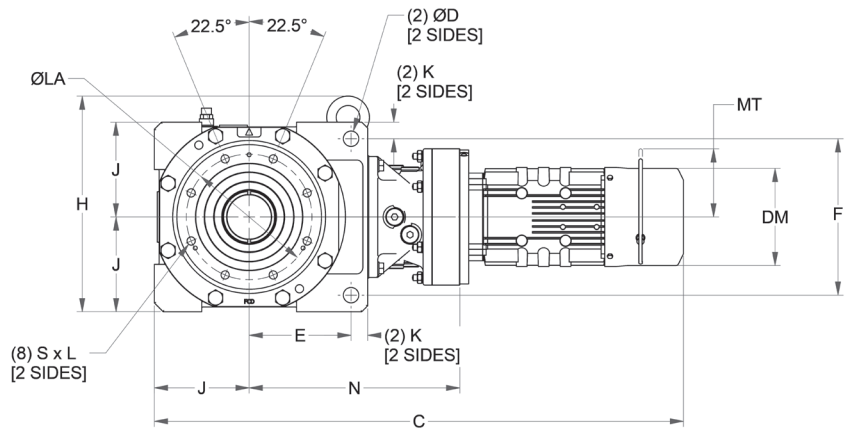
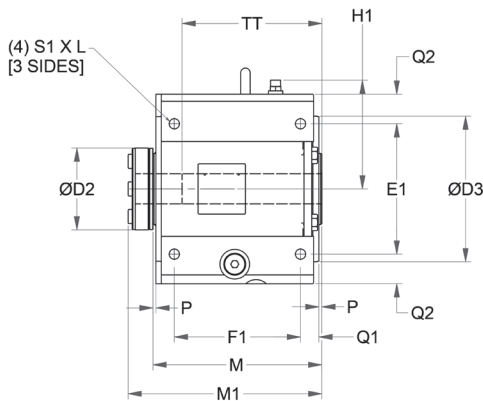
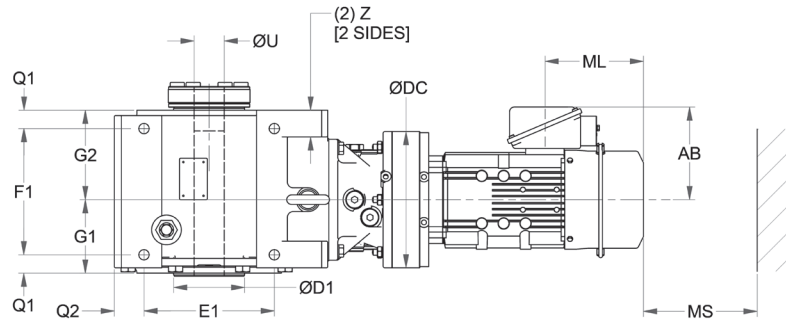
Notes [1]: DM Dimension Symbol ø = Round Fan Cover
DM Dimension Symbol = Square Fan Cover

LXXX-4XX0/4XX5 Frame sizes have equal dimensions, different ratings.

Dimensions

Single Reduction Cyclo® LHYM-4B140Y~4C165Y

Minimum Engagement		
Frame Size	TT	
	inch	(mm)
4B	9.53	(242)
4C	10.98	(279)



All dimensions are in inches (mm).
For units ordered in the Y2 mounting configuration, please refer to page 2.115 for external lubricant piping dimensions.

Model	N	ØDC	J	E	F	K	Z	ØD	E1	F1	Q1	Q2	S1 x L
4B140, 4B145	11.69 (297)	9.06 (230)	5.12 (130)	5.59 (142)	8.43 (214)	0.91 (23)	1.58 (40)	0.87 (22)	7.48 (190)	7.68 (195)	1.06 (27)	1.38 (35)	M16 x 1.02 (M16 x 26)
4B160, 4B165	12.83 (326)	11.8 (300)											
4C140, 4C145	14.0 (356)	9.06 (230)	6.30 (160)	6.77 (172)	10.4 (264)	1.1 (28)	1.8 (45)	1.0 (26)	8.66 (220)	8.39 (213)	1.2 (31)	2.0 (50)	M20 x 1.30 (M20 x 33)
4C160, 4C165	14.8 (377)	11.8 (300)											

Model	M	P	G1	G2	H	H1	ØLA	ØD3	S x L	M1	ØD1	ØD2	ØU	
													Std & Max	Min
4B140, 4B145	10.20 (259)	0.20 (5)	4.80 (122)	5.00 (127)	12.13 (308)	5.94 (151)	6.89 (175)	7.83 (199)	M12 x 0.79 (M12 x 20)	11.54 (293)	3.94 (100)	4.49 (114)	2-7/16 (61.91)	1-15/16 (49.21)
4B160, 4B165														
4C140, 4C145	11.2 (285)	0.2 (5)	4.88 (124)	5.94 (151)	14.33 (364)	7.20 (183)	8.35 (212)	9.61 (244)	M16 x 1.02 (M16 x 26)	12.83 (326)	4.72 (120)	5.43 (138)	2-15/16 (74.61)	2-3/16 (55.56)
4C160, 4C165														

Cyclo® BBB4
Dimensions

LHYM15-4B145Y-EP ▶ LHYM30-4C165Y-EP

All dimensions are in inches (mm)

Model	4 Pole Motor HP (kW)	Without Brake					With Brake						
		C	DM ^[1]	AB	ML	Weight lb (kg)	C	DM ^[1]	AB	ML	MS	MT	Weight lb (kg)
LHYM20-4B145Y-EP	20 x 4 (15 x 4)	37.69 (957)	ø12.49 (ø317)	10.26 (261)	7.01 (178)	440 (200)	42.99 (1092)	ø12.61 (ø320)	10.26 (261)	12.30 (313)	9.53 (242)	-	526 (239)
LHYM10-4B165Y-EP	10 x 4 (7.5 x 4)	34.10 (866)	10.24 (260)	9.04 (230)	5.43 (138)	394 (179)	38.24 (971)	10.24 (260)	9.04 (230)	9.57 (243)	7.44 (189)	7.32 (186)	438 (199)
LHYM15-4B165Y-EP	15 x 4 (11 x 4)	36.54 (928)	10.24 (260)	9.04 (230)	5.43 (138)	407 (185)	40.68 (1033)	10.24 (260)	9.04 (230)	9.57 (243)	7.44 (189)	7.32 (186)	451 (205)
LHYM20-4B165Y-EP	20 x 4 (15 x 4)	38.83 (986)	ø12.49 (ø317)	10.26 (261)	7.01 (178)	490 (222)	44.12 (1121)	ø12.61 (ø320)	10.26 (261)	12.30 (313)	9.53 (242)	-	576 (261)
LHYM25-4B165Y-EP	25 x 4 (18.5 x 4)	43.00 (1092)	ø15.12 (ø384)	13.39 (340)	9.06 (230)	768 (348)	49.85 (1266)	ø15.28 (ø388)	13.39 (340)	15.91 (404)	12.13 (308)	-	865 (392)
LHYM30-4B165Y-EP	30 x 4 (22 x 4)	43.00 (1092)	ø15.12 (ø384)	13.39 (340)	9.06 (230)	768 (348)	49.85 (1266)	ø15.28 (ø388)	13.39 (340)	15.91 (404)	12.13 (308)	-	865 (392)
LHYM1-4C145Y-EP	1 x 4 (0.75 x 4)	31.36 (797)	6.22 (158)	5.98 (152)	3.82 (97)	347 (158)	33.86 (860)	6.22 (158)	5.98 (152)	6.32 (161)	4.80 (122)	4.25 (108)	357 (162)
LHYM1H-4C145Y-EP	1.5 x 4 (1.1 x 4)	32.42 (824)	6.57 (167)	6.16 (156)	3.82 (97)	354 (161)	35.16 (893)	6.57 (167)	6.16 (156)	6.56 (167)	5.04 (128)	4.61 (117)	366 (166)
LHYM2-4C145Y-EP	2 x 4 (1.5 x 4)	32.42 (824)	6.57 (167)	6.16 (156)	3.82 (97)	357 (162)	35.16 (893)	6.57 (167)	6.16 (156)	6.56 (167)	5.04 (128)	4.61 (117)	369 (168)
LHYM3-4C145Y-EP	3 x 4 (2.2 x 4)	31.83 (809)	7.24 (184)	6.71 (170)	4.53 (115)	369 (168)	34.90 (887)	7.24 (184)	6.71 (170)	7.60 (193)	5.43 (138)	5.04 (128)	386 (175)
LHYM5-4C145Y-EP	5 x 4 (3.7 x 4)	33.09 (841)	8.74 (222)	7.34 (186)	4.65 (118)	393 (179)	36.66 (931)	8.74 (222)	7.34 (186)	8.21 (209)	6.02 (153)	6.30 (160)	417 (189)
LHYM8-4C145Y-EP	7.5 x 4 (5.5 x 4)	34.79 (884)	8.74 (222)	7.34 (186)	4.65 (118)	427 (194)	38.35 (974)	8.74 (222)	7.34 (186)	8.21 (209)	6.02 (153)	6.30 (160)	451 (205)
LHYM10-4C145Y-EP	10 x 4 (7.5 x 4)	36.28 (922)	10.24 (260)	9.04 (230)	5.43 (138)	454 (206)	40.42 (1027)	10.24 (260)	9.04 (230)	9.57 (243)	7.44 (189)	7.32 (186)	498 (226)
LHYM15-4C145Y-EP	15 x 4 (11 x 4)	38.72 (984)	10.24 (260)	9.04 (230)	5.43 (138)	467 (212)	42.86 (1089)	10.24 (260)	9.04 (230)	9.57 (243)	7.44 (189)	7.32 (186)	511 (232)
LHYM20-4C145Y-EP	20 x 4 (15 x 4)	41.16 (1046)	ø12.49 (ø317)	10.26 (261)	7.01 (178)	547 (248)	46.46 (1180)	ø12.61 (ø320)	10.26 (261)	12.30 (313)	9.53 (242)	-	633 (287)
LHYM1H-4C165Y-EP	1.5 x 4 (1.1 x 4)	33.26 (845)	6.57 (167)	6.16 (156)	3.82 (97)	399 (181)	36.00 (914)	6.57 (167)	6.16 (156)	6.56 (167)	5.04 (128)	4.61 (117)	411 (187)
LHYM2-4C165Y-EP	2 x 4 (1.5 x 4)	33.26 (845)	6.57 (167)	6.16 (156)	3.82 (97)	402 (183)	36.00 (914)	6.57 (167)	6.16 (156)	6.56 (167)	5.04 (128)	4.61 (117)	414 (188)
LHYM3-4C165Y-EP	3 x 4 (2.2 x 4)	32.67 (830)	7.24 (184)	6.71 (170)	4.53 (115)	412 (187)	35.74 (908)	7.24 (184)	6.71 (170)	7.60 (193)	5.43 (138)	5.04 (128)	429 (195)
LHYM5-4C165Y-EP	5 x 4 (3.7 x 4)	34.13 (867)	8.74 (222)	7.34 (186)	4.65 (118)	437 (198)	37.69 (957)	8.74 (222)	7.34 (186)	8.21 (209)	6.02 (153)	6.30 (160)	461 (209)
LHYM8-4C165Y-EP	7.5 x 4 (5.5 x 4)	35.82 (910)	8.74 (222)	7.34 (186)	4.65 (118)	471 (214)	39.39 (1000)	8.74 (222)	7.34 (186)	8.21 (209)	6.02 (153)	6.30 (160)	495 (225)
LHYM10-4C165Y-EP	10 x 4 (7.5 x 4)	37.28 (947)	10.24 (260)	9.04 (230)	5.43 (138)	499 (227)	41.41 (1052)	10.24 (260)	9.04 (230)	9.57 (243)	7.44 (189)	7.32 (186)	543 (247)
LHYM15-4C165Y-EP	15 x 4 (11 x 4)	39.72 (1009)	10.24 (260)	9.04 (230)	5.43 (138)	511 (232)	43.85 (1114)	10.24 (260)	9.04 (230)	9.57 (243)	7.44 (189)	7.32 (186)	555 (252)
LHYM20-4C165Y-EP	20 x 4 (15 x 4)	42.00 (1067)	ø12.49 (ø317)	10.26 (261)	7.01 (178)	595 (270)	47.30 (1201)	ø12.61 (ø320)	10.26 (261)	12.30 (313)	9.53 (242)	-	681 (309)
LHYM25-4C165Y-EP	25 x 4 (18.5 x 4)	46.18 (1173)	ø15.12 (ø384)	13.39 (340)	9.06 (230)	872 (396)	53.03 (1347)	ø15.28 (ø388)	13.39 (340)	15.91 (404)	12.13 (308)	-	969 (440)
LHYM30-4C165Y-EP	30 x 4 (22 x 4)	46.18 (1173)	ø15.12 (ø384)	13.39 (340)	9.06 (230)	872 (396)	53.03 (1347)	ø15.28 (ø388)	13.39 (340)	15.91 (404)	12.13 (308)	-	969 (440)
LHYM15-4C175Y-EP	15 x 4 (11 x 4)	39.93 (1014)	10.24 (260)	9.04 (230)	5.43 (138)	567 (257)	44.06 (1119)	10.24 (260)	9.04 (230)	9.57 (243)	7.44 (189)	7.32 (186)	611 (277)

Cyclo® BBB4

Dimensions

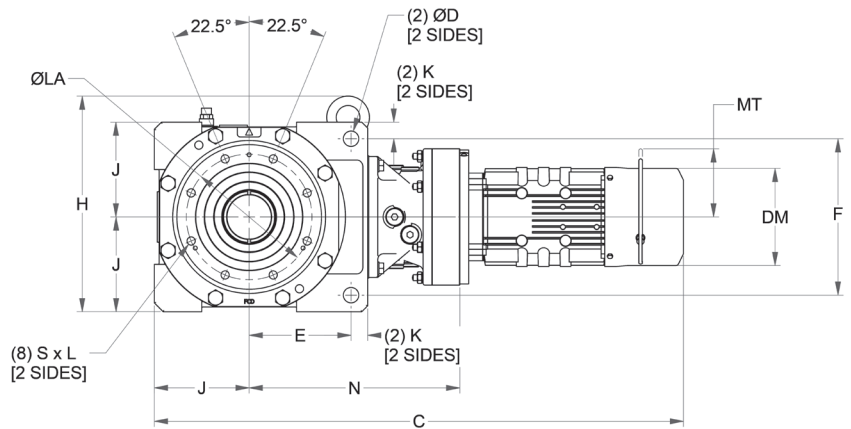
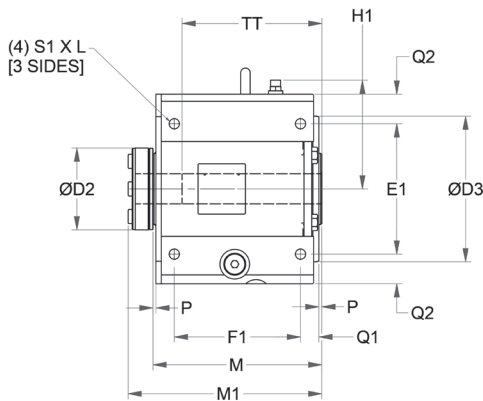
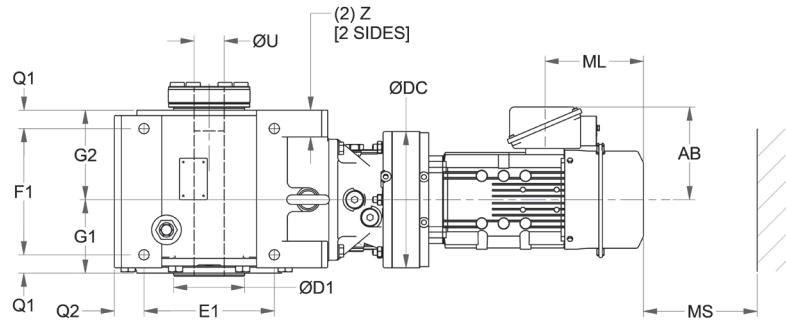
Notes [1]: DM Dimension Symbol ø = Round Fan Cover
DM Dimension Symbol = Square Fan Cover

LXXX-4XX0/4XX5 Frame sizes have equal dimensions, different ratings.

Dimensions

Single Reduction Cyclo® LHYM-4C170Y~4D185Y

Minimum Engagement		
Frame Size	TT	
	inch	(mm)
4C	10.98	(279)
4D	12.83	(326)



Cyclo® BBB4
Dimensions

All dimensions are in inches (mm).
For units ordered in the Y2 mounting configuration, please refer to page 2.115 for external lubricant piping dimensions.

Model	N	ØDC	J	E	F	K	Z	ØD	E1	F1	Q1	Q2	S1 x L
4C170, 4C175	15.5 (393)	13.4 (340)	6.30 (160)	6.77 (172)	10.4 (264)	1.1 (28)	1.8 (45)	1.0 (26)	8.66 (220)	8.39 (213)	1.2 (31)	2.0 (50)	M20 x 1.30 (M20 x 33)
4D170, 4D175	17.4 (443)	13.4 (340)	7.48 (190)	7.60 (193)	12.2 (310)	1.4 (35)	2.2 (55)	1.3 (33)	9.84 (250)	10.0 (254)	1.4 (36)	2.6 (65)	M24 x 1.57 (M24 x 40)
4D180, 4D185	17.6 (446)	14.6 (370)											

Model	M	P	G1	G2	H	H1	ØLA	ØD3	S x L	M1	ØD1	ØD2	ØU	
													Std & Max	Min
4C170, 4C175	11.2 (285)	0.2 (5)	4.88 (124)	5.94 (151)	14.33 (364)	7.20 (183)	8.35 (212)	9.61 (244)	M16 x 1.02 (M16 x 26)	12.83 (326)	4.72 (120)	5.43 (138)	2-15/16 (74.61)	2-3/16 (55.56)
4D170, 4D175 4D180, 4D185	13.4 (340)	0.3 (7)	5.83 (148)	7.01 (178)	16.7 (424)	8.39 (213)	10.0 (255)	11.6 (295)	M20 x 1.30 (M20 x 33)	15.0 (381)	5.51 (140)	5.98 (152)	3-7/16 (87.31)	2-7/16 (61.91)

LHYM15-4C175Y-EP ▶ LHYM15-4D185Y-EP

All dimensions are in inches (mm)

Model	4 Pole Motor HP (kW)	Without Brake					With Brake						
		C	DM ^[1]	AB	ML	Weight lb (kg)	C	DM ^[1]	AB	ML	MS	MT	Weight lb (kg)
LHYM20-4C175Y-EP	20 x 4 (15 x 4)	42.65 (1083)	ø12.49 (ø317)	10.26 (261)	7.01 (178)	647 (294)	47.94 (1218)	ø12.61 (ø320)	10.26 (261)	12.30 (313)	9.53 (242)	-	733 (333)
LHYM25-4C175Y-EP	25 x 4 (18.5 x 4)	46.82 (1189)	ø15.12 (ø384)	13.39 (340)	9.06 (230)	927 (421)	53.67 (1363)	ø15.28 (ø388)	13.39 (340)	15.91 (404)	12.13 (308)	-	1024 (465)
LHYM30-4C175Y-EP	30 x 4 (22 x 4)	46.82 (1189)	ø15.12 (ø384)	13.39 (340)	9.06 (230)	927 (421)	53.67 (1363)	ø15.28 (ø388)	13.39 (340)	15.91 (404)	12.13 (308)	-	1024 (465)
LHYM40-4C175Y-EP	40 x 4 (30 x 4)	51.70 (1313)	ø15.12 (ø384)	13.39 (340)	9.06 (230)	1040 (472)	58.55 (1487)	ø15.28 (ø388)	13.39 (340)	15.91 (404)	12.13 (308)	-	1137 (516)
LHYM2-4D165Y-EP	2 x 4 (1.5 x 4)	35.77 (909)	6.57 (167)	6.16 (156)	3.82 (97)	487 (221)	38.51 (978)	6.57 (167)	6.16 (156)	6.56 (167)	5.04 (128)	4.61 (117)	499 (226)
LHYM3-4D165Y-EP	3 x 4 (2.2 x 4)	35.52 (902)	7.24 (184)	6.71 (170)	4.53 (115)	487 (221)	38.59 (980)	7.24 (184)	6.71 (170)	7.60 (193)	5.43 (138)	5.04 (128)	504 (229)
LHYM5-4D165Y-EP	5 x 4 (3.7 x 4)	36.38 (924)	8.74 (222)	7.34 (186)	4.65 (118)	487 (221)	39.95 (1015)	8.74 (222)	7.34 (186)	8.21 (209)	6.02 (153)	6.30 (160)	511 (232)
LHYM8-4D165Y-EP	7.5 x 4 (5.5 x 4)	38.08 (967)	8.74 (222)	7.34 (186)	4.65 (118)	487 (221)	41.64 (1058)	8.74 (222)	7.34 (186)	8.21 (209)	6.02 (153)	6.30 (160)	511 (232)
LHYM10-4D165Y-EP	10 x 4 (7.5 x 4)	38.43 (976)	10.24 (260)	9.04 (230)	5.43 (138)	490 (222)	42.56 (1081)	10.24 (260)	9.04 (230)	9.57 (243)	7.44 (189)	7.32 (186)	534 (243)
LHYM15-4D165Y-EP	15 x 4 (11 x 4)	40.87 (1038)	10.24 (260)	9.04 (230)	5.43 (138)	490 (222)	45.01 (1143)	10.24 (260)	9.04 (230)	9.57 (243)	7.44 (189)	7.32 (186)	534 (242)
LHYM20-4D165Y-EP	20 x 4 (15 x 4)	42.49 (1079)	ø12.49 (ø317)	10.26 (261)	7.01 (178)	490 (222)	47.78 (1214)	ø12.61 (ø320)	10.26 (261)	12.30 (313)	9.53 (242)	-	576 (261)
LHYM25-4D165Y-EP	25 x 4 (18.5 x 4)	45.28 (1150)	ø15.12 (ø384)	13.39 (340)	9.06 (230)	506 (230)	52.13 (1324)	ø15.28 (ø388)	13.39 (340)	15.91 (404)	12.13 (308)	-	603 (274)
LHYM30-4D165Y-EP	30 x 4 (22 x 4)	45.28 (1150)	ø15.12 (ø384)	13.39 (340)	9.06 (230)	506 (230)	52.13 (1324)	ø15.28 (ø388)	13.39 (340)	15.91 (404)	12.13 (308)	-	603 (274)
LHYM5-4D175Y-EP	5 x 4 (3.7 x 4)	36.14 (918)	8.74 (222)	7.34 (186)	4.65 (118)	524 (238)	39.70 (1008)	8.74 (222)	7.34 (186)	8.21 (209)	6.02 (153)	6.30 (160)	547 (249)
LHYM8-4D175Y-EP	7.5 x 4 (5.5 x 4)	37.83 (961)	8.74 (222)	7.34 (186)	4.65 (118)	524 (238)	41.39 (1051)	8.74 (222)	7.34 (186)	8.21 (209)	6.02 (153)	6.30 (160)	547 (249)
LHYM10-4D175Y-EP	10 x 4 (7.5 x 4)	38.18 (970)	10.24 (260)	9.04 (230)	5.43 (138)	526 (239)	42.32 (1075)	10.24 (260)	9.04 (230)	9.57 (243)	7.44 (189)	7.32 (186)	571 (259)
LHYM15-4D175Y-EP	15 x 4 (11 x 4)	40.62 (1032)	10.24 (260)	9.04 (230)	5.43 (138)	526 (239)	44.76 (1137)	10.24 (260)	9.04 (230)	9.57 (243)	7.44 (189)	7.32 (186)	570 (259)
LHYM20-4D175Y-EP	20 x 4 (15 x 4)	42.24 (1073)	ø12.49 (ø317)	10.26 (261)	7.01 (178)	526 (239)	47.53 (1207)	ø12.61 (ø320)	10.26 (261)	12.30 (313)	9.53 (242)	-	612 (278)
LHYM25-4D175Y-EP	25 x 4 (18.5 x 4)	45.03 (1144)	ø15.12 (ø384)	13.39 (340)	9.06 (230)	542 (246)	51.88 (1318)	ø15.28 (ø388)	13.39 (340)	15.91 (404)	12.13 (308)	-	639 (290)
LHYM30-4D175Y-EP	30 x 4 (22 x 4)	45.03 (1144)	ø15.12 (ø384)	13.39 (340)	9.06 (230)	542 (246)	51.88 (1318)	ø15.28 (ø388)	13.39 (340)	15.91 (404)	12.13 (308)	-	639 (290)
LHYM40-4D175Y-EP	40 x 4 (30 x 4)	49.92 (1268)	ø15.12 (ø384)	13.39 (340)	9.06 (230)	542 (246)	56.77 (1442)	ø15.28 (ø388)	13.39 (340)	15.91 (404)	12.13 (308)	-	639 (290)
LHYM5-4D185Y-EP	5 x 4 (3.7 x 4)	36.26 (921)	8.74 (222)	7.34 (186)	4.65 (118)	537 (244)	39.82 (1012)	8.74 (222)	7.34 (186)	8.21 (209)	6.02 (153)	6.30 (160)	561 (255)
LHYM8-4D185Y-EP	7.5 x 4 (5.5 x 4)	37.95 (964)	8.74 (222)	7.34 (186)	4.65 (118)	537 (244)	41.52 (1055)	8.74 (222)	7.34 (186)	8.21 (209)	6.02 (153)	6.30 (160)	561 (255)
LHYM10-4D185Y-EP	10 x 4 (7.5 x 4)	38.31 (973)	10.24 (260)	9.04 (230)	5.43 (138)	540 (245)	42.44 (1078)	10.24 (260)	9.04 (230)	9.57 (243)	7.44 (189)	7.32 (186)	584 (265)
LHYM15-4D185Y-EP	15 x 4 (11 x 4)	40.75 (1035)	10.24 (260)	9.04 (230)	5.43 (138)	540 (245)	44.88 (1140)	10.24 (260)	9.04 (230)	9.57 (243)	7.44 (189)	7.32 (186)	584 (265)
LHYM20-4D185Y-EP	20 x 4 (15 x 4)	42.36 (1076)	ø12.49 (ø317)	10.26 (261)	7.01 (178)	540 (245)	47.66 (1211)	ø12.61 (ø320)	10.26 (261)	12.30 (313)	9.53 (242)	-	626 (284)
LHYM25-4D185Y-EP	25 x 4 (18.5 x 4)	45.16 (1147)	ø15.12 (ø384)	13.39 (340)	9.06 (230)	556 (252)	52.01 (1321)	ø15.28 (ø388)	13.39 (340)	15.91 (404)	12.13 (308)	-	653 (296)

Cyclo® BBB4

Dimensions

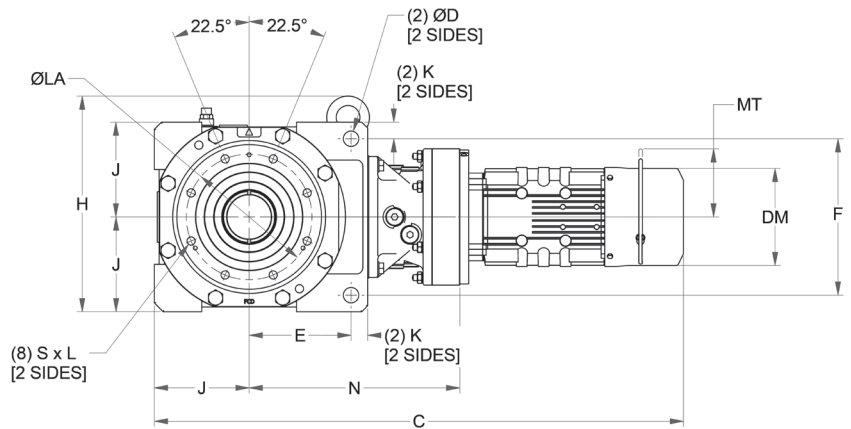
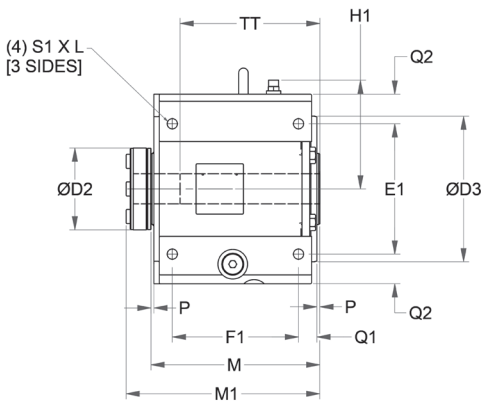
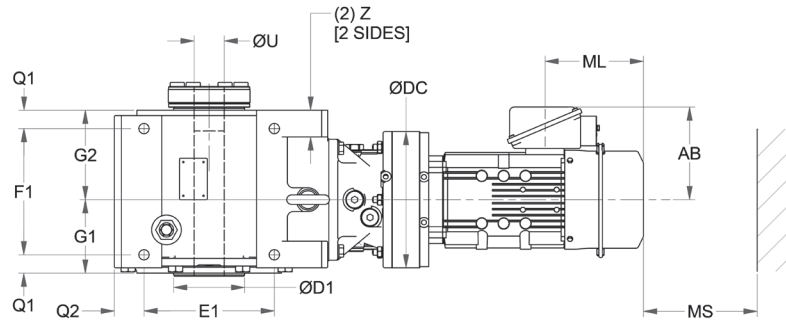
Notes [1]: DM Dimension Symbol ø = Round Fan Cover
DM Dimension Symbol = Square Fan Cover

LXXX-4XX0/4XX5 Frame sizes have equal dimensions, different ratings.

Dimensions

Single Reduction Cyclo® LHYM-4D180Y~4E195Y

Minimum Engagement		
Frame Size	TT	
	inch	(mm)
4D	12.83	(326)
4E	14.13	(359)



All dimensions are in inches (mm).
For units ordered in the Y2 mounting configuration, please refer to page 2.115 for external lubricant piping dimensions.

Model	N	ØDC	J	E	F	K	Z	ØD	E1	F1	Q1	Q2	S1 x L
4D180, 4D185	17.6 (446)	14.6 (370)	7.48 (190)	7.60 (193)	12.2 (310)	1.4 (35)	2.2 (55)	1.3 (33)	9.84 (250)	10.0 (254)	1.4 (36)	2.6 (65)	M24 x 1.57 (M24 x 40)
4E170, 4E175	17.6 (446)	14.6 (370)	8.46 (215)	9.06 (230)	14.2 (360)	1.4 (35)	2.2 (55)	1.3 (33)	11.8 (300)	11.1 (283)	1.5 (38)	2.6 (65)	M24 x 1.57 (M24 x 40)
4E180, 4E185	18.5 (471)	14.6 (370)											
4E190, 4E195	19.3 (490)	16.9 (430)											

Model	M	P	G1	G2	H	H1	ØLA	ØD3	S x L	M1	ØD1	ØD2	ØU	
													Std & Max	Min
4D180, 4D185	13.4 (340)	0.3 (7)	5.83 (148)	7.01 (178)	16.7 (424)	8.39 (213)	10.0 (255)	11.6 (295)	M20 x 1.30 (M20 x 33)	15.0 (381)	5.51 (140)	5.98 (152)	3-7/16 (87.31)	2-7/16 (61.91)
4E170, 4E175 4E180, 4E185 4E190, 4E195	14.7 (373)	0.3 (7)	6.14 (156)	7.99 (203)	19.6 (498)	9.37 (238)	11.0 (280)	12.6 (320)	M20 x 1.38 (M20 x 35)	16.3 (414)	6.30 (160)	6.69 (170)	3-15/16 (100)	2-15/16 (74.61)

LHYM20-4D185Y-EP ▶ LHYM25-4E195Y-EP

All dimensions are in inches (mm)

Model	4 Pole Motor HP (kW)	Without Brake					With Brake						
		C	DM ^[1]	AB	ML	Weight lb (kg)	C	DM ^[1]	AB	ML	MS	MT	Weight lb (kg)
LHYM30-4D185Y-EP	30 x 4 (22 x 4)	45.16 (1147)	ø15.12 (ø384)	13.39 (340)	9.06 (230)	556 (252)	52.01 (1321)	ø15.28 (ø388)	13.39 (340)	15.91 (404)	12.13 (308)	-	653 (296)
LHYM40-4D185Y-EP	40 x 4 (30 x 4)	50.04 (1271)	ø15.12 (ø384)	13.39 (340)	9.06 (230)	556 (252)	56.89 (1445)	ø15.28 (ø388)	13.39 (340)	15.91 (404)	12.13 (308)	-	653 (296)
LHYM50-4D185Y-EP	50 x 4 (37 x 4)	50.04 (1271)	ø15.12 (ø384)	13.39 (340)	9.06 (230)	556 (252)	-	-	-	-	-	-	-
LHYM5-4E175Y-EP	5 x 4 (3.7 x 4)	40.07 (1018)	8.74 (222)	7.34 (186)	4.65 (118)	796 (361)	43.64 (1108)	8.74 (222)	7.34 (186)	8.21 (209)	6.02 (153)	6.30 (160)	820 (372)
LHYM8-4E175Y-EP	7.5 x 4 (5.5 x 4)	41.77 (1061)	8.74 (222)	7.34 (186)	4.65 (118)	830 (377)	45.33 (1151)	8.74 (222)	7.34 (186)	8.21 (209)	6.02 (153)	6.30 (160)	854 (387)
LHYM10-4E175Y-EP	10 x 4 (7.5 x 4)	42.59 (1082)	10.24 (260)	9.04 (230)	5.43 (138)	859 (390)	46.73 (1187)	10.24 (260)	9.04 (230)	9.57 (243)	7.44 (189)	7.32 (186)	903 (410)
LHYM15-4E175Y-EP	15 x 4 (11 x 4)	45.03 (1144)	10.24 (260)	9.04 (230)	5.43 (138)	871 (395)	49.17 (1249)	10.24 (260)	9.04 (230)	9.57 (243)	7.44 (189)	7.32 (186)	916 (416)
LHYM20-4E175Y-EP	20 x 4 (15 x 4)	47.75 (1213)	ø12.49 (ø317)	10.26 (261)	7.01 (178)	952 (432)	53.05 (1347)	ø12.61 (ø320)	10.26 (261)	12.30 (313)	9.53 (242)	-	1038 (471)
LHYM25-4E175Y-EP	25 x 4 (18.5 x 4)	51.92 (1319)	ø15.12 (ø384)	13.39 (340)	9.06 (230)	1231 (559)	58.77 (1493)	ø15.28 (ø388)	13.39 (340)	15.91 (404)	12.13 (308)	-	1328 (603)
LHYM30-4E175Y-EP	30 x 4 (22 x 4)	51.92 (1319)	ø15.12 (ø384)	13.39 (340)	9.06 (230)	1231 (559)	58.77 (1493)	ø15.28 (ø388)	13.39 (340)	15.91 (404)	12.13 (308)	-	1328 (603)
LHYM40-4E175Y-EP	40 x 4 (30 x 4)	56.81 (1443)	ø15.12 (ø384)	13.39 (340)	9.06 (230)	1344 (610)	63.66 (1617)	ø15.28 (ø388)	13.39 (340)	15.91 (404)	12.13 (308)	-	1441 (654)
LHYM5-4E185Y-EP	5 x 4 (3.7 x 4)	40.20 (1021)	8.74 (222)	7.34 (186)	4.65 (118)	839 (381)	43.76 (1112)	8.74 (222)	7.34 (186)	8.21 (209)	6.02 (153)	6.30 (160)	863 (392)
LHYM8-4E185Y-EP	7.5 x 4 (5.5 x 4)	41.89 (1064)	8.74 (222)	7.34 (186)	4.65 (118)	873 (396)	45.45 (1155)	8.74 (222)	7.34 (186)	8.21 (209)	6.02 (153)	6.30 (160)	897 (407)
LHYM10-4E185Y-EP	10 x 4 (7.5 x 4)	42.83 (1088)	10.24 (260)	9.04 (230)	5.43 (138)	903 (410)	46.97 (1193)	10.24 (260)	9.04 (230)	9.57 (243)	7.44 (189)	7.32 (186)	948 (430)
LHYM15-4E185Y-EP	15 x 4 (11 x 4)	45.28 (1150)	10.24 (260)	9.04 (230)	5.43 (138)	916 (416)	49.41 (1255)	10.24 (260)	9.04 (230)	9.57 (243)	7.44 (189)	7.32 (186)	960 (436)
LHYM20-4E185Y-EP	20 x 4 (15 x 4)	47.87 (1216)	ø12.49 (ø317)	10.26 (261)	7.01 (178)	996 (452)	53.17 (1351)	ø12.61 (ø320)	10.26 (261)	12.30 (313)	9.53 (242)	-	1082 (491)
LHYM25-4E185Y-EP	25 x 4 (18.5 x 4)	52.05 (1322)	ø15.12 (ø384)	13.39 (340)	9.06 (230)	1273 (578)	58.90 (1496)	ø15.28 (ø388)	13.39 (340)	15.91 (404)	12.13 (308)	-	1370 (622)
LHYM30-4E185Y-EP	30 x 4 (22 x 4)	52.05 (1322)	ø15.12 (ø384)	13.39 (340)	9.06 (230)	1273 (578)	58.90 (1496)	ø15.28 (ø388)	13.39 (340)	15.91 (404)	12.13 (308)	-	1370 (622)
LHYM40-4E185Y-EP	40 x 4 (30 x 4)	56.93 (1446)	ø15.12 (ø384)	13.39 (340)	9.06 (230)	1386 (629)	63.78 (1620)	ø15.28 (ø388)	13.39 (340)	15.91 (404)	12.13 (308)	-	1483 (673)
LHYM50-4E185Y-EP	50 x 4 (37 x 4)	56.93 (1446)	ø15.12 (ø384)	13.39 (340)	9.06 (230)	1454 (660)	-	-	-	-	-	-	-
LHYM10-4E195Y-EP	10 x 4 (7.5 x 4)	43.46 (1104)	10.24 (260)	9.04 (230)	5.43 (138)	974 (442)	47.60 (1209)	10.24 (260)	9.04 (230)	9.57 (243)	7.44 (189)	7.32 (186)	1018 (462)
LHYM15-4E195Y-EP	15 x 4 (11 x 4)	45.91 (1166)	10.24 (260)	9.04 (230)	5.43 (138)	986 (448)	50.04 (1271)	10.24 (260)	9.04 (230)	9.57 (243)	7.44 (189)	7.32 (186)	1031 (468)
LHYM20-4E195Y-EP	20 x 4 (15 x 4)	48.62 (1235)	ø12.49 (ø317)	10.26 (261)	7.01 (178)	1065 (483)	53.92 (1370)	ø12.61 (ø320)	10.26 (261)	12.30 (313)	9.53 (242)	-	1151 (522)
LHYM25-4E195Y-EP	25 x 4 (18.5 x 4)	52.80 (1341)	ø15.12 (ø384)	13.39 (340)	9.06 (230)	1343 (609)	59.65 (1515)	ø15.28 (ø388)	13.39 (340)	15.91 (404)	12.13 (308)	-	1440 (653)
LHYM30-4E195Y-EP	30 x 4 (22 x 4)	52.80 (1341)	ø15.12 (ø384)	13.39 (340)	9.06 (230)	1343 (609)	59.65 (1515)	ø15.28 (ø388)	13.39 (340)	15.91 (404)	12.13 (308)	-	1440 (653)
LHYM40-4E195Y-EP	40 x 4 (30 x 4)	57.68 (1465)	ø15.12 (ø384)	13.39 (340)	9.06 (230)	1456 (661)	64.53 (1639)	ø15.28 (ø388)	13.39 (340)	15.91 (404)	12.13 (308)	-	1553 (705)
LHYM50-4E195Y-EP	50 x 4 (37 x 4)	57.68 (1465)	ø15.12 (ø384)	13.39 (340)	9.06 (230)	1524 (692)	-	-	-	-	-	-	-

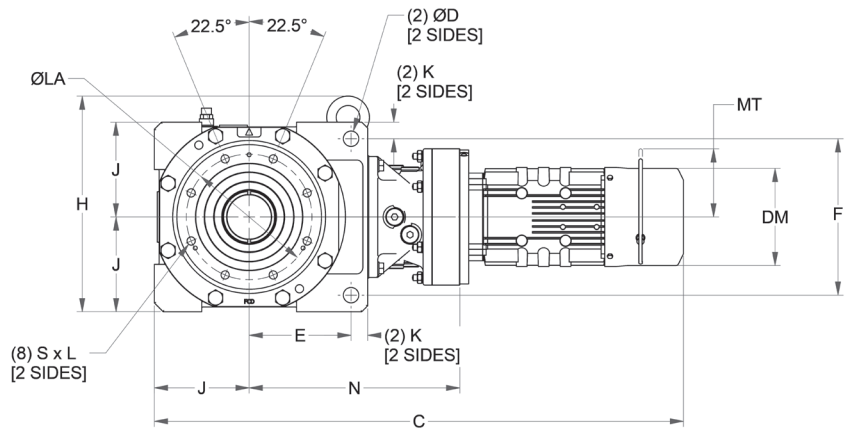
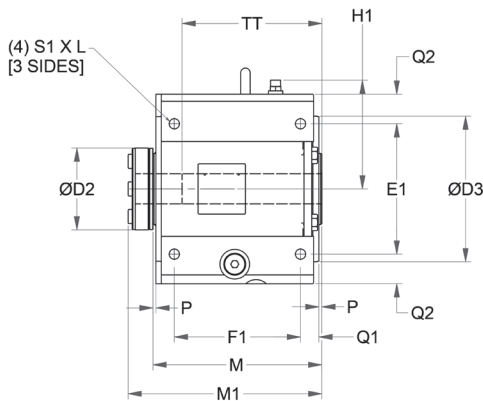
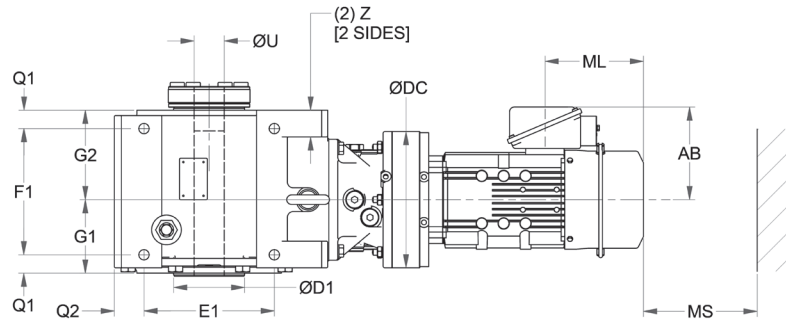
Notes [1]: DM Dimension Symbol ø = Round Fan Cover
DM Dimension Symbol = Square Fan Cover

LXXX-4XX0/4XX5 Frame sizes have equal dimensions, different ratings.

Dimensions

Single Reduction Cyclo® LHYM-4E190Y~4F195Y

Minimum Engagement		
Frame Size	TT	
	inch	(mm)
4E	14.13	(359)
4F	16.22	(412)



Cyclo® BBB4
Dimensions

All dimensions are in inches (mm).
For units ordered in the Y2 mounting configuration, please refer to page 2.115 for external lubricant piping dimensions.

Model	N	ØDC	J	E	F	K	Z	ØD	E1	F1	Q1	Q2	S1 x L
4E190, 4E195	19.3 (490)	16.9 (430)	8.46 (215)	9.06 (230)	14.2 (360)	1.4 (35)	2.2 (55)	1.3 (33)	11.8 (300)	11.1 (283)	1.5 (38)	2.6 (65)	M24 x 1.57 (M24 x 40)
4F180, 4F185	21.1 (535)	14.6 (370)	9.45 (240)	9.92 (252)	15.8 (400)	1.8 (45)	2.8 (70)	1.5 (39)	13.4 (340)	12.6 (320)	1.99 (50.5)	2.8 (70)	M30 x 1.97 (M30 x 50)
4F190, 4F195	21.7 (552)	16.9 (430)											

Model	M	P	G1	G2	H	H1	ØLA	ØD3	S x L	M1	ØD1	ØD2	ØU	
													Std & Max	Min
4E190, 4E195	14.7 (373)	0.3 (7)	6.14 (156)	7.99 (203)	19.6 (498)	9.37 (238)	11.0 (280)	12.6 (320)	M20 x 1.38 (M20 x 35)	16.3 (414)	6.30 (160)	6.69 (170)	3-15/16 (100)	2-15/16 (74.61)
4F180, 4F185 4F190, 4F195	17.1 (435)	0.3 (7)	9.37 (238)	7.20 (183)	23.2 (590)	10.8 (273)	12.6 (320)	14.6 (370)	M24 x 1.57 (M24 x 40)	19.1 (486)	7.09 (180)	7.32 (186)	4-15/16 (125.413)	3-15/16 (100.013)

LHYM30-4E195Y-EP ► LHYM60-4F195Y-EP

All dimensions are in inches (mm)

Model	4 Pole Motor HP (kW)	Without Brake					With Brake						
		C	DM ^[1]	AB	ML	Weight lb (kg)	C	DM ^[1]	AB	ML	MS	MT	Weight lb (kg)
LHYM60-4E195Y-EP	60 x 4 (45 x 4)	59.13 (1502)	ø18.66 (ø474)	16.33 (415)	16.81 (427)	1653 (750)	-	-	-	-	-	-	-
LHYM5-4F185Y-EP	5 x 4 (3.7 x 4)	43.68 (1109)	8.74 (222)	7.34 (186)	4.65 (118)	1273 (578)	47.24 (1200)	8.74 (222)	7.34 (186)	8.21 (209)	6.02 (153)	6.30 (160)	1297 (588)
LHYM8-4F185Y-EP	7.5 x 4 (5.5 x 4)	45.37 (1152)	8.74 (222)	7.34 (186)	4.65 (118)	1307 (593)	48.93 (1243)	8.74 (222)	7.34 (186)	8.21 (209)	6.02 (153)	6.30 (160)	1331 (604)
LHYM10-4F185Y-EP	10 x 4 (7.5 x 4)	46.31 (1176)	10.24 (260)	9.04 (230)	5.43 (138)	1337 (607)	50.45 (1281)	10.24 (260)	9.04 (230)	9.57 (243)	7.44 (189)	7.32 (186)	1381 (627)
LHYM15-4F185Y-EP	15 x 4 (11 x 4)	48.75 (1238)	10.24 (260)	9.04 (230)	5.43 (138)	1350 (613)	52.89 (1343)	10.24 (260)	9.04 (230)	9.57 (243)	7.44 (189)	7.32 (186)	1394 (633)
LHYM20-4F185Y-EP	20 x 4 (15 x 4)	51.35 (1304)	ø12.49 (ø317)	10.26 (261)	7.01 (178)	1430 (649)	56.65 (1439)	ø12.61 (ø320)	10.26 (261)	12.30 (313)	9.53 (242)	-	1516 (688)
LHYM25-4F185Y-EP	25 x 4 (18.5 x 4)	55.53 (1410)	ø15.12 (ø384)	13.39 (340)	9.06 (230)	1707 (774)	62.38 (1584)	ø15.28 (ø388)	13.39 (340)	15.91 (404)	12.13 (308)	-	1804 (818)
LHYM30-4F185Y-EP	30 x 4 (22 x 4)	55.53 (1410)	ø15.12 (ø384)	13.39 (340)	9.06 (230)	1707 (774)	62.38 (1584)	ø15.28 (ø388)	13.39 (340)	15.91 (404)	12.13 (308)	-	1804 (818)
LHYM40-4F185Y-EP	40 x 4 (30 x 4)	60.41 (1534)	ø15.12 (ø384)	13.39 (340)	9.06 (230)	1820 (826)	67.26 (1708)	ø15.28 (ø388)	13.39 (340)	15.91 (404)	12.13 (308)	-	1917 (870)
LHYM50-4F185Y-EP	50 x 4 (37 x 4)	60.41 (1534)	ø15.12 (ø384)	13.39 (340)	9.06 (230)	1888 (857)	-	-	-	-	-	-	-
LHYM5-4F195Y-EP	5 x 4 (3.7 x 4)	44.96 (1142)	8.74 (222)	7.34 (186)	4.65 (118)	1337 (607)	48.52 (1233)	8.74 (222)	7.34 (186)	8.21 (209)	6.02 (153)	6.30 (160)	1360 (617)
LHYM8-4F195Y-EP	7.5 x 4 (5.5 x 4)	46.65 (1185)	8.74 (222)	7.34 (186)	4.65 (118)	1370 (622)	50.22 (1276)	8.74 (222)	7.34 (186)	8.21 (209)	6.02 (153)	6.30 (160)	1394 (633)
LHYM10-4F195Y-EP	10 x 4 (7.5 x 4)	46.89 (1191)	10.24 (260)	9.04 (230)	5.43 (138)	1401 (636)	51.02 (1296)	10.24 (260)	9.04 (230)	9.57 (243)	7.44 (189)	7.32 (186)	1445 (656)
LHYM15-4F195Y-EP	15 x 4 (11 x 4)	49.33 (1253)	10.24 (260)	9.04 (230)	5.43 (138)	1414 (641)	53.46 (1358)	10.24 (260)	9.04 (230)	9.57 (243)	7.44 (189)	7.32 (186)	1458 (662)
LHYM20-4F195Y-EP	20 x 4 (15 x 4)	52.05 (1322)	ø12.49 (ø317)	10.26 (261)	7.01 (178)	1492 (677)	57.34 (1457)	ø12.61 (ø320)	10.26 (261)	12.30 (313)	9.53 (242)	-	1578 (716)
LHYM25-4F195Y-EP	25 x 4 (18.5 x 4)	56.22 (1428)	ø15.12 (ø384)	13.39 (340)	9.06 (230)	1770 (803)	63.07 (1602)	ø15.28 (ø388)	13.39 (340)	15.91 (404)	12.13 (308)	-	1867 (847)
LHYM30-4F195Y-EP	30 x 4 (22 x 4)	56.22 (1428)	ø15.12 (ø384)	13.39 (340)	9.06 (230)	1770 (803)	63.07 (1602)	ø15.28 (ø388)	13.39 (340)	15.91 (404)	12.13 (308)	-	1867 (847)
LHYM40-4F195Y-EP	40 x 4 (30 x 4)	61.10 (1552)	ø15.12 (ø384)	13.39 (340)	9.06 (230)	1883 (855)	67.95 (1726)	ø15.28 (ø388)	13.39 (340)	15.91 (404)	12.13 (308)	-	1980 (899)
LHYM50-4F195Y-EP	50 x 4 (37 x 4)	61.10 (1552)	ø15.12 (ø384)	13.39 (340)	9.06 (230)	1952 (886)	-	-	-	-	-	-	-
LHYM60-4F195Y-EP	60 x 4 (45 x 4)	62.56 (1589)	ø18.66 (ø474)	16.33 (415)	16.81 (427)	2080 (944)	-	-	-	-	-	-	-

Cyclo® BBB4

Dimensions

Sold & Serviced By:


ELECTROMATE

Toll Free Phone (877) SERV098

www.electromate.com

sales@electromate.com

Notes [1]: DM Dimension Symbol ø = Round Fan Cover
DM Dimension Symbol = Square Fan Cover

LXXX-4XX0/4XX5 Frame sizes have equal dimensions, different ratings.

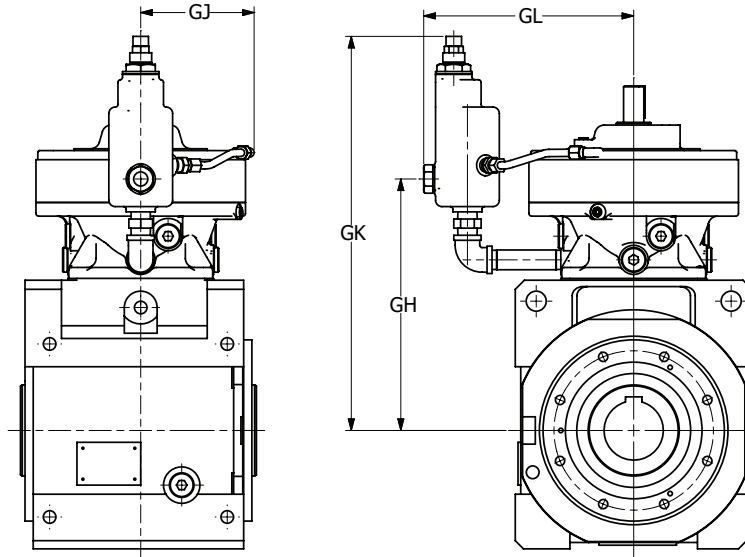
Sumitomo Drive Technologies Cyclo® BBB4

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

Gearmotors **2.143**

Dimensions

Single Reduction Cyclo[®], Y2 Mounting External Lubricant Piping LHY(J)-4A100 ~ 4F195



All dimensions are in inches (mm).

Frame Size	GJ	GL	GH	GK
4A100	3.86	5.98	8.66	13.3
4A105	(98)	(152)	(220)	(339)
4A110	4.02	6.85	8.98	13.7
4A115	(102)	(174)	(228)	(347)
4A120	6.38	7.99	8.90	14.3
4A125	(162)	(203)	(226)	(364)
4A140	6.46	9.09	9.61	15.8
4A145	(164)	(231)	(244)	(401)
4B120	6.38	7.99	10.4	15.8
4B125	(162)	(203)	(263)	(401)
4B140	6.46	9.09	10.9	17.0
4B145	(164)	(231)	(276)	(433)
4B160	7.09	10.3	11.5	17.7
4B165	(180)	(261)	(293)	(450)
4C140	6.46	9.09	13.1	19.3
4C145	(164)	(231)	(334)	(491)
4C160	7.09	10.3	13.5	19.7
4C165	(180)	(261)	(344)	(501)
4C170	7.95	11.4	14.1	22.2
4C175	(202)	(289)	(358)	(565)
4D160	7.09	10.3	16.4	22.6
4D165	(180)	(261)	(416)	(573)
4D170	7.95	11.4	16.1	24.2
4D175	(202)	(289)	(408)	(615)
4D180	9.06	12.4	16.2	27.0
4D185	(230)	(314)	(411)	(687)
4E170	7.95	11.4	17.0	25.2
4E175	(202)	(289)	(433)	(640)
4E180	9.06	12.4	17.2	27.7
4E185	(230)	(314)	(436)	(703)
4E190	10.2	14.0	17.7	28.2
4E195	(260)	(355)	(450)	(717)
4F180	9.06	12.4	19.6	30.2
4F185	(230)	(314)	(499)	(766)
4F190	10.2	14.0	20.2	30.7
4F195	(260)	(355)	(512)	(779)

Cyclo[®] BBB4

Dimensions

Dimensions

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Cyclo® BBB4

Dimensions

Sold & Serviced By:

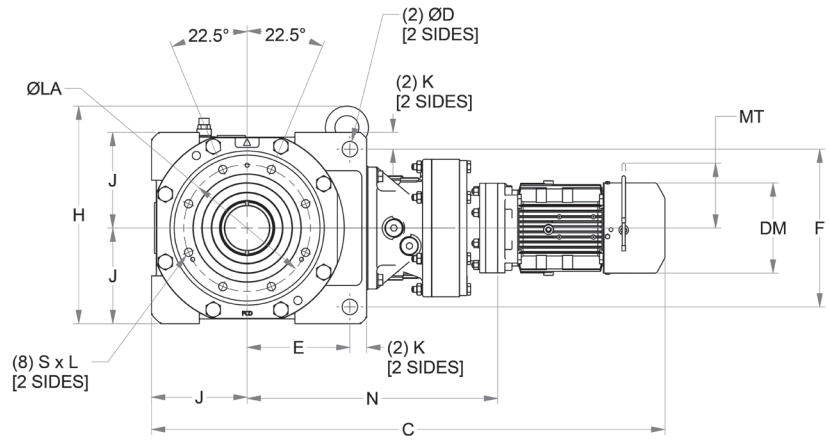
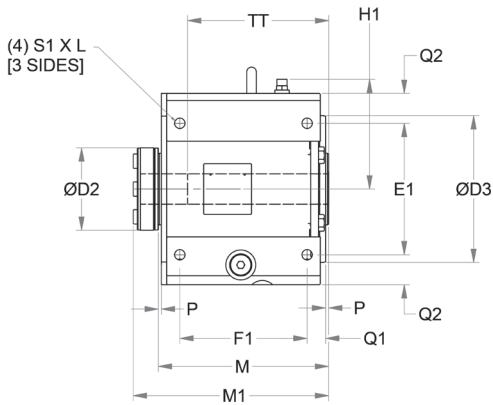
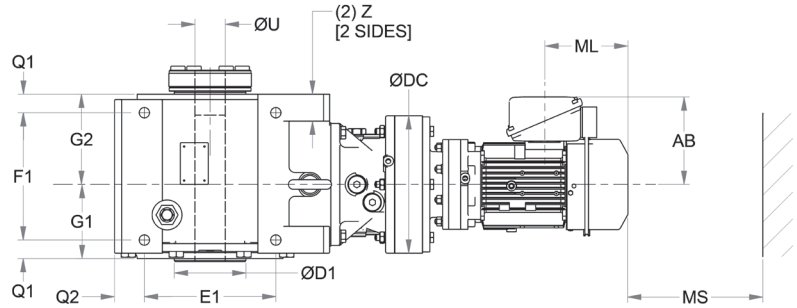


Toll Free Phone (877) SERV098
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Dimensions

Double Reduction Cyclo® LHYM-4A10DAY~4B12DAY

Minimum Engagement		
Frame Size	TT	
	inch	(mm)
4A	8.19	(300)
4B	9.53	(242)



Cyclo® BBB4
Dimensions

All dimensions are in inches (mm).
For double reduction units ordered in the Y2 mounting configuration, please refer to page 2.133 for external lubricant piping dimensions.

Model	N	ØDC	J	E	F	K	Z	ØD	E1	F1	Q1	Q2	S1 x L	M
4A10DA	11.2 (285)	5.91 (150)	4.33 (110)	4.49 (114)	7.24 (184)	0.71 (18)	1.38 (35)	0.71 (18)	5.91 (150)	6.30 (160)	0.91 (23)	1.38 (23)	M12 x 0.79 (M12 x 20)	8.50 (216)
4A12DA	11.7 (297)	8.03 (204)												
4A12DB	12.2 (309)	8.03 (204)												
4B12DA	13.2 (334)	8.03 (204)	5.12 (120)	5.59 (142)	8.43 (214)	0.91 (23)	1.58 (40)	0.87 (22)	7.48 (190)	7.68 (195)	1.06 (27)	1.38 (35)	M16 x 1.02 (M16 x 26)	10.20 (259)

Model	P	G1	G2	H	H1	ØLA	ØD3	S x L	M1	ØD1	ØD2	ØU	
												Std & Max	Min
4A10DB, 4A12DA, 4A12DB	0.20 (5)	3.78 (96)	4.33 (110)	10.87 (276)	5.16 (131)	6.10 (155)	6.89 (175)	M10 x 0.67 (M10 x 17)	9.84 (250)	3.35 (85)	4.09 (104)	2-3/16 (55.56)	1-11/16 (42.86)
4B12DA	0.20 (5)	4.80 (122)	5.00 (127)	12.1 (308)	5.94 (151)	6.89 (175)	7.83 (199)	M12 x 0.79 (M12 x 20)	11.5 (293)	3.94 (100)	4.49 (114)	2-7/16 (61.91)	1-15/16 (49.21)

LHYM01-4A10DAY ▶ LHYM05-4B12DAY

All dimensions are in inches (mm)

Model	4 Pole Motor HP (kW)	Without Brake					With Brake						
		C	DM ^[1]	AB	ML	Weight lb (kg)	C	DM ^[1]	AB	ML	MS	MT	Weight lb (kg)
LHYM01-4A10DAY	1/8 x 4 (0.1 x 4)	20.84 (529)	ø4.69 (ø119)	4.63 (118)	1.38 (35)	120 (55)	22.22 (564)	ø4.88 (ø124)	4.63 (118)	2.76 (70)	1.93 (49)	-	124 (56)
LHYM01-4A10DAY-AV	1/8 x 4 (0.1 x 4)	22.49 (571)	ø4.88 (ø124)	4.63 (118)	2.32 (59)	123 (56)	23.75 (603)	ø4.88 (ø124)	4.63 (118)	3.58 (91)	2.40 (61)	-	126 (57)
LHYM02-4A10DAY	1/4 x 4 (0.2 x 4)	22.49 (571)	ø4.88 (ø124)	4.63 (118)	2.32 (59)	123 (56)	23.75 (603)	ø4.88 (ø124)	4.63 (118)	3.58 (91)	2.40 (61)	-	126 (57)
LHYM02-4A10DAY-AV	1/4 x 4 (0.2 x 4)	23.28 (591)	ø4.88 (ø124)	4.63 (118)	2.32 (59)	126 (57)	24.54 (623)	ø4.88 (ø124)	4.63 (118)	3.58 (91)	2.40 (61)	-	129 (59)
LHYM03-4A10DAY	1/3 x 4 (0.25 x 4)	22.49 (571)	ø4.88 (ø124)	4.63 (118)	2.32 (59)	123 (56)	23.75 (603)	ø4.88 (ø124)	4.63 (118)	3.58 (91)	2.40 (61)	-	126 (57)
LHYM03-4A10DAY-AV	1/3 x 4 (0.25 x 4)	23.28 (591)	ø4.88 (ø124)	4.63 (118)	2.32 (59)	126 (57)	24.54 (623)	ø4.88 (ø124)	4.63 (118)	3.58 (91)	2.40 (61)	-	129 (59)
LHYM05-4A10DAY	1/2 x 4 (0.4 x 4)	23.28 (591)	ø4.88 (ø124)	4.63 (118)	2.32 (59)	126 (57)	24.54 (623)	ø4.88 (ø124)	4.63 (118)	3.58 (91)	2.40 (61)	-	129 (59)
LHYM01-4A12DAY	1/8 x 4 (0.1 x 4)	21.30 (541)	ø4.69 (ø119)	4.63 (118)	1.38 (35)	138 (63)	22.68 (576)	ø4.88 (ø124)	4.63 (118)	2.76 (70)	1.93 (49)	-	141 (64)
LHYM01-4A12DAY-AV	1/8 x 4 (0.1 x 4)	22.96 (583)	ø4.88 (ø124)	4.63 (118)	2.32 (59)	140 (64)	24.22 (615)	ø4.88 (ø124)	4.63 (118)	3.58 (91)	2.40 (61)	-	143 (65)
LHYM01-4A12DBY	1/8 x 4 (0.1 x 4)	21.76 (553)	ø4.69 (ø119)	4.63 (118)	1.38 (35)	143 (65)	23.13 (588)	ø4.88 (ø124)	4.63 (118)	2.76 (70)	1.93 (49)	-	146 (67)
LHYM01-4A12DBY-AV	1/8 x 4 (0.1 x 4)	23.41 (595)	ø4.88 (ø124)	4.63 (118)	2.32 (59)	145 (66)	24.67 (627)	ø4.88 (ø124)	4.63 (118)	3.58 (91)	2.40 (61)	-	148 (67)
LHYM02-4A12DBY	1/4 x 4 (0.2 x 4)	23.41 (595)	ø4.88 (ø124)	4.63 (118)	2.32 (59)	145 (66)	24.67 (627)	ø4.88 (ø124)	4.63 (118)	3.58 (91)	2.40 (61)	-	148 (67)
LHYM02-4A12DBY-AV	1/4 x 4 (0.2 x 4)	24.20 (615)	ø4.88 (ø124)	4.63 (118)	2.32 (59)	148 (67)	25.46 (647)	ø4.88 (ø124)	4.63 (118)	3.58 (91)	2.40 (61)	-	151 (69)
LHYM03-4A12DBY	1/3 x 4 (0.25 x 4)	23.41 (595)	ø4.88 (ø124)	4.63 (118)	2.32 (59)	145 (66)	24.67 (627)	ø4.88 (ø124)	4.63 (118)	3.58 (91)	2.40 (61)	-	148 (67)
LHYM03-4A12DBY-AV	1/3 x 4 (0.25 x 4)	24.20 (615)	ø4.88 (ø124)	4.63 (118)	2.32 (59)	148 (67)	25.46 (647)	ø4.88 (ø124)	4.63 (118)	3.58 (91)	2.40 (61)	-	151 (69)
LHYM05-4A12DBY	1/2 x 4 (0.4 x 4)	24.20 (615)	ø4.88 (ø124)	4.63 (118)	2.32 (59)	148 (67)	25.46 (647)	ø4.88 (ø124)	4.63 (118)	3.58 (91)	2.40 (61)	-	151 (69)
LHYM05-4A12DBY-AV	1/2 x 4 (0.4 x 4)	25.81 (656)	ø5.94 (ø151)	5.67 (144)	3.82 (97)	155 (71)	27.50 (699)	ø5.94 (ø151)	5.67 (144)	5.51 (140)	3.66 (93)	3.94 (100)	161 (73)
LHYM08-4A12DBY	3/4 x 4 (0.55 x 4)	25.81 (656)	ø5.94 (ø151)	5.67 (144)	3.82 (97)	153 (70)	27.50 (699)	ø5.94 (ø151)	5.67 (144)	5.51 (140)	3.66 (93)	3.94 (100)	159 (72)
LHYM08-4A12DBY-AV	3/4 x 4 (0.55 x 4)	27.11 (689)	ø6.30 (ø160)	5.86 (149)	3.94 (100)	164 (75)	29.55 (751)	ø6.30 (ø160)	5.86 (149)	6.38 (162)	4.53 (115)	4.29 (109)	174 (79)
LHYM01-4B12DAY	1/8 x 4 (0.1 x 4)	23.54 (598)	ø4.69 (ø119)	4.63 (118)	1.38 (35)	203 (92)	24.91 (633)	ø4.88 (ø124)	4.63 (118)	2.76 (70)	1.93 (49)	-	206 (94)
LHYM01-4B12DAY-AV	1/8 x 4 (0.1 x 4)	25.19 (640)	ø4.88 (ø124)	4.63 (118)	2.32 (59)	205 (93)	26.45 (672)	ø4.88 (ø124)	4.63 (118)	3.58 (91)	2.40 (61)	-	208 (95)
LHYM02-4B12DAY	1/4 x 4 (0.2 x 4)	25.19 (640)	ø4.88 (ø124)	4.63 (118)	2.32 (59)	205 (93)	26.45 (672)	ø4.88 (ø124)	4.63 (118)	3.58 (91)	2.40 (61)	-	208 (95)
LHYM02-4B12DAY-AV	1/4 x 4 (0.2 x 4)	25.98 (660)	ø4.88 (ø124)	4.63 (118)	2.32 (59)	208 (95)	27.24 (692)	ø4.88 (ø124)	4.63 (118)	3.58 (91)	2.40 (61)	-	211 (96)
LHYM03-4B12DAY	1/3 x 4 (0.25 x 4)	25.19 (640)	ø4.88 (ø124)	4.63 (118)	2.32 (59)	205 (93)	26.45 (672)	ø4.88 (ø124)	4.63 (118)	3.58 (91)	2.40 (61)	-	208 (95)
LHYM03-4B12DAY-AV	1/3 x 4 (0.25 x 4)	25.98 (660)	ø4.88 (ø124)	4.63 (118)	2.32 (59)	208 (95)	27.24 (692)	ø4.88 (ø124)	4.63 (118)	3.58 (91)	2.40 (61)	-	211 (96)
LHYM05-4B12DAY	1/2 x 4 (0.4 x 4)	25.98 (660)	ø4.88 (ø124)	4.63 (118)	2.32 (59)	208 (95)	27.24 (692)	ø4.88 (ø124)	4.63 (118)	3.58 (91)	2.40 (61)	-	211 (96)
LHYM02-4B12DBY	1/4 x 4 (0.2 x 4)	25.64 (651)	ø4.88 (ø124)	4.63 (118)	2.32 (59)	210 (95)	26.90 (683)	ø4.88 (ø124)	4.63 (118)	3.58 (91)	2.40 (61)	-	213 (97)

Cyclo® BBB4

Dimensions

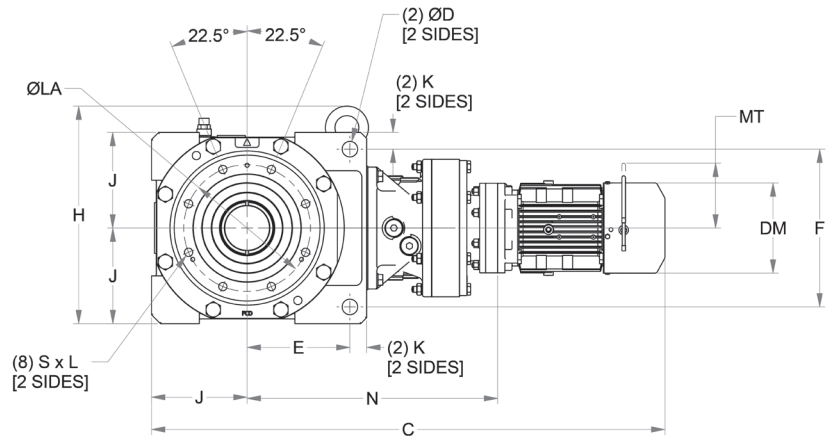
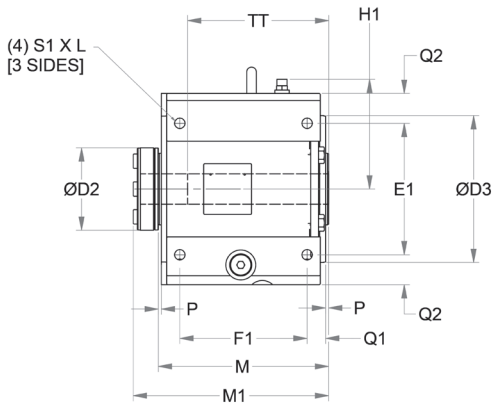
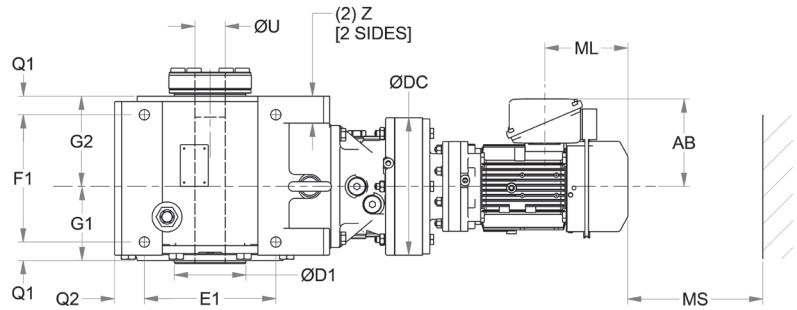
Notes [1]: DM Dimension Symbol ø = Round Fan Cover
DM Dimension Symbol = Square Fan Cover

LXXX-4XX0/4XX5 Frame sizes have equal dimensions, different ratings.

Dimensions

Double Reduction Cyclo® LHYM-4B12DBY~4C14DAY

Minimum Engagement		
Frame Size	TT	
	inch	(mm)
4B	9.53	(242)
4C	10.98	(279)



Cyclo® BBB4
Dimensions

All dimensions are in inches (mm).
For double reduction units ordered in the Y2 mounting configuration, please refer to page 2.133 for external lubricant piping dimensions.

Model	N	ØDC	J	E	F	K	Z	ØD	E1	F1	Q1	Q2	S1 x L	M
4B12DB	13.6 (346)	8.03 (204)	5.12 (130)	5.59 (142)	8.43 (214)	0.91 (23)	1.58 (40)	0.87 (22)	7.48 (190)	7.68 (195)	1.06 (27)	1.38 (35)	M16 x 1.02 (M16 x 26)	10.20 (259)
4B14DB	14.2 (360)	9.06 (230)												
4C14DA	16.1 (410)	9.06 (230)	6.30 (160)	6.77 (172)	10.4 (264)	1.10 (28)	1.77 (45)	1.02 (26)	8.66 (220)	8.39 (213)	1.22 (31)	1.97 (50)	M20 x 1.30 (M20 x 30)	11.2 (285)

Model	P	G1	G2	H	H1	ØLA	ØD3	S x L	M1	ØD1	ØD2	ØU	
												Std & Max	Min
4B12DB, 4B14DB	0.20 (5)	4.80 (122)	5.00 (127)	12.1 (308)	5.94 (151)	6.89 (175)	7.83 (199)	M12 x 0.79 (M12 x 20)	11.5 (293)	3.94 (100)	4.49 (114)	2-7/16 (61.91)	1-15/16 (49.21)
4C14DA	0.20 (5)	4.88 (124)	5.94 (151)	14.3 (364)	7.20 (183)	8.35 (212)	9.61 (244)	M16 x 1.02 (M16 x 26)	12.8 (326)	4.72 (120)	5.43 (138)	2-15/16 (74.61)	2-3/16 (55.56)

LHYM02-4B12DBY ▶ LHYM01-4C14DAY-AV

All dimensions are in inches (mm)

Model	4 Pole Motor HP (kW)	Without Brake					With Brake						
		C	DM ^[1]	AB	ML	Weight lb (kg)	C	DM ^[1]	AB	ML	MS	MT	Weight lb (kg)
LHYM02-4B12DBY-AV	1/4 x 4 (0.2 x 4)	26.43 (671)	ø4.88 (ø124)	4.63 (118)	2.32 (59)	213 (97)	27.69 (703)	ø4.88 (ø124)	4.63 (118)	3.58 (91)	2.40 (61)	-	216 (98)
LHYM03-4B12DBY	1/3 x 4 (0.25 x 4)	25.64 (651)	ø4.88 (ø124)	4.63 (118)	2.32 (59)	210 (95)	26.90 (683)	ø4.88 (ø124)	4.63 (118)	3.58 (91)	2.40 (61)	-	213 (97)
LHYM03-4B12DBY-AV	1/3 x 4 (0.25 x 4)	26.43 (671)	ø4.88 (ø124)	4.63 (118)	2.32 (59)	213 (97)	27.69 (703)	ø4.88 (ø124)	4.63 (118)	3.58 (91)	2.40 (61)	-	216 (98)
LHYM05-4B12DBY	1/2 x 4 (0.4 x 4)	26.43 (671)	ø4.88 (ø124)	4.63 (118)	2.32 (59)	213 (97)	27.69 (703)	ø4.88 (ø124)	4.63 (118)	3.58 (91)	2.40 (61)	-	216 (98)
LHYM05-4B12DBY-AV	1/2 x 4 (0.4 x 4)	28.04 (712)	ø5.94 (ø151)	5.67 (144)	3.82 (97)	220 (100)	29.74 (755)	ø5.94 (ø151)	5.67 (144)	5.51 (140)	3.66 (93)	3.94 (100)	226 (103)
LHYM08-4B12DBY	3/4 x 4 (0.55 x 4)	28.04 (712)	ø5.94 (ø151)	5.67 (144)	3.82 (97)	217 (99)	29.74 (755)	ø5.94 (ø151)	5.67 (144)	5.51 (140)	3.66 (93)	3.94 (100)	223 (102)
LHYM08-4B12DBY-AV	3/4 x 4 (0.55 x 4)	29.34 (745)	ø6.30 (ø160)	5.86 (149)	3.94 (100)	228 (104)	31.78 (807)	ø6.30 (ø160)	5.86 (149)	6.38 (162)	4.53 (115)	4.29 (109)	239 (109)
LHYM1-4B12DBY-EP	1 x 4 (0.75 x 4)	29.78 (756)	6.22 (158)	5.98 (152)	3.82 (97)	233 (106)	32.28 (820)	6.22 (158)	5.98 (152)	6.32 (161)	4.80 (122)	4.25 (108)	243 (110)
LHYM1H-4B12DBY-EP	1.5 x 4 (1.1 x 4)	30.84 (783)	6.57 (167)	6.16 (156)	3.82 (97)	241 (109)	33.57 (853)	6.57 (167)	6.16 (156)	6.56 (167)	5.04 (128)	4.61 (117)	252 (115)
LHYM01-4B14DAY	1/8 x 4 (0.1 x 4)	24.25 (616)	ø4.69 (ø119)	4.63 (118)	1.38 (35)	209 (95)	25.62 (651)	ø4.88 (ø124)	4.63 (118)	2.76 (70)	1.93 (49)	-	213 (97)
LHYM01-4B14DAY-AV	1/8 x 4 (0.1 x 4)	25.90 (658)	ø4.88 (ø124)	4.63 (118)	2.32 (59)	211 (96)	27.16 (690)	ø4.88 (ø124)	4.63 (118)	3.58 (91)	2.40 (61)	-	214 (98)
LHYM02-4B14DAY	1/4 x 4 (0.2 x 4)	25.90 (658)	ø4.88 (ø124)	4.63 (118)	2.32 (59)	211 (96)	27.16 (690)	ø4.88 (ø124)	4.63 (118)	3.58 (91)	2.40 (61)	-	214 (98)
LHYM02-4B14DAY-AV	1/4 x 4 (0.2 x 4)	26.69 (678)	ø4.88 (ø124)	4.63 (118)	2.32 (59)	214 (98)	27.95 (710)	ø4.88 (ø124)	4.63 (118)	3.58 (91)	2.40 (61)	-	218 (99)
LHYM02-4B14DBY	1/4 x 4 (0.2 x 4)	26.25 (667)	ø4.88 (ø124)	4.63 (118)	2.32 (59)	219 (99)	27.51 (699)	ø4.88 (ø124)	4.63 (118)	3.58 (91)	2.40 (61)	-	222 (101)
LHYM02-4B14DBY-AV	1/4 x 4 (0.2 x 4)	27.04 (687)	ø4.88 (ø124)	4.63 (118)	2.32 (59)	222 (101)	28.30 (719)	ø4.88 (ø124)	4.63 (118)	3.58 (91)	2.40 (61)	-	225 (102)
LHYM03-4B14DBY	1/3 x 4 (0.25 x 4)	26.25 (667)	ø4.88 (ø124)	4.63 (118)	2.32 (59)	219 (99)	27.51 (699)	ø4.88 (ø124)	4.63 (118)	3.58 (91)	2.40 (61)	-	222 (101)
LHYM03-4B14DBY-AV	1/3 x 4 (0.25 x 4)	27.04 (687)	ø4.88 (ø124)	4.63 (118)	2.32 (59)	222 (101)	28.30 (719)	ø4.88 (ø124)	4.63 (118)	3.58 (91)	2.40 (61)	-	225 (102)
LHYM05-4B14DBY	1/2 x 4 (0.4 x 4)	27.04 (687)	ø4.88 (ø124)	4.63 (118)	2.32 (59)	222 (101)	28.30 (719)	ø4.88 (ø124)	4.63 (118)	3.58 (91)	2.40 (61)	-	225 (102)
LHYM05-4B14DBY-AV	1/2 x 4 (0.4 x 4)	28.66 (728)	ø5.94 (ø151)	5.67 (144)	3.82 (97)	229 (104)	30.35 (771)	ø5.94 (ø151)	5.67 (144)	5.51 (140)	3.66 (93)	3.94 (100)	235 (107)
LHYM08-4B14DBY	3/4 x 4 (0.55 x 4)	28.66 (728)	ø5.94 (ø151)	5.67 (144)	3.82 (97)	226 (103)	30.35 (771)	ø5.94 (ø151)	5.67 (144)	5.51 (140)	3.66 (93)	3.94 (100)	232 (106)
LHYM08-4B14DBY-AV	3/4 x 4 (0.55 x 4)	29.95 (761)	ø6.30 (ø160)	5.86 (149)	3.94 (100)	237 (108)	32.40 (823)	ø6.30 (ø160)	5.86 (149)	6.38 (162)	4.53 (115)	4.29 (109)	248 (113)
LHYM1-4B14DBY-EP	1 x 4 (0.75 x 4)	30.39 (772)	6.22 (158)	5.98 (152)	3.82 (97)	242 (110)	32.89 (835)	6.22 (158)	5.98 (152)	6.32 (161)	4.80 (122)	4.25 (108)	252 (114)
LHYM1H-4B14DBY-EP	1.5 x 4 (1.1 x 4)	31.45 (799)	6.57 (167)	6.16 (156)	3.82 (97)	249 (113)	34.19 (868)	6.57 (167)	6.16 (156)	6.56 (167)	5.04 (128)	4.61 (117)	261 (119)
LHYM01-4C14DAY	1/8 x 4 (0.1 x 4)	27.72 (704)	ø4.69 (ø119)	4.63 (118)	1.38 (35)	316 (144)	29.10 (739)	ø4.88 (ø124)	4.63 (118)	2.76 (70)	1.93 (49)	-	319 (145)
LHYM01-4C14DAY-AV	1/8 x 4 (0.1 x 4)	29.37 (746)	ø4.88 (ø124)	4.63 (118)	2.32 (59)	318 (145)	30.63 (778)	ø4.88 (ø124)	4.63 (118)	3.58 (91)	2.40 (61)	-	321 (146)
LHYM02-4C14DAY	1/4 x 4 (0.2 x 4)	29.37 (746)	ø4.88 (ø124)	4.63 (118)	2.32 (59)	318 (145)	30.63 (778)	ø4.88 (ø124)	4.63 (118)	3.58 (91)	2.40 (61)	-	321 (146)
LHYM02-4C14DAY-AV	1/4 x 4 (0.2 x 4)	30.16 (766)	ø4.88 (ø124)	4.63 (118)	2.32 (59)	321 (146)	31.42 (798)	ø4.88 (ø124)	4.63 (118)	3.58 (91)	2.40 (61)	-	324 (147)

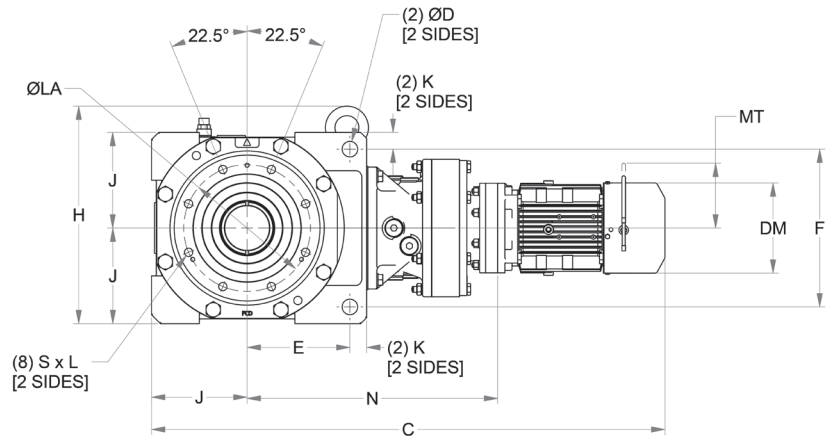
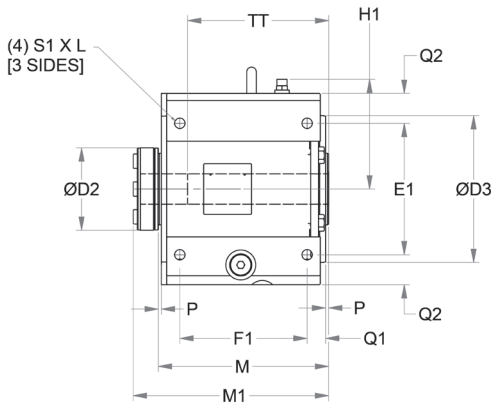
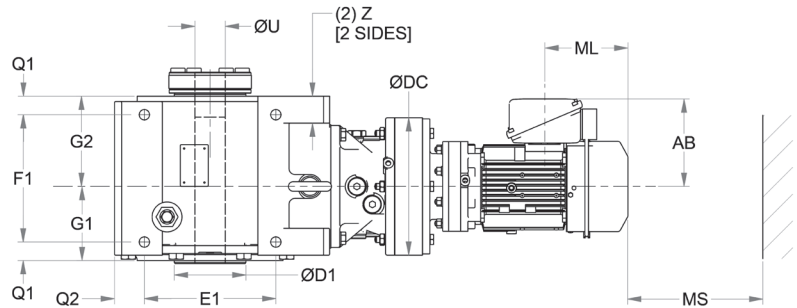
Notes [1]: DM Dimension Symbol ø = Round Fan Cover
DM Dimension Symbol = Square Fan Cover

LXXX-4XX0/4XX5 Frame sizes have equal dimensions, different ratings.

Dimensions

Double Reduction Cyclo® LHYM-4C14DBY~4C16DBY

Minimum Engagement		
Frame Size	TT	
	inch	(mm)
4C	10.98	(279)



Cyclo® BBB4
Dimensions

All dimensions are in inches (mm).
For double reduction units ordered in the Y2 mounting configuration, please refer to page 2.133 for external lubricant piping dimensions.

Model	N	ØDC	J	E	F	K	Z	ØD	E1	F1	Q1	Q2	S1 x L	M
4C14DA	16.1 (410)	9.06 (230)	6.30 (160)	6.77 (172)	10.4 (264)	1.10 (28)	1.77 (45)	1.02 (26)	8.66 (220)	8.39 (213)	1.22 (31)	1.97 (50)	M20 x 1.30 (M20 x 33)	11.2 (285)
4C14DB	16.5 (419)	9.06 (230)												
4C14DC	17.1 (433)	9.06 (230)												
4C16DA	17.4 (442)	11.8 (300)												

Model	P	G1	G2	H	H1	ØLA	ØD3	S x L	M1	ØD1	ØD2	ØU	
												Std & Max	Min
4C14DA, 4C14DB, 4C14DC, 4C16DA	0.20 (5)	4.88 (124)	5.94 (151)	14.3 (364)	7.20 (183)	8.35 (212)	9.61 (244)	M16 x 1.02 (M16 x 26)	12.8 (326)	4.72 (120)	5.43 (138)	2-15/16 (74.61)	2-3/16 (55.56)

LHYM02-4C14DAY ▶ LHYM03-4C16DAY-AV

All dimensions are in inches (mm)

Model	4 Pole Motor HP (kW)	Without Brake					With Brake						
		C	DM ^[1]	AB	ML	Weight lb (kg)	C	DM ^[1]	AB	ML	MS	MT	Weight lb (kg)
LHYM03-4C14DAY	1/3 x 4 (0.25 x 4)	29.37 (746)	ø4.88 (ø124)	4.63 (118)	2.32 (59)	318 (145)	30.63 (778)	ø4.88 (ø124)	4.63 (118)	3.58 (91)	2.40 (61)	-	321 (146)
LHYM03-4C14DAY-AV	1/3 x 4 (0.25 x 4)	30.16 (766)	ø4.88 (ø124)	4.63 (118)	2.32 (59)	321 (146)	31.42 (798)	ø4.88 (ø124)	4.63 (118)	3.58 (91)	2.40 (61)	-	324 (147)
LHYM05-4C14DAY	1/2 x 4 (0.4 x 4)	30.16 (766)	ø4.88 (ø124)	4.63 (118)	2.32 (59)	321 (146)	31.42 (798)	ø4.88 (ø124)	4.63 (118)	3.58 (91)	2.40 (61)	-	324 (147)
LHYM02-4C14DBY	1/4 x 4 (0.2 x 4)	29.73 (755)	ø4.88 (ø124)	4.63 (118)	2.32 (59)	325 (148)	30.99 (787)	ø4.88 (ø124)	4.63 (118)	3.58 (91)	2.40 (61)	-	328 (149)
LHYM02-4C14DBY-AV	1/4 x 4 (0.2 x 4)	30.51 (775)	ø4.88 (ø124)	4.63 (118)	2.32 (59)	328 (149)	31.77 (807)	ø4.88 (ø124)	4.63 (118)	3.58 (91)	2.40 (61)	-	332 (151)
LHYM03-4C14DBY	1/3 x 4 (0.25 x 4)	29.73 (755)	ø4.88 (ø124)	4.63 (118)	2.32 (59)	325 (148)	30.99 (787)	ø4.88 (ø124)	4.63 (118)	3.58 (91)	2.40 (61)	-	328 (149)
LHYM03-4C14DBY-AV	1/3 x 4 (0.25 x 4)	30.51 (775)	ø4.88 (ø124)	4.63 (118)	2.32 (59)	328 (149)	31.77 (807)	ø4.88 (ø124)	4.63 (118)	3.58 (91)	2.40 (61)	-	332 (151)
LHYM05-4C14DBY	1/2 x 4 (0.4 x 4)	30.51 (775)	ø4.88 (ø124)	4.63 (118)	2.32 (59)	328 (149)	31.77 (807)	ø4.88 (ø124)	4.63 (118)	3.58 (91)	2.40 (61)	-	332 (151)
LHYM05-4C14DBY-AV	1/2 x 4 (0.4 x 4)	32.13 (816)	ø5.94 (ø151)	5.67 (144)	3.82 (97)	336 (153)	33.82 (859)	ø5.94 (ø151)	5.67 (144)	5.51 (140)	3.66 (93)	3.94 (100)	341 (155)
LHYM08-4C14DBY	3/4 x 4 (0.55 x 4)	32.13 (816)	ø5.94 (ø151)	5.67 (144)	3.82 (97)	333 (151)	33.82 (859)	ø5.94 (ø151)	5.67 (144)	5.51 (140)	3.66 (93)	3.94 (100)	339 (154)
LHYM08-4C14DBY-AV	3/4 x 4 (0.55 x 4)	33.43 (849)	ø6.30 (ø160)	5.86 (149)	3.94 (100)	344 (156)	35.87 (911)	ø6.30 (ø160)	5.86 (149)	6.38 (162)	4.53 (115)	4.29 (109)	355 (161)
LHYM1-4C14DBY-EP	1 x 4 (0.75 x 4)	33.86 (860)	6.22 (158)	5.98 (152)	3.82 (97)	349 (159)	36.36 (924)	6.22 (158)	5.98 (152)	6.32 (161)	4.80 (122)	4.25 (108)	359 (163)
LHYM1H-4C14DBY-EP	1.5 x 4 (1.1 x 4)	34.92 (887)	6.57 (167)	6.16 (156)	3.82 (97)	356 (162)	37.66 (957)	6.57 (167)	6.16 (156)	6.56 (167)	5.04 (128)	4.61 (117)	368 (167)
LHYM2-4C14DBY-EP	2 x 4 (1.5 x 4)	34.92 (887)	6.57 (167)	6.16 (156)	3.82 (97)	359 (163)	37.66 (957)	6.57 (167)	6.16 (156)	6.56 (167)	5.04 (128)	4.61 (117)	371 (168)
LHYM08-4C14DCY	3/4 x 4 (0.55 x 4)	32.68 (830)	ø5.94 (ø151)	5.67 (144)	3.82 (97)	336 (152)	34.37 (873)	ø5.94 (ø151)	5.67 (144)	5.51 (140)	3.66 (93)	3.94 (100)	341 (155)
LHYM08-4C14DCY-AV	3/4 x 4 (0.55 x 4)	33.98 (863)	ø6.30 (ø160)	5.86 (149)	3.94 (100)	346 (157)	36.42 (925)	ø6.30 (ø160)	5.86 (149)	6.38 (162)	4.53 (115)	4.29 (109)	357 (162)
LHYM1-4C14DCY-EP	1 x 4 (0.75 x 4)	34.41 (874)	6.22 (158)	5.98 (152)	3.82 (97)	351 (160)	36.91 (938)	6.22 (158)	5.98 (152)	6.32 (161)	4.80 (122)	4.25 (108)	361 (164)
LHYM1H-4C14DCY-EP	1.5 x 4 (1.1 x 4)	35.47 (901)	6.57 (167)	6.16 (156)	3.82 (97)	359 (163)	38.21 (971)	6.57 (167)	6.16 (156)	6.56 (167)	5.04 (128)	4.61 (117)	370 (168)
LHYM2-4C14DCY-EP	2 x 4 (1.5 x 4)	35.47 (901)	6.57 (167)	6.16 (156)	3.82 (97)	362 (164)	38.21 (971)	6.57 (167)	6.16 (156)	6.56 (167)	5.04 (128)	4.61 (117)	373 (170)
LHYM3-4C14DCY-EP	3 x 4 (2.2 x 4)	36.30 (922)	7.24 (184)	6.71 (170)	4.53 (115)	378 (172)	39.37 (1000)	7.24 (184)	6.71 (170)	7.60 (193)	5.43 (138)	5.04 (128)	394 (179)
LHYM02-4C16DAY	1/4 x 4 (0.2 x 4)	30.65 (778)	ø4.88 (ø124)	4.63 (118)	2.32 (59)	376 (171)	31.91 (810)	ø4.88 (ø124)	4.63 (118)	3.58 (91)	2.40 (61)	-	379 (172)
LHYM02-4C16DAY-AV	1/4 x 4 (0.2 x 4)	31.43 (798)	ø4.88 (ø124)	4.63 (118)	2.32 (59)	379 (172)	32.69 (830)	ø4.88 (ø124)	4.63 (118)	3.58 (91)	2.40 (61)	-	382 (174)
LHYM03-4C16DAY	1/3 x 4 (0.25 x 4)	30.65 (778)	ø4.88 (ø124)	4.63 (118)	2.32 (59)	376 (171)	31.91 (810)	ø4.88 (ø124)	4.63 (118)	3.58 (91)	2.40 (61)	-	379 (172)
LHYM03-4C16DAY-AV	1/3 x 4 (0.25 x 4)	31.43 (798)	ø4.88 (ø124)	4.63 (118)	2.32 (59)	379 (172)	32.69 (830)	ø4.88 (ø124)	4.63 (118)	3.58 (91)	2.40 (61)	-	382 (174)
LHYM05-4C16DAY	1/2 x 4 (0.4 x 4)	31.43 (798)	ø4.88 (ø124)	4.63 (118)	2.32 (59)	379 (172)	32.69 (830)	ø4.88 (ø124)	4.63 (118)	3.58 (91)	2.40 (61)	-	382 (174)
LHYM05-4C16DAY-AV	1/2 x 4 (0.4 x 4)	33.05 (839)	ø5.94 (ø151)	5.67 (144)	3.82 (97)	386 (176)	34.74 (882)	ø5.94 (ø151)	5.67 (144)	5.51 (140)	3.66 (93)	3.94 (100)	392 (178)
LHYM08-4C16DAY	3/4 x 4 (0.55 x 4)	33.05 (839)	ø5.94 (ø151)	5.67 (144)	3.82 (97)	384 (174)	34.74 (882)	ø5.94 (ø151)	5.67 (144)	5.51 (140)	3.66 (93)	3.94 (100)	390 (177)

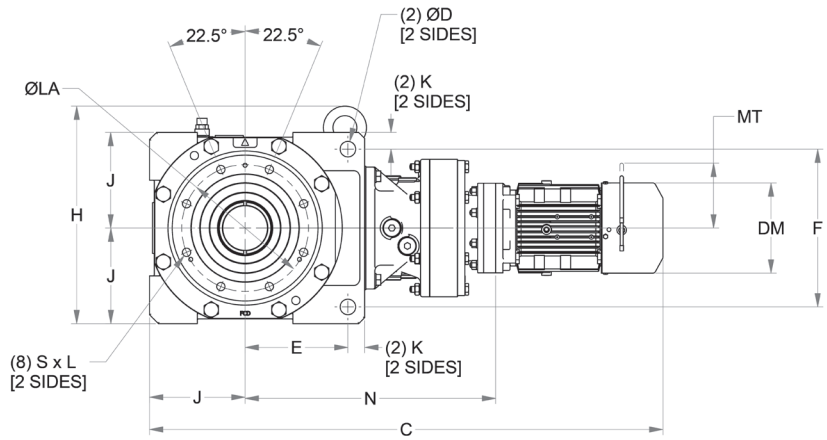
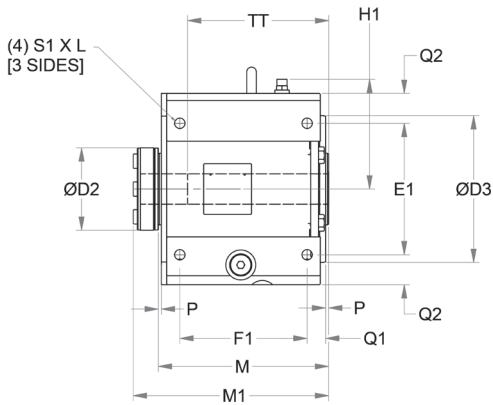
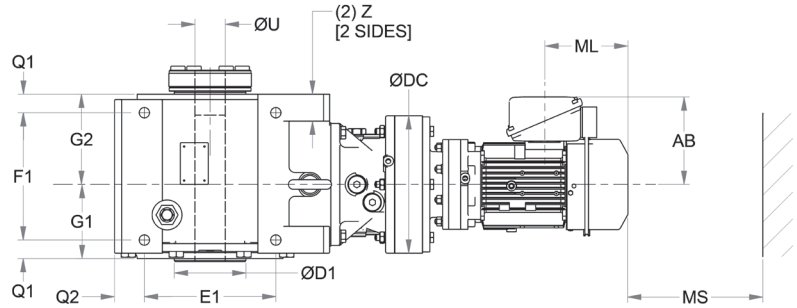
Notes [1]: DM Dimension Symbol ø = Round Fan Cover
DM Dimension Symbol = Square Fan Cover

LXXX-4XX0/4XX5 Frame sizes have equal dimensions, different ratings.

Dimensions

Double Reduction Cyclo® LHYM-4C16DAY~4D16DBY

Minimum Engagement		
Frame Size	TT	
	inch	(mm)
4C	10.98	(279)
4D	12.83	(326)



Cyclo® BBB4
Dimensions

All dimensions are in inches (mm).
For double reduction units ordered in the Y2 mounting configuration, please refer to page 2.133 for external lubricant piping dimensions.

Model	N	ØDC	J	E	F	K	Z	ØD	E1	F1	Q1	Q2	S1 x L	M
4C16DA	17.4 (442)	11.8 (300)	6.30 (160)	6.77 (172)	10.4 (264)	1.10 (28)	1.77 (45)	1.02 (26)	8.66 (220)	8.39 (213)	1.22 (31)	1.97 (50)	M20 x 1.30 (M20 x 33)	11.2 (285)
4C16DB	18.0 (456)	11.8 (300)												
4C16DC	18.0 (458)	11.8 (300)												
4D16DA	20.2 (514)	11.8 (300)	7.48 (190)	7.60 (193)	12.2 (310)	1.38 (35)	2.17 (55)	1.30 (33)	9.84 (250)	10.0 (254)	1.42 (36)	2.56 (65)	M24 x 1.57 (M24 x 40)	13.4 (340)
4D16DB	20.8 (528)	11.8 (300)												

Model	P	G1	G2	H	H1	ØLA	ØD3	S x L	M1	ØD1	ØD2	ØU	
												Std & Max	Min
4C16DA, 4C16DB, 4C16DC	0.20 (5)	4.88 (124)	5.94 (151)	14.3 (364)	7.20 (183)	8.35 (212)	9.61 (244)	M16 x 1.02 (M16 x 26)	12.8 (326)	4.72 (120)	5.43 (138)	2-15/16 (74.61)	2-3/16 (55.56)
4D16DA, 4D16DB	0.28 (7)	5.83 (148)	7.01 (178)	16.7 (424)	8.39 (213)	10.0 (255)	11.6 (295)	M20 x 1.30 (M20 x 33)	15.0 (381)	5.51 (140)	5.98 (152)	3-7/16 (87.31)	2-7/16 (61.91)

LHYM05-4C16DAY ▶ LHYM08-4D16DBY-AV

All dimensions are in inches (mm)

Model	4 Pole Motor HP (kW)	Without Brake					With Brake						
		C	DM ^[1]	AB	ML	Weight lb (kg)	C	DM ^[1]	AB	ML	MS	MT	Weight lb (kg)
LHYM08-4C16DAY-AV	3/4 x 4 (0.55 x 4)	34.35 (872)	ø6.30 (ø160)	5.86 (149)	3.94 (100)	395 (179)	36.79 (934)	ø6.30 (ø160)	5.86 (149)	6.38 (162)	4.53 (115)	4.29 (109)	405 (184)
LHYM1-4C16DAY-EP	1 x 4 (0.75 x 4)	34.78 (883)	6.22 (158)	5.98 (152)	3.82 (97)	400 (182)	37.28 (947)	6.22 (158)	5.98 (152)	6.32 (161)	4.80 (122)	4.25 (108)	409 (186)
LHYM1H-4C16DAY-EP	1.5 x 4 (1.1 x 4)	35.84 (910)	6.57 (167)	6.16 (156)	3.82 (97)	407 (185)	38.58 (980)	6.57 (167)	6.16 (156)	6.56 (167)	5.04 (128)	4.61 (117)	419 (190)
LHYM2-4C16DAY-EP	2 x 4 (1.5 x 4)	35.84 (910)	6.57 (167)	6.16 (156)	3.82 (97)	410 (186)	38.58 (980)	6.57 (167)	6.16 (156)	6.56 (167)	5.04 (128)	4.61 (117)	421 (191)
LHYM1-4C16DBY-EP	1 x 4 (0.75 x 4)	35.33 (897)	6.22 (158)	5.98 (152)	3.82 (97)	404 (184)	37.83 (961)	6.22 (158)	5.98 (152)	6.32 (161)	4.80 (122)	4.25 (108)	414 (188)
LHYM1H-4C16DBY-EP	1.5 x 4 (1.1 x 4)	36.39 (924)	6.57 (167)	6.16 (156)	3.82 (97)	412 (187)	39.13 (994)	6.57 (167)	6.16 (156)	6.56 (167)	5.04 (128)	4.61 (117)	423 (192)
LHYM2-4C16DBY-EP	2 x 4 (1.5 x 4)	36.39 (924)	6.57 (167)	6.16 (156)	3.82 (97)	415 (188)	39.13 (994)	6.57 (167)	6.16 (156)	6.56 (167)	5.04 (128)	4.61 (117)	426 (194)
LHYM3-4C16DBY-EP	3 x 4 (2.2 x 4)	37.22 (945)	7.24 (184)	6.71 (170)	4.53 (115)	431 (196)	40.29 (1023)	7.24 (184)	6.71 (170)	7.60 (193)	5.43 (138)	5.04 (128)	447 (203)
LHYM08-4C16DCY	3/4 x 4 (0.55 x 4)	33.66 (855)	ø5.94 (ø151)	5.67 (144)	3.82 (97)	421 (191)	35.35 (898)	ø5.94 (ø151)	5.67 (144)	5.51 (140)	3.66 (93)	3.94 (100)	427 (194)
LHYM08-4C16DCY-AV	3/4 x 4 (0.55 x 4)	34.96 (888)	ø6.30 (ø160)	5.86 (149)	3.94 (100)	429 (195)	37.40 (950)	ø6.30 (ø160)	5.86 (149)	6.38 (162)	4.53 (115)	4.29 (109)	440 (200)
LHYM02-4D16DAY	1/4 x 4 (0.2 x 4)	34.67 (881)	ø4.88 (ø124)	4.63 (118)	2.32 (59)	522 (237)	35.93 (913)	ø4.88 (ø124)	4.63 (118)	3.58 (91)	2.40 (61)	-	525 (238)
LHYM02-4D16DAY-AV	1/4 x 4 (0.2 x 4)	35.46 (901)	ø4.88 (ø124)	4.63 (118)	2.32 (59)	525 (238)	36.72 (933)	ø4.88 (ø124)	4.63 (118)	3.58 (91)	2.40 (61)	-	528 (240)
LHYM03-4D16DAY	1/3 x 4 (0.25 x 4)	34.67 (881)	ø4.88 (ø124)	4.63 (118)	2.32 (59)	522 (237)	35.93 (913)	ø4.88 (ø124)	4.63 (118)	3.58 (91)	2.40 (61)	-	525 (238)
LHYM03-4D16DAY-AV	1/3 x 4 (0.25 x 4)	35.46 (901)	ø4.88 (ø124)	4.63 (118)	2.32 (59)	525 (238)	36.72 (933)	ø4.88 (ø124)	4.63 (118)	3.58 (91)	2.40 (61)	-	528 (240)
LHYM05-4D16DAY	1/2 x 4 (0.4 x 4)	35.46 (901)	ø4.88 (ø124)	4.63 (118)	2.32 (59)	525 (238)	36.72 (933)	ø4.88 (ø124)	4.63 (118)	3.58 (91)	2.40 (61)	-	528 (240)
LHYM05-4D16DAY-AV	1/2 x 4 (0.4 x 4)	37.07 (942)	ø5.94 (ø151)	5.67 (144)	3.82 (97)	532 (242)	38.77 (985)	ø5.94 (ø151)	5.67 (144)	5.51 (140)	3.66 (93)	3.94 (100)	538 (244)
LHYM08-4D16DAY	3/4 x 4 (0.55 x 4)	37.07 (942)	ø5.94 (ø151)	5.67 (144)	3.82 (97)	530 (241)	38.77 (985)	ø5.94 (ø151)	5.67 (144)	5.51 (140)	3.66 (93)	3.94 (100)	536 (243)
LHYM08-4D16DAY-AV	3/4 x 4 (0.55 x 4)	38.37 (975)	ø6.30 (ø160)	5.86 (149)	3.94 (100)	541 (245)	40.81 (1037)	ø6.30 (ø160)	5.86 (149)	6.38 (162)	4.53 (115)	4.29 (109)	551 (250)
LHYM1-4D16DAY-EP	1 x 4 (0.75 x 4)	38.81 (986)	6.22 (158)	5.98 (152)	3.82 (97)	545 (248)	41.31 (1049)	6.22 (158)	5.98 (152)	6.32 (161)	4.80 (122)	4.25 (108)	555 (252)
LHYM1H-4D16DAY-EP	1.5 x 4 (1.1 x 4)	39.87 (1013)	6.57 (167)	6.16 (156)	3.82 (97)	553 (251)	42.60 (1082)	6.57 (167)	6.16 (156)	6.56 (167)	5.04 (128)	4.61 (117)	565 (256)
LHYM2-4D16DAY-EP	2 x 4 (1.5 x 4)	39.87 (1013)	6.57 (167)	6.16 (156)	3.82 (97)	556 (252)	42.60 (1082)	6.57 (167)	6.16 (156)	6.56 (167)	5.04 (128)	4.61 (117)	567 (258)
LHYM08-4D16DBY	3/4 x 4 (0.55 x 4)	37.62 (956)	ø5.94 (ø151)	5.67 (144)	3.82 (97)	534 (243)	39.32 (999)	ø5.94 (ø151)	5.67 (144)	5.51 (140)	3.66 (93)	3.94 (100)	540 (245)
LHYM08-4D16DBY-AV	3/4 x 4 (0.55 x 4)	38.92 (989)	ø6.30 (ø160)	5.86 (149)	3.94 (100)	545 (248)	41.36 (1051)	ø6.30 (ø160)	5.86 (149)	6.38 (162)	4.53 (115)	4.29 (109)	556 (252)
LHYM1-4D16DBY-EP	1 x 4 (0.75 x 4)	39.36 (1000)	6.22 (158)	5.98 (152)	3.82 (97)	550 (250)	41.86 (1063)	6.22 (158)	5.98 (152)	6.32 (161)	4.80 (122)	4.25 (108)	560 (254)
LHYM1H-4D16DBY-EP	1.5 x 4 (1.1 x 4)	40.42 (1027)	6.57 (167)	6.16 (156)	3.82 (97)	558 (253)	43.16 (1096)	6.57 (167)	6.16 (156)	6.56 (167)	5.04 (128)	4.61 (117)	569 (258)
LHYM2-4D16DBY-EP	2 x 4 (1.5 x 4)	40.42 (1027)	6.57 (167)	6.16 (156)	3.82 (97)	560 (255)	43.16 (1096)	6.57 (167)	6.16 (156)	6.56 (167)	5.04 (128)	4.61 (117)	572 (260)
LHYM3-4D16DBY-EP	3 x 4 (2.2 x 4)	41.25 (1048)	7.24 (184)	6.71 (170)	4.53 (115)	577 (262)	44.32 (1126)	7.24 (184)	6.71 (170)	7.60 (193)	5.43 (138)	5.04 (128)	593 (269)

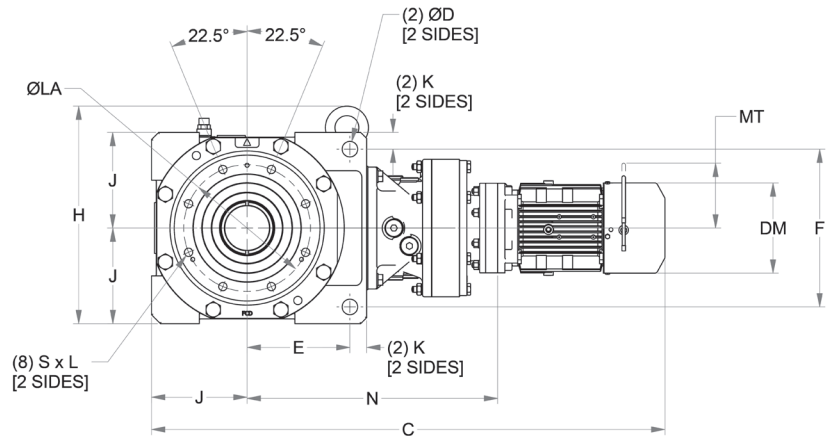
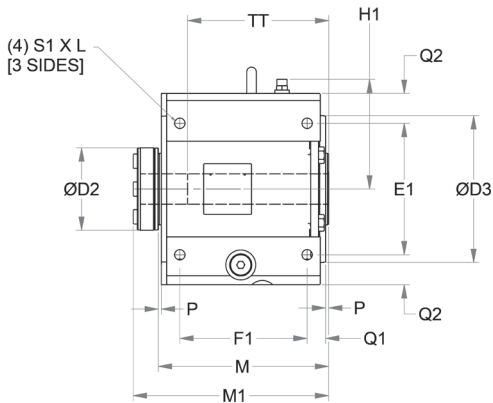
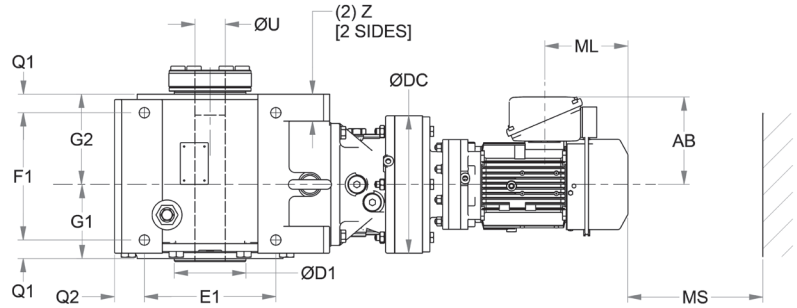
Notes [1]: DM Dimension Symbol ø = Round Fan Cover
DM Dimension Symbol = Square Fan Cover

LXXX-4XX0/4XX5 Frame sizes have equal dimensions, different ratings.

Dimensions

Double Reduction Cyclo® LHYM-4D16DBY~4D17DCY

Minimum Engagement		
Frame Size	TT	
	inch	(mm)
4D	12.83	(326)



Cyclo® BBB4
Dimensions

All dimensions are in inches (mm).
For double reduction units ordered in the Y2 mounting configuration, please refer to page 2.133 for external lubricant piping dimensions.

Model	N	ØDC	J	E	F	K	Z	ØD	E1	F1	Q1	Q2	S1 x L	M
4D16DB	18.0 (456)	11.8 (300)												
4D16DC	18.0 (458)	11.8 (300)												
4D17DA	20.2 (514)	11.8 (300)	7.48 (190)	7.60 (193)	12.2 (310)	1.38 (35)	2.17 (55)	1.30 (33)	9.84 (250)	10.0 (254)	1.42 (36)	2.56 (65)	M24 x 1.57 (M24 x 40)	13.4 (340)
4D17DB	20.8 (528)	11.8 (300)												
4D17DC	20.8 (527)	13.4 (340)												

Model	P	G1	G2	H	H1	ØLA	ØD3	S x L	M1	ØD1	ØD2	ØU	
												Std & Max	Min
4D16DB, 4D16DC, 4D17DA, 4D17DB, 4D17DC	0.28 (7)	5.83 (148)	7.01 (178)	16.7 (424)	8.39 (213)	10.0 (255)	11.6 (295)	M20 x 1.30 (M20 x 33)	15.0 (381)	5.51 (140)	5.98 (152)	3-7/16 (87.31)	2-7/16 (61.91)

LHYM1-4D16DBY-EP ▶ LHYM5-4D17DCY-EP

All dimensions are in inches (mm)

Model	4 Pole Motor HP (kW)	Without Brake					With Brake						
		C	DM ^[1]	AB	ML	Weight lb (kg)	C	DM ^[1]	AB	ML	MS	MT	Weight lb (kg)
LHYM2-4D16DCY-EP	2 x 4 (1.5 x 4)	40.48 (1028)	6.57 (167)	6.16 (156)	3.82 (97)	575 (261)	43.21 (1098)	6.57 (167)	6.16 (156)	6.56 (167)	5.04 (128)	4.61 (117)	586 (266)
LHYM5-4D16DCY-EP	5 x 4 (3.7 x 4)	41.34 (1050)	8.74 (222)	7.34 (186)	4.65 (118)	613 (278)	44.91 (1141)	8.74 (222)	7.34 (186)	8.21 (209)	6.02 (153)	6.30 (160)	637 (289)
LHYM02-4D17DAY	1/4 x 4 (0.2 x 4)	34.46 (875)	ø4.88 (ø124)	4.63 (118)	2.32 (59)	553 (251)	35.72 (907)	ø4.88 (ø124)	4.63 (118)	3.58 (91)	2.40 (61)	-	556 (252)
LHYM02-4D17DAY-AV	1/4 x 4 (0.2 x 4)	35.25 (895)	ø4.88 (ø124)	4.63 (118)	2.32 (59)	556 (252)	36.51 (927)	ø4.88 (ø124)	4.63 (118)	3.58 (91)	2.40 (61)	-	559 (254)
LHYM03-4D17DAY	1/3 x 4 (0.25 x 4)	34.46 (875)	ø4.88 (ø124)	4.63 (118)	2.32 (59)	553 (251)	35.72 (907)	ø4.88 (ø124)	4.63 (118)	3.58 (91)	2.40 (61)	-	556 (252)
LHYM03-4D17DAY-AV	1/3 x 4 (0.25 x 4)	35.25 (895)	ø4.88 (ø124)	4.63 (118)	2.32 (59)	556 (252)	36.51 (927)	ø4.88 (ø124)	4.63 (118)	3.58 (91)	2.40 (61)	-	559 (254)
LHYM05-4D17DAY	1/2 x 4 (0.4 x 4)	35.25 (895)	ø4.88 (ø124)	4.63 (118)	2.32 (59)	556 (252)	36.51 (927)	ø4.88 (ø124)	4.63 (118)	3.58 (91)	2.40 (61)	-	559 (254)
LHYM05-4D17DAY-AV	1/2 x 4 (0.4 x 4)	36.86 (936)	ø5.94 (ø151)	5.67 (144)	3.82 (97)	563 (256)	38.56 (979)	ø5.94 (ø151)	5.67 (144)	5.51 (140)	3.66 (93)	3.94 (100)	569 (258)
LHYM08-4D17DAY	3/4 x 4 (0.55 x 4)	36.86 (936)	ø5.94 (ø151)	5.67 (144)	3.82 (97)	561 (255)	38.56 (979)	ø5.94 (ø151)	5.67 (144)	5.51 (140)	3.66 (93)	3.94 (100)	566 (257)
LHYM08-4D17DAY-AV	3/4 x 4 (0.55 x 4)	38.16 (969)	ø6.30 (ø160)	5.86 (149)	3.94 (100)	571 (259)	40.60 (1031)	ø6.30 (ø160)	5.86 (149)	6.38 (162)	4.53 (115)	4.29 (109)	582 (264)
LHYM1-4D17DAY-EP	1 x 4 (0.75 x 4)	38.60 (980)	6.22 (158)	5.98 (152)	3.82 (97)	576 (262)	41.10 (1044)	6.22 (158)	5.98 (152)	6.32 (161)	4.80 (122)	4.25 (108)	586 (266)
LHYM1H-4D17DAY-EP	1.5 x 4 (1.1 x 4)	39.66 (1007)	6.57 (167)	6.16 (156)	3.82 (97)	584 (265)	42.40 (1077)	6.57 (167)	6.16 (156)	6.56 (167)	5.04 (128)	4.61 (117)	595 (270)
LHYM2-4D17DAY-EP	2 x 4 (1.5 x 4)	39.66 (1007)	6.57 (167)	6.16 (156)	3.82 (97)	587 (266)	42.40 (1077)	6.57 (167)	6.16 (156)	6.56 (167)	5.04 (128)	4.61 (117)	598 (272)
LHYM1-4D17DBY-EP	1 x 4 (0.75 x 4)	39.15 (994)	6.22 (158)	5.98 (152)	3.82 (97)	581 (264)	41.65 (1058)	6.22 (158)	5.98 (152)	6.32 (161)	4.80 (122)	4.25 (108)	591 (268)
LHYM1H-4D17DBY-EP	1.5 x 4 (1.1 x 4)	40.21 (1021)	6.57 (167)	6.16 (156)	3.82 (97)	588 (267)	42.95 (1091)	6.57 (167)	6.16 (156)	6.56 (167)	5.04 (128)	4.61 (117)	600 (272)
LHYM2-4D17DBY-EP	2 x 4 (1.5 x 4)	40.21 (1021)	6.57 (167)	6.16 (156)	3.82 (97)	591 (269)	42.95 (1091)	6.57 (167)	6.16 (156)	6.56 (167)	5.04 (128)	4.61 (117)	603 (274)
LHYM3-4D17DBY-EP	3 x 4 (2.2 x 4)	41.04 (1042)	7.24 (184)	6.71 (170)	4.53 (115)	607 (276)	44.11 (1120)	7.24 (184)	6.71 (170)	7.60 (193)	5.43 (138)	5.04 (128)	624 (283)
LHYM08-4D17DCY	3/4 x 4 (0.55 x 4)	37.55 (954)	ø5.94 (ø151)	5.67 (144)	3.82 (97)	578 (262)	39.25 (997)	ø5.94 (ø151)	5.67 (144)	5.51 (140)	3.66 (93)	3.94 (100)	584 (265)
LHYM08-4D17DCY-AV	3/4 x 4 (0.55 x 4)	38.85 (987)	ø6.30 (ø160)	5.86 (149)	3.94 (100)	586 (266)	41.29 (1049)	ø6.30 (ø160)	5.86 (149)	6.38 (162)	4.53 (115)	4.29 (109)	597 (271)
LHYM2-4D17DCY-EP	2 x 4 (1.5 x 4)	40.35 (1025)	6.57 (167)	6.16 (156)	3.82 (97)	601 (273)	43.08 (1094)	6.57 (167)	6.16 (156)	6.56 (167)	5.04 (128)	4.61 (117)	613 (278)
LHYM3-4D17DCY-EP	3 x 4 (2.2 x 4)	39.76 (1010)	7.24 (184)	6.71 (170)	4.53 (115)	614 (279)	42.83 (1088)	7.24 (184)	6.71 (170)	7.60 (193)	5.43 (138)	5.04 (128)	631 (286)
LHYM5-4D17DCY-EP	5 x 4 (3.7 x 4)	41.21 (1047)	8.74 (222)	7.34 (186)	4.65 (118)	640 (290)	44.78 (1137)	8.74 (222)	7.34 (186)	8.21 (209)	6.02 (153)	6.30 (160)	664 (301)
LHYM02-4E17DAY	1/4 x 4 (0.2 x 4)	36.43 (925)	ø4.88 (ø124)	4.63 (118)	2.32 (59)	720 (327)	37.69 (957)	ø4.88 (ø124)	4.63 (118)	3.58 (91)	2.40 (61)	-	723 (328)
LHYM02-4E17DAY-AV	1/4 x 4 (0.2 x 4)	37.22 (945)	ø4.88 (ø124)	4.63 (118)	2.32 (59)	723 (328)	38.48 (977)	ø4.88 (ø124)	4.63 (118)	3.58 (91)	2.40 (61)	-	726 (330)
LHYM03-4E17DAY	1/3 x 4 (0.25 x 4)	36.43 (925)	ø4.88 (ø124)	4.63 (118)	2.32 (59)	720 (327)	37.69 (957)	ø4.88 (ø124)	4.63 (118)	3.58 (91)	2.40 (61)	-	723 (328)
LHYM03-4E17DAY-AV	1/3 x 4 (0.25 x 4)	37.22 (945)	ø4.88 (ø124)	4.63 (118)	2.32 (59)	723 (328)	38.48 (977)	ø4.88 (ø124)	4.63 (118)	3.58 (91)	2.40 (61)	-	726 (330)
LHYM05-4E17DAY	1/2 x 4 (0.4 x 4)	37.22 (945)	ø4.88 (ø124)	4.63 (118)	2.32 (59)	723 (328)	38.48 (977)	ø4.88 (ø124)	4.63 (118)	3.58 (91)	2.40 (61)	-	726 (330)

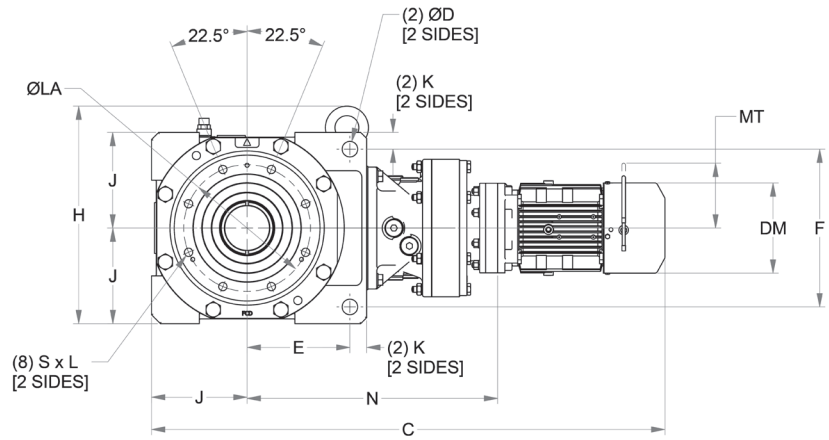
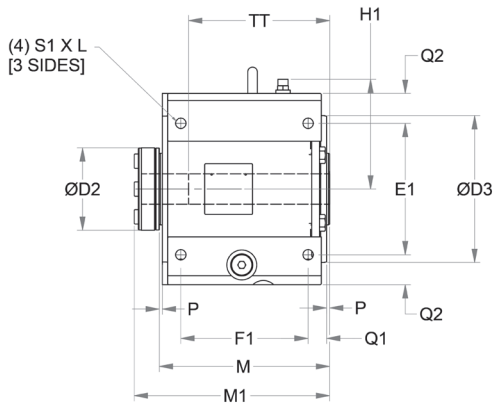
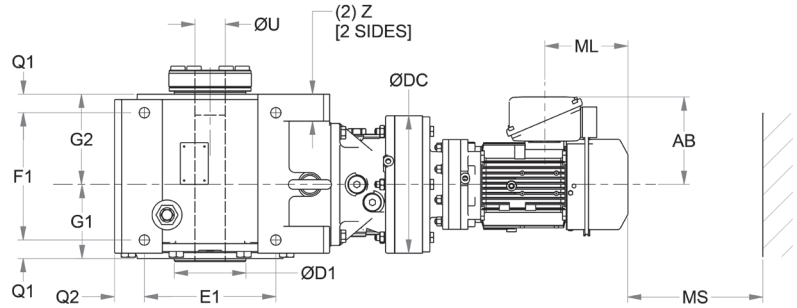
Notes [1]: DM Dimension Symbol ø = Round Fan Cover
DM Dimension Symbol = Square Fan Cover

LXXX-4XX0/4XX5 Frame sizes have equal dimensions, different ratings.

Dimensions

Double Reduction Cyclo® LHYM-4E17DAY~4E18DAY

Minimum Engagement		
Frame Size	TT	
	inch	(mm)
4E	14.1	(359)



Cyclo® BBB4
Dimensions

All dimensions are in inches (mm).
For double reduction units ordered in the Y2 mounting configuration, please refer to page 2.133 for external lubricant piping dimensions.

Model	N	ØDC	J	E	F	K	Z	ØD	E1	F1	Q1	Q2	S1 x L	M
4E17DA	21.0 (534)	13.4 (340)	8.46 (215)	9.06 (230)	14.2 (360)	1.38 (35)	2.17 (55)	1.30 (33)	11.8 (300)	11.1 (283)	1.50 (38)	2.56 (65)	M24 x 1.57 (M24 x 40)	14.7 (373)
4E17DB	21.6 (548)	13.4 (340)												
4E17DC	21.7 (552)	13.4 (340)												
4E18DA	24.5 (621)	14.6 (370)												

Model	P	G1	G2	H	H1	ØLA	ØD3	S x L	M1	ØD1	ØD2	ØU	
												Std & Max	Min
4E17DA, 4E17DB	0.28 (7)	6.14 (156)	7.99 (203)	19.6 (498)	9.37 (238)	11.02 (280)	12.6 (320)	M20 x 1.38 (M20 x 35)	16.3 (414)	6.30 (160)	6.69 (170)	3-15/16 (100.01)	2-15/16 (74.61)

LHYM02-4E17DAY ▶ LHYM1-4E18DAY-EP

All dimensions are in inches (mm)

Model	4 Pole Motor HP (kW)	Without Brake					With Brake						
		C	DM ^[1]	AB	ML	Weight lb (kg)	C	DM ^[1]	AB	ML	MS	MT	Weight lb (kg)
LHYM05-4E17DAY-AV	1/2 x 4 (0.4 x 4)	38.83 (986)	ø5.94 (ø151)	5.67 (144)	3.82 (97)	730 (332)	40.53 (1029)	ø5.94 (ø151)	5.67 (144)	5.51 (140)	3.66 (93)	3.94 (100)	736 (334)
LHYM08-4E17DAY	3/4 x 4 (0.55 x 4)	38.83 (986)	ø5.94 (ø151)	5.67 (144)	3.82 (97)	728 (330)	40.53 (1029)	ø5.94 (ø151)	5.67 (144)	5.51 (140)	3.66 (93)	3.94 (100)	734 (333)
LHYM08-4E17DAY-AV	3/4 x 4 (0.55 x 4)	40.13 (1019)	ø6.30 (ø160)	5.86 (149)	3.94 (100)	739 (335)	42.57 (1081)	ø6.30 (ø160)	5.86 (149)	6.38 (162)	4.53 (115)	4.29 (109)	750 (340)
LHYM1-4E17DAY-EP	1 x 4 (0.75 x 4)	40.56 (1030)	6.22 (158)	5.98 (152)	3.82 (97)	744 (338)	43.06 (1094)	6.22 (158)	5.98 (152)	6.32 (161)	4.80 (122)	4.25 (108)	754 (342)
LHYM1H-4E17DAY-EP	1.5 x 4 (1.1 x 4)	41.63 (1057)	6.57 (167)	6.16 (156)	3.82 (97)	751 (341)	44.36 (1127)	6.57 (167)	6.16 (156)	6.56 (167)	5.04 (128)	4.61 (117)	763 (346)
LHYM2-4E17DAY-EP	2 x 4 (1.5 x 4)	41.63 (1057)	6.57 (167)	6.16 (156)	3.82 (97)	754 (342)	44.36 (1127)	6.57 (167)	6.16 (156)	6.56 (167)	5.04 (128)	4.61 (117)	766 (348)
LHYM1-4E17DBY-EP	1 x 4 (0.75 x 4)	41.12 (1044)	6.22 (158)	5.98 (152)	3.82 (97)	748 (340)	43.62 (1108)	6.22 (158)	5.98 (152)	6.32 (161)	4.80 (122)	4.25 (108)	758 (344)
LHYM1H-4E17DBY-EP	1.5 x 4 (1.1 x 4)	42.18 (1071)	6.57 (167)	6.16 (156)	3.82 (97)	756 (343)	44.92 (1141)	6.57 (167)	6.16 (156)	6.56 (167)	5.04 (128)	4.61 (117)	767 (348)
LHYM2-4E17DBY-EP	2 x 4 (1.5 x 4)	42.18 (1071)	6.57 (167)	6.16 (156)	3.82 (97)	759 (344)	44.92 (1141)	6.57 (167)	6.16 (156)	6.56 (167)	5.04 (128)	4.61 (117)	770 (350)
LHYM3-4E17DBY-EP	3 x 4 (2.2 x 4)	43.01 (1092)	7.24 (184)	6.71 (170)	4.53 (115)	775 (352)	46.08 (1170)	7.24 (184)	6.71 (170)	7.60 (193)	5.43 (138)	5.04 (128)	792 (359)
LHYM2-4E17DCY-EP	2 x 4 (1.5 x 4)	42.32 (1075)	6.57 (167)	6.16 (156)	3.82 (97)	768 (349)	45.05 (1144)	6.57 (167)	6.16 (156)	6.56 (167)	5.04 (128)	4.61 (117)	780 (354)
LHYM3-4E17DCY-EP	3 x 4 (2.2 x 4)	41.73 (1060)	7.24 (184)	6.71 (170)	4.53 (115)	781 (355)	44.80 (1138)	7.24 (184)	6.71 (170)	7.60 (193)	5.43 (138)	5.04 (128)	798 (362)
LHYM5-4E17DCY-EP	5 x 4 (3.7 x 4)	43.18 (1097)	8.74 (222)	7.34 (186)	4.65 (118)	807 (366)	46.75 (1187)	8.74 (222)	7.34 (186)	8.21 (209)	6.02 (153)	6.30 (160)	831 (377)
LHYM8-4E17DCY-EP	7.5 x 4 (5.5 x 4)	44.88 (1140)	8.74 (222)	7.34 (186)	4.65 (118)	841 (382)	48.44 (1230)	8.74 (222)	7.34 (186)	8.21 (209)	6.02 (153)	6.30 (160)	865 (392)
LHYM03-4E18DAY	1/3 x 4 (0.25 x 4)	37.26 (947)	ø4.88 (ø124)	4.63 (118)	2.32 (59)	818 (371)	38.52 (979)	ø4.88 (ø124)	4.63 (118)	3.58 (91)	2.40 (61)	-	821 (372)
LHYM03-4E18DAY-AV	1/3 x 4 (0.25 x 4)	38.05 (967)	ø4.88 (ø124)	4.63 (118)	2.32 (59)	821 (372)	39.31 (999)	ø4.88 (ø124)	4.63 (118)	3.58 (91)	2.40 (61)	-	824 (374)
LHYM05-4E18DAY	1/2 x 4 (0.4 x 4)	38.05 (967)	ø4.88 (ø124)	4.63 (118)	2.32 (59)	821 (372)	39.31 (999)	ø4.88 (ø124)	4.63 (118)	3.58 (91)	2.40 (61)	-	824 (374)
LHYM05-4E18DAY-AV	1/2 x 4 (0.4 x 4)	39.67 (1008)	ø5.94 (ø151)	5.67 (144)	3.82 (97)	828 (376)	41.36 (1051)	ø5.94 (ø151)	5.67 (144)	5.51 (140)	3.66 (93)	3.94 (100)	834 (378)
LHYM08-4E18DAY	3/4 x 4 (0.55 x 4)	39.67 (1008)	ø5.94 (ø151)	5.67 (144)	3.82 (97)	825 (375)	41.36 (1051)	ø5.94 (ø151)	5.67 (144)	5.51 (140)	3.66 (93)	3.94 (100)	831 (377)
LHYM08-4E18DAY-AV	3/4 x 4 (0.55 x 4)	40.96 (1041)	ø6.30 (ø160)	5.86 (149)	3.94 (100)	836 (380)	43.41 (1103)	ø6.30 (ø160)	5.86 (149)	6.38 (162)	4.53 (115)	4.29 (109)	847 (384)
LHYM1-4E18DAY-EP	1 x 4 (0.75 x 4)	41.40 (1052)	6.22 (158)	5.98 (152)	3.82 (97)	841 (382)	43.90 (1115)	6.22 (158)	5.98 (152)	6.32 (161)	4.80 (122)	4.25 (108)	851 (386)
LHYM1H-4E18DAY-EP	1.5 x 4 (1.1 x 4)	42.46 (1079)	6.57 (167)	6.16 (156)	3.82 (97)	848 (385)	45.20 (1148)	6.57 (167)	6.16 (156)	6.56 (167)	5.04 (128)	4.61 (117)	860 (390)
LHYM2-4E18DAY-EP	2 x 4 (1.5 x 4)	42.46 (1079)	6.57 (167)	6.16 (156)	3.82 (97)	851 (386)	45.20 (1148)	6.57 (167)	6.16 (156)	6.56 (167)	5.04 (128)	4.61 (117)	863 (392)
LHYM3-4E18DAY-EP	3 x 4 (2.2 x 4)	43.29 (1100)	7.24 (184)	6.71 (170)	4.53 (115)	867 (394)	46.36 (1178)	7.24 (184)	6.71 (170)	7.60 (193)	5.43 (138)	5.04 (128)	884 (401)
LHYM1H-4E18DBY-EP	1.5 x 4 (1.1 x 4)	43.35 (1101)	6.57 (167)	6.16 (156)	3.82 (97)	873 (396)	46.08 (1171)	6.57 (167)	6.16 (156)	6.56 (167)	5.04 (128)	4.61 (117)	884 (401)
LHYM2-4E18DBY-EP	2 x 4 (1.5 x 4)	43.35 (1101)	6.57 (167)	6.16 (156)	3.82 (97)	876 (397)	46.08 (1171)	6.57 (167)	6.16 (156)	6.56 (167)	5.04 (128)	4.61 (117)	887 (403)
LHYM3-4E18DBY-EP	3 x 4 (2.2 x 4)	42.76 (1086)	7.24 (184)	6.71 (170)	4.53 (115)	887 (403)	45.83 (1164)	7.24 (184)	6.71 (170)	7.60 (193)	5.43 (138)	5.04 (128)	904 (410)

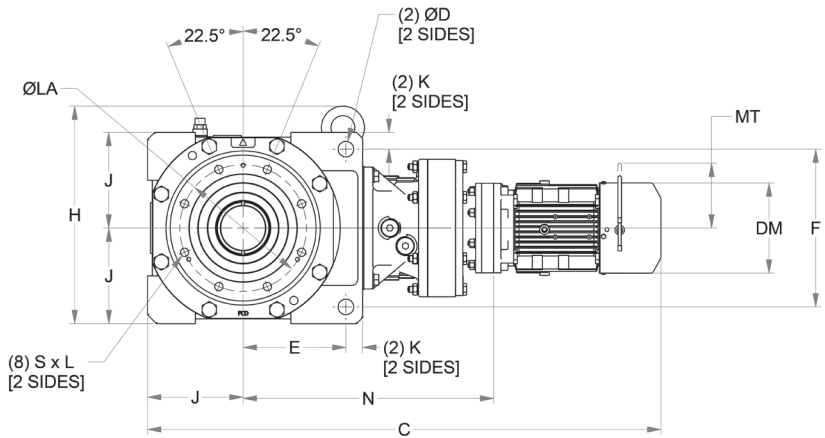
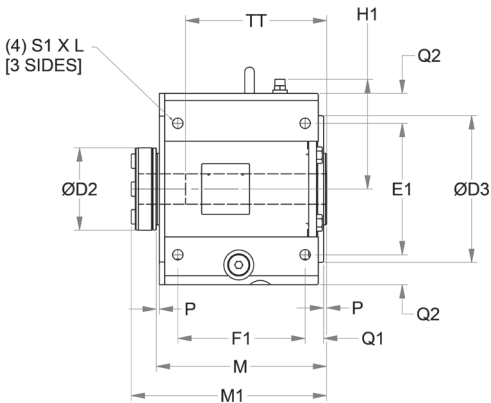
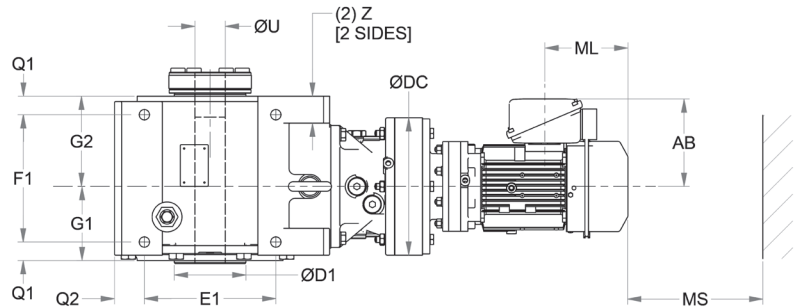
Notes [1]: DM Dimension Symbol ø = Round Fan Cover
DM Dimension Symbol = Square Fan Cover

LXXX-4XX0/4XX5 Frame sizes have equal dimensions, different ratings.

Dimensions

Double Reduction Cyclo® LHYM-4E18DAY ~ 4F19DAY

Minimum Engagement		
Frame Size	TT	
	inch	(mm)
4E	14.1	(359)
4F	16.2	(412)



Cyclo® BBB4
Dimensions

All dimensions are in inches (mm).

Model	N	ØDC	J	E	F	K	Z	ØD	E1	F1	Q1	Q2	S1 x L	M
4E18DA	24.5 (621)	14.6 (370)	8.46 (215)	9.06 (230)	14.2 (360)	1.38 (35)	2.17 (55)	1.30 (33)	11.8 (300)	11.1 (283)	1.50 (38)	2.56 (65)	M24 x 1.57 (M24 x 40)	14.7 (373)
4E18DB	25.3 (643)	14.6 (370)												
4F18DA	26.9 (684)	14.6 (370)	9.45 (240)	9.92 (252)	15.8 (400)	1.6 (40)	2.2 (55)	1.5 (39)	13.4 (340)	12.6 (320)	1.99 (50.5)	2.8 (70)	M30 x 1.97 (M30 x 50)	17.1 (435)
4F18DB	27.8 (706)	14.6 (370)												
4F19DA	28.3 (718)	16.9 (430)												

Model	P	G1	G2	H	H1	ØLA	ØD3	S x L	M1	ØD1	ØD2	ØU	
												Std & Max	Min
4E18DA, 4E18DB	0.28 (7)	6.14 (156)	7.99 (203)	19.6 (498)	9.37 (238)	11.02 (280)	12.6 (320)	M20 x 1.38 (M20 x 35)	16.3 (414)	6.30 (160)	6.69 (170)	3-15/16 (100.01)	2-15/16 (74.61)
4F18DA, 4F18DB 4F19DA	0.3 (7)	7.20 (183)	9.37 (238)	23.2 (590)	10.8 (273)	12.6 (320)	14.6 (370)	M24 x 1.97 (M24 x 50)	19.1 (486)	7.09 (180)	8.15 (207)	4-15/16 (125.41)	3-15/16 (100.01)

LHYM1H-4E18DAY-EP ▶ LHYM05-4F19DAY

All dimensions are in inches (mm)

Model	4 Pole Motor HP (kW)	Without Brake					With Brake						
		C	DM ^[1]	AB	ML	Weight lb (kg)	C	DM ^[1]	AB	ML	MS	MT	Weight lb (kg)
LHYM5-4E18DBY-EP	5 x 4 (3.7 x 4)	44.02 (1118)	8.74 (222)	7.34 (186)	4.65 (118)	911 (414)	47.58 (1209)	8.74 (222)	7.34 (186)	8.21 (209)	6.02 (153)	6.30 (160)	935 (424)
LHYM8-4E18DBY-EP	7.5 x 4 (5.5 x 4)	45.71 (1161)	8.74 (222)	7.34 (186)	4.65 (118)	945 (429)	49.27 (1252)	8.74 (222)	7.34 (186)	8.21 (209)	6.02 (153)	6.30 (160)	969 (440)
LHYM03-4F18DAY	1/3 x 4 (0.25 x 4)	40.74 (1035)	ø4.88 (ø124)	4.63 (118)	2.32 (59)	1205 (547)	42.00 (1067)	ø4.88 (ø124)	4.63 (118)	3.58 (91)	2.40 (61)	-	1208 (548)
LHYM03-4F18DAY-AV	1/3 x 4 (0.25 x 4)	41.53 (1055)	ø4.88 (ø124)	4.63 (118)	2.32 (59)	1208 (548)	42.79 (1087)	ø4.88 (ø124)	4.63 (118)	3.58 (91)	2.40 (61)	-	1211 (550)
LHYM05-4F18DAY	1/2 x 4 (0.4 x 4)	41.53 (1055)	ø4.88 (ø124)	4.63 (118)	2.32 (59)	1208 (548)	42.79 (1087)	ø4.88 (ø124)	4.63 (118)	3.58 (91)	2.40 (61)	-	1211 (550)
LHYM05-4F18DAY-AV	1/2 x 4 (0.4 x 4)	43.14 (1096)	ø5.94 (ø151)	5.67 (144)	3.82 (97)	1215 (552)	44.84 (1139)	ø5.94 (ø151)	5.67 (144)	5.51 (140)	3.66 (93)	3.94 (100)	1221 (554)
LHYM08-4F18DAY	3/4 x 4 (0.55 x 4)	43.14 (1096)	ø5.94 (ø151)	5.67 (144)	3.82 (97)	1213 (550)	44.84 (1139)	ø5.94 (ø151)	5.67 (144)	5.51 (140)	3.66 (93)	3.94 (100)	1219 (553)
LHYM08-4F18DAY-AV	3/4 x 4 (0.55 x 4)	44.44 (1129)	ø6.30 (ø160)	5.86 (149)	3.94 (100)	1224 (555)	46.88 (1191)	ø6.30 (ø160)	5.86 (149)	6.38 (162)	4.53 (115)	4.29 (109)	1234 (560)
LHYM1-4F18DAY-EP	1 x 4 (0.75 x 4)	44.88 (1140)	6.22 (158)	5.98 (152)	3.82 (97)	1229 (558)	47.38 (1203)	6.22 (158)	5.98 (152)	6.32 (161)	4.80 (122)	4.25 (108)	1238 (562)
LHYM1H-4F18DAY-EP	1.5 x 4 (1.1 x 4)	45.94 (1167)	6.57 (167)	6.16 (156)	3.82 (97)	1236 (561)	48.68 (1236)	6.57 (167)	6.16 (156)	6.56 (167)	5.04 (128)	4.61 (117)	1248 (566)
LHYM2-4F18DAY-EP	2 x 4 (1.5 x 4)	45.94 (1167)	6.57 (167)	6.16 (156)	3.82 (97)	1239 (562)	48.68 (1236)	6.57 (167)	6.16 (156)	6.56 (167)	5.04 (128)	4.61 (117)	1250 (567)
LHYM3-4F18DAY-EP	3 x 4 (2.2 x 4)	46.77 (1188)	7.24 (184)	6.71 (170)	4.53 (115)	1255 (570)	49.84 (1266)	7.24 (184)	6.71 (170)	7.60 (193)	5.43 (138)	5.04 (128)	1272 (577)
LHYM1H-4F18DBY-EP	1.5 x 4 (1.1 x 4)	46.82 (1189)	6.57 (167)	6.16 (156)	3.82 (97)	1260 (572)	49.56 (1259)	6.57 (167)	6.16 (156)	6.56 (167)	5.04 (128)	4.61 (117)	1272 (577)
LHYM2-4F18DBY-EP	2 x 4 (1.5 x 4)	46.82 (1189)	6.57 (167)	6.16 (156)	3.82 (97)	1263 (573)	49.56 (1259)	6.57 (167)	6.16 (156)	6.56 (167)	5.04 (128)	4.61 (117)	1275 (579)
LHYM3-4F18DBY-EP	3 x 4 (2.2 x 4)	46.23 (1174)	7.24 (184)	6.71 (170)	4.53 (115)	1275 (578)	49.31 (1252)	7.24 (184)	6.71 (170)	7.60 (193)	5.43 (138)	5.04 (128)	1291 (586)
LHYM5-4F18DBY-EP	5 x 4 (3.7 x 4)	47.49 (1206)	8.74 (222)	7.34 (186)	4.65 (118)	1299 (589)	51.06 (1297)	8.74 (222)	7.34 (186)	8.21 (209)	6.02 (153)	6.30 (160)	1323 (600)
LHYM8-4F18DBY-EP	7.5 x 4 (5.5 x 4)	49.19 (1249)	8.74 (222)	7.34 (186)	4.65 (118)	1333 (605)	52.75 (1340)	8.74 (222)	7.34 (186)	8.21 (209)	6.02 (153)	6.30 (160)	1357 (616)
LHYM10-4F18DBY-EP	10 x 4 (7.5 x 4)	50.68 (1287)	10.24 (260)	9.04 (230)	5.43 (138)	1360 (617)	54.82 (1392)	10.24 (260)	9.04 (230)	9.57 (243)	7.44 (189)	7.32 (186)	1404 (637)
LHYM03-4F19DAY-AV	1/3 x 4 (0.25 x 4)	42.68 (1084)	ø4.88 (ø124)	4.63 (118)	2.32 (59)	1314 (596)	43.94 (1116)	ø4.88 (ø124)	4.63 (118)	3.58 (91)	2.40 (61)	-	1317 (597)
LHYM05-4F19DAY	1/2 x 4 (0.4 x 4)	42.68 (1084)	ø4.88 (ø124)	4.63 (118)	2.32 (59)	1314 (596)	43.94 (1116)	ø4.88 (ø124)	4.63 (118)	3.58 (91)	2.40 (61)	-	1317 (597)
LHYM05-4F19DAY-AV	1/2 x 4 (0.4 x 4)	44.09 (1120)	ø5.94 (ø151)	5.67 (144)	3.82 (97)	1321 (599)	45.79 (1163)	ø5.94 (ø151)	5.67 (144)	5.51 (140)	3.66 (93)	3.94 (100)	1326 (602)
LHYM08-4F19DAY	3/4 x 4 (0.55 x 4)	44.09 (1120)	ø5.94 (ø151)	5.67 (144)	3.82 (97)	1318 (598)	45.79 (1163)	ø5.94 (ø151)	5.67 (144)	5.51 (140)	3.66 (93)	3.94 (100)	1324 (601)
LHYM08-4F19DAY-AV	3/4 x 4 (0.55 x 4)	45.39 (1153)	ø6.30 (ø160)	5.86 (149)	3.94 (100)	1326 (602)	47.83 (1215)	ø6.30 (ø160)	5.86 (149)	6.38 (162)	4.53 (115)	4.29 (109)	1337 (607)
LHYM1-4F19DAY-EP	1 x 4 (0.75 x 4)	45.83 (1164)	6.22 (158)	5.98 (152)	3.82 (97)	1331 (604)	48.33 (1228)	6.22 (158)	5.98 (152)	6.32 (161)	4.80 (122)	4.25 (108)	1341 (609)
LHYM1H-4F19DAY-EP	1.5 x 4 (1.1 x 4)	46.89 (1191)	6.57 (167)	6.16 (156)	3.82 (97)	1338 (607)	49.63 (1261)	6.57 (167)	6.16 (156)	6.56 (167)	5.04 (128)	4.61 (117)	1350 (613)
LHYM2-4F19DAY-EP	2 x 4 (1.5 x 4)	46.89 (1191)	6.57 (167)	6.16 (156)	3.82 (97)	1341 (609)	49.63 (1261)	6.57 (167)	6.16 (156)	6.56 (167)	5.04 (128)	4.61 (117)	1353 (614)
LHYM3-4F19DAY-EP	3 x 4 (2.2 x 4)	46.30 (1176)	7.24 (184)	6.71 (170)	4.53 (115)	1354 (615)	49.37 (1254)	7.24 (184)	6.71 (170)	7.60 (193)	5.43 (138)	5.04 (128)	1371 (622)

Cyclo® BBB4

Dimensions

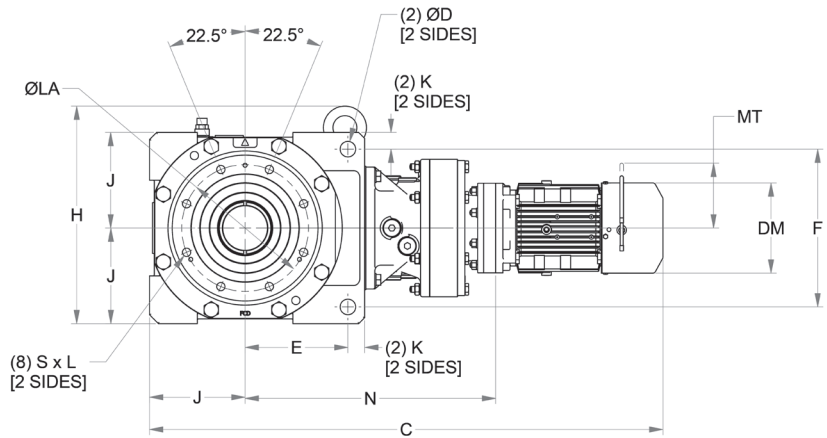
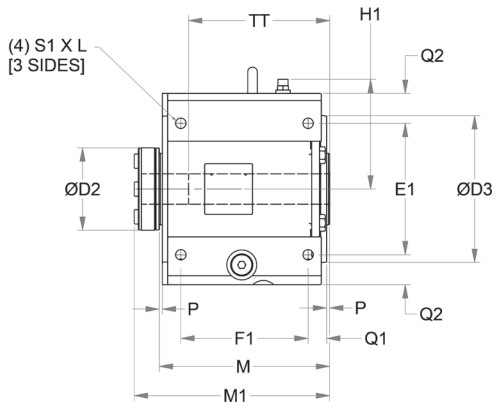
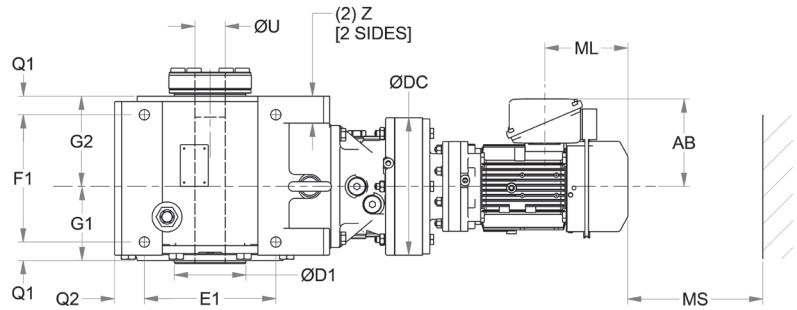
Notes [1]: DM Dimension Symbol ø = Round Fan Cover
DM Dimension Symbol = Square Fan Cover

LXXX-4XX0/4XX5 Frame sizes have equal dimensions, different ratings.

Dimensions

Double Reduction Cyclo® LHYM-4F19DAY ~ 4F19DBY

Minimum Engagement		
Frame Size	TT	
	inch	(mm)
4F	16.2	(412)



Cyclo® BBB4
Dimensions

All dimensions are in inches (mm).

Model	N	ØDC	J	E	F	K	Z	ØD	E1	F1	Q1	Q2	S1 x L	M
4F19DA	28.3 (718)	16.9 (430)	9.45 (240)	9.92 (252)	15.8 (400)	1.6 (40)	2.2 (55)	1.5 (39)	13.4 (340)	12.6 (320)	1.99 (50.5)	2.8 (70)	M30 x 1.97 (M30 x 50)	17.1 (435)
4F19DB	28.9 (734)	16.9 (430)												

Model	P	G1	G2	H	H1	ØLA	ØD3	S x L	M1	ØD1	ØD2	ØU	
												Std & Max	Min
4F19DA, 4F19DB	0.3 (7)	7.20 (183)	9.37 (238)	23.2 (590)	10.8 (273)	12.6 (320)	14.6 (370)	M24 x 1.97 (M24 x 50)	19.1 (486)	7.09 (180)	8.15 (207)	4-15/16 (125.41)	3-15/16 (100.01)

LHYM05-4F19DAY-AV ► LHYM10-4F19DBY-EP

All dimensions are in inches (mm)

Model	4 Pole Motor HP (kW)	Without Brake					With Brake						
		C	DM ^[1]	AB	ML	Weight lb (kg)	C	DM ^[1]	AB	ML	MS	MT	Weight lb (kg)
LHYM5-4F19DAY-EP	5 x 4 (3.7 x 4)	47.76 (1213)	8.74 (222)	7.34 (186)	4.65 (118)	1380 (626)	51.32 (1304)	8.74 (222)	7.34 (186)	8.21 (209)	6.02 (153)	6.30 (160)	1404 (637)
LHYM8-4F19DAY-EP	7.5 x 4 (5.5 x 4)	49.45 (1256)	8.74 (222)	7.34 (186)	4.65 (118)	1413 (641)	53.01 (1347)	8.74 (222)	7.34 (186)	8.21 (209)	6.02 (153)	6.30 (160)	1437 (652)
LHYM3-4F19DBY-EP	3 x 4 (2.2 x 4)	46.93 (1192)	7.24 (184)	6.71 (170)	4.53 (115)	1358 (616)	50.00 (1270)	7.24 (184)	6.71 (170)	7.60 (193)	5.43 (138)	5.04 (128)	1375 (624)
LHYM5-4F19DBY-EP	5 x 4 (3.7 x 4)	48.19 (1224)	8.74 (222)	7.34 (186)	4.65 (118)	1383 (627)	51.75 (1315)	8.74 (222)	7.34 (186)	8.21 (209)	6.02 (153)	6.30 (160)	1406 (638)
LHYM8-4F19DBY-EP	7.5 x 4 (5.5 x 4)	49.88 (1267)	8.74 (222)	7.34 (186)	4.65 (118)	1417 (643)	53.44 (1358)	8.74 (222)	7.34 (186)	8.21 (209)	6.02 (153)	6.30 (160)	1441 (654)
LHYM10-4F19DBY-EP	10 x 4 (7.5 x 4)	51.38 (1305)	10.24 (260)	9.04 (230)	5.43 (138)	1444 (655)	55.51 (1410)	10.24 (260)	9.04 (230)	9.57 (243)	7.44 (189)	7.32 (186)	1488 (675)

Cyclo® BBB4

Dimensions

Sold & Serviced By:



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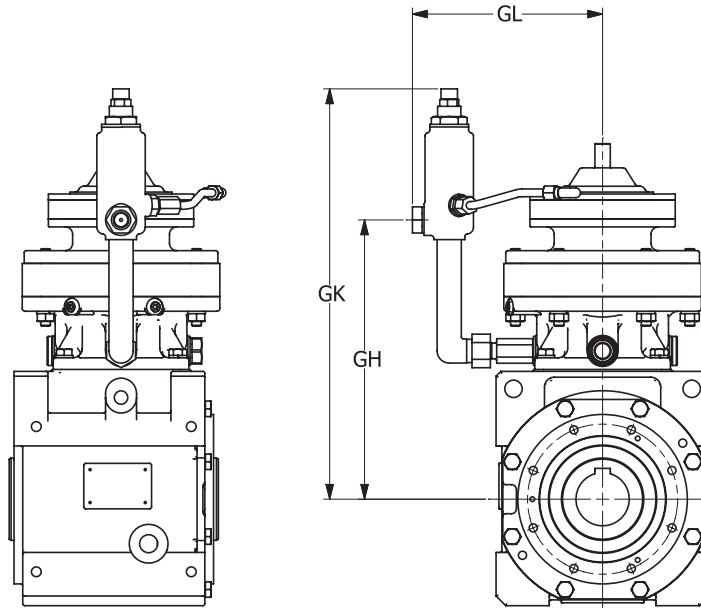
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Notes [1]: DM Dimension Symbol \emptyset = Round Fan Cover
DM Dimension Symbol = Square Fan Cover

LXXX-4XX0/4XX5 Frame sizes have equal dimensions, different ratings.

Dimensions

Double Reduction Cyclo®, Y2 Mounting External Lubricant Piping LHY(J)-4A10DA ~ 4F19DB



All dimensions are in inches (mm).

Frame Size	GL	GH	GK	Frame Size	GL	GH	GK	Frame Size	GL	GH	GK
4A10DA	5.98 (152)	10.9 (278)	15.6 (397)	4C14DC	9.09 (231)	16.5 (418)	22.6 (575)	4E17DA	11.4 (289)	20.5 (521)	28.7 (728)
4A12DA	7.99 (203)	11.4 (290)	16.9 (428)	4C16DA	10.3 (261)	17.0 (433)	23.2 (590)	4E17DB	11.4 (289)	20.8 (528)	28.9 (735)
4A12DB	7.99 (203)	11.8 (299)	17.2 (437)	4D16DA	10.3 (261)	19.9 (505)	26.1 (662)	4E17DC	11.4 (289)	21.0 (533)	29.1 (740)
4B12DA	7.99 (203)	12.9 (327)	18.3 (465)	4D16DB	10.3 (261)	20.2 (512)	26.3 (669)	4E18DA	12.4 (314)	21.1 (536)	31.6 (803)
4B12DB	7.99 (203)	13.2 (336)	18.7 (474)	4D17DA	11.4 (289)	19.5 (496)	27.7 (703)	4E18DB	12.4 (314)	20.6 (522)	32.2 (819)
4B14DA	9.09 (231)	13.7 (349)	19.9 (506)	4D17DB	11.4 (289)	19.8 (503)	28.0 (710)	4F18DA	12.4 (314)	23.6 (599)	34.1 (866)
4B14DB	9.09 (231)	13.9 (353)	20.1 (510)	4D17DC	11.4 (289)	20.0 (508)	28.1 (715)	4F18DB	12.4 (314)	24.2 (615)	34.7 (882)
4C14DA	9.09 (231)	16.0 (407)	22.2 (564)	4D18DA	12.4 (314)	20.1 (511)	31.0 (787)	4F19DA	14.0 (355)	24.6 (624)	35.1 (891)
4C14DB	9.09 (231)	16.2 (411)	22.4 (568)	4D18DB	12.4 (314)	20.7 (527)	31.3 (794)	4F19DB	14.0 (355)	24.9 (633)	35.4 (900)

Cyclo® BBB4
Dimensions

Sold & Serviced By:



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3

Options

Cyclo® BBB4

Options

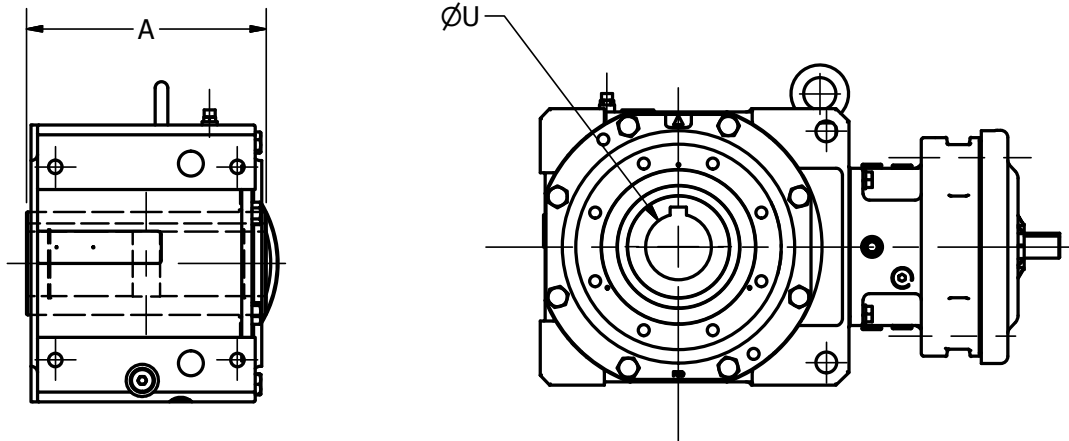
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Options

Keyed Hollow Shaft

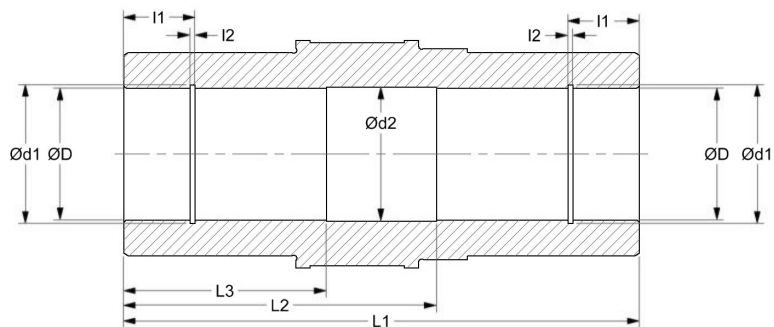


All dimensions are in inches (mm).

Frame Size	Standard Inch Bore Dimension			Standard Metric Bore Dimension			A	TK*
	ØU	ØU Tolerance	Keyway	ØU	ØU Tolerance	Keyway		
4A	2.000	+0.0018/+0.0006	1/2 x 1/4	(55)	(+0.046/+0.016)	(16 x 10)	8.50 (216)	6.50 (165)
4B	2.375	+0.0018/+0.0006	5/8 x 5/16	(65)	(+0.046/+0.016)	(18 x 11)	10.20 (259)	7.87 (200)
4C	2.750	+0.0018/+0.0006	5/8 x 5/16	(75)	(+0.046/+0.016)	(20 x 12)	11.22 (285)	9.76 (248)
4D	3.250	+0.0021/+0.0007	3/4 X 3/8	(85)	(+0.054/+0.019)	(22 x 14)	13.39 (340)	11.93 (303)
4E	4.000	+0.0021/+0.0007	1 X 1/2	(100)	(+0.054/+0.019)	(28 x 16)	14.69 (373)	10.24 (260)
4F	4.500	+0.0023/+0.0009	1 X 1/2	(120)	(+0.058/+0.023)	(32 x 18)	17.13 (435)	12.44 (316)

*Recommended minimum shaft engagement

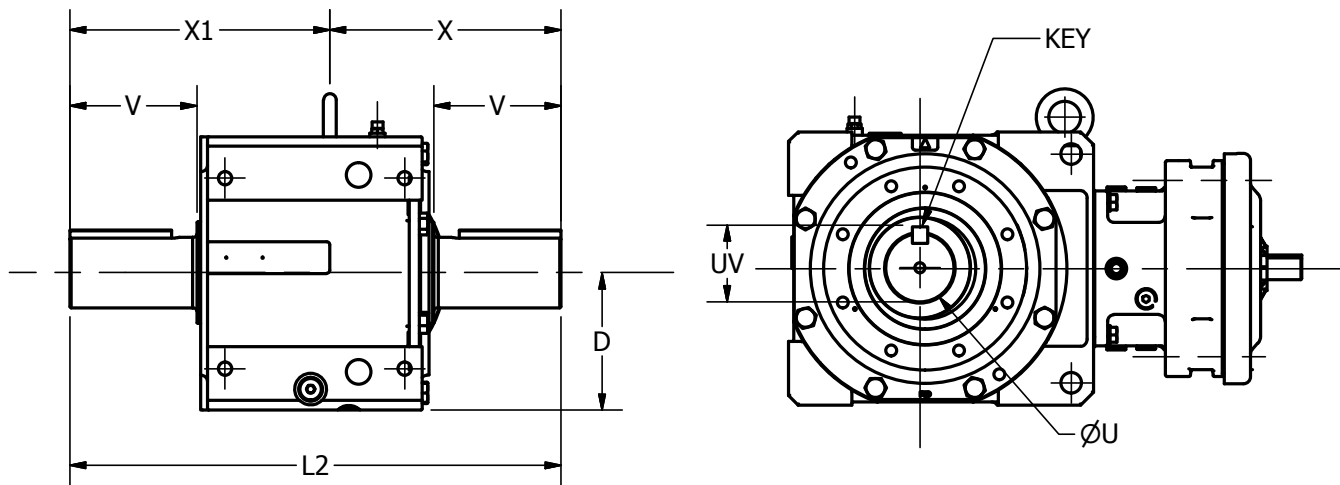
Key Hollow Bore



All dimensions are in inches (mm).

Frame Size	ØD	BBB		Retaining Ring Groove			Relief	
		L1	Ød1	I1	I2	Ød2	L2	L3
4A	2 (55)	8.50 (216)	2.09 (58)	1.18 (30)	.069 (2.2)	2.04 (56)	5.16 (131)	3.35 (85)
4B	2-3/8 (65)	10.2 (259)	2.51 (68)	1.18 (30)	0.085 (2.7)	2.42 (66)	6.26 (159)	3.94 (100)
4C	2-3/4 (75)	11.2 (285)	2.93 (78)	1.18 (37)	0.100 (2.7)	2.80 (76)	6.50 (165)	4.72 (120)
4D	3-1/4 (85)	13.4 (340)	3.43 (88.5)	1.46 (37)	0.116 (3.2)	3.31 (86)	7.68 (208)	5.71 (165)
4E	4 (100)	14.7 (373)	4.27 (103.5)	1.46 (37)	0.116 (3.2)	4.06 (101)	8.19 (208)	6.50 (165)
4F	4-1/2 (120)	17.1 (435)	4.74 (124)	1.93 (49)	0.120 (4.2)	4.55 (121)	9.49 or 9.69 (3) (241 or 246 (3))	7.44 or 7.64 (3) (189 or 194 (3))

Solid Output Shaft



All dimensions are in inches (mm).

Frame Size	Standard Inch Shaft Dimension				Standard Metric Shaft Dimensions				D	V	X	X1	L2
	ØU	ØU Tolerance	UV	Key	ØU	ØU Tolerance	UV	Key					
4A	2.000	h6: 0/-0.0006	2.22	1/2 x 1/2 x 2.76	(50)	(h6: 0/-0.016)	(53.5)	(14 x 9 x 70)	4.33 (110)	3.54 (90)	7.48 (190)	8.11 (206)	15.59 (396)
4B	2.875	h6: 0/-0.0007	3.20	3/4 x 3/4 x 3.15	(65)	(h6: 0/-0.019)	(69.0)	(18 x 11 x 80)	5.12 (130)	4.53 (115)	9.53 (242)	9.72 (247)	19.25 (489)
4C	3.125	h6: 0/-0.0007	3.45	3/4 x 3/4 x 4.72	(80)	(h6: 0/-0.019)	(85.0)	(22 x 14 x 120)	6.30 (160)	5.71 (145)	10.79 (274)	11.85 (301)	22.64 (575)
4D	3.625	h6 0/-0.0009	4.01	7/8 x 7/8 x 5.51	(95)	(h6: 0/-0.022)	(100)	(25 x 14 x 140)	7.48 (190)	6.69 (170)	12.80 (325)	13.98 (355)	26.77 (680)
4E	4.375	h6 0/-0.0009	4.82	1 x 1 x 6.30	(110)	(h6: 0/-0.022)	(116)	(28 x 16 x 160)	8.46 (215)	7.87 (200)	14.29 (363)	16.14 (410)	30.43 (773)
4F	4.750	h6 0/-0.0010	5.29	1-1/4 x 1-1/4 x 6.69	(130)	(h6: 0/-0.025)	(137)	(32 x 18 x 170)	9.45 (240)	8.27 (210)	15.75 (400)	17.91 (455)	33.66 (855)

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Options

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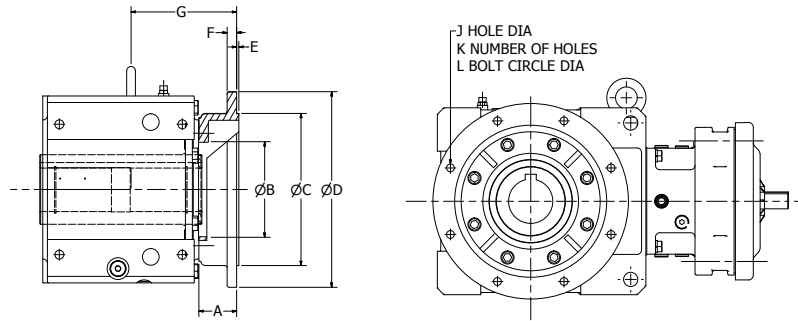
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Options

Output Flange



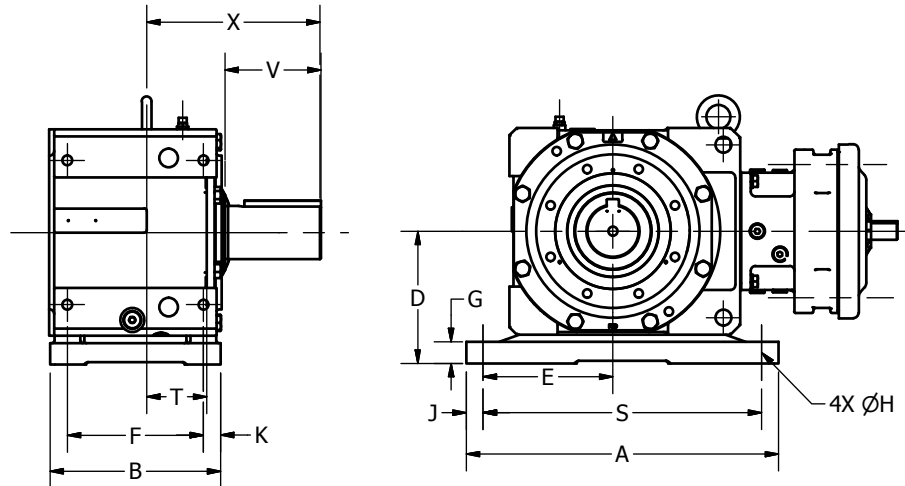
All dimensions are in inches (mm).

Frame Size	A	ØB	ØC	ØD	E	F	G	J	K	L
4A	2.36 (60)	4.72 (120)	7.09 (180)	9.84 (250)	0.16 (4)	0.59 (15)	6.30 (160)	0.55 (14)	4	8.46 (215)
4B	2.40 (61)	5.51 (140)	9.06 (230)	11.8 (300)	0.16 (4)	0.63 (16)	7.40 (188)	0.55 (14)	4	10.4 (265)
4C	2.87 (73)	6.50 (165)	9.84 (250)	13.8 (350)	0.20 (5)	0.71 (18)	7.95 (202)	0.71 (18)	4	11.8 (300)
4D	3.15 (80)	7.68 (195)	13.8 (350)	17.7 (450)	0.20 (5)	0.87 (22)	9.25 (235)	0.71 (18)	8	15.8 (400)
4E	3.15 (80)	8.66 (220)	13.8 (350)	17.7 (450)	0.20 (5)	0.87 (22)	9.57 (243)	0.71 (18)	8	15.8 (400)
4F	2.56 (65)	9.45 (240)	21.7 (550)	26.0 (660)	0.20 (5)	0.94 (24)	10.0 (255)	0.87 (22)	8	23.6 (600)

Foot Mounted

Cyclo® BBB4

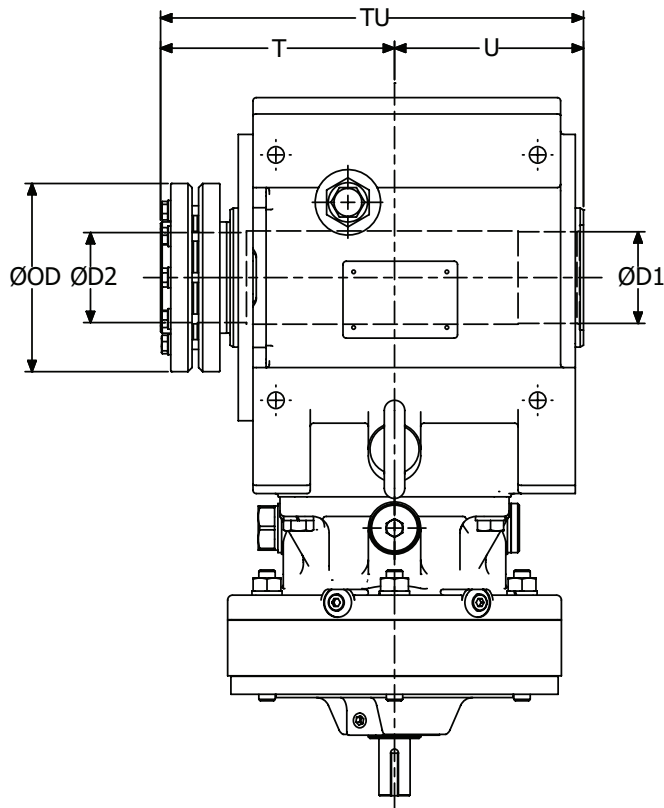
Options



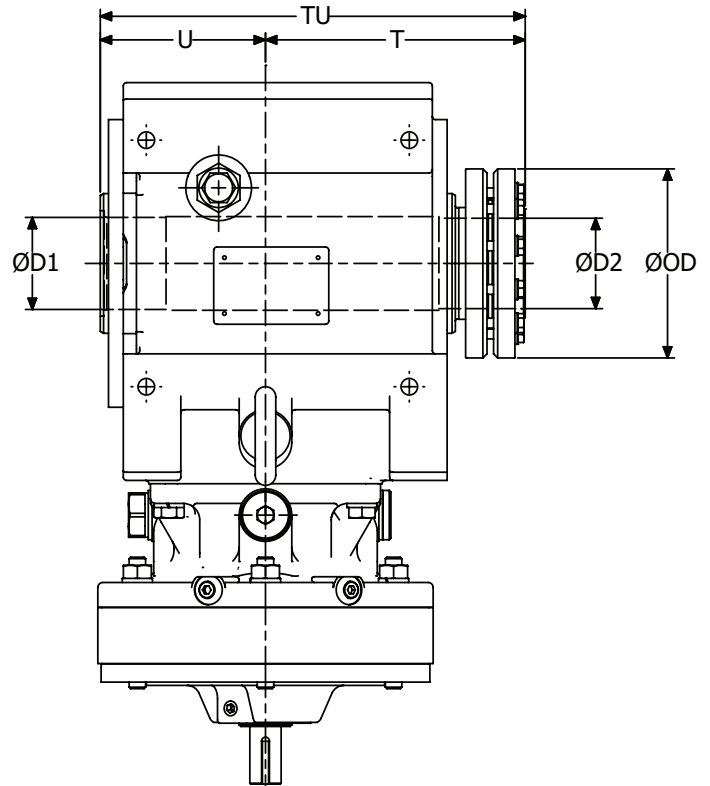
All dimensions are in inches (mm).

Frame Size	A	B	D	E	F	G	ØH	J	K	S	T	V	X
4A	12.6 (320)	7.95 (202)	5.51 (140)	5.31 (135)	6.30 (160)	0.98 (25)	0.55 (14)	0.79 (20)	0.83 (21)	11.0 (280)	2.83 (72)	3.54 (90)	7.48 (190)
4B	15.2 (385)	9.65 (245)	6.69 (170)	6.30 (160)	7.68 (195)	1.38 (35)	0.71 (18)	0.79 (20)	0.98 (25)	13.6 (345)	3.74 (95)	4.53 (115)	9.53 (242)
4C	19.9 (505)	10.6 (270)	8.27 (210)	7.68 (195)	8.27 (210)	1.57 (40)	0.87 (22)	1.18 (30)	1.18 (30)	17.5 (445)	3.58 (91)	5.71 (145)	10.8 (274)
4D	22.1 (560)	12.6 (320)	9.65 (245)	9.25 (235)	10.2 (260)	1.77 (45)	1.02 (26)	1.18 (30)	1.18 (30)	19.7 (500)	4.53 (115)	6.69 (170)	12.8 (325)
4E	25.6 (650)	14.0 (355)	10.8 (275)	10.6 (270)	11.0 (280)	1.77 (45)	1.30 (33)	1.38 (35)	1.50 (38)	22.8 (580)	4.57 (116)	7.87 (200)	14.3 (363)
4F	29.1 (740)	15.8 (400)	12.6 (320)	11.8 (300)	12.6 (320)	2.56 (65)	1.30 (33)	1.38 (35)	1.57 (40)	26.4 (670)	4.43 (113)	8.27 (210)	15.8 (400)

Shrink Disc



Left Projecting Shrink Disc



Right Projecting Shrink Disc

Cyclo® BBB4

Options

All dimensions are in inches (mm).

Frame Size	ØD1	ØD2	ØOD	TU	Left Projecting Shrink Disc		Right Projecting Shrink Disc	
					T	U	T	U
4A	2.20 (56)	2.17 (55)	4.53 (115)	10.2 (259)	5.28 (134)	4.90 (125)	6.40 (163)	3.78 (96)
4B	2.60 (66)	2.56 (65)	5.71 (145)	12.0 (304)	6.76 (172)	5.19 (132)	6.95 (177)	5.00 (127)
4C	2.99 (76)	2.95 (75)	6.69 (170)	13.3 (337)	7.11 (181)	6.14 (156)	8.17 (208)	5.08 (129)
4D	3.39 (86)	3.35 (85)	7.28 (185)	16.0 (408)	8.76 (223)	7.28 (185)	9.94 (253)	6.10 (155)
4E	3.98 (101)	3.94 (100)	9.06 (230)	17.3 (441)	9.07 (231)	8.27 (210)	10.9 (278)	6.42 (163)
4F	4.76 (121)	4.72 (120)	11.4 (290)	20.2 (513)	10.6 (268)	9.65 (245)	12.7 (323)	7.48 (190)

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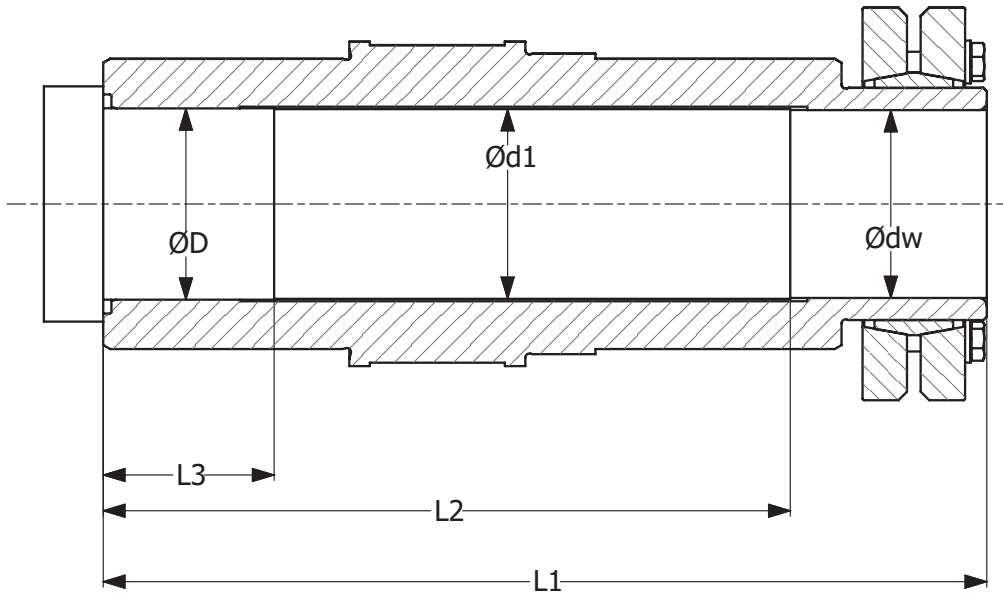
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Options

Shrink Disc - Recommended Driven Inch Shaft Dimensions



Recommendations for the design of the driven shaft if Shrink Disc connection method is selected:

- When ordering the Cyclo® BBB4 with a shrink disc output option, be sure to designate the orientation (left or right) in which to install the shrink disc.
- Once the product is shipped from the Sumitomo factory, the orientation of the shrink disc **cannot** be changed in the field.
- When designing the driven shaft to be inserted into the shrink disc, refer to the table below for shaft design recommendations.

All dimensions are in inches.

Model	Driven Shaft Recommended Dimensions							
	Ødw	Ødw tolerance	Ød1	ØD	ØD tolerance	L1	L2	L3
4A100, 4A105 4A110, 4A115 4A120, 4A125 4A140, 4A145	1-15/16 2 2-3/16	h6: +0/-0.0006 h6: +0/-0.0007 h6: +0/-0.0007	1.91 1.98 2.19	1.98 2.04 2.22	h7: +0/-0.0010 h7: +0/-0.0012 h7: +0/-0.0012	10.18	7.91	1.97
4B120, 4B125 4B140, 4B145 4B160, 4B165	2 2-3/16 2-3/8 2-7/16	h6: +0/-0.0007	1.98 2.19 2.39 2.46	2.04 2.22 2.41 2.48	h7: +0/-0.0012	11.95	9.60	1.97
4C140, 4C145 4C160, 4C165 4C170, 4C175	2-3/4 2-15/16	h6: +0/-0.0007	2.77 2.97	2.79 2.99	h7: +0/-0.0012	13.25	10.63	1.97

Cyclo® BBB4

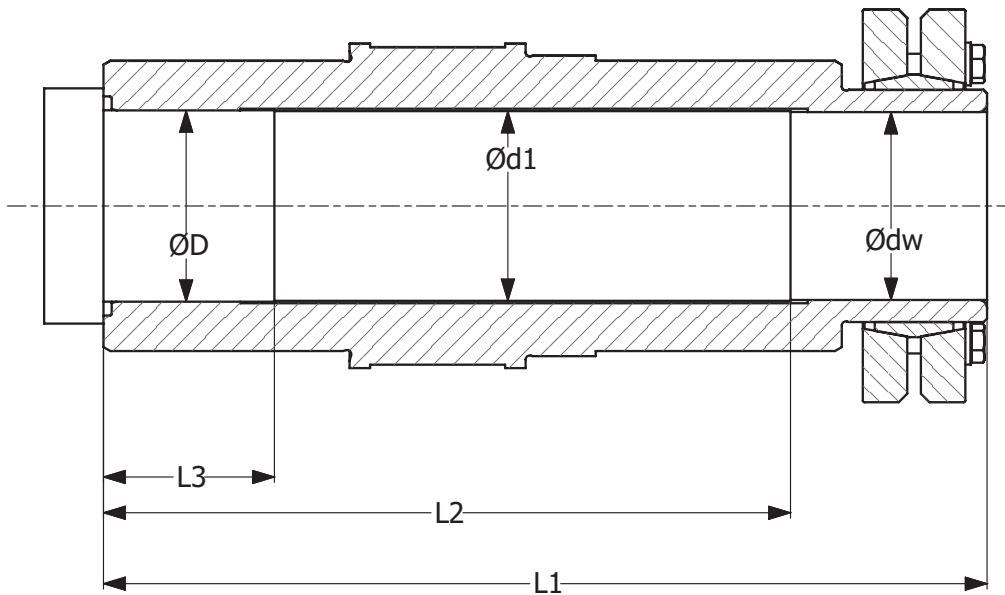
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Shrink Disc - Recommended Driven Metric Shaft Dimensions



All dimensions are in mm.

Model	Driven Shaft Recommended Dimensions							
	Ødw	Ødw tolerance	Ød1	ØD	ØD tolerance	L1	L2	L3
4A100, 4A105 4A110, 4A115	55.00	h6: +0/-0.019	55.50	56.00	h7: +0/-0.030	258.50	201.00	50.00
4B120, 4B125 4B140, 4B145	65.00	h6: +0/-0.019	65.50	66.00	h7: +0/-0.030	303.50	244.00	50.00
4C160, 4C165 4C170, 4C175	75.00	h6: +0/-0.019	75.50	76.00	h7: +0/-0.030	336.50	270.00	50.00
4D170, 4D175 4D180, 4D185	85.00	h6: +0/-0.022	85.50	86.00	h7: +0/-0.035	407.50	325.00	65.00
4E180, 4E185 4E190, 4E195	100.00	h6: +0/-0.022	100.50	101.00	h7: +0/-0.035	440.50	358.00	65.00
4F180, 4F185 4F190, 4F195	120.00	h6: +0/-0.022	120.50	121.00	h7: +0/-0.035	513.00	415.00	98.00

Cyclo® BBB4

Options

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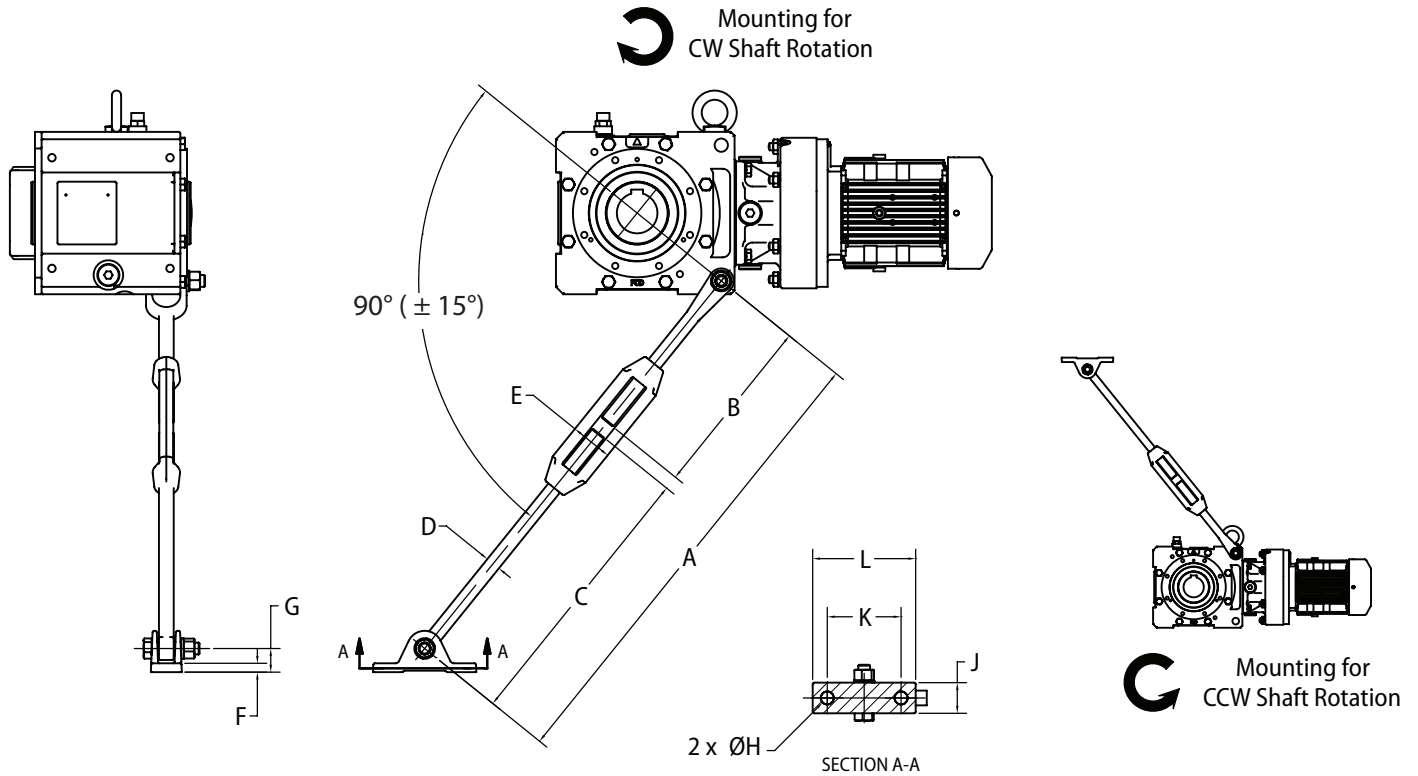
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Options

Torque Arm Turnbuckle Type^[1]



All dimensions are in inches (mm).

Turnbuckle Type Torque Arm Dimensions												
Frame Size	A		B	C	D Thread	E	F	G	ØH	J	K	L
	Min	Max										
4A	25.2 (640)	28.7 (730)	9.69 (246)	14.8 (375)	M20	2.24 (57)	0.47 (12.0)	1.26 (32)	0.69 (17.5)	1.65 (42)	3.94 (100)	5.51 (140)
4B	26.0 (660)	29.5 (750)	10.4 (263)	14.8 (375)	M24	2.32 (59)	0.81 (20.5)	2.13 (54)	0.69 (17.5)	2.76 (70)	4.76 (121)	6.61 (168)
4C	26.0 (660)	29.5 (750)	10.4 (263)	14.8 (375)	M24	2.32 (59)	0.81 (20.5)	2.13 (54)	0.69 (17.5)	2.76 (70)	4.76 (121)	6.61 (168)
4D, 4E	33.9 (860)	37.4 (950)	18.3 ^[2] (465) ^[2]	14.8 (375)	M24	2.32 (59)	0.81 (20.5)	2.13 (54)	0.69 (17.5)	2.76 (70)	4.76 (121)	6.61 (168)

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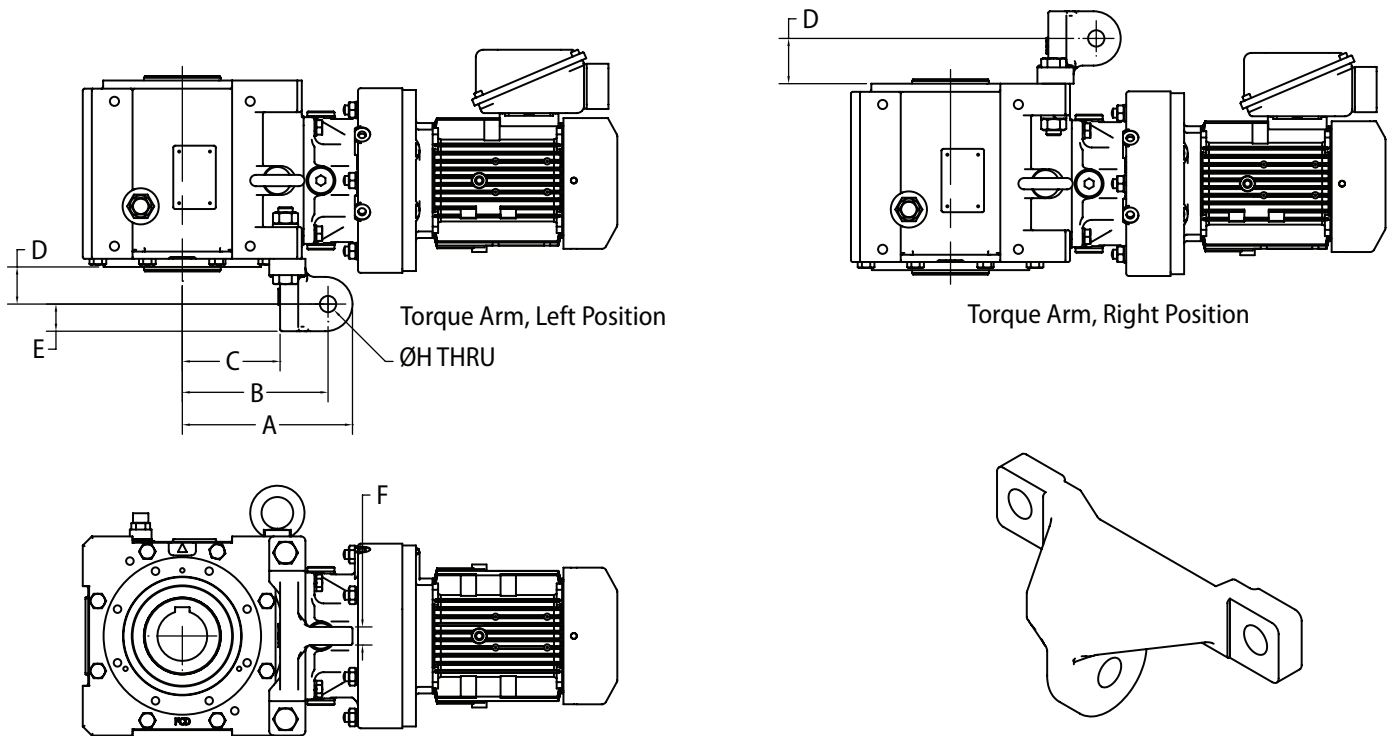
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Note: [1] The Cyclo® BBB4 is shown in Y1 mounting position; use two turnbuckle torque arms if application requires shaft rotation in both directions and use torque arm in tension, not compression. Consult Operation and Maintenance Manual or the Factory when mounting in positions other than Y1.

[2] Value may vary from shown.

[3] Turnbuckle Type torque arm is not available for size F Cyclo(R) BBB4 units. Consult Factory for F-size torque arm type and dimensions.

Torque Arm T-Type^[1]



All dimensions are in inches (mm).

T- Type Torque Arm Dimensions								
Frame Size	A	B	C	D Left ^[2]	D Right ^[2]	E	F	ØH
4A	7.40 (188)	6.34 (161)	4.25 (108)	1.61 (41)	1.97 (50)	1.18 (30)	0.79 (20)	0.71 (18)
4B	8.98 (228)	7.68 (195)	5.00 (127)	2.09 (53)	2.44 (62)	1.42 (36)	1.13 (29)	0.87 (22)
4C	10.8 (274)	9.13 (232)	6.14 (156)	2.60 (66)	2.95 (75)	1.77 (45)	1.25 (32)	1.02 (26)
4D	12.9 (327)	11.0 (279)	7.40 (188)	3.19 (81)	3.58 (91)	2.17 (55)	1.50 (38)	1.30 (33)
4E	14.2 (361)	12.1 (306)	8.27 (210)	3.17 (81)	3.58 (91)	2.17 (55)	1.42 (36)	1.30 (33)

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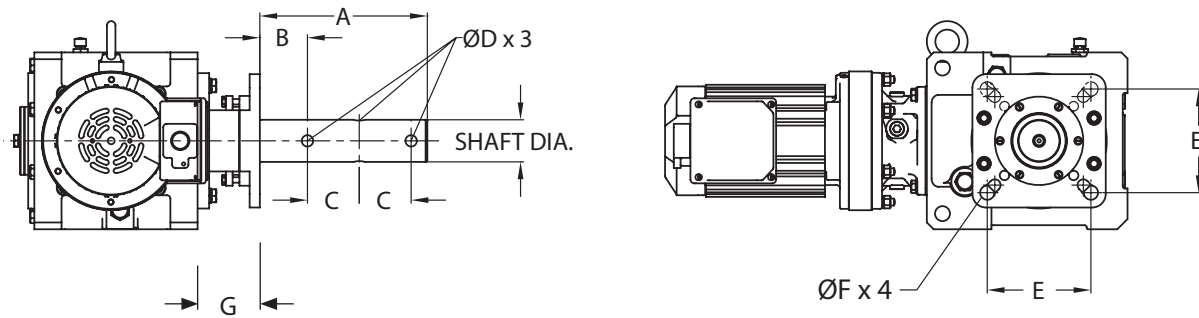
Note: [1] The Cyclo® BBB4 is shown in Y1 mounting position

[2] D dimension is from flange-mount casing surface to hole ØH.

[3] Turnbuckle Type torque arm is not available for size F Cyclo(R) BBB4 units. Consult Factory for F-size torque arm type and dimensions.

Options

Screw Conveyor Drive



- The Screw Conveyor option design conforms to established CEMA inch dimensions.
- Complete Cyclo® BBB screw conveyor drive consists of reducer, CEMA drive shaft assembly and mounting adapter kit.
- CEMA drive shafts are three hole style. Two hole drives available on request.

All dimensions are in inches.

Model	Shaft Diameter	To Fit Screw Diameter	A	B	C	ØD	E	ØF
4A, 4B	1-1/2	6 to 9	9.00	2.13	3.00	17/32	4.00	0.531
	2	9 to 12	9.00	2.13	3.00	21/32	0.38	0.669
	2-7/16	12 to 14	9.69	2.75	3.00	21/32	5.63	0.669
	3	12 to 20	9.88	2.88	3.00	25/32	6.00	0.827
4C, 4D	2	9 to 12	9.00	2.13	3.00	21/32	5.13	0.669
	2-7/16	12 to 14	9.69	2.75	3.00	21/32	5.63	0.669
	3	12 to 20	9.88	2.88	3.00	25/32	6.00	0.827
	3-7/16	18 to 24	13.10	3.88	4.00	29/32	6.75	0.827
4E	2-7/16	12 to 14	9.69	2.75	3.00	21/32	5.63	0.669
	3	12 to 20	9.88	2.88	3.00	25/32	6.00	0.827
	3-7/16	18 to 24	13.10	3.88	4.00	29/32	6.75	0.827

Cyclo® BBB4

Options

Model	G	
	Cast Iron Adapter	Fabricated Steel Adapter
A	4.17	3.60
B	3.96	3.60
C	4.31	3.92
D	4.65	4.25
E	5.93	5.49

Shaft Option 1: Standard 'Taper Grip Hub' 3-Hole Screw Conveyor Steel Shafts

Model	Drive Shaft Diameters & CEMA Drive Shaft Assembly Part Number					Adapter Kit	
	Ø 1-1/2"	Ø 2"	Ø 2-7/16"	Ø 3"	Ø 3-7/16"	Cast Iron Option	Fabricated steel Option
4A	116E4108-C3	116E4200-C3	116E4207-C3	116E4300-C3	-	118A4050	118A4040
4B	116F4108-C3	116F4200-C3	116F4207-C3	116F4300-C3	-	118B4050	118B4040
4C	-	116G4200-C3	116G4207-C3	116G4300-C3	116G4307-C3	118C4050	118C4040
4D	-	116H4200-C3	116H4207-C3	116H4300-C3	116H4307-C3	118D4050	118D4040
4E	-	-	116J4207-C3	116J4300-C3	116J4307-C3	118E4050	118E4040

Shaft Option 2: Standard 'Keyed' 3-Hole Screw Conveyor Shafts [Steel and Stainless steel options]

Model	Drive Shaft Diameters & CEMA Drive Shaft Assembly Part Number ^[1]					Adapter Kit	
	Ø 1-1/2"	Ø 2"	Ø 2-7/16"	Ø 3"	Ø 3-7/16"	Cast Iron Option	Fabricated steel Option
4A	118A5108-C3/ S3	118A5200-C3/ S3	118A5207-C3/ S3	118A5300-C3/ S3	-	118A4060	118A4040
4B	118B5108-C3/ S3	118B5200-C3/ S3	118B5207-C3/ S3	118B5300-C3/ S3	-	118B4060	118B4040
4C	-	118C5200-C3/ S3	118C5207-C3/ S3	118C5300-C3/ S3	118C5307-C3/ S3	118C4060	118C4040
4D	-	118D5200-C3/ S3	118D5207-C3/ S3	118D5300-C3/ S3	118D5307-C3/ S3	-	118D4040
4E	-	-	118E5207-C3/ S3	118E5300-C3/ S3	118E5307-C3/ S3	-	118E4040

Note: [1] The dimension shown is E maximum.

[2] Use suffix 'C3' for Carbon Steel, or 'S3' for Stainless Steel (AISI316) shaft material

Shaft Diameters - Keyed Hollow Bore

All dimensions are in inches.

Bore (in)	Frame Size					
	4A	4B	4C	4D	4E	4F
1-7/16"	○					
1-1/2"	○					
1-5/8"	○					
1-11/16"	○					
1-3/4"	○					
1-13/16"	○	○				
1-7/8"	○	○				
1-15/16"	●◇	○				
2"	●◇	○				
2-3/16"	●◇	●◇				
2-1/4"		○				
2-3/8"		●◇	○			
2-7/16"		●◇	○			
2-1/2"		○	○			
2-9/16"			○			
2-5/8"			○			
2-3/4"			●◇			
2-7/8"			○			
2-15/16"			●◇	○		
3"			○	○		
3-1/8"			○	○		
3-3/16"			○	○		
3-1/4"			○	○		
3-3/8"			○	○	○	○
3-7/16"			○	●	○	○
3-1/2"			○	○	○	○
3-5/8"				○	○	○
3-3/4"				○	○	○
3-7/8"				○	○	○
3-15/16"				○	○	○
4"				○	●	○
4-7/16"						○
4-1/2"						●
4-3/4"						○

All dimensions are in millimeters.

Bore (mm)	Frame Size					
	4A	4B	4C	4D	4E	4F
35	○					
40	○					
45	○	○				
50	○	○				
55	●	○				
60		○	○			
65		●	○			
70			○			
75			●	○		
80				○		
85				●	○	
90				○	○	
95					○	
100					●	
105					○	
110						○
115						○
120						●

- Standard shaft size (Carbon steel material)
- On-demand shaft size (Carbon steel material)
- ◇ Standard Stainless Steel shaft size

Cyclo® BBB4

Options

- Note:
- 1) The customer is responsible for validating the strength of the driven shaft.
 - 2) Consult factory for the price and delivery of 'On-demand' shaft sizes.
 - 3) If the required shaft size is different than the above mentioned sizes, please consult the factory.

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Options

Shaft Diameters - Shrink Disc

All dimensions are in inches.

Bore (in)	Frame Size					
	4A	4B	4C	4D	4E	4F
1- 15/16"	• ◊					
2"	• ◊	•				
2-3/16"	• ◊	• ◊				
2-3/8"		• ◊				
2-7/16"		• ◊				
2-3/4"			• ◊			
2-15/16"			• ◊			
3-15/16"						

All dimensions are in millimeters.

Bore (mm)	Frame Size					
	4A	4B	4C	4D	4E	4F
55	•					
65		•				
66						
75			•			
85				•		
100					•	
120						•

- Standard shaft size (Carbon steel material)
- ◊ Optional shaft size (Carbon steel material)
- ◊ Standard Stainless Steel shaft size

Note: 1) Shrink disc bore with LEFT as well as RIGHT projections are available (refer figures on page 3.5).
 2) Shrink disc bore size mentioned in above is ødw dimension of the Table on page 3.6
 3) If the required shaft size is different than the above mentioned sizes, please consult the factory.

Shaft Diameters - Taper Grip Bushing

Please refer øU dimensions in 'Dimensions' section for the shaft size range (Min. & Max.)

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Shaft Diameters- Solid Shaft

All dimensions are in inches.

Bore (in)	Frame Size					
	4A	4B	4C	4D	4E	4F
1-7/16"	○					
1-1/2"	○					
1-9/16"	○					
1-5/8"	○					
1-3/4"	○					
1-7/8"	○	○				
1-15/16"	○	○				
2"	●	○				
2-1/8"	○	○				
2-3/16"	○	○				
2-1/4"		○				
2.236"		○				
2-3/8"		○	○			
2-7/16"		○	○			
2-1/2"		○	○			
2-5/8"		○	○			
2-3/4"		○	○			
2-7/8"		●	○	○		
2-15/16"			○	○		
3"			○	○		
3-1/8"			●	○		
3-1/4"				○		
3-3/8"				○	○	
3-7/16"				○	○	
3-5/8"				●	○	
3-7/8"					○	
4"					○	
4-3/8"					●	○
4-7/16"						○
4-1/2"					○	○
4-5/8"						○
4-3/4"						●

All dimensions are in millimeters.

Bore (mm)	Frame Size					
	4A	4B	4C	4D	4E	4F
25	○					
45	○					
50	●					
55						
60		○				
65		●				
70						
75			○			
80			●			
85				○		
90				○		
95				●	○	
100					○	
110					●	
115						
120						
130						●

- Standard shaft size (Carbon steel material)
- Optional shaft size (Carbon steel material)

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Options

- Note:
- 1) The customer is responsible for validating the strength of the driven shaft.
 - 2) Consult factory for the price and delivery of 'On-demand' shaft sizes.
 - 3) If the required shaft size is different than the above mentioned sizes, please consult the factory.
 - 4) Solid shaft with LEFT, RIGHT as well as DOUBLE EXTENDED projections are available.

Options

Industry Packages

When ordering, add the Special Specification Code (SSC) that meets your requirements to the end of the model number, to obtain the features listed below. Example: LHYMS3-4A105KB-EPY1-39 YBA5, Q8E: 2"

Note that Q8E is the output diameter SSC code required at the end of every model number (refer to Nomenclature Requirements page 2.4)

Four food-grade packages are available for use in machinery where there is incidental food contact. (Chemi SHIELD, SHIELD360, Food-Grade, and Ultra SHIELD360)

The food-grade optional packages are available for BBB4 frame sizes A, B, and C.

Modification	Chemical Duty	Chemi SHIELD 360*	SHIELD 360*	Ultra SHIELD 360*	Food Grade	Low Temp	High Temp	Weather Proof IP54	Wash-down IP55
Special Specification Code	A32	YBA7	YBA5	YBA8	YBA1	C30	D50	A11/A10	A1C/N43
Motor Portion									
Gasketed Conduit Box	X	X	X		X			X	X
V Ring Seal-Fan End	X	X	X		X			X	X
Special Oil Seal						X	X		
Special Windings						X	X		
Sealer @ Jpines	X	X	X		X			X	X
Special Fan						X			X
Epoxy Paint	X								
FDA Epoxy Paint			X		X				
FDA White Acrylic Top Coat		X							
FDA Stainless Grey Acrylic Top Coat									
FDA Stainless Grey 2 Part Epoxy Clear Top Coat	X	X	X						
Brake Cover Seal									
Sever Duty Breather	X	X	X	X				X	X
Epoxy Paint	X								X
FDA Epoxy Paint					X				
FDA White Acrylic Top Coat			X						
FDA Stainless Grey Acrylic Top Coat		X							
FDA Stainless Grey 2 Part Epoxy Clear Top Coat				X					
FDA Grease Oil/Grease			X	X	X				
Low Temp Grease/Oil						X			
High Temp Grease/Oil							X		
Double Output Seals			X		X	X	X	X	X
Corrosion Preventative Plugs		X		X			X		
Low Temperature Seals									
FKM AM Cassette Seal		X	X	X		X			
FKM (Viton) Seal	X								
Stainless or Tesa Namplate	X	X		X					
Stainless Output Shaft		X		X					

Stainless Steel Solid Shaft - maximum torque ratings with standard solid shaft diameters are the same as those listed in this catalog for standard models. Consult the factory when ordering smaller than standard diameters, or if there will be overhung load.

* UltraShield360™ available in quill input option only

Low Temp Package = -30 degrees C Maximum. For lower temperature requirements consult factory.

High Temp Package = 50 degrees C Maximum. For higher temperature requirements consult factory.

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Technical Information

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Exact Ratios

Bevel Buddybox catalog ratio 11, 13, 14, 16, and 18 utilize a planetary gearset for the first reduction stage.

The exact ratio of planetary gearing can be calculated using the following formula:

$$i_{\text{PLANETARY}} = (Z_{\text{SUN}} + Z_{\text{RING}}) / Z_{\text{SUN}}$$

where: Z_{SUN} = Number of teeth in the sun gear

Z_{RING} = Number of teeth in the ring gear

The overall gearbox ratio can be determined using the following formula:

$$i_{\text{OVERALL}} = (Z_{\text{GEAR}} / Z_{\text{PINION}}) \times i_{\text{PLANETARY}}$$

where: Z_{GEAR} = Number of teeth in the bevel gear

Z_{PINION} = Number of teeth in the bevel pinion

Table 4.1 BBB4 with Planetary Input - Exact Ratios

Nominal Ratio	Frame Size	Gearing Tooth Count				Calculated Ratio i_{OVERALL}
		Bevel		Planetary		
		Z_{GEAR}	Z_{PINION}	Z_{SUN}	Z_{RING}	
11	4A100/5	35	10	46	92	10.50
	4A120/5	35	10	60	120	10.50
	4A140/5	35	10	54	114	10.89
	4B120/5	35	10	60	120	10.50
	4B140/5	35	10	54	114	10.89
	4B160/5	35	10	60	126	10.85
	4C140/5	35	10	54	114	10.89
	4C160/5	35	10	60	126	10.85
	4C170/5	35	10	58	122	10.86
	4D170/5	35	10	58	122	10.86
	4D180/5	35	10	68	136	10.50
	4E170/5	35	10	58	122	10.86
	4E180/5	35	10	68	136	10.50
	4E190/5	35	10	66	138	10.82
4F180/5	35	10	68	136	10.50	
4F190/5	35	10	66	138	10.82	
13	4A100/5	32	10	34	104	12.99
	4A120/5	32	10	45	135	12.80
	4A140/5	32	10	43	131	12.95
	4B120/5	32	10	45	135	12.80
	4B140/5	32	10	43	131	12.95
	4B160/5	32	10	48	144	12.80
	4C140/5	32	10	43	131	12.95
	4C160/5	32	10	48	144	12.80
	4C170/5	32	10	44	136	13.09
	4D170/5	32	10	44	136	13.09
	4D180/5	32	10	44	136	13.09
	4E170/5	32	10	44	136	13.09
	4E180/5	32	10	44	136	13.09
	4E190/5	32	10	45	138	13.01
4F180/5	32	10	44	136	13.09	
4F190/5	32	10	45	138	13.01	

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Table 4.1 BBB4 with Planetary Input - Exact Ratios continued

Nominal Ratio	Frame Size	Gearing Tooth Count				Calculated Ratio $i_{OVERALL}$
		Bevel		Planetary		
		Z_{GEAR}	Z_{PINION}	Z_{SUN}	Z_{RING}	
14	4A100/5	35	10	34	104	14.21
	4A120/5	35	10	45	135	14.00
	4A140/5	35	10	43	131	14.16
	4B120/5	35	10	45	135	14.00
	4B140/5	35	10	43	131	14.16
	4B160/5	35	10	48	144	14.00
	4C140/5	35	10	43	131	14.16
	4C160/5	35	10	48	144	14.00
	4C170/5	35	10	44	136	14.32
	4D170/5	35	10	44	136	14.32
	4D180/5	35	10	44	136	14.32
	4E170/5	35	10	44	136	14.32
	4E180/5	35	10	44	136	14.32
	4E190/5	35	10	45	138	14.23
	4F180/5	35	10	44	136	14.32
	4F190/5	35	10	45	138	14.23
16	4A100/5	32	10	30	114	15.36
	4A120/5	32	10	38	148	15.66
	4A140/5	32	10	36	144	16.00
	4B120/5	32	10	38	148	15.66
	4B140/5	32	10	36	144	16.00
	4B160/5	32	10	39	159	16.25
	4C140/5	32	10	36	144	16.00
	4C160/5	32	10	39	159	16.25
	4C170/5	32	10	38	154	16.17
	4D170/5	32	10	38	154	16.17
	4D180/5	32	10	35	136	15.63
	4E170/5	32	10	38	154	16.17
	4E180/5	32	10	35	136	15.63
	4E190/5	32	10	36	138	15.47
	4F180/5	32	10	35	136	15.63
	4F190/5	32	10	36	138	15.47
18	4A100/5	35	10	30	114	16.80
	4A120/5	35	10	38	148	17.13
	4A140/5	35	10	36	144	17.50
	4B120/5	35	10	38	148	17.13
	4B140/5	35	10	36	144	17.50
	4B160/5	35	10	39	159	17.77
	4C140/5	35	10	36	144	17.50
	4C160/5	35	10	39	159	17.77
	4C170/5	35	10	38	154	17.68
	4D170/5	35	10	38	154	17.68
	4D180/5	35	10	35	136	17.10
	4E170/5	35	10	38	154	17.68
	4E180/5	35	10	35	136	17.10
	4E190/5	35	10	36	138	16.92
	4F180/5	35	10	35	136	17.10
	4F190/5	35	10	36	138	16.92

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Exact Ratios continued

Bevel Buddybox catalog ratios greater than 18:1 utilize Cyclo as the first (or first and second) reduction stage

Cyclo reduction ratios are exact thus the exact overall Bevel Buddybox reduction ratio can be calculated as:

$$i_{\text{OVERALL}} = (Z_{\text{GEAR}} / Z_{\text{PINION}}) \times i_{\text{CYCLO}}$$

where: Z_{GEAR} = Number of teeth in the bevel gear

Z_{PINION} = Number of teeth in the bevel pinion

Table 4.2 BBB4 with Cyclo Input - Exact Ratios

Single Reduction Cyclo

Nominal Ratio	Frame Size	Bevel Gear Tooth Count		Cyclo Ratio (i_{CYCLO})	Calculated Ratio i_{OVERALL}
		Z_{GEAR}	Z_{PINION}		
21	ALL ^[1]	35	10	6	21.00
22		32	10	7	22.40
25		35	10	7	24.50
28		35	10	8	28.00
35		32	10	11	35.20
39		35	10	11	38.50
46		35	10	13	45.50
53		35	10	15	52.50
60		35	10	17	59.50
67		32	10	21	67.20
74		35	10	21	73.50
80		32	10	25	80.00
88		35	10	25	87.50
102		35	10	29	101.50
112		32	10	35	112.00
123		35	10	35	122.50
151		35	10	43	150.50
179		35	10	51	178.50
207		35	10	59	206.50
249		35	10	71	248.50
305	35	10	87	304.50	
417	4A10	35	10	119	416.50

Note [1]: 22:1 and 25:1 ratios are not available for 4A100/5 and 4A110/5 sizes.

Table 4.3 BBB4 with Cyclo Input - Exact Ratios
Double Reduction Cyclo

Nominal Ratio	Frame Size	Bevel Gearing Tooth Count		Cyclo Ratio (i_{CYCLO})	Calculated Ratio $i_{OVERALL}$
		Z _{GEAR}	Z _{PINION}		
364	ALL	35	10	104	364.0
424		35	10	121	423.5
501		35	10	143	500.5
578		35	10	165	577.5
683		35	10	195	682.5
809		35	10	231	808.5
956		35	10	273	955.5
1117		35	10	319	1116.5
1320		35	10	377	1319.5
1656		35	10	473	1655.5
1957		35	10	559	1956.5
2272		35	10	649	2271.5
2559		35	10	731	2558.5
2944		35	10	841	2943.5
3511		35	10	1003	3510.5
4365		35	10	1247	4364.5
5177		35	10	1479	5176.5
6472		35	10	1849	6471.5
7228		35	10	2065	7227.5
8880		35	10	2537	8879.5
10658		35	10	3045	10657.5
12184		35	10	3481	12183.5
15530		35	10	4437	15529.5
17966		35	10	5133	17965.5
21620		35	10	6177	21619.5
26492		35	10	7569	26491.5

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Special Load Guidelines Overhung Load

Reducer/Gearmotor Output Shaft Allowable Overhung Load^[1]

When a sprocket, sheave, or gear is mounted on the slowspeed of a reducer, an overhung load is applied on that shaft. It is necessary to check if the shaft of the Cyclo® BBB4 Speed Reducer will allow the overhung load. Calculate the overhung load using the following formulas:

1) Radial load, Pr

$$Pr = \frac{TI}{R} \leq \frac{Pro}{Lf \cdot Cf \cdot Sf} \quad (\text{lbs, } N)$$

2) Axial Load, Pa

$$Pa \leq \frac{Pao}{Cf \cdot Sf} \quad (\text{lbs, } N)$$

3) When there is combined radial and axial loading on the output shaft

$$\left(\frac{Pr}{Pro} + \frac{Pa}{Pao} \right) \cdot Cf \cdot Sf \leq 1 \quad (\text{lbs, } N)$$

LEGEND

Pr = Actual radial load (lbs, N)

TI = Actual transmitted torque on slow speed shaft of reducer (lb-in, $N\cdot m$)

R = Pitch circle radius of sprocket, gear, pulley, etc. (inch, meter)

Pro = Allowable radial load (lbs, N)

Pa = Actual axial load (lbs, N)

Pao = Allowable axial load (lbs, N)

Cf = Coupling factor

Sf = Service factor

Lf = Load Location factor = 1.0

The values shown in the tables within are the allowable OHL^[2] when it is applied to the center of the solid shaft extension or at the load-side edge of the hollow bore. Please consult the factory when the center point of the load is located elsewhere.

Table 4.4 Coupling Factor, Cf

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 4.5 Service Factor, Sf

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

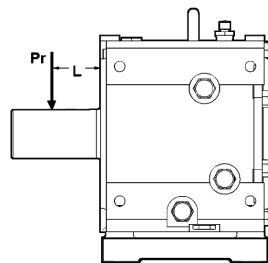
Overhung Load, capacity for solid output shaft

Cyclo® BBB4

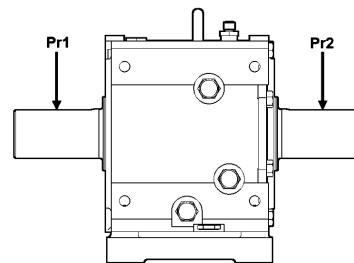
OHL ratings assume there is no axial load applied to the shaft and that the unit is horizontal to floor/foundation. (Mounting feet at bottom or top.) Consult factory when it is wall mount or vertical position. When flange mounted, OHL location should be same side as flange. Consult factory when OHL is opposite flange side. Use ISO/JIS Class 12.9 for mounting hardware.

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Loading position L is the distance from the output shaft shoulder



Pro from table must be $\geq Pr$



For double extension, Pr1 and Pr2 is assumed to be in the same direction. Pro from table must be $\geq Pr1 + Pr2$

Note [1]: For output speeds that are in between those detailed in Tables 4.6a through 4.7c, the overhung load capacity may be calculated through interpolation.

[2]: OHL = Overhung Load

Special Load Guidelines Output Shaft Overhung Load continued

Table 4.6a^[1] Allowable Overhung Load for Output Shaft (Solid Output Shaft) (Cf, Sf = 1)

Force Units: lbs, (N)

Model	L inch (mm)	Output Shaft, RPM									
		5	10	20	30	35	45	50	60	75	90
4A100 4A105 4A110 4A115 4A120 4A125 4A140 4A145	0.75 (19.1)	7170 (31890)	8360 (37180)	7190 (31980)	6110 (27170)	5740 (25530)	5160 (22950)	4940 (21970)	4570 (20320)	4120 (18320)	3790 (16850)
	1.00 (25.4)	6850 (30460)	7490 (33310)	6960 (30950)	5940 (26420)	5560 (24730)	5020 (22320)	4790 (21300)	4420 (19660)	3990 (17740)	3670 (16320)
	1.25 (31.8)	5940 (26420)	6240 (27750)	6240 (27750)	5760 (25620)	5410 (24060)	4870 (21660)	4640 (20630)	4290 (19080)	3890 (17300)	3570 (15870)
	1.50 (38.1)	5230 (23260)	5340 (23750)	5340 (23750)	5340 (23750)	5260 (23390)	4740 (21080)	4520 (20100)	4170 (18540)	3770 (16760)	3470 (15430)
	1.75 (44.5)	4670 (20770)	4670 (20770)	4670 (20770)	4670 (20770)	4670 (20770)	4590 (20410)	4390 (19520)	4070 (18100)	3670 (16320)	3370 (14980)
	1.88 (47.6)	3970 (17650)	4170 (18540)	4170 (18540)	4170 (18540)	4170 (18540)	4170 (18540)	4170 (18540)	3970 (17650)	3570 (15870)	3290 (14630)
	2.00 (50.8)	3420 (15210)	3740 (16630)	3740 (16630)	3740 (16630)	3740 (16630)	3740 (16630)	3740 (16630)	3740 (16630)	3490 (15520)	3190 (14180)
	2.50 (63.5)	2970 (13210)	3120 (13870)	3120 (13870)	3120 (13870)	3120 (13870)	3120 (13870)	3120 (13870)	3120 (13870)	3120 (13870)	3040 (13520)
	3.00 (76.2)	2610 (11600)	2670 (11870)	2670 (11870)	2670 (11870)	2670 (11870)	2670 (11870)	2670 (11870)	2670 (11870)	2670 (11870)	2670 (11870)
	3.50 (88.9)	2340 (10400)	2340 (10400)	2340 (10400)	2340 (10400)	2340 (10400)	2340 (10400)	2340 (10400)	2340 (10400)	2340 (10400)	2340 (10400)
	4.00 (102)	2110 (9380)	2080 (9250)	2080 (9250)	2080 (9250)	2080 (9250)	2080 (9250)	2080 (9250)	2080 (9250)	2080 (9250)	2080 (9250)
	4B120 4B125 4B140 4B145 4B160 4B165	0.75 (19.1)	11800 (52480)	11830 (52610)	8810 (39180)	7340 (32640)	6810 (30290)	6010 (26730)	5690 (25300)	5160 (22950)	4570 (20320)
1.00 (25.4)		12350 (54930)	11530 (51280)	8610 (38290)	7160 (31840)	6660 (29620)	5860 (26060)	5560 (24730)	5040 (22410)	4470 (19880)	4020 (17880)
1.25 (31.8)		12620 (56130)	11260 (50080)	8410 (37400)	6990 (31090)	6490 (28860)	5740 (25530)	5440 (24190)	4940 (21970)	4370 (19430)	3920 (17430)
1.50 (38.1)		11720 (52130)	11010 (48970)	8210 (36510)	6840 (30420)	6340 (28200)	5610 (24950)	5310 (23610)	4820 (21430)	4270 (18990)	3820 (16990)
1.75 (44.5)		10460 (46520)	10460 (46520)	8040 (35760)	6660 (29620)	6210 (27620)	5460 (24280)	5190 (23080)	4720 (20990)	4170 (18540)	3740 (16630)
1.88 (47.6)		8870 (39450)	9310 (41410)	7860 (34960)	6540 (29080)	6060 (26950)	5360 (23840)	5060 (22500)	4620 (20540)	4070 (18100)	3670 (16320)
2.00 (50.8)		7650 (34020)	8360 (37180)	7690 (34200)	6390 (28420)	5940 (26420)	5240 (23300)	4970 (22100)	4520 (20100)	3990 (17740)	3570 (15870)
2.50 (63.5)		6650 (29570)	6990 (31090)	6990 (31090)	6110 (27170)	5690 (25300)	5020 (22320)	4770 (21210)	4320 (19210)	3820 (16990)	3420 (15210)
3.00 (76.2)		5870 (26100)	5990 (26640)	5990 (26640)	5890 (26190)	5460 (24280)	4820 (21430)	4570 (20320)	4140 (18410)	3670 (16320)	3290 (14630)
3.50 (88.9)		5240 (23300)	5240 (23300)	5240 (23300)	5240 (23300)	5240 (23300)	4640 (20630)	4390 (19520)	3990 (17740)	3520 (15650)	3170 (14100)
4.00 (102)		4720 (20990)	4640 (20630)	4640 (20630)	4640 (20630)	4640 (20630)	4470 (19880)	4240 (18850)	3840 (17080)	3390 (15070)	3040 (13520)
4.50 (114)		4310 (19170)	4190 (18630)	4190 (18630)	4190 (18630)	4190 (18630)	4190 (18630)	4190 (18630)	4090 (18190)	3720 (16540)	3270 (14540)
5.00 (127)	3320 (14760)	3490 (15520)	3490 (15520)	3490 (15520)	3490 (15520)	3490 (15520)	3490 (15520)	3490 (15520)	3470 (15430)	2740 (12180)	

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Note [1]: For output speeds that are in between those detailed in Tables 4.6a through 4.7c, the overhung load capacity may be calculated through interpolation.

Special Load Guidelines Output Shaft Overhung Load continued

Table 4.6b Allowable Overhung Load for Output Shaft (Solid Output Shaft) (Cf, Sf = 1)

Force Units: lbs, (N)

Model	L inch (mm)	Output shaft, RPM									
		5	10	20	30	35	45	50	60	75	90
4C140 4C145 4C160 4C165 4C170 4C175	0.75 (19.1)	16770 (74590)	16650 (74050)	12330 (54840)	10180 (45280)	9460 (42070)	8310 (36960)	7860 (34960)	7090 (31530)	6240 (27750)	5560 (24730)
	1.00 (25.4)	17560 (78100)	16280 (72410)	12060 (53640)	9960 (44300)	9240 (41090)	8110 (36070)	7690 (34200)	6940 (30860)	6090 (27080)	5440 (24190)
	1.25 (31.8)	17980 (79970)	15930 (70850)	11810 (52530)	9760 (43410)	9040 (40200)	7940 (35310)	7510 (33400)	6790 (30200)	5960 (26510)	5310 (23610)
	1.50 (38.1)	18210 (80990)	15580 (69290)	11530 (51280)	9540 (42430)	8840 (39320)	7790 (34640)	7360 (32730)	6640 (29530)	5840 (25970)	5210 (23170)
	1.75 (44.5)	18280 (81300)	15250 (67830)	11310 (50300)	9340 (41540)	8660 (38510)	7610 (33840)	7190 (31980)	6510 (28950)	5710 (25390)	5090 (22640)
	1.88 (47.6)	17120 (76140)	14960 (66540)	11080 (49280)	9160 (40740)	8490 (37760)	7460 (33180)	7060 (31400)	6360 (28280)	5590 (24860)	4990 (22190)
	2.00	15780 (70180)	14660 (65200)	10860 (48300)	8990 (39980)	8310 (36960)	7310 (32510)	6910 (30730)	6240 (27750)	5490 (24410)	4890 (21750)
	2.50 (63.5)	13690 (60890)	14080 (62620)	10430 (46390)	8640 (38430)	7990 (35530)	7040 (31310)	6640 (29530)	6010 (26730)	5260 (23390)	4720 (20990)
	3.00 (76.2)	12090 (53770)	12330 (54840)	10060 (44740)	8310 (36960)	7710 (34290)	6760 (30060)	6390 (28420)	5790 (25750)	5060 (22500)	4540 (20190)
	3.50 (88.9)	10780 (47940)	10780 (47940)	9690 (43100)	8010 (35620)	7440 (33090)	6540 (29080)	6160 (27390)	5590 (24860)	4890 (21750)	4370 (19430)
	4.00 (102)	9740 (43320)	9590 (42650)	9360 (41630)	7740 (34420)	7160 (31840)	6310 (28060)	5960 (26510)	5390 (23970)	4720 (20990)	4220 (18770)
	4.50 (114)	8860 (39400)	8610 (38290)	8610 (38290)	7490 (33310)	6940 (30860)	6090 (27080)	5760 (25620)	5210 (23170)	4570 (20320)	4090 (18190)
	5.00 (127)	6840 (30420)	7190 (31980)	7190 (31980)	7010 (31180)	6490 (28860)	5710 (25390)	5390 (23970)	4890 (21750)	4290 (19080)	3820 (16990)
	6.00 (152)	6040 (26860)	6160 (27390)	6160 (27390)	6160 (27390)	6110 (27170)	5360 (23840)	5090 (22640)	4590 (20410)	4040 (17960)	3590 (15960)

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Note [1]: For output speeds that are in between those detailed in Tables 4.6a through 4.7c, the overhung load capacity may be calculated through interpolation.

Special Load Guidelines Output Shaft Overhung Load continued

Table 4.6c Allowable Overhung Load for Output Shaft (Solid Output Shaft) (Cf, Sf = 1)

Force Units: lbs, (N)

Model	L inch (mm)	Output Shaft, RPM									
		5	10	20	30	35	45	50	60	75	90
4D160 4D165 4D170 4D175 4D180 4D185	0.75 (19.1)	21850 (97180)	23970 (106610)	17730 (78860)	14630 (65070)	13530 (60180)	11880 (52840)	11210 (49860)	10110 (44960)	8860 (39400)	7890 (35090)
	1.00 (25.4)	23060 (102570)	23550 (104750)	17400 (77390)	14360 (63870)	13280 (59060)	11660 (51860)	11010 (48970)	9940 (44210)	8690 (38650)	7740 (34420)
	1.25 (31.8)	23590 (104920)	23100 (102740)	17080 (75970)	14080 (62620)	13030 (57950)	11430 (50840)	10810 (48080)	9740 (43320)	8540 (37980)	7590 (33760)
	1.50 (38.1)	23940 (106480)	22700 (100960)	16780 (74630)	13830 (61510)	12810 (56970)	11230 (49950)	10610 (47190)	9560 (42520)	8390 (37310)	7460 (33180)
	1.75 (44.5)	24070 (107060)	22300 (99190)	16480 (73300)	13580 (60400)	12580 (55950)	11030 (49060)	10410 (46300)	9410 (41850)	8240 (36650)	7340 (32640)
	1.88 (47.6)	22610 (100560)	21900 (97410)	16180 (71960)	13360 (59420)	12360 (54970)	10830 (48170)	10230 (45500)	9240 (41090)	8090 (35980)	7210 (32070)
	2.00 (50.8)	21420 (95270)	21520 (95720)	15900 (70720)	13130 (58400)	12160 (54080)	10660 (47410)	10060 (44740)	9090 (40430)	7960 (35400)	7090 (31530)
	2.50 (63.5)	20310 (90330)	20820 (92600)	15380 (68410)	12680 (56400)	11760 (52300)	10310 (45850)	9740 (43320)	8790 (39090)	7690 (34200)	6840 (30420)
	3.00 (76.2)	17910 (79660)	18280 (81300)	14910 (66310)	12280 (54620)	11380 (50610)	9990 (44430)	9440 (41980)	8510 (37850)	7440 (33090)	6640 (29530)
	3.50 (88.9)	16000 (71160)	16000 (71160)	14430 (64180)	11910 (52970)	11030 (49060)	9660 (42960)	9140 (40650)	8240 (36650)	7210 (32070)	6410 (28510)
	4.00 (102)	14440 (64220)	14210 (63200)	14010 (62310)	11560 (51410)	10680 (47500)	9390 (41760)	8860 (39400)	7990 (35530)	6990 (31090)	6240 (27750)
	4.50 (114)	13180 (58620)	12810 (56970)	12810 (56970)	11210 (49860)	10380 (46170)	9110 (40520)	8610 (38290)	7760 (34510)	6790 (30200)	6040 (26860)
	5.00 (127)	10150 (45140)	10660 (47410)	10660 (47410)	10610 (47190)	9810 (43630)	8610 (38290)	8140 (36200)	7340 (32640)	6410 (28510)	5710 (25390)
	6.00 (152)	8950 (39800)	9140 (40650)	9140 (40650)	9140 (40650)	9140 (40650)	8160 (36290)	7710 (34290)	6960 (30950)	6090 (27080)	5410 (24060)
	7.00 (178)	7990 (35530)	7990 (35530)	7990 (35530)	7990 (35530)	7990 (35530)	7760 (34510)	7310 (32510)	6610 (29400)	5790 (25750)	5140 (22860)

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Note [1]: For output speeds that are in between those detailed in Tables 4.6a through 4.7c, the overhung load capacity may be calculated through interpolation.

Special Load Guidelines Output Shaft Overhung Load continued

Table 4.6d Allowable Overhung Load for Output Shaft (Solid Output Shaft) (Cf, Sf = 1)

Force Units: lbs, (N)

Model	L inch (mm)	Output Shaft, RPM									
		5	10	20	30	35	45	50	60	75	90
4E170 4E175 4E180 4E185 4E190 4E195	0.75 (19.1)	22060 (98120)	25720 (114400)	24970 (111060)	20970 (93270)	19550 (86950)	17350 (77170)	16480 (73300)	15030 (66850)	13380 (59510)	12110 (53860)
	1.00 (25.4)	23290 (103590)	25470 (113290)	24620 (109500)	20600 (91620)	19200 (85400)	17050 (75830)	16200 (72050)	14780 (65740)	13160 (58530)	11880 (52840)
	1.25 (31.8)	23780 (105770)	24970 (111060)	24200 (107640)	20250 (90070)	18880 (83970)	16780 (74630)	15930 (70850)	14530 (64620)	12930 (57510)	11680 (51950)
	1.50 (38.1)	24210 (107680)	24700 (109860)	23800 (105860)	19930 (88640)	18580 (82640)	16480 (73300)	15650 (69610)	14280 (63510)	12710 (56530)	11510 (51190)
	1.75 (44.5)	24370 (108390)	24370 (108390)	23420 (104170)	19600 (87180)	18280 (81300)	16230 (72190)	15400 (68490)	14060 (62530)	12510 (55640)	11310 (50300)
	1.88 (47.6)	22920 (101940)	24070 (107060)	23050 (102520)	19280 (85750)	17980 (79970)	15950 (70940)	15150 (67380)	13830 (61510)	12310 (54750)	11130 (49500)
	2.00 (50.8)	21720 (96610)	23750 (105640)	22670 (100830)	18980 (84420)	17700 (78720)	15700 (69830)	14930 (66400)	13610 (60530)	12110 (53860)	10960 (48750)
	2.50 (63.5)	22070 (98160)	23170 (103060)	22000 (97850)	18400 (81840)	17150 (76280)	15230 (67740)	14460 (64310)	13210 (58750)	11730 (52170)	10630 (47280)
	3.00 (76.2)	22150 (98520)	22600 (100520)	21350 (94960)	17850 (79390)	16650 (74050)	14780 (65740)	14030 (62400)	12810 (56970)	11380 (50610)	10310 (45850)
	3.50 (88.9)	22070 (98160)	22070 (98160)	20720 (92160)	17350 (77170)	16150 (71830)	14360 (63870)	13630 (60620)	12430 (55280)	11060 (49190)	10010 (44520)
	4.00 (102)	21900 (97410)	21550 (95850)	20150 (89620)	16850 (74940)	15700 (69830)	13960 (62090)	13260 (58980)	12080 (53730)	10760 (47860)	9740 (43320)
	4.50 (114)	21680 (96430)	21070 (93710)	19600 (87180)	16400 (72940)	15280 (67960)	13580 (60400)	12880 (57290)	11760 (52300)	10460 (46520)	9460 (42070)
	5.00 (127)	17810 (79210)	18700 (83170)	18580 (82640)	15550 (69160)	14510 (64540)	12880 (57290)	12230 (54390)	11160 (49630)	9940 (44210)	8990 (39980)
	6.00 (152)	15710 (69870)	16030 (71300)	16030 (71300)	14780 (65740)	13780 (61290)	12230 (54390)	11630 (51730)	10610 (47190)	9440 (41980)	8540 (37980)
	7.00 (178)	14030 (62400)	14030 (62400)	14030 (62400)	14030 (62400)	13130 (58400)	11660 (51860)	11080 (49280)	10110 (44960)	8990 (39980)	8140 (36200)
4F180 4F185 4F190 4F195	0.75 (19.1)	28700 (127650)	33460 (148830)	33460 (148830)	33460 (148830)	33210 (147710)	29720 (132190)	28470 (126630)	25970 (115510)	23320 (103720)	21270 (94600)
	1.00 (25.4)	30370 (135080)	33210 (147710)	33210 (147710)	33210 (147710)	32710 (145490)	29220 (129970)	27970 (124410)	25720 (114400)	23000 (102300)	20950 (93180)
	1.25 (31.8)	31150 (138550)	32710 (145490)	32710 (145490)	32710 (145490)	32460 (144380)	28970 (128850)	27470 (122180)	25220 (112170)	22650 (100740)	20650 (91850)
	1.50 (38.1)	31820 (141530)	32460 (144380)	32460 (144380)	32460 (144380)	31960 (142150)	28470 (126630)	27220 (121070)	24920 (110840)	22350 (99410)	20350 (90510)
	1.75 (44.5)	31960 (142150)	31960 (142150)	31960 (142150)	31960 (142150)	31460 (139930)	28220 (125520)	26720 (118850)	24570 (109280)	22020 (97940)	20080 (89310)
	1.88 (47.6)	30200 (134320)	31710 (141040)	31710 (141040)	31710 (141040)	30960 (137710)	27720 (123290)	26470 (117730)	24220 (107730)	21720 (96610)	19800 (88070)
	2.00 (50.8)	28770 (127960)	31460 (139930)	31460 (139930)	31460 (139930)	30460 (135480)	27220 (121070)	25970 (115510)	23900 (106300)	21420 (95270)	19530 (86860)
	2.50 (63.5)	29250 (130100)	30710 (136590)	30710 (136590)	30710 (136590)	29720 (132190)	26720 (118850)	25470 (113290)	23270 (103500)	20870 (92820)	19030 (84640)
	3.00 (76.2)	29620 (131740)	30220 (134410)	30220 (134410)	30220 (134410)	28970 (128850)	25970 (115510)	24700 (109860)	22670 (100830)	20320 (90380)	18530 (82420)
	3.50 (88.9)	29470 (131080)	29470 (131080)	29470 (131080)	29470 (131080)	28220 (125520)	25220 (112170)	24070 (107060)	22100 (98300)	19830 (88200)	18050 (80280)
	4.00 (102)	29440 (130940)	28970 (128850)	28970 (128850)	28970 (128850)	27720 (123290)	24650 (109640)	23500 (104520)	21550 (95850)	19330 (85970)	17630 (78410)
	4.50 (114)	29800 (132550)	28970 (128850)	28970 (128850)	28720 (127740)	26970 (119960)	24070 (107060)	22920 (101940)	21050 (93630)	18880 (83970)	17200 (76500)
	5.00 (127)	27110 (120580)	28470 (126630)	28470 (126630)	27470 (122180)	25720 (114400)	22970 (102170)	21870 (97270)	20080 (89310)	18000 (80060)	16400 (72940)
	6.00 (152)	25700 (114310)	26220 (116620)	26220 (116620)	26220 (116620)	24600 (109420)	21970 (97720)	20920 (93050)	19200 (85400)	17230 (76630)	15700 (69830)
	7.00 (178)	23900 (106300)	23900 (106300)	23900 (106300)	23900 (106300)	23550 (104750)	21050 (93630)	20050 (89180)	18400 (81840)	16500 (73390)	15030 (66850)

Note [1]: For output speeds that are in between those detailed in Tables 4.6a through 4.7c, the overhung load capacity may be calculated through interpolation.

Special Load Guidelines Output Shaft Overhung Load continued

Table 4.7a Allowable Overhung Load for Output Shaft (Keyed Hollow Bore, Shrink Disc, Taper Grip Bushing) (Cf, Sf = 1)

Force Units: lbs, (N)

Model	L inch (mm)	Output Shaft, RPM									
		5	10	20	30	35	45	50	60	75	90
4A100 4A105 4A110 4A115 4A120 4A125 4A140 4A145	0.75 (19.1)	7170 (31890)	8360 (37180)	7510 (33400)	6440 (28640)	6060 (26950)	5490 (24410)	5260 (23390)	4870 (21660)	4440 (19740)	4120 (18320)
	1.00 (25.4)	7490 (33310)	8190 (36420)	7290 (32420)	6240 (27750)	5890 (26190)	5310 (23610)	5090 (22640)	4740 (21080)	4320 (19210)	3990 (17740)
	1.25 (31.8)	7610 (33840)	7990 (35530)	7060 (31400)	6060 (26950)	5710 (25390)	5160 (22950)	4940 (21970)	4590 (20410)	4190 (18630)	3870 (17210)
	1.50 (38.1)	7680 (34160)	7840 (34870)	6860 (30510)	5890 (26190)	5540 (24640)	5020 (22320)	4820 (21430)	4470 (19880)	4070 (18100)	3770 (16760)
	1.75 (44.5)	7660 (34070)	7660 (34070)	6690 (29750)	5740 (25530)	5390 (23970)	4890 (21750)	4690 (20860)	4340 (19300)	3970 (17650)	3670 (16320)
	2.00 (50.8)	7150 (31800)	7510 (33400)	6510 (28950)	5590 (24860)	5260 (23390)	4770 (21210)	4570 (20320)	4240 (18850)	3870 (17210)	3570 (15870)
	2.50 (63.5)	6730 (29930)	7360 (32730)	6340 (28200)	5440 (24190)	5110 (22720)	4640 (20630)	4440 (19740)	4120 (18320)	3770 (16760)	3470 (15430)
	3.00 (76.2)	6730 (29930)	7060 (31400)	6040 (26860)	5160 (22950)	4870 (21660)	4420 (19660)	4220 (18770)	3920 (17430)	3570 (15870)	3290 (14630)
	3.50 (88.9)	6680 (29710)	6810 (30290)	5760 (25620)	4940 (21970)	4640 (20630)	4220 (18770)	4040 (17960)	3740 (16630)	3420 (15210)	3140 (13960)
	4.00 (102)	6560 (29170)	6560 (29170)	5490 (24410)	4720 (20990)	4440 (19740)	4020 (17880)	3840 (17080)	3570 (15870)	3240 (14410)	3020 (13430)
	4.50 (114)	6390 (28420)	6290 (27970)	5260 (23390)	4520 (20100)	4240 (18850)	3840 (17080)	3690 (16410)	3420 (15210)	3120 (13870)	2890 (12850)
	4B120 4B125 4B140 4B145 4B160 4B165	0.75 (19.1)	11800 (52480)	13010 (57860)	10010 (44520)	8510 (37850)	7990 (35530)	7190 (31980)	6890 (30640)	6360 (28280)	5740 (25530)
1.00 (25.4)		12350 (54930)	12680 (56400)	9760 (43410)	8310 (36960)	7790 (34640)	7010 (31180)	6710 (29840)	6190 (27530)	5610 (24950)	5160 (22950)
1.25 (31.8)		12410 (55190)	12380 (55060)	9540 (42430)	8110 (36070)	7610 (33840)	6860 (30510)	6560 (29170)	6060 (26950)	5490 (24410)	5040 (22410)
1.50 (38.1)		12210 (54310)	12110 (53860)	9310 (41410)	7910 (35180)	7440 (33090)	6690 (29750)	6410 (28510)	5910 (26280)	5340 (23750)	4920 (21880)
1.75 (44.5)		11910 (52970)	11830 (52610)	9110 (40520)	7740 (34420)	7260 (32290)	6540 (29080)	6260 (27840)	5790 (25750)	5240 (23300)	4820 (21430)
2.00 (50.8)		10890 (48430)	11430 (50840)	8910 (39630)	7590 (33760)	7110 (31620)	6410 (28510)	6110 (27170)	5660 (25170)	5110 (22720)	4690 (20860)
2.50 (63.5)		10040 (44650)	10980 (48830)	8710 (38740)	7410 (32950)	6960 (30950)	6260 (27840)	5990 (26640)	5540 (24640)	5020 (22320)	4590 (20410)
3.00 (76.2)		9680 (43050)	10160 (45190)	8340 (37090)	7110 (31620)	6660 (29620)	6010 (26730)	5740 (25530)	5310 (23610)	4790 (21300)	4420 (19660)
3.50 (88.9)		9300 (41360)	9490 (42210)	8010 (35620)	6810 (30290)	6410 (28510)	5760 (25620)	5510 (24500)	5090 (22640)	4620 (20540)	4240 (18850)
4.00 (102)		8860 (39400)	8860 (39400)	7710 (34290)	6560 (29170)	6160 (27390)	5540 (24640)	5310 (23610)	4890 (21750)	4440 (19740)	4070 (18100)
4.50 (114)		8470 (37670)	8340 (37090)	7440 (33090)	6310 (28060)	5940 (26420)	5340 (23750)	5110 (22720)	4720 (20990)	4270 (18990)	3920 (17430)
5.00 (127)		8090 (35980)	7860 (34960)	7160 (31840)	6090 (27080)	5740 (25530)	5160 (22950)	4940 (21970)	4540 (20190)	4120 (18320)	3790 (16850)
5.50 (139)	6730 (29930)	7060 (31400)	6690 (29750)	5690 (25300)	5340 (23750)	4820 (21430)	4590 (20410)	4240 (18850)	3840 (17080)	3540 (15740)	

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Note [1]: For output speeds that are in between those detailed in Tables 4.6a through 4.7c, the overhung load capacity may be calculated through interpolation.

Special Load Guidelines Output Shaft Overhung Load continued

Table 4.7b Allowable Overhung Load for Output Shaft (Keyed Hollow Bore, Shrink Disc, Taper Grip Bushing) (Cf, Sf = 1)

Force Units: lbs, (N)

Model	L inch (mm)	Output Shaft, RPM									
		5	10	20	30	35	45	50	60	75	90
4C140 4C145 4C160 4C165 4C170 4C175	0.75 (19.1)	16770 (74590)	17480 (77750)	13160 (58530)	11030 (49060)	10280 (45720)	9140 (40650)	8690 (38650)	7940 (35310)	7060 (31400)	6390 (28420)
	1.00 (25.4)	17560 (78100)	17080 (75970)	12880 (57290)	10780 (47940)	10060 (44740)	8940 (39760)	8490 (37760)	7760 (34510)	6910 (30730)	6260 (27840)
	1.25 (31.8)	17980 (79970)	16730 (74410)	12610 (56080)	10560 (46970)	9840 (43760)	8740 (38870)	8310 (36960)	7590 (33760)	6760 (30060)	6110 (27170)
	1.50 (38.1)	18210 (80990)	16350 (72720)	12330 (54840)	10330 (45940)	9640 (42870)	8560 (38070)	8140 (36200)	7440 (33090)	6610 (29400)	5990 (26640)
	1.75 (44.5)	18280 (81300)	16030 (71300)	12080 (53730)	10110 (44960)	9440 (41980)	8390 (37310)	7960 (35400)	7260 (32290)	6490 (28860)	5860 (26060)
	1.88 (47.6)	17120 (76140)	15700 (69830)	11830 (52610)	9910 (44070)	9240 (41090)	8210 (36510)	7810 (34730)	7110 (31620)	6340 (28200)	5740 (25530)
	2.00 (50.8)	16170 (71920)	15380 (68410)	11580 (51500)	9710 (43190)	9060 (40290)	8040 (35760)	7640 (33980)	6990 (31090)	6210 (27620)	5640 (25080)
	2.50 (63.5)	16260 (72320)	14780 (65740)	11130 (49500)	9340 (41540)	8710 (38740)	7740 (34420)	7360 (32730)	6710 (29840)	5990 (26640)	5410 (24060)
	3.00 (76.2)	15640 (69560)	14260 (63420)	10730 (47720)	8990 (39980)	8390 (37310)	7460 (33180)	7090 (31530)	6460 (28730)	5760 (25620)	5210 (23170)
	3.50 (88.9)	14980 (66630)	13730 (61070)	10360 (46080)	8660 (38510)	8090 (35980)	7190 (31980)	6840 (30420)	6240 (27750)	5560 (24730)	5040 (22410)
	4.00 (102)	14360 (63870)	13260 (58980)	9990 (44430)	8360 (37180)	7810 (34730)	6940 (30860)	6590 (29310)	6010 (26730)	5360 (23840)	4870 (21660)
	4.50 (114)	13740 (61110)	12830 (57060)	9660 (42960)	8090 (35980)	7540 (33530)	6710 (29840)	6360 (28280)	5810 (25840)	5190 (23080)	4690 (20860)
	5.00 (127)	11480 (51060)	12030 (53500)	9060 (40290)	7590 (33760)	7060 (31400)	6290 (27970)	5960 (26510)	5460 (24280)	4870 (21660)	4390 (19520)
	6.00 (152)	10770 (47900)	10980 (48830)	8540 (37980)	7140 (31750)	6660 (29620)	5910 (26280)	5610 (24950)	5140 (22860)	4570 (20320)	4140 (18410)
	4D160 4D165 4D170 4D175 4D180 4D185	0.75 (19.1)	21850 (97180)	25470 (113290)	19150 (85170)	16050 (71390)	14960 (66540)	13310 (59200)	12630 (56170)	11560 (51410)	10280 (45720)
1.00 (25.4)		23060 (102570)	24950 (110970)	18800 (83620)	15750 (70050)	14680 (65290)	13060 (58090)	12410 (55190)	11330 (50390)	10090 (44880)	9140 (40650)
1.25 (31.8)		23590 (104920)	24500 (108970)	18450 (82060)	15450 (68720)	14430 (64180)	12810 (56970)	12180 (54170)	11130 (49500)	9910 (44070)	8990 (39980)
1.50 (38.1)		23940 (106480)	24050 (106970)	18130 (80640)	15180 (67520)	14160 (62980)	12580 (55950)	11960 (53190)	10930 (48610)	9740 (43320)	8810 (39180)
1.75 (44.5)		24070 (107060)	23620 (105060)	17800 (79170)	14930 (66400)	13910 (61870)	12360 (54970)	11760 (52300)	10730 (47720)	9560 (42520)	8660 (38510)
1.88 (47.6)		22610 (100560)	23220 (103280)	17500 (77840)	14660 (65200)	13680 (60840)	12160 (54080)	11560 (51410)	10560 (46970)	9390 (41760)	8510 (37850)
2.00 (50.8)		21420 (95270)	22820 (101500)	17200 (76500)	14410 (64090)	13430 (59730)	11960 (53190)	11360 (50520)	10360 (46080)	9240 (41090)	8360 (37180)
2.50 (63.5)		21710 (96560)	22070 (98160)	16630 (73970)	13930 (61960)	13010 (57860)	11560 (51410)	10980 (48830)	10040 (44650)	8940 (39760)	8090 (35980)
3.00 (76.2)		21760 (96780)	21370 (95050)	16100 (71610)	13510 (60090)	12580 (55950)	11180 (49720)	10630 (47280)	9710 (43190)	8640 (38430)	7840 (34870)
3.50 (88.9)		21650 (96290)	20700 (92070)	15600 (69380)	13080 (58170)	12180 (54170)	10830 (48170)	10310 (45850)	9410 (41850)	8390 (37310)	7590 (33760)
4.00 (102)		21470 (95490)	20080 (89310)	15130 (67290)	12680 (56400)	11830 (52610)	10510 (46740)	9990 (44430)	9140 (40650)	8140 (36200)	7360 (32730)
4.50 (114)		20940 (93140)	19500 (86730)	14710 (65430)	12310 (54750)	11480 (51060)	10210 (45410)	9710 (43190)	8860 (39400)	7890 (35090)	7140 (31750)
5.00 (127)		17570 (78150)	18430 (81970)	13880 (61730)	11630 (51730)	10860 (48300)	9640 (42870)	9160 (40740)	8390 (37310)	7460 (33180)	6760 (30060)
6.00 (152)		16540 (73560)	16880 (75080)	13160 (58530)	11030 (49060)	10280 (45720)	9140 (40650)	8690 (38650)	7940 (35310)	7060 (31400)	6410 (28510)
7.00 (178)		15550 (69160)	15550 (69160)	12510 (55640)	10480 (46610)	9790 (43540)	8690 (38650)	8260 (36740)	7540 (33530)	6710 (29840)	6090 (27080)

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Note [1]: For output speeds that are in between those detailed in Tables 4.6a through 4.7c, the overhung load capacity may be calculated through interpolation.

Special Load Guidelines Output Shaft Overhung Load continued

Table 4.7c Allowable Overhung Load for Output Shaft (Keyed Hollow Bore, Shrink Disc, Taper Grip Bushing) (Cf, Sf = 1)

Force Units: lbs, (N)

Model	L inch (mm)	Output Shaft, RPM									
		5	10	20	30	35	45	50	60	75	90
4E170 4E175 4E180 4E185 4E190 4E195	0.75 (19.1)	22060 (98120)	25720 (114400)	25720 (114400)	21700 (96520)	20270 (90160)	18100 (80500)	17230 (76630)	15780 (70180)	14130 (62850)	12830 (57060)
	1.00 (25.4)	23290 (103590)	25470 (113290)	25470 (113290)	21350 (94960)	19930 (88640)	17780 (79080)	16930 (75300)	15500 (68940)	13880 (61730)	12630 (56170)
	1.25 (31.8)	23780 (105770)	24970 (111060)	24920 (110840)	20970 (93270)	19600 (87180)	17480 (77750)	16650 (74050)	15250 (67830)	13660 (60750)	12410 (55190)
	1.50 (38.1)	24210 (107680)	24700 (109860)	24520 (109060)	20620 (91710)	19280 (85750)	17200 (76500)	16380 (72850)	15010 (66760)	13430 (59730)	12210 (54310)
	1.75 (44.5)	24370 (108390)	24370 (108390)	24120 (107280)	20300 (90290)	18950 (84280)	16900 (75170)	16100 (71610)	14760 (65650)	13210 (58750)	12010 (53420)
	1.88 (47.6)	22920 (101940)	24070 (107060)	23720 (105500)	19980 (88870)	18650 (82950)	16650 (74050)	15850 (70500)	14510 (64540)	12980 (57730)	11810 (52530)
	2.00 (50.8)	21720 (96610)	23750 (105640)	23350 (103860)	19650 (87400)	18380 (81750)	16380 (72850)	15600 (69380)	14280 (63510)	12780 (56840)	11630 (51730)
	2.50 (63.5)	22070 (98160)	23170 (103060)	22650 (100740)	19050 (84730)	17800 (79170)	15880 (70630)	15130 (67290)	13860 (61640)	12410 (55190)	11280 (50170)
	3.00 (76.2)	22150 (98520)	22600 (100520)	21970 (97720)	18500 (82280)	17280 (76860)	15400 (68490)	14680 (65290)	13430 (59730)	12030 (53500)	10930 (48610)
	3.50 (88.9)	22070 (98160)	22070 (98160)	21350 (94960)	17950 (79840)	16780 (74630)	14960 (66540)	14260 (63420)	13060 (58090)	11680 (51950)	10630 (47280)
	4.00 (102)	21900 (97410)	21550 (95850)	20750 (92290)	17450 (77610)	16300 (72500)	14560 (64760)	13860 (61640)	12680 (56400)	11360 (50520)	10330 (45940)
	4.50 (114)	21680 (96430)	21070 (93710)	20180 (89760)	16980 (75520)	15850 (70500)	14160 (62980)	13480 (59950)	12330 (54840)	11030 (49060)	10040 (44650)
	5.00 (127)	19190 (85350)	20150 (89620)	19130 (85090)	16100 (71610)	15060 (66980)	13430 (59730)	12780 (56840)	11710 (52080)	10480 (46610)	9540 (42430)
	6.00 (152)	18940 (84240)	19330 (85970)	18200 (80950)	15300 (68050)	14310 (63650)	12760 (56750)	12160 (54080)	11130 (49500)	9960 (44300)	9060 (40290)
	7.00 (178)	18550 (82510)	18550 (82510)	17350 (77170)	14610 (64980)	13630 (60620)	12160 (54080)	11580 (51500)	10610 (47190)	9490 (42210)	8640 (38430)
4F180 4F185 4F190 4F195	0.75 (19.1)	28700 (127650)	33460 (148830)	33460 (148830)	33460 (148830)	32960 (146600)	29470 (131080)	28220 (125520)	25720 (114400)	23150 (102970)	21100 (93850)
	1.00 (25.4)	30370 (135080)	33210 (147710)	33210 (147710)	33210 (147710)	32460 (144380)	29220 (129970)	27720 (123290)	25470 (113290)	22820 (101500)	20800 (92510)
	1.25 (31.8)	31150 (138550)	32710 (145490)	32710 (145490)	32710 (145490)	32210 (143270)	28720 (127740)	27220 (121070)	24970 (111060)	22500 (100080)	20500 (91180)
	1.50 (38.1)	31820 (141530)	32460 (144380)	32460 (144380)	32460 (144380)	31710 (141040)	28220 (125520)	26970 (119960)	24750 (110080)	22170 (98610)	20220 (89930)
	1.75 (44.5)	31960 (142150)	31960 (142150)	31960 (142150)	31960 (142150)	31210 (138820)	27970 (124410)	26470 (117730)	24400 (108530)	21870 (97270)	19950 (88730)
	1.88 (47.6)	30200 (134320)	31710 (141040)	31710 (141040)	31710 (141040)	30710 (136590)	27470 (122180)	26220 (116620)	24070 (107060)	21570 (95940)	19680 (87530)
	2.00 (50.8)	28770 (127960)	31460 (139930)	31460 (139930)	31460 (139930)	30460 (135480)	27220 (121070)	25970 (115510)	23750 (105640)	21270 (94600)	19400 (86290)
	2.50 (63.5)	29250 (130100)	30710 (136590)	30710 (136590)	30710 (136590)	29470 (131080)	26470 (117730)	25220 (112170)	23120 (102830)	20720 (92160)	18900 (84060)
	3.00 (76.2)	29620 (131740)	30220 (134410)	30220 (134410)	30220 (134410)	28720 (127740)	25720 (114400)	24550 (109190)	22520 (100160)	20200 (89840)	18400 (81840)
	3.50 (88.9)	29470 (131080)	29470 (131080)	29470 (131080)	29470 (131080)	28220 (125520)	25220 (112170)	23920 (106390)	21970 (97720)	19700 (87620)	17950 (79840)
	4.00 (102)	29440 (130940)	28970 (128850)	28970 (128850)	28970 (128850)	27470 (122180)	24500 (108970)	23350 (103860)	21420 (95270)	19230 (85530)	17500 (77840)
	4.50 (114)	29800 (132550)	28970 (128850)	28970 (128850)	28720 (127740)	26720 (118850)	23920 (106390)	22800 (101410)	20920 (93050)	18750 (83400)	17100 (76060)
	5.00 (127)	27110 (120580)	28470 (126630)	28470 (126630)	27220 (121070)	25470 (113290)	22850 (101630)	21750 (96740)	19980 (88870)	17900 (79610)	16330 (72630)
	6.00 (152)	25700 (114310)	26220 (116620)	26220 (116620)	26220 (116620)	24450 (108750)	21850 (97180)	20820 (92600)	19100 (84950)	17130 (76190)	15600 (69380)
	7.00 (178)	25470 (113290)	25470 (113290)	25470 (113290)	24970 (111060)	23450 (104300)	20950 (93180)	19950 (88730)	18300 (81390)	16430 (73080)	14960 (66540)

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Special Load Guidelines Output Shaft Allowable Axial Load

Table 4.8 Allowable Axial Load (Common to Hollow and Solid Shafts)

[Units] Upper line: lbs; lower line: (N)

Frame Size	Output Shaft Speed r/min									
	5	10	20	30	35	45	50	60	75	90
4A10 □, 4A11 □, 4A12 □, 4A14 □	4968 (22100)	4968 (22100)	4968 (22100)	4586 (20400)	4249 (18900)	3709 (16500)	3507 (15600)	3147 (14000)	2743 (12200)	2428 (10800)
4B12 □, 4B14 □, 4B16 □	9329 (41500)	8835 (39300)	6227 (27700)	4923 (21900)	4474 (19900)	3754 (16700)	3462 (15400)	2990 (13300)	2450 (10900)	2025 (9010)
4C14 □, 4C16 □, 4C17 □	14567 (64800)	10903 (48500)	7373 (32800)	5620 (25000)	4991 (22200)	4024 (17900)	3642 (16200)	2990 (13300)	2248 (10000)	1675 (7450)
4D16 □, 4D17 □, 4D18 □	20816 (92600)	14859 (66100)	9981 (44400)	7531 (33500)	6677 (29700)	5328 (23700)	4811 (21400)	3912 (17400)	2877 (12800)	2070 (9210)
4E17 □, 4E18 □, 4E19 □	20974 (93300)	20569 (91500)	14297 (63600)	11150 (49600)	10049 (44700)	8340 (37100)	7666 (34100)	6542 (29100)	5215 (23200)	4204 (18700)
4F18 □, 4F19 □	33720 (150000)	33720 (150000)	24503 (109000)	19670 (87500)	17962 (79900)	15331 (68200)	14297 (63600)	12544 (55800)	10521 (46800)	8947 (39800)

*The □ mark of each frame size represents 0, 5, DA, DB, or DC.

Above values are valid when no radial load is applied on the shaft, and 12.9 grade mounting bolts are used.

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Special Load Guidelines Input Shaft Overhung Load

Reducer/Gearmotor Input Shaft Allowable Overhung Load

The radial load acting on the high speed shaft (ie: unit supplied as a reducer) may be calculated with the following formula:

$$Pr \leq \frac{Pro}{Lf \cdot Cf \cdot Sf}$$

LEGEND

- Pr** = Actual radial load (lbs, *N*)
- Pro** = Allowable radial load (lbs, *N*)
- Lf** = Load Location factor (Table 4.6a)
- Cf** = Coupling Factor (Table 4.4)
- Sf** = Service factor (Table 4.5)

Figure 4.1 Input Shaft Load Location Factor (Lf)

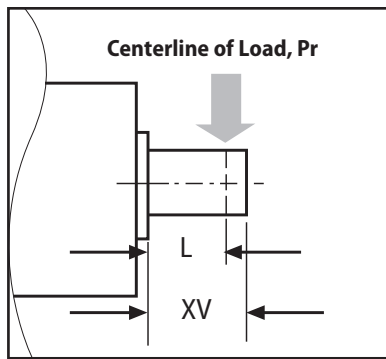


Table 4.9 Input Shaft Load Location Factor (Lf)

Model	L inch/(mm)											
	0.25 (6.35)	0.50 (12.7)	0.75 (19.05)	1.00 (25.4)	1.25 (31.75)	1.50 (38.1)	1.75 (44.45)	2.00 (50.8)	2.50 (63.5)	3.00 (76.2)	3.50 (88.9)	4.00 (101.6)
4A10DA, 4A12DA, 4B12DA, 4B14DA, 4C14DA	0.78	1.07	1.52	2.02	—	—	—	—	—	—	—	—
4A12DB, 4B12DB, 4B14DB, 4C14DB, 4C16DA, 4D16DA, 4D17DA, 4E17DA	0.90	1.09	1.52	2.03	2.53	—	—	—	—	—	—	—
4A100, 4A105, 4C14DC, 4D16DB, 4D17DB, 4D18DA, 4E17DB, 4E18DA, 4F18DA	0.93	1.09	1.52	2.03	2.53	—	—	—	—	—	—	—
4A110, 4A115	0.93	1.09	1.52	2.03	2.53	—	—	—	—	—	—	—
4A120, 4A125, 4B120, 4B125, 4D17DC, 4E17DC, 4E19DA, 4F19DA	0.68	0.87	1.10	1.43	1.77	2.12	2.46	—	—	—	—	—
4C145, 4D18DB, 4E18DB, 4E19DB, 4F18DB, 4F19DB	0.70	0.84	0.98	1.25	1.53	1.83	2.11	—	—	—	—	—
4B160, 4B165, 4C160, 4C165, 4D160, 4D165	0.90	0.94	0.97	1.06	1.22	1.36	1.51	1.66	1.94	—	—	—
4C170, 4C175, 4D170, 4D175, 4E170, 4E175	—	0.91	0.95	0.99	1.09	1.23	1.38	1.51	1.79	2.08	—	—
4D180, 4D185, 4E180, 4E185, 4F180, 4F185	—	—	0.92	0.96	1.01	1.11	1.24	1.37	1.63	1.88	2.15	2.40
4E190, 4E195, 4F190, 4F195	—	—	0.92	0.95	0.99	1.06	1.15	1.26	1.47	1.69	1.90	2.12

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Special Load Guidelines Input Shaft Overhung Load continued

Table 4.10 Input Shaft Overhung Load Capacity Pro (Lf, Cf, Sf =1)

Force Units: lbs, (N)

Model	Reduction Ratio	Input Speed (RPM)						
		1750	1450	1165	980	870	720	580
4A10DA, 4A12DA, 4B12DA, 4B14DA, 4C14DA	364 - 5177, 7228, 10658	44 (196)	33 (147)	33 (147)	44 (196)	44 (196)	44 (196)	44 (196)
	1849, 2537	11 (49.1)	11 (49.1)	11 (49.1)	11 (49.1)	11 (49.1)	33 (147)	44 (196)
4A12DB, 4B12DB, 4B14DB, 4C14DB, 4C16DA, 4D16DA, 4D17DA, 4E17DA	All Ratios	44 (196)	44 (196)	44 (196)	44 (196)	55 (245)	55 (245)	66 (294)
4A100, 4A105, 4C14DC, 4D16DB, 4D17DB, 4D18DA, 4E17DB, 4E18DA, 4F18DA	11 - 39, 54 - 578, 809, 1117, 1656, 2272 - 10658	99 (441)	99 (441)	110 (491)	121 (540)	132 (589)	132 (589)	132 (589)
	42, 46, 48, 53, 683, 956, 1320, 1957	99 (441)	77 (343)	99 (441)	110 (491)	110 (491)	121 (540)	132 (589)
4A110, 4A115	19 - 28, 67 - 305	99 (441)	77 (343)	99 (441)	110 (491)	110 (491)	121 (540)	132 (589)
	35 - 60	44 (196)	44 (196)	44 (196)	44 (196)	55 (245)	55 (245)	66 (294)
4A120, 4A125, 4B120, 4B125, 4D17DC, 4E17DC, 4E19DA, 4F19DA	11 - 60, 364 - 2559, 3511, 5177	133 (590)	155 (690)	166 (740)	175 (780)	198 (880)	198 (880)	198 (880)
	67 - 305, 2944, 4365, 6472 - 10658	121 (540)	99 (440)	110 (490)	121 (540)	133 (590)	198 (880)	198 (880)
4D18DB, 4E18DB, 4E19DB, 4F18DB, 4F19DB	11 - 74	308 (1370)	308 (1370)	308 (1370)	342 (1520)	364 (1620)	387 (1720)	418 (1860)
	80 - 305	288 (1280)	288 (1280)	288 (1280)	308 (1370)	330 (1470)	353 (1570)	398 (1770)
4A140, 4A145, 4B140, 4B145, 4C140, 4C145	11 - 28	308 (1370)	308 (1370)	308 (1370)	342 (1520)	364 (1620)	387 (1720)	418 (1860)
	35 - 74	277 (1230)	220 (980)	243 (1080)	265 (1180)	277 (1230)	297 (1320)	330 (1470)
	80, 88	243 (1080)	254 (1130)	265 (1180)	288 (1280)	297 (1320)	308 (1370)	330 (1470)
	93 - 305	121 (540)	133 (590)	133 (590)	155 (690)	155 (690)	155 (690)	243 (1080)
4B160, 4B165, 4C160, 4C165, 4D160, 4D165	11 - 88, 163 - 207	398 (1770)	398 (1770)	441 (1960)	463 (2060)	486 (2160)	486 (2160)	486 (2160)
	93 - 151, 227 - 305	243 (1080)	265 (1180)	288 (1280)	308 (1370)	308 (1370)	353 (1570)	398 (1770)
4C170, 4C175, 4D170, 4D175, 4E170, 4E175	All Ratios	463 (2060)	463 (2060)	508 (2260)	508 (2260)	528 (2350)	551 (2450)	596 (2650)
4D180, 4D185, 4E180, 4E185, 4F180, 4F185	All Ratios	618 (2750)	573 (2550)	618 (2750)	661 (2940)	683 (3040)	751 (3340)	771 (3430)
4E190, 4E195, 4F190, 4F195	35 - 88	683 (3040)	683 (3040)	728 (3240)	794 (3530)	816 (3630)	881 (3920)	881 (3920)
	93 - 305	596 (2650)	573 (2550)	638 (2840)	661 (2940)	706 (3140)	751 (3340)	816 (3630)

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Special Load Guidelines Inertia

Table 4.11 Reducer Moment of Inertia on Motor Shaft of Gearmotor: Hollow Output Shaft, Ratios 11 - 53^[1]
Units: lb·in² (x 10⁻⁴ kg·m²)

Model	Nominal Reduction Ratio												
	11	13	14	16	18	21	22	25	28	35	39	46	53
4A100	1.57	0.978	0.904	0.608	0.586	0.462	—	—	0.302	0.186	0.176	0.162	0.141
4A105	(4.60)	(2.86)	(2.64)	(1.78)	(1.72)	(1.35)	—	—	(0.884)	(0.544)	(0.514)	(0.475)	(0.414)
4A110	—	—	—	—	—	0.710	—	—	0.491	0.358	0.348	0.304	0.278
4A115	—	—	—	—	—	(2.08)	—	—	(1.44)	(1.05)	(1.02)	(0.891)	(0.813)
4A120	3.86	2.35	2.28	1.70	1.65	1.28	1.44	1.42	0.986	0.608	0.598	0.631	0.589
4A125	(11.3)	(6.89)	(6.67)	(4.99)	(4.84)	(3.74)	(4.21)	(4.14)	(2.89)	(1.78)	(1.75)	(1.85)	(1.72)
4A140	8.32	5.30	5.22	3.77	3.72	3.37	3.47	3.45	2.27	1.61	1.60	1.29	1.16
4A145	(24.4)	(15.5)	(15.3)	(11.0)	(10.9)	(9.87)	(10.2)	(10.1)	(6.65)	(4.71)	(4.68)	(3.77)	(3.40)
4B120	5.24	3.24	3.05	2.30	1.47	1.62	1.73	1.67	1.18	0.726	0.700	0.704	0.644
4B125	(15.3)	(9.48)	(8.93)	(6.72)	(4.31)	(4.75)	(5.06)	(4.88)	(3.45)	(2.12)	(2.05)	(2.06)	(1.88)
4B140	9.69	6.22	6.03	4.37	4.25	3.75	3.79	3.72	2.48	1.74	1.71	1.37	1.22
4B145	(28.4)	(18.2)	(17.7)	(12.8)	(12.4)	(11.0)	(11.1)	(10.9)	(7.27)	(5.08)	(5.01)	(4.01)	(3.58)
4B160	27.7	17.8	17.6	12.1	12.0	8.93	10.1	10.0	6.17	4.41	4.39	3.87	3.46
4B165	(81.0)	(52.1)	(51.6)	(35.5)	(35.1)	(26.1)	(29.5)	(29.3)	(18.0)	(12.9)	(12.8)	(11.3)	(10.1)
4C140	13.7	9.01	8.40	6.20	3.96	4.84	4.73	4.52	3.10	2.12	2.04	1.60	1.40
4C145	(40.1)	(26.4)	(24.6)	(18.1)	(11.6)	(14.2)	(13.8)	(13.2)	(9.06)	(6.20)	(5.96)	(4.69)	(4.09)
4C160	31.9	20.8	20.1	14.0	13.6	10.0	11.0	10.8	6.75	4.78	4.69	4.09	3.63
4C165	(93.4)	(60.8)	(59.0)	(40.9)	(39.7)	(29.2)	(32.1)	(31.6)	(19.8)	(14.0)	(13.7)	(12.0)	(10.6)
4C170	55.0	35.0	34.4	26.4	26.0	23.8	23.4	23.1	17.6	13.3	13.2	12.3	10.9
4C175	(161)	(102)	(101)	(77.2)	(76.0)	(69.8)	(68.3)	(67.7)	(51.4)	(38.9)	(38.6)	(36.1)	(31.9)
4D160	—	—	—	—	—	12.6	13.3	12.7	8.21	5.73	5.47	4.64	4.04
4D165	—	—	—	—	—	(36.8)	(39.0)	(37.1)	(24.0)	(16.8)	(16.0)	(13.6)	(11.8)
4D170	68.5	44.1	42.2	32.3	31.1	26.5	25.7	25.1	19.0	14.2	14.0	12.9	11.3
4D175	(200)	(129)	(123)	(94.5)	(90.9)	(77.5)	(75.3)	(73.4)	(55.7)	(41.7)	(40.9)	(37.7)	(33.1)
4D180	104	52.8	50.9	36.4	35.1	36.6	31.5	30.9	26.5	21.5	21.2	18.9	16.6
4D185	(304)	(155)	(149)	(107)	(103)	(107)	(92.2)	(90.3)	(77.5)	(62.8)	(62.1)	(55.4)	(48.7)
4E170	—	—	—	—	—	30.5	29.0	28.0	21.3	15.6	15.2	13.7	12.0
4E175	—	—	—	—	—	(89.2)	(84.7)	(82.0)	(62.3)	(45.5)	(44.4)	(40.2)	(35.0)
4E180	120	62.3	59.5	43.0	41.1	40.6	34.7	33.8	28.7	22.8	22.4	19.8	17.3
4E185	(351)	(182)	(174)	(126)	(120)	(119)	(102)	(98.9)	(84.0)	(66.7)	(65.5)	(57.8)	(50.6)
4E190	188	102	99.6	70.7	68.8	77.0	64.9	64.0	56.7	48.5	48.1	44.2	41.9
4E195	(551)	(300)	(291)	(207)	(201)	(225)	(190)	(187)	(166)	(142)	(141)	(129)	(123)
4F180	178	97.6	92.8	68.4	65.1	52.8	44.4	42.7	35.6	26.7	26.0	22.4	19.2
4F185	(522)	(286)	(272)	(200)	(190)	(155)	(130)	(125)	(104)	(78.1)	(76.2)	(65.4)	(56.3)
4F190	234	131	126	91.0	87.7	90.0	75.2	73.6	64.1	52.7	52.0	47.0	44.0
4F195	(686)	(383)	(369)	(266)	(257)	(263)	(220)	(215)	(187)	(154)	(152)	(138)	(129)

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Note: (1) The inertia tables do not include the inertia of the integral motors. Total unit inertia is obtained by adding the reducer inertia to the motor inertia.

Special Load Guidelines Inertia continued

Table 4.12 Reducer Moment of Inertia on Motor Shaft of Gearmotor: Hollow Output Shaft, Ratios 60 - 305⁽¹⁾
 Units: lb·in² (x 10⁻⁴ kg·m²)

Model	Nominal Reduction Ratio												
	60	67	74	80	88	102	112	123	151	179	207	249	305
4A100	0.101	0.107	0.104	0.094	0.092	0.064	0.059	0.058	0.053	0.070	0.047	0.067	0.045
4A105	(0.297)	(0.314)	(0.306)	(0.275)	(0.270)	(0.188)	(0.172)	(0.169)	(0.154)	(0.206)	(0.138)	(0.196)	(0.131)
4A110	0.260	0.227	0.225	0.217	0.215	0.207	0.197	0.196	0.191	0.185	0.183	0.181	0.179
4A115	(0.760)	(0.665)	(0.657)	(0.634)	(0.628)	(0.605)	(0.577)	(0.575)	(0.559)	(0.541)	(0.536)	(0.529)	(0.525)
4A120	0.441	0.496	0.493	0.455	0.453	0.320	0.303	0.302	0.286	0.396	0.272	0.384	0.261
4A125	(1.29)	(1.45)	(1.44)	(1.33)	(1.33)	(0.935)	(0.887)	(0.884)	(0.838)	(1.16)	(0.795)	(1.12)	(0.763)
4A140	1.03	0.876	0.873	0.814	0.812	0.745	0.720	0.719	0.673	0.655	0.654	0.637	0.633
4A145	(3.01)	(2.56)	(2.56)	(2.38)	(2.38)	(2.18)	(2.11)	(2.10)	(1.97)	(1.92)	(1.91)	(1.86)	(1.85)
4B120	0.484	0.528	0.521	0.478	0.473	0.334	0.315	0.312	0.293	0.401	0.275	0.387	0.262
4B125	(1.42)	(1.54)	(1.52)	(1.40)	(1.38)	(0.978)	(0.921)	(0.913)	(0.857)	(1.17)	(0.805)	(1.13)	(0.768)
4B140	1.07	0.911	0.904	0.838	0.833	0.761	0.732	0.730	0.680	0.660	0.658	0.639	0.635
4B145	(3.14)	(2.67)	(2.65)	(2.45)	(2.44)	(2.23)	(2.14)	(2.14)	(1.99)	(1.93)	(1.93)	(1.87)	(1.86)
4B160	2.92	2.66	2.65	2.48	2.47	2.19	2.10	2.10	2.01	1.97	1.98	1.89	1.86
4B165	(8.53)	(7.79)	(7.77)	(7.25)	(7.23)	(6.41)	(6.15)	(6.14)	(5.88)	(5.77)	(5.80)	(5.54)	(5.46)
4C140	1.21	1.02	0.993	0.912	0.896	0.807	0.770	0.762	0.701	0.675	0.669	0.647	0.640
4C145	(3.54)	(2.97)	(2.91)	(2.67)	(2.62)	(2.36)	(2.25)	(2.23)	(2.05)	(1.98)	(1.96)	(1.89)	(1.87)
4C160	3.04	2.76	2.74	2.55	2.53	2.24	2.14	2.13	2.03	1.99	1.99	1.90	1.87
4C165	(8.91)	(8.08)	(8.02)	(7.46)	(7.41)	(6.54)	(6.26)	(6.23)	(5.94)	(5.81)	(5.83)	(5.56)	(5.47)
4C170	10.4	9.70	9.67	9.32	9.30	8.77	8.69	8.68	8.40	8.29	8.18	8.14	8.10
4C175	(30.5)	(28.4)	(28.3)	(27.3)	(27.2)	(25.7)	(25.4)	(25.4)	(24.6)	(24.3)	(23.9)	(23.8)	(23.7)
4D160	3.37	3.02	2.95	2.73	2.68	2.35	2.23	2.21	2.08	2.02	2.02	1.92	1.88
4D165	(9.86)	(8.85)	(8.64)	(8.00)	(7.85)	(6.87)	(6.53)	(6.46)	(6.09)	(5.92)	(5.90)	(5.62)	(5.51)
4D170	10.7	9.96	9.89	9.50	9.45	8.88	8.79	8.76	8.45	8.32	8.21	8.16	8.12
4D175	(31.4)	(29.1)	(28.9)	(27.8)	(27.7)	(26.0)	(25.7)	(25.6)	(24.7)	(24.4)	(24.0)	(23.9)	(23.8)
4D180	15.7	14.9	14.8	13.7	13.7	13.0	12.8	12.8	12.4	12.0	11.9	11.8	11.7
4D185	(46.0)	(43.5)	(43.3)	(40.1)	(40.0)	(38.0)	(37.4)	(37.4)	(36.2)	(35.2)	(34.9)	(34.6)	(34.4)
4E170	11.2	10.3	10.21	9.76	9.68	9.05	8.92	8.88	8.53	8.38	8.25	8.19	8.14
4E175	(32.9)	(30.2)	(29.9)	(28.6)	(28.3)	(26.5)	(26.1)	(26.0)	(25.0)	(24.5)	(24.1)	(24.0)	(23.8)
4E180	16.2	15.2	15.1	14.0	13.9	13.2	12.9	12.9	12.5	12.1	12.0	11.8	11.8
4E185	(47.4)	(44.5)	(44.2)	(40.9)	(40.7)	(38.5)	(37.8)	(37.7)	(36.5)	(35.3)	(35.0)	(34.7)	(34.4)
4E190	40.0	37.1	37.0	35.9	35.9	34.7	33.8	33.8	33.2	32.8	32.5	32.3	32.1
4E195	(117)	(109)	(108)	(105)	(105)	(102)	(98.9)	(98.8)	(97.1)	(96.0)	(95.2)	(94.6)	(94.1)
4F180	17.7	16.3	16.1	14.7	14.6	13.7	13.3	13.2	12.7	12.2	12.1	11.9	11.8
4F185	(51.9)	(47.7)	(47.1)	(43.1)	(42.7)	(40.0)	(38.9)	(38.7)	(37.2)	(35.8)	(35.4)	(34.9)	(34.6)
4F190	41.6	38.3	38.1	36.7	36.6	35.3	34.2	34.1	33.4	33.0	32.7	32.4	32.2
4F195	(122)	(112)	(111)	(108)	(107)	(103)	(100)	(99.9)	(97.9)	(96.6)	(95.6)	(94.9)	(94.3)

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Note: (1) The inertia tables does not include the inertia of the integral motors. Total unit inertia is obtained by adding the reducer inertia to the motor inertia.

Special Load Guidelines **Inertia** continued

Table 4.13 Reducer Moment of Inertia on Motor Shaft of Gearmotor: Solid Shaft [Left (L) or Right (R)] Output, Ratios 11 - 53⁽¹⁾
 Units: lb·in² ($\times 10^{-4}$ kg·m²)

Model	Nominal Reduction Ratio												
	11	13	14	16	18	21	22	25	28	35	39	46	53
4A100	1.58	0.986	0.910	0.614	0.560	0.465	—	—	0.304	0.187	0.177	0.163	0.142
4A105	(4.64)	(2.88)	(2.66)	(1.80)	(1.64)	(1.36)	—	—	(0.890)	(0.547)	(0.517)	(0.477)	(0.415)
4A100	—	—	—	—	—	0.713	—	—	0.492	0.359	0.349	0.305	0.278
4A115	—	—	—	—	—	(2.09)	—	—	(1.44)	(1.05)	(1.02)	(0.893)	(0.814)
4A120	3.88	2.36	2.29	1.71	1.66	1.28	1.44	1.42	0.988	0.610	0.599	0.632	0.589
4A125	(11.3)	(6.92)	(6.69)	(5.01)	(4.85)	(3.75)	(4.22)	(4.15)	(2.89)	(1.78)	(1.75)	(1.85)	(1.72)
4A140	8.34	5.31	5.23	3.77	3.72	3.37	3.48	3.45	2.27	1.61	1.60	1.29	1.16
4A145	(24.4)	(15.5)	(15.3)	(11.0)	(10.9)	(9.88)	(10.2)	(10.1)	(6.65)	(4.71)	(4.68)	(3.78)	(3.40)
4B120	5.30	3.28	3.09	2.32	2.19	1.64	1.74	1.68	1.19	0.731	0.705	0.708	0.646
4B125	(15.5)	(9.61)	(9.03)	(6.80)	(6.42)	(4.79)	(5.10)	(4.91)	(3.48)	(2.14)	(2.06)	(2.07)	(1.89)
4B120	9.75	3.91	3.72	4.40	4.27	3.76	3.80	3.74	2.49	1.74	1.72	1.37	1.22
4B125	(28.5)	(11.4)	(10.9)	(12.9)	(12.5)	(11.0)	(11.1)	(10.9)	(7.29)	(5.10)	(5.02)	(4.02)	(3.58)
4B140	27.7	17.8	17.7	12.2	12.0	8.95	10.1	10.0	6.18	4.42	4.39	3.87	3.47
4B145	(81.2)	(52.2)	(51.7)	(35.6)	(35.2)	(26.2)	(29.5)	(29.4)	(18.1)	(12.9)	(12.8)	(11.3)	(10.1)
4B160	13.8	9.10	8.47	6.26	5.85	4.87	4.76	4.55	3.12	2.13	2.05	1.61	1.40
4B165	(40.5)	(26.6)	(24.8)	(18.3)	(17.1)	(14.3)	(13.9)	(13.3)	(9.12)	(6.23)	(5.99)	(4.71)	(4.10)
4C160	32.0	12.4	11.8	14.0	13.6	10.0	11.0	10.8	6.77	4.79	4.70	4.09	3.63
4C165	(93.7)	(36.4)	(34.5)	(41.0)	(39.9)	(29.3)	(32.2)	(31.6)	(19.8)	(14.0)	(13.8)	(12.0)	(10.6)
4C170	55.1	35.1	34.5	26.4	26.0	23.9	23.4	23.2	17.6	13.3	13.2	12.3	10.9
4C175	(161)	(103)	(101)	(77.3)	(76.1)	(69.9)	(68.4)	(67.8)	(51.4)	(38.9)	(38.7)	(36.1)	(31.9)
4D160	—	—	—	—	—	12.6	13.4	12.7	8.25	5.76	5.49	4.65	4.06
4D165	—	—	—	—	—	(37.0)	(39.2)	(37.3)	(24.1)	(16.8)	(16.1)	(13.6)	(11.9)
4D170	68.7	27.4	25.4	32.4	31.2	26.6	25.8	25.1	19.1	14.3	14.0	12.9	11.3
4D175	(201)	(80.1)	(74.4)	(94.9)	(91.2)	(77.7)	(75.5)	(73.6)	(55.8)	(41.8)	(41.0)	(37.8)	(33.2)
4D180	104	53.0	51.1	36.6	35.2	36.7	31.6	30.9	26.5	21.5	21.2	18.9	16.7
4D185	(305)	(155)	(150)	(107)	(103)	(107)	(92.4)	(90.5)	(77.6)	(62.9)	(62.1)	(55.4)	(48.8)
4E170	—	—	—	—	—	30.7	29.1	28.2	21.4	15.6	15.2	13.8	12.0
4E175	—	—	—	—	—	(89.7)	(85.2)	(82.4)	(62.6)	(45.7)	(44.6)	(40.4)	(35.1)
4E180	121	48.3	45.4	43.4	41.4	40.8	34.9	33.9	28.8	22.8	22.5	19.8	17.3
4E185	(353)	(141)	(133)	(127)	(121)	(119)	(102)	(99.3)	(84.3)	(66.9)	(65.7)	(58.0)	(50.7)
4E190	189	103	100	71.1	69.1	77.2	65.1	64.1	56.8	48.6	48.2	44.3	41.9
4E195	(553)	(301)	(293)	(208)	(202)	(226)	(191)	(188)	(166)	(142)	(141)	(130)	(123)
4F180	180	76.9	71.9	69.4	65.9	53.4	44.8	43.1	35.9	26.9	26.2	22.5	19.3
4F185	(528)	(225)	(210)	(203)	(193)	(156)	(131)	(126)	(105)	(78.6)	(76.6)	(65.8)	(56.5)
4F190	236	132	127	92.0	88.5	90.5	75.7	74.0	64.4	52.8	52.2	47.1	44.1
4F195	(692)	(388)	(373)	(269)	(259)	(265)	(221)	(216)	(188)	(155)	(153)	(138)	(129)

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Note: (1) The inertia tables does not include the inertia of the integral motors. Total unit inertia is obtained by adding the reducer inertia to the motor inertia.

Special Load Guidelines Inertia continued

Table 4.14 Reducer Moment of Inertia on Motor Shaft of Gearmotor: Solid Shaft [Left (L) or Right (R)] Output, Ratios 60 - 305^[1]
 Units: lb·in² (x 10⁻⁴ kg·m²)

Model	Nominal Reduction Ratio												
	60	67	74	80	88	102	112	123	151	179	207	249	305
4A100	0.102	0.108	0.105	0.094	0.092	0.064	0.060	0.058	0.053	0.070	0.047	0.067	0.045
4A105	(0.298)	(0.315)	(0.307)	(0.276)	(0.270)	(0.188)	(0.175)	(0.169)	(0.155)	(0.206)	(0.138)	(0.196)	(0.131)
4A110	0.260	0.228	0.225	0.217	0.215	0.207	0.197	0.196	0.191	0.185	0.183	0.181	0.179
4A115	(0.761)	(0.666)	(0.658)	(0.635)	(0.629)	(0.605)	(0.578)	(0.575)	(0.559)	(0.541)	(0.536)	(0.529)	(0.525)
4A120	0.441	0.496	0.493	0.456	0.454	0.320	0.303	0.302	0.286	0.396	0.272	0.384	0.261
4A125	(1.29)	(1.45)	(1.44)	(1.33)	(1.33)	(0.936)	(0.887)	(0.884)	(0.838)	(1.159)	(0.795)	(1.125)	(0.763)
4A140	1.03	0.877	0.874	0.814	0.812	0.745	0.720	0.719	0.673	0.655	0.654	0.637	0.633
4A145	(3.01)	(2.57)	(2.56)	(2.38)	(2.38)	(2.18)	(2.11)	(2.10)	(1.97)	(1.92)	(1.91)	(1.86)	(1.85)
4B120	0.486	0.529	0.522	0.479	0.474	0.335	0.317	0.313	0.293	0.401	0.275	0.387	0.262
4B125	(1.42)	(1.55)	(1.53)	(1.40)	(1.39)	(0.98)	(0.93)	(0.91)	(0.86)	(1.17)	(0.81)	(1.13)	(0.768)
4B140	1.08	0.912	0.905	0.839	0.834	0.761	0.733	0.730	0.680	0.660	0.658	0.639	0.635
4B145	(3.15)	(2.67)	(2.65)	(2.46)	(2.44)	(2.23)	(2.14)	(2.14)	(1.99)	(1.93)	(1.93)	(1.87)	(1.86)
4B160	2.92	2.66	2.66	2.48	2.47	2.19	2.10	2.10	2.01	1.97	1.98	1.89	1.86
4B165	(8.54)	(7.79)	(7.77)	(7.25)	(7.24)	(6.41)	(6.15)	(6.14)	(5.88)	(5.77)	(5.80)	(5.54)	(5.46)
4C140	1.21	1.02	0.996	0.914	0.898	0.809	0.776	0.763	0.702	0.675	0.670	0.647	0.640
4C145	(3.55)	(2.98)	(2.91)	(2.68)	(2.63)	(2.37)	(2.27)	(2.23)	(2.05)	(1.98)	(1.96)	(1.89)	(1.87)
4C160	3.05	2.77	2.74	2.55	2.53	2.24	2.14	2.13	2.03	1.99	1.99	1.90	1.87
4C165	(8.92)	(8.09)	(8.03)	(7.46)	(7.41)	(6.55)	(6.26)	(6.24)	(5.94)	(5.81)	(5.83)	(5.56)	(5.47)
4C170	10.4	9.70	9.68	9.32	9.30	8.77	8.69	8.68	8.40	8.29	8.18	8.14	8.10
4C175	(30.5)	(28.4)	(28.3)	(27.3)	(27.2)	(25.7)	(25.4)	(25.4)	(24.6)	(24.3)	(23.9)	(23.8)	(23.7)
4D160	3.38	3.03	2.96	2.74	2.69	2.35	2.24	2.21	2.08	2.02	2.02	1.92	1.88
4D165	(9.88)	(8.87)	(8.65)	(8.01)	(7.86)	(6.88)	(6.56)	(6.46)	(6.09)	(5.92)	(5.91)	(5.62)	(5.51)
4D170	10.7	9.97	9.89	9.51	9.46	8.88	8.79	8.76	8.45	8.32	8.21	8.16	8.12
4D175	(31.5)	(29.2)	(29.0)	(27.8)	(27.7)	(26.0)	(25.7)	(25.6)	(24.7)	(24.4)	(24.0)	(23.9)	(23.8)
4D180	15.7	14.9	14.8	13.7	13.7	13.0	12.8	12.8	12.4	12.0	11.9	11.8	11.7
4D185	(46.0)	(43.5)	(43.3)	(40.2)	(40.0)	(38.0)	(37.4)	(37.4)	(36.2)	(35.2)	(34.9)	(34.6)	(34.4)
4E170	11.3	10.3	10.2	9.77	9.69	9.06	8.94	8.88	8.53	8.38	8.25	8.19	8.14
4E175	(33.0)	(30.3)	(29.9)	(28.6)	(28.4)	(26.5)	(26.2)	(26.0)	(25.0)	(24.5)	(24.1)	(24.0)	(23.8)
4E180	16.2	15.2	15.1	14.0	13.9	13.2	12.9	12.9	12.5	12.1	12.0	11.8	11.8
4E185	(47.5)	(44.6)	(44.3)	(40.9)	(40.7)	(38.5)	(37.8)	(37.7)	(36.5)	(35.3)	(35.1)	(34.7)	(34.4)
4E190	40.0	37.1	37.0	35.9	35.9	34.8	33.8	33.8	33.2	32.8	32.5	32.3	32.1
4E195	(117)	(109)	(108)	(105)	(105)	(102)	(98.9)	(98.8)	(97.1)	(96.0)	(95.2)	(94.6)	(94.1)
4F180	17.8	16.3	16.2	14.8	14.6	13.7	13.3	13.3	12.7	12.2	12.1	11.9	11.8
4F185	(52.1)	(47.8)	(47.3)	(43.2)	(42.8)	(40.1)	(39.0)	(38.8)	(37.2)	(35.8)	(35.4)	(34.9)	(34.6)
4F190	41.7	38.3	38.1	36.8	36.6	35.3	34.2	34.2	33.4	33.0	32.7	32.4	32.2
4F195	(122)	(112)	(112)	(108)	(107)	(103)	(100)	(99.9)	(97.9)	(96.6)	(95.6)	(94.9)	(94.3)

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Technical Information

Note: (1) The inertia tables does not include the inertia of the integral motors. Total unit inertia is obtained by adding the reducer inertia to the motor inertia.

Special Load Guidelines **Inertia** continued

Table 4.15 Reducer Moment of Inertia on Motor Shaft of Gearmotor: Dual Extended Solid Shaft (T) Output, Ratios 11 - 53⁽¹⁾
 Units: lb·in² (x 10⁻⁴ kg·m²)

Model	Nominal Reduction Ratio												
	11	13	14	16	18	21	22	25	28	35	39	46	53
4A100 4A105	1.65 (4.83)	1.03 (3.01)	0.947 (2.77)	0.645 (1.89)	0.586 (1.72)	0.482 (1.41)	— —	— —	0.313 (0.917)	0.193 (0.565)	0.182 (0.532)	0.166 (0.487)	0.145 (0.423)
4A100 4A115	— —	— —	— —	— —	— —	0.730 (2.14)	— —	— —	0.502 (1.47)	0.365 (1.07)	0.354 (1.03)	0.309 (0.903)	0.281 (0.822)
4A120 4A125	3.47 (10.2)	2.41 (7.05)	2.32 (6.80)	1.74 (5.09)	1.68 (4.93)	1.30 (3.80)	1.46 (4.27)	1.43 (4.18)	0.997 (2.92)	0.616 (1.80)	0.604 (1.77)	0.635 (1.86)	0.592 (1.73)
4A140 4A145	7.29 (21.3)	5.35 (15.7)	5.27 (15.4)	3.80 (11.1)	3.75 (11.0)	3.39 (9.93)	3.48 (10.2)	3.46 (10.1)	2.28 (6.68)	1.62 (4.73)	1.61 (4.70)	1.29 (3.79)	1.17 (3.41)
4B120 4B125	5.46 (16.0)	3.39 (9.92)	3.17 (9.29)	2.40 (7.01)	2.25 (6.59)	1.68 (4.91)	1.78 (5.20)	1.71 (5.00)	1.21 (3.54)	0.745 (2.18)	0.717 (2.10)	0.716 (2.09)	0.652 (1.91)
4B120 4B125	9.90 (29.0)	6.36 (18.6)	6.15 (18.0)	4.47 (13.1)	4.33 (12.7)	3.80 (11.1)	3.84 (11.2)	3.76 (11.0)	2.51 (7.36)	1.76 (5.14)	1.73 (5.06)	1.38 (4.04)	1.23 (3.60)
4B140 4B145	23.9 (70.0)	18.0 (52.5)	17.7 (51.9)	12.2 (35.8)	12.1 (35.4)	9.0 (26.3)	10.1 (29.6)	10.1 (29.4)	6.20 (18.1)	4.43 (13.0)	4.40 (12.9)	3.88 (11.3)	3.47 (10.2)
4B160 4B165	14.2 (41.5)	9.34 (27.3)	8.68 (25.4)	6.42 (18.8)	5.98 (17.5)	4.96 (14.5)	4.84 (14.2)	4.62 (13.5)	3.17 (9.27)	2.16 (6.33)	2.07 (6.07)	1.63 (4.77)	1.42 (4.15)
4C160 4C165	32.4 (94.8)	21.1 (61.8)	20.4 (59.8)	14.2 (41.5)	13.8 (40.3)	10.1 (29.5)	11.1 (32.5)	10.9 (31.8)	6.82 (20.0)	4.82 (14.1)	4.73 (13.8)	4.11 (12.0)	3.65 (10.7)
4C170 4C175	47.8 (140)	35.3 (103)	34.7 (102)	26.6 (77.8)	26.2 (76.5)	24.0 (70.2)	23.5 (68.7)	23.2 (68.0)	17.6 (51.6)	13.3 (39.0)	13.2 (38.7)	12.4 (36.2)	10.9 (32.0)
4D160 4D165	— —	— —	— —	— —	— —	12.8 (37.6)	13.6 (39.7)	12.9 (37.7)	8.36 (24.5)	5.83 (17.0)	5.55 (16.2)	4.70 (13.7)	4.09 (12.0)
4D170 4D175	69.5 (203)	44.8 (131)	42.8 (125)	32.8 (95.9)	31.4 (92.0)	26.8 (78.3)	25.8 (75.6)	25.3 (74.0)	19.2 (56.2)	14.3 (42.0)	14.1 (41.2)	13.0 (37.9)	11.4 (33.3)
4D180 4D185	82.7 (242)	53.5 (157)	51.5 (151)	36.9 (108)	35.5 (104)	36.9 (108)	31.7 (92.9)	31.1 (90.9)	26.6 (77.9)	21.6 (63.1)	21.3 (62.3)	19.0 (55.5)	16.7 (48.8)
4E170 4E175	— —	— —	— —	— —	— —	31.0 (90.9)	29.5 (86.2)	28.4 (83.2)	21.6 (63.2)	15.8 (46.1)	15.3 (44.9)	13.9 (40.6)	12.1 (35.3)
4E180 4E185	122 (358)	63.8 (187)	60.7 (178)	44.1 (129)	42.0 (123)	41.2 (121)	35.3 (103)	34.2 (100)	29.0 (85.0)	23.0 (67.3)	22.6 (66.0)	19.9 (58.2)	17.4 (50.9)
4E190 4E195	153 (446)	104 (304)	101 (295)	71.8 (210)	69.7 (204)	77.5 (227)	65.4 (192)	64.4 (188)	57.0 (167)	48.7 (143)	48.3 (141)	44.4 (130)	42.0 (123)
4F180 4F185	182 (534)	100 (293)	95.1 (278)	70.3 (206)	66.6 (195)	53.9 (158)	46.1 (135)	43.5 (127)	36.2 (106)	27.0 (79.1)	26.3 (77.1)	22.6 (66.1)	19.4 (56.8)
4F190 4F195	200 (587)	134 (391)	129 (376)	92.9 (272)	89.2 (261)	91.0 (266)	76.1 (223)	74.3 (218)	64.6 (189)	53.0 (155)	52.3 (153)	47.2 (138)	44.1 (129)

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Note: (1) The inertia tables does not include the inertia of the integral motors. Total unit inertia is obtained by adding the reducer inertia to the motor inertia.

Special Load Guidelines Inertia continued

Table 4.16 Reducer Moment of Inertia on Motor Shaft of Gearmotor: Dual Extended Solid Shaft (T) Output, Ratios 60 - 305^[1]
 Units: lb·in² ($\times 10^{-4}$ kg·m²)

Model	Nominal Reduction Ratio												
	60	67	74	80	88	102	112	123	151	179	207	249	305
4A100	0.104	0.109	0.106	0.095	0.093	0.065	0.059	0.058	0.053	0.071	0.047	0.067	0.045
4A105	(0.304)	(0.320)	(0.311)	(0.279)	(0.273)	(0.191)	(0.174)	(0.171)	(0.156)	(0.207)	(0.139)	(0.197)	(0.131)
4A110	0.262	0.229	0.226	0.218	0.216	0.208	0.198	0.197	0.191	0.185	0.183	0.181	0.180
4A115	(0.767)	(0.671)	(0.662)	(0.638)	(0.632)	(0.607)	(0.579)	(0.576)	(0.560)	(0.541)	(0.537)	(0.530)	(0.526)
4A120	0.443	0.498	0.495	0.457	0.455	0.321	0.304	0.303	0.287	0.396	0.272	0.384	0.261
4A125	(1.30)	(1.46)	(1.45)	(1.34)	(1.33)	(0.938)	(0.889)	(0.886)	(0.839)	(1.16)	(0.795)	(1.13)	(0.763)
4A140	1.03	0.878	0.875	0.815	0.813	0.745	0.720	0.719	0.673	0.655	0.654	0.637	0.633
4A145	(3.01)	(2.57)	(2.56)	(2.39)	(2.38)	(2.18)	(2.11)	(2.10)	(1.97)	(1.92)	(1.92)	(1.86)	(1.85)
4B120	0.490	0.533	0.525	0.482	0.476	0.337	0.317	0.314	0.294	0.401	0.276	0.387	0.263
4B125	(1.44)	(1.56)	(1.54)	(1.41)	(1.39)	(0.985)	(0.926)	(0.918)	(0.860)	(1.18)	(0.807)	(1.13)	(0.769)
4B140	1.08	0.916	0.909	0.842	0.836	0.763	0.734	0.731	0.681	0.661	0.659	0.640	0.635
4B145	(3.16)	(2.68)	(2.66)	(2.46)	(2.45)	(2.23)	(2.15)	(2.14)	(1.99)	(1.93)	(1.93)	(1.87)	(1.86)
4B160	2.92	2.67	2.66	2.48	2.48	2.19	2.10	2.10	2.01	1.97	1.98	1.89	1.86
4B165	(8.55)	(7.81)	(7.78)	(7.26)	(7.24)	(6.42)	(6.16)	(6.15)	(5.88)	(5.77)	(5.80)	(5.54)	(5.46)
4C140	1.23	1.03	1.00	0.921	0.903	0.813	0.774	0.765	0.704	0.677	0.671	0.648	0.640
4C145	(3.59)	(3.01)	(2.94)	(2.69)	(2.64)	(2.38)	(2.27)	(2.24)	(2.06)	(1.98)	(1.96)	(1.90)	(1.87)
4C160	3.06	2.77	2.75	2.56	2.54	2.24	2.14	2.13	2.03	1.99	1.99	1.90	1.87
4C165	(8.96)	(8.12)	(8.05)	(7.48)	(7.43)	(6.56)	(6.27)	(6.24)	(5.94)	(5.82)	(5.83)	(5.56)	(5.47)
4C170	10.4	9.71	9.68	9.33	9.31	8.77	8.70	8.69	8.40	8.29	8.18	8.14	8.11
4C175	(30.5)	(28.4)	(28.3)	(27.3)	(27.2)	(25.7)	(25.4)	(25.4)	(24.6)	(24.3)	(23.9)	(23.8)	(23.7)
4D160	3.40	3.05	2.97	2.75	2.70	2.36	2.24	2.21	2.08	2.03	2.02	1.92	1.88
4D165	(9.95)	(8.93)	(8.70)	(8.05)	(7.89)	(6.90)	(6.56)	(6.48)	(6.10)	(5.93)	(5.91)	(5.62)	(5.51)
4D170	10.8	9.99	9.91	9.52	9.47	8.89	8.80	8.77	8.45	8.33	8.21	8.16	8.12
4D175	(31.5)	(29.2)	(29.0)	(27.9)	(27.7)	(26.0)	(25.7)	(25.7)	(24.7)	(24.4)	(24.0)	(23.9)	(23.8)
4D180	15.7	14.9	14.8	13.7	13.7	13.0	12.8	12.8	12.4	12.0	11.9	11.8	11.7
4D185	(46.1)	(43.6)	(43.3)	(40.2)	(40.0)	(38.0)	(37.5)	(37.4)	(36.2)	(35.2)	(34.9)	(34.6)	(34.4)
4E170	11.3	10.4	10.3	9.80	9.72	9.08	8.94	8.89	8.54	8.39	8.25	8.19	8.14
4E175	(33.1)	(30.4)	(30.0)	(28.7)	(28.4)	(26.6)	(26.2)	(26.0)	(25.0)	(24.5)	(24.2)	(24.0)	(23.8)
4E180	16.3	15.3	15.2	14.0	13.9	13.2	12.9	12.9	12.5	12.1	12.0	11.9	11.8
4E185	(47.7)	(44.7)	(44.4)	(41.0)	(40.8)	(38.6)	(37.9)	(37.7)	(36.5)	(35.4)	(35.1)	(34.7)	(34.4)
4E190	40.1	37.2	37.1	36.0	35.9	34.8	33.8	33.8	33.2	32.8	32.5	32.3	32.1
4E195	(117)	(109)	(108)	(105)	(105)	(102)	(98.9)	(98.8)	(97.1)	(96.0)	(95.2)	(94.6)	(94.1)
4F180	17.9	16.4	16.2	14.8	14.7	13.7	13.3	13.3	12.7	12.3	12.1	11.9	11.8
4F185	(52.3)	(48.0)	(47.4)	(43.3)	(42.9)	(40.2)	(39.0)	(38.8)	(37.2)	(35.9)	(35.4)	(34.9)	(34.6)
4F190	41.7	38.4	38.2	36.8	36.7	35.4	34.2	34.2	33.5	33.0	32.7	32.4	32.2
4F195	(122)	(112)	(112)	(108)	(107)	(103)	(100)	(100.0)	(97.9)	(96.6)	(95.6)	(94.9)	(94.3)

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Note: (1) The inertia tables does not include the inertia of the integral motors. Total unit inertia is obtained by adding the reducer inertia to the motor inertia.

Special Load Guidelines **Inertia** continued

Table 4.17a Moment of Inertia on Motor Shaft of V-Frame Integral Motor

Units: lb-inch² ($\times 10^{-4}$ kg-m²)

1/8 HP (0.1 kW) x 4 Pole		1/4 HP (0.2 kW) x 4 Pole		1/3 HP (0.25 kW) x 4 Pole		1/2 HP (0.4 kW) x 4 Pole		3/4 HP (0.55 kW) x 4 Pole	
Standard	w/ Brake	Standard	w/Brake	Standard	w/Brake	Standard	w/Brake	Standard	w/Brake
1.11 (3.25)	1.2 (3.5)	1.71 (5)	1.88 (5.5)	1.71 (5)	1.88 (5.5)	2.22 (6.5)	2.31 (6.75)	3.45 (10.1)	3.79 (11.1)

Table 4.17b Moment of Inertia on Motor Shaft of V-Frame AF Integral Motor

1/8 HP (0.1 kW) x 4 Pole		1/4 HP (0.2 kW) x 4 Pole		1/3 HP (0.25 kW) x 4 Pole		1/2 HP (0.4 kW) x 4 Pole		3/4 HP (0.55 kW) x 4 Pole	
Standard	w/ Brake	Standard	w/Brake	Standard	w/Brake	Standard	w/Brake	Standard	w/Brake
1.71 (5)	1.88 (5.5)	2.22 (6.5)	2.31 (6.75)	2.22 (6.5)	2.31 (6.75)	4.1 (12)	4.44 (13)	6.32 (18.5)	7.11 (20.8)

Table 4.17c Moment of Inertia on Motor Shaft of N-Frame Integral Motor

1 HP (0.75 kW) x 4 Pole		1.5 HP (1.1 kW) x 4 Pole		2 HP (1.5 kW) x 4 Pole		3 HP (2.2 kW) x 4 Pole		5 HP (3.7 kW) x 4 Pole	
Standard	w/ Brake	Standard	w/Brake	Standard	w/Brake	Standard	w/Brake	Standard	w/Brake
8.03 (23.5)	8.82 (25.8)	11.5 (33.7)	13.5 (39.6)	13.4 (39.1)	15.4 (45)	30.1 (88)	33.4 (97.8)	66.3 (194)	71.4 (209)
7.5 HP (5.5 kW) x 4 Pole		10 HP (7.5 kW) x 4 Pole		15 HP (11 kW) x 4 Pole		20 HP (15 kW) x 4 Pole		25 HP (18.5 kW) x 4 Pole	
Standard	w/ Brake	Standard	w/ Brake	Standard	w/ Brake	Standard	w/ Brake	Standard	w/ Brake
99.4 (291)	105 (306)	140 (409)	154 (450)	192 (561)	206 (602)	340 (995)	393 (1150)	875 (2560)	926 (2710)
30 HP (22 kW) x 4 Pole		40 HP (30 kW) x 4 Pole		50 HP (37 kW) x 4 Pole		60 HP (45 kW) x 4 Pole		75 HP (55 kW) x 4 Pole	
Standard	w/ Brake	Standard	w/ Brake	Standard	w/ Brake	Standard	w/ Brake	Standard	w/ Brake
875 (2560)	926 (2710)	1110 (3260)	1170 (3420)	1330 (3900)	1380 (4040)	2500 (7310)	2550 (7450)	2950 (8640)	- -

Special Load Guidelines Misc.

Excessive Overloads

Cyclo® BBB4 Speed Reducers provide 200% momentary intermittent shock load capacity and are warranted for two 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, review the recommendations in the selection procedure. For braking or reversing, or quick starting of loads having large inertia, consult factory for model selection or recommended modifications.

Allowable Radial and Thrust Loads

The loads imposed on the reducer shafts 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 reducer shafts. When driving through helical or bevel gears, all three conditions (torsional, radial and thrust load) may be referred to the reducer shaft.

The reducer shafts and bearings must have sufficient strength to withstand these loads, and it is, therefore, necessary to determine the allowable limits for each condition. Please consult factory for further information.

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..

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sales@electromate.com

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 4.22 and Table 4.23). 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 14°F to 104°F (-10° to 40°C).

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

NOTE: For units supplied in the Y4 mounting position (input shaft vertical down), the Cyclo® portion is filled at the factory with grease. For these units, the Cyclo® portion does not need to be filled with lubricant before start-up. The Bevel Gear portion of models built for the Y4 mounting configuration still requires filling with gear oil before start-up. Refer to the unit Operating and Maintenance manual for further details.

Adding grease prior to initial start-up is not required. If grease must be replenished or changed avoid using greases other than those shown in the Table 4.20. Please consult the factory when the units will be used in widely fluctuating temperatures, ambient temperatures other than those specified in Table 4.20, 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.

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 4.22 and Table 4.23).

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

- Maintain proper oil levels at all times.
- An oil change after the first 500 hours of operation is highly recommended.
- Sumitomo recommends an oil change every 2500 hours, or six months, whichever comes first. If a proper preventive maintenance program is implemented and maintained, a longer change period may be acceptable.
- For any operating conditions outside our standard (page xx), consult factory for recommendations.

Grease Replenishment and Change Interval

For units ordered for mounting in the Y4 configuration (motor vertical down), please consult the Operating and Maintenance manual for proper grease replenishment and change interval for the Cyclo® portion.

*VG68 is not available for ExxonMobil Spartan.

**Shell Gadus S2 V220 NLGI 0 can be used for 4A100 and 4A105 sizes only

Table 4.18 Lubrication Type

Unit Size	Output (Bevel Gear Portion)	Input (Cyclo® Portion)		
		Motor Horizontal	Motor Vertical Up	Motor Vertical Down
All	Oil	Oil	Oil	Grease

Approved Oils:

ExxonMobil	Spartan EP	Idemitsu	Daphne Super Gear Oil	BP	Energol GR-XP
ExxonMobil	Mobilgear 600XP	Klüber	Kluberoll GEM1	Castrol	Alpha SP
ExxonMobil	Mobil SHC Gear Hi-Shock 150	Caltex	Meropa	Gulf	EP Lubricant HD
				Shell	Omala S2 G

Table 4.19 Ambient Temperatures

°F	14	32	50	68	86	104	122	
°C	-10	0	10	20	30	40	50	
ISO VG	68* (14° F to 41° F)							
	100 / 150 (32° F to 95° F)							
							220 / 320 / 460 (86° F to 122° F)	

Food Grade Oil: Klüber: Klübersynth UH1 6-460

Table 4.20 Standard Greases

Ambient Temperature °F (°C)	Reduction Ratio	Input (Cyclo® Portion)
14° to 122°F (-10° to 50°C)	11 through 18:1	N/A**
	19:1 and higher	Exxon Unirex N2

Table 4.21 Food Grade Grease

Ambient Temperature °F (°C)	Reduction Ratio	Input (Cyclo® Portion)
14° to 122°F (-10° to 50°C)	11 through 18:1	N/A
	19:1 and higher	Ultrachem Omnilube FGM2

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Oil Quantities

Be sure to check the oil level with the oil gauge. The following listed oil quantity is an approximation.

Table 4.22 BBB with Single Reduction Cyclo - Approximate Oil Quantity

Units: US liquid gallon (*liter*) **Note: Output** = Bevel Gear Portion **Input** = Cyclo® Portion

Bevel Gear Unit Size	Mounting Configuration						
	Y1	Y3	Y2	Y4	Y5	Y6	
4A10	0.43 (1.62)		0.84(3.17)	0.30 (1.13)	Grease	0.36 (1.36)	0.49 (1.84)
4A11	0.44 (1.66)		0.86(3.26)			0.37 (1.40)	0.50 (1.88)
4A12	0.45 (1.71)		0.88 (3.35)			0.38 (1.45)	0.51 (1.93)
4A14	0.50 (1.91)		1.00 (3.77)	0.45 (1.72)	Grease	0.44 (1.65)	0.56 (2.13)
4B12	0.87 (3.29)		1.72 (6.50)			0.88 (3.34)	0.85 (3.23)
4B14	0.92 (3.49)		1.84 (6.97)			0.94 (3.54)	0.91 (3.43)
4B16	1.04 (3.92)		2.01 (7.61)	0.72 (2.72)	Grease	1.05 (3.97)	1.02 (3.86)
4C14	1.46 (5.52)		2.94 (11.1)			1.40 (5.30)	1.55 (5.88)
4C16	1.57 (5.96)		3.11 (11.8)			1.52 (5.74)	1.67 (6.32)
4C17	1.67 (6.34)		3.31 (12.5)	1.22 (4.61)	Grease	1.62 (6.12)	1.77 (6.70)
4D16	2.66 (10.1)		5.26 (19.9)			2.56 (9.69)	2.76 (10.4)
4D17	2.75 (10.4)		5.41 (20.5)			2.65 (10.0)	2.85 (10.8)
4D18	2.83 (10.7)		5.54 (21.0)	1.66 (6.26)	Grease	2.72 (10.3)	2.93 (11.1)
4E17	3.85 (14.6)		7.60 (28.8)			3.45 (13.1)	4.24 (16.1)
4E18	3.88 (14.7)		7.70 (29.1)			3.49 (13.2)	4.28 (16.2)
4E19	4.14 (15.7)		8.04 (30.4)	1.92 (7.28)	Grease	3.75 (14.2)	4.54 (17.2)
4F18	5.28 (20.0)		10.41 (39.4)			4.89 (18.5)	5.65 (21.4)
4F19	5.50 (20.8)		10.74 (40.6)			5.10 (19.3)	5.86 (22.2)

Table 4.23 BBB with Double Reduction Cyclo - Approximate Oil Quantity

Units: US liquid gallon (*liter*) **Note: Output** = Bevel Gear Portion **Input** = Cyclo® Portion

Bevel Gear Unit Size	Mounting Configuration						
	Y1	Y3	Y2	Y4	Y5	Y6	
4A10DA	0.44 (1.65)		0.84 (3.20)	0.30 (1.13)	Grease	0.37 (1.39)	0.49 (1.87)
4A12DA	0.46 (1.74)		0.89 (3.38)			0.39 (1.48)	0.52 (1.96)
4A12DB	0.47 (1.78)		0.90 (3.43)			0.40 (1.52)	0.53 (2.00)
4B12DA	0.88 (3.32)		1.73 (6.53)	0.45 (1.72)	Grease	0.89 (3.37)	0.86 (3.26)
4B12DB	0.89 (3.36)		1.73 (6.57)			0.90 (3.41)	0.87 (3.30)
4B14DA	0.93 (3.52)		1.85 (7.00)			0.94 (3.57)	0.91 (3.46)
4B14DB	0.94 (3.56)		1.86 (7.04)	0.72 (2.72)	Grease	0.95(3.61)	0.92 (3.50)
4B14DC	0.95(3.61)		1.89(7.17)			0.97(3.66)	0.94(3.55)
4C14DA	1.47 (5.55)		2.95 (11.2)			1.41 (5.33)	1.56 (5.91)
4C14DB	1.48 (5.59)		2.96 (11.2)	0.72 (2.72)	Grease	1.42 (5.37)	1.57 (5.95)
4C14DC	1.49 (5.64)		2.97 (11.3)			1.43 (5.42)	1.59 (6.00)
4C16DA	1.59 (6.03)		3.13 (11.8)			1.53 (5.81)	1.69 (5.39)
4C16DB	1.61 (6.08)		3.14 (11.9)	1.22 (4.61)	Grease	1.55 (5.86)	1.70 (6.44)
4C17DA	1.69 (6.41)		3.33 (12.6)			1.63 (6.19)	1.79 (6.77)
4C17DB	1.70(6.44)		3.33(12.60)			1.67(6.32)	1.80(6.80)
4C17DC	1.75(6.64)		3.35(12.70)	1.65 (6.26)	Grease	1.70(6.42)	1.82(6.90)
4D16DA	2.68 (10.1)		5.27 (20.0)			2.58 (9.76)	2.77 (10.5)
4D16DB	2.69 (10.2)		5.29 (20.0)			2.59 (9.81)	2.79 (10.6)
4D16DC	2.72(10.3)		5.31(20.1)	1.22 (4.61)	Grease	2.59(9.82)	2.83(10.7)
4D17DA	2.69(10.2)		5.28(20.0)			2.59(9.81)	2.80(10.6)
4D17DB	2.78 (10.5)		5.44 (20.6)			2.68 (10.2)	2.88 (10.9)
4D17DC	2.82 (10.7)		5.48 (20.7)	1.65 (6.26)	Grease	2.72 (10.3)	2.91 (11.0)
4D18DA	2.85(10.8)		5.57(21.1)			2.77(10.5)	2.96(11.2)
4D18DB	3.09(11.7)		5.65(21.4)			3.01(11.4)	3.20(12.1)
4E17DA	3.86 (14.6)		7.62 (28.8)	1.7 (6.3)	Grease	3.47 (13.1)	4.26 (16.1)
4E17DB	3.88 (14.7)		7.63 (28.9)			3.48 (13.2)	4.27 (16.2)
4E17DC	3.91 (14.8)		7.67 (29.0)			3.52 (13.3)	4.31 (16.3)
4E18DA	3.9 (14.8)		7.7 (29.3)	1.9 (7.3)	Grease	3.5 (13.3)	4.3 (16.3)
4E18DB	4.1 (15.7)		7.8 (29.6)			3.8 (14.2)	4.5 (17.2)
4E19DA	4.6 (17.5)		8.2 (31)			4.2 (16)	5 (19)
4E19DB	4.7 (17.7)		8.2 (31)	1.9 (7.3)	Grease	4.3 (16.2)	5.1 (19.2)
4F18DA	5.3 (20.1)		10.5 (39.6)			4.9 (18.6)	5.7 (21.5)
4F18DB	5.5 (21)		10.5 (39.9)			5.2 (19.5)	5.9 (22.4)
4F19DA	6 (22.6)		10.9 (41.2)	1.9 (7.3)	Grease	5.6 (21.1)	6.3 (24)
4F19DB	6 (22.8)		10.9 (41.2)			5.6 (21.3)	6.4 (24.2)

Cyclo® BBB4

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Motor Optional Conduit Box Location

Table 4.24 - BBB4 Y1 Mounting

Cable Port Direction	Terminal Box Mounting Position			
	Left Side (N33) (Viewed from Gearbox Side)	Right Side (N34) (Viewed from Gearbox Side)	Top Side (N35) (Viewed from Gearbox Side)	Bottom Side (N36) (Viewed from Gearbox Side)
Type A (N3A)				
Type B (N3B)				
Type C (N3C)				
Type D (N3D)				

Table 4.25 - BBB4 Y2 Mounting

Cable Port Direction	Terminal Box Mounting Position			
	Left Side (N33) (Viewed from Gearbox Side)	Right Side (N34) (Viewed from Gearbox Side)	Top Side (N35) (Viewed from Gearbox Side)	Bottom Side (N36) (Viewed from Gearbox Side)
Type A (N3A)				
Type B (N3B)				
Type C (N3C)				
Type D (N3D)				

Special consideration must be given to terminal box location N35 in mounting position Y2 if the unit is oil lubricated. The conduit box may interfere with the unit's oil plumbing system. Another conduit box location should be selected if possible. If location N35 must be used, consult the factory.

NOTE: Default Terminal Box position for Gearmotors is N33/ N3B for all mounting positions (Y1 thru Y6), as highlighted in grey.

←: The arrow indicates direction of lead wire out of conduit box.

Motor Optional Conduit Box Location continued

Table 4.26 - BBB4 Y3 Mounting

Cable Port Direction	Terminal Box Mounting Position			
	Left Side (N33) (Viewed from Gearbox Side)	Right Side (N34) (Viewed from Gearbox Side)	Top Side (N35) (Viewed from Gearbox Side)	Bottom Side (N36) (Viewed from Gearbox Side)
Type A (N3A)				
Type B (N3B)				
Type C (N3C)				
Type D (N3D)				

Table 2.27 - BBB4 Y4 Mounting

Cable Port Direction	Terminal Box Mounting Position			
	Left Side (N33) (Viewed from Gearbox Side)	Right Side (N34) (Viewed from Gearbox Side)	Top Side (N35) (Viewed from Gearbox Side)	Bottom Side (N36) (Viewed from Gearbox Side)
Type A (N3A)				
Type B (N3B)				
Type C (N3C)				
Type D (N3D)				

Special consideration must be given to terminal box location N35 in mounting position Y2 if the unit is oil lubricated. The conduit box may interfere with the unit's oil plumbing system. Another conduit box location should be selected if possible. If location N35 must be used, consult the factory.

NOTE: Default Terminal Box position for Gearmotors is N33/ N3B for all mounting positions (Y1 thru Y6), as highlighted in grey.

←: The arrow indicates direction of lead wire out of conduit box.

Cyclo® BBB4

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Motor Optional Conduit Box Location continued

Table 4.28 - BBB4 Y5 Mounting

Cable Port Direction	Terminal Box Mounting Position			
	Left Side (N33) (Viewed from Gearbox Side)	Right Side (N34) (Viewed from Gearbox Side)	Top Side (N35) (Viewed from Gearbox Side)	Bottom Side (N36) (Viewed from Gearbox Side)
Type A (N3A)				
Type B (N3B)				
Type C (N3C)				
Type D (N3D)				

Table 4.29 - BBB4 Y6 Mounting

Cable Port Direction	Terminal Box Mounting Position			
	Left Side (N33) (Viewed from Gearbox Side)	Right Side (N34) (Viewed from Gearbox Side)	Top Side (N35) (Viewed from Gearbox Side)	Bottom Side (N36) (Viewed from Gearbox Side)
Type A (N3A)				
Type B (N3B)				
Type C (N3C)				
Type D (N3D)				

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Special consideration must be given to terminal box location N35 in mounting position Y2 if the unit is oil lubricated. The conduit box may interfere with the unit's oil plumbing system. Another conduit box location should be selected if possible. If location N35 must be used, consult the factory.

NOTE: Default Terminal Box position for Gearmotors is N33/ N3B for all mounting positions (Y1 thru Y6), as highlighted in grey.

←: The arrow indicates direction of lead wire out of conduit box.

Motor Installation: Fan/Brake Cover Clearance Requirements

Required gearmotor clearance dimension FA and FB for installation to achieve best performance and proper maintenance.

Dimension FA: Clearance dimension necessary to remove fan cover or brake cover without removing the motor from the equipment.

Dimension FB: Minimum clearance to provide adequate ventilation.

Notes: 1. In some cases, it may be necessary to move the gearmotor to remove the fan cover or brake cover.

2. Dimension FB is the minimum clearance when the fan cover is up against a closed wall.

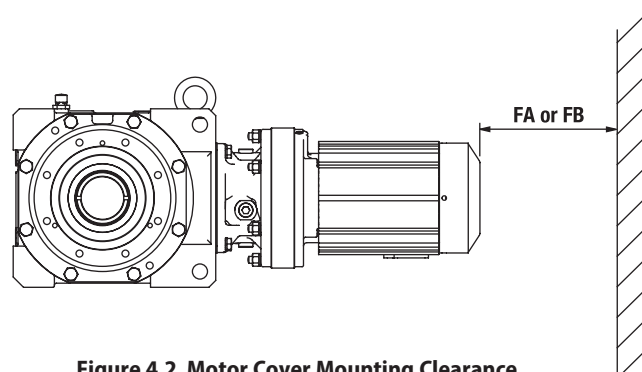


Figure 4.2 Motor Cover Mounting Clearance

Table 4.30a Motor Clearance Requirements for Standard IE1 motors (1/8 to 3/4 hp)

Units: inches (mm)

IE1 Motor			Standard 3-Phase Motor		3-Phase With Brake Motor	
Frame Size	HP x Pole	kW x Pole	FA	FB	FA	FB
VA-63S	1/8 x 4	0.1 x 4	-	-	2.0 (49)	-
VA-63M	1/4 x 4	0.2 x 4	1.9 (48)	0.8 (20)	2.5 (61)	0.8 (20)
VA-63M	1/3 x 4	0.25 x 4				
VA-71M	1/2 x 4	0.4 x 4	1.9 (48)	0.8 (20)	2.5 (61)	0.8 (20)
VA-80S	3/4 x 4	0.55 x 4	2.0 (49)	0.8 (20)	3.7 (93)	0.8 (20)

Table 4.30b Motor Clearance Requirements for AF - motors (1/8 to 3/4 hp)

Units: inches (mm)

IE1 Motor			Standard 3-Phase Motor		3-Phase With Brake Motor	
Frame Size	HP x Pole	kW x Pole	FA	FB	FA	FB
VA-63S	1/8 x 4	0.1 x 4				
VA-63M	1/4 x 4	0.2 x 4	1.9 (48)	0.8 (20)	2.5 (61)	0.8 (20)
VA-63M	1/3 x 4	0.25 x 4				
VA-71M	1/2 x 4	0.4 x 4	2 (49)	0.8 (20)	3.7 (93)	0.8 (20)
VA-80S	3/4 x 4	0.55 x 4	2.1 (52)	0.8 (20)	4.6 (115)	0.8 (20)

Table 4.30c Motor Clearance Requirements for EP motors (1 to 75 hp)

Units: inches (mm)

IE3 Motor			3-Phase Without Brake Motor		3-Phase Brake (B) Motor	
Frame Size	HP x Pole	kW x Pole	FA	FB	FA	FB
N-80M	1 x 4	0.75 x 4	2.3 (58)	0.8 (20)	4.8 (122)	0.8 (20)
N-90S	1.5 x 4	1.1 x 4	2.3 (59)	0.8 (20)	5.0 (128)	0.8 (20)
N-90L	2 x 4	1.5 x 4				
N-100L	3 x 4	2.2 x 4	2.4 (60)	0.8 (20)	5.4 (138)	0.8 (20)
N-112M	5 x 4	3.7 x 4	2.5 (63)	1.0 (25)	6.0 (153)	0.8 (20)
N-132S	7.5 x 4	5.5 x 4				
N-132M	10 x 4	7.5 x 4	3.3 (84)	1.2 (30)	7.4 (189)	1 (25)
N-160M	15 x 4	11 x 4				
N-160L	20 x 4	15 x 4	4.2 (107)	1.2 (30)	9.5 (242)	1.2 (30)
N-180MS	25 x 4	18.5 x 4	5.3 (134)	1.2 (30)	12.1 (308)	1.2 (30)
N-180M	30 x 4	22 x 4				
N-180L	40 x 4	30 x 4				
N-200L	50 x 4	37 x 4	5.3 (134)	1.2 (30)	13.6 (345)	1.2 (30)
N-200LL	60 x 4	45 x 4	6.7 (171)	1.2 (30)	14.8 (376)	1.2 (30)

Cyclo® BBB4

Technical
Information

Motor Conduit Box Details

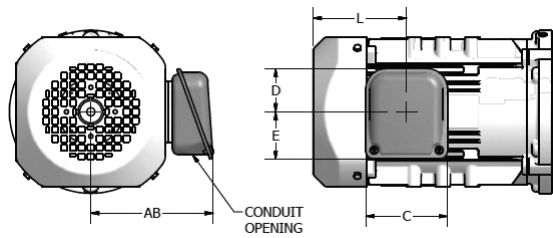


Figure 4.3 Indoor Duty (Optional) Box

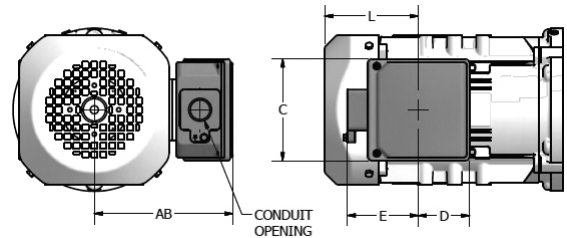


Figure 4.4 Global EP.NA and Outdoor Duty Box

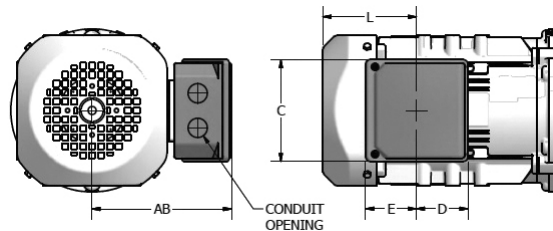


Figure 4.5 Global IE3 CE Box

Table 4.31 Conduit Box Information

Units: inches (mm)

Frame Size	Duty Rating	General Dimensions				Without Brake		With Brake		Conduit Opening	Material
		AB	C	D	E	Availability	L	Availability	L		
V-63S	Indoor Duty (Optional)	4.11 (105)	3.35 (85)	2.09 (53)	1.69 (43)	yes	1.38 (35)	CF ⁽¹⁾	2.76 (70)	Ø0.90 (Ø23)	Steel
	Indoor Duty Brake (Optional)	4.32 (110)	3.94 (100)	2.29 (58)	2.10 (53)			yes		Ø0.90 (Ø23)	Steel
	Outdoor Duty (Optional)	4.98 (127)	3.94 (100)	2.42 (62)	2.76 (70)			yes		NPT1/2 ⁽²⁾	Steel
	Global	4.63 (118)	4.09 (104)	2.24 (57)	2.16 (55)			yes		NPT1/2	Al Diecast
	Global CE	4.63 (118)	4.09 (104)	2.24 (57)	2.16 (55)			yes		M16, M25	Al Diecast
VA-63S V-63M VA-63M V-71M	Indoor Duty (Optional)	4.11 (105)	3.35 (85)	2.09 (53)	1.69 (43)	yes	2.32 (59)	CF ⁽¹⁾	3.58 (91)	Ø0.90 (Ø23)	Steel
	Indoor Duty Brake (Optional)	4.32 (110)	3.94 (100)	2.29 (58)	2.10 (53)			yes		Ø0.90 (Ø23)	Steel
	Outdoor Duty (Optional)	4.98 (127)	3.94 (100)	2.42 (62)	2.76 (70)			yes		NPT1/2 ⁽²⁾	Steel
	Global	4.63 (118)	4.09 (104)	2.24 (57)	2.16 (55)			yes		NPT1/2	Al Diecast
	Global CE	4.63 (118)	4.09 (104)	2.24 (57)	2.16 (55)			yes		M16, M25	Al Diecast
VA-71M V-80S	Indoor Duty (Optional)	4.69 (119)	3.35 (85)	1.72 (44)	2.04 (52)	yes	3.82 (97)	CF ⁽¹⁾	5.51 (140)	Ø0.90 (Ø23)	Steel
	Indoor Duty Brake (Optional)	5.68 (144)	4.80 (122)	2.60 (66)	2.84 (72)			yes		Ø0.90 (Ø23)	Steel
	Outdoor Duty (Optional)	5.55 (141)	3.94 (100)	2.20 (56)	2.95 (75)			yes		G3/4 ⁽²⁾	Steel
	Global	5.67 (144)	4.92 (125)	2.50 (64)	3.43 (87)			yes		NPT3/4 ⁽²⁾	Al Diecast
	Global CE	5.71 (145)	4.92 (125)	2.50 (64)	2.47 (63)			yes		2 - M25	Al Diecast
VA-80S	Indoor Duty (Optional)	4.88 (124)	3.35 (85)	1.72 (44)	2.04 (52)	yes	3.94 (100)	CF ⁽¹⁾	6.38 (162)	Ø0.90 (Ø23)	Steel
	Indoor Duty Brake (Optional)	5.87 (149)	4.80 (122)	2.60 (66)	2.84 (72)			yes		Ø0.90 (Ø23)	Steel
	Outdoor Duty (Optional)	5.75 (146)	3.94 (100)	2.20 (56)	2.95 (75)			yes		G3/4 ⁽²⁾	Steel
	Global	5.86 (149)	4.92 (125)	2.50 (64)	3.43 (87)			yes		NPT3/4 ⁽²⁾	Al Diecast
	Global CE	5.91 (150)	4.92 (125)	2.50 (64)	2.47 (63)			yes		2 - M25	Al Diecast

Table 4.31 Conduit Box Information (continued)

Units: inches (mm)

Frame Size	Duty Rating	General Dimensions				Without Brake		With Brake		Conduit Opening	Material
		AB	C	D	E	Availability	L	Availability	L		
N-80M	Indoor Duty (Optional)	4.85 (123)	3.35 (85)	1.72 (44)	2.04 (52)	Yes	3.82 (97)	CF ⁽¹⁾	6.32 (161)	Ø0.90 (Ø23)	Steel
	Indoor Duty Brake (Optional)	5.99 (152)	4.80 (122)	2.60 (66)	2.84 (72)			Yes		Ø0.90 (Ø23)	Steel
	Outdoor Duty (Optional)	5.87 (149)	3.94 (100)	2.20 (56)	2.95 (75)			Yes		G3/4 ⁽²⁾	Steel
	Global EP.NA	5.98 (152)	4.92 (125)	2.50 (64)	3.43 (87)			Yes		NPT3/4 ⁽²⁾	Al Diecast
	Global IE3 CE	6.02 (153)	4.92 (125)	2.50 (64)	2.47 (63)			Yes		2 - M25	Al Diecast
N-90S N-90L	Indoor Duty (Optional)	5.03 (128)	3.35 (85)	1.72 (44)	2.04 (52)	Yes	3.82 (97)	CF ⁽¹⁾	6.56 (167)	Ø0.90 (Ø23)	Steel
	Indoor Duty Brake (Optional)	6.17 (157)	4.80 (122)	2.60 (66)	2.84 (72)			Yes		Ø0.90 (Ø23)	Steel
	Outdoor Duty (Optional)	6.04 (154)	3.94 (100)	2.20 (56)	2.95 (75)			Yes		G3/4 ⁽²⁾	Steel
	Global EP.NA	6.16 (156)	4.92 (125)	2.50 (64)	3.43 (87)			Yes		NPT3/4 ⁽²⁾	Al Diecast
	Global IE3 CE	6.20 (158)	4.92 (125)	2.50 (64)	2.47 (63)			Yes		2 - M25	Al Diecast
N-100L N-112S	Indoor Duty (Optional)	5.93 (151)	3.94 (100)	2.09 (53)	2.29 (58)	Yes	4.53 (115)	CF ⁽¹⁾	7.60 (193)	Ø0.90 (Ø23)	Steel
	Indoor Duty Brake (Optional)	6.72 (171)	4.80 (122)	2.60 (66)	2.84 (72)			Yes		Ø0.90 (Ø23)	Steel
	Outdoor Duty (Optional)	7.21 (183)	4.84 (123)	2.52 (64)	3.43 (87)			Yes		G3/4 ⁽²⁾	Steel
	Global EP.NA	6.71 (170)	4.92 (125)	2.50 (64)	3.43 (87)			Yes		NPT3/4 ⁽²⁾	Al Diecast
	Global IE3 CE	6.75 (172)	4.92 (125)	2.50 (64)	2.47 (63)			Yes		2 - M25	Al Diecast
N-112M	Indoor Duty (Optional)	6.56 (167)	3.94 (100)	2.09 (53)	2.29 (58)	Yes	4.65 (118)	CF ⁽¹⁾	8.21 (209)	Ø0.90 (Ø23)	Steel
	Indoor Duty Brake (Optional)	7.35 (187)	4.80 (122)	2.60 (66)	2.84 (72)			Yes		Ø0.90 (Ø23)	Steel
	Outdoor Duty (Optional)	7.84 (199)	4.84 (123)	2.52 (64)	3.43 (87)			Yes		G3/4 ⁽²⁾	Steel
	Global EP.NA	7.34 (186)	4.92 (125)	2.50 (64)	3.43 (87)			Yes		NPT3/4 ⁽²⁾	Al Diecast
	Global IE3 CE	7.38 (188)	4.92 (125)	2.50 (64)	2.47 (63)			Yes		2 - M25	Al Diecast
N-132S	Indoor Duty (Optional)	6.56 (167)	3.94 (100)	2.09 (53)	2.29 (58)	Yes	4.65 (118)	CF ⁽¹⁾	8.21 (209)	Ø0.90 (Ø23)	Steel
	Indoor Duty Brake (Optional)	7.35 (187)	4.80 (122)	2.60 (66)	2.84 (72)			Yes		Ø0.90 (Ø23)	Steel
	Outdoor Duty (Optional)	7.84 (199)	4.84 (123)	2.52 (64)	3.43 (87)			Yes		G1 ⁽²⁾	Steel
	Global EP.NA	7.34 (186)	4.92 (125)	2.50 (64)	3.43 (87)			Yes		NPT1 ⁽²⁾	Al Diecast
	Global IE3 CE	7.38 (188)	4.92 (125)	2.50 (64)	2.47 (63)			Yes		2 - M25	Al Diecast
N-132M	Indoor Duty (Optional)	7.98 (203)	4.80 (122)	2.60 (66)	2.84 (72)	Yes	5.43 (138)	Yes	9.57 (243)	Ø1.69 (Ø43)	Steel
	Outdoor Duty (Optional)	9.26 (235)	6.06 (154)	3.11 (79)	4.13 (105)					G1 ⁽²⁾	Steel
	Global EP.NA	9.04 (230)	6.69 (170)	3.40 (86)	4.43 (113)					NPT1 ⁽²⁾	Al Diecast
	Global IE3 CE	9.04 (230)	6.69 (170)	3.40 (86)	3.51 (89)					2-M32	Al Diecast

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Note: ⁽¹⁾ For "Available?" identified with "CF", please consult factory for brake configuration supporting this conduit box.

Table 4.31 Conduit Box Information (continued)

Frame Size	Duty Rating	General Dimensions				Without Brake		With Brake		Conduit Opening	Material
		AB	C	D	E	Availability	L	Availability	L		
N-160M	Indoor Duty (Optional)	7.98 (203)	4.80 (122)	2.60 (66)	2.84 (72)	Yes	5.43 (138)	Yes	9.57 (243)	Ø1.69 (Ø43)	Steel
	Outdoor Duty (Optional)	9.26 (235)	6.06 (154)	3.11 (79)	4.13 (105)					G1-1/4 ⁽²⁾	Steel
	Global EP.NA	9.04 (230)	6.69 (170)	3.40 (86)	4.43 (113)					NPT1-1/4 ⁽²⁾	Al Diecast
	Global IE3 CE	9.04 (230)	6.69 (170)	3.40 (86)	3.51 (89)					2-M32	Al Diecast
N-160L	Indoor Duty (Optional)	9.20 (234)	4.80 (122)	2.60 (66)	2.84 (72)	Yes	7.01 (178)	No	12.30 (313)	Ø1.69 (Ø43)	Steel
	Indoor Duty Brake (Optional)	10.16 (258)	6.54 (166)	3.48 (88)	3.89 (99)			Yes		Ø1.69 (Ø43)	Steel
	Outdoor Duty (Optional)	10.48 (266)	6.06 (154)	3.11 (79)	4.13 (105)			Yes		G1-1/4 ⁽²⁾	Steel
	Global EP.NA	10.26 (261)	6.69 (170)	3.40 (86)	4.43 (113)			Yes		NPT1-1/4 ⁽²⁾	Al Diecast
	Global IE3 CE	10.26 (261)	6.69 (170)	3.40 (86)	3.51 (89)			Yes		2-M32	Al Diecast
N-180MS N-180M	Indoor Duty (Optional)	11.69 (297)	6.54 (166)	3.48 (88)	3.89 (99)	Yes	9.06 (230)	Yes	15.91 (404)	Ø1.93 (Ø49)	Steel
	Outdoor Duty (Optional)	14.08 (358)	7.56 (192)	4.53 (115)	6.89 (175)					G1-1/4 ⁽²⁾	Cast Iron
	Global EP.NA	13.39 (340)	9.02 (229)	4.38 (111)	5.47 (139)					NPT1-1/4 ⁽²⁾	Cast Iron
	Global IE3 CE	13.39 (340)	9.02 (229)	4.38 (111)	4.43 (113)					2 - M40	Cast Iron
N-180L N-200L	Indoor Duty (Optional)	11.69 (297)	6.54 (166)	3.48 (88)	3.89 (99)	Yes	9.06 (230)	Yes	15.91 (404)	Ø1.93 (Ø49)	Steel
	Outdoor Duty (Optional)	14.08 (358)	7.56 (192)	4.53 (115)	6.89 (175)					G2 ⁽²⁾	Cast Iron
	Global EP.NA	13.39 (340)	9.02 (229)	4.38 (111)	5.47 (139)					NPT2 ⁽²⁾	Cast Iron
	Global IE3 CE	13.39 (340)	9.02 (229)	4.38 (111)	4.43 (113)					2 - M40	Cast Iron
N-200LL N-225S	Indoor Duty (Optional)	16.24 (413)	9.45 (240)	4.19 (106)	6.30 (160)	Yes	16.81 (427)			Ø3.03 (Ø77)	Steel
	Outdoor Duty (Optional)	19.03 (483)	10.16 (258)	5.28 (134)	11.50 (292)					G2-1/2 ⁽²⁾	Cast Iron
	Global EP.NA	16.54 (420)	10.63 (270)	5.14 (131)	6.22 (158)					NPT3 ⁽²⁾	Cast Iron
	Global IE3 CE	16.54 (420)	10.63 (270)	5.14 (131)	5.13 (130)					2 - M63	Cast Iron

(1) Default thread option shown. Alternate thread options available. Please consult factory for alternate conduit thread options.

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Fractional Motor Performance Data - 60Hz Operation

Table 4.32a Standard Three Phase, 230/460V, 60Hz, 1800 RPM Synchronous Speed, TEFC - UL

Motor Capacity		Frame Size	Full Load (A)			Current				Starting Torque % of FL	Breakdown Torque % of FL	Nominal Efficiency %	Power Factor %	NEMA Code Letter
HP	kW		Rated RPM	Torque		Full Load		No Load % of FL	Starting % of FL					
				in-lbs	N-m	230V	460V							
1/8**	0.1	V-63S	1730	4.55	0.514	0.66	0.33	86.1	424	326	308	63.3	60.0	K
1/4	0.2	V-63M	1730	9.10	1.03	1.12	0.56	79.6	464	300	287	69.2	65.1	K
1/3	0.25	V-63M	1700	12.2	1.38	1.24	0.62	72.0	419	237	226	70.1	72.0	G
1/2	0.4	V-71M	1750	18.0	2.03	2.15	1.08	77.7	456	295	276	71.5	65.4	J
3/4	0.55	V-80S	1720	27.5	3.11	2.47	1.24	68.4	500	266	261	76.5	73.1	H

** 1/8 HP is TENV

Table 4.32b Standard Three Phase, 240/480V, 60Hz, 1800 RPM Synchronous Speed, TEFC - UL

Motor Capacity		Frame Size	Full Load (A)			Current				Starting Torque % of FL	Breakdown Torque % of FL	Nominal Efficiency %	Power Factor %	NEMA Code Letter
HP	kW		Rated RPM	Torque		Full Load		No Load % of FL	Starting % of FL					
				in-lbs	N-m	240V	480V							
1/8**	0.1	V-63S	1740	4.53	0.512	0.69	0.35	87.4	429	364	341	61.9	56.3	L
1/4	0.2	V-63M	1740	9.05	1.02	1.16	0.58	83.6	466	335	317	68.2	61	K
1/3	0.25	V-63M	1710	12.3	1.39	1.27	0.63	77.0	429	268	238	69.8	68.1	H
1/2	0.4	V-71M	1750	18.0	2.04	2.27	1.13	83.2	460	328	303	70.4	60.4	K
3/4	0.55	V-80S	1730	27.3	3.09	2.52	1.26	73.4	508	294	285	76.0	69.2	H

** 1/8 HP is TENV

Table 4.32c Non-Standard Three Phase, 230/460V, 60Hz, 1800 RPM Synchronous Speed, TEFC - CSA

Motor Capacity		Frame Size	Full Load (A)			Current				Starting Torque % of FL	Breakdown Torque % of FL	Nominal Efficiency %	Power Factor %	NEMA Code Letter
HP	kW		Rated RPM	Torque		Full Load		No Load % of FL	Starting % of FL					
				in-lbs	N-m	230V	460V							
1/8**	0.1	V-63S	1730	4.55	0.514	0.66	0.33	86.1	424	326	308	63.3	60.0	K
1/4	0.2	V-63M	1730	9.10	1.03	1.12	0.56	79.6	464	300	287	69.2	65.1	K
1/3	0.25	V-63M	1700	12.2	1.38	1.24	0.62	72.0	419	237	226	70.1	72.0	G
1/2	0.4	V-71M	1750	18.0	2.03	2.15	1.08	77.7	456	295	276	71.5	65.4	J
3/4	0.55	V-80S	1720	27.5	3.11	2.47	1.24	68.4	500	266	261	76.5	73.1	H

** 1/8 HP is TENV

Table 4.32d Non-Standard Three Phase, 575V, 60Hz, 1800 RPM Synchronous Speed, TEFC - CSA

Motor Capacity		Frame Size	Full Load (A)			Current				Starting Torque % of FL	Breakdown Torque % of FL	Nominal Efficiency %	Power Factor %	NEMA Code Letter
HP	kW		Rated RPM	Torque		Full Load		No Load % of FL	Starting % of FL					
				in-lbs	N-m	575V								
1/8**	0.1	V-63S	1720	4.58	0.518	0.28		91.8	464	376	391	65.5	54.1	M
1/4	0.2	V-63M	1730	9.10	1.03	0.48		85.4	458	316	340	69.4	60.1	K
1/3	0.25	V-63M	1710	12.2	1.38	0.52		78.8	423	250	270	71.3	67.5	H
1/2	0.4	V-71M	1700	18.5	2.09	0.79		75.8	468	309	300	75.2	63.1	J
3/4	0.55	V-80S	1700	27.8	3.14	1.00		74.0	530	260	268	75.4	71.4	H

** 1/8 HP is TENV

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Fractional AF-Motor (AV) Performance Data - 60Hz Operation

Table 4.33a Three Phase, 230/460V, 60Hz, 1800 RPM Synchronous Speed, 10:1 Constant Torque Speed Range TEFC

Motor Capacity		Frame Size	Wiring	Full Load Torque		Voltage V	60 Hz Current Amp	Speed RPM	Voltage V	6 Hz Current Amp	Speed RPM	No Load Current @ 60 Hz
HP	kW			in-lbs	N-m							
1/8	0.1	VA-63S	High Voltage	4.77	0.54	460	0.49	1770	68	0.37	125	0.46
			Low Voltage			230			34			0.92
1/4	0.2	VA-63M	High Voltage	9.6	1.08	460	0.91	1765	68	0.79	125	0.87
			Low Voltage			230			34			1.74
1/3	0.25	VA-63M	High Voltage	12	1.36	460	0.94	1755	78	0.87	125	0.87
			Low Voltage			230			34			1.74
1/2	0.4	VA-71M	High Voltage	19.2	2.17	460	1.3	1750	70	1.1	115	1.21
			Low Voltage			230			35			2.42
3/4	0.55	VA-80S	High Voltage	26.3	2.97	460	1.7	1760	62	1.6	125	1.54
			Low Voltage			230			31			3.07

Table 4.33b Three Phase, 230/460V, 60Hz, 1800 RPM Synchronous Speed, 10:1 Constant Torque Speed Range TEFC - CSA

Motor Capacity		Frame Size	Wiring	Full Load Torque		Voltage V	60 Hz Current Amp	Speed RPM	Voltage V	6 Hz Current Amp	Speed RPM	No Load Current @ 60 Hz
HP	kW			in-lbs	N-m							
1/8	0.1	VA-63S	High Voltage	4.77	0.54	460	0.49	1770	68	0.37	125	0.46
			Low Voltage			230			34			0.92
1/4	0.2	VA-63M	High Voltage	9.57	1.08	460	0.91	1765	68	0.79	125	0.87
			Low Voltage			230			34			1.74
1/3	0.25	VA-63M	High Voltage	12.0	1.36	460	0.94	1755	78	0.87	125	0.87
			Low Voltage			230			34			1.74
1/2	0.4	VA-71M	High Voltage	19.3	2.17	460	1.3	1750	70	1.1	115	1.21
			Low Voltage			230			35			2.42
3/4	0.55	VA-80S	High Voltage	26.3	2.97	460	1.7	1765	62	1.5	145	1.54
			Low Voltage			230			31			3.08

Table 4.33c Three Phase, 575V, 60Hz, 1800 RPM Synchronous Speed, 10:1 Constant Torque Speed Range TEFC - CSA Approved

Motor Capacity		Frame Size	Full Load Torque		Voltage V	60 Hz Current Amp	Speed RPM	Voltage V	6 Hz Current Amp	Speed RPM	No Load Current @ 60 Hz
HP	kW		in-lbs	N-m							
1/8	0.1	VA-63S	4.77	0.54	575	0.4	1770	85	0.3	130	0.4
1/4	0.2	VA-63M	9.57	1.08	575	0.7	1765	77	0.5	85	0.62
1/3	0.25	VA-63M	12.0	1.36	575	0.7	1755	95	0.7	120	0.62
1/2	0.4	VA-71M	19.4	2.17	575	0.94	1745	88	0.86	110	0.86
3/4	0.55	VA-80S	26.3	2.97	575	1.3	1765	76	1.1	140	0.98

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Motor Performance Data - EP.NA Motor, 60Hz Operation

Table 4.34 Three Phase, 230/460v, 60Hz, 1800 RPM Synchronous Speed, TEFC

Motor Capacity		Frame Size	Full Load (A)			Current				Starting Torque % of FL	Breakdown Torque % of FL	Nominal Efficiency %	Power Factor %	NEMA Code Letter
HP	kW		Rated RPM	Torque		Full Load		No Load % of FL	Starting % of FL					
				in-lbs	N-m	230V	460V							
1	0.75	N-80M	1730	36.6	4.14	3.06	1.53	62.0	692	343	403	85.5	72.0	K
1.5	1.1	N-90S	1730	53.7	6.07	4.15	2.08	52.1	659	277	341	86.5	76.5	J
2	1.5	N-90L	1730	73.2	8.28	5.61	2.80	52.7	694	284	356	86.5	77.2	J
3	2.2	N-100L	1740	107	12.1	7.66	3.83	47.5	824	317	389	89.5	80.7	K
5	3.7	N-112M	1750	179	20.2	12.3	6.17	44.5	821	244	379	89.5	83.9	K
7.5	5.5	N-132S	1760	264	29.8	17.8	8.90	42.9	1000	290	461	91.7	84.2	L
10	7.5	N-132M	1760	360	40.7	24.4	12.2	36.1	606	193	277	91.7	84.1	G
15	11	N-160M	1770	525	59.3	38.4	19.2	48.0	736	274	369	92.4	77.8	J
20	15	N-160L	1770	716	80.9	47.7	23.8	36.5	828	227	351	93.0	85.0	J
25	18.5	N-180MS	1780	878	99.2	56.9	28.5	31.7	805	245	308	93.6	86.4	J
30	22	N-180M	1780	1040	118	67.4	33.7	28.8	673	206	258	93.6	87.1	G
40	30	N-180L	1780	1420	161	91.6	45.8	29.5	792	242	295	94.1	87.0	J
50	37	N-200L	1780	1760	198	113	56.5	31.7	890	276	328	94.5	86.7	K
60	45	N-200LL	1780	2140	241	138	69.0	37.7	962	308	393	95.0	86.3	K

Table 4.35 Three Phase, 240/480V, 60Hz, 1800 RPM Synchronous Speed, TEFC

Motor Capacity		Frame Size	Full Load (A)			Current				Starting Torque % of FL	Breakdown Torque % of FL	Nominal Efficiency %	Power Factor %	NEMA Code Letter
HP	kW		Rated RPM	Torque		Full Load		No Load % of FL	Starting % of FL					
				in-lbs	N-m	240V	480V							
1	0.75	N-80M	1740	36.4	4.12	3.05	1.52	66.2	723	380	439	85.5	69.2	L
1.5	1.1	N-90S	1740	53.4	6.04	4.09	2.05	56.6	704	310	375	86.5	74.1	J
2	1.5	N-90L	1730	73.2	8.28	5.54	2.77	57.8	722	316	387	86.5	74.5	K
3	2.2	N-100L	1750	106	12.0	7.53	3.77	52.1	911	352	446	89.5	78.4	L
5	3.7	N-112M	1760	178	20.1	12.1	6.06	49.3	886	268	421	89.5	81.7	K
7.5	5.5	N-132S	1760	264	29.8	17.5	8.76	47.6	1060	321	506	91.7	82.0	M
10	7.5	N-132M	1760	360	40.7	23.8	11.9	40.3	652	212	308	91.7	82.2	H
15	11	N-160M	1770	525	59.3	38.7	19.3	54.0	760	305	405	92.4	74.0	K
20	15	N-160L	1770	716	80.9	46.5	23.2	41.0	893	251	387	93.0	83.3	K
25	18.5	N-180MS	1780	878	99.2	55.1	27.6	35.2	881	268	340	93.6	85.3	K
30	22	N-180M	1780	1040	118	64.9	32.4	29.9	748	224	285	93.6	86.5	H
40	30	N-180L	1780	1420	161	88.8	44.4	33.3	867	266	326	94.1	85.9	J
50	37	N-200L	1780	1760	198	110.0	55.1	35.7	968	304	361	94.5	85.2	K
60	45	N-200LL	1780	2140	241	135.0	67.6	42.0	1050	329	430	95.0	84.4	L

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Motor Performance Data - EP.NA Motor, 60Hz Operation (continued)

Table 4.36 Three Phase, 575V, 60Hz, 1800 RPM Synchronous Speed, TEFC

Motor Capacity		Frame Size	Full Load (A)			Current			Starting Torque % of FL	Breakdown Torque % of FL	Nominal Efficiency %	Power Factor %	NEMA Code Letter
HP	kW		Rated RPM	Torque		Full Load 575V	No Load % of FL	Starting % of FL					
				in-lbs	N-m								
1	0.75	N-80M	1740	36.4	4.12	1.36	72.7	768	430	500	85.5	64.4	M
1.5	1.1	N-90S	1740	53.4	6.04	1.69	57.8	743	313	386	86.5	74.5	K
2	1.5	N-90L	1730	73.2	8.28	2.22	52.3	685	272	341	86.5	77.9	J
3	2.2	N-100L	1740	107	12.1	3.05	47.2	839	322	404	89.5	80.8	K
5	3.7	N-112M	1750	179	20.2	4.86	42.0	798	230	355	89.5	84.9	J
7.5	5.5	N-132S	1760	264	29.8	7.12	42.5	957	263	429	91.7	84.7	L
10	7.5	N-132M	1760	360	40.7	10.1	43.9	704	230	332	91.7	81.3	H
15	11	N-160M	1760	528	59.7	14.5	41.7	710	237	331	92.4	82.3	H
20	15	N-160L	1770	716	80.9	19.4	41.1	915	257	396	93.0	83.3	K
25	18.5	N-180MS	1780	878	99.2	22.8	35.2	916	276	350	93.6	86.1	K
30	22	N-180M	1780	1040	118	26.8	29.9	779	230	293	93.6	87.2	H
40	30	N-180L	1780	1420	161	37.0	31.5	857	263	321	94.1	86.1	J
50	37	N-200L	1780	1760	198	45.5	36.0	954	297	352	94.5	85.9	K
60	45	N-200LL	1780	2140	241	55.7	40.5	1040	324	422	95.0	85.4	L

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Motor Performance Data - CE Motor, 50Hz Operation

Table 4.37a Three Phase, 220/380V, 50Hz, 1500 RPM Synchronous Speed, TEFC

Motor Capacity		Frame Size	Full Load (A)			Current				Starting Torque % of FL	Breakdown Torque % of FL	Nominal Efficiency %	Power Factor %	NEMA Code Letter
HP	kW		Rated RPM	Torque		Full Load		No Load % of FL	Starting % of FL					
				in-lbs	N-m	220V	380V							
1/8**	0.1	V-63S	1400	6.03	0.682	0.6	0.35	78.3	371	230	226	63.3	69.1	H
1/4	0.2	V-63M	1390	12.2	1.37	1.05	0.61	71.5	361	206	206	67.6	73.7	F
1/3	0.25	V-63M	1360	15.5	1.75	1.22	0.71	61.4	338	195	181	69.1	77.8	E
1/2	0.4	V-71M	1410	24.0	2.71	2.06	1.19	68.3	353	201	204	69.7	73.5	F
3/4	0.55	V-80S	1400	33.2	3.75	2.45	1.42	58.5	373	206	196	73.4	80.2	E
1	0.75	N-80M	1430	44.3	5.01	3.46	2.00	66.2	579	383	402	84.7	67.9	K
1.5	1.1	N-90S	1430	65.0	7.35	4.49	2.59	54.4	606	296	343	85.4	75.1	J
2	1.5	N-90L	1420	89.2	10.1	6.10	3.52	54.9	578	304	338	85.4	75.5	H
3	2.2	N-100L	1440	129	14.6	8.58	4.96	52.2	758	344	418	88.6	78.0	K
4	3.0	N-112S	1430	177	20.0	11.3	6.50	45.6	676	316	365	87.7	80.8	J
5	3.7	N-112M	1460	214	24.2	13.5	7.80	48.5	743	266	378	89.6	81.2	J
5.5	4.0	N-112M	1450	233	26.3	14.4	8.30	45.2	692	266	378	88.9	82.9	J
7.5	5.5	N-132S	1460	318	36.0	-	11.5	49.6	907	316	471	90.6	80.7	L
10	7.5	N-132M	1460	434	49.1	-	15.8	44.9	590	213	315	90.8	79.6	H
15	11	N-160M	1460	636	71.9	-	22.3	38.5	551	200	283	91.4	81.6	G
20	15	N-160L	1470	862	97.4	-	30.5	43.1	619	230	304	92.6	80.6	H
25	18.5	N-180MS	1480	1060	119	-	35.6	36.9	735	245	338	94.0	83.5	J
30	22	N-180M	1480	1260	142	-	41.9	31.4	624	206	284	93.5	85.4	G

** 1/8 HP is TENV

Table 4.37b Three Phase, 230/400V, 50Hz, 1500 RPM Synchronous Speed, TEFC

Motor Capacity		Frame Size	Full Load (A)			Current				Starting Torque % of FL	Breakdown Torque % of FL	Nominal Efficiency %	Power Factor %	NEMA Code Letter
HP	kW		Rated RPM	Torque		Full Load		No Load % of FL	Starting % of FL					
				in-lbs	N-m	230V	400V							
1/8**	0.1	V-63S	1420	5.95	0.672	0.62	0.36	83.6	361	261	255	62.1	64.9	H
1/4	0.2	V-63M	1410	12.0	1.35	1.08	0.62	77.3	371	236	233	67.1	69.5	G
1/3	0.25	V-63M	1380	15.3	1.73	1.22	0.7	68.4	371	225	205	69.4	74.2	F
1/2	0.4	V-71M	1420	23.8	2.69	2.13	1.23	75.6	366	229	229	68.5	68.7	G
3/4	0.55	V-80S	1410	32.9	3.72	2.45	1.41	65.2	390	225	219	73.6	76.7	F
1	0.75	N-80M	1440	44.0	4.97	3.54	2.05	72.3	613	423	446	84.6	62.7	L
1.5	1.1	N-90S	1440	64.5	7.29	4.50	2.60	61.4	640	336	387	85.6	71.1	K
2	1.5	N-90L	1430	88.6	10.0	6.17	3.56	62.2	601	338	375	85.8	72.3	J
3	2.2	N-100L	1450	128	14.5	8.56	4.95	60.2	798	382	465	88.7	74.1	L
4	3.0	N-112S	1440	176	19.9	11.2	6.45	53.2	727	352	419	87.9	76.9	K
5	3.7	N-112M	1460	214	24.2	13.7	7.90	56.0	766	294	420	89.0	77.5	K
5.5	4.0	N-112M	1460	231	26.2	14.4	8.30	53.4	733	273	388	89.1	78.8	K
7.5	5.5	N-132S	1460	318	36.0	-	11.6	56.6	937	351	524	90.6	76.2	M
10	7.5	N-132M	1460	434	49.1	-	16.0	51.9	704	206	350	91.2	75.5	K

** 1/8 HP is TENV

Table continued on next page.

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Technical Information

Motor Performance Data - IE3 CE Motor, 50Hz Operation (continued)

Table 4.37b continued... Three Phase, 230/400V, 50Hz, 1500 RPM Synchronous Speed, TEFC

Motor Capacity		Frame Size	Full Load (A)			Current				Starting Torque % of FL	Breakdown Torque % of FL	Nominal Efficiency %	Power Factor %	NEMA Code Letter
HP	kW		Rated RPM	Torque		Full Load		No Load % of FL	Starting % of FL					
				in-lbs	N-m	230V	400V							
15	11	N-160M	1470	632	71.5	-	22.2	54.4	635	257	378	91.5	73.0	J
20	15	N-160L	1480	856	96.8	-	30.6	50.6	647	256	338	92.5	76.3	J
25	18.5	N-180MS	1480	1060	119	-	35.4	43.8	777	272	375	93.9	80.1	K
30	22	N-180M	1480	1260	142	-	40.9	37.9	673	227	314	93.8	82.7	H
40	30	N-180L	1480	1710	194	-	59.1	47.3	730	265	382	94.0	78.2	J
50	37	N-200L	1480	2110	239	-	69.5	40.8	753	266	361	94.1	81.4	J
60	45	N-200LL	1480	2570	290	-	82.5	41.7	845	317	411	94.6	83.5	K

Table 4.38 Three Phase, 240/415V, 50Hz, 1500 RPM Synchronous Speed, TEFC

Motor Capacity		Frame Size	Full Load (A)			Current				Starting Torque % of FL	Breakdown Torque % of FL	Nominal Efficiency %	Power Factor %	NEMA Code Letter
HP	kW		Rated RPM	Torque		Full Load		No Load % of FL	Starting % of FL					
				in-lbs	N-m	240V	415V							
1/8**	0.1	V-63S	1420	5.95	0.672	0.65	0.37	88.1	378	286	277	60.9	60.9	J
1/4	0.2	V-63M	1410	12.0	1.35	1.1	0.64	80.9	375	260	253	66.4	65.7	H
1/3	0.25	V-63M	1390	15.2	1.72	1.23	0.71	73.0	380	247	223	69.5	70.6	G
1/2	0.4	V-71M	1430	23.6	2.67	2.23	1.29	80.6	364	250	247	67.0	64.4	H
3/4	0.55	V-80S	1420	32.7	3.7	2.46	1.43	70.6	413	248	237	73.6	73.1	G
1	0.75	N-80M	1450	43.7	4.94	3.65	2.11	76.3	600	461	484	84.1	59.4	L
1.5	1.1	N-90S	1440	64.5	7.29	4.57	2.64	66.3	654	368	422	85.5	67.4	K
2	1.5	N-90L	1440	88.0	9.95	6.29	3.63	68.7	611	366	406	85.4	67.3	K
3	2.2	N-100L	1450	128	14.5	8.83	5.10	66.1	805	412	502	88.3	69.3	M
4	3.0	N-112S	1440	176	19.9	11.3	6.55	59.8	751	387	458	87.9	73.2	L
5	3.7	N-112M	1460	214	24.2	13.9	8.00	62.5	788	319	453	89.2	72.7	L
5.5	4.0	N-112M	1460	231	26.2	14.5	8.35	59.7	752	294	418	89.0	74.8	K
7.5	5.5	N-132S	1470	316	35.7	-	11.9	64.1	958	378	564	90.2	72.0	N
10	7.5	N-132M	1470	431	48.7	-	16.2	58.5	629	254	378	90.6	71.1	J
15	11	N-160M	1470	632	71.5	-	22.4	50.6	617	249	354	91.6	74.6	H
20	15	N-160L	1480	856	96.8	-	31.2	57.0	659	275	364	92.2	72.3	J
25	18.5	N-180MS	1490	1050	119	-	35.7	49.9	800	292	404	93.8	76.7	K
30	22	N-180M	1480	1260	142	-	40.8	43.6	699	245	339	93.6	80.2	J
40	30	N-180L	1480	1710	194	-	60.2	52.9	743	285	411	93.6	74.2	K
50	37	N-200L	1480	2110	239	-	70.0	46.0	777	287	391	94.1	78.2	K
60	45	N-200LL	1480	2570	290	-	82.5	47.0	876	341	442	94.5	80.7	L

** 1/8 HP is TENV

Motor Thermal Rating for Cyclic Applications

Table 4.39 Motor Thermal Rating Table

Motor Power HP (kW)	Allowable C x Z				Motor Inertia lb-in ² (kg-m ²)	
	below 35% ED ^[1]	35% ~ 50% ED ^[1]	50% ~ 80% ED ^[1]	80% ~ 100% ED ^[1]	Standard	with Brake
1/8 (0.1)	3200	3000	2000	1200	1.11 (0.000325)	1.2 (0.00035)
1/4 (0.2)	2200	2800	2800	2500	1.71 (0.0005)	1.88 (0.00055)
1/3 (0.25)	2200	2800	2800	2500	1.71 (0.0005)	1.88 (0.00055)
1/2 (0.4)	1800	2200	1500	1500	2.22 (0.00065)	2.31 (0.000675)
3/4 (0.55)	1800	2200	1500	1500	3.45 (0.00101)	3.79 (0.00111)
1 (0.75)	1400	1400	800	500	8.03 (0.00235)	8.82 (0.00258)
1.5 (1.1)	1400	1400	800	500	11.5 (0.00337)	13.5 (0.00396)
2 (1.5)	1200	1200	500	400	13.4 (0.00391)	15.4 (0.0045)
3 (2.2)	1000	900	400	200	30.1 (0.0088)	33.4 (0.00978)
5 (3.7)	800	800	800	700	66.3 (0.0194)	71.4 (0.0209)
7.5 (5.5)	300	300	200	150	99.4 (0.0291)	105 (0.0306)
10 (7.5)	400	350	300	300	140 (0.0409)	154 (0.045)
15 (11)	200	200	150	150	192 (0.0561)	206 (0.0602)
20 (15)	100	90	78	68	340 (0.0995)	393 (0.115)
25 (18.5)	75	65	55	50	875 (0.256)	926 (0.271)
30 (22)	75	65	55	50	875 (0.256)	926 (0.271)
40 (30)	55	40	17	10	1110 (0.326)	1170 (0.342)

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

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/cycle).

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

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

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

- (c) Calculate Z by adding Z_r to Z_i by the following formula.

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

3. Calculate C x Z (the product of C and Z)

Use the value of C obtained in Step (1) and value of Z obtained in Step (2).

4. Obtain the duty cycle %ED and compare calculated C x Z in the appropriate column from Motor Thermal Rating Table.

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

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Motor continued

Standard Wiring Diagrams

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

Table 4.40 Wiring Configuration for 230/460V, 60Hz and 575V, 60Hz by EP.NA Motor

Motor HP x P	230/460V, 60Hz			575V, 60Hz		
	Internal	No. of Leads	Diagram	Internal	No. of Leads	Diagram
1/8 x 4	WYE	9	9-Lead WYE	WYE	3	3-Lead
1/4 x 4						
1/3 x 4						
1/2 x 4						
3/4 x 4						
1 x 4						
1.5 x 4						
2 x 4						
3 x 4						
5 x 4						
7.5 x 4	DELTA	9	9-Lead DELTA	DELTA	3	3-Lead
10 x 4						
15 x 4						
20 x 4						
25 x 4						
30 x 4						
40 x 4						
50 x 4						
60 x 4						

Figure 4.6a 9-Lead WYE

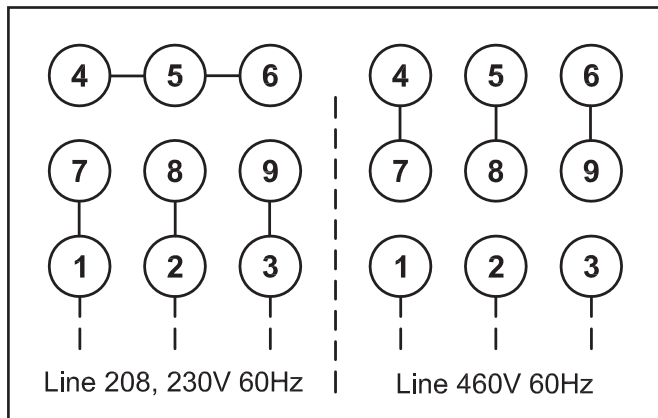


Figure 4.6b 9-Lead DELTA

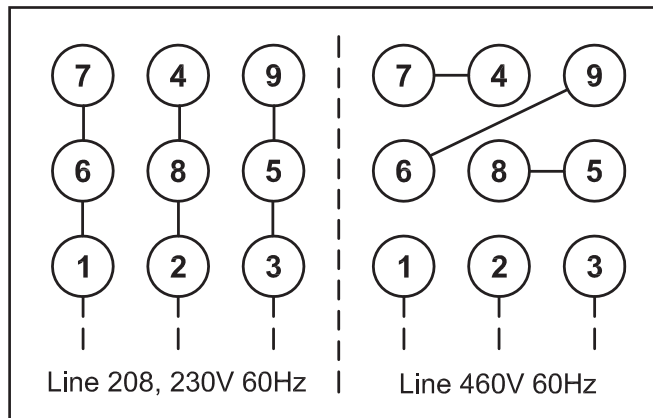
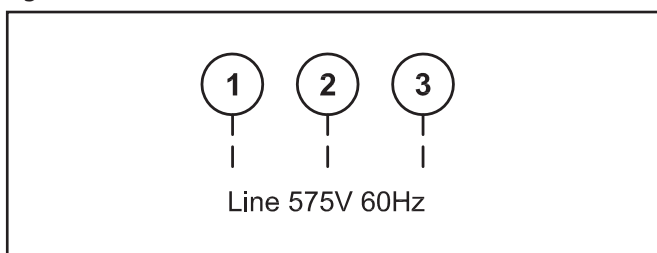


Figure 4.6c 3-Lead SINGLE



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Three-Phase IE3 CE Motors

Table 4.41 Wiring Configuration by IE3 CE Motor

Motor kW x P	Voltage Configuration	Wiring Diagram
.75 x 4	220/380V, 50Hz Three Phase	DELTA-WYE
1.1 x 4		
1.5 x 4		
2.2 x 4		
3.0 x 4		
3.7 x 4		
5.5 x 4	380V, 50Hz Three Phase	WYE-Start DELTA-Run
7.5 x 4		
11 x 4		
15 x 4		
18.5 x 4		
22 x 4		
30 x 4		
37 x 4		
45 x 4		
55 x 4		

Figure 4.7 DELTA-WYE Diagram

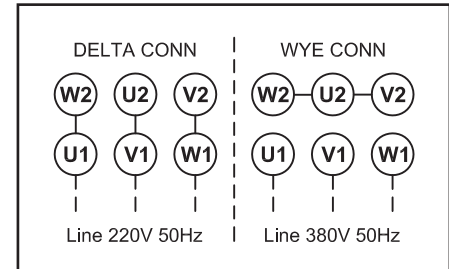
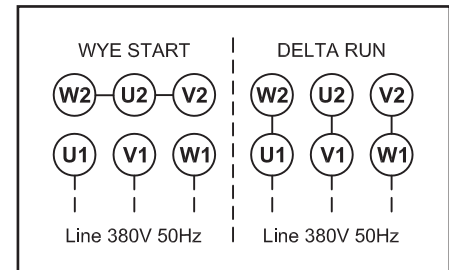


Figure 4.8 WYE-Start DELTA-Run Diagram



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Brakemotor Characteristics

The brakemotor on Cyclo® gearmotors operates with direct current supplied by a dual voltage rectifier for 230/460V, or single voltage rectifier/power module for other noted voltages. Rectifier or power module is mounted in the motor conduit box.

When used for outdoor installations, standard brakemotor must be protected by a cover. Such covers are available from the factory, please inquire when ordering.

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

Brake Characteristics

Table 4.42 Brake Characteristics - Standard torque, Delay Time, Work Capacity

Brake Model	Motor Capacity		Standard Braking Torque ft - lbs (<i>N - m</i>)	Braking Delay Time (sec)			Brake Work Capacity		
	HP x 4P	kW x 4P		Normal Braking Action		Fast Braking Action	Allowable E ₀ (J/min)	Gap Adjust (x 10 ⁷ J)	Total E ₁ (x 10 ⁷ J)
				Standard Wiring	Inverter Wiring ^[2]				
FB-01A	1/8	0.1	0.7 (1.0)	0.15 ~ 0.2	0.08 ~ 0.12	0.015 ~ 0.02	1080	2.6	6.7
FB-02A	1/8 ~ 1/3	0.1 ~ 0.25	1.4 (2.0)						
FB-05A	1/4 ~ 1/2	0.2 ~ 0.4	2.9 (4.0)	0.1 ~ 0.15	0.03 ~ 0.07	0.01 ~ 0.015			
FB-1D	1/2	0.4	5.8 (7.5)	0.2 ~ 0.3	0.1 ~ 0.15	0.01 ~ 0.02	1620	7.0	33.1
FB-2D	3/4	0.55	11 (15)						
FB-3D	3/4	0.55	16 (22)	0.3 ~ 0.4	0.15 ~ 0.2		3360	16.4	53.7
FB-1E	1	0.75	5.5 (7.5)	0.25 ~ 0.45	0.15 ~ 0.25	0.01 ~ 0.03	2580	11.6	38.7
FB-1HE	1.5	1.1	8.0 (11)	0.45 ~ 0.65	0.25 ~ 0.35		3360	20.8	46.3
FB-2E	2	1.5	11 (15)	0.35 ~ 0.55	0.15 ~ 0.25	0.02 ~ 0.04	5720	26.3	105.3
FB-3E	3	2.2	16 (22)	0.75 ~ 0.95	0.4 ~ 0.5				
FB-5E	5	3.7	30 (40)	1.1 ~ 1.3	0.4 ~ 0.5				
FB-8E	7.5	5.5	40 (55)	1.0 ~ 1.2	0.3 ~ 0.4	0.03 ~ 0.11 ^[3]	6900	57.4	382.8
FB-10E	10	7.5	59 (80)	1.8 ~ 2.0	0.6 ~ 0.7				
FB-15E	15	11	80 (110)	1.6 ~ 1.8	0.5 ~ 0.6				
FB-20	20	15	110 (150)	-	-	0.06 ~ 0.14 ^[3]	22440	191.6	1150
FB-30	25	18.5	140 (190)	-	-	0.03 ~ 0.11 ^[3]			
	30	22	160 (220)						
	40	30	150 (200)						
ESB-250 ^[2]	50	37	200 (266)	-	-	0.065	30672	52	267
	60	45	235 (320)						

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Notes: [1] Also applies to wiring where brake is powered separately from the motor leads.

[2] Available only with power module rated for use at 200VAC or 220VAC.

Above table applies to standard brake specification under standard brake torque. Special brakes may perform differently from those shown.

Initial brake torque may be lower than specified brake torque.

If this is the case, under light load start and stop the motor to wear-in the braking surface.

To improve performance for positioning accuracy or lifting applications, consider using fast braking action circuit.

If the brake is operated at a rate greater than the Allowable Brake Work Capacity, E₀,

the brake performance may degrade or become inoperable.

ESB Type brake uses a power module (HD-110M3) that is installed separately from the brakemotor.

ESB Type brake cannot be operated in a vertical orientation.

[3] Values shown for 200V Class and 400V Class Brakes. Please consult factory for 575V Brakes.

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Brakemotor Characteristics

Table 4.43 Brake Maintenance - Brake Gap, Brake Lining Thickness

Brake Model	Brake Gap			Brake Lining Thickness		
	Spec. (Initial) inch (mm)	Limit inch (mm)	Adjustment Method	Spec. (Initial) inch (mm)	Limit inch (mm)	
FB-01A	0.008 ~ 0.014 (0.2 ~ 0.35)	0.020 (0.5)	Twist detent	0.276 (7.0)	0.256 (6.5)	
FB-02A						
FB-05A						
FB-1D	0.012 ~ 0.016 (0.3 ~ 0.4)	0.024 (0.60)	Shim	0.347 (8.8)	0.236 (6.0)	
FB-2D					0.307 (7.8)	
FB-3D					0.315 (8.0)	
FB-1E					0.307 (7.8)	
FB-1HE	0.010 ~ 0.014 (0.25 ~ 0.35)	0.024 (0.60)		0.347 (8.8)	0.355 (9.0)	
FB-2E					0.315 (8.0)	
FB-3E					0.307 (7.8)	
FB-5E	0.014 ~ 0.018 (0.35 ~ 0.45)	0.040 (1.0)		Nut	0.410 (10.4)	0.331 (8.4)
FB-8E						0.394 (10.0)
FB-10E						0.433 (11.0)
FB-15E			0.276 (7.0)			
FB-20	0.024 ~ 0.028 (0.6 ~ 0.7)	0.047 (1.2)	0.630 (16.0)		0.472 (12.0)	
FB-30					0.236 (6.0)	
ESB-250 ^[2]	0.028 (0.7)	0.079 (2.0)	Threaded Ring	0.236 (6.0)	0.142 (3.6)	

- Notes:**
- Available only with power module rated for use at 200VAC or 220VAC.
 - ESB Type brake uses a power module (HD-110M3) that is installed separately from the brakemotor.
 - ESB Type brake cannot be operated in a vertical orientation.

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Brakemotor: Brake Current Rating

Table 4.44a Brake Current for Standard Fractional Motor and AF-Motor (AV)

Brake Model	230VAC, 50/60Hz			460VAC, 50/60Hz			575VAC, 50/60Hz		
	Vdc (V)	Idc (A)	Iac (A)	Vdc (V)	Idc (A)	Iac (A)	Vdc (V)	Idc (A)	Iac (A)
FB-01A	207VDC Full Wave	0.05	0.06	207VDC Half Wave	0.05	0.04	259VDC Half Wave	0.05	0.03
FB-02A		0.08	0.1		0.08	0.06		0.09	0.07
FB-05A		0.1	0.1		0.1	0.1		0.1	0.1
FB-1D		0.2	0.2		0.2	0.2		0.2	0.2
FB-2D									
FB-3D									

Table 4.44b Brake Current for EP.NA Motor

Brake Model	230VAC, 50/60Hz			240VAC, 50/60Hz			460VAC, 50/60Hz			480VAC, 50/60Hz		
	Vdc (V)	Idc (A)	Iac (A)	Vdc (V)	Idc (A)	Iac (A)	Vdc (V)	Idc (A)	Iac (A)	Vdc (V)	Idc (A)	Iac (A)
FB-1E	207VDC Full Wave	0.1	0.1	216VDC Full Wave	0.1	0.1	207VDC Half Wave	0.1	0.1	216VDC Half Wave	0.1	0.1
FB-1HE		0.2	0.2		0.2	0.2		0.2	0.2		0.2	
FB-2E		0.2	0.2		0.2	0.2		0.3	0.2		0.2	
FB-3E		0.4	0.4		0.4	0.4		0.3	0.4		0.3	
FB-5E		0.4	0.4		0.5	0.5		0.4	0.3		0.5	0.4
FB-8E												
FB-10E												
FB-15E												
FB-20	207VDC /104VDC Module ^[2]	2.0/1.0 ^[3]	2.0/0.8 ^[3]	216VDC /108VDC Module ^[2]	2.1/1.1 ^[3]	2.1/0.8 ^[3]	414VDC /207VDC Module ^[2]	1.0/0.5 ^[3]	1.0/0.4 ^[3]	432VDC /216VDC Module ^[2]	1.0/0.5 ^[3]	1.0/0.4 ^[3]
ESB-250 ^[1]												

Table 4.44b continued... Brake Current for EP.NA Motor

Brake Model	575VAC, 50/60Hz		
	Vdc (V)	Idc (A)	Iac (A)
FB-1E	259VDC Half Wave	0.1	0.1
FB-1HE		0.2	0.2
FB-2E		0.2	0.2
FB-3E		0.4	0.3
FB-5E		0.5	0.4
FB-8E		0.4	0.3
FB-10E			
FB-15E			
FB-20	259VDC Half Wave	0.4	0.3
ESB-250 ^[1]			

Notes: [1] ESB-250 is available only with power module rated for use at 200VAC or 220VAC.

[2] Power module type brake control generates two voltage levels--1) high excitation voltage for initial release, and 2) lower holding voltage.

[3] 2 brake current values shown corresponding to the two voltage levels from power module--1) excitation current on initial power up, and 2) holding current.

Brake coil design will be specific to brake voltage specified at time of order. Check motor nameplate, to determine brake voltage rating.

FB-20 and FB-30 Brake Coil and Power Module come in two voltage ranges--1) 200-240VAC, and 2) 380-480VAC.

Brakemotor: Brake Current Rating

Table 4.45a Brake Current for Fractional Motor CE Motor

Brake Model	220VAC, 50/60Hz			230VAC, 50/60Hz			380VAC, 50/60Hz			400VAC, 50/60Hz		
	Vdc (V)	Idc (A)	Iac (A)	Vdc (V)	Idc (A)	Iac (A)	Vdc (V)	Idc (A)	Iac (A)	Vdc (V)	Idc (A)	Iac (A)
FB-01A	99VDC Half Wave	0.13	0.12	104VDC Half Wave	0.13	0.12	171VDC Half Wave	0.06	0.04	180VDC Half Wave	0.06	0.04
FB-02A		0.2	0.2		0.2	0.2		0.08	0.07		0.08	0.07
FB-05A		0.3	0.2		0.2	0.2		0.1	0.1		0.1	0.1
FB-1D												

Table 4.45b Combination Table with Brakemotor Inertia

Brake Model	Motor Frame Sizes	Inertia WR2 lb-in ² (kg-m ²)
FB-1E	N-80M	8.82 (0.00258)
FB-1HE	N-90S	13.5 (0.00396)
FB-2E	N-90L	15.4 (0.0045)
FB-3E	N-100L	33.4 (0.00978)
FB-5E	N-112M	71.4 (0.0209)
FB-8E	N-132S	105 (0.0306)
FB-10E	N-132M	154 (0.045)
FB-15E	N-160M	206 (0.0602)
FB-20	N-160L	393 (0.115)
FB-30	N-180MS	926 (0.271)
	N-180M	926 (0.271)
FB-30	N-180L	1170 (0.342)
ESB-250	N-200L	1380 (0.404)
	N-200LL	2550 (0.745)

Table 4.45c Brake Current for CE Motor

Brake Model	220VAC, 50/60Hz			230VAC, 50/60Hz			380VAC, 50/60Hz			400VAC, 50/60Hz			
	Vdc (V)	Idc (A)	Iac (A)	Vdc (V)	Idc (A)	Iac (A)	Vdc (V)	Idc (A)	Iac (A)	Vdc (V)	Idc (A)	Iac (A)	
FB-01A	99VDC Half Wave	0.13	0.12	104VDC Half Wave	0.13	0.12	171VDC Half Wave	0.06	0.04	180VDC Half Wave	0.06	0.04	
FB-02A		0.2	0.2		0.2	0.2		0.08	0.07		0.08	0.07	
FB-05A		0.3	0.2		0.2	0.2		0.1	0.1		0.1	0.1	
FB-1D													
FB-1E		0.2	0.4		0.4	0.5		0.4	0.2		0.2	0.2	0.2
FB-1HE													
FB-2E		0.6	0.5		0.5	0.5		0.5	0.3		0.2	0.3	0.2
FB-3E		1	0.7		0.7	1		0.8	0.4		0.3	0.4	0.3
FB-4E													
FB-5E													
FB-8E													
FB-10E		1.1	0.9		0.9	1.2		0.9	0.5		0.4	0.5	0.4
FB-15E													
FB-20													
FB-30	198VDC /99VDC Module ^[2]	2.0/1.0 ^[3]	2.0/0.8 ^[3]	207VDC /104VDC Module ^[2]	2.0/1.0 ^[3]	2.0/0.8 ^[3]	342VDC /171VDC Module ^[2]	0.8/0.4 ^[3]	0.8/0.3 ^[3]	360VDC /180VDC Module ^[2]	0.9/0.5 ^[3]	0.9/0.4 ^[3]	
ESB-250 ⁽¹⁾		2.2/1.1 ^[3]	2.2/0.9 ^[3]										

Notes: [1] ESB-250 is available only with power module rated for use at 200VAC or 220VAC.

[2] Power module type brake control generates two voltage levels--1) high excitation voltage for initial release, and 2) lower holding voltage.

[3] 2 brake current values shown corresponding to the two voltage levels from power module--1) excitation current on initial power up, and 2) holding current.

Brake coil design will be specific to brake voltage specified at time of order. Check motor nameplate, to determine brake voltage rating.

FB-20 and FB-30 Brake Coil and Power Module come in two voltage ranges--1) 200-240VAC, and 2) 380-480VAC.

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Brakemotor: Optional Brake Torques

Table 4.46 Standard Brake Models

Brake Model	Motor Capacity		Braking Torque ft-lbs (N-m)	
	HP x 4P	kW x 4P	Standard	Optional
FB-01A	1/8	0.1	0.7 (1.0)	0.25 (0.34), 0.3 (0.4), 0.4 (0.54), 0.48 (0.65), 0.6 (0.8), 0.7 (1.0), 1.0 (1.4)
FB-02A	1/8 ~ 1/3	0.1 ~ 0.25	1.4 (2.0)	0.48 (0.65), 0.6 (0.8), 0.7 (1.0), 1.0 (1.4), 1.4 (2.0), 1.9 (2.6), 2.3 (3.1)
FB-05A	1/4 ~ 1/2	0.2 ~ 0.4	2.9 (4.0)	0.7 (1.0), 1.0 (1.4), 1.4 (2.0), 1.9 (2.6), 2.3 (3.1)
FB-1D	1/2	0.4	5.8 (7.5)	1.9 (2.6), 2.3 (3.1), 2.7 (3.7), 3.9 (5.3), 4.6 (6.2), 6.9 (9.4), 7.7 (10)
FB-2D	3/4	0.55	11 (15)	3.6 (4.9), 4.3 (5.8), 5.1 (6.9), 7.2 (9.8), 8.7 (12), 13 (18), 14 (19)
FB-3D	3/4	0.55	16 (22)	5.3 (7.2), 6.6 (9.0), 7.4 (10), 11 (15), 13 (18), 19 (26), 21 (28)
FB-1E	1	0.75	5.5 (7.5)	7.4 (10), 4.0 (5.5), 3.0 (4.0), 2.2 (3.0)
FB-1HE	1.5	1.1	8.0 (11)	11 (15), 5.5 (7.5), 3.7 (5.0), 2.2 (3.0)
FB-2E	2	1.5	11 (15)	15 (20), 8.0 (11), 5.5 (7.5), 3.7 (5.0)
FB-3E	3	2.2	16 (22)	22 (30), 11 (15), 7.4 (10), 4.4 (6.0)
FB-4E	4	3.0	22 (30)	30 (40), 16 (22), 11 (15), 7.4 (10)
FB-5E	5	3.7	30 (40)	40 (55), 22 (30), 15 (20), 7.4 (10)
FB-8E	7.5	5.5	40 (55)	53 (72), 30 (40), 22 (30), 15 (20)
FB-10E	10	7.5	59 (80)	80 (110), 44 (60), 30 (40), 15 (20)
FB-15E	15	11	80 (110)	110 (150), 59 (80), 44 (60), 29 (40)
FB-20	20	15	110 (150)	160 (220), 130 (175), 89 (120), 74 (100), 63 (85), 44 (60)
FB-30	25	18.5	140 (190)	160 (220), 110 (150), 89 (120), 74 (100), 44 (60)
	30	22	160 (220)	130 (175), 110 (150), 89 (120), 63 (85)
	40	30	150 (200)	120 (160), 74 (100)
ESB-250	50	37	195 (266)	275 (372), 235 (320), 155 (212), 120 (160), 78 (106)
	60	45	235 (320)	315 (426), 275 (372), 195(266), 155 (212), 120 (160)

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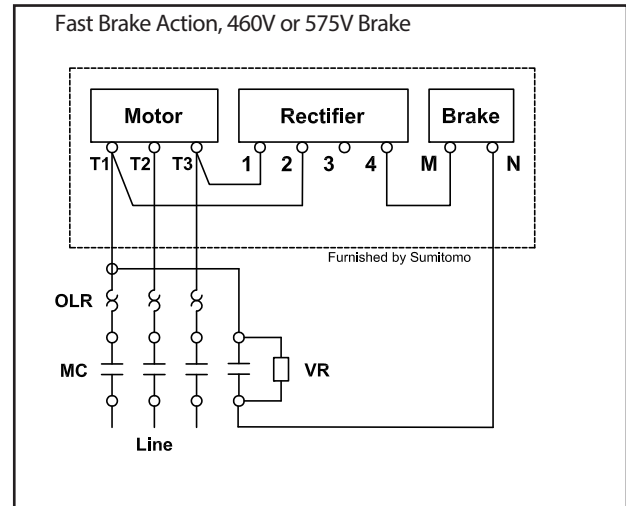
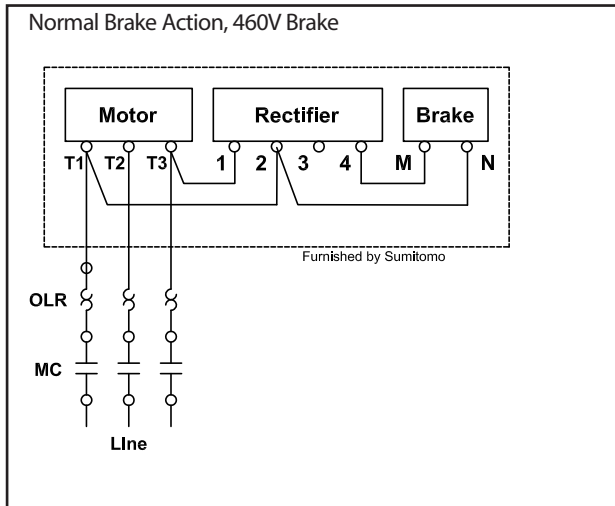
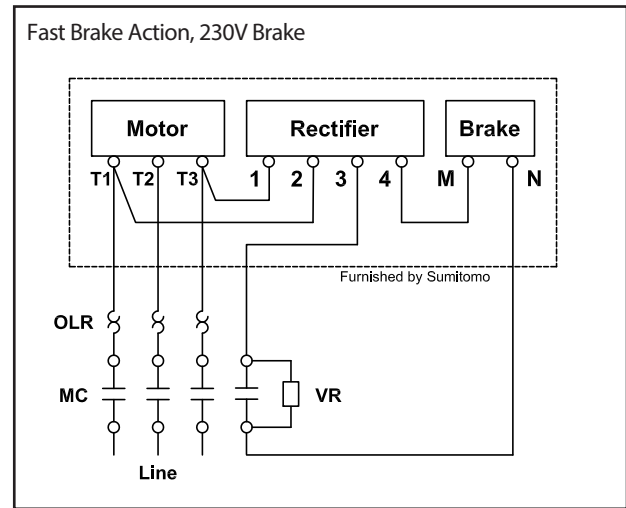
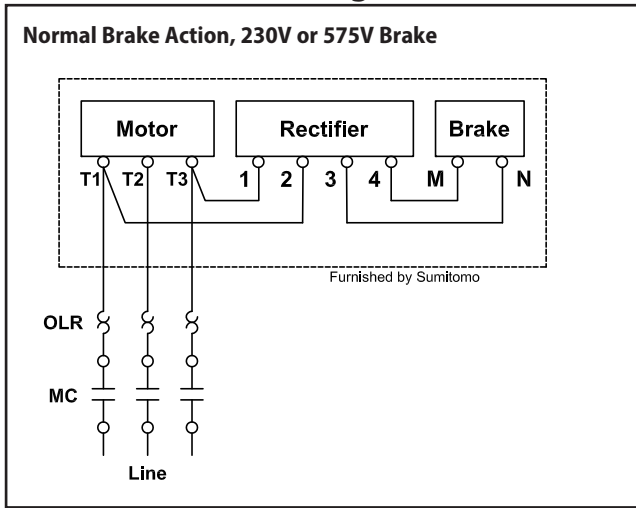
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Brakemotor Standard Wiring Connection

Models FB-01A through FB-15E, 230/460V, 60Hz or 575V, 60Hz



- Key:**
MC: Electromagnetic Relay
OLR: Overload or Thermal Relay
VR: Varistor (protective device, refer to Varistor Specification Table)

Brakemotor Standard Wiring Connection

Table 4.47 Varistor Specification Table

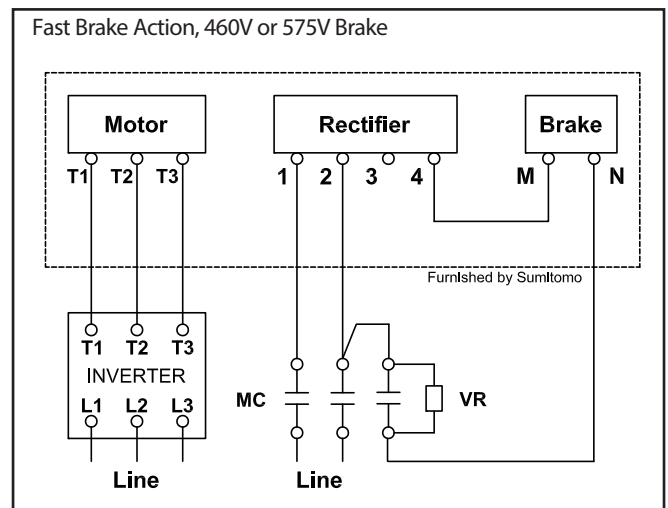
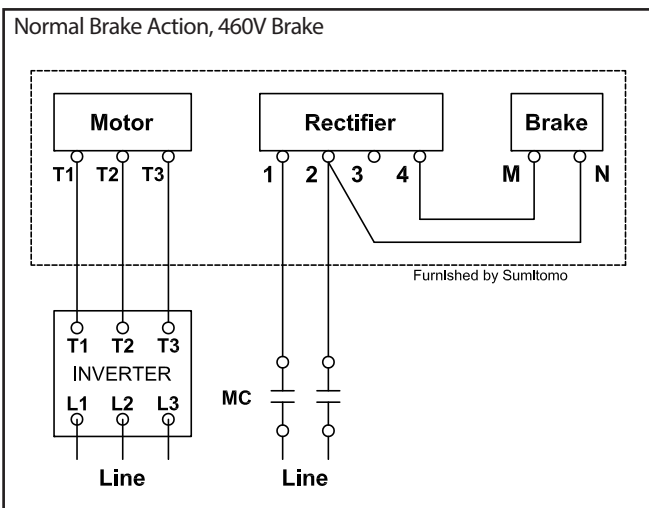
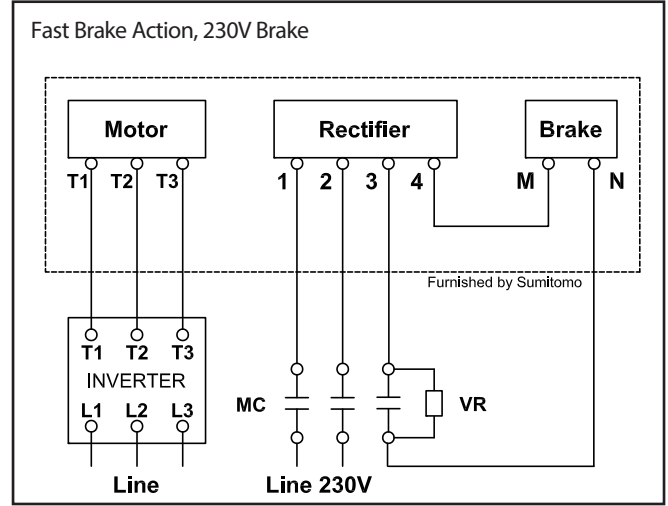
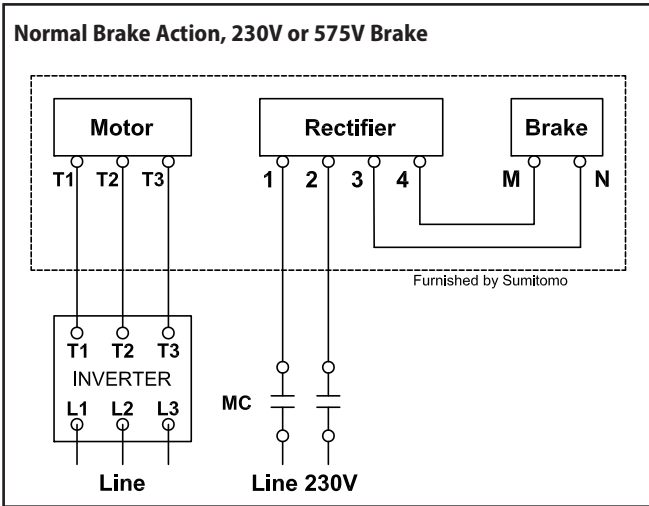
Operating Voltage		190-230V	380-460V	575V
Varistor Rated Voltage		AC260-300V	AC510V	AC604V
Varistor Voltage		430-470V	820V	1000V
Rated Watt	FB-01A, 02A, 05A	Over 0.4W	Over 0.4W	Over 0.4W
	FB-1E, 1D	Over 0.6W	Over 0.6W	Over 0.4W
	FB-1HE, 2E, 2D, 3D	Over 1.5W	Over 1.5W	Over 0.6W
	FB-3E, 4E	Over 1.5W	Over 1.5W	Over 0.6W
	FB-5E, 8E	Over 1.5W	Over 1.5W	Over 1.5W
	FB-10E, 8E	Over 1.5W	Over 1.5W	Over 1.5W
	FB-20, 30			Over 1.5W

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Brakemotor Inverter Wiring Connection

Models FB-01A through FB-15E, 230/460V, 60Hz or 575V, 60Hz



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Technical Information

Key:

MC: Electromagnetic Relay

OLR: Overload or Thermal Relay

VR: Varistor (protective device, refer to Varistor Specification Table)

Brakemotor Inverter Wiring Connection, EP.NA Motor

Table 4.48 Varistor Specification Table

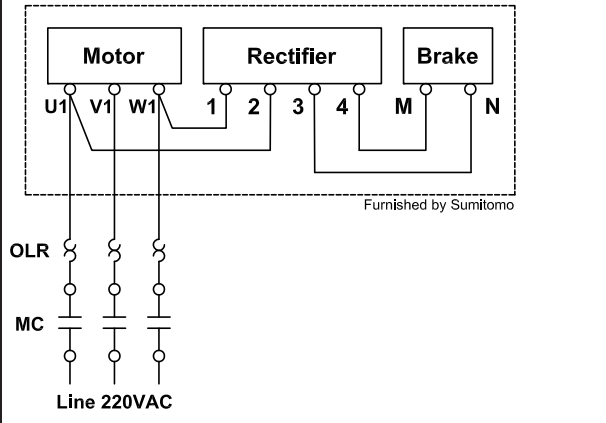
Operating Voltage		190-230V	380-460V	575V
Varistor Rated Voltage		AC260-300V	AC510V	AC604V
Varistor Voltage		430-470V	820V	1000V
Rated Watt	FB-01A, 02A, 05A	Over 0.4W	Over 0.4W	Over 0.4W
	FB-1E, 1D	Over 0.6W	Over 0.6W	Over 0.4W
	FB-1HE, 2E, 2D, 3D	Over 1.5W	Over 1.5W	Over 0.6W
	FB-3E, 4E	Over 1.5W	Over 1.5W	Over 0.6W
	FB-5E, 8E	Over 1.5W	Over 1.5W	Over 1.5W
	FB-10E, 8E	Over 1.5W	Over 1.5W	Over 1.5W
	FB-20, 30			Over 1.5W

Motor Brakemotor, Standard Wiring

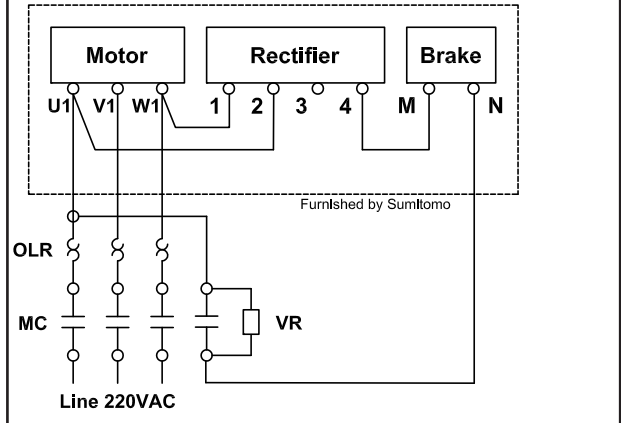
Standard Wiring Connection for CE Motors

Models FB-01A through FB-5E, 220/380V, 50Hz

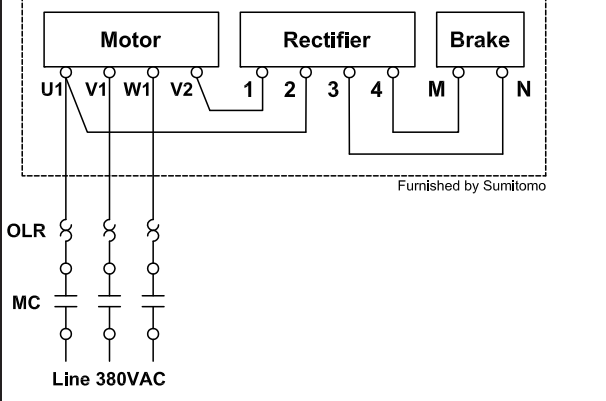
Normal Brake Action, 220V Motor, 220V Brake



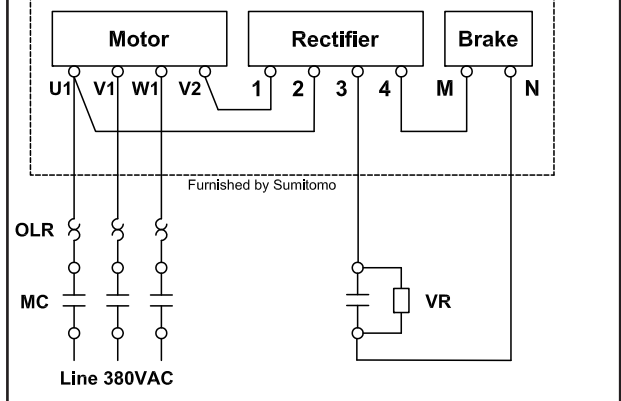
Fast Brake Action, 220V Motor, 220V Brake



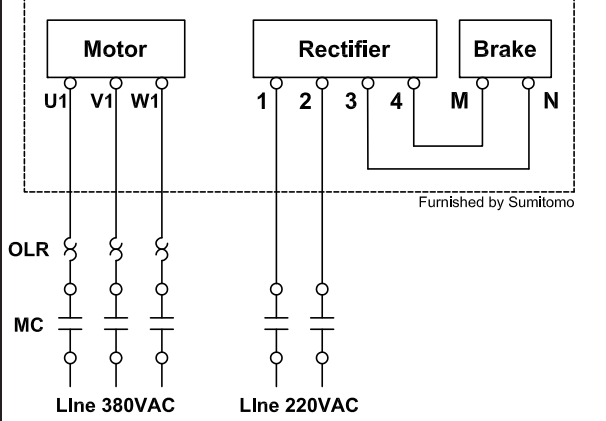
Normal Brake Action, 380V Motor, 220V Brake, Tapped



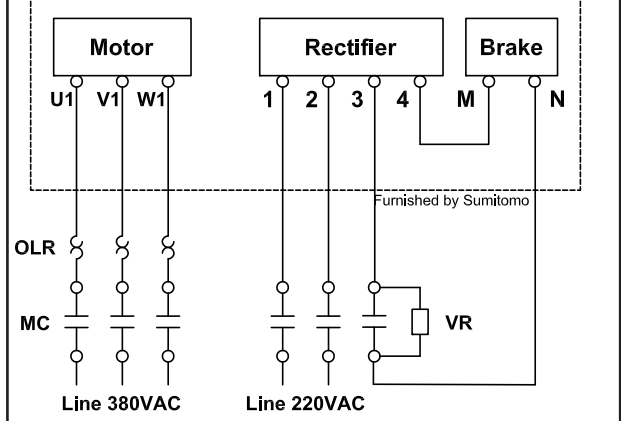
Fast Brake Action, 380V Motor, 220V Brake, Tapped



Normal Brake Action, 380V Motor, 220V Brake, Separated



Fast Brake Action, 380V Motor, 220V Brake, Separated



Key:

MC: Electromagnetic Relay

OLR: Overload or Thermal Relay

MCB: Magnetic Circuit Breaker

VR: Varistor (protective device, refer to Varistor Specification Table)

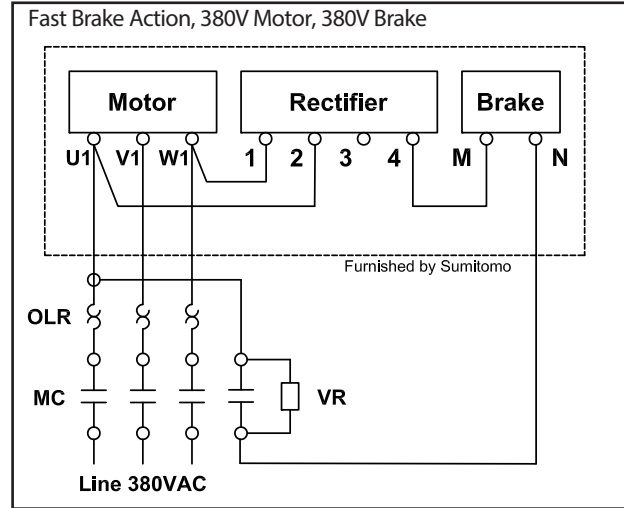
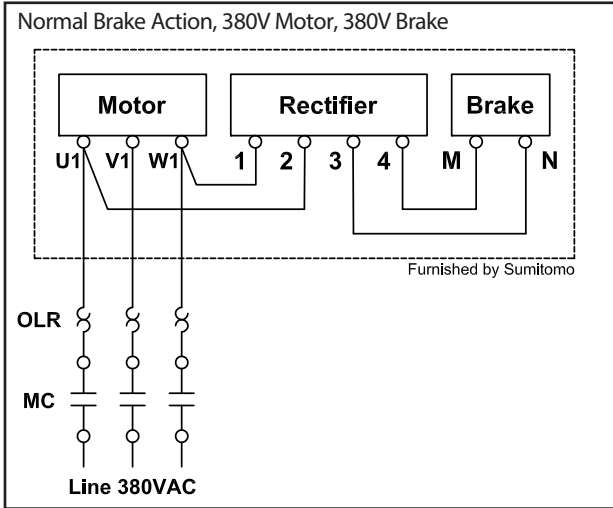
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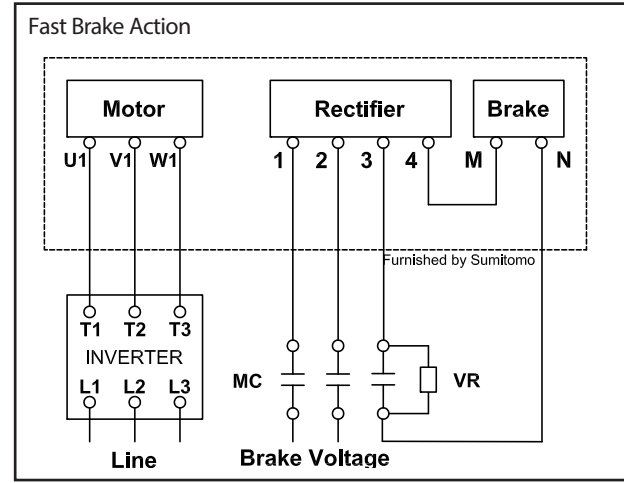
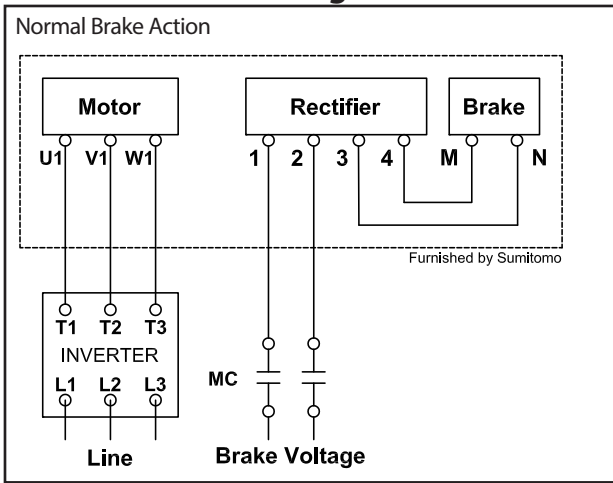
Motor Brakemotor, Standard Wiring continued

Standard Wiring Connection for CE Motors (continued)

Models FB-8E through FB-15E, 380V, 50Hz



Models FB-01A through FB-15E with Inverter



Key:

MC: Electromagnetic Relay OLR: Overload or Thermal Relay MCB: Magnetic Circuit Breaker
 VR: Varistor (protective device, refer to Varistor Specification Table)

Table 4.49a Standard CE Motor, Motor/Brake Voltage Table

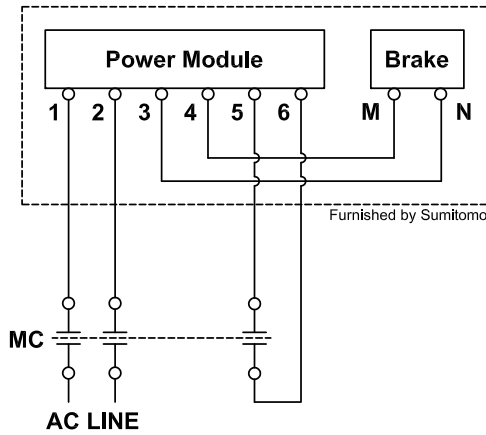
Motor Power kW x 4P	Brake Model	Motor Voltage	Brake Voltage
0.1	FB-01A	220/380V, 50Hz	220V, 50Hz*
0.2, 0.25	FB-02A		
0.4	FB-05A		
0.55	FB-1D		
0.75	FB-1E		
1.1	FB-2E		
1.5	FB-1HE		
2.2	FB-3E		
3.0	FB-4E		
3.7	FB-5E		
5.5	FB-8E	380V, 50Hz	380V, 50Hz
7.5	FB-10E		
11	FB-15E		

Table 4.49b Varistor Specification Table

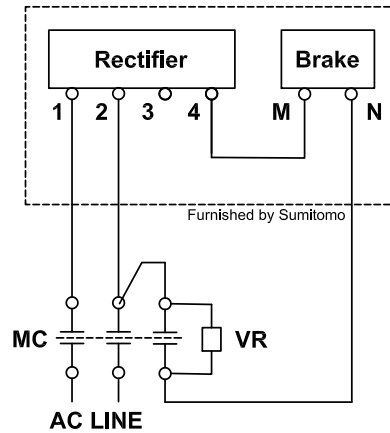
Operating Voltage	190-230V	380-460V	575V
Varistor Rated Voltage	AC260-300V	AC510V	AC604V
Varistor Voltage	430-470V	820V	1000V
Rated Watt	FB-01A, 02A, 05A	Over 0.4W	Over 0.4W
	FB-1E, 1D	Over 0.6W	Over 0.4W
	FB-1HE, 2E	Over 1.5W	Over 0.6W
	FB-3E, 4E	Over 1.5W	Over 0.6W
	FB-5E, 8E	Over 1.5W	Over 1.5W
	FB-10E, 8E	Over 1.5W	Over 1.5W
	FB-20, 30		

Wiring for Brake Models FB-20 / FB-30 - EP.NA Motor and IE3 CE Motor

FB-20 and FB-30 Brake Wiring, 480VAC or less



FB-20 and FB-30 Brake Wiring, 575VAC



Key:

MC: Electromagnetic Relay

VR: Varistor (protective device, refer to Varistor Specification Table)

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Motor Brakemotor Standard Wiring continued

Brake Rectifiers and Brake Power Modules

Table 4.50 Brake Rectifiers for EP.NA Motors

Brake Type	Motor Power HP (kW) x P	230V/460V Rectifier		575V Rectifier	
		Model Number	Part Number	Model Number	Part Number
FB-1E	1 x 4	25FW-4FB3	EW107WW-01	10F-6FB3	EW104WW-01
FB-1HE	1.5 x 4				
FB-2E	2 x 4				
FB-3E	3 x 4				
FB-5E	5 x 4				
FB-8E	7.5 x 4				
FB-10E	10 x 4				
FB-15E	15 x 4				
FB-20	20 x 4				
FB-30	25 x 4				
	30 x 4				
	40 x 4				

Table 4.51 Brake Rectifiers for IE3 CE Motors

Brake Type	Motor Power HP (kW) x P	220V Rectifier		380V Rectifier	
		Model Number	Part Number	Model Number	Part Number
FB-1E	0.75 x 4	10F-2FB2	MP983WW-01		
FB-1HE	1.1 x 4				
FB-2E	1.5 x 4				
FB-3E	2.2 x 4				
FB-4E	3.0 x 4				
FB-5E	3.7 x 4 4.0 x 4				
FB-8E	5.5 x 4			05F-4FB2	MP985WW-01
FB-10E	7.5 x 4			15F-4FB1	EW397WW-01
FB-15E	11 x 4				

Table 4.52 Brake Power Modules for EP.NA Motors and IE3 CE Motors

Brake Type	Motor (HP x P)	170 ~ 300VAC Module		380 ~ 480VAC Module	
		Model Numbers	Part Number	Model Numbers	Part Number
FB-20	20 x 4	13SR-2	EY570WW-01	10SR-4	MQ003WW-01
FB-30	25 x 4				
	30 x 4				
	40 x 4				

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Warranty

Company warrants that (i) all new equipment and parts (collectively, "Equipment") sold by Company will conform to printed drawings and specification sheets issued by Company and (ii) are free of defects in material and workmanship for the time period shown in Table 1. The warranty period commences on the date of shipment of the Equipment by Company.

If, within the warranty period, Company receives from Buyer written notice of any alleged defect in any of the Equipment and, if the Equipment is found by Company not to conform with these warranties (after Buyer has provided Company a reasonable opportunity to perform any appropriate tests on the allegedly defective Equipment), Company will, at its sole option and expense, either repair or replace the Equipment. In all instances, Company reserves the right to require Buyer to deliver the Equipment for repair or replacement to a designated service center and require Buyer to pay all charges for inbound and outbound transportation and for services of any kind, diagnostic or otherwise, excepting only the direct and actual cost of Equipment repair or replacement. Warranty coverage is limited to parts and labor and does not include travel and other expenses. Buyer applications and use of the Equipment may require installation of safety features. Buyer is responsible for furnishing and installing guards or other safety equipment needed to protect operating personnel, even though such equipment may not be furnished by Company with the Equipment purchased. Equipment supplied, but not manufactured, by Company is warranted only to the extent of the original manufacturer's warranty.

Table 4.53 - Product Warranty

Product	Warranty Period (After Shipment)	Components Excluded
Cyclo® Speed Reducers and Gearmotors	2 Years	Bearings and Seals
Cyclo® Bevel Buddybox Speed Reducers and Gearmotors	2 Years	Bearings and Seals
Cyclo® Helical Buddybox Speed Reducers and Gearmotors	2 Years	Bearings and Seals
Fine Cyclo® Speed Reducers	2 Years	Bearings and Seals
Beier® Variator Mechanical Adjustable Speed Reducers	2 Years	Bearings and Seals
Hyponic® Speed Reducers and Gearmotors	2 Years	Bearings and Seals
Hedcon® Double Enveloping Worm Gear Speed Reducers	2 Years	Bearings and Seals
Helical Shaft Mount Speed Reducers	2 Years	Bearings and Seals
Rhytax®	2 Years	Bearings and Seals
IB Series Servo Gearheads	1 Year	Bearings and Seals
Astero Gearmotors	1 Year	Bearings and Seals
Variable Frequency Inverters	1 Year	---
Paramax® Speed Reducers	2 Years	Bearings and Seals
Compower Planetary Speed Reducers	1 Year	Bearings and Seals
Hansen UniMiner	2 Years	Bearings and Seals
Hansen P4	2 Years	Bearings and Seals
Parts	1 Year	---
Repairs	1 Year	Bearings and Seals

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