

# Sumitomo Drive Technologies

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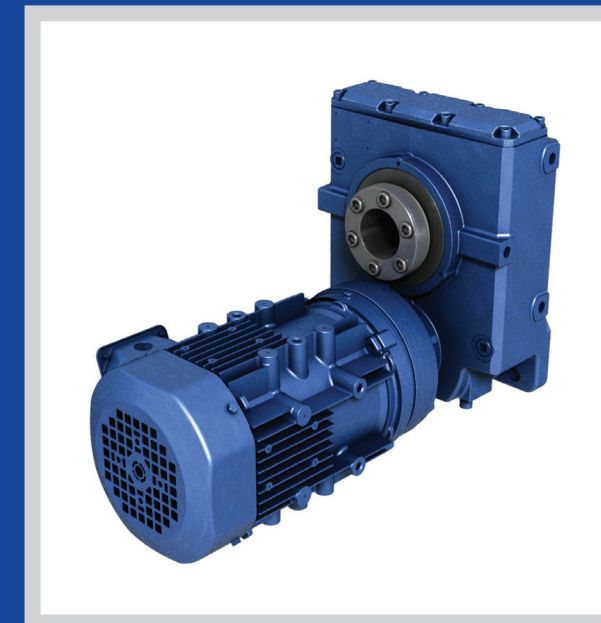
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Sumitomo Drive Technologies

CYCLO® HBB HELICAL BUDDYBOX®

Gearmotor and Speed Reducers

# Sumitomo Drive Technologies



**CYCLO® HBB  
 HELICAL BUDDYBOX®**  
 Gearmotor and Speed Reducers



## EPNA Motors

Enhanced Performance (EPNA) 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.

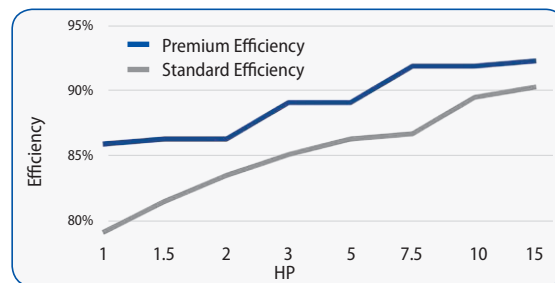
### Exceptionally long life

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. In order to match the longer insulation life, deep groove ball bearings have been incorporated to further extend the life of our products.



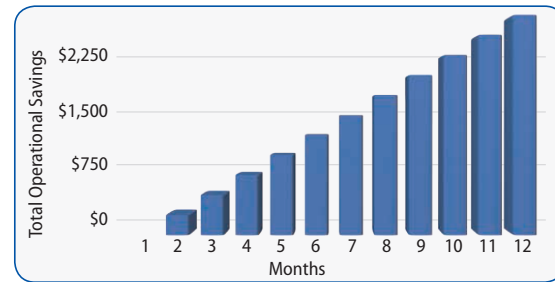
### Eco friendly

Premium efficiency, mandated by the DOE (Department of Energy, USA), 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.



### 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.



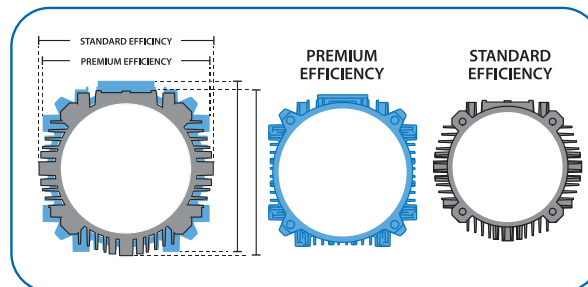
The assumptions for the study are as follows:  
 9.8 cents of a dollar per kWh • 8600 operating hours annually • A 7.5 kilowatt motor (10 HP) • IE3 motor costing 25% more than the IE1 motor • IE3 premium efficiency motor being 2.8% more efficient than the IE1 standard efficiency motor

### 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.



## For applications ranging from robotics to bulk material handling.

Sumitomo offers a comprehensive lineup of premier power transmission products to keep customers' operations performing at their best. This includes the broadest range of the most reliable and highest quality speed reducers, gearmotors and large industrial gearboxes available in the industry.

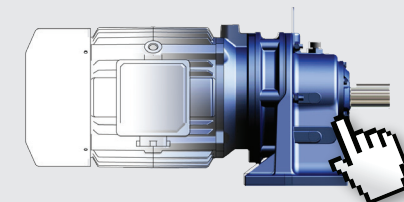
|                            | Torque (lbs-in)        | 8.85 | 88.5                                  | 885   | 8,850 | 88,507 | 885,075 | 8,850,746 |
|----------------------------|------------------------|------|---------------------------------------|---|-------|--------|---------|-----------|
| Precision / Motion Control | IB P1 Series           |      | 71 - 1,354 lb-in (8 - 153 N-m)        |   |       |        |         |           |
|                            | Servo 6000             |      | 142 - 4,425 lb-in (16 - 500 N-m)      |   |       |        |         |           |
|                            | Fine Cyclo®            |      |                                       | 1,318 - 45,492 lb-in (149 - 5,140 N-m)  |       |        |         |           |
| Inline                     | Cyclo® 6000            |      | 55 - 603,000 lb-in (6.2 - 68,130 N-m) |   |       |        |         |           |
| Right Angle                | Hyponic®               |      | 44 - 13,100 lb-in (5 - 1,480 N-m)     |   |       |        |         |           |
|                            | Cyclo® BBB 5 Series    |      |                                       | 1,088 - 45,450 lb-in (123 - 5,140 N-m)  |       |        |         |           |
|                            | Cyclo® BBB 4 Series    |      |                                       | 1,088 - 159,983 lb-in (123 - 17,400 N-m)  |       |        |         |           |
| Offset Parallel            | Cyclo® HBB             |      |                                       | 1,080 - 75,800 lb-in (122 - 8,564 N-m)  |       |        |         |           |
|                            | Helical Shaft Mount    |      |                                       | 3,900 - 388,884 lb-in (440 - 43,938 N-m)  |       |        |         |           |
| Large Industrial           | Paramax® 9000          |      |                                       | 23,012 - 4,885,614 lb-in (2,600 - 552,000 N-m)  |       |        |         |           |
|                            | Hansen P4 Single-Stage |      |                                       | 40,000 - 1,504,000 lb-in (4,519 - 170,000 N-m)  |       |        |         |           |
|                            | Hansen P4 Multi-Stage  |      |                                       | 46,000 - 9,735,825 lb-in (5,200 - 1,100,000 N-m)  |       |        |         |           |
|                            | Hansen P4 Vertical     |      |                                       | 105,000 - 7,250,000 lb-in (11,863 - 819,000 N-m)  |       |        |         |           |
|                            | Hansen P4 UniMiner     |      |                                       | 122,000 - 889,000 lb-in (13,784 - 100,445 N-m)  |       |        |         |           |
|                            | Seisa Drives           |      |                                       | DP1000: 40,713 - 6,515,000 lb-in (4,600 - 736,000 N-m)<br>Mill Drives: 7,806,362 - 42,625,212 lb-in (882,000 - 4,816,000 N-m) |       |        |         |           |



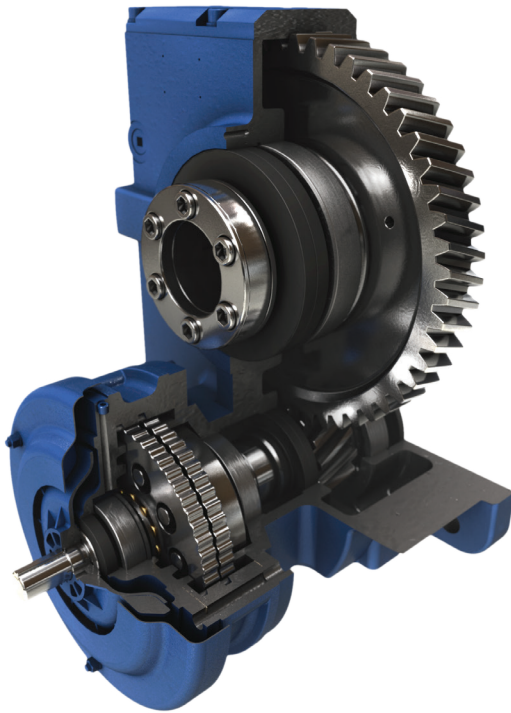
Product Configurator: [www.sumitomodrive.com/Configurator](http://www.sumitomodrive.com/Configurator)

Sumitomo Drive Technologies' online product Configurator streamlines the selection process, enabling you to build **our power transmission products for your specific application.**

Configure your Sumitomo Drive Technologies products today at [www.sumitomodrive.com/Configurator](http://www.sumitomodrive.com/Configurator)



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► Flexible configurations

• Mounting Options:

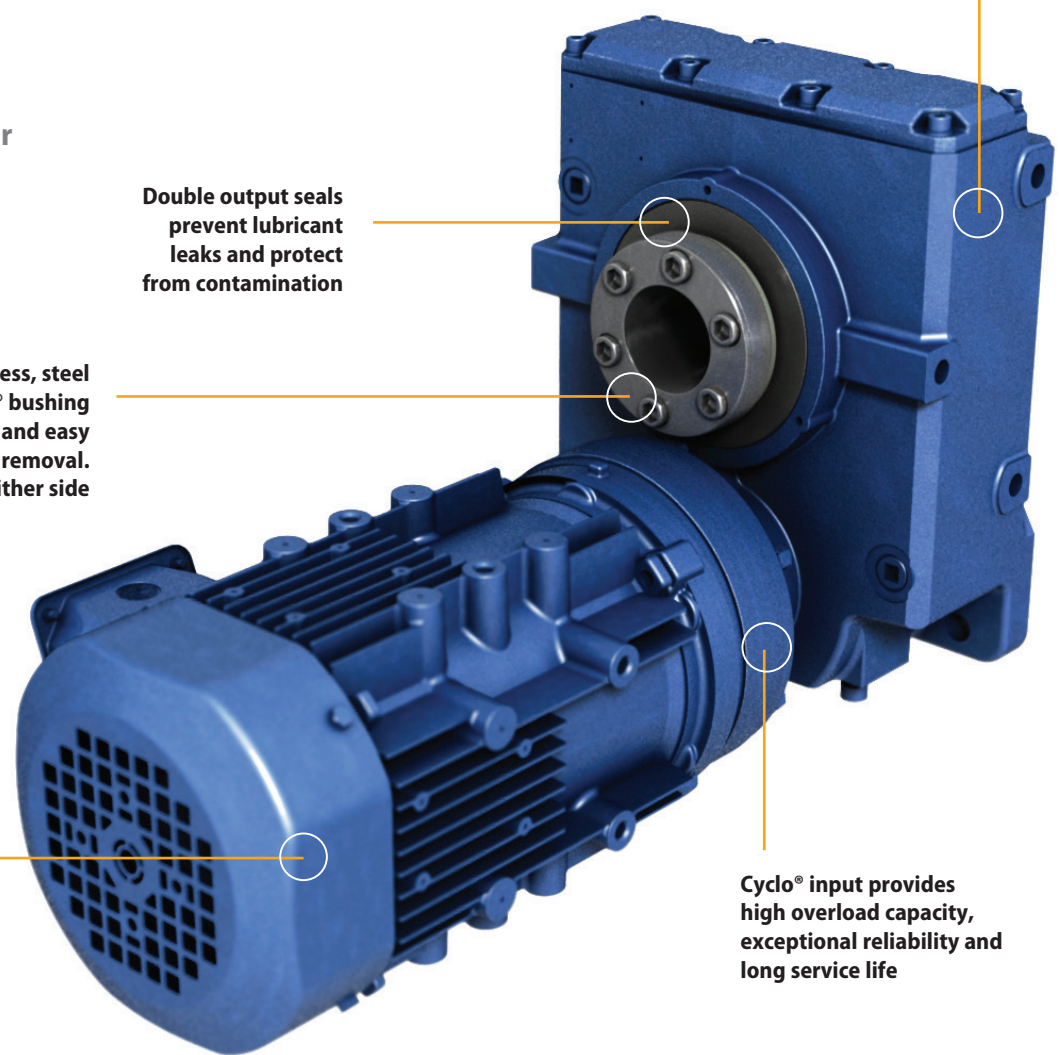
- Flange
- Face
- Torque Arm
- Screw Conveyor

Double output seals prevent lubricant leaks and protect from contamination

Patented universal housing design

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

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



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

Product Description

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

Features & Benefits

- **Cycloidal speed reduction technology**
  - ~ Quiet, efficient and reliable operation with high torque density and compact size
- **Modular design**
  - ~ Interchangeable cast iron housings in foot, flanged or face mount configurations
- **Double output seals**
  - ~ Virtually leak-free operation and optimal protection from lubrication contamination
- **Taper Grip® Bushing**
  - ~ Simple, steel, keyless shaft mounting system resists fretting and eases unit installation and removal from driven shaft
- **CEMA Screw Conveyor Drive option**
  - ~ Quick and simple conversion for Cyclo® HBB units to fit CEMA standard dimensions

Specifications

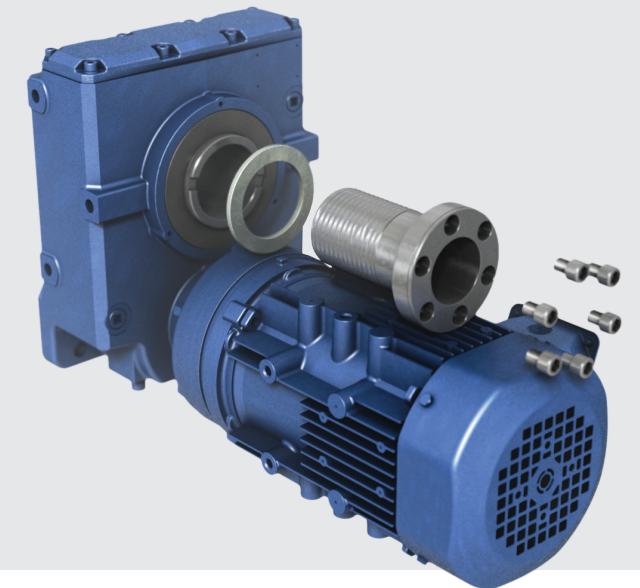
|                         |                                 |
|-------------------------|---------------------------------|
| <b>Ratios:</b>          | 11:1 up to 26,000:1 and greater |
| <b>Torque Capacity:</b> | Up to 75,800 in. lbs.           |
| <b>HP:</b>              | 1/8 to 40               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

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

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

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

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



Cyclo® Quality and Reliability, Shaft Mount Design

► High performance steel gearing components deliver up to 95% efficiency



► Applications

- Material Handling
- Conveyors
- Baggage Handling
- Shredders
- Belt Filter Press
- Mixer/Blender
- Rolling Mill Table
- Screw Conveyors
- Elevators
- Hoist Drives
- Climber Screens
- Food Processing

# Product Range (Standard Motor and Reducer Combinations)

# FAQs

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

| Input Type          | Planetary  |    | Cyclo |      |      |      |      |      |      |      |       |       |       |       |       |       |       |       |  |
|---------------------|------------|----|-------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|--|
|                     | 11         | 18 | 21    | 28   | 39   | 46   | 53   | 60   | 74   | 88   | 102   | 123   | 151   | 179   | 207   | 249   | 305   | 417   |  |
| Nominal Ratio       | *          | *  | 21.0  | 28.0 | 38.5 | 45.5 | 52.5 | 59.5 | 73.5 | 87.5 | 101.5 | 122.5 | 150.5 | 178.5 | 206.5 | 248.5 | 304.5 | 416.5 |  |
| Actual Ratio        | *          | *  | 21.0  | 28.0 | 38.5 | 45.5 | 52.5 | 59.5 | 73.5 | 87.5 | 101.5 | 122.5 | 150.5 | 178.5 | 206.5 | 248.5 | 304.5 | 416.5 |  |
| 1450 50 Hz          | *          | *  | 69.0  | 51.8 | 37.7 | 31.9 | 27.6 | 24.4 | 19.7 | 16.6 | 14.3  | 11.8  | 9.63  | 8.12  | 7.02  | 5.84  | 4.76  | 3.48  |  |
| 1750 60 Hz          | *          | *  | 83.3  | 62.5 | 45.5 | 38.5 | 33.3 | 29.4 | 23.8 | 20.0 | 17.2  | 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)    | ●  | ●     | ●    | ●    | ●    | ●    | ●    | ●    | ●    | ●     | ●     | ●     | ●     | ●     | ●     | ●     | ●     |  |

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

## 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   |  |
| Nominal Ratio       | 364.0      | 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 |  |
| Actual Ratio        | 364.0      | 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 |  |
| 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  |  |
| 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  |  |
| 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)  | ●     | ●     | ●     | ●     | ●     | ●     | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      |  |

- Standard efficiency motor
- Premium efficiency or IE3 motor

\* Planetary Actual Ratio

| Unit Size | Nominal Ratio | Actual Ratio | Actual RPM |       |
|-----------|---------------|--------------|------------|-------|
|           |               |              | 50 Hz      | 60 Hz |
| A6100     | 11            | 10.50        | 138        | 167   |
| A6105     | 18            | 16.80        | 86.3       | 104   |
| B6120     | 11            | 10.50        | 138        | 167   |
| B6125     | 18            | 17.13        | 84.6       | 102   |
| C6140     | 11            | 10.89        | 133        | 161   |
| C6145     | 18            | 17.50        | 82.9       | 100   |
| D6160     | 11            | 10.85        | 134        | 161   |
| D6165     | 18            | 17.77        | 81.6       | 98.5  |
| E6170     | 11            | 10.86        | 133        | 161   |
| E6175     | 18            | 17.68        | 82.0       | 99.0  |

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

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

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

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

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

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

### What are service factors and how are they used?

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

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

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

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

Cyclo® HBB speed reducers provide 300% momentary intermittent shock loads capacity. For applications with shock loads greater than 300%, consult an SMA Application Engineer.

### What are the standard input speeds?

In general terms, the speeds are 1750 and 1165 RPM at 60Hz, and 1450 and 980 RPM at 50Hz. The selection tables in this catalog are based on 1750 RPM. When other input speeds are used, the horsepower and torque ratings will vary.

### What are the thermal limitations of the Cyclo® HBB?

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

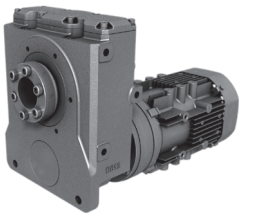
### Why is a Taper-Grip® bushing used? What is its material?

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

### What kind of torque arm is supplied as standard? At what position should it be mounted?

The standard torque arm assembly is shown in the dimension pages. 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 plus or minus 15 degrees variance. It should always be mounted in tension, not compression. T-type and flange-mount (banjo) torque arms are also offered as options.

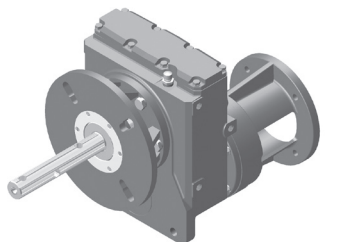
### Common Configurations



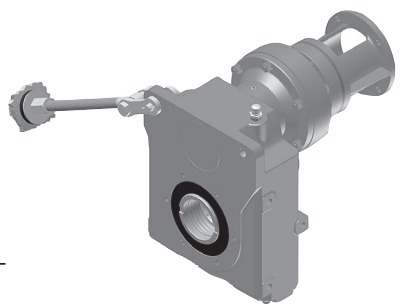
Single Reduction Gearmotor



Single Reduction Reducer with C-Face Adapter



C-Face Reducer with Screw Conveyor Adapter



Double Reduction, C-Face Reducer with Torque Arm

# 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 (EPAAct), as recently amended by the Department of Energy with a new ruling.

EP Sumitomo motors met 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 VFDs?

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.

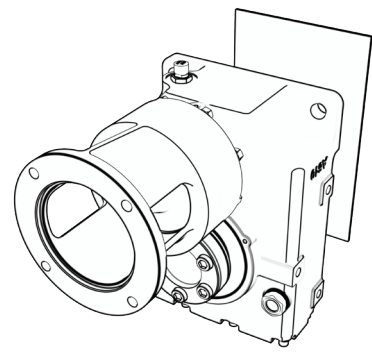
If taking an old standard efficiency motor off a gearmotor and replacing it with the same HP new EP motor, the EP motor will bolt to the old gearmotor. The motor flange diameters, pilot diameters, bolt patterns and shaft diameters all match. Motor body dimensions and weight will change.

# Standard Specifications

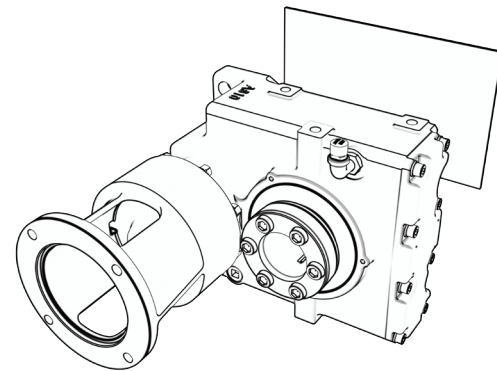
|   | Standard Specifications  | Standard Specifications with Built-In Brake  |  |
|---|--|--|--|
| <b>3 Phase Integral Motor<br/>Fractional HP Motor</b> | Capacity Range   | 1/8 through 3/4 HP (4 pole)  | 1/8 through 3/4 HP (4 pole)  |
|   | Power Supply   | Motor Power: 230 / 460V, 60 Hz, 3 Phase<br>575V, 60 Hz, 3 Phase  | Motor Power: 230 / 460V, 60 Hz, 3 Phase<br>575V, 60 Hz, 3 Phase<br>Brake Power: 230 / 460V, 60 Hz, 1 Phase<br>575V, 60 Hz, 1 Phase   |
|   | Motor Standard   | NEMA   | NEMA   |
|   | Efficiency   | Standard Efficiency (IE1)  | Standard Efficiency (IE1)  |
|   | Protection   | IP55   | IP55   |
|   | Certification  | CE Mark, UL Recognition, CSA Approval  | CE Mark, UL Recognition, CSA Approval  |
|   | Conduit Box  | Diecast Aluminum, NPT Conduit Thread   | Diecast Aluminum, NPT Conduit Thread   |
| <b>3 Phase Integral Motor<br/>EP, NA Motor</b>        | Capacity Range   | 1 through 40 HP (4 pole)   | 1 through 40 HP (4 pole)   |
|   | Power Supply   | Motor Power: 230 / 460V, 60 Hz, 3 Phase<br>575V, 60 Hz, 3 Phase  | Motor Power: 230 / 460V, 60 Hz, 3 Phase<br>575V, 60 Hz, 3 Phase<br>Brake Power: 230 / 460V, 60 Hz, 1 Phase<br>575V, 60 Hz, 1 Phase   |
|   | Motor Standard   | NEMA   | NEMA   |
|   | Efficiency   | Premium Efficiency (IE3)   | Premium Efficiency (IE3)   |
|   | Protection   | IP55   | IP55   |
|   | Certification  | CE Mark, UL Recognition, CSA Approval  | CE Mark, UL Recognition, CSA Approval  |
|   | Conduit Box  | Diecast Aluminum, NPT Conduit Thread   | Diecast Aluminum, NPT Conduit Thread   |
| <b>3 Phase Integral Motor<br/>IE3 CE Motor</b>        | Capacity Range   | 0.75 through 30 kW (4 pole)  | 0.75 through 30 kW (4 pole)  |
|   | Power Supply   | Motor Power (0.75 through 4.0 kW) 230 / 400V, 50 Hz, 3 Phase<br>(5.5 through 30 kW) 400V, 50 Hz, 3 Phase | Motor Power (0.75 through 4.0 kW) 230 / 400V, 50 Hz, 3 Phase<br>(5.5 through 30 kW) 400V, 50 Hz, 3 Phase<br>Brake Power (0.75 through 4.0 kW) 220 - 240V, 50 Hz, 1 Phase<br>(5.5 through 30 kW) 380 - 415V, 50 Hz, 1 Phase |
|   | Motor Standard   | IEC  | IEC  |
|   | Efficiency   | IE3  | IE3  |
|   | Protection   | IP55   | IP44   |
|   | Certification  | CE Mark  | CE Mark  |
|   | Conduit Box  | Diecast Aluminum, Metric Conduit Thread  | Diecast Aluminum, Metric Conduit Thread  |
| <b>3 Phase Integral Motor -<br/>Common</b>            | Enclosure  | Totally Enclosed Fan Cooled (TEFC)<br>1/8 HP - Totally Enclosed Non-Ventilated (TENV)                    | Totally Enclosed Fan Cooled (TEFC)<br>1/8 HP - Totally Enclosed Non-Ventilated (TENV)  |
|   | Motor Type   | Asynchronous Induction Motor, Squirrel Cage Rotor  | Asynchronous Induction Motor, Squirrel Cage Rotor  |
|   | Frame Material   | Diecast Aluminum   | Diecast Aluminum   |
|   | Bearings   | Double Shielded, Deep Groove, Ball Bearing, CM Clearance   | Double Shielded, Deep Groove, Ball Bearing, CM Clearance   |
|   | Insulation   | Class F  | Class F - Motor and Brake  |
|   | Time Rating  | Continuous   | Continuous   |
|   | <b>HBB®<br/>Reducer</b>  | Reduction  | Combination of Cyclo or Planetary input and helical gear output.   |
| Lubrication   |  | Cyclo portion is grease or oil, planetary and helical portions are oil lubricated.                       |  |
| Seals   |  | Nitrile material, dual lipped, tandem output seals.  |  |
| Material  |  | Rugged cast iron housings in all sizes.  |  |
| Paint Color   |  | Blue, Munsell color number 6.5PB 3.6/8.2   |  |
| <b>Ambient<br/>Conditions</b>                         | Bearings   | Output tapered roller bearings optional.   |  |
|   | Installation Location  | Indoor or outdoor with open cover.   |  |
|   | 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 |  |  |

# Mounting Positions

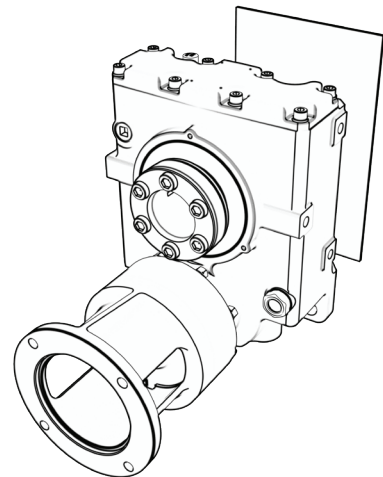
Please see the Appendix (Section 5) for additional mounting configurations.  
 1. Mounting positions are shown with standard (Taper Grip Bushing) output option.  
 2. The plane of reference represents the location of customer's equipment.



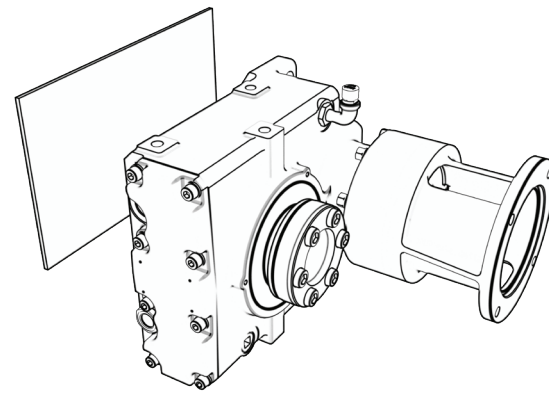
Y1



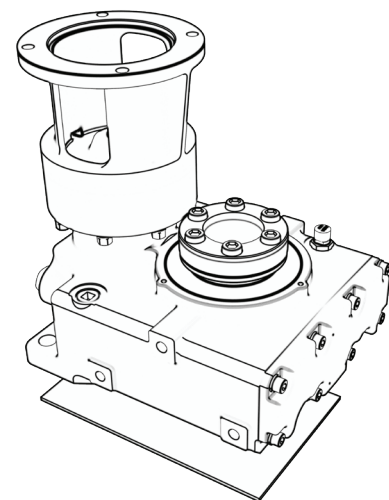
Y2



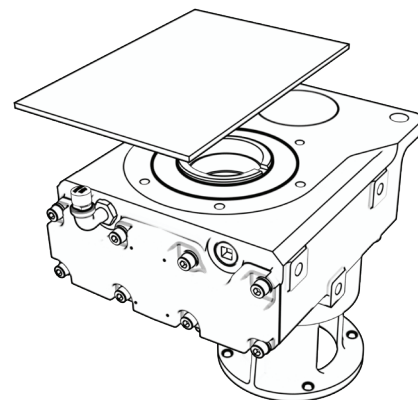
Y3



Y4



Y5

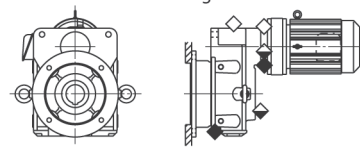
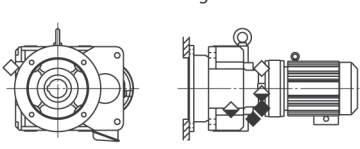
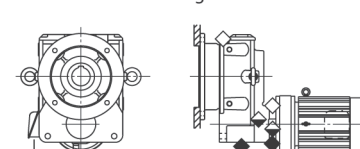
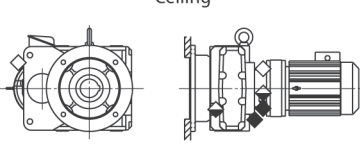
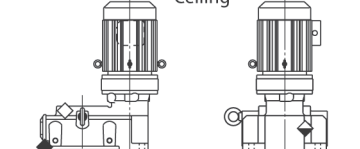
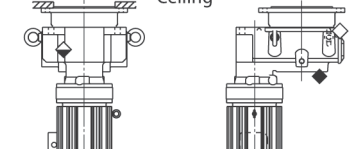


Y6

# Additional Mounting Configurations

## Flange Mounting Positions

Fig. 5.18 Hollow Shaft, Flange Mount

| EHY□ - □ - F1   | EHY□ - □ - F2   | EHY□ - □ - F3   |
|---|---|---|
| <p>Ceiling</p>  <p>Floor</p> | <p>Ceiling</p>  <p>Floor</p> | <p>Ceiling</p>  <p>Floor</p> |
| EHY□ - □ - F4   | EVY□ - □ - F5   | EVY□ - □ - F6   |
| <p>Ceiling</p>  <p>Floor</p> | <p>Ceiling</p>  <p>Floor</p> | <p>Ceiling</p>  <p>Floor</p> |

Notes: [1] □ indicates various nomenclature designations for input connection, frame size, ratio, etc. Please see pages 2.4 and 3.4 for complete reducer and gearmotor nomenclature.  
 [2] ◇ = Oil Fill Location; ◊ = Oil Level Location; ◆ = Oil Drain Location.  
 [3] For positions F5 and F6, the Cyclo® portion is grease-lubricated; oil fill and drain ports are unnecessary.  
 [4] For Cyclo® HBB sizes Z6090 - C6145 position F5 has two drain ports.

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# 2

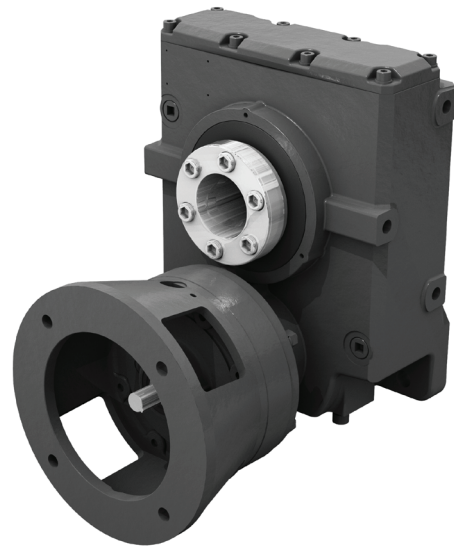
# Speed Reducers

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## Hollow Shaft Type

Cyclo® HBB

How to  
Select



# How to select a Speed Reducer

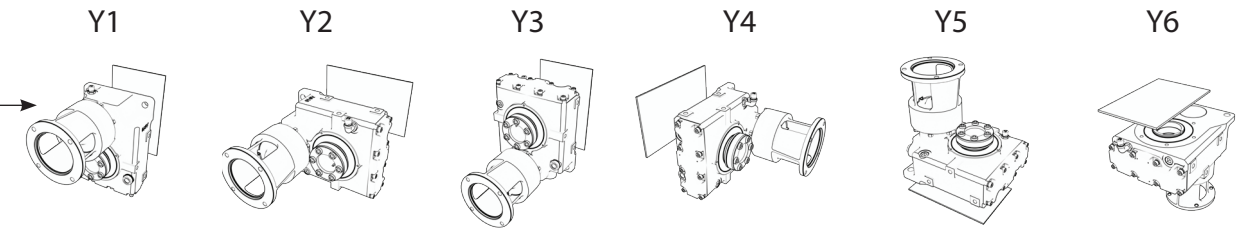


## Step 1: Collect data about your application

Before starting you need to know the:

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

### Mounting Positions



## Step 2: Choose a Mounting Position

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

## Step 3: Select a Frame Size

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

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

**3C:** Determine the Selection Horsepower (HP or kW) by multiplying the Motor Power (HP or kW) by the Service Factor.

**3D:** Select a Frame size from the Reducer Selection Tables on pages 2.8–2.13 by matching both the Selection Horsepower and Desired Output Speed (RPMs) to a frame size model number. **Note:** For Mounting Positions Y1, Y2, Y3, Y4 see pages 2.8–2.9. For Mounting Positions Y5 and Y6 see pages 2.10–2.11). For all Double Reduction Mounting Positions see pages 2.12–2.13.

### Recommended Reducer Service Factors

|                               | AGMA Load Classifications |                     |                 |
|-------------------------------|---------------------------|---------------------|-----------------|
|                               | Uniform (U)               | Moderate Shock (M)  | Heavy Shock (H) |
| 1/2 hr. per day (Occasional)  | 0.50 <sup>[1]</sup>       | 0.80 <sup>[1]</sup> | 1.25            |
| 3 hrs. per day (Intermittent) | 0.80                      | 1.00                | 1.50            |
| Up to 10 hrs. per day         | 1.00                      | 1.25                | 1.75            |
| 24 hrs. per day               | 1.20                      | 1.50                | 2.00            |

**Note:** [1] Maximum momentary or starting load must not exceed 300% of gear reducer rating (rating meaning service factor of 1.0). Time specified for occasional and intermittent service refers to total operating time per day.

### Determine Selection Horsepower (HP)

$$\text{Motor HP} \times \text{Service Factor} = \text{Selection HP}$$

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

## Step 4: Verify Dimensions

Use the Dimensions information on pages 2.14–2.20 to verify that the selected Frame Size is appropriate.

## Step 5: Choose an Output Connection Method

Select keyed hollow bore or Taper-Grip® Bushing, and the associated bore size. For Taper-Grip® Bushing select a Bore Size from the Stock Bushing Bore Size Table.

## Step 6: Choose Options

Please refer to Options section 4.1. For additional available options refer to our online Product Configurator at [www.sumitomodrive.com/configurator](http://www.sumitomodrive.com/configurator)

## Step 7: Configure a Model Number

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

STOCK TAPER GRIP® BUSHING BORES

| Size | Inch Sizes   | Metric Sizes | Min. Bore*                      |
|------|--|--------------|---------------------------------|
| Z    | 1 <sup>3</sup> / <sub>16</sub> , 1 <sup>7</sup> / <sub>16</sub>  | 30, 40       | 1 <sup>3</sup> / <sub>16</sub>  |
| A    | 1 <sup>15</sup> / <sub>16</sub> , 2 <sup>3</sup> / <sub>16</sub> | 50, 55       | 1 <sup>11</sup> / <sub>16</sub> |
| B    | 2 <sup>3</sup> / <sub>16</sub> , 2 <sup>7</sup> / <sub>16</sub>  | 60, 65       | 1 <sup>15</sup> / <sub>16</sub> |
| C    | 2 <sup>7</sup> / <sub>16</sub> , 2 <sup>15</sup> / <sub>16</sub> | 65, 75       | 2 <sup>3</sup> / <sub>16</sub>  |
| D    | 2 <sup>15</sup> / <sub>16</sub> , 3 <sup>7</sup> / <sub>16</sub> | 75, 85       | 2 <sup>7</sup> / <sub>16</sub>  |
| E    | 3 <sup>7</sup> / <sub>16</sub> , 3 <sup>15</sup> / <sub>16</sub> | 90, 100      | 2 <sup>15</sup> / <sub>16</sub> |

### Select a Frame Size

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

| Output RPM                 | 20.0          | 17.2          | 14.3          | 11.6          | 9.80          | 8.47          | 7.04          | 5.75          | 4.20          | Frame Size |
|----------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|------------|
| Ratio                      | 88            | 102           | 123           | 151           | 179           | 207           | 249           | 305           | 417           |            |
| Input Power HP (kW)        | 0.899 (0.671) | 0.838 (0.625) | 0.821 (0.602) | 0.584 (0.435) | 0.444 (0.332) | 0.414 (0.309) | 0.337 (0.252) | 0.283 (0.211) | 0.168 (0.125) | Z6090      |
| Output Torque in-lbs (N-m) | 2610 (295)    | 2830 (319)    | 3330 (377)    | 2920 (330)    | 2640 (298)    | 2840 (321)    | 2790 (315)    | 2870 (324)    | 2320 (262)    |            |
| Input Power HP (kW)        | 1.16 (0.866)  | 1.05 (0.784)  | 0.960 (0.716) | 0.781 (0.583) | 0.566 (0.422) | 0.500 (0.373) | 0.404 (0.301) | 0.386 (0.288) | 0.202 (0.151) | Z6095      |
| Output Torque in-lbs (N-m) | 3380 (381)    | 3540 (400)    | 3980 (441)    | 3900 (441)    | 3350 (376)    | 3430 (390)    | 3340 (377)    | 3900 (441)    | 2800 (316)    |            |
| Input Power HP (kW)        | 1.70 (1.27)   | 1.62 (1.21)   | 1.31 (0.975)  | 0.584 (0.436) | 0.580 (0.433) | 0.282 (0.210) | 0.584 (0.436) | 0.580 (0.433) | 0.282 (0.210) | A6100      |
| Output Torque in-lbs (N-m) | 4950 (559)    | 5470 (618)    | 5330 (601)    | 4820 (545)    | 5870 (663)    | 3900 (440)    | 4820 (545)    | 5870 (663)    | 3900 (440)    |            |
| Input Power HP (kW)        | 2.24 (1.67)   | 2.13 (1.59)   | 1.61 (1.20)   | 0.752 (0.561) | 0.757 (0.565) | 0.383 (0.286) | 0.752 (0.561) | 0.757 (0.565) | 0.383 (0.286) | A6105      |
| Output Torque in-lbs (N-m) | 6510 (735)    | 7190 (812)    | 6540 (738)    | 6210 (701)    | 7660 (866)    | 5300 (599)    | 6210 (701)    | 7660 (866)    | 5300 (599)    |            |

2 ...to your SELECTION HP...

3 ...to find your FRAME SIZE

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



For special circumstances affecting Frame Size selection such as:

- Overhung Load
- Shock Loading

Consult Appendix, pages 5.7.

# Configure a Model Number

# Nomenclature

### Output Shaft Orientation

| Type       | Prefix |
|------------|--------|
| Horizontal | H      |
| Vertical   | V      |

### Mounting Style

| Type                               | Prefix |
|------------------------------------|--------|
| Flange (Keyed Hollow Bore) pg. 4.3 | F      |
| Shaft Mount (Hollow Shaft)         | Y      |

### Input Connection

| Input Connection                 | Prefix |
|----------------------------------|--------|
| C-Face Adapter with jaw coupling | J      |
| Quill Hollow Input with bushing  | X      |
| Free Input Shaft                 |        |

### Modification

|          | Prefix |
|----------|--------|
| Special  | S      |
| Standard |        |

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

- Motor frame size for input adapter or Quill Hollow Input.
- Taper Grip Bushing or Keyed Hollow Bore diameter (refer to pages 4.2 to 4.3 for diameters)
- Optional conduit box positions must be specified, or standard is provided, refer to page 5.13
- Optional Industry Package, refer to page 4.6
- Specify type for nonstandard torque arm or no torque arm

### Frame Size

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

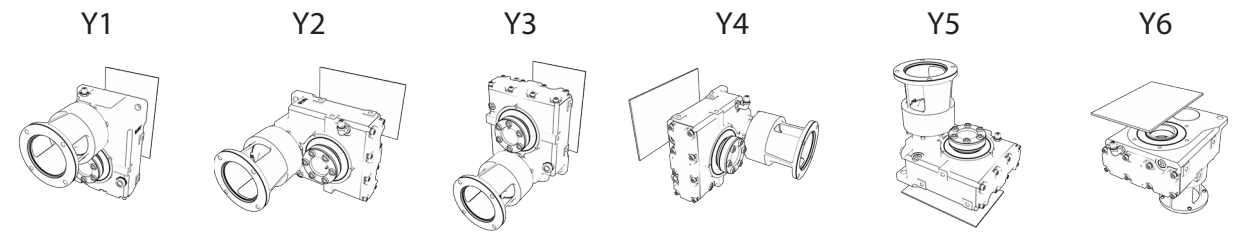
### Shaft Specifications

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

### Reducer Specification

| Type  | Suffix |
|---|--------|
| Standard  |        |
| High Capacity Bearing (required for screw conveyor) | R1     |

### Mounting Positions (Please see page 1.9 for additional mounting positions.)



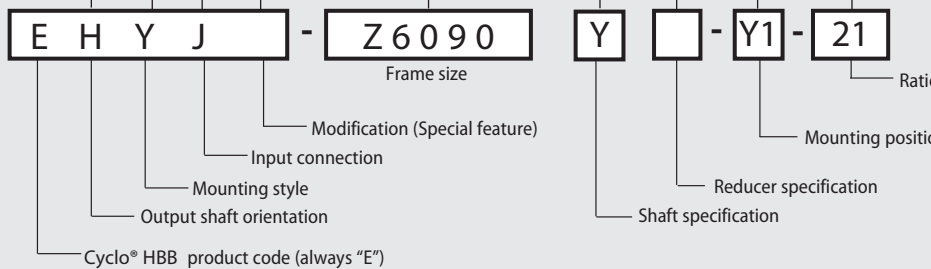
### Nominal Total Ratio

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

### Nomenclature Example:

**EHYJ - Z6090Y - Y1 - 21**

- |                                       |                                     |
|---------------------------------------|-------------------------------------|
| <b>E</b> – Cyclo® Helical Buddybox    | <b>Z6090</b> – Frame Size           |
| <b>H</b> – Horizontal Output          | <b>Y</b> – Inch Shaft Specification |
| <b>Y</b> – Shaft Mount (Hollow Shaft) | <b>Y1</b> – Mounting Position       |
| <b>J</b> – C-Face Input               | <b>21</b> – Ratio                   |



Cyclo® HBB  
Nomenclature

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Nomenclature

# AGMA Load Classifications

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

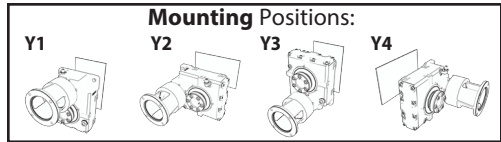
U = Uniform Load      H = Heavy Shock  
M = Moderate Shock    S = Contact Sumitomo

Cydo® HBB  
AGMA  
Tables

Cydo® HBB

# Single Reduction Selection Tables

1750 RPM - Quill, C-Face, and Free Input



Single Reduction Selection Tables  
 Y1, Y2, Y3, Y4: Pages 2.8 - 2.9  
 Y5, Y6: Pages 2.10 - 2.11  
 Double Reduction Selection Tables  
 Y1, Y2, Y3, Y4, Y5, Y6: Pages 2.12 - 2.13

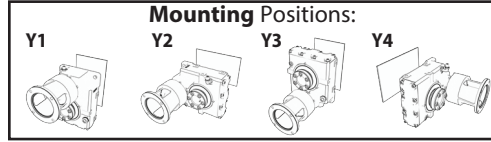
C-Face Dimensions Pages:  
 Single Reduction 2.14-2.15  
 Double Reduction 2.16-2.218

Quill Dimensions Pages:  
 Single Reduction 2.19  
 Double Reduction 2.20

| Output RPM                 | 167          | 100          | 83.3         | 62.5         | 45.5         | 38.5         | 33.3         | 29.4         | 23.8         | Frame Size |
|----------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|------------|
| Ratio                      | 11           | 18           | 21           | 28           | 39           | 46           | 53           | 60           | 74           |            |
| <b>Input Power HP (kW)</b> |              |              | 1.54 (1.15)  | 1.54 (1.15)  | 1.54 (1.15)  | 1.54 (1.15)  | 1.54 (1.15)  | 1.54 (1.15)  | 1.02 (0.758) | Z6090      |
| Output Torque in-lbs (N-m) |              |              | 1070 (121)   | 1430 (162)   | 1970 (222)   | 2320 (262)   | 2680 (303)   | 3040 (343)   | 2480 (280)   |            |
| <b>Input Power HP (kW)</b> |              |              | 2.03 (1.52)  | 2.03 (1.52)  | 2.03 (1.52)  | 2.03 (1.52)  | 2.03 (1.52)  | 1.98 (1.47)  | 1.60 (1.19)  | Z6095      |
| Output Torque in-lbs (N-m) |              |              | 1420 (160)   | 1890 (213)   | 2600 (293)   | 3070 (347)   | 3540 (400)   | 3900 (441)   | 3900 (441)   |            |
| <b>Input Power HP (kW)</b> | 3.15 (2.35)  | 3.28 (2.45)  | 3.15 (2.35)  | 3.15 (2.35)  | 3.15 (2.35)  | 3.15 (2.35)  | 3.15 (2.35)  | 2.66 (1.99)  | 2.58 (1.93)  | A6100      |
| Output Torque in-lbs (N-m) | 1100 (124)   | 1910 (216)   | 2200 (248)   | 2930 (331)   | 4020 (455)   | 4760 (537)   | 5490 (620)   | 5260 (594)   | 6300 (712)   |            |
| <b>Input Power HP (kW)</b> | 4.26 (3.18)  | 4.44 (3.31)  | 4.26 (3.18)  | 4.26 (3.18)  | 4.26 (3.18)  | 4.26 (3.18)  | 4.26 (3.18)  | 3.29 (2.46)  | 3.13 (2.34)  | A6105      |
| Output Torque in-lbs (N-m) | 1490 (168)   | 2580 (292)   | 2970 (336)   | 3960 (448)   | 5450 (616)   | 6440 (728)   | 7430 (840)   | 6510 (735)   | 7650 (864)   |            |
| <b>Input Power HP (kW)</b> | 6.80 (5.07)  | 6.94 (5.18)  | 6.80 (5.07)  | 6.80 (5.07)  | 6.80 (5.07)  | 6.80 (5.07)  | 6.80 (5.07)  | 6.80 (5.07)  | 5.31 (3.96)  | B6120      |
| Output Torque in-lbs (N-m) | 2370 (268)   | 4040 (456)   | 4740 (536)   | 6320 (714)   | 8690 (982)   | 10300 (1160) | 11900 (1340) | 13400 (1520) | 13000 (1460) |            |
| <b>Input Power HP (kW)</b> | 7.79 (5.81)  | 7.96 (5.93)  | 7.79 (5.81)  | 9.31 (6.95)  | 7.94 (5.92)  | 7.94 (5.92)  | 7.94 (5.92)  | 7.59 (5.66)  | 6.42 (4.79)  | B6125      |
| Output Torque in-lbs (N-m) | 2720 (307)   | 4630 (523)   | 5430 (614)   | 8660 (979)   | 10100 (1150) | 12000 (1360) | 13800 (1560) | 15000 (1690) | 15700 (1770) |            |
| <b>Input Power HP (kW)</b> | 16.8 (12.5)  | 17.4 (13.0)  | 17.4 (13.0)  | 17.4 (13.0)  | 17.4 (13.0)  | 17.4 (13.0)  | 16.1 (12.0)  | 13.5 (10.1)  | 11.6 (8.66)  | C6140      |
| Output Torque in-lbs (N-m) | 5860 (662)   | 10100 (1140) | 12200 (1370) | 16200 (1830) | 22300 (2520) | 26300 (2980) | 28100 (3170) | 26700 (3020) | 28300 (3200) |            |
| <b>Input Power HP (kW)</b> | 19.5 (14.6)  | 20.2 (15.1)  | 20.2 (15.1)  | 20.2 (15.1)  | 20.2 (15.1)  | 20.2 (15.1)  | 18.0 (13.4)  | 15.9 (11.8)  | 12.8 (9.57)  | C6145      |
| Output Torque in-lbs (N-m) | 6810 (769)   | 11800 (1330) | 14100 (1600) | 18800 (2130) | 25900 (2930) | 30500 (3450) | 31300 (3540) | 31300 (3540) | 31300 (3540) |            |
| <b>Input Power HP (kW)</b> | 26.6 (19.8)  | 27.1 (20.2)  | 27.2 (20.3)  | 26.4 (19.7)  | 26.4 (19.7)  | 26.4 (19.7)  | 25.1 (18.7)  | 17.5 (13.1)  | 17.3 (12.9)  | D6160      |
| Output Torque in-lbs (N-m) | 9270 (1050)  | 15700 (1780) | 19000 (2140) | 24600 (2770) | 33800 (3820) | 39900 (4510) | 43800 (4950) | 34600 (3910) | 42200 (4770) |            |
| <b>Input Power HP (kW)</b> | 31.6 (23.5)  | 32.1 (24.0)  | 32.2 (24.1)  | 32.2 (24.1)  | 32.2 (24.1)  | 30.3 (22.6)  | 30.3 (22.6)  | 25.3 (18.8)  | 21.5 (16.1)  | D6165      |
| Output Torque in-lbs (N-m) | 11000 (1240) | 18700 (2110) | 22500 (2540) | 30000 (3390) | 41200 (4660) | 45800 (5170) | 52800 (5970) | 49900 (5640) | 52600 (5940) |            |
| <b>Input Power HP (kW)</b> | 36.1 (26.9)  | 37.0 (27.6)  | 37.0 (27.6)  | 37.0 (27.6)  | 37.0 (27.6)  | 36.6 (27.3)  | 34.2 (25.5)  | 26.4 (19.7)  | 26.1 (19.5)  | E6170      |
| Output Torque in-lbs (N-m) | 12600 (1420) | 21500 (2430) | 25800 (2920) | 34400 (3890) | 47300 (5350) | 55300 (6240) | 59600 (6740) | 52100 (5880) | 63800 (7210) |            |
| <b>Input Power HP (kW)</b> | 39.4 (29.4)  | 40.3 (30.1)  | 40.4 (30.1)  | 40.4 (30.1)  | 40.4 (30.1)  | 40.4 (30.1)  | 40.4 (30.1)  | 32.2 (24.1)  | 31.4 (23.4)  | E6175      |
| Output Torque in-lbs (N-m) | 13700 (1550) | 23400 (2650) | 28200 (3180) | 37600 (4250) | 51700 (5840) | 61100 (6900) | 70500 (7960) | 63700 (7200) | 76600 (8650) |            |

# Single Reduction Selection Tables

1750 RPM - Quill, C-Face, and Free Input



Single Reduction Selection Tables  
 Y1, Y2, Y3, Y4: Pages 2.8 - 2.9  
 Y5, Y6: Pages 2.10 - 2.11  
 Double Reduction Selection Tables  
 Y1, Y2, Y3, Y4, Y5, Y6: Pages 2.12 - 2.13

C-Face Dimensions Pages:  
 Single Reduction 2.14-2.15  
 Double Reduction 2.16-2.218

Quill Dimensions Pages:  
 Single Reduction 2.19  
 Double Reduction 2.20

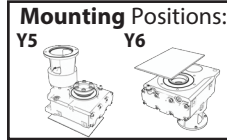
| Output RPM                 | 20.0          | 17.2          | 14.3          | 11.6          | 9.80          | 8.47          | 7.04          | 5.75          | 4.20          | Frame Size |
|----------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|------------|
| Ratio                      | 88            | 102           | 123           | 151           | 179           | 207           | 249           | 305           | 417           |            |
| <b>Input Power HP (kW)</b> | 0.899 (0.671) | 0.838 (0.625) | 0.821 (0.612) | 0.584 (0.435) | 0.444 (0.332) | 0.414 (0.309) | 0.337 (0.252) | 0.283 (0.211) | 0.168 (0.125) | Z6090      |
| Output Torque in-lbs (N-m) | 2610 (295)    | 2830 (319)    | 3340 (377)    | 2920 (330)    | 2640 (298)    | 2840 (321)    | 2790 (315)    | 2870 (324)    | 2320 (262)    |            |
| <b>Input Power HP (kW)</b> | 1.16 (0.866)  | 1.05 (0.784)  | 0.960 (0.716) | 0.781 (0.583) | 0.566 (0.422) | 0.500 (0.373) | 0.404 (0.301) | 0.386 (0.288) | 0.202 (0.151) | Z6095      |
| Output Torque in-lbs (N-m) | 3380 (381)    | 3540 (400)    | 3900 (441)    | 3900 (441)    | 3350 (379)    | 3430 (388)    | 3340 (377)    | 3900 (441)    | 2800 (316)    |            |
| <b>Input Power HP (kW)</b> | 1.70 (1.27)   | 1.62 (1.21)   | 1.31 (0.975)  | 1.05 (0.780)  | 0.751 (0.560) | 0.692 (0.516) | 0.584 (0.436) | 0.580 (0.433) | 0.282 (0.210) | A6100      |
| Output Torque in-lbs (N-m) | 4950 (559)    | 5470 (618)    | 5320 (601)    | 5230 (591)    | 4450 (503)    | 4750 (536)    | 4820 (545)    | 5870 (663)    | 3900 (440)    |            |
| <b>Input Power HP (kW)</b> | 2.24 (1.67)   | 2.13 (1.59)   | 1.61 (1.20)   | 1.45 (1.08)   | 1.04 (0.776)  | 0.949 (0.708) | 0.752 (0.561) | 0.757 (0.565) | 0.383 (0.286) | A6105      |
| Output Torque in-lbs (N-m) | 6510 (735)    | 7190 (812)    | 6540 (738)    | 7240 (818)    | 6170 (697)    | 6510 (736)    | 6210 (701)    | 7660 (866)    | 5300 (599)    |            |
| <b>Input Power HP (kW)</b> | 4.14 (3.09)   | 4.01 (2.99)   | 3.34 (2.49)   | 2.56 (1.91)   | 2.30 (1.72)   | 1.74 (1.30)   | 1.28 (0.957)  | 1.27 (0.944)  |               | B6120      |
| Output Torque in-lbs (N-m) | 12000 (1360)  | 13500 (1530)  | 13600 (1530)  | 12800 (1450)  | 13600 (1540)  | 12000 (1350)  | 10600 (1200)  | 12800 (1450)  |               |            |
| <b>Input Power HP (kW)</b> | 5.30 (3.96)   | 4.65 (3.47)   | 3.85 (2.87)   | 3.13 (2.34)   | 2.64 (1.97)   | 2.17 (1.62)   | 1.61 (1.20)   | 1.51 (1.13)   |               | B6125      |
| Output Torque in-lbs (N-m) | 15400 (1740)  | 15700 (1770)  | 15700 (1770)  | 15700 (1770)  | 15700 (1770)  | 14900 (1680)  | 13300 (1500)  | 15300 (1730)  |               |            |
| <b>Input Power HP (kW)</b> | 9.23 (6.89)   | 7.98 (5.95)   | 6.98 (5.21)   | 5.28 (3.94)   | 4.60 (3.43)   | 3.97 (2.96)   | 3.26 (2.43)   | 2.65 (1.98)   |               | C6140      |
| Output Torque in-lbs (N-m) | 26800 (3030)  | 26900 (3040)  | 28400 (3210)  | 26400 (2980)  | 27200 (3080)  | 27200 (3080)  | 26900 (3040)  | 26800 (3030)  |               |            |
| <b>Input Power HP (kW)</b> | 10.6 (7.91)   | 9.29 (6.93)   | 7.70 (5.74)   | 6.27 (4.67)   | 5.28 (3.94)   | 4.57 (3.41)   | 3.80 (2.83)   | 3.10 (2.31)   |               | C6145      |
| Output Torque in-lbs (N-m) | 30800 (3480)  | 31300 (3540)  | 31300 (3540)  | 31300 (3540)  | 31300 (3540)  | 31300 (3540)  | 31300 (3540)  | 31300 (3540)  |               |            |
| <b>Input Power HP (kW)</b> | 13.2 (9.86)   | 14.1 (10.5)   | 13.0 (9.67)   | 9.99 (7.45)   | 7.71 (5.75)   | 5.92 (4.42)   | 4.65 (3.47)   | 4.65 (3.47)   |               | D6160      |
| Output Torque in-lbs (N-m) | 38400 (4340)  | 47500 (5360)  | 52800 (5960)  | 49900 (5640)  | 45700 (5170)  | 40600 (4590)  | 38400 (4340)  | 47100 (5320)  |               |            |
| <b>Input Power HP (kW)</b> | 18.9 (14.1)   | 15.3 (11.4)   | 13.5 (10.1)   | 10.6 (7.91)   | 9.25 (6.90)   | 7.71 (5.75)   | 6.65 (4.96)   | 5.22 (3.90)   |               | D6165      |
| Output Torque in-lbs (N-m) | 54900 (6200)  | 51600 (5830)  | 54900 (6200)  | 53000 (5990)  | 54900 (6200)  | 52900 (5970)  | 54900 (6200)  | 52800 (5970)  |               |            |
| <b>Input Power HP (kW)</b> | 21.2 (15.8)   | 19.2 (14.3)   | 16.1 (12.0)   | 13.1 (9.75)   | 11.2 (8.39)   | 9.58 (7.15)   | 7.94 (5.92)   | 6.45 (4.81)   |               | E6170      |
| Output Torque in-lbs (N-m) | 61600 (6960)  | 64600 (7300)  | 65500 (7400)  | 65300 (7380)  | 66700 (7540)  | 65800 (7430)  | 65500 (7400)  | 65200 (7370)  |               |            |
| <b>Input Power HP (kW)</b> | 26.3 (19.7)   | 22.7 (16.9)   | 18.8 (14.0)   | 15.2 (11.3)   | 12.9 (9.63)   | 11.2 (8.33)   | 9.28 (6.92)   | 7.57 (5.65)   |               | E6175      |
| Output Torque in-lbs (N-m) | 76600 (8650)  | 76600 (8650)  | 76600 (8650)  | 75700 (8560)  | 76600 (8650)  | 76600 (8650)  | 76600 (8650)  | 76600 (8650)  |               |            |

Selection Tables

Selection Tables

# Single Reduction Selection Tables

## 1750 RPM - Quill, C-Face, and Free Input



Single Reduction Selection Tables  
 Y1, Y2, Y3, Y4: Pages 2.8 - 2.9  
 Y5, Y6: Pages 2.10 - 2.11  
 Double Reduction Selection Tables  
 Y1, Y2, Y3, Y4, Y5, Y6: Pages 2.12 - 2.13

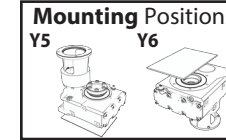
C-Face Dimensions Pages:  
 Single Reduction 2.14-2.15  
 Double Reduction 2.16-2.218

Quill Dimensions Pages:  
 Single Reduction 2.19  
 Double Reduction 2.20

| Output RPM                 | 83.3         | 62.5         | 45.5         | 38.5         | 33.3         | 29.4         | 23.8         | Frame |
|----------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|-------|
| Ratio                      | 21           | 28           | 39           | 46           | 53           | 60           | 74           | Size  |
| Input Power HP (kW)        | 1.54 (1.15)  | 1.54 (1.15)  | 1.54 (1.15)  | 1.54 (1.15)  | 1.54 (1.15)  | 1.54 (1.15)  | 1.02 (0.758) | Z6090 |
| Output Torque in-lbs (N-m) | 1070 (121)   | 1430 (162)   | 1970 (222)   | 2320 (262)   | 2680 (303)   | 3040 (343)   | 2480 (280)   |       |
| Input Power HP (kW)        | 2.03 (1.52)  | 2.03 (1.52)  | 2.03 (1.52)  | 2.03 (1.52)  | 2.03 (1.52)  | 1.98 (1.47)  | 1.60 (1.19)  | Z6095 |
| Output Torque in-lbs (N-m) | 1420 (160)   | 1890 (213)   | 2600 (293)   | 3070 (347)   | 3540 (400)   | 3900 (441)   | 3900 (441)   |       |
| Input Power HP (kW)        | 3.15 (2.35)  | 3.15 (2.35)  | 3.15 (2.35)  | 3.15 (2.35)  | 3.15 (2.35)  | 2.66 (1.99)  | 2.58 (1.93)  | A6100 |
| Output Torque in-lbs (N-m) | 2200 (248)   | 2930 (331)   | 4020 (455)   | 4760 (537)   | 5490 (620)   | 5260 (594)   | 6300 (712)   |       |
| Input Power HP (kW)        | 4.26 (3.18)  | 4.26 (3.18)  | 4.26 (3.18)  | 4.26 (3.18)  | 4.26 (3.18)  | 3.29 (2.46)  | 3.13 (2.34)  | A6105 |
| Output Torque in-lbs (N-m) | 2970 (336)   | 3960 (448)   | 5450 (616)   | 6440 (728)   | 7430 (840)   | 6510 (735)   | 7650 (864)   |       |
| Input Power HP (kW)        | 6.80 (5.07)  | 6.80 (5.07)  | 6.80 (5.07)  | 6.80 (5.07)  | 6.80 (5.07)  | 6.80 (5.07)  | 5.31 (3.96)  | B6120 |
| Output Torque in-lbs (N-m) | 4740 (536)   | 6320 (714)   | 8690 (982)   | 10300 (1160) | 11900 (1340) | 13400 (1520) | 13000 (1460) |       |
| Input Power HP (kW)        | 7.79 (5.81)  | 9.31 (6.95)  | 7.94 (5.92)  | 7.94 (5.92)  | 7.94 (5.92)  | 7.59 (5.66)  | 6.42 (4.79)  | B6125 |
| Output Torque in-lbs (N-m) | 5430 (614)   | 8660 (979)   | 10100 (1150) | 12000 (1360) | 13800 (1560) | 15000 (1690) | 15700 (1770) |       |
| Input Power HP (kW)        | 14.9 (11.1)  | 14.9 (11.1)  | 14.9 (11.1)  | 10.2 (7.58)  | 10.2 (7.58)  | 7.45 (5.56)  | 7.45 (5.56)  | C6140 |
| Output Torque in-lbs (N-m) | 10400 (1170) | 13800 (1560) | 19000 (2150) | 15300 (1730) | 17700 (2000) | 14700 (1660) | 18200 (2050) |       |
| Input Power HP (kW)        | 14.9 (11.1)  | 14.9 (11.1)  | 14.9 (11.1)  | 10.2 (7.58)  | 10.2 (7.58)  | 7.45 (5.56)  | 7.45 (5.56)  | C6145 |
| Output Torque in-lbs (N-m) | 10400 (1170) | 13800 (1560) | 19000 (2150) | 15300 (1730) | 17700 (2000) | 14700 (1660) | 18200 (2050) |       |
| Input Power HP (kW)        |              | 20.3 (15.2)  | 20.3 (15.2)  | 14.9 (11.1)  | 14.9 (11.1)  | 14.9 (11.1)  | 10.2 (7.58)  | D6160 |
| Output Torque in-lbs (N-m) |              | 18900 (2130) | 26000 (2930) | 22500 (2540) | 26000 (2930) | 29400 (3330) | 24800 (2800) |       |
| Input Power HP (kW)        |              | 20.3 (15.2)  | 20.3 (15.2)  | 14.9 (11.1)  | 14.9 (11.1)  | 14.9 (11.1)  | 10.2 (7.58)  | D6165 |
| Output Torque in-lbs (N-m) |              | 18900 (2130) | 26000 (2930) | 22500 (2540) | 26000 (2930) | 29400 (3330) | 24800 (2800) |       |
| Input Power HP (kW)        |              |              | 19.1 (14.2)  | 19.1 (14.2)  | 16.1 (12.0)  | 13.0 (9.71)  | 13.0 (9.71)  | E6170 |
| Output Torque in-lbs (N-m) |              |              | 24400 (2760) | 28900 (3260) | 28000 (3160) | 25700 (2910) | 31800 (3590) |       |
| Input Power HP (kW)        |              |              | 19.1 (14.2)  | 19.1 (14.2)  | 16.1 (12.0)  | 13.0 (9.71)  | 13.0 (9.71)  | E6175 |
| Output Torque in-lbs (N-m) |              |              | 24400 (2760) | 28900 (3260) | 28000 (3160) | 25700 (2910) | 31800 (3590) |       |

# Single Reduction Selection Tables

## 1750 RPM - Quill, C-Face, and Free Input



Single Reduction Selection Tables  
 Y1, Y2, Y3, Y4: Pages 2.8 - 2.9  
 Y5, Y6: Pages 2.10 - 2.11  
 Double Reduction Selection Tables  
 Y1, Y2, Y3, Y4, Y5, Y6: Pages 2.12 - 2.13

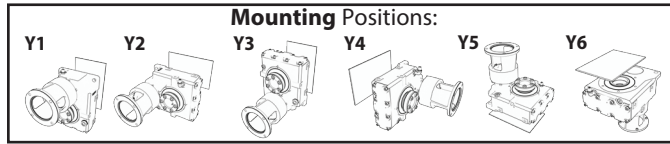
C-Face Dimensions Pages:  
 Single Reduction 2.14-2.15  
 Double Reduction 2.16-2.218

Quill Dimensions Pages:  
 Single Reduction 2.19  
 Double Reduction 2.20

| Output RPM                 | 20.0          | 17.2          | 14.3          | 11.6          | 9.80          | 8.47          | 7.04          | 5.75          | 4.20          | Frame |
|----------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|-------|
| Ratio                      | 88            | 102           | 123           | 151           | 179           | 207           | 249           | 305           | 417           | Size  |
| Input Power HP (kW)        | 0.899 (0.671) | 0.838 (0.625) | 0.821 (0.612) | 0.584 (0.435) | 0.444 (0.332) | 0.414 (0.309) | 0.337 (0.252) | 0.283 (0.211) | 0.168 (0.125) | Z6090 |
| Output Torque in-lbs (N-m) | 2610 (295)    | 2830 (319)    | 3340 (377)    | 2920 (330)    | 2640 (298)    | 2840 (321)    | 2790 (315)    | 2870 (324)    | 2320 (262)    |       |
| Input Power HP (kW)        | 1.16 (0.866)  | 1.05 (0.784)  | 0.960 (0.716) | 0.781 (0.583) | 0.566 (0.422) | 0.500 (0.373) | 0.404 (0.301) | 0.386 (0.288) | 0.202 (0.151) | Z6095 |
| Output Torque in-lbs (N-m) | 3380 (381)    | 3540 (400)    | 3900 (441)    | 3900 (441)    | 3350 (379)    | 3430 (388)    | 3340 (377)    | 3900 (441)    | 2800 (316)    |       |
| Input Power HP (kW)        | 1.70 (1.27)   | 1.62 (1.21)   | 1.31 (0.975)  | 1.05 (0.780)  | 0.751 (0.560) | 0.692 (0.516) | 0.584 (0.436) | 0.580 (0.433) | 0.282 (0.210) | A6100 |
| Output Torque in-lbs (N-m) | 4950 (559)    | 5470 (618)    | 5320 (601)    | 5230 (591)    | 4450 (503)    | 4750 (536)    | 4820 (545)    | 5870 (663)    | 3900 (440)    |       |
| Input Power HP (kW)        | 2.24 (1.67)   | 2.13 (1.59)   | 1.61 (1.20)   | 1.45 (1.08)   | 1.04 (0.776)  | 0.949 (0.708) | 0.752 (0.561) | 0.757 (0.565) | 0.383 (0.286) | A6105 |
| Output Torque in-lbs (N-m) | 6510 (735)    | 7190 (812)    | 6540 (738)    | 7240 (818)    | 6170 (697)    | 6510 (736)    | 6210 (701)    | 7660 (866)    | 5300 (599)    |       |
| Input Power HP (kW)        | 4.14 (3.09)   | 4.01 (2.99)   | 3.34 (2.49)   | 2.56 (1.91)   | 2.30 (1.72)   | 1.74 (1.30)   | 1.28 (0.957)  | 1.27 (0.944)  |               | B6120 |
| Output Torque in-lbs (N-m) | 12000 (1360)  | 13500 (1530)  | 13600 (1530)  | 12800 (1450)  | 13600 (1540)  | 12000 (1350)  | 10600 (1200)  | 12800 (1450)  |               |       |
| Input Power HP (kW)        | 5.30 (3.96)   | 4.65 (3.47)   | 3.85 (2.87)   | 3.13 (2.34)   | 2.64 (1.97)   | 2.17 (1.62)   | 1.61 (1.20)   | 1.51 (1.13)   |               | B6125 |
| Output Torque in-lbs (N-m) | 15400 (1740)  | 15700 (1770)  | 15700 (1770)  | 15700 (1770)  | 15700 (1770)  | 14900 (1680)  | 13300 (1500)  | 15300 (1730)  |               |       |
| Input Power HP (kW)        | 7.45 (5.56)   | 5.01 (3.74)   | 5.01 (3.74)   | 2.98 (2.22)   | 2.98 (2.22)   | 2.98 (2.22)   | 2.03 (1.52)   | 2.03 (1.52)   |               | C6140 |
| Output Torque in-lbs (N-m) | 21600 (2450)  | 16900 (1910)  | 20400 (2300)  | 14900 (1680)  | 17600 (1990)  | 20400 (2310)  | 16800 (1890)  | 20500 (2320)  |               |       |
| Input Power HP (kW)        | 7.45 (5.56)   | 5.01 (3.74)   | 5.01 (3.74)   | 2.98 (2.22)   | 2.98 (2.22)   | 2.98 (2.22)   | 2.03 (1.52)   | 2.03 (1.52)   |               | C6145 |
| Output Torque in-lbs (N-m) | 21600 (2450)  | 16900 (1910)  | 20400 (2300)  | 14900 (1680)  | 17600 (1990)  | 20400 (2310)  | 16800 (1890)  | 20500 (2320)  |               |       |
| Input Power HP (kW)        | 10.2 (7.58)   | 10.2 (7.58)   | 10.2 (7.58)   | 5.01 (3.74)   | 5.01 (3.74)   | 5.01 (3.74)   | 2.98 (2.22)   | 2.98 (2.22)   |               | D6160 |
| Output Torque in-lbs (N-m) | 29500 (3330)  | 34200 (3870)  | 41300 (4670)  | 25000 (2830)  | 29700 (3360)  | 34400 (3880)  | 24600 (2780)  | 30100 (3400)  |               |       |
| Input Power HP (kW)        | 10.2 (7.58)   | 10.2 (7.58)   | 10.2 (7.58)   | 5.01 (3.74)   | 5.01 (3.74)   | 5.01 (3.74)   | 2.98 (2.22)   | 2.98 (2.22)   |               | D6165 |
| Output Torque in-lbs (N-m) | 29500 (3330)  | 34200 (3870)  | 41300 (4670)  | 25000 (2830)  | 29700 (3360)  | 34400 (3880)  | 24600 (2780)  | 30100 (3400)  |               |       |
| Input Power HP (kW)        | 14.9 (11.1)   | 14.9 (11.1)   | 10.2 (7.58)   | 10.2 (7.58)   | 7.45 (5.56)   | 7.45 (5.56)   | 5.01 (3.74)   | 5.01 (3.74)   |               | E6170 |
| Output Torque in-lbs (N-m) | 43300 (4890)  | 50200 (5670)  | 41300 (4670)  | 50800 (5740)  | 44200 (4990)  | 51100 (5770)  | 41400 (4670)  | 50700 (5730)  |               |       |
| Input Power HP (kW)        | 14.9 (11.1)   | 14.9 (11.1)   | 10.2 (7.58)   | 10.2 (7.58)   | 7.45 (5.56)   | 7.45 (5.56)   | 5.01 (3.74)   | 5.01 (3.74)   |               | E6175 |
| Output Torque in-lbs (N-m) | 43300 (4890)  | 50200 (5670)  | 41300 (4670)  | 50800 (5740)  | 44200 (4990)  | 51100 (5770)  | 41400 (4670)  | 50700 (5730)  |               |       |

# Double Reduction Selection Tables

1750 RPM - Quill, C-Face, and Free Input



Single Reduction Selection Tables  
 Y1, Y2, Y3, Y4: Pages 2.8 - 2.9  
 Y5, Y6: Pages 2.10 - 2.11  
 Double Reduction Selection Tables  
 Y1, Y2, Y3, Y4, Y5, Y6: Pages 2.12 - 2.13

C-Face Dimensions Pages:  
 Single Reduction 2.14-2.15  
 Double Reduction 2.16-2.18

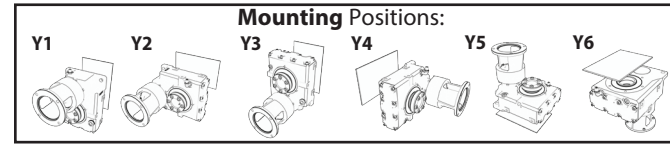
Quill Dimensions Pages:  
 Single Reduction 2.19  
 Double Reduction 2.20

| Output RPM                 | 4.81          | 4.13          | 3.50          | 3.03          | 2.56          | 2.16          | 1.83          | 1.57          | 1.33          | 1.06          | 0.894         | 0.770         | 0.684         | Frame  |
|----------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|--------|
| Ratio                      | 364           | 424           | 501           | 578           | 683           | 809           | 956           | 1117          | 1320          | 1656          | 1957          | 2272          | 2559          | Size   |
| Input Power HP (kW)        | 0.337 (0.251) | 0.290 (0.216) | 0.245 (0.183) | 0.212 (0.158) | 0.180 (0.134) | 0.152 (0.113) | 1/8* (0.1)*   | 1/8* (0.1)*   | 1/8* (0.1)*   | 1/8* (0.1)*   | 1/8* (0.1)*   | 1/8* (0.1)*   | 1/8* (0.1)*   | Z609DA |
| Output Torque in-lbs (N-m) | 3870 (437)    | 3870 (437)    | 3870 (437)    | 3870 (437)    | 3870 (437)    | 3870 (437)    | 3870 (437)    | 3870 (437)    | 3870 (437)    | 3870 (437)    | 3870 (437)    | 3870 (437)    | 3870 (437)    |        |
| Input Power HP (kW)        | 0.576 (0.429) | 0.576 (0.429) | 0.496 (0.370) | 0.430 (0.321) | 0.364 (0.271) | 0.307 (0.229) | 0.260 (0.194) | 0.222 (0.166) | 0.188 (0.140) | 0.150 (0.112) | 1/8* (0.1)*   | 1/8* (0.1)*   | 1/8* (0.1)*   | A610DA |
| Output Torque in-lbs (N-m) | 6610 (746)    | 7690 (868)    | 7820 (884)    | 7820 (884)    | 7820 (884)    | 7820 (884)    | 7820 (884)    | 7820 (884)    | 7820 (884)    | 7820 (884)    | 7820 (884)    | 7820 (884)    | 7820 (884)    |        |
| Input Power HP (kW)        | 0.576 (0.429) | 0.576 (0.429) | 0.576 (0.429) | 0.576 (0.429) | 0.576 (0.429) | 0.576 (0.429) | 0.520 (0.388) | 0.445 (0.332) | 0.377 (0.281) | 0.300 (0.224) | 0.254 (0.189) | 0.219 (0.163) | 0.194 (0.145) | B612DA |
| Output Torque in-lbs (N-m) | 6610 (746)    | 7690 (868)    | 9080 (1030)   | 10500 (1180)  | 12400 (1400)  | 14700 (1660)  | 15700 (1770)  | 15700 (1770)  | 15700 (1770)  | 15700 (1770)  | 15700 (1770)  | 15700 (1770)  | 15700 (1770)  |        |
| Input Power HP (kW)        | 1.37 (1.02)   | 1.17 (0.875)  | 0.993 (0.741) | 0.860 (0.642) | 0.728 (0.543) | 0.615 (0.458) | 0.520 (0.388) | 0.445 (0.332) | 0.377 (0.281) | 0.300 (0.224) | 0.254 (0.189) | 0.219 (0.163) | 0.194 (0.145) | B612DB |
| Output Torque in-lbs (N-m) | 15700 (1770)  | 15700 (1770)  | 15700 (1770)  | 15700 (1770)  | 15700 (1770)  | 15700 (1770)  | 15700 (1770)  | 15700 (1770)  | 15700 (1770)  | 15700 (1770)  | 15700 (1770)  | 15700 (1770)  | 15700 (1770)  |        |
| Input Power HP (kW)        | 0.576 (0.429) | 0.576 (0.429) | 0.576 (0.429) | 0.576 (0.429) | 0.576 (0.429) | 0.576 (0.429) | 0.576 (0.429) | 0.576 (0.429) | 0.576 (0.429) | 0.576 (0.429) | 0.508 (0.379) | 0.438 (0.326) | 0.388 (0.290) | C614DA |
| Output Torque in-lbs (N-m) | 6610 (746)    | 7690 (868)    | 9080 (1030)   | 10500 (1180)  | 12400 (1400)  | 14700 (1660)  | 17300 (1960)  | 20300 (2290)  | 23900 (2710)  | 30000 (3390)  | 31300 (3540)  | 31300 (3540)  | 31300 (3540)  |        |
| Input Power HP (kW)        | 2.14 (1.60)   | 2.14 (1.60)   | 1.99 (1.48)   | 1.72 (1.28)   | 1.46 (1.09)   | 1.23 (0.917)  | 1.04 (0.776)  | 0.890 (0.664) | 0.753 (0.562) | 0.600 (0.448) | 0.508 (0.379) | 0.438 (0.326) | 0.388 (0.290) | C614DB |
| Output Torque in-lbs (N-m) | 24600 (2780)  | 28600 (3230)  | 31300 (3540)  | 31300 (3540)  | 31300 (3540)  | 31300 (3540)  | 31300 (3540)  | 31300 (3540)  | 31300 (3540)  | 31300 (3540)  | 31300 (3540)  | 31300 (3540)  | 31300 (3540)  |        |
| Input Power HP (kW)        | 2.73 (2.04)   | 2.35 (1.75)   | 1.99 (1.48)   | 1.72 (1.28)   | 1.46 (1.09)   | 1.23 (0.917)  | 1.04 (0.776)  | 0.890 (0.664) | 0.753 (0.562) | 0.600 (0.448) | 0.508 (0.379) | 0.438 (0.326) | 0.388 (0.290) | C614DC |
| Output Torque in-lbs (N-m) | 31300 (3540)  | 31300 (3540)  | 31300 (3540)  | 31300 (3540)  | 31300 (3540)  | 31300 (3540)  | 31300 (3540)  | 31300 (3540)  | 31300 (3540)  | 31300 (3540)  | 31300 (3540)  | 31300 (3540)  | 31300 (3540)  |        |
| Input Power HP (kW)        | 2.14 (1.60)   | 2.14 (1.60)   | 2.14 (1.60)   | 2.14 (1.60)   | 2.13 (1.59)   | 1.80 (1.35)   | 1.54 (1.15)   | 1.31 (0.975)  | 1.04 (0.777)  | 0.881 (0.657) | 0.759 (0.566) | 0.674 (0.503) | 0.674 (0.503) | D616DA |
| Output Torque in-lbs (N-m) | 24600 (2780)  | 28600 (3230)  | 33800 (3820)  | 39000 (4410)  | 46100 (5210)  | 54300 (6140)  | 54300 (6140)  | 54300 (6140)  | 54300 (6140)  | 54300 (6140)  | 54300 (6140)  | 54300 (6140)  | 54300 (6140)  |        |
| Input Power HP (kW)        | 4.50 (3.36)   | 4.07 (3.04)   | 3.44 (2.57)   | 2.98 (2.23)   | 2.53 (1.88)   | 2.13 (1.59)   | 1.80 (1.35)   | 1.54 (1.15)   | 1.31 (0.975)  | 1.04 (0.777)  | 0.881 (0.657) | 0.759 (0.566) | 0.674 (0.503) | D616DB |
| Output Torque in-lbs (N-m) | 51600 (5830)  | 54300 (6140)  | 54300 (6140)  | 54300 (6140)  | 54300 (6140)  | 54300 (6140)  | 54300 (6140)  | 54300 (6140)  | 54300 (6140)  | 54300 (6140)  | 54300 (6140)  | 54300 (6140)  | 54300 (6140)  |        |
| Input Power HP (kW)        | 4.74 (3.53)   | 4.07 (3.04)   | 3.44 (2.57)   | 2.98 (2.23)   | 2.53 (1.88)   | 2.13 (1.59)   | 1.80 (1.35)   | 1.54 (1.15)   | 1.31 (0.975)  | 1.04 (0.777)  | 0.881 (0.657) | 0.759 (0.566) | 0.674 (0.503) | D616DC |
| Output Torque in-lbs (N-m) | 54300 (6140)  | 54300 (6140)  | 54300 (6140)  | 54300 (6140)  | 54300 (6140)  | 54300 (6140)  | 54300 (6140)  | 54300 (6140)  | 54300 (6140)  | 54300 (6140)  | 54300 (6140)  | 54300 (6140)  | 54300 (6140)  |        |
| Input Power HP (kW)        | 2.14 (1.60)   | 2.14 (1.60)   | 2.14 (1.60)   | 2.14 (1.60)   | 2.14 (1.60)   | 2.14 (1.60)   | 2.14 (1.60)   | 2.14 (1.60)   | 1.82 (1.36)   | 1.45 (1.08)   | 1.23 (0.917)  | 1.06 (0.790)  | 0.940 (0.701) | E617DA |
| Output Torque in-lbs (N-m) | 24600 (2780)  | 28600 (3230)  | 33800 (3820)  | 39000 (4410)  | 46100 (5210)  | 54600 (6170)  | 64600 (7300)  | 75500 (8530)  | 75900 (8570)  | 75900 (8570)  | 75900 (8570)  | 75900 (8570)  | 75900 (8570)  |        |
| Input Power HP (kW)        | 4.50 (3.36)   | 4.50 (3.36)   | 4.50 (3.36)   | 4.17 (3.11)   | 3.53 (2.63)   | 2.98 (2.22)   | 2.52 (1.88)   | 2.15 (1.61)   | 1.82 (1.36)   | 1.45 (1.08)   | 1.23 (0.917)  | 1.06 (0.790)  | 0.940 (0.701) | E617DB |
| Output Torque in-lbs (N-m) | 51600 (5830)  | 60100 (6790)  | 71000 (8020)  | 75900 (8570)  | 75900 (8570)  | 75900 (8570)  | 75900 (8570)  | 75900 (8570)  | 75900 (8570)  | 75900 (8570)  | 75900 (8570)  | 75900 (8570)  | 75900 (8570)  |        |
| Input Power HP (kW)        | 6.61 (4.93)   | 5.68 (4.24)   | 4.81 (3.59)   | 4.17 (3.11)   | 3.53 (2.63)   | 2.98 (2.22)   | 2.52 (1.88)   | 2.15 (1.61)   | 1.82 (1.36)   | 1.45 (1.08)   | 1.23 (0.917)  | 1.06 (0.790)  | 0.940 (0.701) | E617DC |
| Output Torque in-lbs (N-m) | 75900 (8570)  | 75900 (8570)  | 75900 (8570)  | 75900 (8570)  | 75900 (8570)  | 75900 (8570)  | 75900 (8570)  | 75900 (8570)  | 75900 (8570)  | 75900 (8570)  | 75900 (8570)  | 75900 (8570)  | 75900 (8570)  |        |

Notes: \* Minimum motor power for starting in cold temperature or high inertia application. A torque limiting device is recommended to protect the unit or driven machine.

# Double Reduction Selection Tables

1750 RPM - Quill, C-Face, and Free Input



Single Reduction Selection Tables  
 Y1, Y2, Y3, Y4: Pages 2.8 - 2.9  
 Y5, Y6: Pages 2.10 - 2.11  
 Double Reduction Selection Tables  
 Y1, Y2, Y3, Y4, Y5, Y6: Pages 2.12 - 2.13

C-Face Dimensions Pages:  
 Single Reduction 2.14-2.15  
 Double Reduction 2.16-2.18

Quill Dimensions Pages:  
 Single Reduction 2.19  
 Double Reduction 2.20

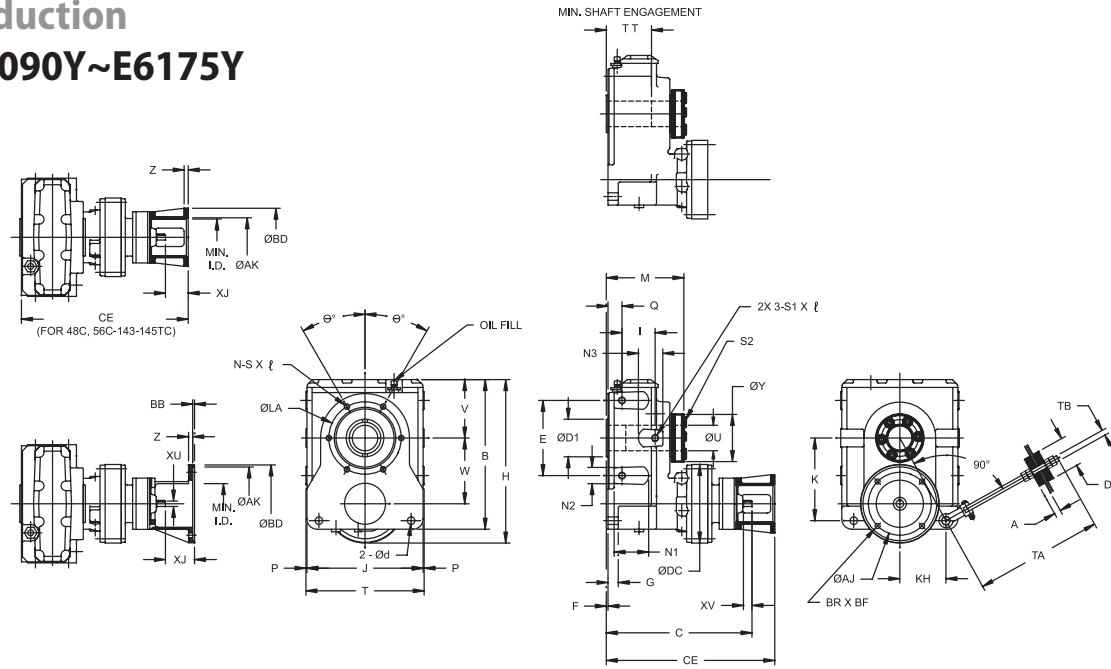
| Output RPM                 | 0.595         | 0.499         | 0.401         | 0.338        | 0.270        | 0.242        | 0.197        | 0.164        | 0.144        | 0.113        | 0.0974       | 0.0809       | 0.0661       | Frame  |
|----------------------------|---------------|---------------|---------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------|
| Ratio                      | 2944          | 3511          | 4365          | 5177         | 6472         | 7228         | 8880         | 10658        | 12184        | 15530        | 17966        | 21620        | 26492        | Size   |
| Input Power HP (kW)        | 1/8* (0.1)*   | 1/8* (0.1)*   | 1/8* (0.1)*   | 1/8* (0.1)*  | 1/8* (0.1)*  | 1/8* (0.1)*  | 1/8* (0.1)*  | 1/8* (0.1)*  | 1/8* (0.1)*  | 1/8* (0.1)*  | 1/8* (0.1)*  | 1/8* (0.1)*  | 1/8* (0.1)*  | Z609DA |
| Output Torque in-lbs (N-m) | 3870 (437)    | 3870 (437)    | 3870 (437)    | 3870 (437)   | 3870 (437)   | 3870 (437)   | 3870 (437)   | 3870 (437)   | 3870 (437)   | 3870 (437)   | 3870 (437)   | 3870 (437)   | 3870 (437)   |        |
| Input Power HP (kW)        | 1/8* (0.1)*   | 1/8* (0.1)*   | 1/8* (0.1)*   | 1/8* (0.1)*  | 1/8* (0.1)*  | 1/8* (0.1)*  | 1/8* (0.1)*  | 1/8* (0.1)*  | 1/8* (0.1)*  | 1/8* (0.1)*  | 1/8* (0.1)*  | 1/8* (0.1)*  | 1/8* (0.1)*  | A610DA |
| Output Torque in-lbs (N-m) | 7820 (884)    | 7820 (884)    | 7820 (884)    | 7820 (884)   | 7820 (884)   | 7820 (884)   | 7820 (884)   | 7820 (884)   | 7820 (884)   | 7820 (884)   | 7820 (884)   | 7820 (884)   | 7820 (884)   |        |
| Input Power HP (kW)        | 0.169 (0.126) | 0.142 (0.106) | 1/8* (0.1)*   | 1/8* (0.1)*  | 1/8* (0.1)*  | 1/8* (0.1)*  | 1/8* (0.1)*  | 1/8* (0.1)*  | 1/8* (0.1)*  | 1/8* (0.1)*  | 1/8* (0.1)*  | 1/8* (0.1)*  | 1/8* (0.1)*  | B612DA |
| Output Torque in-lbs (N-m) | 15700 (1770)  | 15700 (1770)  | 15700 (1770)  | 15700 (1770) | 15700 (1770) | 15700 (1770) | 15700 (1770) | 15700 (1770) | 15700 (1770) | 15700 (1770) | 15700 (1770) | 15700 (1770) | 15700 (1770) |        |
| Input Power HP (kW)        | 0.169 (0.126) | 0.142 (0.106) | 1/8* (0.1)*   | 1/8* (0.1)*  | 1/8* (0.1)*  | 1/8* (0.1)*  | 1/8* (0.1)*  | 1/8* (0.1)*  | 1/8* (0.1)*  | 1/8* (0.1)*  | 1/8* (0.1)*  | 1/8* (0.1)*  | 1/8* (0.1)*  | B612DB |
| Output Torque in-lbs (N-m) | 15700 (1770)  | 15700 (1770)  | 15700 (1770)  | 15700 (1770) | 15700 (1770) | 15700 (1770) | 15700 (1770) | 15700 (1770) | 15700 (1770) | 15700 (1770) | 15700 (1770) | 15700 (1770) | 15700 (1770) |        |
| Input Power HP (kW)        | 0.338 (0.252) | 0.283 (0.211) | 1/4* (0.2)*   | 1/4* (0.2)*  | 1/4* (0.2)*  | 1/4* (0.2)*  | 1/4* (0.2)*  | 1/4* (0.2)*  | 1/4* (0.2)*  | 1/4* (0.2)*  | 1/4* (0.2)*  | 1/4* (0.2)*  | 1/4* (0.2)*  | C614DA |
| Output Torque in-lbs (N-m) | 31300 (3540)  | 31300 (3540)  | 31300 (3540)  | 31300 (3540) | 31300 (3540) | 31300 (3540) | 31300 (3540) | 31300 (3540) | 31300 (3540) | 31300 (3540) | 31300 (3540) | 31300 (3540) | 31300 (3540) |        |
| Input Power HP (kW)        | 0.338 (0.252) | 0.283 (0.211) | 1/4* (0.2)*   | 1/4* (0.2)*  | 1/4* (0.2)*  | 1/4* (0.2)*  | 1/4* (0.2)*  | 1/4* (0.2)*  | 1/4* (0.2)*  | 1/4* (0.2)*  | 1/4* (0.2)*  | 1/4* (0.2)*  | 1/4* (0.2)*  | C614DB |
| Output Torque in-lbs (N-m) | 31300 (3540)  | 31300 (3540)  | 31300 (3540)  | 31300 (3540) | 31300 (3540) | 31300 (3540) | 31300 (3540) | 31300 (3540) | 31300 (3540) | 31300 (3540) | 31300 (3540) | 31300 (3540) | 31300 (3540) |        |
| Input Power HP (kW)        | 0.338 (0.252) | 0.283 (0.211) | 1/4* (0.2)*   | 1/4* (0.2)*  | 1/4* (0.2)*  | 1/4* (0.2)*  | 1/4* (0.2)*  | 1/4* (0.2)*  | 1/4* (0.2)*  | 1/4* (0.2)*  | 1/4* (0.2)*  | 1/4* (0.2)*  | 1/4* (0.2)*  | C614DC |
| Output Torque in-lbs (N-m) | 31300 (3540)  | 31300 (3540)  | 31300 (3540)  | 31300 (3540) | 31300 (3540) | 31300 (3540) | 31300 (3540) | 31300 (3540) | 31300 (3540) | 31300 (3540) | 31300 (3540) | 31300 (3540) | 31300 (3540) |        |
| Input Power HP (kW)        | 0.586 (0.437) | 1/2* (0.4)*   | 1/2* (0.4)*   | 1/2* (0.4)*  | 1/2* (0.4)*  | 1/4* (0.2)*  | 1/4* (0.2)*  | 1/4* (0.2)*  | 1/4* (0.2)*  | 1/4* (0.2)*  | 1/4* (0.2)*  | 1/4* (0.2)*  | 1/4* (0.2)*  | D616DA |
| Output Torque in-lbs (N-m) | 54300 (6140)  | 54300 (6140)  | 54300 (6140)  | 54300 (6140) | 54300 (6140) | 54300 (6140) | 54300 (6140) | 54300 (6140) | 54300 (6140) | 54300 (6140) | 54300 (6140) | 54300 (6140) | 54300 (6140) |        |
| Input Power HP (kW)        | 0.586 (0.437) | 1/2* (0.4)*   | 1/2* (0.4)*   | 1/2* (0.4)*  | 1/2* (0.4)*  | 1/4* (0.2)*  | 1/4* (0.2)*  | 1/4* (0.2)*  | 1/4* (0.2)*  | 1/4* (0.2)*  | 1/4* (0.2)*  | 1/4* (0.2)*  | 1/4* (0.2)*  | D616DB |
| Output Torque in-lbs (N-m) | 54300 (6140)  | 54300 (6140)  | 54300 (6140)  | 54300 (6140) | 54300 (6140) | 54300 (6140) | 54300 (6140) | 54300 (6140) | 54300 (6140) | 54300 (6140) | 54300 (6140) | 54300 (6140) | 54300 (6140) |        |
| Input Power HP (kW)        | 0.586 (0.437) | 1/2* (0.4)*   | 1/2* (0.4)*   | 1/2* (0.4)*  | 1/2* (0.4)*  | 1/4* (0.2)*  | 1/4* (0.2)*  | 1/4* (0.2)*  | 1/4* (0.2)*  | 1/4* (0.2)*  | 1/4* (0.2)*  | 1/4* (0.2)*  | 1/4* (0.2)*  | D616DC |
| Output Torque in-lbs (N-m) | 54300 (6140)  | 54300 (6140)  | 54300 (6140)  | 54300 (6140) | 54300 (6140) | 54300 (6140) | 54300 (6140) | 54300 (6140) | 54300 (6140) | 54300 (6140) | 54300 (6140) | 54300 (6140) | 54300 (6140) |        |
| Input Power HP (kW)        | 0.817 (0.610) | 0.685 (0.511) | 0.551 (0.411) | 1/2* (0.4)*  | 1/2* (0.4)*  | 1/2* (0.4)*  | 1/2* (0.4)*  | 1/4* (0.2)*  | 1/4* (0.2)*  | 1/4* (0.2)*  | 1/4* (0.2)*  | 1/4* (0.2)*  | 1/4* (0.2)*  | E617DA |
| Output Torque in-lbs (N-m) | 75900 (8570)  | 75900 (8570)  | 7590          |              |              |              |              |              |              |              |              |              |              |        |

# C-Face Dimensions

## Single Reduction EHY(J)-Z6090Y~E6175Y

# C-Face Dimensions

## Single Reduction EHY(J)-Z6090Y~E6175Y



All dimensions are in inches.

| Model | ØL          | Ø°   | N | S x L             | S1 x L            | XU         | XV        | Key                                       | Wt. lb (kg) |
|-------|-------------|------|---|-------------------|-------------------|------------|-----------|---|-------------|
| Z609  | 4.72 (120)  | 0    | 4 | M10x0.79 (M10x20) | M10x0.79 (M10x20) | 0.625 (16) | 0.98 (25) | 3/16 x 3/16 x 0.75 (4.762 x 4.762 x 19)   | 62 (28)     |
| A610  | 6.10 (155)  | 30   | 6 | M12x0.87 (M12x22) | M12x0.87 (M12x22) | 0.750 (19) | 1.38 (35) | 3/16 x 3/16 x 1.02 (4.762 x 4.762 x 26)   | 85 (39)     |
| B612  | 6.89 (175)  |      |   | M16x1.02 (M16x26) | M16x1.02 (M16x26) | 0.875 (22) | 1.57 (40) | 3/16 x 3/16 x 1.38 (4.762 x 4.762 x 35)   | 154 (70)    |
| C614  | 8.35 (212)  |      |   | M20x1.38 (M20x35) | M20x1.38 (M20x35) | 1.125 (29) | 1.77 (45) | 1/4 x 1/4 x 1.77 (6.35 x 6.35 x 45)       | 254 (115)   |
| D616  | 10.04 (255) |      |   | M24x1.57 (M24x40) | M24x1.57 (M24x40) | 1.375 (35) | 2.17 (55) | 5/16 x 5/16 x 2.17 (7.9375 x 7.9375 x 55) | 459 (208)   |
| E617  | 11.02 (280) | 22.5 | 8 |                   |                   |            |           |   | 626 (284)   |

| Model | NEMA C-Face | ØAJ         | ØAK         | ØBD         | BB       | BF        | BR | CE          | XJ         | Z         | Min. ID    | Wt. lb (kg) |
|-------|-------------|-------------|-------------|-------------|----------|-----------|----|-------------|------------|-----------|------------|-------------|
| Z609  | 42C         | 3.75 (95)   | 3.00 (76)   | 4.33 (110)  |          | 0.28 (7)  |    | 10.87 (276) | 1.78 (45)  |           | 2.44 (62)  | 68 (31)     |
|       | 48C         |             |             |             |          |           |    | 11.25 (286) | 2.16 (55)  |           |            |             |
|       | 56-145TC    | 5.87 (149)  | 4.50 (114)  | 6.69 (170)  |          | 0.43 (11) |    | 11.72 (298) | 2.63 (67)  |           | 4.21 (107) | 70 (32)     |
| A610  | 48C         | 3.75 (95)   | 3.00 (76)   | 4.33 (110)  |          | 0.28 (7)  |    | 12.08 (307) | 2.16 (55)  | 0.47 (12) | 2.44 (62)  | 90 (41)     |
|       | 56-145TC    | 5.87 (149)  | 4.50 (114)  | 6.69 (170)  |          | 0.43 (11) |    | 12.55 (319) | 2.63 (67)  |           | 4.21 (107) | 92 (42)     |
|       | 182-184TC   | 7.25 (184)  | 8.50 (216)  | 8.98 (228)  | 0.22 (6) | 0.55 (14) |    | 13.37 (340) | 3.45 (88)  |           | 5.43 (138) | 96 (44)     |
| B612  | 56-145TC    | 5.87 (149)  | 4.50 (114)  | 6.69 (170)  |          | 0.43 (11) |    | 14.65 (372) | 2.63 (67)  |           | 4.21 (107) | 163 (74)    |
|       | 182-184TC   | 7.25 (184)  | 8.50 (216)  | 8.98 (228)  | 0.22 (6) | 0.55 (14) |    | 15.40 (391) | 3.37 (86)  |           | 5.43 (138) | 167 (76)    |
|       | 213-215TC   |             |             |             |          |           |    | 16.40 (417) | 4.37 (111) | 1.47 (37) |            | 176 (80)    |
| C614  | 56-145TC    | 5.87 (149)  | 4.50 (114)  | 6.69 (170)  |          | 0.43 (11) |    | 17.49 (444) | 2.63 (67)  | 0.47 (12) | 4.21 (107) | 266 (121)   |
|       | 182-184TC   |             |             |             |          | 0.59 (15) |    | 18.24 (463) | 3.37 (86)  |           | 5.43 (138) | 270 (122)   |
|       | 213-215TC   | 7.25 (184)  | 8.50 (216)  | 8.98 (228)  | 0.22 (6) | 0.55 (14) |    | 19.24 (489) | 4.37 (111) | 1.47 (37) |            | 279 (127)   |
|       | 254-256TC   |             |             |             |          |           |    | 19.79 (503) | 4.93 (125) | 0.57 (14) | 5.08 (129) |             |
| D616  | 56-145TC    | 5.87 (149)  | 4.50 (114)  | 6.69 (170)  |          | 0.43 (11) |    | 20.50 (521) | 2.63 (67)  | 0.47 (12) | 4.21 (107) | 500 (227)   |
|       | 182-184TC   |             |             |             |          |           |    | 21.25 (540) | 3.37 (86)  | 0.57 (14) |            | 505 (229)   |
|       | 213-215TC   | 7.25 (184)  | 8.50 (216)  | 8.98 (228)  |          |           |    | 21.87 (555) | 4.00 (102) | 1.20 (30) | 5.71 (145) | 511 (232)   |
|       | 254-256TC   |             |             |             |          |           |    | 22.63 (575) | 4.75 (121) |           |            | 507 (230)   |
| E617  | 284-286TC   | 9.00 (229)  | 10.50 (267) | 11.10 (282) | 0.22 (6) | 0.55 (14) |    | 23.65 (601) | 5.77 (147) | 0.57 (14) | 7.87 (200) | 505 (229)   |
|       | 182-184TC   |             |             |             |          |           |    | 23.38 (594) | 3.38 (86)  |           |            | 670 (304)   |
|       | 213-215TC   | 7.25 (184)  | 8.50 (216)  | 8.98 (228)  |          |           |    | 24.00 (610) | 4.00 (102) | 1.20 (30) | 5.71 (145) | 676 (307)   |
|       | 254-256TC   |             |             |             |          |           |    | 24.75 (629) | 4.75 (121) | 0.57 (14) |            | 672 (305)   |
|       | 324-326TC   | 11.00 (279) | 12.50 (318) | 14.17 (360) |          | 0.71 (18) |    | 25.44 (646) | 5.44 (138) | 0.59 (15) |            | 677 (307)   |

All dimensions are in inches (mm).

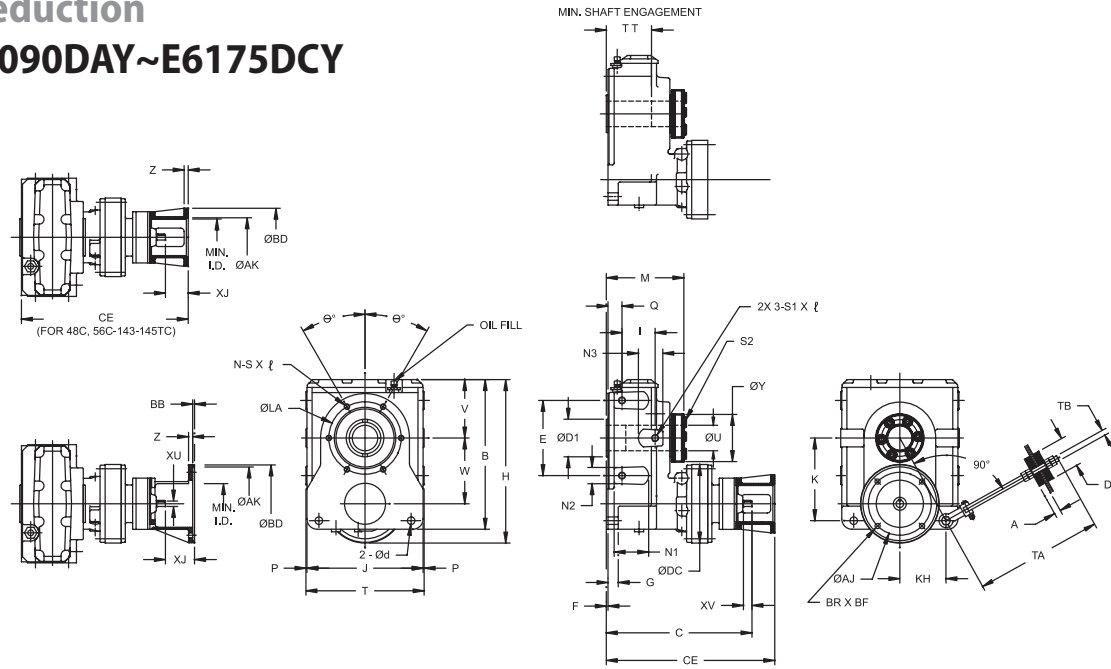
| Model | B             | C           | E           | F        | G         | H           | I           | J           | K            | M            | P        | Q           | T           | TT          | ØU            |                |                |
|-------|---------------|-------------|-------------|----------|-----------|-------------|-------------|-------------|--------------|--------------|----------|-------------|-------------|-------------|---------------|----------------|----------------|
|       |               |             |             |          |           |             |             |             |              |              |          |             |             |             | Max (Std)     | Min            |                |
| Z609  | 11.00 (279.5) | 9.09 (231)  | 5.51 (140)  | 0.20 (5) | 0.79 (20) | 11.87 (301) | 2.20 (56)   | 8.31 (211)  | 6.18 (157)   | 6.06 (154)   | 0.12 (3) | 1.06 (27)   | 8.54 (217)  | 4.43 (113)  | 1-7/16 (36.5) | 1-3/16 (30.2)  |                |
| A610  | 11.83 (300.5) | 9.92 (252)  | 5.91 (150)  |          |           | 12.70 (323) | 2.60 (66)   | 9.17 (233)  | 6.44 (163.5) | 6.61 (168)   |          | 1.14 (29)   | 9.41 (239)  | 4.96 (126)  | 2-3/16 (55.6) | 1-11/16 (42.9) |                |
| B612  | 14.45 (367)   | 12.03 (306) | 7.48 (190)  |          |           | 0.98 (25)   | 16.10 (409) | 3.39 (86)   | 11.42 (290)  | 7.97 (202.5) |          | 7.64 (194)  | 1.22 (31)   | 11.65 (296) | 5.63 (143)    | 2-7/16 (61.9)  | 1-15/16 (49.2) |
| C614  | 17.24 (438)   | 14.86 (377) | 8.66 (220)  |          |           | 1.18 (30)   | 18.84 (479) | 3.82 (97)   | 13.39 (340)  | 9.53 (242)   |          | 9.17 (233)  | 1.61 (41)   | 13.62 (346) | 7.32 (186)    | 2-15/16 (74.6) | 2-3/16 (55.6)  |
| D616  | 21.22 (539)   | 17.87 (454) | 9.84 (250)  | 0.28 (7) | 1.38 (35) | 23.94 (608) | 4.49 (114)  | 16.77 (426) | 11.54 (293)  | 10.20 (259)  | 0.20 (5) | 1.77 (45)   | 17.17 (436) | 8.03 (204)  | 3-7/16 (87.3) | 2-7/16 (65.1)  |                |
| E617  | 24.02 (610)   | 20.00 (508) | 11.81 (300) |          |           | 1.77 (45)   | 26.85 (682) | 5.00 (127)  | 18.90 (480)  | 13.07 (332)  |          | 10.98 (279) | 1.97 (50)   | 19.29 (490) | 8.82 (224)    | 3-15/16 (100)  | 2-15/16 (74.6) |

| Model | V            | W           | ØY         | Ød        | ØD1        | ØDC         | KH         | N1         | N2        | N3         | S2  | TA          | A           | D         | TB  |
|-------|--------------|-------------|------------|-----------|------------|-------------|------------|------------|-----------|------------|-----|-------------|-------------|-----------|-----|
| Z609  | 4.23 (107.5) | 4.69 (119)  | 3.23 (82)  | 0.55 (14) | 2.56 (65)  | 5.91 (150)  | 3.54 (90)  | 1.02 (26)  | 1.02 (26) |            | M10 | 17.50 (445) | 0.63 (16)   | 2.36 (60) | M20 |
| A610  | 4.61 (117)   | 5.14 (131)  | 4.09 (104) | 0.71 (18) | 3.35 (85)  | 3.74 (95)   | 1.10 (28)  | 1.10 (28)  |           |            | M12 | 17.87 (454) |             |           |     |
| B612  | 5.69 (144.5) | 6.40 (163)  | 4.49 (114) |           | 3.94 (100) | 8.03 (204)  | 4.33 (110) | 1.34 (34)  | 1.26 (32) |            |     | M16         | 18.37 (467) |           |     |
| C614  | 6.73 (171)   | 7.58 (193)  | 5.43 (138) | 0.87 (22) | 4.33 (110) | 9.06 (230)  | 5.31 (135) | 3.98 (101) | 2.05 (52) | 2.83 (72)  |     | 19.50 (495) | 0.75 (19)   | 3.54 (90) | M24 |
| D616  | 8.43 (214)   | 9.61 (244)  | 5.98 (152) | 1.02 (26) | 5.12 (130) | 11.81 (300) | 6.38 (162) | 3.62 (92)  | 2.36 (60) | 3.62 (92)  |     | 20.25 (514) |             |           |     |
| E617  | 9.45 (240)   | 10.71 (272) | 6.69 (170) | 1.30 (33) | 5.91 (150) | 13.39 (340) | 7.09 (180) | 3.82 (97)  | 2.44 (62) | 3.94 (100) |     |             |             |           |     |

# C-Face Dimensions

## Double Reduction

### EHY(J)-Z6090DAY~E6175DCY



All dimensions are in inches (mm).

| Model  | B                | C              | E              | F           | G            | H              | I              | J              | K               | M              | P           | Q             | T              | TT             | ØU                |                   |                   |  |
|--------|------------------|----------------|----------------|-------------|--------------|----------------|----------------|----------------|-----------------|----------------|-------------|---------------|----------------|----------------|-------------------|-------------------|-------------------|--|
|        |                  |                |                |             |              |                |                |                |                 |                |             |               |                |                | Max (Std)         | Min               |                   |  |
| Z609DA | 11.00<br>(279.5) | 10.73<br>(273) | 5.51<br>(140)  | 0.20<br>(5) | 0.79<br>(20) | 11.87<br>(301) | 2.20<br>(56)   | 8.31<br>(211)  | 6.18<br>(157)   | 6.06<br>(154)  | 0.12<br>(3) | 1.06<br>(27)  | 8.54<br>(217)  | 4.43<br>(113)  | 1-7/16<br>(36.5)  | 1-3/16<br>(30.2)  |                   |  |
| A610DA | 11.83<br>(300.5) | 11.87<br>(301) | 5.91<br>(150)  |             |              | 12.70<br>(323) | 2.60<br>(66)   | 9.17<br>(233)  | 6.44<br>(163.5) | 6.61<br>(168)  |             | 1.14<br>(29)  | 9.41<br>(239)  | 4.96<br>(126)  | 2-3/16<br>(55.6)  | 1-11/16<br>(42.9) |                   |  |
| B612DA | 14.45<br>(367)   | 13.37<br>(340) | 7.48<br>(190)  |             |              | 0.98<br>(25)   | 16.10<br>(409) | 3.39<br>(86)   | 11.42<br>(290)  | 7.97<br>(202)  |             | 7.64<br>(194) | 1.22<br>(31)   | 11.65<br>(296) | 5.63<br>(143)     | 2-7/16<br>(61.9)  | 1-15/16<br>(49.2) |  |
| B612DB |                  | 14.10<br>(358) |                |             |              |                |                |                |                 |                |             |               |                |                |                   |                   |                   |  |
| C614DA |                  | 15.91<br>(404) |                |             |              |                |                |                |                 |                |             |               |                |                |                   |                   |                   |  |
| C614DB | 17.24<br>(438)   | 16.54<br>(420) | 8.66<br>(220)  |             | 1.18<br>(30) | 18.84<br>(479) | 3.82<br>(97)   | 13.39<br>(340) | 9.53<br>(242)   | 9.17<br>(233)  |             | 1.61<br>(41)  | 13.62<br>(346) | 7.32<br>(186)  | 2-15/16<br>(74.6) | 2-3/16<br>(55.6)  |                   |  |
| C614DC |                  | 16.78<br>(426) |                |             |              |                |                |                |                 |                |             |               |                |                |                   |                   |                   |  |
| D616DA |                  | 18.68<br>(474) |                |             |              |                |                |                |                 |                |             |               |                |                |                   |                   |                   |  |
| D616DB | 21.22<br>(539)   | 18.92<br>(481) | 9.84<br>(250)  | 0.28<br>(7) | 1.38<br>(35) | 23.94<br>(608) | 4.49<br>(114)  | 16.77<br>(426) | 11.54<br>(293)  | 10.20<br>(259) |             | 1.77<br>(45)  | 17.17<br>(436) | 8.03<br>(204)  | 3-7/16<br>(87.3)  | 2-7/16<br>(61.9)  |                   |  |
| D616DC |                  | 19.80<br>(503) |                |             |              |                |                |                |                 |                |             |               |                |                |                   |                   |                   |  |
| E617DA |                  | 20.06<br>(510) |                |             |              |                |                |                |                 |                |             |               |                |                |                   |                   |                   |  |
| E617DB | 24.02<br>(610)   | 20.30<br>(516) | 11.81<br>(300) |             | 1.77<br>(45) | 26.85<br>(682) | 5.00<br>(127)  | 18.90<br>(480) | 13.07<br>(332)  | 10.98<br>(279) |             | 1.97<br>(50)  | 19.29<br>(490) | 8.82<br>(224)  | 3-15/16<br>(100)  | 2-15/16<br>(74.6) |                   |  |
| E617DC |                  | 21.26<br>(540) |                |             |              |                |                |                |                 |                |             |               |                |                |                   |                   |                   |  |

# C-Face Dimensions

## Double Reduction

### EHY(J)-Z6090DAY~E6175DCY

All dimensions are in inches (mm).

| Model  | V               | W              | ØY            | Ød           | ØD1           | ØDC            | KH            | N1           | N2           | N3            | S2  | TA             | A            | D            | TB  |
|--------|-----------------|----------------|---------------|--------------|---------------|----------------|---------------|--------------|--------------|---------------|-----|----------------|--------------|--------------|-----|
| Z609DA | 4.23<br>(107.4) | 4.69<br>(119)  | 3.23<br>(82)  | 0.55<br>(14) | 2.56<br>(65)  | 5.91<br>(150)  | 3.54<br>(90)  | 1.02<br>(26) | 1.02<br>(26) | -             | M10 | 17.50<br>(445) | 0.63<br>(16) | 2.36<br>(60) | M20 |
| A610DA | 4.61<br>(117)   | 5.14<br>(131)  | 4.09<br>(104) | 0.71<br>(18) | 3.35<br>(85)  |                | 3.74<br>(95)  | 1.10<br>(28) | 1.10<br>(28) |               | M12 | 17.87<br>(454) |              |              |     |
| B612DA | 5.69<br>(144.5) | 6.40<br>(163)  | 4.49<br>(114) |              | 3.94<br>(100) | 8.03<br>(204)  | 4.33<br>(110) | 1.34<br>(32) | 1.26<br>(32) |               | M16 | 19.50<br>(495) |              |              |     |
| B612DB |                 |                |               |              |               |                |               |              |              |               |     |                |              |              |     |
| C614DA | 6.73<br>(171)   | 7.58<br>(193)  | 5.43<br>(138) | 0.87<br>(22) | 4.33<br>(110) | 9.06<br>(230)  | 5.31<br>(135) | 3.98<br>(52) | 2.05<br>(52) | 2.83<br>(72)  | M16 | 18.37<br>(467) | 0.75<br>(19) | 3.54<br>(90) | M24 |
| C614DB |                 |                |               |              |               |                |               |              |              |               |     |                |              |              |     |
| C614DC |                 |                |               |              |               |                |               |              |              |               |     |                |              |              |     |
| D616DA | 8.43<br>(214)   | 9.61<br>(244)  | 5.98<br>(152) | 1.02<br>(26) | 5.12<br>(130) | 11.81<br>(300) | 6.38<br>(162) | 3.62<br>(60) | 2.36<br>(60) | 3.62<br>(92)  | M16 | 19.50<br>(495) | 0.75<br>(19) | 3.54<br>(90) | M24 |
| D616DB |                 |                |               |              |               |                |               |              |              |               |     |                |              |              |     |
| D616DC |                 |                |               |              |               |                |               |              |              |               |     |                |              |              |     |
| E617DA | 9.45<br>(240)   | 10.71<br>(272) | 6.69<br>(170) | 1.30<br>(33) | 5.91<br>(150) | 13.39<br>(340) | 7.09<br>(180) | 3.82<br>(62) | 2.44<br>(62) | 3.94<br>(100) | M16 | 20.25<br>(514) | 0.75<br>(19) | 3.54<br>(90) | M24 |
| E617DB |                 |                |               |              |               |                |               |              |              |               |     |                |              |              |     |
| E617DC |                 |                |               |              |               |                |               |              |              |               |     |                |              |              |     |

All dimensions are in inches (mm).

| Model  | ØLA            | Ø°                   | N           | S x L                | S1 x L               | XU            | XV           | Key  | Wt. lb (kg)  |
|--------|----------------|----------------------|-------------|----------------------|----------------------|---------------|--------------|--|--------------|
| Z609DA | 4.72<br>(120)  | 0                    | 4           | M10x0.79<br>(M10x20) | M10x0.79<br>(M10x20) | 0.500<br>(13) | 0.98<br>(25) | 1/8 x 1/8 x 0.71<br>(3.175 x 3.175 x 18)   | 65<br>(29)   |
| A610DA | 6.10<br>(155)  |                      |             |                      | M12x0.87<br>(M12x22) |               |              |  | 90<br>(41)   |
| B612DA | 6.89<br>(175)  | M12x0.87<br>(M12x22) | 158<br>(72) |                      |                      |               |              |  |              |
| B612DB |                |                      |             | M16x1.02<br>(M16x26) | 165<br>(75)          |               |              |  |              |
| C614DA |                |                      |             |                      | 247<br>(112)         |               |              |  |              |
| C614DB | 8.35<br>(212)  | 30                   | 6           | M16x1.18<br>(M16x30) | M20x1.38<br>(M20x35) | 256<br>(116)  |              |  |              |
| C614DC |                |                      |             |                      |                      |               | 258<br>(117) |  |              |
| D616DA |                |                      |             |                      |                      | 461<br>(209)  |              |  |              |
| D616DB | 10.04<br>(255) |                      |             |                      |                      | 465<br>(211)  |              |  |              |
| D616DC |                |                      |             |                      |                      | 481<br>(218)  |              |  |              |
| E617DA |                | 22.5                 | 8           | M20x1.38<br>(M20x35) | M24x1.57<br>(M24x40) | 0.625<br>(16) | 0.98<br>(25) | 3/16 x 3/16 x 0.75<br>(4.762 x 4.762 x 19) | 612<br>(278) |
| E617DB | 11.02<br>(280) |                      |             |                      |                      | 0.750<br>(19) | 1.38<br>(35) | 3/16 x 3/16 x 1.02<br>(4.762 x 4.762 x 26) | 622<br>(282) |
| E617DC |                |                      |             |                      |                      | 0.750<br>(19) | 1.38<br>(35) | 3/16 x 3/16 x 1.02<br>(4.762 x 4.762 x 26) | 633<br>(287) |

Dimensions

Dimensions

# C-Face Dimensions

# Quill Hollow Input Dimensions

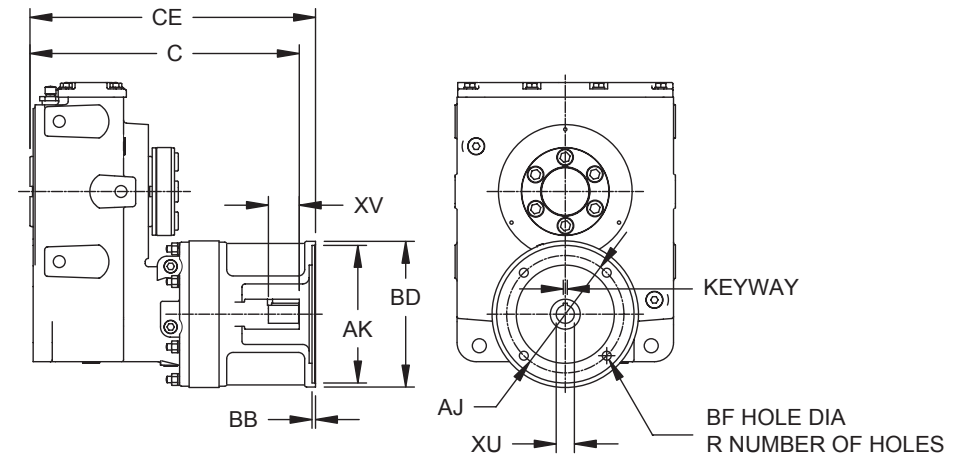
## Double Reduction

### EHY(J)-Z6090DAY~E6175DCY

## Single Reduction

### EHY(X)-Z6090Y~D6165Y

| Model    | NEMA C-Face | ØAJ        | ØAK        | ØBD        | BB         | BF          | BR          | CE          | XJ          | Z          | Min. ID    | Wt. lb (kg) |
|----------|-------------|------------|------------|------------|------------|-------------|-------------|-------------|-------------|------------|------------|-------------|
| Z609DA   | 42C         | 3.75 (95)  | 3.00 (76)  | 4.33 (110) |            | 0.28 (7)    |             | 12.51 (318) | 1.78 (45)   | 0.47 (12)  | 2.44 (62)  | 68 (31)     |
|          | 48C         |            |            |            |            | 0.43 (11)   |             | 12.89 (327) | 2.16 (55)   |            | 3.15 (80)  | 70 (32)     |
|          | 56C         | 5.87 (149) | 4.50 (114) | 6.69 (170) |            | 13.29 (338) |             | 2.56 (65)   | 3.15 (80)   |            | 70 (32)    |             |
| A610DA   | 42C         | 3.75 (85)  | 3.00 (76)  | 4.33 (110) |            | 0.28 (7)    |             | 13.65 (347) | 1.78 (45)   | 0.47 (12)  | 2.44 (62)  | 93 (42)     |
|          | 48C         |            |            |            |            | 0.43 (11)   |             | 14.03 (356) | 2.16 (55)   |            | 3.15 (80)  | 95 (43)     |
|          | 56C         | 5.87 (149) | 4.50 (114) | 6.69 (170) |            | 14.43 (367) |             | 2.56 (65)   | 3.15 (80)   |            | 95 (43)    |             |
| B612DA   | 42C         | 3.75 (95)  | 3.00 (76)  | 4.33 (110) |            | 0.28 (7)    |             | 15.15 (385) | 1.78 (45)   | 0.47 (12)  | 2.44 (62)  | 161 (73)    |
|          | 48C         |            |            |            |            | 0.43 (11)   |             | 15.53 (394) | 2.16 (55)   |            | 3.15 (80)  | 164 (74)    |
|          | 56C         | 5.87 (149) | 4.50 (114) | 6.69 (170) |            | 15.93 (405) |             | 2.56 (65)   | 3.15 (80)   |            | 164 (74)   |             |
| B612DB   | 48C         | 3.75 (95)  | 3.00 (76)  | 4.33 (110) |            | 0.28 (7)    |             | 16.26 (413) | 2.16 (55)   | 0.47 (12)  | 2.44 (62)  | 170 (77)    |
|          | 56C~145TC   | 5.87 (149) | 4.50 (114) | 6.69 (170) |            | 0.43 (11)   |             | 16.73 (425) | 2.63 (67)   |            | 4.21 (107) | 172 (78)    |
| C614DA   | 48C         | 3.75 (95)  | 3.00 (76)  | 4.33 (110) |            | 0.28 (7)    |             | 18.07 (459) | 2.16 (55)   | 0.47 (12)  | 2.44 (62)  | 251 (114)   |
|          | 56C         | 5.87 (149) | 4.50 (114) | 6.69 (170) |            | 0.43 (11)   |             | 18.47 (469) | 2.56 (65)   |            | 3.15 (80)  | 253 (115)   |
| C614DB   | 48C         | 3.75 (95)  | 3.00 (76)  | 4.33 (110) |            | 0.28 (7)    |             | 18.70 (475) | 2.16 (55)   | 0.47 (12)  | 2.44 (62)  | 262 (119)   |
|          | 56C~145TC   | 5.87 (149) | 4.50 (114) | 6.69 (170) |            | 0.43 (11)   |             | 19.17 (487) | 2.63 (67)   |            | 4.21 (107) | 264 (120)   |
| C614DC   | 56~145TC    | 5.87 (149) | 4.50 (114) | 6.69 (170) |            | 0.43 (11)   |             | 19.41 (493) | 2.63 (67)   | 0.47 (12)  | 2.44 (62)  | 266 (121)   |
|          | 182~184TC   | 7.25 (184) | 8.50 (216) | 8.98 (228) |            | 0.22 (6)    |             | 0.55 (14)   | 20.23 (514) |            | 3.45 (88)  | 5.43 (138)  |
| D616DA   | 56C~145TC   | 5.87 (149) | 4.50 (114) | 6.69 (170) |            | 0.43 (11)   |             | 21.31 (541) | 2.63 (67)   | 0.47 (12)  | 4.13 (105) | 468 (212)   |
| D616DB   | 56C~145TC   |            |            |            |            | 0.55 (14)   |             | 21.55 (547) | 2.63 (67)   |            | 5.43 (138) | 472 (214)   |
|          | D616DC      | 182~184TC  | 7.25 (184) | 8.50 (216) | 8.98 (228) |             | 0.43 (11)   |             | 22.37 (568) | 3.45 (88)  | 0.47 (12)  | 4.21 (107)  |
| 56~145TC |             | 5.87 (149) | 4.50 (114) | 6.69 (170) | 0.55 (14)  |             | 22.43 (570) |             | 2.63 (67)   | 4.21 (107) |            | 490 (222)   |
| E617DA   | 182~184TC   | 7.25 (184) | 8.50 (216) | 8.98 (228) |            | 0.22 (6)    |             | 23.17 (589) | 3.37 (86)   | 0.47 (12)  | 5.43 (138) | 494 (224)   |
|          | 56C~145TC   | 5.87 (149) | 4.50 (114) | 6.69 (170) |            | 0.43 (11)   |             | 22.69 (576) | 2.63 (67)   |            | 4.21 (107) | 625 (283)   |
| E617DB   | 56C~145TC   |            |            |            |            | 0.55 (14)   |             | 22.93 (582) | 3.45 (88)   | 0.47 (12)  | 4.21 (107) | 629 (285)   |
|          | 182~184TC   | 7.25 (184) | 8.50 (216) | 8.98 (228) |            | 0.22 (6)    |             | 0.55 (14)   | 23.75 (603) |            | 3.45 (88)  | 5.43 (138)  |
| E617DC   | 182~184TC   | 7.25 (184) | 8.50 (216) | 8.98 (228) |            | 0.55 (14)   |             | 24.63 (626) | 3.37 (86)   |            | 5.43 (138) | 646 (293)   |



All dimensions are in inches. (mm)

| Model | NEMA C-Face | ØAJ          | ØAK          | ØBD          | BB         | BF          | BR(R) | C             | CE            | XU                              | XU Tol.                         | XV          | Keyway                      | Wt. lb (kg) |
|-------|-------------|--------------|--------------|--------------|------------|-------------|-------|---------------|---------------|---------------------------------|---------------------------------|-------------|-----------------------------|-------------|
| Z609  | 56C         | 5.87 (149.1) | 4.50 (114.3) | 6.69 (170.0) |            | 0.43 (11.0) | 4     | 9.33 (237.0)  | 10.09 (256.3) | 0.625 (15.9)                    | 0.0014 / 0.0007 (0.034 / 0.016) | 1.18 (30.0) | 3/16 x 3/32 (4.762 x 2.381) | 68 (31)     |
|       | 143-145TC   |              |              |              |            |             |       | 9.33 (237.0)  | 0.875 (22.3)  | 0.0016 / 0.0008 (0.041 / 0.020) | 1.57 (39.9)                     |             |                             |             |
| A610  | 56C         | 5.87 (149.1) | 4.50 (114.3) | 6.69 (170.0) |            | 0.43 (11.0) | 4     | 10.31 (261.9) | 11.03 (280.2) | 0.625 (15.9)                    | 0.0014 / 0.0007 (0.034 / 0.016) | 1.18 (30.0) | 3/16 x 3/32 (4.762 x 2.381) | 92 (42)     |
|       | 143-145TC   |              |              |              |            |             |       | 10.31 (261.9) | 0.875 (22.3)  | 0.0016 / 0.0008 (0.041 / 0.020) | 1.65 (42.0)                     |             |                             |             |
| B612  | 56C         | 5.87 (149.1) | 4.50 (114.3) | 6.69 (170.0) |            | 0.43 (11.0) | 4     | 11.18 (284.0) | 12.19 (309.7) | 1.125 (28.6)                    | 0.0014 / 0.0007 (0.034 / 0.016) | 1.89 (48.1) | 1/4 x 1/8 (6.35 x 3.175)    | 99 (45)     |
|       | 143-145TC   |              |              |              |            |             |       | 12.7 (322.6)  | 13.14 (333.8) | 0.875 (22.3)                    | 0.0016 / 0.0008 (0.041 / 0.020) | 1.50 (38.1) | 3/16 x 3/32 (4.762 x 2.381) | 162 (73)    |
| C614  | 56C         | 5.87 (149.1) | 4.50 (114.3) | 6.69 (170.0) |            | 0.43 (11.0) | 4     | 12.7 (322.6)  | 14.06 (357.2) | 1.125 (28.6)                    | 0.0014 / 0.0007 (0.034 / 0.016) | 2.48 (63.0) | 1/4 x 1/8 (6.35 x 3.175)    | 165 (75)    |
|       | 143-145TC   |              |              |              |            |             |       | 12.7 (322.6)  | 14.06 (357.2) | 0.875 (22.3)                    | 0.0016 / 0.0008 (0.041 / 0.020) | 2.64 (67.1) | 5/16 x 5/32 (7.938 x 3.969) | 164 (74)    |
| D616  | 143-145TC   | 5.87 (149.1) | 4.50 (114.3) | 6.69 (170.0) |            | 0.43 (11.0) | 4     | 15.53 (394.5) | 15.74 (399.8) | 0.875 (22.3)                    | 0.0016 / 0.0008 (0.041 / 0.020) | 1.61 (40.9) | 3/16 x 3/32 (4.762 x 2.381) | 263 (119)   |
|       | 182-184TC   |              |              |              |            |             |       | 16.71 (424.4) | 17.43 (442.8) | 1.125 (28.6)                    | 0.0014 / 0.0007 (0.034 / 0.016) | 1.91 (48.6) | 1/4 x 1/8 (6.35 x 3.175)    | 271 (123)   |
|       | 213-215TC   |              |              |              |            |             |       | 16.71 (424.4) | 17.43 (442.8) | 1.375 (35.0)                    | 0.002 / 0.001 (0.050 / 0.025)   | 2.68 (68.1) | 5/16 x 5/32 (7.938 x 3.969) | 270 (122)   |
|       | 254-256TC   |              |              |              |            |             |       | 16.71 (424.4) | 17.43 (442.8) | 1.625 (41.3)                    | 0.002 / 0.001 (0.050 / 0.025)   | 2.99 (76.0) | 3/8 x 3/16 (9.525 x 4.762)  | 271 (123)   |
| E617  | 182-184TC   | 7.25 (184.2) | 8.50 (215.9) | 8.98 (228.1) | 0.22 (5.6) | 0.55 (14.0) | 4     | 17.95 (455.9) | 18.78 (477.1) | 1.125 (28.6)                    | 0.0016 / 0.0008 (0.041 / 0.020) | 2.01 (51.1) | 1/4 x 1/8 (6.35 x 3.175)    | 468 (212)   |
|       | 213-215TC   |              |              |              |            |             |       | 17.95 (455.9) | 18.78 (477.1) | 1.375 (35.0)                    | 0.002 / 0.001 (0.050 / 0.025)   | 2.48 (63.0) | 5/16 x 5/32 (7.938 x 3.969) | 467 (212)   |
|       | 254-256TC   |              |              |              |            |             |       | 17.95 (455.9) | 18.78 (477.1) | 1.625 (41.3)                    | 0.002 / 0.001 (0.050 / 0.025)   | 3.11 (79.0) | 3/8 x 3/16 (9.525 x 4.762)  | 466 (211)   |

# Quill Hollow Input Dimensions

## Double Reduction

### EHY(X)-Z6090DAY~E6175DCY

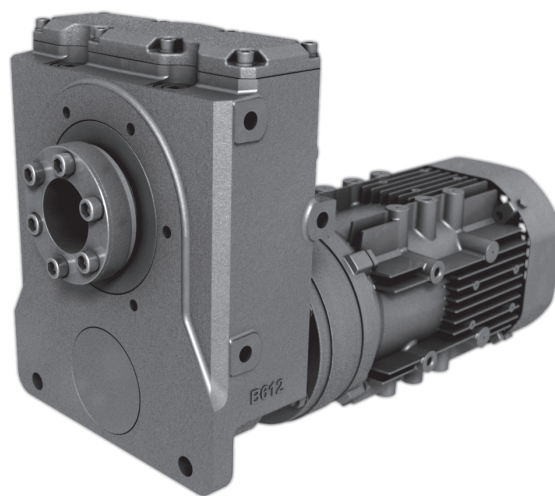
| Model  | NEMA C-Face |           | ØAJ              | ØAK             | ØBD                                | BB               | BF               | BR(R)          | C                | CE                                 | XU             | XU Tol.                            | XV             | Keyway                         | Wt. lb (kg)                 |                |
|--------|-------------|-----------|------------------|-----------------|------------------------------------|------------------|------------------|----------------|------------------|------------------------------------|----------------|------------------------------------|----------------|--------------------------------|-----------------------------|----------------|
| Z609DA | 56C         | 607       | 5.87<br>(149.1)  | 4.50<br>(114.3) | 6.69<br>(170.0)                    |                  |                  |                | 11<br>(279.4)    | 11.63<br>(295.5)                   | 0.63<br>(15.9) | 0.0014 / 0.0007<br>(0.034 / 0.016) | 1.1<br>(28.0)  | 3/16 x 3/32<br>(4.762 x 2.381) | 70                          |                |
| A610DA |             | 607       |                  |                 |                                    |                  |                  |                | 12.14<br>(308.4) | 12.78<br>(324.7)                   |                |                                    |                |                                | 95                          |                |
| B612DA |             | 607       |                  |                 |                                    |                  |                  |                | 13.64<br>(346.5) | 14.27<br>(362.5)                   |                |                                    |                |                                | 163                         |                |
| B612DB |             | 143~145TC |                  |                 |                                    |                  |                  |                | 609              | 14.33<br>(364.0)                   |                |                                    |                |                                | 15.09<br>(383.3)            | 170            |
|        |             |           | 14.33<br>(364.0) | 0.88<br>(22.3)  | 0.0016 / 0.0008<br>(0.041 / 0.020) | 1.57<br>(39.9)   |                  |                |                  |                                    |                |                                    |                |                                |                             |                |
| C614DA | 56C         | 607       | 3.75<br>(95.3)   | 3.00<br>(76.2)  | 4.33<br>(110.0)                    |                  |                  |                | 16.18<br>(411.0) | 16.81<br>(427.0)                   | 0.63<br>(15.9) | 0.0014 / 0.0007<br>(0.034 / 0.016) | 1.1<br>(28.0)  | 253                            |                             |                |
| C614DB |             | 143~145TC | 609              | 5.87<br>(149.1) | 4.50<br>(114.3)                    |                  |                  |                | 6.69<br>(170.0)  | 16.77<br>(426.0)                   |                |                                    |                |                                | 17.53<br>(445.3)            | 0.88<br>(22.3) |
|        |             |           |                  |                 |                                    | 17.16<br>(435.9) | 17.88<br>(454.2) | 0.63<br>(15.9) |                  | 0.0014 / 0.0007<br>(0.034 / 0.016) | 1.18<br>(30.0) |                                    |                |                                |                             |                |
| C614DC | 56C         | 610       | 5.87<br>(149.1)  | 4.50<br>(114.3) | 6.69<br>(170.0)                    |                  |                  |                | 17.16<br>(435.9) | 17.88<br>(454.2)                   | 0.88<br>(22.3) | 0.0014 / 0.0007<br>(0.034 / 0.016) | 1.65<br>(42.0) | 265                            |                             |                |
|        | 143~145TC   |           |                  |                 |                                    |                  |                  |                | 18.03<br>(458.0) | 19.04<br>(483.7)                   | 1.13<br>(28.6) | 0.0016 / 0.0008<br>(0.041 / 0.020) | 1.89<br>(48.1) |                                | 1/4 x 1/8<br>(6.35 x 3.175) | 272            |
|        | 182~184TC   |           |                  |                 |                                    |                  |                  |                | 18.92<br>(480.6) | 19.67<br>(499.7)                   | 0.63<br>(15.9) | 0.0014 / 0.0007<br>(0.034 / 0.016) | 1.18<br>(30.0) |                                |                             |                |
| D616DA | 56C         | 609       | 5.87<br>(149.1)  | 4.50<br>(114.3) | 6.69<br>(170.0)                    |                  |                  |                | 18.92<br>(480.6) | 19.67<br>(499.7)                   | 0.88<br>(22.3) | 0.0016 / 0.0008<br>(0.041 / 0.020) | 1.57<br>(39.9) | 466                            |                             |                |
|        | 143~145TC   |           |                  |                 |                                    |                  |                  |                | 19.31<br>(490.5) | 20.02<br>(508.6)                   | 0.63<br>(15.9) | 0.0014 / 0.0007<br>(0.034 / 0.016) | 1.18<br>(30.0) |                                |                             |                |
| D616DB | 56C         | 610       | 5.87<br>(149.1)  | 4.50<br>(114.3) | 6.69<br>(170.0)                    |                  |                  |                | 19.31<br>(490.5) | 20.02<br>(508.6)                   | 0.88<br>(22.3) | 0.0014 / 0.0007<br>(0.034 / 0.016) | 1.65<br>(42.0) | 471                            |                             |                |
|        | 143~145TC   |           |                  |                 |                                    |                  |                  |                | 20.18<br>(512.6) | 21.18<br>(538.0)                   | 1.13<br>(28.6) | 0.0016 / 0.0008<br>(0.041 / 0.020) | 1.89<br>(48.1) |                                | 1/4 x 1/8<br>(6.35 x 3.175) | 479            |
|        | 182~184TC   |           |                  |                 |                                    |                  |                  |                | 20.48<br>(520.2) | 20.91<br>(531.2)                   | 0.63<br>(15.9) | 0.0014 / 0.0007<br>(0.034 / 0.016) | 1.18<br>(30.0) |                                |                             |                |
| D616DC | 56C         | 612       | 5.87<br>(149.1)  | 4.50<br>(114.3) | 6.69<br>(170.0)                    |                  |                  |                | 20.48<br>(520.2) | 20.91<br>(531.2)                   | 0.88<br>(22.3) | 0.0016 / 0.0008<br>(0.041 / 0.020) | 1.5<br>(38.1)  | 489                            |                             |                |
|        | 143~145TC   |           |                  |                 |                                    |                  |                  |                | 20.48<br>(520.2) | 21.83<br>(554.5)                   | 1.13<br>(28.6) | 0.0016 / 0.0008<br>(0.041 / 0.020) | 2.48<br>(63.0) |                                | 1/4 x 1/8<br>(6.35 x 3.175) | 492            |
|        | 182~184TC   |           |                  |                 |                                    |                  |                  |                | 20.48<br>(520.2) | 21.83<br>(554.5)                   | 1.38<br>(35.0) | 0.002 / 0.001<br>(0.050 / 0.025)   | 2.64<br>(67.1) | 5/16 x 5/32                    | 492                         |                |
|        | 213~215TC   |           |                  |                 |                                    |                  |                  |                | 20.29<br>(515.4) | 21.05<br>(534.7)                   | 0.63<br>(15.9) | 0.0014 / 0.0007<br>(0.034 / 0.016) | 1.18<br>(30.0) |                                |                             |                |
| E617DA | 56C         | 609       | 5.87<br>(149.1)  | 4.50<br>(114.3) | 6.69<br>(170.0)                    |                  |                  |                | 20.29<br>(515.4) | 21.05<br>(534.7)                   | 0.88<br>(22.3) | 0.0016 / 0.0008<br>(0.041 / 0.020) | 1.57<br>(39.9) | 623                            |                             |                |
|        | 143~145TC   |           |                  |                 |                                    |                  |                  |                | 20.69<br>(525.5) | 21.40<br>(543.6)                   | 0.63<br>(15.9) | 0.0014 / 0.0007<br>(0.034 / 0.016) | 1.18<br>(30.0) |                                |                             |                |
| E617DB | 56C         | 610       | 5.87<br>(149.1)  | 4.50<br>(114.3) | 6.69<br>(170.0)                    |                  |                  |                | 20.69<br>(525.5) | 21.40<br>(543.6)                   | 0.88<br>(22.3) | 0.0016 / 0.0008<br>(0.041 / 0.020) | 1.65<br>(42.0) | 628                            |                             |                |
|        | 143~145TC   |           |                  |                 |                                    |                  |                  |                | 21.56<br>(547.6) | 22.56<br>(573.1)                   | 1.13<br>(28.6) | 0.0016 / 0.0008<br>(0.041 / 0.020) | 1.89<br>(48.1) |                                | 1/4 x 1/8<br>(6.35 x 3.175) | 636            |
|        | 182~184TC   |           |                  |                 |                                    |                  |                  |                | 21.94<br>(557.3) | 22.37<br>(568.2)                   | 0.63<br>(15.9) | 0.0014 / 0.0007<br>(0.034 / 0.016) | 1.18<br>(30.0) |                                |                             |                |
| E617DC | 56C         | 612       | 5.87<br>(149.1)  | 4.50<br>(114.3) | 6.69<br>(170.0)                    |                  |                  |                | 21.94<br>(557.3) | 22.37<br>(568.2)                   | 0.88<br>(22.3) | 0.0016 / 0.0008<br>(0.041 / 0.020) | 1.5<br>(38.1)  | 641                            |                             |                |
|        | 143~145TC   |           |                  |                 |                                    |                  |                  |                | 22.05<br>(560.1) | 23.29<br>(591.6)                   | 1.13<br>(28.6) | 0.0016 / 0.0008<br>(0.041 / 0.020) | 2.48<br>(63.0) |                                | 1/4 x 1/8<br>(6.35 x 3.175) | 644            |
|        | 182~184TC   |           |                  |                 |                                    |                  |                  |                | 22.13<br>(562.1) | 23.29<br>(591.6)                   | 1.38<br>(35.0) | 0.002 / 0.001<br>(0.050 / 0.025)   | 2.64<br>(67.1) | 5/16 x 5/32                    |                             |                |
|        | 213~215TC   |           |                  |                 |                                    |                  |                  |                |                  |                                    |                |                                    |                |                                |                             |                |

Cydo® HBB  
Dimensions

# 3

## How to Select

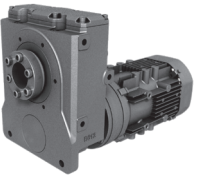
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Cyclo® HBB

How to  
Select

# How to Select a Gearmotor



## Step 1: Collect data about your application

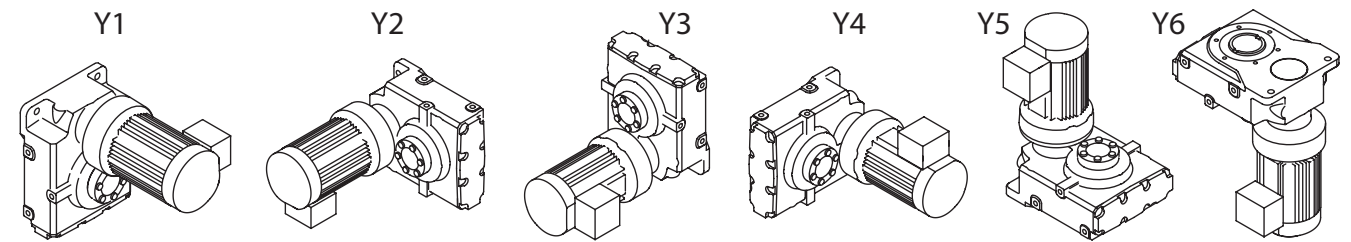
Before starting you need to know the:

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

## Step 2: Choose a Mounting Position

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

Mounting Positions (Please see the Appendix, Section 5, for additional mounting positions.)



## Step 3: Select a Frame Size

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

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

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

Select a Frame Size

• Mounting Position

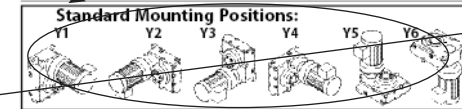
• Motor HP

• Output Speed

• Service Class

• SELECTION

### Double Reduction Selection Tables: Y1, Y2, Y3, Y4, Y5, Y6



Dimension Pages:  
Single Reduction 3.80-3.85  
Double Reduction 3.86-3.89

|                  |                 |          |          |
|------------------|-----------------|----------|----------|
| 5 HP<br>(3.7 kW) | Frequency       | 50 Hz    | 60 Hz    |
|                  | Input Speed     | 1450 RPM | 1750 RPM |
|                  | Number of Poles | 4        |          |

| 50Hz               |                            |                                | 60 Hz              |                            |                                | Selection        |                 |       |
|--------------------|----------------------------|--------------------------------|--------------------|----------------------------|--------------------------------|------------------|-----------------|-------|
| Output Speed (RPM) | Output Torque in-lbs (N·m) | Service Factor SF (AGMA Class) | Output Speed (RPM) | Output Torque in-lbs (N·m) | Service Factor SF (AGMA Class) | Motor Power Code | Base Frame Size | Ratio |
| 3.98               | 72400 (8180)               | 0.79 - 1.10                    | 4.81               | 60000 (6780)               | 0.95 - 1.33                    | 5                | D616DC          | 364   |
| 3.42               | 84200 (9520)               | 0.68 - 0.95                    | 4.13               | 69800 (7880)               | 0.82 - 1.15                    | 5                | D616DC          | 424   |
| 2.90               | 99500 (11200)              | 0.58 - 0.80                    | 3.50               | 82500 (9320)               | 0.69 - 0.97                    | 5                | D616DC          | 501   |
| 2.51               | 115000 (13000)             | 0.50 - 0.70                    | 3.03               | 95200 (10800)              | 0.60 - 0.84                    | 5                | D616DC          | 578   |
| 2.12               | 136000 (15300)             | 0.42 - 0.59                    | 2.56               | 112000 (12700)             | 0.51 - 0.71                    | 5                | D616DC          | 683   |
| 1.79               | 161000 (18200)             | 0.50 -                         | 2.16               | 133000 (15100)             | 0.60 -                         | 5                | E617DC          | 809   |
| 1.52               | 190000 (21500)             | 0.42 -                         | 1.83               | 157000 (17800)             | 0.51 -                         | 5                | E617DC          | 956   |

## Step 4: Verify Dimensions

Use the Dimensions information on pages 3.80–3.91 to verify that the selected Frame Size is appropriate.

## Step 5: Choose a Bushing Bore Size

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

STOCK BUSHING BORES

| Size | Inch Sizes  | Metric Sizes | Min. Bore                       |
|------|---|--------------|---------------------------------|
| Z    | 1 <sup>3</sup> / <sub>16</sub> , 1 <sup>7</sup> / <sub>16</sub> , | 30, 40       | 1 <sup>3</sup> / <sub>16</sub>  |
| A    | 1 <sup>15</sup> / <sub>16</sub> , 2 <sup>3</sup> / <sub>16</sub>  | 50, 55       | 1 <sup>11</sup> / <sub>16</sub> |
| B    | 2 <sup>3</sup> / <sub>16</sub> , 2 <sup>7</sup> / <sub>16</sub>   | 60, 65       | 1 <sup>15</sup> / <sub>16</sub> |
| C    | 2 <sup>7</sup> / <sub>16</sub> , 2 <sup>15</sup> / <sub>16</sub>  | 65, 75       | 2 <sup>3</sup> / <sub>16</sub>  |
| D    | 2 <sup>15</sup> / <sub>16</sub> , 3 <sup>7</sup> / <sub>16</sub>  | 75, 85       | 2 <sup>7</sup> / <sub>16</sub>  |
| E    | 3 <sup>7</sup> / <sub>16</sub> , 3 <sup>15</sup> / <sub>16</sub>  | 90, 100      | 2 <sup>15</sup> / <sub>16</sub> |

## Step 6: Choose Options

Please refer to Options section 4.1. For additional available options refer to our online Product Configurator at [www.sumitomodrive.com/configurator](http://www.sumitomodrive.com/configurator)

## Step 7: Configure a Model Number

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

For special circumstances affecting Frame Size selection such as:

- Overhung Load
- Shock Loading

Consult Appendix, pages 5.7

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



# Configure a Model Number

# Nomenclature

### Output Shaft Orientation

| Type       | Code |
|------------|------|
| Horizontal | H    |
| Vertical   | V    |

- Include the following information when ordering:**
- Motor Specifications (230/460 VAC 60 Hz is supplied, unless otherwise specified)
  - Taper Grip Bushing or Keyed Hollow Bore diameter (refer to pages 4.2 to 4.3 for diameters)
  - Optional conduit box positions must be specified, or standard is provided, refer to page 5.14
  - Optional Industry Package, refer to page 4.6
  - Specify type for nonstandard torque arm or no torque arm

### Mounting Style

| Type                               | Code |
|------------------------------------|------|
| Flange (Keyed Hollow Bore) pg. 4.2 | F    |
| Shaft Mount (Hollow Shaft)         | Y    |

### Input Connection

| Input Connection | Code |
|------------------|------|
| Gearmotor        | M    |

### Frame Size

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

### Modification

|          | Code |
|----------|------|
| Special  | S    |
| Standard |      |

### Gearmotor HP (applies only to 1750 RPM)

| HP    | kW     | Code |
|-------|--------|------|
| 1/8   | (0.1)  | 01   |
| 1/4   | (0.2)  | 02   |
| 1/3   | (0.25) | 03   |
| 1/2   | (0.4)  | 05   |
| 3/4   | (0.55) | 08   |
| 1     | (0.75) | 1    |
| 1 1/2 | (1.1)  | 1H   |
| 2     | (1.5)  | 2    |
| 3     | (2.2)  | 3    |
| EP 5  | (3.7)  | 5    |
| 7 1/2 | (5.5)  | 8    |
| 10    | (7.5)  | 10   |
| 15    | (11)   | 15   |
| 20    | (15)   | 20   |
| 25    | (18.5) | 25   |
| 30    | (22)   | 30   |
| 40    | (30)   | 40   |

### AGMA Class

| Class | Code |
|-------|------|
| I     | A    |
| II    | B    |
| III   | C    |

### Motor and Bearing Specification

| Specification  | Code |
|--|------|
| AF Motor (Inverter Duty 1/8 HP to 3/4 HP)              | AV   |
| Inverter Ready Motor Premium Efficiency (1+HP), IE3    | EP   |
| High Capacity Bearing<br>(Required for Screw Conveyor) | R1   |

Note: When there are multiple suffices, sequence them alphabetically. Ex.: EPR1

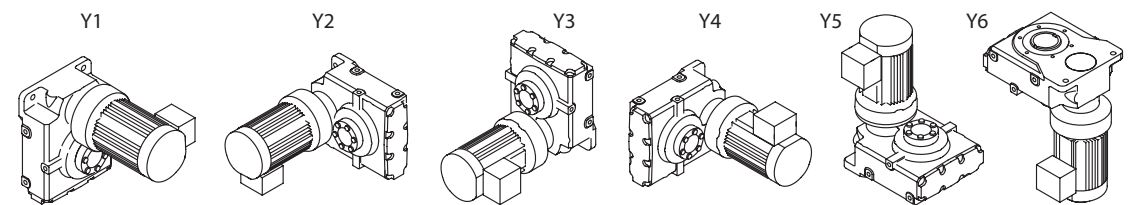
### Brake

|            | Code |
|------------|------|
| With Brake | B    |
| No Brake   | -    |

### Shaft Specifications

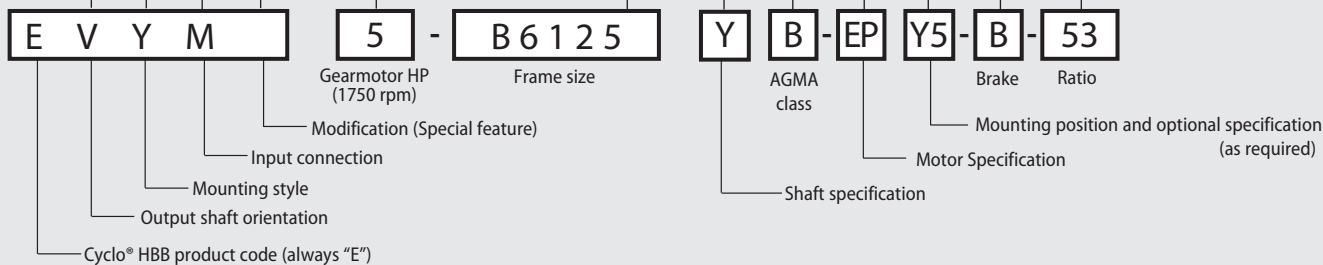
| Input Shaft | Hollow Output Shaft | Suffix |
|-------------|---------------------|--------|
| mm          | Key (mm)            |        |
| Inch        | Key (Inch)          | K      |
| mm          | Taper-Grip®         | M      |
| Inch        | Taper-Grip®         | Y      |

### Mounting Positions (Please see the Appendix, Section 5, for additional mounting positions.)



### Nominal Total Ratio

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



**Nomenclature Example:**  
**EVYM5 - B6125YB - EP Y5 - 53**

E - Cyclo Helical Buddybox  
 V - Vertical  
 Y - Shaft Mount (Hollow Shaft)  
 M - Integral Motor  
 5 - 5 HP, 1750 RPM

B6125 - Frame Size  
 Y - Inch Shaft Specification  
 B - AGMA Class II  
 EP - Three-Phase Motor Premium Efficiency  
 Y5 - Mounting Position  
 53 - Ratio



# Constant Torque Speed Ranges: Gearmotors

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Table 3.8 Turn Down Ratio (CTSR) for Integral Motors in CONSTANT TORQUE Applications Powered by Inverter VFDs.

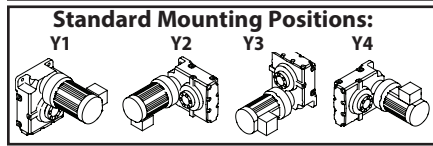
| Fractional HP Motors - 60 Hz |                |            |                       |
|------------------------------|----------------|------------|-----------------------|
| Motor Power<br>(4 - Pole)    | Standard Motor |            | AF Motor              |
|                              | W/o Brake      | With Brake | With or Without Brake |
| 1/8 HP (0.1 kW)              | 2:1            | 2:1        | 10:1                  |
| 1/4 HP (0.2 kW)              | 2:1            | 2:1        | 10:1                  |
| 1/3 HP (0.25 kW)             | 2:1            | 2:1        | 10:1                  |
| 1/2 HP (0.4 kW)              | 2:1            | 2:1        | 10:1                  |
| 3/4 HP (0.55 kW)             | 2:1            | 2:1        | 10:1                  |

| Premium Efficiency Integral HP Motors - 60 Hz |                |            |                     |
|---|----------------|------------|---------------------|
| Motor Power<br>(4 - Pole)                     | Standard Motor |            | Oversized Motor     |
|   | W/o Brake      | With Brake | With SSC YA01 Brake |
| 1 HP (0.75 kW)                                | 10:1           | 10:1       |                     |
| 1.5 HP (1.1 kW)                               | 10:1           | 5:1        | 10:1                |
| 2 HP (1.5 kW)                                 | 10:1           | 4:1        | 10:1                |
| 3 HP (2.2 kW)                                 | 10:1           | 4:1        | 10:1                |
| 5 HP (3.7 kW)                                 | 10:1           | 4:1        | 10:1                |
| 7.5 HP (5.5 kW)                               | 10:1           | 4:1        | 10:1                |
| 10 HP (7.5 kW)                                | 10:1           | 6:1        | 10:1                |
| 15 HP (11 kW)                                 | 10:1           | 6:1        | 10:1                |
| 20 HP (15 kW)                                 | 10:1           | 10:1       |                     |
| 25 HP (18.5 kW)                               | 10:1           | 10:1       |                     |
| 30 HP (22 kW)                                 | 10:1           | 10:1       |                     |
| 40 HP (30 kW)                                 | 10:1           | 10:1       |                     |

For motor selection considerations for inverter (VFD) operation please refer to pages 5.26 and 5.27.

# Single Reduction Selection Tables: Y1, Y2, Y3, Y4

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



**Selection Table Pages:**

|                    |           |
|--------------------|-----------|
| Single Reduction   | 3.10-3.38 |
| -Y1,Y2,Y3,Y4       | 3.10-3.38 |
| -Y5,Y6             | 3.39-3.61 |
| Double Reduction   | 3.62-3.79 |
| -Y1,Y2,Y3,Y4,Y5,Y6 | 3.62-3.79 |

**Dimension Pages:**

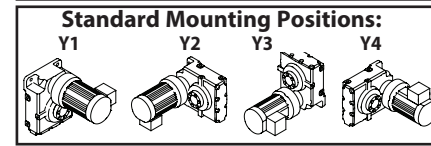
|                  |           |
|------------------|-----------|
| Single Reduction | 3.80-3.85 |
| Double Reduction | 3.86-3.91 |

|                 |          |          |
|-----------------|----------|----------|
| 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 |            | Output Speed (RPM) | Output Torque |       | Service Factor |              | Base             |              |       | VFD <sup>[1]</sup> |
|                    | in-lbs        | (N·m) | SF             | AGMA Class |                    | in-lbs        | (N·m) | SF             | AGMA Class   | Motor Power Code | Frame Size   | Ratio |                    |
| 7.02               | 1110          | (125) | 3.09           | III        | 8.47               | 920           | (104) | 3.09           | III          | 01               | <b>Z6090</b> | 207   | (a)                |
| 5.84               | 1340          | (151) | 2.52           | III        | 7.04               | 1110          | (125) | 2.52           | III          | 01               | <b>Z6090</b> | 249   | (a)                |
|                    |               |       | 2.78           | III        |                    |               |       | 01             | <b>Z6095</b> | 249              | (a)          |       |                    |
| 4.76               | 1640          | (185) | 2.11           | III        | 5.75               | 1360          | (153) | 2.11           | III          | 01               | <b>Z6090</b> | 305   | (a)                |
|                    |               |       | 2.39           | III        |                    |               |       | 01             | <b>Z6095</b> | 305              | (a)          |       |                    |
| 3.48               | 2240          | (253) | 1.25           | I          | 4.20               | 1850          | (210) | 1.25           | I            | 01               | <b>Z6090</b> | 417   | (a)                |
|                    |               |       | 1.45           | II         |                    |               |       | 01             | <b>Z6095</b> | 417              | (a)          |       |                    |

# Single Reduction Selection Tables: Y1, Y2, Y3, Y4

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



**Selection Table Pages:**

|                    |           |
|--------------------|-----------|
| Single Reduction   | 3.10-3.38 |
| -Y1,Y2,Y3,Y4       | 3.10-3.38 |
| -Y5,Y6             | 3.39-3.61 |
| Double Reduction   | 3.62-3.79 |
| -Y1,Y2,Y3,Y4,Y5,Y6 | 3.62-3.79 |

**Dimension Pages:**

|                  |           |
|------------------|-----------|
| Single Reduction | 3.80-3.85 |
| Double Reduction | 3.86-3.91 |

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

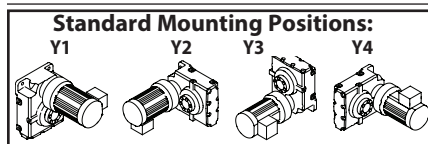
| 50Hz               |               |       |                | 60 Hz      |                    |               |       | Selection      |            |                  |              |       |                    |
|--------------------|---------------|-------|----------------|------------|--------------------|---------------|-------|----------------|------------|------------------|--------------|-------|--------------------|
| Output Speed (RPM) | Output Torque |       | Service Factor |            | Output Speed (RPM) | Output Torque |       | Service Factor |            | Base             |              |       | VFD <sup>[1]</sup> |
|                    | in-lbs        | (N·m) | SF             | AGMA Class |                    | in-lbs        | (N·m) | SF             | AGMA Class | Motor Power Code | Frame Size   | Ratio |                    |
| 14.3               | 1090          | (123) | 3.13           | III        | 17.2               | 904           | (102) | 3.13           | III        | 02               | <b>Z6090</b> | 102   | (a)                |
| 11.8               | 1320          | (149) | 2.97           | III        | 14.3               | 1090          | (123) | 3.06           | III        | 02               | <b>Z6090</b> | 123   | (a)                |
|                    |               |       | 2.97           | III        |                    |               |       | 3.58           | III        | 02               | <b>Z6095</b> | 123   | (a)                |
| 9.63               | 1620          | (183) | 2.18           | III        | 11.6               | 1340          | (151) | 2.18           | III        | 02               | <b>Z6090</b> | 151   | (a)                |
|                    |               |       | 2.41           | III        |                    |               |       | 2.91           | III        | 02               | <b>Z6095</b> | 151   | (a)                |
| 8.12               | 1920          | (217) | 1.66           | II         | 9.80               | 1590          | (180) | 1.66           | II         | 02               | <b>Z6090</b> | 179   | (a)                |
|                    |               |       | 2.04           | III        |                    |               |       | 2.11           | III        | 02               | <b>Z6095</b> | 179   | (a)                |
|                    |               |       | 2.80           | III        |                    |               |       | 2.80           | III        | 02               | <b>A6100</b> | 179   | (a)                |
| 7.02               | 2220          | (251) | 1.54           | II         | 8.47               | 1840          | (208) | 1.54           | II         | 02               | <b>Z6090</b> | 207   | (a)                |
|                    |               |       | 1.68           | II         |                    |               |       | 1.86           | II         | 02               | <b>Z6095</b> | 207   | (a)                |
|                    |               |       | 2.58           | III        |                    |               |       | 2.58           | III        | 02               | <b>A6100</b> | 207   | (a)                |
| 5.84               | 2670          | (302) | 1.26           | I          | 7.04               | 2210          | (250) | 1.26           | I          | 02               | <b>Z6090</b> | 249   | (a)                |
|                    |               |       | 1.39           | I          |                    |               |       | 1.51           | II         | 02               | <b>Z6095</b> | 249   | (a)                |
|                    |               |       | 2.18           | III        |                    |               |       | 2.18           | III        | 02               | <b>A6100</b> | 249   | (a)                |
|                    |               |       | 2.53           | III        |                    |               |       | 2.81           | III        | 02               | <b>A6105</b> | 249   | (a)                |
| 4.76               | 3270          | (370) | 1.06           | I          | 5.75               | 2710          | (306) | 1.06           | I          | 02               | <b>Z6090</b> | 305   | (a)                |
|                    |               |       | 1.19           | I          |                    |               |       | 1.44           | II         | 02               | <b>Z6095</b> | 305   | (a)                |
|                    |               |       | 2.17           | III        |                    |               |       | 2.17           | III        | 02               | <b>A6100</b> | 305   | (a)                |
|                    |               |       | 2.39           | III        |                    |               |       | 2.83           | III        | 02               | <b>A6105</b> | 305   | (a)                |
| 3.48               | 4480          | (506) | 1.05           | I          | 4.20               | 3710          | (419) | 1.05           | I          | 02               | <b>A6100</b> | 417   | (a)                |
|                    |               |       | 1.43           | II         |                    |               |       | 1.43           | II         | 02               | <b>A6105</b> | 417   | (a)                |

**Notes:** [1] Variable Frequency Drive (VFD) notes (see page 3.8 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.

**Notes:** [1] Variable Frequency Drive (VFD) notes (see page 3.8 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.

# Single Reduction Selection Tables: Y1, Y2, Y3, Y4

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



**Selection Table Pages:**  
Single Reduction -Y1,Y2,Y3,Y4 3.10-3.38  
-Y5,Y6 3.39-3.61  
Double Reduction -Y1,Y2,Y3,Y4,Y5,Y6 3.62-3.79

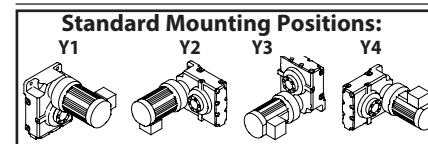
**Dimension Pages:**  
Single Reduction 3.80-3.85  
Double Reduction 3.86-3.91

|                 |          |          |
|-----------------|----------|----------|
| 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 |            | Output Speed (RPM) | Output Torque |        | Service Factor |            | Base             |            |       | VFD <sup>[1]</sup> |
|                    | in-lbs        | (N·m) | SF             | AGMA Class |                    | in-lbs        | (N·m)  | SF             | AGMA Class | Motor Power Code | Frame Size | Ratio |                    |
| 19.7               | 988           | (112) | 3.03           | III        | 23.8               | 818           | (92.5) | 3.03           | III        | 03               | Z6090      | 74    | (a)                |
| 16.6               | 1180          | (133) | 2.68           | III        | 20.0               | 974           | (110)  | 2.68           | III        | 03               | Z6090      | 88    | (a)                |
| 14.3               | 1360          | (154) | 2.50           | III        | 17.2               | 1130          | (128)  | 2.50           | III        | 03               | Z6090      | 102   | (a)                |
|                    |               |       | 2.86           | III        |                    |               |        | 3.13           | III        | 03               | Z6095      | 102   | (a)                |
| 11.8               | 1650          | (186) | 2.37           | III        | 14.3               | 1360          | (154)  | 2.45           | III        | 03               | Z6090      | 123   | (a)                |
|                    |               |       | 2.37           | III        |                    |               |        | 2.86           | III        | 03               | Z6095      | 123   | (a)                |
| 9.63               | 2020          | (228) | 1.74           | II         | 11.6               | 1680          | (189)  | 1.74           | II         | 03               | Z6090      | 151   | (a)                |
|                    |               |       | 1.93           | II         |                    |               |        | 2.33           | III        | 03               | Z6095      | 151   | (a)                |
|                    |               |       | 3.12           | III        |                    |               |        | 3.12           | III        | 03               | A6100      | 151   | (a)                |
| 8.12               | 2400          | (271) | 1.33           | I          | 9.80               | 1990          | (225)  | 1.33           | I          | 03               | Z6090      | 179   | (a)                |
|                    |               |       | 1.63           | II         |                    |               |        | 1.69           | II         | 03               | Z6095      | 179   | (a)                |
|                    |               |       | 2.24           | III        |                    |               |        | 2.24           | III        | 03               | A6100      | 179   | (a)                |
|                    |               |       | 3.10           | III        |                    |               |        | 3.10           | III        | 03               | A6105      | 179   | (a)                |
|                    |               |       | 1.24           | I          |                    |               |        | 1.49           | II         | 03               | Z6095      | 207   | (a)                |
| 7.02               | 2770          | (313) | 1.24           | I          | 8.47               | 2300          | (260)  | 1.24           | I          | 03               | Z6090      | 207   | (a)                |
|                    |               |       | 1.34           | I          |                    |               |        | 1.49           | II         | 03               | Z6095      | 207   | (a)                |
|                    |               |       | 2.06           | III        |                    |               |        | 2.06           | III        | 03               | A6100      | 207   | (a)                |
|                    |               |       | 2.72           | III        |                    |               |        | 2.83           | III        | 03               | A6105      | 207   | (a)                |
| 5.84               | 3340          | (377) | 1.01           | I          | 7.04               | 2770          | (313)  | 1.01           | I          | 03               | Z6090      | 249   | (a)                |
|                    |               |       | 1.11           | I          |                    |               |        | 1.21           | I          | 03               | Z6095      | 249   | (a)                |
|                    |               |       | 1.74           | II         |                    |               |        | 1.74           | II         | 03               | A6100      | 249   | (a)                |
|                    |               |       | 2.02           | III        |                    |               |        | 2.24           | III        | 03               | A6105      | 249   | (a)                |
|                    |               |       | 0.85           | -          |                    |               |        | 1.15           | I          | 03               | Z6095      | 305   | (a)                |
| 4.76               | 4090          | (462) | 0.85           | -          | 5.75               | 3390          | (383)  | 0.85           | -          | 03               | Z6090      | 305   | (a)                |
|                    |               |       | 0.95           | -          |                    |               |        | 1.15           | I          | 03               | Z6095      | 305   | (a)                |
|                    |               |       | 1.73           | II         |                    |               |        | 1.73           | II         | 03               | A6100      | 305   | (a)                |
|                    |               |       | 1.91           | II         |                    |               |        | 2.26           | III        | 03               | A6105      | 305   | (a)                |
| 3.48               | 5600          | (632) | 0.84           | -          | 4.20               | 4640          | (524)  | 0.84           | -          | 03               | A6100      | 417   | (a)                |
|                    |               |       | 1.14           | I          |                    |               |        | 1.14           | I          | 03               | A6105      | 417   | (a)                |

# Single Reduction Selection Tables: Y1, Y2, Y3, Y4

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



**Selection Table Pages:**  
Single Reduction -Y1,Y2,Y3,Y4 3.10-3.38  
-Y5,Y6 3.39-3.61  
Double Reduction -Y1,Y2,Y3,Y4,Y5,Y6 3.62-3.79

**Dimension Pages:**  
Single Reduction 3.80-3.85  
Double Reduction 3.86-3.91

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

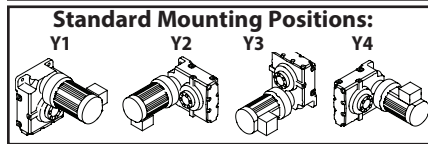
| 50Hz               |               |        |                | 60 Hz      |                    |               |        | Selection      |            |                  |            |       |                    |
|--------------------|---------------|--------|----------------|------------|--------------------|---------------|--------|----------------|------------|------------------|------------|-------|--------------------|
| Output Speed (RPM) | Output Torque |        | Service Factor |            | Output Speed (RPM) | Output Torque |        | Service Factor |            | Base             |            |       | VFD <sup>[1]</sup> |
|                    | in-lbs        | (N·m)  | SF             | AGMA Class |                    | in-lbs        | (N·m)  | SF             | AGMA Class | Motor Power Code | Frame Size | Ratio |                    |
| 69.0               | 451           | (51.0) | 2.87           | III        | 83.3               | 374           | (42.3) | 2.87           | III        | 05               | Z6090      | 21    | (a)                |
| 51.8               | 602           | (68.0) | 2.87           | III        | 62.5               | 499           | (56.4) | 2.87           | III        | 05               | Z6090      | 28    | (a)                |
| 37.7               | 828           | (93.5) | 2.87           | III        | 45.5               | 686           | (77.5) | 2.87           | III        | 05               | Z6090      | 39    | (a)                |
| 31.9               | 978           | (111)  | 2.87           | III        | 38.5               | 810           | (91.6) | 2.87           | III        | 05               | Z6090      | 46    | (a)                |
| 27.6               | 1130          | (128)  | 2.87           | III        | 33.3               | 935           | (106)  | 2.87           | III        | 05               | Z6090      | 53    | (a)                |
| 24.4               | 1280          | (145)  | 2.87           | III        | 29.4               | 1060          | (120)  | 2.87           | III        | 05               | Z6090      | 60    | (a)                |
|                    |               |        | 3.05           | III        |                    |               |        | 3.68           | III        | 05               | Z6095      | 60    | (a)                |
| 19.7               | 1580          | (179)  | 1.89           | II         | 23.8               | 1310          | (148)  | 1.89           | II         | 05               | Z6090      | 74    | (a)                |
|                    |               |        | 2.47           | III        |                    |               |        | 2.98           | III        | 05               | Z6095      | 74    | (a)                |
| 16.6               | 1880          | (213)  | 1.68           | II         | 20.0               | 1560          | (176)  | 1.68           | II         | 05               | Z6090      | 88    | (a)                |
|                    |               |        | 2.08           | III        |                    |               |        | 2.17           | III        | 05               | Z6095      | 88    | (a)                |
|                    |               |        | 3.17           | III        |                    |               |        | 3.17           | III        | 05               | A6100      | 88    | (a)                |
| 14.3               | 2180          | (247)  | 1.56           | II         | 17.2               | 1810          | (204)  | 1.56           | II         | 05               | Z6090      | 102   | (a)                |
|                    |               |        | 1.79           | II         |                    |               |        | 1.96           | II         | 05               | Z6095      | 102   | (a)                |
|                    |               |        | 3.03           | III        |                    |               |        | 3.03           | III        | 05               | A6100      | 102   | (a)                |
| 11.8               | 2630          | (298)  | 1.48           | II         | 14.3               | 2180          | (247)  | 1.53           | II         | 05               | Z6090      | 123   | (a)                |
|                    |               |        | 1.48           | II         |                    |               |        | 1.79           | II         | 05               | Z6095      | 123   | (a)                |
|                    |               |        | 2.44           | III        |                    |               |        | 2.44           | III        | 05               | A6100      | 123   | (a)                |
|                    |               |        | 2.97           | III        |                    |               |        | 3.00           | III        | 05               | A6105      | 123   | (a)                |
| 9.63               | 3240          | (366)  | 1.09           | I          | 11.6               | 2680          | (303)  | 1.09           | I          | 05               | Z6090      | 151   | (a)                |
|                    |               |        | 1.21           | I          |                    |               |        | 1.46           | II         | 05               | Z6095      | 151   | (a)                |
|                    |               |        | 1.95           | II         |                    |               |        | 1.95           | II         | 05               | A6100      | 151   | (a)                |
|                    |               |        | 2.42           | III        |                    |               |        | 2.70           | III        | 05               | A6105      | 151   | (a)                |
| 8.12               | 3840          | (434)  | 0.83           | -          | 9.80               | 3180          | (359)  | 0.83           | -          | 05               | Z6090      | 179   | (a)                |
|                    |               |        | 1.02           | I          |                    |               |        | 1.05           | I          | 05               | Z6095      | 179   | (a)                |
|                    |               |        | 1.40           | II         |                    |               |        | 1.40           | II         | 05               | A6100      | 179   | (a)                |
|                    |               |        | 1.94           | II         |                    |               |        | 1.94           | II         | 05               | A6105      | 179   | (a)                |
| 7.02               | 4440          | (502)  | 0.84           | -          | 8.47               | 3680          | (416)  | 0.93           | -          | 05               | Z6095      | 207   | (a)                |
|                    |               |        | 1.29           | I          |                    |               |        | 1.29           | I          | 05               | A6100      | 207   | (a)                |
|                    |               |        | 1.70           | II         |                    |               |        | 1.77           | II         | 05               | A6105      | 207   | (a)                |
| 5.84               | 5340          | (604)  | 1.09           | I          | 7.04               | 4430          | (500)  | 1.09           | I          | 05               | A6100      | 249   | (a)                |
|                    |               |        | 1.26           | I          |                    |               |        | 1.40           | II         | 05               | A6105      | 249   | (a)                |
|                    |               |        | 2.39           | III        |                    |               |        | 2.39           | III        | 05               | B6120      | 249   | (a)                |
|                    |               |        | 2.84           | III        |                    |               |        | 3.00           | III        | 05               | B6125      | 249   | (a)                |
| 4.76               | 6550          | (740)  | 1.08           | I          | 5.75               | 5420          | (613)  | 1.08           | I          | 05               | A6100      | 305   | (a)                |
|                    |               |        | 1.20           | I          |                    |               |        | 1.41           | II         | 05               | A6105      | 305   | (a)                |
|                    |               |        | 2.36           | III        |                    |               |        | 2.36           | III        | 05               | B6120      | 305   | (a)                |
|                    |               |        | 2.39           | III        |                    |               |        | 2.83           | III        | 05               | B6125      | 305   | (a)                |
|                    |               |        | 1.08           | I          |                    |               |        | 1.08           | I          | 05               | A6100      | 305   | (a)                |

**Notes:** [1] Variable Frequency Drive (VFD) notes (see page 3.8 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.

**Notes:** [1] Variable Frequency Drive (VFD) notes (see page 3.8 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.

# Single Reduction Selection Tables: Y1, Y2, Y3, Y4

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



**Selection Table Pages:**  
 Single Reduction  
 -Y1,Y2,Y3,Y4 3.10-3.38  
 -Y5,Y6 3.39-3.61  
 Double Reduction  
 -Y1,Y2,Y3,Y4,Y5,Y6 3.62-3.79

**Dimension Pages:**  
 Single Reduction 3.80-3.85  
 Double Reduction 3.86-3.91

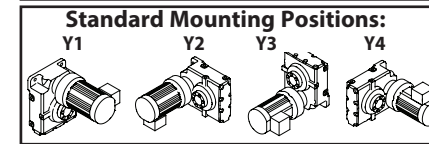
|                 |          |          |
|-----------------|----------|----------|
| Frequency       | 50 Hz    | 60 Hz    |
| Input Speed     | 1450 RPM | 1750 RPM |
| Number of Poles | 4        |          |

| 50Hz               |               |        |                | 60 Hz      |                    |               |        | Selection      |              |                  |              |       |                    |
|--------------------|---------------|--------|----------------|------------|--------------------|---------------|--------|----------------|--------------|------------------|--------------|-------|--------------------|
| Output Speed (RPM) | Output Torque |        | Service Factor |            | Output Speed (RPM) | Output Torque |        | Service Factor |              | Base             |              |       | VFD <sup>[1]</sup> |
|                    | in-lbs        | (N·m)  | SF             | AGMA Class |                    | in-lbs        | (N·m)  | SF             | AGMA Class   | Motor Power Code | Frame Size   | Ratio |                    |
| 69.0               | 621           | (70.1) | 2.08           | III        | 83.3               | 514           | (58.1) | 2.08           | III          | 08               | <b>Z6090</b> | 21    | (a)                |
|                    |               |        | 2.75           | III        |                    |               |        | 08             | <b>Z6095</b> | 21               | (a)          |       |                    |
| 51.8               | 828           | (93.5) | 2.08           | III        | 62.5               | 686           | (77.5) | 2.08           | III          | 08               | <b>Z6090</b> | 28    | (a)                |
|                    |               |        | 2.75           | III        |                    |               |        | 08             | <b>Z6095</b> | 28               | (a)          |       |                    |
| 37.7               | 1140          | (129)  | 2.08           | III        | 45.5               | 943           | (107)  | 2.08           | III          | 08               | <b>Z6090</b> | 39    | (a)                |
|                    |               |        | 2.75           | III        |                    |               |        | 08             | <b>Z6095</b> | 39               | (a)          |       |                    |
| 31.9               | 1340          | (152)  | 2.08           | III        | 38.5               | 1110          | (126)  | 2.08           | III          | 08               | <b>Z6090</b> | 46    | (a)                |
|                    |               |        | 2.75           | III        |                    |               |        | 08             | <b>Z6095</b> | 46               | (a)          |       |                    |
| 27.6               | 1550          | (175)  | 2.08           | III        | 33.3               | 1290          | (145)  | 2.08           | III          | 08               | <b>Z6090</b> | 53    | (a)                |
|                    |               |        | 2.52           | III        |                    |               |        | 08             | <b>Z6095</b> | 53               | (a)          |       |                    |
| 24.4               | 1760          | (199)  | 2.08           | III        | 29.4               | 1460          | (165)  | 2.08           | III          | 08               | <b>Z6090</b> | 60    | (a)                |
|                    |               |        | 2.22           | III        |                    |               |        | 08             | <b>Z6095</b> | 60               | (a)          |       |                    |
| 19.7               | 2170          | (245)  | 1.38           | I          | 23.8               | 1800          | (203)  | 1.38           | I            | 08               | <b>Z6090</b> | 74    | (a)                |
|                    |               |        | 1.80           | II         |                    |               |        | 08             | <b>Z6095</b> | 74               | (a)          |       |                    |
| 16.6               | 2590          | (292)  | 1.22           | I          | 20.0               | 2140          | (242)  | 1.22           | I            | 08               | <b>Z6090</b> | 88    | (a)                |
|                    |               |        | 1.51           | II         |                    |               |        | 08             | <b>Z6095</b> | 88               | (a)          |       |                    |
|                    |               |        | 2.31           | III        |                    |               |        | 08             | <b>A6100</b> | 88               | (a)          |       |                    |
|                    |               |        | 3.02           | III        |                    |               |        | 08             | <b>A6105</b> | 88               | (a)          |       |                    |
| 14.3               | 3000          | (339)  | 1.14           | I          | 17.2               | 2490          | (281)  | 1.14           | I            | 08               | <b>Z6090</b> | 102   | (a)                |
|                    |               |        | 1.30           | I          |                    |               |        | 08             | <b>Z6095</b> | 102              | (a)          |       |                    |
|                    |               |        | 2.20           | III        |                    |               |        | 08             | <b>A6100</b> | 102              | (a)          |       |                    |
|                    |               |        | 2.61           | III        |                    |               |        | 08             | <b>A6105</b> | 102              | (a)          |       |                    |
| 11.8               | 3620          | (409)  | 1.08           | I          | 14.3               | 3000          | (339)  | 1.11           | I            | 08               | <b>Z6090</b> | 123   | (a)                |
|                    |               |        | 1.08           | I          |                    |               |        | 08             | <b>Z6095</b> | 123              | (a)          |       |                    |
|                    |               |        | 1.77           | II         |                    |               |        | 08             | <b>A6100</b> | 123              | (a)          |       |                    |
|                    |               |        | 2.16           | III        |                    |               |        | 08             | <b>A6105</b> | 123              | (a)          |       |                    |
| 9.63               | 4450          | (503)  | 0.88           | -          | 11.6               | 3690          | (416)  | 1.06           | I            | 08               | <b>Z6095</b> | 151   | (a)                |
|                    |               |        | 1.42           | II         |                    |               |        | 08             | <b>A6100</b> | 151              | (a)          |       |                    |
|                    |               |        | 1.76           | II         |                    |               |        | 08             | <b>A6105</b> | 151              | (a)          |       |                    |
| 8.12               | 5280          | (596)  | 1.02           | I          | 9.80               | 4370          | (494)  | 1.02           | I            | 08               | <b>A6100</b> | 179   | (a)                |
|                    |               |        | 1.41           | II         |                    |               |        | 08             | <b>A6105</b> | 179              | (a)          |       |                    |
|                    |               |        | 2.96           | III        |                    |               |        | 08             | <b>B6120</b> | 179              | (a)          |       |                    |
|                    |               |        | 2.97           | III        |                    |               |        | 08             | <b>B6125</b> | 179              | (a)          |       |                    |
| 7.02               | 6100          | (690)  | 0.94           | -          | 8.47               | 5060          | (571)  | 0.94           | -            | 08               | <b>A6100</b> | 207   | (a)                |
|                    |               |        | 1.24           | I          |                    |               |        | 08             | <b>A6105</b> | 207              | (a)          |       |                    |
|                    |               |        | 2.36           | III        |                    |               |        | 08             | <b>B6120</b> | 207              | (a)          |       |                    |
|                    |               |        | 2.57           | III        |                    |               |        | 08             | <b>B6125</b> | 207              | (a)          |       |                    |

**Notes:** [1] Variable Frequency Drive (VFD) notes (see page 3.8 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.

# Single Reduction Selection Tables: Y1, Y2, Y3, Y4

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



**Selection Table Pages:**  
 Single Reduction  
 -Y1,Y2,Y3,Y4 3.10-3.38  
 -Y5,Y6 3.39-3.61  
 Double Reduction  
 -Y1,Y2,Y3,Y4,Y5,Y6 3.62-3.79

**Dimension Pages:**  
 Single Reduction 3.80-3.85  
 Double Reduction 3.86-3.91

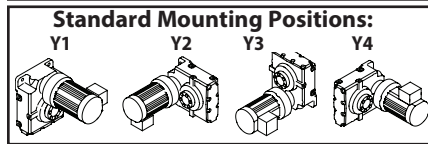
|                 |          |          |
|-----------------|----------|----------|
| Frequency       | 50 Hz    | 60 Hz    |
| Input Speed     | 1450 RPM | 1750 RPM |
| Number of Poles | 4        |          |

| 50Hz               |               |        |                | 60 Hz      |                    |               |       | Selection      |              |                  |              |       |                    |
|--------------------|---------------|--------|----------------|------------|--------------------|---------------|-------|----------------|--------------|------------------|--------------|-------|--------------------|
| Output Speed (RPM) | Output Torque |        | Service Factor |            | Output Speed (RPM) | Output Torque |       | Service Factor |              | Base             |              |       | VFD <sup>[1]</sup> |
|                    | in-lbs        | (N·m)  | SF             | AGMA Class |                    | in-lbs        | (N·m) | SF             | AGMA Class   | Motor Power Code | Frame Size   | Ratio |                    |
| 5.84               | 7350          | (830)  | 0.92           | -          | 7.04               | 6090          | (688) | 1.02           | I            | 08               | <b>A6105</b> | 249   | (a)                |
|                    |               |        | 1.74           | II         |                    |               |       | 08             | <b>B6120</b> | 249              | (a)          |       |                    |
|                    |               |        | 2.07           | III        |                    |               |       | 08             | <b>B6125</b> | 249              | (a)          |       |                    |
| 4.76               | 9000          | (1020) | 0.87           | -          | 5.75               | 7460          | (843) | 1.03           | I            | 08               | <b>A6105</b> | 305   | (a)                |
|                    |               |        | 1.72           | II         |                    |               |       | 08             | <b>B6120</b> | 305              | (a)          |       |                    |
|                    |               |        | 1.74           | II         |                    |               |       | 08             | <b>B6125</b> | 305              | (a)          |       |                    |

**Notes:** [1] Variable Frequency Drive (VFD) notes (see page 3.8 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.

# Single Reduction Selection Tables: Y1, Y2, Y3, Y4

**1 HP  
(0.75 kW)**



**Selection Table Pages:**

|  |           |
|--|-----------|
| Single Reduction<br>-Y1,Y2,Y3,Y4       | 3.10-3.38 |
| -Y5,Y6                                 | 3.39-3.61 |
| Double Reduction<br>-Y1,Y2,Y3,Y4,Y5,Y6 | 3.62-3.79 |

**Dimension Pages:**

|                  |           |
|------------------|-----------|
| Single Reduction | 3.80-3.85 |
| Double Reduction | 3.86-3.91 |

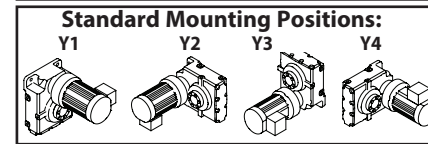
|                 |          |          |
|-----------------|----------|----------|
| Frequency       | 50 Hz    | 60 Hz    |
| Input Speed     | 1450 RPM | 1750 RPM |
| Number of Poles | 4        |          |

| 50Hz               |               |        |                | 60 Hz      |                    |               |        | Selection      |              |                  |              |       |                    |
|--------------------|---------------|--------|----------------|------------|--------------------|---------------|--------|----------------|--------------|------------------|--------------|-------|--------------------|
| Output Speed (RPM) | Output Torque |        | Service Factor |            | Output Speed (RPM) | Output Torque |        | Service Factor |              | Base             |              |       | VFD <sup>[1]</sup> |
|                    | in-lbs        | (N·m)  | SF             | AGMA Class |                    | in-lbs        | (N·m)  | SF             | AGMA Class   | Motor Power Code | Frame Size   | Ratio |                    |
| 138                | 423           | (47.8) | 3.13           | III        | 167                | 351           | (39.6) | 3.13           | III          | 1                | <b>A6100</b> | 11    |                    |
| 69.0               | 847           | (95.6) | 1.53           | II         | 83.3               | 701           | (79.2) | 1.53           | II           | 1                | <b>Z6090</b> | 21    |                    |
|                    |               |        | 2.02           | III        |                    |               |        | 1              | <b>Z6095</b> | 21               |              |       |                    |
|                    |               |        | 3.13           | III        |                    |               |        | 1              | <b>A6100</b> | 21               |              |       |                    |
|                    |               |        | 3.13           | III        |                    |               |        | 1              | <b>A6100</b> | 21               |              |       |                    |
| 51.8               | 1130          | (128)  | 1.53           | II         | 62.5               | 935           | (106)  | 1.53           | II           | 1                | <b>Z6090</b> | 28    |                    |
|                    |               |        | 2.02           | III        |                    |               |        | 1              | <b>Z6095</b> | 28               |              |       |                    |
|                    |               |        | 3.13           | III        |                    |               |        | 1              | <b>A6100</b> | 28               |              |       |                    |
| 37.7               | 1550          | (175)  | 1.53           | II         | 45.5               | 1290          | (145)  | 1.53           | II           | 1                | <b>Z6090</b> | 39    |                    |
|                    |               |        | 2.02           | III        |                    |               |        | 1              | <b>Z6095</b> | 39               |              |       |                    |
|                    |               |        | 3.13           | III        |                    |               |        | 1              | <b>A6100</b> | 39               |              |       |                    |
| 31.9               | 1830          | (207)  | 1.53           | II         | 38.5               | 1520          | (172)  | 1.53           | II           | 1                | <b>Z6090</b> | 46    |                    |
|                    |               |        | 2.02           | III        |                    |               |        | 1              | <b>Z6095</b> | 46               |              |       |                    |
|                    |               |        | 3.13           | III        |                    |               |        | 1              | <b>A6100</b> | 46               |              |       |                    |
| 27.6               | 2120          | (239)  | 1.53           | II         | 33.3               | 1750          | (198)  | 1.53           | II           | 1                | <b>Z6090</b> | 53    |                    |
|                    |               |        | 1.85           | II         |                    |               |        | 1              | <b>Z6095</b> | 53               |              |       |                    |
|                    |               |        | 3.13           | III        |                    |               |        | 1              | <b>A6100</b> | 53               |              |       |                    |
| 24.4               | 2400          | (271)  | 1.53           | II         | 29.4               | 1990          | (225)  | 1.53           | II           | 1                | <b>Z6090</b> | 60    |                    |
|                    |               |        | 1.63           | II         |                    |               |        | 1              | <b>Z6095</b> | 60               |              |       |                    |
|                    |               |        | 2.65           | III        |                    |               |        | 1              | <b>A6100</b> | 60               |              |       |                    |
| 19.7               | 2960          | (335)  | 1.01           | I          | 23.8               | 2450          | (277)  | 1.01           | I            | 1                | <b>Z6090</b> | 74    |                    |
|                    |               |        | 1.32           | I          |                    |               |        | 1              | <b>Z6095</b> | 74               |              |       |                    |
|                    |               |        | 2.53           | III        |                    |               |        | 1              | <b>A6100</b> | 74               |              |       |                    |
|                    |               |        | 2.64           | III        |                    |               |        | 1              | <b>A6105</b> | 74               |              |       |                    |
| 16.6               | 3530          | (399)  | 0.89           | -          | 20.0               | 2920          | (330)  | 0.89           | -            | 1                | <b>Z6090</b> | 88    |                    |
|                    |               |        | 1.11           | I          |                    |               |        | 1              | <b>Z6095</b> | 88               |              |       |                    |
|                    |               |        | 1.69           | II         |                    |               |        | 1              | <b>A6100</b> | 88               |              |       |                    |
|                    |               |        | 2.22           | III        |                    |               |        | 1              | <b>A6105</b> | 88               |              |       |                    |
| 14.3               | 4090          | (462)  | 0.83           | -          | 17.2               | 3390          | (383)  | 0.83           | -            | 1                | <b>Z6090</b> | 102   |                    |
|                    |               |        | 0.95           | -          |                    |               |        | 1              | <b>Z6095</b> | 102              |              |       |                    |
|                    |               |        | 1.61           | II         |                    |               |        | 1              | <b>A6100</b> | 102              |              |       |                    |
|                    |               |        | 1.91           | II         |                    |               |        | 1              | <b>A6105</b> | 102              |              |       |                    |
| 11.8               | 4940          | (558)  | 0.79           | -          | 14.3               | 4090          | (462)  | 0.82           | -            | 1                | <b>Z6090</b> | 123   |                    |
|                    |               |        | 0.79           | -          |                    |               |        | 1              | <b>Z6095</b> | 123              |              |       |                    |
|                    |               |        | 1.30           | I          |                    |               |        | 1              | <b>A6100</b> | 123              |              |       |                    |
|                    |               |        | 1.58           | II         |                    |               |        | 1              | <b>A6105</b> | 123              |              |       |                    |
|                    |               |        | 3.16           | III        |                    |               |        | 1              | <b>B6120</b> | 123              |              |       |                    |
|                    |               |        | 3.17           | III        |                    |               |        | 1              | <b>B6125</b> | 123              |              |       |                    |

**Notes:** [1] Variable Frequency Drive (VFD) notes (see page 3.8 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.

# Single Reduction Selection Tables: Y1, Y2, Y3, Y4

**1 HP  
(0.75 kW)**



**Selection Table Pages:**

|  |           |
|--|-----------|
| Single Reduction<br>-Y1,Y2,Y3,Y4       | 3.10-3.38 |
| -Y5,Y6                                 | 3.39-3.61 |
| Double Reduction<br>-Y1,Y2,Y3,Y4,Y5,Y6 | 3.62-3.79 |

**Dimension Pages:**

|                  |           |
|------------------|-----------|
| Single Reduction | 3.80-3.85 |
| Double Reduction | 3.86-3.91 |

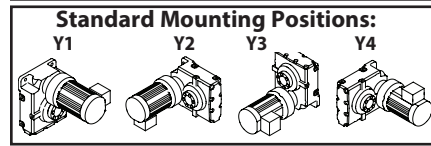
|                 |          |          |
|-----------------|----------|----------|
| Frequency       | 50 Hz    | 60 Hz    |
| Input Speed     | 1450 RPM | 1750 RPM |
| Number of Poles | 4        |          |

| 50Hz               |               |        |                | 60 Hz      |                    |               |        | Selection      |              |                  |              |       |                    |
|--------------------|---------------|--------|----------------|------------|--------------------|---------------|--------|----------------|--------------|------------------|--------------|-------|--------------------|
| Output Speed (RPM) | Output Torque |        | Service Factor |            | Output Speed (RPM) | Output Torque |        | Service Factor |              | Base             |              |       | VFD <sup>[1]</sup> |
|                    | in-lbs        | (N·m)  | SF             | AGMA Class |                    | in-lbs        | (N·m)  | SF             | AGMA Class   | Motor Power Code | Frame Size   | Ratio |                    |
| 9.63               | 6070          | (685)  | 1.04           | I          | 11.6               | 5030          | (568)  | 1.04           | I            | 1                | <b>A6100</b> | 151   |                    |
|                    |               |        | 1.29           | I          |                    |               |        | 1              | <b>A6105</b> | 151              |              |       |                    |
|                    |               |        | 2.55           | III        |                    |               |        | 1              | <b>B6120</b> | 151              |              |       |                    |
|                    |               |        | 2.58           | III        |                    |               |        | 1              | <b>B6125</b> | 151              |              |       |                    |
| 8.12               | 7200          | (813)  | 1.03           | I          | 9.80               | 5960          | (674)  | 1.03           | I            | 1                | <b>A6105</b> | 179   |                    |
|                    |               |        | 2.17           | III        |                    |               |        | 1              | <b>B6120</b> | 179              |              |       |                    |
|                    |               |        | 2.18           | III        |                    |               |        | 1              | <b>B6125</b> | 179              |              |       |                    |
| 7.02               | 8320          | (940)  | 0.91           | -          | 8.47               | 6900          | (779)  | 0.94           | -            | 1                | <b>A6105</b> | 207   |                    |
|                    |               |        | 1.73           | II         |                    |               |        | 1              | <b>B6120</b> | 207              |              |       |                    |
|                    |               |        | 1.88           | II         |                    |               |        | 1              | <b>B6125</b> | 207              |              |       |                    |
| 5.84               | 10000         | (1130) | 1.28           | I          | 7.04               | 8300          | (938)  | 1.28           | I            | 1                | <b>B6120</b> | 249   |                    |
|                    |               |        | 1.52           | II         |                    |               |        | 1              | <b>B6125</b> | 249              |              |       |                    |
|                    |               |        | 3.13           | III        |                    |               |        | 1              | <b>C6140</b> | 249              |              |       |                    |
|                    |               |        | 3.13           | III        |                    |               |        | 1              | <b>C6145</b> | 249              |              |       |                    |
| 4.76               | 12300         | (1390) | 1.26           | I          | 5.75               | 10200         | (1150) | 1.26           | I            | 1                | <b>B6120</b> | 305   |                    |
|                    |               |        | 1.28           | I          |                    |               |        | 1              | <b>B6125</b> | 305              |              |       |                    |
|                    |               |        | 2.55           | III        |                    |               |        | 1              | <b>C6140</b> | 305              |              |       |                    |
|                    |               |        | 2.55           | III        |                    |               |        | 1              | <b>C6145</b> | 305              |              |       |                    |

**Notes:** [1] Variable Frequency Drive (VFD) notes (see page 3.8 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.

# Single Reduction Selection Tables: Y1, Y2, Y3, Y4

**1.5 HP  
(1.1 kW)**



**Selection Table Pages:**  
Single Reduction  
-Y1,Y2,Y3,Y4 3.10-3.38  
-Y5,Y6 3.39-3.61  
Double Reduction  
-Y1,Y2,Y3,Y4,Y5,Y6 3.62-3.79

**Dimension Pages:**  
Single Reduction 3.80-3.85  
Double Reduction 3.86-3.91

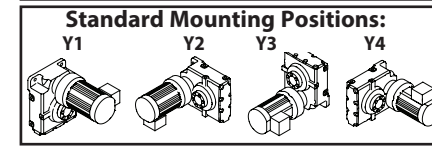
|                 |          |          |
|-----------------|----------|----------|
| Frequency       | 50 Hz    | 60 Hz    |
| Input Speed     | 1450 RPM | 1750 RPM |
| Number of Poles | 4        |          |

| 50Hz               |               |        |                | 60 Hz      |                    |               |        | Selection      |              |                  |              | VFD <sup>[1]</sup> |
|--------------------|---------------|--------|----------------|------------|--------------------|---------------|--------|----------------|--------------|------------------|--------------|--------------------|
| Output Speed (RPM) | Output Torque |        | Service Factor |            | Output Speed (RPM) | Output Torque |        | Service Factor |              | Base             |              |                    |
|                    | in-lbs        | (N·m)  | SF             | AGMA Class |                    | in-lbs        | (N·m)  | SF             | AGMA Class   | Motor Power Code | Frame Size   | Ratio              |
| 138                | 621           | (70.1) | 2.14           | III        | 167                | 514           | (58.1) | 2.14           | III          | 1H               | <b>A6100</b> | 11                 |
|                    |               |        | 2.89           | III        |                    |               |        | 1H             | <b>A6105</b> | 11               |              |                    |
| 82.9               | 1030          | (117)  | 2.23           | III        | 100                | 857           | (96.9) | 2.23           | III          | 1H               | <b>A6100</b> | 18                 |
|                    |               |        | 3.01           | III        |                    |               |        | 1H             | <b>A6105</b> | 18               |              |                    |
| 69.0               | 1240          | (140)  | 1.04           | I          | 83.3               | 1030          | (116)  | 1.04           | I            | 1H               | <b>Z6090</b> | 21                 |
|                    |               |        | 1.38           | I          |                    |               |        | 1H             | <b>Z6095</b> | 21               |              |                    |
|                    |               |        | 2.13           | III        |                    |               |        | 1H             | <b>A6100</b> | 21               |              |                    |
|                    |               |        | 2.89           | III        |                    |               |        | 1H             | <b>A6105</b> | 21               |              |                    |
| 51.8               | 1660          | (187)  | 1.04           | I          | 62.5               | 1370          | (155)  | 1.04           | I            | 1H               | <b>Z6090</b> | 28                 |
|                    |               |        | 1.38           | I          |                    |               |        | 1H             | <b>Z6095</b> | 28               |              |                    |
|                    |               |        | 2.13           | III        |                    |               |        | 1H             | <b>A6100</b> | 28               |              |                    |
|                    |               |        | 2.89           | III        |                    |               |        | 1H             | <b>A6105</b> | 28               |              |                    |
| 37.7               | 2280          | (257)  | 1.04           | I          | 45.5               | 1890          | (213)  | 1.04           | I            | 1H               | <b>Z6090</b> | 39                 |
|                    |               |        | 1.38           | I          |                    |               |        | 1H             | <b>Z6095</b> | 39               |              |                    |
|                    |               |        | 2.13           | III        |                    |               |        | 1H             | <b>A6100</b> | 39               |              |                    |
|                    |               |        | 2.89           | III        |                    |               |        | 1H             | <b>A6105</b> | 39               |              |                    |
| 31.9               | 2690          | (304)  | 1.04           | I          | 38.5               | 2230          | (252)  | 1.04           | I            | 1H               | <b>Z6090</b> | 46                 |
|                    |               |        | 1.38           | I          |                    |               |        | 1H             | <b>Z6095</b> | 46               |              |                    |
|                    |               |        | 2.13           | III        |                    |               |        | 1H             | <b>A6100</b> | 46               |              |                    |
|                    |               |        | 2.89           | III        |                    |               |        | 1H             | <b>A6105</b> | 46               |              |                    |
| 27.6               | 3100          | (351)  | 1.04           | I          | 33.3               | 2570          | (291)  | 1.04           | I            | 1H               | <b>Z6090</b> | 53                 |
|                    |               |        | 1.26           | I          |                    |               |        | 1H             | <b>Z6095</b> | 53               |              |                    |
|                    |               |        | 2.13           | III        |                    |               |        | 1H             | <b>A6100</b> | 53               |              |                    |
|                    |               |        | 2.52           | III        |                    |               |        | 1H             | <b>A6105</b> | 53               |              |                    |
| 24.4               | 3520          | (397)  | 1.04           | I          | 29.4               | 2910          | (329)  | 1.04           | I            | 1H               | <b>Z6090</b> | 60                 |
|                    |               |        | 1.11           | I          |                    |               |        | 1H             | <b>Z6095</b> | 60               |              |                    |
|                    |               |        | 1.81           | II         |                    |               |        | 1H             | <b>A6100</b> | 60               |              |                    |
|                    |               |        | 2.22           | III        |                    |               |        | 1H             | <b>A6105</b> | 60               |              |                    |
| 19.7               | 4350          | (491)  | 0.90           | -          | 23.8               | 3600          | (407)  | 1.08           | I            | 1H               | <b>Z6095</b> | 74                 |
|                    |               |        | 1.73           | II         |                    |               |        | 1H             | <b>A6100</b> | 74               |              |                    |
|                    |               |        | 1.80           | II         |                    |               |        | 1H             | <b>A6105</b> | 74               |              |                    |
| 16.6               | 5170          | (584)  | 1.15           | I          | 20.0               | 4290          | (484)  | 1.15           | I            | 1H               | <b>A6100</b> | 88                 |
|                    |               |        | 1.51           | II         |                    |               |        | 1H             | <b>A6105</b> | 88               |              |                    |
|                    |               |        | 2.81           | III        |                    |               |        | 1H             | <b>B6120</b> | 88               |              |                    |
|                    |               |        | 3.03           | III        |                    |               |        | 1H             | <b>B6125</b> | 88               |              |                    |

**Notes:** [1] Variable Frequency Drive (VFD) notes (see page 3.8 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.

# Single Reduction Selection Tables: Y1, Y2, Y3, Y4

**1.5 HP  
(1.1 kW)**



**Selection Table Pages:**  
Single Reduction  
-Y1,Y2,Y3,Y4 3.10-3.38  
-Y5,Y6 3.39-3.61  
Double Reduction  
-Y1,Y2,Y3,Y4,Y5,Y6 3.62-3.79

**Dimension Pages:**  
Single Reduction 3.80-3.85  
Double Reduction 3.86-3.91

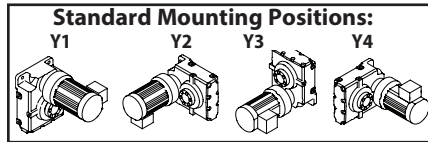
|                 |          |          |
|-----------------|----------|----------|
| Frequency       | 50 Hz    | 60 Hz    |
| Input Speed     | 1450 RPM | 1750 RPM |
| Number of Poles | 4        |          |

| 50Hz               |               |        |                | 60 Hz      |                    |               |        | Selection      |              |                  |              | VFD <sup>[1]</sup> |
|--------------------|---------------|--------|----------------|------------|--------------------|---------------|--------|----------------|--------------|------------------|--------------|--------------------|
| Output Speed (RPM) | Output Torque |        | Service Factor |            | Output Speed (RPM) | Output Torque |        | Service Factor |              | Base             |              |                    |
|                    | in-lbs        | (N·m)  | SF             | AGMA Class |                    | in-lbs        | (N·m)  | SF             | AGMA Class   | Motor Power Code | Frame Size   | Ratio              |
| 14.3               | 6000          | (678)  | 1.10           | I          | 17.2               | 4970          | (562)  | 1.10           | I            | 1H               | <b>A6100</b> | 102                |
|                    |               |        | 1.30           | I          |                    |               |        | 1H             | <b>A6105</b> | 102              |              |                    |
|                    |               |        | 2.61           | III        |                    |               |        | 1H             | <b>B6120</b> | 102              |              |                    |
|                    |               |        | 2.61           | III        |                    |               |        | 1H             | <b>B6125</b> | 102              |              |                    |
| 11.8               | 7240          | (818)  | 0.89           | -          | 14.3               | 6000          | (678)  | 0.89           | -            | 1H               | <b>A6100</b> | 123                |
|                    |               |        | 1.08           | I          |                    |               |        | 1H             | <b>A6105</b> | 123              |              |                    |
|                    |               |        | 2.15           | III        |                    |               |        | 1H             | <b>B6120</b> | 123              |              |                    |
|                    |               |        | 2.16           | III        |                    |               |        | 1H             | <b>B6125</b> | 123              |              |                    |
| 9.63               | 8900          | (1010) | 0.88           | -          | 11.6               | 7370          | (833)  | 0.98           | -            | 1H               | <b>A6105</b> | 151                |
|                    |               |        | 1.74           | II         |                    |               |        | 1H             | <b>B6120</b> | 151              |              |                    |
|                    |               |        | 1.76           | II         |                    |               |        | 1H             | <b>B6125</b> | 151              |              |                    |
| 8.12               | 10600         | (1190) | 1.48           | II         | 9.80               | 8740          | (988)  | 1.56           | II           | 1H               | <b>B6120</b> | 179                |
|                    |               |        | 1.48           | II         |                    |               |        | 1H             | <b>B6125</b> | 179              |              |                    |
|                    |               |        | 2.97           | III        |                    |               |        | 1H             | <b>C6140</b> | 179              |              |                    |
|                    |               |        | 2.97           | III        |                    |               |        | 1H             | <b>C6145</b> | 179              |              |                    |
| 7.02               | 12200         | (1380) | 1.18           | I          | 8.47               | 10100         | (1140) | 1.18           | I            | 1H               | <b>B6120</b> | 207                |
|                    |               |        | 1.28           | I          |                    |               |        | 1H             | <b>B6125</b> | 207              |              |                    |
|                    |               |        | 2.57           | III        |                    |               |        | 1H             | <b>C6140</b> | 207              |              |                    |
|                    |               |        | 2.57           | III        |                    |               |        | 1H             | <b>C6145</b> | 207              |              |                    |
| 5.84               | 14700         | (1660) | 0.87           | -          | 7.04               | 12200         | (1380) | 0.87           | -            | 1H               | <b>B6120</b> | 249                |
|                    |               |        | 1.03           | I          |                    |               |        | 1H             | <b>B6125</b> | 249              |              |                    |
|                    |               |        | 2.13           | III        |                    |               |        | 1H             | <b>C6140</b> | 249              |              |                    |
|                    |               |        | 2.13           | III        |                    |               |        | 1H             | <b>C6145</b> | 249              |              |                    |
|                    |               |        | 3.15           | III        |                    |               |        | 1H             | <b>D6160</b> | 249              |              |                    |
| 4.76               | 18000         | (2030) | 0.86           | -          | 5.75               | 14900         | (1690) | 0.86           | -            | 1H               | <b>B6120</b> | 305                |
|                    |               |        | 0.87           | -          |                    |               |        | 1H             | <b>B6125</b> | 305              |              |                    |
|                    |               |        | 1.74           | II         |                    |               |        | 1H             | <b>C6140</b> | 305              |              |                    |
|                    |               |        | 1.74           | II         |                    |               |        | 1H             | <b>C6145</b> | 305              |              |                    |
|                    |               |        | 2.93           | III        |                    |               |        | 1H             | <b>D6160</b> | 305              |              |                    |
|                    |               |        | 3.05           | III        |                    |               |        | 1H             | <b>D6165</b> | 305              |              |                    |

**Notes:** [1] Variable Frequency Drive (VFD) notes (see page 3.8 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.

# Single Reduction Selection Tables: Y1, Y2, Y3, Y4

**2 HP  
(1.5 kW)**



**Selection Table Pages:**

|  |           |
|--|-----------|
| Single Reduction<br>-Y1,Y2,Y3,Y4       | 3.10-3.38 |
| -Y5,Y6                                 | 3.39-3.61 |
| Double Reduction<br>-Y1,Y2,Y3,Y4,Y5,Y6 | 3.62-3.79 |

**Dimension Pages:**

|                  |           |
|------------------|-----------|
| Single Reduction | 3.80-3.85 |
| Double Reduction | 3.86-3.91 |

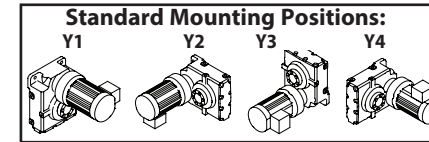
|                 |          |          |
|-----------------|----------|----------|
| Frequency       | 50 Hz    | 60 Hz    |
| Input Speed     | 1450 RPM | 1750 RPM |
| Number of Poles | 4        |          |

| 50Hz               |               |        |                | 60 Hz      |                    |               |        | Selection      |              |                  |              | VFD <sup>[1]</sup> |
|--------------------|---------------|--------|----------------|------------|--------------------|---------------|--------|----------------|--------------|------------------|--------------|--------------------|
| Output Speed (RPM) | Output Torque |        | Service Factor |            | Output Speed (RPM) | Output Torque |        | Service Factor |              | Base             |              |                    |
|                    | in-lbs        | (N·m)  | SF             | AGMA Class |                    | in-lbs        | (N·m)  | SF             | AGMA Class   | Motor Power Code | Frame Size   | Ratio              |
| 138                | 847           | (95.6) | 1.57           | II         | 167                | 701           | (79.2) | 1.57           | II           | 2                | <b>A6100</b> | 11                 |
|                    |               |        | 2.12           | III        |                    |               |        | 2              | <b>A6105</b> | 11               |              |                    |
| 82.9               | 1410          | (159)  | 1.63           | II         | 100                | 1170          | (132)  | 1.63           | II           | 2                | <b>A6100</b> | 18                 |
|                    |               |        | 2.21           | III        |                    |               |        | 2              | <b>A6105</b> | 18               |              |                    |
| 69.0               | 1690          | (191)  | 1.01           | I          | 83.3               | 1400          | (158)  | 1.01           | I            | 2                | <b>Z6095</b> | 21                 |
|                    |               |        | 1.56           | II         |                    |               |        | 2              | <b>A6100</b> | 21               |              |                    |
|                    |               |        | 2.12           | III        |                    |               |        | 2              | <b>A6105</b> | 21               |              |                    |
| 51.8               | 2260          | (255)  | 1.01           | I          | 62.5               | 1870          | (211)  | 1.01           | I            | 2                | <b>Z6095</b> | 28                 |
|                    |               |        | 1.56           | II         |                    |               |        | 2              | <b>A6100</b> | 28               |              |                    |
|                    |               |        | 2.12           | III        |                    |               |        | 2              | <b>A6105</b> | 28               |              |                    |
| 37.7               | 3100          | (351)  | 1.01           | I          | 45.5               | 2570          | (291)  | 1.01           | I            | 2                | <b>Z6095</b> | 39                 |
|                    |               |        | 1.56           | II         |                    |               |        | 2              | <b>A6100</b> | 39               |              |                    |
|                    |               |        | 2.12           | III        |                    |               |        | 2              | <b>A6105</b> | 39               |              |                    |
| 31.9               | 3670          | (414)  | 1.01           | I          | 38.5               | 3040          | (343)  | 1.01           | I            | 2                | <b>Z6095</b> | 46                 |
|                    |               |        | 1.56           | II         |                    |               |        | 2              | <b>A6100</b> | 46               |              |                    |
|                    |               |        | 2.12           | III        |                    |               |        | 2              | <b>A6105</b> | 46               |              |                    |
| 27.6               | 4230          | (478)  | 0.92           | -          | 33.3               | 3510          | (396)  | 1.01           | I            | 2                | <b>Z6095</b> | 53                 |
|                    |               |        | 1.56           | II         |                    |               |        | 2              | <b>A6100</b> | 53               |              |                    |
|                    |               |        | 1.85           | II         |                    |               |        | 2              | <b>A6105</b> | 53               |              |                    |
| 24.4               | 4800          | (542)  | 0.81           | -          | 29.4               | 3970          | (449)  | 0.98           | -            | 2                | <b>Z6095</b> | 60                 |
|                    |               |        | 1.32           | I          |                    |               |        | 2              | <b>A6100</b> | 60               |              |                    |
|                    |               |        | 1.63           | II         |                    |               |        | 2              | <b>A6105</b> | 60               |              |                    |
| 19.7               | 5930          | (669)  | 0.66           | -          | 23.8               | 4910          | (555)  | 0.80           | -            | 2                | <b>Z6095</b> | 74                 |
|                    |               |        | 1.27           | I          |                    |               |        | 2              | <b>A6100</b> | 74               |              |                    |
|                    |               |        | 1.32           | I          |                    |               |        | 2              | <b>A6105</b> | 74               |              |                    |
|                    |               |        | 2.64           | III        |                    |               |        | 2              | <b>B6120</b> | 74               |              |                    |
|                    |               |        | 2.64           | III        |                    |               |        | 2              | <b>B6125</b> | 74               |              |                    |
| 16.6               | 7050          | (797)  | 0.85           | -          | 20.0               | 5840          | (660)  | 0.85           | -            | 2                | <b>A6100</b> | 88                 |
|                    |               |        | 1.11           | I          |                    |               |        | 2              | <b>A6105</b> | 88               |              |                    |
|                    |               |        | 2.06           | III        |                    |               |        | 2              | <b>B6120</b> | 88               |              |                    |
|                    |               |        | 2.22           | III        |                    |               |        | 2              | <b>B6125</b> | 88               |              |                    |
| 14.3               | 8180          | (925)  | 0.81           | -          | 17.2               | 6780          | (766)  | 0.81           | -            | 2                | <b>A6100</b> | 102                |
|                    |               |        | 0.96           | -          |                    |               |        | 2              | <b>A6105</b> | 102              |              |                    |
|                    |               |        | 1.91           | II         |                    |               |        | 2              | <b>B6120</b> | 102              |              |                    |
|                    |               |        | 1.91           | II         |                    |               |        | 2              | <b>B6125</b> | 102              |              |                    |

**Notes:** [1] Variable Frequency Drive (VFD) notes (see page 3.8 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.

# Single Reduction Selection Tables: Y1, Y2, Y3, Y4

**2 HP  
(1.5 kW)**



**Selection Table Pages:**

|  |           |
|--|-----------|
| Single Reduction<br>-Y1,Y2,Y3,Y4       | 3.10-3.38 |
| -Y5,Y6                                 | 3.39-3.61 |
| Double Reduction<br>-Y1,Y2,Y3,Y4,Y5,Y6 | 3.62-3.79 |

**Dimension Pages:**

|                  |           |
|------------------|-----------|
| Single Reduction | 3.80-3.85 |
| Double Reduction | 3.86-3.91 |

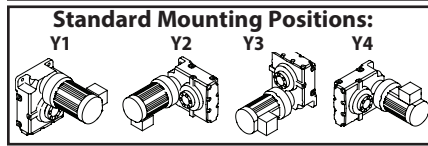
|                 |          |          |
|-----------------|----------|----------|
| Frequency       | 50 Hz    | 60 Hz    |
| Input Speed     | 1450 RPM | 1750 RPM |
| Number of Poles | 4        |          |

| 50Hz               |               |        |                | 60 Hz      |                    |               |        | Selection      |              |                  |              | VFD <sup>[1]</sup> |
|--------------------|---------------|--------|----------------|------------|--------------------|---------------|--------|----------------|--------------|------------------|--------------|--------------------|
| Output Speed (RPM) | Output Torque |        | Service Factor |            | Output Speed (RPM) | Output Torque |        | Service Factor |              | Base             |              |                    |
|                    | in-lbs        | (N·m)  | SF             | AGMA Class |                    | in-lbs        | (N·m)  | SF             | AGMA Class   | Motor Power Code | Frame Size   | Ratio              |
| 11.8               | 9880          | (1120) | 0.79           | -          | 14.3               | 8180          | (925)  | 0.80           | -            | 2                | <b>A6105</b> | 123                |
|                    |               |        | 1.58           | II         |                    |               |        | 2              | <b>B6120</b> | 123              |              |                    |
|                    |               |        | 1.59           | II         |                    |               |        | 2              | <b>B6125</b> | 123              |              |                    |
|                    |               |        | 3.17           | III        |                    |               |        | 2              | <b>C6140</b> | 123              |              |                    |
|                    |               |        | 3.17           | III        |                    |               |        | 2              | <b>C6145</b> | 123              |              |                    |
| 9.63               | 12100         | (1370) | 1.27           | I          | 11.6               | 10100         | (1140) | 1.27           | I            | 2                | <b>B6120</b> | 151                |
|                    |               |        | 1.29           | I          |                    |               |        | 2              | <b>B6125</b> | 151              |              |                    |
|                    |               |        | 2.58           | III        |                    |               |        | 2              | <b>C6140</b> | 151              |              |                    |
| 8.12               | 14400         | (1630) | 1.09           | I          | 9.80               | 11900         | (1350) | 1.14           | I            | 2                | <b>B6120</b> | 179                |
|                    |               |        | 1.09           | I          |                    |               |        | 2              | <b>B6125</b> | 179              |              |                    |
|                    |               |        | 2.18           | III        |                    |               |        | 2              | <b>C6140</b> | 179              |              |                    |
| 7.02               | 16600         | (1880) | 0.87           | -          | 8.47               | 13800         | (1560) | 0.87           | -            | 2                | <b>B6120</b> | 207                |
|                    |               |        | 0.94           | -          |                    |               |        | 2              | <b>B6125</b> | 207              |              |                    |
|                    |               |        | 1.88           | II         |                    |               |        | 2              | <b>C6140</b> | 207              |              |                    |
|                    |               |        | 1.88           | II         |                    |               |        | 2              | <b>C6145</b> | 207              |              |                    |
|                    |               |        | 2.95           | III        |                    |               |        | 2              | <b>D6160</b> | 207              |              |                    |
| 5.84               | 20000         | (2260) | 0.76           | -          | 7.04               | 16600         | (1880) | 0.80           | -            | 2                | <b>B6125</b> | 249                |
|                    |               |        | 1.56           | II         |                    |               |        | 2              | <b>C6140</b> | 249              |              |                    |
|                    |               |        | 1.56           | II         |                    |               |        | 2              | <b>C6145</b> | 249              |              |                    |
|                    |               |        | 2.31           | III        |                    |               |        | 2              | <b>D6160</b> | 249              |              |                    |
|                    |               |        | 2.74           | III        |                    |               |        | 2              | <b>D6165</b> | 249              |              |                    |
| 4.76               | 24500         | (2770) | 1.28           | I          | 5.75               | 20300         | (2300) | 1.32           | I            | 2                | <b>C6140</b> | 305                |
|                    |               |        | 1.28           | I          |                    |               |        | 2              | <b>C6145</b> | 305              |              |                    |
|                    |               |        | 2.15           | III        |                    |               |        | 2              | <b>D6160</b> | 305              |              |                    |
|                    |               |        | 2.24           | III        |                    |               |        | 2              | <b>D6165</b> | 305              |              |                    |

**Notes:** [1] Variable Frequency Drive (VFD) notes (see page 3.8 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.

# Single Reduction Selection Tables: Y1, Y2, Y3, Y4

**3 HP  
(2.2 kW)**



**Selection Table Pages:**

|  |           |
|--|-----------|
| Single Reduction<br>-Y1,Y2,Y3,Y4       | 3.10-3.38 |
| -Y5,Y6                                 | 3.39-3.61 |
| Double Reduction<br>-Y1,Y2,Y3,Y4,Y5,Y6 | 3.62-3.79 |

**Dimension Pages:**

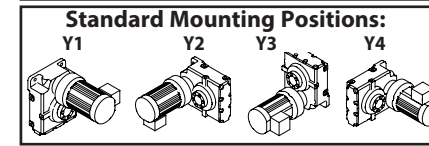
|                  |           |
|------------------|-----------|
| Single Reduction | 3.80-3.85 |
| Double Reduction | 3.86-3.91 |

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

| 50Hz               |               |       |                | 60 Hz      |                    |               |       | Selection      |            |                  |            | VFD <sup>[1]</sup> |
|--------------------|---------------|-------|----------------|------------|--------------------|---------------|-------|----------------|------------|------------------|------------|--------------------|
| Output Speed (RPM) | Output Torque |       | Service Factor |            | Output Speed (RPM) | Output Torque |       | Service Factor |            | Base             |            |                    |
|                    | in-lbs        | (N·m) | SF             | AGMA Class |                    | in-lbs        | (N·m) | SF             | AGMA Class | Motor Power Code | Frame Size | Ratio              |
| 138                | 1240          | (140) | 1.07           | I          | 167                | 1030          | (116) | 1.07           | I          | 3                | A6100      | 11                 |
|                    |               |       | 1.45           | II         |                    |               |       | 3              | A6105      | 11               |            |                    |
|                    |               |       | 2.30           | III        |                    |               |       | 3              | B6120      | 11               |            |                    |
|                    |               |       | 2.82           | III        |                    |               |       | 3              | B6125      | 11               |            |                    |
| 82.9               | 2070          | (234) | 1.11           | I          | 100                | 1710          | (194) | 1.11           | I          | 3                | A6100      | 18                 |
|                    |               |       | 1.51           | II         |                    |               |       | 3              | A6105      | 18               |            |                    |
|                    |               |       | 2.35           | III        |                    |               |       | 3              | B6120      | 18               |            |                    |
|                    |               |       | 2.88           | III        |                    |               |       | 3              | B6125      | 18               |            |                    |
| 69.0               | 2480          | (281) | 1.07           | I          | 83.3               | 2060          | (232) | 1.07           | I          | 3                | A6100      | 21                 |
|                    |               |       | 1.45           | II         |                    |               |       | 3              | A6105      | 21               |            |                    |
|                    |               |       | 2.30           | III        |                    |               |       | 3              | B6120      | 21               |            |                    |
|                    |               |       | 3.16           | III        |                    |               |       | 3              | B6125      | 21               |            |                    |
| 51.8               | 3310          | (374) | 1.07           | I          | 62.5               | 2740          | (310) | 1.07           | I          | 3                | A6100      | 28                 |
|                    |               |       | 1.45           | II         |                    |               |       | 3              | A6105      | 28               |            |                    |
|                    |               |       | 2.30           | III        |                    |               |       | 3              | B6120      | 28               |            |                    |
|                    |               |       | 3.16           | III        |                    |               |       | 3              | B6125      | 28               |            |                    |
| 37.7               | 4550          | (514) | 1.07           | I          | 45.5               | 3770          | (426) | 1.07           | I          | 3                | A6100      | 39                 |
|                    |               |       | 1.45           | II         |                    |               |       | 3              | A6105      | 39               |            |                    |
|                    |               |       | 2.30           | III        |                    |               |       | 3              | B6120      | 39               |            |                    |
|                    |               |       | 2.69           | III        |                    |               |       | 3              | B6125      | 39               |            |                    |
| 31.9               | 5380          | (608) | 1.07           | I          | 38.5               | 4460          | (504) | 1.07           | I          | 3                | A6100      | 46                 |
|                    |               |       | 1.45           | II         |                    |               |       | 3              | A6105      | 46               |            |                    |
|                    |               |       | 2.30           | III        |                    |               |       | 3              | B6120      | 46               |            |                    |
|                    |               |       | 2.69           | III        |                    |               |       | 3              | B6125      | 46               |            |                    |
| 27.6               | 6210          | (701) | 1.07           | I          | 33.3               | 5140          | (581) | 1.07           | I          | 3                | A6100      | 53                 |
|                    |               |       | 1.26           | I          |                    |               |       | 3              | A6105      | 53               |            |                    |
|                    |               |       | 2.30           | III        |                    |               |       | 3              | B6120      | 53               |            |                    |
|                    |               |       | 2.52           | III        |                    |               |       | 3              | B6125      | 53               |            |                    |
| 24.4               | 7040          | (795) | 0.90           | -          | 29.4               | 5830          | (659) | 0.90           | -          | 3                | A6100      | 60                 |
|                    |               |       | 1.11           | I          |                    |               |       | 3              | A6105      | 60               |            |                    |
|                    |               |       | 2.22           | III        |                    |               |       | 3              | B6120      | 60               |            |                    |
|                    |               |       | 2.23           | III        |                    |               |       | 3              | B6125      | 60               |            |                    |
| 19.7               | 8690          | (982) | 0.86           | -          | 23.8               | 7200          | (814) | 0.88           | -          | 3                | A6100      | 74                 |
|                    |               |       | 0.90           | -          |                    |               |       | 3              | A6105      | 74               |            |                    |
|                    |               |       | 1.80           | II         |                    |               |       | 3              | B6120      | 74               |            |                    |
|                    |               |       | 1.80           | II         |                    |               |       | 3              | B6125      | 74               |            |                    |

# Single Reduction Selection Tables: Y1, Y2, Y3, Y4

**3 HP  
(2.2 kW)**



**Selection Table Pages:**

|  |           |
|--|-----------|
| Single Reduction<br>-Y1,Y2,Y3,Y4       | 3.10-3.38 |
| -Y5,Y6                                 | 3.39-3.61 |
| Double Reduction<br>-Y1,Y2,Y3,Y4,Y5,Y6 | 3.62-3.79 |

**Dimension Pages:**

|                  |           |
|------------------|-----------|
| Single Reduction | 3.80-3.85 |
| Double Reduction | 3.86-3.91 |

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

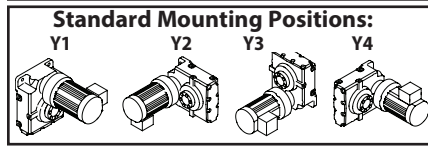
| 50Hz               |               |        |                | 60 Hz      |                    |               |        | Selection      |            |                  |            | VFD <sup>[1]</sup> |
|--------------------|---------------|--------|----------------|------------|--------------------|---------------|--------|----------------|------------|------------------|------------|--------------------|
| Output Speed (RPM) | Output Torque |        | Service Factor |            | Output Speed (RPM) | Output Torque |        | Service Factor |            | Base             |            |                    |
|                    | in-lbs        | (N·m)  | SF             | AGMA Class |                    | in-lbs        | (N·m)  | SF             | AGMA Class | Motor Power Code | Frame Size | Ratio              |
| 16.6               | 10300         | (1170) | 1.40           | II         | 20.0               | 8570          | (969)  | 1.40           | II         | 3                | B6120      | 88                 |
|                    |               |        | 1.51           | II         |                    |               |        | 3              | B6125      | 88               |            |                    |
|                    |               |        | 3.03           | III        |                    |               |        | 3              | C6140      | 88               |            |                    |
|                    |               |        | 3.03           | III        |                    |               |        | 3              | C6145      | 88               |            |                    |
|                    |               |        | 3.03           | III        |                    |               |        | 3              | C6145      | 88               |            |                    |
| 14.3               | 12000         | (1360) | 1.30           | I          | 17.2               | 9940          | (1120) | 1.36           | I          | 3                | B6120      | 102                |
|                    |               |        | 1.31           | I          |                    |               |        | 3              | B6125      | 102              |            |                    |
|                    |               |        | 2.61           | III        |                    |               |        | 3              | C6140      | 102              |            |                    |
|                    |               |        | 2.61           | III        |                    |               |        | 3              | C6145      | 102              |            |                    |
|                    |               |        | 2.61           | III        |                    |               |        | 3              | C6145      | 102              |            |                    |
| 11.8               | 14500         | (1640) | 1.08           | I          | 14.3               | 12000         | (1360) | 1.13           | I          | 3                | B6120      | 123                |
|                    |               |        | 1.08           | I          |                    |               |        | 3              | B6125      | 123              |            |                    |
|                    |               |        | 2.16           | III        |                    |               |        | 3              | C6140      | 123              |            |                    |
|                    |               |        | 2.16           | III        |                    |               |        | 3              | C6145      | 123              |            |                    |
|                    |               |        | 2.16           | III        |                    |               |        | 3              | C6145      | 123              |            |                    |
| 9.63               | 17800         | (2010) | 0.87           | -          | 11.6               | 14700         | (1670) | 0.87           | -          | 3                | B6120      | 151                |
|                    |               |        | 0.88           | -          |                    |               |        | 3              | B6125      | 151              |            |                    |
|                    |               |        | 1.76           | II         |                    |               |        | 3              | C6140      | 151              |            |                    |
|                    |               |        | 1.76           | II         |                    |               |        | 3              | C6145      | 151              |            |                    |
|                    |               |        | 2.93           | III        |                    |               |        | 3              | D6160      | 151              |            |                    |
|                    |               |        | 3.08           | III        |                    |               |        | 3              | D6165      | 151              |            |                    |
|                    |               |        | 3.08           | III        |                    |               |        | 3              | D6165      | 151              |            |                    |
| 8.12               | 21100         | (2380) | 0.74           | -          | 9.80               | 17500         | (1980) | 0.90           | -          | 3                | B6125      | 179                |
|                    |               |        | 1.48           | II         |                    |               |        | 3              | C6140      | 179              |            |                    |
|                    |               |        | 1.48           | II         |                    |               |        | 3              | C6145      | 179              |            |                    |
|                    |               |        | 2.50           | III        |                    |               |        | 3              | D6160      | 179              |            |                    |
|                    |               |        | 2.60           | III        |                    |               |        | 3              | D6165      | 179              |            |                    |
| 7.02               | 24400         | (2760) | 1.28           | I          | 8.47               | 20200         | (2290) | 1.35           | I          | 3                | C6140      | 207                |
|                    |               |        | 1.28           | I          |                    |               |        | 3              | C6145      | 207              |            |                    |
|                    |               |        | 2.01           | III        |                    |               |        | 3              | D6160      | 207              |            |                    |
|                    |               |        | 2.25           | III        |                    |               |        | 3              | D6165      | 207              |            |                    |
|                    |               |        | 3.01           | III        |                    |               |        | 3              | E6170      | 207              |            |                    |
|                    |               |        | 3.14           | III        |                    |               |        | 3              | E6175      | 207              |            |                    |
| 5.84               | 29400         | (3320) | 1.07           | I          | 7.04               | 24300         | (2750) | 1.10           | I          | 3                | C6140      | 249                |
|                    |               |        | 1.07           | I          |                    |               |        | 3              | C6145      | 249              |            |                    |
|                    |               |        | 1.58           | II         |                    |               |        | 3              | D6160      | 249              |            |                    |
|                    |               |        | 1.87           | II         |                    |               |        | 3              | D6165      | 249              |            |                    |
|                    |               |        | 2.50           | III        |                    |               |        | 3              | E6170      | 249              |            |                    |
| 2.61               | III           | 3      | E6175          | 249        |                    |               |        |                |            |                  |            |                    |

**Notes:** [1] Variable Frequency Drive (VFD) notes (see page 3.8 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.

**Notes:** [1] Variable Frequency Drive (VFD) notes (see page 3.8 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.

# Single Reduction Selection Tables: Y1, Y2, Y3, Y4

**3 HP  
(2.2 kW)**



**Selection Table Pages:**  
Single Reduction  
-Y1,Y2,Y3,Y4 3.10-3.38  
-Y5,Y6 3.39-3.61  
Double Reduction  
-Y1,Y2,Y3,Y4,Y5,Y6 3.62-3.79

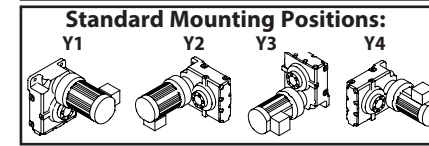
**Dimension Pages:**  
Single Reduction 3.80-3.85  
Double Reduction 3.86-3.91

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

| 50Hz               |               |        | 60 Hz              |               |        | Selection        |            |       | VFD <sup>[1]</sup> |     |
|--------------------|---------------|--------|--------------------|---------------|--------|------------------|------------|-------|--------------------|-----|
| Output Speed (RPM) | Output Torque |        | Output Speed (RPM) | Output Torque |        | Base             |            |       |                    |     |
|                    | in-lbs        | (N·m)  |                    | in-lbs        | (N·m)  | Motor Power Code | Frame Size | Ratio |                    |     |
| 4.76               | 36000         | (4070) | 5.75               | 29800         | (3370) | 0.87             | -          | 3     | <b>C6140</b>       | 305 |
|                    |               |        |                    |               |        | 0.87             | -          | 3     | <b>C6145</b>       | 305 |
|                    |               |        |                    |               |        | 1.47             | II         | 3     | <b>D6160</b>       | 305 |
|                    |               |        |                    |               |        | 1.52             | II         | 3     | <b>D6165</b>       | 305 |
|                    |               |        |                    |               |        | 2.08             | III        | 3     | <b>E6170</b>       | 305 |
|                    |               |        |                    |               |        | 2.13             | III        | 3     | <b>E6175</b>       | 305 |

# Single Reduction Selection Tables: Y1, Y2, Y3, Y4

**5 HP  
(3.7 kW)**



**Selection Table Pages:**  
Single Reduction  
-Y1,Y2,Y3,Y4 3.10-3.38  
-Y5,Y6 3.39-3.61  
Double Reduction  
-Y1,Y2,Y3,Y4,Y5,Y6 3.62-3.79

**Dimension Pages:**  
Single Reduction 3.80-3.85  
Double Reduction 3.86-3.91

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

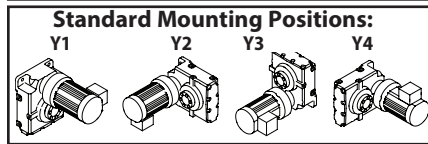
| 50Hz               |               |        | 60 Hz              |               |        | Selection        |            |       | VFD <sup>[1]</sup> |     |
|--------------------|---------------|--------|--------------------|---------------|--------|------------------|------------|-------|--------------------|-----|
| Output Speed (RPM) | Output Torque |        | Output Speed (RPM) | Output Torque |        | Base             |            |       |                    |     |
|                    | in-lbs        | (N·m)  |                    | in-lbs        | (N·m)  | Motor Power Code | Frame Size | Ratio |                    |     |
| 138                | 2090          | (236)  | 167                | 1730          | (195)  | 1.37             | I          | 5     | <b>B6120</b>       | 11  |
|                    |               |        |                    |               |        | 1.68             | II         | 5     | <b>B6125</b>       | 11  |
| 82.9               | 3480          | (393)  | 100                | 2880          | (326)  | 1.40             | II         | 5     | <b>B6120</b>       | 18  |
|                    |               |        |                    |               |        | 1.71             | II         | 5     | <b>B6125</b>       | 18  |
| 69.0               | 4180          | (472)  | 83.3               | 3460          | (391)  | 1.37             | I          | 5     | <b>B6120</b>       | 21  |
|                    |               |        |                    |               |        | 1.88             | II         | 5     | <b>B6125</b>       | 21  |
| 51.8               | 5570          | (629)  | 62.5               | 4610          | (521)  | 1.37             | I          | 5     | <b>B6120</b>       | 28  |
|                    |               |        |                    |               |        | 1.88             | II         | 5     | <b>B6125</b>       | 28  |
| 37.7               | 7660          | (865)  | 45.5               | 6340          | (717)  | 1.37             | I          | 5     | <b>B6120</b>       | 39  |
|                    |               |        |                    |               |        | 1.60             | II         | 5     | <b>B6125</b>       | 39  |
| 31.9               | 9050          | (1020) | 38.5               | 7500          | (847)  | 1.37             | I          | 5     | <b>B6120</b>       | 46  |
|                    |               |        |                    |               |        | 1.60             | II         | 5     | <b>B6125</b>       | 46  |
| 27.6               | 10400         | (1180) | 33.3               | 8650          | (977)  | 1.37             | I          | 5     | <b>B6120</b>       | 53  |
|                    |               |        |                    |               |        | 1.50             | II         | 5     | <b>B6125</b>       | 53  |
|                    |               |        |                    |               |        | 3.00             | III        | 5     | <b>C6140</b>       | 53  |
|                    |               |        |                    |               |        | 3.00             | III        | 5     | <b>C6145</b>       | 53  |
| 24.4               | 11800         | (1340) | 29.4               | 9800          | (1110) | 1.37             | I          | 5     | <b>B6120</b>       | 60  |
|                    |               |        |                    |               |        | 1.32             | I          | 5     | <b>B6125</b>       | 60  |
|                    |               |        |                    |               |        | 2.65             | III        | 5     | <b>C6140</b>       | 60  |
|                    |               |        |                    |               |        | 2.65             | III        | 5     | <b>C6145</b>       | 60  |
| 19.7               | 14600         | (1650) | 23.8               | 12100         | (1370) | 1.07             | I          | 5     | <b>B6120</b>       | 74  |
|                    |               |        |                    |               |        | 1.07             | I          | 5     | <b>B6125</b>       | 74  |
|                    |               |        |                    |               |        | 2.14             | III        | 5     | <b>C6140</b>       | 74  |
|                    |               |        |                    |               |        | 2.14             | III        | 5     | <b>C6145</b>       | 74  |
| 16.6               | 17400         | (1970) | 20.0               | 14400         | (1630) | 0.83             | -          | 5     | <b>B6120</b>       | 88  |
|                    |               |        |                    |               |        | 0.90             | -          | 5     | <b>B6125</b>       | 88  |
|                    |               |        |                    |               |        | 1.80             | II         | 5     | <b>C6140</b>       | 88  |
|                    |               |        |                    |               |        | 1.80             | II         | 5     | <b>C6145</b>       | 88  |
|                    |               |        |                    |               |        | 2.67             | III        | 5     | <b>D6160</b>       | 88  |
|                    |               |        |                    |               |        | 3.15             | III        | 5     | <b>D6165</b>       | 88  |
| 14.3               | 20200         | (2280) | 17.2               | 16700         | (1890) | 0.77             | -          | 5     | <b>B6120</b>       | 102 |
|                    |               |        |                    |               |        | 0.78             | -          | 5     | <b>B6125</b>       | 102 |
|                    |               |        |                    |               |        | 1.55             | II         | 5     | <b>C6140</b>       | 102 |
|                    |               |        |                    |               |        | 1.55             | II         | 5     | <b>C6145</b>       | 102 |
|                    |               |        |                    |               |        | 2.58             | III        | 5     | <b>D6160</b>       | 102 |
|                    |               |        |                    |               |        | 2.72             | III        | 5     | <b>D6165</b>       | 102 |

**Notes:** [1] Variable Frequency Drive (VFD) notes (see page 3.8 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.

**Notes:** [1] Variable Frequency Drive (VFD) notes (see page 3.8 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.

# Single Reduction Selection Tables: Y1, Y2, Y3, Y4

**5 HP  
(3.7 kW)**



**Selection Table Pages:**

|                    |           |
|--------------------|-----------|
| Single Reduction   |           |
| -Y1,Y2,Y3,Y4       | 3.10-3.38 |
| -Y5,Y6             | 3.39-3.61 |
| Double Reduction   |           |
| -Y1,Y2,Y3,Y4,Y5,Y6 | 3.62-3.79 |

**Dimension Pages:**

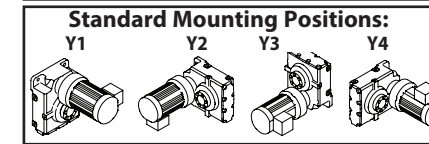
|                  |           |
|------------------|-----------|
| Single Reduction | 3.80-3.85 |
| Double Reduction | 3.86-3.91 |

|                 |          |          |
|-----------------|----------|----------|
| 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 |            | Output Speed (RPM) | Output Torque |       | Service Factor |              | Base             |              |       | VFD <sup>[1]</sup> |
|                    | in-lbs        | (N·m) | SF             | AGMA Class |                    | in-lbs        | (N·m) | SF             | AGMA Class   | Motor Power Code | Frame Size   | Ratio |                    |
| 11.8               | 24400 (2750)  |       | 1.29           | I          | 14.3               | 20200 (2280)  |       | 1.41           | II           | 5                | <b>C6140</b> | 123   |                    |
|                    |               |       | 1.29           | I          |                    |               |       | 5              | <b>C6145</b> | 123              |              |       |                    |
|                    |               |       | 2.17           | III        |                    |               |       | 5              | <b>D6160</b> | 123              |              |       |                    |
|                    |               |       | 2.25           | III        |                    |               |       | 5              | <b>D6165</b> | 123              |              |       |                    |
|                    |               |       | 3.02           | III        |                    |               |       | 5              | <b>E6170</b> | 123              | (-)          |       |                    |
|                    |               |       | 3.14           | III        |                    |               |       | 5              | <b>E6175</b> | 123              | (-)          |       |                    |
| 9.63               | 29900 (3380)  |       | 1.05           | I          | 11.6               | 24800 (2800)  |       | 1.06           | I            | 5                | <b>C6140</b> | 151   |                    |
|                    |               |       | 1.05           | I          |                    |               |       | 5              | <b>C6145</b> | 151              |              |       |                    |
|                    |               |       | 1.74           | II         |                    |               |       | 5              | <b>D6160</b> | 151              |              |       |                    |
|                    |               |       | 1.83           | II         |                    |               |       | 5              | <b>D6165</b> | 151              |              |       |                    |
|                    |               |       | 2.45           | III        |                    |               |       | 5              | <b>E6170</b> | 151              |              |       |                    |
|                    |               |       | 2.56           | III        |                    |               |       | 5              | <b>E6175</b> | 151              |              |       |                    |
| 8.12               | 35500 (4010)  |       | 0.88           | -          | 9.80               | 29400 (3320)  |       | 0.93           | -            | 5                | <b>C6140</b> | 179   |                    |
|                    |               |       | 0.88           | -          |                    |               |       | 5              | <b>C6145</b> | 179              |              |       |                    |
|                    |               |       | 1.49           | II         |                    |               |       | 5              | <b>D6160</b> | 179              |              |       |                    |
|                    |               |       | 1.55           | II         |                    |               |       | 5              | <b>D6165</b> | 179              |              |       |                    |
|                    |               |       | 2.07           | III        |                    |               |       | 5              | <b>E6170</b> | 179              |              |       |                    |
|                    |               |       | 2.16           | III        |                    |               |       | 5              | <b>E6175</b> | 179              |              |       |                    |
| 7.02               | 41100 (4640)  |       | 0.76           | -          | 8.47               | 34000 (3840)  |       | 0.80           | -            | 5                | <b>C6140</b> | 207   |                    |
|                    |               |       | 0.76           | -          |                    |               |       | 5              | <b>C6145</b> | 207              |              |       |                    |
|                    |               |       | 1.19           | I          |                    |               |       | 5              | <b>D6160</b> | 207              |              |       |                    |
|                    |               |       | 1.34           | I          |                    |               |       | 5              | <b>D6165</b> | 207              |              |       |                    |
|                    |               |       | 1.79           | II         |                    |               |       | 5              | <b>E6170</b> | 207              |              |       |                    |
|                    |               |       | 1.86           | II         |                    |               |       | 5              | <b>E6175</b> | 207              |              |       |                    |
| 5.84               | 49400 (5580)  |       | 0.94           | -          | 7.04               | 40900 (4630)  |       | 0.94           | -            | 5                | <b>D6160</b> | 249   |                    |
|                    |               |       | 1.11           | I          |                    |               |       | 5              | <b>D6165</b> | 249              |              |       |                    |
|                    |               |       | 1.49           | II         |                    |               |       | 5              | <b>E6170</b> | 249              |              |       |                    |
|                    |               |       | 1.55           | II         |                    |               |       | 5              | <b>E6175</b> | 249              |              |       |                    |
| 4.76               | 60600 (6840)  |       | 0.87           | -          | 5.75               | 50200 (5670)  |       | 0.94           | -            | 5                | <b>D6160</b> | 305   |                    |
|                    |               |       | 0.91           | -          |                    |               |       | 5              | <b>D6165</b> | 305              |              |       |                    |
|                    |               |       | 1.23           | I          |                    |               |       | 5              | <b>E6170</b> | 305              |              |       |                    |
|                    |               |       | 1.26           | I          |                    |               |       | 5              | <b>E6175</b> | 305              |              |       |                    |

# Single Reduction Selection Tables: Y1, Y2, Y3, Y4

**7.5 HP  
(5.5 kW)**



**Selection Table Pages:**

|                    |           |
|--------------------|-----------|
| Single Reduction   |           |
| -Y1,Y2,Y3,Y4       | 3.10-3.38 |
| -Y5,Y6             | 3.39-3.61 |
| Double Reduction   |           |
| -Y1,Y2,Y3,Y4,Y5,Y6 | 3.62-3.79 |

**Dimension Pages:**

|                  |           |
|------------------|-----------|
| Single Reduction | 3.80-3.85 |
| Double Reduction | 3.86-3.91 |

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

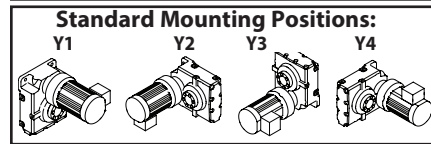
| 50Hz               |               |       |                | 60 Hz      |                    |               |       | Selection      |              |                  |              |       |                    |
|--------------------|---------------|-------|----------------|------------|--------------------|---------------|-------|----------------|--------------|------------------|--------------|-------|--------------------|
| Output Speed (RPM) | Output Torque |       | Service Factor |            | Output Speed (RPM) | Output Torque |       | Service Factor |              | Base             |              |       | VFD <sup>[1]</sup> |
|                    | in-lbs        | (N·m) | SF             | AGMA Class |                    | in-lbs        | (N·m) | SF             | AGMA Class   | Motor Power Code | Frame Size   | Ratio |                    |
| 138                | 3100 (351)    |       | 0.92           | -          | 167                | 2570 (291)    |       | 0.92           | -            | 8                | <b>B6120</b> | 11    |                    |
|                    |               |       | 1.13           | I          |                    |               |       | 8              | <b>B6125</b> | 11               |              |       |                    |
|                    |               |       | 2.28           | III        |                    |               |       | 8              | <b>C6140</b> | 11               |              |       |                    |
|                    |               |       | 2.65           | III        |                    |               |       | 8              | <b>C6145</b> | 11               |              |       |                    |
|                    |               |       |                |            |                    |               |       |                |              |                  |              |       |                    |
| 82.9               | 5170 (584)    |       | 0.94           | -          | 100                | 4290 (484)    |       | 0.94           | -            | 8                | <b>B6120</b> | 18    |                    |
|                    |               |       | 1.15           | I          |                    |               |       | 8              | <b>B6125</b> | 18               |              |       |                    |
|                    |               |       | 2.36           | III        |                    |               |       | 8              | <b>C6140</b> | 18               |              |       |                    |
|                    |               |       | 2.75           | III        |                    |               |       | 8              | <b>C6145</b> | 18               |              |       |                    |
| 69.0               | 6210 (701)    |       | 0.92           | -          | 83.3               | 5140 (581)    |       | 0.92           | -            | 8                | <b>B6120</b> | 21    |                    |
|                    |               |       | 1.27           | I          |                    |               |       | 8              | <b>B6125</b> | 21               |              |       |                    |
|                    |               |       | 2.36           | III        |                    |               |       | 8              | <b>C6140</b> | 21               |              |       |                    |
|                    |               |       | 2.75           | III        |                    |               |       | 8              | <b>C6145</b> | 21               |              |       |                    |
| 51.8               | 8280 (935)    |       | 0.92           | -          | 62.5               | 6860 (775)    |       | 0.92           | -            | 8                | <b>B6120</b> | 28    |                    |
|                    |               |       | 1.26           | I          |                    |               |       | 8              | <b>B6125</b> | 28               |              |       |                    |
|                    |               |       | 2.36           | III        |                    |               |       | 8              | <b>C6140</b> | 28               |              |       |                    |
|                    |               |       | 2.75           | III        |                    |               |       | 8              | <b>C6145</b> | 28               |              |       |                    |
| 37.7               | 11400 (1290)  |       | 0.92           | -          | 45.5               | 9430 (1070)   |       | 0.92           | -            | 8                | <b>B6120</b> | 39    |                    |
|                    |               |       | 1.08           | I          |                    |               |       | 8              | <b>B6125</b> | 39               |              |       |                    |
|                    |               |       | 2.36           | III        |                    |               |       | 8              | <b>C6140</b> | 39               |              |       |                    |
|                    |               |       | 2.75           | III        |                    |               |       | 8              | <b>C6145</b> | 39               |              |       |                    |
| 31.9               | 13400 (1520)  |       | 0.92           | -          | 38.5               | 11100 (1260)  |       | 0.92           | -            | 8                | <b>B6120</b> | 46    |                    |
|                    |               |       | 1.08           | I          |                    |               |       | 8              | <b>B6125</b> | 46               |              |       |                    |
|                    |               |       | 2.36           | III        |                    |               |       | 8              | <b>C6140</b> | 46               |              |       |                    |
|                    |               |       | 2.33           | III        |                    |               |       | 8              | <b>C6145</b> | 46               |              |       |                    |
| 27.6               | 15500 (1750)  |       | 0.92           | -          | 33.3               | 12900 (1450)  |       | 0.92           | -            | 8                | <b>B6120</b> | 53    |                    |
|                    |               |       | 1.01           | I          |                    |               |       | 8              | <b>B6125</b> | 53               |              |       |                    |
|                    |               |       | 2.02           | III        |                    |               |       | 8              | <b>C6140</b> | 53               |              |       |                    |
|                    |               |       | 2.02           | III        |                    |               |       | 8              | <b>C6145</b> | 53               |              |       |                    |
| 24.4               | 17600 (1990)  |       | 0.89           | -          | 29.4               | 14600 (1650)  |       | 0.92           | -            | 8                | <b>B6120</b> | 60    |                    |
|                    |               |       | 0.89           | -          |                    |               |       | 8              | <b>B6125</b> | 60               |              |       |                    |
|                    |               |       | 1.78           | II         |                    |               |       | 8              | <b>C6140</b> | 60               |              |       |                    |
|                    |               |       | 1.78           | II         |                    |               |       | 8              | <b>C6145</b> | 60               |              |       |                    |
|                    |               |       | 2.37           | III        |                    |               |       | 8              | <b>D6160</b> | 60               |              |       |                    |
|                    |               |       | 3.12           | III        |                    |               |       | 8              | <b>D6165</b> | 60               |              |       |                    |

**Notes:** [1] Variable Frequency Drive (VFD) notes (see page 3.8 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.

**Notes:** [1] Variable Frequency Drive (VFD) notes (see page 3.8 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.

# Single Reduction Selection Tables: Y1, Y2, Y3, Y4

**7.5 HP  
(5.5 kW)**



**Selection Table Pages:**

|  |           |
|--|-----------|
| Single Reduction<br>-Y1,Y2,Y3,Y4       | 3.10-3.38 |
| -Y5,Y6                                 | 3.39-3.61 |
| Double Reduction<br>-Y1,Y2,Y3,Y4,Y5,Y6 | 3.62-3.79 |

**Dimension Pages:**

|                  |           |
|------------------|-----------|
| Single Reduction | 3.80-3.85 |
| Double Reduction | 3.86-3.91 |

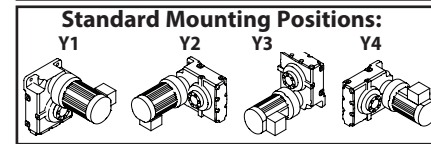
|                 |          |          |
|-----------------|----------|----------|
| Frequency       | 50 Hz    | 60 Hz    |
| Input Speed     | 1450 RPM | 1750 RPM |
| Number of Poles | 4        |          |

| 50Hz               |               |       |                | 60 Hz      |                    |               |       | Selection      |              |                  |              |       |                    |
|--------------------|---------------|-------|----------------|------------|--------------------|---------------|-------|----------------|--------------|------------------|--------------|-------|--------------------|
| Output Speed (RPM) | Output Torque |       | Service Factor |            | Output Speed (RPM) | Output Torque |       | Service Factor |              | Base             |              |       | VFD <sup>[1]</sup> |
|                    | in-lbs        | (N·m) | SF             | AGMA Class |                    | in-lbs        | (N·m) | SF             | AGMA Class   | Motor Power Code | Frame Size   | Ratio |                    |
| 19.7               | 21700 (2450)  |       | 0.72           | -          | 23.8               | 18000 (2030)  |       | 0.87           | -            | 8                | <b>B6125</b> | 74    |                    |
|                    |               |       | 1.44           | II         |                    |               |       | 8              | <b>C6140</b> | 74               |              |       |                    |
|                    |               |       | 1.44           | II         |                    |               |       | 8              | <b>C6145</b> | 74               |              |       |                    |
|                    |               |       | 2.35           | III        |                    |               |       | 8              | <b>D6160</b> | 74               |              |       |                    |
|                    |               |       | 2.53           | III        |                    |               |       | 8              | <b>D6165</b> | 74               |              |       |                    |
|                    |               |       | 2.92           | III        |                    |               |       | 8              | <b>D6165</b> | 74               |              |       |                    |
| 16.6               | 25900 (2920)  |       | 1.21           | I          | 20.0               | 21400 (2420)  |       | 1.25           | I            | 8                | <b>C6140</b> | 88    |                    |
|                    |               |       | 1.21           | I          |                    |               |       | 8              | <b>C6145</b> | 88               |              |       |                    |
|                    |               |       | 1.79           | II         |                    |               |       | 8              | <b>D6160</b> | 88               |              |       |                    |
|                    |               |       | 2.12           | III        |                    |               |       | 8              | <b>D6165</b> | 88               |              |       |                    |
|                    |               |       | 2.83           | III        |                    |               |       | 8              | <b>E6170</b> | 88               |              |       |                    |
|                    |               |       | 2.96           | III        |                    |               |       | 8              | <b>E6175</b> | 88               |              |       |                    |
| 14.3               | 30000 (3390)  |       | 1.04           | I          | 17.2               | 24900 (2810)  |       | 1.08           | I            | 8                | <b>C6140</b> | 102   |                    |
|                    |               |       | 1.04           | I          |                    |               |       | 8              | <b>C6145</b> | 102              |              |       |                    |
|                    |               |       | 1.74           | II         |                    |               |       | 8              | <b>D6160</b> | 102              |              |       |                    |
|                    |               |       | 1.83           | II         |                    |               |       | 8              | <b>D6165</b> | 102              |              |       |                    |
|                    |               |       | 2.45           | III        |                    |               |       | 8              | <b>E6170</b> | 102              |              |       |                    |
|                    |               |       | 2.55           | III        |                    |               |       | 8              | <b>E6175</b> | 102              |              |       |                    |
| 11.8               | 36200 (4090)  |       | 0.87           | -          | 14.3               | 30000 (3390)  |       | 0.95           | -            | 8                | <b>C6140</b> | 123   |                    |
|                    |               |       | 0.87           | -          |                    |               |       | 8              | <b>C6145</b> | 123              |              |       |                    |
|                    |               |       | 1.46           | II         |                    |               |       | 8              | <b>D6160</b> | 123              |              |       |                    |
|                    |               |       | 1.52           | II         |                    |               |       | 8              | <b>D6165</b> | 123              |              |       |                    |
|                    |               |       | 2.03           | III        |                    |               |       | 8              | <b>E6170</b> | 123              |              |       |                    |
|                    |               |       | 2.11           | III        |                    |               |       | 8              | <b>E6175</b> | 123              |              |       |                    |
| 9.63               | 44500 (5030)  |       | 0.70           | -          | 11.6               | 36900 (4160)  |       | 0.85           | -            | 8                | <b>C6145</b> | 151   |                    |
|                    |               |       | 1.17           | I          |                    |               |       | 8              | <b>D6160</b> | 151              |              |       |                    |
|                    |               |       | 1.23           | I          |                    |               |       | 8              | <b>D6165</b> | 151              |              |       |                    |
|                    |               |       | 1.65           | II         |                    |               |       | 8              | <b>E6170</b> | 151              |              |       |                    |
|                    |               |       | 1.72           | II         |                    |               |       | 8              | <b>E6175</b> | 151              |              |       |                    |
|                    |               |       | 2.05           | III        |                    |               |       | 8              | <b>E6175</b> | 151              |              |       |                    |
| 8.12               | 52800 (5960)  |       | 1.00           | I          | 9.80               | 43700 (4940)  |       | 1.05           | I            | 8                | <b>D6160</b> | 179   |                    |
|                    |               |       | 1.04           | I          |                    |               |       | 8              | <b>D6165</b> | 179              |              |       |                    |
|                    |               |       | 1.39           | I          |                    |               |       | 8              | <b>E6170</b> | 179              |              |       |                    |
|                    |               |       | 1.45           | II         |                    |               |       | 8              | <b>E6175</b> | 179              |              |       |                    |
|                    |               |       | 1.75           | II         |                    |               |       | 8              | <b>E6175</b> | 179              |              |       |                    |
| 7.02               | 61000 (6900)  |       | 0.80           | -          | 8.47               | 50600 (5710)  |       | 0.80           | -            | 8                | <b>D6160</b> | 207   |                    |
|                    |               |       | 0.90           | -          |                    |               |       | 8              | <b>D6165</b> | 207              |              |       |                    |
|                    |               |       | 1.20           | I          |                    |               |       | 8              | <b>E6170</b> | 207              |              |       |                    |
|                    |               |       | 1.25           | I          |                    |               |       | 8              | <b>E6175</b> | 207              |              |       |                    |
|                    |               |       | 1.51           | II         |                    |               |       | 8              | <b>E6175</b> | 207              |              |       |                    |

**Notes:** [1] Variable Frequency Drive (VFD) notes (see page 3.8 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.

# Single Reduction Selection Tables: Y1, Y2, Y3, Y4

**7.5 HP  
(5.5 kW)**



**Selection Table Pages:**

|  |           |
|--|-----------|
| Single Reduction<br>-Y1,Y2,Y3,Y4       | 3.10-3.38 |
| -Y5,Y6                                 | 3.39-3.61 |
| Double Reduction<br>-Y1,Y2,Y3,Y4,Y5,Y6 | 3.62-3.79 |

**Dimension Pages:**

|                  |           |
|------------------|-----------|
| Single Reduction | 3.80-3.85 |
| Double Reduction | 3.86-3.91 |

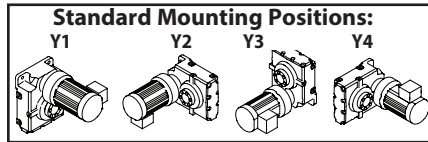
|                 |          |          |
|-----------------|----------|----------|
| Frequency       | 50 Hz    | 60 Hz    |
| Input Speed     | 1450 RPM | 1750 RPM |
| Number of Poles | 4        |          |

| 50Hz               |               |       | 60 Hz          |            |                    | Selection     |       |                |              |                  |              |       |                    |
|--------------------|---------------|-------|----------------|------------|--------------------|---------------|-------|----------------|--------------|------------------|--------------|-------|--------------------|
| Output Speed (RPM) | Output Torque |       | Service Factor |            | Output Speed (RPM) | Output Torque |       | Service Factor |              | Base             |              |       | VFD <sup>[1]</sup> |
|                    | in-lbs        | (N·m) | SF             | AGMA Class |                    | in-lbs        | (N·m) | SF             | AGMA Class   | Motor Power Code | Frame Size   | Ratio |                    |
| 5.84               | 73500 (8300)  |       | 0.75           | -          | 7.04               | 60900 (6880)  |       | 0.90           | -            | 8                | <b>D6165</b> | 249   |                    |
|                    |               |       | 1.00           | I          |                    |               |       | 8              | <b>E6170</b> | 249              |              |       |                    |
|                    |               |       | 1.04           | I          |                    |               |       | 8              | <b>E6175</b> | 249              |              |       |                    |
|                    |               |       | 1.26           | I          |                    |               |       | 8              | <b>E6175</b> | 249              |              |       |                    |
| 4.76               | 90000 (10200) |       | 0.83           | -          | 5.75               | 74600 (8430)  |       | 0.87           | -            | 8                | <b>E6170</b> | 305   |                    |
|                    |               |       | 0.85           | -          |                    |               |       | 8              | <b>E6175</b> | 305              |              |       |                    |

**Notes:** [1] Variable Frequency Drive (VFD) notes (see page 3.8 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.

# Single Reduction Selection Tables: Y1, Y2, Y3, Y4

**10 HP  
(7.5 kW)**



**Selection Table Pages:**

|  |           |
|--|-----------|
| Single Reduction<br>-Y1,Y2,Y3,Y4       | 3.10-3.38 |
| -Y5,Y6                                 | 3.39-3.61 |
| Double Reduction<br>-Y1,Y2,Y3,Y4,Y5,Y6 | 3.62-3.79 |

**Dimension Pages:**

|                  |           |
|------------------|-----------|
| Single Reduction | 3.80-3.85 |
| Double Reduction | 3.86-3.91 |

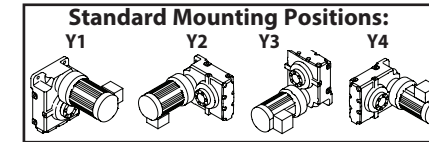
|                 |          |          |
|-----------------|----------|----------|
| Frequency       | 50 Hz    | 60 Hz    |
| Input Speed     | 1450 RPM | 1750 RPM |
| Number of Poles | 4        |          |

| 50Hz               |               |        |                | 60 Hz      |                    |               |        | Selection      |              |                  |              | VFD <sup>[1]</sup> |
|--------------------|---------------|--------|----------------|------------|--------------------|---------------|--------|----------------|--------------|------------------|--------------|--------------------|
| Output Speed (RPM) | Output Torque |        | Service Factor |            | Output Speed (RPM) | Output Torque |        | Service Factor |              | Base             |              |                    |
|                    | in-lbs        | (N·m)  | SF             | AGMA Class |                    | in-lbs        | (N·m)  | SF             | AGMA Class   | Motor Power Code | Frame Size   | Ratio              |
| 138                | 4230          | (478)  | 1.67           | II         | 167                | 3510          | (396)  | 1.67           | II           | 10               | <b>C6140</b> | 11                 |
|                    |               |        | 1.94           | II         |                    |               |        | 10             | <b>C6145</b> | 11               |              |                    |
|                    |               |        | 2.64           | III        |                    |               |        | 10             | <b>D6160</b> | 11               |              |                    |
|                    |               |        | 3.05           | III        |                    |               |        | 10             | <b>D6165</b> | 11               |              |                    |
| 82.9               | 7050          | (797)  | 1.73           | II         | 100                | 5840          | (660)  | 1.73           | II           | 10               | <b>C6140</b> | 18                 |
|                    |               |        | 2.01           | III        |                    |               |        | 10             | <b>C6145</b> | 18               |              |                    |
|                    |               |        | 2.69           | III        |                    |               |        | 10             | <b>D6160</b> | 18               |              |                    |
|                    |               |        | 3.10           | III        |                    |               |        | 10             | <b>D6165</b> | 18               |              |                    |
| 69.0               | 8470          | (956)  | 1.73           | II         | 83.3               | 7010          | (792)  | 1.73           | II           | 10               | <b>C6140</b> | 21                 |
|                    |               |        | 2.01           | III        |                    |               |        | 10             | <b>C6145</b> | 21               |              |                    |
| 51.8               | 11300         | (1280) | 0.93           | -          | 62.5               | 9350          | (1060) | 0.93           | -            | 10               | <b>B6125</b> | 28                 |
|                    |               |        | 1.73           | II         |                    |               |        | 10             | <b>C6140</b> | 28               |              |                    |
|                    |               |        | 2.01           | III        |                    |               |        | 10             | <b>C6145</b> | 28               |              |                    |
|                    |               |        | 2.63           | III        |                    |               |        | 10             | <b>D6160</b> | 28               |              |                    |
| 37.7               | 15500         | (1750) | 1.73           | II         | 45.5               | 12900         | (1450) | 1.73           | II           | 10               | <b>C6140</b> | 39                 |
|                    |               |        | 2.01           | III        |                    |               |        | 10             | <b>C6145</b> | 39               |              |                    |
|                    |               |        | 2.63           | III        |                    |               |        | 10             | <b>D6160</b> | 39               |              |                    |
| 31.9               | 18300         | (2070) | 1.71           | II         | 38.5               | 15200         | (1720) | 1.73           | II           | 10               | <b>C6140</b> | 46                 |
|                    |               |        | 1.71           | II         |                    |               |        | 10             | <b>C6145</b> | 46               |              |                    |
|                    |               |        | 2.63           | III        |                    |               |        | 10             | <b>D6160</b> | 46               |              |                    |
|                    |               |        | 2.99           | III        |                    |               |        | 10             | <b>D6165</b> | 46               |              |                    |
| 27.6               | 21200         | (2390) | 1.48           | II         | 33.3               | 17500         | (1980) | 1.60           | II           | 10               | <b>C6140</b> | 53                 |
|                    |               |        | 1.48           | II         |                    |               |        | 10             | <b>C6145</b> | 53               |              |                    |
|                    |               |        | 2.49           | III        |                    |               |        | 10             | <b>D6160</b> | 53               |              |                    |
|                    |               |        | 2.59           | III        |                    |               |        | 10             | <b>D6165</b> | 53               |              |                    |
| 24.4               | 24000         | (2710) | 1.31           | I          | 29.4               | 19900         | (2250) | 1.34           | I            | 10               | <b>C6140</b> | 60                 |
|                    |               |        | 1.31           | I          |                    |               |        | 10             | <b>C6145</b> | 60               |              |                    |
|                    |               |        | 1.74           | II         |                    |               |        | 10             | <b>D6160</b> | 60               |              |                    |
|                    |               |        | 2.29           | III        |                    |               |        | 10             | <b>D6165</b> | 60               |              |                    |
|                    |               |        | 2.62           | III        |                    |               |        | 10             | <b>E6170</b> | 60               |              |                    |
|                    |               |        | 3.19           | III        |                    |               |        | 10             | <b>E6175</b> | 60               |              |                    |
| 19.7               | 29600         | (3350) | 1.06           | I          | 23.8               | 24500         | (2770) | 1.15           | I            | 10               | <b>C6140</b> | 74                 |
|                    |               |        | 1.06           | I          |                    |               |        | 10             | <b>C6145</b> | 74               |              |                    |
|                    |               |        | 1.72           | II         |                    |               |        | 10             | <b>D6160</b> | 74               |              |                    |
|                    |               |        | 1.85           | II         |                    |               |        | 10             | <b>D6165</b> | 74               |              |                    |
|                    |               |        | 2.48           | III        |                    |               |        | 10             | <b>E6170</b> | 74               |              |                    |
|                    |               |        | 2.58           | III        |                    |               |        | 10             | <b>E6175</b> | 74               |              |                    |

**Notes:** [1] Variable Frequency Drive (VFD) notes (see page 3.8 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.

# Single Reduction Selection Tables: Y1, Y2, Y3, Y4

**10 HP  
(7.5 kW)**



**Selection Table Pages:**

|  |           |
|--|-----------|
| Single Reduction<br>-Y1,Y2,Y3,Y4       | 3.10-3.38 |
| -Y5,Y6                                 | 3.39-3.61 |
| Double Reduction<br>-Y1,Y2,Y3,Y4,Y5,Y6 | 3.62-3.79 |

**Dimension Pages:**

|                  |           |
|------------------|-----------|
| Single Reduction | 3.80-3.85 |
| Double Reduction | 3.86-3.91 |

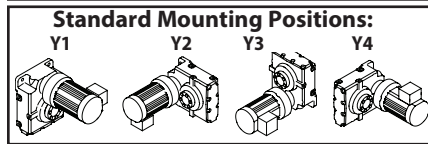
|                 |          |          |
|-----------------|----------|----------|
| Frequency       | 50 Hz    | 60 Hz    |
| Input Speed     | 1450 RPM | 1750 RPM |
| Number of Poles | 4        |          |

| 50Hz               |               |         |                | 60 Hz      |                    |               |        | Selection      |              |                  |              | VFD <sup>[1]</sup> |
|--------------------|---------------|---------|----------------|------------|--------------------|---------------|--------|----------------|--------------|------------------|--------------|--------------------|
| Output Speed (RPM) | Output Torque |         | Service Factor |            | Output Speed (RPM) | Output Torque |        | Service Factor |              | Base             |              |                    |
|                    | in-lbs        | (N·m)   | SF             | AGMA Class |                    | in-lbs        | (N·m)  | SF             | AGMA Class   | Motor Power Code | Frame Size   | Ratio              |
| 16.6               | 35300         | (3990)  | 0.89           | -          | 20.0               | 29200         | (3300) | 0.92           | -            | 10               | <b>C6140</b> | 88                 |
|                    |               |         | 0.89           | -          |                    |               |        | 10             | <b>C6145</b> | 88               |              |                    |
|                    |               |         | 1.32           | I          |                    |               |        | 10             | <b>D6160</b> | 88               |              |                    |
|                    |               |         | 1.56           | II         |                    |               |        | 10             | <b>D6165</b> | 88               |              |                    |
|                    |               |         | 2.08           | III        |                    |               |        | 10             | <b>E6170</b> | 88               |              |                    |
|                    |               |         | 2.17           | III        |                    |               |        | 10             | <b>E6175</b> | 88               |              |                    |
| 14.3               | 40900         | (4620)  | 0.77           | -          | 17.2               | 33900         | (3830) | 0.92           | -            | 10               | <b>C6145</b> | 102                |
|                    |               |         | 1.27           | I          |                    |               |        | 10             | <b>D6160</b> | 102              |              |                    |
|                    |               |         | 1.34           | I          |                    |               |        | 10             | <b>D6165</b> | 102              |              |                    |
|                    |               |         | 1.79           | II         |                    |               |        | 10             | <b>E6170</b> | 102              |              |                    |
| 11.8               | 49400         | (5580)  | 1.07           | I          | 14.3               | 40900         | (4620) | 1.29           | I            | 10               | <b>D6160</b> | 123                |
|                    |               |         | 1.11           | I          |                    |               |        | 10             | <b>D6165</b> | 123              |              |                    |
|                    |               |         | 1.49           | II         |                    |               |        | 10             | <b>E6170</b> | 123              |              |                    |
|                    |               |         | 1.55           | II         |                    |               |        | 10             | <b>E6175</b> | 123              |              |                    |
| 9.63               | 60700         | (6850)  | 0.86           | -          | 11.6               | 50300         | (5680) | 0.99           | -            | 10               | <b>D6160</b> | 151                |
|                    |               |         | 0.90           | -          |                    |               |        | 10             | <b>D6165</b> | 151              |              |                    |
|                    |               |         | 1.21           | I          |                    |               |        | 10             | <b>E6170</b> | 151              |              |                    |
|                    |               |         | 1.26           | I          |                    |               |        | 10             | <b>E6175</b> | 151              |              |                    |
| 8.12               | 72000         | (8130)  | 0.76           | -          | 9.80               | 59600         | (6740) | 0.92           | -            | 10               | <b>D6165</b> | 179                |
|                    |               |         | 1.02           | I          |                    |               |        | 10             | <b>E6170</b> | 179              |              |                    |
|                    |               |         | 1.06           | I          |                    |               |        | 10             | <b>E6175</b> | 179              |              |                    |
| 7.02               | 83200         | (9400)  | 0.88           | -          | 8.47               | 69000         | (7790) | 0.95           | -            | 10               | <b>E6170</b> | 207                |
|                    |               |         | 0.92           | -          |                    |               |        | 10             | <b>E6175</b> | 207              |              |                    |
| 5.84               | 100000        | (11300) | 0.76           | -          | 7.04               | 83000         | (9380) | 0.92           | -            | 10               | <b>E6175</b> | 249                |

**Notes:** [1] Variable Frequency Drive (VFD) notes (see page 3.8 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.

# Single Reduction Selection Tables: Y1, Y2, Y3, Y4

**15 HP  
(11 kW)**



**Selection Table Pages:**

|  |           |
|--|-----------|
| Single Reduction<br>-Y1,Y2,Y3,Y4       | 3.10-3.38 |
| -Y5,Y6                                 | 3.39-3.61 |
| Double Reduction<br>-Y1,Y2,Y3,Y4,Y5,Y6 | 3.62-3.79 |

**Dimension Pages:**

|                  |           |
|------------------|-----------|
| Single Reduction | 3.80-3.85 |
| Double Reduction | 3.86-3.91 |

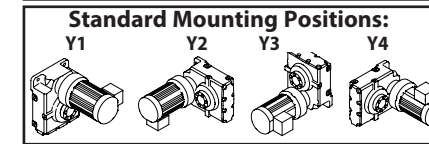
|                 |          |          |
|-----------------|----------|----------|
| Frequency       | 50 Hz    | 60 Hz    |
| Input Speed     | 1450 RPM | 1750 RPM |
| Number of Poles | 4        |          |

| 50Hz               |               |        |                | 60 Hz      |                    |               |        | Selection      |              |                  |              | VFD <sup>[1]</sup> |  |
|--------------------|---------------|--------|----------------|------------|--------------------|---------------|--------|----------------|--------------|------------------|--------------|--------------------|--|
| Output Speed (RPM) | Output Torque |        | Service Factor |            | Output Speed (RPM) | Output Torque |        | Service Factor |              | Base             |              |                    |  |
|                    | in-lbs        | (N·m)  | SF             | AGMA Class |                    | in-lbs        | (N·m)  | SF             | AGMA Class   | Motor Power Code | Frame Size   | Ratio              |  |
| 138                | 6210          | (701)  | 1.14           | I          | 167                | 5140          | (581)  | 1.14           | I            | 15               | <b>C6140</b> | 11                 |  |
|                    |               |        | 1.32           | I          |                    |               |        | 15             | <b>C6145</b> | 11               |              |                    |  |
|                    |               |        | 1.80           | II         |                    |               |        | 15             | <b>D6160</b> | 11               |              |                    |  |
|                    |               |        | 2.08           | III        |                    |               |        | 15             | <b>D6165</b> | 11               |              |                    |  |
|                    |               |        | 2.45           | III        |                    |               |        | 15             | <b>E6170</b> | 11               |              |                    |  |
|                    |               |        | 2.67           | III        |                    |               |        | 15             | <b>E6175</b> | 11               |              |                    |  |
| 82.9               | 10300         | (1170) | 1.18           | I          | 100                | 8570          | (969)  | 1.18           | I            | 15               | <b>C6140</b> | 18                 |  |
|                    |               |        | 1.37           | I          |                    |               |        | 15             | <b>C6145</b> | 18               |              |                    |  |
|                    |               |        | 1.83           | II         |                    |               |        | 15             | <b>D6160</b> | 18               |              |                    |  |
|                    |               |        | 2.12           | III        |                    |               |        | 15             | <b>D6165</b> | 18               |              |                    |  |
|                    |               |        | 2.51           | III        |                    |               |        | 15             | <b>E6170</b> | 18               |              |                    |  |
|                    |               |        | 2.73           | III        |                    |               |        | 15             | <b>E6175</b> | 18               |              |                    |  |
| 69.0               | 12400         | (1400) | 1.18           | I          | 83.3               | 10300         | (1160) | 1.18           | I            | 15               | <b>C6140</b> | 21                 |  |
|                    |               |        | 1.37           | I          |                    |               |        | 15             | <b>C6145</b> | 21               |              |                    |  |
| 51.8               | 16600         | (1870) | 1.18           | I          | 62.5               | 13700         | (1550) | 1.18           | I            | 15               | <b>C6140</b> | 28                 |  |
|                    |               |        | 1.37           | I          |                    |               |        | 15             | <b>C6145</b> | 28               |              |                    |  |
|                    |               |        | 1.79           | II         |                    |               |        | 15             | <b>D6160</b> | 28               |              |                    |  |
|                    |               |        | 2.19           | III        |                    |               |        | 15             | <b>D6165</b> | 28               |              |                    |  |
| 37.7               | 22800         | (2570) | 1.18           | I          | 45.5               | 18900         | (2130) | 1.18           | I            | 15               | <b>C6140</b> | 39                 |  |
|                    |               |        | 1.37           | I          |                    |               |        | 15             | <b>C6145</b> | 39               |              |                    |  |
|                    |               |        | 1.79           | II         |                    |               |        | 15             | <b>D6160</b> | 39               |              |                    |  |
|                    |               |        | 2.19           | III        |                    |               |        | 15             | <b>D6165</b> | 39               |              |                    |  |
|                    |               |        | 2.51           | III        |                    |               |        | 15             | <b>E6170</b> | 39               |              |                    |  |
|                    |               |        | 2.74           | III        |                    |               |        | 15             | <b>E6175</b> | 39               |              |                    |  |
| 31.9               | 26900         | (3040) | 1.16           | I          | 38.5               | 22300         | (2520) | 1.18           | I            | 15               | <b>C6140</b> | 46                 |  |
|                    |               |        | 1.16           | I          |                    |               |        | 15             | <b>C6145</b> | 46               |              |                    |  |
|                    |               |        | 1.79           | II         |                    |               |        | 15             | <b>D6160</b> | 46               |              |                    |  |
|                    |               |        | 2.04           | III        |                    |               |        | 15             | <b>D6165</b> | 46               |              |                    |  |
|                    |               |        | 2.48           | III        |                    |               |        | 15             | <b>E6170</b> | 46               |              |                    |  |
|                    |               |        | 2.74           | III        |                    |               |        | 15             | <b>E6175</b> | 46               |              |                    |  |
| 27.6               | 31000         | (3510) | 1.01           | I          | 33.3               | 25700         | (2910) | 1.09           | I            | 15               | <b>C6140</b> | 53                 |  |
|                    |               |        | 1.01           | I          |                    |               |        | 15             | <b>C6145</b> | 53               |              |                    |  |
|                    |               |        | 1.70           | II         |                    |               |        | 15             | <b>D6160</b> | 53               |              |                    |  |
|                    |               |        | 1.77           | II         |                    |               |        | 15             | <b>D6165</b> | 53               |              |                    |  |
|                    |               |        | 2.32           | III        |                    |               |        | 15             | <b>E6170</b> | 53               |              |                    |  |
|                    |               |        | 2.47           | III        |                    |               |        | 15             | <b>E6175</b> | 53               |              |                    |  |

**Notes:** [1] Variable Frequency Drive (VFD) notes (see page 3.8 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.

# Single Reduction Selection Tables: Y1, Y2, Y3, Y4

**15 HP  
(11 kW)**



**Selection Table Pages:**

|  |           |
|--|-----------|
| Single Reduction<br>-Y1,Y2,Y3,Y4       | 3.10-3.38 |
| -Y5,Y6                                 | 3.39-3.61 |
| Double Reduction<br>-Y1,Y2,Y3,Y4,Y5,Y6 | 3.62-3.79 |

**Dimension Pages:**

|                  |           |
|------------------|-----------|
| Single Reduction | 3.80-3.85 |
| Double Reduction | 3.86-3.91 |

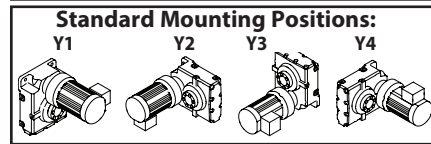
|                 |          |          |
|-----------------|----------|----------|
| Frequency       | 50 Hz    | 60 Hz    |
| Input Speed     | 1450 RPM | 1750 RPM |
| Number of Poles | 4        |          |

| 50Hz               |               |         |                | 60 Hz      |                    |               |        | Selection      |              |                  |              | VFD <sup>[1]</sup> |  |
|--------------------|---------------|---------|----------------|------------|--------------------|---------------|--------|----------------|--------------|------------------|--------------|--------------------|--|
| Output Speed (RPM) | Output Torque |         | Service Factor |            | Output Speed (RPM) | Output Torque |        | Service Factor |              | Base             |              |                    |  |
|                    | in-lbs        | (N·m)   | SF             | AGMA Class |                    | in-lbs        | (N·m)  | SF             | AGMA Class   | Motor Power Code | Frame Size   | Ratio              |  |
| 24.4               | 35200         | (3970)  | 0.89           | -          | 29.4               | 29100         | (3290) | 0.92           | -            | 15               | <b>C6140</b> | 60                 |  |
|                    |               |         | 0.89           | -          |                    |               |        | 15             | <b>C6145</b> | 60               |              |                    |  |
|                    |               |         | 1.19           | I          |                    |               |        | 15             | <b>D6160</b> | 60               |              |                    |  |
|                    |               |         | 1.56           | II         |                    |               |        | 15             | <b>D6165</b> | 60               |              |                    |  |
|                    |               |         | 1.79           | II         |                    |               |        | 15             | <b>E6170</b> | 60               |              |                    |  |
|                    |               |         | 2.18           | III        |                    |               |        | 15             | <b>E6175</b> | 60               |              |                    |  |
| 19.7               | 43500         | (4910)  | 0.72           | -          | 23.8               | 36000         | (4070) | 0.87           | -            | 15               | <b>C6145</b> | 74                 |  |
|                    |               |         | 1.17           | I          |                    |               |        | 15             | <b>D6160</b> | 74               |              |                    |  |
|                    |               |         | 1.26           | I          |                    |               |        | 15             | <b>D6165</b> | 74               |              |                    |  |
|                    |               |         | 1.69           | II         |                    |               |        | 15             | <b>E6170</b> | 74               |              |                    |  |
|                    |               |         | 1.76           | II         |                    |               |        | 15             | <b>E6175</b> | 74               |              |                    |  |
| 16.6               | 51700         | (5840)  | 0.90           | -          | 20.0               | 42900         | (4840) | 0.90           | -            | 15               | <b>D6160</b> | 88                 |  |
|                    |               |         | 1.06           | I          |                    |               |        | 15             | <b>D6165</b> | 88               |              |                    |  |
|                    |               |         | 1.42           | II         |                    |               |        | 15             | <b>E6170</b> | 88               |              |                    |  |
|                    |               |         | 1.48           | II         |                    |               |        | 15             | <b>E6175</b> | 88               |              |                    |  |
| 14.3               | 60000         | (6780)  | 0.87           | -          | 17.2               | 49700         | (5620) | 0.95           | -            | 15               | <b>D6160</b> | 102                |  |
|                    |               |         | 0.91           | -          |                    |               |        | 15             | <b>D6165</b> | 102              |              |                    |  |
|                    |               |         | 1.22           | I          |                    |               |        | 15             | <b>E6170</b> | 102              |              |                    |  |
|                    |               |         | 1.28           | I          |                    |               |        | 15             | <b>E6175</b> | 102              |              |                    |  |
| 11.8               | 72400         | (8180)  | 0.73           | -          | 14.3               | 60000         | (6780) | 0.88           | -            | 15               | <b>D6160</b> | 123                |  |
|                    |               |         | 0.76           | -          |                    |               |        | 15             | <b>D6165</b> | 123              |              |                    |  |
|                    |               |         | 1.01           | I          |                    |               |        | 15             | <b>E6170</b> | 123              |              |                    |  |
|                    |               |         | 1.06           | I          |                    |               |        | 15             | <b>E6175</b> | 123              |              |                    |  |
|                    |               |         | 0.83           | -          |                    |               |        | 15             | <b>E6170</b> | 151              |              |                    |  |
| 9.63               | 89000         | (10100) | 0.83           | -          | 11.6               | 73700         | (8330) | 0.89           | -            | 15               | <b>E6170</b> | 151                |  |
|                    |               |         | 0.86           | -          |                    |               |        | 15             | <b>E6175</b> | 151              |              |                    |  |
| 8.12               | 106000        | (11900) | 0.73           | -          | 9.80               | 87400         | (9880) | 0.88           | -            | 15               | <b>E6175</b> | 179                |  |

**Notes:** [1] Variable Frequency Drive (VFD) notes (see page 3.8 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.

# Single Reduction Selection Tables: Y1, Y2, Y3, Y4

**20 HP  
(15 kW)**



**Selection Table Pages:**

|  |           |
|--|-----------|
| Single Reduction<br>-Y1,Y2,Y3,Y4       | 3.10-3.38 |
| -Y5,Y6                                 | 3.39-3.61 |
| Double Reduction<br>-Y1,Y2,Y3,Y4,Y5,Y6 | 3.62-3.79 |

**Dimension Pages:**

|                  |           |
|------------------|-----------|
| Single Reduction | 3.80-3.85 |
| Double Reduction | 3.86-3.91 |

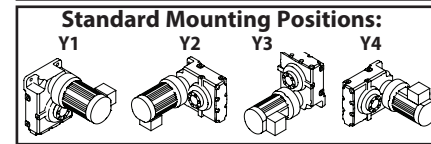
|                 |          |          |
|-----------------|----------|----------|
| Frequency       | 50 Hz    | 60 Hz    |
| Input Speed     | 1450 RPM | 1750 RPM |
| Number of Poles | 4        |          |

| 50Hz               |               |        | 60 Hz              |               |        | Selection        |            |       | VFD <sup>[1]</sup> |
|--------------------|---------------|--------|--------------------|---------------|--------|------------------|------------|-------|--------------------|
| Output Speed (RPM) | Output Torque |        | Output Speed (RPM) | Output Torque |        | Base             |            |       |                    |
|                    | in-lbs        | (N·m)  |                    | in-lbs        | (N·m)  | Motor Power Code | Frame Size | Ratio |                    |
| 138                | 8470 (956)    | 0.84 - | 167                | 7010 (792)    | 0.84 - | 20               | C6140      | 11    |                    |
|                    |               |        |                    |               |        | 20               | C6145      | 11    |                    |
|                    |               |        |                    |               |        | 20               | D6160      | 11    |                    |
|                    |               |        |                    |               |        | 20               | D6165      | 11    |                    |
|                    |               |        |                    |               |        | 20               | E6170      | 11    |                    |
|                    |               |        |                    |               |        | 20               | E6175      | 11    |                    |
| 82.9               | 14100 (1590)  | 0.87 - | 100                | 11700 (1320)  | 0.87 - | 20               | C6140      | 18    |                    |
|                    |               |        |                    |               |        | 20               | C6145      | 18    |                    |
|                    |               |        |                    |               |        | 20               | D6160      | 18    |                    |
|                    |               |        |                    |               |        | 20               | D6165      | 18    |                    |
|                    |               |        |                    |               |        | 20               | E6170      | 18    |                    |
|                    |               |        |                    |               |        | 20               | E6175      | 18    |                    |
| 69.0               | 16900 (1910)  | 0.87 - | 83.3               | 14000 (1580)  | 0.87 - | 20               | C6140      | 21    |                    |
|                    |               |        |                    |               |        | 20               | C6145      | 21    |                    |
| 51.8               | 22600 (2550)  | 0.87 - | 62.5               | 18700 (2110)  | 0.87 - | 20               | C6140      | 28    |                    |
|                    |               |        |                    |               |        | 20               | C6145      | 28    |                    |
|                    |               |        |                    |               |        | 20               | D6160      | 28    |                    |
|                    |               |        |                    |               |        | 20               | D6165      | 28    |                    |
| 37.7               | 31000 (3510)  | 0.87 - | 45.5               | 25700 (2910)  | 0.87 - | 20               | C6140      | 39    |                    |
|                    |               |        |                    |               |        | 20               | C6145      | 39    |                    |
|                    |               |        |                    |               |        | 20               | D6160      | 39    |                    |
|                    |               |        |                    |               |        | 20               | D6165      | 39    |                    |
|                    |               |        |                    |               |        | 20               | E6170      | 39    |                    |
|                    |               |        |                    |               |        | 20               | E6175      | 39    |                    |
| 31.9               | 36700 (4140)  | 0.85 - | 38.5               | 30400 (3430)  | 0.87 - | 20               | C6140      | 46    |                    |
|                    |               |        |                    |               |        | 20               | C6145      | 46    |                    |
|                    |               |        |                    |               |        | 20               | D6160      | 46    |                    |
|                    |               |        |                    |               |        | 20               | D6165      | 46    |                    |
|                    |               |        |                    |               |        | 20               | E6170      | 46    |                    |
|                    |               |        |                    |               |        | 20               | E6175      | 46    |                    |
| 27.6               | 42300 (4780)  | 0.74 - | 33.3               | 35100 (3960)  | 0.80 - | 20               | C6140      | 53    |                    |
|                    |               |        |                    |               |        | 20               | C6145      | 53    |                    |
|                    |               |        |                    |               |        | 20               | D6160      | 53    |                    |
|                    |               |        |                    |               |        | 20               | D6165      | 53    |                    |
|                    |               |        |                    |               |        | 20               | E6170      | 53    |                    |
|                    |               |        |                    |               |        | 20               | E6175      | 53    |                    |

**Notes:** [1] Variable Frequency Drive (VFD) notes (see page 3.8 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.

# Single Reduction Selection Tables: Y1, Y2, Y3, Y4

**20 HP  
(15 kW)**



**Selection Table Pages:**

|  |           |
|--|-----------|
| Single Reduction<br>-Y1,Y2,Y3,Y4       | 3.10-3.38 |
| -Y5,Y6                                 | 3.39-3.61 |
| Double Reduction<br>-Y1,Y2,Y3,Y4,Y5,Y6 | 3.62-3.79 |

**Dimension Pages:**

|                  |           |
|------------------|-----------|
| Single Reduction | 3.80-3.85 |
| Double Reduction | 3.86-3.91 |

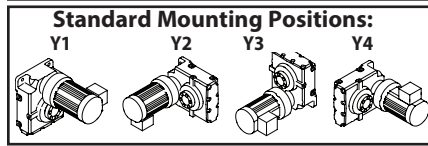
|                 |          |          |
|-----------------|----------|----------|
| Frequency       | 50 Hz    | 60 Hz    |
| Input Speed     | 1450 RPM | 1750 RPM |
| Number of Poles | 4        |          |

| 50Hz               |               |        | 60 Hz              |               |        | Selection        |            |       | VFD <sup>[1]</sup> |
|--------------------|---------------|--------|--------------------|---------------|--------|------------------|------------|-------|--------------------|
| Output Speed (RPM) | Output Torque |        | Output Speed (RPM) | Output Torque |        | Base             |            |       |                    |
|                    | in-lbs        | (N·m)  |                    | in-lbs        | (N·m)  | Motor Power Code | Frame Size | Ratio |                    |
| 24.4               | 48000 (5420)  | 0.87 - | 29.4               | 39700 (4490)  | 0.87 - | 20               | D6160      | 60    |                    |
|                    |               |        |                    |               |        | 20               | D6165      | 60    |                    |
|                    |               |        |                    |               |        | 20               | E6170      | 60    |                    |
|                    |               |        |                    |               |        | 20               | E6175      | 60    |                    |
|                    |               |        |                    |               |        | 20               | E6175      | 60    |                    |
| 19.7               | 59300 (6690)  | 0.86 - | 23.8               | 49100 (5550)  | 0.86 - | 20               | D6160      | 74    |                    |
|                    |               |        |                    |               |        | 20               | D6165      | 74    |                    |
|                    |               |        |                    |               |        | 20               | E6170      | 74    |                    |
|                    |               |        |                    |               |        | 20               | E6175      | 74    |                    |
| 16.6               | 70500 (7970)  | 0.78 - | 20.0               | 58400 (6600)  | 0.94 - | 20               | D6165      | 88    |                    |
|                    |               |        |                    |               |        | 20               | E6170      | 88    |                    |
|                    |               |        |                    |               |        | 20               | E6175      | 88    |                    |
|                    |               |        |                    |               |        | 20               | E6175      | 88    |                    |
| 14.3               | 81800 (9250)  | 0.90 - | 17.2               | 67800 (7660)  | 0.95 - | 20               | E6170      | 102   |                    |
|                    |               |        |                    |               |        | 20               | E6175      | 102   |                    |
| 11.8               | 98800 (11200) | 0.74 - | 14.3               | 81800 (9250)  | 0.80 - | 20               | E6170      | 123   |                    |
|                    |               |        |                    |               |        | 20               | E6175      | 123   |                    |

**Notes:** [1] Variable Frequency Drive (VFD) notes (see page 3.8 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.

# Single Reduction Selection Tables: Y1, Y2, Y3, Y4

**25 HP  
(18.5 kW)**



**Selection Table Pages:**

|                    |           |
|--------------------|-----------|
| Single Reduction   | 3.10-3.38 |
| -Y1,Y2,Y3,Y4       | 3.10-3.38 |
| -Y5,Y6             | 3.39-3.61 |
| Double Reduction   | 3.62-3.79 |
| -Y1,Y2,Y3,Y4,Y5,Y6 | 3.62-3.79 |

**Dimension Pages:**

|                  |           |
|------------------|-----------|
| Single Reduction | 3.80-3.85 |
| Double Reduction | 3.86-3.91 |

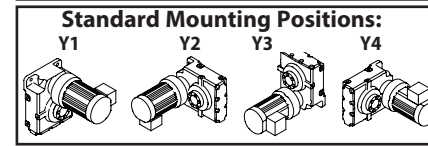
|                 |          |          |
|-----------------|----------|----------|
| Frequency       | 50 Hz    | 60 Hz    |
| Input Speed     | 1450 RPM | 1750 RPM |
| Number of Poles | 4        |          |

| 50Hz               |                               |                                 | 60 Hz              |                               |                                 | Selection        |                    |       | VFD <sup>[1]</sup> |
|--------------------|-------------------------------|---------------------------------|--------------------|-------------------------------|---------------------------------|------------------|--------------------|-------|--------------------|
| Output Speed (RPM) | Output Torque<br>in-lbs (N·m) | Service Factor<br>SF AGMA Class | Output Speed (RPM) | Output Torque<br>in-lbs (N·m) | Service Factor<br>SF AGMA Class | Motor Power Code | Base<br>Frame Size | Ratio |                    |
| 138                | 10400 (1180)                  | 1.07 I                          | 167                | 8650 (977)                    | 1.07 I                          | 25               | D6160              | 11    |                    |
|                    |                               | 1.24 I                          |                    |                               | 25                              | D6165            | 11                 |       |                    |
|                    |                               | 1.46 II                         |                    |                               | 25                              | E6170            | 11                 |       |                    |
|                    |                               | 1.59 II                         |                    |                               | 25                              | E6175            | 11                 |       |                    |
| 82.9               | 17400 (1970)                  | 1.09 I                          | 100                | 14400 (1630)                  | 1.09 I                          | 25               | D6160              | 18    |                    |
|                    |                               | 1.26 I                          |                    |                               | 25                              | D6165            | 18                 |       |                    |
|                    |                               | 1.49 II                         |                    |                               | 25                              | E6170            | 18                 |       |                    |
|                    |                               | 1.63 II                         |                    |                               | 25                              | E6175            | 18                 |       |                    |
| 51.8               | 27800 (3150)                  | 1.06 I                          | 62.5               | 23100 (2610)                  | 1.06 I                          | 25               | D6160              | 28    |                    |
|                    |                               | 1.30 I                          |                    |                               | 25                              | D6165            | 28                 |       |                    |
| 37.7               | 38300 (4330)                  | 1.06 I                          | 45.5               | 31700 (3580)                  | 1.06 I                          | 25               | D6160              | 39    |                    |
|                    |                               | 1.30 I                          |                    |                               | 25                              | D6165            | 39                 |       |                    |
|                    |                               | 1.49 II                         |                    |                               | 25                              | E6170            | 39                 |       |                    |
|                    |                               | 1.63 II                         |                    |                               | 25                              | E6175            | 39                 |       |                    |
| 31.9               | 45200 (5110)                  | 1.06 I                          | 38.5               | 37500 (4240)                  | 1.06 I                          | 25               | D6160              | 46    |                    |
|                    |                               | 1.21 I                          |                    |                               | 25                              | D6165            | 46                 |       |                    |
|                    |                               | 1.47 II                         |                    |                               | 25                              | E6170            | 46                 |       |                    |
|                    |                               | 1.63 II                         |                    |                               | 25                              | E6175            | 46                 |       |                    |
| 27.6               | 52200 (5900)                  | 1.01 I                          | 33.3               | 43300 (4890)                  | 1.01 I                          | 25               | D6160              | 53    |                    |
|                    |                               | 1.05 I                          |                    |                               | 25                              | D6165            | 53                 |       |                    |
|                    |                               | 1.38 I                          |                    |                               | 25                              | E6170            | 53                 |       |                    |
|                    |                               | 1.47 II                         |                    |                               | 25                              | E6175            | 53                 |       |                    |
| 24.4               | 59200 (6680)                  | 0.93 -                          | 29.4               | 49000 (5540)                  | 1.02 I                          | 25               | D6165              | 60    |                    |
|                    |                               | 1.06 I                          |                    |                               | 25                              | E6170            | 60                 |       |                    |
|                    |                               | 1.29 I                          |                    |                               | 25                              | E6175            | 60                 |       |                    |
| 19.7               | 73100 (8260)                  | 0.75 -                          | 23.8               | 60600 (6840)                  | 0.87 -                          | 25               | D6165              | 74    |                    |
|                    |                               | 1.00 I                          |                    |                               | 25                              | E6170            | 74                 |       |                    |
|                    |                               | 1.05 I                          |                    |                               | 25                              | E6175            | 74                 |       |                    |
| 16.6               | 87000 (9830)                  | 0.84 -                          | 20.0               | 72100 (8140)                  | 0.85 -                          | 25               | E6170              | 88    |                    |
|                    |                               | 0.88 -                          |                    |                               | 25                              | E6175            | 88                 |       |                    |
| 14.3               | 101000 (11400)                | 0.76 -                          | 17.2               | 83600 (9450)                  | 0.92 -                          | 25               | E6175              | 102   |                    |

**Notes:** [1] Variable Frequency Drive (VFD) notes (see page 3.8 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.

# Single Reduction Selection Tables: Y1, Y2, Y3, Y4

**30 HP  
(22 kW)**



**Selection Table Pages:**

|                    |           |
|--------------------|-----------|
| Single Reduction   | 3.10-3.38 |
| -Y1,Y2,Y3,Y4       | 3.10-3.38 |
| -Y5,Y6             | 3.39-3.61 |
| Double Reduction   | 3.62-3.79 |
| -Y1,Y2,Y3,Y4,Y5,Y6 | 3.62-3.79 |

**Dimension Pages:**

|                  |           |
|------------------|-----------|
| Single Reduction | 3.80-3.85 |
| Double Reduction | 3.86-3.91 |

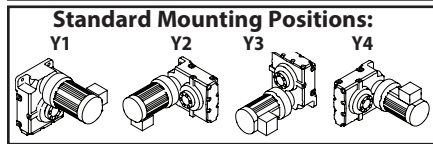
|                 |          |          |
|-----------------|----------|----------|
| Frequency       | 50 Hz    | 60 Hz    |
| Input Speed     | 1450 RPM | 1750 RPM |
| Number of Poles | 4        |          |

| 50Hz               |                               |                                 | 60 Hz              |                               |                                 | Selection        |                    |       | VFD <sup>[1]</sup> |
|--------------------|-------------------------------|---------------------------------|--------------------|-------------------------------|---------------------------------|------------------|--------------------|-------|--------------------|
| Output Speed (RPM) | Output Torque<br>in-lbs (N·m) | Service Factor<br>SF AGMA Class | Output Speed (RPM) | Output Torque<br>in-lbs (N·m) | Service Factor<br>SF AGMA Class | Motor Power Code | Base<br>Frame Size | Ratio |                    |
| 138                | 12400 (1400)                  | 0.90 -                          | 167                | 10300 (1160)                  | 0.90 -                          | 30               | D6160              | 11    |                    |
|                    |                               | 1.04 I                          |                    |                               | 30                              | D6165            | 11                 |       |                    |
|                    |                               | 1.22 I                          |                    |                               | 30                              | E6170            | 11                 |       |                    |
|                    |                               | 1.34 I                          |                    |                               | 30                              | E6175            | 11                 |       |                    |
| 82.9               | 20700 (2340)                  | 0.92 -                          | 100                | 17100 (1940)                  | 0.92 -                          | 30               | D6160              | 18    |                    |
|                    |                               | 1.06 I                          |                    |                               | 30                              | D6165            | 18                 |       |                    |
|                    |                               | 1.25 I                          |                    |                               | 30                              | E6170            | 18                 |       |                    |
|                    |                               | 1.37 I                          |                    |                               | 30                              | E6175            | 18                 |       |                    |
| 51.8               | 33100 (3740)                  | 0.90 -                          | 62.5               | 27400 (3100)                  | 0.90 -                          | 30               | D6160              | 28    |                    |
|                    |                               | 1.09 I                          |                    |                               | 30                              | D6165            | 28                 |       |                    |
| 37.7               | 45500 (5140)                  | 0.90 -                          | 45.5               | 37700 (4260)                  | 0.90 -                          | 30               | D6160              | 39    |                    |
|                    |                               | 1.09 I                          |                    |                               | 30                              | D6165            | 39                 |       |                    |
|                    |                               | 1.25 I                          |                    |                               | 30                              | E6170            | 39                 |       |                    |
|                    |                               | 1.37 I                          |                    |                               | 30                              | E6175            | 39                 |       |                    |
| 31.9               | 53800 (6080)                  | 0.90 -                          | 38.5               | 44600 (5040)                  | 0.90 -                          | 30               | D6160              | 46    |                    |
|                    |                               | 1.02 I                          |                    |                               | 30                              | D6165            | 46                 |       |                    |
|                    |                               | 1.24 I                          |                    |                               | 30                              | E6170            | 46                 |       |                    |
|                    |                               | 1.37 I                          |                    |                               | 30                              | E6175            | 46                 |       |                    |
| 27.6               | 62100 (7010)                  | 0.85 -                          | 33.3               | 51400 (5810)                  | 0.85 -                          | 30               | D6160              | 53    |                    |
|                    |                               | 0.88 -                          |                    |                               | 30                              | D6165            | 53                 |       |                    |
|                    |                               | 1.16 I                          |                    |                               | 30                              | E6170            | 53                 |       |                    |
|                    |                               | 1.23 I                          |                    |                               | 30                              | E6175            | 53                 |       |                    |
| 24.4               | 70400 (7950)                  | 0.78 -                          | 29.4               | 58300 (6590)                  | 0.86 -                          | 30               | D6165              | 60    |                    |
|                    |                               | 0.89 -                          |                    |                               | 30                              | E6170            | 60                 |       |                    |
|                    |                               | 1.09 I                          |                    |                               | 30                              | E6175            | 60                 |       |                    |
| 19.7               | 86900 (9820)                  | 0.84 -                          | 23.8               | 72000 (8140)                  | 0.89 -                          | 30               | E6170              | 74    |                    |
|                    |                               | 0.88 -                          |                    |                               | 30                              | E6175            | 74                 |       |                    |
| 16.6               | 103000 (11700)                | 0.74 -                          | 20.0               | 85700 (9690)                  | 0.89 -                          | 30               | E6175              | 88    |                    |

**Notes:** [1] Variable Frequency Drive (VFD) notes (see page 3.8 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.

# Single Reduction Selection Tables: Y1, Y2, Y3, Y4

**40 HP  
(30 kW)**



**Selection Table Pages:**

|                    |           |
|--------------------|-----------|
| Single Reduction   |           |
| -Y1,Y2,Y3,Y4       | 3.10-3.38 |
| -Y5,Y6             | 3.39-3.61 |
| Double Reduction   |           |
| -Y1,Y2,Y3,Y4,Y5,Y6 | 3.62-3.79 |

**Dimension Pages:**

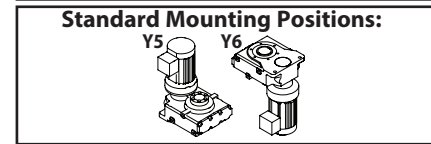
|                  |           |
|------------------|-----------|
| Single Reduction | 3.80-3.85 |
| Double Reduction | 3.86-3.91 |

|                 |          |          |
|-----------------|----------|----------|
| 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 |            | Output Speed (RPM) | Output Torque |        | Service Factor |              | Base             |              |       | VFD <sup>[1]</sup> |
|                    | in-lbs        | (N·m)   | SF             | AGMA Class |                    | in-lbs        | (N·m)  | SF             | AGMA Class   | Motor Power Code | Frame Size   | Ratio |                    |
| 138                | 16900         | (1910)  | 0.90           | -          | 167                | 14000         | (1580) | 0.90           | -            | 40               | <b>E6170</b> | 11    |                    |
|                    |               |         | 0.98           | -          |                    |               |        | 40             | <b>E6175</b> | 11               |              |       |                    |
| 82.9               | 28200         | (3190)  | 0.92           | -          | 100                | 23400         | (2640) | 0.92           | -            | 40               | <b>E6170</b> | 18    |                    |
|                    |               |         | 1.00           | I          |                    |               |        | 40             | <b>E6175</b> | 18               |              |       |                    |
|                    |               |         | 1.00           | I          |                    |               |        | 40             | <b>E6175</b> | 18               |              |       |                    |
| 37.7               | 62100         | (7010)  | 0.92           | -          | 45.5               | 51400         | (5810) | 0.92           | -            | 40               | <b>E6170</b> | 39    |                    |
|                    |               |         | 1.00           | I          |                    |               |        | 40             | <b>E6175</b> | 39               |              |       |                    |
| 31.9               | 73400         | (8290)  | 0.91           | -          | 38.5               | 60800         | (6870) | 0.91           | -            | 40               | <b>E6170</b> | 46    |                    |
|                    |               |         | 1.00           | I          |                    |               |        | 40             | <b>E6175</b> | 46               |              |       |                    |
| 27.6               | 84700         | (9560)  | 0.85           | -          | 33.3               | 70100         | (7920) | 0.85           | -            | 40               | <b>E6170</b> | 53    |                    |
|                    |               |         | 0.90           | -          |                    |               |        | 40             | <b>E6175</b> | 53               |              |       |                    |
| 24.4               | 95900         | (10800) | 0.80           | -          | 29.4               | 79500         | (8980) | 0.80           | -            | 40               | <b>E6175</b> | 60    |                    |

# Single Reduction Selection Tables: Y5, Y6

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



**Selection Table Pages:**

|                    |           |
|--------------------|-----------|
| Single Reduction   |           |
| -Y1,Y2,Y3,Y4       | 3.10-3.38 |
| -Y5,Y6             | 3.39-3.60 |
| Double Reduction   |           |
| -Y1,Y2,Y3,Y4,Y5,Y6 | 3.62-3.79 |

**Dimension Pages:**

|                  |           |
|------------------|-----------|
| Single Reduction | 3.80-3.85 |
| Double Reduction | 3.86-3.91 |

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

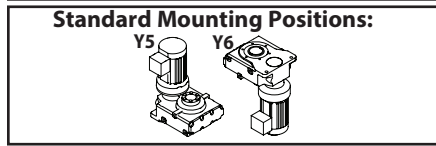
| 50Hz               |               |       |                | 60 Hz      |                    |               |       | Selection      |              |                  |              |       |                    |
|--------------------|---------------|-------|----------------|------------|--------------------|---------------|-------|----------------|--------------|------------------|--------------|-------|--------------------|
| Output Speed (RPM) | Output Torque |       | Service Factor |            | Output Speed (RPM) | Output Torque |       | Service Factor |              | Base             |              |       | VFD <sup>[1]</sup> |
|                    | in-lbs        | (N·m) | SF             | AGMA Class |                    | in-lbs        | (N·m) | SF             | AGMA Class   | Motor Power Code | Frame Size   | Ratio |                    |
| 7.02               | 1110          | (125) | 3.09           | III        | 8.47               | 920           | (104) | 3.09           | III          | 01               | <b>Z6090</b> | 207   | (a)                |
| 5.84               | 1340          | (151) | 2.52           | III        | 7.04               | 1110          | (125) | 2.52           | III          | 01               | <b>Z6090</b> | 249   | (a)                |
|                    |               |       | 2.78           | III        |                    |               |       | 01             | <b>Z6095</b> | 249              | (a)          |       |                    |
| 4.76               | 1640          | (185) | 2.11           | III        | 5.75               | 1360          | (153) | 2.11           | III          | 01               | <b>Z6090</b> | 305   | (a)                |
|                    |               |       | 2.39           | III        |                    |               |       | 01             | <b>Z6095</b> | 305              | (a)          |       |                    |
| 3.48               | 2240          | (253) | 1.25           | I          | 4.20               | 1850          | (210) | 1.25           | I            | 01               | <b>Z6090</b> | 417   | (a)                |
|                    |               |       | 1.45           | II         |                    |               |       | 01             | <b>Z6095</b> | 417              | (a)          |       |                    |

**Notes:** [1] Variable Frequency Drive (VFD) notes (see page 3.8 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.

**Notes:** [1] Variable Frequency Drive (VFD) notes (see page 3.8 for Constant Torque Speed Ranges):

# Single Reduction Selection Tables: Y5, Y6

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



**Selection Table Pages:**

|  |           |
|--|-----------|
| Single Reduction<br>-Y1,Y2,Y3,Y4       | 3.10-3.38 |
| -Y5,Y6                                 | 3.39-3.60 |
| Double Reduction<br>-Y1,Y2,Y3,Y4,Y5,Y6 | 3.62-3.79 |

**Dimension Pages:**

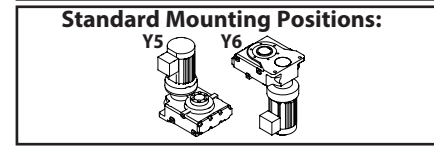
|                  |           |
|------------------|-----------|
| Single Reduction | 3.80-3.85 |
| Double Reduction | 3.86-3.91 |

|                 |          |          |
|-----------------|----------|----------|
| 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 |            | Output Speed (RPM) | Output Torque |       | Service Factor |            | Base             |              |       | VFD <sup>[1]</sup> |    |              |     |     |
|                    | in-lbs        | (N·m) | SF             | AGMA Class |                    | in-lbs        | (N·m) | SF             | AGMA Class | Motor Power Code | Frame Size   | Ratio |                    |    |              |     |     |
| 14.3               | 1090          | (123) | 3.13           | III        | 17.2               | 904           | (102) | 3.13           | III        | 02               | <b>Z6090</b> | 102   | (a)                |    |              |     |     |
| 11.8               | 1320          | (149) | 2.97           | III        | 14.3               | 1090          | (123) | 3.06           | III        | 02               | <b>Z6090</b> | 123   | (a)                |    |              |     |     |
|                    |               |       | 2.97           | III        |                    |               |       | 3.58           | III        |                  |              |       |                    | 02 | <b>Z6095</b> | 123 | (a) |
| 9.63               | 1620          | (183) | 2.18           | III        | 11.6               | 1340          | (151) | 2.18           | III        | 02               | <b>Z6090</b> | 151   | (a)                |    |              |     |     |
|                    |               |       | 2.41           | III        |                    |               |       | 2.91           | III        |                  |              |       |                    | 02 | <b>Z6095</b> | 151 | (a) |
| 8.12               | 1920          | (217) | 1.66           | II         | 9.80               | 1590          | (180) | 1.66           | II         | 02               | <b>Z6090</b> | 179   | (a)                |    |              |     |     |
|                    |               |       | 2.04           | III        |                    |               |       | 2.11           | III        |                  |              |       |                    | 02 | <b>Z6095</b> | 179 | (a) |
|                    |               |       | 2.80           | III        |                    |               |       | 2.80           | III        |                  |              |       |                    | 02 | <b>A6100</b> | 179 | (a) |
| 7.02               | 2220          | (251) | 1.54           | II         | 8.47               | 1840          | (208) | 1.54           | II         | 02               | <b>Z6090</b> | 207   | (a)                |    |              |     |     |
|                    |               |       | 1.68           | II         |                    |               |       | 1.86           | II         |                  |              |       |                    | 02 | <b>Z6095</b> | 207 | (a) |
|                    |               |       | 2.58           | III        |                    |               |       | 2.58           | III        |                  |              |       |                    | 02 | <b>A6100</b> | 207 | (a) |
| 5.84               | 2670          | (302) | 1.26           | I          | 7.04               | 2210          | (250) | 1.26           | I          | 02               | <b>Z6090</b> | 249   | (a)                |    |              |     |     |
|                    |               |       | 1.39           | I          |                    |               |       | 1.51           | II         |                  |              |       |                    | 02 | <b>Z6095</b> | 249 | (a) |
|                    |               |       | 2.18           | III        |                    |               |       | 2.18           | III        |                  |              |       |                    | 02 | <b>A6100</b> | 249 | (a) |
|                    |               |       | 2.53           | III        |                    |               |       | 2.81           | III        |                  |              |       |                    | 02 | <b>A6105</b> | 249 | (a) |
| 4.76               | 3270          | (370) | 1.06           | I          | 5.75               | 2710          | (306) | 1.06           | I          | 02               | <b>Z6090</b> | 305   | (a)                |    |              |     |     |
|                    |               |       | 1.19           | I          |                    |               |       | 1.44           | II         |                  |              |       |                    | 02 | <b>Z6095</b> | 305 | (a) |
|                    |               |       | 2.17           | III        |                    |               |       | 2.17           | III        |                  |              |       |                    | 02 | <b>A6100</b> | 305 | (a) |
|                    |               |       | 2.39           | III        |                    |               |       | 2.83           | III        |                  |              |       |                    | 02 | <b>A6105</b> | 305 | (a) |
| 3.48               | 4480          | (506) | 1.05           | I          | 4.20               | 3710          | (419) | 1.05           | I          | 02               | <b>A6100</b> | 417   | (a)                |    |              |     |     |
|                    |               |       | 1.43           | II         |                    |               |       | 1.43           | II         |                  |              |       |                    | 02 | <b>A6105</b> | 417 | (a) |

# Single Reduction Selection Tables: Y5, Y6

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



**Selection Table Pages:**

|  |           |
|--|-----------|
| Single Reduction<br>-Y1,Y2,Y3,Y4       | 3.10-3.38 |
| -Y5,Y6                                 | 3.39-3.60 |
| Double Reduction<br>-Y1,Y2,Y3,Y4,Y5,Y6 | 3.62-3.79 |

**Dimension Pages:**

|                  |           |
|------------------|-----------|
| Single Reduction | 3.80-3.85 |
| Double Reduction | 3.86-3.91 |

|                 |          |          |
|-----------------|----------|----------|
| 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 |            | Output Speed (RPM) | Output Torque |        | Service Factor |            | Base             |              |       | VFD <sup>[1]</sup> |    |              |     |     |
|                    | in-lbs        | (N·m) | SF             | AGMA Class |                    | in-lbs        | (N·m)  | SF             | AGMA Class | Motor Power Code | Frame Size   | Ratio |                    |    |              |     |     |
| 19.7               | 988           | (112) | 3.03           | III        | 23.8               | 818           | (92.5) | 3.03           | III        | 03               | <b>Z6090</b> | 74    | (a)                |    |              |     |     |
| 16.6               | 1180          | (133) | 2.68           | III        | 20.0               | 974           | (110)  | 2.68           | III        | 03               | <b>Z6090</b> | 88    | (a)                |    |              |     |     |
| 14.3               | 1360          | (154) | 2.50           | III        | 17.2               | 1130          | (128)  | 2.50           | III        | 03               | <b>Z6090</b> | 102   | (a)                |    |              |     |     |
|                    |               |       | 2.86           | III        |                    |               |        | 3.13           | III        |                  |              |       |                    | 03 | <b>Z6095</b> | 102 | (a) |
| 11.8               | 1650          | (186) | 2.37           | III        | 14.3               | 1360          | (154)  | 2.45           | III        | 03               | <b>Z6090</b> | 123   | (a)                |    |              |     |     |
|                    |               |       | 2.37           | III        |                    |               |        | 2.86           | III        |                  |              |       |                    | 03 | <b>Z6095</b> | 123 | (a) |
| 9.63               | 2020          | (228) | 1.74           | II         | 11.6               | 1680          | (189)  | 1.74           | II         | 03               | <b>Z6090</b> | 151   | (a)                |    |              |     |     |
|                    |               |       | 1.93           | II         |                    |               |        | 2.33           | III        |                  |              |       |                    | 03 | <b>Z6095</b> | 151 | (a) |
|                    |               |       | 3.12           | III        |                    |               |        | 3.12           | III        |                  |              |       |                    | 03 | <b>A6100</b> | 151 | (a) |
| 8.12               | 2400          | (271) | 1.33           | I          | 9.80               | 1990          | (225)  | 1.33           | I          | 03               | <b>Z6090</b> | 179   | (a)                |    |              |     |     |
|                    |               |       | 1.63           | II         |                    |               |        | 1.69           | II         |                  |              |       |                    | 03 | <b>Z6095</b> | 179 | (a) |
|                    |               |       | 2.24           | III        |                    |               |        | 2.24           | III        |                  |              |       |                    | 03 | <b>A6100</b> | 179 | (a) |
|                    |               |       | 3.10           | III        |                    |               |        | 3.10           | III        |                  |              |       |                    | 03 | <b>A6105</b> | 179 | (a) |
| 7.02               | 2770          | (313) | 1.24           | I          | 8.47               | 2300          | (260)  | 1.24           | I          | 03               | <b>Z6090</b> | 207   | (a)                |    |              |     |     |
|                    |               |       | 1.34           | I          |                    |               |        | 1.49           | II         |                  |              |       |                    | 03 | <b>Z6095</b> | 207 | (a) |
|                    |               |       | 2.06           | III        |                    |               |        | 2.06           | III        |                  |              |       |                    | 03 | <b>A6100</b> | 207 | (a) |
| 5.84               | 3340          | (377) | 1.01           | I          | 7.04               | 2770          | (313)  | 1.01           | I          | 03               | <b>Z6090</b> | 249   | (a)                |    |              |     |     |
|                    |               |       | 1.11           | I          |                    |               |        | 1.21           | I          |                  |              |       |                    | 03 | <b>Z6095</b> | 249 | (a) |
|                    |               |       | 1.74           | II         |                    |               |        | 1.74           | II         |                  |              |       |                    | 03 | <b>A6100</b> | 249 | (a) |
|                    |               |       | 2.02           | III        |                    |               |        | 2.24           | III        |                  |              |       |                    | 03 | <b>A6105</b> | 249 | (a) |
| 4.76               | 4090          | (462) | 0.85           | -          | 5.75               | 3390          | (383)  | 0.85           | -          | 03               | <b>Z6090</b> | 305   | (a)                |    |              |     |     |
|                    |               |       | 0.95           | -          |                    |               |        | 1.15           | I          |                  |              |       |                    | 03 | <b>Z6095</b> | 305 | (a) |
|                    |               |       | 1.73           | II         |                    |               |        | 1.73           | II         |                  |              |       |                    | 03 | <b>A6100</b> | 305 | (a) |
|                    |               |       | 1.91           | II         |                    |               |        | 2.26           | III        |                  |              |       |                    | 03 | <b>A6105</b> | 305 | (a) |
| 3.48               | 5600          | (632) | 0.84           | -          | 4.20               | 4640          | (524)  | 0.84           | -          | 03               | <b>A6100</b> | 417   | (a)                |    |              |     |     |
|                    |               |       | 1.14           | I          |                    |               |        | 1.14           | I          |                  |              |       |                    | 03 | <b>A6105</b> | 417 | (a) |

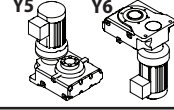
Notes: [1] Variable Frequency Drive (VFD) notes (see page 3.8 for Constant Torque Speed Ranges):

Notes: [1] Variable Frequency Drive (VFD) notes (see page 3.8 for Constant Torque Speed Ranges):

# Single Reduction Selection Tables: Y5, Y6

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

**Standard Mounting Positions:**



**Selection Table Pages:**

Single Reduction  
-Y1,Y2,Y3,Y4 3.10-3.38  
-Y5,Y6 3.39-3.60  
Double Reduction  
-Y1,Y2,Y3,Y4,Y5,Y6 3.62-3.79

**Dimension Pages:**

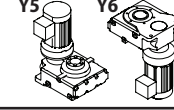
Single Reduction 3.80-3.85  
Double Reduction 3.86-3.91

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

# Single Reduction Selection Tables: Y5, Y6

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

**Standard Mounting Positions:**



**Selection Table Pages:**

Single Reduction  
-Y1,Y2,Y3,Y4 3.10-3.38  
-Y5,Y6 3.39-3.60  
Double Reduction  
-Y1,Y2,Y3,Y4,Y5,Y6 3.62-3.79

**Dimension Pages:**

Single Reduction 3.80-3.85  
Double Reduction 3.86-3.91

|                 |          |          |
|-----------------|----------|----------|
| 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 |            | Output Speed (RPM) | Output Torque |        | Service Factor |            | Base             |            |       | VFD <sup>[1]</sup> |
|                    | in-lbs        | (N·m)  | SF             | AGMA Class |                    | in-lbs        | (N·m)  | SF             | AGMA Class | Motor Power Code | Frame Size | Ratio |                    |
| 69.0               | 451           | (51.0) | 2.87           | III        | 83.3               | 374           | (42.3) | 2.87           | III        | 05               | Z6090      | 21    | (a)                |
| 51.8               | 602           | (68.0) | 2.87           | III        | 62.5               | 499           | (56.4) | 2.87           | III        | 05               | Z6090      | 28    | (a)                |
| 37.7               | 828           | (93.5) | 2.87           | III        | 45.5               | 686           | (77.5) | 2.87           | III        | 05               | Z6090      | 39    | (a)                |
| 31.9               | 978           | (111)  | 2.87           | III        | 38.5               | 810           | (91.6) | 2.87           | III        | 05               | Z6090      | 46    | (a)                |
| 27.6               | 1130          | (128)  | 2.87           | III        | 33.3               | 935           | (106)  | 2.87           | III        | 05               | Z6090      | 53    | (a)                |
| 24.4               | 1280          | (145)  | 2.87           | III        | 29.4               | 1060          | (120)  | 2.87           | III        | 05               | Z6090      | 60    | (a)                |
|                    |               |        | 3.05           | III        |                    |               |        | 05             | Z6095      | 60               | (a)        |       |                    |
| 19.7               | 1580          | (179)  | 1.89           | II         | 23.8               | 1310          | (148)  | 1.89           | II         | 05               | Z6090      | 74    | (a)                |
|                    |               |        | 2.47           | III        |                    |               |        | 2.98           | III        | 05               | Z6095      | 74    | (a)                |
| 16.6               | 1880          | (213)  | 1.68           | II         | 20.0               | 1560          | (176)  | 1.68           | II         | 05               | Z6090      | 88    | (a)                |
|                    |               |        | 2.08           | III        |                    |               |        | 2.17           | III        | 05               | Z6095      | 88    | (a)                |
|                    |               |        | 3.17           | III        |                    |               |        | 3.17           | III        | 05               | A6100      | 88    | (a)                |
| 14.3               | 2180          | (247)  | 1.56           | II         | 17.2               | 1810          | (204)  | 1.56           | II         | 05               | Z6090      | 102   | (a)                |
|                    |               |        | 1.79           | II         |                    |               |        | 1.96           | II         | 05               | Z6095      | 102   | (a)                |
|                    |               |        | 3.03           | III        |                    |               |        | 3.03           | III        | 05               | A6100      | 102   | (a)                |
| 11.8               | 2630          | (298)  | 1.48           | II         | 14.3               | 2180          | (247)  | 1.53           | II         | 05               | Z6090      | 123   | (a)                |
|                    |               |        | 1.48           | II         |                    |               |        | 1.79           | II         | 05               | Z6095      | 123   | (a)                |
|                    |               |        | 2.44           | III        |                    |               |        | 2.44           | III        | 05               | A6100      | 123   | (a)                |
|                    |               |        | 2.97           | III        |                    |               |        | 3.00           | III        | 05               | A6105      | 123   | (a)                |
| 9.63               | 3240          | (366)  | 1.09           | I          | 11.6               | 2680          | (303)  | 1.09           | I          | 05               | Z6090      | 151   | (a)                |
|                    |               |        | 1.21           | I          |                    |               |        | 1.46           | II         | 05               | Z6095      | 151   | (a)                |
|                    |               |        | 1.95           | II         |                    |               |        | 1.95           | II         | 05               | A6100      | 151   | (a)                |
|                    |               |        | 2.42           | III        |                    |               |        | 2.70           | III        | 05               | A6105      | 151   | (a)                |
| 8.12               | 3840          | (434)  | 0.83           | -          | 9.80               | 3180          | (359)  | 0.83           | -          | 05               | Z6090      | 179   | (a)                |
|                    |               |        | 1.02           | I          |                    |               |        | 1.05           | I          | 05               | Z6095      | 179   | (a)                |
|                    |               |        | 1.40           | II         |                    |               |        | 1.40           | II         | 05               | A6100      | 179   | (a)                |
|                    |               |        | 1.94           | II         |                    |               |        | 1.94           | II         | 05               | A6105      | 179   | (a)                |
| 7.02               | 4440          | (502)  | 0.84           | -          | 8.47               | 3680          | (416)  | 0.93           | -          | 05               | Z6095      | 207   | (a)                |
|                    |               |        | 1.29           | I          |                    |               |        | 1.29           | I          | 05               | A6100      | 207   | (a)                |
|                    |               |        | 1.70           | II         |                    |               |        | 1.77           | II         | 05               | A6105      | 207   | (a)                |
| 5.84               | 5340          | (604)  | 1.09           | I          | 7.04               | 4430          | (500)  | 1.09           | I          | 05               | A6100      | 249   | (a)                |
|                    |               |        | 1.26           | I          |                    |               |        | 1.40           | II         | 05               | A6105      | 249   | (a)                |
|                    |               |        | 2.39           | III        |                    |               |        | 2.39           | III        | 05               | B6120      | 249   | (a)                |
|                    |               |        | 2.84           | III        |                    |               |        | 3.00           | III        | 05               | B6125      | 249   | (a)                |
| 4.76               | 6550          | (740)  | 1.08           | I          | 5.75               | 5420          | (613)  | 1.08           | I          | 05               | A6100      | 305   | (a)                |
|                    |               |        | 1.20           | I          |                    |               |        | 1.41           | II         | 05               | A6105      | 305   | (a)                |
|                    |               |        | 2.36           | III        |                    |               |        | 2.36           | III        | 05               | B6120      | 305   | (a)                |
|                    |               |        | 2.39           | III        |                    |               |        | 2.83           | III        | 05               | B6125      | 305   | (a)                |

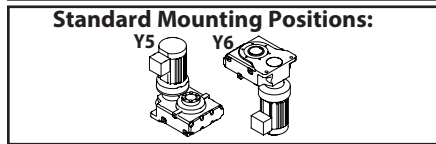
Notes: [1] Variable Frequency Drive (VFD) notes (see page 3.8 for Constant Torque Speed Ranges):

| 50Hz               |               |        |                | 60 Hz      |                    |               |        | Selection      |            |                  |            |       |                    |
|--------------------|---------------|--------|----------------|------------|--------------------|---------------|--------|----------------|------------|------------------|------------|-------|--------------------|
| Output Speed (RPM) | Output Torque |        | Service Factor |            | Output Speed (RPM) | Output Torque |        | Service Factor |            | Base             |            |       | VFD <sup>[1]</sup> |
|                    | in-lbs        | (N·m)  | SF             | AGMA Class |                    | in-lbs        | (N·m)  | SF             | AGMA Class | Motor Power Code | Frame Size | Ratio |                    |
| 69.0               | 621           | (70.1) | 2.08           | III        | 83.3               | 514           | (58.1) | 2.08           | III        | 08               | Z6090      | 21    | (a)                |
| 51.8               | 828           | (93.5) | 2.08           | III        | 62.5               | 686           | (77.5) | 2.08           | III        | 08               | Z6090      | 28    | (a)                |
|                    |               |        | 2.75           | III        |                    |               |        | 2.75           | III        | 08               | Z6095      | 28    | (a)                |
| 37.7               | 1140          | (129)  | 2.08           | III        | 45.5               | 943           | (107)  | 2.08           | III        | 08               | Z6090      | 39    | (a)                |
|                    |               |        | 2.75           | III        |                    |               |        | 2.75           | III        | 08               | Z6095      | 39    | (a)                |
| 31.9               | 1340          | (152)  | 2.08           | III        | 38.5               | 1110          | (126)  | 2.08           | III        | 08               | Z6090      | 46    | (a)                |
|                    |               |        | 2.75           | III        |                    |               |        | 2.75           | III        | 08               | Z6095      | 46    | (a)                |
| 27.6               | 1550          | (175)  | 2.08           | III        | 33.3               | 1290          | (145)  | 2.08           | III        | 08               | Z6090      | 53    | (a)                |
|                    |               |        | 2.52           | III        |                    |               |        | 2.75           | III        | 08               | Z6095      | 53    | (a)                |
| 24.4               | 1760          | (199)  | 2.08           | III        | 29.4               | 1460          | (165)  | 2.08           | III        | 08               | Z6090      | 60    | (a)                |
|                    |               |        | 2.22           | III        |                    |               |        | 2.68           | III        | 08               | Z6095      | 60    | (a)                |
| 19.7               | 2170          | (245)  | 1.38           | I          | 23.8               | 1800          | (203)  | 1.38           | I          | 08               | Z6090      | 74    | (a)                |
|                    |               |        | 1.80           | II         |                    |               |        | 2.17           | III        | 08               | Z6095      | 74    | (a)                |
|                    |               |        | 1.22           | I          |                    |               |        | 1.58           | II         | 08               | Z6090      | 88    | (a)                |
| 16.6               | 2590          | (292)  | 1.51           | II         | 20.0               | 2140          | (242)  | 1.58           | II         | 08               | Z6095      | 88    | (a)                |
|                    |               |        | 2.31           | III        |                    |               |        | 2.31           | III        | 08               | A6100      | 88    | (a)                |
|                    |               |        | 3.02           | III        |                    |               |        | 3.04           | III        | 08               | A6105      | 88    | (a)                |
|                    |               |        | 1.14           | I          |                    |               |        | 1.14           | I          | 08               | Z6090      | 102   | (a)                |
| 14.3               | 3000          | (339)  | 1.30           | I          | 17.2               | 2490          | (281)  | 1.42           | II         | 08               | Z6095      | 102   | (a)                |
|                    |               |        | 2.20           | III        |                    |               |        | 2.20           | III        | 08               | A6100      | 102   | (a)                |
|                    |               |        | 2.61           | III        |                    |               |        | 2.89           | III        | 08               | A6105      | 102   | (a)                |
|                    |               |        | 1.08           | I          |                    |               |        | 1.08           | I          | 08               | Z6090      | 123   | (a)                |
| 11.8               | 3620          | (409)  | 1.08           | I          | 14.3               | 3000          | (339)  | 1.30           | I          | 08               | Z6095      | 123   | (a)                |
|                    |               |        | 1.77           | II         |                    |               |        | 1.77           | II         | 08               | A6100      | 123   | (a)                |
|                    |               |        | 2.16           | III        |                    |               |        | 2.18           | III        | 08               | A6105      | 123   | (a)                |
|                    |               |        | 0.88           | -          |                    |               |        | 0.88           | -          | 08               | Z6095      | 151   | (a)                |
| 9.63               | 4450          | (503)  | 1.42           | II         | 11.6               | 3690          | (416)  | 1.42           | II         | 08               | A6100      | 151   | (a)                |
|                    |               |        | 1.76           | II         |                    |               |        | 1.96           | II         | 08               | A6105      | 151   | (a)                |
|                    |               |        | 1.02           | I          |                    |               |        | 1.02           | I          | 08               | A6100      | 179   | (a)                |
| 8.12               | 5280          | (596)  | 1.41           | II         | 9.80               | 4370          | (494)  | 1.41           | II         | 08               | A6105      | 179   | (a)                |
|                    |               |        | 2.96           | III        |                    |               |        | 3.12           | III        | 08               | B6120      | 179   | (a)                |
|                    |               |        | 2.97           | III        |                    |               |        | 3.58           | III        | 08               | B6125      | 179   | (a)                |
|                    |               |        | 0.94           | -          |                    |               |        | 0.94           | -          | 08               | A6100      | 207   | (a)                |
| 7.02               | 6100          | (690)  | 1.24           | I          | 8.47               | 5060          | (571)  | 1.29           | I          | 08               | A6105      | 207   | (a)                |
|                    |               |        | 2.36           | III        |                    |               |        | 2.36           | III        | 08               | B6120      | 207   | (a)                |
|                    |               |        | 2.57           | III        |                    |               |        | 2.95           | III        | 08               | B6125      | 207   | (a)                |

Notes: [1] Variable Frequency Drive (VFD) notes (see page 3.8 for Constant Torque Speed Ranges):

# Single Reduction Selection Tables: Y5, Y6

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



**Selection Table Pages:**

|                    |           |
|--------------------|-----------|
| Single Reduction   |           |
| -Y1,Y2,Y3,Y4       | 3.10-3.38 |
| -Y5,Y6             | 3.39-3.60 |
| Double Reduction   |           |
| -Y1,Y2,Y3,Y4,Y5,Y6 | 3.62-3.79 |

**Dimension Pages:**

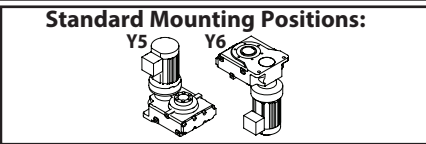
|                  |           |
|------------------|-----------|
| Single Reduction | 3.80-3.85 |
| Double Reduction | 3.86-3.91 |

|                 |          |          |
|-----------------|----------|----------|
| 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 |            | Output Speed (RPM) | Output Torque |       | Service Factor |              | Base             |              |       | VFD <sup>[1]</sup> |
|                    | in-lbs        | (N·m)  | SF             | AGMA Class |                    | in-lbs        | (N·m) | SF             | AGMA Class   | Motor Power Code | Frame Size   | Ratio |                    |
| 5.84               | 7350          | (830)  | 0.92           | -          | 7.04               | 6090          | (688) | 1.02           | I            | 08               | <b>A6105</b> | 249   | (a)                |
|                    |               |        | 1.74           | II         |                    |               |       | 08             | <b>B6120</b> | 249              | (a)          |       |                    |
|                    |               |        | 2.07           | III        |                    |               |       | 08             | <b>B6125</b> | 249              | (a)          |       |                    |
|                    |               |        | 2.75           | III        |                    |               |       | 08             | <b>C6145</b> | 249              | (a)          |       |                    |
| 4.76               | 9000          | (1020) | 0.87           | -          | 5.75               | 7460          | (843) | 1.03           | I            | 08               | <b>A6105</b> | 305   | (a)                |
|                    |               |        | 1.72           | II         |                    |               |       | 08             | <b>B6120</b> | 305              | (a)          |       |                    |
|                    |               |        | 1.74           | II         |                    |               |       | 08             | <b>B6125</b> | 305              | (a)          |       |                    |
|                    |               |        | 2.75           | III        |                    |               |       | 08             | <b>C6145</b> | 305              | (a)          |       |                    |

# Single Reduction Selection Tables: Y5, Y6

**1 HP  
(0.75 kW)**



**Selection Table Pages:**

|                    |           |
|--------------------|-----------|
| Single Reduction   |           |
| -Y1,Y2,Y3,Y4       | 3.10-3.38 |
| -Y5,Y6             | 3.39-3.60 |
| Double Reduction   |           |
| -Y1,Y2,Y3,Y4,Y5,Y6 | 3.62-3.79 |

**Dimension Pages:**

|                  |           |
|------------------|-----------|
| Single Reduction | 3.80-3.85 |
| Double Reduction | 3.86-3.91 |

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

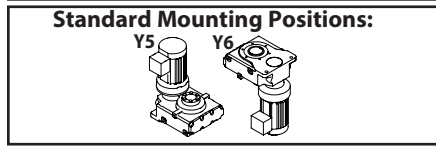
| 50Hz               |               |        |                | 60 Hz      |                    |               |        | Selection      |              |                  |              |       |                    |
|--------------------|---------------|--------|----------------|------------|--------------------|---------------|--------|----------------|--------------|------------------|--------------|-------|--------------------|
| Output Speed (RPM) | Output Torque |        | Service Factor |            | Output Speed (RPM) | Output Torque |        | Service Factor |              | Base             |              |       | VFD <sup>[1]</sup> |
|                    | in-lbs        | (N·m)  | SF             | AGMA Class |                    | in-lbs        | (N·m)  | SF             | AGMA Class   | Motor Power Code | Frame Size   | Ratio |                    |
| 69.0               | 847           | (95.6) | 1.53           | II         | 83.3               | 701           | (79.2) | 1.53           | II           | 1                | <b>Z6090</b> | 21    |                    |
|                    |               |        | 2.02           | III        |                    |               |        | 1              | <b>Z6095</b> | 21               |              |       |                    |
|                    |               |        | 3.13           | III        |                    |               |        | 1              | <b>A6100</b> | 21               |              |       |                    |
| 51.8               | 1130          | (128)  | 1.53           | II         | 62.5               | 935           | (106)  | 1.53           | II           | 1                | <b>Z6090</b> | 28    |                    |
|                    |               |        | 2.02           | III        |                    |               |        | 1              | <b>Z6095</b> | 28               |              |       |                    |
|                    |               |        | 3.13           | III        |                    |               |        | 1              | <b>A6100</b> | 28               |              |       |                    |
| 37.7               | 1550          | (175)  | 1.53           | II         | 45.5               | 1290          | (145)  | 1.53           | II           | 1                | <b>Z6090</b> | 39    |                    |
|                    |               |        | 2.02           | III        |                    |               |        | 1              | <b>Z6095</b> | 39               |              |       |                    |
|                    |               |        | 3.13           | III        |                    |               |        | 1              | <b>A6100</b> | 39               |              |       |                    |
| 31.9               | 1830          | (207)  | 1.53           | II         | 38.5               | 1520          | (172)  | 1.53           | II           | 1                | <b>Z6090</b> | 46    |                    |
|                    |               |        | 2.02           | III        |                    |               |        | 1              | <b>Z6095</b> | 46               |              |       |                    |
|                    |               |        | 3.13           | III        |                    |               |        | 1              | <b>A6100</b> | 46               |              |       |                    |
| 27.6               | 2120          | (239)  | 1.53           | II         | 33.3               | 1750          | (198)  | 1.53           | II           | 1                | <b>Z6090</b> | 53    |                    |
|                    |               |        | 1.85           | II         |                    |               |        | 1              | <b>Z6095</b> | 53               |              |       |                    |
|                    |               |        | 3.13           | III        |                    |               |        | 1              | <b>A6100</b> | 53               |              |       |                    |
| 24.4               | 2400          | (271)  | 1.53           | II         | 29.4               | 1990          | (225)  | 1.53           | II           | 1                | <b>Z6090</b> | 60    |                    |
|                    |               |        | 1.63           | II         |                    |               |        | 1              | <b>Z6095</b> | 60               |              |       |                    |
|                    |               |        | 2.65           | III        |                    |               |        | 1              | <b>A6100</b> | 60               |              |       |                    |
| 19.7               | 2960          | (335)  | 1.01           | I          | 23.8               | 2450          | (277)  | 1.01           | I            | 1                | <b>Z6090</b> | 74    |                    |
|                    |               |        | 1.32           | I          |                    |               |        | 1              | <b>Z6095</b> | 74               |              |       |                    |
|                    |               |        | 2.53           | III        |                    |               |        | 1              | <b>A6100</b> | 74               |              |       |                    |
|                    |               |        | 2.64           | III        |                    |               |        | 1              | <b>A6105</b> | 74               |              |       |                    |
| 16.6               | 3530          | (399)  | 0.89           | -          | 20.0               | 2920          | (330)  | 0.89           | -            | 1                | <b>Z6090</b> | 88    |                    |
|                    |               |        | 1.11           | I          |                    |               |        | 1              | <b>Z6095</b> | 88               |              |       |                    |
|                    |               |        | 1.69           | II         |                    |               |        | 1              | <b>A6100</b> | 88               |              |       |                    |
|                    |               |        | 2.22           | III        |                    |               |        | 1              | <b>A6105</b> | 88               |              |       |                    |
| 14.3               | 4090          | (462)  | 0.83           | -          | 17.2               | 3390          | (383)  | 0.83           | -            | 1                | <b>Z6090</b> | 102   |                    |
|                    |               |        | 0.95           | -          |                    |               |        | 1              | <b>Z6095</b> | 102              |              |       |                    |
|                    |               |        | 1.61           | II         |                    |               |        | 1              | <b>A6100</b> | 102              |              |       |                    |
|                    |               |        | 1.91           | II         |                    |               |        | 1              | <b>A6105</b> | 102              |              |       |                    |
| 11.8               | 4940          | (558)  | 0.79           | -          | 14.3               | 4090          | (462)  | 0.82           | -            | 1                | <b>Z6090</b> | 123   |                    |
|                    |               |        | 0.79           | -          |                    |               |        | 1              | <b>Z6095</b> | 123              |              |       |                    |
|                    |               |        | 1.30           | I          |                    |               |        | 1              | <b>A6100</b> | 123              |              |       |                    |
|                    |               |        | 1.58           | II         |                    |               |        | 1              | <b>A6105</b> | 123              |              |       |                    |
|                    |               |        | 3.16           | III        |                    |               |        | 1              | <b>B6120</b> | 123              |              |       |                    |
|                    |               |        | 3.17           | III        |                    |               |        | 1              | <b>B6125</b> | 123              |              |       |                    |

Notes: [1] Variable Frequency Drive (VFD) notes (see page 3.8 for Constant Torque Speed Ranges):

Notes: [1] Variable Frequency Drive (VFD) notes (see page 3.8 for Constant Torque Speed Ranges):

# Single Reduction Selection Tables: Y5, Y6

**1 HP**  
(0.75 kW)



**Selection Table Pages:**

|                                     |           |
|-------------------------------------|-----------|
| Single Reduction -Y1,Y2,Y3,Y4       | 3.10-3.38 |
| -Y5,Y6                              | 3.39-3.60 |
| Double Reduction -Y1,Y2,Y3,Y4,Y5,Y6 | 3.62-3.79 |

**Dimension Pages:**

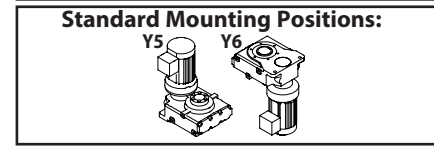
|                  |           |
|------------------|-----------|
| Single Reduction | 3.80-3.85 |
| Double Reduction | 3.86-3.91 |

|                 |          |          |
|-----------------|----------|----------|
| 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 |            | Output Speed (RPM) | Output Torque |        | Service Factor |              | Base             |              |       | VFD <sup>[1]</sup> |
|                    | in-lbs        | (N·m)  | SF             | AGMA Class |                    | in-lbs        | (N·m)  | SF             | AGMA Class   | Motor Power Code | Frame Size   | Ratio |                    |
| 9.63               | 6070          | (685)  | 1.04           | I          | 11.6               | 5030          | (568)  | 1.04           | I            | 1                | <b>A6100</b> | 151   |                    |
|                    |               |        | 1.29           | I          |                    |               |        | 1              | <b>A6105</b> | 151              |              |       |                    |
|                    |               |        | 2.55           | III        |                    |               |        | 1              | <b>B6120</b> | 151              |              |       |                    |
|                    |               |        | 2.58           | III        |                    |               |        | 1              | <b>B6125</b> | 151              |              |       |                    |
| 8.12               | 7200          | (813)  | 1.03           | I          | 9.80               | 5960          | (674)  | 1.03           | I            | 1                | <b>A6105</b> | 179   |                    |
|                    |               |        | 2.17           | III        |                    |               |        | 1              | <b>B6120</b> | 179              |              |       |                    |
|                    |               |        | 2.18           | III        |                    |               |        | 1              | <b>B6125</b> | 179              |              |       |                    |
|                    |               |        | 2.96           | III        |                    |               |        | 1              | <b>C6145</b> | 179              |              |       |                    |
| 7.02               | 8320          | (940)  | 0.91           | -          | 8.47               | 6900          | (779)  | 0.94           | -            | 1                | <b>A6105</b> | 207   |                    |
|                    |               |        | 1.73           | II         |                    |               |        | 1              | <b>B6120</b> | 207              |              |       |                    |
|                    |               |        | 1.88           | II         |                    |               |        | 1              | <b>B6125</b> | 207              |              |       |                    |
|                    |               |        | 2.96           | III        |                    |               |        | 1              | <b>C6145</b> | 207              |              |       |                    |
| 5.84               | 10000         | (1130) | 1.28           | I          | 7.04               | 8300          | (938)  | 1.28           | I            | 1                | <b>B6120</b> | 249   |                    |
|                    |               |        | 1.52           | II         |                    |               |        | 1              | <b>B6125</b> | 249              |              |       |                    |
|                    |               |        | 2.02           | III        |                    |               |        | 1              | <b>C6145</b> | 249              |              |       |                    |
|                    |               |        | 2.96           | III        |                    |               |        | 1              | <b>D6165</b> | 249              |              |       |                    |
| 4.76               | 12300         | (1390) | 1.26           | I          | 5.75               | 10200         | (1150) | 1.26           | I            | 1                | <b>B6120</b> | 305   |                    |
|                    |               |        | 1.28           | I          |                    |               |        | 1              | <b>B6125</b> | 305              |              |       |                    |
|                    |               |        | 2.02           | III        |                    |               |        | 1              | <b>C6145</b> | 305              |              |       |                    |
|                    |               |        | 2.96           | III        |                    |               |        | 1              | <b>D6165</b> | 305              |              |       |                    |

# Single Reduction Selection Tables: Y5, Y6

**1.5 HP**  
(1.1 kW)



**Selection Table Pages:**

|                                     |           |
|-------------------------------------|-----------|
| Single Reduction -Y1,Y2,Y3,Y4       | 3.10-3.38 |
| -Y5,Y6                              | 3.39-3.60 |
| Double Reduction -Y1,Y2,Y3,Y4,Y5,Y6 | 3.62-3.79 |

**Dimension Pages:**

|                  |           |
|------------------|-----------|
| Single Reduction | 3.80-3.85 |
| Double Reduction | 3.86-3.91 |

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

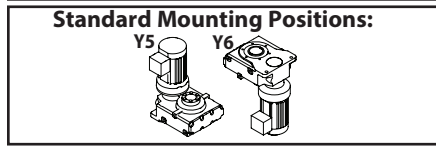
| 50Hz               |               |       |                | 60 Hz      |                    |               |       | Selection      |              |                  |              |       |                    |
|--------------------|---------------|-------|----------------|------------|--------------------|---------------|-------|----------------|--------------|------------------|--------------|-------|--------------------|
| Output Speed (RPM) | Output Torque |       | Service Factor |            | Output Speed (RPM) | Output Torque |       | Service Factor |              | Base             |              |       | VFD <sup>[1]</sup> |
|                    | in-lbs        | (N·m) | SF             | AGMA Class |                    | in-lbs        | (N·m) | SF             | AGMA Class   | Motor Power Code | Frame Size   | Ratio |                    |
| 69.0               | 1240          | (140) | 1.04           | I          | 83.3               | 1030          | (116) | 1.04           | I            | 1H               | <b>Z6090</b> | 21    |                    |
|                    |               |       | 1.38           | I          |                    |               |       | 1H             | <b>Z6095</b> | 21               |              |       |                    |
|                    |               |       | 2.13           | III        |                    |               |       | 1H             | <b>A6100</b> | 21               |              |       |                    |
|                    |               |       | 2.89           | III        |                    |               |       | 1H             | <b>A6105</b> | 21               |              |       |                    |
|                    |               |       | 2.89           | III        |                    |               |       | 1H             | <b>A6105</b> | 21               |              |       |                    |
| 51.8               | 1660          | (187) | 1.04           | I          | 62.5               | 1370          | (155) | 1.04           | I            | 1H               | <b>Z6090</b> | 28    |                    |
|                    |               |       | 1.38           | I          |                    |               |       | 1H             | <b>Z6095</b> | 28               |              |       |                    |
|                    |               |       | 2.13           | III        |                    |               |       | 1H             | <b>A6100</b> | 28               |              |       |                    |
|                    |               |       | 2.89           | III        |                    |               |       | 1H             | <b>A6105</b> | 28               |              |       |                    |
|                    |               |       | 2.89           | III        |                    |               |       | 1H             | <b>A6105</b> | 28               |              |       |                    |
| 37.7               | 2280          | (257) | 1.04           | I          | 45.5               | 1890          | (213) | 1.04           | I            | 1H               | <b>Z6090</b> | 39    |                    |
|                    |               |       | 1.38           | I          |                    |               |       | 1H             | <b>Z6095</b> | 39               |              |       |                    |
|                    |               |       | 2.13           | III        |                    |               |       | 1H             | <b>A6100</b> | 39               |              |       |                    |
|                    |               |       | 2.89           | III        |                    |               |       | 1H             | <b>A6105</b> | 39               |              |       |                    |
|                    |               |       | 2.89           | III        |                    |               |       | 1H             | <b>A6105</b> | 39               |              |       |                    |
| 31.9               | 2690          | (304) | 1.04           | I          | 38.5               | 2230          | (252) | 1.04           | I            | 1H               | <b>Z6090</b> | 46    |                    |
|                    |               |       | 1.38           | I          |                    |               |       | 1H             | <b>Z6095</b> | 46               |              |       |                    |
|                    |               |       | 2.13           | III        |                    |               |       | 1H             | <b>A6100</b> | 46               |              |       |                    |
|                    |               |       | 2.89           | III        |                    |               |       | 1H             | <b>A6105</b> | 46               |              |       |                    |
|                    |               |       | 2.89           | III        |                    |               |       | 1H             | <b>A6105</b> | 46               |              |       |                    |
| 27.6               | 3100          | (351) | 1.04           | I          | 33.3               | 2570          | (291) | 1.04           | I            | 1H               | <b>Z6090</b> | 53    |                    |
|                    |               |       | 1.26           | I          |                    |               |       | 1H             | <b>Z6095</b> | 53               |              |       |                    |
|                    |               |       | 2.13           | III        |                    |               |       | 1H             | <b>A6100</b> | 53               |              |       |                    |
|                    |               |       | 2.89           | III        |                    |               |       | 1H             | <b>A6105</b> | 53               |              |       |                    |
|                    |               |       | 2.89           | III        |                    |               |       | 1H             | <b>A6105</b> | 53               |              |       |                    |
| 24.4               | 3520          | (397) | 1.04           | I          | 29.4               | 2910          | (329) | 1.04           | I            | 1H               | <b>Z6090</b> | 60    |                    |
|                    |               |       | 1.11           | I          |                    |               |       | 1H             | <b>Z6095</b> | 60               |              |       |                    |
|                    |               |       | 1.81           | II         |                    |               |       | 1H             | <b>A6100</b> | 60               |              |       |                    |
|                    |               |       | 2.22           | III        |                    |               |       | 1H             | <b>A6105</b> | 60               |              |       |                    |
| 19.7               | 4350          | (491) | 0.90           | -          | 23.8               | 3600          | (407) | 1.08           | I            | 1H               | <b>Z6095</b> | 74    |                    |
|                    |               |       | 1.73           | II         |                    |               |       | 1H             | <b>A6100</b> | 74               |              |       |                    |
|                    |               |       | 1.80           | II         |                    |               |       | 1H             | <b>A6105</b> | 74               |              |       |                    |
|                    |               |       | 1.80           | II         |                    |               |       | 1H             | <b>A6105</b> | 74               |              |       |                    |
| 16.6               | 5170          | (584) | 1.15           | I          | 20.0               | 4290          | (484) | 1.15           | I            | 1H               | <b>A6100</b> | 88    |                    |
|                    |               |       | 1.51           | II         |                    |               |       | 1H             | <b>A6105</b> | 88               |              |       |                    |
|                    |               |       | 2.81           | III        |                    |               |       | 1H             | <b>B6120</b> | 88               |              |       |                    |
|                    |               |       | 3.03           | III        |                    |               |       | 1H             | <b>B6125</b> | 88               |              |       |                    |
|                    |               |       | 3.03           | III        |                    |               |       | 1H             | <b>B6125</b> | 88               |              |       |                    |
| 14.3               | 6000          | (678) | 1.10           | I          | 17.2               | 4970          | (562) | 1.10           | I            | 1H               | <b>A6100</b> | 102   |                    |
|                    |               |       | 1.30           | I          |                    |               |       | 1H             | <b>A6105</b> | 102              |              |       |                    |
|                    |               |       | 2.61           | III        |                    |               |       | 1H             | <b>B6120</b> | 102              |              |       |                    |
|                    |               |       | 2.61           | III        |                    |               |       | 1H             | <b>B6125</b> | 102              |              |       |                    |
|                    |               |       | 2.61           | III        |                    |               |       | 1H             | <b>B6125</b> | 102              |              |       |                    |

**Notes:** [1] Variable Frequency Drive (VFD) notes (see page 3.8 for Constant Torque Speed Ranges):  
All 1HP+ motors require EP suffix in model number and can be used with a VFD, unless noted.

**Notes:** [1] Variable Frequency Drive (VFD) notes (see page 3.8 for Constant Torque Speed Ranges):  
All 1HP+ motors require EP suffix in model number and can be used with a VFD, unless noted.

# Single Reduction Selection Tables: Y5, Y6

**1.5 HP**  
(1.1 kW)



**Selection Table Pages:**

|                  |                    |           |
|------------------|--------------------|-----------|
| Single Reduction | -Y1,Y2,Y3,Y4       | 3.10-3.38 |
|                  | -Y5,Y6             | 3.39-3.60 |
| Double Reduction | -Y1,Y2,Y3,Y4,Y5,Y6 | 3.62-3.79 |

**Dimension Pages:**

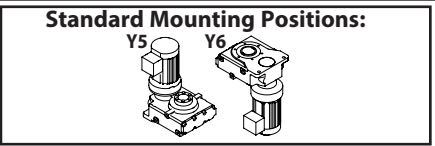
|                  |           |
|------------------|-----------|
| Single Reduction | 3.80-3.85 |
| Double Reduction | 3.86-3.91 |

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

| 50Hz               |               |        |                | 60 Hz      |                    |               |        | Selection      |              |                  |              | VFD <sup>[1]</sup> |
|--------------------|---------------|--------|----------------|------------|--------------------|---------------|--------|----------------|--------------|------------------|--------------|--------------------|
| Output Speed (RPM) | Output Torque |        | Service Factor |            | Output Speed (RPM) | Output Torque |        | Service Factor |              | Base             |              |                    |
|                    | in-lbs        | (N·m)  | SF             | AGMA Class |                    | in-lbs        | (N·m)  | SF             | AGMA Class   | Motor Power Code | Frame Size   | Ratio              |
| 11.8               | 7240          | (818)  | 0.89           | -          | 14.3               | 6000          | (678)  | 0.89           | -            | 1H               | <b>A6100</b> | 123                |
|                    |               |        | 1.08           | I          |                    |               |        | 1H             | <b>A6105</b> | 123              |              |                    |
|                    |               |        | 2.15           | III        |                    |               |        | 1H             | <b>B6120</b> | 123              |              |                    |
|                    |               |        | 2.16           | III        |                    |               |        | 1H             | <b>B6125</b> | 123              |              |                    |
| 9.63               | 8900          | (1010) | 0.88           | -          | 11.6               | 7370          | (833)  | 0.98           | -            | 1H               | <b>A6105</b> | 151                |
|                    |               |        | 1.74           | II         |                    |               |        | 1H             | <b>B6120</b> | 151              |              |                    |
|                    |               |        | 1.76           | II         |                    |               |        | 1H             | <b>B6125</b> | 151              |              |                    |
| 8.12               | 10600         | (1190) | 1.48           | II         | 9.80               | 8740          | (988)  | 1.56           | II           | 1H               | <b>B6120</b> | 179                |
|                    |               |        | 1.48           | II         |                    |               |        | 1H             | <b>B6125</b> | 179              |              |                    |
|                    |               |        | 2.02           | III        |                    |               |        | 1H             | <b>C6145</b> | 179              |              |                    |
| 7.02               | 12200         | (1380) | 1.18           | I          | 8.47               | 10100         | (1140) | 1.18           | I            | 1H               | <b>B6120</b> | 207                |
|                    |               |        | 1.28           | I          |                    |               |        | 1H             | <b>B6125</b> | 207              |              |                    |
|                    |               |        | 2.02           | III        |                    |               |        | 1H             | <b>C6145</b> | 207              |              |                    |
|                    |               |        | 1.18           | I          |                    |               |        | 1H             | <b>B6120</b> | 249              |              |                    |
| 5.84               | 14700         | (1660) | 0.87           | -          | 7.04               | 12200         | (1380) | 0.87           | -            | 1H               | <b>B6120</b> | 249                |
|                    |               |        | 1.03           | I          |                    |               |        | 1H             | <b>B6125</b> | 249              |              |                    |
|                    |               |        | 1.38           | I          |                    |               |        | 1H             | <b>C6145</b> | 249              |              |                    |
|                    |               |        | 2.02           | III        |                    |               |        | 1H             | <b>D6165</b> | 249              |              |                    |
| 4.76               | 18000         | (2030) | 0.86           | -          | 5.75               | 14900         | (1690) | 0.86           | -            | 1H               | <b>B6120</b> | 305                |
|                    |               |        | 0.87           | -          |                    |               |        | 1H             | <b>B6125</b> | 305              |              |                    |
|                    |               |        | 1.38           | I          |                    |               |        | 1H             | <b>C6145</b> | 305              |              |                    |
|                    |               |        | 2.02           | III        |                    |               |        | 1H             | <b>D6165</b> | 305              |              |                    |

# Single Reduction Selection Tables: Y5, Y6

**2 HP**  
(1.5 kW)



**Selection Table Pages:**

|                  |                    |           |
|------------------|--------------------|-----------|
| Single Reduction | -Y1,Y2,Y3,Y4       | 3.10-3.38 |
|                  | -Y5,Y6             | 3.39-3.60 |
| Double Reduction | -Y1,Y2,Y3,Y4,Y5,Y6 | 3.62-3.79 |

**Dimension Pages:**

|                  |           |
|------------------|-----------|
| Single Reduction | 3.80-3.85 |
| Double Reduction | 3.86-3.91 |

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

| 50Hz               |               |        |                | 60 Hz      |                    |               |       | Selection      |              |                  |              | VFD <sup>[1]</sup> |
|--------------------|---------------|--------|----------------|------------|--------------------|---------------|-------|----------------|--------------|------------------|--------------|--------------------|
| Output Speed (RPM) | Output Torque |        | Service Factor |            | Output Speed (RPM) | Output Torque |       | Service Factor |              | Base             |              |                    |
|                    | in-lbs        | (N·m)  | SF             | AGMA Class |                    | in-lbs        | (N·m) | SF             | AGMA Class   | Motor Power Code | Frame Size   | Ratio              |
| 69.0               | 1690          | (191)  | 1.01           | I          | 83.3               | 1400          | (158) | 1.01           | I            | 2                | <b>Z6095</b> | 21                 |
|                    |               |        | 1.56           | II         |                    |               |       | 2              | <b>A6100</b> | 21               |              |                    |
|                    |               |        | 2.12           | III        |                    |               |       | 2              | <b>A6105</b> | 21               |              |                    |
| 51.8               | 2260          | (255)  | 1.01           | I          | 62.5               | 1870          | (211) | 1.01           | I            | 2                | <b>Z6095</b> | 28                 |
|                    |               |        | 1.56           | II         |                    |               |       | 2              | <b>A6100</b> | 28               |              |                    |
|                    |               |        | 2.12           | III        |                    |               |       | 2              | <b>A6105</b> | 28               |              |                    |
| 37.7               | 3100          | (351)  | 1.01           | I          | 45.5               | 2570          | (291) | 1.01           | I            | 2                | <b>Z6095</b> | 39                 |
|                    |               |        | 1.56           | II         |                    |               |       | 2              | <b>A6100</b> | 39               |              |                    |
|                    |               |        | 2.12           | III        |                    |               |       | 2              | <b>A6105</b> | 39               |              |                    |
| 31.9               | 3670          | (414)  | 1.01           | I          | 38.5               | 3040          | (343) | 1.01           | I            | 2                | <b>Z6095</b> | 46                 |
|                    |               |        | 1.56           | II         |                    |               |       | 2              | <b>A6100</b> | 46               |              |                    |
|                    |               |        | 2.12           | III        |                    |               |       | 2              | <b>A6105</b> | 46               |              |                    |
| 27.6               | 4230          | (478)  | 0.92           | -          | 33.3               | 3510          | (396) | 1.01           | I            | 2                | <b>Z6095</b> | 53                 |
|                    |               |        | 1.56           | II         |                    |               |       | 2              | <b>A6100</b> | 53               |              |                    |
|                    |               |        | 1.85           | II         |                    |               |       | 2              | <b>A6105</b> | 53               |              |                    |
| 24.4               | 4800          | (542)  | 0.81           | -          | 29.4               | 3970          | (449) | 0.98           | -            | 2                | <b>Z6095</b> | 60                 |
|                    |               |        | 1.32           | I          |                    |               |       | 2              | <b>A6100</b> | 60               |              |                    |
|                    |               |        | 1.63           | II         |                    |               |       | 2              | <b>A6105</b> | 60               |              |                    |
| 19.7               | 5930          | (669)  | 0.66           | -          | 23.8               | 4910          | (555) | 0.80           | -            | 2                | <b>Z6095</b> | 74                 |
|                    |               |        | 1.27           | I          |                    |               |       | 2              | <b>A6100</b> | 74               |              |                    |
|                    |               |        | 1.32           | I          |                    |               |       | 2              | <b>A6105</b> | 74               |              |                    |
|                    |               |        | 2.64           | III        |                    |               |       | 2              | <b>B6120</b> | 74               |              |                    |
|                    |               |        | 2.64           | III        |                    |               |       | 2              | <b>B6125</b> | 74               |              |                    |
| 16.6               | 7050          | (797)  | 0.85           | -          | 20.0               | 5840          | (660) | 0.85           | -            | 2                | <b>A6100</b> | 88                 |
|                    |               |        | 1.11           | I          |                    |               |       | 2              | <b>A6105</b> | 88               |              |                    |
|                    |               |        | 2.06           | III        |                    |               |       | 2              | <b>B6120</b> | 88               |              |                    |
|                    |               |        | 2.22           | III        |                    |               |       | 2              | <b>B6125</b> | 88               |              |                    |
| 14.3               | 8180          | (925)  | 0.81           | -          | 17.2               | 6780          | (766) | 0.81           | -            | 2                | <b>A6100</b> | 102                |
|                    |               |        | 0.96           | -          |                    |               |       | 2              | <b>A6105</b> | 102              |              |                    |
|                    |               |        | 1.91           | II         |                    |               |       | 2              | <b>B6120</b> | 102              |              |                    |
|                    |               |        | 1.91           | II         |                    |               |       | 2              | <b>B6125</b> | 102              |              |                    |
|                    |               |        | 2.49           | III        |                    |               |       | 2              | <b>C6145</b> | 102              |              |                    |
| 11.8               | 9880          | (1120) | 0.79           | -          | 14.3               | 8180          | (925) | 0.80           | -            | 2                | <b>A6105</b> | 123                |
|                    |               |        | 1.58           | II         |                    |               |       | 2              | <b>B6120</b> | 123              |              |                    |
|                    |               |        | 1.59           | II         |                    |               |       | 2              | <b>B6125</b> | 123              |              |                    |
|                    |               |        | 2.49           | III        |                    |               |       | 2              | <b>C6145</b> | 123              |              |                    |

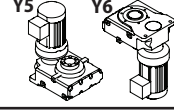
**Notes:** [1] Variable Frequency Drive (VFD) notes (see page 3.8 for Constant Torque Speed Ranges):  
All 1HP+ motors require EP suffix in model number and can be used with a VFD, unless noted.

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# Single Reduction Selection Tables: Y5, Y6

**2 HP**  
(1.5 kW)

**Standard Mounting Positions:**



**Selection Table Pages:**

Single Reduction  
-Y1,Y2,Y3,Y4 3.10-3.38  
-Y5,Y6 3.39-3.60  
Double Reduction  
-Y1,Y2,Y3,Y4,Y5,Y6 3.62-3.79

**Dimension Pages:**

Single Reduction 3.80-3.85  
Double Reduction 3.86-3.91

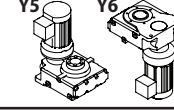
|                 |          |          |
|-----------------|----------|----------|
| Frequency       | 50 Hz    | 60 Hz    |
| Input Speed     | 1450 RPM | 1750 RPM |
| Number of Poles | 4        |          |

| 50Hz               |               |       |                | 60 Hz      |                    |               |       | Selection      |              |                  |              |       |                    |
|--------------------|---------------|-------|----------------|------------|--------------------|---------------|-------|----------------|--------------|------------------|--------------|-------|--------------------|
| Output Speed (RPM) | Output Torque |       | Service Factor |            | Output Speed (RPM) | Output Torque |       | Service Factor |              | Base             |              |       | VFD <sup>[1]</sup> |
|                    | in-lbs        | (N·m) | SF             | AGMA Class |                    | in-lbs        | (N·m) | SF             | AGMA Class   | Motor Power Code | Frame Size   | Ratio |                    |
| 9.63               | 12100 (1370)  |       | 1.27           | I          | 11.6               | 10100 (1140)  |       | 1.27           | I            | 2                | <b>B6120</b> | 151   |                    |
|                    |               |       | 1.29           | I          |                    |               |       | 2              | <b>B6125</b> | 151              |              |       |                    |
|                    |               |       | 2.49           | III        |                    |               |       | 2              | <b>D6165</b> | 151              |              |       |                    |
| 8.12               | 14400 (1630)  |       | 1.09           | I          | 9.80               | 11900 (1350)  |       | 1.14           | I            | 2                | <b>B6120</b> | 179   |                    |
|                    |               |       | 1.09           | I          |                    |               |       | 2              | <b>B6125</b> | 179              |              |       |                    |
|                    |               |       | 1.48           | II         |                    |               |       | 2              | <b>C6145</b> | 179              |              |       |                    |
|                    |               |       | 2.49           | III        |                    |               |       | 2              | <b>D6165</b> | 179              |              |       |                    |
| 7.02               | 16600 (1880)  |       | 0.87           | -          | 8.47               | 13800 (1560)  |       | 0.87           | -            | 2                | <b>B6120</b> | 207   |                    |
|                    |               |       | 0.94           | -          |                    |               |       | 2              | <b>B6125</b> | 207              |              |       |                    |
|                    |               |       | 1.48           | II         |                    |               |       | 2              | <b>C6145</b> | 207              |              |       |                    |
|                    |               |       | 2.49           | III        |                    |               |       | 2              | <b>D6165</b> | 207              |              |       |                    |
| 5.84               | 20000 (2260)  |       | 0.76           | -          | 7.04               | 16600 (1880)  |       | 0.80           | -            | 2                | <b>B6125</b> | 249   |                    |
|                    |               |       | 1.01           | I          |                    |               |       | 2              | <b>C6145</b> | 249              |              |       |                    |
|                    |               |       | 1.48           | II         |                    |               |       | 2              | <b>D6165</b> | 249              |              |       |                    |
| 4.76               | 24500 (2770)  |       | 1.01           | I          | 5.75               | 20300 (2300)  |       | 1.01           | I            | 2                | <b>C6145</b> | 305   |                    |
|                    |               |       | 1.48           | II         |                    |               |       | 2              | <b>D6165</b> | 305              |              |       |                    |

# Single Reduction Selection Tables: Y5, Y6

**3 HP**  
(2.2 kW)

**Standard Mounting Positions:**



**Selection Table Pages:**

Single Reduction  
-Y1,Y2,Y3,Y4 3.10-3.38  
-Y5,Y6 3.39-3.60  
Double Reduction  
-Y1,Y2,Y3,Y4,Y5,Y6 3.62-3.79

**Dimension Pages:**

Single Reduction 3.80-3.85  
Double Reduction 3.86-3.91

|                 |          |          |
|-----------------|----------|----------|
| 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 |            | Output Speed (RPM) | Output Torque |       | Service Factor |              | Base             |              |       | VFD <sup>[1]</sup> |
|                    | in-lbs        | (N·m) | SF             | AGMA Class |                    | in-lbs        | (N·m) | SF             | AGMA Class   | Motor Power Code | Frame Size   | Ratio |                    |
| 69.0               | 2480 (281)    |       | 1.07           | I          | 83.3               | 2060 (232)    |       | 1.07           | I            | 3                | <b>A6100</b> | 21    |                    |
|                    |               |       | 1.45           | II         |                    |               |       | 3              | <b>A6105</b> | 21               |              |       |                    |
|                    |               |       | 2.30           | III        |                    |               |       | 3              | <b>B6120</b> | 21               |              |       |                    |
|                    |               |       | 3.16           | III        |                    |               |       | 3              | <b>B6125</b> | 21               |              |       |                    |
| 51.8               | 3310 (374)    |       | 1.07           | I          | 62.5               | 2740 (310)    |       | 1.07           | I            | 3                | <b>A6100</b> | 28    |                    |
|                    |               |       | 1.45           | II         |                    |               |       | 3              | <b>A6105</b> | 28               |              |       |                    |
|                    |               |       | 2.30           | III        |                    |               |       | 3              | <b>B6120</b> | 28               |              |       |                    |
|                    |               |       | 3.16           | III        |                    |               |       | 3              | <b>B6125</b> | 28               |              |       |                    |
| 37.7               | 4550 (514)    |       | 1.07           | I          | 45.5               | 3770 (426)    |       | 1.07           | I            | 3                | <b>A6100</b> | 39    |                    |
|                    |               |       | 1.45           | II         |                    |               |       | 3              | <b>A6105</b> | 39               |              |       |                    |
|                    |               |       | 2.30           | III        |                    |               |       | 3              | <b>B6120</b> | 39               |              |       |                    |
|                    |               |       | 2.69           | III        |                    |               |       | 3              | <b>B6125</b> | 39               |              |       |                    |
| 31.9               | 5380 (608)    |       | 1.07           | I          | 38.5               | 4460 (504)    |       | 1.07           | I            | 3                | <b>A6100</b> | 46    |                    |
|                    |               |       | 1.45           | II         |                    |               |       | 3              | <b>A6105</b> | 46               |              |       |                    |
|                    |               |       | 2.30           | III        |                    |               |       | 3              | <b>B6120</b> | 46               |              |       |                    |
|                    |               |       | 2.69           | III        |                    |               |       | 3              | <b>B6125</b> | 46               |              |       |                    |
| 27.6               | 6210 (701)    |       | 1.07           | I          | 33.3               | 5140 (581)    |       | 1.07           | I            | 3                | <b>A6100</b> | 53    |                    |
|                    |               |       | 1.26           | I          |                    |               |       | 3              | <b>A6105</b> | 53               |              |       |                    |
|                    |               |       | 2.30           | III        |                    |               |       | 3              | <b>B6120</b> | 53               |              |       |                    |
|                    |               |       | 2.52           | III        |                    |               |       | 3              | <b>B6125</b> | 53               |              |       |                    |
| 24.4               | 7040 (795)    |       | 0.90           | -          | 29.4               | 5830 (659)    |       | 0.90           | -            | 3                | <b>A6100</b> | 60    |                    |
|                    |               |       | 1.11           | I          |                    |               |       | 3              | <b>A6105</b> | 60               |              |       |                    |
|                    |               |       | 2.22           | III        |                    |               |       | 3              | <b>B6120</b> | 60               |              |       |                    |
|                    |               |       | 2.23           | III        |                    |               |       | 3              | <b>B6125</b> | 60               |              |       |                    |
| 19.7               | 8690 (982)    |       | 0.86           | -          | 23.8               | 7200 (814)    |       | 0.88           | -            | 3                | <b>A6100</b> | 74    |                    |
|                    |               |       | 0.90           | -          |                    |               |       | 3              | <b>A6105</b> | 74               |              |       |                    |
|                    |               |       | 1.80           | II         |                    |               |       | 3              | <b>B6120</b> | 74               |              |       |                    |
|                    |               |       | 1.80           | II         |                    |               |       | 3              | <b>B6125</b> | 74               |              |       |                    |
|                    |               |       | 2.53           | III        |                    |               |       | 3              | <b>C6145</b> | 74               |              |       |                    |
| 16.6               | 10300 (1170)  |       | 1.40           | II         | 20.0               | 8570 (969)    |       | 1.40           | II           | 3                | <b>B6120</b> | 88    |                    |
|                    |               |       | 1.51           | II         |                    |               |       | 3              | <b>B6125</b> | 88               |              |       |                    |
|                    |               |       | 2.53           | III        |                    |               |       | 3              | <b>C6145</b> | 88               |              |       |                    |
| 14.3               | 12000 (1360)  |       | 1.30           | I          | 17.2               | 9940 (1120)   |       | 1.36           | I            | 3                | <b>B6120</b> | 102   |                    |
|                    |               |       | 1.31           | I          |                    |               |       | 3              | <b>B6125</b> | 102              |              |       |                    |
|                    |               |       | 1.70           | II         |                    |               |       | 3              | <b>C6145</b> | 102              |              |       |                    |

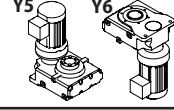
**Notes:** [1] Variable Frequency Drive (VFD) notes (see page 3.8 for Constant Torque Speed Ranges):  
All 1HP+ motors require EP suffix in model number and can be used with a VFD, unless noted.

**Notes:** [1] Variable Frequency Drive (VFD) notes (see page 3.8 for Constant Torque Speed Ranges):  
All 1HP+ motors require EP suffix in model number and can be used with a VFD, unless noted.

# Single Reduction Selection Tables: Y5, Y6

**3 HP**  
(2.2 kW)

**Standard Mounting Positions:**



**Selection Table Pages:**

Single Reduction  
-Y1,Y2,Y3,Y4 3.10-3.38  
-Y5,Y6 3.39-3.60  
Double Reduction  
-Y1,Y2,Y3,Y4,Y5,Y6 3.62-3.79

**Dimension Pages:**

Single Reduction 3.80-3.85  
Double Reduction 3.86-3.91

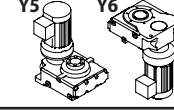
|                 |          |          |
|-----------------|----------|----------|
| Frequency       | 50 Hz    | 60 Hz    |
| Input Speed     | 1450 RPM | 1750 RPM |
| Number of Poles | 4        |          |

| 50Hz               |               |       |                | 60 Hz      |                    |               |       | Selection      |              |                  |              |       |                    |
|--------------------|---------------|-------|----------------|------------|--------------------|---------------|-------|----------------|--------------|------------------|--------------|-------|--------------------|
| Output Speed (RPM) | Output Torque |       | Service Factor |            | Output Speed (RPM) | Output Torque |       | Service Factor |              | Base             |              |       | VFD <sup>[1]</sup> |
|                    | in-lbs        | (N·m) | SF             | AGMA Class |                    | in-lbs        | (N·m) | SF             | AGMA Class   | Motor Power Code | Frame Size   | Ratio |                    |
| 11.8               | 14500 (1640)  |       | 1.08           | I          | 14.3               | 12000 (1360)  |       | 1.13           | I            | 3                | <b>B6120</b> | 123   |                    |
|                    |               |       | 1.08           | I          |                    |               |       | 3              | <b>B6125</b> | 123              |              |       |                    |
|                    |               |       | 1.70           | II         |                    |               |       | 3              | <b>C6145</b> | 123              |              |       |                    |
| 9.63               | 17800 (2010)  |       | 0.87           | -          | 11.6               | 14700 (1670)  |       | 0.87           | -            | 3                | <b>B6120</b> | 151   |                    |
|                    |               |       | 0.88           | -          |                    |               |       | 3              | <b>B6125</b> | 151              |              |       |                    |
|                    |               |       | 1.70           | II         |                    |               |       | 3              | <b>D6165</b> | 151              |              |       |                    |
| 8.12               | 21100 (2380)  |       | 0.74           | -          | 9.80               | 17500 (1980)  |       | 0.90           | -            | 3                | <b>B6125</b> | 179   |                    |
|                    |               |       | 1.01           | I          |                    |               |       | 3              | <b>C6145</b> | 179              |              |       |                    |
|                    |               |       | 1.70           | II         |                    |               |       | 3              | <b>D6165</b> | 179              |              |       |                    |
|                    |               |       | 2.53           | III        |                    |               |       | 3              | <b>E6175</b> | 179              |              |       |                    |
| 7.02               | 24400 (2760)  |       | 1.01           | I          | 8.47               | 20200 (2290)  |       | 1.01           | I            | 3                | <b>C6145</b> | 207   |                    |
|                    |               |       | 1.70           | II         |                    |               |       | 3              | <b>D6165</b> | 207              |              |       |                    |
|                    |               |       | 2.53           | III        |                    |               |       | 3              | <b>E6175</b> | 207              |              |       |                    |
| 5.84               | 29400 (3320)  |       | 1.01           | I          | 7.04               | 24300 (2750)  |       | 1.01           | I            | 3                | <b>D6165</b> | 249   |                    |
|                    |               |       | 1.70           | II         |                    |               |       | 3              | <b>E6175</b> | 249              |              |       |                    |
| 4.76               | 36000 (4070)  |       | 1.01           | I          | 5.75               | 29800 (3370)  |       | 1.01           | I            | 3                | <b>D6165</b> | 305   |                    |
|                    |               |       | 1.70           | II         |                    |               |       | 3              | <b>E6175</b> | 305              |              |       |                    |

# Single Reduction Selection Tables: Y5, Y6

**5 HP**  
(3.7 kW)

**Standard Mounting Positions:**



**Selection Table Pages:**

Single Reduction  
-Y1,Y2,Y3,Y4 3.10-3.38  
-Y5,Y6 3.39-3.60  
Double Reduction  
-Y1,Y2,Y3,Y4,Y5,Y6 3.62-3.79

**Dimension Pages:**

Single Reduction 3.80-3.85  
Double Reduction 3.86-3.91

|                 |          |          |
|-----------------|----------|----------|
| 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 |            | Output Speed (RPM) | Output Torque |       | Service Factor |              | Base             |              |       | VFD <sup>[1]</sup> |
|                    | in-lbs        | (N·m) | SF             | AGMA Class |                    | in-lbs        | (N·m) | SF             | AGMA Class   | Motor Power Code | Frame Size   | Ratio |                    |
| 69.0               | 4180 (472)    |       | 1.37           | I          | 83.3               | 3460 (391)    |       | 1.37           | I            | 5                | <b>B6120</b> | 21    |                    |
|                    |               |       | 1.88           | II         |                    |               |       | 5              | <b>B6125</b> | 21               |              |       |                    |
|                    |               |       | 3.00           | III        |                    |               |       | 5              | <b>C6145</b> | 21               |              |       |                    |
| 51.8               | 5570 (629)    |       | 1.37           | I          | 62.5               | 4610 (521)    |       | 1.37           | I            | 5                | <b>B6120</b> | 28    |                    |
|                    |               |       | 1.88           | II         |                    |               |       | 5              | <b>B6125</b> | 28               |              |       |                    |
|                    |               |       | 3.00           | III        |                    |               |       | 5              | <b>C6145</b> | 28               |              |       |                    |
| 37.7               | 7660 (865)    |       | 1.37           | I          | 45.5               | 6340 (717)    |       | 1.37           | I            | 5                | <b>B6120</b> | 39    |                    |
|                    |               |       | 1.60           | II         |                    |               |       | 5              | <b>B6125</b> | 39               |              |       |                    |
|                    |               |       | 3.00           | III        |                    |               |       | 5              | <b>C6145</b> | 39               |              |       |                    |
| 31.9               | 9050 (1020)   |       | 1.37           | I          | 38.5               | 7500 (847)    |       | 1.37           | I            | 5                | <b>B6120</b> | 46    |                    |
|                    |               |       | 1.60           | II         |                    |               |       | 5              | <b>B6125</b> | 46               |              |       |                    |
|                    |               |       | 2.05           | III        |                    |               |       | 5              | <b>C6145</b> | 46               |              |       |                    |
|                    |               |       | 3.00           | III        |                    |               |       | 5              | <b>D6165</b> | 46               | (-)          |       |                    |
| 27.6               | 10400 (1180)  |       | 1.37           | I          | 33.3               | 8650 (977)    |       | 1.37           | I            | 5                | <b>B6120</b> | 53    |                    |
|                    |               |       | 1.50           | II         |                    |               |       | 5              | <b>B6125</b> | 53               |              |       |                    |
|                    |               |       | 2.05           | III        |                    |               |       | 5              | <b>C6145</b> | 53               |              |       |                    |
|                    |               |       | 3.00           | III        |                    |               |       | 5              | <b>D6165</b> | 53               |              |       |                    |
| 24.4               | 11800 (1340)  |       | 1.32           | I          | 29.4               | 9800 (1110)   |       | 1.37           | I            | 5                | <b>B6120</b> | 60    |                    |
|                    |               |       | 1.32           | I          |                    |               |       | 5              | <b>B6125</b> | 60               |              |       |                    |
|                    |               |       | 3.00           | III        |                    |               |       | 5              | <b>D6165</b> | 60               |              |       |                    |
| 19.7               | 14600 (1650)  |       | 1.07           | I          | 23.8               | 12100 (1370)  |       | 1.07           | I            | 5                | <b>B6120</b> | 74    |                    |
|                    |               |       | 1.07           | I          |                    |               |       | 5              | <b>B6125</b> | 74               |              |       |                    |
|                    |               |       | 1.50           | II         |                    |               |       | 5              | <b>C6145</b> | 74               |              |       |                    |
|                    |               |       | 2.05           | III        |                    |               |       | 5              | <b>D6165</b> | 74               |              |       |                    |
|                    |               |       | 2.62           | III        |                    |               |       | 5              | <b>E6175</b> | 74               | (-)          |       |                    |
| 16.6               | 17400 (1970)  |       | 0.83           | -          | 20.0               | 14400 (1630)  |       | 0.83           | -            | 5                | <b>B6120</b> | 88    |                    |
|                    |               |       | 0.90           | -          |                    |               |       | 5              | <b>B6125</b> | 88               |              |       |                    |
|                    |               |       | 1.50           | II         |                    |               |       | 5              | <b>C6145</b> | 88               |              |       |                    |
|                    |               |       | 2.05           | III        |                    |               |       | 5              | <b>D6165</b> | 88               |              |       |                    |
|                    |               |       | 3.00           | III        |                    |               |       | 5              | <b>E6175</b> | 88               | (-)          |       |                    |
| 14.3               | 20200 (2280)  |       | 0.77           | -          | 17.2               | 16700 (1890)  |       | 0.81           | -            | 5                | <b>B6120</b> | 102   |                    |
|                    |               |       | 0.78           | -          |                    |               |       | 5              | <b>B6125</b> | 102              |              |       |                    |
|                    |               |       | 1.01           | I          |                    |               |       | 5              | <b>C6145</b> | 102              |              |       |                    |
|                    |               |       | 2.05           | III        |                    |               |       | 5              | <b>D6165</b> | 102              |              |       |                    |
|                    |               |       | 3.00           | III        |                    |               |       | 5              | <b>E6175</b> | 102              | (-)          |       |                    |
| 11.8               | 24400 (2750)  |       | 1.01           | I          | 14.3               | 20200 (2280)  |       | 1.01           | I            | 5                | <b>C6145</b> | 123   |                    |
|                    |               |       | 2.05           | III        |                    |               |       | 5              | <b>D6165</b> | 123              |              |       |                    |

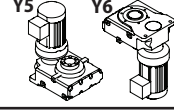
**Notes:** [1] Variable Frequency Drive (VFD) notes (see page 3.8 for Constant Torque Speed Ranges):  
All 1HP+ motors require EP suffix in model number and can be used with a VFD, unless noted.

**Notes:** [1] Variable Frequency Drive (VFD) notes (see page 3.8 for Constant Torque Speed Ranges):  
All 1HP+ motors require EP suffix in model number and can be used with a VFD, unless noted.

# Single Reduction Selection Tables: Y5, Y6

**5 HP  
(3.7 kW)**

**Standard Mounting Positions:**



**Selection Table Pages:**

Single Reduction  
-Y1,Y2,Y3,Y4 3.10-3.38  
-Y5,Y6 3.39-3.60  
Double Reduction  
-Y1,Y2,Y3,Y4,Y5,Y6 3.62-3.79

**Dimension Pages:**

Single Reduction 3.80-3.85  
Double Reduction 3.86-3.91

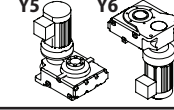
|                 |          |          |
|-----------------|----------|----------|
| Frequency       | 50 Hz    | 60 Hz    |
| Input Speed     | 1450 RPM | 1750 RPM |
| Number of Poles | 4        |          |

| 50Hz               |               |        |                | 60 Hz      |                    |               |        | Selection      |            |   | VFD <sup>[1]</sup> |     |
|--------------------|---------------|--------|----------------|------------|--------------------|---------------|--------|----------------|------------|---|--------------------|-----|
| Output Speed (RPM) | Output Torque |        | Service Factor |            | Output Speed (RPM) | Output Torque |        | Service Factor |            | Base<br>Motor Power Code<br>Frame Size<br>Ratio |                    |     |
|                    | in-lbs        | (N·m)  | SF             | AGMA Class |                    | in-lbs        | (N·m)  | SF             | AGMA Class |   |                    |     |
| 9.63               | 29900         | (3380) | 1.01           | I          | 11.6               | 24800         | (2800) | 1.01           | I          | 5   | <b>D6165</b>       | 151 |
|                    |               |        | 2.05           | III        |                    |               |        | 2.05           | III        | 5   | <b>E6175</b>       | 151 |
| 8.12               | 35500         | (4010) | 1.01           | I          | 9.80               | 29400         | (3320) | 1.01           | I          | 5   | <b>D6165</b>       | 179 |
|                    |               |        | 1.50           | II         |                    |               |        | 1.50           | II         | 5   | <b>E6175</b>       | 179 |
| 7.02               | 41100         | (4640) | 1.01           | I          | 8.47               | 34000         | (3840) | 1.01           | I          | 5   | <b>D6165</b>       | 207 |
|                    |               |        | 1.50           | II         |                    |               |        | 1.50           | II         | 5   | <b>E6175</b>       | 207 |
| 5.84               | 49400         | (5580) | 1.01           | I          | 7.04               | 40900         | (4630) | 1.01           | I          | 5   | <b>E6175</b>       | 249 |
| 4.76               | 60600         | (6840) | 1.01           | I          | 5.75               | 50200         | (5670) | 1.01           | I          | 5   | <b>E6175</b>       | 305 |

# Single Reduction Selection Tables: Y5, Y6

**7.5 HP  
(5.5 kW)**

**Standard Mounting Positions:**



**Selection Table Pages:**

Single Reduction  
-Y1,Y2,Y3,Y4 3.10-3.38  
-Y5,Y6 3.39-3.60  
Double Reduction  
-Y1,Y2,Y3,Y4,Y5,Y6 3.62-3.79

**Dimension Pages:**

Single Reduction 3.80-3.85  
Double Reduction 3.86-3.91

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

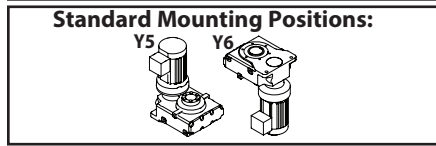
| 50Hz               |               |        |                | 60 Hz      |                    |               |        | Selection      |            |   | VFD <sup>[1]</sup> |     |
|--------------------|---------------|--------|----------------|------------|--------------------|---------------|--------|----------------|------------|---|--------------------|-----|
| Output Speed (RPM) | Output Torque |        | Service Factor |            | Output Speed (RPM) | Output Torque |        | Service Factor |            | Base<br>Motor Power Code<br>Frame Size<br>Ratio |                    |     |
|                    | in-lbs        | (N·m)  | SF             | AGMA Class |                    | in-lbs        | (N·m)  | SF             | AGMA Class |   |                    |     |
| 69.0               | 6210          | (701)  | 0.92           | -          | 83.3               | 5140          | (581)  | 0.92           | -          | 8   | <b>B6120</b>       | 21  |
|                    |               |        | 1.27           | I          |                    |               |        | 1.06           | I          | 8   | <b>B6125</b>       | 21  |
|                    |               |        | 2.02           | III        |                    |               |        | 2.02           | III        | 8   | <b>C6145</b>       | 21  |
| 51.8               | 8280          | (935)  | 0.92           | -          | 62.5               | 6860          | (775)  | 0.92           | -          | 8   | <b>B6120</b>       | 28  |
|                    |               |        | 1.26           | I          |                    |               |        | 1.26           | I          | 8   | <b>B6125</b>       | 28  |
|                    |               |        | 2.02           | III        |                    |               |        | 2.02           | III        | 8   | <b>C6145</b>       | 28  |
|                    |               |        | 2.75           | III        |                    |               |        | 2.75           | III        | 8   | <b>D6165</b>       | 28  |
| 37.7               | 11400         | (1290) | 0.92           | -          | 45.5               | 9430          | (1070) | 0.92           | -          | 8   | <b>B6120</b>       | 39  |
|                    |               |        | 1.08           | I          |                    |               |        | 1.08           | I          | 8   | <b>B6125</b>       | 39  |
|                    |               |        | 2.02           | III        |                    |               |        | 2.02           | III        | 8   | <b>C6145</b>       | 39  |
|                    |               |        | 2.75           | III        |                    |               |        | 2.75           | III        | 8   | <b>D6165</b>       | 39  |
| 31.9               | 13400         | (1520) | 0.92           | -          | 38.5               | 11100         | (1260) | 0.92           | -          | 8   | <b>B6120</b>       | 46  |
|                    |               |        | 1.08           | I          |                    |               |        | 1.08           | I          | 8   | <b>B6125</b>       | 46  |
|                    |               |        | 1.38           | I          |                    |               |        | 1.38           | I          | 8   | <b>C6145</b>       | 46  |
|                    |               |        | 2.02           | III        |                    |               |        | 2.02           | III        | 8   | <b>D6165</b>       | 46  |
|                    |               |        | 2.59           | III        |                    |               |        | 2.59           | III        | 8   | <b>E6175</b>       | 46  |
| 27.6               | 15500         | (1750) | 0.92           | -          | 33.3               | 12900         | (1450) | 0.92           | -          | 8   | <b>B6120</b>       | 53  |
|                    |               |        | 1.01           | I          |                    |               |        | 1.08           | I          | 8   | <b>B6125</b>       | 53  |
|                    |               |        | 1.38           | I          |                    |               |        | 1.38           | I          | 8   | <b>C6145</b>       | 53  |
|                    |               |        | 2.02           | III        |                    |               |        | 2.02           | III        | 8   | <b>D6165</b>       | 53  |
|                    |               |        | 2.18           | III        |                    |               |        | 2.18           | III        | 8   | <b>E6175</b>       | 53  |
| 24.4               | 17600         | (1990) | 0.89           | -          | 29.4               | 14600         | (1650) | 0.92           | -          | 8   | <b>B6120</b>       | 60  |
|                    |               |        | 0.89           | -          |                    |               |        | 1.03           | I          | 8   | <b>B6125</b>       | 60  |
|                    |               |        | 2.02           | III        |                    |               |        | 2.02           | III        | 8   | <b>D6165</b>       | 60  |
| 19.7               | 21700         | (2450) | 0.72           | -          | 23.8               | 18000         | (2030) | 0.87           | -          | 8   | <b>B6125</b>       | 74  |
|                    |               |        | 1.01           | I          |                    |               |        | 1.01           | I          | 8   | <b>C6145</b>       | 74  |
|                    |               |        | 1.38           | I          |                    |               |        | 1.38           | I          | 8   | <b>D6165</b>       | 74  |
|                    |               |        | 1.77           | II         |                    |               |        | 1.77           | II         | 8   | <b>E6175</b>       | 74  |
| 16.6               | 25900         | (2920) | 1.01           | I          | 20.0               | 21400         | (2420) | 1.01           | I          | 8   | <b>C6145</b>       | 88  |
|                    |               |        | 1.38           | I          |                    |               |        | 1.38           | I          | 8   | <b>D6165</b>       | 88  |
|                    |               |        | 2.02           | III        |                    |               |        | 2.02           | III        | 8   | <b>E6175</b>       | 88  |
| 14.3               | 30000         | (3390) | 1.38           | I          | 17.2               | 24900         | (2810) | 1.38           | I          | 8   | <b>D6165</b>       | 102 |
|                    |               |        | 2.02           | III        |                    |               |        | 2.02           | III        | 8   | <b>E6175</b>       | 102 |
| 11.8               | 36200         | (4090) | 1.38           | I          | 14.3               | 30000         | (3390) | 1.38           | I          | 8   | <b>D6165</b>       | 123 |
| 9.63               | 44500         | (5030) | 1.38           | I          | 11.6               | 36900         | (4160) | 1.38           | I          | 8   | <b>E6175</b>       | 151 |
| 8.12               | 52800         | (5960) | 1.01           | I          | 9.80               | 43700         | (4940) | 1.01           | I          | 8   | <b>E6175</b>       | 179 |

**Notes:** [1] Variable Frequency Drive (VFD) notes (see page 3.8 for Constant Torque Speed Ranges):  
All 1HP+ motors require EP suffix in model number and can be used with a VFD, unless noted.

**Notes:** [1] Variable Frequency Drive (VFD) notes (see page 3.8 for Constant Torque Speed Ranges):  
All 1HP+ motors require EP suffix in model number and can be used with a VFD, unless noted.

# Single Reduction Selection Tables: Y5, Y6

**7.5 HP  
(5.5 kW)**



**Selection Table Pages:**

|                    |           |
|--------------------|-----------|
| Single Reduction   |           |
| -Y1,Y2,Y3,Y4       | 3.10-3.38 |
| -Y5,Y6             | 3.39-3.60 |
| Double Reduction   |           |
| -Y1,Y2,Y3,Y4,Y5,Y6 | 3.62-3.79 |

**Dimension Pages:**

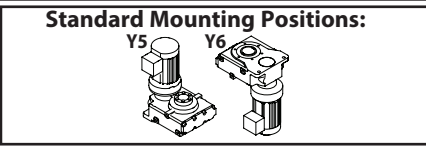
|                  |           |
|------------------|-----------|
| Single Reduction | 3.80-3.85 |
| Double Reduction | 3.86-3.91 |

|                 |          |          |
|-----------------|----------|----------|
| 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 |            | Output Speed (RPM) | Output Torque |        | Service Factor |            | Base             |              |       | VFD <sup>[1]</sup> |
|                    | in-lbs        | (N·m)  | SF             | AGMA Class |                    | in-lbs        | (N·m)  | SF             | AGMA Class | Motor Power Code | Frame Size   | Ratio |                    |
| 7.02               | 61000         | (6900) | 1.01           | I          | 8.47               | 50600         | (5710) | 1.01           | I          | 8                | <b>E6175</b> | 207   |                    |

# Single Reduction Selection Tables: Y5, Y6

**10 HP  
(7.5 kW)**



**Selection Table Pages:**

|                    |           |
|--------------------|-----------|
| Single Reduction   |           |
| -Y1,Y2,Y3,Y4       | 3.10-3.38 |
| -Y5,Y6             | 3.39-3.60 |
| Double Reduction   |           |
| -Y1,Y2,Y3,Y4,Y5,Y6 | 3.62-3.79 |

**Dimension Pages:**

|                  |           |
|------------------|-----------|
| Single Reduction | 3.80-3.85 |
| Double Reduction | 3.86-3.91 |

|                 |          |          |
|-----------------|----------|----------|
| 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 |            | Output Speed (RPM) | Output Torque |        | Service Factor |              | Base             |              |       | VFD <sup>[1]</sup> |
|                    | in-lbs        | (N·m)  | SF             | AGMA Class |                    | in-lbs        | (N·m)  | SF             | AGMA Class   | Motor Power Code | Frame Size   | Ratio |                    |
| 69.0               | 8470          | (956)  | 1.48           | II         | 83.3               | 7010          | (792)  | 1.48           | II           | 10               | <b>C6145</b> | 21    |                    |
| 51.8               | 11300         | (1280) | 0.93           | -          | 62.5               | 9350          | (1060) | 0.93           | -            | 10               | <b>B6125</b> | 28    |                    |
|                    |               |        | 1.48           | II         |                    |               |        | 10             | <b>C6145</b> | 28               |              |       |                    |
|                    |               |        | 2.02           | III        |                    |               |        | 10             | <b>D6165</b> | 28               |              |       |                    |
| 37.7               | 15500         | (1750) | 1.48           | II         | 45.5               | 12900         | (1450) | 1.48           | II           | 10               | <b>C6145</b> | 39    |                    |
|                    |               |        | 2.02           | III        |                    |               |        | 10             | <b>D6165</b> | 39               |              |       |                    |
| 31.9               | 18300         | (2070) | 1.01           | I          | 38.5               | 15200         | (1720) | 1.01           | I            | 10               | <b>C6145</b> | 46    |                    |
|                    |               |        | 1.48           | II         |                    |               |        | 10             | <b>D6165</b> | 46               |              |       |                    |
|                    |               |        | 1.90           | II         |                    |               |        | 10             | <b>E6175</b> | 46               | (-)          |       |                    |
| 27.6               | 21200         | (2390) | 1.01           | I          | 33.3               | 17500         | (1980) | 1.01           | I            | 10               | <b>C6145</b> | 53    |                    |
|                    |               |        | 1.48           | II         |                    |               |        | 10             | <b>D6165</b> | 53               |              |       |                    |
|                    |               |        | 1.60           | II         |                    |               |        | 10             | <b>E6175</b> | 53               |              |       |                    |
| 24.4               | 24000         | (2710) | 1.48           | II         | 29.4               | 19900         | (2250) | 1.48           | II           | 10               | <b>D6165</b> | 60    |                    |
| 19.7               | 29600         | (3350) | 1.01           | I          | 23.8               | 24500         | (2770) | 1.01           | I            | 10               | <b>D6165</b> | 74    |                    |
|                    |               |        | 1.29           | I          |                    |               |        | 10             | <b>E6175</b> | 74               |              |       |                    |
| 16.6               | 35300         | (3990) | 1.01           | I          | 20.0               | 29200         | (3300) | 1.01           | I            | 10               | <b>D6165</b> | 88    |                    |
|                    |               |        | 1.48           | II         |                    |               |        | 10             | <b>E6175</b> | 88               |              |       |                    |
| 14.3               | 40900         | (4620) | 1.01           | I          | 17.2               | 33900         | (3830) | 1.01           | I            | 10               | <b>D6165</b> | 102   |                    |
|                    |               |        | 1.48           | II         |                    |               |        | 10             | <b>E6175</b> | 102              |              |       |                    |
| 11.8               | 49400         | (5580) | 1.01           | I          | 14.3               | 40900         | (4620) | 1.01           | I            | 10               | <b>D6165</b> | 123   |                    |
| 9.63               | 60700         | (6850) | 1.01           | I          | 11.6               | 50300         | (5680) | 1.01           | I            | 10               | <b>E6175</b> | 151   |                    |

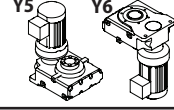
**Notes:** [1] Variable Frequency Drive (VFD) notes (see page 3.8 for Constant Torque Speed Ranges):  
All 1HP+ motors require EP suffix in model number and can be used with a VFD, unless noted.

**Notes:** [1] Variable Frequency Drive (VFD) notes (see page 3.8 for Constant Torque Speed Ranges):  
All 1HP+ motors require EP suffix in model number and can be used with a VFD, unless noted.

# Single Reduction Selection Tables: Y5, Y6

**15 HP  
(11 kW)**

**Standard Mounting Positions:**



**Selection Table Pages:**

Single Reduction  
-Y1,Y2,Y3,Y4 3.10-3.38  
-Y5,Y6 3.39-3.60  
Double Reduction  
-Y1,Y2,Y3,Y4,Y5,Y6 3.62-3.79

*Dimension Pages:*

Single Reduction 3.80-3.85  
Double Reduction 3.86-3.91

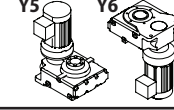
|                 |          |          |
|-----------------|----------|----------|
| Frequency       | 50 Hz    | 60 Hz    |
| Input Speed     | 1450 RPM | 1750 RPM |
| Number of Poles | 4        |          |

| 50Hz               |               |        |                | 60 Hz      |                    |               |        | Selection      |            |                  |              |       |                    |
|--------------------|---------------|--------|----------------|------------|--------------------|---------------|--------|----------------|------------|------------------|--------------|-------|--------------------|
| Output Speed (RPM) | Output Torque |        | Service Factor |            | Output Speed (RPM) | Output Torque |        | Service Factor |            | Base             |              |       | VFD <sup>[1]</sup> |
|                    | in-lbs        | (N·m)  | SF             | AGMA Class |                    | in-lbs        | (N·m)  | SF             | AGMA Class | Motor Power Code | Frame Size   | Ratio |                    |
| 69.0               | 12400         | (1400) | 1.01           | I          | 83.3               | 10300         | (1160) | 1.01           | I          | 15               | <b>C6145</b> | 21    |                    |
| 51.8               | 16600         | (1870) | 1.01           | I          | 62.5               | 13700         | (1550) | 1.01           | I          | 15               | <b>C6145</b> | 28    |                    |
|                    |               |        | 1.38           | I          |                    |               |        | 1.38           | I          |                  |              |       |                    |
| 37.7               | 22800         | (2570) | 1.01           | I          | 45.5               | 18900         | (2130) | 1.01           | I          | 15               | <b>C6145</b> | 39    |                    |
|                    |               |        | 1.38           | I          |                    |               |        | 1.38           | I          |                  |              |       |                    |
| 31.9               | 26900         | (3040) | 1.01           | I          | 38.5               | 22300         | (2520) | 1.01           | I          | 15               | <b>D6165</b> | 46    | (-)                |
|                    |               |        | 1.29           | I          |                    |               |        | 1.29           | I          |                  |              |       |                    |
| 27.6               | 31000         | (3510) | 1.01           | I          | 33.3               | 25700         | (2910) | 1.01           | I          | 15               | <b>D6165</b> | 53    |                    |
|                    |               |        | 1.09           | I          |                    |               |        | 1.09           | I          |                  |              |       |                    |
| 24.4               | 35200         | (3970) | 1.01           | I          | 29.4               | 29100         | (3290) | 1.01           | I          | 15               | <b>D6165</b> | 60    |                    |
| 19.7               | 43500         | (4910) | 0.88           | -          | 23.8               | 36000         | (4070) | 0.88           | -          | 15               | <b>E6175</b> | 74    |                    |
| 16.6               | 51700         | (5840) | 1.01           | I          | 20.0               | 42900         | (4840) | 1.01           | I          | 15               | <b>E6175</b> | 88    |                    |
| 14.3               | 60000         | (6780) | 1.01           | I          | 17.2               | 49700         | (5620) | 1.01           | I          | 15               | <b>E6175</b> | 102   |                    |

# Single Reduction Selection Tables: Y5, Y6

**20 HP  
(15 kW)**

**Standard Mounting Positions:**



**Selection Table Pages:**

Single Reduction  
-Y1,Y2,Y3,Y4 3.10-3.38  
-Y5,Y6 3.39-3.60  
Double Reduction  
-Y1,Y2,Y3,Y4,Y5,Y6 3.62-3.79

*Dimension Pages:*

Single Reduction 3.80-3.85  
Double Reduction 3.86-3.91

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

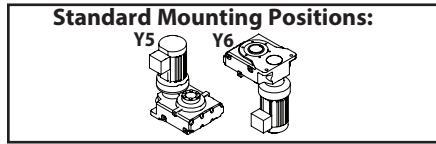
| 50Hz               |               |        |                | 60 Hz      |                    |               |        | Selection      |            |                  |              |       |                    |
|--------------------|---------------|--------|----------------|------------|--------------------|---------------|--------|----------------|------------|------------------|--------------|-------|--------------------|
| Output Speed (RPM) | Output Torque |        | Service Factor |            | Output Speed (RPM) | Output Torque |        | Service Factor |            | Base             |              |       | VFD <sup>[1]</sup> |
|                    | in-lbs        | (N·m)  | SF             | AGMA Class |                    | in-lbs        | (N·m)  | SF             | AGMA Class | Motor Power Code | Frame Size   | Ratio |                    |
| 51.8               | 22600         | (2550) | 1.01           | I          | 62.5               | 18700         | (2110) | 1.01           | I          | 20               | <b>D6165</b> | 28    |                    |
| 37.7               | 31000         | (3510) | 1.01           | I          | 45.5               | 25700         | (2910) | 1.01           | I          | 20               | <b>D6165</b> | 39    |                    |
| 31.9               | 36700         | (4140) | 0.95           | -          | 38.5               | 30400         | (3430) | 0.95           | -          | 20               | <b>E6175</b> | 46    |                    |
| 27.6               | 42300         | (4780) | 0.80           | -          | 33.3               | 35100         | (3960) | 0.80           | -          | 20               | <b>E6175</b> | 53    |                    |

**Notes:** [1] Variable Frequency Drive (VFD) notes (see page 3.8 for Constant Torque Speed Ranges):  
All 1HP+ motors require EP suffix in model number and can be used with a VFD, unless noted.

**Notes:** [1] Variable Frequency Drive (VFD) notes (see page 3.8 for Constant Torque Speed Ranges):  
All 1HP+ motors require EP suffix in model number and can be used with a VFD, unless noted.

# Single Reduction Selection Tables: Y5, Y6

**25 HP  
(18.5 kW)**



**Selection Table Pages:**

|                    |           |
|--------------------|-----------|
| Single Reduction   |           |
| -Y1,Y2,Y3,Y4       | 3.10-3.38 |
| -Y5,Y6             | 3.39-3.60 |
| Double Reduction   |           |
| -Y1,Y2,Y3,Y4,Y5,Y6 | 3.62-3.79 |

**Dimension Pages:**

|                  |           |
|------------------|-----------|
| Single Reduction | 3.80-3.85 |
| Double Reduction | 3.86-3.91 |

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

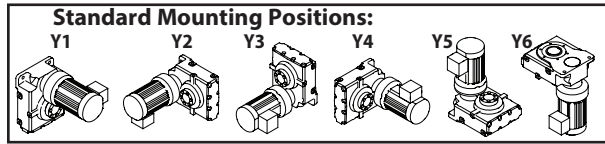
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| 50Hz               |               |        |                | 60 Hz      |                    |               |        | Selection      |            |                  |              |       |                    |
|--------------------|---------------|--------|----------------|------------|--------------------|---------------|--------|----------------|------------|------------------|--------------|-------|--------------------|
| Output Speed (RPM) | Output Torque |        | Service Factor |            | Output Speed (RPM) | Output Torque |        | Service Factor |            | Base             |              |       | VFD <sup>[1]</sup> |
|                    | in-lbs        | (N·m)  | SF             | AGMA Class |                    | in-lbs        | (N·m)  | SF             | AGMA Class | Motor Power Code | Frame Size   | Ratio |                    |
| 51.8               | 27800         | (3150) | 0.82           | -          | 62.5               | 23100         | (2610) | 0.82           | -          | 25               | <b>D6165</b> | 28    |                    |
| 37.7               | 38300         | (4330) | 0.82           | -          | 45.5               | 31700         | (3580) | 0.82           | -          | 25               | <b>D6165</b> | 39    |                    |

**Notes:** [1] Variable Frequency Drive (VFD) notes (see page 3.8 for Constant Torque Speed Ranges):  
All 1HP+ motors require EP suffix in model number and can be used with a VFD, unless noted.

# Double Reduction Selection Tables: Y1, Y2, Y3, Y4, Y5, Y6

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



Dimension Pages:

|                  |           |
|------------------|-----------|
| Single Reduction | 3.80-3.85 |
| Double Reduction | 3.86-3.91 |

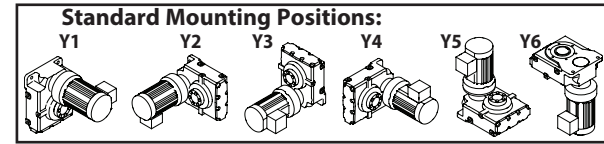
|                 |          |          |
|-----------------|----------|----------|
| Frequency       | 50 Hz    | 60 Hz    |
| Input Speed     | 1450 RPM | 1750 RPM |
| Number of Poles | 4        |          |

| 50Hz               |               |        |                | 60 Hz      |                    |               |        | Selection      |            |                  | VFD <sup>[1]</sup> |       |     |
|--------------------|---------------|--------|----------------|------------|--------------------|---------------|--------|----------------|------------|------------------|--------------------|-------|-----|
| Output Speed (RPM) | Output Torque |        | Service Factor |            | Output Speed (RPM) | Output Torque |        | Service Factor |            | Base             |                    |       |     |
|                    | in-lbs        | (N·m)  | SF             | AGMA Class |                    | in-lbs        | (N·m)  | SF             | AGMA Class | Motor Power Code | Frame Size         | Ratio |     |
| 3.98               | 1960          | (221)  | 2.08           | III        | 4.81               | 1620          | (183)  | 2.51           | III        | 01               | Z609DA             | 364   | (a) |
| 3.42               | 2280          | (257)  | 1.79           | II         | 4.13               | 1890          | (213)  | 2.16           | III        | 01               | Z609DA             | 424   | (a) |
| 2.90               | 2690          | (304)  | 1.52           | II         | 3.50               | 2230          | (252)  | 1.83           | II         | 01               | Z609DA             | 501   | (a) |
|                    |               |        | 3.06           | III        |                    |               |        | 3.70           | III        | 01               | A610DA             | 501   | (a) |
| 2.51               | 3100          | (351)  | 1.31           | I          | 3.03               | 2570          | (291)  | 1.58           | II         | 01               | Z609DA             | 578   | (a) |
|                    |               |        | 2.66           | III        |                    |               |        | 3.21           | III        | 01               | A610DA             | 578   | (a) |
| 2.12               | 3670          | (414)  | 1.11           | I          | 2.56               | 3040          | (343)  | 1.34           | I          | 01               | Z609DA             | 683   | (a) |
|                    |               |        | 2.25           | III        |                    |               |        | 2.71           | III        | 01               | A610DA             | 683   | (a) |
| 1.79               | 4350          | (491)  | 0.94           | -          | 2.16               | 3600          | (407)  | 1.13           | I          | 01               | Z609DA             | 809   | (a) |
|                    |               |        | 1.90           | II         |                    |               |        | 2.29           | III        | 01               | A610DA             | 809   | (a) |
| 1.52               | 5140          | (580)  | 0.79           | -          | 1.83               | 4260          | (481)  | 0.96           | -          | 01               | Z609DA             | 956   | (a) |
|                    |               |        | 1.61           | II         |                    |               |        | 1.94           | II         | 01               | A610DA             | 956   | (a) |
| 1.30               | 6000          | (678)  | 0.68           | -          | 1.57               | 4970          | (562)  | 0.82           | -          | 01               | Z609DA             | 1117  | (a) |
|                    |               |        | 1.37           | I          |                    |               |        | 1.66           | II         | 01               | A610DA             | 1117  | (a) |
|                    |               |        | 2.75           | III        |                    |               |        | 3.32           | III        | 01               | B612DA             | 1117  | (a) |
| 1.10               | 7090          | (801)  | 0.57           | -          | 1.33               | 5880          | (664)  | 0.69           | -          | 01               | Z609DA             | 1320  | (a) |
|                    |               |        | 1.16           | I          |                    |               |        | 1.40           | II         | 01               | A610DA             | 1320  | (a) |
|                    |               |        | 2.33           | III        |                    |               |        | 2.81           | III        | 01               | B612DA             | 1320  | (a) |
| 0.876              | 8900          | (1010) | 0.46           | -          | 1.06               | 7370          | (833)  | 0.55           | -          | 01               | Z609DA             | 1656  | (a) |
|                    |               |        | 0.93           | -          |                    |               |        | 1.12           | I          | 01               | A610DA             | 1656  | (a) |
|                    |               |        | 1.86           | II         |                    |               |        | 2.24           | III        | 01               | B612DA             | 1656  | (a) |
| 0.741              | 10500         | (1190) | 0.78           | -          | 0.894              | 8710          | (984)  | 0.95           | -          | 01               | A610DA             | 1957  | (a) |
|                    |               |        | 1.57           | II         |                    |               |        | 1.89           | II         | 01               | B612DA             | 1957  | (a) |
|                    |               |        | 3.14           | III        |                    |               |        | 3.79           | III        | 01               | C614DB             | 1957  | (a) |
| 0.638              | 12200         | (1380) | 0.68           | -          | 0.770              | 10100         | (1140) | 0.82           | -          | 01               | A610DA             | 2272  | (a) |
|                    |               |        | 1.35           | I          |                    |               |        | 1.63           | II         | 01               | B612DA             | 2272  | (a) |
|                    |               |        | 2.70           | III        |                    |               |        | 3.26           | III        | 01               | C614DB             | 2272  | (a) |
| 0.567              | 13800         | (1550) | 0.60           | -          | 0.684              | 11400         | (1290) | 0.72           | -          | 01               | A610DA             | 2559  | (a) |
|                    |               |        | 1.20           | I          |                    |               |        | 1.45           | II         | 01               | B612DA             | 2559  | (a) |
|                    |               |        | 2.40           | III        |                    |               |        | 2.90           | III        | 01               | C614DB             | 2559  | (a) |
| 0.493              | 15800         | (1790) | 0.52           | -          | 0.595              | 13100         | (1480) | 0.63           | -          | 01               | A610DA             | 2944  | (a) |
|                    |               |        | 1.04           | I          |                    |               |        | 1.26           | I          | 01               | B612DA             | 2944  | (a) |
|                    |               |        | 2.09           | III        |                    |               |        | 2.52           | III        | 01               | C614DB             | 2944  | (a) |
| 0.413              | 18900         | (2130) | 0.44           | -          | 0.499              | 15600         | (1770) | 0.53           | -          | 01               | A610DA             | 3511  | (a) |
|                    |               |        | 0.87           | -          |                    |               |        | 1.06           | I          | 01               | B612DA             | 3511  | (a) |
| 0.332              | 23500         | (2650) | 0.70           | -          | 0.401              | 19400         | (2200) | 0.85           | -          | 01               | B612DA             | 4365  | (a) |
| 0.280              | 27800         | (3140) | 0.59           | -          | 0.338              | 23100         | (2600) | 0.72           | -          | 01               | B612DA             | 5177  | (a) |
| 0.224              | 34800         | (3930) | 0.47           | -          | 0.270              | 28800         | (3260) | 0.57           | -          | 01               | B612DA             | 6472  | (a) |
| 0.201              | 38800         | (4390) | 0.42           | -          | 0.242              | 32200         | (3640) | 0.51           | -          | 01               | B612DA             | 7228  | (a) |

Notes: [1] Variable Frequency Drive (VFD) notes (see page 3.8 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.

# Double Reduction Selection Tables: Y1, Y2, Y3, Y4, Y5, Y6

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



Dimension Pages:

|                  |           |
|------------------|-----------|
| Single Reduction | 3.80-3.85 |
| Double Reduction | 3.86-3.91 |

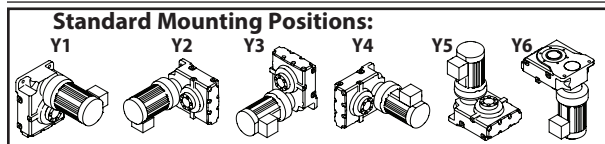
|                 |          |          |
|-----------------|----------|----------|
| Frequency       | 50 Hz    | 60 Hz    |
| Input Speed     | 1450 RPM | 1750 RPM |
| Number of Poles | 4        |          |

| 50Hz               |               |        |                | 60 Hz      |                    |               |        | Selection      |            |                  | VFD <sup>[1]</sup> |       |     |
|--------------------|---------------|--------|----------------|------------|--------------------|---------------|--------|----------------|------------|------------------|--------------------|-------|-----|
| Output Speed (RPM) | Output Torque |        | Service Factor |            | Output Speed (RPM) | Output Torque |        | Service Factor |            | Base             |                    |       |     |
|                    | in-lbs        | (N·m)  | SF             | AGMA Class |                    | in-lbs        | (N·m)  | SF             | AGMA Class | Motor Power Code | Frame Size         | Ratio |     |
| 3.98               | 3910          | (442)  | 1.04           | I          | 4.81               | 3240          | (366)  | 1.26           | I          | 02               | Z609DA             | 364   | (a) |
| 3.42               | 4550          | (514)  | 2.11           | III        | 4.13               | 3770          | (426)  | 2.15           | III        | 02               | A610DA             | 364   | (a) |
|                    |               |        | 0.90           | -          |                    |               |        | 1.08           | I          | 02               | Z609DA             | 424   | (a) |
| 2.90               | 5380          | (608)  | 1.81           | II         | 3.50               | 4460          | (504)  | 2.15           | III        | 02               | A610DA             | 424   | (a) |
|                    |               |        | 0.76           | -          |                    |               |        | 1.08           | I          | 02               | Z609DA             | 501   | (a) |
| 2.51               | 6210          | (701)  | 1.53           | II         | 3.03               | 5140          | (581)  | 1.85           | II         | 02               | A610DA             | 501   | (a) |
|                    |               |        | 2.15           | III        |                    |               |        | 2.15           | III        | 02               | B612DA             | 501   | (a) |
|                    |               |        | 3.07           | III        |                    |               |        | 3.70           | III        | 02               | B612DB             | 501   | (a) |
| 2.12               | 7340          | (829)  | 0.66           | -          | 2.56               | 6080          | (687)  | 0.79           | -          | 02               | Z609DA             | 578   | (a) |
|                    |               |        | 1.33           | I          |                    |               |        | 1.60           | II         | 02               | A610DA             | 578   | (a) |
|                    |               |        | 2.15           | III        |                    |               |        | 2.15           | III        | 02               | B612DA             | 578   | (a) |
| 1.79               | 8690          | (982)  | 2.66           | III        | 2.16               | 7200          | (814)  | 3.21           | III        | 02               | B612DB             | 578   | (a) |
|                    |               |        | 0.47           | -          |                    |               |        | 1.14           | I          | 02               | Z609DA             | 809   | (a) |
|                    |               |        | 0.95           | -          |                    |               |        | 2.15           | III        | 02               | A610DA             | 809   | (a) |
| 1.52               | 10300         | (1160) | 1.90           | II         | 1.83               | 8510          | (962)  | 2.15           | III        | 02               | B612DA             | 809   | (a) |
|                    |               |        | 1.90           | II         |                    |               |        | 2.29           | III        | 02               | B612DB             | 809   | (a) |
|                    |               |        | 0.80           | -          |                    |               |        | 1.14           | I          | 02               | Z609DA             | 809   | (a) |
| 1.30               | 12000         | (1360) | 1.61           | II         | 1.57               | 9940          | (1120) | 2.15           | III        | 02               | A610DA             | 956   | (a) |
|                    |               |        | 2.15           | III        |                    |               |        | 1.94           | II         | 02               | B612DB             | 956   | (a) |
|                    |               |        | 2.15           | III        |                    |               |        | 2.15           | III        | 02               | C614DA             | 956   | (a) |
| 1.10               | 14200         | (1600) | 0.69           | -          | 1.33               | 11800         | (1330) | 0.57           | -          | 02               | Z609DA             | 809   | (a) |
|                    |               |        | 1.38           | I          |                    |               |        | 1.66           | II         | 02               | A610DA             | 809   | (a) |
|                    |               |        | 2.15           | III        |                    |               |        | 2.15           | III        | 02               | B612DA             | 809   | (a) |
| 0.876              | 17800         | (2010) | 2.75           | III        | 1.06               | 14700         | (1670) | 3.32           | III        | 02               | C614DB             | 1117  | (a) |
|                    |               |        | 0.58           | -          |                    |               |        | 1.40           | II         | 02               | A610DA             | 1320  | (a) |
|                    |               |        | 1.16           | I          |                    |               |        | 1.40           | II         | 02               | B612DB             | 1320  | (a) |
| 0.741              | 21000         | (2380) | 2.15           | III        | 0.894              | 17400         | (1970) | 2.15           | III        | 02               | C614DA             | 1320  | (a) |
|                    |               |        | 2.33           | III        |                    |               |        | 2.81           | III        | 02               | C614DB             | 1320  | (a) |
|                    |               |        | 0.70           | -          |                    |               |        | 1.12           | I          | 02               | A610DA             | 1656  | (a) |
| 0.201              | 38800         | (4390) | 0.44           | -          | 0.499              | 15600         | (1770) | 2.15           | III        | 02               | B612DB             | 1656  | (a) |
|                    |               |        | 0.87           | -          |                    |               |        | 1.86           | II         | 02               | C614DA             | 1656  | (a) |
|                    |               |        | 1.86           | II         |                    |               |        | 2.24           | III        | 02               | C614DB             | 1656  | (a) |
| 0.332              | 23500         | (2650) | 0.78           | -          | 0.894              | 17400         | (1970) | 0.95           | -          | 02               | B612DB             | 1957  | (a) |
|                    |               |        | 1.57           | II         |                    |               |        | 1.89           | II         | 02               | C614DB             | 1957  | (a) |
|                    |               |        | 2.72           | III        |                    |               |        | 3.29           | III        | 02               | D616DA             | 1957  | (a) |

Notes: [1] Variable Frequency Drive (VFD) notes (see page 3.8 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.

# Double Reduction Selection Tables: Y1,Y2,Y3,Y4,Y5,Y6

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



Dimension Pages:  
Single Reduction 3.80-3.85  
Double Reduction 3.86-3.91

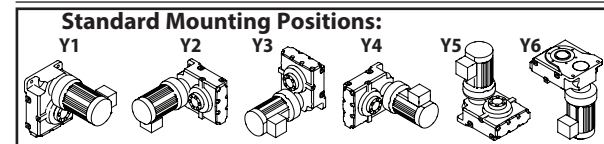
|                 |          |          |
|-----------------|----------|----------|
| Frequency       | 50 Hz    | 60 Hz    |
| Input Speed     | 1450 RPM | 1750 RPM |
| Number of Poles | 4        |          |

| 50Hz               |                               |                                 | 60 Hz              |                               |                                 | Selection        |                    |       | VFD <sup>[1]</sup> |
|--------------------|-------------------------------|---------------------------------|--------------------|-------------------------------|---------------------------------|------------------|--------------------|-------|--------------------|
| Output Speed (RPM) | Output Torque<br>in-lbs (N·m) | Service Factor<br>SF AGMA Class | Output Speed (RPM) | Output Torque<br>in-lbs (N·m) | Service Factor<br>SF AGMA Class | Motor Power Code | Base<br>Frame Size | Ratio |                    |
| 0.638              | 24400 (2760)                  | 0.68 - I                        | 0.770              | 20200 (2290)                  | 0.82 - I                        | 02               | <b>B612DB</b>      | 2272  | (a)                |
|                    |                               | 1.35 II                         |                    |                               | 02                              | <b>C614DB</b>    | 2272               | (a)   |                    |
|                    |                               | 2.35 III                        |                    |                               | 02                              | <b>D616DA</b>    | 2272               | (a)   |                    |
| 0.567              | 27500 (3110)                  | 0.60 - I                        | 0.684              | 22800 (2570)                  | 0.72 - I                        | 02               | <b>B612DB</b>      | 2559  | (a)                |
|                    |                               | 1.20 II                         |                    |                               | 02                              | <b>C614DB</b>    | 2559               | (a)   |                    |
|                    |                               | 2.08 III                        |                    |                               | 02                              | <b>D616DA</b>    | 2559               | (a)   |                    |
|                    |                               | 2.91 III                        |                    |                               | 02                              | <b>E617DA</b>    | 2559               | (a)   |                    |
| 0.493              | 31600 (3570)                  | 0.52 - I                        | 0.595              | 26200 (2960)                  | 0.63 - I                        | 02               | <b>B612DB</b>      | 2944  | (a)                |
|                    |                               | 1.04 II                         |                    |                               | 02                              | <b>C614DB</b>    | 2944               | (a)   |                    |
|                    |                               | 2.53 III                        |                    |                               | 02                              | <b>E617DA</b>    | 2944               | (a)   |                    |
| 0.413              | 37700 (4260)                  | 0.44 - I                        | 0.499              | 31300 (3530)                  | 0.53 - I                        | 02               | <b>B612DB</b>      | 3511  | (a)                |
|                    |                               | 0.87 - I                        |                    |                               | 02                              | <b>C614DB</b>    | 3511               | (a)   |                    |
| 0.332              | 46900 (5300)                  | 0.70 - I                        | 0.401              | 38900 (4390)                  | 0.85 - I                        | 02               | <b>C614DB</b>      | 4365  | (a)                |
| 0.280              | 55600 (6290)                  | 0.59 - I                        | 0.338              | 46100 (5210)                  | 0.72 - I                        | 02               | <b>C614DB</b>      | 5177  | (a)                |
| 0.224              | 69600 (7860)                  | 0.47 - I                        | 0.270              | 57600 (6510)                  | 0.57 - I                        | 02               | <b>C614DB</b>      | 6472  | (a)                |
| 0.201              | 77700 (8780)                  | 0.42 - I                        | 0.242              | 64400 (7270)                  | 0.51 - I                        | 02               | <b>C614DB</b>      | 7228  | (a)                |
|                    |                               | 0.74 - I                        |                    |                               | 02                              | <b>D616DA</b>    | 7228               | (a)   |                    |
| 0.163              | 95400 (10800)                 | 0.60 - I                        | 0.197              | 79100 (8940)                  | 0.72 - I                        | 02               | <b>D616DA</b>      | 8880  | (a)                |
| 0.136              | 115000 (12900)                | 0.50 - I                        | 0.164              | 94900 (10700)                 | 0.60 - I                        | 02               | <b>D616DA</b>      | 10658 | (a)                |
|                    |                               | 0.70 - I                        |                    |                               | 02                              | <b>E617DA</b>    | 10658              | (a)   |                    |
| 0.119              | 131000 (14800)                | 0.44 - I                        | 0.144              | 109000 (12300)                | 0.53 - I                        | 02               | <b>D616DA</b>      | 12184 | (a)                |
|                    |                               | 0.61 - I                        |                    |                               | 02                              | <b>E617DA</b>    | 12184              | (a)   |                    |
| 0.0934             | 167000 (18900)                | 0.48 - I                        | 0.113              | 138000 (15600)                | 0.58 - I                        | 02               | <b>E617DA</b>      | 15530 | (a)                |
| 0.0807             | 193000 (21800)                | 0.41 - I                        | 0.0974             | 160000 (18100)                | 0.50 - I                        | 02               | <b>E617DA</b>      | 17966 | (a)                |

Notes: [1] Variable Frequency Drive (VFD) notes (see page 3.8 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.

# Double Reduction Selection Tables: Y1,Y2,Y3,Y4,Y5,Y6

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



Dimension Pages:  
Single Reduction 3.80-3.85  
Double Reduction 3.86-3.91

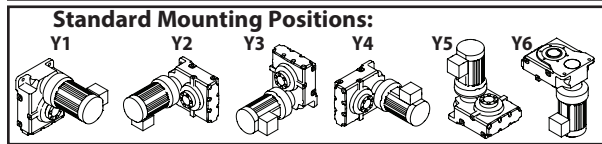
|                 |          |          |
|-----------------|----------|----------|
| Frequency       | 50 Hz    | 60 Hz    |
| Input Speed     | 1450 RPM | 1750 RPM |
| Number of Poles | 4        |          |

| 50Hz               |                               |                                 | 60 Hz              |                               |                                 | Selection        |                    |       | VFD <sup>[1]</sup> |
|--------------------|-------------------------------|---------------------------------|--------------------|-------------------------------|---------------------------------|------------------|--------------------|-------|--------------------|
| Output Speed (RPM) | Output Torque<br>in-lbs (N·m) | Service Factor<br>SF AGMA Class | Output Speed (RPM) | Output Torque<br>in-lbs (N·m) | Service Factor<br>SF AGMA Class | Motor Power Code | Base<br>Frame Size | Ratio |                    |
| 3.98               | 4890 (553)                    | 0.83 - I                        | 4.81               | 4050 (458)                    | 1.01 - I                        | 03               | <b>Z609DA</b>      | 364   | (a)                |
|                    |                               | 1.69 II                         |                    |                               | 03                              | <b>A610DA</b>    | 364                | (a)   |                    |
| 3.42               | 5690 (643)                    | 0.72 - I                        | 4.13               | 4710 (533)                    | 0.86 - I                        | 03               | <b>Z609DA</b>      | 424   | (a)                |
|                    |                               | 1.45 II                         |                    |                               | 03                              | <b>A610DA</b>    | 424                | (a)   |                    |
|                    |                               | 2.90 III                        |                    |                               | 03                              | <b>B612DB</b>    | 424                | (a)   |                    |
| 2.90               | 6720 (760)                    | 0.61 - I                        | 3.50               | 5570 (630)                    | 0.73 - I                        | 03               | <b>Z609DA</b>      | 501   | (a)                |
|                    |                               | 1.23 II                         |                    |                               | 03                              | <b>A610DA</b>    | 501                | (a)   |                    |
|                    |                               | 1.72 II                         |                    |                               | 03                              | <b>B612DA</b>    | 501                | (a)   |                    |
| 2.51               | 7760 (877)                    | 0.53 - I                        | 3.03               | 6430 (726)                    | 0.63 - I                        | 03               | <b>Z609DA</b>      | 578   | (a)                |
|                    |                               | 1.06 II                         |                    |                               | 03                              | <b>A610DA</b>    | 578                | (a)   |                    |
|                    |                               | 1.72 II                         |                    |                               | 03                              | <b>B612DA</b>    | 578                | (a)   |                    |
| 2.12               | 9170 (1040)                   | 0.44 - I                        | 2.56               | 7600 (859)                    | 0.54 - I                        | 03               | <b>Z609DA</b>      | 683   | (a)                |
|                    |                               | 0.90 - I                        |                    |                               | 03                              | <b>A610DA</b>    | 683                | (a)   |                    |
|                    |                               | 1.72 II                         |                    |                               | 03                              | <b>B612DA</b>    | 683                | (a)   |                    |
| 1.79               | 10900 (1230)                  | 0.76 - I                        | 2.16               | 9000 (1020)                   | 0.92 - I                        | 03               | <b>A610DA</b>      | 809   | (a)                |
|                    |                               | 1.52 II                         |                    |                               | 03                              | <b>B612DA</b>    | 809                | (a)   |                    |
|                    |                               | 1.52 II                         |                    |                               | 03                              | <b>B612DB</b>    | 809                | (a)   |                    |
| 1.52               | 12800 (1450)                  | 0.64 - I                        | 1.83               | 10600 (1200)                  | 0.78 - I                        | 03               | <b>A610DA</b>      | 956   | (a)                |
|                    |                               | 1.29 II                         |                    |                               | 03                              | <b>B612DB</b>    | 956                | (a)   |                    |
|                    |                               | 1.72 II                         |                    |                               | 03                              | <b>C614DA</b>    | 956                | (a)   |                    |
| 1.30               | 15000 (1690)                  | 0.55 - I                        | 1.57               | 12400 (1400)                  | 0.66 - I                        | 03               | <b>A610DA</b>      | 1117  | (a)                |
|                    |                               | 1.10 II                         |                    |                               | 03                              | <b>B612DB</b>    | 1117               | (a)   |                    |
|                    |                               | 1.72 II                         |                    |                               | 03                              | <b>C614DA</b>    | 1117               | (a)   |                    |
| 1.10               | 17700 (2000)                  | 0.47 - I                        | 1.33               | 14700 (1660)                  | 0.56 - I                        | 03               | <b>A610DA</b>      | 1320  | (a)                |
|                    |                               | 0.93 - I                        |                    |                               | 03                              | <b>B612DB</b>    | 1320               | (a)   |                    |
|                    |                               | 1.72 II                         |                    |                               | 03                              | <b>C614DA</b>    | 1320               | (a)   |                    |
| 0.876              | 22200 (2510)                  | 0.74 - I                        | 1.06               | 18400 (2080)                  | 0.90 - I                        | 03               | <b>B612DB</b>      | 1656  | (a)                |
|                    |                               | 1.48 II                         |                    |                               | 03                              | <b>C614DA</b>    | 1656               | (a)   |                    |
|                    |                               | 1.48 II                         |                    |                               | 03                              | <b>C614DB</b>    | 1656               | (a)   |                    |
|                    |                               | 2.57 III                        |                    |                               | 03                              | <b>D616DA</b>    | 1656               | (a)   |                    |

Notes: [1] Variable Frequency Drive (VFD) notes (see page 3.8 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.

# Double Reduction Selection Tables: Y1,Y2,Y3,Y4,Y5,Y6

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



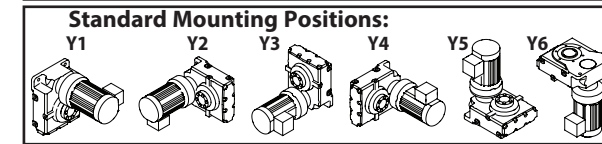
Dimension Pages:  
Single Reduction 3.80-3.85  
Double Reduction 3.86-3.91

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

| 50Hz               |               |         |                | 60 Hz      |                    |               |         | Selection      |               |                  | VFD <sup>[1]</sup> |       |     |
|--------------------|---------------|---------|----------------|------------|--------------------|---------------|---------|----------------|---------------|------------------|--------------------|-------|-----|
| Output Speed (RPM) | Output Torque |         | Service Factor |            | Output Speed (RPM) | Output Torque |         | Service Factor |               | Base             |                    |       |     |
|                    | in-lbs        | (N·m)   | SF             | AGMA Class |                    | in-lbs        | (N·m)   | SF             | AGMA Class    | Motor Power Code | Frame Size         | Ratio |     |
| 0.741              | 26300         | (2970)  | 0.63           | -          | 0.894              | 21800         | (2460)  | 0.76           | -             | 03               | <b>B612DB</b>      | 1957  | (a) |
|                    |               |         | 1.26           | I          |                    |               |         | 03             | <b>C614DB</b> | 1957             | (a)                |       |     |
|                    |               |         | 2.18           | III        |                    |               |         | 03             | <b>D616DA</b> | 1957             | (a)                |       |     |
|                    |               |         | 3.04           | III        |                    |               |         | 03             | <b>E617DA</b> | 1957             | (a)                |       |     |
| 0.638              | 30500         | (3450)  | 0.54           | -          | 0.770              | 25300         | (2860)  | 0.65           | -             | 03               | <b>B612DB</b>      | 2272  | (a) |
|                    |               |         | 1.08           | I          |                    |               |         | 03             | <b>C614DB</b> | 2272             | (a)                |       |     |
|                    |               |         | 1.88           | II         |                    |               |         | 03             | <b>D616DA</b> | 2272             | (a)                |       |     |
|                    |               |         | 2.62           | III        |                    |               |         | 03             | <b>E617DA</b> | 2272             | (a)                |       |     |
| 0.567              | 34400         | (3880)  | 0.48           | -          | 0.684              | 28500         | (3220)  | 0.58           | -             | 03               | <b>B612DB</b>      | 2559  | (a) |
|                    |               |         | 0.96           | -          |                    |               |         | 03             | <b>C614DB</b> | 2559             | (a)                |       |     |
|                    |               |         | 1.67           | II         |                    |               |         | 03             | <b>D616DA</b> | 2559             | (a)                |       |     |
|                    |               |         | 2.32           | III        |                    |               |         | 03             | <b>E617DA</b> | 2559             | (a)                |       |     |
| 0.493              | 39600         | (4470)  | 0.42           | -          | 0.595              | 32800         | (3700)  | 0.50           | -             | 03               | <b>B612DB</b>      | 2944  | (a) |
|                    |               |         | 0.83           | -          |                    |               |         | 03             | <b>C614DB</b> | 2944             | (a)                |       |     |
|                    |               |         | 2.02           | III        |                    |               |         | 03             | <b>E617DA</b> | 2944             | (a)                |       |     |
| 0.413              | 47200         | (5330)  | 0.70           | -          | 0.499              | 39100         | (4420)  | 0.84           | -             | 03               | <b>C614DB</b>      | 3511  | (a) |
| 0.332              | 58600         | (6630)  | 0.56           | -          | 0.401              | 48600         | (5490)  | 0.68           | -             | 03               | <b>C614DB</b>      | 4365  | (a) |
| 0.280              | 69600         | (7860)  | 0.47           | -          | 0.338              | 57600         | (6510)  | 0.57           | -             | 03               | <b>C614DB</b>      | 5177  | (a) |
| 0.201              | 97100         | (11000) | 0.59           | -          | 0.242              | 80500         | (9090)  | 0.71           | -             | 03               | <b>D616DA</b>      | 7228  | (a) |
| 0.163              | 119000        | (13500) | 0.48           | -          | 0.197              | 98900         | (11200) | 0.58           | -             | 03               | <b>D616DA</b>      | 8880  | (a) |
| 0.136              | 143000        | (16200) | 0.56           | -          | 0.164              | 119000        | (13400) | 0.67           | -             | 03               | <b>E617DA</b>      | 10658 | (a) |
| 0.119              | 164000        | (18500) | 0.49           | -          | 0.144              | 136000        | (15300) | 0.59           | -             | 03               | <b>E617DA</b>      | 12184 | (a) |

# Double Reduction Selection Tables: Y1,Y2,Y3,Y4,Y5,Y6

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



Dimension Pages:  
Single Reduction 3.80-3.85  
Double Reduction 3.86-3.91

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

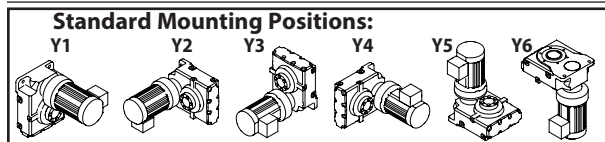
| 50Hz               |               |        |                | 60 Hz      |                    |               |        | Selection      |               |                  | VFD <sup>[1]</sup> |       |     |
|--------------------|---------------|--------|----------------|------------|--------------------|---------------|--------|----------------|---------------|------------------|--------------------|-------|-----|
| Output Speed (RPM) | Output Torque |        | Service Factor |            | Output Speed (RPM) | Output Torque |        | Service Factor |               | Base             |                    |       |     |
|                    | in-lbs        | (N·m)  | SF             | AGMA Class |                    | in-lbs        | (N·m)  | SF             | AGMA Class    | Motor Power Code | Frame Size         | Ratio |     |
| 3.98               | 7830          | (884)  | 0.52           | -          | 4.81               | 6480          | (733)  | 0.63           | -             | 05               | <b>Z609DA</b>      | 364   |     |
|                    |               |        | 1.05           | I          |                    |               |        | 05             | <b>A610DA</b> | 364              |                    |       |     |
|                    |               |        | 2.11           | III        |                    |               |        | 05             | <b>B612DB</b> | 364              | (a)                |       |     |
| 3.42               | 9100          | (1030) | 0.45           | -          | 4.13               | 7540          | (852)  | 0.54           | -             | 05               | <b>Z609DA</b>      | 424   |     |
|                    |               |        | 0.91           | -          |                    |               |        | 05             | <b>A610DA</b> | 424              |                    |       |     |
|                    |               |        | 1.81           | II         |                    |               |        | 05             | <b>B612DB</b> | 424              | (a)                |       |     |
| 2.90               | 10800         | (1220) | 0.77           | -          | 3.50               | 8920          | (1010) | 0.92           | -             | 05               | <b>A610DA</b>      | 501   |     |
|                    |               |        | 1.07           | I          |                    |               |        | 05             | <b>B612DA</b> | 501              |                    |       |     |
|                    |               |        | 1.53           | II         |                    |               |        | 05             | <b>B612DB</b> | 501              | (a)                |       |     |
| 2.51               | 12400         | (1400) | 0.66           | -          | 3.03               | 10300         | (1160) | 0.80           | -             | 05               | <b>A610DA</b>      | 578   |     |
|                    |               |        | 1.07           | I          |                    |               |        | 05             | <b>B612DA</b> | 578              |                    |       |     |
|                    |               |        | 1.33           | I          |                    |               |        | 05             | <b>B612DB</b> | 578              | (a)                |       |     |
| 2.12               | 14700         | (1660) | 0.56           | -          | 2.56               | 12200         | (1370) | 0.68           | -             | 05               | <b>A610DA</b>      | 683   |     |
|                    |               |        | 1.07           | I          |                    |               |        | 05             | <b>B612DA</b> | 683              |                    |       |     |
|                    |               |        | 1.13           | I          |                    |               |        | 05             | <b>B612DB</b> | 683              | (a)                |       |     |
| 1.79               | 17400         | (1960) | 0.47           | -          | 2.16               | 14400         | (1630) | 0.57           | -             | 05               | <b>A610DA</b>      | 809   |     |
|                    |               |        | 0.95           | -          |                    |               |        | 05             | <b>B612DA</b> | 809              |                    |       |     |
|                    |               |        | 0.95           | -          |                    |               |        | 05             | <b>B612DB</b> | 809              | (a)                |       |     |
| 1.52               | 20500         | (2320) | 0.80           | -          | 1.83               | 17000         | (1920) | 0.97           | -             | 05               | <b>B612DB</b>      | 956   | (a) |
|                    |               |        | 1.07           | I          |                    |               |        | 05             | <b>C614DA</b> | 956              |                    |       |     |
|                    |               |        | 1.61           | II         |                    |               |        | 05             | <b>C614DB</b> | 956              | (a)                |       |     |
| 1.30               | 24000         | (2710) | 0.69           | -          | 1.57               | 19900         | (2250) | 0.83           | -             | 05               | <b>B612DA</b>      | 1117  |     |
|                    |               |        | 1.07           | I          |                    |               |        | 05             | <b>C614DA</b> | 1117             |                    |       |     |
|                    |               |        | 1.38           | I          |                    |               |        | 05             | <b>C614DB</b> | 1117             | (a)                |       |     |
| 1.10               | 28400         | (3210) | 0.58           | -          | 1.33               | 23500         | (2660) | 0.70           | -             | 05               | <b>B612DA</b>      | 1320  |     |
|                    |               |        | 1.07           | I          |                    |               |        | 05             | <b>C614DA</b> | 1320             |                    |       |     |
|                    |               |        | 1.16           | I          |                    |               |        | 05             | <b>C614DB</b> | 1320             | (a)                |       |     |
|                    |               |        | 2.02           | III        |                    |               |        | 2.44           | III           | 05               | <b>D616DA</b>      | 1320  | (a) |
|                    |               |        | 2.82           | III        |                    |               |        | 05             | <b>E617DA</b> | 1320             | (a)                |       |     |

Notes: [1] Variable Frequency Drive (VFD) notes (see page 3.8 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.

Notes: [1] Variable Frequency Drive (VFD) notes (see page 3.8 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.

# Double Reduction Selection Tables: Y1,Y2,Y3,Y4,Y5,Y6

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



Dimension Pages:

|                  |           |
|------------------|-----------|
| Single Reduction | 3.80-3.85 |
| Double Reduction | 3.86-3.91 |

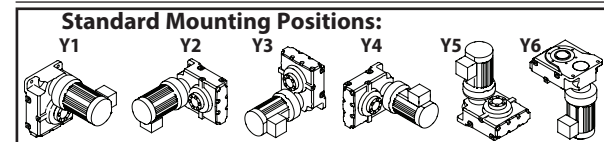
|                 |          |          |
|-----------------|----------|----------|
| Frequency       | 50 Hz    | 60 Hz    |
| Input Speed     | 1450 RPM | 1750 RPM |
| Number of Poles | 4        |          |

| 50Hz               |                |       | 60 Hz          |            |                    | Selection      |       |                | VFD <sup>[1]</sup> |            |               |                  |            |
|--------------------|----------------|-------|----------------|------------|--------------------|----------------|-------|----------------|--------------------|------------|---------------|------------------|------------|
| Output Speed (RPM) | Output Torque  |       | Service Factor | AGMA Class | Output Speed (RPM) | Output Torque  |       | Service Factor |                    | AGMA Class | Base          |                  |            |
|                    | in-lbs         | (N·m) |                |            |                    | in-lbs         | (N·m) |                | SF                 |            | AGMA Class    | Motor Power Code | Frame Size |
| 0.876              | 35600 (4020)   |       | 0.46           | -          | 1.06               | 29500 (3330)   |       | 0.56           | -                  | 05         | <b>B612DA</b> | 1656             |            |
|                    |                |       | 0.93           | -          |                    |                |       | 05             | <b>C614DA</b>      | 1656       |               |                  |            |
|                    |                |       | 0.93           | -          |                    |                |       | 05             | <b>C614DB</b>      | 1656       | (a)           |                  |            |
|                    |                |       | 1.61           | II         |                    |                |       | 05             | <b>D616DA</b>      | 1656       | (a)           |                  |            |
|                    |                |       | 2.25           | III        |                    |                |       | 05             | <b>E617DA</b>      | 1656       | (a)           |                  |            |
| 0.741              | 42100 (4750)   |       | 0.78           | -          | 0.894              | 34900 (3940)   |       | 0.95           | -                  | 05         | <b>C614DB</b> | 1957             | (a)        |
|                    |                |       | 1.36           | I          |                    |                |       | 05             | <b>D616DA</b>      | 1957       | (a)           |                  |            |
|                    |                |       | 1.90           | II         |                    |                |       | 05             | <b>E617DA</b>      | 1957       | (a)           |                  |            |
| 0.638              | 48800 (5520)   |       | 0.68           | -          | 0.770              | 40500 (4570)   |       | 0.82           | -                  | 05         | <b>C614DB</b> | 2272             | (a)        |
|                    |                |       | 1.17           | I          |                    |                |       | 05             | <b>D616DA</b>      | 2272       | (a)           |                  |            |
|                    |                |       | 1.64           | II         |                    |                |       | 05             | <b>E617DA</b>      | 2272       | (a)           |                  |            |
| 0.567              | 55000 (6210)   |       | 0.60           | -          | 0.684              | 45600 (5150)   |       | 0.72           | -                  | 05         | <b>C614DB</b> | 2559             | (a)        |
|                    |                |       | 1.04           | I          |                    |                |       | 05             | <b>D616DA</b>      | 2559       | (a)           |                  |            |
|                    |                |       | 1.45           | II         |                    |                |       | 05             | <b>E617DA</b>      | 2559       | (a)           |                  |            |
| 0.493              | 63300 (7150)   |       | 0.52           | -          | 0.595              | 52400 (5920)   |       | 0.63           | -                  | 05         | <b>C614DB</b> | 2944             | (a)        |
|                    |                |       | 0.90           | -          |                    |                |       | 05             | <b>D616DA</b>      | 2944       | (a)           |                  |            |
|                    |                |       | 1.26           | I          |                    |                |       | 05             | <b>E617DA</b>      | 2944       | (a)           |                  |            |
| 0.413              | 75500 (8530)   |       | 0.44           | -          | 0.499              | 62500 (7070)   |       | 0.53           | -                  | 05         | <b>C614DB</b> | 3511             | (a)        |
|                    |                |       | 0.76           | -          |                    |                |       | 05             | <b>D616DA</b>      | 3511       | (a)           |                  |            |
|                    |                |       | 1.06           | I          |                    |                |       | 05             | <b>E617DA</b>      | 3511       | (a)           |                  |            |
| 0.332              | 93800 (10600)  |       | 0.61           | -          | 0.401              | 77700 (8780)   |       | 0.74           | -                  | 05         | <b>D616DA</b> | 4365             | (a)        |
|                    |                |       | 0.85           | -          |                    |                |       | 05             | <b>E617DA</b>      | 4365       | (a)           |                  |            |
| 0.280              | 111000 (12600) |       | 0.51           | -          | 0.338              | 92200 (10400)  |       | 0.62           | -                  | 05         | <b>D616DA</b> | 5177             | (a)        |
|                    |                |       | 0.72           | -          |                    |                |       | 05             | <b>E617DA</b>      | 5177       | (a)           |                  |            |
| 0.224              | 139000 (15700) |       | 0.41           | -          | 0.270              | 115000 (13000) |       | 0.50           | -                  | 05         | <b>D616DA</b> | 6472             | (a)        |
|                    |                |       | 0.57           | -          |                    |                |       | 05             | <b>E617DA</b>      | 6472       | (a)           |                  |            |
| 0.201              | 155000 (17600) |       | 0.51           | -          | 0.242              | 129000 (14500) |       | 0.62           | -                  | 05         | <b>E617DA</b> | 7228             | (a)        |
| 0.163              | 191000 (21600) |       | 0.42           | -          | 0.197              | 158000 (17900) |       | 0.51           | -                  | 05         | <b>E617DA</b> | 8880             | (a)        |

Notes: [1] Variable Frequency Drive (VFD) notes (see page 3.8 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.

# Double Reduction Selection Tables: Y1,Y2,Y3,Y4,Y5,Y6

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



Dimension Pages:

|                  |           |
|------------------|-----------|
| Single Reduction | 3.80-3.85 |
| Double Reduction | 3.86-3.91 |

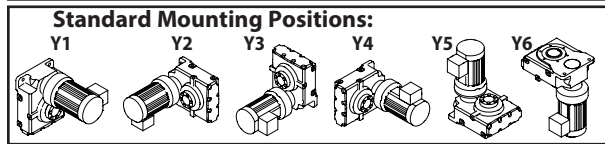
|                 |          |          |
|-----------------|----------|----------|
| Frequency       | 50 Hz    | 60 Hz    |
| Input Speed     | 1450 RPM | 1750 RPM |
| Number of Poles | 4        |          |

| 50Hz               |               |       | 60 Hz          |            |                    | Selection     |       |                | VFD <sup>[1]</sup> |            |               |                  |            |
|--------------------|---------------|-------|----------------|------------|--------------------|---------------|-------|----------------|--------------------|------------|---------------|------------------|------------|
| Output Speed (RPM) | Output Torque |       | Service Factor | AGMA Class | Output Speed (RPM) | Output Torque |       | Service Factor |                    | AGMA Class | Base          |                  |            |
|                    | in-lbs        | (N·m) |                |            |                    | in-lbs        | (N·m) |                | SF                 |            | AGMA Class    | Motor Power Code | Frame Size |
| 3.98               | 10800 (1220)  |       | 1.53           | II         | 4.81               | 8920 (1010)   |       | 1.85           | II                 | 08         | <b>B612DB</b> | 364              | (a)        |
|                    |               |       | 2.91           | III        |                    |               |       | 08             | <b>C614DB</b>      | 364        | (a)           |                  |            |
|                    |               |       | 3.07           | III        |                    |               |       | 08             | <b>C614DC</b>      | 364        | (a),(-)       |                  |            |
|                    |               |       | 3.70           | III        |                    |               |       | 08             | <b>C614DC</b>      | 364        | (a),(-)       |                  |            |
| 3.42               | 12500 (1410)  |       | 1.32           | I          | 4.13               | 10400 (1170)  |       | 1.59           | II                 | 08         | <b>B612DB</b> | 424              | (a)        |
|                    |               |       | 2.64           | III        |                    |               |       | 08             | <b>C614DB</b>      | 424        | (a)           |                  |            |
|                    |               |       | 2.64           | III        |                    |               |       | 08             | <b>C614DC</b>      | 424        | (a),(-)       |                  |            |
| 2.90               | 14800 (1670)  |       | 1.12           | I          | 3.50               | 12300 (1390)  |       | 1.35           | I                  | 08         | <b>B612DB</b> | 501              | (a)        |
|                    |               |       | 2.23           | III        |                    |               |       | 08             | <b>C614DB</b>      | 501        | (a)           |                  |            |
|                    |               |       | 2.91           | III        |                    |               |       | 08             | <b>D616DA</b>      | 501        | (a)           |                  |            |
| 2.51               | 17100 (1930)  |       | 0.97           | -          | 3.03               | 14100 (1600)  |       | 1.17           | I                  | 08         | <b>B612DB</b> | 578              | (a)        |
|                    |               |       | 1.93           | II         |                    |               |       | 08             | <b>C614DB</b>      | 578        | (a)           |                  |            |
|                    |               |       | 2.91           | III        |                    |               |       | 08             | <b>D616DA</b>      | 578        | (a)           |                  |            |
| 2.12               | 20200 (2280)  |       | 0.82           | -          | 2.56               | 16700 (1890)  |       | 0.99           | -                  | 08         | <b>B612DB</b> | 683              | (a)        |
|                    |               |       | 1.64           | II         |                    |               |       | 08             | <b>C614DB</b>      | 683        | (a)           |                  |            |
|                    |               |       | 2.84           | III        |                    |               |       | 08             | <b>D616DA</b>      | 683        | (a)           |                  |            |
|                    |               |       | 2.84           | III        |                    |               |       | 08             | <b>D616DB</b>      | 683        | (a)           |                  |            |
| 1.79               | 23900 (2700)  |       | 0.69           | -          | 2.16               | 19800 (2240)  |       | 0.83           | -                  | 08         | <b>B612DB</b> | 809              | (a)        |
|                    |               |       | 1.38           | I          |                    |               |       | 08             | <b>C614DB</b>      | 809        | (a)           |                  |            |
|                    |               |       | 2.40           | III        |                    |               |       | 08             | <b>D616DA</b>      | 809        | (a)           |                  |            |
|                    |               |       | 2.91           | III        |                    |               |       | 08             | <b>E617DA</b>      | 809        | (a)           |                  |            |
| 1.52               | 28200 (3190)  |       | 0.58           | -          | 1.83               | 23400 (2640)  |       | 0.71           | -                  | 08         | <b>B612DB</b> | 956              | (a)        |
|                    |               |       | 1.17           | I          |                    |               |       | 08             | <b>C614DB</b>      | 956        | (a)           |                  |            |
|                    |               |       | 2.03           | III        |                    |               |       | 08             | <b>D616DA</b>      | 956        | (a)           |                  |            |
|                    |               |       | 2.83           | III        |                    |               |       | 08             | <b>E617DA</b>      | 956        | (a)           |                  |            |
|                    |               |       | 2.83           | III        |                    |               |       | 08             | <b>E617DB</b>      | 956        | (a)           |                  |            |
| 1.30               | 33000 (3730)  |       | 0.50           | -          | 1.57               | 27300 (3090)  |       | 0.60           | -                  | 08         | <b>B612DB</b> | 1117             | (a)        |
|                    |               |       | 1.00           | I          |                    |               |       | 08             | <b>C614DB</b>      | 1117       | (a)           |                  |            |
|                    |               |       | 1.74           | II         |                    |               |       | 08             | <b>D616DA</b>      | 1117       | (a)           |                  |            |
|                    |               |       | 2.42           | III        |                    |               |       | 08             | <b>E617DA</b>      | 1117       | (a)           |                  |            |
| 1.10               | 39000 (4410)  |       | 0.42           | -          | 1.33               | 32300 (3650)  |       | 0.51           | -                  | 08         | <b>B612DB</b> | 1320             | (a)        |
|                    |               |       | 0.85           | -          |                    |               |       | 08             | <b>C614DB</b>      | 1320       | (a)           |                  |            |
|                    |               |       | 1.47           | II         |                    |               |       | 08             | <b>D616DA</b>      | 1320       | (a)           |                  |            |
|                    |               |       | 2.05           | III        |                    |               |       | 08             | <b>E617DA</b>      | 1320       | (a)           |                  |            |
|                    |               |       | 2.47           | III        |                    |               |       | 08             | <b>E617DA</b>      | 1320       | (a)           |                  |            |
| 0.876              | 48900 (5530)  |       | 0.67           | -          | 1.06               | 40500 (4580)  |       | 0.81           | -                  | 08         | <b>C614DB</b> | 1656             | (a)        |
|                    |               |       | 1.17           | I          |                    |               |       | 08             | <b>D616DA</b>      | 1656       | (a)           |                  |            |
|                    |               |       | 1.63           | II         |                    |               |       | 08             | <b>E617DA</b>      | 1656       | (a)           |                  |            |

Notes: [1] Variable Frequency Drive (VFD) notes (see page 3.8 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.

# Double Reduction Selection Tables: Y1,Y2,Y3,Y4,Y5,Y6

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



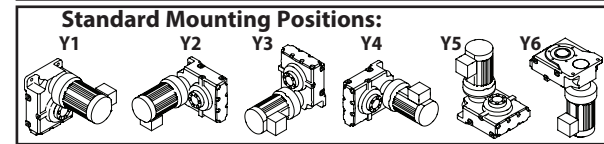
Dimension Pages:  
Single Reduction 3.80-3.85  
Double Reduction 3.86-3.91

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

| 50Hz               |               |         |                | 60 Hz      |                    |               |         | Selection      |               |                  | VFD <sup>[1]</sup> |       |     |
|--------------------|---------------|---------|----------------|------------|--------------------|---------------|---------|----------------|---------------|------------------|--------------------|-------|-----|
| Output Speed (RPM) | Output Torque |         | Service Factor |            | Output Speed (RPM) | Output Torque |         | Service Factor |               | Base             |                    |       |     |
|                    | in-lbs        | (N·m)   | SF             | AGMA Class |                    | in-lbs        | (N·m)   | SF             | AGMA Class    | Motor Power Code | Frame Size         | Ratio |     |
| 0.741              | 57800         | (6530)  | 0.57           | -          | 0.894              | 47900         | (5410)  | 0.69           | -             | 08               | <b>C614DB</b>      | 1957  | (a) |
|                    |               |         | 0.99           | -          |                    |               |         | 08             | <b>D616DA</b> | 1957             | (a)                |       |     |
|                    |               |         | 1.38           | I          |                    |               |         | 08             | <b>E617DA</b> | 1957             | (a)                |       |     |
| 0.638              | 67100         | (7590)  | 0.49           | -          | 0.770              | 55600         | (6290)  | 0.59           | -             | 08               | <b>C614DB</b>      | 2272  | (a) |
|                    |               |         | 0.85           | -          |                    |               |         | 08             | <b>D616DA</b> | 2272             | (a)                |       |     |
|                    |               |         | 1.19           | I          |                    |               |         | 08             | <b>E617DA</b> | 2272             | (a)                |       |     |
| 0.567              | 75600         | (8550)  | 0.44           | -          | 0.684              | 62700         | (7080)  | 0.53           | -             | 08               | <b>C614DB</b>      | 2559  | (a) |
|                    |               |         | 0.76           | -          |                    |               |         | 08             | <b>D616DA</b> | 2559             | (a)                |       |     |
|                    |               |         | 1.06           | I          |                    |               |         | 08             | <b>E617DA</b> | 2559             | (a)                |       |     |
| 0.493              | 87000         | (9830)  | 0.66           | -          | 0.595              | 72100         | (8150)  | 0.79           | -             | 08               | <b>D616DA</b>      | 2944  | (a) |
|                    |               |         | 0.92           | -          |                    |               |         | 08             | <b>E617DA</b> | 2944             | (a)                |       |     |
| 0.413              | 104000        | (11700) | 0.55           | -          | 0.499              | 86000         | (9710)  | 0.67           | -             | 08               | <b>D616DA</b>      | 3511  | (a) |
|                    |               |         | 0.77           | -          |                    |               |         | 08             | <b>E617DA</b> | 3511             | (a)                |       |     |
| 0.332              | 129000        | (14600) | 0.44           | -          | 0.401              | 107000        | (12100) | 0.54           | -             | 08               | <b>D616DA</b>      | 4365  | (a) |
|                    |               |         | 0.62           | -          |                    |               |         | 08             | <b>E617DA</b> | 4365             | (a)                |       |     |
| 0.280              | 153000        | (17300) | 0.52           | -          | 0.338              | 127000        | (14300) | 0.63           | -             | 08               | <b>E617DA</b>      | 5177  | (a) |
| 0.224              | 191000        | (21600) | 0.42           | -          | 0.270              | 159000        | (17900) | 0.50           | -             | 08               | <b>E617DA</b>      | 6472  | (a) |

# Double Reduction Selection Tables: Y1,Y2,Y3,Y4,Y5,Y6

**1 HP  
(0.75 kW)**



Dimension Pages:  
Single Reduction 3.80-3.85  
Double Reduction 3.86-3.91

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

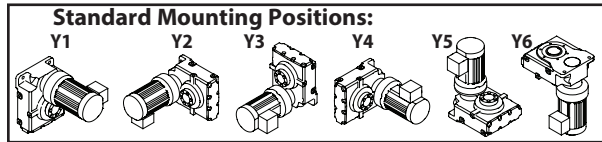
| 50Hz               |               |        |                | 60 Hz      |                    |               |        | Selection      |               |                  | VFD <sup>[1]</sup> |       |  |
|--------------------|---------------|--------|----------------|------------|--------------------|---------------|--------|----------------|---------------|------------------|--------------------|-------|--|
| Output Speed (RPM) | Output Torque |        | Service Factor |            | Output Speed (RPM) | Output Torque |        | Service Factor |               | Base             |                    |       |  |
|                    | in-lbs        | (N·m)  | SF             | AGMA Class |                    | in-lbs        | (N·m)  | SF             | AGMA Class    | Motor Power Code | Frame Size         | Ratio |  |
| 3.98               | 14700         | (1660) | 1.13           | I          | 4.81               | 12200         | (1370) | 1.36           | I             | 1                | <b>B612DB</b>      | 364   |  |
|                    |               |        | 2.13           | III        |                    |               |        | 1              | <b>C614DB</b> | 364              |                    |       |  |
|                    |               |        | 2.25           | III        |                    |               |        | 1              | <b>C614DC</b> | 364              |                    |       |  |
| 3.42               | 17100         | (1930) | 0.97           | -          | 4.13               | 14100         | (1600) | 1.17           | I             | 1                | <b>B612DB</b>      | 424   |  |
|                    |               |        | 1.93           | II         |                    |               |        | 1              | <b>C614DB</b> | 424              |                    |       |  |
|                    |               |        | 1.93           | II         |                    |               |        | 1              | <b>C614DC</b> | 424              |                    |       |  |
| 2.90               | 20200         | (2280) | 0.82           | -          | 3.50               | 16700         | (1890) | 0.99           | -             | 1                | <b>B612DB</b>      | 501   |  |
|                    |               |        | 1.64           | II         |                    |               |        | 1              | <b>C614DB</b> | 501              |                    |       |  |
|                    |               |        | 2.13           | III        |                    |               |        | 1              | <b>D616DA</b> | 501              |                    |       |  |
| 2.51               | 23300         | (2630) | 0.71           | -          | 3.03               | 19300         | (2180) | 0.86           | -             | 1                | <b>B612DB</b>      | 578   |  |
|                    |               |        | 1.42           | II         |                    |               |        | 1              | <b>C614DB</b> | 578              |                    |       |  |
|                    |               |        | 2.13           | III        |                    |               |        | 1              | <b>D616DA</b> | 578              |                    |       |  |
| 2.12               | 27500         | (3110) | 0.60           | -          | 2.56               | 22800         | (2580) | 0.72           | -             | 1                | <b>B612DB</b>      | 683   |  |
|                    |               |        | 1.20           | I          |                    |               |        | 1              | <b>C614DB</b> | 683              |                    |       |  |
|                    |               |        | 2.08           | III        |                    |               |        | 1              | <b>D616DA</b> | 683              |                    |       |  |
| 1.79               | 32600         | (3680) | 0.51           | -          | 2.16               | 27000         | (3050) | 0.61           | -             | 1                | <b>B612DB</b>      | 809   |  |
|                    |               |        | 1.01           | I          |                    |               |        | 1              | <b>C614DB</b> | 809              |                    |       |  |
|                    |               |        | 1.76           | II         |                    |               |        | 1              | <b>D616DA</b> | 809              |                    |       |  |
| 1.52               | 38500         | (4350) | 0.43           | -          | 1.83               | 31900         | (3610) | 0.52           | -             | 1                | <b>B612DB</b>      | 956   |  |
|                    |               |        | 0.86           | -          |                    |               |        | 1              | <b>C614DB</b> | 956              |                    |       |  |
|                    |               |        | 1.49           | II         |                    |               |        | 1              | <b>D616DA</b> | 956              |                    |       |  |
| 1.30               | 45000         | (5080) | 0.73           | -          | 1.57               | 37300         | (4210) | 0.89           | -             | 1                | <b>C614DB</b>      | 1117  |  |
|                    |               |        | 1.27           | I          |                    |               |        | 1              | <b>D616DA</b> | 1117             |                    |       |  |
|                    |               |        | 1.78           | II         |                    |               |        | 1              | <b>E617DA</b> | 1117             |                    |       |  |
| 1.10               | 53200         | (6010) | 0.62           | -          | 1.33               | 44100         | (4980) | 0.75           | -             | 1                | <b>C614DB</b>      | 1320  |  |
|                    |               |        | 1.08           | I          |                    |               |        | 1              | <b>D616DA</b> | 1320             |                    |       |  |
|                    |               |        | 1.50           | II         |                    |               |        | 1              | <b>E617DA</b> | 1320             |                    |       |  |
| 0.876              | 66700         | (7540) | 0.49           | -          | 1.06               | 55300         | (6250) | 0.60           | -             | 1                | <b>C614DB</b>      | 1656  |  |
|                    |               |        | 0.86           | -          |                    |               |        | 1              | <b>D616DA</b> | 1656             |                    |       |  |
|                    |               |        | 1.20           | I          |                    |               |        | 1              | <b>E617DA</b> | 1656             |                    |       |  |

Notes: [1] Variable Frequency Drive (VFD) notes (see page 3.8 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.

Notes: [1] Variable Frequency Drive (VFD) notes (see page 3.8 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.

# Double Reduction Selection Tables: Y1,Y2,Y3,Y4,Y5,Y6

**1 HP  
(0.75 kW)**



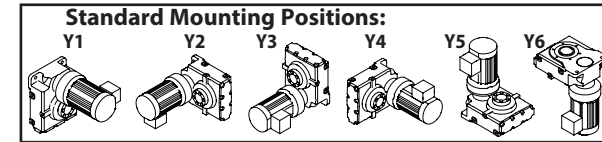
Dimension Pages:  
Single Reduction 3.80-3.85  
Double Reduction 3.86-3.91

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

| 50Hz               |               |         | 60 Hz          |            |                    | Selection     |         |      | VFD <sup>[1]</sup> |                  |               |       |  |
|--------------------|---------------|---------|----------------|------------|--------------------|---------------|---------|------|--------------------|------------------|---------------|-------|--|
| Output Speed (RPM) | Output Torque |         | Service Factor | AGMA Class | Output Speed (RPM) | Output Torque |         | Base |                    |                  |               |       |  |
|                    | in-lbs        | (N·m)   |                |            |                    | in-lbs        | (N·m)   | SF   | AGMA Class         | Motor Power Code | Frame Size    | Ratio |  |
| 0.741              | 78900         | (8910)  | 0.42           | -          | 0.894              | 65300         | (7380)  | 0.51 | -                  | 1                | <b>C614DB</b> | 1957  |  |
|                    |               |         | 0.73           | -          |                    |               |         | 1    | <b>D616DA</b>      | 1957             |               |       |  |
|                    |               |         | 1.01           | I          |                    |               |         | 1    | <b>E617DA</b>      | 1957             |               |       |  |
| 0.638              | 91600         | (10300) | 0.63           | -          | 0.770              | 75900         | (8570)  | 0.75 | -                  | 1                | <b>D616DA</b> | 2272  |  |
|                    |               |         | 0.87           | -          |                    |               |         | 1    | <b>E617DA</b>      | 2272             |               |       |  |
| 0.567              | 103000        | (11700) | 0.56           | -          | 0.684              | 85500         | (9650)  | 0.67 | -                  | 1                | <b>D616DA</b> | 2559  |  |
|                    |               |         | 0.77           | -          |                    |               |         | 1    | <b>E617DA</b>      | 2559             |               |       |  |
| 0.493              | 119000        | (13400) | 0.48           | -          | 0.595              | 98300         | (11100) | 0.58 | -                  | 1                | <b>D616DA</b> | 2944  |  |
|                    |               |         | 0.67           | -          |                    |               |         | 1    | <b>E617DA</b>      | 2944             |               |       |  |
| 0.413              | 142000        | (16000) | 0.56           | -          | 0.499              | 117000        | (13200) | 0.68 | -                  | 1                | <b>E617DA</b> | 3511  |  |
| 0.332              | 176000        | (19900) | 0.45           | -          | 0.401              | 146000        | (16500) | 0.55 | -                  | 1                | <b>E617DA</b> | 4365  |  |

# Double Reduction Selection Tables: Y1,Y2,Y3,Y4,Y5,Y6

**1.5 HP  
(1.1 kW)**



Dimension Pages:  
Single Reduction 3.80-3.85  
Double Reduction 3.86-3.91

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

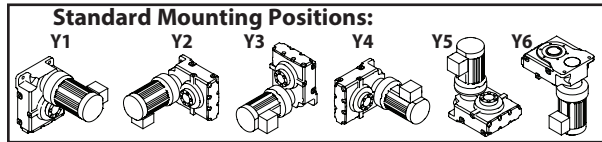
| 50Hz               |               |        | 60 Hz          |            |                    | Selection     |        |      | VFD <sup>[1]</sup> |                  |               |       |  |
|--------------------|---------------|--------|----------------|------------|--------------------|---------------|--------|------|--------------------|------------------|---------------|-------|--|
| Output Speed (RPM) | Output Torque |        | Service Factor | AGMA Class | Output Speed (RPM) | Output Torque |        | Base |                    |                  |               |       |  |
|                    | in-lbs        | (N·m)  |                |            |                    | in-lbs        | (N·m)  | SF   | AGMA Class         | Motor Power Code | Frame Size    | Ratio |  |
| 3.98               | 21500         | (2430) | 0.77           | -          | 4.81               | 17800         | (2010) | 0.93 | -                  | 1H               | <b>B612DB</b> | 364   |  |
|                    |               |        | 1.45           | II         |                    |               |        | 1H   | <b>C614DB</b>      | 364              |               |       |  |
|                    |               |        | 1.53           | II         |                    |               |        | 1H   | <b>C614DC</b>      | 364              |               |       |  |
|                    |               |        | 2.66           | III        |                    |               |        | 1H   | <b>D616DB</b>      | 364              |               |       |  |
| 3.42               | 25000         | (2830) | 0.66           | -          | 4.13               | 20700         | (2340) | 0.80 | -                  | 1H               | <b>B612DB</b> | 424   |  |
|                    |               |        | 1.32           | I          |                    |               |        | 1H   | <b>C614DB</b>      | 424              |               |       |  |
|                    |               |        | 1.32           | I          |                    |               |        | 1H   | <b>C614DC</b>      | 424              |               |       |  |
|                    |               |        | 2.29           | III        |                    |               |        | 1H   | <b>D616DB</b>      | 424              |               |       |  |
|                    |               |        | 3.05           | III        |                    |               |        | 1H   | <b>E617DB</b>      | 424              |               |       |  |
|                    |               |        | 3.19           | III        |                    |               |        | 1H   | <b>E617DC</b>      | 424              |               |       |  |
| 2.90               | 29600         | (3340) | 0.56           | -          | 3.50               | 24500         | (2770) | 0.67 | -                  | 1H               | <b>B612DB</b> | 501   |  |
|                    |               |        | 1.12           | I          |                    |               |        | 1H   | <b>C614DB</b>      | 501              |               |       |  |
|                    |               |        | 1.45           | II         |                    |               |        | 1H   | <b>D616DA</b>      | 501              |               |       |  |
|                    |               |        | 1.94           | II         |                    |               |        | 1H   | <b>D616DB</b>      | 501              |               |       |  |
|                    |               |        | 2.70           | III        |                    |               |        | 1H   | <b>E617DB</b>      | 501              |               |       |  |
|                    |               |        | 2.70           | III        |                    |               |        | 1H   | <b>E617DC</b>      | 501              |               |       |  |
|                    |               |        | 3.26           | III        |                    |               |        | 1H   | <b>E617DC</b>      | 501              |               |       |  |
| 2.51               | 34100         | (3860) | 0.48           | -          | 3.03               | 28300         | (3200) | 0.58 | -                  | 1H               | <b>B612DB</b> | 578   |  |
|                    |               |        | 0.97           | -          |                    |               |        | 1H   | <b>C614DB</b>      | 578              |               |       |  |
|                    |               |        | 1.45           | II         |                    |               |        | 1H   | <b>D616DA</b>      | 578              |               |       |  |
|                    |               |        | 1.68           | II         |                    |               |        | 1H   | <b>D616DB</b>      | 578              |               |       |  |
|                    |               |        | 2.34           | III        |                    |               |        | 1H   | <b>E617DB</b>      | 578              |               |       |  |
| 2.12               | 40300         | (4560) | 0.82           | -          | 2.56               | 33400         | (3780) | 0.99 | -                  | 1H               | <b>C614DB</b> | 683   |  |
|                    |               |        | 1.42           | II         |                    |               |        | 1H   | <b>D616DA</b>      | 683              |               |       |  |
|                    |               |        | 1.42           | II         |                    |               |        | 1H   | <b>D616DB</b>      | 683              |               |       |  |
|                    |               |        | 1.98           | II         |                    |               |        | 1H   | <b>E617DB</b>      | 683              |               |       |  |
| 1.79               | 47800         | (5400) | 0.69           | -          | 2.16               | 39600         | (4470) | 0.83 | -                  | 1H               | <b>C614DB</b> | 809   |  |
|                    |               |        | 1.20           | I          |                    |               |        | 1H   | <b>D616DA</b>      | 809              |               |       |  |
|                    |               |        | 1.45           | II         |                    |               |        | 1H   | <b>E617DA</b>      | 809              |               |       |  |
|                    |               |        | 1.67           | II         |                    |               |        | 1H   | <b>E617DB</b>      | 809              |               |       |  |
| 1.52               | 56500         | (6380) | 0.58           | -          | 1.83               | 46800         | (5290) | 0.71 | -                  | 1H               | <b>C614DB</b> | 956   |  |
|                    |               |        | 1.01           | I          |                    |               |        | 1H   | <b>D616DA</b>      | 956              |               |       |  |
|                    |               |        | 1.41           | II         |                    |               |        | 1H   | <b>E617DA</b>      | 956              |               |       |  |
|                    |               |        | 1.41           | II         |                    |               |        | 1H   | <b>E617DB</b>      | 956              |               |       |  |
| 1.30               | 66000         | (7460) | 0.50           | -          | 1.57               | 54700         | (6180) | 0.60 | -                  | 1H               | <b>C614DB</b> | 1117  |  |
|                    |               |        | 0.87           | -          |                    |               |        | 1H   | <b>D616DA</b>      | 1117             |               |       |  |
|                    |               |        | 1.21           | I          |                    |               |        | 1H   | <b>E617DA</b>      | 1117             |               |       |  |

Notes: [1] Variable Frequency Drive (VFD) notes (see page 3.8 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.

Notes: [1] Variable Frequency Drive (VFD) notes (see page 3.8 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.

# Double Reduction Selection Tables: Y1,Y2,Y3,Y4,Y5,Y6

**1.5 HP**  
(1.1 kW)



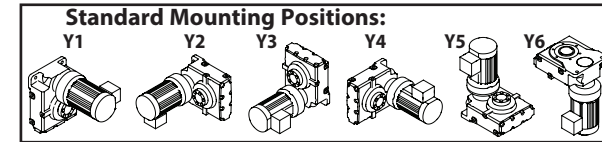
Dimension Pages:  
Single Reduction 3.80-3.85  
Double Reduction 3.86-3.91

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

| 50Hz               |               |         |                | 60 Hz      |                    |               |         | Selection      |               |      | VFD <sup>[1]</sup> |            |
|--------------------|---------------|---------|----------------|------------|--------------------|---------------|---------|----------------|---------------|------|--------------------|------------|
| Output Speed (RPM) | Output Torque |         | Service Factor |            | Output Speed (RPM) | Output Torque |         | Service Factor |               | Base |                    |            |
|                    | in-lbs        | (N·m)   | SF             | AGMA Class |                    | in-lbs        | (N·m)   | SF             | AGMA Class    |      | Motor Power Code   | Frame Size |
| 1.10               | 78000         | (8810)  | 0.42           | -          | 1.33               | 64600         | (7300)  | 0.51           | -             | 1H   | <b>C614DB</b>      | 1320       |
|                    |               |         | 0.73           | -          |                    |               |         | 1H             | <b>D616DA</b> | 1320 |                    |            |
|                    |               |         | 1.02           | I          |                    |               |         | 1H             | <b>E617DA</b> | 1320 |                    |            |
| 0.876              | 97900         | (11100) | 0.59           | -          | 1.06               | 81100         | (9160)  | 0.71           | -             | 1H   | <b>D616DA</b>      | 1656       |
|                    |               |         | 0.82           | -          |                    |               |         | 1H             | <b>E617DA</b> | 1656 |                    |            |
| 0.741              | 116000        | (13100) | 0.50           | -          | 0.894              | 95800         | (10800) | 0.60           | -             | 1H   | <b>D616DA</b>      | 1957       |
|                    |               |         | 0.69           | -          |                    |               |         | 1H             | <b>E617DA</b> | 1957 |                    |            |
| 0.638              | 134000        | (15200) | 0.43           | -          | 0.770              | 111000        | (12600) | 0.51           | -             | 1H   | <b>D616DA</b>      | 2272       |
|                    |               |         | 0.60           | -          |                    |               |         | 1H             | <b>E617DA</b> | 2272 |                    |            |
| 0.567              | 151000        | (17100) | 0.53           | -          | 0.684              | 125000        | (14200) | 0.64           | -             | 1H   | <b>E617DA</b>      | 2559       |
| 0.493              | 174000        | (19700) | 0.46           | -          | 0.595              | 144000        | (16300) | 0.55           | -             | 1H   | <b>E617DA</b>      | 2944       |

# Double Reduction Selection Tables: Y1,Y2,Y3,Y4,Y5,Y6

**2 HP**  
(1.5 kW)



Dimension Pages:  
Single Reduction 3.80-3.85  
Double Reduction 3.86-3.91

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

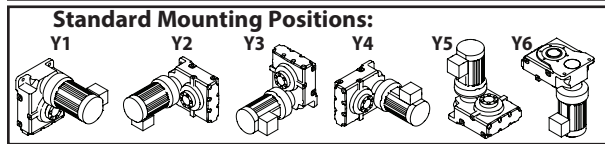
| 50Hz               |               |         |                | 60 Hz      |                    |               |        | Selection      |               |      | VFD <sup>[1]</sup> |            |
|--------------------|---------------|---------|----------------|------------|--------------------|---------------|--------|----------------|---------------|------|--------------------|------------|
| Output Speed (RPM) | Output Torque |         | Service Factor |            | Output Speed (RPM) | Output Torque |        | Service Factor |               | Base |                    |            |
|                    | in-lbs        | (N·m)   | SF             | AGMA Class |                    | in-lbs        | (N·m)  | SF             | AGMA Class    |      | Motor Power Code   | Frame Size |
| 3.98               | 29300         | (3320)  | 0.56           | -          | 4.81               | 24300         | (2750) | 0.68           | -             | 2    | <b>B612DB</b>      | 364        |
|                    |               |         | 1.07           | I          |                    |               |        | 2              | <b>C614DB</b> | 364  |                    |            |
|                    |               |         | 1.13           | I          |                    |               |        | 2              | <b>C614DC</b> | 364  |                    |            |
|                    |               |         | 1.95           | II         |                    |               |        | 2              | <b>D616DB</b> | 364  |                    |            |
|                    |               |         | 1.95           | II         |                    |               |        | 2              | <b>D616DC</b> | 364  |                    |            |
|                    |               |         | 2.72           | III        |                    |               |        | 2              | <b>E617DC</b> | 364  |                    |            |
| 3.42               | 34100         | (3860)  | 0.48           | -          | 4.13               | 28300         | (3200) | 0.58           | -             | 2    | <b>B612DB</b>      | 424        |
|                    |               |         | 0.97           | -          |                    |               |        | 2              | <b>C614DB</b> | 424  |                    |            |
|                    |               |         | 0.97           | -          |                    |               |        | 2              | <b>C614DC</b> | 424  |                    |            |
|                    |               |         | 1.68           | II         |                    |               |        | 2              | <b>D616DB</b> | 424  |                    |            |
|                    |               |         | 2.24           | III        |                    |               |        | 2              | <b>E617DB</b> | 424  |                    |            |
|                    |               |         | 2.34           | III        |                    |               |        | 2              | <b>E617DC</b> | 424  |                    |            |
| 2.90               | 40300         | (4560)  | 0.82           | -          | 3.50               | 33400         | (3780) | 0.99           | -             | 2    | <b>C614DB</b>      | 501        |
|                    |               |         | 1.07           | I          |                    |               |        | 2              | <b>D616DA</b> | 501  |                    |            |
|                    |               |         | 1.42           | II         |                    |               |        | 2              | <b>D616DB</b> | 501  |                    |            |
|                    |               |         | 1.98           | II         |                    |               |        | 2              | <b>E617DB</b> | 501  |                    |            |
|                    |               |         | 1.98           | II         |                    |               |        | 2              | <b>E617DC</b> | 501  |                    |            |
| 2.51               | 46600         | (5260)  | 0.71           | -          | 3.03               | 38600         | (4360) | 0.86           | -             | 2    | <b>C614DB</b>      | 578        |
|                    |               |         | 1.07           | I          |                    |               |        | 2              | <b>D616DA</b> | 578  |                    |            |
|                    |               |         | 1.23           | I          |                    |               |        | 2              | <b>D616DB</b> | 578  |                    |            |
|                    |               |         | 1.72           | II         |                    |               |        | 2              | <b>E617DB</b> | 578  |                    |            |
| 2.12               | 55000         | (6220)  | 0.60           | -          | 2.56               | 45600         | (5150) | 0.72           | -             | 2    | <b>C614DB</b>      | 683        |
|                    |               |         | 1.04           | I          |                    |               |        | 2              | <b>D616DA</b> | 683  |                    |            |
|                    |               |         | 1.04           | I          |                    |               |        | 2              | <b>D616DB</b> | 683  |                    |            |
|                    |               |         | 1.45           | II         |                    |               |        | 2              | <b>E617DB</b> | 683  |                    |            |
| 1.79               | 65200         | (7360)  | 0.51           | -          | 2.16               | 54000         | (6100) | 0.61           | -             | 2    | <b>C614DB</b>      | 809        |
|                    |               |         | 0.88           | -          |                    |               |        | 2              | <b>D616DA</b> | 809  |                    |            |
|                    |               |         | 1.07           | I          |                    |               |        | 2              | <b>E617DA</b> | 809  |                    |            |
|                    |               |         | 1.23           | I          |                    |               |        | 2              | <b>E617DB</b> | 809  |                    |            |
| 1.52               | 77000         | (8700)  | 0.43           | -          | 1.83               | 63800         | (7210) | 0.52           | -             | 2    | <b>C614DB</b>      | 956        |
|                    |               |         | 0.74           | -          |                    |               |        | 2              | <b>D616DA</b> | 956  |                    |            |
|                    |               |         | 1.04           | I          |                    |               |        | 2              | <b>E617DA</b> | 956  |                    |            |
|                    |               |         | 1.04           | I          |                    |               |        | 2              | <b>E617DB</b> | 956  |                    |            |
| 1.30               | 90000         | (10200) | 0.64           | -          | 1.57               | 74600         | (8430) | 0.77           | -             | 2    | <b>D616DA</b>      | 1117       |
|                    |               |         | 0.89           | -          |                    |               |        | 2              | <b>E617DA</b> | 1117 |                    |            |
| 1.10               | 106000        | (12000) | 0.54           | -          | 1.33               | 88100         | (9960) | 0.65           | -             | 2    | <b>D616DA</b>      | 1320       |
|                    |               |         | 0.75           | -          |                    |               |        | 2              | <b>E617DA</b> | 1320 |                    |            |

Notes: [1] Variable Frequency Drive (VFD) notes (see page 3.8 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.

Notes: [1] Variable Frequency Drive (VFD) notes (see page 3.8 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.

# Double Reduction Selection Tables: Y1,Y2,Y3,Y4,Y5,Y6

**2 HP**  
(1.5 kW)



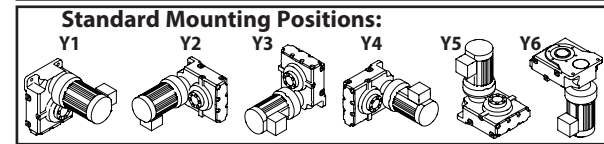
Dimension Pages:  
Single Reduction 3.80-3.85  
Double Reduction 3.86-3.91

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

| 50Hz               |                |       | 60 Hz          |            |                    | Selection      |       |      | VFD <sup>[1]</sup> |                  |            |
|--------------------|----------------|-------|----------------|------------|--------------------|----------------|-------|------|--------------------|------------------|------------|
| Output Speed (RPM) | Output Torque  |       | Service Factor | AGMA Class | Output Speed (RPM) | Output Torque  |       | Base |                    |                  |            |
|                    | in-lbs         | (N·m) |                |            |                    | in-lbs         | (N·m) | SF   | AGMA Class         | Motor Power Code | Frame Size |
| 0.876              | 133000 (15100) |       | 0.43           | -          | 1.06               | 111000 (12500) |       |      | 2                  | <b>D616DA</b>    | 1656       |
|                    |                |       | 0.60           | -          |                    |                |       |      | 2                  | <b>E617DA</b>    | 1656       |
| 0.741              | 158000 (17800) |       | 0.51           | -          | 0.894              | 131000 (14800) |       |      | 2                  | <b>E617DA</b>    | 1957       |
| 0.638              | 183000 (20700) |       | 0.44           | -          | 0.770              | 152000 (17100) |       |      | 2                  | <b>E617DA</b>    | 2272       |

# Double Reduction Selection Tables: Y1,Y2,Y3,Y4,Y5,Y6

**3 HP**  
(2.2 kW)



Dimension Pages:  
Single Reduction 3.80-3.85  
Double Reduction 3.86-3.91

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

| 50Hz               |                |       | 60 Hz          |            |                    | Selection      |       |      | VFD <sup>[1]</sup> |                  |            |
|--------------------|----------------|-------|----------------|------------|--------------------|----------------|-------|------|--------------------|------------------|------------|
| Output Speed (RPM) | Output Torque  |       | Service Factor | AGMA Class | Output Speed (RPM) | Output Torque  |       | Base |                    |                  |            |
|                    | in-lbs         | (N·m) |                |            |                    | in-lbs         | (N·m) | SF   | AGMA Class         | Motor Power Code | Frame Size |
| 3.98               | 43000 (4860)   |       | 0.73           | -          | 4.81               | 35700 (4030)   |       |      | 3                  | <b>C614DB</b>    | 364        |
|                    |                |       | 0.77           | -          |                    |                |       |      | 3                  | <b>C614DC</b>    | 364        |
|                    |                |       | 1.33           | I          |                    |                |       |      | 3                  | <b>D616DB</b>    | 364        |
|                    |                |       | 1.33           | I          |                    |                |       |      | 3                  | <b>D616DC</b>    | 364        |
|                    |                |       | 1.86           | II         |                    |                |       |      | 3                  | <b>E617DC</b>    | 364        |
| 3.42               | 50100 (5660)   |       | 0.66           | -          | 4.13               | 41500 (4690)   |       |      | 3                  | <b>C614DB</b>    | 424        |
|                    |                |       | 0.66           | -          |                    |                |       |      | 3                  | <b>C614DC</b>    | 424        |
|                    |                |       | 1.14           | I          |                    |                |       |      | 3                  | <b>D616DB</b>    | 424        |
|                    |                |       | 1.53           | II         |                    |                |       |      | 3                  | <b>E617DB</b>    | 424        |
|                    |                |       | 1.60           | II         |                    |                |       |      | 3                  | <b>E617DC</b>    | 424        |
| 2.90               | 59200 (6690)   |       | 0.56           | -          | 3.50               | 49000 (5540)   |       |      | 3                  | <b>C614DB</b>    | 501        |
|                    |                |       | 0.73           | -          |                    |                |       |      | 3                  | <b>D616DA</b>    | 501        |
|                    |                |       | 0.97           | -          |                    |                |       |      | 3                  | <b>D616DB</b>    | 501        |
|                    |                |       | 1.35           | I          |                    |                |       |      | 3                  | <b>E617DB</b>    | 501        |
|                    |                |       | 1.35           | I          |                    |                |       |      | 3                  | <b>E617DC</b>    | 501        |
| 2.51               | 68300 (7720)   |       | 0.48           | -          | 3.03               | 56600 (6390)   |       |      | 3                  | <b>C614DB</b>    | 578        |
|                    |                |       | 0.73           | -          |                    |                |       |      | 3                  | <b>D616DA</b>    | 578        |
|                    |                |       | 0.84           | -          |                    |                |       |      | 3                  | <b>D616DB</b>    | 578        |
|                    |                |       | 1.17           | I          |                    |                |       |      | 3                  | <b>E617DB</b>    | 578        |
| 2.12               | 80700 (9120)   |       | 0.71           | -          | 2.56               | 66900 (7550)   |       |      | 3                  | <b>D616DA</b>    | 683        |
|                    |                |       | 0.71           | -          |                    |                |       |      | 3                  | <b>D616DB</b>    | 683        |
|                    |                |       | 0.99           | -          |                    |                |       |      | 3                  | <b>E617DB</b>    | 683        |
| 1.79               | 95600 (10800)  |       | 0.60           | -          | 2.16               | 79200 (8950)   |       |      | 3                  | <b>D616DA</b>    | 809        |
|                    |                |       | 0.73           | -          |                    |                |       |      | 3                  | <b>E617DA</b>    | 809        |
|                    |                |       | 0.84           | -          |                    |                |       |      | 3                  | <b>E617DB</b>    | 809        |
| 1.52               | 113000 (12800) |       | 0.51           | -          | 1.83               | 93600 (10600)  |       |      | 3                  | <b>D616DA</b>    | 956        |
|                    |                |       | 0.71           | -          |                    |                |       |      | 3                  | <b>E617DA</b>    | 956        |
|                    |                |       | 0.71           | -          |                    |                |       |      | 3                  | <b>E617DB</b>    | 956        |
| 1.30               | 132000 (14900) |       | 0.43           | -          | 1.57               | 109000 (12400) |       |      | 3                  | <b>D616DA</b>    | 1117       |
|                    |                |       | 0.61           | -          |                    |                |       |      | 3                  | <b>E617DA</b>    | 1117       |
| 1.10               | 156000 (17600) |       | 0.51           | -          | 1.33               | 129000 (14600) |       |      | 3                  | <b>E617DA</b>    | 1320       |

Notes: [1] Variable Frequency Drive (VFD) notes (see page 3.8 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.

Notes: [1] Variable Frequency Drive (VFD) notes (see page 3.8 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.

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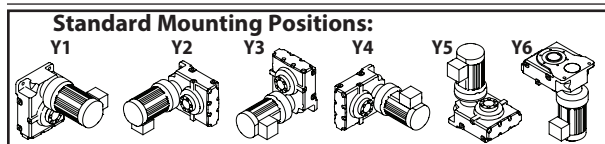
Selection  
Tables

Cyclo® HBB

Selection  
Tables

# Double Reduction Selection Tables: Y1,Y2,Y3,Y4,Y5,Y6

**5 HP  
(3.7 kW)**



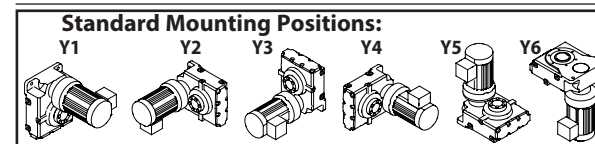
Dimension Pages:  
Single Reduction 3.80-3.85  
Double Reduction 3.86-3.91

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

| 50Hz               |               |         | 60 Hz          |            |                    | Selection     |         |                | VFD <sup>[1]</sup> |            |               |                  |            |
|--------------------|---------------|---------|----------------|------------|--------------------|---------------|---------|----------------|--------------------|------------|---------------|------------------|------------|
| Output Speed (RPM) | Output Torque |         | Service Factor | AGMA Class | Output Speed (RPM) | Output Torque |         | Service Factor |                    | AGMA Class | Base          |                  |            |
|                    | in-lbs        | (N·m)   |                |            |                    | in-lbs        | (N·m)   |                | SF                 |            | AGMA Class    | Motor Power Code | Frame Size |
| 3.98               | 72400         | (8180)  | 0.79           | -          | 4.81               | 60000         | (6780)  | 0.95           | -                  | 5          | <b>D616DC</b> | 364              |            |
|                    |               |         | 1.10           | I          |                    |               |         | 5              | <b>E617DC</b>      | 364        |               |                  |            |
| 3.42               | 84200         | (9520)  | 0.68           | -          | 4.13               | 69800         | (7880)  | 0.82           | -                  | 5          | <b>D616DC</b> | 424              |            |
|                    |               |         | 0.95           | -          |                    |               |         | 5              | <b>E617DC</b>      | 424        |               |                  |            |
| 2.90               | 99500         | (11200) | 0.58           | -          | 3.50               | 82500         | (9320)  | 0.69           | -                  | 5          | <b>D616DC</b> | 501              |            |
|                    |               |         | 0.80           | -          |                    |               |         | 5              | <b>E617DC</b>      | 501        |               |                  |            |
| 2.51               | 115000        | (13000) | 0.50           | -          | 3.03               | 95200         | (10800) | 0.60           | -                  | 5          | <b>D616DC</b> | 578              |            |
|                    |               |         | 0.70           | -          |                    |               |         | 5              | <b>E617DC</b>      | 578        |               |                  |            |
| 2.12               | 136000        | (15300) | 0.42           | -          | 2.56               | 112000        | (12700) | 0.51           | -                  | 5          | <b>D616DC</b> | 683              |            |
|                    |               |         | 0.59           | -          |                    |               |         | 5              | <b>E617DC</b>      | 683        |               |                  |            |
| 1.79               | 161000        | (18200) | 0.50           | -          | 2.16               | 133000        | (15100) | 0.60           | -                  | 5          | <b>E617DC</b> | 809              |            |
|                    |               |         | 0.42           | -          |                    |               |         | 1.83           | 157000             | (17800)    | 0.51          | -                |            |

# Double Reduction Selection Tables: Y1,Y2,Y3,Y4,Y5,Y6

**7.5 HP  
(5.5 kW)**



Dimension Pages:  
Single Reduction 3.80-3.85  
Double Reduction 3.86-3.91

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

| 50Hz               |               |         | 60 Hz          |            |                    | Selection     |         |                | VFD <sup>[1]</sup> |            |               |                  |            |
|--------------------|---------------|---------|----------------|------------|--------------------|---------------|---------|----------------|--------------------|------------|---------------|------------------|------------|
| Output Speed (RPM) | Output Torque |         | Service Factor | AGMA Class | Output Speed (RPM) | Output Torque |         | Service Factor |                    | AGMA Class | Base          |                  |            |
|                    | in-lbs        | (N·m)   |                |            |                    | in-lbs        | (N·m)   |                | SF                 |            | AGMA Class    | Motor Power Code | Frame Size |
| 3.98               | 108000        | (12200) | 0.53           | -          | 4.81               | 89200         | (10100) | 0.64           | -                  | 8          | <b>D616DC</b> | 364              |            |
|                    |               |         | 0.74           | -          |                    |               |         | 8              | <b>E617DC</b>      | 364        |               |                  |            |
| 3.42               | 125000        | (14100) | 0.46           | -          | 4.13               | 104000        | (11700) | 0.55           | -                  | 8          | <b>D616DC</b> | 424              |            |
|                    |               |         | 0.64           | -          |                    |               |         | 8              | <b>E617DC</b>      | 424        |               |                  |            |
| 2.90               | 148000        | (16700) | 0.54           | -          | 3.50               | 123000        | (13900) | 0.65           | -                  | 8          | <b>E617DC</b> | 501              |            |
|                    |               |         | 0.47           | -          |                    |               |         | 3.03           | 141000             | (16000)    | 0.57          | -                |            |

**Notes:** [1] Variable Frequency Drive (VFD) notes (see page 3.8 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.

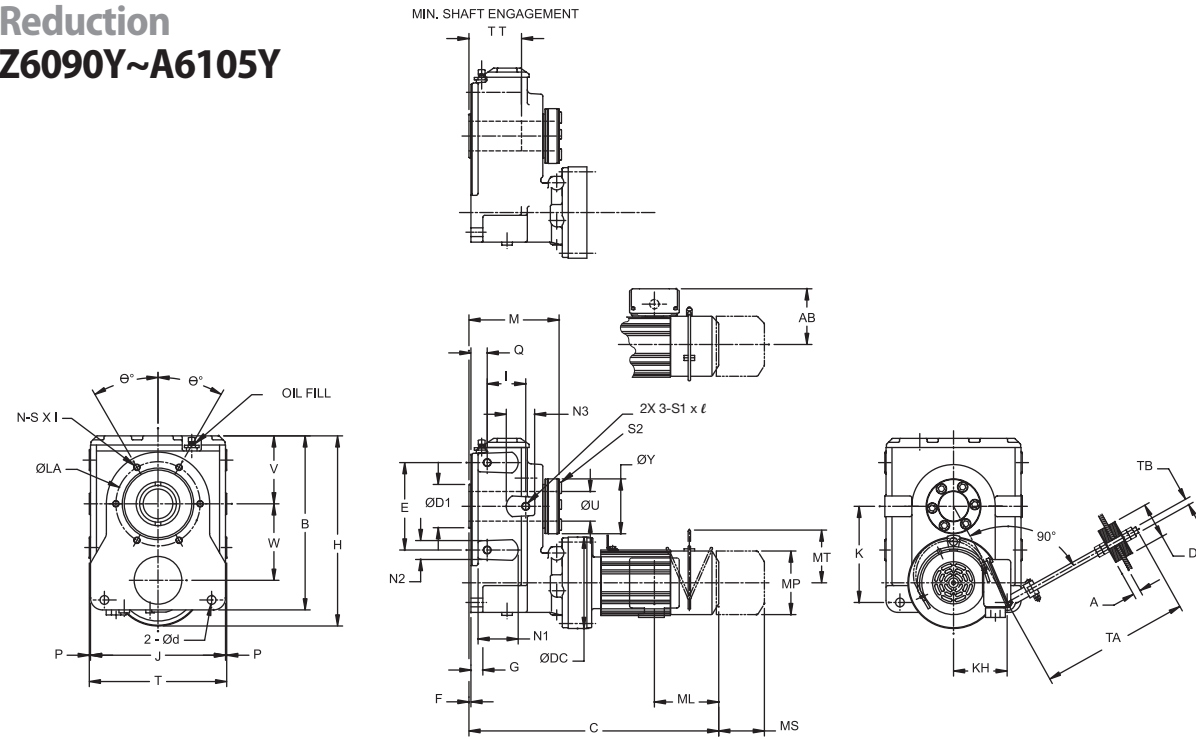
**Notes:** [1] Variable Frequency Drive (VFD) notes (see page 3.8 for Constant Torque Speed Ranges):  
 (-) = For Inverter Operation, starting condition may require ambient temperature of 5° C or higher.  
 (a) = Both AV and non-AV motors can be used for selection.

# Dimensions

# Dimensions

## Single Reduction EHYM-Z6090Y~A6105Y

## Single Reduction EHYM-Z6090Y~A6105Y (cont.)



All dimensions are in inches (mm).

| Model | B                | E             | F           | G            | H              | I            | J             | K               | M             | P           | Q            | T             | TT            | ØU               |                   |
|-------|------------------|---------------|-------------|--------------|----------------|--------------|---------------|-----------------|---------------|-------------|--------------|---------------|---------------|------------------|-------------------|
|       |                  |               |             |              |                |              |               |                 |               |             |              |               |               | Max (Std)        | Min               |
| Z609  | 11.00<br>(279.5) | 5.51<br>(140) | 0.20<br>(5) | 0.79<br>(20) | 11.87<br>(301) | 2.20<br>(56) | 8.31<br>(211) | 6.18<br>(157)   | 6.06<br>(154) | 0.12<br>(3) | 1.06<br>(27) | 8.54<br>(217) | 4.43<br>(113) | 1-7/16<br>(36.5) | 1-3/16<br>(30.2)  |
| A610  | 11.83<br>(300.5) | 5.91<br>(150) |             |              | 12.70<br>(323) | 2.60<br>(66) | 9.17<br>(233) | 6.44<br>(163.5) | 6.61<br>(168) |             | 1.14<br>(29) | 9.41<br>(239) | 4.96<br>(126) | 2-3/16<br>(55.6) | 1-11/16<br>(42.9) |

| Model | V               | W             | ØY            | Ød           | ØD1          | ØDC           | KH           | N1           | N2           | N3 | S2  | TA             | A            | D            | TB  |
|-------|-----------------|---------------|---------------|--------------|--------------|---------------|--------------|--------------|--------------|----|-----|----------------|--------------|--------------|-----|
| Z609  | 4.23<br>(107.5) | 4.69<br>(119) | 3.23<br>(82)  | 0.55<br>(14) | 2.56<br>(65) | 5.91<br>(150) | 3.54<br>(90) | 1.02<br>(26) | 1.02<br>(26) | -  | M10 | 17.50<br>(445) | 0.63<br>(16) | 2.36<br>(60) | M20 |
| A610  | 4.61<br>(117)   | 5.14<br>(131) | 4.09<br>(104) | 0.71<br>(18) | 3.35<br>(85) |               | 3.74<br>(95) | 1.10<br>(28) | 1.10<br>(28) |    | M12 |                |              |              |     |

All dimensions are in inches (mm)

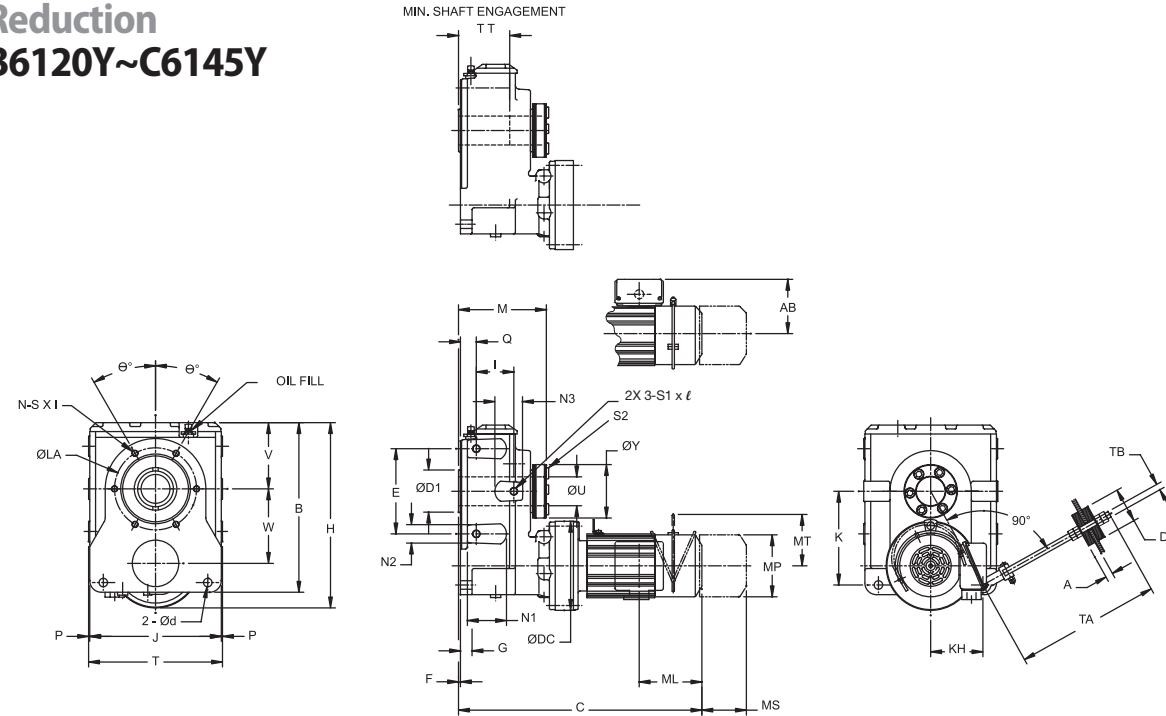
| Frames         | HPxP<br>(kW x P)      | Model            | Without Brake  |               |               |                   |                | With Brake     |               |               |                   |               |               |                |
|----------------|-----------------------|------------------|----------------|---------------|---------------|-------------------|----------------|----------------|---------------|---------------|-------------------|---------------|---------------|----------------|
|                |                       |                  | C              | AB            | ML            | MP <sup>[1]</sup> | Wt.<br>lb (kg) | C              | AB            | ML            | MP <sup>[1]</sup> | MS            | MT            | Wt.<br>lb (kg) |
| Z6090<br>Z6095 | 1/8 x 4<br>(0.1 x 4)  | EHYM01-Z6095Y    | 12.01<br>(305) | 4.63<br>(118) | 1.38<br>(35)  | ø4.88<br>(ø124)   | 68<br>(31)     | 13.39<br>(340) | 4.63<br>(118) | 3.58<br>(91)  | ø4.88<br>(ø124)   | 1.93<br>(49)  | -             | 71<br>(32)     |
|                | 1/4 x 4<br>(0.2 x 4)  | EHYM02-Z6095Y    | 13.66<br>(347) |               | 70<br>(32)    |                   | 14.92<br>(379) | 2.40<br>(61)   |               |               |                   | 73<br>(33)    |               |                |
|                | 1/3 x 4<br>(0.25 x 4) | EHYM03-Z6095Y    | 14.45<br>(367) |               | 73<br>(33)    |                   | 15.71<br>(399) | 2.40<br>(61)   |               |               |                   | 76<br>(35)    |               |                |
|                | 1/2 x 4<br>(0.4 x 4)  | EHYM05-Z6095Y    | 16.06<br>(408) | 5.67<br>(144) | 3.82<br>(97)  | ø5.94<br>(ø151)   | 78<br>(35)     | 17.76<br>(451) | 5.67<br>(144) | 5.51<br>(140) | ø5.94<br>(ø151)   | 3.66<br>(93)  | 3.94<br>(100) | 83<br>(38)     |
|                | 3/4 x 4<br>(0.55 x 4) | EHYM08-Z6095Y    | 16.06<br>(408) | 5.67<br>(144) | 3.82<br>(97)  | ø5.94<br>(ø151)   | 78<br>(35)     | 17.76<br>(451) | 5.67<br>(144) | 5.51<br>(140) | ø5.94<br>(ø151)   | 3.66<br>(93)  | 3.94<br>(100) | 83<br>(38)     |
|                | 1/8 x 4<br>(0.1 x 4)  | EHYM01-Z6095Y-AV | 13.66<br>(347) | 4.63<br>(118) | 2.32<br>(59)  | ø4.88<br>(ø124)   | 70<br>(32)     | 14.92<br>(379) | 4.63<br>(118) | 3.58<br>(91)  | ø4.88<br>(ø124)   | 2.40<br>(61)  | -             | 73<br>(33)     |
|                | 1/4 x 4<br>(0.2 x 4)  | EHYM02-Z6095Y-AV | 14.45<br>(367) |               |               |                   | 73<br>(33)     | 15.71<br>(399) |               |               |                   | 2.40<br>(61)  |               | 76<br>(35)     |
|                | 1/3 x 4<br>(0.25 x 4) | EHYM03-Z6095Y-AV | 16.06<br>(408) |               |               |                   | 80<br>(37)     | 17.76<br>(451) |               |               |                   | 2.40<br>(61)  |               | 86<br>(39)     |
|                | 1/2 x 4<br>(0.4 x 4)  | EHYM05-Z6095Y-AV | 17.36<br>(441) | 5.86<br>(149) | 3.94<br>(100) | ø5.94<br>(ø151)   | 88<br>(40)     | 19.80<br>(503) | 5.86<br>(149) | 6.38<br>(162) | ø6.30<br>(ø160)   | 4.53<br>(115) | 4.29<br>(109) | 99<br>(45)     |
|                | 3/4 x 4<br>(0.55 x 4) | EHYM08-Z6095Y-AV | 17.36<br>(441) | 5.86<br>(149) | 3.94<br>(100) | ø5.94<br>(ø151)   | 88<br>(40)     | 19.80<br>(503) | 5.86<br>(149) | 6.38<br>(162) | ø6.30<br>(ø160)   | 4.53<br>(115) | 4.29<br>(109) | 99<br>(45)     |
|                | 1 x 4<br>(0.75 x 4)   | EHYM1-Z6095Y-EP  | 17.80<br>(452) | 5.98<br>(152) | 3.82<br>(97)  | 6.22<br>(158)     | 93<br>(43)     | 20.30<br>(516) | 5.98<br>(152) | 6.32<br>(161) | 6.22<br>(158)     | 4.80<br>(122) | 4.25<br>(108) | 103<br>(47)    |
|                | 1.5 x 4<br>(1.1 x 4)  | EHYM1H-Z6095Y-EP | 18.86<br>(479) | 6.16<br>(156) |               |                   | 101<br>(46)    | 21.59<br>(549) | 6.16<br>(156) | 6.56<br>(167) | 6.57<br>(167)     | 5.04<br>(128) | 4.61<br>(117) | 112<br>(51)    |
|                | 2 x 4<br>(1.5 x 4)    | EHYM2-Z6095Y-EP  | 18.86<br>(479) | 6.16<br>(156) |               |                   | 104<br>(47)    | 21.59<br>(549) | 6.16<br>(156) | 6.56<br>(167) | 6.57<br>(167)     | 5.04<br>(128) | 4.61<br>(117) | 115<br>(53)    |

| Frames          | HPxP<br>(kW x P)      | Model            | Without Brake  |               |               |                   |                | With Brake     |               |               |                   |               |               |                |
|-----------------|-----------------------|------------------|----------------|---------------|---------------|-------------------|----------------|----------------|---------------|---------------|-------------------|---------------|---------------|----------------|
|                 |                       |                  | C              | AB            | ML            | MP <sup>[1]</sup> | Wt.<br>lb (kg) | C              | AB            | ML            | MP <sup>[1]</sup> | MS            | MT            | Wt.<br>lb (kg) |
| A6100,<br>A6105 | 1/4 x 4<br>(0.2 x 4)  | EHYM02-A6105Y    | 14.80<br>(376) | 4.63<br>(118) | 2.32<br>(59)  | ø4.88<br>(ø124)   | 93<br>(42)     | 16.06<br>(408) | 4.63<br>(118) | 3.58<br>(91)  | ø4.88<br>(ø124)   | 2.40<br>(61)  | -             | 96<br>(44)     |
|                 | 1/3 x 4<br>(0.25 x 4) | EHYM03-A6105Y    | 15.59<br>(396) |               |               |                   | 96<br>(44)     | 16.85<br>(428) |               |               |                   | 2.40<br>(61)  |               | 99<br>(45)     |
|                 | 1/2 x 4<br>(0.4 x 4)  | EHYM05-A6105Y    | 17.20<br>(437) |               |               |                   | 101<br>(46)    | 18.90<br>(480) |               |               |                   | 2.40<br>(61)  |               | 106<br>(49)    |
|                 | 3/4 x 4<br>(0.55 x 4) | EHYM08-A6105Y    | 17.20<br>(437) | 5.67<br>(144) | 3.82<br>(97)  | ø6.30<br>(ø160)   | 101<br>(46)    | 18.90<br>(480) | 5.67<br>(144) | 5.51<br>(140) | ø5.94<br>(ø151)   | 3.66<br>(93)  | 3.94<br>(100) | 106<br>(49)    |
|                 | 1/4 x 4<br>(0.2 x 4)  | EHYM02-A6105Y-AV | 15.59<br>(396) | 4.63<br>(118) | 2.32<br>(59)  | ø4.88<br>(ø124)   | 96<br>(44)     | 16.85<br>(428) | 4.63<br>(118) | 3.58<br>(91)  | ø4.88<br>(ø124)   | 2.40<br>(61)  | -             | 99<br>(45)     |
|                 | 1/3 x 4<br>(0.25 x 4) | EHYM03-A6105Y-AV | 17.20<br>(437) | 5.67<br>(144) | 3.82<br>(97)  | ø5.94<br>(ø151)   | 103<br>(47)    | 18.90<br>(480) | 5.67<br>(144) | 5.51<br>(140) | ø5.94<br>(ø151)   | 3.66<br>(93)  | 3.94<br>(100) | 109<br>(50)    |
|                 | 1/2 x 4<br>(0.4 x 4)  | EHYM05-A6105Y-AV | 18.50<br>(470) | 5.86<br>(149) | 3.94<br>(100) | ø6.30<br>(ø160)   | 111<br>(51)    | 20.94<br>(532) | 5.86<br>(149) | 6.38<br>(162) | ø6.30<br>(ø160)   | 4.53<br>(115) | 4.29<br>(109) | 122<br>(56)    |
|                 | 3/4 x 4<br>(0.55 x 4) | EHYM08-A6105Y-AV | 18.94<br>(481) | 5.98<br>(152) | 3.82<br>(97)  | 6.22<br>(158)     | 116<br>(53)    | 21.44<br>(545) | 5.98<br>(152) | 6.32<br>(161) | 6.22<br>(158)     | 4.80<br>(122) | 4.25<br>(108) | 126<br>(57)    |
|                 | 1 x 4<br>(0.75 x 4)   | EHYM1-A6105Y-EP  | 20.00<br>(508) | 6.16<br>(156) |               |                   | 124<br>(56)    | 22.74<br>(578) | 6.16<br>(156) | 6.56<br>(167) | 6.57<br>(167)     | 5.04<br>(128) | 4.61<br>(117) | 135<br>(62)    |
|                 | 1.5 x 4<br>(1.1 x 4)  | EHYM1H-A6105Y-EP | 20.00<br>(508) | 6.16<br>(156) |               |                   | 127<br>(58)    | 22.74<br>(578) | 6.16<br>(156) | 6.56<br>(167) | 6.57<br>(167)     | 5.04<br>(128) | 4.61<br>(117) | 138<br>(63)    |
|                 | 2 x 4<br>(1.5 x 4)    | EHYM2-A6105Y-EP  | 20.83<br>(529) | 6.71<br>(170) | 4.53<br>(115) | 7.24<br>(184)     | 143<br>(65)    | 23.90<br>(607) | 6.71<br>(170) | 7.60<br>(193) | 7.24<br>(184)     | 5.43<br>(138) | 5.04<br>(128) | 159<br>(73)    |

Notes [1]: DM Dimension Symbol ø = Round Fan Cover  
DM Dimension Symbol = Square Fan Cover

# Dimensions

## Single Reduction EHYM-B6120Y~C6145Y



All dimensions are in inches (mm).

| Model       | B              | E             | F           | G            | H              | I            | J              | K               | M             | P           | Q            | T              | TT            | ØU                |                   |
|-------------|----------------|---------------|-------------|--------------|----------------|--------------|----------------|-----------------|---------------|-------------|--------------|----------------|---------------|-------------------|-------------------|
|             |                |               |             |              |                |              |                |                 |               |             |              |                |               | Max (Std)         | Min               |
| <b>B612</b> | 14.45<br>(367) | 7.48<br>(190) | 0.20<br>(5) | 0.98<br>(35) | 16.10<br>(409) | 3.39<br>(86) | 11.42<br>(290) | 7.97<br>(202.5) | 7.64<br>(194) | 0.12<br>(3) | 1.22<br>(31) | 11.65<br>(296) | 5.63<br>(143) | 2-7/16<br>(61.9)  | 1-15/16<br>(49.2) |
| <b>C614</b> | 17.24<br>(438) | 8.66<br>(220) |             | 1.18<br>(30) | 18.84<br>(479) | 3.82<br>(97) | 13.39<br>(340) | 9.53<br>(242)   | 9.17<br>(233) |             | 1.61<br>(41) | 13.62<br>(346) | 7.32<br>(186) | 2-15/16<br>(74.6) | 2-3/16<br>(55.6)  |

| Model       | V               | W             | ØY            | Ød           | ØD1           | ØDC           | KH            | N1            | N2           | N3           | S2  | TA             | A            | D            | TB  |
|-------------|-----------------|---------------|---------------|--------------|---------------|---------------|---------------|---------------|--------------|--------------|-----|----------------|--------------|--------------|-----|
| <b>B612</b> | 5.69<br>(144.5) | 6.40<br>(163) | 4.49<br>(114) | 0.71<br>(18) | 3.94<br>(100) | 8.03<br>(204) | 4.33<br>(110) | 1.34<br>(34)  | 1.26<br>(32) | -            | M12 | 17.87<br>(454) | 0.63<br>(16) | 2.36<br>(60) | M20 |
| <b>C614</b> | 6.73<br>(171)   | 7.58<br>(193) | 5.43<br>(138) | 0.87<br>(22) | 4.33<br>(110) | 9.06<br>(230) | 5.31<br>(135) | 3.98<br>(101) | 2.05<br>(52) | 2.83<br>(72) | M16 | 18.37<br>(467) | 0.75<br>(19) | 3.54<br>(90) | M24 |

# Dimensions

## Single Reduction EHYM-B6120Y~C6145Y (cont.)

All dimensions are in inches (mm).

| Frames                  | HPxP<br>(kW x P)      | Model            | Without Brake  |               |                |                 |                | With Brake     |               |                |                 |               |               |                |
|-------------------------|-----------------------|------------------|----------------|---------------|----------------|-----------------|----------------|----------------|---------------|----------------|-----------------|---------------|---------------|----------------|
|                         |                       |                  | C              | AB            | ML             | MP [1]          | Wt             | C              | AB            | ML             | MP [1]          | MS            | MT            | Wt.<br>lb (kg) |
| <b>B6120,<br/>B6125</b> | 1/2 x 4<br>(0.4 x 4)  | EHYM05-B6125Y    | 17.07<br>(434) | 4.63<br>(118) | 2.32<br>(59)   | ø4.88<br>(ø124) | 165<br>(75)    | 18.33<br>(466) | 4.63<br>(118) | 3.58<br>(91)   | ø4.88<br>(ø124) | 2.40<br>(61)  | -             | 168<br>(77)    |
|                         | 3/4 x 4<br>(0.55 x 4) | EHYM08-B6125Y    | 18.48<br>(470) | 5.67<br>(144) | 3.82<br>(97)   | ø5.94<br>(ø151) | 170<br>(77)    | 20.18<br>(513) | 5.67<br>(144) | 5.51<br>(140)  | ø5.94<br>(ø151) | 3.66<br>(93)  | 3.94<br>(100) | 175<br>(80)    |
|                         | 1/2 x 4<br>(0.4 x 4)  | EHYM05-B6125Y-AV |                |               |                |                 | 172<br>(78)    |                |               |                |                 |               |               | 178<br>(81)    |
|                         | 3/4 x 4<br>(0.55 x 4) | EHYM08-B6125Y-AV | 19.78<br>(503) | 5.86<br>(149) | 3.94<br>(100)  | ø6.30<br>(ø160) | 178<br>(81)    | 22.22<br>(565) | 5.86<br>(149) | 6.38<br>(162)  | ø6.30<br>(ø160) | 4.53<br>(115) | 4.29<br>(109) | 189<br>(86)    |
|                         | 1 x 4<br>(0.75 x 4)   | EHYM1-B6125Y-EP  | 20.22<br>(514) | 5.98<br>(152) | 3.82<br>(97)   | 6.22<br>(158)   | 183<br>(83)    | 22.72<br>(577) | 5.98<br>(152) | 6.32<br>(161)  | 6.22<br>(158)   | 4.80<br>(122) | 4.25<br>(108) | 193<br>(88)    |
|                         | 1.5 x 4<br>(1.1 x 4)  | EHYM1H-B6125Y-EP | 21.28<br>(541) | 6.16<br>(156) | 3.82<br>(97)   | 6.57<br>(167)   | 190<br>(86)    | 24.02<br>(610) | 6.16<br>(156) | 6.56<br>(167)  | 6.57<br>(167)   | 5.04<br>(128) | 4.61<br>(117) | 201<br>(92)    |
|                         | 2 x 4<br>(1.5 x 4)    | EHYM2-B6125Y-EP  |                |               |                |                 | 193<br>(88)    |                |               |                |                 |               |               | 204<br>(93)    |
|                         | 3 x 4<br>(2.2 x 4)    | EHYM3-B6125Y-EP  | 20.69<br>(526) | 6.71<br>(170) | 4.53<br>(115)  | 7.24<br>(184)   | 206<br>(94)    | 23.76<br>(604) | 6.71<br>(170) | 7.60<br>(193)  | 7.24<br>(184)   | 5.43<br>(138) | 5.04<br>(128) | 222<br>(101)   |
|                         | 5 x 4<br>(3.7 x 4)    | EHYM5-B6125Y-EP  | 22.15<br>(563) | 7.34<br>(186) | 4.65<br>(118)  | 8.74<br>(222)   | 231<br>(105)   | 25.71<br>(653) | 7.34<br>(186) | 8.21<br>(209)  | 8.74<br>(222)   | 6.02<br>(153) | 6.30<br>(160) | 255<br>(116)   |
|                         | 7.5 x 4<br>(5.5 x 4)  | EHYM8-B6125Y-EP  | 265<br>(120)   |               |                |                 | 274<br>(696)   |                |               |                |                 |               |               | 289<br>(131)   |
| 10 x 4<br>(7.5 x 4)     | EHYM10-B6125Y-EP      | 25.57<br>(650)   | 9.04<br>(230)  | 5.43<br>(138) | 10.24<br>(260) | 293<br>(133)    | 29.70<br>(755) | 9.04<br>(230)  | 9.57<br>(243) | 10.24<br>(260) | 7.44<br>(189)   | 7.32<br>(186) | 337<br>(153)  |                |

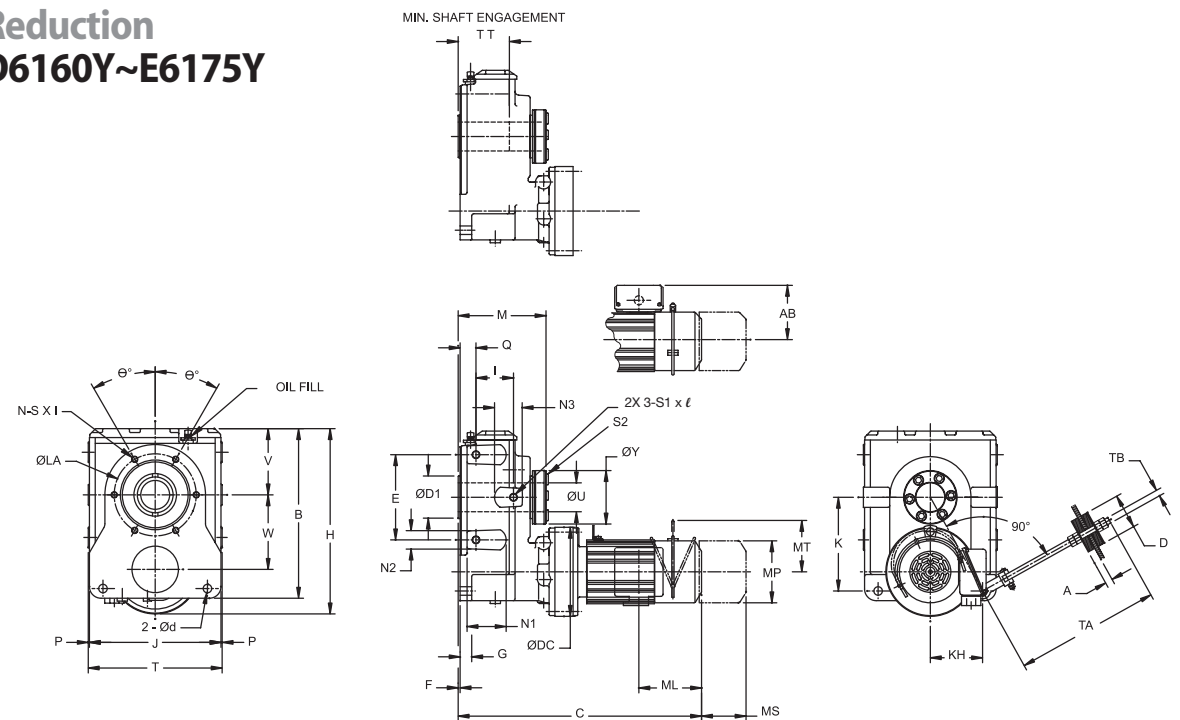
| Frames                  | HPxP<br>(kW x P)      | Model            | Without Brake  |               |                  |                 |                | With Brake     |                |                  |                 |               |               |                |
|-------------------------|-----------------------|------------------|----------------|---------------|------------------|-----------------|----------------|----------------|----------------|------------------|-----------------|---------------|---------------|----------------|
|                         |                       |                  | C              | AB            | ML               | MP [1]          | Wt             | C              | AB             | ML               | MP [1]          | MS            | MT            | Wt.<br>lb (kg) |
| <b>C6140,<br/>C6145</b> | 3/4 x 4<br>(0.55 x 4) | EHYM08-C6145Y    | 21.00<br>(534) | 5.67<br>(144) | 3.82<br>(97)     | ø5.94<br>(ø151) | 272<br>(124)   | 22.70<br>(577) | 5.67<br>(144)  | 5.51<br>(140)    | ø5.94<br>(ø151) | 3.66<br>(93)  | 3.94<br>(100) | 278<br>(126)   |
|                         | 3/4 x 4<br>(0.55 x 4) | EHYM08-C6145Y-AV | 22.30<br>(567) | 5.86<br>(149) | 3.94<br>(100)    |                 | 281<br>(128)   |                |                |                  |                 |               |               | 24.74<br>(629) |
|                         | 1 x 4<br>(0.75 x 4)   | EHYM1-C6145Y-EP  | 22.74<br>(578) | 5.98<br>(152) | 3.82<br>(97)     | 6.22<br>(158)   | 285<br>(130)   | 25.24<br>(641) | 5.98<br>(152)  | 6.32<br>(161)    | 6.22<br>(158)   | 4.80<br>(122) | 4.25<br>(108) | 295<br>(134)   |
|                         | 1.5 x 4<br>(1.1 x 4)  | EHYM1H-C6145Y-EP | 23.80<br>(605) | 6.16<br>(156) |                  |                 | 292<br>(133)   |                |                |                  |                 |               |               | 26.54<br>(674) |
|                         | 2 x 4<br>(1.5 x 4)    | EHYM2-C6145Y-EP  | 23.21<br>(590) | 6.71<br>(170) | 4.53<br>(115)    | 7.24<br>(184)   | 295<br>(134)   | 26.28<br>(668) | 6.71<br>(170)  | 7.60<br>(193)    | 7.24<br>(184)   | 5.43<br>(138) | 5.04<br>(128) | 307<br>(139)   |
|                         | 3 x 4<br>(2.2 x 4)    | EHYM3-C6145Y-EP  |                |               |                  |                 | 307<br>(139)   |                |                |                  |                 |               |               | 26.28<br>(668) |
|                         | 5 x 4<br>(3.7 x 4)    | EHYM5-C6145Y-EP  | 24.47<br>(622) | 7.34<br>(186) | 4.65<br>(118)    | 8.74<br>(222)   | 331<br>(150)   | 28.03<br>(712) | 7.34<br>(186)  | 8.21<br>(209)    | 8.74<br>(222)   | 6.02<br>(153) | 6.30<br>(160) | 355<br>(161)   |
|                         | 7.5 x 4<br>(5.5 x 4)  | EHYM8-C6145Y-EP  | 365<br>(166)   |               |                  |                 | 29.72<br>(755) |                |                |                  |                 |               |               | 389<br>(177)   |
|                         | 10 x 4<br>(7.5 x 4)   | EHYM10-C6145Y-EP | 27.66<br>(703) | 9.04<br>(230) | 5.43<br>(138)    | 10.24<br>(260)  | 392<br>(178)   | 31.79<br>(808) | 9.04<br>(230)  | 9.57<br>(243)    | 10.24<br>(260)  | 7.44<br>(189) | 7.32<br>(186) | 436<br>(198)   |
|                         | 15 x 4<br>(11 x 4)    | EHYM15-C6145Y-EP | 404<br>(184)   |               |                  |                 | 34.23<br>(870) |                |                |                  |                 |               |               | 449<br>(204)   |
| 20 x 4<br>(15 x 4)      | EHYM20-C6145Y-EP      | 32.54<br>(827)   | 10.26<br>(261) | 7.01<br>(178) | ø12.49<br>(ø317) | 485<br>(220)    | 37.83<br>(961) | 10.26<br>(261) | 12.30<br>(313) | ø12.61<br>(ø320) | 9.53<br>(242)   | -             | 571<br>(259)  |                |

Notes [1]: DM Dimension Symbol ø = Round Fan Cover  
DM Dimension Symbol = Square Fan Cover

Sumitomo Drive Technologies Cyclo® HBB

# Dimensions

## Single Reduction EHYM-D6160Y~E6175Y



All dimensions are in inches.

| Model       | B              | E              | F           | G            | H              | I             | J              | K              | M              | P           | Q            | T              | TT            | ØU               |                   |
|-------------|----------------|----------------|-------------|--------------|----------------|---------------|----------------|----------------|----------------|-------------|--------------|----------------|---------------|------------------|-------------------|
|             |                |                |             |              |                |               |                |                |                |             |              |                |               | Max (Std)        | Min               |
| <b>D616</b> | 21.22<br>(539) | 9.84<br>(250)  | 0.28<br>(7) | 1.38<br>(35) | 23.94<br>(608) | 4.49<br>(114) | 16.77<br>(426) | 11.54<br>(293) | 10.20<br>(259) | 0.20<br>(5) | 1.77<br>(45) | 17.17<br>(436) | 8.03<br>(204) | 3-7/16<br>(87.3) | 2-7/16<br>(65.1)  |
| <b>E617</b> | 24.02<br>(610) | 11.81<br>(300) |             | 1.77<br>(45) | 26.85<br>(682) | 5.00<br>(127) | 18.90<br>(480) | 13.07<br>(332) | 10.98<br>(279) |             | 1.97<br>(50) | 19.29<br>(490) | 8.82<br>(224) | 3-15/16<br>(100) | 2-15/16<br>(74.6) |

| Model       | V             | W              | ØY            | Ød           | ØD1           | ØDC            | KH            | N1           | N2           | N3            | S2  | TA             | A            | D            | TB  |
|-------------|---------------|----------------|---------------|--------------|---------------|----------------|---------------|--------------|--------------|---------------|-----|----------------|--------------|--------------|-----|
| <b>D616</b> | 8.43<br>(214) | 9.61<br>(244)  | 5.98<br>(152) | 1.02<br>(26) | 5.12<br>(130) | 11.81<br>(300) | 6.38<br>(162) | 3.62<br>(92) | 2.36<br>(60) | 3.62<br>(92)  | M16 | 19.50<br>(495) | 0.75<br>(19) | 3.54<br>(90) | M24 |
| <b>E617</b> | 9.45<br>(240) | 10.71<br>(272) | 6.69<br>(170) | 1.30<br>(33) | 5.91<br>(150) | 13.39<br>(340) | 7.09<br>(180) | 3.82<br>(97) | 2.44<br>(62) | 3.94<br>(100) |     | 20.25<br>(514) |              |              |     |

# Dimensions

## Single Reduction EHYM-D6160Y~E6175Y

All dimensions are in inches (mm)

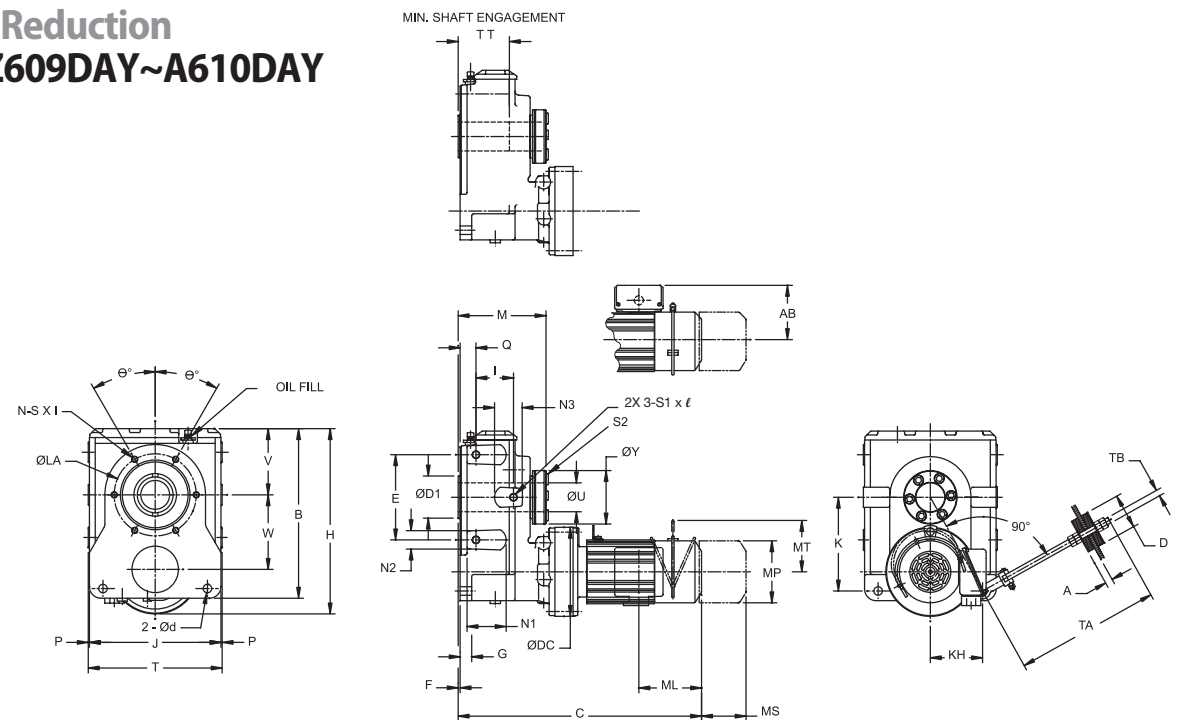
| Frames                  | HPxP<br>(kW x P)     | Model            | Without Brake  |                |               |                   |              | With Brake      |                |                |                   |                |               |                |
|-------------------------|----------------------|------------------|----------------|----------------|---------------|-------------------|--------------|-----------------|----------------|----------------|-------------------|----------------|---------------|----------------|
|                         |                      |                  | C              | AB             | ML            | MP <sup>[1]</sup> | Wt           | C               | AB             | ML             | MP <sup>[1]</sup> | MS             | MT            | Wt.<br>lb (kg) |
| <b>D6160,<br/>D6165</b> | 1 x 4<br>(0.75 x 4)  | EHYM1-D6165Y-EP  | 23.29<br>(592) | 5.98<br>(152)  | 3.82<br>(97)  | 6.22<br>(158)     | 482<br>(219) | 25.79<br>(655)  | 5.98<br>(152)  | 6.32<br>(161)  | 6.22<br>(158)     | 4.80<br>(122)  | 4.25<br>(108) | 492<br>(224)   |
|                         | 1.5 x 4<br>(1.1 x 4) | EHYM1H-D6165Y-EP | 24.35<br>(619) | 6.16<br>(156)  |               | 6.57<br>(167)     | 490<br>(222) | 27.09<br>(688)  | 6.16<br>(156)  | 6.56<br>(167)  | 6.57<br>(167)     | 5.04<br>(128)  | 4.61<br>(117) | 501<br>(228)   |
|                         | 2 x 4<br>(1.5 x 4)   | EHYM2-D6165Y-EP  |                |                |               | 493<br>(224)      |              |                 |                |                |                   |                | 504<br>(229)  |                |
|                         | 3 x 4<br>(2.2 x 4)   | EHYM3-D6165Y-EP  | 24.09<br>(612) | 6.71<br>(170)  | 4.53<br>(115) | 7.24<br>(184)     | 503<br>(228) | 27.17<br>(690)  | 6.71<br>(170)  | 7.60<br>(193)  | 7.24<br>(184)     | 5.43<br>(138)  | 5.04<br>(128) | 519<br>(236)   |
|                         | 5 x 4<br>(3.7 x 4)   | EHYM5-D6165Y-EP  | 24.96<br>(634) | 7.34<br>(186)  | 4.65<br>(118) | 8.74<br>(222)     | 528<br>(240) | 28.52<br>(725)  | 7.34<br>(186)  | 8.21<br>(209)  | 8.74<br>(222)     | 6.02<br>(153)  | 6.30<br>(160) | 551<br>(250)   |
|                         | 7.5 x 4<br>(5.5 x 4) | EHYM8-D6165Y-EP  | 26.65<br>(677) |                |               |                   | 561<br>(255) | 30.22<br>(768)  |                |                |                   |                |               | 585<br>(266)   |
|                         | 10 x 4<br>(7.5 x 4)  | EHYM10-D6165Y-EP | 27.01<br>(686) | 9.04<br>(230)  | 5.43<br>(138) | 10.24<br>(260)    | 589<br>(268) | 31.14<br>(791)  | 9.04<br>(230)  | 9.57<br>(243)  | 10.24<br>(260)    | 7.44<br>(189)  | 7.32<br>(186) | 634<br>(288)   |
|                         | 15 x 4<br>(11 x 4)   | EHYM15-D6165Y-EP | 29.45<br>(748) |                |               |                   | 602<br>(273) | 33.58<br>(853)  |                |                |                   |                |               | 646<br>(293)   |
|                         | 20 x 4<br>(15 x 4)   | EHYM20-D6165Y-EP | 31.06<br>(789) | 10.26<br>(261) | 7.01<br>(178) | ø12.49<br>(ø317)  | 685<br>(311) | 36.36<br>(924)  | 10.26<br>(261) | 12.30<br>(313) | ø12.61<br>(ø320)  | 9.53<br>(242)  |               | 771<br>(350)   |
|                         | 25 x 4<br>(18.5 x 4) | EHYM25-D6165Y-EP | 33.86<br>(860) | 13.39<br>(340) | 9.06<br>(230) | ø15.12<br>(ø384)  | 963<br>(437) | 40.71<br>(1034) | 13.39<br>(340) | 15.91<br>(404) | ø15.28<br>(ø388)  | 12.13<br>(308) |               | 1060<br>(481)  |
| 30 x 4<br>(22 x 4)      | EHYM30-D6165Y-EP     |                  |                |                |               |                   |              |                 |                |                |                   |                |               |                |

| Frames                  | HPxP<br>(kW x P)     | Model            | Without Brake   |                |               |                   |               | With Brake      |                |                |                   |                |               |                |
|-------------------------|----------------------|------------------|-----------------|----------------|---------------|-------------------|---------------|-----------------|----------------|----------------|-------------------|----------------|---------------|----------------|
|                         |                      |                  | C               | AB             | ML            | MP <sup>[1]</sup> | Wt            | C               | AB             | ML             | MP <sup>[1]</sup> | MS             | MT            | Wt.<br>lb (kg) |
| <b>E6170,<br/>E6175</b> | 3 x 4<br>(2.2 x 4)   | EHYM3-E6175Y-EP  | 27.20<br>(691)  | 6.71<br>(170)  | 4.53<br>(115) | 7.24<br>(184)     | 675<br>(306)  | 30.28<br>(769)  | 6.71<br>(170)  | 7.60<br>(193)  | 7.24<br>(184)     | 5.43<br>(138)  | 5.04<br>(128) | 692<br>(314)   |
|                         | 5 x 4<br>(3.7 x 4)   | EHYM5-E6175Y-EP  | 28.27<br>(718)  | 7.34<br>(186)  | 4.65<br>(118) | 8.74<br>(222)     | 699<br>(317)  | 31.83<br>(809)  | 7.34<br>(186)  | 8.21<br>(209)  | 8.74<br>(222)     | 6.02<br>(153)  | 6.30<br>(160) | 722<br>(328)   |
|                         | 7.5 x 4<br>(5.5 x 4) | EHYM8-E6175Y-EP  | 29.96<br>(761)  |                |               |                   | 733<br>(333)  | 33.52<br>(852)  |                |                |                   |                |               | 756<br>(343)   |
|                         | 10 x 4<br>(7.5 x 4)  | EHYM10-E6175Y-EP | 30.79<br>(782)  | 9.04<br>(230)  | 5.43<br>(138) | 10.24<br>(260)    | 761<br>(346)  | 34.92<br>(887)  | 9.04<br>(230)  | 9.57<br>(243)  | 10.24<br>(260)    | 7.44<br>(189)  | 7.32<br>(186) | 806<br>(366)   |
|                         | 15 x 4<br>(11 x 4)   | EHYM15-E6175Y-EP | 33.23<br>(844)  |                |               |                   | 774<br>(351)  | 37.36<br>(949)  |                |                |                   |                |               | 818<br>(371)   |
|                         | 20 x 4<br>(15 x 4)   | EHYM20-E6175Y-EP | 35.94<br>(913)  | 10.26<br>(261) | 7.01<br>(178) | ø12.49<br>(ø317)  | 855<br>(388)  | 41.24<br>(1048) | 10.26<br>(261) | 12.30<br>(313) | ø12.61<br>(ø320)  | 9.53<br>(242)  |               | 941<br>(427)   |
|                         | 25 x 4<br>(18.5 x 4) | EHYM25-E6175Y-EP | 40.12<br>(1019) | 13.39<br>(340) | 9.06<br>(230) | ø15.12<br>(ø384)  | 1134<br>(515) | 46.97<br>(1193) | 13.39<br>(340) | 15.91<br>(404) | ø15.28<br>(ø388)  | 12.13<br>(308) |               | 1231<br>(559)  |
|                         | 30 x 4<br>(22 x 4)   | EHYM30-E6175Y-EP |                 |                |               |                   | 1247<br>(566) | 51.85<br>(1317) |                |                |                   |                |               | 1344<br>(610)  |
| 40 x 4<br>(30 x 4)      | EHYM40-E6175Y-EP     | 45.00<br>(1143)  |                 |                |               |                   |               |                 |                |                |                   |                |               |                |

Notes [1]: DM Dimension Symbol ø = Round Fan Cover  
DM Dimension Symbol = Square Fan Cover

# Dimensions

## Double Reduction EHYM-Z609DAY~A610DAY



All dimensions are in inches (mm)

| Model  | B                | E             | F           | G            | H              | I            | J             | K               | M             | P           | Q            | T             | TT            | ØU               |                   |
|--------|------------------|---------------|-------------|--------------|----------------|--------------|---------------|-----------------|---------------|-------------|--------------|---------------|---------------|------------------|-------------------|
|        |                  |               |             |              |                |              |               |                 |               |             |              |               |               | Max (Std)        | Min               |
| Z609DA | 11.00<br>(279.5) | 5.51<br>(140) | 0.20<br>(5) | 0.79<br>(20) | 11.87<br>(301) | 2.20<br>(56) | 8.31<br>(211) | 6.18<br>(157)   | 6.06<br>(154) | 0.12<br>(3) | 1.06<br>(27) | 8.54<br>(217) | 4.43<br>(113) | 1-7/16<br>(36.5) | 1-3/16<br>(30.2)  |
| A610DA | 11.83<br>(300.5) | 5.91<br>(150) |             |              | 12.70<br>(323) | 2.60<br>(66) | 9.17<br>(233) | 6.44<br>(163.5) | 6.61<br>(168) |             | 1.14<br>(29) | 9.41<br>(239) | 4.96<br>(126) | 2-3/16<br>(55.6) | 1-11/16<br>(42.9) |

| Model  | V               | W             | ØY            | Ød           | ØD1          | ØDC           | KH           | N1           | N2           | N3 | S2  | TA             | A            | D            | TB  |
|--------|-----------------|---------------|---------------|--------------|--------------|---------------|--------------|--------------|--------------|----|-----|----------------|--------------|--------------|-----|
| Z609DA | 4.23<br>(107.4) | 4.69<br>(119) | 3.23<br>(82)  | 0.55<br>(14) | 2.56<br>(65) | 5.91<br>(150) | 3.54<br>(90) | 1.02<br>(26) | 1.02<br>(26) | -  | M10 | 17.50<br>(445) | 0.63<br>(16) | 2.36<br>(60) | M20 |
| A610DA | 4.61<br>(117)   | 5.14<br>(131) | 4.09<br>(104) | 0.71<br>(18) | 3.35<br>(85) |               | 3.74<br>(95) | 1.10<br>(28) | 1.10<br>(28) |    |     |                |              |              |     |

# Dimensions

## Double Reduction EHYM-Z609DAY~A610DAY

All dimensions are in inches (mm)

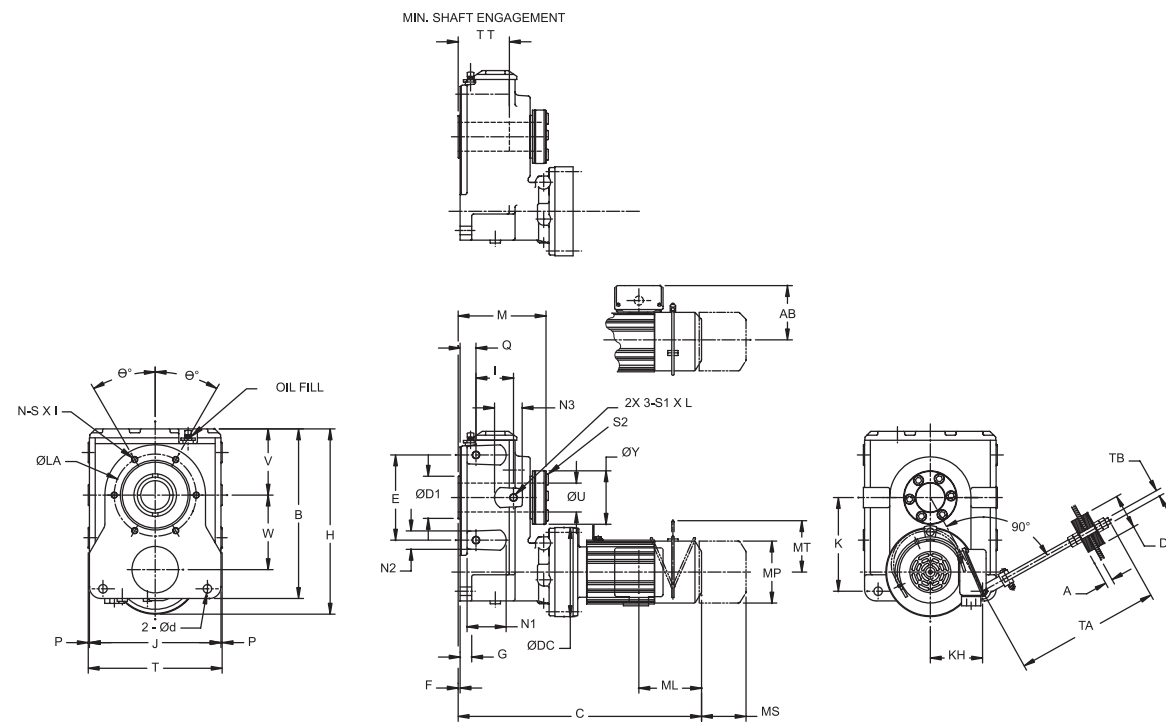
| Frames                | HPxP<br>(kW x P)      | Model             | Without Brake  |               |                |                   |                | With Brake     |               |              |                   |              |    |                |                |
|-----------------------|-----------------------|-------------------|----------------|---------------|----------------|-------------------|----------------|----------------|---------------|--------------|-------------------|--------------|----|----------------|----------------|
|                       |                       |                   | C              | AB            | ML             | MP <sup>[1]</sup> | Wt             | C              | AB            | ML           | MP <sup>[1]</sup> | MS           | MT | Wt.<br>lb (kg) |                |
| Z609DA                | 1/8 x 4<br>(0.1 x 4)  | EHYM01-Z609DAY    | 13.92<br>(354) | 4.63<br>(118) | 1.38 (35)      | ø4.69<br>(ø119)   | 72 (33)        | 15.30<br>(389) | 4.63<br>(118) | 2.76<br>(70) | ø4.88<br>(ø124)   | 1.93<br>(49) | -  |                | 75<br>(34)     |
|                       | 1/4 x 4<br>(0.2 x 4)  | EHYM02-Z609DAY    | 15.57<br>(396) |               |                |                   |                | 74 (34)        |               |              |                   |              |    |                | 16.83<br>(428) |
|                       | 1/3 x 4<br>(0.25 x 4) | EHYM03-Z609DAY    |                |               |                |                   |                |                |               |              |                   |              |    |                |                |
|                       | 1/8 x 4<br>(0.1 x 4)  | EHYM01-Z609DAY-AV |                |               | 16.36<br>(416) | 77 (35)           | 17.62<br>(448) |                |               | 80<br>(36)   |                   |              |    |                |                |
|                       | 1/4 x 4<br>(0.2 x 4)  | EHYM02-Z609DAY-AV |                |               |                |                   |                |                |               |              |                   |              |    |                |                |
| 1/3 x 4<br>(0.25 x 4) | EHYM03-Z609DAY-AV     |                   |                |               |                |                   |                |                |               |              |                   |              |    |                |                |

| Frames                | HPxP<br>(kW x P)      | Model             | Without Brake  |               |                |                   |                | With Brake     |               |              |                   |              |    |                |                |
|-----------------------|-----------------------|-------------------|----------------|---------------|----------------|-------------------|----------------|----------------|---------------|--------------|-------------------|--------------|----|----------------|----------------|
|                       |                       |                   | C              | AB            | ML             | MP <sup>[1]</sup> | Wt             | C              | AB            | ML           | MP <sup>[1]</sup> | MS           | MT | Wt.<br>lb (kg) |                |
| A610DA                | 1/8 x 4<br>(0.1 x 4)  | EHYM01-A610DAY    | 15.06<br>(383) | 4.63<br>(118) | 1.38<br>(35)   | ø4.69<br>(ø119)   | 97<br>(44)     | 16.44<br>(418) | 4.63<br>(118) | 2.76<br>(70) | ø4.88<br>(ø124)   | 1.93<br>(49) | -  |                | 100<br>(46)    |
|                       | 1/4 x 4<br>(0.2 x 4)  | EHYM02-A610DAY    | 16.71<br>(425) |               |                |                   |                | 102<br>(46)    |               |              |                   |              |    |                | 17.97<br>(457) |
|                       | 1/3 x 4<br>(0.25 x 4) | EHYM03-A610DAY    |                |               |                |                   |                |                |               |              |                   |              |    |                |                |
|                       | 1/2 x 4<br>(0.4 x 4)  | EHYM05-A610DAY    |                |               | 17.50<br>(445) | 102<br>(46)       | 18.76<br>(477) |                |               | 105<br>(48)  |                   |              |    |                |                |
|                       | 1/8 x 4<br>(0.1 x 4)  | EHYM01-A610DAY-AV | 16.71<br>(425) |               |                |                   |                | 99<br>(45)     |               |              | 17.97<br>(457)    | 102<br>(46)  |    |                |                |
|                       | 1/4 x 4<br>(0.2 x 4)  | EHYM02-A610DAY-AV |                |               |                |                   |                |                |               |              |                   |              |    |                |                |
| 1/3 x 4<br>(0.25 x 4) | EHYM03-A610DAY-AV     |                   |                |               |                |                   |                |                |               |              |                   |              |    |                |                |

Notes [1]: DM Dimension Symbol ø = Round Fan Cover  
DM Dimension Symbol = Square Fan Cover

# Dimensions

## Double Reduction EHYM-B612DAY~C614DBY



Cyclo® HBB

All dimensions are in inches (mm)

| Model         | B              | E             | F           | G            | H              | I            | J              | K             | M             | P           | Q            | T              | TT            | ØU                |                   |  |  |  |  |  |  |  |  |
|---------------|----------------|---------------|-------------|--------------|----------------|--------------|----------------|---------------|---------------|-------------|--------------|----------------|---------------|-------------------|-------------------|--|--|--|--|--|--|--|--|
|               |                |               |             |              |                |              |                |               |               |             |              |                |               | Max (Std)         | Min               |  |  |  |  |  |  |  |  |
| <b>B612DA</b> | 14.45<br>(367) | 7.48<br>(190) | 0.20<br>(5) | 0.98<br>(25) | 16.10<br>(409) | 3.39<br>(86) | 11.42<br>(290) | 7.97<br>(202) | 7.64<br>(194) | 0.12<br>(3) | 1.22<br>(31) | 11.65<br>(296) | 5.63<br>(143) | 2-7/16<br>(61.9)  | 1-15/16<br>(49.2) |  |  |  |  |  |  |  |  |
| <b>B612DB</b> |                |               |             |              |                |              |                |               |               |             |              |                |               |                   |                   |  |  |  |  |  |  |  |  |
| <b>C614DA</b> | 17.24<br>(438) | 8.66<br>(220) | 0.20<br>(5) | 1.18<br>(30) | 18.84<br>(479) | 3.82<br>(97) | 13.39<br>(340) | 9.53<br>(242) | 9.17<br>(233) | 0.12<br>(3) | 1.61<br>(41) | 13.62<br>(346) | 7.32<br>(186) | 2-15/16<br>(74.6) | 2-3/16<br>(55.6)  |  |  |  |  |  |  |  |  |
| <b>C614DB</b> |                |               |             |              |                |              |                |               |               |             |              |                |               |                   |                   |  |  |  |  |  |  |  |  |
| <b>C614DC</b> |                |               |             |              |                |              |                |               |               |             |              |                |               |                   |                   |  |  |  |  |  |  |  |  |

| Model         | V               | W             | ØY            | Ød           | ØD1           | ØDC           | KH            | N1           | N2           | N3           | S2  | TA             | A            | D            | TB  |  |  |  |  |  |  |  |  |  |  |  |  |
|---------------|-----------------|---------------|---------------|--------------|---------------|---------------|---------------|--------------|--------------|--------------|-----|----------------|--------------|--------------|-----|--|--|--|--|--|--|--|--|--|--|--|--|
| <b>B612DA</b> | 5.69<br>(144.5) | 6.40<br>(163) | 4.49<br>(114) | 0.71<br>(18) | 3.94<br>(100) | 8.03<br>(204) | 4.33<br>(110) | 1.34<br>(32) | 1.26<br>(32) | -            | M12 | 17.87<br>(454) | 0.63<br>(16) | 2.36<br>(60) | M20 |  |  |  |  |  |  |  |  |  |  |  |  |
| <b>B612DB</b> |                 |               |               |              |               |               |               |              |              |              |     |                |              |              |     |  |  |  |  |  |  |  |  |  |  |  |  |
| <b>C614DA</b> | 6.73<br>(171)   | 7.58<br>(193) | 5.43<br>(138) | 0.87<br>(22) | 4.33<br>(110) | 9.06<br>(230) | 5.31<br>(135) | 3.98<br>(52) | 2.05<br>(52) | 2.83<br>(72) | M16 | 18.37<br>(467) | 0.75<br>(19) | 3.54<br>(90) | M24 |  |  |  |  |  |  |  |  |  |  |  |  |
| <b>C614DB</b> |                 |               |               |              |               |               |               |              |              |              |     |                |              |              |     |  |  |  |  |  |  |  |  |  |  |  |  |
| <b>C614DC</b> |                 |               |               |              |               |               |               |              |              |              |     |                |              |              |     |  |  |  |  |  |  |  |  |  |  |  |  |

Dimensions

# Dimensions

## Double Reduction EHYM-B612DAY~C614DBY

All dimensions are in inches (mm)

| Frames                | HPxP<br>(kW x P)      | Model             | Without Brake  |                |              |                   |                | With Brake     |               |                |                   |              |               |                 |              |                |               |              |                 |              |   |              |
|-----------------------|-----------------------|-------------------|----------------|----------------|--------------|-------------------|----------------|----------------|---------------|----------------|-------------------|--------------|---------------|-----------------|--------------|----------------|---------------|--------------|-----------------|--------------|---|--------------|
|                       |                       |                   | C              | AB             | ML           | MP <sup>[1]</sup> | Wt             | C              | AB            | ML             | MP <sup>[1]</sup> | MS           | MT            | Wt.<br>lb (kg)  |              |                |               |              |                 |              |   |              |
| <b>B612DA</b>         | 1/8 x 4<br>(0.1 x 4)  | EHYM01-B612DAY    | 16.56<br>(421) | 4.63<br>(118)  | 1.38<br>(35) | ø4.88<br>(ø124)   | 164<br>(75)    | 17.93<br>(456) | 4.63<br>(118) | 2.76<br>(70)   | ø4.88<br>(ø124)   | 1.93<br>(49) | -             | 167<br>(76)     |              |                |               |              |                 |              |   |              |
|                       | 1/4 x 4<br>(0.2 x 4)  | EHYM02-B612DAY    | 18.21<br>(463) |                | 166<br>(76)  |                   | 19.47<br>(495) | 169<br>(77)    |               | 20.26<br>(515) |                   | 169<br>(77)  |               |                 |              |                |               |              |                 |              |   |              |
|                       | 1/3 x 4<br>(0.25 x 4) | EHYM03-B612DAY    | 19.00<br>(483) |                | 166<br>(76)  |                   | 19.47<br>(495) | 169<br>(77)    |               | 20.26<br>(515) |                   | 169<br>(77)  |               |                 |              |                |               |              |                 |              |   |              |
|                       | 1/2 x 4<br>(0.4 x 4)  | EHYM05-B612DAY    | 19.00<br>(483) |                | 169<br>(77)  |                   | 20.26<br>(515) | 169<br>(77)    |               | 20.26<br>(515) |                   | 169<br>(77)  |               |                 |              |                |               |              |                 |              |   |              |
|                       | 1/8 x 4<br>(0.1 x 4)  | EHYM01-B612DAY-AV | 18.21<br>(463) |                | 166<br>(76)  |                   | 19.47<br>(495) | 169<br>(77)    |               | 20.26<br>(515) |                   | 169<br>(77)  |               |                 |              |                |               |              |                 |              |   |              |
|                       | 1/4 x 4<br>(0.2 x 4)  | EHYM02-B612DAY-AV | 19.00<br>(483) |                | 169<br>(77)  |                   | 20.26<br>(515) | 169<br>(77)    |               | 20.26<br>(515) |                   | 169<br>(77)  |               |                 |              |                |               |              |                 |              |   |              |
| <b>B612DB</b>         | 1/3 x 4<br>(0.25 x 4) | EHYM03-B612DBY    | 18.66<br>(474) | 5.67<br>(144)  | 2.32<br>(59) | ø5.94<br>(ø151)   | 171<br>(78)    | 19.92<br>(506) | 5.67<br>(144) | 5.51<br>(140)  | ø5.94<br>(ø151)   | 3.66<br>(93) | 3.94<br>(100) | 174<br>(79)     |              |                |               |              |                 |              |   |              |
|                       | 1/2 x 4<br>(0.4 x 4)  | EHYM05-B612DBY    | 19.45<br>(494) |                |              |                   | 174<br>(79)    | 20.71<br>(526) |               |                |                   |              |               | 177<br>(81)     |              |                |               |              |                 |              |   |              |
|                       | 3/4 x 4<br>(0.55 x 4) | EHYM08-B612DBY    | 21.06<br>(535) |                |              |                   | 179<br>(81)    | 22.76<br>(578) |               |                |                   |              |               | 184<br>(84)     |              |                |               |              |                 |              |   |              |
|                       | 1/3 x 4<br>(0.25 x 4) | EHYM03-B612DBY-AV | 19.45<br>(494) |                |              |                   | 174<br>(79)    | 20.71<br>(526) |               |                |                   |              |               | 177<br>(81)     |              |                |               |              |                 |              |   |              |
|                       | 1/2 x 4<br>(0.4 x 4)  | EHYM05-B612DBY-AV | 21.06<br>(535) |                |              |                   | 181<br>(82)    | 22.76<br>(578) |               |                |                   |              |               | 187<br>(85)     |              |                |               |              |                 |              |   |              |
|                       | 3/4 x 4<br>(0.55 x 4) | EHYM08-B612DBY-AV | 22.36<br>(568) |                |              |                   | 189<br>(86)    | 24.80<br>(630) |               |                |                   |              |               | 200<br>(91)     |              |                |               |              |                 |              |   |              |
|                       | 1 x 4<br>(0.75 x 4)   | EHYM1-B612DBY-EP  | 22.80<br>(579) |                |              |                   | 194<br>(88)    | 25.30<br>(643) |               |                |                   |              |               | 204<br>(93)     |              |                |               |              |                 |              |   |              |
|                       | 1/3 x 4<br>(0.25 x 4) | EHYM03-B614DBY    | 21.10<br>(536) |                |              |                   | 4.63<br>(118)  | 2.32<br>(59)   |               |                |                   |              |               | ø4.88<br>(ø124) | 263<br>(120) | 22.36<br>(568) | 4.63<br>(118) | 3.58<br>(91) | ø4.88<br>(ø124) | 2.40<br>(61) | - | 266<br>(121) |
|                       | 1/2 x 4<br>(0.4 x 4)  | EHYM05-C614DBY    | 21.89<br>(556) |                |              |                   |                |                |               |                |                   |              |               |                 | 266<br>(120) | 23.15<br>(588) |               |              |                 |              |   | 269<br>(122) |
|                       | 3/4 x 4<br>(0.55 x 4) | EHYM08-C614DBY    | 23.50<br>(597) |                |              |                   |                |                |               |                |                   |              |               |                 | 271<br>(123) | 25.20<br>(640) |               |              |                 |              |   | 277<br>(126) |
| 1/3 x 4<br>(0.25 x 4) | EHYM03-C614DBY-AV     | 21.89<br>(556)    | 266<br>(121)   | 23.15<br>(588) | 269<br>(122) |                   |                |                |               |                |                   |              |               |                 |              |                |               |              |                 |              |   |              |
| 1/2 x 4<br>(0.4 x 4)  | EHYM05-C614DBY-AV     | 23.50<br>(597)    | 274<br>(124)   | 25.20<br>(640) | 279<br>(127) |                   |                |                |               |                |                   |              |               |                 |              |                |               |              |                 |              |   |              |
| 3/4 x 4<br>(0.55 x 4) | EHYM08-C614DBY-AV     | 24.80<br>(630)    | 282<br>(128)   | 27.24<br>(692) | 293<br>(133) |                   |                |                |               |                |                   |              |               |                 |              |                |               |              |                 |              |   |              |
| 1 x 4<br>(0.75 x 4)   | EHYM1-C614DBY-EP      | 25.24<br>(641)    | 287<br>(130)   | 27.74<br>(705) | 297<br>(135) |                   |                |                |               |                |                   |              |               |                 |              |                |               |              |                 |              |   |              |
| 1.5 x 4<br>(1.1 x 4)  | EHYM1H-C614DBY-EP     | 26.30<br>(668)    | 294<br>(134)   | 29.04<br>(738) | 306<br>(139) |                   |                |                |               |                |                   |              |               |                 |              |                |               |              |                 |              |   |              |
| 2 x 4<br>(1.5 x 4)    | EHYM2-C614DBY-EP      | 26.30<br>(668)    | 297<br>(135)   | 29.7<br>(738)  | 309<br>(140) |                   |                |                |               |                |                   |              |               |                 |              |                |               |              |                 |              |   |              |

Notes [1]: DM Dimension Symbol ø = Round Fan Cover  
DM Dimension Symbol = Square Fan Cover

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Cyclo® HBB

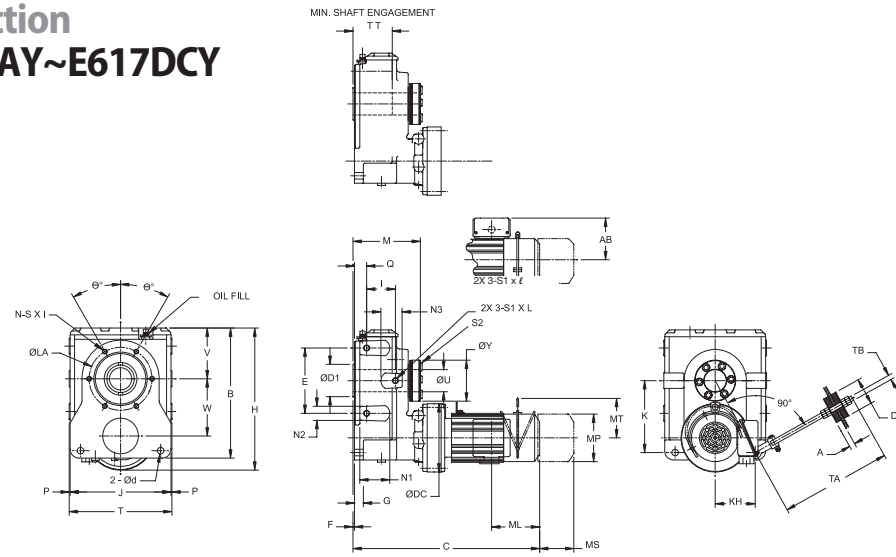
Dimensions

# Dimensions

# Dimensions

## Double Reduction EHYM-D616DAY~E617DCY

## Double Reduction EHYM-D616DAY~E617DCY



All dimensions are in inches (mm).

| Model         | B              | E              | F           | G            | H              | I             | J              | K              | M              | P           | Q            | T              | TT            | ØU               |                   |
|---------------|----------------|----------------|-------------|--------------|----------------|---------------|----------------|----------------|----------------|-------------|--------------|----------------|---------------|------------------|-------------------|
|               |                |                |             |              |                |               |                |                |                |             |              |                |               | Max (Std)        | Min               |
| <b>D616DA</b> | 21.22<br>(539) | 9.84<br>(250)  | 0.28<br>(7) | 1.38<br>(35) | 23.94<br>(608) | 4.49<br>(114) | 16.77<br>(426) | 11.54<br>(293) | 10.20<br>(259) | 0.20<br>(5) | 1.77<br>(45) | 17.17<br>(436) | 8.03<br>(204) | 3-7/16<br>(87.3) | 2-7/16<br>(61.9)  |
| <b>D616DB</b> |                |                |             |              |                |               |                |                |                |             |              |                |               |                  |                   |
| <b>D616DC</b> |                |                |             |              |                |               |                |                |                |             |              |                |               |                  |                   |
| <b>E617DA</b> | 24.02<br>(610) | 11.81<br>(300) | 0.28<br>(7) | 1.77<br>(45) | 26.85<br>(682) | 5.00<br>(127) | 18.90<br>(480) | 13.07<br>(332) | 10.98<br>(279) | 0.20<br>(5) | 1.97<br>(50) | 19.29<br>(490) | 8.82<br>(224) | 3-15/16<br>(100) | 2-15/16<br>(74.6) |
| <b>E617DB</b> |                |                |             |              |                |               |                |                |                |             |              |                |               |                  |                   |
| <b>E617DC</b> |                |                |             |              |                |               |                |                |                |             |              |                |               |                  |                   |

| Model         | V             | W              | ØY            | Ød           | ØD1           | ØDC            | KH            | N1           | N2           | N3            | S2  | TA             | A            | D            | TB  |
|---------------|---------------|----------------|---------------|--------------|---------------|----------------|---------------|--------------|--------------|---------------|-----|----------------|--------------|--------------|-----|
| <b>D616DA</b> | 8.43<br>(214) | 9.61<br>(244)  | 5.98<br>(152) | 1.02<br>(26) | 5.12<br>(130) | 11.81<br>(300) | 6.38<br>(162) | 3.62<br>(60) | 2.36<br>(60) | 3.62<br>(92)  | M16 | 19.50<br>(495) | 0.75<br>(19) | 3.54<br>(90) | M24 |
| <b>D616DB</b> |               |                |               |              |               |                |               |              |              |               |     |                |              |              |     |
| <b>D616DC</b> |               |                |               |              |               |                |               |              |              |               |     |                |              |              |     |
| <b>E617DA</b> | 9.45<br>(240) | 10.71<br>(272) | 6.69<br>(170) | 1.30<br>(33) | 5.91<br>(150) | 13.39<br>(340) | 7.09<br>(180) | 3.82<br>(62) | 2.44<br>(62) | 3.94<br>(100) | M16 | 20.25<br>(514) | 0.75<br>(19) | 3.54<br>(90) | M24 |
| <b>E617DB</b> |               |                |               |              |               |                |               |              |              |               |     |                |              |              |     |
| <b>E617DC</b> |               |                |               |              |               |                |               |              |              |               |     |                |              |              |     |

All dimensions are in inches (mm)

| Frames             | HPxP<br>(kW x P)      | Model             | Without Brake  |               |               |                 |              | With Brake     |               |               |                 |               |               |                |
|--------------------|-----------------------|-------------------|----------------|---------------|---------------|-----------------|--------------|----------------|---------------|---------------|-----------------|---------------|---------------|----------------|
|                    |                       |                   | C              | AB            | ML            | MP [1]          | Wt           | C              | AB            | ML            | MP [1]          | MS            | MT            | Wt.<br>lb (kg) |
| <b>D616DA</b>      | 1/2 x 4<br>(0.4 x 4)  | EHYM05-D616DAY    | 24.04<br>(611) | 4.63<br>(118) | 2.32<br>(59)  | ø5.94<br>(ø151) | 470<br>(213) | 25.30<br>(643) | 4.63<br>(118) | 3.58<br>(91)  | ø4.88<br>(ø124) | 2.40<br>(61)  | -             | 473<br>(215)   |
|                    | 3/4 x 4<br>(0.55 x 4) | EHYM08-D616DAY    | 25.65<br>(652) | 5.67<br>(144) | 3.82<br>(97)  | ø4.88<br>(ø124) | 474<br>(215) | 27.34<br>(695) | 5.67<br>(144) | 5.51<br>(140) | ø5.94<br>(ø151) | 3.66<br>(93)  | 3.94<br>(100) | 480<br>(218)   |
|                    | 1/2 x 4<br>(0.4 x 4)  | EHYM05-D616DAY-AV |                |               |               |                 | 477<br>(217) |                |               |               |                 |               |               | 483<br>(219)   |
|                    | 3/4 x 4<br>(0.55 x 4) | EHYM08-D616DAY-AV | 26.95<br>(685) | 5.86<br>(149) | 3.94<br>(100) | ø5.94<br>(ø151) | 485<br>(220) | 29.39<br>(747) | 5.86<br>(149) | 6.38<br>(162) | ø6.30<br>(ø160) | 4.53<br>(115) | 4.29<br>(109) | 496<br>(225)   |
|                    | 1 x 4<br>(0.75 x 4)   | EHYM1-D616DAY-EP  | 27.38<br>(696) | 5.98<br>(152) | 3.82<br>(97)  | ø6.57<br>(ø167) | 490<br>(223) | 29.88<br>(759) | 5.98<br>(152) | 6.32<br>(161) | ø6.22<br>(ø158) | 4.80<br>(122) | 4.25<br>(108) | 500<br>(227)   |
|                    | 1.5 x 4<br>(1.1 x 4)  | EHYM1H-D616DAY-EP | 28.44<br>(723) | 6.16<br>(156) |               |                 | 498<br>(226) | 31.18<br>(792) | 6.16<br>(156) | 6.56<br>(167) | ø6.57<br>(ø167) | 5.04<br>(128) | 4.61<br>(117) | 509<br>(231)   |
| 2 x 4<br>(1.5 x 4) | EHYM2-D616DAY-EP      | 501<br>(227)      |                |               |               |                 | 512<br>(233) |                |               |               |                 |               |               |                |
| <b>D616DB</b>      | 1.5 x 4<br>(1.1 x 4)  | EHYM1H-D616DBY-EP | 29.00<br>(737) | 6.16<br>(156) | 3.82<br>(97)  | ø6.57<br>(ø167) | 502<br>(228) | 31.73<br>(806) | 6.16<br>(156) | 6.56<br>(167) | ø6.57<br>(ø167) | 5.04<br>(128) | 4.61<br>(117) | 514<br>(233)   |
|                    | 2 x 4<br>(1.5 x 4)    | EHYM2-D616DBY-EP  |                |               |               |                 | 505<br>(229) |                |               |               |                 |               | 517<br>(235)  |                |
|                    | 3 x 4<br>(2.2 x 4)    | EHYM3-D616DBY-EP  | 29.82<br>(758) | 6.71<br>(170) | 4.53<br>(115) | ø7.24<br>(ø184) | 521<br>(237) | 32.89<br>(836) | 6.71<br>(170) | 7.60<br>(193) | ø7.24<br>(ø184) | 5.43<br>(138) | 5.04<br>(128) | 538<br>(244)   |

| Frames             | HPxP<br>(kW x P)      | Model             | Without Brake  |               |               |                 |              | With Brake     |               |               |                 |               |               |                |
|--------------------|-----------------------|-------------------|----------------|---------------|---------------|-----------------|--------------|----------------|---------------|---------------|-----------------|---------------|---------------|----------------|
|                    |                       |                   | C              | AB            | ML            | MP [1]          | Wt           | C              | AB            | ML            | MP [1]          | MS            | MT            | Wt.<br>lb (kg) |
| <b>E617DA</b>      | 1/2 x 4<br>(0.4 x 4)  | EHYM05-E617DAY    | 25.41<br>(646) | 4.63<br>(118) | 2.32<br>(59)  | ø4.88<br>(ø124) | 626<br>(284) | 26.67<br>(678) | 4.63<br>(118) | 3.58<br>(91)  | ø4.88<br>(ø124) | 2.40<br>(61)  | -             | 629<br>(286)   |
|                    | 3/4 x 4<br>(0.55 x 4) | EHYM08-E617DAY    | 27.03<br>(687) | 5.67<br>(144) | 3.82<br>(97)  | ø5.94<br>(ø151) | 631<br>(286) | 28.72<br>(730) | 5.67<br>(144) | 5.51<br>(140) | ø5.94<br>(ø151) | 3.66<br>(93)  | 3.94<br>(100) | 637<br>(289)   |
|                    | 1/2 x 4<br>(0.4 x 4)  | EHYM05-E617DAY-AV |                |               |               |                 | 633<br>(288) |                |               |               |                 |               |               | 639<br>(290)   |
|                    | 3/4 x 4<br>(0.55 x 4) | EHYM08-E617DAY-AV | 28.33<br>(720) | 5.86<br>(149) | 3.94<br>(100) | ø6.30<br>(ø160) | 642<br>(291) | 30.77<br>(782) | 5.86<br>(149) | 6.38<br>(162) | ø6.30<br>(ø160) | 4.53<br>(115) | 4.29<br>(109) | 652<br>(296)   |
|                    | 1 x 4<br>(0.75 x 4)   | EHYM1-E617DAY-EP  | 28.76<br>(731) | 5.98<br>(152) | 3.82<br>(97)  | ø6.57<br>(ø167) | 647<br>(294) | 31.26<br>(794) | 5.98<br>(152) | 6.32<br>(161) | ø6.22<br>(ø158) | 4.80<br>(122) | 4.25<br>(108) | 656<br>(298)   |
|                    | 1.5 x 4<br>(1.1 x 4)  | EHYM1H-E617DAY-EP | 29.82<br>(758) | 6.16<br>(156) |               |                 | 654<br>(297) | 32.56<br>(827) | 6.16<br>(156) | 6.56<br>(167) | ø6.57<br>(ø167) | 5.04<br>(128) | 4.61<br>(117) | 666<br>(302)   |
| 2 x 4<br>(1.5 x 4) | EHYM2-E617DAY-EP      | 657<br>(298)      |                |               |               |                 | 668<br>(303) |                |               |               |                 |               |               |                |
| <b>E617DB</b>      | 1.5 x 4<br>(1.1 x 4)  | EHYM1H-E617DBY-EP | 30.37<br>(772) | 6.16<br>(156) | 4.53<br>(115) | ø6.57<br>(ø167) | 659<br>(299) | 33.11<br>(841) | 6.16<br>(156) | 6.56<br>(167) | ø6.57<br>(ø167) | 5.04<br>(128) | 4.61<br>(117) | 670<br>(304)   |
|                    | 2 x 4<br>(1.5 x 4)    | EHYM2-E617DBY-EP  |                |               |               |                 | 662<br>(300) |                |               |               |                 |               | 673<br>(306)  |                |
|                    | 3 x 4<br>(2.2 x 4)    | EHYM3-E617DBY-EP  | 31.20<br>(793) | 6.71<br>(170) | 4.53<br>(115) | ø7.24<br>(ø184) | 678<br>(308) | 34.27<br>(871) | 6.71<br>(170) | 7.60<br>(193) | ø7.24<br>(ø184) | 5.43<br>(138) | 5.04<br>(128) | 694<br>(315)   |
| <b>E617DC</b>      | 3 x 4<br>(2.2 x 4)    | EHYM3-E617DCY-EP  | 29.92<br>(760) | 7.34<br>(186) | 4.65<br>(118) | ø8.74<br>(ø222) | 684<br>(311) | 32.99<br>(838) | 7.34<br>(186) | 8.21<br>(209) | ø8.74<br>(ø222) | 6.02<br>(153) | 6.30<br>(160) | 701<br>(318)   |
|                    | 5 x 4<br>(3.7 x 4)    | EHYM5-E617DCY-EP  | 31.38<br>(797) | 7.34<br>(186) | 4.65<br>(118) | ø8.74<br>(ø222) | 710<br>(322) | 34.94<br>(888) | 7.34<br>(186) | 8.21<br>(209) | ø8.74<br>(ø222) | 6.02<br>(153) | 6.30<br>(160) | 734<br>(333)   |

Notes [1]: DM Dimension Symbol ø = Round Fan Cover  
DM Dimension Symbol = Square Fan Cover

Sumitomo Drive Technologies Cyclo® HBB

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Cyclo® HBB

Dimensions

# 4

# Options

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# Options: Shaft Diameters

Table 4.1 Available Keyed Hollow Bores (in.)

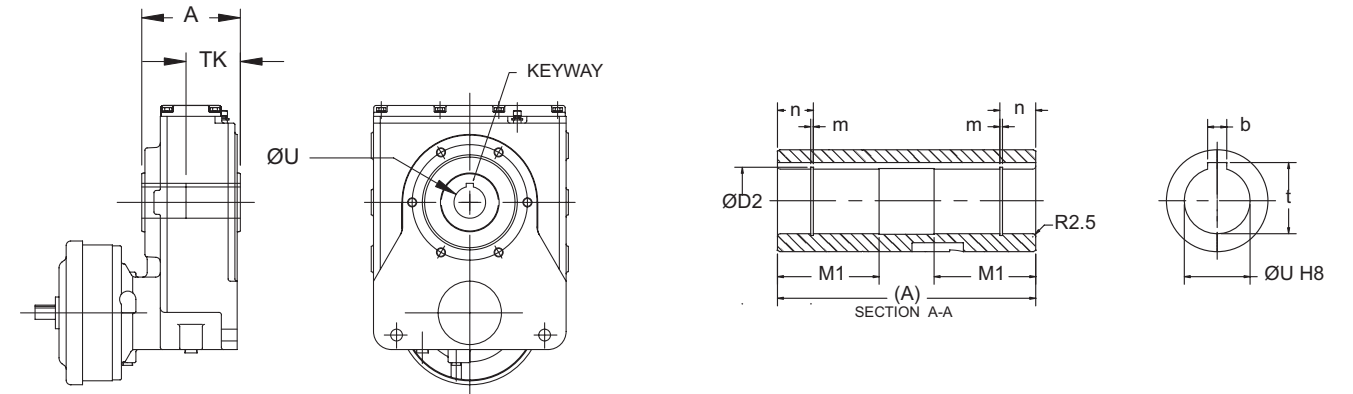
| Bore Size (mm.) | Frame Size |   |   |   |   |   |
|-----------------|------------|---|---|---|---|---|
|                 | Z          | A | B | C | D | E |
| 1 3/16          | ○          |   |   |   |   |   |
| 1 1/4           | ○          | ○ |   |   |   |   |
| 1 5/16          | ○          | ○ |   |   |   |   |
| 1 3/8           | ○          | ○ | ○ |   |   |   |
| 1 7/16          | ○          | ○ | ○ |   |   |   |
| 1 1/2           | ○          | ○ | ○ |   |   |   |
| 1 9/16          |            | ○ | ○ |   |   |   |
| 1 5/8           |            | ○ | ○ |   |   |   |
| 1 11/16         |            | ○ | ○ |   |   |   |
| 1 3/4           |            | ○ | ○ |   |   |   |
| 1 13/16         |            | ○ | ○ |   |   |   |
| 1 7/8           |            | ○ | ○ |   |   |   |
| 1 15/16         |            | ○ | ○ |   |   |   |
| 2               |            | ○ | ○ |   |   |   |
| 2 1/16          |            | ○ | ○ |   |   |   |
| 2 1/8           |            | ○ | ○ |   |   |   |
| 2 3/16          |            | ○ | ○ | ○ |   |   |
| 2 1/4           |            |   | ○ | ○ |   |   |
| 2 5/16          |            |   | ○ | ○ |   |   |
| 2 3/8           |            |   | ○ | ○ | ○ |   |
| 2 7/16          |            |   | ○ | ○ | ○ |   |
| 2 1/2           |            |   | ○ | ○ | ○ |   |
| 2 9/16          |            |   | ○ | ○ | ○ |   |
| 2 5/8           |            |   | ○ | ○ | ○ |   |
| 2 11/16         |            |   |   | ○ | ○ |   |
| 2 3/4           |            |   |   | ○ | ○ |   |
| 2 13/16         |            |   |   | ○ | ○ |   |
| 2 7/8           |            |   |   | ○ | ○ |   |
| 2 15/16         |            |   |   | ○ | ○ | ○ |
| 3               |            |   |   | ○ | ○ | ○ |
| 3 1/16          |            |   |   | ○ | ○ | ○ |
| 3 1/8           |            |   |   | ○ | ○ | ○ |
| 3 3/16          |            |   |   | ○ | ○ | ○ |
| 3 1/4           |            |   |   |   | ○ | ○ |
| 3 5/16          |            |   |   |   | ○ | ○ |
| 3 3/8           |            |   |   |   | ○ | ○ |
| 3 7/16          |            |   |   |   | ○ | ○ |
| 3 1/2           |            |   |   |   | ○ | ○ |
| 3 9/16          |            |   |   |   | ○ | ○ |
| 3 5/8           |            |   |   |   | ○ | ○ |
| 3 11/16         |            |   |   |   | ○ | ○ |
| 3 3/4           |            |   |   |   | ○ | ○ |
| 3 13/16         |            |   |   |   |   | ○ |
| 3 7/8           |            |   |   |   |   | ○ |
| 3 15/16         |            |   |   |   |   | ○ |
| 4               |            |   |   |   |   | ○ |

Table 4.2 Available Keyed Hollow Bores (mm)

| Bore Size (mm.) | Frame Size |   |   |   |   |   |
|-----------------|------------|---|---|---|---|---|
|                 | Z          | A | B | C | D | E |
| 30              | ○          |   |   |   |   |   |
| 35              | ○          |   |   |   |   |   |
| 40              | ○          |   |   |   |   |   |
| 45              |            | ○ |   |   |   |   |
| 50              |            | ○ |   |   |   |   |
| 55              |            | ○ | ○ |   |   |   |
| 60              |            |   | ○ | ○ |   |   |
| 65              |            |   | ○ | ○ |   |   |
| 70              |            |   |   | ○ | ○ |   |
| 75              |            |   |   | ○ | ○ |   |
| 80              |            |   |   | ○ | ○ | ○ |
| 85              |            |   |   |   | ○ | ○ |
| 90              |            |   |   |   | ○ | ○ |
| 95              |            |   |   |   |   | ○ |
| 100             |            |   |   |   |   | ○ |
| 105             |            |   |   |   |   | ○ |
| 110             |            |   |   |   |   | ○ |

Symbols: ○ Optional  
Consult factory for price and delivery.

## Keyed Hollow Bore

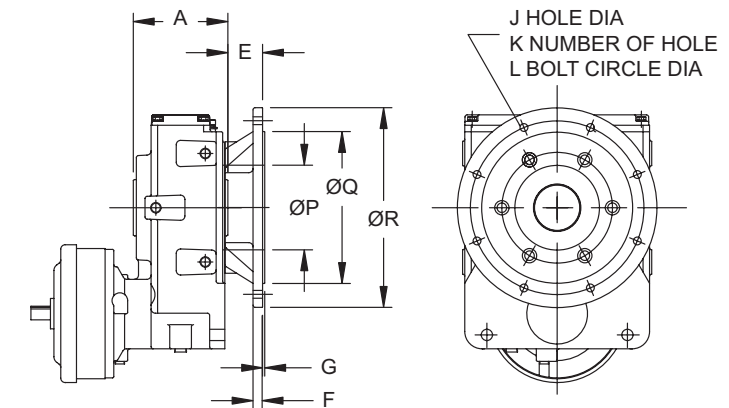


All dimensions are in millimeters.

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

\*Recommended minimum shaft engagement for shaft material 1045 steel with hardness Hb 225 - 265  
ØU shaft diameters are listed in tables 4.1 and 4.2.

## Output Flange



All dimensions are in inches (mm).

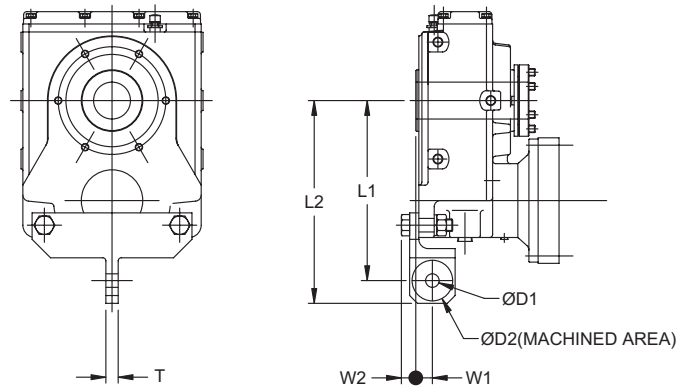
| Model | A          | E           | F         | G          | J         | K | L           | P           | Q           | R           |
|-------|------------|-------------|-----------|------------|-----------|---|-------------|-------------|-------------|-------------|
| Z     | 4.72 (120) | 1.24 (31.5) | 0.47 (12) | 0.14 (3.5) | 0.43 (11) | 4 | 6.50 (165)  | 3.54 (90)   | 5.12 (130)  | 7.87 (200)  |
| A     | 5.28 (134) | 1.30 (33)   | 0.59 (15) | 0.16 (4)   | 0.55 (14) |   | 8.46 (215)  | 4.72 (120)  | 7.09 (180)  | 10.00 (255) |
| B     | 6.30 (160) | 1.61 (41)   |           |            |           |   | 5.51 (140)  | 5.51 (140)  | 9.84 (254)  | 10.00 (254) |
| C     | 7.56 (192) | 2.28 (58)   | 0.79 (20) |            |           |   | 11.81 (300) | 6.50 (165)  | 9.84 (250)  | 13.98 (355) |
| D     | 8.58 (218) | 3.15 (80)   |           | 0.20 (5)   | 0.71 (18) | 8 | 7.68 (195)  | 7.68 (195)  | 13.78 (350) | 18.11 (460) |
| E     | 9.37 (238) | 3.15 (81)   | 0.87 (22) |            |           |   | 15.75 (400) | 12.60 (320) | 13.78 (350) | 17.72 (455) |

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

# Options

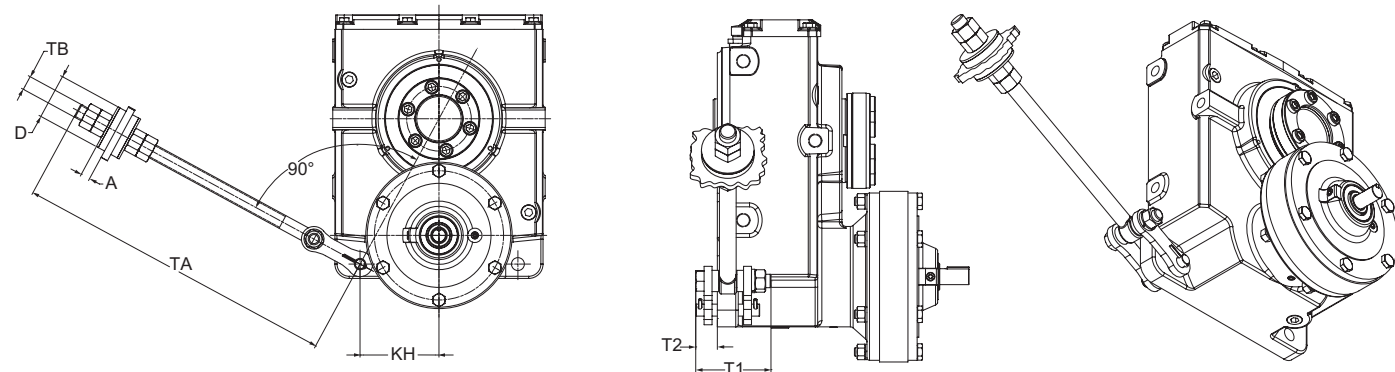
## Options

## "T" Type Torque Arm



All dimensions are in inches (mm).

| Model | L1             | L2             | W1           | W2           | T            | D1           | D2           | Bolt Size |
|-------|----------------|----------------|--------------|--------------|--------------|--------------|--------------|-----------|
| Z     | 8.94<br>(219)  | 9.92<br>(243)  | 0.71<br>(17) | 0.59<br>(14) | 0.47<br>(12) | 0.55<br>(14) | 1.70<br>(43) | M12       |
| A     | 9.39<br>(230)  | 10.57<br>(259) | 0.91<br>(22) | 0.67<br>(16) | 0.63<br>(15) | 0.71<br>(18) | 2.09<br>(53) | M16       |
| B     | 11.52<br>(282) | 12.97<br>(318) | 1.06<br>(26) | 0.75<br>(18) | 0.79<br>(19) | 0.87<br>(22) | 2.60<br>(66) | M20       |
| C     | 14.06<br>(344) | 15.83<br>(388) | 1.26<br>(31) | 1.02<br>(25) | 1.02<br>(25) | 1.02<br>(26) | 3.27<br>(83) | M24       |
| D     | 17.05<br>(418) | 18.82<br>(461) | 1.57<br>(38) | 1.18<br>(29) | 1.18<br>(29) |              |              |           |
| E     | 18.98<br>(465) | 21.14<br>(518) | 2.20<br>(54) | 1.50<br>(37) | 1.42<br>(35) | 1.30<br>(33) | 4.06<br>(33) | M30       |

Clevis Type Torque Arm<sup>[1]</sup>

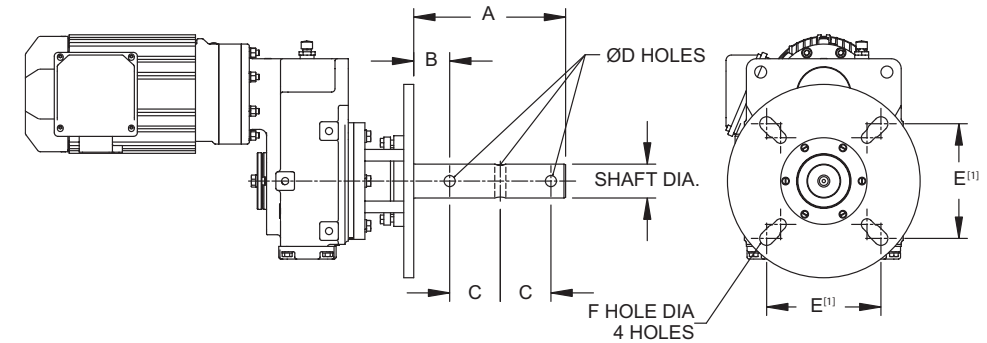
All dimensions are in inches (mm).

| Model | A            | D            | KH            | T1            | T2             | TA             | TB  |
|-------|--------------|--------------|---------------|---------------|----------------|----------------|-----|
| Z     | 0.63<br>(16) | 2.36<br>(60) | 3.54<br>(90)  | 2.40<br>(61)  | 0.67<br>(17)   | 17.50<br>(445) | M20 |
| A     |              |              | 3.74<br>(95)  | 3.54<br>(90)  | 1.02<br>(26)   | 17.87<br>(454) |     |
| B     |              |              | 4.33<br>(110) | 3.90<br>(99)  | 1.69<br>(43)   | 18.37<br>(467) |     |
| C     | 0.75<br>(19) | 3.54<br>(90) | 5.31<br>(135) | 3.90<br>(99)  | 1.87<br>(47.5) | 19.50<br>(495) | M24 |
| D     |              |              | 6.38<br>(162) | 5.04<br>(128) | 1.30<br>(33)   | 20.25<br>(514) |     |
| E     |              |              | 7.09<br>(180) | 5.04<br>(128) | 1.30<br>(33)   | 20.25<br>(514) |     |

Note: [1] These clevis type torque arm dimensions also appear in all Cyclo HBB reducer and gearmotor dimension drawings in Sections 2 and 3 of this catalog.

## Options

## Screw Conveyor Drive



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

All dimensions are in inches.

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

Note: [1] The dimension shown is E maximum.

| HBB Reducer Model | Drive Shaft Diameter (in.) | To Fit Screw Diameter (in.) | CEMA Steel Drive Shaft Assembly P/N | CEMA Stainless Drive Shaft Assembly P/N | Mounting Adapter Kit P/N |
|-------------------|----------------------------|-----------------------------|-------------------------------------|---|--------------------------|
| Z                 | 1-1/2                      | 6, 9                        | 117Z4108-C3                         | 117Z4108-S3                             | 117Z4050                 |
|                   | 2                          | 9, 12                       | 117Z4200-C3                         | 117Z4200-S3                             |                          |
|                   | 2-7/16                     | 12, 14                      | 117Z4207-C3                         | 117Z4207-S3                             |                          |
|                   | 3                          | 12-20                       | 117Z4300-C3                         | 117Z4300-S3                             |                          |
| A                 | 1-1/2                      | 6, 9                        | 116E4108-C3                         | 116E4108-S3                             | 117A40451                |
|                   | 2                          | 9, 12                       | 116E4200-C3                         | 116E4200-S3                             |                          |
|                   | 2-7/16                     | 12, 14                      | 116E4207-C3                         | 116E4207-S3                             |                          |
|                   | 3                          | 12-20                       | 116E4300-C3                         | 116E4300-S3                             |                          |
| B                 | 1-1/2                      | 6, 9                        | 116F4108-C3                         | 116F4108-S3                             | 117B4051                 |
|                   | 2                          | 9, 12                       | 116F4200-C3                         | 116F4200-S3                             |                          |
|                   | 2-7/16                     | 12, 14                      | 116F4207-C3                         | 116F4207-S3                             |                          |
|                   | 3                          | 12-20                       | 116F4300-C3                         | 116F4300-S3                             |                          |
| C                 | 2                          | 9, 12                       | 116G4200-C3                         | 116G4200-S3                             | 117C4050                 |
|                   | 2-7/16                     | 12, 14                      | 116G4207-C3                         | 116G4207-S3                             |                          |
|                   | 3                          | 12-20                       | 116G4300-C3                         | 116G4300-S3                             |                          |
|                   | 3-7/16                     | 18-24                       | 116G4307-C3                         | 116G4307-S3                             |                          |
| D                 | 2                          | 9, 12                       | 116H4200-C3                         | 116H4200-S3                             | 117D4050                 |
|                   | 2-7/16                     | 12, 14                      | 116H4207-C3                         | 116H4207-S3                             |                          |
|                   | 3                          | 12-20                       | 116H4300-C3                         | 116H4300-S3                             |                          |
|                   | 3-7/16                     | 18-24                       | 116H4307-C3                         | 116H4307-S3                             |                          |
| E                 | 2-7/16                     | 12, 14                      | 116J4207-C3                         | 116J4207-S3                             | 117E4050                 |
|                   | 3                          | 12-20                       | 116J4300-C3                         | 116J4300-S3                             |                          |
|                   | 3-7/16                     | 18-24                       | 116J4307-C3                         | 116J4307-S3                             |                          |

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

# Industry Packages

Two food-grade packages are available for use in machinery where there is incidental food contact. (SHIELD360 and Food-Grade)

|                              | Chemical Duty | SHIELD 360* | Food Grade | Low Temp | High Temp | Weather Proof IP54 | Wash-down IP55 |
|------------------------------|---------------|-------------|------------|----------|-----------|--------------------|----------------|
| <b>Motor Portion</b>         |               |             |            |          |           |                    |                |
| Gasketed Conduit Box         | X             | X           | X          |          |           | X                  | X              |
| V Ring Seal- Fan End         | X             | X           | X          |          |           | X                  | X              |
| Special Oil Seal             |               |             |            | X        | X         |                    |                |
| Special Windings             |               |             |            | X        | X         |                    |                |
| Sealer @ Joints              | X             | X           | X          |          |           | X                  | X              |
| Special Fan                  |               |             |            | X        | X         |                    |                |
| Epoxy Paint                  | X             |             |            |          |           |                    | X              |
| FDA Epoxy Paint              |               |             | X          |          |           |                    |                |
| FDA White Top Coat           |               | X           |            |          |           |                    |                |
| FDA Stainless Steel Top Coat |               |             |            |          |           |                    |                |
| Brake Cover and Seal         | X             | X           |            |          |           | X                  | X              |
| <b>Reducer Portion</b>       |               |             |            |          |           |                    |                |
| Severe Duty Breather         | X             | X           |            |          |           | X                  | X              |
| Epoxy Paint                  | X             |             |            |          |           |                    | X              |
| FDA Epoxy Paint              |               |             | X          |          |           |                    |                |
| FDA White Top Coat           |               | X           |            |          |           |                    |                |
| FDA Stainless Steel Top Coat |               |             |            |          |           |                    |                |
| FDA Grease Oil/Grease        |               | X           | X          |          |           |                    |                |
| Low Temp Grease / Oil        |               |             |            | X        |           |                    |                |
| High Temp Grease / Oil       |               |             |            |          | X         |                    |                |
| Double Output Seals          | X             | X           | X          | X        | X         | X                  | X              |
| High Temperature Seals       |               |             |            |          | X         |                    |                |
| Low Temperature Seals        |               |             |            | X        |           |                    |                |
| FKM AM & Chemical            | X             |             |            |          |           |                    |                |
| Stainless or Tesa Nameplate  | X             |             |            |          |           |                    |                |

Standard unit temperature range is -10 degrees C to 40 degrees C.

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.

# 5

# Technical Information

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Cyclo® HBB

Technical  
Information

# Exact Ratios

# Exact Ratios

## Exact Ratios for the Helical Buddybox can be calculated as follows:

For Nominal Ratios 11 and 18:1 - the first reduction gear stage is a true planetary configuration. The overall unit reduction ratio is the product of the planetary ratio with the helical stage reduction ratio. Reduction stage ratios can be determined through the gearing tooth count as follows:

$$\text{Calculated Ratio} = (\text{first stage ratio}) \times (\text{second stage ratio}) = \left( \frac{Z_{SUN} + Z_{RING}}{Z_{SUN}} \right) \left( \frac{Z_{GEAR}}{Z_{PINION}} \right)$$

where:  $Z_{SUN} \cdot Z_{RING}$  = Number of teeth in the sun gear and ring gear respectively

For Nominal Ratios greater than 18:1 - the primary reduction stage is the Cyclo. Cyclo ratios are exact thus tooth count information is not required for ratio calculation purposes. The overall reduction ratio is the product of the Cyclo ratio with the helical stage reduction ratio.

**Table 5.1 Helical Buddybox Tooth Counts and Ratios**

| Nominal Ratio | Frame Size | Gearing Tooth Count |                   |                     |                   | Calculated Ratio<br><i>i</i> <sub>OVERALL</sub> |
|---------------|------------|---------------------|-------------------|---------------------|-------------------|---|
|               |            | Planetary           |                   | Helical             |                   |   |
|               |            | Z <sub>SUN</sub>    | Z <sub>RING</sub> | Z <sub>PINION</sub> | Z <sub>GEAR</sub> |   |
| 11            | Z6090/5    |                     |                   |                     |                   |   |
|               | A6100/5    | 46                  | 92                | 14                  | 49                | 10.5000   |
|               | B6120/5    | 60                  | 120               | 14                  | 49                | 10.5000   |
|               | C6140/5    | 60                  | 120               | 14                  | 49                | 10.5000   |
|               | D6160/5    | 60                  | 126               | 15                  | 52                | 10.7467   |
|               | E6170/5    | 58                  | 122               | 15                  | 52                | 10.7586   |
| 18            | Z6090/5    |                     |                   |                     |                   |   |
|               | A6100/5    | 30                  | 114               | 14                  | 49                | 16.8000   |
|               | B6120/5    | 38                  | 148               | 14                  | 49                | 17.1316   |
|               | C6140/5    | 38                  | 148               | 14                  | 49                | 17.1316   |
|               | D6160/5    | 39                  | 159               | 15                  | 52                | 17.6000   |
|               | E6170/5    | 38                  | 154               | 15                  | 52                | 17.5158   |

| Nominal Ratio | Frame Size | Gearing Tooth Count       |                     |                   | Calculated Ratio<br><i>i</i> <sub>OVERALL</sub> |
|---------------|------------|---------------------------|---------------------|-------------------|---|
|               |            | Cyclo                     | Helical             |                   |   |
|               |            | <i>i</i> <sub>CYCLO</sub> | Z <sub>PINION</sub> | Z <sub>GEAR</sub> |   |
| 21            | Z6090/5    | 6                         | 15                  | 52                | 20.8000   |
|               | A6100/5    | 6                         | 14                  | 49                | 21.0000   |
|               | B6120/5    | 6                         | 14                  | 49                | 21.0000   |
|               | C6140/5    | 6                         | 14                  | 49                | 21.0000   |
|               | D6160/5    | 6                         | 15                  | 52                | 20.8000   |
|               | E6170/5    | 6                         | 15                  | 52                | 20.8000   |
| 28            | Z6090/5    | 8                         | 15                  | 52                | 27.7333   |
|               | A6100/5    | 8                         | 14                  | 49                | 28.0000   |
|               | B6120/5    | 8                         | 14                  | 49                | 28.0000   |
|               | C6140/5    | 8                         | 14                  | 49                | 28.0000   |
|               | D6160/5    | 8                         | 15                  | 52                | 27.7333   |
|               | E6170/5    | 8                         | 15                  | 52                | 27.7333   |

**Table 5.1 Helical Buddybox Tooth Counts and Ratios (continued)**

| Nominal Ratio | Frame Size | Gearing Tooth Count       |                     |                   | Calculated Ratio<br><i>i</i> <sub>OVERALL</sub> |
|---------------|------------|---------------------------|---------------------|-------------------|---|
|               |            | Cyclo                     | Helical             |                   |   |
|               |            | <i>i</i> <sub>CYCLO</sub> | Z <sub>PINION</sub> | Z <sub>GEAR</sub> |   |
| 39            | Z6090/5    | 11                        | 15                  | 52                | 38.1333   |
|               | A6100/5    | 11                        | 14                  | 49                | 38.5000   |
|               | B6120/5    | 11                        | 14                  | 49                | 38.5000   |
|               | C6140/5    | 11                        | 14                  | 49                | 38.5000   |
|               | D6160/5    | 11                        | 15                  | 52                | 38.1333   |
| E6170/5       | 11         | 15                        | 52                  | 38.1333           |   |
| 46            | Z6090/5    | 13                        | 15                  | 52                | 45.0667   |
|               | A6100/5    | 13                        | 14                  | 49                | 45.5000   |
|               | B6120/5    | 13                        | 14                  | 49                | 45.5000   |
|               | C6140/5    | 13                        | 14                  | 49                | 45.5000   |
|               | D6160/5    | 13                        | 15                  | 52                | 45.0667   |
| E6170/5       | 13         | 15                        | 52                  | 45.0667           |   |
| 53            | Z6090/5    | 15                        | 15                  | 52                | 52.0000   |
|               | A6100/5    | 15                        | 14                  | 49                | 52.5000   |
|               | B6120/5    | 15                        | 14                  | 49                | 52.5000   |
|               | C6140/5    | 15                        | 14                  | 49                | 52.5000   |
|               | D6160/5    | 15                        | 15                  | 52                | 52.0000   |
| E6170/5       | 15         | 15                        | 52                  | 52.0000           |   |
| 60            | Z6090/5    | 17                        | 15                  | 52                | 58.9333   |
|               | A6100/5    | 17                        | 14                  | 49                | 59.5000   |
|               | B6120/5    | 17                        | 14                  | 49                | 59.5000   |
|               | C6140/5    | 17                        | 14                  | 49                | 59.5000   |
|               | D6160/5    | 17                        | 15                  | 52                | 58.9333   |
| E6170/5       | 17         | 15                        | 52                  | 58.9333           |   |
| 74            | Z6090/5    | 21                        | 15                  | 52                | 72.8000   |
|               | A6100/5    | 21                        | 14                  | 49                | 73.5000   |
|               | B6120/5    | 21                        | 14                  | 49                | 73.5000   |
|               | C6140/5    | 21                        | 14                  | 49                | 73.5000   |
|               | D6160/5    | 21                        | 15                  | 52                | 72.8000   |
| E6170/5       | 21         | 15                        | 52                  | 72.8000           |   |
| 88            | Z6090/5    | 25                        | 15                  | 52                | 86.6667   |
|               | A6100/5    | 25                        | 14                  | 49                | 87.5000   |
|               | B6120/5    | 25                        | 14                  | 49                | 87.5000   |
|               | C6140/5    | 25                        | 14                  | 49                | 87.5000   |
|               | D6160/5    | 25                        | 15                  | 52                | 86.6667   |
| E6170/5       | 25         | 15                        | 52                  | 86.6667           |   |
| 102           | Z6090/5    | 29                        | 15                  | 52                | 100.5333  |
|               | A6100/5    | 29                        | 14                  | 49                | 101.5000  |
|               | B6120/5    | 29                        | 14                  | 49                | 101.5000  |
|               | C6140/5    | 29                        | 14                  | 49                | 101.5000  |
|               | D6160/5    | 29                        | 15                  | 52                | 100.5333  |
| E6170/5       | 29         | 15                        | 52                  | 100.5333          |   |
| 123           | Z6090/5    | 35                        | 15                  | 52                | 121.3333  |
|               | A6100/5    | 35                        | 14                  | 49                | 122.5000  |
|               | B6120/5    | 35                        | 14                  | 49                | 122.5000  |
|               | C6140/5    | 35                        | 14                  | 49                | 122.5000  |
|               | D6160/5    | 35                        | 15                  | 52                | 121.3333  |
| E6170/5       | 35         | 15                        | 52                  | 121.3333          |   |

Technical Information

Technical Information

# Exact Ratios

**Table 5.1 Helical Buddybox Tooth Counts and Ratios (continued)**

| Nominal Ratio | Frame Size | Gearing Tooth Count |              |            | Calculated Ratio<br>$i_{OVERALL}$ |
|---------------|------------|---------------------|--------------|------------|-----------------------------------|
|               |            | Cyclo               | Helical      |            |                                   |
|               |            | $i_{CYCLO}$         | $Z_{PINION}$ | $Z_{GEAR}$ |                                   |
| 151           | Z6090/5    | 43                  | 15           | 52         | 149.0667                          |
|               | A6100/5    | 43                  | 14           | 49         | 150.5000                          |
|               | B6120/5    | 43                  | 14           | 49         | 150.5000                          |
|               | C6140/5    | 43                  | 14           | 49         | 150.5000                          |
|               | D6160/5    | 43                  | 15           | 52         | 149.0667                          |
|               | E6170/5    | 43                  | 15           | 52         | 149.0667                          |
| 179           | Z6090/5    | 51                  | 15           | 52         | 176.8000                          |
|               | A6100/5    | 51                  | 14           | 49         | 178.5000                          |
|               | B6120/5    | 51                  | 14           | 49         | 178.5000                          |
|               | C6140/5    | 51                  | 14           | 49         | 178.5000                          |
|               | D6160/5    | 51                  | 15           | 52         | 176.8000                          |
|               | E6170/5    | 51                  | 15           | 52         | 176.8000                          |
| 207           | Z6090/5    | 59                  | 15           | 52         | 204.5333                          |
|               | A6100/5    | 59                  | 14           | 49         | 206.5000                          |
|               | B6120/5    | 59                  | 14           | 49         | 206.5000                          |
|               | C6140/5    | 59                  | 14           | 49         | 206.5000                          |
|               | D6160/5    | 59                  | 15           | 52         | 204.5333                          |
|               | E6170/5    | 59                  | 15           | 52         | 204.5333                          |
| 249           | Z6090/5    | 71                  | 15           | 52         | 246.1333                          |
|               | A6100/5    | 71                  | 14           | 49         | 248.5000                          |
|               | B6120/5    | 71                  | 14           | 49         | 248.5000                          |
|               | C6140/5    | 71                  | 14           | 49         | 248.5000                          |
|               | D6160/5    | 71                  | 15           | 52         | 246.1333                          |
|               | E6170/5    | 71                  | 15           | 52         | 246.1333                          |
| 305           | Z6090/5    | 87                  | 15           | 52         | 301.6000                          |
|               | A6100/5    | 87                  | 14           | 49         | 304.5000                          |
|               | B6120/5    | 87                  | 14           | 49         | 304.5000                          |
|               | C6140/5    | 87                  | 14           | 49         | 304.5000                          |
|               | D6160/5    | 87                  | 15           | 52         | 301.6000                          |
|               | E6170/5    | 87                  | 15           | 52         | 301.6000                          |
| 417           | Z6090/5    | 119                 | 15           | 52         | 412.5333                          |
|               | A6100/5    | 119                 | 14           | 49         | 416.5000                          |
|               | B6120/5    |                     |              |            |                                   |
|               | C6140/5    |                     |              |            |                                   |
|               | D6160/5    |                     |              |            |                                   |
|               | E6170/5    |                     |              |            |                                   |

# Exact Ratios

**Table 5.2 Gearing Tooth Count**

| Nominal Ratio | Frame Size | Gearing Tooth Count |              |           |            | Exact Ratio |
|---------------|------------|---------------------|--------------|-----------|------------|-------------|
|               |            | Helical             |              | Planetary |            |             |
|               |            | $Z_{GEAR}$          | $Z_{PINION}$ | $Z_{SUN}$ | $Z_{RING}$ |             |
| 11            | Z6090/5    |                     |              |           |            |             |
|               | A6100/5    | 14                  | 49           | 46        | 92         | 10.5000     |
|               | B6120/5    | 14                  | 49           | 60        | 120        | 10.5000     |
|               | C6140/5    | 14                  | 49           | 60        | 120        | 10.5000     |
|               | D6160/5    | 15                  | 52           | 60        | 126        | 10.7467     |
|               | E6170/5    | 15                  | 52           | 58        | 122        | 10.7586     |
|               | 18         | Z6090/5             |              |           |            |             |
| A6100/5       |            | 14                  | 49           | 30        | 114        | 16.8000     |
| B6120/5       |            | 14                  | 49           | 38        | 148        | 17.1316     |
| C6140/5       |            | 14                  | 49           | 38        | 148        | 17.1316     |
| D6160/5       |            | 15                  | 52           | 39        | 159        | 17.6000     |
| E6170/5       |            | 15                  | 52           | 38        | 154        | 17.5158     |

## Single Reduction

**Table 5.3 Single Reduction Exact Ratios**

|          | 21    | 28    | 39    | 46    | 53    | 60    | 74    | 88    | 102    | 123    | 151    | 179    | 207    | 249    | 305    | 417    |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|
| <b>Z</b> | 20.80 | 27.73 | 38.13 | 45.07 | 52.00 | 58.93 | 72.80 | 86.67 | 100.53 | 121.33 | 149.07 | 176.80 | 204.53 | 246.13 | 301.60 | 412.53 |
| <b>A</b> | 21.00 | 28.00 | 38.50 | 45.50 | 52.50 | 59.50 | 73.50 | 87.50 | 101.50 | 122.50 | 150.50 | 178.50 | 206.50 | 248.50 | 304.50 | 416.50 |
| <b>B</b> | 21.00 | 28.00 | 38.50 | 45.50 | 52.50 | 59.50 | 73.50 | 87.50 | 101.50 | 122.50 | 150.50 | 178.50 | 206.50 | 248.50 | 304.50 | -      |
| <b>C</b> | 21.00 | 28.00 | 38.50 | 45.50 | 52.50 | 59.50 | 73.50 | 87.50 | 101.50 | 122.50 | 150.50 | 178.50 | 206.50 | 248.50 | 304.50 | -      |
| <b>D</b> | 20.80 | 27.73 | 38.13 | 45.07 | 52.00 | 58.93 | 72.80 | 86.67 | 100.53 | 121.33 | 149.07 | 176.80 | 204.53 | 246.13 | 301.60 | -      |
| <b>E</b> | 20.80 | 27.73 | 38.13 | 45.07 | 52.00 | 58.93 | 72.80 | 86.67 | 100.53 | 121.33 | 149.07 | 176.80 | 204.53 | 246.13 | 301.60 | -      |

# Exact Ratios continued

## Double Reduction

Table 5.4 Double Reduction Exact Ratios

|          | 364    | 424    | 501    | 578    | 683    | 809    | 956    | 1117    | 1320    | 1656    | 1957    | 2272    | 2559    |
|----------|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------|---------|---------|---------|
| <b>Z</b> | 360.53 | 419.47 | 495.73 | 572.00 | 676.00 | 800.80 | 946.40 | 1105.87 | 1306.93 | 1639.73 | 1937.87 | 2249.87 | 2534.13 |
| <b>A</b> | 364.00 | 423.50 | 500.50 | 577.50 | 682.50 | 808.50 | 955.50 | 1116.50 | 1319.50 | 1655.50 | 1956.50 | 2271.50 | 2558.50 |
| <b>B</b> | 364.00 | 423.50 | 500.50 | 577.50 | 682.50 | 808.50 | 955.50 | 1116.50 | 1319.50 | 1655.50 | 1956.50 | 2271.50 | 2558.50 |
| <b>C</b> | 364.00 | 423.50 | 500.50 | 577.50 | 682.50 | 808.50 | 955.50 | 1116.50 | 1319.50 | 1655.50 | 1956.50 | 2271.50 | 2558.50 |
| <b>D</b> | 360.53 | 419.47 | 495.73 | 572.00 | 676.00 | 800.80 | 946.40 | 1105.87 | 1306.93 | 1639.73 | 1937.87 | 2249.87 | 2534.13 |
| <b>E</b> | 360.53 | 419.47 | 495.73 | 572.00 | 676.00 | 800.80 | 946.40 | 1105.87 | 1306.93 | 1639.73 | 1937.87 | 2249.87 | 2534.13 |

|          | 2944    | 3511    | 4365    | 5177    | 6472    | 7228    | 8880    | 10658    | 12184    | 15530    | 17966    | 21620    | 26492    |
|----------|---------|---------|---------|---------|---------|---------|---------|----------|----------|----------|----------|----------|----------|
| <b>Z</b> | 2915.47 | 3477.07 | 4322.93 | 5127.20 | 6409.87 | 7158.67 | 8794.93 | 10556.00 | 12067.47 | 15381.60 | 17794.40 | -        | -        |
| <b>A</b> | 2943.50 | 3510.50 | 4364.50 | 5176.50 | 6471.50 | 7227.50 | 8879.50 | 10657.50 | 12183.50 | 15529.50 | 17965.50 | -        | -        |
| <b>B</b> | 2943.50 | 3510.50 | 4364.50 | 5176.50 | 6471.50 | 7227.50 | 8879.50 | 10657.50 | 12183.50 | 15529.50 | 17965.50 | 21619.50 | 26491.50 |
| <b>C</b> | 2943.50 | 3510.50 | 4364.50 | 5176.50 | 6471.50 | 7227.50 | 8879.50 | 10657.50 | 12183.50 | 15529.50 | 17965.50 | 21619.50 | 26491.50 |
| <b>D</b> | 2915.47 | 3477.07 | 4322.93 | 5127.20 | 6409.87 | 7158.67 | 8794.93 | 10556.00 | 12067.47 | 15381.60 | 17794.40 | 21413.60 | 26239.20 |
| <b>E</b> | 2915.47 | 3477.07 | 4322.93 | 5127.20 | 6409.87 | 7158.67 | 8794.93 | 10556.00 | 12067.47 | 15381.60 | 17794.40 | 21413.60 | 26239.20 |

# Special Load Guidelines Overhung Load

## Reducer/Gearmotor Output Shaft Allowable Overhung Load

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® HBB Speed Reducer will allow the overhung load. Calculate the overhung load using the following formulas:

1) Radial load,  $P_r$

$$P_r = \frac{TI}{R} \leq \frac{Pro}{Lf \cdot Cf \cdot Sf} \quad (\text{lbs, } N)$$

2) Axial Load,  $P_a$

$$P_a \leq \frac{Pao}{Cf \cdot Sf} \quad (\text{lbs, } N)$$

3) When there is combined radial and axial loading on the output shaft

$$\left( \frac{P_r + P_a}{Pro + Pao} \right) \cdot Cf \cdot Sf \leq 1 \quad (\text{lbs, } N)$$

LEGEND

- Pr** = Actual radial load (lbs, *N*)
- TI** = Actual transmitted torque on slow speed shaft of reducer (lb-in, *N·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 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 5.5 Load Connection Factor (Cf)

| Type of Connection      |            | Cf   |
|-------------------------|------------|------|
| General Purpose Chain   | Single Row | 1.00 |
|                         | Double Row | 1.25 |
| Machined Gear or Pinion |            | 1.25 |
| Synchronous Belt        |            | 1.50 |
| V-Belt                  |            | 1.50 |
| Flat Belt               |            | 2.50 |

Table 5.6 Shock Factor (Fs)

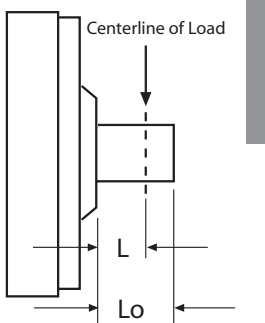
Force Units: lbs, (N)

| Shock Factor   | Fs  |
|----------------|-----|
| No Shock       | 1.0 |
| Moderate Shock | 1.3 |
| Heavy Shock    | 1.6 |

Table 5.7 Input Shaft Overhung Load Location Factor, Lf

| Model               | L (inches)     |                |                 |                |                 |                |                 |                |                |                |
|---------------------|----------------|----------------|-----------------|----------------|-----------------|----------------|-----------------|----------------|----------------|----------------|
|                     | 0.25<br>(6.35) | 0.50<br>(12.7) | 0.75<br>(19.05) | 1.00<br>(25.4) | 1.25<br>(31.75) | 1.50<br>(38.1) | 1.75<br>(44.45) | 2.00<br>(50.8) | 2.50<br>(63.5) | 3.00<br>(76.2) |
| <b>Z6090, Z6095</b> | 0.90           | 1.09           | 1.52            | 2.03           |                 |                |                 |                |                |                |
| <b>A6100, A6105</b> | 0.93           | 1.09           | 1.52            | 2.03           |                 |                |                 |                |                |                |
| <b>B6120, B6125</b> |                | 0.87           | 1.10            | 1.43           | 1.77            | 2.12           |                 |                |                |                |
| <b>C6140, C6145</b> |                | 0.84           | 0.98            | 1.25           | 1.53            | 1.83           | 2.11            |                |                |                |
| <b>D6160, D6165</b> |                | 0.94           | 0.97            | 1.06           | 1.22            | 1.36           | 1.51            | 1.66           |                |                |
| <b>E6170, E6175</b> |                |                | 0.95            | 0.99           | 1.09            | 1.23           | 1.38            | 1.51           | 1.79           | 2.08           |

Figure 5.1



# Special Load Guidelines Output Shaft Overhung Load continued

# Special Load Guidelines Inertia continued

**Table 5.8 Input Shaft Allowable Overhung Load (Lf, Cf, Fs =1)**

Unit: lbs.

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

**Table 5.9 Moment of Inertia on Motor Shaft of N-Frame Integral Motor**

Units: lb-inch<sup>2</sup> ( $\times 10^{-4}$  kg-m<sup>2</sup>)

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

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

# Special Load Guidelines Inertia continued

# Lubrication

**Table 5.10 Moment of Inertia on Motor Shaft of N-Frame Integral Motor** Units: lb-inch<sup>2</sup> (x 10<sup>-4</sup> kg-m<sup>2</sup>)

| 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<br>(23.5)           | 8.82<br>(25.8) | 11.5<br>(33.7)           | 13.5<br>(39.6) | 13.4<br>(39.1)         | 15.4<br>(45) | 30.1<br>(88)           | 33.4<br>(97.8) | 66.3<br>(194)            | 71.4<br>(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<br>(291)            | 105<br>(306)   | 140<br>(409)             | 154<br>(450)   | 192<br>(561)           | 206<br>(602) | 340<br>(995)           | 393<br>(1150)  | 875<br>(2560)            | 926<br>(2710) |
| 30 HP (22 kW) x 4 Pole   |                | 40 HP (30 kW) x 4 Pole   |                |                        |              |                        |                |                          |               |
| Standard                 | w/ Brake       | Standard                 | w/ Brake       |                        |              |                        |                |                          |               |
| 875<br>(2560)            | 926<br>(2710)  | 1110<br>(3260)           | 1170<br>(3420) |                        |              |                        |                |                          |               |

**Table 5.11 Moment of Inertia on Motor Shaft of V-Frame Standard Integral Motor** Units: lb-inch<sup>2</sup> (x 10<sup>-4</sup> kg-m<sup>2</sup>)

| 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<br>(3.25)           | 1.2<br>(3.5) | 1.71<br>(5)              | 1.88<br>(5.5) | 1.71<br>(5)               | 1.88<br>(5.5) | 2.22<br>(6.5)            | 2.31<br>(6.75) | 3.45<br>(10.1)            | 3.79<br>(11.1) |

**Table 5.12 Moment of Inertia on Motor Shaft of V-Frame AF Integral Motor** Units: lb-inch<sup>2</sup> (x 10<sup>-4</sup> kg-m<sup>2</sup>)

| 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<br>(5)              | 1.88<br>(5.5) | 2.22<br>(6.5)            | 2.31<br>(6.75) | 2.22<br>(6.5)             | 2.31<br>(6.75) | 4.1<br>(12)              | 4.44<br>(13) | 6.32<br>(18.5)            | 7.11<br>(20.8) |

## Special Load Guidelines Misc.

### Excessive Overloads

Cyclo® HBB Speed Reducers provide 300% 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 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..

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

Before operating, fill the unit with the appropriate amount of the correct lubricant for the mounting position (see Table 5.13). When operating in winter or other relatively low ambient temperatures, use the lower viscosity oil specified for each ambient temperature range. Please consult the factory if the unit will be operated consistently in ambient temperatures other than 32°F–104°F.

**Table 5.13 Lubrication Type**

| Unit Size | Output (Helical Gear Portion) | Input (Cyclo® Portion) |                   |                     |
|-----------|-------------------------------|------------------------|-------------------|---------------------|
|           |                               | Motor Horizontal       | Motor Vertical Up | Motor Vertical Down |
| Z609      | Oil                           | Grease                 | Grease            | Grease              |
| A610      |                               |                        |                   |                     |
| B612      |                               |                        |                   |                     |
| C614      |                               |                        |                   |                     |
| D616      |                               |                        |                   |                     |
| E617      | Oil                           |                        |                   |                     |

**Table 5.14 Approved Oils**

|                   |                 |                 |                       |                |                 |
|-------------------|-----------------|-----------------|-----------------------|----------------|-----------------|
| <b>ExxonMobil</b> | Spartan EP      | <b>Idemitsu</b> | Daphne Super Gear Oil | <b>BP</b>      | Energol GR-XP   |
| <b>Mobil</b>      | Mobilgear 600XP | <b>Kluber</b>   | Kluberoll GEM1        | <b>Castrol</b> | Alpha SP        |
| <b>Shell</b>      | Omala S2 G      | <b>Caltex</b>   | Meropa                | <b>Gulf</b>    | EP Lubricant HD |

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

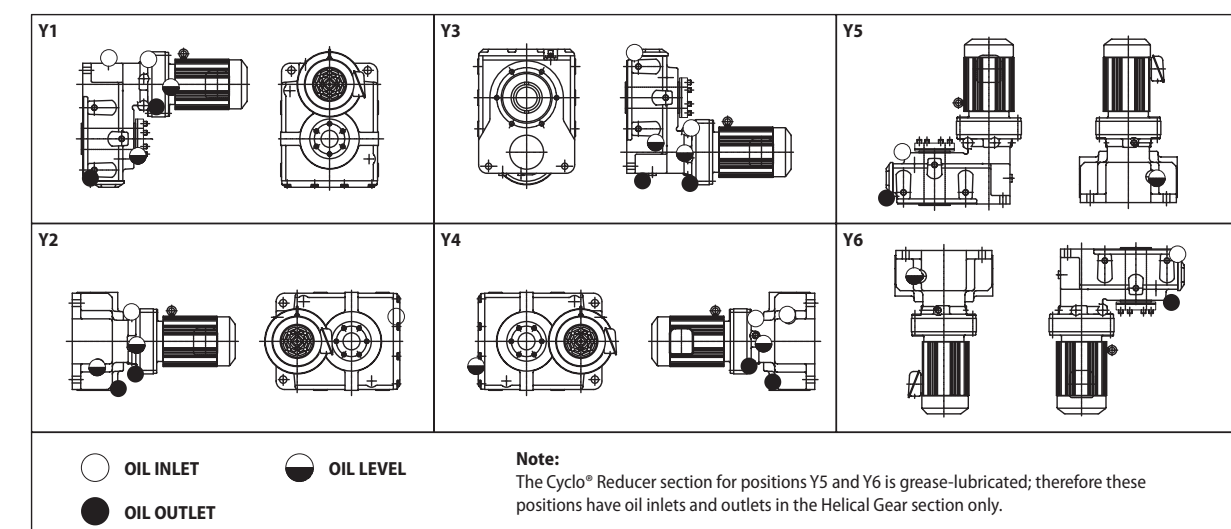
Adding grease prior to initial start-up is not required. If grease must be replenished or changed (see Grease Lubrication section), avoid using greases other than those shown in Table 5.14. Please consult the factory when the units will be used in widely fluctuating temperatures, ambient temperatures other than those specified in Table 5.15, 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.

| Ambient Temperature |     |    |         |    |    |             |     |
|---------------------|-----|----|---------|----|----|-------------|-----|
| °F                  | 14  | 32 | 50      | 68 | 86 | 104         | 122 |
| °C                  | -10 | 0  | 10      | 20 | 30 | 40          | 50  |
| ISO VG              | 68  |    | 100/150 |    |    | 220/320/460 |     |

**Table 5.15 Approved Greases**

| Ambient Temperature |           | Cyclo (Input) Portion |                        |
|---------------------|-----------|-----------------------|------------------------|
| °F                  | °C        | Ratios 11, 18:1       | Ratios 21:1 and higher |
| 14 to 122           | -10 to 50 | Shell Gadus S2 V220 0 | Exxon Unirex N2        |

**Figure 5.2 Oil Plug Locations**



Technical Information

Technical Information

# Lubrication continued

# North American Motor Specifications

## Oil Quantities

Table 5.16 Oil Fill Quantities

\*G = Grease

| Model |        | Y1   |      | Y2   |      | Y3   |      | Y4   |      | Y5   |      | Y6   |      |
|-------|--------|------|------|------|------|------|------|------|------|------|------|------|------|
|       |        | Ltr. | Gal. | Ltr. | Gal. | Ltr. | Gal. | Ltr. | Gal. | Ltr. | Gal. | Ltr. | Gal. |
| Z609  | Output | 0.5  | 0.13 | 0.5  | 0.13 | 0.5  | 0.13 | 0.5  | 0.13 | 1.4  | 0.37 | 0.8  | 0.21 |
|       | Input  | G    | G    | G    | G    | G    | G    | G    | G    | G    | G    | G    | G    |
| A610  | Output | 0.7  | 0.18 | 0.8  | 0.21 | 0.7  | 0.18 | 0.7  | 0.18 | 1.6  | 0.42 | 1.1  | 0.29 |
|       | Input  | G    | G    | G    | G    | G    | G    | G    | G    | G    | G    | G    | G    |
| B612  | Output | 1.4  | 0.37 | 1.6  | 0.42 | 1.2  | 0.32 | 1.6  | 0.42 | 3.3  | 0.87 | 2.2  | 0.58 |
|       | Input  | G    | G    | G    | G    | G    | G    | G    | G    | G    | G    | G    | G    |
| C614  | Output | 1.8  | 0.48 | 2.3  | 0.61 | 1.6  | 0.42 | 2.3  | 0.61 | 5.2  | 1.37 | 3.4  | 0.9  |
|       | Input  | 0.3  | 0.08 | 0.3  | 0.08 | 0.3  | 0.08 | 0.3  | 0.08 | G    | G    | G    | G    |
| D616  | Output | 4.4  | 1.16 | 4.7  | 1.24 | 3.4  | 0.90 | 4.6  | 1.22 | 9.6  | 2.54 | 7.4  | 1.95 |
|       | Input  | 0.6  | 0.16 | 0.6  | 0.16 | 0.6  | 0.16 | 0.6  | 0.16 | G    | G    | G    | G    |
| E617  | Output | 5.6  | 1.48 | 6.8  | 1.80 | 4.1  | 1.08 | 6.7  | 1.77 | 13   | 3.43 | 10.1 | 2.67 |
|       | Input  | 0.9  | 0.24 | 0.9  | 0.24 | 0.9  | 0.24 | 0.9  | 0.24 | G    | G    | G    | G    |

**Oil lubricated units** are shipped without oil. Prior to initial start-up, the unit must be filled with the correct amount of oil (see Table 5.16). For those units where both the gear and Cyclo® portions are oil lubricated, the oil must be filled in two separate locations, one on the gear housing and one on the Cyclo® housing.

The helical (output) portion of all **double reduction units** is oil lubricated and must be filled by the customer with the correct amount of oil (see Table 5.16) prior to initial start-up.

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

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

## Grease Replenishment and Change Interval

A. On single reduction Cyclo® Helical Buddybox (Cyclo® HBB) sizes Z6090/95, A6100/05 and B6120/25, the Cyclo® portion is grease lubricated as standard and therefore maintenance free. Consult the operations and maintenance manual for the grease change interval.

B. When mounting Cyclo® HBB sizes C6140/45, D6160/65 and E6170/75 in the Y5 and Y6 positions, please consult the maintenance and operations manual for the proper grease replenishment and change interval for the Cyclo® portion.

## Oil Replenishment and Change Interval

A. Maintain proper oil levels at all times.

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

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

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

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

| Feature                     | All Motors   |
|-----------------------------|--|
| Motor Type                  | 3-Phase AC Asynchronous Squirrel Cage Induction Motor  |
| Motor Standard              | NEMA   |
| Power Range                 | 1/8 through 40 HP<br>(0.1 through 30 kW)   |
| Number of Poles             | 4 Poles  |
| Motor Power Supply          | 230 / 460 Volts, 60 Hz, 3 phase<br>575 Volts, 60 Hz, 3 phase                                 |
| Synchronous RPM (Slip)      | 1800 RPM (20 - 100 RPM - See Motor Nameplate)  |
| NEMA Design                 | A or B (See Motor Nameplate)   |
| Efficiency                  | 1/8 through 3/4 HP (Standard Efficiency - IE1)<br>1 through 40 HP (Premium Efficiency - IE3) |
| Motor Temperature Rise      | Class B  |
| Motor Insulation            | Class F Tropicalized   |
| Service Factor              | Sinusoidal Utility Power: 1.15, Inverter Power: 1.0  |
| Time Rating                 | Continuous   |
| Frame Material              | Diecast Aluminum   |
| Enclosure Type              | 1/8 HP - TENV, 1/4 HP - 40 HP - TEFC   |
| Enclosure Rating            | IP55 Outdoor and Indoor<br>Neoprene v-ring, gaskets and slinger shaft seals                  |
| Conduit Box                 | Outdoor Gasketed Oversized Diecast Aluminum, NPT Conduit Thread<br>(Optional Indoor Steel)   |
| Certification               | UL Recognition, CSA Certification, CE Marked   |
| Inverter Compatibility      | Motor Insulation MG1 Part 31 Compliant   |
| Constant Torque Speed Range | See Below  |
| Overspeed Operation         | Up to 120 Hz<br><b>Check Reducer and Driven Equipment Overspeed Rating!</b>                  |
| Motor Bearings              | Double shielded, Deep Groove, Sealed for Life,<br>CM Reduced Clearance Ball Bearings         |
| Fan Guard (TEFC)            | Steel  |
| Fan (TEFC)                  | 1/8 - 3/4 HP (PBT) 1 - 40 HP (Nylon Resin - PA66 with 30% Glass Fiber)                       |
| Lifting Provisions          | (1 - 40 HP) Eyebolt  |

| Feature                        | Non-Brake Motor         | Brake Motor   |
|--------------------------------|-------------------------|---|
| Constant Torque Speed Range    | See page 3.8 for table. | See page 3.8 for table.   |
| 208V Motor Power               | Usable on 208V Network  | Motor usable on 208V network but supply 230V for brake control                    |
| Brake Power Supply             | -----                   | 230 / 460 Volts, 60 Hz, 1 phase<br>575 Volts, 60 Hz, 1 phase                      |
| Brake Insulation               | -----                   | Class F   |
| Manual Brake Release Mechanism | -----                   | 1/8 - 1/2 HP - no release mechanism<br>3/4 - 40 HP - one-touch lever type release |

Cyclo® HBB

Cyclo® HBB

Technical Information

Technical Information

# Motor Optional Conduit Box Location

# Motor

**NOTE:** Default Terminal Box position for Gearmotors is N33/ N3B for all mounting positions (Y1 thru Y6).  
 ← : The arrow indicates direction of lead wire out of conduit box.

## Standard Mounting Direction of Terminal Box

The terminal box mounting position can be rotated in increments of 90 degrees (N33, N34, N35, N36).  
 The terminal box cable entry port can also be rotated in increments of 90 degrees (N3A, N3B, N3C, N3D).  
 Specify the terminal box mounting configuration based on figures shown below.  
 The conduit box orientation is shown relative to HBB casing. For orientation of the HBB, please see page 1.7.

**Figure 5.3 Terminal Box Mounting Options for Y1 Position**

| Cable Port Direction | Terminal Box Mounting Position (As viewed from Motor Fan Side) |   |                |                   |
|----------------------|--|---|----------------|-------------------|
|                      | Left Side (N33)<br>(Viewed from Output Shaft Side)             | Right Side (N34)<br>(Viewed from Output Shaft Side) | Top Side (N35) | Bottom Side (N36) |
| Type A (N3A)         |  |   |                |                   |
| Type B (N3B)         |  |   |                |                   |
| Type C (N3C)         |  |   |                |                   |
| Type D (N3D)         |  |   |                |                   |

**Figure 5.4 Terminal Box Mounting Options for Y2, Y3, Y4, Y5, Y6 Positions**

| Cable Port Direction | Terminal box mounting position (As viewed from Motor Fan Side) |   |                |                   |
|----------------------|--|---|----------------|-------------------|
|                      | Left Side (N33)<br>(Viewed from Output Shaft Side)             | Right Side (N34)<br>(Viewed from Output Shaft Side) | Top Side (N35) | Bottom Side (N36) |
| 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.

## Motor Installation: Fan/Brake Cover Clearance Requirements

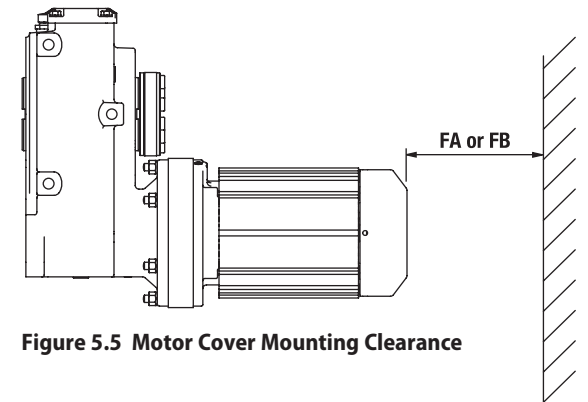
**Required gearmotor clearance dimension FA and FB for installation to achieve best performance and proper maintenance.**

**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 5.5 Motor Cover Mounting Clearance**

**Table 5.17a Motor Clearance Requirements for Standard IE1 motors (1/8 to 3/4 hp)**

| Frame Size | IE1 Motor<br>HP x Pole | IE1 Motor<br>kW x Pole | Standard 3-Phase Motor |          | 3-Phase With Brake Motor |          |
|------------|------------------------|------------------------|------------------------|----------|--------------------------|----------|
|            |                        |                        | FA                     | FB       | FA                       | FB       |
| V-63S      | 1/8 x 4                | 0.1 x 4                | -                      | -        | 2.0 (49)                 | -        |
| V-63M      | 1/4 x 4                | 0.2 x 4                | 1.9 (48)               | 0.8 (20) | 2.5 (63)                 | 0.8 (20) |
| V-63M      | 1/3 x 4                | 0.25 x 4               |                        |          |                          |          |
| V-71M      | 1/2 x 4                | 0.4 x 4                | 1.9 (48)               | 0.8 (20) | 2.5 (63)                 | 0.8 (20) |
| V-80S      | 3/4 x 4                | 0.55 x 4               | 2.0 (49)               | 0.8 (20) | 3.7 (93)                 | 0.8 (20) |

**Table 5.17b Motor Clearance Requirements for AF - motors (1/8 to 3/4 hp)**

| Frame Size | IE1 Motor<br>HP x Pole | IE1 Motor<br>kW x Pole | Standard 3-Phase Motor |          | 3-Phase With Brake Motor |          |
|------------|------------------------|------------------------|------------------------|----------|--------------------------|----------|
|            |                        |                        | 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 (63)                 | 0.8 (20) |
| VA-63M     | 1/3 x 4                | 0.25 x 4               |                        |          |                          |          |
| VA-71M     | 1/2 x 4                | 0.4 x 4                | 2.0 (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 5.17c Motor Clearance Requirements for EP motors (1 to 15 hp)**

| Frame Size | IE3 Motor<br>HP x Pole | IE3 Motor<br>kW x Pole | 3-Phase Without Brake Motor |          | 3-Phase Brake (B) Motor |          |
|------------|------------------------|------------------------|-----------------------------|----------|-------------------------|----------|
|            |                        |                        | FA                          | FB       | FA                      | FB       |
| N-80M      | 1 x 4                  | 0.75 x 4               | 2.3 (59)                    | 0.8 (20) | 4.8 (122)               | 0.8 (20) |
| N-90S      | 1.5 x 4                | 1.1 x 4                |                             |          |                         |          |
| N-90L      | 2 x 4                  | 1.5 x 4                | 2.3 (59)                    | 0.8 (20) | 5.0 (128)               | 0.8 (20) |
| 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                |                             |          |                         |          |
| N-132S     | 7.5 x 4                | 5.5 x 4                | 2.5 (63)                    | 1.0 (25) | 6.0 (153)               | 0.8 (20) |
| N-132M     | 10 x 4                 | 7.5 x 4                |                             |          |                         |          |
| N-160M     | 15 x 4                 | 11 x 4                 | 3.3 (84)                    | 1.2 (30) | 7.4 (189)               | 1 (25)   |
| 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               |                             |          |                         |          |
| N-180M     | 30 x 4                 | 22 x 4                 | 5.3 (134)                   | 1.2 (30) | 12.1 (308)              | 1.2 (30) |
| 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) |

Technical Information

Technical Information

# Motor continued

# Motor continued

## Motor Conduit Box Details

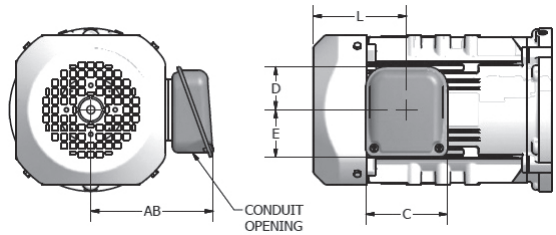


Figure 5.6 Indoor Duty (Optional) Box

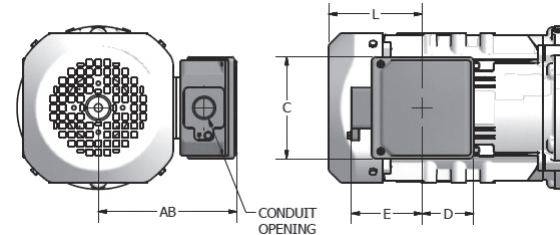


Figure 5.7 Global EP.NA and Outdoor Duty Box

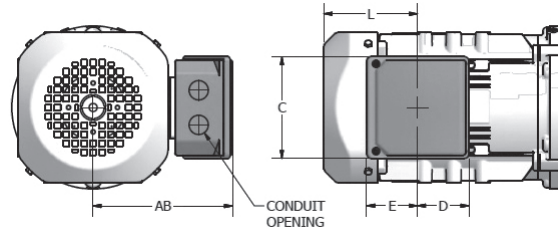


Figure 5.8 Global IE3 CE Box

Table 5.18 Conduit Box Information

| 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 <sup>(1)</sup> | 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 <sup>(2)</sup> | 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<br>V-63M<br>VA-63M<br>V-71M | Indoor Duty (Optional)       | 4.11 (105)         | 3.35 (85)  | 2.09 (53) | 1.69 (43) | Yes           | 2.32 (59)  | CF <sup>(1)</sup> | 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 <sup>(2)</sup> | 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<br>V-80S                    | Indoor Duty (Optional)       | 4.69 (119)         | 3.35 (85)  | 1.72 (44) | 2.04 (52) | Yes           | 3.82 (97)  | CF <sup>(1)</sup> | 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 <sup>(2)</sup>   | Steel      |
|                                    | Global                       | 5.67 (144)         | 4.92 (125) | 2.50 (64) | 3.43 (87) |               |            | Yes               |            | NPT3/4 <sup>(2)</sup> | 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 <sup>(1)</sup> | 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 <sup>(2)</sup>   | Steel      |
|                                    | Global                       | 5.86 (149)         | 4.92 (125) | 2.50 (64) | 3.43 (87) |               |            | Yes               |            | NPT3/4 <sup>(2)</sup> | Al Diecast |
|                                    | Global CE                    | 5.91 (150)         | 4.92 (125) | 2.50 (64) | 2.47 (63) |               |            | Yes               |            | 2 - M25               | Al Diecast |

(1) For "Available?" identified with "CF", please consult factory for brake configuration supporting this conduit box.

(2) Default thread option shown. Alternate thread options available. Please consult factory for alternate conduit thread options

Table 5.18 Conduit Box Information (cont.)

| 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 <sup>(1)</sup> | 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 <sup>(2)</sup>     | Steel      |
|                  | Global EP.NA                 | 5.98 (152)         | 4.92 (125) | 2.50 (64) | 3.43 (87)  |               |            | Yes               |            | NPT3/4 <sup>(2)</sup>   | Al Diecast |
|                  | Global IE3 CE                | 6.02 (153)         | 4.92 (125) | 2.50 (64) | 2.47 (63)  |               |            | Yes               |            | 2 - M25                 | Al Diecast |
| N-90S<br>N-90L   | Indoor Duty (Optional)       | 5.03 (128)         | 3.35 (85)  | 1.72 (44) | 2.04 (52)  | Yes           | 3.82 (97)  | CF <sup>(1)</sup> | 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 <sup>(2)</sup>     | Steel      |
|                  | Global EP.NA                 | 6.16 (156)         | 4.92 (125) | 2.50 (64) | 3.43 (87)  |               |            | Yes               |            | NPT3/4 <sup>(2)</sup>   | Al Diecast |
|                  | Global IE3 CE                | 6.20 (158)         | 4.92 (125) | 2.50 (64) | 2.47 (63)  |               |            | Yes               |            | 2 - M25                 | Al Diecast |
| N-100L<br>N-112S | Indoor Duty (Optional)       | 5.93 (151)         | 3.94 (100) | 2.09 (53) | 2.29 (58)  | Yes           | 4.53 (115) | CF <sup>(1)</sup> | 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 <sup>(2)</sup>     | Steel      |
|                  | Global EP.NA                 | 6.71 (170)         | 4.92 (125) | 2.50 (64) | 3.43 (87)  |               |            | Yes               |            | NPT3/4 <sup>(2)</sup>   | 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 <sup>(1)</sup> | 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 <sup>(2)</sup>     | Steel      |
|                  | Global EP.NA                 | 7.34 (186)         | 4.92 (125) | 2.50 (64) | 3.43 (87)  |               |            | Yes               |            | NPT3/4 <sup>(2)</sup>   | 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 <sup>(1)</sup> | 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 <sup>(2)</sup>       | Steel      |
|                  | Global EP.NA                 | 7.34 (186)         | 4.92 (125) | 2.50 (64) | 3.43 (87)  |               |            | Yes               |            | NPT1 <sup>(2)</sup>     | 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 <sup>(2)</sup>       | Steel      |
|                  | Global EP.NA                 | 9.04 (230)         | 6.69 (170) | 3.40 (86) | 4.43 (113) |               |            |                   |            | NPT1 <sup>(2)</sup>     | Al Diecast |
| N-160M           | Global IE3 CE                | 9.04 (230)         | 6.69 (170) | 3.40 (86) | 3.51 (89)  | Yes           | 5.43 (138) | Yes               | 9.57 (243) | 2-M32                   | Al Diecast |
|                  | Indoor Duty (Optional)       | 7.98 (203)         | 4.80 (122) | 2.60 (66) | 2.84 (72)  |               |            |                   |            | Ø1.69 (Ø43)             | Steel      |
|                  | Outdoor Duty (Optional)      | 9.26 (235)         | 6.06 (154) | 3.11 (79) | 4.13 (105) |               |            |                   |            | G1-1/4 <sup>(2)</sup>   | Steel      |
|                  | Global EP.NA                 | 9.04 (230)         | 6.69 (170) | 3.40 (86) | 4.43 (113) |               |            |                   |            | NPT1-1/4 <sup>(2)</sup> | Al Diecast |
| N-160M           | Global IE3 CE                | 9.04 (230)         | 6.69 (170) | 3.40 (86) | 3.51 (89)  | Yes           | 5.43 (138) | Yes               | 9.57 (243) | 2-M32                   | Al Diecast |
|                  | Indoor Duty (Optional)       | 7.98 (203)         | 4.80 (122) | 2.60 (66) | 2.84 (72)  |               |            |                   |            | Ø1.69 (Ø43)             | Steel      |

Technical Information

Technical Information

# Motor continued

# Motor continued

**Table 5.18 Conduit Box Information (cont.)**

inch (mm)

| Motor Model       | Duty                         | Dimensions (inches) |             |            |             | Yes | 7.01 (178)  | No  | 12.30 (313) | Conduit                 |            |
|-------------------|------------------------------|---------------------|-------------|------------|-------------|-----|-------------|-----|-------------|-------------------------|------------|
|                   |                              | W                   | H           | D          | Depth       |     |             |     |             | Ø                       | Material   |
| 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 <sup>(2)</sup>   | Steel      |
|                   | Global EP.NA                 | 10.26 (261)         | 6.69 (170)  | 3.40 (86)  | 4.43 (113)  |     |             | Yes |             | NPT1-1/4 <sup>(2)</sup> | Al Diecast |
|                   | Global IE3 CE                | 10.26 (261)         | 6.69 (170)  | 3.40 (86)  | 3.51 (89)   |     |             | Yes |             | 2-M32                   | Al Diecast |
| N-180MS<br>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 <sup>(2)</sup>   | Cast Iron  |
|                   | Global EP.NA                 | 13.39 (340)         | 9.02 (229)  | 4.38 (111) | 5.47 (139)  |     |             |     |             | NPT1-1/4 <sup>(2)</sup> | Cast Iron  |
|                   | Global IE3 CE                | 13.39 (340)         | 9.02 (229)  | 4.38 (111) | 4.43 (113)  |     |             |     |             | 2 - M40                 | Cast Iron  |
| N-180L<br>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 <sup>(2)</sup>       | Cast Iron  |
|                   | Global EP.NA                 | 13.39 (340)         | 9.02 (229)  | 4.38 (111) | 5.47 (139)  |     |             |     |             | NPT2 <sup>(2)</sup>     | Cast Iron  |
|                   | Global IE3 CE                | 13.39 (340)         | 9.02 (229)  | 4.38 (111) | 4.43 (113)  |     |             |     |             | 2 - M40                 | Cast Iron  |
| N-200LL<br>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 <sup>(2)</sup>   | Cast Iron  |
|                   | Global EP.NA                 | 16.54 (420)         | 10.63 (270) | 5.14 (131) | 6.22 (158)  |     |             |     |             | NPT3 <sup>(2)</sup>     | Cast Iron  |
|                   | Global IE3 CE                | 16.54 (420)         | 10.63 (270) | 5.14 (131) | 5.13 (130)  |     |             |     |             | 2 - M63                 | Cast Iron  |

(1) For "Available?" identified with "CF", please consult factory for brake configuration supporting this conduit box.  
 (2) Default thread option shown. Alternate thread options available. Please consult factory for alternate conduit thread options

## Fractional Motor Performance Data - 60Hz Operation

**Table 5.19a Three Phase, 230/460V, 60Hz, 1800 RPM Synchronous Speed, TEFC - UL Recognized**

| 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 5.19b Three Phase, 240/480V, 60Hz, 1800 RPM Synchronous Speed, TEFC - UL Recognized**

| 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 5.19c Three Phase, 230/460V, 60Hz, 1800 RPM Synchronous Speed, TEFC - CSA Approved**

| 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 5.19d Three Phase, 575V, 60Hz, 1800 RPM Synchronous Speed, TEFC - CSA Approved**

| 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

**Fractional AF-Motor (AV) Performance Data - 60Hz Operation**

**Table 5.20a 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 | 19.3             | 2.18 | 460       | 1.3               | 1750      | 70        | 1.1              | 115       | 1.21                    |
|                |      |            | Low Voltage  |                  |      | 230       |                   |           | 35        |                  |           | 2.42                    |
| 3/4            | 0.55 | VA-80S     | High Voltage | 26.4             | 2.98 | 460       | 1.7               | 1760      | 62        | 1.6              | 125       | 1.54                    |
|                |      |            | Low Voltage  |                  |      | 230       |                   |           | 31        |                  |           | 3.07                    |

**Table 5.20b Three Phase, 230/460V, 60Hz, 1800 RPM Synchronous Speed, 10:1 Constant Torque Speed Range TEFC - CSA Approved**

| 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             | 2.18 | 460       | 1.3               | 1750      | 70        | 1.1              | 115       | 1.21                    |
|                |      |            | Low Voltage  |                  |      | 230       |                   |           | 35        |                  |           | 2.42                    |
| 3/4            | 0.55 | VA-90S     | High Voltage | 26.3             | 2.98 | 460       | 1.7               | 1765      | 62        | 1.5              | 145       | 1.54                    |
|                |      |            | Low Voltage  |                  |      | 230       |                   |           | 31        |                  |           | 3.08                    |

**Table 5.20c 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             | 2.19 | 575       | 0.94              | 1745      | 88        | 0.86             | 110       | 0.86                    |
| 3/4            | 0.55 | VA-90S     | 26.3             | 2.98 | 575       | 1.3               | 1765      | 76        | 1.1              | 140       | 0.98                    |

**Motor Performance Data - Small kW CE Motor, 50Hz Operation**

**Table 5.21a IE1 Three Phase, 220/380V, 50Hz, 1500 RPM Synchronous Speed, TEFC - CE**

(Not for EU or UK)

| 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                |

\*\* 1/8 HP is TENV

**Table 5.21b IE1 Three Phase, 230/400V, 50Hz, 1500 RPM Synchronous Speed, TEFC - CE**

(Not for EU or UK)

| 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                |

\*\* 1/8 HP is TENV

**Table 5.21c IE1 Three Phase, 240/415V, 50Hz, 1500 RPM Synchronous Speed, TEFC - CE**

(Not for EU or UK)

| 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                |

\*\* 1/8 HP is TENV

**Table 5.21d IE3 Three Phase, 230/400V, 50Hz, 1500 RPM Synchronous Speed, 6 lead, CE Marked, TEFC**

(for EU or UK)

| Motor Capacity |       | Frame Size | Full Load Ratings |      |      |        |        |                    | Current as % Full Load |         | Torque as % of Full Load |          |           |
|----------------|-------|------------|-------------------|------|------|--------|--------|--------------------|------------------------|---------|--------------------------|----------|-----------|
| HP             | kW    |            | Current           |      | RPM  | Torque |        | Nominal Efficiency | Power Factor           | No Load | Starting                 | Starting | Breakdown |
|                |       |            | 230V              | 400V |      | N-m    | in-lbs |                    |                        |         |                          |          |           |
| 1/8**          | 0.1** | V-63S      | 0.62              | 0.35 | 1420 | 0.672  | 5.95   | 62.1               | 0.65                   | 83.6    | 361                      | 261      | 255       |
| 1/8            | 0.12  | VA-63S     | 0.7               | 0.41 | 1430 | 0.8    | 7.08   | 72.5               | 0.59                   | 84.3    | 571                      | 283      | 346       |
| 1/4            | 0.2   | VA-63M     | 1.08              | 0.63 | 1410 | 1.35   | 11.95  | 76.5               | 0.60                   | 77.8    | 565                      | 277      | 331       |
| 1/3            | 0.25  | VA-63M     | 1.19              | 0.69 | 1400 | 1.71   | 15.13  | 76.1               | 0.69                   | 70.6    | 513                      | 219      | 262       |
| 1/2            | 0.4   | VA-71M     | 1.86              | 1.08 | 1420 | 2.68   | 23.72  | 79.1               | 0.68                   | 72.6    | 559                      | 311      | 362       |
| 3/4            | 0.55  | N-80S      | 2.31              | 1.33 | 1430 | 3.66   | 32.39  | 83.5               | 0.71                   | 36.4    | 647                      | 293      | 365       |

\*\* 0.1 kW (1/8 HP) is TENV and IE1

**Motor Performance Data - EP.NA Motor, 60Hz Operation**

**Table 5.22 Three Phase, 230/460v, 60Hz, 1800 RPM Synchronous Speed, TEFC**

| Motor Capacity |      | Frame Size | Full Load |        |      | Current (A) |      |                 |                  | 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 | 47.6            | 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                |

**Table 5.23 Three Phase, 240/480V, 60Hz, 1800 RPM Synchronous Speed, TEFC**

| Motor Capacity |      | Frame Size | Full Load |        |      | Current (A) |      |                 |                  | 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 | 52.0            | 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                |

**Motor Performance Data - EP.NA Motor, 60Hz Operation (continued)**

**Table 5.24 Three Phase, 575V, 60Hz, 1800 RPM Synchronous Speed, TEFC**

| Motor Capacity |      | Frame Size | Full Load |        |      | Current (A) |      |                 |                  | 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              | 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              |                  |

**Motor Performance Data - IE3 CE Motor, 50Hz Operation**

**Table 5.25 Three Phase, 220/380V, 50Hz, 1500 RPM Synchronous Speed, TEFC**

| Motor Capacity |      | Frame Size | Full Load |        |      | Current (A) |      |                 |                  | 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              | 0.75 | N-80M      | 1430      | 44.3   | 5.01 | 3.46        | 2.00 | 69.5            | 608              | 383                     | 402                      | 84.7                 | 67.9           | K                |
| 1.5            | 1.1  | N-90S      | 1430      | 65.0   | 7.35 | 4.49        | 2.59 | 57.1            | 637              | 296                     | 343                      | 85.4                 | 75.1           | J                |
| 2              | 1.5  | N-90L      | 1420      | 89.2   | 10.1 | 6.10        | 3.52 | 57.1            | 607              | 304                     | 338                      | 85.4                 | 75.5           | H                |
| 3              | 2.2  | N-100L     | 1440      | 129    | 14.6 | 8.58        | 4.96 | 54.8            | 796              | 344                     | 418                      | 88.6                 | 78.0           | K                |
| 4              | 3.0  | N-112S     | 1430      | 177    | 20.0 | 11.3        | 6.50 | 48.1            | 712              | 316                     | 365                      | 87.7                 | 80.8           | J                |
| 5              | 3.7  | N-112M     | 1460      | 214    | 24.2 | 13.5        | 7.80 | 50.7            | 777              | 266                     | 378                      | 89.6                 | 81.2           | J                |
| 5.5            | 4.0  | N-112M     | 1450      | 233    | 26.3 | 14.4        | 8.30 | 47.7            | 730              | 266                     | 378                      | 88.9                 | 82.9           | J                |
| 7.5            | 5.5  | N-132S     | 1460      | 318    | 36.0 | -           | 11.5 | 42.0            | 950              | 316                     | 471                      | 90.6                 | 80.7           | L                |
| 10             | 7.5  | N-132M     | 1460      | 434    | 49.1 | -           | 15.8 | 47.2            | 620              | 213                     | 315                      | 90.8                 | 79.6           | H                |
| 15             | 11   | N-160M     | 1460      | 636    | 71.9 | -           | 22.3 | 40.4            | 578              | 200                     | 283                      | 91.4                 | 81.6           | G                |
| 20             | 15   | N-160L     | 1470      | 862    | 97.4 | -           | 30.5 | 45.2            | 649              | 230                     | 304                      | 92.6                 | 80.6           | H                |
| 25             | 18.5 | N-180MS    | 1480      | 1060   | 119  | -           | 35.6 | 38.8            | 772              | 245                     | 338                      | 94.0                 | 83.5           | J                |
| 30             | 22   | N-180M     | 1480      | 1260   | 142  | -           | 41.9 | 32.9            | 656              | 206                     | 284                      | 93.5                 | 85.4           | G                |
| 40             | 30   | N-180L     | 1480      | 1710   | 194  | -           | 58.9 | 41.4            | 631              | 239                     | 344                      | 94.3                 | 82.6           | H                |

**Table 5.26 Three Phase, 230/400V, 50Hz, 1500 RPM Synchronous Speed, TEFC**

| Motor Capacity |      | Frame Size | Full Load |        |      | Current (A) |      |                 |                  | 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              | 0.75 | N-80M      | 1440      | 44.0   | 4.97 | 3.54        | 2.05 | 75.8            | 643              | 423                     | 446                      | 84.6                 | 62.7           | L                |
| 1.5            | 1.1  | N-90S      | 1440      | 64.5   | 7.29 | 4.50        | 2.60 | 64.4            | 672              | 336                     | 387                      | 85.6                 | 71.1           | K                |
| 2              | 1.5  | N-90L      | 1430      | 88.6   | 10.0 | 6.17        | 3.56 | 65.3            | 631              | 338                     | 375                      | 85.8                 | 72.3           | J                |
| 3              | 2.2  | N-100L     | 1450      | 128    | 14.5 | 8.56        | 4.95 | 63.3            | 839              | 382                     | 465                      | 88.7                 | 74.1           | L                |
| 4              | 3.0  | N-112S     | 1440      | 176    | 19.9 | 11.2        | 6.45 | 56.0            | 767              | 352                     | 419                      | 87.9                 | 76.9           | K                |
| 5              | 3.7  | N-112M     | 1460      | 214    | 24.2 | 13.7        | 7.90 | 58.8            | 805              | 294                     | 420                      | 89.0                 | 77.5           | K                |
| 5.5            | 4.0  | N-112M     | 1460      | 231    | 26.2 | 14.4        | 8.30 | 56.0            | 768              | 273                     | 388                      | 89.1                 | 78.8           | K                |
| 7.5            | 5.5  | N-132S     | 1460      | 318    | 36.0 | -           | 11.6 | 59.5            | 985              | 351                     | 524                      | 90.6                 | 76.2           | M                |
| 10             | 7.5  | N-132M     | 1460      | 434    | 49.1 | -           | 16.0 | 54.5            | 739              | 206                     | 350                      | 91.2                 | 75.5           | K                |
| 15             | 11   | N-160M     | 1470      | 632    | 71.5 | -           | 22.2 | 61.2            | 714              | 257                     | 378                      | 91.5                 | 73.0           | J                |
| 20             | 15   | N-160L     | 1480      | 856    | 96.8 | -           | 30.6 | 53.3            | 681              | 256                     | 338                      | 92.5                 | 76.3           | J                |
| 25             | 18.5 | N-180MS    | 1480      | 1060   | 119  | -           | 35.4 | 46.0            | 817              | 272                     | 375                      | 93.9                 | 80.1           | K                |
| 30             | 22   | N-180M     | 1480      | 1260   | 142  | -           | 40.9 | 39.9            | 707              | 227                     | 314                      | 93.8                 | 82.7           | H                |
| 40             | 30   | N-180L     | 1480      | 1710   | 194  | -           | 59.1 | 49.7            | 767              | 265                     | 382                      | 94.0                 | 78.2           | J                |

**Motor Performance Data - IE3 CE Motor, 50Hz Operation (continued)**

**Table 5.27 Three Phase, 240/415V, 50Hz, 1500 RPM Synchronous Speed, TEFC**

| Motor Capacity |      | Frame Size | Full Load |        |      | Current (A) |      |                 |                  | 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              | 0.75 | N-80M      | 1450      | 43.7   | 4.94 | 3.65        | 2.11 | 80.1            | 629              | 461                     | 484                      | 84.1                 | 59.4           | L                |
| 1.5            | 1.1  | N-90S      | 1440      | 64.5   | 7.29 | 4.57        | 2.64 | 69.7            | 688              | 368                     | 422                      | 85.5                 | 67.4           | K                |
| 2              | 1.5  | N-90L      | 1440      | 88.0   | 9.95 | 6.29        | 3.63 | 72.2            | 642              | 366                     | 406                      | 85.4                 | 67.3           | K                |
| 3              | 2.2  | N-100L     | 1450      | 128    | 14.5 | 8.83        | 5.10 | 69.3            | 844              | 412                     | 502                      | 88.3                 | 69.3           | M                |
| 4              | 3.0  | N-112S     | 1440      | 176    | 19.9 | 11.3        | 6.55 | 62.5            | 785              | 387                     | 458                      | 87.9                 | 73.2           | L                |
| 5              | 3.7  | N-112M     | 1460      | 214    | 24.2 | 13.9        | 8.00 | 65.6            | 827              | 319                     | 453                      | 89.2                 | 72.7           | L                |
| 5.5            | 4.0  | N-112M     | 1460      | 231    | 26.2 | 14.5        | 8.35 | 62.9            | 792              | 294                     | 418                      | 89.0                 | 74.8           | K                |
| 7.5            | 5.5  | N-132S     | 1470      | 316    | 35.7 | -           | 11.9 | 67.1            | 1000             | 378                     | 564                      | 90.2                 | 72.0           | N                |
| 10             | 7.5  | N-132M     | 1470      | 431    | 48.7 | -           | 16.2 | 61.4            | 660              | 254                     | 378                      | 90.6                 | 71.1           | J                |
| 15             | 11   | N-160M     | 1470      | 632    | 71.5 | -           | 22.4 | 53.2            | 648              | 249                     | 354                      | 91.6                 | 74.6           | H                |
| 20             | 15   | N-160L     | 1480      | 856    | 96.8 | -           | 31.2 | 59.9            | 693              | 275                     | 364                      | 92.2                 | 72.3           | J                |
| 25             | 18.5 | N-180MS    | 1490      | 1050   | 119  | -           | 35.7 | 52.4            | 840              | 292                     | 404                      | 93.8                 | 76.7           | K                |
| 30             | 22   | N-180M     | 1480      | 1260   | 142  | -           | 40.8 | 45.8            | 735              | 245                     | 339                      | 93.6                 | 80.2           | J                |
| 40             | 30   | N-180L     | 1480      | 1710   | 194  | -           | 60.2 | 55.6            | 781              | 285                     | 411                      | 93.6                 | 74.2           | K                |

Technical Information

Technical Information

## Motor Selection Considerations for Inverter (VFD) Operation

### Benefits:

**Operating a three-phase AC Motor with an Inverter (Variable Frequency Drive – VFD) brings benefits to the design of a process control system:**

- Extending a motor's acceleration time (soft starting) can greatly reduce motor starting current levels. Inrush current is limited typically to 150% of a motor's ampere ratings.
- Controlled and extended acceleration and deceleration rates reduce or eliminate the stress of high torque demands on the motor, reducer and driven load.
- Motor speed can be infinitely adjusted electronically to operate the process at the optimum speed.
- Full-rated motor torque levels can be applied to the load over as much as a 10:1 speed range (6 to 60 Hz, approximately 180 to 1800 RPM motor shaft speed). *(See note on next page about Constant Torque Speed Range)*
- Overspeed operation: within the operating limits of the motor, reducer and driven load, motor speed range can be extended beyond 60 Hz (1800 RPM). *(See note on next page about Constant Horsepower Speed Range)*
- Regulation of motor speed and/or torque without additional feedback devices.
- A properly sized and adjusted Sensorless Flux Vector AC drive can regulate motor shaft speed to almost eliminate motor slip over the motor's entire loading range.
- Electronic programmable motor torque limiting.
- Electronic overload and short circuit protection for the motor.
- Electronic Reversing: upon command, a VFD will follow preprogrammed deceleration rate to stop motor and then follow acceleration rate to bring motor to commanded speed in reverse direction. No additional power or mechanical components needed to reverse the motor.
- Motor braking (up to 150% of motor rated torque level with optional VFD components).  
**NOTE: VFDs do not provide HOLDING brake capability.** VFDs can be used to sequence a motor-mounted holding brake.
- Many VFDs include basic process control functions and easily interface with Programmable Logic Controllers for more advance process control schemes.
- Serial communication capability for remote monitoring of motor, VFD and process status.
- Within a small limited HP range, VFDs can be selected to power a three-phase 230V motor from a single phase 240V power feed.

### Constant Torque Operation:

For most gearmotor applications, a constant-torque rated VFD is required.

Constant-torque rated VFDs carry various manufacturer designations:

- Constant Torque, Heavy Duty or Normal Duty.

All constant-torque rated VFDs carry a 60-second ampere overload capability level of 150% of the VFD's continuous output ampere rating.

VFDs that offer a 110% or 120% 60-second ampere overload capability are designed for variable-torque type loads like fans and pumps with propellers and impellers and are most likely undersized for gearmotor applications.

When a VFD applies power to a motor, it simultaneously varies both the applied motor voltage level (amplitude) and the motor frequency (Hz) so that the torque delivered at the motor shaft can be held constant from a motor's base speed (typically 60 Hz) down to below 20 Hz.

The lower frequency limit is dependent on the design complexity of the VFD:

Basic V/Hz control (6 Hz), Sensorless Vector control (0.6 Hz), full Flux Vector control (0.06 Hz).

To achieve the Vector levels of motor control, the VFD must control only one motor, the VFD and motor must be closely matched in power ratings and the VFD must be properly adjusted, perhaps even "tuned" to the motor.

**Most electrical motors are not designed to operate continuously at such low frequencies.**

*(See note on next page about Constant Torque Speed Range)*

## Motor Selection Considerations for Inverter (VFD) Operation (cont.)

### Constant Horsepower (CHP) Operation:

It may be possible to configure a VFD to operate a motor at speeds beyond the motor's base frequency (typically 60 Hz – 1800 RPM).

**To avoid unsafe and unreliable operation, never power a motor, reducer or a driven load beyond the manufacturer's maximum safe operating speed.**

Consult Sumitomo factory for the HBB reducer maximum operating speed rating.

Consult the manufacturer of the driven load for its maximum operating speed rating.

A motor's full-load power rating is the product of its full-load torque rating and its base speed rating.

A motor's power rating does not increase when it is operated above its base speed.

Operation above a motor's base frequency is called Constant Horsepower (CHP) operation.

When a motor is operated above its base frequency, its output torque capability drops as its frequency is increased.

### Constant Torque Speed Range (CTSR):

Most motors are not designed to operate for prolonged periods of time at low speed (typically below 20 Hz).

Most motors (i.e TEFC) depend upon a motor shaft-mounted fan for ventilation.

When the motor is operating at low speed, this motor shaft-mounted fan does not provide sufficient air movement to keep the motor's internal temperature within proper operating limits.

Operating a motor continuously beyond its CTSR can result in premature motor failure.

Be sure to properly configure the VFD's motor overload protection to match the motor type.

Motors listed for control by a VFD at low speed have been specifically designed to dissipate the heat through means other than the motor shaft-mounted fan.

A motor's ability to operate continuously at low speed is defined by its CTSR or Constant Torque Speed Range.

Examples of a CTSR rating are: 4:1, 6:1, 10:1.

A motor with a CTSR rating of 4:1 can operate continuously at 15 Hz (60 Hz / 4 = 15 Hz).

A motor with a CTSR rating of 10:1 can operate continuously at 6 Hz (60 Hz / 10 = 6 Hz).

See "Constant Torque Speed Ranges: Gearmotors" on page 3.8 for the Sumitomo motor constant torque speed rating (CTSR).

Consult the instructional material supplied with the VFD for additional important information.

## Standard Wiring Diagrams

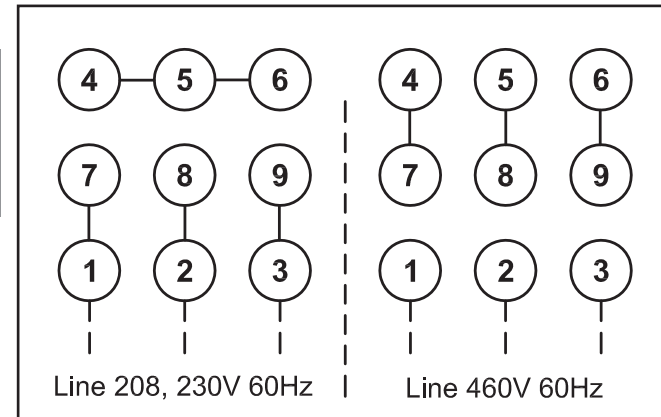
Illustrated below are the wiring diagrams for our standard motors. For additional information please refer to the motor name plate. Due to changes in design features, this diagram may not always agree with that on the motor. If different, the motor diagram found inside the conduit box cover should be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

### Three-Phase Fractional and EP.NA Motor

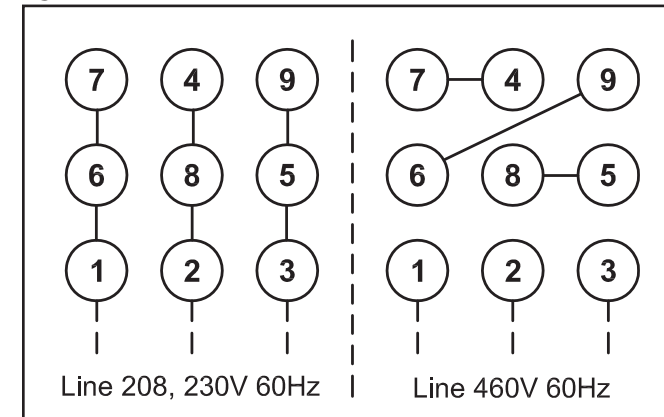
**Table 5.28 Wiring Configuration for 230/460V, 60Hz and 575V, 60Hz by EP.NA Motor**

| Motor<br>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<br>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<br>DELTA | DELTA      | 3            | 3-Lead  |
| 10 x 4          |                |              |                 |            |              |         |
| 15 x 4          |                |              |                 |            |              |         |
| 20 x 4          |                |              |                 |            |              |         |
| 25 x 4          |                |              |                 |            |              |         |
| 30 x 4          |                |              |                 |            |              |         |
| 40 x 4          |                |              |                 |            |              |         |

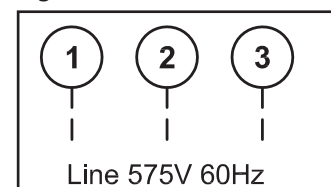
**Figure 5.9 9-Lead - WYE**



**Figure 5.10 9-Lead - DELTA**



**Figure 5.11 3-Lead - SINGLE**

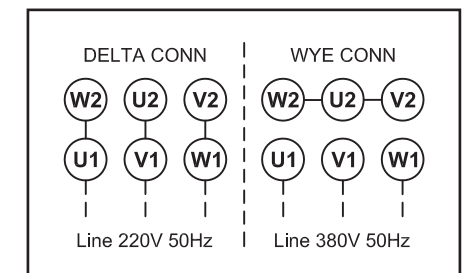


## Three-Phase IE3 CE Motors

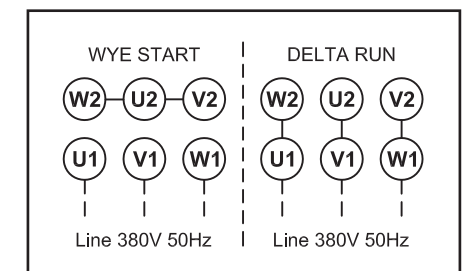
**Table 5.29 Wiring Configuration by IE3 CE Motor**

| Motor<br>kW x P | Voltage Configuration         | Wiring Diagram         |
|-----------------|-------------------------------|------------------------|
| 0.1 x 4         | 220/380V, 50Hz<br>Three Phase | DELTA-WYE              |
| 0.2 x 4         |                               |                        |
| 0.25 x 4        |                               |                        |
| 0.4 x 4         |                               |                        |
| 0.55 x 4        |                               |                        |
| .75 x 4         |                               |                        |
| 1.1 x 4         |                               |                        |
| 1.5 x 4         |                               |                        |
| 2.2 x 4         |                               |                        |
| 3.0 x 4         |                               |                        |
| 3.7 x 4         | 380V, 50Hz<br>Three Phase     | WYE-Start<br>DELTA-Run |
| 5.5 x 4         |                               |                        |
| 7.5 x 4         |                               |                        |
| 11 x 4          |                               |                        |
| 15 x 4          |                               |                        |
| 18.5 x 4        |                               |                        |
| 22 x 4          |                               |                        |
| 30 x 4          |                               |                        |

**Figure 5.12 DELTA-WYE Diagram**



**Figure 5.13 WYE-Start DELTA-Run Diagram**



## Motor Thermal Rating for Cyclic Applications

Motors operated across the line with frequent starts and stops will generate excess heat from high starting current. The capacity for the motor to handle this extra heating will depend on the combination of strating frequency, the load inertia, and time duty. Calculate the C x Z value from the formulas below for inertial factor (C) and starts per hour (Z) and compare the C x Z results against the permissible values for the intergral motor ratings in the Motor Thermal Rating Table

**Table 5.30 Motor Thermal Rating Table**

| Motor Power<br>HP<br>(kW) | Allowable C x Z             |                             |                             |                              | Motor Inertia<br>lb-in <sup>2</sup> (kg-m <sup>2</sup> ) |                 |
|---------------------------|-----------------------------|-----------------------------|-----------------------------|------------------------------|--|-----------------|
|                           | below 35% ED <sup>[1]</sup> | 35% ~ 50% ED <sup>[1]</sup> | 50% ~ 80% ED <sup>[1]</sup> | 80% ~ 100% ED <sup>[1]</sup> | 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 seem 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.**

$$\%ED = \frac{t_a}{t_a + t_b} \cdot 100$$

$t_a$  = on-time  
 $t_b$  = off-time

## Brakemotor Characteristics

The brakemotor on Cyclo® HBB 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 5.31 Brake Characteristics - Standard torque, Delay Time, Work Capacity**

| Brake Model | Motor Capacity |            | Standard Braking Torque<br>ft - lbs (N - m) | Braking Delay Time (sec)       |             |                            | Brake Work Capacity              |                                  |  |
|-------------|----------------|------------|---|--------------------------------|-------------|----------------------------|----------------------------------|----------------------------------|--|
|             |                |            |   | Normal Braking Action          |             | Fast Braking Action        | Allowable E <sub>0</sub> (J/min) | Gap Adjust (x 10 <sup>7</sup> J) | Total E <sub>1</sub> (x 10 <sup>7</sup> J) |
|             | HP x 4P        | kW x 4P    | Standard Wiring                             | Inverter Wiring <sup>[1]</sup> |             |                            |                                  |                                  |  |
| FB-01A1     | 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-02A1     | 1/8 ~ 1/3      | 0.1 ~ 0.25 | 1.4 (2.0)                                   |                                |             |                            |                                  |                                  |  |
| FB-05A1     | 1/4 ~ 1/2      | 0.2 ~ 0.4  | 2.9 (4.0)                                   | 0.1 ~ 0.15                     | 0.03 ~ 0.07 | 0.01 ~ 0.015               | 1620                             | 7.0                              | 33.1                                       |
| FB-1D       | 1/2            | 0.4        | 5.8 (7.5)                                   | 0.2 ~ 0.3                      | 0.1 ~ 0.15  | 0.01 ~ 0.02                |                                  |                                  |  |
| FB-2D       | 3/4            | 0.55       | 11 (15)                                     |                                |             |                            |                                  |                                  |  |
| FB-3D       | 3/4            | 0.55       | 16 (22)                                     | 0.3 ~ 0.4                      | 0.15 ~ 0.2  | 0.01 ~ 0.03                | 2580                             | 6.8                              | 29.5                                       |
| FB-1E       | 1              | 0.75       | 5.5 (7.5)                                   | 0.25 ~ 0.45                    | 0.15 ~ 0.25 |                            | 2580                             | 11.6                             | 38.7                                       |
| FB-1HE      | 1.5            | 1.1        | 8.0 (11)                                    | 0.45 ~ 0.65                    | 0.25 ~ 0.35 | 0.01 ~ 0.03                | 3360                             | 20.8                             | 46.3                                       |
| FB-2E       | 2              | 1.5        | 11 (15)                                     | 0.35 ~ 0.55                    | 0.15 ~ 0.25 |                            |                                  |                                  |  |
| FB-3E       | 3              | 2.2        | 16 (22)                                     | 0.75 ~ 0.95                    | 0.4 ~ 0.5   | 0.02 ~ 0.04                | 5720                             | 26.3                             | 105.3                                      |
| 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   | 0.02 ~ 0.04                | 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   | 0.02 ~ 0.04                | 10800                            | 110.2                            | 551.1                                      |
| FB-20       | 20             | 15         | 110 (150)                                   | -                              | -           |                            |                                  |                                  |  |
| FB-30       | 25             | 18.5       | 140 (190)                                   | -                              | -           | 0.03 ~ 0.11 <sup>[2]</sup> | 22440                            | 191.6                            | 1150                                       |
|             | 30             | 22         | 160 (220)                                   |                                |             |                            |                                  |                                  |  |
|             | 40             | 30         | 150 (200)                                   |                                |             |                            |                                  |                                  |  |

**Notes:** [1] Also applies to wiring where brake is powered separately from the motor leads.

[2] Values shown for 200V Class and 400V Class Brakes. Please consult factory for 575V Brakes.

**Brake Characteristics**

**Table 5.32 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-01A1     | 0.008 ~ 0.014<br>(0.2 ~ 0.35)  | 0.020<br>(0.5)  | Twist Detent      | 0.276 (7.0)               | 0.256 (6.5)     |
| FB-02A1     |                                |                 |                   |                           |                 |
| FB-05A1     |                                |                 |                   |                           |                 |
| FB-1D       | 0.012 ~ 0.016<br>(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      |                                |                 |                   |                           | 0.315 (8.0)     |
| FB-2E       | 0.010 ~ 0.014<br>(0.25 ~ 0.35) | 0.030 (0.75)    |                   | 0.355 (9.0)               | 0.331 (8.4)     |
| FB-3E       |                                |                 |                   |                           |                 |
| FB-5E       | 0.014 ~ 0.018<br>(0.35 ~ 0.45) | 0.040 (1.0)     | Nut               | 0.433 (11.0)              | 0.394 (10.0)    |
| FB-8E       |                                |                 |                   |                           | 0.236 (6.0)     |
| FB-10E      |                                |                 |                   |                           | 0.276 (7.0)     |
| FB-15E      |                                |                 |                   |                           | 0.472 (12.0)    |
| FB-20       | 0.024 ~ 0.028<br>(0.6 ~ 0.7)   | 0.059 (1.5)     |                   | 0.630 (16.0)              | 0.472 (12.0)    |
| FB-30       |                                |                 |                   |                           |                 |

**Brakemotor: Brake Current Rating**

**Table 5.33 Brake Current for Standard Fractional Motor and AF-Motor (AV)**

| Brake Model | 230VAC, 60Hz        |         |         | 460VAC, 60Hz        |         |         | 575VAC, 60Hz        |         |         |
|-------------|---------------------|---------|---------|---------------------|---------|---------|---------------------|---------|---------|
|             | Vdc (V)             | Idc (A) | Iac (A) | Vdc (V)             | Idc (A) | Iac (A) | Vdc (V)             | Idc (A) | Iac (A) |
| FB-01A1     | 207VDC<br>Full Wave | 0.05    | 0.06    | 207VDC<br>Half Wave | 0.05    | 0.04    | 259VDC<br>Half Wave | 0.05    | 0.03    |
| FB-02A1     |                     | 0.08    | 0.1     |                     | 0.08    | 0.06    |                     | 0.09    | 0.07    |
| FB-05A1     |                     | 0.1     | 0.1     |                     | 0.1     | 0.1     |                     | 0.1     | 0.1     |
| FB-1D       |                     | 0.1     | 0.1     |                     | 0.1     | 0.1     |                     | 0.1     | 0.1     |
| FB-2D       |                     | 0.2     | 0.2     |                     | 0.2     | 0.2     |                     | 0.2     | 0.2     |
| FB-3D       |                     |         |         |                     |         |         |                     |         |         |

**Table 5.34 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<br>Full Wave                        | 0.1                    | 0.1                    | 216VDC<br>Full Wave                        | 0.1                    | 0.1                    | 207VDC<br>Half Wave                        | 0.1                    | 0.1                    | 216VDC<br>Half Wave                        | 0.1                    | 0.1                    |
| FB-1HE      |  | 0.2                    | 0.2                    |  | 0.2                    | 0.2                    |  | 0.2                    | 0.2                    |  |                        |                        |
| FB-2E       |  | 0.2                    | 0.2                    |  | 0.2                    | 0.2                    |  | 0.2                    | 0.2                    |  |                        |                        |
| FB-3E       |  | 0.2                    | 0.2                    |  | 0.2                    | 0.2                    |  | 0.2                    | 0.2                    |  |                        |                        |
| FB-5E       |  | 0.4                    | 0.4                    |  | 0.4                    | 0.4                    |  | 0.4                    | 0.4                    |  |                        |                        |
| FB-8E       |  | 0.4                    | 0.4                    |  | 0.4                    | 0.4                    |  | 0.4                    | 0.4                    |  |                        |                        |
| FB-10E      |  |                        |                        |  |                        |                        |  |                        |                        |  |                        |                        |
| FB-15E      |  |                        |                        |  |                        |                        |  |                        |                        |  |                        |                        |
| FB-20       | 207VDC<br>/104VDC<br>Module <sup>[1]</sup> | 2.0/1.0 <sup>[2]</sup> | 2.0/0.8 <sup>[2]</sup> | 216VDC<br>/108VDC<br>Module <sup>[2]</sup> | 2.1/1.1 <sup>[2]</sup> | 2.1/0.8 <sup>[2]</sup> | 414VDC<br>/207VDC<br>Module <sup>[1]</sup> | 1.0/0.5 <sup>[2]</sup> | 1.0/0.4 <sup>[2]</sup> | 432VDC<br>/216VDC<br>Module <sup>[1]</sup> | 1.0/0.5 <sup>[2]</sup> | 1.0/0.4 <sup>[2]</sup> |
| FB-30       |  |                        |                        |  |                        |                        |  |                        |                        |  |                        |                        |

**Table 5.35 Brake Current for EP.NA Motor 575V**

| Brake Model | 575VAC, 50/60Hz     |         |         |
|-------------|---------------------|---------|---------|
|             | Vdc (V)             | Idc (A) | Iac (A) |
| FB-1E       | 259VDC<br>Half Wave | 0.1     | 0.1     |
| FB-1HE      |                     | 0.2     | 0.2     |
| FB-2E       |                     | 0.2     | 0.2     |
| FB-3E       |                     | 0.2     | 0.2     |
| FB-5E       |                     | 0.4     | 0.3     |
| FB-8E       |                     | 0.4     | 0.3     |
| FB-10E      |                     |         |         |
| FB-15E      |                     |         |         |
| FB-20       | 259VDC<br>Half Wave | 0.4     | 0.3     |
| FB-30       |                     |         |         |

**Notes:** [1] Power module type brake control generates two voltage levels--1) high excitation voltage for initial release, and 2) lower holding voltage. [2] 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.

# Motor continued

**Table 5.36 Brake Current for Fractional Motor CE Motor**

| Brake Model | 220VAC, 50Hz       |         |         | 230VAC, 50Hz        |         |         | 380VAC, 50Hz        |         |         | 400VAC, 50Hz        |         |         |
|-------------|--------------------|---------|---------|---------------------|---------|---------|---------------------|---------|---------|---------------------|---------|---------|
|             | 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-01A1     | 99VDC<br>Half Wave | 0.13    | 0.12    | 104VDC<br>Half Wave | 0.13    | 0.12    | 171VDC<br>Half Wave | 0.06    | 0.04    | 180VDC<br>Half Wave | 0.06    | 0.04    |
| FB-02A1     |                    | 0.2     | 0.2     |                     | 0.2     | 0.2     |                     | 0.08    | 0.07    |                     | 0.08    | 0.07    |
| FB-05A1     |                    | 0.3     | 0.2     |                     | 0.2     | 0.2     |                     | 0.1     | 0.1     |                     | 0.1     | 0.1     |
| FB-1D       |                    |         |         |                     |         |         |                     |         |         |                     |         |         |

**Table 5.37 Brake Current for IE3 CE Motor**

| Brake Model | 220VAC, 50Hz       |                                     |                        | 230VAC, 50Hz        |                        |                                      | 380VAC, 50Hz        |                        |                        | 400VAC, 50Hz        |                                      |                        |
|-------------|--------------------|-------------------------------------|------------------------|---------------------|------------------------|--------------------------------------|---------------------|------------------------|------------------------|---------------------|--------------------------------------|------------------------|
|             | 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       | 99VDC<br>Half Wave | 0.2                                 | 0.2                    | 104VDC<br>Half Wave | 0.2                    | 0.2                                  | 171VDC<br>Half Wave | 0.1                    | 0.1                    | 180VDC<br>Half Wave | 0.1                                  | 0.1                    |
| FB-1HE      |                    | 0.5                                 | 0.4                    |                     | 0.5                    | 0.4                                  |                     | 0.2                    | 0.2                    |                     | 0.2                                  | 0.2                    |
| FB-2E       |                    | 0.6                                 | 0.5                    |                     | 0.6                    | 0.5                                  |                     | 0.3                    | 0.2                    |                     | 0.3                                  | 0.2                    |
| FB-3E       |                    |                                     |                        |                     |                        |                                      |                     |                        |                        |                     |                                      |                        |
| FB-4E       |                    | 1                                   | 0.7                    |                     | 1                      | 0.8                                  |                     | 0.4                    | 0.3                    |                     | 0.4                                  | 0.3                    |
| FB-5E       |                    |                                     |                        |                     |                        |                                      |                     |                        |                        |                     |                                      |                        |
| FB-8E       |                    |                                     |                        |                     |                        |                                      |                     |                        |                        |                     |                                      |                        |
| FB-10E      |                    | 1.1                                 | 0.9                    |                     | 1.2                    | 0.9                                  |                     | 0.5                    | 0.4                    |                     | 0.5                                  | 0.4                    |
| FB-15E      |                    |                                     |                        |                     |                        |                                      |                     |                        |                        |                     |                                      |                        |
| FB-20       |                    | 198VDC /99VDC Module <sup>[1]</sup> | 2.0/1.0 <sup>[2]</sup> |                     | 2.0/0.8 <sup>[2]</sup> | 207VDC /104VDC Module <sup>[1]</sup> |                     | 2.0/1.0 <sup>[2]</sup> | 2.0/0.8 <sup>[2]</sup> |                     | 342VDC /171VDC Module <sup>[1]</sup> | 0.8/0.4 <sup>[2]</sup> |
| FB-30       |                    |                                     |                        |                     |                        |                                      |                     |                        |                        |                     |                                      |                        |

## Brakemotor: Optional Brake Torques

**Table 5.38 Standard Brake Models**

| Brake Model | Motor Capacity |              |              | Motor Frame Size | Braking Torque ft-lbs (N-m) |           |             |           |            |             |
|-------------|----------------|--------------|--------------|------------------|-----------------------------|-----------|-------------|-----------|------------|-------------|
|             | Model          | HP x 4P (ST) | HP x 4P (AV) |                  | kW x 4P (ST)                | Standard  | Optional    |           |            |             |
| FB-01A1     | 1/8            | -            | -            | 0.1              | V-63S                       | 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-02A1     | 1/4 - 1/3      | 1/8          | -            | 0.2 - 0.25       | V-63M, VA-63S               | 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-05A1     | 1/2            | 1/4 - 1/3    | -            | 0.37             | V-71M VA-63M                | 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       | 3/4            | 1/2          | -            | 0.55             | V-80S VA-71M                | 5.8 (7.5) | 2.7 (3.7)   | 3.9 (5.3) | -          | -           |
|             |                |              |              |                  |                             |           | 4.6 (6.2)   | 6.9 (9.4) | 7.7 (10)   | -           |
| FB-2D       | -              | 3/4          | -            | -                | VA-80S                      | 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-1E       | 1              | 1            | -            | 0.75             | N-80M                       | 5.5 (7.5) | 2.2 (3.0)   | 3.0 (4.0) | 4.0 (5.5)  | 7.4 (10)    |
| FB-1HE      | 1.5            | -            | -            | 1.1              | N-90S                       | 8.0 (11)  | -           | 3.7 (5.0) | 5.5 (7.5)  | 11 (15)     |
| FB-2E       | 2              | 1.5          | -            | 1.5              | N-90L                       | 11 (15)   | 3.7 (5.0)   | 5.5 (7.5) | 8.0 (11)   | 15 (20)     |
| FB-3E       | 3              | 2            | -            | 2.2              | N-100L                      | 16 (22)   | 4.4 (6.0)   | 7.4 (10)  | 11 (15)    | 22 (30)     |
| FB-5E       | 5              | 3            | -            | 3.7              | N-112M                      | 30 (40)   | 7.4 (10)    | 15 (20)   | 22 (30)    | 40 (55)     |
| FB-8E       | 7.5            | 5            | -            | 5.5              | N-132S                      | 40 (55)   | 15 (20)     | 22 (30)   | 30 (40)    | 53 (72)     |
| FB-10E      | 10             | 7.5          | -            | 7.5              | M-132M                      | 59 (80)   | 15 (20)     | 30 (40)   | 44 (66)    | 80 (110)    |
| FB-15E      | 15             | 10           | -            | 11               | M-160M                      | 80 (110)  | 29 (40)     | 44 (60)   | 59 (80)    | 110 (150)   |
| FB-20       | 20             | 15 - 20      | -            | 15               | N-160L                      | 110 (150) | 44 (60)     | 63 (85)   | 74 (100)   | 89 (120)    |
|             |                |              |              |                  |                             |           | 130 (175)   | 160 (220) | -          | -           |
| FB-30       | 25             | 25           | -            | 18.5             | N180MS                      | 140 (190) | 44 (60)     | 74 (100)  | 89 (120)   | 110 (150)   |
|             |                |              |              |                  |                             |           | 130 (175)   | -         | -          | -           |
|             |                |              |              |                  |                             |           | 63 (85)     | 89 (120)  | 110 (150)  | 130 (175)   |
|             | 30             | 30           | -            | 22               | N-180M                      | 160 (220) | 74 (100)    | 120 (160) | -          | -           |
|             | 40             | 40           | -            | 30               | N-180L                      | 150 (200) | 74 (100)    | 120 (160) | -          | -           |

**Notes:** [1] Power module type brake control generates two voltage levels--1) high excitation voltage for initial release, and 2) lower holding voltage.

[2] 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.

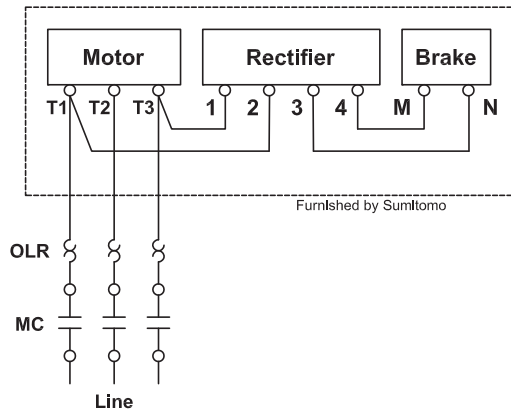
FB-20 and FB-30 Brake Coil and Power Module come in two voltage ranges--1) 200-240VAC, and 2) 380-480VAC.

ST - Standard Motor, AV - Inverter Motor

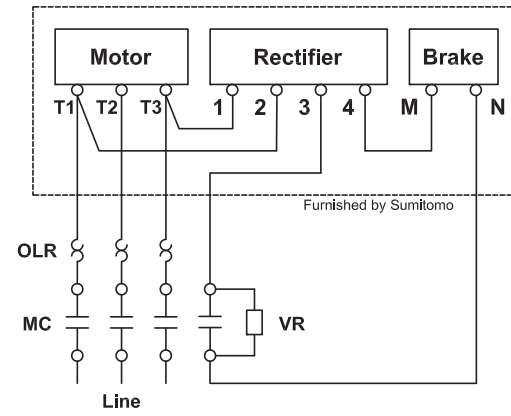
## Brakemotor Standard Wiring Connection, EP.NA Motor

Models FB-01A1 through FB-15E, 230/460V, 60Hz or 575V, 60Hz (Fractional through 15 HP)

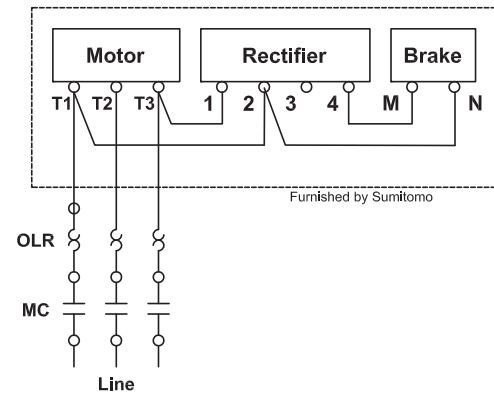
Normal Brake Action, 230V or 575V Brake



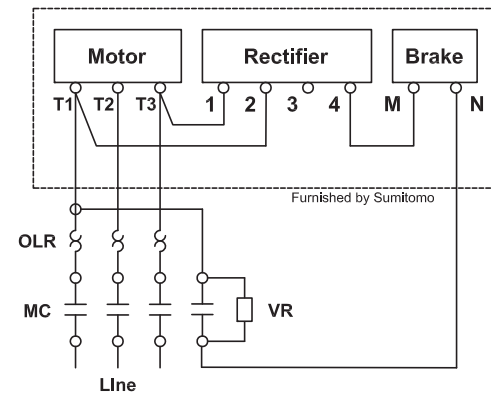
Fast Brake Action, 230V or 575V Brake



Normal Brake Action, 460V Brake



Fast Brake Action, 460V Brake



**Key:**  
**MC:** Motor Contactor  
**OLR:** Overload or Thermal Relay  
**VR:** Varistor (protective device, refer to Varistor Specification Table)

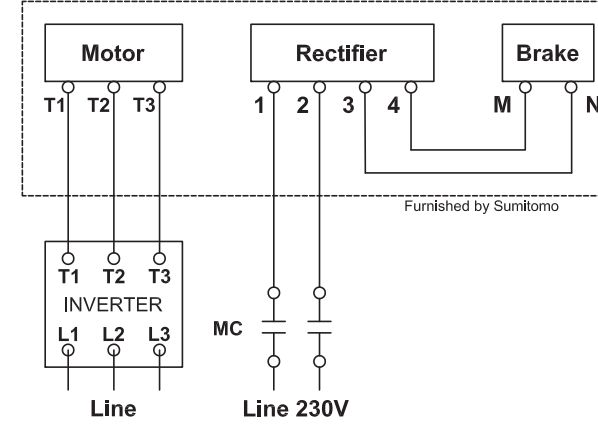
Table 5.39 Varistor Specification Table

| Operating Voltage      |                     | 190-230V   | 380-460V  | 575V      |
|------------------------|---------------------|------------|-----------|-----------|
| Varistor Rated Voltage |                     | AC260-300V | AC510V    | AC604V    |
| Varistor Voltage       |                     | 430-470V   | 820V      | 1000V     |
| Rated Watt             | FB-01A1, 02A1, 05A1 | 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, 3E  | Over 1.5W  | Over 1.5W | Over 0.6W |
|                        | FB-5E, 8E, 10E, 15E | Over 1.5W  | Over 1.5W | Over 1.5W |

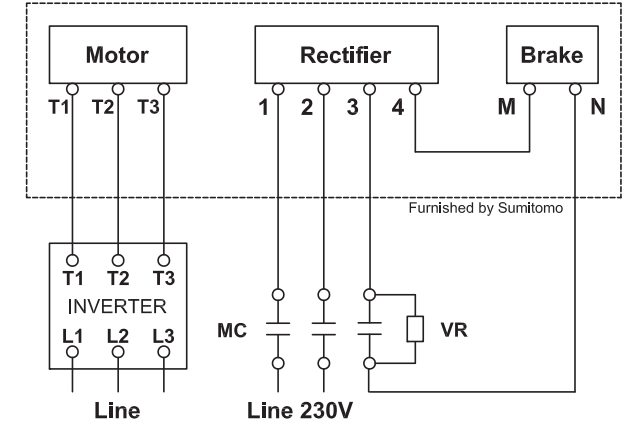
## Brakemotor Inverter Wiring Connection, EP.NA Motor

Models FB-01A1 through FB-15E, 230/460V, 60Hz or 575V, 60Hz

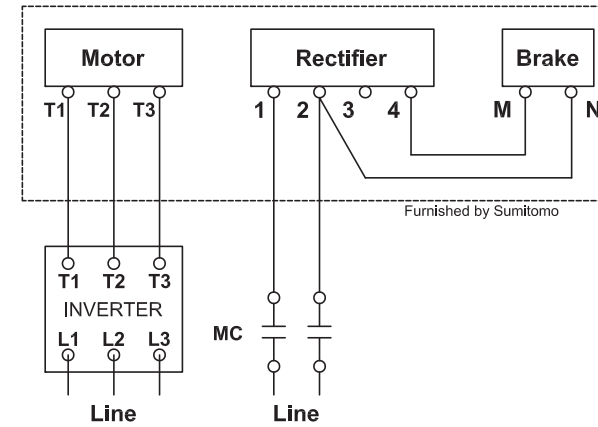
Normal Brake Action, 230V or 575V Brake



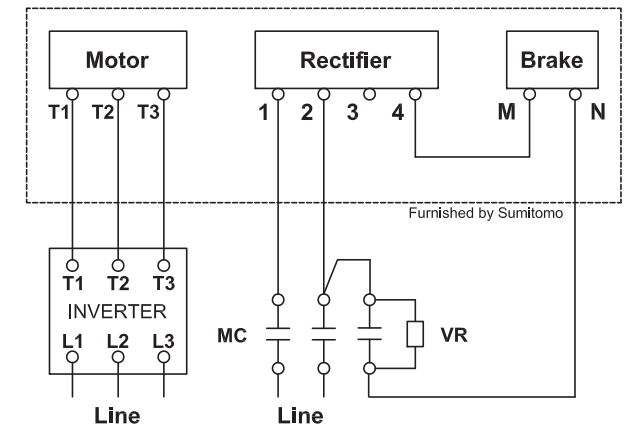
Fast Brake Action, 230V or 575V Brake



Normal Brake Action, 460V Brake



Fast Brake Action, 460V Brake



**Key:**  
**MC:** Motor Contactor  
**OLR:** Overload or Thermal Relay  
**VR:** Varistor (protective device, refer to Varistor Specification Table)

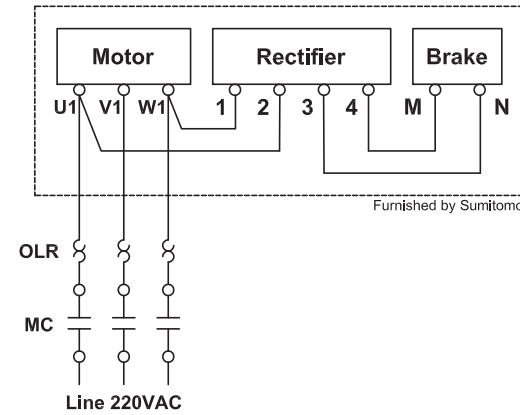
Table 5.40 Varistor Specification Table

| Operating Voltage      |                     | 190-230V   | 380-460V  | 575V      |
|------------------------|---------------------|------------|-----------|-----------|
| Varistor Rated Voltage |                     | AC260-300V | AC510V    | AC604V    |
| Varistor Voltage       |                     | 430-470V   | 820V      | 1000V     |
| Rated Watt             | FB-01A1, 02A1, 05A1 | 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, 3E  | Over 1.5W  | Over 1.5W | Over 0.6W |
|                        | FB-5E, 8E, 10E, 15E | Over 1.5W  | Over 1.5W | Over 1.5W |

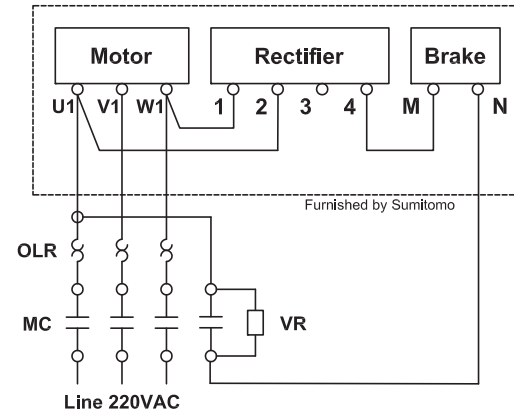
# Standard Wiring Connection for IE3 CE Motors

Models FB-01A1 through FB-5E, 220/380V, 50Hz

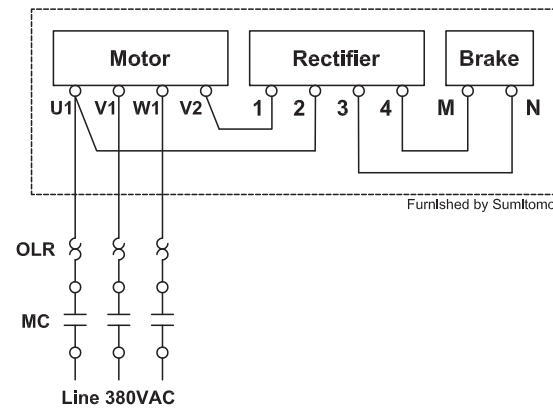
Normal Brake Action, 220V Motor, 220V Brake



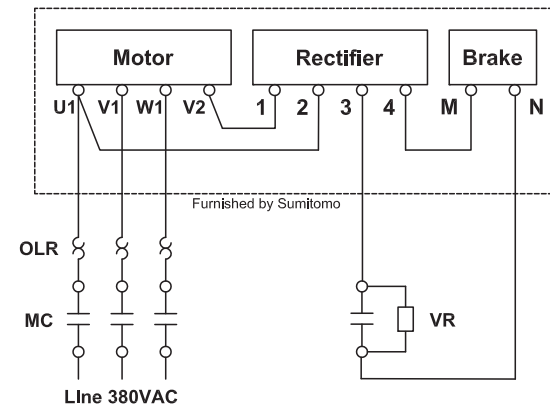
Fast Brake Action, 220V Motor, 220V Brake



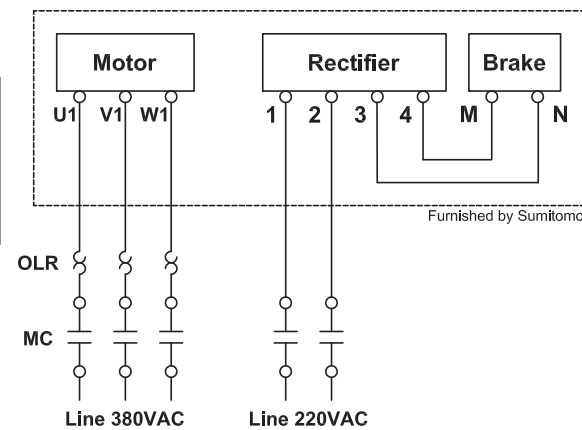
Normal Brake Action, 380V Motor, 220V Brake, Tapped



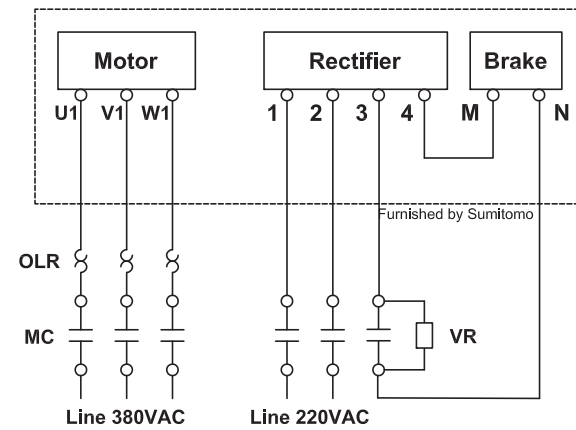
Fast Brake Action, 380V Motor, 220V Brake, Tapped



Normal Brake Action, 380V Motor, 220V Brake, Separated



Fast Brake Action, 380V Motor, 220V Brake, Separated

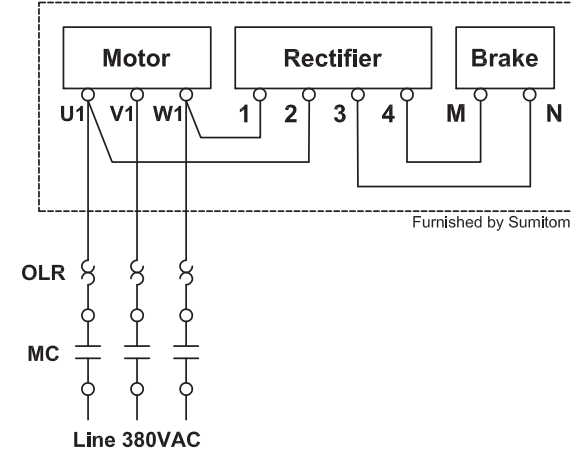


**Key:**  
**MC:** Motor Contactor  
**OLR:** Overload or Thermal Relay  
**MCB:** Magnetic Circuit Breaker  
**VR:** Varistor (protective device, refer to Varistor Specification Table on page 5.39)

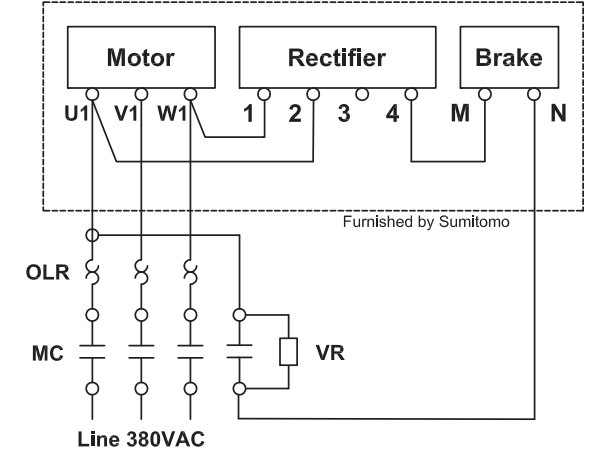
# Standard Wiring Connection for IE3 CE Motors (continued)

Models FB-8E through FB-15E, 380V, 50Hz

Normal Brake Action, 380V Motor, 380V Brake

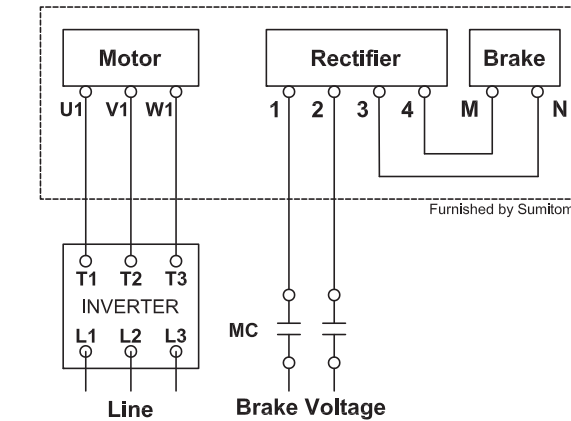


Fast Brake Action, 380V Motor, 380V Brake

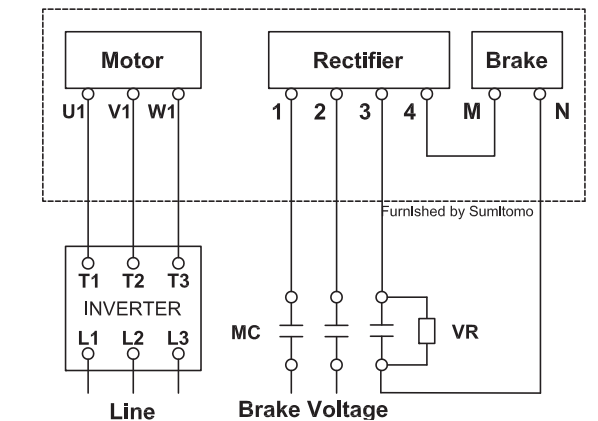


## Models FB-01A1 through FB-15E with Inverter

Normal Brake Action



Fast Brake Action



**Key:**  
**MC:** Motor Contactor    **OLR:** Overload or Thermal Relay    **MCB:** Magnetic Circuit Breaker  
**VR:** Varistor (protective device, refer to Varistor Specification Table)

Table 5.41 Standard CE Motor, Motor/Brake Voltage Table

| Motor Power kW x 4P | Brake Model | Motor Voltage  | Brake Voltage |
|---------------------|-------------|----------------|---------------|
| 0.75                | FB-1E       | 220/380V, 50Hz | 220V, 50Hz*   |
| 1.1                 | FB-2E       |                |               |
| 1.5                 | FB-1HE      |                |               |
| 2.2                 | FB-3E       |                |               |
| 3.0                 | FB-4E       |                |               |
| 3.7                 | FB-5E       | 380V, 50Hz     | 380V, 50Hz    |
| 5.5                 | FB-8E       |                |               |
| 7.5                 | FB-10E      |                |               |
| 11                  | FB-15E      |                |               |

\*Optional 380V 50Hz Brake Available

Table 5.42 Varistor Specification Table

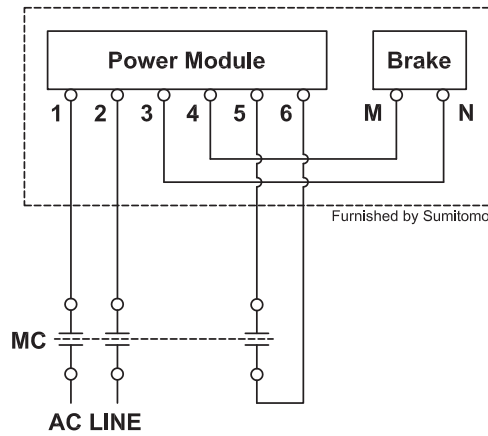
| Operating Voltage      |                     | 190-230V   | 380-460V  |
|------------------------|---------------------|------------|-----------|
| Varistor Rated Voltage |                     | AC260-300V | AC510V    |
| Varistor Voltage       |                     | 430-470V   | 820V      |
| Rated Watt             | FB-01A1, 02A1, 05A1 | Over 0.4W  | Over 0.4W |
|                        | FB-1E, 1D           | Over 0.6W  | Over 0.6W |
|                        | FB-1HE, 2E, 2D, 3E  | Over 1.5W  | Over 1.5W |
|                        | FB-5E, 2E, 2D, 3E   | Over 1.5W  | Over 1.5W |

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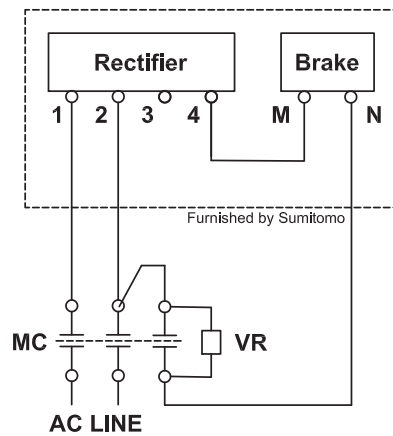
Technical Information

## 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:** Motor Contactor  
**VR:** Varistor (protective device, refer to Varistor Specification Table)  
 Varistor Rated Voltage - AC604V  
 Varistor Rated Watts - Over 1.5W

## Brake Rectifiers and Brake Power Modules

Table 5.43a Brake Rectifiers for Fractional Motors

| Brake Type | Motor Power<br>HP x P | 230V/460V Rectifier |             | 575V Rectifier |             |
|------------|-----------------------|---------------------|-------------|----------------|-------------|
|            |                       | Model Number        | Part Number | Model Number   | Part Number |
| FB-01A1    | 1/8 X 4               | 25FW-4FB3           | EY477WW-01  | 10F-6FB3       | EY498WW-01  |
| FB-02A1    | 1/4 - 1/3 X 4         |                     |             |                |             |
| FB-05A1    | 1/2 X 4               |                     |             |                |             |
| FB-1D      | 3/4 X 4               |                     |             |                |             |
| FB-2D      | 3/4 X 4               |                     |             |                |             |

Table 5.43b Brake Rectifiers for Fractional Motors

| Brake Type | Motor Power<br>kW x P | 220V Rectifier |             |
|------------|-----------------------|----------------|-------------|
|            |                       | Model Number   | Part Number |
| FB-01A1    | 0.1 X 4               | 10F-2FB2       | MP983WW-01  |
| FB-02A1    | 0.2 - 0.25 X 4        |                |             |
| FB-05A1    | 0.37 X 4              |                |             |
| FB-1D      | 0.55 X 4              |                |             |

Table 5.43c Brake Rectifiers for EP.NA Motors up to 15 HP

| Brake Type | Motor Power<br>HP x P | 230V/460V Rectifier |             | 575V Rectifier |             |
|------------|-----------------------|---------------------|-------------|----------------|-------------|
|            |                       | Model Number        | Part Number | Model Number   | Part Number |
| FB-1E      | 1 x 4                 | 25FW-4FB3           | EY477WW-01  | 10F-6FB3       | EY498WW-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                |                     |             |                |             |

Table 5.43d Brake Rectifiers for IE3 CE Motors up to 11 kW

| Brake Type | Motor Power<br>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<br>4.0 x 4    |                |             |                |             |
| FB-8E      | 5.5 x 4               |                |             | 05F-4FB2       | MP985WW-01  |
| FB-10E     | 7.5 x 4               |                |             |                |             |
| FB-15E     | 11 x 4                |                |             | 15F-4FB1       | EW397WW-01  |

Table 5.44 Brake Rectifiers and Power Modules for EP.NA Motors and IE3 CE Motors (20-40 HP)(15-30 kW)

| Brake Type | Motor (HP x P) | Motor Power<br>(kW x P) | 170 ~ 300VAC Module |             | 380 ~ 480VAC Module |             |
|------------|----------------|-------------------------|---------------------|-------------|---------------------|-------------|
|            |                |                         | Model Number        | Part Number | Model Number        | Part Number |
| FB-20      | 20 x 4         | 15 x 4                  | 13SR-2              | EY570WW-01  | 10SR-4              | MQ003WW-01  |
| FB-30      | 25 x 4         | 18.5 x 4                |                     |             |                     |             |
|            | 30 x 4         | 22 x 4                  |                     |             |                     |             |
|            | 40 x 4         | 30 x 4                  |                     |             |                     |             |

\*optional 380V 50Hz Brake Available

# 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 5.45. 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 5.45 - Product Warranty**

| Product   | Warranty Period (After Shipment) | Components Excluded |
|---|----------------------------------|---------------------|
| Cyclo® Speed Reducers and Gearmotors  | 3 Years                          | Wearable items      |
| Cyclo® Bevel & Helical BuddyBox® Speed Reducers and Gearmotors                                      | 3 Years                          | Wearable items      |
| Fine Cyclo® and Elastic Cyclo (ECY) Speed Reducers  | 1 Year                           | Wearable items      |
| Beier® Variator Mechanical Adjustable Speed Reducers  | 2 Years                          | Wearable items      |
| Hyponic® Speed Reducers and Gearmotors  | 3 Years                          | Wearable items      |
| Helical Shaft Mount Speed Reducers  | 3 Years                          | Wearable items      |
| Bevel BuddyBox® H Series Speed Reducers and Gearmotors  | 3 Years                          | Wearable items      |
| Fortress® Speed Reducers  | 3 Years                          | Wearable items      |
| Rhytax® Speed Reducers and Gearmotors   | 3 Years                          | Wearable items      |
| IB Series Servo Gearheads & Astero Gearmotors   | 1 Year                           | Wearable items      |
| Motors  | 1 Year                           | -                   |
| Variable Frequency Drives (Invertek)  | 3 Years                          | -                   |
| Hedcon® Double Enveloping Worm Gear Speed Reducers  | 2 Years                          | Wearable items      |
| Paramax® Right Angle Spiral Bevel Gear and Parallel Shaft Helical Gear Speed Reducers               | 2 Years                          | Wearable items      |
| Hansen UniMiner and P4 Right Angle Spiral Bevel Gear and Parallel Shaft Helical Gear Speed Reducers | 2 Years                          | Wearable items      |
| Paramax® and Hansen Cooling Tower Application Series Speed Reducers                                 | 1 Year                           | Wearable items      |
| Compower® Planetary Speed Reducers  | 1 Year                           | Wearable items      |
| Parts   | 1 Year                           | -                   |
| Repairs   | 1 Year                           | Wearable items      |

Cyclo® HBB

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