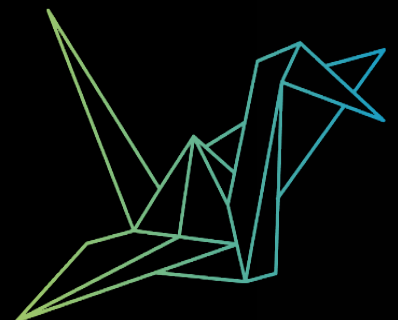
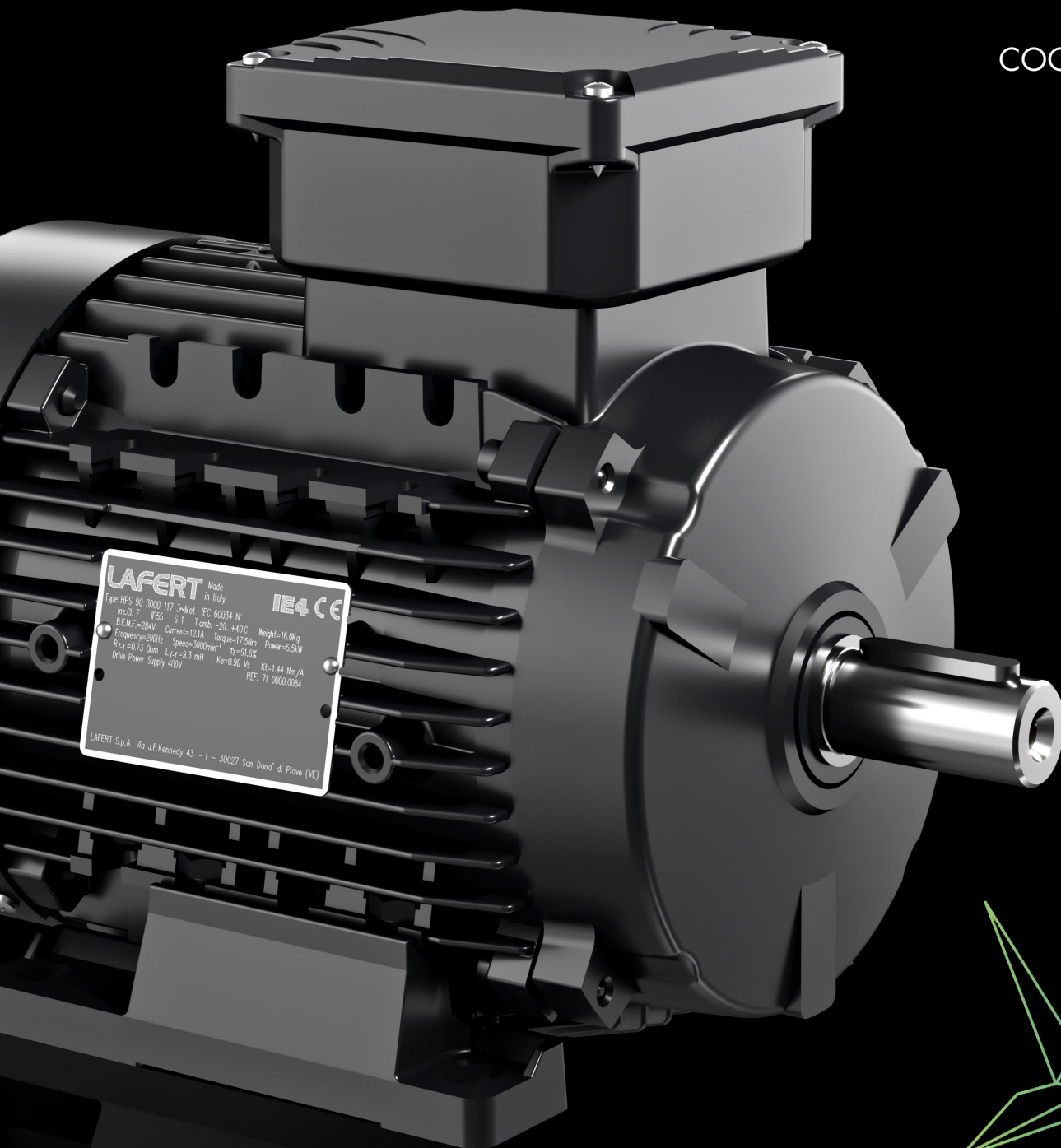


# PRODUCT CATALOGUE

METRIC MOTORS  
GEARBOXES  
COOLANT PUMPS





Lafert's technical solution for achieving robust performance, combined with extensive customizations including flanges, shafts, brakes and coatings for resistance against external agents.

## FANS & VENTILATION



Single-Phase motors designed to deliver high performance with low levels of vibration and noise. For reliability when there's no time for down time.

## CONVEYING & PACKAGING



High performance PM synchronous motors with integrated drive achieve IE5 ultra-premium efficiency tailored to variable or constant torque applications, with a specific focus on energy-saving HVAC equipment.

## LIQUID PUMPING



# LAFERT NORTHAMERICA

Toll Free: 1-800-661-6413 | [WWW.LAFERTNA.COM](http://WWW.LAFERTNA.COM) | [LNA.INFO@SHI-G.COM](mailto:LNA.INFO@SHI-G.COM)

**IE4 IE5**  **US**



## TEXTILE MANUFACTURING

Ultra premium efficient electric motors and VFDs aimed at setting the industry standard for sustainability and energy consumption with significant reductions in size and weight.



## FOOD PROCESSING

Sanitary, durable and corrosion resistant solutions for operation in extreme environments including high pressure water jets.



## RENEWABLE ENERGY

The harsher the working environment, the higher the engineering standard. Lafert Brake Motors engineered to ensure precise and reliable performance for applications requiring the highest starting and/or braking frequency.



|                                       |       |
|---------------------------------------|-------|
| <b>General Product Overview</b> ..... | 4 & 5 |
|---------------------------------------|-------|

## Motors

|                                                                                                                        |         |
|------------------------------------------------------------------------------------------------------------------------|---------|
| IE4 Three Phase/HPI/Combi - High Performance Permanent Magnet AC Motors, Packaged Drives & Brushless Servo Motors..... | 6       |
| HPS - High Performance Standalone Permanent Magnet AC Motors .....                                                     | 7       |
| AMPH / LAB - IE3 Premium Efficiency Motors (2 & 4 pole) .....                                                          | 8       |
| AMPH / LAB - IE3 Premium Efficiency Motors (6 & 8 pole) .....                                                          | 9       |
| ST / AM - Standard Efficiency Motors & 3-Phase Motor Parts Breakdown .....                                             | 10      |
| FB - 2-Speed Motors .....                                                                                              | 11      |
| AMBZ - High Brake Torque Full Size Brake Motors (575V).....                                                            | 12      |
| AAF - High Brake Torque Full Size Brake Motors (230/460V).....                                                         | 13      |
| AAFB - 2-Speed High Brake Torque Full Size Brake Motors .....                                                          | 14      |
| AAF - High Brake Torque Full Size Brake Motors - Parts Breakdown.....                                                  | 15      |
| MS - Low Brake Torque Compact Brake Motors .....                                                                       | 16      |
| MS - Low Brake Torque Compact Brake Motors - Parts Breakdown.....                                                      | 17      |
| Single Phase Motor - Connection Diagrams (Single & Dual Voltage) .....                                                 | 17      |
| LM / LME - Single Phase Motors (Single Voltage) .....                                                                  | 18      |
| DVE - Single Phase Motors (Dual Voltage).....                                                                          | 19      |
| LA - IP56 Stainless Steel Motors.....                                                                                  | 20      |
| LA - IP67 & IP69K Stainless Steel Motors.....                                                                          | 21      |
| Cooling Fans & Fan Covers .....                                                                                        | 22      |
| Flanges.....                                                                                                           | 23      |
| Dimensions for HPS - Permanent Magnet Synchronous Motors .....                                                         | 24      |
| Dimensions for DVE / LM(E) - Single Phase Motors (IM B3).....                                                          | 25      |
| Dimensions for AM / ST / FB - Three Phase Motors (IM B3).....                                                          | 26      |
| Dimensions for AMPH - Three Phase Premium Efficiency Motors (IM B3).....                                               | 27      |
| Dimensions for AMBZ / AAF(B) / MS - Full Size & Compact Brake Motors (IM B3).....                                      | 28      |
| Dimensions for Aluminum Frame (Single & 3-Phase) Motor Flanges (IM B14 & IM B5) .....                                  | 29      |
| Dimensions for LAB / FB Motors (IM B3, IM B5, IM B35) .....                                                            | 30      |
| Explosion Proof Motors - MAK - Product Information.....                                                                | 31 & 32 |
| Explosion Proof Motors - MAK .....                                                                                     | 33      |
| Explosion Proof Motors - MAK - Dimensions (IM B3, IM B34, IM B35).....                                                 | 34 & 35 |
| Wiring Diagrams - ST / LAB / AM / AMPH / LA / FB / MS / AMFV .....                                                     | 58      |

## Pumps

|                                                     |              |
|-----------------------------------------------------|--------------|
| SPV / IMM / AP / MP - Immersion Type Pumps .....    | 36 & 37 & 38 |
| SQ / AU - Side Mount / Self Priming Type Pumps..... | 37 & 38      |

## Gearboxes

|                                                                     |    |
|---------------------------------------------------------------------|----|
| Featured SITI Gearboxes - Range .....                               | 39 |
| MI / MU - Right Angle Worm Gearboxes and Accessories .....          | 40 |
| MI / MU - Right Angle Worm Gearboxes - Service Factors .....        | 41 |
| I-MI - Ratings Table (Sizes 25-50).....                             | 42 |
| I-MI - Ratings Table (Sizes 60-110) .....                           | 43 |
| I-MI - Dimensions (Size 30).....                                    | 44 |
| I-MI - Dimensions (Sizes 40-70).....                                | 45 |
| I-MI - Dimensions (Sizes 80-175).....                               | 46 |
| I-MI - Mounting Positions.....                                      | 47 |
| U-MU - Ratings Table (Sizes 40-75).....                             | 48 |
| U-MU - Ratings Table (Sizes 90-110).....                            | 49 |
| U-MU - Mounting Positions .....                                     | 49 |
| U-MU - Dimensions (Solid Input Shafts & Output Flanges) .....       | 50 |
| P - Prestages and Bushings .....                                    | 51 |
| MBH - Bevel Helical Gearboxes .....                                 | 52 |
| MKF - Motovariator (Speed Variator) Gearboxes .....                 | 52 |
| MNHL(F) / NHL - Helical Inline Gearboxes - Product Information..... | 53 |
| MNHL(F) / NHL - Helical Inline - Ratings Table (Sizes 20-35).....   | 54 |
| MNHL(F) / NHL - Helical Inline - Ratings Table (Sizes 40-70).....   | 55 |
| MNHL(F) - Helical Inline - Dimensions .....                         | 56 |
| R - Bevel Gearboxes .....                                           | 57 |
| NRG - Planetary Gearboxes .....                                     | 57 |

|                                                    |    |
|----------------------------------------------------|----|
| <b>Terms And Conditions Of Sale/Warranty</b> ..... | 59 |
|----------------------------------------------------|----|

## GENERAL MECHANICAL CHARACTERISTICS

### FRAME

The housing for frame sizes 56 & 63 as well as 180 - 315 feature motor pedestals that are integrally cast. Frame sizes 71 - 160 have pedestals that are removable. Pressure die cast aluminum frame sizes are from 56 - 160. Cast iron frame sizes are from 180 - 315.

### FLANGES

Flange material is designed to match motor housing material (ie: cast aluminum or cast iron). For frame sizes 56 - 160, increased and reduced flanges are available in B14 (C flange) and B5 (D flange) styles.

### BEARINGS

The bearings mounted on our motors are high quality Japanese made products. They are a rigid radial type with a single row of balls. The types used for different frame sizes are indicated in the table below. Roller bearings are used for frame sizes 315 - 4, 6 and 8 poles.

| Aluminum Motors |       |          | Cast Iron (LAB) Motors |       |                 |
|-----------------|-------|----------|------------------------|-------|-----------------|
| Frame Size      | Poles | DE / NDE | Frame Size             | Poles | DE / NDE        |
| 56              | 2 - 4 | 6201-2Z  | 132 M                  | 8     | 6308 C3-2Z      |
| 63              | 2 - 6 | 6202-2Z  | 160 M/L                | 2 - 8 | 6309 C3-2Z      |
| 71              | 2 - 8 | 6203-2Z  | 180 M/L                | 2 - 8 | 6311 C3         |
| 80              | 2 - 8 | 6204-2Z  | 200 L                  | 2 - 8 | 6312 C3         |
| 90              | 2 - 8 | 6205-2Z  | 225 S/M                | 2 - 8 | 6313 C3         |
| 100             | 2 - 8 | 6206-2Z  | 250 M                  | 2 - 6 | 6314 C3         |
| 112             | 2 - 8 | 6306-2Z  | 280 S/M                | 2     | 6314 C3         |
| 132             | 2 - 8 | 6208-2Z  | 280 S/M                | 4 - 6 | 6317 C3         |
| 160             | 2 - 8 | 6309-2Z  | 315 S/L                | 2     | 6317 C3         |
|                 |       |          | 315 S/L                | 4 - 8 | NU319 / 6319 C3 |

Bearings of type designation "2Z" have two shields for each bearing which are pre-lubricated by the manufacturer. All bearings have clearance of (C3). Covers with grease lubricators can be supplied. All our bearings are pre-loaded axially with compensating rings of tempered steel. Motor frames 180 - 315 have re-greasable bearings; both drive and non-drive end shields are equipped with grease fittings.

### COOLING

A fan with bi-directional blades supplies cooling. The fans are made of glass-reinforced polyethylene which is resistant to temperatures of up to 160° Celsius. Pressure die cast aluminum fans can be supplied on request.

### FAN COVER

Frame sizes 56 - 112 are either a plastic/nylon composite, aluminum, or rolled steel. Frame sizes 132 - 200 and larger are rolled steel.

### ROTORS

Rotors are "squirrel-cage" design, constructed of pressure die cast aluminum or aluminum alloy and dynamically balanced. Steel shafts (C40) can be either standard or specially made to your requirements. Standard motors have the shaft extending from one end of the motor only. Extensions from both ends can be supplied on request.

### PAINT

All motors with the exception of explosion proof design (MAK) are normally painted with a semi-gloss black paint (RAL9005). Explosion proof motors are normally painted blue with RAL5010 which is an acid-protection coating for heavy duty applications.

### NOISE

Motors are constructed to comply with international standards.

**NOTE:** All motors are Totally Enclosed Fan Cooled (TEFC) unless otherwise specified.

## REQUIREMENTS

Lafert N.A recommends the use of filters and/or reactors when using a variable frequency drive to prevent failures due to spikes & surges. This is required for 575 V. Failure to install proper protection may void the motor warranty.



## INGRESS PROTECTION RATINGS

The type of protection against accidental contact and/or the entry of water or foreign particles is denoted by IEC 34-5. The standard is composed of two letters followed by two numbers. See below for IP Rating code breakdown.

**IP** Ingress Protection

**1st number** From 0 to 6, The first number indicates complete protection against contact with live or moving parts inside the casing.

**5 =** Protection against harmful dust deposits; dust is not prevented from entering, but must not interfere with the proper functioning of the motor.

**6 =** Complete protection against contact; no ingress of dust.

**2nd number** From 0 to 9K, indicates progressively the level of protection against the entry of water.

**4 =** Protection against water sprayed on the motor from any direction.

**5 =** Protection against water jet from a nozzle onto the motor from any direction.

**6 =** Protection against heavy seas or water projected in powerful jets.

**7 =** Ingress of water in harmful quantity shall not be possible when the enclosure is immersed in water under defined conditions of pressure and time (up to 1 meter of submersion).

**9K =** Protection against close-range high pressure, high temperature spray downs.

Lafert NA stocks motors in: **IP54, IP55, IP56, IP67 & IP69K**

## Available Features and Customization Capabilities:

**Ingress Protection:** IP54, IP55, IP56, IP65, IP67 & IP69K

**Environmental:** Tropicalized Windings

**Mounting:** F1, F2, F0, Basemount, B35, B5, B34, B14, NEMA C Face & Special Brackets

**Flange Design:** Increased or Reduction, Vertical or Horizontal

**Drainage:** Drain Holes, T-Valve Fittings

## Mechanical Design:

- Special Shafts:
  - Non-Standard Length & Diameter
  - Multiple Steps
  - Drilled & Tapped or External Thread
  - Double Shafted
  - Hollow Shaft
- Modified Flange Builds

## Electrical Design:

- Low Voltages: 42/72V, Three Phase
- High Voltages: 690V, 60Hz, Three Phase
- 2 Speed: 2/8, 2/12, 4/16, 8/16 Poles
- Multi Speed: 2/4-8 (Three Speed), 4/8-6/12 Poles (Four Speed)
- Single Phase Motor Designs
- Specialized Connection Requirements
- AC & DC Brake Coil Voltages

Thermal Protection | Rain & Lint Covers | Encoder Mounting Options | Special Application Bearings

## NEW - IE4 THREE-PHASE MOTORS

### FIRST IN ENERGY SAVINGS

**SUPER PREMIUM EFFICIENCY IE4**  
ASYNCHRONOUS INDUCTION MOTORS

**1 - 20 HP**

FRAME SIZE:

IEC 80 - 160

NEMA 56 - 254/256



## HP Combi - High Performance Motor and Drive Package

HP Combi is a range of highly efficient motor and variable frequency drive (VFD) packaged solutions which combine industry-leading permanent magnet (PM) synchronous motor technology from Lafert with dedicated drive platforms engineered to deliver maximum energy cost savings and system performance for three application categories – pumps and fans (Combi Flow), automation and motion (Combi Plus) and general purpose (Combi Smart).

- Optimized for Increased System Efficiency Available up to 50 HP
- Plug & Play Solution Fully Dimensioned and Configured According to Customer Needs
- Advanced Control Electronics for Easy Commissioning, Control and Service
- IP66 / NEMA 4X outdoor
- Precise Speed Control

Designed for both variable torque applications, typically in HVAC, and for constant torque applications such as material handling, air compressors and vacuum pumps.



## HP Integral - High Performance Integrated Permanent Magnet AC Motors with Frequency Drive

The HPI Series combines high performance HPS Series permanent magnet motors with variable frequency drives (VFD) optimized to produce a seamlessly integrated motor and drive solution. The on-board Lafert drive technology and control interface deliver optimized system performance and energy efficiency, without costly and time-consuming integration of discrete motors and drives.

- Space & Weight Savings up to 50% Relative to Equivalent EISA Premium Efficient Motors
- Includes IE4/IE5 "Super/Ultra" Premium Efficient HPS Series Motor
- Design eliminates enclosure requirement for frequency drive
- High Performance Sensorless AC Vector Control
- On-board Digital Analog I/O & Communications (Modbus RTU, RS 232, CANopen)
- Optimized for HVAC Applications

The HPI Series is available to equipment manufacturers for high volume applications (>1,000 units/year). Lafert offers HPI Series products with the option and capability to customize the control, electrical and mechanical design to customer specification. Please visit the Lafert North America website or contact our Outside Sales team for more information.



## Lafert Brushless Servo Motors

Industry-leading Lafert expertise in production and design of permanent magnet motor technology has its foundation in twenty-five years of brushless servo motor manufacturing. A complete range of AC servo motors are manufactured to customer specifications at our Italian facility for applications such as material handling, packaging, precision manufacture and robot applications.

- Standard Range Includes Rated Torque (0.25 - 390+ Nm) & speed (0 - 6000+ rpm)
- Available Sensorless or with Resolver, Absolute or Incremental Encoder
- High Overload, Dynamic Performance, Power Density
- Forced Ventilation (Fan Cooled) & Brake Motor Executions
- Torque Motor ("pancake") Design for Direct-Drive Applications
- Standard or Optional Marks and Approvals Include CE, UL & ATEX Zone 2, 2 (Hazardous Location)

Lafert North America provides replacement support for current and legacy Lafert brushless servo motors.

Contact a Lafert sales representative for new servo motor applications.



# HPS - High Performance Standalone Permanent Magnet AC Motors

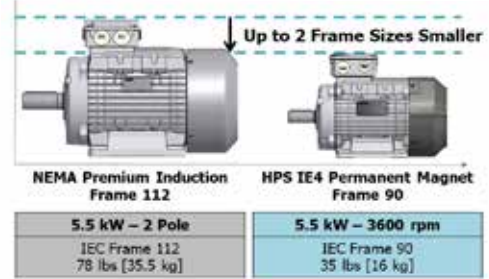


## IE4/IE5 Efficient Motor Solution for HVAC and Demanding Applications

Standard Range Covers (0.25 – 37) kW and (1800, 3600, 4500) RPM

- Super and Ultra Premium IE4/IE5 Energy Efficient as per IEC TS 60034-30-2:2016
- To Accommodate High Torque Output: Frames 71, 90 & 160 Have O/S DE & NDE Bearings. Frames 112 & 132 Have O/S DE Bearings & Standard NDE Bearings
- Class F (155°C) Insulation, Class B (80°C) Thermal Rise
- Foot (IM B3), Flange (IM B5 or IM B14, Metric or NEMA) Mounting (removable feet)
- IP55 Environmental Rating •Totally Enclosed Fan Cooled (TEFC)
- Designed for Sensorless Control (no encoder required)

HPS Series motors require a frequency drive to start/run and cannot be started across-the-line.



### HPS Series IE4 - 3600 RPM - Values @ 460V

Dimensions: Page 24

| Part Number           | NEMA C-Flange Mount | Rated Power | Rated Torque | Peak Torque | Voltage Constant | Torque Constant Speed | BEMF at Rated Speed | Rated Current | Efficiency HPS | Weight |
|-----------------------|---------------------|-------------|--------------|-------------|------------------|-----------------------|---------------------|---------------|----------------|--------|
|                       |                     | Pn kW       | Mn Nm        | Mpk Nm      | Ke Vs            | Kt Nm/A               | En Vrs              | In Arms       | η %            | lbs    |
| HPS56 3600 4          | -                   | 0.25        | 0.70         | 2.0         | 0.90             | 1.56                  | 339                 | 0.4           | 71.5%          | 6      |
| HPS56 3600 6          | -                   | 0.37        | 1.00         | 2.9         | 0.90             | 1.56                  | 339                 | 0.6           | 75.6%          | 6      |
| HPS56 3600 10         | -                   | 0.55        | 1.50         | 4.4         | 0.90             | 1.56                  | 339                 | 1.0           | 79.3%          | 6      |
| HPS56 3600 13         | -                   | 0.75        | 2.00         | 6.0         | 0.90             | 1.56                  | 339                 | 1.3           | 81.5%          | 7      |
| HPS71 3600 13         | 56                  | 0.75        | 2.00         | 6.0         | 0.90             | 1.56                  | 339                 | 1.3           | 81.5%          | 11     |
| HPS71 3600 19         | 56                  | 1.10        | 2.90         | 8.8         | 0.90             | 1.56                  | 339                 | 1.9           | 83.3%          | 12     |
| HPS71 3600 26         | 56                  | 1.50        | 4.00         | 11.9        | 0.90             | 1.56                  | 339                 | 2.6           | 84.8%          | 13     |
| HPS71 3600 37         | 56                  | 2.20        | 5.80         | 17.5        | 0.90             | 1.56                  | 339                 | 3.7           | 86.4%          | 15     |
| HPS90 3600 37 (S-L)   | 143/145             | 2.20        | 5.80         | 17.5        | 0.90             | 1.56                  | 339                 | 3.7           | 86.4%          | 22     |
| HPS90 3600 51 (S-L)   | 143/145             | 3.00        | 8.00         | 23.9        | 0.90             | 1.56                  | 339                 | 5.1           | 87.7%          | 26     |
| HPS90 3600 68 (S-L)   | 143/145             | 4.00        | 10.60        | 31.8        | 0.90             | 1.56                  | 339                 | 6.8           | 88.7%          | 31     |
| HPS90 3600 94 (S-L)   | 143/145             | 5.50        | 14.60        | 43.8        | 0.90             | 1.56                  | 339                 | 9.4           | 89.7%          | 35     |
| HPS112 3600 94 (M)    | 182/184             | 5.50        | 14.60        | 43.8        | 0.90             | 1.56                  | 339                 | 9.4           | 89.7%          | 51     |
| HPS112 3600 128 (M)   | 182/184             | 7.50        | 19.90        | 59.7        | 0.90             | 1.56                  | 339                 | 12.8          | 90.6%          | 57     |
| HPS112 3600 187 (M)   | 182/184             | 11.00       | 29.20        | 87.5        | 0.90             | 1.56                  | 339                 | 18.7          | 91.6%          | 66     |
| HPS112 3600 255 (M)   | 182/184             | 15.00       | 39.80        | 119.4       | 0.90             | 1.56                  | 339                 | 25.5          | 92.4%          | 73     |
| HPS132 3600 255 (M)   | 213/215             | 15.00       | 39.80        | 119.4       | 0.90             | 1.56                  | 339                 | 25.5          | 92.4%          | 112    |
| HPS132 3600 315 (XL)  | 213/215             | 18.50       | 49.10        | 147.2       | 0.90             | 1.56                  | 339                 | 31.5          | 92.8%          | 128    |
| HPS132 3600 375 (XXL) | 213/215             | 22.00       | 58.40        | 175.1       | 0.90             | 1.56                  | 339                 | 37.5          | 93.2%          | 143    |
| HPS132 3600 511 (XXL) | 213/215             | 30.00       | 79.60        | 238.7       | 0.90             | 1.56                  | 339                 | 51.1          | 93.7%          | 159    |
| HPS160 3600 511 (L)   | -                   | 30.00       | 79.6         | 199         | 0.90             | 1.56                  | 339                 | 51.1          | 93.7%          | 176    |
| HPS 160 3600 629 (L)  | -                   | 37.00       | 98           | 245         | 0.90             | 1.56                  | 339                 | 62.9          | 94.1%          | 187    |

### HPS Series - 1800 RPM - Values @ 460V

| Part Number           | NEMA C-Flange Mount | Rated Power | Rated Torque | Peak Torque | Voltage Constant | Torque Constant Speed | BEMF at Rated Speed | Rated Current | Efficiency HPS | Weight |
|-----------------------|---------------------|-------------|--------------|-------------|------------------|-----------------------|---------------------|---------------|----------------|--------|
|                       |                     | Pn kW       | Mn Nm        | Mpk Nm      | Ke Vs            | Kt Nm/A               | En Vrs              | In Arms       | η %            | lbs    |
| HPS56 1800 3          | -                   | 0.18        | 1.00         | 2.9         | 1.80             | 3.1                   | 339                 | 0.3           | 72.0%          | 6      |
| HPS56 1800 4          | -                   | 0.25        | 1.30         | 4.0         | 1.80             | 3.1                   | 339                 | 0.4           | 75.4%          | 7      |
| HPS56 1800 6          | -                   | 0.37        | 2.0          | 5.9         | 1.80             | 3.1                   | 339                 | 0.6           | 78.9%          | 7      |
| HPS71 1800 9          | 56                  | 0.55        | 2.90         | 8.8         | 1.80             | 3.1                   | 339                 | 0.9           | 81.9%          | 11     |
| HPS71 1800 13         | 56                  | 0.75        | 4.00         | 11.9        | 1.80             | 3.1                   | 339                 | 1.3           | 83.9%          | 12     |
| HPS71 1800 19         | 56                  | 1.10        | 5.80         | 17.5        | 1.80             | 3.1                   | 339                 | 1.9           | 85.6%          | 14     |
| HPS71 1800 26         | 56                  | 1.50        | 8.00         | 23.9        | 1.80             | 3.1                   | 339                 | 2.6           | 86.7%          | 15     |
| HPS90 1800 26 (S-L)   | 143/145             | 1.50        | 8.00         | 23.9        | 1.80             | 3.1                   | 339                 | 2.6           | 86.7%          | 22     |
| HPS90 1800 38 (S-L)   | 143/145             | 2.20        | 11.70        | 35.0        | 1.80             | 3.1                   | 339                 | 3.8           | 88.1%          | 26     |
| HPS90 1800 51 (S-L)   | 143/145             | 3.00        | 15.90        | 47.7        | 1.80             | 3.1                   | 339                 | 5.1           | 89.1%          | 31     |
| HPS90 1800 68 (S-L)   | 143/145             | 4.00        | 21.20        | 63.7        | 1.80             | 3.1                   | 339                 | 6.8           | 89.9%          | 37     |
| HPS112 1800 68 (M)    | 182/184             | 4.00        | 21.20        | 63.7        | 1.80             | 3.1                   | 339                 | 6.8           | 89.9%          | 51     |
| HPS112 1800 94 (M)    | 182/184             | 5.50        | 29.20        | 87.5        | 1.80             | 3.1                   | 339                 | 9.4           | 90.8%          | 57     |
| HPS112 1800 128 (M)   | 182/184             | 7.50        | 39.80        | 119.4       | 1.80             | 3.1                   | 339                 | 12.8          | 91.6%          | 66     |
| HPS112 1800 187 (XL)  | 182/184             | 11.00       | 58.40        | 175.1       | 1.80             | 3.1                   | 339                 | 18.7          | 92.0%          | 73     |
| HPS132 1800 187 (M)   | 213/215             | 11.00       | 58.40        | 175.1       | 1.80             | 3.1                   | 339                 | 18.7          | 92.4%          | 112    |
| HPS132 1800 255 (XXL) | 213/215             | 15.00       | 79.60        | 238.7       | 1.80             | 3.1                   | 339                 | 25.5          | 93.0%          | 128    |
| HPS132 1800 315 (XXL) | 213/215             | 18.50       | 98.10        | 294.4       | 1.80             | 3.1                   | 339                 | 31.5          | 93.4%          | 143    |
| HPS160 1800 186 (M)   | -                   | 11.00       | 58.00        | 146.0       | 1.80             | 3.1                   | 339                 | 18.6          | 92.4%          | 143    |
| HPS160 1800 257 (M)   | -                   | 15.00       | 80.00        | 199.0       | 1.80             | 3.1                   | 339                 | 25.7          | 93.0%          | 154    |
| HPS160 1800 314 (M)   | -                   | 18.50       | 98.00        | 245.0       | 1.80             | 3.1                   | 339                 | 31.4          | 93.4%          | 154    |
| HPS160 1800 375 (L)   | -                   | 22.00       | 117.00       | 292.0       | 1.80             | 3.1                   | 339                 | 37.5          | 93.7%          | 176    |
| HPS160 1800 510 (L)   | -                   | 30.00       | 159.00       | 398.0       | 1.80             | 3.1                   | 339                 | 51.0          | 94.2%          | 209    |

# AMPH / LAB - IE3 Premium Efficiency Motors



## 3-Phase: 60Hz Standard

1.15 Service Factor (SF) • 208-230/460V 9 Leads • 333/575V 6 Leads

Frame Sizes 100 and Above in 575/990V 6 Leads • Frame Sizes 132 to 315 in 460/796V 6 Leads

Threaded Hole Output Shaft (Standard) • Squirrel Cage • Class F • TEFC • IP55 • IEC - CEI - UNEL MEC

Compliant with EISA Regulations & NRCAN Approved

AMPH (cURus approved) - 6:1 CT Turn Down - F2 Lead Box (F0 or F1 Available) - CC#: 046B

LAB (CSA Energy Verified) - 10:1 CT Turn Down - TEFC - PTC - Cast Based (F0 Lead Box, Non-Removable Feet) - ExNa

Filter Requirements Page 4

AMPH Dimensions (Frames 80 to 160): Pages 27 & 29

LAB Cast Iron Dimensions (Frames 132 to 315): Page 30

### 2 POLE - 3600 RPM

| Part Number     | Output Power |        | Speed<br>Min <sup>-1</sup> | Torque<br>Nm | EFF.<br>100% | Full Load Amps |        | Weight<br>(lbs) | Price (\$) |
|-----------------|--------------|--------|----------------------------|--------------|--------------|----------------|--------|-----------------|------------|
|                 | kW           | HP     |                            |              |              | 460 V          | 575 V  |                 |            |
| AMPH 80Z AA2    | 0.75         | 1.00   | 3525                       | 2.00         | 85.0         | 1.50           | 1.20   | 21              | \$913      |
| AMPH 80Z BA2    | 1.10         | 1.50   | 3490                       | 3.00         | 85.4         | 2.00           | 1.60   | 25              | \$999      |
| AMPH 80Z CA2    | 1.50         | 2.00   | 3460                       | 4.10         | 85.5         | 2.80           | 2.20   | 30              | \$1,032    |
| AMPH 90S AA2 ☉  | 1.50         | 2.00   | 3515                       | 4.10         | 85.5         | 2.80           | 2.20   | 37              | \$1,343    |
| AMPH 90L BA2 ☉  | 2.20         | 3.00   | 3480                       | 6.00         | 86.5         | 3.80           | 3.00   | 41              | \$1,758    |
| AMPH 90L DA2 ☉  | 3.00         | 4.00   | 3510                       | 8.20         | 88.5         | 5.30           | 4.20   | 45              | \$1,818    |
| AMPH 100L AA2   | 3.00         | 4.00   | 3515                       | 8.20         | 88.5         | 4.90           | 3.90   | 52              | \$1,933    |
| AMPH 100L CA2   | 4.00         | 5.50   | 3530                       | 10.80        | 88.5         | 7.40           | 5.90   | 59              | \$2,274    |
| AMPH 112M BA2   | 4.00         | 5.50   | 3520                       | 10.90        | 88.5         | 6.20           | 5.00   | 81              | \$2,491    |
| AMPH 112M CA2   | 5.50         | 7.50   | 3530                       | 14.90        | 89.5         | 8.90           | 7.10   | 81              | \$3,125    |
| AMPH 112M DA2   | 7.50         | 10.00  | 3530                       | 20.30        | 90.2         | 11.90          | 9.50   | 90              | \$3,129    |
| AMPH 132S ZA2   | 5.50         | 7.50   | 3540                       | 14.80        | 89.5         | 8.80           | 7.00   | 93              | \$3,279    |
| AMPH 132S TA2   | 7.50         | 10.00  | 3540                       | 20.20        | 90.2         | 12.00          | 9.60   | 106             | \$4,088    |
| AMPH 132M TA2   | 9.20         | 12.40  | 3545                       | 24.80        | 90.2         | 14.50          | 11.60  | 111             | \$4,641    |
| AMPH 132M RA2   | 11.00        | 15.00  | 3535                       | 29.70        | 91.0         | 17.70          | 14.20  | 133             | \$5,006    |
| AMPH 132M ZA2   | 15.00        | 20.00  | 3530                       | 40.60        | 91.0         | 23.50          | 18.80  | 150             | \$5,921    |
| AMPH 160M YA2   | 11.00        | 15.00  | 3550                       | 29.60        | 91.0         | 17.00          | 13.60  | 199             | \$5,193    |
| AMPH 160M ZA2   | 15.00        | 20.00  | 3555                       | 40.30        | 91.0         | 23.40          | 18.70  | 203             | \$6,839    |
| AMPH 160L ZA2 * | 18.50        | 25.00  | 3555                       | 49.70        | 91.7         | 31.00          | 24.80  | 239             | \$8,090    |
| AMPH 160L TA2 * | 22.00        | 30.00  | 3540                       | 59.30        | 91.7         | 35.80          | 28.60  | 239             | \$8,859    |
| LAB 180M E2     | 22.00        | 30.00  | 3560                       | 60.04        | 91.7         | 34.04          | 27.23  | 426             | \$5,982    |
| LAB 200L D2     | 30.00        | 40.00  | 3570                       | 79.82        | 92.4         | 45.04          | 36.03  | 527             | \$8,555    |
| LAB 200L E2     | 37.00        | 50.00  | 3570                       | 99.78        | 93.0         | 55.93          | 44.75  | 554             | \$9,334    |
| LAB 225M E2     | 45.00        | 60.00  | 3580                       | 119.40       | 93.6         | 66.69          | 53.35  | 710             | \$11,579   |
| LAB 250M E2     | 55.00        | 75.00  | 3580                       | 149.25       | 93.6         | 83.36          | 66.69  | 904             | \$14,392   |
| LAB 280S D2     | 75.00        | 100.00 | 3580                       | 199.00       | 94.1         | 110.56         | 88.45  | 1210            | \$17,562   |
| LAB 280M E2     | 90.00        | 125.00 | 3580                       | 248.75       | 95.0         | 136.89         | 109.51 | 1334            | \$19,952   |
| LAB 315S D2     | 110.00       | 150.00 | 3580                       | 298.50       | 95.0         | 164.27         | 131.42 | 1850            | \$35,995   |
| LAB 315L D2     | 150.00       | 200.00 | 3580                       | 398.01       | 95.4         | 218.11         | 174.49 | 2154            | \$39,037   |

### 4 POLE - 1800 RPM

| Part Number     | Output Power |        | Speed<br>Min <sup>-1</sup> | Torque<br>Nm | EFF.<br>100% | Full Load Amps |        | Weight<br>(lbs) | Price (\$) |
|-----------------|--------------|--------|----------------------------|--------------|--------------|----------------|--------|-----------------|------------|
|                 | kW           | HP     |                            |              |              | 460 V          | 575 V  |                 |            |
| AMPH 80Z AA4    | 0.75         | 1.00   | 1740                       | 4.10         | 85.5         | 1.45           | 1.20   | 24              | \$1,093    |
| AMPH 90S AA4 ☉  | 1.10         | 1.50   | 1745                       | 6.00         | 86.5         | 2.20           | 1.80   | 42              | \$1,307    |
| AMPH 90L BA4 ☉  | 1.50         | 2.00   | 1735                       | 8.30         | 86.5         | 2.90           | 2.30   | 42              | \$1,481    |
| AMPH 90L CA4 ☉  | 1.80         | 2.40   | 1730                       | 9.90         | 86.5         | 3.80           | 3.00   | 42              | \$1,684    |
| AMPH 100L AA4 + | 2.20         | 3.00   | 1760                       | 11.90        | 89.5         | 3.80           | 3.00   | 55              | \$1,963    |
| AMPH 100L BA4 + | 3.00         | 4.00   | 1765                       | 16.20        | 89.5         | 5.30           | 4.20   | 70              | \$2,249    |
| AMPH 112M BA4   | 4.00         | 5.50   | 1760                       | 21.70        | 89.5         | 6.90           | 5.50   | 79              | \$2,518    |
| AMPH 132S AA4   | 5.50         | 7.50   | 1770                       | 29.70        | 91.7         | 9.00           | 7.20   | 132             | \$3,524    |
| AMPH 132M BA4   | 7.50         | 10.00  | 1765                       | 40.50        | 91.7         | 12.50          | 10.40  | 143             | \$4,023    |
| AMPH 132M CA4   | 9.20         | 12.40  | 1765                       | 49.80        | 91.7         | 15.20          | 13.80  | 156             | \$4,766    |
| AMPH 132M DA4   | 11.00        | 15.00  | 1770                       | 59.70        | 92.4         | 18.50          | 14.80  | 170             | \$5,193    |
| AMPH 160M AA4   | 11.00        | 15.00  | 1770                       | 58.30        | 92.4         | 18.60          | 15.00  | 230             | \$6,157    |
| AMPH 160L BA4   | 15.00        | 20.00  | 1770                       | 80.00        | 93.0         | 24.80          | 19.80  | 272             | \$7,988    |
| AMPH 160L CA4   | 18.50        | 25.00  | 1770                       | 99.80        | 93.6         | 32.50          | 26.00  | 243             | \$8,588    |
| AMPH 160L DA4   | 22.00        | 30.00  | 1770                       | 118.60       | 93.6         | 35.60          | 28.50  | 298             | \$9,211    |
| LAB 180M D4     | 18.50        | 25.00  | 1770                       | 100.63       | 93.6         | 29.77          | 23.82  | 417             | \$5,840    |
| LAB 180L E4     | 22.00        | 30.00  | 1770                       | 120.75       | 93.6         | 37.51          | 30.01  | 452             | \$6,243    |
| LAB 200L D4     | 30.00        | 40.00  | 1770                       | 161.00       | 94.1         | 49.75          | 39.80  | 564             | \$8,030    |
| LAB 225S D4     | 37.00        | 50.00  | 1770                       | 201.25       | 94.5         | 57.61          | 46.09  | 680             | \$9,847    |
| LAB 225M E4     | 45.00        | 60.00  | 1770                       | 241.50       | 95.0         | 68.76          | 55.01  | 736             | \$11,912   |
| LAB 250M E4     | 55.00        | 75.00  | 1770                       | 301.88       | 95.4         | 86.60          | 69.28  | 913             | \$14,722   |
| LAB 280S D4     | 75.00        | 100.00 | 1780                       | 400.24       | 95.4         | 115.47         | 92.38  | 1277            | \$18,810   |
| LAB 280M E4     | 90.00        | 125.00 | 1780                       | 500.30       | 95.4         | 142.66         | 114.13 | 1400            | \$21,020   |
| LAB 315S D4     | 110.00       | 150.00 | 1780                       | 600.36       | 95.8         | 174.53         | 139.63 | 1880            | \$35,995   |
| LAB 315L D4     | 150.00       | 200.00 | 1780                       | 800.48       | 96.2         | 231.74         | 185.40 | 2220            | \$39,037   |

☉ S/L dual set of holes on base (actual frame is 90L)

+ Special flange required (H4)

\* △△△ internal connection AMPH 9 lead hook up at 230/460V YY/Y connection, (except for 2 pole 160L - △△△)

AMPH frame sizes from 80 to 160 have removable feet  
LAB cast iron constuction has non-removable feet

## AMPH / LAB - IE3 Premium Efficiency Motors



### 3-Phase: 60Hz Standard

1.15 Service Factor (SF) • 208-230/460V 9 Leads • 333/575V 6 Leads

Frame Sizes 100 and Above in 575/990V 6 Leads • Frame Sizes 132 to 315 in 460/796V 6 Leads

Threaded Hole Output Shaft (Standard) • Squirrel Cage • Class F • TEFC • IP55 • IEC - CEI - UNEL MEC

Compliant with EISA Regulations & NRCAN Approved

AMPH (cURus approved) - 6:1 CT Turn Down - F2 Lead Box (F0 or F1 Available) - CC#: 046B

LAB (CSA Energy Verified) - 10:1 CT Turn Down - TEFC - PTC Included - Cast Based (F0 Lead Box, Non-Removable Feet) - ExNa



Filter Requirements Page 4

AMPH Dimensions (Frames 90 to 160): Pages 27 & 29

LAB Cast Iron Dimensions (Frames 132 to 315): Page 30

#### 6 POLE - 1200 RPM

| Part Number     | Output Power |       | Speed Min <sup>-1</sup> | Torque Nm | EFF 100% | Full Load Amps |       | Weight (lbs) | Price (\$) |
|-----------------|--------------|-------|-------------------------|-----------|----------|----------------|-------|--------------|------------|
|                 | kW           | HP    |                         |           |          | 460 V          | 575 V |              |            |
| AMPH 90S AA6 ●  | 0.75         | 1.00  | 1155                    | 6.2       | 82.5     | 2.05           | 1.65  | 41           | \$1,722    |
| AMPH 100L AA6 + | 1.10         | 1.50  | 1175                    | 8.9       | 87.5     | 2.50           | 2.00  | 64           | \$2,483    |
| AMPH 112M AA6   | 1.10         | 1.50  | 1180                    | 8.9       | 87.5     | 2.50           | 2.00  | 78           | \$2,904    |
| AMPH 112M BA6   | 1.50         | 2.00  | 1180                    | 12.1      | 88.5     | 3.50           | 2.80  | 83           | \$3,276    |
| AMPH 112M CA6   | 1.80         | 2.40  | 1170                    | 14.7      | 88.5     | 3.90           | 3.10  | 83           | \$3,728    |
| AMPH 132S AA6   | 2.20         | 3.00  | 1175                    | 17.9      | 89.5     | 4.70           | 3.80  | 105          | \$4,064    |
| AMPH 132S BA6   | 3.00         | 4.00  | 1175                    | 24.4      | 89.5     | 6.40           | 5.10  | 108          | \$4,455    |
| AMPH 132M CA6   | 4.00         | 5.50  | 1175                    | 32.5      | 89.5     | 7.90           | 6.30  | 113          | \$5,141    |
| AMPH 160M AA6   | 5.50         | 7.50  | 1180                    | 44.5      | 91.0     | 9.80           | 7.80  | 189          | \$7,013    |
| AMPH 160M BA6   | 7.50         | 10.00 | 1180                    | 60.7      | 91.0     | 13.60          | 10.90 | 234          | \$7,937    |
| AMPH 160L CA6   | 9.20         | 12.40 | 1175                    | 74.8      | 91.0     | 16.40          | 13.10 | 257          | \$9,131    |

● S/L dual set of holes on base (actual frame is 90L)

+ Special flange required (H4)

Select AMPH sizes are available with dual mounting holes on the base.

9 lead hook up at 230/460V YY/Y connection (except for 2 pole 160L -  $\Delta\Delta/\Delta$ ).

AMPH frame sizes from 90 to 160 have removable feet.

#### 6 POLE - 1200 RPM

| Part Number | Output Power |        | Speed Min <sup>-1</sup> | Torque Nm | EFF 100% | Full Load Amps |        | Weight (lbs) | Price (\$) |
|-------------|--------------|--------|-------------------------|-----------|----------|----------------|--------|--------------|------------|
|             | kW           | HP     |                         |           |          | 460 V          | 575 V  |              |            |
| LAB 180L D6 | 15.00        | 20.00  | 1180                    | 120.75    | 91.7     | 25.53          | 20.42  | 408          | \$6,282    |
| LAB 200L D6 | 18.50        | 25.00  | 1160                    | 153.54    | 93.0     | 31.46          | 25.17  | 542          | \$7,941    |
| LAB 200L E6 | 22.00        | 30.00  | 1160                    | 184.25    | 93.0     | 37.76          | 30.20  | 565          | \$8,630    |
| LAB 225M D6 | 30.00        | 40.00  | 1160                    | 245.67    | 94.1     | 49.75          | 39.80  | 710          | \$11,200   |
| LAB 250M E6 | 37.00        | 50.00  | 1160                    | 307.08    | 94.1     | 62.19          | 49.75  | 842          | \$13,737   |
| LAB 280S D6 | 45.00        | 60.00  | 1160                    | 368.50    | 94.5     | 74.31          | 59.45  | 1090         | \$17,592   |
| LAB 280M E6 | 55.00        | 75.00  | 1190                    | 449.01    | 94.5     | 92.89          | 74.31  | 1180         | \$19,583   |
| LAB 315L D6 | 110.00       | 150.00 | 1170                    | 598.68    | 95.8     | 174.70         | 139.39 | 2180         | \$41,834   |

#### 8 POLE - 900 RPM

| Part Number  | Output Power |       | Speed Min <sup>-1</sup> | Torque Nm | EFF 100% | Full Load Amps |       | Weight (lbs) | Price (\$) |
|--------------|--------------|-------|-------------------------|-----------|----------|----------------|-------|--------------|------------|
|              | kW           | HP    |                         |           |          | 460 V          | 575 V |              |            |
| LAB 132M ZA8 | 2.20         | 3.00  | 870                     | 24.57     | 85.5     | 4.63           | 3.70  | 128          | \$2,368    |
| LAB 132M TA8 | 3.00         | 4.00  | 870                     | 32.76     | 86.5     | 6.10           | 4.88  | 143          | \$2,952    |
| LAB 160M YA8 | 3.70         | 5.00  | 870                     | 40.94     | 86.5     | 7.52           | 6.01  | 210          | \$3,934    |
| LAB 160M ZA8 | 5.50         | 7.50  | 870                     | 61.42     | 86.5     | 11.28          | 9.02  | 240          | \$4,402    |
| LAB 160L ZA8 | 7.50         | 10.00 | 870                     | 81.89     | 89.5     | 14.53          | 11.62 | 287          | \$5,101    |
| LAB 180L E8  | 11.00        | 15.00 | 870                     | 122.83    | 89.5     | 21.21          | 16.97 | 416          | \$6,186    |
| LAB 200L E8  | 15.00        | 20.00 | 870                     | 163.78    | 90.2     | 27.68          | 22.15 | 443          | \$8,561    |
| LAB 200L D8  | 18.00        | 25.00 | 880                     | 202.39    | 90.2     | 34.60          | 27.68 | 485          | \$9,456    |
| LAB 225S E8  | 22.00        | 30.00 | 880                     | 242.87    | 91.7     | 40.31          | 32.24 | 595          | \$11,394   |
| LAB 225M E8  | 30.00        | 40.00 | 880                     | 323.83    | 91.7     | 53.74          | 42.99 | 815          | \$12,593   |

LAB cast iron construction has non-removable feet.

### 3-Phase: 60Hz standard

1.15 Service Factor (SF) • 208-230/460V - 333/575V • F2 Lead Box (F0 or F1 Available for Frame Sizes 71 and Above)

Dimensions: Pages 26 & 29

TEFC • IP55 • Squirrel Cage • Threaded Hole Output Shaft (Standard) • Class F • IEC - CEI - UNEL MEC

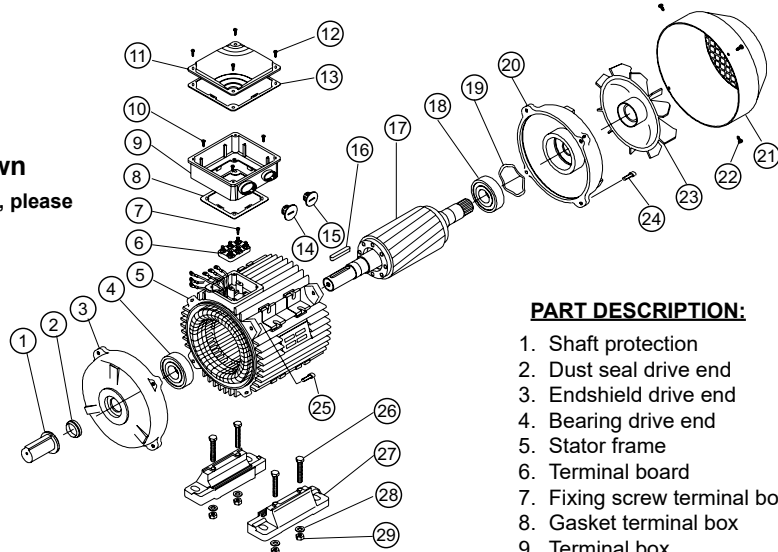
AM Motors (cURus approved)

ST Motors (CSA Approved)

#### 3 Phase Motor Parts Breakdown

When inquiring or ordering spare parts, please supply the following information:

- Motor Type
- Designation of Spare Part
- Mounting Arrangement
- Motor Serial Number
- Date on Nameplate



#### PART DESCRIPTION:

1. Shaft protection
2. Dust seal drive end
3. Endshield drive end
4. Bearing drive end
5. Stator frame
6. Terminal board
7. Fixing screw terminal board
8. Gasket terminal box
9. Terminal box
10. Fixing screw terminal box
11. Terminal box lid
12. Fixing screw terminal box lid
13. Gasket terminal box lid
14. Blank gland plug
15. Blank gland plug
16. Key
17. Rotor complete
18. Bearing non-drive end
19. Pre-load washer
20. Endshield non-drive end
21. Fan cover
22. Fixing screw fan cover
23. Fan
24. Fixing bolt endshield non-drive end
25. Fixing bolt endshield drive end
26. Fixing bolt motor feet
27. Motor feet
28. Fixing washer motor feet
29. Fixing nut motor feet

#### 2 POLE - 3600 RPM

| Part Number | HP   | Full Load Amps |       | Torque Nm | Speed Min <sup>-1</sup> | Weight (lbs) | Price (\$) |
|-------------|------|----------------|-------|-----------|-------------------------|--------------|------------|
|             |      | 460 V          | 575 V |           |                         |              |            |
| ST 56 S2 *  | 0.18 | 0.40           | 0.29  | 0.39      | 3300                    | 7            | \$514      |
| ST 63 C2 *  | 0.25 | 0.55           | 0.45  | 0.57      | 3120                    | 8            | \$517      |
| ST 63 S2 *  | 0.35 | 0.75           | 0.60  | 0.75      | 3310                    | 9            | \$523      |
| ST 63 L2 *  | 0.50 | 1.10           | 0.90  | 1.09      | 3265                    | 10           | \$541      |
| ST 71 C2    | 0.50 | 0.95           | 0.75  | 1.08      | 3300                    | 13           | \$550      |
| ST 71 S2    | 0.75 | 1.40           | 1.10  | 1.58      | 3380                    | 14           | \$557      |
| ST 71 L2    | 1.00 | 1.85           | 1.50  | 2.15      | 3320                    | 16           | \$625      |

#### 4 POLE - 1800 RPM

| Part Number | HP   | Full Load Amps |       | Torque Nm | Speed Min <sup>-1</sup> | Weight (lbs) | Price (\$) |
|-------------|------|----------------|-------|-----------|-------------------------|--------------|------------|
|             |      | 460 V          | 575 V |           |                         |              |            |
| ST 56 S4 *  | 0.12 | 0.40           | 0.29  | 0.55      | 1560                    | 6            | \$514      |
| ST 63 C4 *  | 0.18 | 0.45           | 0.35  | 0.79      | 1630                    | 7            | \$517      |
| ST 63 S4 *  | 0.25 | 0.60           | 0.50  | 1.12      | 1590                    | 9            | \$521      |
| ST 63 A4 *  | 0.33 | 0.80           | 0.65  | 1.44      | 1630                    | 9            | \$523      |
| ST 71 C4    | 0.35 | 0.85           | 0.65  | 1.56      | 1600                    | 13           | \$540      |
| ST 71 S4    | 0.5  | 1.10           | 0.90  | 2.16      | 1650                    | 13           | \$548      |
| AM 71 ZCA4  | 0.75 | 1.50           | 1.20  | 3.20      | 1670                    | 16           | \$615      |
| ST 80 C4    | 0.75 | 1.50           | 1.20  | 3.18      | 1680                    | 18           | \$619      |

#### 6 POLE - 1200 RPM

| Part Number | HP   | Full Load Amps |       | Torque Nm | Speed Min <sup>-1</sup> | Weight (lbs) | Price (\$) |
|-------------|------|----------------|-------|-----------|-------------------------|--------------|------------|
|             |      | 460 V          | 575 V |           |                         |              |            |
| ST 63 C6 *  | 0.12 | 0.55           | 0.45  | 0.87      | 980                     | 10           | \$811      |
| ST 71 C6    | 0.25 | 0.80           | 0.65  | 1.70      | 1050                    | 14           | \$837      |
| ST 71 S6    | 0.35 | 1.00           | 0.80  | 2.44      | 1020                    | 15           | \$847      |
| ST 80 C6    | 0.50 | 1.15           | 0.90  | 3.27      | 1090                    | 18           | \$870      |
| ST 80 S6    | 0.75 | 1.60           | 1.30  | 4.90      | 1090                    | 21           | \$942      |

#### 8 POLE - 900 RPM

| Part Number | HP   | Full Load Amps |       | Torque Nm | Speed Min <sup>-1</sup> | Weight (lbs) | Price (\$) |
|-------------|------|----------------|-------|-----------|-------------------------|--------------|------------|
|             |      | 460 V          | 575 V |           |                         |              |            |
| ST 71 C8    | 0.20 | 0.60           | 0.50  | 1.87      | 760                     | 13           | \$984      |
| ST 80 C8    | 0.35 | 1.00           | 0.80  | 3.08      | 810                     | 18           | \$1,207    |
| ST 90S C8 ● | 0.50 | 1.60           | 1.25  | 4.40      | 810                     | 25           | \$1,489    |
| ST 90L S8 ● | 0.75 | 2.30           | 1.85  | 6.60      | 810                     | 33           | \$1,674    |

\* Non-removable feet - side mount only (F2 standard/ F1 upon request)

● S/L dual set of holes on base (actual frame is 90L)

Frame sizes from 71 to 90 have removable feet.

## FB - 2-Speed Motors



### 3-Phase: 60Hz standard

1.0 Service Factor (SF) • 230V, 460V or 575V • Constant Torque • Threaded Hole Output Shaft

TEFC • Squirrel Cage • Class F • IP55 - IEC - CEI - UNEL MEC

Frame Sizes 71-160: F2 Lead Box (F0 or F1 Available)

Frame Sizes 180-315: F0 Lead Box (Cast based, Non-Removable Feet)

Dimensions (Frames 63 to 160): Pages 26 & 29

Dimensions (Frames 180 to 315 - same as LAB series): Page 30

#### 2/4 POLE - 3600/1800 RPM - 1 WINDING

| Part Number   | HP            | Weight<br>(lbs) | FULL LOAD AMPS |             | Price (\$) |
|---------------|---------------|-----------------|----------------|-------------|------------|
|               |               |                 | 460 V          | 575 V       |            |
| FB 63 S2/4 *  | 0.40/0.27     | 10              | 0.80/0.62      | 0.64/0.50   | \$1,073    |
| FB 71 C2/4    | 0.60/0.40     | 17              | 1.36/0.96      | 1.09/0.77   | \$1,266    |
| FB 80 C2/4    | 0.80/0.60     | 19              | 1.44/1.12      | 1.15/0.90   | \$1,426    |
| FB 80 S2/4    | 1.00/0.75     | 25              | 1.76/1.44      | 1.41/1.15   | \$1,520    |
| FB 80 L2/4    | 1.50/1.10     | 32              | 2.48/1.92      | 1.98/1.54   | \$1,611    |
| FB 90L C2/4 ● | 2.10/1.60     | 34              | 3.12/2.72      | 2.50/2.18   | \$2,166    |
| FB 90L S2/4 ● | 2.60/1.90     | 38              | 3.60/2.88      | 2.88/2.30   | \$2,360    |
| FB 100L C2/4  | 3.40/2.50     | 47              | 4.72/3.60      | 3.78/2.88   | \$2,810    |
| FB 100L L2/4  | 4.00/3.00     | 50              | 6.16/4.64      | 4.93/3.71   | \$2,846    |
| FB 100L S2/4  | 4.50/3.50     | 51              | 6.56/5.28      | 5.25/4.22   | \$3,305    |
| FB 112M C2/4  | 6.00/4.50     | 80              | 8.16/5.76      | 6.53/4.61   | \$4,567    |
| FB 132S ZA2/4 | 8.00/6.40     | 101             | 9.60/9.60      | 7.68/7.68   | \$6,146    |
| FB 132M ZA2/4 | 11.00/9.00    | 121             | 13.60/12.80    | 10.88/10.24 | \$7,185    |
| FB 160M ZA2/4 | 14.50/11.70   | 192             | 18.00/17.60    | 14.40/14.08 | \$11,144   |
| FB 160L ZA2/4 | 22.50/17.00   | 225             | 24.80/22.80    | 19.84/18.24 | \$16,963   |
| FB 180M ZA2/4 | 26.50/20.00   | 287             | INQUIRE        |             | \$17,686   |
| FB 180L ZA2/4 | 31.00/24.00   | 309             |                |             | \$20,987   |
| FB 200L P2/4  | 39.00/32.50   | 507             |                |             | \$28,258   |
| FB 200L R2/4  | 45.00/35.00   | 562             |                |             | \$29,911   |
| FB 225S P2/4  | 52.00/40.00   | 716             |                |             | \$34,594   |
| FB 225M P2/4  | 63.00/46.00   | 728             |                |             | \$39,078   |
| FB 250M P2/4  | 79.00/68.00   | 1025            |                |             | \$51,247   |
| FB 280S V2/4  | 98.00/82.00   | 1279            |                |             | \$69,526   |
| FB 280M V2/4  | 114.00/95.00  | 1367            |                |             | \$82,972   |
| FB 315S ZE2/4 | 156.00/116.00 | 1896            |                |             | \$99,634   |
| FB 315M ZE2/4 | 170.00/136.00 | 2073            |                |             | \$122,368  |
| FB 315L ZE2/4 | 204.00/163.00 | 2470            |                |             | \$131,978  |

#### 4/8 POLE - 1800/900 RPM - 1 WINDING

| Part Number   | HP            | Weight<br>(lbs) | FULL LOAD AMPS |             | Price (\$) |
|---------------|---------------|-----------------|----------------|-------------|------------|
|               |               |                 | 460 V          | 575 V       |            |
| FB 71 C4/8    | 0.35/0.18     | 15              | 0.56/0.64      | 0.45/0.51   | \$1,491    |
| FB 80 C4/8    | 0.50/0.25     | 17              | 0.83/0.63      | 0.66/0.50   | \$1,658    |
| FB 80 S4/8    | 0.70/0.35     | 20              | 1.12/1.04      | 0.90/0.83   | \$1,749    |
| FB 90S C4/8 ● | 1.00/0.50     | 30              | 1.68/1.44      | 1.34/1.15   | \$2,239    |
| FB 90L S4/8 ● | 1.30/0.70     | 35              | 1.92/1.76      | 1.54/1.41   | \$2,530    |
| FB 100L C4/8  | 1.90/0.90     | 48              | 2.72/2.80      | 2.18/2.24   | \$2,810    |
| FB 100L S4/8  | 2.50/1.20     | 56              | 3.30/3.10      | 2.64/2.48   | \$3,071    |
| FB 112M C4/8  | 2.40/1.40     | 70              | 3.36/3.20      | 2.69/2.56   | \$3,655    |
| FB 112M S4/8  | 3.00/1.80     | 75              | 4.16/3.68      | 3.33/2.94   | \$4,319    |
| FB 132S ZA4/8 | 5.20/2.80     | 95              | 7.68/5.76      | 6.14/4.61   | \$6,289    |
| FB 132M ZA4/8 | 6.50/3.50     | 119             | 9.36/6.72      | 7.49/5.38   | \$7,197    |
| FB 132M L4/8  | 7.50/4.00     | 135             | 9.73/7.20      | 7.78/5.76   | \$7,791    |
| FB 160M C4/8  | 8.50/5.50     | 165             | 9.60/9.60      | 7.68/7.68   | \$9,129    |
| FB 160M YA4/8 | 10.00/5.50    | 185             | 13.20/11.36    | 10.56/9.09  | \$11,099   |
| FB 160M ZA4/8 | 12.20/7.00    | 198             | 16.80/14.40    | 13.44/11.52 | \$14,043   |
| FB 160L ZA4/8 | 17.00/10.00   | 220             | 18.40/18.40    | 14.72/14.72 | \$16,846   |
| FB 180L ZA4/8 | 24.00/15.00   | 331             | INQUIRE        |             | \$22,858   |
| FB 200L P4/8  | 31.00/20.00   | 485             |                |             | \$28,989   |
| FB 200LR4/8   | 39.00/24.00   | 562             |                |             | \$35,803   |
| FB 225S P4/8  | 43.00/28.00   | 684             |                |             | \$39,129   |
| FB225M P4/8   | 50.00/35.00   | 695             |                |             | \$45,751   |
| FB 250M P4/8  | 63.00/43.00   | 1080            |                |             | \$57,017   |
| FB 280S V4/8  | 82.00/60.00   | 1279            |                |             | \$72,932   |
| FB 280M V4/8  | 95.00/71.00   | 1367            |                |             | \$91,174   |
| FB 315S ZE4/8 | 136.00/82.00  | 1742            |                |             | \$112,066  |
| FB315M ZE4/8  | 163.00/100.00 | 1896            |                |             | \$142,568  |
| FB 315L ZE4/8 | 200.00/120.00 | 2183            |                |             | \$172,404  |

#### 4/6 POLE - 1800/1200 RPM - 2 WINDING

| Part Number   | HP          | Weight<br>(lbs) | FULL LOAD AMPS |             | Price (\$) |
|---------------|-------------|-----------------|----------------|-------------|------------|
|               |             |                 | 460 V          | 575 V       |            |
| FB 71 C4/6    | 0.35/0.25   | 16              | 0.64/0.56      | 0.51/0.45   | \$1,636    |
| FB 80 A4/6    | 0.50/0.35   | 18              | 0.84/0.80      | 0.67/0.64   | \$1,888    |
| FB 80 C4/6    | 0.75/0.50   | 22              | 1.28/1.12      | 1.02/0.90   | \$2,009    |
| FB 90L C4/6 ● | 1.20/0.80   | 36              | 2.00/2.00      | 1.60/1.60   | \$2,551    |
| FB 100L L4/6  | 1.50/1.00   | 54              | 2.88/2.08      | 2.30/1.66   | \$2,968    |
| FB 100L C4/6  | 2.00/1.20   | 73              | 3.12/2.32      | 2.50/1.86   | \$3,276    |
| FB 112M C4/6  | 2.50/1.80   | 74              | 3.92/3.36      | 3.14/2.69   | \$4,087    |
| FB 112M S4/6  | 3.50/2.50   | 81              | 4.96/4.24      | 3.97/3.39   | \$5,034    |
| FB 132S ZA4/6 | 4.00/3.00   | 95              | 7.60/6.00      | 6.08/4.80   | \$5,651    |
| FB 132M ZA4/6 | 6.70/4.30   | 119             | 9.40/8.30      | 7.52/6.64   | \$11,033   |
| FB 160M YA4/6 | 10.00/6.80  | 185             | 13.20/9.60     | 10.56/7.68  | \$12,144   |
| FB 160M ZA4/6 | 12.20/8.00  | 198             | 18.40/13.60    | 14.72/10.88 | \$13,813   |
| FB 160L ZA4/6 | 16.00/11.00 | 220             | 19.20/18.40    | 15.36/14.72 | \$18,927   |
| FB180L ZA4/6  | 22.50/15.00 | 331             | INQUIRE        | INQUIRE     | \$23,493   |

#### 6/8 POLE - 1200/900 RPM - 2 WINDING

| Part Number   | HP          | Weight<br>(lbs) | FULL LOAD AMPS |            | Price (\$) |
|---------------|-------------|-----------------|----------------|------------|------------|
|               |             |                 | 460 V          | 575 V      |            |
| FB 71 C6/8    | 0.30/0.15   | 16              | 0.70/0.46      | 0.56/0.37  | \$1,705    |
| FB 80 C6/8    | 0.50/0.25   | 21              | 1.09/0.72      | 0.87/0.58  | \$2,255    |
| FB 90L C6/8 ● | 0.75/0.40   | 36              | 1.68/1.48      | 1.34/1.18  | \$3,320    |
| FB 100L C6/8  | 1.00/0.60   | 52              | 1.84/1.68      | 1.47/1.34  | \$3,580    |
| FB 112M C6/8  | 1.30/0.90   | 70              | 2.48/1.84      | 1.98/1.47  | \$4,302    |
| FB 112M S6/8  | 2.00/1.00   | 80              | 3.60/1.84      | 2.88/1.47  | \$4,890    |
| FB 132S ZA6/8 | 2.20/1.80   | 95              | 5.52/4.16      | 4.42/3.33  | \$6,563    |
| FB 132M ZA6/8 | 3.90/3.00   | 119             | 6.64/4.72      | 5.31/3.78  | \$8,458    |
| FB 160M YA6/8 | 5.50/4.00   | 185             | 9.20/6.32      | 7.36/5.06  | \$11,019   |
| FB 160M ZA6/8 | 7.50/5.50   | 198             | 12.16/9.60     | 9.73/7.68  | \$13,994   |
| FB 160L ZA6/8 | 10.00/7.50  | 220             | 14.40/11.60    | 11.52/9.28 | \$15,511   |
| FB 180L ZA6/8 | 15.00/11.50 | 331             | INQUIRE        | INQUIRE    | \$21,216   |

\* Non-removable feet - side mount only (F2 standard/ F1 upon request)

● S/L dual set of holes on base (actual frame is 90L)

#### 2/8 POLE - 3600/900 RPM - 2 WINDING

| Part Number   | HP        | Weight<br>(lbs) | FULL LOAD AMPS |           | Price (\$) |
|---------------|-----------|-----------------|----------------|-----------|------------|
|               |           |                 | 460 V          | 575 V     |            |
| FB 80 C2/8    | 0.50/0.15 | 21              | 1.04/0.56      | 0.83/0.45 | \$2,273    |
| FB 80 S2/8    | 0.75/0.15 | 26              | 1.12/0.67      | 0.9/0.54  | \$2,450    |
| FB 90L C2/8 ● | 1.00/0.25 | 35              | 2.00/0.92      | 1.6/0.74  | \$3,068    |
| FB 90L S2/8 ● | 1.50/0.40 | 43              | 2.64/1.20      | 2.11/0.96 | \$3,358    |
| FB 100L S2/8  | 2.00/0.50 | 45              | 2.80/1.60      | 2.24/1.28 | \$3,634    |
| FB 100L L2/8  | 2.50/0.60 | 45              | 3.44/1.76      | 2.75/1.41 | \$4,267    |
| FB 112M C2/8  | 2.50/1.45 | 78              | 4.00/2.96      | 3.2/2.37  | \$5,034    |
| FB 112M L2/8  | 3.00/0.75 | 79              | 4.40/1.60      | 3.52/1.28 | \$5,401    |
| FB 132S C2/8  | 4.00/1.00 | 81              | 6.90/4.00      | 5.52/3.2  | \$6,570    |
| FB 132M S2/8  | 6.00/1.50 | 94              | 7.60/5.60      | 6.08/4.48 | \$8,462    |

Frame sizes from 71 to 160 have removable feet.

Custom 2-Speeds available in all frame sizes.



## AMBZ - High Brake Torque Full Size Brake Motors (575V)



### Self Braking - 3-Phase: 60 Hz standard - AC 6 Lead-Coil Brake

1.15 Service Factor (SF) • 333/575V • Brake Voltage Same as Motor Voltage • TEFC • Squirrel Cage • Class F

DC Brake Coil Available • Manual Release Key Optional (side of motor) • IP54

IEC • CEI • UNEL MEC • CuRus • S3 60% Duty Cycle • F2 Lead Box (F0 or F1 Available for Frame Sizes 71 and Above)

Dimensions: Pages 28 & 29

#### 2 POLE - 3600 RPM

| Part Number    | HP    | Full Load Amps 575 V | Torque Nm | Speed Min <sup>-1</sup> | Max Brake Torque (Nm) | Weight (lbs) | Price (\$) |
|----------------|-------|----------------------|-----------|-------------------------|-----------------------|--------------|------------|
| AMBZ 63 ZAA2 * | 0.25  | 0.44                 | 0.57      | 3120                    | 3.5                   | 12           | \$1,720    |
| AMBZ 63 ZBA2 * | 0.33  | 0.58                 | 0.71      | 3310                    | 3.5                   | 13           | \$1,702    |
| AMBZ 63 ZCA2 * | 0.50  | 0.87                 | 1.09      | 3265                    | 3.5                   | 14           | \$1,831    |
| AMBZ 71 ZAA2   | 0.50  | 0.73                 | 1.08      | 3300                    | 3.5                   | 18           | \$1,805    |
| AMBZ 71 ZBA2   | 0.75  | 1.10                 | 1.58      | 3380                    | 7.5                   | 20           | \$1,867    |
| AMBZ 71 ZCA2   | 1.00  | 1.40                 | 2.15      | 3320                    | 7.5                   | 22           | \$2,001    |
| AMBZ 80 ZAA2   | 1.00  | 1.50                 | 2.09      | 3410                    | 7.5                   | 27           | \$2,149    |
| AMBZ 80 ZBA2   | 1.50  | 2.00                 | 3.14      | 3400                    | 15.0                  | 32           | \$2,243    |
| AMBZ 80 ZCA2   | 2.00  | 2.50                 | 4.19      | 3400                    | 15.0                  | 36           | \$2,355    |
| AMBZ 90S AA2 ● | 2.00  | 2.10                 | 4.18      | 3410                    | 15.0                  | 41           | \$2,848    |
| AMBZ 90S BA2 ● | 2.50  | 2.50                 | 5.21      | 3420                    | 15.0                  | 41           | \$3,021    |
| AMBZ 90L CA2 ● | 3.00  | 3.60                 | 6.25      | 3420                    | 15.0                  | 48           | \$3,141    |
| AMBZ 90L DA2 ● | 4.00  | 4.50                 | 8.27      | 3445                    | 40.0                  | 60           | \$3,313    |
| AMBZ 100L AA2  | 4.00  | 4.10                 | 8.27      | 3445                    | 40.0                  | 63           | \$3,675    |
| AMBZ 100L BA2  | 5.50  | 5.60                 | 11.59     | 3380                    | 40.0                  | 64           | \$4,047    |
| AMBZ 100L CA2  | 7.50  | 7.30                 | 15.72     | 3400                    | 40.0                  | 78           | \$4,314    |
| AMBZ 112M AA2  | 5.50  | 5.90                 | 11.42     | 3430                    | 40.0                  | 76           | \$4,579    |
| AMBZ 112M BA2  | 7.50  | 7.30                 | 15.44     | 3460                    | 40.0                  | 83           | \$5,014    |
| AMBZ 112M CA2  | 10.00 | 10.00                | 20.59     | 3460                    | 75.0                  | 106          | \$5,315    |
| AMBZ 132S YA2  | 7.50  | 7.60                 | 15.35     | 3480                    | 75.0                  | 124          | \$6,919    |
| AMBZ 132S ZA2  | 10.00 | 10.60                | 20.65     | 3450                    | 75.0                  | 137          | \$7,642    |
| AMBZ 132M ZA2  | 12.50 | 12.10                | 25.37     | 3510                    | 75.0                  | 148          | \$8,532    |
| AMBZ 132M RA2  | 15.00 | 15.20                | 30.93     | 3455                    | 75.0                  | 159          | \$8,914    |
| AMBZ 132M TA2  | 20.00 | 20.00                | 40.67     | 3504                    | 150.0                 | 183          | \$9,518    |
| AMBZ 160M VA2  | 15.00 | 16.50                | 30.27     | 3530                    | 150.0                 | 234          | \$11,728   |
| AMBZ 160M XA2  | 20.00 | 19.30                | 40.37     | 3530                    | 150.0                 | 271          | \$12,824   |
| AMBZ 160L XA2  | 25.00 | 25.70                | 50.31     | 3540                    | 150.0                 | 302          | \$14,334   |
| AMBZ 160L RA2  | 30.00 | 27.10                | 60.55     | 3530                    | 150.0                 | 302          | \$16,694   |

#### 6 POLE - 1200 RPM

| Part Number    | HP    | Full Load Amps 575 V | Torque Nm | Speed Min <sup>-1</sup> | Max Brake Torque (Nm) | Weight (lbs) | Price (\$) |
|----------------|-------|----------------------|-----------|-------------------------|-----------------------|--------------|------------|
| AMBZ 63 ZAA6 * | 0.12  | 0.36                 | 0.83      | 1030                    | 3.5                   | 15           | \$1,901    |
| AMBZ 71 ZAA6   | 0.25  | 0.62                 | 1.70      | 1050                    | 7.5                   | 20           | \$1,940    |
| AMBZ 71 ZBA6   | 0.33  | 0.80                 | 2.16      | 1090                    | 7.5                   | 21           | \$1,994    |
| AMBZ 80 ZAA6   | 0.50  | 0.91                 | 3.27      | 1090                    | 7.5                   | 26           | \$2,265    |
| AMBZ 80 ZBA6   | 0.75  | 1.30                 | 4.90      | 1090                    | 15.0                  | 32           | \$2,398    |
| AMBZ 90S AA6 ● | 1.00  | 1.70                 | 6.25      | 1140                    | 15.0                  | 39           | \$2,950    |
| AMBZ 90L BA6 ● | 1.50  | 2.50                 | 9.29      | 1150                    | 40.0                  | 52           | \$3,208    |
| AMBZ 100L AA6  | 2.00  | 3.60                 | 12.39     | 1150                    | 40.0                  | 59           | \$3,719    |
| AMBZ 100L BA6  | 2.50  | 3.60                 | 15.49     | 1150                    | 40.0                  | 69           | \$3,998    |
| AMBZ 112M AA6  | 3.00  | 4.10                 | 18.59     | 1150                    | 40.0                  | 80           | \$4,763    |
| AMBZ 112M CA6  | 4.00  | 4.60                 | 24.78     | 1150                    | 75.0                  | 117          | \$5,522    |
| AMBZ 132S ZA6  | 4.00  | 5.20                 | 24.78     | 1150                    | 75.0                  | 124          | \$7,033    |
| AMBZ 132M YA6  | 5.50  | 7.00                 | 34.07     | 1150                    | 75.0                  | 137          | \$7,641    |
| AMBZ 132M ZA6  | 7.50  | 9.40                 | 46.46     | 1150                    | 150.0                 | 177          | \$8,659    |
| AMBZ 160M ZA6  | 10.00 | 11.60                | 61.95     | 1150                    | 150.0                 | 269          | \$12,086   |
| AMBZ 160L ZA6  | 15.00 | 15.60                | 92.93     | 1150                    | 150.0                 | 315          | \$14,003   |

#### 4 POLE - 1800 RPM

| Part Number    | HP    | Full Load Amps 575 V | Torque Nm | Speed Min <sup>-1</sup> | Max Brake Torque (Nm) | Weight (lbs) | Price (\$) |
|----------------|-------|----------------------|-----------|-------------------------|-----------------------|--------------|------------|
| AMBZ 63 ZAA4 * | 0.16  | 0.36                 | 0.70      | 1630                    | 3.5                   | 12           | \$1,625    |
| AMBZ 63 ZBA4 * | 0.25  | 0.51                 | 1.12      | 1590                    | 3.5                   | 13           | \$1,691    |
| AMBZ 63 ZCA4 * | 0.33  | 0.58                 | 1.44      | 1630                    | 3.5                   | 14           | \$1,750    |
| AMBZ 71 ZAA4   | 0.33  | 0.73                 | 1.47      | 1600                    | 3.5                   | 17           | \$1,793    |
| AMBZ 71 ZBA4   | 0.50  | 0.91                 | 2.16      | 1650                    | 7.5                   | 19           | \$1,827    |
| AMBZ 71 ZCA4   | 0.75  | 1.20                 | 3.24      | 1650                    | 7.5                   | 22           | \$1,882    |
| AMBZ 80 ZAA4   | 0.75  | 1.20                 | 3.18      | 1680                    | 7.5                   | 27           | \$2,057    |
| AMBZ 80 ZBA4   | 1.00  | 1.70                 | 4.22      | 1690                    | 15.0                  | 32           | \$2,147    |
| AMBZ 80 ZCA4   | 1.50  | 2.00                 | 6.44      | 1660                    | 15.0                  | 34           | \$2,302    |
| AMBZ 90S AA4 ● | 1.50  | 2.10                 | 6.36      | 1680                    | 15.0                  | 39           | \$2,681    |
| AMBZ 90L BA4 ● | 2.00  | 2.70                 | 8.60      | 1656                    | 40.0                  | 48           | \$2,864    |
| AMBZ 90L CA4 ● | 2.50  | 3.10                 | 10.60     | 1680                    | 40.0                  | 51           | \$3,131    |
| AMBZ 90L DA4 ● | 3.00  | 3.90                 | 12.72     | 1680                    | 40.0                  | 56           | \$3,224    |
| AMBZ 100L AA4  | 3.00  | 3.50                 | 12.65     | 1690                    | 40.0                  | 64           | \$3,427    |
| AMBZ 100L BA4  | 4.00  | 5.00                 | 16.76     | 1700                    | 40.0                  | 70           | \$3,735    |
| AMBZ 100L CA4  | 5.50  | 6.40                 | 23.32     | 1680                    | 75.0                  | 85           | \$4,108    |
| AMBZ 112M AA4  | 5.50  | 5.70                 | 22.78     | 1720                    | 75.0                  | 97           | \$4,676    |
| AMBZ 112M BA4  | 7.50  | 8.00                 | 30.98     | 1725                    | 75.0                  | 97           | \$4,921    |
| AMBZ 132S AA4  | 7.50  | 7.80                 | 31.16     | 1715                    | 75.0                  | 135          | \$6,842    |
| AMBZ 132M BA4  | 10.00 | 10.60                | 41.18     | 1730                    | 75.0                  | 154          | \$7,636    |
| AMBZ 132M CA4  | 12.50 | 10.90                | 50.89     | 1750                    | 150.0                 | 196          | \$8,040    |
| AMBZ 132M DA4  | 15.00 | 16.00                | 61.84     | 1728                    | 150.0                 | 196          | \$9,481    |
| AMBZ 160M AA4  | 15.00 | 15.30                | 61.07     | 1750                    | 150.0                 | 260          | \$11,740   |
| AMBZ 160L BA4  | 20.00 | 19.60                | 81.42     | 1750                    | 150.0                 | 300          | \$12,936   |
| AMBZ 160L CA4  | 25.00 | 26.60                | 101.78    | 1750                    | 250.0                 | 344          | \$16,512   |
| AMBZ 160L DA4  | 30.00 | 32.00                | 122.13    | 1750                    | 250.0                 | 340          | \$17,172   |

#### 8 POLE - 900 RPM

| Part Number    | HP    | Full Load Amps 575 V | Torque Nm | Speed Min <sup>-1</sup> | Max Brake Torque (Nm) | Weight (lbs) | Price (\$) |
|----------------|-------|----------------------|-----------|-------------------------|-----------------------|--------------|------------|
| AMBZ 71 ZAA8   | 0.16  | 0.65                 | 1.50      | 760                     | 7.5                   | 20           | \$2,428    |
| AMBZ 80 ZAA8   | 0.33  | 0.87                 | 2.90      | 810                     | 7.5                   | 26           | \$2,603    |
| AMBZ 90S AA8 ● | 0.50  | 1.30                 | 4.40      | 810                     | 15.0                  | 38           | \$3,337    |
| AMBZ 90L BA8 ● | 0.75  | 2.00                 | 6.60      | 810                     | 15.0                  | 46           | \$3,538    |
| AMBZ 100L AA8  | 1.00  | 1.90                 | 8.69      | 820                     | 40.0                  | 59           | \$4,138    |
| AMBZ 100L BA8  | 1.50  | 2.90                 | 12.88     | 830                     | 40.0                  | 70           | \$4,605    |
| AMBZ 112M AA8  | 2.00  | 3.50                 | 17.17     | 830                     | 40.0                  | 100          | \$5,397    |
| AMBZ 132S ZA8  | 3.00  | 4.20                 | 25.15     | 850                     | 75.0                  | 143          | \$7,743    |
| AMBZ 132M ZA8  | 4.00  | 5.70                 | 33.14     | 860                     | 150.0                 | 163          | \$8,486    |
| AMBZ 160M YA8  | 5.50  | 6.50                 | 45.56     | 860                     | 150.0                 | 229          | \$12,027   |
| AMBZ 160M ZA8  | 7.50  | 8.50                 | 62.13     | 860                     | 150.0                 | 267          | \$12,863   |
| AMBZ 160L ZA8  | 10.00 | 11.00                | 83.82     | 850                     | 150.0                 | 313          | \$14,291   |

\* Non-removable feet - Side mount only (F2 standard/ F1 upon request)

● S/L dual set of holes on base (actual frame is 90L)

Frame sizes from 71 to 160 have removable feet.



AMBZ brake motors do not come with a manual brake release lever (available upon request - for side exterior location of brake cover only).

# AAF - High Brake Torque Full Size Brake Motors (230/460V)



## 3-Phase: 60Hz standard - AC 6 Lead-Coil Brake

1.15 Service Factor (SF) • 208 230V/460V or 333/575V (Inquire) • Brake Voltage Same as Motor Voltage

F2 Lead Box (F0 or F1 Available for Frame Sizes 71 and Above)

Adjustable Brake Torque • Manual Release Lever Included (rear end of motor) • TEFC • Squirrel Cage

Class F • IP54 • S3 60% Duty Cycle • IEC - CEI - UNEL MEC - CSA Approved

Dimensions: Page 28 & 29  
Parts Breakdown: Page 15

### 2 POLE - 3600 RPM

| Part Number  | HP    | Full Load Amps |       | Torque Nm | Speed Min <sup>-1</sup> | Max Brake Torque (Nm) | Weight (lbs) | Price (\$) |
|--------------|-------|----------------|-------|-----------|-------------------------|-----------------------|--------------|------------|
|              |       | 460 V          | 575 V |           |                         |                       |              |            |
| AAF 63 C2 *  | 0.25  | 0.55           | 0.45  | 0.57      | 3120                    | 4.9                   | 17           | \$1,774    |
| AAF 63 S2 *  | 0.35  | 0.75           | 0.6   | 0.75      | 3310                    | 4.9                   | 18           | \$1,824    |
| AAF 63 L2 *  | 0.50  | 1.1            | 0.9   | 1.09      | 3265                    | 4.9                   | 19           | \$1,889    |
| AAF 71 C2    | 0.50  | 0.95           | 0.75  | 1.08      | 3300                    | 10.8                  | 29           | \$1,861    |
| AAF 71 S2    | 0.75  | 1.4            | 1.1   | 1.58      | 3380                    | 10.8                  | 30           | \$1,926    |
| AAF 71 L2    | 1.00  | 1.85           | 1.5   | 2.15      | 3320                    | 10.8                  | 32           | \$2,062    |
| AAF 80 C2    | 1.00  | 1.8            | 1.4   | 2.09      | 3410                    | 19.6                  | 43           | \$2,216    |
| AAF 80 S2    | 1.50  | 2.3            | 1.9   | 3.14      | 3400                    | 19.6                  | 45           | \$2,312    |
| AAF 80 L2    | 2.00  | 2.8            | 2.3   | 4.19      | 3400                    | 19.6                  | 47           | \$2,427    |
| AAF 90S C2 ☉ | 2.00  | 3.2            | 2.5   | 4.18      | 3410                    | 34.3                  | 57           | \$2,997    |
| AAF 90S L2 ☉ | 2.50  | 3.9            | 3.1   | 5.21      | 3420                    | 34.3                  | 59           | \$3,180    |
| AAF 90L S2 ☉ | 3.00  | 4.6            | 3.7   | 6.25      | 3420                    | 34.3                  | 64           | \$3,306    |
| AAF 100L C2  | 4.00  | 5.7            | 4.5   | 8.27      | 3445                    | 54.0                  | 73           | \$3,869    |
| AAF 100L S2  | 5.50  | 7.5            | 6     | 11.59     | 3380                    | 54.0                  | 80           | \$4,260    |
| AAF 112M C2  | 5.50  | 7.8            | 6.2   | 11.42     | 3430                    | 88.3                  | 112          | \$4,819    |
| AAF 112M S2  | 7.50  | 10.1           | 8.1   | 15.44     | 3460                    | 88.3                  | 119          | \$5,279    |
| AAF 132S L2  | 7.50  | 10.5           | 8.4   | 15.35     | 3480                    | 166.8                 | 149          | \$7,283    |
| AAF 132S C2  | 10.00 | 13.5           | 10.8  | 20.65     | 3450                    | 166.8                 | 162          | \$8,044    |
| AAF 132M S2  | 12.50 | 17.1           | 13.7  | 25.37     | 3510                    | 166.8                 | 177          | \$8,981    |
| AAF 132M A2  | 15.00 | 19.8           | 15.8  | 30.93     | 3455                    | 166.8                 | 184          | \$9,384    |
| AAF 160M C2  | 15.00 | 18.6           | 14.9  | 30.1      | 3550                    | 264.9                 | 275          | \$12,345   |
| AAF 160M S2  | 20.00 | 24             | 19.2  | 40.08     | 3555                    | 264.9                 | 298          | \$13,499   |
| AAF 160L L2  | 25.00 | 29.6           | 23.7  | 50.03     | 3560                    | 264.9                 | 326          | \$15,089   |

### 6 POLE - 1200 RPM

| Part Number  | HP    | Full Load Amps |       | Torque Nm | Speed Min <sup>-1</sup> | Max Brake Torque (Nm) | Weight (lbs) | Price (\$) |
|--------------|-------|----------------|-------|-----------|-------------------------|-----------------------|--------------|------------|
|              |       | 460 V          | 575 V |           |                         |                       |              |            |
| AAF 63 C6 *  | 0.12  | 0.55           | 0.45  | 0.87      | 980                     | 4.9                   | 19           | \$2,495    |
| AAF 71 C6    | 0.25  | 0.80           | 0.65  | 1.70      | 1050                    | 10.8                  | 30           | \$2,000    |
| AAF 71 S6    | 0.35  | 1.00           | 0.80  | 2.44      | 1020                    | 10.8                  | 31           | \$2,055    |
| AAF 80 C6    | 0.50  | 1.15           | 0.90  | 3.27      | 1090                    | 19.6                  | 37           | \$2,335    |
| AAF 80 S6    | 0.75  | 1.60           | 1.30  | 4.90      | 1090                    | 19.6                  | 40           | \$2,473    |
| AAF 90S C6 ☉ | 1.00  | 2.20           | 1.80  | 6.25      | 1140                    | 34.3                  | 51           | \$3,105    |
| AAF 90L S6 ☉ | 1.50  | 3.10           | 2.50  | 9.33      | 1145                    | 34.3                  | 58           | \$3,377    |
| AAF 100L C6  | 2.00  | 4.10           | 3.30  | 12.39     | 1150                    | 54.0                  | 69           | \$3,828    |
| AAF 100L S6  | 2.50  | 4.70           | 3.80  | 15.49     | 1150                    | 54.0                  | 76           | \$4,209    |
| AAF 112M C6  | 3.00  | 4.90           | 3.90  | 18.59     | 1150                    | 88.3                  | 109          | \$5,017    |
| AAF 112M A6  | 4.00  | 6.50           | 5.20  | 24.78     | 1150                    | 88.3                  | 128          | \$5,812    |
| AAF 132S C6  | 4.00  | 6.90           | 5.50  | 24.78     | 1150                    | 88.3                  | 150          | \$7,403    |
| AAF 132M S6  | 5.50  | 9.20           | 7.40  | 34.07     | 1150                    | 88.3                  | 163          | \$8,044    |
| AAF 132M A6  | 7.50  | 12.60          | 10.00 | 46.46     | 1150                    | 88.3                  | 193          | \$9,115    |
| AAF 160M C6  | 10.00 | 13.90          | 11.10 | 60.89     | 1170                    | 264.9                 | 309          | \$12,722   |
| AAF 160L S6  | 15.00 | 19.80          | 15.80 | 91.73     | 1165                    | 264.9                 | 341          | \$14,740   |

☉ S/L dual set of holes on base (actual frame is 90L)

#### NOTE:

- Contact us for replacement brake components.
- Special brake voltages available. Please inquire.

### 4 POLE - 1800 RPM

| Part Number  | HP    | Full Load Amps |       | Torque Nm | Speed Min <sup>-1</sup> | Max Brake Torque (Nm) | Weight (lbs) | Price (\$) |
|--------------|-------|----------------|-------|-----------|-------------------------|-----------------------|--------------|------------|
|              |       | 460 V          | 575 V |           |                         |                       |              |            |
| AAF 63 C4 *  | 0.18  | 0.45           | 0.35  | 0.79      | 1630                    | 4.9                   | 18           | \$1,680    |
| AAF 63 S4 *  | 0.25  | 0.60           | 0.50  | 1.12      | 1590                    | 4.9                   | 19           | \$1,743    |
| AAF 63 A4 *  | 0.33  | 0.80           | 0.65  | 1.44      | 1630                    | 4.9                   | 20           | \$1,803    |
| AAF 71 C4    | 0.35  | 0.85           | 0.65  | 1.56      | 1600                    | 10.8                  | 26           | \$1,843    |
| AAF 71 S4    | 0.50  | 1.10           | 0.90  | 2.16      | 1650                    | 10.8                  | 28           | \$1,882    |
| AAF 71 L4    | 0.70  | 1.60           | 1.25  | 2.97      | 1680                    | 10.8                  | 30           | \$1,941    |
| AAF 80 C4    | 0.75  | 1.50           | 1.20  | 3.18      | 1680                    | 19.6                  | 38           | \$2,121    |
| AAF 80 S4    | 1.00  | 2.00           | 1.60  | 4.22      | 1690                    | 19.6                  | 41           | \$2,213    |
| AAF 80 L4    | 1.30  | 2.60           | 2.10  | 5.58      | 1660                    | 19.6                  | 43           | \$2,373    |
| AAF 90S C4   | 1.50  | 2.50           | 2.00  | 6.36      | 1680                    | 34.3                  | 50           | \$2,822    |
| AAF 90L S4   | 2.00  | 3.30           | 2.70  | 8.60      | 1656                    | 34.3                  | 56           | \$3,015    |
| AAF 90L L4   | 2.50  | 3.90           | 3.10  | 10.60     | 1680                    | 34.3                  | 60           | \$3,296    |
| AAF 100L C4  | 3.00  | 5.00           | 4.00  | 12.65     | 1690                    | 54.0                  | 76           | \$3,607    |
| AAF 100L S4  | 4.00  | 6.30           | 5.10  | 16.76     | 1700                    | 54.0                  | 84           | \$3,931    |
| AAF 112M S4  | 5.50  | 7.60           | 6.30  | 22.78     | 1720                    | 88.3                  | 118          | \$4,923    |
| AAF 112M/4   | 7.50  | 9.70           | 7.80  | 30.80     | 1735                    | 88.3                  | 136          | \$5,180    |
| AAF 132S S4  | 7.50  | 10.50          | 8.40  | 30.98     | 1725                    | 166.8                 | 161          | \$7,201    |
| AAF 132M A4  | 10.00 | 14.20          | 11.40 | 41.54     | 1715                    | 166.8                 | 184          | \$8,038    |
| AAF 132M L4  | 12.50 | 16.60          | 13.30 | 50.89     | 1750                    | 166.8                 | 217          | \$8,463    |
| AAF 160M C4  | 15.00 | 19.10          | 15.30 | 60.72     | 1760                    | 264.9                 | 315          | \$12,358   |
| AAF 160L BA4 | 20.00 | 25.00          | 20.00 | 80.96     | 1760                    | 264.9                 | 344          | \$13,616   |

### 8 POLE - 900 RPM

| Part Number  | HP    | Full Load Amps |       | Torque Nm | Speed Min <sup>-1</sup> | Max Brake Torque (Nm) | Weight (lbs) | Price (\$) |
|--------------|-------|----------------|-------|-----------|-------------------------|-----------------------|--------------|------------|
|              |       | 460 V          | 575 V |           |                         |                       |              |            |
| AAF 71 C8    | 0.20  | 0.60           | 0.50  | 1.87      | 760                     | 10.8                  | 28           | \$2,502    |
| AAF 80 C8    | 0.35  | 1.00           | 0.80  | 3.08      | 810                     | 19.6                  | 36           | \$2,999    |
| AAF 90S C8 ☉ | 0.50  | 1.60           | 1.25  | 4.40      | 810                     | 34.3                  | 56           | \$3,526    |
| AAF 90L S8 ☉ | 0.75  | 2.30           | 1.85  | 6.60      | 810                     | 34.3                  | 62           | \$3,724    |
| AAF 100L C8  | 1.00  | 2.40           | 1.95  | 8.69      | 820                     | 54.0                  | 69           | \$4,373    |
| AAF 100L S8  | 1.50  | 3.60           | 2.90  | 12.88     | 830                     | 54.0                  | 80           | \$4,848    |
| AAF 112M C8  | 2.00  | 4.30           | 3.40  | 17.17     | 830                     | 88.3                  | 119          | \$5,704    |
| AAF 132S C8  | 3.00  | 5.90           | 4.80  | 25.15     | 850                     | 88.3                  | 163          | \$8,184    |
| AAF 132M S8  | 4.00  | 7.50           | 6.00  | 33.14     | 860                     | 88.3                  | 182          | \$8,970    |
| AAF 160M C8  | 5.50  | 8.60           | 6.90  | 45.30     | 865                     | 264.9                 | 266          | \$12,713   |
| AAF 160M S8  | 7.50  | 12.50          | 10.00 | 61.42     | 870                     | 264.9                 | 290          | \$13,596   |
| AAF 160L L8  | 10.00 | 15.40          | 12.30 | 86.88     | 820                     | 264.9                 | 306          | \$15,105   |

\* Non-removable feet - Side mount only (F2 standard/ F1 upon request)

Frame sizes from 71 to 160 have removable feet.



Exploded View: Page 15

## AAFB - 2-Speed High Brake Torque Full Size Brake Motors



### 3-Phase: 60Hz standard - AC 6 Lead - Coil Brake

1.0 Service Factor (SF) • 230V, 460V or 575V • Adjustable Brake Torque • Manual Release Included

F2 Lead Box (F0 or F1 Available for Frame Sizes 71 and Above)

Squirrel Cage • TEFC • Class F • S6 60% Duty Cycle • IP54 • IEC • CEI • UNEL MEC • CSA Approved

Dimensions: Pages 28 & 29

#### 2/4 POLE - 3600/1800 RPM - 1 WINDING

| Part Number     | HP          | Weight (lbs) | Full Load Amps |             | Price (\$) |
|-----------------|-------------|--------------|----------------|-------------|------------|
|                 |             |              | 460 V          | 575 V       |            |
| AAFB 63 S2/4 *  | 0.40/0.27   | 19           | 0.80/0.62      | 0.64/0.50   | \$2,373    |
| AAFB 71 C2/4    | 0.60/0.40   | 33           | 1.36/0.96      | 1.09/0.77   | \$2,634    |
| AAFB 80 C2/4    | 0.80/0.60   | 43           | 1.44/1.12      | 1.15/0.90   | \$2,933    |
| AAFB 80 S2/4    | 1.00/0.75   | 50           | 1.76/1.44      | 1.41/1.15   | \$3,034    |
| AAFB 80 L2/4    | 1.50/1.10   | 57           | 2.48/1.92      | 1.98/1.54   | \$3,134    |
| AAFB 90L C2/4 ● | 2.10/1.60   | 63           | 3.12/2.72      | 2.50/2.18   | \$3,929    |
| AAFB 90L S2/4 ● | 2.60/1.90   | 66           | 3.60/2.88      | 2.88/2.30   | \$4,115    |
| AAFB 100L C2/4  | 3.40/2.50   | 76           | 4.72/3.60      | 3.78/2.88   | \$4,889    |
| AAFB 100L L2/4  | 4.00/3.00   | 77           | 6.16/4.64      | 4.93/3.71   | \$5,105    |
| AAFB 100L S2/4  | 4.50/3.50   | 80           | 6.56/5.28      | 5.25/4.22   | \$5,572    |
| AAFB 112M C2/4  | 6.00/4.50   | 121          | 8.16/5.76      | 6.53/4.61   | \$7,189    |
| AAFB 132S S2/4  | 7.50/6.00   | 163          | 9.60/9.60      | 7.68/7.68   | \$9,899    |
| AAFB 132M L2/4  | 11.00/9.00  | 181          | 13.60/12.80    | 10.88/10.24 | \$11,106   |
| AAFB 160M C2/4  | 15.00/12.00 | 317          | 18.00/17.60    | 14.4/14.08  | \$16,303   |
| AAFB 160L S2/4  | 20.00/17.00 | 333          | 24.80/22.80    | 19.84/18.24 | \$18,043   |

#### 4/8 POLE - 1800/900 RPM - 1 WINDING

| Part Number     | HP         | Weight (lbs) | Full Load Amps |             | Price (\$) |
|-----------------|------------|--------------|----------------|-------------|------------|
|                 |            |              | 460 V          | 575 V       |            |
| AAFB 71 C4/8    | 0.35/0.18  | 31           | 0.56/0.64      | 0.45/0.51   | \$2,966    |
| AAFB 80 C4/8    | 0.50/0.25  | 45           | 0.83/0.63      | 0.66/0.50   | \$3,284    |
| AAFB 80 S4/8    | 0.70/0.35  | 45           | 1.12/1.04      | 0.90/0.83   | \$3,363    |
| AAFB 90S C4/8 ● | 1.00/0.50  | 58           | 1.68/1.44      | 1.34/1.15   | \$4,134    |
| AAFB 90L S4/8 ● | 1.30/0.70  | 63           | 1.92/1.76      | 1.54/1.41   | \$4,455    |
| AAFB 100L C4/8  | 1.90/0.90  | 75           | 2.72/2.80      | 2.18/2.24   | \$5,068    |
| AAFB 112M C4/8  | 2.40/1.40  | 111          | 3.36/3.20      | 2.69/2.56   | \$6,250    |
| AAFB 112M S4/8  | 3.00/1.80  | 117          | 4.16/3.68      | 3.33/2.94   | \$6,900    |
| AAFB 132S C4/8  | 5.00/2.80  | 159          | 7.68/5.76      | 6.14/4.61   | \$9,997    |
| AAFB 132M S4/8  | 6.50/3.50  | 195          | 9.36/6.72      | 7.49/5.38   | \$10,891   |
| AAFB 160M C4/8  | 8.50/5.50  | 256          | 9.60/9.60      | 7.68/7.68   | \$15,454   |
| AAFB 160L S4/8  | 10.00/6.50 | 278          | 13.20/11.36    | 10.56/9.09  | \$17,113   |
| AAFB 160L L4/8  | 14.00/8.00 | 299          | 16.80/14.40    | 13.44/11.52 | \$18,727   |

#### 4/6 POLE - 1800/1200 RPM - 2 WINDING

| Part Number     | HP         | Weight (lbs) | Full Load Amps |             | Price (\$) |
|-----------------|------------|--------------|----------------|-------------|------------|
|                 |            |              | 460 V          | 575 V       |            |
| AAFB 71 C4/6    | 0.35/0.25  | 32           | 0.64/0.56      | 0.51/0.45   | \$3,034    |
| AAFB 80 A4/6    | 0.50/0.35  | 42           | 0.84/0.80      | 0.67/0.64   | \$3,455    |
| AAFB 80 C4/6    | 0.75/0.50  | 46           | 1.28/1.12      | 1.02/0.90   | \$3,583    |
| AAFB 90L C4/6 ● | 1.20/0.80  | 64           | 2.00/2.00      | 1.60/1.60   | \$4,421    |
| AAFB 100L L4/6  | 1.50/1.00  | 83           | 2.88/2.08      | 2.30/1.66   | \$5,118    |
| AAFB 100L C4/6  | 2.00/1.20  | 102          | 3.12/2.32      | 2.50/1.86   | \$5,422    |
| AAFB 112M C4/6  | 2.50/1.80  | 115          | 3.92/3.36      | 3.14/2.69   | \$6,542    |
| AAFB 112M S4/6  | 3.50/2.50  | 124          | 4.96/4.24      | 3.97/3.39   | \$7,477    |
| AAFB 132M C4/6  | 5.50/3.50  | 187          | 7.60/6.00      | 6.08/4.80   | \$10,349   |
| AAFB 160M C4/6  | 7.50/5.00  | 265          | 10.80/8.00     | 8.64/6.40   | \$15,815   |
| AAFB 160M S4/6  | 10.00/6.50 | 289          | 13.20/9.60     | 10.56/7.68  | \$16,680   |
| AAFB 160L L4/6  | 13.00/9.00 | 311          | 20.00/13.60    | 16.00/10.88 | \$18,223   |

#### 6/8 POLE - 1200/900 RPM - 2 WINDING

| Part Number     | HP        | Weight (lbs) | Full Load Amps |           | Price (\$) |
|-----------------|-----------|--------------|----------------|-----------|------------|
|                 |           |              | 460 V          | 575 V     |            |
| AAFB 71 C6/8    | 0.30/0.15 | 31           | 0.70/0.46      | 0.56/0.37 | \$3,096    |
| AAFB 80 C6/8    | 0.50/0.25 | 45           | 1.09/0.72      | 0.87/0.58 | \$3,825    |
| AAFB 90L C6/8 ● | 0.75/0.40 | 64           | 1.68/1.48      | 1.34/1.18 | \$5,105    |
| AAFB 100L C6/8  | 1.00/0.60 | 80           | 1.84/1.68      | 1.47/1.34 | \$5,752    |
| AAFB 112M C6/8  | 1.30/0.90 | 112          | 2.48/1.84      | 1.98/1.47 | \$6,759    |
| AAFB 112M S6/8  | 2.00/1.00 | 121          | 3.60/1.84      | 2.88/1.47 | \$7,333    |
| AAFB 132M A6/8  | 3.00/1.70 | 154          | 5.52/4.16      | 4.41/3.33 | \$10,605   |
| AAFB 132M C6/8  | 4.00/2.30 | 185          | 6.64/4.72      | 5.31/3.77 | \$12,472   |
| AAFB 160M C6/8  | 6.50/3.50 | 285          | 9.20/6.32      | 7.36/5.06 | \$17,974   |
| AAFB 160L S6/8  | 8.00/4.50 | 307          | 12.16/9.60     | 9.73/7.68 | \$20,200   |

\* Non-removable feet - Side mount only (F2 standard/ F1 upon request)

● S/L dual set of holes on base (actual frame is 90L)

Frame sizes from 71 to 160 have removable feet.

#### 2/8 POLE - 3600/900 RPM - 2 WINDING

| Part Number     | HP        | Weight (lbs) | Full Load Amps |           | Price (\$) |
|-----------------|-----------|--------------|----------------|-----------|------------|
|                 |           |              | 460 V          | 575 V     |            |
| AAFB 80 C2/8    | 0.50/0.15 | 40           | 1.04/0.56      | 0.83/0.45 | \$3,858    |
| AAFB 80 S2/8    | 0.75/0.15 | 51           | 1.12/0.67      | 0.90/0.54 | \$4,022    |
| AAFB 90L C2/8 ● | 1.00/0.25 | 58           | 2.00/0.92      | 1.60/0.74 | \$5,143    |
| AAFB 90L S2/8 ● | 1.50/0.40 | 73           | 2.64/1.20      | 2.11/0.96 | \$5,143    |
| AAFB 100L S2/8  | 2.00/0.50 | 76           | 2.80/1.60      | 2.24/1.28 | \$5,752    |
| AAFB 100L L2/8  | 2.50/0.60 | 77           | 3.44/1.76      | 2.75/1.41 | \$6,400    |
| AAFB 112M C2/8  | 2.50/1.45 | 119          | 4.00/2.96      | 3.20/2.37 | \$7,477    |
| AAFB 112M L2/8  | 3.00/0.75 | 120          | 4.40/1.60      | 3.52/1.28 | \$7,836    |
| AAFB 132S C2/8  | 4.00/1.00 | 158          | 6.90/4.00      | 5.52/3.20 | \$10,605   |
| AAFB 132M S2/8  | 6.00/1.50 | 184          | 7.60/5.60      | 6.08/4.48 | \$12,453   |

#### NOTE:

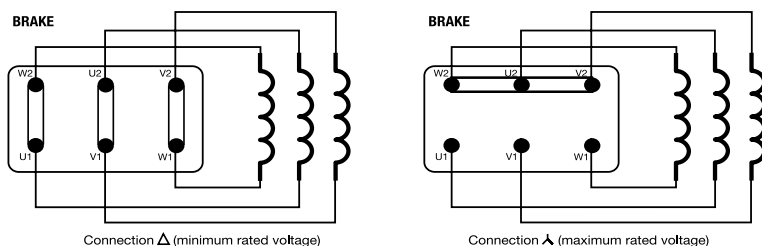
- Contact us for replacement brake components.
- Special brake voltages available. Please inquire.



## 3-Phase Brake Motors

In the event of a power failure, the motor, and the machinery it is driving, will stop immediately, braking is SAFE, POWERFUL and FAST. The "dead" time created by the inertia of rotating parts is reduced to a minimum. Braking power is independent of the direction of rotation. The instant braking action of these motors is particularly suited to situations where accurate positioning and ability to repeat is essential.

The standard configuration includes two separate terminal blocks supplying electrical current and controls. One supplies the brake, the other supplies the motor. The materials used in the construction of all friction surfaces are designed to withstand frequent stops per hour. Special care has been taken to ensure proper heat dissipation.



All brake coils are designed with standard three phase voltage (AC) 230/460v or 333/575v - regardless of what voltage the motor winding might be. Special brake coil voltage can be supplied upon request.

### ELECTROMAGNET REPLACEMENT:

Unscrew the manual releasing lever (41) if the brake has one. Remove the brake cover (39). Release the six wires connecting the brake to the terminal board (20). Unscrew the nuts (35/5) and remove the electromagnet (38) from the pilot pin (35/1). Place the new electromagnet on the pilot pin. Replace and tighten the nuts (35/5). Adjust the nuts (35/4) to equalize the value of the air gap to factory specifications (between 0.5 - 0.8mm).

Insert the feed cables through the hole from the braking section. Reconnect all previous connections.

### DISK BRAKE REPLACEMENT:

Unscrew the manual release lever (41) if the brake has one. Unscrew the nuts (35/5) and remove the electromagnet (38). Unscrew nuts (35/4) and self locking nut (35/3) and extract the spring (35/2) and countermagnet (37) and extract the disk brake (36). With clean hands, install the new disk brake. Take precautions that the O-ring (34) is properly installed on the brake support flange (32). Make sure the disk brake has a minimum clearance of 0.3mm from the friction path. Replace the countermagnet (37) and spring (35/2) and replace nuts (35/3) and (35/4). Replace the electromagnet and nuts (35/5). Be sure to maintain an air gap of between 0.5 and 0.8mm to regulate the air gap and braking torque.

### AIR GAP REGULATION:

The air gap i.e., the distance between the electromagnet (38) and the countermagnet (37) must be carefully set between 0.5 and 0.8mm. If this

distance is not carefully maintained because of worn disk brakes or incorrect adjustment procedures, vibration of the countermagnet or even the burning of the electromagnet could result.

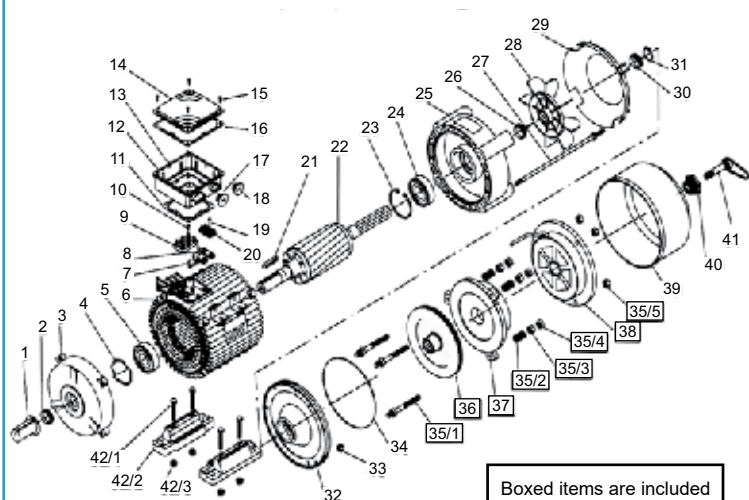
It is recommended that you check the air gap periodically (every 1,000,000 insertions) since the gap tends to increase with usage of the disk brake. Regular inspection will ensure trouble-free operation and reduced down-time. To regulate the air gap, adjust nuts (35/4) and (35/5). Be sure to maintain an even air gap of 0.5 and 0.8mm between the two mating surfaces.

### BRAKE TORQUE REGULATION:

The braking torque can be manually adjusted over a wide range simply by varying the pressure of the springs acting on the moving armature of the electromagnet. Braking action is achieved by moving the mobile armature against a brake disc which is rigidly keyed to the motor shaft. Axial movement is blocked by the motor flange

The braking torque is proportional to the pressure exerted by the springs (35/2) and may be varied by adjusting the self-locking nuts (35/3). The pressure of the springs must be as uniform as possible. When applying the brake, the electromagnet (38) should attract the countermagnet (37) and hold it without creating vibration in order to achieve maximum braking torque. To reduce the braking torque, loosen the self-locking nuts (35/3) further until the desired amount of torque has been achieved.

### Parts Breakdown for AAF/AAFB Brake Motors



Boxed items are included in a brake assembly kit.

### PART DESCRIPTION:

- |                                                             |                                         |
|-------------------------------------------------------------|-----------------------------------------|
| 1 Shaft protection                                          | 26 Dust seal                            |
| 2 Dust seal drive end                                       | 27 Tie rod                              |
| 3 End shield drive end                                      | 28 Fan                                  |
| 4 Preload washer                                            | 29 Fan cover                            |
| 5 Bearing drive end                                         | 30 Dust seal (for IP55 only)            |
| 6 Slater frame                                              | 31 Circlip for fan locking              |
| 7 Terminal board support (for sizes 63 ... 112)             | 32 Brake support flange                 |
| 8 Fixing screw terminal board support (for sizes 63... 112) | 33 Tie rod fixing nut                   |
| 9 Motor terminal board                                      | 34 O-ring (for IP55 only)               |
| 10 Fixing screw motor terminal board                        | 35 Brake adjusting fixing kit:          |
| 11 Gasket terminal box                                      | [35/1] guiding column                   |
| 12 Terminal box                                             | [35/2] braking spring                   |
| 13 Fixing screw terminal box                                | [35/3] self-locking nut                 |
| 14 Gasket terminal box lid                                  | [35/4] electromagnet locking nut        |
| 15 Terminal box lid                                         | [35/5] electromagnet locking nut        |
| 16 Fixing screw terminal box lid                            | 36 Brake disk                           |
| 17 Blank gland plug                                         | 37 Countermagnet (Brake anchor)         |
| 18 Blank gland plug                                         | 38 Electromagnet                        |
| 19 Fixing screw brake terminal board (for sizes 63... 112)  | 39 Brake cover                          |
| 20 Brake terminal board (for sizes 63... 112)               | 40 Nipple                               |
| 21 Motor key                                                | 41 Manual brake release lever           |
| 22 Rotor complete                                           | 42 Foot kit (1 foot) for sizes 71 - 160 |
| 23 Circlip                                                  | 42/1 fixing screw                       |
| 24 Bearing non drive end                                    | 42/2 foot                               |
| 25 End shield non-drive end                                 | 42/3 fixing nut                         |

## MS - Low Brake Torque Compact Brake Motors



### 3-Phase: 60Hz Standard - DC Brake Coil

1.15 Service Factor (SF) • 208 230/460V or 333/575V • F2 Lead Box (F0 or F1 Available for Frame Sizes 71 and Above)

Brake Voltage Standard 230V-AC into Rectifier with 460V Motor, or 333V-AC into Rectifier with 575V motor

TEFC • Squirrel Cage • Class F • IP54 • S6 70% Duty Cycle • IEC - CEI - UNEL MEC - CSA approved

Dimensions: Pages 28 & 29  
Connection Diagram: Page 58

#### 2 POLE - 3600 RPM

| Part Number | HP    | Full Load Amps |       | Rated Torque Nm | Speed Min <sup>-1</sup> | Max Brake Torque (Nm) | Weight (lbs) | Price (\$) |
|-------------|-------|----------------|-------|-----------------|-------------------------|-----------------------|--------------|------------|
|             |       | 460 V          | 575 V |                 |                         |                       |              |            |
| MS 63 C2 *  | 0.25  | 0.55           | 0.45  | 0.57            | 3120                    | 3                     | 11           | \$1,541    |
| MS 63 S2 *  | 0.35  | 0.75           | 0.60  | 0.75            | 3310                    | 3                     | 12           | \$1,581    |
| MS 63 L2 *  | 0.50  | 1.10           | 0.90  | 1.09            | 3265                    | 3                     | 12           | \$1,602    |
| MS 71 C2    | 0.50  | 0.95           | 0.75  | 1.08            | 3300                    | 4                     | 15           | \$1,683    |
| MS 71 S2    | 0.75  | 1.40           | 1.10  | 1.58            | 3380                    | 4                     | 16           | \$1,773    |
| MS 71 L2    | 1.00  | 1.85           | 1.50  | 2.15            | 3320                    | 4                     | 18           | \$1,853    |
| MS 80 C2    | 1.00  | 1.80           | 1.40  | 2.09            | 3410                    | 7                     | 23           | \$1,964    |
| MS 80 S2    | 1.50  | 2.30           | 1.90  | 3.14            | 3400                    | 7                     | 26           | \$2,114    |
| MS 80 L2    | 2.00  | 2.80           | 2.30  | 4.19            | 3400                    | 7                     | 29           | \$2,240    |
| MS 90S C2   | 2.00  | 3.20           | 2.50  | 4.18            | 3410                    | 7                     | 32           | \$2,582    |
| MS 90S L2   | 2.50  | 3.90           | 3.10  | 5.21            | 3420                    | 7                     | 36           | \$2,866    |
| MS 90L S2   | 3.00  | 4.60           | 3.70  | 6.25            | 3420                    | 7                     | 40           | \$3,007    |
| MS 90L DA2  | 4.00  | 5.80           | 4.60  | 8.19            | 3480                    | 7                     | 50           | \$3,217    |
| MS 100L C2  | 4.00  | 5.70           | 4.50  | 8.27            | 3445                    | 13                    | 51           | \$3,553    |
| MS 100L S2  | 5.50  | 7.50           | 6.00  | 11.59           | 3380                    | 13                    | 58           | \$3,953    |
| MS 100L CA2 | 7.50  | 9.20           | 7.40  | 15.31           | 3490                    | 13                    | 68           | \$4,112    |
| MS 112M C2  | 5.50  | 7.80           | 6.20  | 11.42           | 3430                    | 13                    | 67           | \$4,293    |
| MS 112M S2  | 7.50  | 10.10          | 8.10  | 15.44           | 3460                    | 13                    | 81           | \$4,742    |
| MS 112M CA2 | 10.00 | 12.30          | 9.80  | 20.24           | 3520                    | 13                    | 86           | \$5,067    |
| MS 132S L2  | 7.50  | 10.50          | 8.40  | 15.35           | 3480                    | 30                    | 95           | \$5,501    |
| MS 132S C2  | 10.00 | 13.50          | 10.80 | 20.65           | 3450                    | 30                    | 108          | \$6,916    |
| MS 132M S2  | 12.50 | 17.10          | 13.70 | 25.37           | 3510                    | 30                    | 127          | \$7,536    |
| MS 132M A2  | 15.00 | 19.80          | 15.80 | 30.93           | 3455                    | 30                    | 129          | \$8,471    |
| MS 160M VA2 | 15.00 | 18.60          | 14.90 | 30.10           | 3550                    | 30                    | 193          | \$9,100    |
| MS 160M XA2 | 20.00 | 24.00          | 19.20 | 40.08           | 3555                    | 30                    | 232          | \$10,883   |
| MS 160L XA2 | 25.00 | 29.60          | 23.70 | 50.03           | 3560                    | 30                    | 263          | \$12,966   |
| MS 160L RA2 | 30.00 | 33.50          | 26.80 | 60.21           | 3550                    | 30                    | 263          | \$14,010   |

#### 6 POLE - 1200 RPM

| Part Number | HP    | Full Load Amps |       | Rated Torque Nm | Speed Min <sup>-1</sup> | Max Brake Torque (Nm) | Weight (lbs) | Price (\$) |
|-------------|-------|----------------|-------|-----------------|-------------------------|-----------------------|--------------|------------|
|             |       | 460 V          | 575 V |                 |                         |                       |              |            |
| MS 63 C6 *  | 0.12  | 0.55           | 0.45  | 0.87            | 980                     | 3                     | 12           | \$2,155    |
| MS 71 C6    | 0.25  | 0.80           | 0.65  | 1.70            | 1050                    | 4                     | 16           | \$1,882    |
| MS 71 S6    | 0.35  | 1.00           | 0.80  | 2.44            | 1020                    | 4                     | 17           | \$1,949    |
| MS 80 C6    | 0.50  | 1.15           | 0.90  | 3.27            | 1090                    | 7                     | 23           | \$2,130    |
| MS 80 S6    | 0.75  | 1.60           | 1.30  | 4.90            | 1090                    | 7                     | 25           | \$2,283    |
| MS 90S C6   | 1.00  | 2.20           | 1.80  | 6.25            | 1140                    | 7                     | 30           | \$2,651    |
| MS 90L S6   | 1.50  | 3.10           | 2.50  | 9.33            | 1145                    | 7                     | 38           | \$2,952    |
| MS 100L C6  | 2.00  | 4.10           | 3.30  | 12.39           | 1150                    | 13                    | 46           | \$3,444    |
| MS 100L S6  | 2.50  | 4.70           | 3.80  | 15.49           | 1150                    | 13                    | 56           | \$3,806    |
| MS 112M C6  | 3.00  | 4.90           | 3.90  | 18.59           | 1150                    | 13                    | 73           | \$4,585    |
| MS 112M A6  | 4.00  | 6.50           | 5.20  | 24.78           | 1150                    | 13                    | 87           | \$5,371    |
| MS 132S C6  | 4.00  | 6.90           | 5.50  | 24.78           | 1150                    | 30                    | 95           | \$6,385    |
| MS 132M S6  | 5.50  | 9.20           | 7.40  | 34.07           | 1150                    | 30                    | 108          | \$6,881    |
| MS 132M A6  | 7.50  | 12.60          | 10.00 | 46.46           | 1150                    | 30                    | 136          | \$7,982    |
| MS 160M ZA6 | 10.00 | 13.90          | 11.10 | 60.89           | 1170                    | 30                    | 230          | \$9,302    |
| MS 160L ZA6 | 15.00 | 19.80          | 15.80 | 91.73           | 1165                    | 30                    | 275          | \$12,617   |

#### 4 POLE - 1800 RPM

| Part Number | HP    | Full Load Amps |       | Rated Torque Nm | Speed Min <sup>-1</sup> | Max Brake Torque (Nm) | Weight (lbs) | Price (\$) |
|-------------|-------|----------------|-------|-----------------|-------------------------|-----------------------|--------------|------------|
|             |       | 460 V          | 575 V |                 |                         |                       |              |            |
| MS 63 C4 *  | 0.18  | 0.45           | 0.35  | 0.79            | 1630                    | 3                     | 10           | \$1,497    |
| MS 63 S4 *  | 0.25  | 0.60           | 0.50  | 1.12            | 1590                    | 3                     | 12           | \$1,548    |
| MS 63 A4 *  | 0.33  | 0.80           | 0.65  | 1.44            | 1630                    | 3                     | 12           | \$1,592    |
| MS 71 C4    | 0.35  | 0.85           | 0.65  | 1.56            | 1600                    | 4                     | 15           | \$1,672    |
| MS 71 S4    | 0.50  | 1.10           | 0.90  | 2.16            | 1650                    | 4                     | 16           | \$1,734    |
| MS 71 L4    | 0.70  | 1.60           | 1.25  | 2.97            | 1680                    | 4                     | 19           | \$1,829    |
| MS 71 ZCA4  | 0.75  | 1.50           | 1.20  | 3.20            | 1670                    | 4                     | 21           | \$1,839    |
| MS 80 C4    | 0.75  | 1.50           | 1.20  | 3.18            | 1680                    | 7                     | 23           | \$1,939    |
| MS 80 S4    | 1.00  | 2.00           | 1.60  | 4.22            | 1690                    | 7                     | 25           | \$2,011    |
| MS 80 L4    | 1.30  | 2.60           | 2.10  | 5.58            | 1660                    | 7                     | 28           | \$2,187    |
| MS 90S C4   | 1.50  | 2.50           | 2.00  | 6.36            | 1680                    | 7                     | 32           | \$2,424    |
| MS 90L S4   | 2.00  | 3.30           | 2.70  | 8.60            | 1656                    | 7                     | 36           | \$2,647    |
| MS 90L L4   | 2.50  | 3.90           | 3.10  | 10.60           | 1680                    | 7                     | 41           | \$2,945    |
| MS 90L DA4  | 3.00  | 5.00           | 4.00  | 12.50           | 1710                    | 7                     | 46           | \$3,090    |
| MS 100L C4  | 3.00  | 5.00           | 4.00  | 12.65           | 1690                    | 13                    | 50           | \$3,247    |
| MS 100L S4  | 4.00  | 6.30           | 5.10  | 16.76           | 1700                    | 13                    | 56           | \$3,588    |
| MS 100L CA4 | 5.50  | 8.20           | 6.60  | 22.78           | 1720                    | 13                    | 66           | \$3,966    |
| MS 112M S4  | 5.50  | 7.60           | 6.30  | 22.78           | 1720                    | 13                    | 74           | \$4,347    |
| MS 112M BA4 | 7.50  | 9.70           | 7.80  | 30.80           | 1735                    | 13                    | 86           | \$5,000    |
| MS 132S S4  | 7.50  | 10.50          | 8.40  | 30.98           | 1725                    | 30                    | 106          | \$6,027    |
| MS 132M A4  | 10.00 | 14.20          | 11.40 | 41.54           | 1715                    | 30                    | 126          | \$7,079    |
| MS 132M RA4 | 12.50 | 16.60          | 13.30 | 50.89           | 1750                    | 30                    | 164          | \$7,984    |
| MS 132M TA4 | 15.00 | 19.90          | 15.90 | 61.42           | 1740                    | 30                    | 164          | \$8,690    |
| MS 160M XA4 | 15.00 | 19.10          | 15.30 | 60.72           | 1760                    | 30                    | 218          | \$8,909    |
| MS 160L XA4 | 20.00 | 25.00          | 20.00 | 80.96           | 1760                    | 30                    | 260          | \$11,489   |
| MS 160L ZA4 | 25.00 | 31.30          | 25.00 | 101.20          | 1760                    | 30                    | 280          | \$13,379   |
| MS 160L RA4 | 30.00 | 37.30          | 29.80 | 122.13          | 1750                    | 30                    | 283          | \$14,222   |

#### 8 POLE - 900 RPM

| Part Number | HP    | Full Load Amps |       | Rated Torque Nm | Speed Min <sup>-1</sup> | Max Brake Torque (Nm) | Weight (lbs) | Price (\$) |
|-------------|-------|----------------|-------|-----------------|-------------------------|-----------------------|--------------|------------|
|             |       | 460 V          | 575 V |                 |                         |                       |              |            |
| MS 71 C8    | 0.20  | 0.60           | 0.50  | 1.87            | 760                     | 4                     | 16           | \$2,097    |
| MS 80 C8    | 0.35  | 1.00           | 0.80  | 3.08            | 810                     | 7                     | 23           | \$2,549    |
| MS 90S C8   | 0.50  | 1.60           | 1.25  | 4.40            | 810                     | 7                     | 30           | \$3,005    |
| MS 90L S8   | 0.75  | 2.30           | 1.85  | 6.60            | 810                     | 7                     | 38           | \$3,252    |
| MS 100L C8  | 1.00  | 2.40           | 1.95  | 8.69            | 820                     | 13                    | 46           | \$3,762    |
| MS 100L S8  | 1.50  | 3.60           | 2.90  | 12.88           | 830                     | 13                    | 57           | \$4,274    |
| MS 112M C8  | 2.00  | 4.30           | 3.40  | 17.17           | 830                     | 13                    | 88           | \$4,987    |
| MS 132S C8  | 3.00  | 5.90           | 4.80  | 25.15           | 850                     | 30                    | 114          | \$6,672    |
| MS 132M S8  | 4.00  | 7.50           | 6.00  | 33.14           | 860                     | 30                    | 134          | \$7,622    |
| MS 160M YA8 | 5.50  | 8.60           | 6.90  | 45.30           | 865                     | 30                    | 190          | \$8,329    |
| MS 160M ZA8 | 7.50  | 12.50          | 10.00 | 61.42           | 870                     | 30                    | 226          | \$9,998    |
| MS 160L ZA8 | 10.00 | 15.40          | 12.30 | 86.88           | 820                     | 30                    | 273          | \$12,399   |

\* Non-removable feet - side mount only (F2 standard/ F1 upon request)  
 ◎ S/L dual set of holes on base (actual frame is 90L)

Frame sizes from 71 to 160 have removable feet.

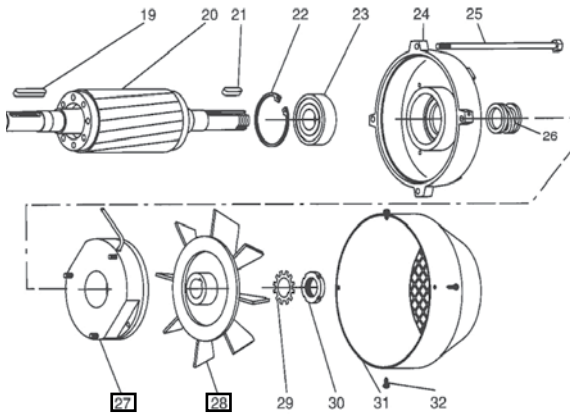
MS Range Braking Torque (Kgm)  
 63/71 frame = 0.40  
 80/90 frame = 0.70  
 100/112 frame = 1.4  
 132/160 frame = 3.1  
 To convert KGM to ft/lbs, multiply by 7.231

Different brake (DC) coil voltages are available upon request:  
**ACTUAL** 148V-DC - for 575V units (SS2 half wave)  
 206V-DC - for 460V units (STD1 full wave)  
**OPTIONAL** 24V-DC  
 103V-DC - STD1

#### Available options:

- Single phase brake motors
- Manual release lever
- 2-Speed version
- Rapid speed special diode rectifier bridge for quicker stops
- Special coil voltages

## MS Brake Motor - Parts Breakdown



### PART DESCRIPTION:

- |                            |                                                                                                                        |
|----------------------------|------------------------------------------------------------------------------------------------------------------------|
| 19 Motor key               | 27 Pre-assembled part of the brake (electromagnet, brake anchor with friction surface, braking springs, fixing screws) |
| 20 Rotor complete          | 28 Brake fan                                                                                                           |
| 21 Brake key               | 29 Lock washer                                                                                                         |
| 22 Circlip                 | 30 Air gap adjustment ring nut                                                                                         |
| 23 Bearing non-drive end   | 31 Fan cover                                                                                                           |
| 24 Endshield non-drive end | 32 Fixing screw fan cover                                                                                              |
| 25 Tie rod                 |                                                                                                                        |
| 26 Main contrast spring    |                                                                                                                        |



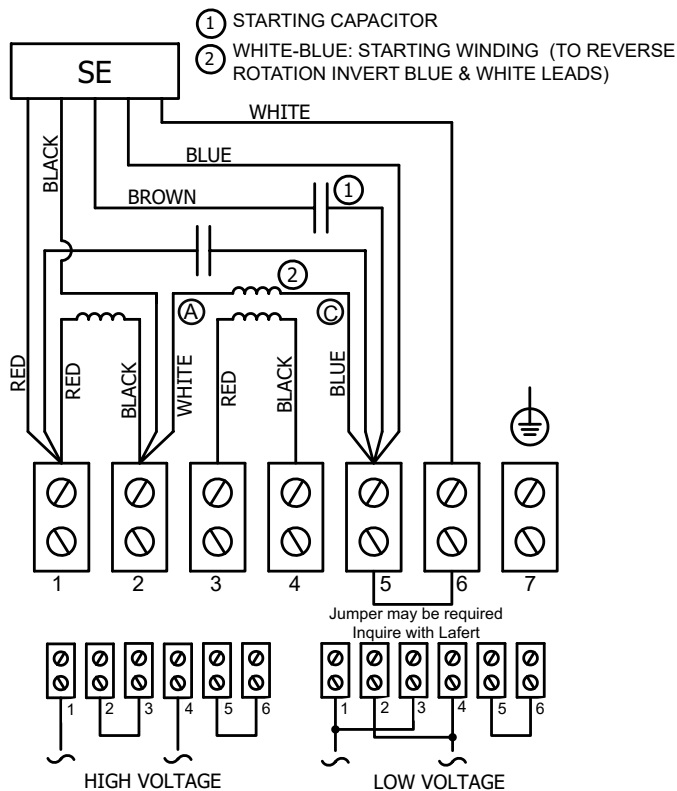
BOXED ITEMS ARE INCLUDED IN A BRAKE ASSEMBLY KIT

## Single Phase Motor - Capacitor Start & Run Connection Diagrams

### Dual Voltage

#### DVE Series

DVE Motor List: Page 19

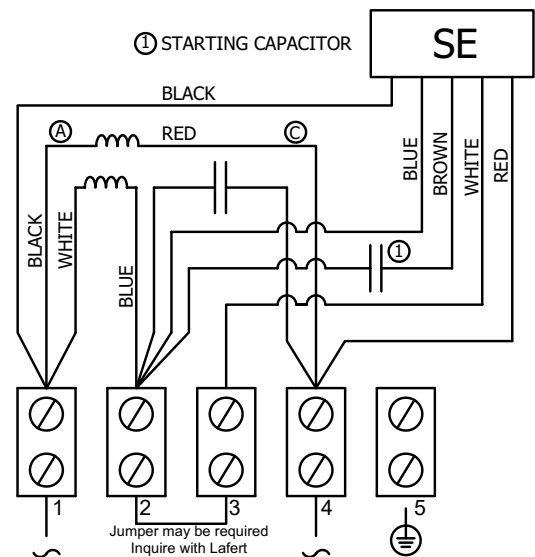


**To Change Direction of Rotation, Switch Lead "A" with Lead "C"**  
DVE Motors are designed for high starting torque applications. DVE motors feature capacitor start and run making them suitable for most applications (i.e. Gearboxes, pumps, and machine tools).

### Single Voltage

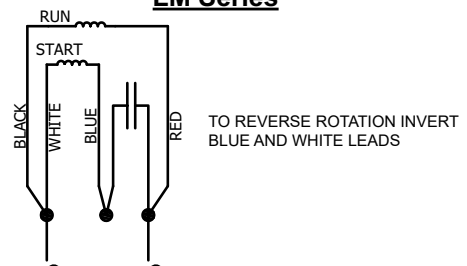
#### LME Series

LME & LM Motor List: Page 18



WHITE-BLUE : STARTING WINDING  
RED-BLACK : RUNNING WINDING (A-C)  
TO REVERSE ROTATION INVERT "A" AND "C" LEADS

#### LM Series



# LM / LME - Single Phase Motors (Single Voltage)



## 1-Phase - 60 Hz Standard

1.0 Service Factor (SF) • 115V or 230V • TEFC • Squirrel Cage • Class F • IP55 • IEC - CEI - UNEL MEC - CSA approved  
F2 Lead Box (F0 or F1 Available for 71 Size Frame and Above)

Available options: Self braking • Thermal protection • Custom shafts and flanges available

Dimensions: Pages 25 & 29  
Connection Diagram: Page 17

### 2 POLE - 3600 RPM

| Part Number    | HP   | Weight (lbs) | Rated Torque Nm | Speed Min <sup>-1</sup> | 115V           |              |                      |                     | 230V           |              |                      |                     | LM Price (\$) | LME Price (\$) |
|----------------|------|--------------|-----------------|-------------------------|----------------|--------------|----------------------|---------------------|----------------|--------------|----------------------|---------------------|---------------|----------------|
|                |      |              |                 |                         | Full Load Amps | Run Cap (µf) | (LME) Start Cap (µf) | (LME) Current Relay | Full Load Amps | Run Cap (µf) | (LME) Start Cap (µf) | (LME) Current Relay |               |                |
| LM 56 C2 *     | 0.15 | 8            | 0.32            | 3300                    | 2.5            | 16.0         | -                    | -                   | 1.2            | 4.0          | -                    | -                   | \$658         | -              |
| LM(E) 63 C2 *  | 0.15 | 10           | 0.32            | 3300                    | 2.4            | 16.0         | 53+20%               | SE02                | 1.2            | 4.0          | 16+20%               | SE02                | \$667         | \$881          |
| LM(E) 63 S2 *  | 0.25 | 11           | 0.50            | 3450                    | 3.2            | 25.0         | 53+20%               | SE01                | 1.4            | 6.3          | 12.5+20%             | SE01                | \$676         | \$900          |
| LM(E) 63 L2 *  | 0.33 | 12           | 0.66            | 3465                    | 3.7            | 25.0         | 53+20%               | SE01                | 1.8            | 8.0          | 20+20%               | SE01                | \$735         | \$932          |
| LM(E) 71 C2    | 0.50 | 16           | 1.00            | 3340                    | 8.7            | 25.0         | 53+20%               | SE02                | 3.8            | 12.5         | 30+20%               | SE01                | \$813         | \$1,068        |
| LM(E) 71 S2    | 0.75 | 19           | 1.50            | 3450                    | 7.9            | 16.0         | 53+20%               | SE02                | 3.8            | 16.0         | 30+20%               | SE02                | \$895         | \$1,149        |
| LM(E) 80 C2    | 1.00 | 25           | 2.10            | 3450                    | 12.0           | 60.0         | 124+20%              | SE01                | 5.8            | 25.0         | 108+20%              | SE02                | \$1,041       | \$1,318        |
| LM(E) 80 S2    | 1.50 | 25           | 3.10            | 3345                    | 13.6           | 50.0         | 161+20%              | SE01                | 6.7            | 25.0         | 124+20%              | SE02                | \$1,100       | \$1,426        |
| LM(E) 80/2     | 2.00 | 32           | 3.10            | 3450                    | 16.8           | 60.0         | 189+20%              | SE02                | 8.1            | 50.0         | 161+20%              | SE02                | \$1,446       | \$1,866        |
| LM(E) 90S C2 ● | 1.50 | 36           | 3.10            | 3440                    | 16.0           | (2) 60.0     | 189+20%              | SE02                | 7.5            | 50.0         | 124+20%              | SE03                | \$1,373       | \$1,711        |
| LM(E) 90L S2 ● | 2.00 | 38           | 4.30            | 3350                    | 22.0           | 70.0         | 189+20%              | SE02                | 11.0           | 36.0         | 108+20%              | SE02                | \$1,502       | \$1,842        |
| LM(E) 90L L2 ● | 2.50 | 41           | 5.00            | 3450                    | 23.0           | 50.0         | 161+20%              | SE02                | 11.5           | 40.0         | 124+20%              | SE02                | \$1,649       | \$1,984        |
| LM(E) 100L C2  | 3.00 | 54           | 6.20            | 3405                    | 25.8           | 80.0         | 187+21.5%            | SE01                | 13.5           | 50.0         | 161+20%              | SE03                | \$1,893       | \$2,263        |
| LME 100L S2    | 5.00 | 58           | 10.50           | -                       | -              | -            | -                    | -                   | 21.0           | 50.0         | 161+20%              | SE02                | -             | \$3,208        |

### 4 POLE - 1800 RPM

| Part Number    | HP   | Weight (lbs) | Rated Torque Nm | Speed Min <sup>-1</sup> | 115V           |              |                      |                     | 230V           |              |                      |                     | LM Price (\$) | LME Price (\$) |
|----------------|------|--------------|-----------------|-------------------------|----------------|--------------|----------------------|---------------------|----------------|--------------|----------------------|---------------------|---------------|----------------|
|                |      |              |                 |                         | Full Load Amps | Run Cap (µf) | (LME) Start Cap (µf) | (LME) Current Relay | Full Load Amps | Run Cap (µf) | (LME) Start Cap (µf) | (LME) Current Relay |               |                |
| LM 56 S4 *     | 0.12 | 8            | 0.52            | 1650                    | 2.0            | 25.0         | -                    | -                   | 0.9            | 6.3          | -                    | -                   | \$658         | -              |
| LM(E) 63 A4 *  | 0.15 | 10           | 0.60            | 1700                    | 2.4            | 25.0         | 30+20%               | SE02                | 1.2            | 8.0          | 16+20%               | SE01                | \$667         | \$881          |
| LM(E) 63 C4 *  | 0.25 | 11           | 1.00            | 1680                    | 3.1            | 25.0         | 30+20%               | SE01                | 1.6            | 8.0          | 16+20%               | SE01                | \$703         | \$921          |
| LM(E) 71 C4    | 0.33 | 16           | 1.35            | 1620                    | 4.6            | 12.5         | 30+20%               | SE02                | 2.2            | 10.0         | 16+20%               | SE02                | \$787         | \$1,041        |
| LM(E) 71 S4    | 0.40 | 17           | 1.60            | 1730                    | 5.9            | 16.0         | 20+20%               | SE02                | 2.8            | 12.5         | 30+20%               | SE01                | \$823         | \$1,079        |
| LM(E) 71 L4    | 0.50 | 19           | 2.10            | 1700                    | 6.5            | 25.0         | 30+20%               | SE01                | 3.2            | 16.0         | 53+20%               | SE02                | \$916         | \$1,170        |
| LM(E) 80 C4    | 0.50 | 22           | 2.05            | 1710                    | 5.5            | 50.0         | 124+20%              | SE01                | 2.8            | 12.5         | 30+20%               | SE02                | \$979         | \$1,257        |
| LM(E) 80 S4    | 0.75 | 25           | 3.10            | 1710                    | 9.1            | 50.0         | 124+20%              | SE01                | 4.6            | 12.5         | 53+20%               | SE01                | \$1,019       | \$1,295        |
| LM(E) 80 L4    | 1.00 | 28           | 4.20            | 1700                    | 10.6           | 50.0         | 124+20%              | SE01                | 4.9            | 20.0         | 88+20%               | SE01                | \$1,065       | \$1,341        |
| LM(E) 90L C4 ● | 1.50 | 34           | 6.25            | 1700                    | 15.0           | 50.0         | 124+20%              | SE02                | 8.3            | 25.0         | 108+20%              | SE01                | \$1,407       | \$1,743        |
| LM(E) 90L S4 ● | 2.00 | 39           | 8.60            | 1630                    | 22.0           | 60.0         | 108+20%              | SE02                | 10.0           | 31.5         | 124+20%              | SE01                | \$1,545       | \$1,878        |
| LM(E) 100L C4  | 2.50 | 50           | 10.10           | 1710                    | 25.0           | 50.0         | 161+20%              | SE02                | 12.0           | 50.0         | 124+20%              | SE01                | \$1,889       | \$2,257        |
| LM(E) 100L S4  | 3.00 | 53           | 12.40           | 1690                    | 27.0           | 60.0+70.0    | 324+20%              | SE02                | 13.3           | 50.0         | 189+20%              | SE02                | \$2,052       | \$2,417        |
| LME 112M /4    | 5.00 | 76           | 21.00           | -                       | -              | -            | -                    | -                   | 22.0           | 60.0         | 2x108+20%            | SE02                | -             | \$3,206        |

### 6 POLE - 1200 RPM

| Part Number    | HP   | Weight (lbs) | Rated Torque Nm | Speed Min <sup>-1</sup> | 115V           |              |                      |                     | 230V           |              |                      |                     | LM Price (\$) | LME Price (\$) |
|----------------|------|--------------|-----------------|-------------------------|----------------|--------------|----------------------|---------------------|----------------|--------------|----------------------|---------------------|---------------|----------------|
|                |      |              |                 |                         | Full Load Amps | Run Cap (µf) | (LME) Start Cap (µf) | (LME) Current Relay | Full Load Amps | Run Cap (µf) | (LME) Start Cap (µf) | (LME) Current Relay |               |                |
| LM(E) 71 C6    | 0.20 | 18           | 1.50            | 1100                    | 3.8            | 25.0         | 53+20%               | SE02                | 1.8            | 6.3          | 16+20%               | SE01                | \$1,145       | \$1,499        |
| LM(E) 80 C6    | 0.35 | 19           | 2.10            | 1150                    | 4.6            | 40.0         | 108+20%              | SE02                | 2.2            | 10.0         | 30+20%               | SE02                | \$1,322       | \$1,627        |
| LM(E) 80 S6    | 0.50 | 22           | 3.10            | 1150                    | 5.9            | 50.0         | 124+20%              | SE02                | 2.7            | 12.5         | 40+20%               | SE01                | \$1,471       | \$1,780        |
| LM(E) 90L C6 ● | 0.75 | 36           | 4.80            | 1100                    | 10.0           | 90.0         | 124+20%              | SE02                | 4.7            | 31.5         | 64+20%               | SE02                | \$1,964       | \$2,466        |
| LM(E) 90L S6 ● | 1.00 | 40           | 6.50            | 1110                    | 10.2           | (2) 50.0     | 88+20%               | SE02                | 5.0            | 31.5         | 64+20%               | SE02                | \$2,106       | \$2,618        |
| LM(E) 100L C6  | 1.50 | 42           | 9.30            | 1130                    | 16.6           | 170.0        | 189+20%              | SE02                | 7.8            | 40.0         | 88+20%               | SE03                | \$2,332       | \$2,733        |
| LM(E) 100L S6  | 2.00 | 50           | 13.10           | 1090                    | 20.0           | 140.0        | 189+20%              | SE01                | 10.2           | 40.0         | 88+20%               | SE01                | \$2,458       | \$2,853        |

● S/L dual set of holes on base (actual frame is 90L) \* Non-removable feet - side mount only (F2 standard/ F1 upon request)

#### LM MOTORS:

LM type motors are designed for no load or low starting torque applications such as fan duty. LM motors have two windings connected in parallel with a run capacitor connected in series giving the motor considerable overload capacity and high power factor. Please call for availability.

#### LME MOTORS:

LME type motors are designed for high torque applications. LME motors feature a capacitor start and capacitor run making them suitable for most applications (i.e. Gearboxes, pumps, machine tools.)



Frame sizes 71-112 have removable feet.

## DVE - Single Phase Motors (Dual Voltage)



### 60 HZ Dual Voltage

1.0 Service Factor (SF) • 115V/230V • TEFC • Squirrel Cage

F2 Lead Box (F0 or F1 Available for Frame Sizes 71 and Above)

Class F • IP55 • IEC - CEI - UNEL MEC - CSA approved

Dimensions: Pages 25 & 29  
Connection Diagram: Page 17

#### 2 POLE - 3600 RPM

| Part Number  | HP   | 115/230V Full Load Amps | Rated Torque Nm | Speed Min <sup>-1</sup> | Run Cap (µf) | Start Cap (µf) | Current Relay | Weight (lbs) | Price (\$) |
|--------------|------|-------------------------|-----------------|-------------------------|--------------|----------------|---------------|--------------|------------|
| DVE 63 C2 *  | 0.15 | 2.4/1.2                 | 0.32            | 3300                    | 16.0         | 53+20%         | SE01          | 11           | \$1,100    |
| DVE 63 S2 *  | 0.25 | 3.2/1.6                 | 0.51            | 3320                    | 10.0         | 30+20%         | SE02          | 12           | \$1,119    |
| DVE 63 L2 *  | 0.33 | 3.5/1.7                 | 0.70            | 3330                    | 16.0         | 53+20%         | SE01          | 13           | \$1,159    |
| DVE 71 C2    | 0.50 | 7.0/3.5                 | 1.00            | 3380                    | 25.0         | 53+20%         | SE01          | 16           | \$1,326    |
| DVE 71 S2    | 0.75 | 7.5/4.0                 | 1.52            | 3450                    | 20.0         | 53+20%         | SE02          | 19           | \$1,425    |
| DVE 80 C2    | 1.00 | 13.0/6.5                | 2.10            | 3450                    | 31.5         | 108+20%        | SE01          | 26           | \$1,640    |
| DVE 80 S2    | 1.50 | 14.7/7.3                | 3.20            | 3300                    | 50.0         | 161+20%        | SE01          | 30           | \$1,774    |
| DVE 90S C2 ● | 1.50 | 19.6/10.0               | 3.00            | 3440                    | 70.0         | 124+20%        | SE02          | 34           | \$2,126    |
| DVE 90L S2 ● | 2.00 | 22.0/11.0               | 4.30            | 3350                    | 40.0         | 124+20%        | SE02          | 40           | \$2,289    |
| DVE 90L L2 ● | 2.50 | 24.0/12.5               | 5.00            | 3450                    | 40.0         | 161+20%        | SE02          | 42           | \$2,468    |
| DVE 90L A2 ● | 3.00 | 31.5/16.5               | 6.15            | 3420                    | 60.0         | 161+20%        | SE02          | 43           | \$2,718    |
| DVE 100L C2  | 3.00 | 25.8/14.3               | 6.20            | 3405                    | 50.0         | 161+20%        | SE01          | 55           | \$2,813    |

#### 4 POLE - 1800 RPM

| Part Number  | HP   | 115/230V Full Load Amps | Rated Torque Nm | Speed Min <sup>-1</sup> | Run Cap (µf) | Start Cap (µf) | Current Relay | Weight (lbs) | Price (\$) |
|--------------|------|-------------------------|-----------------|-------------------------|--------------|----------------|---------------|--------------|------------|
| DVE 63 A4 *  | 0.15 | 2.6/1.3                 | 0.70            | 1640                    | 25.0         | 53+20%         | SE02          | 10           | \$1,100    |
| DVE 63 C4 *  | 0.25 | 3.2/1.6                 | 1.05            | 1660                    | 8.0          | 16+20%         | SE02          | 11           | \$1,148    |
| DVE 71 C4    | 0.33 | 4.8/2.4                 | 1.35            | 1720                    | 16.0         | 30+20%         | SE02          | 16           | \$1,294    |
| DVE 71 S4    | 0.40 | 7.0/3.5                 | 1.70            | 1630                    | 12.5         | 25+20%         | SE02          | 19           | \$1,341    |
| DVE 71 L4    | 0.50 | 6.5/3.2                 | 2.10            | 1715                    | 25.0         | 53+20%         | SE02          | 19           | \$1,453    |
| DVE 80 C4    | 0.50 | 6.0/3.0                 | 2.05            | 1710                    | 50.0         | 124+20%        | SE01          | 22           | \$1,562    |
| DVE 80 S4    | 0.75 | 7.8/3.6                 | 3.20            | 1660                    | 16.0         | 53+20%         | SE01          | 25           | \$1,608    |
| DVE 80 L4    | 1.00 | 10.8/5.4                | 4.20            | 1700                    | 40.0         | 124+20%        | SE01          | 29           | \$1,668    |
| DVE 90L D4 ● | 1.50 | 16.2/8.2                | 6.20            | 1660                    | 40.0         | 108+20%        | SE02          | 34           | \$2,164    |
| DVE 90L E4 ● | 2.00 | 20.5/10.3               | 8.50            | 1680                    | 50.0         | 124+20%        | SE02          | 39           | \$2,338    |
| DVE 100L C4  | 2.50 | 26.0/13.0               | 10.10           | 1700                    | 50.0         | 124+20%        | SE02          | 51           | \$2,805    |
| DVE 100L S4  | 3.00 | 30.0/15.0               | 12.40           | 1690                    | 60.0         | 324+20%        | SE02          | 53           | \$3,000    |

#### 6 POLE - 1200 RPM

| Part Number    | HP   | 115/230V Full Load Amps | Rated Torque Nm | Speed Min <sup>-1</sup> | Run Cap (µf) | Start Cap (µf) | Current Relay | Weight (lbs) | Price (\$) |
|----------------|------|-------------------------|-----------------|-------------------------|--------------|----------------|---------------|--------------|------------|
| DVE 71 C6      | 0.25 | 3.8/1.9                 | 1.50            | 1100                    | 25           | 53+20%         | SE02          | 18           | \$1,863    |
| DVE 80 C6      | 0.33 | 4.6/2.3                 | 2.10            | 1150                    | 40           | 108+20%        | SE02          | 20           | \$2,022    |
| DVE 80 S6      | 0.50 | 5.9/3.0                 | 3.10            | 1150                    | 50           | 124+20%        | SE02          | 23           | \$2,209    |
| DVE 90L C6 ●   | 0.75 | 9.0/4.5                 | 4.80            | 1100                    | 25           | 64+20%         | SE02          | 37           | \$3,062    |
| DVE 90L S6 ●   | 1.00 | 11.0/5.5                | 6.50            | 1100                    | 50           | 88+20%         | SE02          | 40           | \$3,255    |
| DVE 100L C6 +  | 1.50 | 15.8/7.9                | 9.10            | 1150                    | 170          | 189+20%        | SE02          | 42           | \$3,396    |
| DVE 100L S6 ++ | 2.00 | 20.0/10.0               | 13.10           | 1090                    | 140          | 189+20%        | SE02          | 50           | \$3,551    |

● S/L dual set of holes on base (actual frame is 90L)

\* Non-removable feet - side mount only (F2 standard/ F1 upon request)

+ A total of 3 run capacitors are being used (50µf+50µf+70µf)

++ A total of 2 run capacitors are being used (70µf+70µf)



Frame sizes 71-100 have removable feet.

## LA - IP56 Stainless Steel Motors



### “Wash-down Protection”

*Ideal for Food Processing and Pharmaceutical Industries*

1.15 Service Factor (SF) • IEC 63 to 80 Frame Sizes in 2, 4 & 6 Poles • 230/460V (50/60 Hz) or 333/575V (60 Hz)

All Stainless Steel 300 Construction • IP56 Wash Down • Class F Insulation • Drain Holes at 90° Position

B3, B14 or B5 Mounting • Laser etched nameplate and paint free housing • TENV • CSA safety approvals

Turn Down Ratio 4:1 CT 10:1 • VT F2 Lead Box (standard) • Sanitary • Double Gaskets in Conduit Box

#### 2 POLE - 3600 RPM

| Part Number | Enclosure | HP   | Full Load Amps |       | Rated Torque Nm | Speed Min <sup>-1</sup> | Weight (lbs) | Price (\$) |
|-------------|-----------|------|----------------|-------|-----------------|-------------------------|--------------|------------|
|             |           |      | 460 V          | 575 V |                 |                         |              |            |
| LA63S2      | TENV      | 0.33 | 0.53           | 0.43  | 0.68            | 3455                    | 18           | \$896      |
| LA71C2      | TENV      | 0.50 | 0.75           | 0.60  | 1.01            | 3515                    | 26           | \$1,021    |
| LA71S2      | TENV      | 0.75 | 1.05           | 0.84  | 1.52            | 3500                    | 31           | \$1,065    |



#### 4 POLE - 1800 RPM

| Part Number | Enclosure | HP   | Full Load Amps |       | Rated Torque Nm | Speed Min <sup>-1</sup> | Weight (lbs) | Price (\$) |
|-------------|-----------|------|----------------|-------|-----------------|-------------------------|--------------|------------|
|             |           |      | 460 V          | 575 V |                 |                         |              |            |
| LA63S4      | TENV      | 0.25 | 0.53           | 0.43  | 1.02            | 1740                    | 18           | \$888      |
| LA71C4      | TENV      | 0.33 | 0.58           | 0.47  | 1.34            | 1750                    | 19           | \$1,026    |
| LA71S4      | TENV      | 0.50 | 0.75           | 0.60  | 2.04            | 1745                    | 24           | \$1,067    |
| LA80C4      | TENV      | 0.75 | 1.10           | 0.88  | 3.02            | 1765                    | 39           | \$1,288    |

Connection Diagram: Page 58

#### 6 POLE - 1200 RPM

| Part Number | Enclosure | HP   | Full Load Amps |       | Rated Torque Nm | Speed Min <sup>-1</sup> | Weight (lbs) | Price (\$) |
|-------------|-----------|------|----------------|-------|-----------------|-------------------------|--------------|------------|
|             |           |      | 460 V          | 575 V |                 |                         |              |            |
| LA71C6      | TENV      | 0.25 | 0.66           | 0.53  | 1.55            | 1145                    | 23           | \$1,199    |
| LA71S6      | TENV      | 0.33 | 0.78           | 0.62  | 2.05            | 1145                    | 25           | \$1,249    |
| LA80C6      | TENV      | 0.50 | 0.88           | 0.70  | 3.09            | 1150                    | 40           | \$1,477    |
| LA80S6      | TENV      | 0.75 | 1.20           | 0.95  | 4.64            | 1150                    | 45           | \$1,670    |

#### FLS B5 Flanges

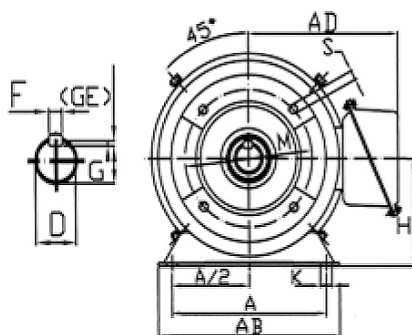
| Part Number | Price (\$) |
|-------------|------------|
| FLS 63B5    | 149.00     |
| FLS 71B5    | 254.00     |
| FLS 80B5    | 271.00     |

#### FLS B14 Flanges

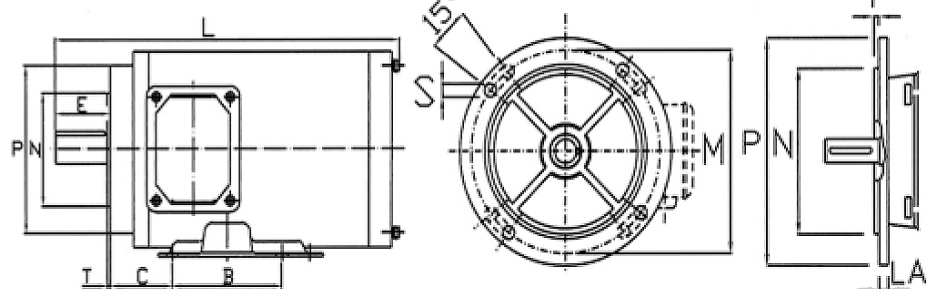
| Part Number | Price (\$) |
|-------------|------------|
| FLS 63B14   | 143.00     |
| FLS 71B14   | 238.00     |
| FLS 80B14   | 268.00     |

**NOTE: Lowest 1 of 8 drain plugs must be removed to allow proper drainage.  
(4 drain plugs located on front end-bell and 4 located on non-drive end-bell)**

#### IM B3 & IM B34 - C Flange



#### IM B5 - D Flange



(Totally Enclosed Non-Ventilated)

Dimensions in mm

| Motor Type |     |      |     |    |    |    |   |      |    |    |     |     |     |     | B14 FLANGE |    |     |    |     | B5 FLANGE |     |     |    |     |
|------------|-----|------|-----|----|----|----|---|------|----|----|-----|-----|-----|-----|------------|----|-----|----|-----|-----------|-----|-----|----|-----|
|            | A   | A/2  | B   | C  | D  | E  | F | G    | H  | K  | AB  | AC  | AD  | L   | M          | N  | P   | S  | T   | M         | N   | P   | S  | T   |
| LA 63      | 100 | 55.0 | 80  | 40 | 11 | 23 | 4 | 8.5  | 63 | 7  | 125 | 114 | 112 | 241 | 75         | 60 | 90  | M5 | 2.5 | 115       | 95  | 140 | 10 | 3.0 |
| LA 71      | 112 | 56.0 | 90  | 45 | 14 | 30 | 5 | 11.0 | 71 | 7  | 140 | 134 | 122 | 278 | 85         | 70 | 105 | M6 | 2.5 | 130       | 110 | 160 | 10 | 3.5 |
| LA 80      | 125 | 62.5 | 100 | 50 | 19 | 40 | 6 | 15.5 | 80 | 10 | 150 | 144 | 127 | 322 | 100        | 80 | 120 | M6 | 3.0 | 165       | 130 | 200 | 12 | 3.5 |

# LA - IP67 / IP69K Stainless Steel Motors



## “Ultra / Steam Jet Protection”

1.15 Service Factor (SF) • IE1 (0.25HP to 0.75HP) & IE3 (1HP & Above) in 2 & 4 Poles • 230/460V (50/60 Hz) or 333/575V (60 Hz)  
 All Stainless Steel 304 Construction (Shaft is SS420 Steel Grade) • Laser Etched Nameplate • Thermistors (150°C) • F0 Lead Box  
 Class F Insulation • B3, B14 or B5 Mounting • TENV or TEFC • Round Lead Box • Stainless Steel Cable Glands  
 1 Meter of 4 Core Double Insulated Cable • Turn Down Ratio 3:1CT & 10:1 VT • CSA Safety Approval • IE3 CSA Energy Verified



Connection Diagram: Page 58

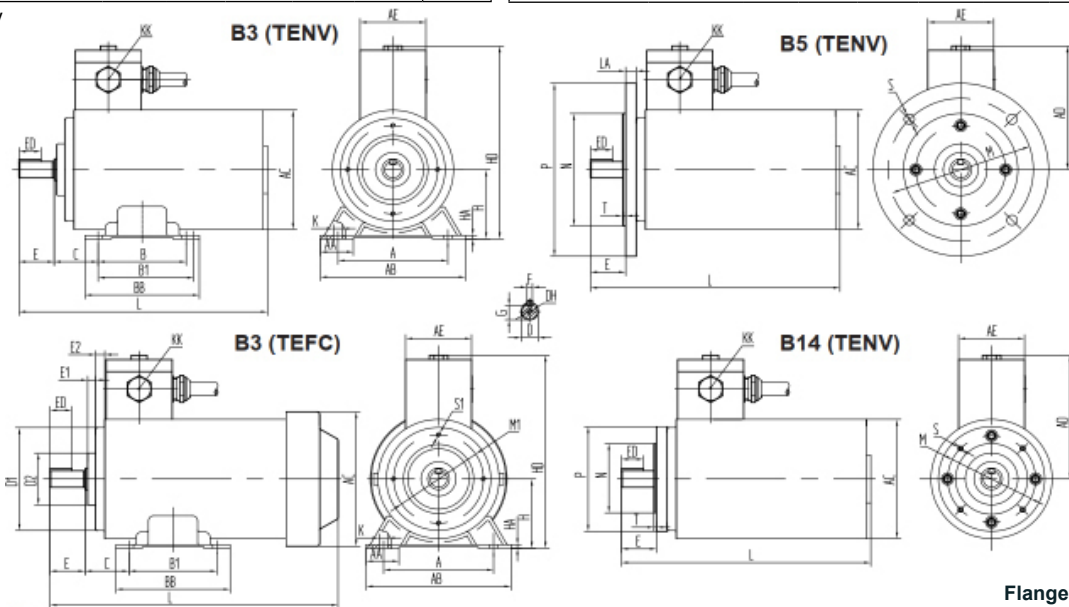
### 2 POLE - 3600 RPM

| Part Number   | Enclosure | HP    | Full Load Amps |       | Rated Torque Nm | Speed Min <sup>-1</sup> | Weight (lbs) | Price (\$) |
|---------------|-----------|-------|----------------|-------|-----------------|-------------------------|--------------|------------|
|               |           |       | 460 V          | 575 V |                 |                         |              |            |
| LA 63 1-2     | TENV      | 0.25  | 0.35           | 0.30  | 0.50            | 3430                    | 23           | \$943      |
| LA 63 2-2     | TENV      | 0.35  | 0.48           | 0.38  | 0.70            | 3420                    | 25           | \$983      |
| LA 71 1-2     | TENV      | 0.50  | 0.69           | 0.56  | 1.02            | 3450                    | 31           | \$1,138    |
| LA 71 2-2     | TENV      | 0.75  | 1.00           | 0.88  | 1.53            | 3430                    | 32           | \$1,188    |
| LA 80 1-2 *   | TENV      | 1.00  | 1.36           | 1.09  | 2.08            | 3450                    | 47           | \$1,704    |
| LA 80 2-2 *   | TENV      | 1.50  | 1.95           | 1.60  | 3.03            | 3470                    | 53           | \$1,755    |
| LA 90S 1-2 *  | TEFC      | 2.00  | 2.40           | 2.06  | 4.12            | 3475                    | 66           | \$2,482    |
| LA 90L 1-2 *  | TEFC      | 3.00  | 3.50           | 2.98  | 6.05            | 3475                    | 66           | \$2,488    |
| LA 100L 1-2 * | TEFC      | 4.00  | 4.60           | 3.63  | 8.22            | 3485                    | 110          | \$3,086    |
| LA 112M 1-2 * | TEFC      | 5.50  | 6.00           | 5.20  | 11.04           | 3460                    | 137          | \$5,628    |
| LA 132S 1-2 * | TEFC      | 7.50  | 8.10           | 6.44  | 14.84           | 3540                    | 187          | \$7,125    |
| LA 132S 2-2 * | TEFC      | 10.00 | 10.90          | 8.72  | 20.23           | 3540                    | 187          | \$7,223    |
| LA 132M 1-2 * | TEFC      | 15.00 | 15.90          | 12.72 | 30.26           | 3535                    | 220          | \$9,896    |

\* Premium Efficiency

### 4 POLE - 1800 RPM

| Part Number   | Enclosure | HP    | Full Load Amps |       | Rated Torque Nm | Speed Min <sup>-1</sup> | Weight (lbs) | Price (\$) |
|---------------|-----------|-------|----------------|-------|-----------------|-------------------------|--------------|------------|
|               |           |       | 460 V          | 575 V |                 |                         |              |            |
|               |           |       |                |       |                 |                         |              |            |
| LA 63 2-4     | TENV      | 0.25  | 0.48           | 0.38  | 1.01            | 1700                    | 25           | \$1,004    |
| LA 71 1-4     | TENV      | 0.35  | 0.58           | 0.48  | 1.37            | 1740                    | 31           | \$1,123    |
| LA 71 2-4     | TENV      | 0.50  | 0.83           | 0.65  | 2.03            | 1740                    | 33           | \$1,188    |
| LA 80 1-4     | TENV      | 0.75  | 1.24           | 0.96  | 3.04            | 1730                    | 45           | \$1,433    |
| LA 80 2-4 *   | TENV      | 1.00  | 1.62           | 1.26  | 4.14            | 1730                    | 50           | \$1,744    |
| LA 90S 1-4 *  | TEFC      | 1.50  | 1.90           | 1.56  | 5.99            | 1755                    | 66           | \$2,404    |
| LA 90L 1-4 *  | TEFC      | 2.00  | 2.60           | 2.10  | 8.19            | 1750                    | 68           | \$2,461    |
| LA 100L 1-4 * | TEFC      | 3.00  | 3.70           | 3.47  | 12.01           | 1750                    | 106          | \$3,333    |
| LA 100L 2-4 * | TEFC      | 4.00  | 5.10           | 4.63  | 16.37           | 1750                    | 110          | \$3,379    |
| LA 112M 1-4 * | TEFC      | 5.50  | 6.00           | 5.73  | 21.77           | 1755                    | 137          | \$5,662    |
| LA 132S 1-4 * | TEFC      | 7.50  | 9.00           | 7.90  | 29.84           | 1760                    | 198          | \$7,135    |
| LA 132M 1-4 * | TEFC      | 10.00 | 12.10          | 10.20 | 40.70           | 1760                    | 198          | \$7,819    |
| LA 132M 2-4 * | TEFC      | 15.00 | 16.90          | 14.50 | 60.60           | 1765                    | 243          | \$8,601    |



### Modular Flanges

Flange List: Page 23  
 Dimensions in mm

| Frame (H) | A   | AA   | AB  | BB  | HA | B   | B1  | C  | D  | D1  | D2 | DH  | E  | E1   | E2   | F  | G    | HD  | K  | KK METRIC | AE | LA | ED | L TENV | L TEFC |
|-----------|-----|------|-----|-----|----|-----|-----|----|----|-----|----|-----|----|------|------|----|------|-----|----|-----------|----|----|----|--------|--------|
| 63        | 100 | 32   | 132 | 110 | 4  | 80  | N/A | 40 | 11 | 95  | 45 | M3  | 23 | 11.5 | 20.0 | 4  | 8.5  | 190 | 7  | 2-M20x1.5 | 65 | 15 | 13 | 265    | 300    |
| 71        | 112 | 30   | 140 | 120 | 4  | 90  | N/A | 45 | 14 | 108 | 50 | M4  | 30 | 10.0 | 26.5 | 5  | 11.0 | 205 | 7  | 2-M20x1.5 | 65 | 15 | 20 | 290    | 335    |
| 80        | 125 | 37.5 | 165 | 130 | 4  | 100 | N/A | 50 | 19 | 119 | 60 | M6  | 40 | 6.5  | 10.5 | 6  | 15.5 | 230 | 10 | 2-M20x1.5 | 75 | 12 | 25 | 323    | 360    |
| 90        | 140 | 40   | 180 | 165 | 4  | 100 | 125 | 56 | 24 | 135 | 80 | M6  | 50 | 7.5  | 15.0 | 8  | 20.0 | 250 | 10 | 2-M20x1.5 | 75 | 12 | 40 | 375    | 420    |
| 100       | 160 | 45   | 205 | 180 | 4  | 140 | N/A | 63 | 28 | 150 | 76 | M10 | 60 | 7.5  | 7.0  | 8  | 24.0 | 280 | 12 | 2-M20x1.5 | 85 | 12 | 45 | 430    | 480    |
| 112       | 190 | 60   | 250 | 180 | 5  | 140 | N/A | 70 | 28 | 166 | 76 | M10 | 60 | 7.0  | 28.0 | 8  | 24.0 | 315 | 13 | 2-M25x1.5 | 85 | 12 | 45 | 440    | 495    |
| 132       | 216 | 60   | 276 | 218 | 5  | 140 | 178 | 89 | 38 | 200 | 93 | M12 | 80 | 11.5 | 24.0 | 10 | 33.0 | 350 | 13 | 2-M25x1.5 | 85 | 16 | 63 | 555    | 617    |

| Frame (H) | AD  | AC TENV | AC TEFC | M1  | S1 | M   | N   | B5 P | S  | T   | M   | N   | B14 P | S   | T   |
|-----------|-----|---------|---------|-----|----|-----|-----|------|----|-----|-----|-----|-------|-----|-----|
| 63        | 128 | 119     | 133     | 78  | M6 | 115 | 95  | 140  | 10 | 3.5 | 75  | 60  | 95    | M5  | 2.5 |
| 71        | 135 | 129     | 150     | 90  | M6 | 130 | 110 | 160  | 10 | 3.5 | 85  | 70  | 105   | M6  | 2.5 |
| 80        | 150 | 139     | 165     | 102 | M6 | 165 | 130 | 200  | 12 | 3.5 | 100 | 80  | 120   | M6  | 3.0 |
| 90        | 160 | 164     | 190     | 115 | M6 | 165 | 130 | 200  | 12 | 3.5 | 115 | 95  | 140   | M8  | 3.0 |
| 100       | 185 | 186     | 210     | 96  | M6 | 215 | 180 | 250  | 15 | 4.0 | 130 | 110 | 160   | M8  | 3.5 |
| 112       | 203 | 220     | 240     | 96  | M6 | 215 | 180 | 250  | 15 | 4.0 | 130 | 110 | 160   | M8  | 3.5 |
| 132       | 215 | 261     | 280     | 153 | M8 | 265 | 230 | 300  | 15 | 4.0 | 165 | 130 | 200   | M10 | 4.0 |

## Standard Motor Parts

### Cooling Fans & Fan Covers



| Cooling Fans |                      |              |              |                 |     |            |       |
|--------------|----------------------|--------------|--------------|-----------------|-----|------------|-------|
| Motor Type   |                      | Frame Size   | Part Number  | Dimensions (mm) |     | Price (\$) |       |
|              |                      |              |              | Bore            | OD  |            |       |
| ALUMINUM     | ST/ LM(E)/ DVE       | 56           | XVA000040000 | 9               | 85  | \$160      |       |
|              |                      | 63           | XVA000110000 | 14              | 90  | \$220      |       |
|              | ST/ AM/ LM(E)/ DVE   | 71           | XVA003220000 | 14              | 128 | \$237      |       |
|              |                      | 80           | XVA003320000 | 19              | 143 | \$298      |       |
|              | ST/ LM(E)/ DVE       | 90           | XVA003420000 | 24              | 162 | \$329      |       |
|              |                      | 100 / 112    | XVA003540000 | 28              | 180 | \$357      |       |
|              |                      | 132          | XVA000710000 | 40              | 230 | \$448      |       |
|              |                      | 160          | XVA000810000 | 45              | 270 | \$548      |       |
|              |                      |              |              |                 |     |            |       |
| PLASTIC      | ST/ LM(E)/ DVE       | 56           | XVN003060000 | 9               | 90  | \$101      |       |
|              |                      | 63           | XVN003160000 | 14              | 110 | \$101      |       |
|              | ST/ AM/ LM(E)/ DVE   | 71           | XVN003260000 | 14              | 128 | \$118      |       |
|              |                      | 80           | XVN003310000 | 19              | 135 | \$118      |       |
|              | AMPH                 | 80           | XVN003350000 | 19              | 110 | \$118      |       |
|              | ST/ LM(E)/ DVE       | 90           | XVN003410000 | 24              | 155 | \$126      |       |
|              |                      | 90           | XVN003450000 | 24              | 135 | \$126      |       |
|              | AMPH                 | 90L (DA2)    | XVN003470000 | 24              | 129 | \$126      |       |
|              |                      | 100 (2 Pole) | XVN003550000 | 28              | 135 | \$189      |       |
|              |                      | 100 / 160    | XVN003520000 | 28              | 164 | \$189      |       |
|              | ST/ LM(E)/ DVE/ AMPH | 112          | XVN003610000 | 28              | 190 | \$189      |       |
|              | ST/ LM(E)/ DVE       | 112          | XVN003650000 | 28              | 135 | \$189      |       |
|              |                      | 132 (2 Pole) | XVN003750000 | 40              | 135 | \$329      |       |
|              | AMPH                 | 132          | XVN003770000 | 40              | 164 | \$329      |       |
|              |                      | ST           | 132          | XVN00081        | 40  | 220        | \$329 |
|              |                      |              |              |                 |     |            |       |

#### NOTE:

Fans for newer designed motors may vary. Please check with the technical department for specific requirements.

Metal fans are pressure die-cast aluminum.

Plastic fans are glass reinforced at 160°C polypropylene.

| Fan Covers          |                      |                  |                   |                 |              |            |
|---------------------|----------------------|------------------|-------------------|-----------------|--------------|------------|
| Motor Type          |                      | Frame Size       | Part Number       | Dimensions (mm) |              | Price (\$) |
|                     |                      |                  |                   | Depth           | OD           |            |
| METAL               | ST/ LM(E)/ DVE       | 56               | XCR007020000      | 52              | 110          | \$51       |
|                     |                      | 63               | XCR007120000      | 52              | 124          | \$51       |
|                     | ST/ AM/ LM(E) / AMPH | 71               | XCR007220000      | 67              | 139          | \$54       |
|                     |                      | 80               | XCR007320000      | 68              | 156          | \$69       |
|                     | ST/ LM(E)/ DVE       | 90               | XCR007420000      | 70              | 180          | \$92       |
|                     |                      | 100              | XCR007520000      | 85              | 195          | \$100      |
|                     | AMPH                 | 100 (2 Pole)     | XCR00051-AMPH     | 120             | 195          | \$100      |
|                     |                      | 100 (4-6 Pole) + | XCR007570000 +    | 195             | 195          | \$100      |
|                     |                      | 112              | XCR007620000      | 95              | 222          | \$138      |
|                     |                      | 112M (DA2)       | XCR007660000      | 120             | 220          | \$138      |
|                     |                      | 132S ++          | XCR00071-S ++     | 90              | 250          | \$175      |
|                     |                      | 132M ++          | XCR00071-M ++     | 130             | 250          | \$175      |
|                     |                      | 132L ++          | XCR00071-L ++     | 190             | 250          | \$175      |
|                     |                      | 160M             | XCR00081-AMPH160M | 130             | 315          | \$219      |
|                     |                      | 160L             | XCR00081-AMPH160L | 150             | 315          | \$362      |
|                     |                      | PLASTIC          | ST/ LM(E)/ DVE    | 56              | XCR007010000 | 52         |
| 63                  | XCR0007110000        |                  |                   | 58              | 124          | \$52       |
| ST/ AM/ LME(E)/ DVE | 71                   |                  | XCR0007210000     | 67              | 139          | \$55       |
|                     | 80                   |                  | XCR0007310000     | 65              | 156          | \$70       |
| ST/ AMPH            | 90                   |                  | XCR0007410000     | 70              | 180          | \$92       |
| ST/ LM(E)           | 100                  |                  | XCR0007510000     | 85              | 195          | \$100      |
| ST/ LM(E)/ AMPH     | 90                   |                  | XCR0007410000     | 70              | 180          | \$92       |
| AMPH                | 90L (DA2)            |                  | XCR00045-AMS      | 92              | 180          | \$92       |
|                     | 112M (DA2)           |                  | XCR007660000      | 120             | 220          | \$138      |
| ST/ LM(E)/ AMPH     | 112                  |                  | XCR0007610000     | 95              | 222          | \$138      |

+ Available in square design only

++ Verify dimensions prior to order as there are some exceptions

For frame sizes 180 to 315, or any other parts not listed here, please contact Lafert NA.

## Range of Flanges

All Flanges are Machined for Shaft Oil Seals



**M** = Center to center bolt hole circle

**N**= Spigot diameter

Dimensions in mm

### Aluminum Flanges

ST, AM,FB, AAF, AMBZ, MS, LM(E), DVE, AMPH Motors

| B5 'D' Flange | M   | N   | Price (\$) | B14 'C' Flange | M   | N   | Price (\$) |
|---------------|-----|-----|------------|----------------|-----|-----|------------|
| FL56B5        | 100 | 80  | \$124      | FL56B14        | 65  | 50  | \$124      |
| FL63B5        | 115 | 95  | \$124      | FL63B14        | 75  | 60  | \$124      |
| FL71B5        | 130 | 110 | \$124      | FL71B14        | 85  | 70  | \$124      |
| FL80B5        | 165 | 130 | \$155      | FL80B14        | 100 | 80  | \$138      |
| FL90B5        | 165 | 130 | \$190      | FL90B14        | 115 | 95  | \$160      |
| FL100B5 *     | 215 | 180 | \$267      | FL100B14 *     | 130 | 110 | \$239      |
| FL112B5       | 215 | 180 | \$267      | FL112B14       | 130 | 110 | \$257      |
| FL132B5       | 265 | 230 | \$491      | FL132B14       | 165 | 130 | \$353      |
| FL160B5       | 300 | 250 | \$722      | FL160B14       | 215 | 180 | \$670      |

\* AMPH 100 frame motors in 4 & 6 pole require H4 flanges

Dimensions: Page 29

### Cast Iron Flanges

LAB Motors

| B5 'D' Flange | M   | N   | Price (\$) | B14 'C' Flange | M   | N   | Price (\$) |
|---------------|-----|-----|------------|----------------|-----|-----|------------|
| FLD132B5      | 265 | 230 | \$388      | FLD132B14      | 165 | 130 | \$279      |
| FLD160B5      | 300 | 250 | \$571      | FLD160B14      | 215 | 180 | \$530      |
| FLD180B5      | 300 | 250 | \$576      |                |     |     |            |
| FLD200B5      | 350 | 300 | \$952      |                |     |     |            |
| FLD225B5      | 400 | 350 | \$1,532    |                |     |     |            |
| FLD250B5      | 500 | 450 | \$1,613    |                |     |     |            |
| FLD280B5      | 500 | 450 | \$1,958    |                |     |     |            |
| FLD315B5      | 600 | 550 | \$2,828    |                |     |     |            |

Dimensions: Page 30

**Permanent Magnet Motor (HPS)  
Flanges - Page 24**

### Increased and Reduced Aluminum Flanges

ST, AM, FB, AAF, AMBZ, MS, LM(E), DVE, AMPH Motors

| B5 Reduced     | Price (\$) | B5 Increased | Price (\$) | B14 Reduced    | Price (\$) | B14 Increased | Price (\$) |
|----------------|------------|--------------|------------|----------------|------------|---------------|------------|
| FL63B5R56      | \$187      | FL63B5I71    | \$178      | FL63B14R56     | \$187      | FL56B14I63    | \$187      |
| FL71B5R56      | \$187      | FL71B5I80    | \$232      | FL71B14R63     | \$187      | FL63B14I71    | \$187      |
| FL71B5R63      | \$187      |              |            | FL80B14R63     | \$208      | FL63B14I80    | \$208      |
| FL80B5R63      | \$232      |              |            | FL80B14R71     | \$208      | FL71B14I80    | \$208      |
| FL80B5R71      | \$232      |              |            | FL90B14R71     | \$239      | FL71B14I90    | \$232      |
| FL90B5R71      | \$285      |              |            | FL90B14R80     | \$239      | FL80B14I90    | \$232      |
| FL100B5R71     | \$402      |              |            | FL100B14R90    | \$359      | FL80B14I100   | \$346      |
| FL100B5R80     | \$402      |              |            | FL112B14R90    | \$402      | FL90B14I100   | \$359      |
| FL100B5R90     | \$402      |              |            | FL132B14R100   | \$531      | FL100B14I132  | \$531      |
| FL112B5R90 *   | \$402      |              |            | FL132B14R112   | \$531      | FL112B14I132  | \$531      |
| FL132B5R112    | \$739      |              |            | FL160B14R132** | \$1,006    |               |            |
| FL160B5R132 ** | \$1,080    |              |            |                |            |               |            |

\* Shaft machining required at additional cost.

\*\* 160M Frame: shaft extension and bearing repositioning is required at additional cost.

160L Frame: shaft extension is required at additional cost.

NOTE: Please inquire for all B5 increased/reduced flanges as they may require motor customization. An additional charge may be applicable.

### Stainless Steel Flange Adapter Plates

LA Motors (IP67 & IP69K)

| B5 'D' Flange | M   | N   | Price (\$) | B14 'C' Flange | M   | N   | Price (\$) |
|---------------|-----|-----|------------|----------------|-----|-----|------------|
| FLP63B5       | 115 | 95  | \$214      | FLP63B14       | 75  | 60  | \$145      |
| FLP71B5       | 130 | 110 | \$261      | FLP71B14       | 85  | 70  | \$139      |
| FLP80B5       | 165 | 130 | \$290      | FLP80B14       | 100 | 80  | \$139      |
| FLP90B5       | 165 | 130 | \$347      | FLP90B14       | 115 | 95  | \$151      |
| FLP100B5      | 215 | 180 | \$486      | FLP100B14      | 130 | 110 | \$191      |
| FLP112B5      | 215 | 180 | \$486      | FLP112B14      | 130 | 110 | \$191      |
| FLP132B5      | 265 | 230 | \$955      | FLP132B14      | 165 | 130 | \$359      |

IP56 Flanges: Page 20

IP67 / IP69K Dimensions: Page 21

### Explosion Proof Flanges

MAK Motors

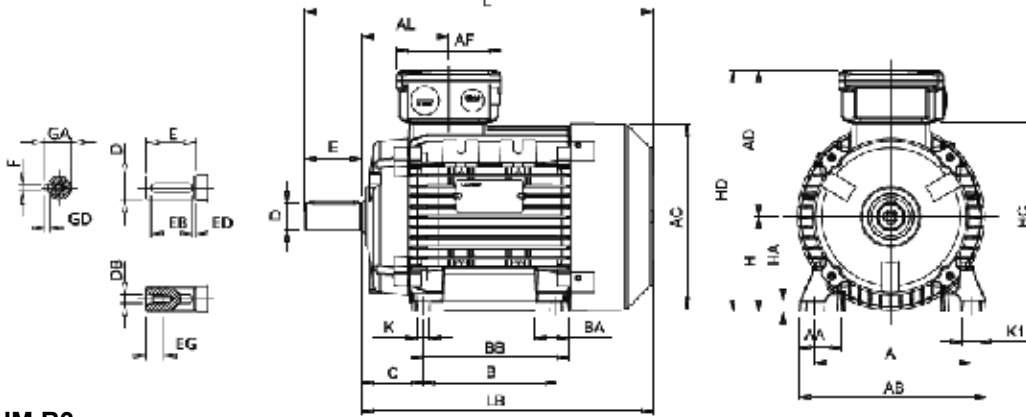
| B5 'D' Flange | M   | N   | B14 'C' Flange | M   | N   |
|---------------|-----|-----|----------------|-----|-----|
| FLEX56B5      | 100 | 80  | FLEX56B14      | 65  | 50  |
| FLEX63B5      | 115 | 95  | FLEX63B14      | 75  | 60  |
| FLEX71B5      | 130 | 110 | FLEX71B14      | 85  | 70  |
| FLEX80B5      | 165 | 130 | FLEX80B14      | 100 | 80  |
| FLEX90B5      | 165 | 130 | FLEX90B14      | 115 | 95  |
| FLEX100B5     | 215 | 180 | FLEX100B14     | 130 | 110 |
| FLEX112B5     | 215 | 180 | FLEX112B14     | 130 | 110 |
| FLEX132B5     | 265 | 230 | FLEX132B14     | 165 | 130 |
| FLEX160B5     | 300 | 250 | FLEX160B14     | 215 | 180 |
| FLEX180B5     | 300 | 250 |                |     |     |
| FLEX200B5     | 350 | 300 |                |     |     |
| FLEX225B5     | 400 | 350 |                |     |     |
| FLEX250B5     | 500 | 450 |                |     |     |

Dimensions: Page 35  
NEMA flanges available

# HPS - High Performance Permanent Magnet Synchronous Motors



## IM B3 / IM B14 / IM B5 / NEMA C-Flange Dimensions (Aluminum Frame)



(N)\*\* = NEMA  
 1) Clearance hole for screw  
 2) Maximum dimension  
 3) Centering holes in shaft extensions to DIN 332 part 2

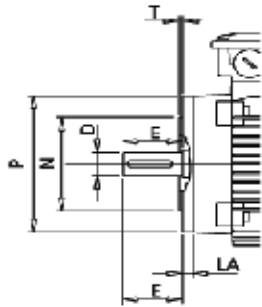
### IM B3

| H (Frame) | A   | B       | C   | K <sup>(1)</sup> | AB  | BB  | AD <sup>(2)</sup> | HD <sup>(2)</sup> | AC  | HC  | HA | K1 | L   | L(N)**  | LB  | LB (N)** |
|-----------|-----|---------|-----|------------------|-----|-----|-------------------|-------------------|-----|-----|----|----|-----|---------|-----|----------|
| 56        | 90  | 71      | 36  | 6                | 107 | 86  | 92                | 148               | 110 | 109 | 8  | 9  | 188 | -       | 168 | -        |
| 71        | 112 | 90      | 45  | 8                | 135 | 108 | 114               | 185               | 142 | 142 | 9  | 17 | 245 | 10.433" | 215 | 8.386"   |
| 90 S/L    | 140 | 100/125 | 56  | 10               | 170 | 150 | 148               | 238               | 177 | 181 | 11 | 15 | 317 | 12.638" | 267 | 10.512"  |
| 112 M     | 190 | 140     | 70  | 12.5             | 220 | 176 | 171               | 283               | 225 | 226 | 15 | 19 | 388 | 15.669" | 328 | 13.051"  |
| 112 XL    | 190 | 140     | 70  | 12.5             | 220 | 176 | 171               | 283               | 225 | 226 | 15 | 19 | 410 | 16.535" | 350 | 13.917"  |
| 132 M     | 216 | 178     | 89  | 12               | 256 | 218 | 195               | 327               | 248 | 261 | 17 | 20 | 485 | 19.055" | 405 | 15.945"  |
| 132 XL    | 216 | 178     | 89  | 12               | 256 | 218 | 195               | 327               | 248 | 261 | 17 | 20 | 505 | 19.852" | 425 | 16.732"  |
| 132 XXL   | 216 | 178     | 89  | 12               | 256 | 218 | 195               | 327               | 248 | 261 | 17 | 20 | 556 | 21.860" | 476 | 18.740"  |
| 160 M     | 254 | 210     | 108 | 14               | 320 | 270 | 238               | 398               | 317 | 316 | 23 | 18 | 608 | -       | 498 | -        |
| 160 L     | 254 | 254     | 108 | 14               | 320 | 310 | 238               | 398               | 317 | 316 | 23 | 18 | 652 | -       | 542 | -        |

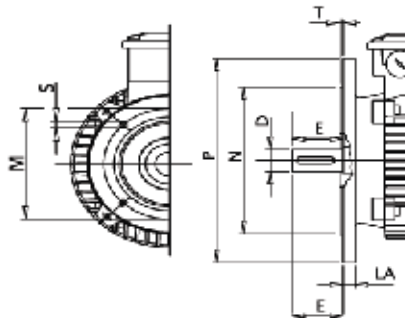
| H (Frame) | AL  | AF  | BA    | AA | D       | D(N)** | E   | E(N)** | F    | F(N)** | GD  | GA   | DB <sup>(3)</sup> | EG   | EB  | EB (N)** | ED |
|-----------|-----|-----|-------|----|---------|--------|-----|--------|------|--------|-----|------|-------------------|------|-----|----------|----|
| 56        | 61  | 93  | 27    | 27 | 14      | -      | 30  | -      | 5    | -      | 5   | 16   | M5                | 12.5 | 20  | -        | 4  |
| 71        | 75  | 93  | 22    | 30 | 19 j6   | 0.625" | 40  | 2.06"  | 6    | 0.188" | 6   | 22   | M6                | 16   | 30  | 1.41"    | 4  |
| 90 S/L    | 85  | 110 | 28/53 | 37 | 24 j6   | 0.875" | 50  | 2.12"  | 8    | 0.188" | 7   | 27   | M8                | 19   | 40  | 1.41"    | 4  |
| 112 M     | 92  | 110 | 46    | 48 | 28 j6   | 1.125" | 60  | 2.62"  | 8    | 0.25"  | 7   | 31   | M10               | 22   | 50  | 1.78"    | 4  |
| 112 XL    | 92  | 110 | 46    | 48 | 28 j6   | 1.125" | 60  | 2.62"  | 8    | 0.25"  | 7   | 31   | M10               | 22   | 50  | 1.78"    | 4  |
| 132 M     | 122 | 133 | 45    | 59 | 38 k6   | 1.375" | 80  | 3.12"  | 10   | 0.312" | 8   | 41   | M12               | 28   | 70  | 2.41"    | 4  |
| 132 XL    | 122 | 133 | 45    | 59 | 38 k6   | 1.375" | 80  | 3.12"  | 10   | 0.312" | 8   | 41   | M12               | 28   | 70  | 2.41"    | 4  |
| 132 XXL   | 122 | 133 | 45    | 59 | 38 k6   | 1.375" | 80  | 3.12"  | 10   | 0.312" | 8   | 41   | M12               | 28   | 70  | 2.41"    | 4  |
| 160 M     | 146 | 150 | 65    | 76 | 42 k6 * | -      | 110 | -      | 12 * | -      | 8 * | 45 * | M16               | 36   | 100 | -        | 4  |
| 160 L     | 168 | 150 | 65    | 76 | 48 k6   | -      | 110 | -      | 14   | -      | 9   | 51.5 | M16               | 36   | 100 | -        | 4  |

\* For HPS 160M in 18.5kW, refer to HPS 160L dimension

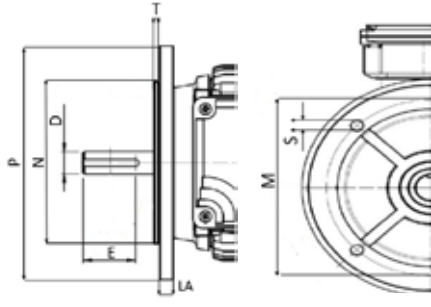
### IM B14 - C Flange



### IM B5 - D Flange



### NEMA - C Flange

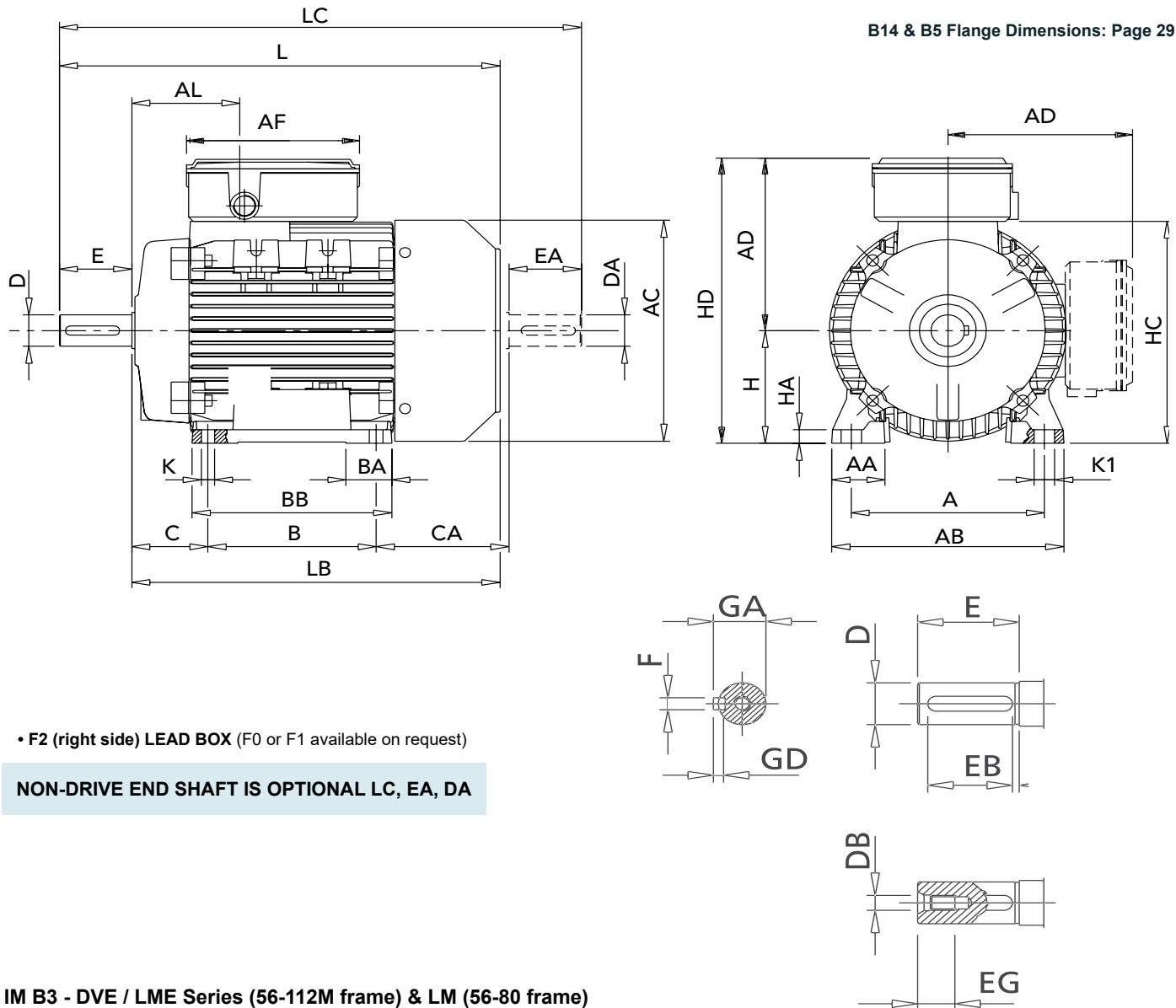


| Frame        | Dimensions in Millimeters |     |    |     |     |                  |                         |     |    |     |     |                  | Dimensions in Inches |      |        |        |       |                  |
|--------------|---------------------------|-----|----|-----|-----|------------------|-------------------------|-----|----|-----|-----|------------------|----------------------|------|--------|--------|-------|------------------|
|              | B14 FLANGE                |     |    |     |     |                  | B14 FLANGE (Increasing) |     |    |     |     |                  | NEMA C-FLANGE        |      |        |        |       |                  |
|              | P                         | N   | LA | M   | T   | S <sup>(1)</sup> | P                       | N   | LA | M   | T   | S <sup>(1)</sup> | P                    | N    | LA     | M      | T     | S <sup>(1)</sup> |
| 56           | 80                        | 50  | 8  | 65  | 2.5 | M5               | 105                     | 70  | 8  | 85  | 2.5 | M6               | -                    | -    | -      | -      | -     | -                |
| 71           | 105                       | 70  | 11 | 85  | 2.5 | M6               | 140                     | 95  | 8  | 115 | 3   | M8               | 6.5"                 | 4.5" | 0.354" | 5.875" | 0.16" | 3/8"             |
| 90 S/L       | 140                       | 95  | 10 | 115 | 3.0 | M8               | 160                     | 110 | 9  | 130 | 3.5 | M8               | 6.5"                 | 4.5" | 0.472" | 5.875" | 0.16" | 3/8"             |
| 112 M/XL     | 160                       | 110 | 10 | 130 | 3.5 | M8               | 200                     | 130 | 12 | 165 | 3.5 | M10              | 9"                   | 8.5" | 0.459" | 7.25"  | 0.25" | 1/2"             |
| 132 M/XL/XXL | 200                       | 130 | 23 | 165 | 3.5 | M10              | 250                     | 180 | 12 | 215 | 4   | M12              | 9"                   | 8.5" | 0.36"  | 7.25"  | 0.25" | 1/2"             |
| 160 M/L      | 250                       | 180 | 20 | 216 | 4.0 | M12              | 300                     | 230 | 12 | 265 | 5   | M16              | -                    | -    | -      | -      | -     | -                |

Permanent Magnet Motors require oversized bearing flanges. Please contact a Lafert N.A sales representative for details.

## IM B3 Dimensions (Aluminum Frame)

B14 &amp; B5 Flange Dimensions: Page 29



## IM B3 - DVE / LME Series (56-112M frame) &amp; LM (56-80 frame)

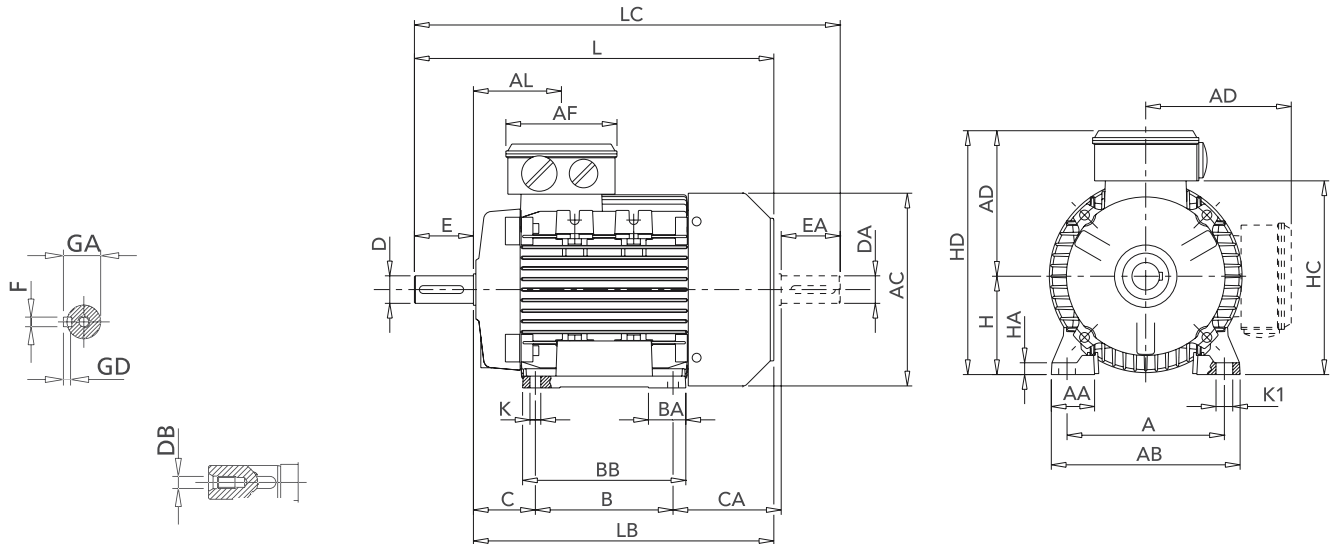
Dimensions in mm

| H<br>(Frame) | A   | B   | C  | K  | AB  | BB  | CA  | AD  | HD  | AC  | HC  | HA | K1 | L   | LB  | LC  | AL  | AF  | BA | AA | D/DA | E/EA | F | GD | GA   | DB  | EG   | EB |
|--------------|-----|-----|----|----|-----|-----|-----|-----|-----|-----|-----|----|----|-----|-----|-----|-----|-----|----|----|------|------|---|----|------|-----|------|----|
| 56 *         | 90  | 71  | 36 | 6  | 107 | 86  | 63  | 98  | 154 | 104 | 110 | 8  | 9  | 189 | 169 | 210 | 68  | 143 | 27 | 27 | 9    | 20   | 3 | 3  | 10.2 | M3  | 7.5  | 15 |
| 63 *         | 100 | 80  | 40 | 7  | 120 | 100 | 73  | 105 | 168 | 122 | 122 | 8  | 11 | 214 | 191 | 239 | 66  | 143 | 28 | 30 | 11   | 23   | 4 | 4  | 12.5 | M4  | 10.5 | 15 |
| 71           | 112 | 90  | 45 | 7  | 135 | 109 | 80  | 119 | 190 | 142 | 144 | 9  | 11 | 243 | 213 | 275 | 73  | 143 | 28 | 31 | 14   | 30   | 5 | 5  | 16   | M5  | 12.5 | 20 |
| 80           | 125 | 100 | 50 | 9  | 154 | 125 | 89  | 131 | 211 | 160 | 162 | 10 | 14 | 277 | 237 | 319 | 99  | 168 | 35 | 33 | 19   | 40   | 6 | 6  | 21.5 | M6  | 19   | 30 |
| 90S          | 140 | 100 | 56 | 9  | 170 | 125 | 101 | 140 | 230 | 180 | 181 | 11 | 15 | 307 | 257 | 357 | 103 | 168 | 37 | 37 | 24   | 50   | 8 | 7  | 27   | M8  | 19   | 40 |
| 90L          | 140 | 125 | 56 | 9  | 170 | 150 | 101 | 140 | 230 | 180 | 181 | 11 | 15 | 332 | 282 | 382 | 103 | 168 | 37 | 37 | 24   | 50   | 8 | 7  | 27   | M8  | 19   | 40 |
| 100L         | 160 | 140 | 63 | 11 | 192 | 166 | 110 | 147 | 247 | 195 | 200 | 12 | 17 | 373 | 313 | 433 | 107 | 168 | 42 | 44 | 28   | 60   | 8 | 7  | 31   | M10 | 22   | 50 |
| 112M         | 190 | 140 | 70 | 12 | 220 | 175 | 126 | 163 | 275 | 222 | 226 | 15 | 19 | 394 | 334 | 456 | 109 | 168 | 46 | 48 | 28   | 60   | 8 | 7  | 31   | M10 | 22   | 50 |

\* Non-removable feet - side mount only (F2 standard/ F1 upon request)

## IM B3 Dimensions (Aluminum Frame)

B5 &amp; B14 Flange Dimensions: Page 29



• F2 (right side) LEAD BOX (F0 or F1 available on request)

NON-DRIVE END SHAFT IS OPTIONAL LC, EA, DA

## IM B3 - AM / ST / FB

Dimensions in mm

| Frame               | A   | B   | C   | K <sup>(1)</sup> | AB  | BB  | AD <sup>(2)</sup> | HD <sup>(2)</sup> | AC  | HC  | HA  | K1 | AL  | AF  | BA   | AA   | D/DA | E/EA | F  | GD | GA   | DB <sup>(3)</sup> | CA  | L   | LB  | LC  |
|---------------------|-----|-----|-----|------------------|-----|-----|-------------------|-------------------|-----|-----|-----|----|-----|-----|------|------|------|------|----|----|------|-------------------|-----|-----|-----|-----|
| 56 *                | 90  | 71  | 36  | 6                | 107 | 86  | 92                | 148               | 110 | 109 | 8   | 9  | 61  | 92  | 27   | 27   | 9    | 20   | 3  | 3  | 10.2 | M3                | 64  | 188 | 168 | 211 |
| 63 *                | 100 | 80  | 40  | 7                | 120 | 100 | 96                | 159               | 124 | 120 | 8   | 11 | 63  | 92  | 29   | 30   | 11   | 23   | 4  | 4  | 12.5 | M4                | 72  | 211 | 188 | 238 |
| 71                  | 112 | 90  | 45  | 8                | 135 | 108 | 110               | 181               | 139 | 142 | 9   | 11 | 69  | 92  | 28   | 31   | 14   | 30   | 5  | 5  | 16   | M5                | 83  | 246 | 216 | 278 |
| 80                  | 125 | 100 | 50  | 10               | 153 | 125 | 129               | 209               | 160 | 162 | 9.5 | 14 | 79  | 116 | 28.5 | 34.5 | 19   | 40   | 6  | 6  | 21.5 | M6                | 89  | 272 | 232 | 319 |
| 90S                 | 140 | 100 | 56  | 10               | 170 | 150 | 138               | 228               | 180 | 181 | 11  | 15 | 85  | 116 | 53   | 37   | 24   | 50   | 8  | 7  | 27   | M8                | 116 | 317 | 267 | 372 |
| 90L                 | 140 | 125 | 56  | 10               | 170 | 150 | 138               | 228               | 180 | 181 | 11  | 15 | 85  | 116 | 53   | 37   | 24   | 50   | 8  | 7  | 27   | M8                | 91  | 317 | 267 | 372 |
| 100                 | 160 | 140 | 63  | 11               | 192 | 166 | 145               | 245               | 196 | 198 | 12  | 17 | 92  | 116 | 38   | 44   | 28   | 60   | 8  | 7  | 31   | M10               | 110 | 366 | 306 | 433 |
| 112                 | 190 | 140 | 70  | 12.5             | 220 | 175 | 161               | 273               | 225 | 226 | 15  | 19 | 92  | 116 | 46   | 48   | 28   | 60   | 8  | 7  | 31   | M10               | 126 | 388 | 328 | 456 |
| 132S                | 216 | 140 | 89  | 12               | 256 | 180 | 195               | 327               | 248 | 261 | 17  | 20 | 100 | 133 | 45   | 59   | 38   | 80   | 10 | 8  | 41   | M12               | 134 | 442 | 362 | 523 |
| 132M                | 216 | 178 | 89  | 12               | 256 | 218 | 195               | 327               | 248 | 261 | 17  | 20 | 120 | 133 | 45   | 59   | 38   | 80   | 10 | 8  | 41   | M12               | 136 | 482 | 402 | 563 |
| 132M <sup>(4)</sup> | 216 | 178 | 89  | 12               | 256 | 218 | 195               | 327               | 248 | 261 | 17  | 20 | 120 | 133 | 45   | 59   | 38   | 80   | 10 | 8  | 41   | M12               | 166 | 500 | 420 | 593 |
| 160M                | 254 | 210 | 108 | 14               | 320 | 270 | 238               | 398               | 317 | 316 | 23  | 18 | 146 | 150 | 65   | 76   | 42   | 110  | 12 | 8  | 45   | M16               | 180 | 608 | 498 | 718 |
| 160L                | 254 | 254 | 108 | 14               | 320 | 310 | 238               | 398               | 317 | 316 | 23  | 18 | 168 | 150 | 65   | 76   | 42   | 110  | 12 | 8  | 45   | M16               | 180 | 652 | 542 | 762 |
| 160L <sup>(5)</sup> | 254 | 254 | 108 | 14               | 320 | 310 | 238               | 398               | 317 | 316 | 23  | 18 | 168 | 150 | 65   | 76   | 42   | 110  | 12 | 8  | 45   | M16               | 210 | 678 | 568 | 678 |

\* Non-removable feet - side mount only (F2 standard/ F1 upon request)

1) Clearance hole for screw

2) Maximum dimension

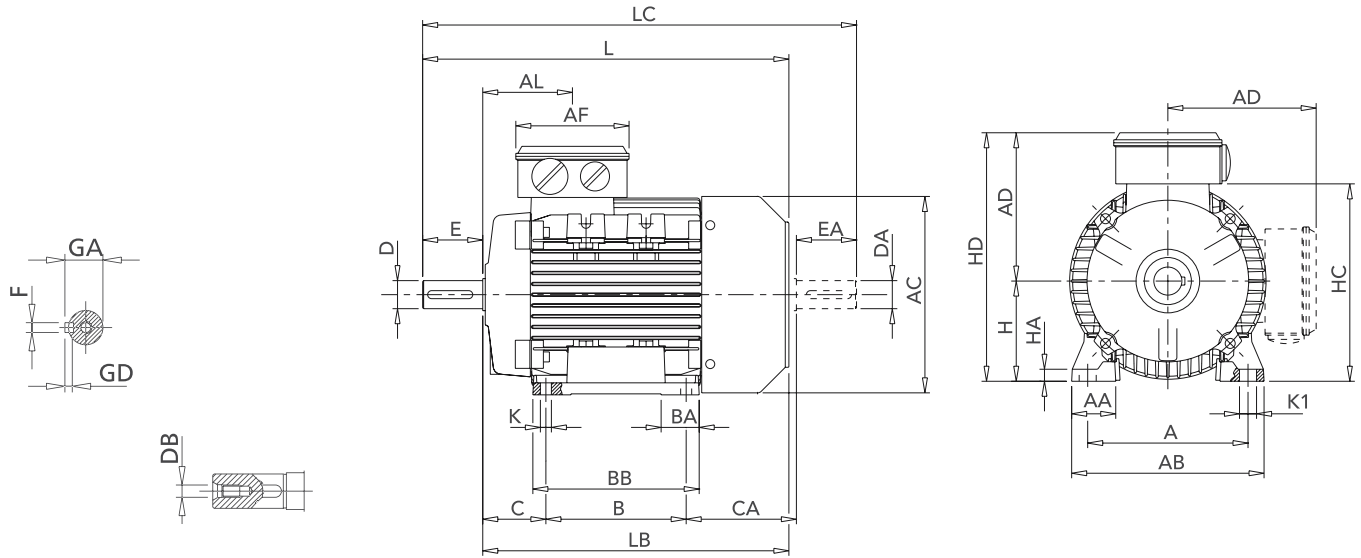
3) Centering holes in shaft extensions to DIN 332 part 2

4) Only for MT A2

5) Only for LD A4

## IM B3 Dimensions (Aluminum Frame)

B14 & B5 Flange Dimensions: Page 29



• F2 (right side) LEAD BOX (F0 or F1 available on request)

NON-DRIVE END SHAFT IS OPTIONAL LC, EA, DA

### IM B3 - AMPH Series

Dimensions in mm

| Frame H | Pole | HP        | A   | B   | C   | K <sup>1)</sup> | AB  | BB  | AD <sup>2)</sup> | HD <sup>2)</sup> | AC  | HC  | HA  | K1 | AL  | AF  | BA   | AA   | D/DA  | E/EA   | F    | GD  | GA   | DB <sup>3)</sup> | CA  | L   | LB  | LC  |
|---------|------|-----------|-----|-----|-----|-----------------|-----|-----|------------------|------------------|-----|-----|-----|----|-----|-----|------|------|-------|--------|------|-----|------|------------------|-----|-----|-----|-----|
| 80      | 2-4  | all       | 125 | 100 | 50  | 10              | 153 | 125 | 140              | 220              | 160 | 162 | 9.5 | 14 | 79  | 116 | 28.5 | 34.5 | 19    | 40     | 6    | 6   | 21.5 | M6               | 89  | 272 | 232 | 319 |
| 90S     | 2-4  | all       | 140 | 100 | 56  | 10              | 170 | 150 | 149              | 239              | 180 | 181 | 11  | 15 | 85  | 116 | 53   | 37   | 24    | 50     | 8    | 7   | 27   | M8               | 116 | 317 | 267 | 372 |
|         | 6    | 1.0       | 140 | 100 | 56  | 10              | 170 | 150 | 149              | 239              | 180 | 181 | 11  | 15 | 85  | 116 | 53   | 37   | 24    | 50     | 8    | 7   | 27   | M8               | 116 | 317 | 267 | 372 |
| 90L     | 2    | 3.0       | 140 | 125 | 56  | 10              | 170 | 150 | 149              | 239              | 180 | 181 | 11  | 15 | 85  | 116 | 53   | 37   | 24    | 50     | 8    | 7   | 27   | M8               | 91  | 317 | 267 | 372 |
|         | 2    | 4.0       | 140 | 125 | 56  | 10              | 170 | 150 | 138              | 239              | 180 | 181 | 11  | 15 | 85  | 116 | 53   | 37   | 24    | 50     | 8    | 7   | 27   | M8               | 114 | 340 | 290 | 395 |
|         | 4    | all       | 140 | 125 | 56  | 10              | 170 | 150 | 149              | 239              | 180 | 181 | 11  | 15 | 85  | 116 | 53   | 37   | 24    | 50     | 8    | 7   | 27   | M8               | 91  | 317 | 267 | 372 |
| 100L    | 2    | all       | 160 | 140 | 63  | 11              | 192 | 166 | 156              | 256              | 196 | 198 | 12  | 17 | 91  | 110 | 38   | 44   | 28    | 60     | 8    | 7   | 31   | M10              | 110 | 366 | 306 | 433 |
|         | 4-6  | all       | 160 | 140 | 63  | 11              | 192 | 166 | 156              | 256              | 198 | 192 | 12  | 17 | 92  | 118 | 41   | 44   | 28    | 60     | 8    | 7   | 31   | M10              | 110 | 366 | 306 | 433 |
| 112M    | 2    | 5.5-7.5   | 190 | 140 | 70  | 12.5            | 220 | 176 | 172              | 284              | 225 | 225 | 15  | 19 | 92  | 116 | 46   | 48   | 28    | 60     | 8    | 7   | 31   | M10              | 126 | 388 | 328 | 456 |
|         | 2    | 10.0      | 190 | 140 | 70  | 12.5            | 220 | 176 | 172              | 284              | 225 | 225 | 15  | 19 | 92  | 116 | 46   | 48   | 28    | 60     | 8    | 7   | 31   | M10              | 148 | 410 | 350 | 478 |
|         | 4    | all       | 190 | 140 | 70  | 12.5            | 220 | 176 | 172              | 284              | 225 | 225 | 15  | 19 | 92  | 116 | 46   | 48   | 28    | 60     | 8    | 7   | 31   | M10              | 126 | 388 | 328 | 456 |
|         | 6    | 1.5       | 190 | 140 | 70  | 12.5            | 220 | 176 | 172              | 284              | 225 | 225 | 15  | 19 | 92  | 116 | 46   | 48   | 28    | 60     | 8    | 7   | 31   | M10              | 126 | 388 | 328 | 456 |
|         | 6    | 2.0-2.4   | 190 | 140 | 70  | 12.5            | 220 | 176 | 172              | 284              | 225 | 225 | 15  | 19 | 92  | 116 | 46   | 48   | 28    | 60     | 8    | 7   | 31   | M10              | 148 | 410 | 350 | 478 |
| 132S    | 2    | 7.5       | 216 | 140 | 89  | 12              | 256 | 180 | 194              | 326              | 248 | 261 | 17  | 20 | 102 | 133 | 45   | 59   | 38    | 80     | 10   | 8   | 41   | M12              | 134 | 445 | 365 | 523 |
|         | 2    | 10.0      | 216 | 140 | 89  | 12              | 256 | 180 | 194              | 326              | 248 | 261 | 17  | 20 | 102 | 133 | 45   | 59   | 38    | 80     | 10   | 8   | 41   | M12              | 154 | 465 | 385 | 543 |
|         | 4    | 7.5       | 216 | 140 | 89  | 12              | 256 | 180 | 194              | 326              | 248 | 261 | 17  | 20 | 102 | 133 | 45   | 59   | 38    | 80     | 10   | 8   | 41   | M12              | 174 | 485 | 405 | 563 |
|         | 6    | 3.0-4.0   | 216 | 140 | 89  | 12              | 256 | 180 | 194              | 326              | 248 | 261 | 17  | 20 | 102 | 133 | 45   | 59   | 38    | 80     | 10   | 8   | 41   | M12              | 154 | 465 | 385 | 543 |
| 132M    | 2    | 12.4-15.0 | 216 | 178 | 89  | 12              | 256 | 218 | 194              | 326              | 248 | 261 | 17  | 20 | 122 | 133 | 45   | 59   | 38    | 80     | 10   | 8   | 41   | M12              | 156 | 505 | 425 | 583 |
|         | 2    | 20.0      | 216 | 178 | 89  | 12              | 256 | 218 | 194              | 326              | 248 | 261 | 17  | 20 | 122 | 133 | 45   | 59   | 38    | 80     | 10   | 8   | 41   | M12              | 207 | 556 | 476 | 640 |
|         | 4    | 10.0      | 216 | 178 | 89  | 12              | 256 | 218 | 194              | 326              | 248 | 261 | 17  | 20 | 122 | 133 | 45   | 59   | 38    | 80     | 10   | 8   | 41   | M12              | 156 | 505 | 425 | 583 |
|         | 4    | 12.4      | 216 | 178 | 89  | 12              | 256 | 218 | 194              | 326              | 248 | 261 | 17  | 20 | 122 | 133 | 45   | 59   | 38    | 80     | 10   | 8   | 41   | M12              | 207 | 556 | 476 | 640 |
|         | 6    | 5.5       | 216 | 178 | 89  | 12              | 256 | 218 | 194              | 326              | 248 | 261 | 17  | 20 | 122 | 133 | 45   | 59   | 38    | 80     | 10   | 8   | 41   | M12              | 136 | 485 | 405 | 563 |
| 160M    | 2-6  | all       | 254 | 210 | 108 | 14              | 320 | 270 | 238              | 398              | 317 | 316 | 23  | 18 | 146 | 150 | 65   | 76   | 42/28 | 110/60 | 12/8 | 8/7 | 45   | M16              | 180 | 608 | 498 | 668 |
| 160L    | 2-6  | all       | 254 | 254 | 108 | 14              | 320 | 310 | 238              | 398              | 317 | 316 | 23  | 18 | 168 | 150 | 65   | 76   | 42/28 | 110/60 | 12/8 | 8/7 | 45   | M16              | 180 | 652 | 542 | 712 |

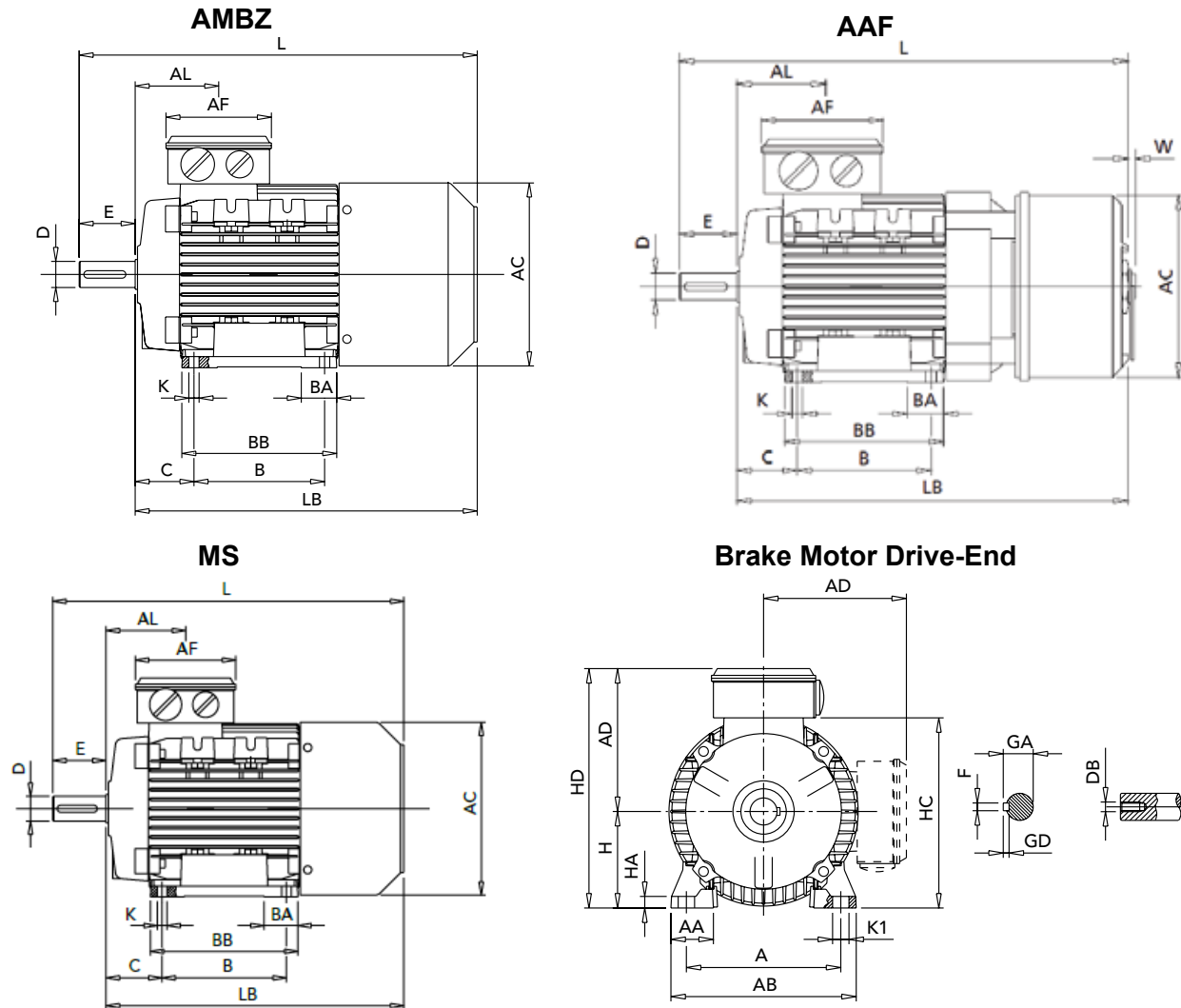
1) Clearance hole for screw

2) Maximum dimension

3) Centering holes in shaft extensions to DIN 332 part 2

IM B3 Dimensions (Aluminum Frame)

B14 & B5 Flange Dimensions: Page 29



**IM B3**

Dimensions in mm

AMBZ / MS - manual release lever optional (side of motor)  
AAF - manual release key included (rear of motor)

• F2 (right side) LEAD BOX (F0 or F1 available on request)

| (Frame)             |     |     |     |                  |     |     |                   |                   |     |     |    |     |     |    |    |    |     |    |    |      | AMBZ              |     |     | AAF |     |     |     | MS * |     |     |     |
|---------------------|-----|-----|-----|------------------|-----|-----|-------------------|-------------------|-----|-----|----|-----|-----|----|----|----|-----|----|----|------|-------------------|-----|-----|-----|-----|-----|-----|------|-----|-----|-----|
| H                   | A   | B   | C   | K <sup>(1)</sup> | AB  | BB  | AD <sup>(2)</sup> | HD <sup>(2)</sup> | HC  | HA  | K1 | AL  | AF  | BA | AA | D  | E   | F  | GD | GA   | DB <sup>(3)</sup> | AC  | L   | LB  | AC  | L   | LB  | W    | AC  | L   | LB  |
| 63                  | 100 | 80  | 40  | 7                | 120 | 100 | 96                | 159               | 120 | 8   | 11 | 63  | 92  | 29 | 30 | 11 | 23  | 4  | 4  | 12.5 | M4                | 124 | 267 | 244 | 126 | 302 | 279 | 6    | 124 | 226 | 203 |
| 71                  | 112 | 90  | 45  | 8                | 135 | 108 | 110               | 181               | 142 | 8   | 11 | 69  | 92  | 28 | 31 | 14 | 30  | 5  | 5  | 16   | M5                | 138 | 300 | 270 | 142 | 336 | 306 | 5    | 139 | 255 | 225 |
| 80                  | 125 | 100 | 50  | 10               | 153 | 125 | 129               | 208               | 161 | 9.5 | 14 | 79  | 116 | 29 | 35 | 19 | 40  | 6  | 6  | 21.5 | M6                | 156 | 350 | 310 | 160 | 384 | 344 | 5    | 157 | 294 | 254 |
| 90S                 | 140 | 100 | 56  | 10               | 170 | 150 | 137               | 227               | 180 | 11  | 15 | 85  | 116 | 53 | 37 | 24 | 50  | 8  | 7  | 27   | M8                | 178 | 403 | 353 | 179 | 435 | 385 | 4    | 177 | 340 | 290 |
| 90L                 | 140 | 125 | 56  | 10               | 170 | 150 | 137               | 227               | 180 | 11  | 15 | 85  | 116 | 53 | 37 | 24 | 50  | 8  | 7  | 27   | M8                | 178 | 403 | 353 | 179 | 435 | 385 | 4    | 177 | 340 | 290 |
| 100                 | 160 | 140 | 63  | 11               | 192 | 166 | 144               | 244               | 197 | 12  | 17 | 91  | 116 | 38 | 44 | 28 | 60  | 8  | 7  | 31   | M10               | 192 | 465 | 405 | 197 | 479 | 419 | 6    | 196 | 379 | 319 |
| 112                 | 190 | 140 | 70  | 12.5             | 220 | 176 | 160               | 272               | 225 | 15  | 19 | 92  | 116 | 46 | 48 | 28 | 60  | 8  | 7  | 31   | M10               | 222 | 487 | 427 | 224 | 507 | 447 | 6    | 222 | 396 | 336 |
| 132S                | 216 | 140 | 89  | 12               | 256 | 180 | 194               | 326               | 261 | 17  | 20 | 100 | 133 | 45 | 59 | 38 | 80  | 10 | 8  | 41   | M12               | 259 | 592 | 512 | 263 | 613 | 533 | 8    | 248 | 480 | 400 |
| 132M                | 216 | 178 | 89  | 12               | 256 | 218 | 194               | 326               | 261 | 17  | 20 | 120 | 133 | 45 | 59 | 38 | 80  | 10 | 8  | 41   | M12               | 259 | 612 | 532 | 263 | 633 | 553 | 8    | 248 | 500 | 420 |
| 160M                | 254 | 210 | 108 | 14               | 320 | 270 | 237               | 397               | 317 | 23  | 18 | 146 | 150 | 65 | 76 | 42 | 110 | 12 | 8  | 45   | M16               | 316 | 721 | 611 | 258 | 784 | 674 | -    | 316 | 614 | 504 |
| 160L                | 254 | 254 | 108 | 14               | 320 | 310 | 237               | 397               | 317 | 23  | 18 | 168 | 150 | 65 | 76 | 42 | 110 | 12 | 8  | 45   | M16               | 316 | 763 | 653 | 258 | 806 | 696 | -    | 316 | 658 | 548 |
| 160L <sup>(4)</sup> | 254 | 254 | 108 | 14               | 320 | 310 | 237               | 397               | 317 | 23  | 18 | 168 | 150 | 65 | 76 | 42 | 110 | 12 | 8  | 45   | M16               | 316 | 790 | 680 | -   | -   | -   | -    | -   | -   | -   |

1) Clearance hole for screw 4) Only for LD A4

2) Maximum dimension

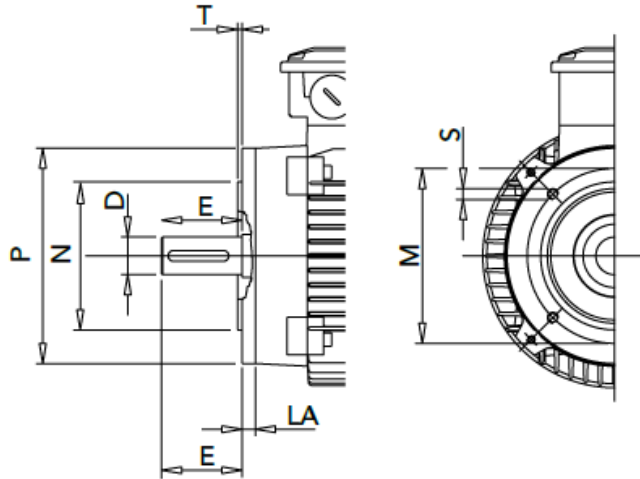
3) Centering holes in shaft extensions to SIN 332 part 2

\* Please Inquire: MS Compact brake motor non-drive end shaft is not standard size.

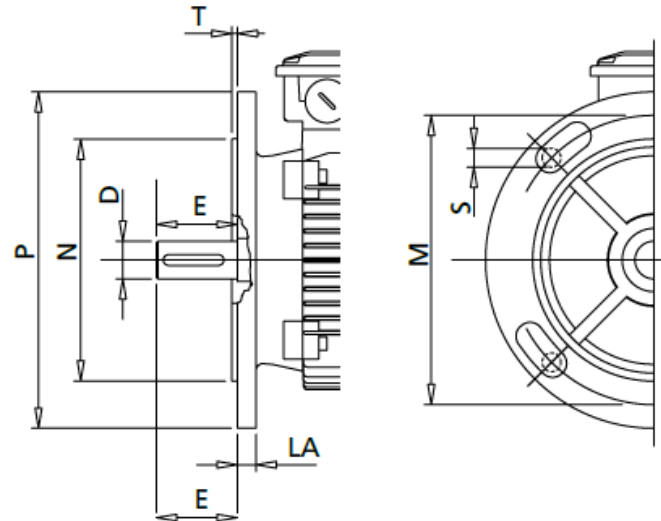
## IM B14 / IM B5 - Flange Dimensions

Motor Dimensions: Page 25-28

### IM B14



### IM B5



### IM B14 - C Flange & IM B5 - D Flange

Dimensions in mm

M = Center to center bolt hole circle N = Spigot diameter P = Outside diameter

| Frame | B14 |     |     |     |     |    | B14<br>Reduced<br>Frame | B14<br>Increased<br>Frame | B5  |     |     |      |     |    | B5<br>Reduced<br>Frame | B5<br>Increased<br>Frame |
|-------|-----|-----|-----|-----|-----|----|-------------------------|---------------------------|-----|-----|-----|------|-----|----|------------------------|--------------------------|
|       | M   | N   | P   | S   | T   | LA |                         |                           | M   | N   | P   | S    | T   | LA |                        |                          |
| 56    | 65  | 50  | 80  | M5  | 2.5 | 8  | -                       | 63                        | 100 | 80  | 120 | 7    | 2.5 | 7  | -                      | -                        |
| 63    | 75  | 60  | 90  | M5  | 2.5 | 8  | 56                      | 71/80                     | 115 | 95  | 140 | 9.5  | 3   | 8  | 56                     | 71                       |
| 71    | 85  | 70  | 105 | M6  | 2.5 | 8  | 63                      | 80/90                     | 130 | 110 | 160 | 9.5  | 3.5 | 10 | 63/56                  | 80/90                    |
| 80    | 100 | 80  | 120 | M6  | 3   | 9  | 71/63                   | 90/100                    | 165 | 130 | 200 | 11.5 | 3.5 | 10 | 71/63                  | -                        |
| 90    | 115 | 95  | 140 | M8  | 3   | 9  | 80/71                   | 100/112                   | 165 | 130 | 200 | 11.5 | 3.5 | 12 | 71                     | -                        |
| 100   | 130 | 110 | 160 | M8  | 3.5 | 10 | 90                      | 132                       | 215 | 180 | 250 | 14   | 4   | 14 | 90/80/71               | -                        |
| 112   | 130 | 110 | 160 | M8  | 3.5 | 10 | 90                      | 132                       | 215 | 180 | 250 | 14   | 4   | 14 | 90 *                   | -                        |
| 132   | 165 | 130 | 200 | M10 | 3.5 | 30 | 112/100                 | -                         | 265 | 230 | 300 | 14   | 4   | 14 | 112                    | -                        |
| 160   | 215 | 180 | 250 | M12 | 4   | 12 | 132 **                  | -                         | 300 | 250 | 350 | 18   | 5   | 15 | 132 **                 | -                        |

\* Shaft machining required at additional cost.

\*\* 160M Frame: shaft extension and bearing repositioning is required at additional cost.

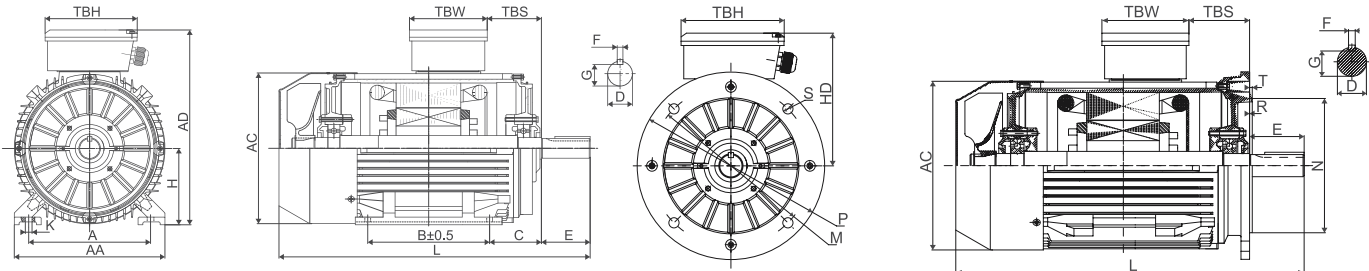
160L Frame: shaft extension is required at additional cost.

NOTE: Please inquire for all B5 increased/reduced flanges as they may require motor customization. An additional charge may be applicable.

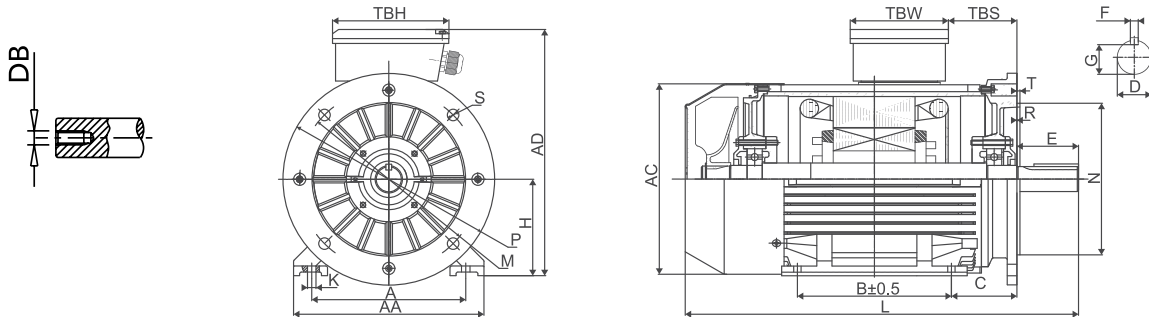
# Mounting (132-315 Cast Iron Frames) Dimensions

**IM B3**

**IM B5 - D Flange**



**IM B35**



## Installation & Overall Dimensions

Dimensions in mm

• F0 Lead Box

| Frame<br>H | Poles   | Foot Mounting |          |     | Shaft |     |    |     |      | General |     |     |     |     |          | Terminal Box |     |     |
|------------|---------|---------------|----------|-----|-------|-----|----|-----|------|---------|-----|-----|-----|-----|----------|--------------|-----|-----|
|            |         | A             | B        | C   | D     | E   | F  | DB  | G    | K       | AA  | AD  | HD  | AC  | L        | TBS          | TBW | TBH |
| 132 M      | 8       | 216           | 178      | 89  | 38    | 80  | 10 | M12 | 33   | 12      | 270 | 345 | 210 | 275 | 560      | 48           | 108 | 116 |
| 160 M/L    | 2,4,6,8 | 254           | 210/254  | 108 | 42    | 110 | 12 | M16 | 37   | 15      | 320 | 420 | 255 | 330 | 670/700  | 69           | 150 | 160 |
| 180 M/L    | 2,4,6,8 | 279           | 241/279  | 121 | 48    | 110 | 14 | M16 | 42.5 | 15      | 348 | 455 | 275 | 380 | 700/740  | 81           | 150 | 160 |
| 200 L      | 2,4,6,8 | 318           | 305      | 133 | 55    | 110 | 16 | M20 | 49   | 19      | 388 | 505 | 305 | 420 | 770      | 92           | 188 | 208 |
| 225 S      | 4,6,8   | 356           | 286      | 149 | 60    | 140 | 18 | M20 | 53   | 19      | 436 | 560 | 335 | 470 | 815      | 95           | 188 | 208 |
| 225 M      | 2       | 356           | 311      | 149 | 55    | 110 | 16 | M20 | 49   | 19      | 436 | 560 | 335 | 470 | 820      | 95           | 188 | 208 |
|            | 4,6,8   | 356           | 311      | 149 | 60    | 140 | 18 | M20 | 53   | 19      | 436 | 560 | 335 | 470 | 845      | 95           | 188 | 208 |
| 250 M      | 2       | 406           | 349      | 168 | 60    | 140 | 18 | M20 | 53   | 24      | 484 | 615 | 365 | 510 | 910      | 99           | 216 | 246 |
|            | 4,6,8   | 406           | 349      | 168 | 65    | 140 | 18 | M20 | 58   | 24      | 484 | 615 | 365 | 510 | 910      | 99           | 216 | 246 |
| 280 S/M    | 2       | 457           | 368 /419 | 190 | 65    | 140 | 18 | M20 | 58   | 24      | 557 | 680 | 400 | 580 | 985/1035 | 107          | 216 | 246 |
|            | 4,6,8   | 457           | 368/419  | 190 | 75    | 140 | 20 | M20 | 67.5 | 24      | 557 | 680 | 400 | 580 | 985/1035 | 107          | 216 | 246 |
| 315 S      | 2       | 508           | 406      | 216 | 65    | 140 | 18 | M20 | 58   | 28      | 630 | 845 | 530 | 645 | 1270     | 117          | 280 | 320 |
|            | 4,6,8   | 508           | 406      | 216 | 80    | 170 | 22 | M20 | 71   | 28      | 630 | 845 | 530 | 645 | 1270     | 117          | 280 | 320 |
| 315 M/L    | 2       | 508           | 457/508  | 216 | 65    | 140 | 18 | M20 | 58   | 28      | 630 | 845 | 530 | 645 | 1300     | 117          | 280 | 320 |
|            | 4,6,8   | 508           | 457/508  | 216 | 80    | 170 | 22 | M20 | 71   | 28      | 630 | 845 | 530 | 645 | 1300     | 117          | 280 | 320 |

| Frame<br>H | Poles   | Bearings  |               |             | B5  |     |     |      |   |
|------------|---------|-----------|---------------|-------------|-----|-----|-----|------|---|
|            |         | Drive End | Non-Drive End | Cable Gland | M   | N   | P   | S    | T |
| 132 M      | 8       | 6308 C3   | 6308 C3       | M32x1.5     | 265 | 230 | 300 | 4-14 | 4 |
| 160 M/L    | 2,4,6,8 | 6309 C3   | 6309 C3       | M40x1.5     | 300 | 250 | 350 | 4-18 | 5 |
| 180 M/L    | 2,4,6,8 | 6311 C3   | 6311 C3       | M40x1.5     | 300 | 250 | 350 | 4-19 | 5 |
| 200 L      | 2,4,6,8 | 6312 C3   | 6312 C3       | M40x1.5     | 350 | 300 | 400 | 4-19 | 5 |
| 225 S/M    | 2,4,6,8 | 6313 C3   | 6313 C3       | M50x1.5     | 400 | 350 | 450 | 8-19 | 5 |
| 250 M      | 2,4,6   | 6314 C3   | 6314 C3       | M63x1.5     | 500 | 450 | 550 | 8-19 | 5 |
| 280 S/M    | 2       | 6314 C3   | 6314 C3       | M63x1.5     | 500 | 450 | 550 | 8-19 | 5 |
|            | 4,6     | 6317 C3   | 6317 C3       | M63x1.5     | 500 | 450 | 550 | 8-19 | 5 |
| 315 S/L    | 2       | 6317 C3   | 6317 C3       | M63x1.5     | 600 | 550 | 660 | 8-24 | 6 |
|            | 4,6     | NU319     | 6319 C3       | M63x1.5     | 600 | 550 | 660 | 8-24 | 6 |

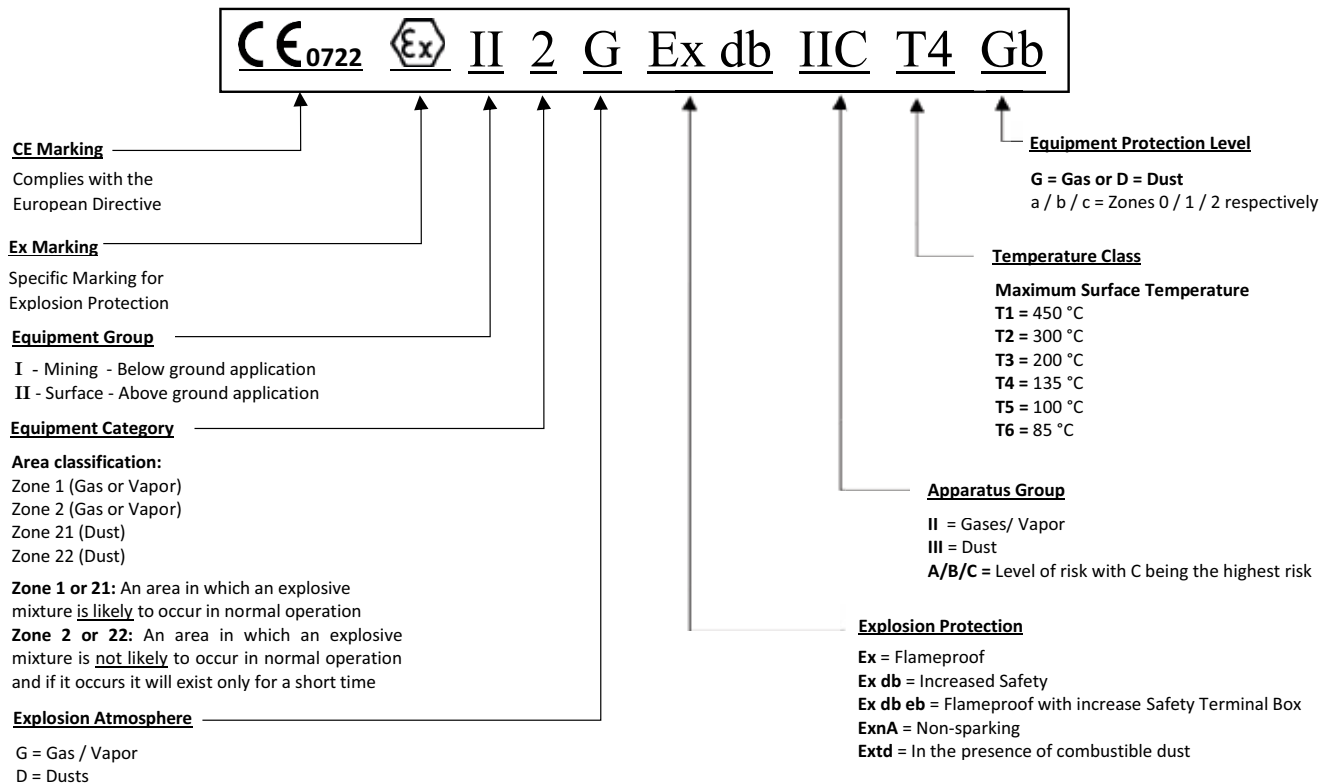
## Product Information

### Gases, Vapours & Groups [ATEX and IECEx]

Combustible gases and vapors are divided into classes according to their ignition temperature and into groups according to their explosive capacity. Symbolic markings on motors and other electrical equipment are used to indicate the production mode, the enclosure group, and the temperature class, which allows us to understand the zone in which such equipment can be installed.

| Group | Environment                  | Location                    | Typical Substance         |
|-------|------------------------------|-----------------------------|---------------------------|
| I     | Gases, Vapours and Coal Dust | Coal Mining                 | Methane (fire damp)       |
| IIA   | Gases, Vapours and Mists     | Surface and other locations | Methane, Propane, etc.    |
| IIB   |                              |                             | Ethylene                  |
| IIC   |                              |                             | Hydrogen, Acetylene, etc. |
| IIIA  | Combustible Dusts            | Surface and other locations | Combustible flyings       |
| IIIB  |                              |                             | Non-conductive            |
| IIIC  |                              |                             | Conductive                |

### Typical ATEX & IECEx Nomenclature



### Zone Classification

| Usage area in the presence of <b>GAS</b> | Usage area in the presence of <b>DUSTS</b> | Hazardous level of the operational <b>ZONE</b> |
|------------------------------------------|--------------------------------------------|------------------------------------------------|
| Zone 0                                   | Zone 20                                    | Explosive atmosphere <b>ALWAYS PRESENT</b>     |
| Zone 1                                   | Zone 21                                    | Explosive atmosphere <b>PROBABLE</b>           |
| Zone 2                                   | Zone 22                                    | Explosive atmosphere <b>UNLIKELY</b>           |

### Temperature Classification

| Ignition Temperature of Medium (relative to limit temperature) | Temperature Class | Maximum Surface Temperature of Electrical Equipment (including 40° C ambient temperature) |      |
|----------------------------------------------------------------|-------------------|-------------------------------------------------------------------------------------------|------|
| [°C]                                                           |                   | [°C]                                                                                      | [°F] |
| over 450                                                       | <b>T1</b>         | 450                                                                                       | 842  |
| from 300 to 450                                                | <b>T2</b>         | 300                                                                                       | 572  |
| from 200 to 300                                                | <b>T3</b>         | 200                                                                                       | 392  |
| from 135 to 200                                                | <b>T4</b>         | 135                                                                                       | 275  |
| from 100 to 135                                                | <b>T5</b>         | 100                                                                                       | 212  |
| from 85 to 100                                                 | <b>T6</b>         | 85                                                                                        | 185  |

## Product Information

| Special Features & Optional Types                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Flameproof Motor Purchasing Checklist                                                                                                                                                                                                                                                                                                                                       |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Typical Variants</b> <ul style="list-style-type: none"> <li>• Motors with brakes</li> <li>• 2GD motors for areas classified as zone 21 and zone 22 (Dust)</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <b>Power Rating</b> _____ kW<br><b>Synchronous Speed</b> _____ RPM<br><b>Phase</b> _____ Ph<br><b>Frequency</b> _____ Hz<br><b>Voltage</b> _____ V<br><b>Destination (Country)</b> _____                                                                                                                                                                                    |
| <b>Electrical Variants</b> <ul style="list-style-type: none"> <li>• Non-standard voltages and frequencies (maximum voltage 1000V)</li> <li>• Motors suitable for frequency inverter drive</li> <li>• Motors with encoder</li> <li>• Motors with forced ventilation (from frame size 80)</li> <li>• Motors for tropical climates</li> <li>• Motors for low ambient temperatures</li> <li>• Motors insulated to class H</li> <li>• Motors with bimetallic detector; thermistor PTC or thermistor PT100</li> <li>• Motors with anti-condensation heaters</li> <li>• Motors with special electrical design</li> <li>• Single-phase motors with capacitor fitted in a large size terminal box (EEx-d, max 59 µF)</li> </ul> | <b>Starting &amp; Control</b> _____ D.o.L<br>_____ VFD<br><b>Torque</b> _____ Constant<br>_____ Variable<br><b>Protection Scheme</b> _____ TEFC<br>_____ Ex db<br>_____ Ex db eb<br>_____ Ex'na                                                                                                                                                                             |
| <b>Mechanical Variants</b> <ul style="list-style-type: none"> <li>• Special flanges and shafts</li> <li>• Double ended shafts</li> <li>• Cable gland fitted to terminal box</li> <li>• Terminal box with special cable entries</li> <li>• Motors without terminal box and with loose cables</li> <li>• Ingress protection IP56 - IP65 - IP66</li> <li>• Motors with condensation drainage valves</li> <li>• Motors with special bearing (uni-directional, with sensors, with rollers, insulated, oversized, thrust bearings)</li> <li>• Motors with a rain cap or sun shield, water-shedding disc</li> <li>• Low noise emission version</li> </ul>                                                                     | <b>Temperature Class</b> T _____ (1,2,3,4,5 or 6)<br><b>Zone Classification</b> _____ (Gas 1 or 2)<br>_____ (Dust 21 or 22)<br><b>Grouping</b> _____ ( I, IIA, IIB, IIC)<br><b>Insulation Class</b> _____ Class F<br><b>Temperature Rise</b> _____ Class B<br><b>Ambient Temperature</b> _____ (40°C, 45°C, 50°C, 55°C)<br><b>IP rating</b> IP _____ (IP55, IP56, IP other) |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <b>IC Rating</b> _____ IC411<br>_____ IC416<br>_____ IC _____<br><b>Paint Standard</b> _____ C2<br>_____ C3<br>_____ C4<br>_____ C5i<br>Other: _____                                                                                                                                                                                                                        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <b>Finish Colour</b> _____ RAL 5010 (standard)<br>Other: _____                                                                                                                                                                                                                                                                                                              |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <b>Main Terminal Box (MTB)</b> _____ F0<br>_____ F _____<br><b>Termination IEC 60034-8</b> _____ Standard Terminal Block<br>_____ Flying Leads<br><b>Bearings Arrangement</b> _____ Anti Friction Ball<br>_____ Roller Type<br>_____ Sealed<br>Other: _____                                                                                                                 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <b>Mounting</b> _____ B3 Foot Mounted<br>_____ B5<br>_____ B14<br>_____ B34<br>_____ B35<br>_____ V1                                                                                                                                                                                                                                                                        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <b>Service Factor</b> _____ 1.0<br>_____ 1.15<br><b>Certifications</b> _____ ATEX<br>_____ IEC ex (On Request)<br>Other: _____                                                                                                                                                                                                                                              |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <b>Efficiency Classification</b> _____ IE1 Standard High<br>_____ IE2 ePACT<br>_____ IE3 Efficient (Europe)<br>_____ Thermistors<br>_____ Thermostats<br>_____ 100 Ω platinum RTDs<br>_____ 2-phase wired to MTB<br>_____ Space Heaters _____ V AC<br>Other: _____                                                                                                          |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <b>Special Features</b> _____                                                                                                                                                                                                                                                                                                                                               |

**Explosion Proof Motors 1HP & Higher do NOT meet the North American Energy Efficiency Regulations. Our Explosion Proof Motors are ATEX Certified only (no CSA/UL Certification available).**

*See below for exemptions.*

| Exemptions for use in North America                                       |                                                                                 |
|---------------------------------------------------------------------------|---------------------------------------------------------------------------------|
| <i>Efficiency Regulations can be exempt per the following conditions:</i> |                                                                                 |
| a.                                                                        | Motors that are rated for a Duty cycle of S2 to S9 (intermittent duty)          |
| b.                                                                        | Motors that are to be powered by independent power source, not a local utility. |
| c.                                                                        | Single phase motors                                                             |
| d.                                                                        | 2 speed motors                                                                  |

*Note: Motors that will be for export outside of North America or used in offshore applications are not required to meet North American Regulations.*

# MAK - Explosion Proof Motors



## Product Information

230/460V or 333/575V, 50 Hz or 60 Hz • Threaded Hole in Output Shaft • TEFC • Squirrel Cage • Class F • Cast Iron (F0 Lead Box)  
 IP55 Flameproof Enclosure • Ex db IIC T4 Gb ATEX Certification • Single Phase, 2 Speed & Brake Motor Designs Available • Class 'B' Rise  
 No CSA or UL Certification Provided • Thermistors for Continuous Torque Applications • Alternate Protection Levels Available  
 Non-sparking (Class 1 Div. 1) motors are also available.

### 2 POLE - 3600 RPM

| ATEX CERTIFIED |       |       | Weight<br>(lbs) | Full Load Amps |       | Rated<br>Torque<br>Nm |
|----------------|-------|-------|-----------------|----------------|-------|-----------------------|
| Part Number    | Kw    | HP    |                 | 460 V          | 575 V |                       |
| MAK056BP2      | 0.12  | 0.18  | 15              | 0.31           | 0.25  | 0.44                  |
| MAK063AP2      | 0.18  | 0.25  | 22              | 0.45           | 0.36  | 0.62                  |
| MAK063BP2      | 0.25  | 0.33  | 24              | 0.69           | 0.55  | 0.86                  |
| MAK071AP2      | 0.37  | 0.50  | 33              | 0.77           | 0.62  | 1.23                  |
| MAK071BP2      | 0.55  | 0.75  | 35              | 1.08           | 0.86  | 1.90                  |
| MAK080AP2      | 0.75  | 1.00  | 49              | 1.41           | 1.13  | 2.51                  |
| MAK080BP2      | 1.10  | 1.50  | 53              | 2.11           | 1.69  | 3.67                  |
| MAK090SP2      | 1.50  | 2.00  | 64              | 2.63           | 2.10  | 4.97                  |
| MAK090LP2      | 2.20  | 3.00  | 69              | 3.49           | 2.80  | 7.33                  |
| MAK100LWP2     | 3.00  | 4.00  | 99              | 5.31           | 4.25  | 9.84                  |
| MAK112MP2      | 4.00  | 5.50  | 123             | 6.64           | 5.31  | 13.05                 |
| MAK132SAP2     | 5.50  | 7.50  | 157             | 8.93           | 7.14  | 17.90                 |
| MAK132SBP2     | 7.50  | 10.00 | 174             | 11.69          | 9.35  | 24.46                 |
| MAK132MAP2     | 9.20  | 12.50 | 216             | 14.26          | 11.41 | 30.15                 |
| MAK132MBP2     | 11.00 | 15.00 | 216             | 17.14          | 13.71 | 36.07                 |
| MAK160MAP2     | 11.00 | 15.00 | 287             | 17.19          | 13.75 | 35.69                 |
| MAK160MBP2     | 15.00 | 20.00 | 326             | 23.29          | 18.64 | 48.69                 |
| MAK160LP2      | 18.50 | 25.00 | 362             | 27.68          | 22.14 | 59.91                 |
| MAK180MP2      | 22.00 | 30.00 | 489             | 32.27          | 25.82 | 71.24                 |
| MAK200LAP2     | 30.00 | 40.00 | 758             | 44.26          | 35.41 | 96.79                 |
| MAK200LBP2     | 37.00 | 50.00 | 809             | 53.67          | 42.94 | 119.29                |
| MAK225MP2      | 45.00 | 60.00 | 1003            | 65.52          | 52.42 | 144.07                |
| MAK250MP2      | 55.00 | 75.00 | 1168            | 82.47          | 65.98 | 176.38                |

### 6 POLE - 1200 RPM

| ATEX CERTIFIED |       |       | Weight<br>(lbs) | Full Load Amps |       | Rated<br>Torque<br>Nm |
|----------------|-------|-------|-----------------|----------------|-------|-----------------------|
| Part Number    | Kw    | HP    |                 | 460 V          | 575 V |                       |
| MAK056BP6      | 0.035 | 0.05  | 15              | 0.33           | 0.26  | 0.37                  |
| MAK063AP6      | 0.09  | 0.12  | 22              | -              | -     | -                     |
| MAK063BP6      | 0.12  | 0.16  | 24              | 0.55           | 0.44  | 1.33                  |
| MAK071AP6      | 0.18  | 0.25  | 34              | 0.50           | 0.40  | 1.91                  |
| MAK071BP6      | 0.25  | 0.35  | 36              | 0.75           | 0.60  | 2.63                  |
| MAK080AP6      | 0.37  | 0.50  | 50              | 0.91           | 0.73  | 3.82                  |
| MAK080BP6      | 0.55  | 0.75  | 55              | 1.42           | 1.13  | 5.69                  |
| MAK090SP6      | 0.75  | 1.00  | 64              | 1.78           | 1.43  | 7.52                  |
| MAK090LP6      | 1.10  | 1.50  | 68              | 2.39           | 1.91  | 11.15                 |
| MAK100LP6      | 1.50  | 2.00  | 96              | 3.37           | 2.70  | 14.97                 |
| MAK112MP6      | 2.20  | 3.00  | 126             | 4.52           | 3.62  | 21.73                 |
| MAK132SP6      | 3.00  | 4.00  | 167             | 5.78           | 4.63  | 29.44                 |
| MAK132MAP6     | 4.00  | 5.50  | 200             | 7.76           | 6.21  | 39.26                 |
| MAK132MBP6     | 5.50  | 7.50  | 220             | 11.34          | 9.07  | 54.04                 |
| MAK160MP6      | 7.50  | 10.00 | 315             | 14.35          | 11.48 | 73.69                 |
| MAK160LP6      | 11.00 | 15.00 | 362             | 21.35          | 13.09 | 107.74                |
| MAK180MP6      | 15.00 | 20.00 | 570             | 27.77          | 21.73 | 146.47                |
| MAK200LAP6     | 18.50 | 25.00 | 774             | 34.03          | 27.23 | 179.55                |
| MAK200LBP6     | 22.00 | 30.00 | 833             | 37.25          | 29.80 | 213.52                |
| MAK225MP6      | 30.00 | 40.00 | 994             | 50.33          | 40.26 | 291.75                |
| MAK250MP6      | 37.00 | 50.00 | 1235            | 63.37          | 50.70 | 358.00                |

### 4 POLE - 1800 RPM

Dimensions: Page 34 & 35

| ATEX CERTIFIED |       |       | Weight<br>(lbs) | Full Load Amps |       | Rated<br>Torque<br>Nm |
|----------------|-------|-------|-----------------|----------------|-------|-----------------------|
| Part Number    | Kw    | HP    |                 | 460 V          | 575 V |                       |
| MAK056BP4      | 0.09  | 0.12  | 16              | 0.29           | 0.23  | 0.64                  |
| MAK063AP4      | 0.12  | 0.18  | 23              | 0.41           | 0.33  | 0.84                  |
| MAK063BP4      | 0.18  | 0.25  | 26              | 0.57           | 0.45  | 1.26                  |
| MAK063CP4      | 0.25  | 0.33  | 26              | 0.83           | 0.66  | 1.80                  |
| MAK071AP4      | 0.25  | 0.33  | 35              | 0.63           | 0.51  | 1.70                  |
| MAK071BP4      | 0.37  | 0.50  | 37              | 0.87           | 0.70  | 2.51                  |
| MAK080AP4      | 0.55  | 0.75  | 52              | 1.33           | 1.06  | 3.68                  |
| MAK080BP4      | 0.75  | 1.00  | 54              | 1.63           | 1.30  | 5.00                  |
| MAK090SP4      | 1.10  | 1.50  | 65              | 2.28           | 1.82  | 7.28                  |
| MAK090LP4      | 1.50  | 2.00  | 70              | 3.04           | 2.43  | 9.98                  |
| MAK100LWP4     | 2.20  | 3.00  | 100             | 4.55           | 3.64  | 14.50                 |
| MAK100LXP4     | 3.00  | 4.00  | 105             | 5.85           | 4.68  | 19.84                 |
| MAK112MP4      | 4.00  | 5.50  | 135             | 7.57           | 6.06  | 26.31                 |
| MAK132SP4      | 5.50  | 7.50  | 175             | 10.06          | 8.05  | 35.95                 |
| MAK132MAP4     | 7.50  | 10.00 | 210             | 13.46          | 10.77 | 49.09                 |
| MAK132MBP4     | 9.20  | 11.80 | 226             | 16.69          | 13.35 | 60.50                 |
| MAK160MP4      | 11.00 | 15.00 | 310             | 19.45          | 15.56 | 71.36                 |
| MAK160LP4      | 15.00 | 20.00 | 365             | 25.96          | 20.77 | 97.52                 |
| MAK180MP4      | 18.50 | 25.00 | 495             | 33.33          | 26.66 | 119.78                |
| MAK180LP4      | 22.00 | 30.00 | 541             | 38.91          | 31.13 | 142.54                |
| MAK200LP4      | 30.00 | 40.00 | 755             | 47.6           | 38.08 | 194.77                |
| MAK225SP4      | 37.00 | 50.00 | 960             | 58.57          | 46.86 | 239.23                |
| MAK225MP4      | 45.00 | 60.00 | 1036            | 71.39          | 57.11 | 290.76                |
| MAK250MP4      | 55.00 | 75.00 | 1246            | 85.49          | 68.39 | 353.94                |

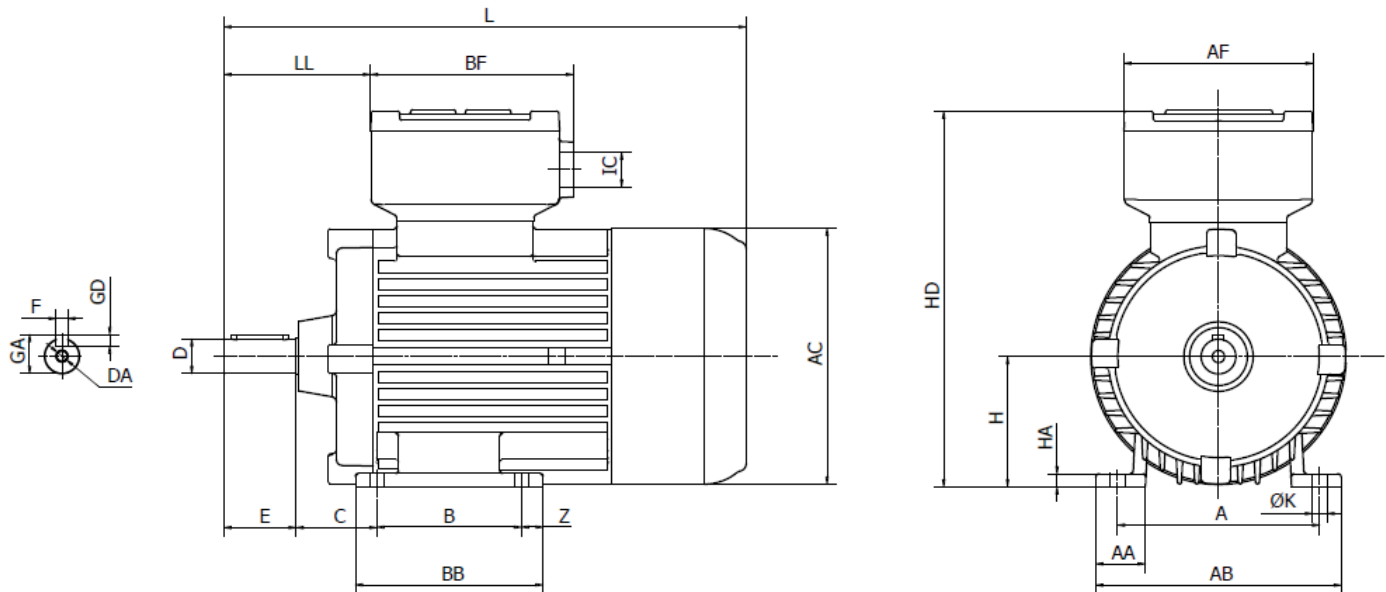
### 8 POLE - 900 RPM

| ATEX CERTIFIED |       |       | Weight<br>(lbs) | Full Load Amps |       | Rated<br>Torque<br>Nm |
|----------------|-------|-------|-----------------|----------------|-------|-----------------------|
| Part Number    | Kw    | HP    |                 | 460 V          | 575 V |                       |
| MAK063P8       | 0.04  | 0.06  | 26              | 0.4            | 0.32  | 0.62                  |
| MAK071P8       | 0.09  | 0.12  | 34              | 0.73           | 0.58  | 1.20                  |
| MAK080AP8      | 0.18  | 0.25  | 50              | 0.77           | 0.62  | 2.44                  |
| MAK080BP8      | 0.25  | 0.33  | 55              | 0.97           | 0.78  | 3.44                  |
| MAK090SP8      | 0.37  | 0.50  | 64              | 1.5            | 1.20  | 4.99                  |
| MAK090LP8      | 0.55  | 0.75  | 70              | 1.77           | 1.42  | 7.49                  |
| MAK100LWP8     | 0.75  | 1.00  | 96              | 2.09           | 1.67  | 9.99                  |
| MAK100LXP8     | 1.10  | 1.50  | 103             | 3.21           | 2.57  | 14.73                 |
| MAK112MP8      | 1.50  | 2.00  | 128             | 3.91           | 2.40  | 20.35                 |
| MAK132SP8      | 2.20  | 3.00  | 172             | 4.77           | 3.81  | 29.10                 |
| MAK132MP8      | 3.00  | 4.00  | 206             | 6.61           | 5.29  | 39.63                 |
| MAK160MAP8     | 4.00  | 5.50  | 288             | 9.35           | 7.32  | 53.05                 |
| MAK160MBP8     | 5.50  | 7.50  | 315             | 11.39          | 9.11  | 72.25                 |
| MAK160LP8      | 7.50  | 10.00 | 363             | 15.58          | 12.47 | 98.25                 |
| MAK180LP8      | 11.00 | 15.00 | 570             | 21.52          | 17.22 | 143.71                |
| MAK200LP8      | 15.00 | 20.00 | 795             | 28.11          | 22.49 | 195.70                |
| MAK225SP8      | 18.50 | 25.00 | 917             | 34.6           | 27.68 | 240.70                |
| MAK225MP8      | 22.00 | 30.00 | 992             | 21.18          | 16.95 | 285.85                |
| MAK250MP8      | 30.00 | 40.00 | 1270            | 53.09          | 42.48 | 387.69                |

NORTH AMERICAN CERTIFICATION MUST BE OBTAINED BY USER

Explosion Proof Motors 1HP & higher do NOT meet North American Energy Efficiency Regulations - Exemptions: Page 32

## IM B3 Dimensions



• F0 Lead Box

### IM B3 - MAK Series

Dimensions in mm

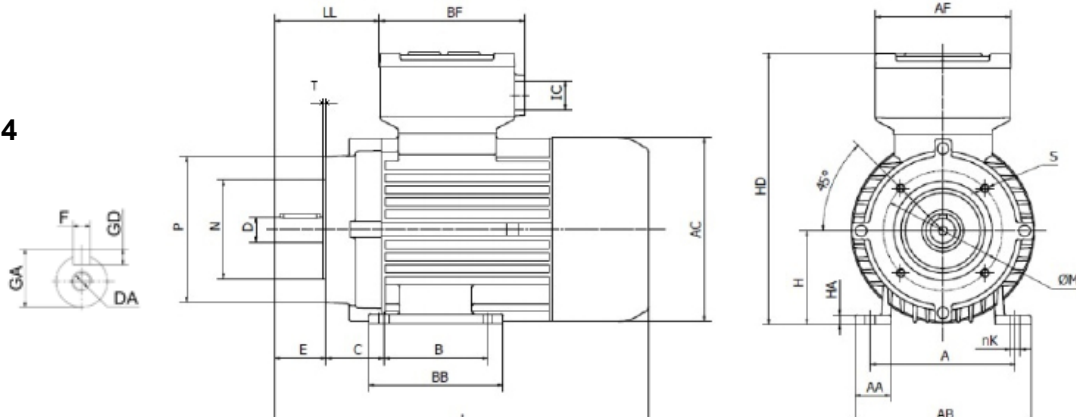
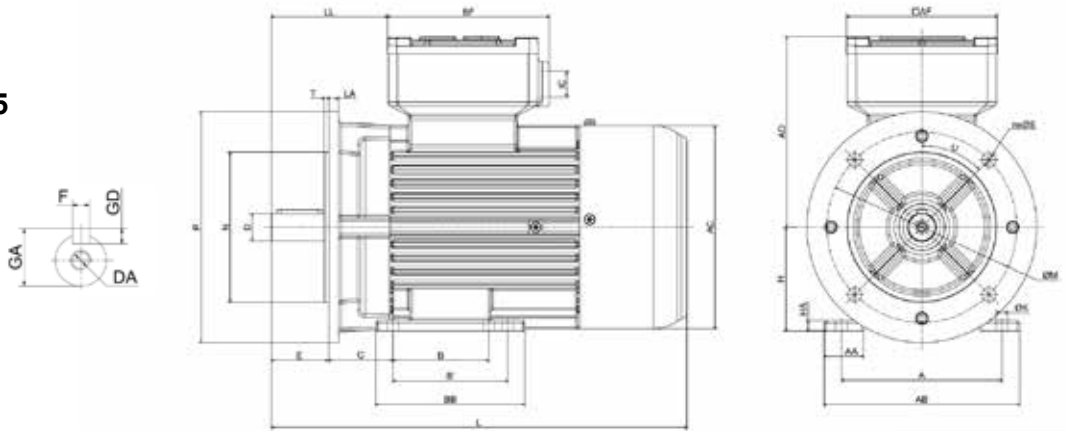
| Frame    | A   | AA  | AB  | AC  | AF  | B   | BB  | BF  | C   | D  | DA  | E   | F  | GA   | GD | H   | HA | HD  | K  | L   | LL  | Z  | IC    |
|----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|-----|-----|----|------|----|-----|----|-----|----|-----|-----|----|-------|
| 56       | 90  | 23  | 105 | 110 | 91  | 71  | 90  | 104 | 36  | 9  | M3  | 20  | 3  | 10.2 | 3  | 56  | 6  | 176 | 6  | 210 | 53  | 9  | 1xM20 |
| 63 A / B | 100 | 30  | 120 | 123 | 101 | 80  | 100 | 114 | 40  | 11 | M4  | 23  | 4  | 12.5 | 4  | 63  | 7  | 198 | 7  | 244 | 68  | 10 | 1xM20 |
| 71 A / B | 112 | 32  | 140 | 139 | 101 | 90  | 110 | 114 | 45  | 14 | M5  | 30  | 5  | 16.0 | 5  | 71  | 8  | 215 | 7  | 284 | 80  | 10 | 1xM20 |
| 80 A / B | 125 | 39  | 155 | 157 | 131 | 100 | 130 | 141 | 50  | 19 | M6  | 40  | 6  | 21.5 | 6  | 80  | 9  | 238 | 10 | 323 | 85  | 15 | 1xM25 |
| 90 S     | 140 | 34  | 170 | 177 | 131 | 100 | 130 | 141 | 56  | 24 | M8  | 50  | 8  | 27.0 | 7  | 90  | 9  | 256 | 10 | 362 | 102 | 15 | 1xM25 |
| 90 L     | 140 | 34  | 170 | 177 | 131 | 125 | 155 | 141 | 56  | 24 | M8  | 50  | 8  | 27.0 | 7  | 90  | 9  | 256 | 10 | 382 | 102 | 15 | 1xM25 |
| 100 L    | 160 | 45  | 196 | 196 | 131 | 140 | 170 | 141 | 63  | 28 | M10 | 60  | 8  | 31.0 | 7  | 100 | 12 | 285 | 12 | 449 | 129 | 15 | 1xM25 |
| 112M     | 190 | 48  | 224 | 221 | 151 | 140 | 170 | 163 | 70  | 28 | M10 | 60  | 8  | 31.0 | 7  | 112 | 12 | 318 | 12 | 452 | 128 | 15 | 1xM32 |
| 132S     | 216 | 60  | 260 | 260 | 151 | 140 | 180 | 163 | 89  | 38 | M12 | 80  | 10 | 41.0 | 8  | 132 | 13 | 355 | 12 | 526 | 138 | 20 | 1xM32 |
| 132M     | 216 | 60  | 260 | 260 | 151 | 178 | 220 | 163 | 89  | 38 | M12 | 80  | 10 | 41.0 | 8  | 132 | 13 | 355 | 12 | 566 | 138 | 22 | 1xM32 |
| 160M     | 254 | 75  | 306 | 317 | 201 | 210 | 260 | 219 | 108 | 42 | M16 | 110 | 12 | 45.0 | 8  | 160 | 15 | 423 | 15 | 631 | 175 | 28 | 2xM32 |
| 160L     | 254 | 75  | 306 | 317 | 201 | 254 | 300 | 219 | 108 | 42 | M16 | 110 | 12 | 45.0 | 8  | 160 | 15 | 423 | 15 | 671 | 175 | 24 | 2xM32 |
| 180M     | 279 | 83  | 341 | 348 | 201 | 241 | 303 | 215 | 121 | 48 | M16 | 110 | 14 | 51.5 | 9  | 180 | 20 | 482 | 15 | 755 | 209 | 31 | 2xM32 |
| 180L     | 279 | 83  | 341 | 348 | 201 | 279 | 340 | 215 | 121 | 48 | M16 | 110 | 14 | 51.5 | 9  | 180 | 20 | 482 | 15 | 795 | 209 | 30 | 2xM32 |
| 200L     | 318 | 93  | 380 | 385 | 262 | 305 | 370 | 286 | 133 | 55 | M20 | 110 | 16 | 59.0 | 10 | 200 | 22 | 566 | 18 | 870 | 213 | 32 | 2xM50 |
| 225S     | 356 | 110 | 434 | 433 | 262 | 286 | 365 | 286 | 149 | 60 | M20 | 140 | 18 | 64.0 | 11 | 225 | 25 | 611 | 19 | 917 | 248 | 50 | 2xM50 |
| 225M 2   | 356 | 110 | 434 | 433 | 262 | 311 | 390 | 286 | 149 | 55 | M20 | 110 | 16 | 59.0 | 10 | 225 | 25 | 611 | 19 | 927 | 248 | 50 | 2xM50 |
| 225M 4-8 | 356 | 110 | 434 | 433 | 262 | 311 | 390 | 286 | 149 | 60 | M20 | 140 | 18 | 64.0 | 11 | 225 | 25 | 611 | 19 | 957 | 248 | 50 | 2xM50 |
| 250M 2   | 406 | 122 | 486 | 480 | 262 | 349 | 425 | 286 | 168 | 60 | M20 | 140 | 18 | 64.0 | 11 | 250 | 25 | 661 | 24 | 986 | 254 | 38 | 2xM50 |
| 250M 4-8 | 406 | 122 | 486 | 480 | 262 | 349 | 425 | 286 | 168 | 65 | M20 | 140 | 18 | 69.0 | 11 | 250 | 25 | 661 | 24 | 986 | 254 | 38 | 2xM50 |



Ground

1 in the terminal box 1 on the frame

## IM B34 & IM B35 Dimensions

**IM B34**

**IM B35**


• F0 Lead Box

B34 = Motor with feet and B14 Flange  
 B35 = Motor with feet and B5 Flange

### IM B34 & IM B35

Dimensions in mm

| Dimensions in mm |     |     |     |     |     |     |     |     |     |     |    |     |     |    |      |    |     |     |       | B34 |     |     |     |     |     | B35 |     |     |     |    |     |    |  |
|------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|-----|-----|----|------|----|-----|-----|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|-----|----|--|
| Frame            | A   | AA  | AB  | AC  | AD  | AF  | B   | BB  | BF  | C   | D  | DA  | E   | F  | GA   | GD | L   | LL  | IC    | K   | M   | N   | P   | S   | T   | K   | M   | N   | p   | S  | T   | LA |  |
| 56               | 90  | 23  | 105 | 110 | 120 | 91  | 71  | 90  | 104 | 36  | 9  | M3  | 20  | 3  | 10.2 | 3  | 210 | 53  | 1xM20 | 6   | 65  | 50  | 80  | M5  | 2.5 | 5.8 | 100 | 80  | 119 | 7  | 3   | 8  |  |
| 63               | 100 | 30  | 120 | 123 | 135 | 101 | 80  | 100 | 114 | 40  | 11 | M4  | 23  | 4  | 12.5 | 4  | 244 | 68  | 1xM20 | 7   | 75  | 60  | 90  | M5  | 2.5 | 7   | 115 | 95  | 140 | 10 | 3   | 8  |  |
| 71               | 112 | 32  | 140 | 139 | 144 | 101 | 90  | 110 | 114 | 45  | 14 | M5  | 30  | 5  | 16.0 | 5  | 284 | 80  | 1xM20 | 7   | 85  | 70  | 105 | M6  | 2.5 | 7   | 130 | 110 | 160 | 10 | 3.5 | 8  |  |
| 80               | 125 | 39  | 155 | 157 | 158 | 131 | 100 | 130 | 141 | 50  | 19 | M6  | 40  | 6  | 21.5 | 6  | 323 | 85  | 1xM25 | 10  | 100 | 80  | 120 | M6  | 3   | 10  | 165 | 130 | 200 | 12 | 3.5 | 9  |  |
| 90 S             | 140 | 34  | 170 | 177 | 166 | 131 | 100 | 130 | 141 | 56  | 24 | M8  | 50  | 8  | 27.0 | 7  | 362 | 102 | 1xM25 | 10  | 115 | 95  | 140 | M8  | 3   | 10  | 165 | 130 | 200 | 12 | 3.5 | 9  |  |
| 90 L             | 140 | 34  | 170 | 177 | 166 | 131 | 125 | 155 | 141 | 56  | 24 | M8  | 50  | 8  | 27.0 | 7  | 382 | 102 | 1xM25 | 10  | 115 | 95  | 140 | M8  | 3   | 10  | 165 | 130 | 200 | 12 | 3.5 | 9  |  |
| 100              | 160 | 45  | 196 | 196 | 185 | 131 | 140 | 170 | 141 | 63  | 28 | M10 | 60  | 8  | 31.0 | 7  | 449 | 129 | 1xM25 | 12  | 130 | 110 | 160 | M8  | 3.5 | 12  | 215 | 180 | 250 | 15 | 4   | 10 |  |
| 112M             | 190 | 48  | 224 | 221 | 206 | 151 | 140 | 170 | 163 | 70  | 28 | M10 | 60  | 8  | 31.0 | 7  | 452 | 128 | 1xM32 | 12  | 130 | 110 | 160 | M8  | 3.5 | 12  | 215 | 180 | 250 | 15 | 4   | 11 |  |
| 132S             | 216 | 60  | 260 | 260 | 223 | 151 | 140 | 180 | 163 | 89  | 38 | M12 | 80  | 10 | 41.0 | 8  | 526 | 138 | 1xM32 | 12  | 165 | 130 | 200 | M10 | 3.5 | 12  | 265 | 230 | 300 | 15 | 4   | 12 |  |
| 132M             | 216 | 60  | 260 | 260 | 223 | 151 | 178 | 220 | 163 | 89  | 38 | M12 | 80  | 10 | 41.0 | 8  | 566 | 138 | 1xM32 | 12  | 165 | 130 | 200 | M10 | 3.5 | 12  | 265 | 230 | 300 | 15 | 4   | 12 |  |
| 160M             | 254 | 75  | 306 | 317 | 263 | 201 | 210 | 260 | 219 | 108 | 42 | M16 | 110 | 12 | 45.0 | 8  | 631 | 175 | 2xM32 | 15  | 215 | 180 | 250 | M12 | 4   | 15  | 300 | 250 | 350 | 19 | 5   | 14 |  |
| 160L             | 254 | 75  | 306 | 317 | 263 | 201 | 254 | 300 | 219 | 108 | 42 | M16 | 110 | 12 | 45.0 | 8  | 671 | 175 | 2xM32 | 15  | 215 | 180 | 250 | M12 | 4   | 15  | 300 | 250 | 350 | 19 | 5   | 14 |  |
| 180M             | 279 | 83  | 341 | 348 | 302 | 201 | 241 | 303 | 215 | 121 | 48 | M16 | 110 | 14 | 51.5 | 9  | 755 | 209 | 2xM32 | *   | *   | *   | *   | *   | *   | 15  | 300 | 250 | 350 | 19 | 5   | 15 |  |
| 180L             | 279 | 83  | 341 | 348 | 302 | 201 | 279 | 340 | 215 | 121 | 48 | M16 | 110 | 14 | 51.5 | 9  | 795 | 209 | 2xM32 | *   | *   | *   | *   | *   | *   | 15  | 300 | 250 | 350 | 19 | 5   | 15 |  |
| 200L             | 318 | 93  | 380 | 385 | 366 | 262 | 305 | 370 | 286 | 133 | 55 | M20 | 110 | 16 | 59.0 | 10 | 870 | 213 | 2xM50 | *   | *   | *   | *   | *   | *   | 18  | 350 | 300 | 400 | 19 | 5   | 18 |  |
| 225S             | 356 | 110 | 434 | 433 | 386 | 262 | 286 | 365 | 286 | 149 | 60 | M20 | 140 | 18 | 64.0 | 11 | 917 | 248 | 2xM50 | *   | *   | *   | *   | *   | *   | 19  | 400 | 350 | 450 | 19 | 5   | 18 |  |
| 225M 2           | 356 | 110 | 434 | 433 | 386 | 262 | 311 | 390 | 286 | 149 | 55 | M20 | 110 | 16 | 59.0 | 10 | 927 | 248 | 2xM50 | *   | *   | *   | *   | *   | *   | 19  | 400 | 350 | 450 | 19 | 5   | 18 |  |
| 225M 4-8         | 356 | 110 | 434 | 433 | 386 | 262 | 311 | 390 | 286 | 149 | 60 | M20 | 140 | 18 | 64.0 | 11 | 957 | 248 | 2xM50 | *   | *   | *   | *   | *   | *   | 19  | 400 | 350 | 450 | 19 | 5   | 18 |  |
| 250M 2           | 406 | 122 | 486 | 480 | 411 | 262 | 349 | 425 | 286 | 168 | 60 | M20 | 140 | 18 | 64.0 | 11 | 986 | 254 | 2xM50 | *   | *   | *   | *   | *   | *   | 24  | 500 | 450 | 550 | 19 | 5   | 18 |  |
| 250M 4-8         | 406 | 122 | 486 | 480 | 411 | 262 | 349 | 425 | 286 | 168 | 65 | M20 | 140 | 18 | 69.0 | 11 | 986 | 254 | 2xM50 | *   | *   | *   | *   | *   | *   | 24  | 500 | 450 | 550 | 19 | 5   | 18 |  |

\* For B14 flanges on frame sizes 132-160, please inquire with a Lafert N.A sales representative.

Note: B5 flanges size: 56-200 have 4 holes &amp; size: 225-250 have 8 holes

## SPV / IMM - Immersion Type Pumps (3-Phase)



### Product Information

208-230/460V or 333/575V 60 Hz • 3600 RPM • SPV Pumps are cULus Approved  
Single-Phase Available (*made on request with a typical lead time of 4-5 days*)

**SPV Weight (lbs) for each Suction Height: Page 37**

Dimensions: Page 37  
Alternate Designs: Page 38

| Part Number | HP   | Full Load Amps |      | Suction Height B (mm)  | Price (\$) |
|-------------|------|----------------|------|------------------------|------------|
|             |      | 460V           | 575V |                        |            |
| SPV 12      | 0.12 | 0.33           | 0.32 | 90-120-170-220-270-350 | \$860      |
| SPV 18      | 0.18 | 0.34           | 0.31 | 90-120-170-220-270-350 | \$927      |
| SPV 25      | 0.25 | 0.50           | 0.25 | 90-120-170-220-270-350 | \$1,415    |
| SPV 33      | 0.33 | 0.50           | 0.32 | 90-120-170-220-270-350 | \$1,552    |
| SPV 50      | 0.50 | 1.65           | 1.20 | 200-270-350-440*-550*  | \$1,966    |
| SPV 75      | 0.75 | 2.00           | 1.40 | 200-270-350-440*-550*  | \$2,192    |
| SPV 100     | 1.00 | 2.10           | 1.67 | 200-270-350-440*-550*  | \$3,173    |
| SPV 150     | 1.50 | 2.60           | 2.30 | 200-270-350-440*-550*  | \$3,323    |

\* SPV Pumps with suction height of 440 & 550 are cast iron

| Part Number | HP  | Full Load Amps |      | Suction Height B (mm) | Weight (lbs) | Price (\$) |
|-------------|-----|----------------|------|-----------------------|--------------|------------|
|             |     | 460V           | 575V |                       |              |            |
| IMM 90 A    | 2.0 | 5.0            | 3.9  | 350                   | 105          | \$5,148    |
|             |     |                |      | 450                   | 107          | \$5,361    |
|             |     |                |      | 600                   | 108          | \$5,574    |
|             |     |                |      | 800                   | 111          | \$5,758    |
| IMM 90 B    | 3.0 | 6.2            | 4.9  | 350                   | 109          | \$5,945    |
|             |     |                |      | 450                   | 110          | \$6,127    |
|             |     |                |      | 600                   | 111          | \$6,309    |
|             |     |                |      | 800                   | 114          | \$6,564    |
| IMM 100 B   | 5.0 | 8.6            | 6.8  | 350                   | 117          | \$6,838    |
|             |     |                |      | 450                   | 119          | \$7,009    |
|             |     |                |      | 600                   | 120          | \$7,179    |
|             |     |                |      | 800                   | 123          | \$7,456    |



Competitively priced replacement pumps for tool and cutting machines, as well as for the glass grinding and printing industries.  
High Pressure multi-stage pump designs are also available, please inquire.

### SPV / IMM - FLOW PERFORMANCE

US Gallons per minute / Prevalence Head in Meters

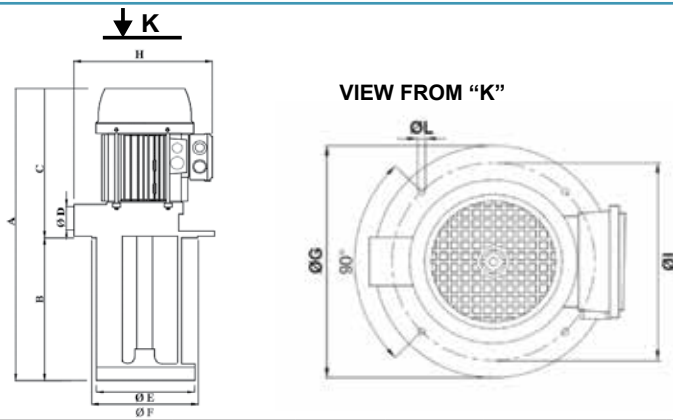
Head in Meters

| Part Number | HP   | Gas Thread | 0   | 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12  | 13  | 14  | 15  |
|-------------|------|------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| SPV 12      | 0.12 | 3/4"       | 15  | 12  | 9   | 6   | 2   | -   | -   | -   | -   | -   | -   | -   | -   | -   | -   | -   |
| SPV 18      | 0.18 | 3/4"       | 17  | 15  | 13  | 10  | 6   | 1   | -   | -   | -   | -   | -   | -   | -   | -   | -   | -   |
| SPV 25      | 0.25 | 3/4"       | 19  | 17  | 15  | 13  | 10  | 5   | -   | -   | -   | -   | -   | -   | -   | -   | -   | -   |
| SPV 33      | 0.33 | 3/4"       | 21  | 19  | 17  | 14  | 11  | 7   | 1   | -   | -   | -   | -   | -   | -   | -   | -   | -   |
| SPV 50      | 0.50 | 1 1/4"     | 44  | 41  | 38  | 35  | 32  | 29  | 25  | 21  | 16  | 11  | 5   | -   | -   | -   | -   | -   |
| SPV 75      | 0.75 | 1 1/4"     | 60  | 57  | 54  | 51  | 48  | 44  | 40  | 36  | 32  | 27  | 22  | 16  | 7   | -   | -   | -   |
| SPV 100     | 1.00 | 1 1/4"     | 78  | 74  | 70  | 66  | 61  | 56  | 51  | 45  | 39  | 33  | 26  | 18  | 9   | -   | -   | -   |
| SPV 150     | 1.50 | 1 1/4"     | 95  | 91  | 86  | 81  | 76  | 70  | 64  | 58  | 51  | 44  | 35  | 24  | 15  | -   | -   | -   |
| IMM 71A     | 0.50 | 1"         | 63  | 61  | 58  | 54  | 52  | 44  | 45  | 41  | 38  | 34  | 29  | 23  | 18  | 10  | 1   | -   |
| IMM 71B     | 0.75 | 1"         | 63  | 61  | 58  | 55  | 53  | 50  | 47  | 44  | 40  | 37  | 33  | 25  | 18  | 16  | 15  | 8   |
| IMM 80A     | 1.00 | 1 1/4"     | 77  | 74  | 71  | 68  | 64  | 61  | 58  | 56  | 52  | 47  | 41  | 36  | 31  | 25  | 19  | 11  |
| IMM 80B     | 1.50 | 1 1/4"     | 103 | 100 | 97  | 94  | 91  | 88  | 84  | 80  | 76  | 73  | 69  | 64  | 59  | 54  | 49  | 43  |
| IMM 90A     | 2.00 | 2"         | 245 | 230 | 216 | 201 | 187 | 166 | 146 | 118 | 90  | 61  | 31  | -   | -   | -   | -   | -   |
| IMM 90B     | 3.00 | 2"         | 339 | 326 | 313 | 300 | 286 | 272 | 258 | 239 | 220 | 200 | 180 | 154 | 128 | 87  | 45  | -   |
| IMM 100B    | 5.00 | 2 1/2"     | 378 | 365 | 353 | 339 | 325 | 310 | 295 | 555 | 261 | 242 | 224 | 206 | 188 | 161 | 135 | 108 |

GALLONS PER MINUTE

STANDARD IMPELLER DIRECTION OF ROTATION IS CLOCK-WISE WHEN FACING THE FAN COVER.

## SPV / IMM - Immersion Type Pumps (3-Phase)



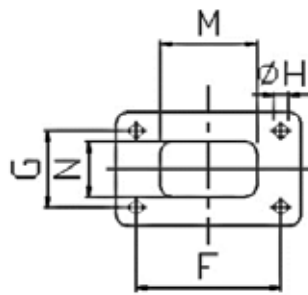
| Part Number       | HP          | A       | B         | Weight (lbs) | C          | D - Gas Thread | E   | F   | G   | H   | I   | L  | Mounting Holes |
|-------------------|-------------|---------|-----------|--------------|------------|----------------|-----|-----|-----|-----|-----|----|----------------|
| SPV 12 / SPV 18   | 0.12 / 0.18 | 255/285 | 90/120 T  | 6/7          | 165        | 3/4"           | 98  | 100 | 130 | 151 | 115 | 7  | 4              |
|                   |             | 335/385 | 170/220 T | 7            |            |                |     |     |     |     |     |    |                |
|                   |             | 435/515 | 270/350 T | 7/8          |            |                |     |     |     |     |     |    |                |
| SPV 25 / SPV 33   | 0.25 / 0.33 | 300/330 | 90/120 T  | 10 / 11      | 210        | 3/4"           | 98  | 100 | 130 | 170 | 115 | 7  | 4              |
|                   |             | 380/430 | 170/220 T | 10 / 11      |            |                |     |     |     |     |     |    |                |
|                   |             | 480/560 | 270/350 T | 11 / 12      |            |                |     |     |     |     |     |    |                |
| SPV 50 / SPV 75   | 0.50 / 0.75 | 460     | 200 T     | 17 / 20      | 260 (250*) | 1 1/4"         | 138 | 140 | 180 | 215 | 160 | 9  | 4              |
|                   |             | 530     | 270 T     | 19 / 21      |            |                |     |     |     |     |     |    |                |
|                   |             | 610     | 350 T     | 20 / 22      |            |                |     |     |     |     |     |    |                |
|                   |             | 690*    | 440*      | 35 / 37      |            |                |     |     |     |     |     |    |                |
|                   |             | 800*    | 550*      | 38 / 40      |            |                |     |     |     |     |     |    |                |
| SPV 100 / SPV 150 | 1.00 / 1.50 | 500     | 200 T     | 23 / 26      | 300        | 1 1/4"         | 138 | 140 | 180 | 230 | 160 | 9  | 4              |
|                   |             | 570     | 270 T     | 24 / 27      |            |                |     |     |     |     |     |    |                |
|                   |             | 650     | 350       | 26 / 29      |            |                |     |     |     |     |     |    |                |
|                   |             | 740*    | 440*      | 42 / 44      |            |                |     |     |     |     |     |    |                |
|                   |             | 850*    | 550*      | 45 / 48      |            |                |     |     |     |     |     |    |                |
| IMM 90A / IMM 90B | 2.00 / 3.00 | 695     | 350       | 105 / 109    | 345        | 2"             | 235 | 240 | 300 | 130 | 270 | 13 | 4              |
|                   |             | 795     | 450       | 107 / 110    |            |                |     |     |     |     |     |    |                |
|                   |             | 945     | 600       | 108 / 111    |            |                |     |     |     |     |     |    |                |
|                   |             | 1145    | 800       | 111 / 114    |            |                |     |     |     |     |     |    |                |
| IMM 100B          | 5.00        | 730     | 350       | 117          | 380        | 2 1/2"         | 235 | 240 | 300 | 145 | 270 | 13 | 4              |
|                   |             | 830     | 450       | 119          |            |                |     |     |     |     |     |    |                |
|                   |             | 980     | 600       | 120          |            |                |     |     |     |     |     |    |                |
|                   |             | 1180    | 800       | 123          |            |                |     |     |     |     |     |    |                |

\* Cast Iron T = TRI mode for glass processing machinery

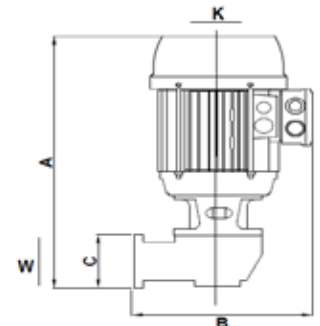
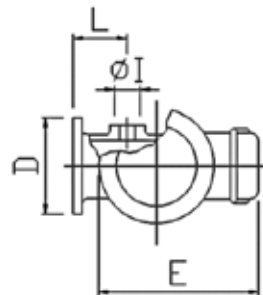
## SQ - Side Mount



View from "W" (Flange Details)



View from "K"



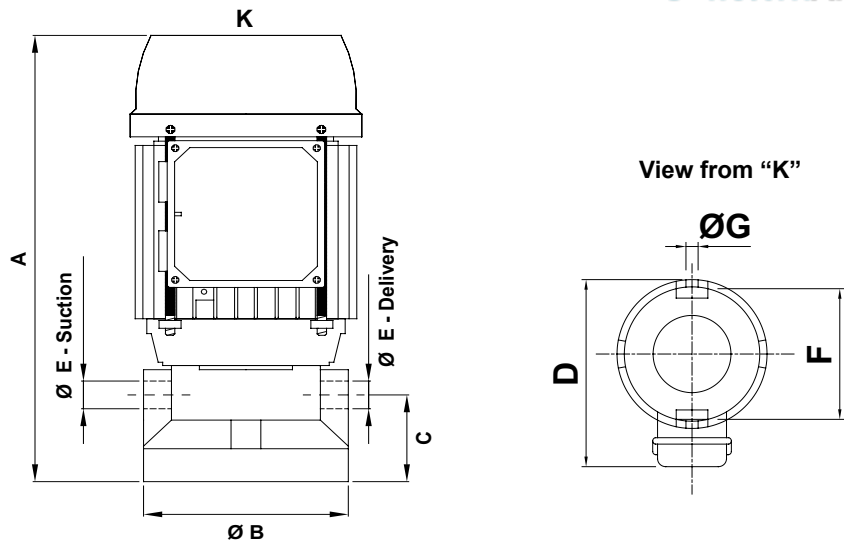
### Type SQ - Side Mount

| Part Number | Absorbed kW | HP   | Weight (lbs) | US Gallons/Minute - Prevalence Head (m) |      |      |      |     | Dimensions (mm) |     |    |    |     |    |    |   |      |    |    | Price (\$) |         |
|-------------|-------------|------|--------------|-----------------------------------------|------|------|------|-----|-----------------|-----|----|----|-----|----|----|---|------|----|----|------------|---------|
|             |             |      |              | 0                                       | 1    | 2    | 3    | 4   | A               | B   | C  | D  | E   | F  | G  | H | I    | L  | M  |            | N       |
| SQ 56       | 0.16        | 0.18 | 9            | 15.9                                    | 12.7 | 9.2  | 7.1  | 2.9 | 265             | 170 | 60 | 95 | 140 | 75 | 45 | 7 | 3/8" | 51 | 50 | 30         | \$886   |
| SQ 63       | 0.30        | 0.25 | 11           | 21.1                                    | 18.2 | 14.3 | 10.8 | 7.1 | 300             | 180 | 60 | 95 | 158 | 75 | 45 | 7 | 1/2" | 51 | 50 | 30         | \$1,332 |

Type AU - Self Priming



Dimensions



| Part Number | Absorbed kW | HP   | Weight (lbs) | US Gallons/Minute - Prevalence Head in Meters |     |     |     |     |     |     |     |     |     |     | Dimensions (mm) |     |    |     |      |    |   | Price (\$) |
|-------------|-------------|------|--------------|-----------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----------------|-----|----|-----|------|----|---|------------|
|             |             |      |              | 0                                             | 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   | 9   | 10  | A               | B   | C  | D   | E    | F  | G |            |
| AU 56       | 0.16        | 0.18 | 10           | 1.8                                           | 1.6 | 1.3 | 1.1 | 0.8 | 0.5 | 0.3 |     |     |     |     | 215             | 115 | 48 | 114 | 3/8" | 95 | 7 | \$1,106    |
| AU 63       | 0.30        | 0.25 | 12           | 2.9                                           | 2.6 | 2.4 | 2.1 | 1.8 | 1.6 | 1.3 | 1.1 | 0.8 | 0.5 | 0.3 | 270             | 115 | 48 | 165 | 1/2" | 95 | 7 | \$1,644    |

AP - Immersion Pump

Overview



Available in frame sizes 80-122, up to 7.5 HP upon request.

Suitable for transferring liquids containing impurities up to 2 mm (closed impeller) or 3 mm (open impeller). Their hydraulic components: impeller and feed screw in cast iron, pump body in cast iron/ steel allow them to be used with water, emulsions and oily substances in general, with a viscosity not exceeding 21 cSt (3° Engel). The temperature of the liquid must not exceed 90°C. They are commonly used on:

- machine tools (milling and turning machines-machining centres)
- glass processing machinery
- surface treatment plants
- filtration systems

MP - Immersion Pump - Multistage High Pressure/Flow

Overview



Available in frame sizes 63-100, up to 5.5 HP upon request.

Suitable for transferring liquids containing impurities up to 3 mm in size. Their hydraulic components: impeller in brass and feed screw and pump body in aluminum allow them to be used with water, emulsions and oily substances in general, with a viscosity not exceeding 21 cSt (3° Engel). The temperature of the liquid must not exceed 90°C. They are commonly used on:

- machine tools (milling and turning machines-machining centres)
- glass processing machinery
- filtration systems

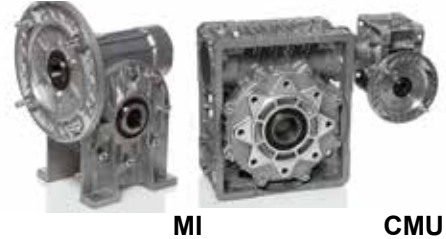
## Featured SITI Gearboxes



### Range

#### Right Angle Worm Gearboxes (Pages 40-51)

- Available with stainless steel output shaft
- Maximum input power of 55 kW
- Hollow, or solid output shaft in single or double design
- Single and double reduction available
- Ratios 5:1 to 100:1 (single stage reduction) and up to 10,000:1 (combination gearboxes)
- Various input sizes



MI

CMU

#### Inline Helical Gearboxes (Pages 53-56)

- Ratios up to 466:1
- Maximum torque 12,000 Nm
- Maximum input power of 336 kW
- Tough - strengthened by ribs for maximum performance
- IEC shaft & flange inputs/outputs
- Designed to fit standard IEC motors
- Base or various motor flange outputs
- 10 sizes with 3 input versions



MNHL

#### Bevel Helical Gearboxes (Page 52)

- Torque arms available
- Maximum input power of 337 kW
- 9 sizes that offer a wide range of mounting options
- Reduction ratios up to 226:1
- Output torque from 12 Nm to 14,000 Nm
- Hollow, single or double output shafts, shrink disk
- Extremely compact, modular & versatile



MBH

#### Shaft Mounted Helical Gearboxes (Inquire)

- 7 sizes that offer a wide range of possible mounting positions
- Maximum input power 108 kW
- High resistant gears with oversized bearings
- Superior sealing for leak prevention
- Maximum torque 6,876 Nm
- Ratio up to 30:1



RP2

#### Motovariators (Page 52)

- Zero speed option available
- IEC shaft & flange inputs/outputs
- Mechanical variable speed control
- Designed to fit standard IEC motors
- 7 sizes, 200+ versions, with a wide range of mounting positions
- Maximum input power of 11 kW
- Maximum torque of 3,000 Nm
- Planets & races are made in special steel 100Cr6



MKF

#### Planetary Gearboxes (Page 57)

- Direct, foot mount & flange mount options
- Modular design with compact sub grouping for simple ratio replacement (maximum of 4 reduction stages)
- 7 sizes available with 4 available input & output configurations
- Ratio range up to 4,066:1
- Maximum output torque of over 30,000 Nm
- Maximum input power of 45 kW
- Standard & high load output support connections



NRG

NEMA Inputs for OEM/High volume quantities may be available. Please contact a Lafert Sales Representative at 1-800-661-6413 for more information.

# MI / MU - Right Angle Worm Gearboxes



## MI - I Series Worm Gearboxes

|        |     |              |                    |                                    | ADDITIONAL FEATURES & ACCESSORIES (Add \$) |                          |                     |                     |                     |            |                    |                |
|--------|-----|--------------|--------------------|------------------------------------|--------------------------------------------|--------------------------|---------------------|---------------------|---------------------|------------|--------------------|----------------|
| Size   | Oil | Weight (lbs) | MI Series Price \$ | I Series Price \$ (Factory Option) | Base per Side                              | Output Flange (F or FBR) | Output Flange (FBM) | Single Output Shaft | Double Output Shaft | Torque Arm | Double Input Shaft | Torque Limiter |
| I 25 + | *   | 3            | \$498.00           | \$440.00                           | \$29.00                                    | \$29.00                  | -                   | -                   | -                   | -          | \$123.00           | -              |
| MI 30  | *   | 5            | \$570.00           | \$495.00                           | -                                          | \$59.00                  | -                   | \$105.00            | \$116.00            | -          | \$143.00           | -              |
| MI 40  | *   | 8            | \$672.00           | \$575.00                           | \$66.00                                    | \$56.00                  | \$61.00             | \$124.00            | \$185.00            | \$112.00   | \$171.00           | \$359.00       |
| MI 50  | *   | 10           | \$863.00           | \$748.00                           | \$72.00                                    | \$65.00                  | \$72.00             | \$195.00            | \$215.00            | \$146.00   | \$217.00           | \$448.00       |
| MI 60  | *   | 21           | \$1,206.00         | \$999.00                           | \$89.00                                    | \$84.00                  | \$95.00             | \$215.00            | \$265.00            | \$203.00   | \$274.00           | \$697.00       |
| MI 70  | *   | 24           | \$1,242.00         | \$1,116.00                         | \$105.00                                   | \$97.00                  | \$109.00            | \$237.00            | \$295.00            | \$240.00   | \$313.00           | \$786.00       |
| MI 80  | *   | 38           | \$1,817.00         | \$1,633.00                         | \$129.00                                   | \$319.00                 | \$352.00            | \$276.00            | \$329.00            | \$306.00   | \$457.00           | \$1,001.00     |
| MI 90  | *   | 48           | \$1,971.00         | \$1,749.00                         | \$158.00                                   | \$407.00                 | \$452.00            | \$286.00            | \$328.00            | \$320.00   | \$497.00           | \$1,191.00     |
| MI 110 | **  | 69           | \$2,749.00         | \$2,445.00                         | \$174.00                                   | \$695.00                 | -                   | \$333.00            | \$365.00            | \$483.00   | \$695.00           | \$1,529.00     |
| MI 130 | **  | 107          | \$4,486.00         | \$4,036.00                         | \$531.00                                   | \$958.00                 | -                   | \$446.00            | \$544.00            | \$492.00   | \$1,132.00         | -              |
| MI 150 | **  | 161          | \$6,251.00         | \$5,676.00                         | \$658.00                                   | \$1,254.00               | -                   | \$573.00            | \$750.00            | -          | \$1,576.00         | -              |
| MI 175 | **  | 248          | \$9,682.00         | \$8,963.00                         | \$1,008.00                                 | \$2,422.00               | -                   | \$760.00            | \$914.00            | -          | \$2,439.00         | -              |

+ Includes solid input shaft & input flange (only) \* Prelubricated \*\* Oil available on request at extra cost

ATEX Approved and Inox version/stainless steel available upon request

MI Performance Rating Tables: Page 42 & 43

MI Dimensions: Page 44 - 46

MI Mounting Positions: Page 47

## MU - U Series Worm Gearboxes

|        |     |              |                    |                                    | ADDITIONAL FEATURES & ACCESSORIES (Add \$) |                     |                     |            |                    |
|--------|-----|--------------|--------------------|------------------------------------|--------------------------------------------|---------------------|---------------------|------------|--------------------|
| Size   | Oil | Weight (lbs) | MU Series Price \$ | U Series Price \$ (Factory Option) | Output Flanges (F, FBR, FBM, FBML)         | Single Output Shaft | Double Output Shaft | Torque Arm | Double Input Shaft |
| MU 40  | *   | 6            | \$740.00           | \$637.00                           | \$61.00                                    | \$137.00            | \$204.00            | \$112.00   | \$188.00           |
| MU 50  | *   | 8            | \$949.00           | \$823.00                           | \$72.00                                    | \$216.00            | \$236.00            | \$146.00   | \$238.00           |
| MU 63  | *   | 12           | \$1,367.00         | \$1,227.00                         | \$95.00                                    | \$236.00            | \$290.00            | \$203.00   | \$333.00           |
| MU 75  | *   | 20           | \$1,903.00         | \$1,797.00                         | \$110.00                                   | \$264.00            | \$351.00            | \$240.00   | \$502.00           |
| MU 90  | *   | 30           | \$2,165.00         | \$1,922.00                         | \$343.00                                   | \$313.00            | \$364.00            | \$320.00   | \$546.00           |
| MU 110 | *   | 42           | \$3,025.00         | \$2,690.00                         | \$452.00                                   | \$366.00            | \$404.00            | \$483.00   | \$761.00           |

MU Performance Rating Tables: Page 48 & 49

MU Dimensions: Page 50

MU Mounting Positions: Page 49

ATEX Approved Gearboxes - add 20% Inox version/stainless steel - add 40%

## MU - Output Shaft Dimensions

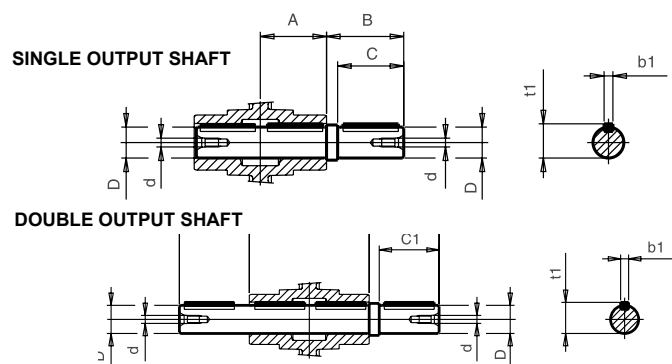
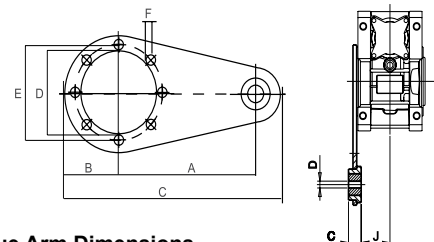
| Size     | A    | A <sub>1</sub> | B    | C    | B <sub>1</sub> | C <sub>1</sub> | Dh <sub>7</sub> | d   | L   | b <sub>1</sub> | t <sub>1</sub> |
|----------|------|----------------|------|------|----------------|----------------|-----------------|-----|-----|----------------|----------------|
| U-MU 40  | 39   | 78             | 43   | 43   | 40             | 40             | 18              | M5  | 164 | 6              | 20.5           |
| U-MU 50  | 46   | 92             | 53.5 | 53.5 | 50             | 50             | 25              | M8  | 199 | 8              | 28             |
| U-MU 63  | 56   | 112            | 65   | 53.5 | 60             | 50             | 25              | M8  | 219 | 8              | 28             |
| U-MU 75  | 60   | 120            | 70   | 63.5 | 60             | 60             | 28              | M8  | 247 | 8              | 31             |
| U-MU 90  | 70   | 140            | 65   | 84.5 | 60             | 80             | 35              | M8  | 309 | 8              | 38             |
| U-MU 110 | 77.5 | 155            | 126  | 84.5 | 110            | 80             | 42              | M10 | 324 | 12             | 45             |

## MI - Output Shaft Dimensions

| Size     | A    | A <sub>1</sub> | B   | C   | Dh <sub>7</sub> | d   | L   | b <sub>1</sub> | t <sub>1</sub> |
|----------|------|----------------|-----|-----|-----------------|-----|-----|----------------|----------------|
| I-MI 30  | 28.5 | 57             | 35  | 30  | 14              | M5  | 127 | 5              | 16             |
| I-MI 40  | 41   | 82             | 50  | 40  | 19              | M8  | 182 | 6              | 21.5           |
| I-MI 50  | 49   | 98             | 60  | 50  | 24              | M8  | 218 | 8              | 27             |
| I-MI 60  | 60   | 120            | 65  | 60  | 25              | M8  | 250 | 8              | 28             |
| I-MI 70  | 60.5 | 121            | 70  | 60  | 28              | M8  | 261 | 8              | 31             |
| I-MI 80  | 70   | 140            | 65  | 60  | 35              | M8  | 270 | 10             | 38             |
| I-MI 90  | 75   | 150            | 96  | 80  | 38              | M8  | 342 | 10             | 41             |
| I-MI 110 | 77.5 | 155            | 126 | 110 | 42              | M10 | 407 | 12             | 45             |
| I-MI 130 | 95   | 190            | 126 | 110 | 48              | M10 | 442 | 14             | 51.5           |
| I-MI 150 | 110  | 220            | 132 | 110 | 55              | M12 | 484 | 16             | 59             |
| I-MI 175 | 115  | 230            | 150 | 140 | 60              | M12 | 530 | 18             | 64             |

## MI / MU - Torque Arm Dimensions

| Size    | A   | B    | C     | D   | E   | F  | G  | H  | I | J    |
|---------|-----|------|-------|-----|-----|----|----|----|---|------|
| 40      | 100 | 40   | 170   | 50  | 65  | 7  | 20 | 10 | 4 | 29.5 |
| 50      | 100 | 44   | 180   | 60  | 75  | 7  | 20 | 10 | 4 | 35.5 |
| 60 / 63 | 150 | 53   | 233   | 70  | 85  | 9  | 20 | 10 | 6 | 46   |
| 70 / 75 | 200 | 62.5 | 300   | 80  | 100 | 9  | 25 | 14 | 6 | 47.5 |
| 80      | 200 | 77.5 | 315   | 110 | 130 | 11 | 25 | 14 | 6 | -    |
| 90      | 200 | 77.5 | 315   | 110 | 130 | 11 | 25 | 14 | 6 | 57.5 |
| 110     | 250 | 100  | 387.5 | 130 | 165 | 13 | 25 | 14 | 6 | 64.5 |
| 130     | 300 | 120  | 465   | 180 | 215 | 13 | 30 | 16 | 8 | -    |
| 150     | 300 | 125  | 470   | 180 | 215 | 15 | 30 | 16 | 8 | -    |



## Service Factors

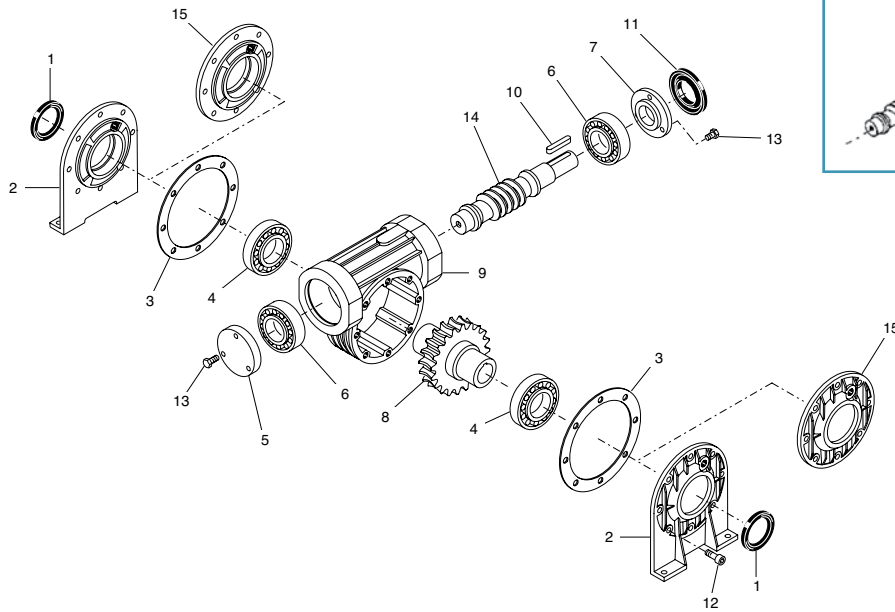
The following table provides the service factors relating to the most common applications in which Right Angle Worm Gearboxes are utilized. For applications that do not appear in the table, the relative value may be selected by taking into account the following characteristics:

- Applied Load, Number of Working Hours per Day, and Number of Start/Stops per hour.

When brake motors are used, the values in the service factor table must be multiplied by 1.12.

| Load Classification                                                             | Application                                                                                                                                                                                                  | Starts/hr. | Average Operating Hours Per Day |        |         |          |
|---------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|---------------------------------|--------|---------|----------|
|                                                                                 |                                                                                                                                                                                                              |            | <2                              | 2 to 8 | 9 to 16 | 17 to 24 |
| Easy load starting, smooth operation, small load acceleration.                  | Centrifugal Pumps - Bottling Equipment - Belt Conveyors with uniform loads - Low Shock Load Applications - Can Filling Machines - Sewage Clarifier's                                                         | < 10       | 0.75                            | 1      | 1.25    | 1.5      |
| Moderate load starting, uneven operating conditions, medium load accelerations. | Shakers & Mixers - Kneading Drums - Screw Conveyors - Textile Machinery - Belt Conveyors (uneven load distribution) - Heat Treatment Ovens - Bucket Elevators - Wire Drawing Machines - Meat Grinders.       | <10        | 1                               | 1.25   | 1.5     | 1.75     |
|                                                                                 |                                                                                                                                                                                                              | 10 to 50   | 1.25                            | 1.5    | 1.75    | 2        |
|                                                                                 |                                                                                                                                                                                                              | 50 to 100  | 1.5                             | 1.75   | 2       | 2.2      |
|                                                                                 |                                                                                                                                                                                                              | 100 to 200 | 1.5                             | 1.75   | 2       | 2.2      |
| Heavy load starting, uneven loads, heavy load accelerations.                    | Deburring Drums, Milling Machines, Lifting Winches, Conveyor with Shock Loading, Concrete Mixers, Shear Pressers, Rotary Kilns, Punch Presses, Aggregate Conveyors - Heavy Duty Hoists - Recycling Machinery | <10        | 1.25                            | 1.5    | 1.5     | 2        |
|                                                                                 |                                                                                                                                                                                                              | 10 to 50   | 1.5                             | 1.75   | 1.75    | 2.2      |
|                                                                                 |                                                                                                                                                                                                              | 50 to 100  | 1.75                            | 2      | 2       | 2.5      |
|                                                                                 |                                                                                                                                                                                                              | 100 to 200 | 2                               | 2.2    | 2.2     | 3        |

### I 80 I175



PAM (Quill Input)

#### PARTS DESCRIPTION

- Oil Seal
- Foot
- Gasket
- Bearing
- Cover
- Bearing
- Cover
- Crown Gear
- Body
- Key
- Oil Seal
- Screw
- Screw
- Worm Screw
- Flange
- Gasket
- Nut
- Flange
- Screw
- Screw
- Worm Screw Pam

## MOTOR SHAFT & FLANGE DIAMETERS

### Pre-Arranged for Motor Mounting (PAM)

| Input Flange Type | Frame |        |        |        |        |        |        |          |         |         |         |
|-------------------|-------|--------|--------|--------|--------|--------|--------|----------|---------|---------|---------|
|                   | 56    | 63     | 71     | 80     | 90     | 100    | 112    | 132      | 160     | 180     | 200     |
| B5                | 9/120 | 11/140 | 14/160 | 19/200 | 24/200 | 28/250 | 28/250 | 38/300   | 42/350* | 48/350* | 55/400* |
| B14               | 9/80  | 11/90  | 14/105 | 19/120 | 24/140 | 28/160 | 28/160 | 38/200** | -       | -       | -       |

\* MI series only

\*\* MU series only

# I-MI - Right Angle Worm Gearboxes



## Ratings Table (Sizes 25-50)

1.0 Service Factor

| Ratio | n1   | n2  | I-MI-25 |      |      |     | I-MI-30 |      |      |     | I-MI-40 |      |      |     | I-MI-50 |      |      |     |
|-------|------|-----|---------|------|------|-----|---------|------|------|-----|---------|------|------|-----|---------|------|------|-----|
|       |      |     | M2      | kW   | HP   | RD  | M2      | kW   | HP   | RD  | M2      | kW   | HP   | RD  | M2      | kW   | HP   | RD  |
| 7.5   | 3360 | 448 | 7       | 0.40 | 0.54 | 85% | 13      | 0.69 | 0.93 | 86% | 22      | 1.15 | 1.57 | 88% | 41      | 2.16 | 2.93 | 88% |
|       | 1680 | 224 | 8       | 0.24 | 0.32 | 83% | 15      | 0.42 | 0.56 | 84% | 26      | 0.71 | 0.97 | 86% | 49      | 1.34 | 1.83 | 86% |
|       | 1080 | 144 | 10      | 0.18 | 0.24 | 81% | 17      | 0.31 | 0.43 | 82% | 30      | 0.55 | 0.74 | 84% | 58      | 1.04 | 1.41 | 84% |
|       | 800  | 107 | 12      | 0.11 | 0.15 | 79% | 22      | 0.19 | 0.26 | 80% | 38      | 0.32 | 0.44 | 82% | 72      | 0.61 | 0.83 | 82% |
| 10    | 3360 | 336 | 7       | 0.31 | 0.42 | 82% | 14      | 0.57 | 0.77 | 84% | 23      | 0.91 | 1.24 | 87% | 44      | 1.80 | 2.45 | 86% |
|       | 1680 | 168 | 8       | 0.18 | 0.25 | 80% | 17      | 0.36 | 0.49 | 82% | 27      | 0.56 | 0.76 | 85% | 54      | 1.13 | 1.54 | 84% |
|       | 1080 | 108 | 10      | 0.14 | 0.19 | 78% | 20      | 0.28 | 0.38 | 80% | 31      | 0.43 | 0.58 | 83% | 64      | 0.88 | 1.19 | 82% |
|       | 800  | 80  | 12      | 0.08 | 0.11 | 76% | 24      | 0.16 | 0.22 | 78% | 39      | 0.25 | 0.33 | 81% | 78      | 0.51 | 0.70 | 80% |
| 15    | 3360 | 224 | 7       | 0.22 | 0.29 | 78% | 14      | 0.40 | 0.54 | 79% | 24      | 0.69 | 0.93 | 83% | 50      | 1.42 | 1.92 | 82% |
|       | 1680 | 112 | 8       | 0.13 | 0.18 | 76% | 17      | 0.25 | 0.35 | 77% | 30      | 0.43 | 0.59 | 81% | 60      | 0.89 | 1.20 | 80% |
|       | 1080 | 72  | 10      | 0.10 | 0.13 | 74% | 20      | 0.20 | 0.27 | 75% | 35      | 0.34 | 0.46 | 79% | 71      | 0.69 | 0.94 | 78% |
|       | 800  | 53  | 12      | 0.06 | 0.08 | 72% | 24      | 0.12 | 0.16 | 73% | 43      | 0.20 | 0.27 | 77% | 88      | 0.40 | 0.55 | 76% |
| 20    | 3360 | 168 | 7       | 0.16 | 0.22 | 77% | 14      | 0.33 | 0.44 | 73% | 29      | 0.63 | 0.86 | 80% | 44      | 0.97 | 1.32 | 80% |
|       | 1680 | 84  | 8       | 0.10 | 0.13 | 75% | 17      | 0.20 | 0.28 | 72% | 35      | 0.40 | 0.54 | 78% | 54      | 0.61 | 0.83 | 78% |
|       | 1080 | 54  | 10      | 0.07 | 0.10 | 74% | 20      | 0.16 | 0.22 | 71% | 42      | 0.31 | 0.42 | 76% | 64      | 0.47 | 0.64 | 76% |
|       | 800  | 40  | 12      | 0.04 | 0.06 | 71% | 24      | 0.09 | 0.13 | 68% | 51      | 0.18 | 0.25 | 74% | 78      | 0.28 | 0.38 | 74% |
| 25    | 3360 | 134 | 8       | 0.17 | 0.22 | 69% | 15      | 0.28 | 0.38 | 77% | 19      | 0.34 | 0.46 | 78% | 43      | 0.79 | 1.07 | 77% |
|       | 1680 | 67  | 9       | 0.10 | 0.13 | 68% | 19      | 0.17 | 0.24 | 75% | 33      | 0.31 | 0.42 | 76% | 53      | 0.50 | 0.68 | 75% |
|       | 1080 | 43  | 11      | 0.08 | 0.10 | 67% | 22      | 0.13 | 0.18 | 74% | 39      | 0.24 | 0.32 | 74% | 63      | 0.38 | 0.52 | 74% |
|       | 800  | 32  | 12      | 0.04 | 0.06 | 65% | 27      | 0.08 | 0.11 | 71% | 49      | 0.14 | 0.19 | 72% | 77      | 0.23 | 0.31 | 71% |
| 30    | 3360 | 112 | 9       | 0.16 | 0.22 | 65% | 17      | 0.30 | 0.41 | 66% | 32      | 0.52 | 0.71 | 71% | 56      | 0.91 | 1.24 | 72% |
|       | 1680 | 56  | 11      | 0.10 | 0.14 | 64% | 20      | 0.18 | 0.25 | 65% | 38      | 0.32 | 0.43 | 70% | 68      | 0.56 | 0.76 | 71% |
|       | 1080 | 36  | 13      | 0.08 | 0.11 | 63% | 24      | 0.14 | 0.19 | 64% | 45      | 0.24 | 0.33 | 69% | 80      | 0.43 | 0.58 | 70% |
|       | 800  | 27  | 15      | 0.05 | 0.06 | 61% | 30      | 0.08 | 0.11 | 62% | 55      | 0.15 | 0.20 | 67% | 99      | 0.25 | 0.35 | 67% |
| 40    | 3360 | 84  | 8       | 0.11 | 0.15 | 63% | 15      | 0.20 | 0.27 | 68% | 31      | 0.41 | 0.56 | 65% | 49      | 0.69 | 0.94 | 62% |
|       | 1680 | 42  | 10      | 0.07 | 0.10 | 62% | 19      | 0.12 | 0.17 | 67% | 37      | 0.26 | 0.35 | 64% | 60      | 0.43 | 0.58 | 61% |
|       | 1080 | 27  | 12      | 0.06 | 0.08 | 61% | 22      | 0.09 | 0.13 | 66% | 44      | 0.20 | 0.27 | 63% | 70      | 0.33 | 0.45 | 60% |
|       | 800  | 20  | 14      | 0.03 | 0.04 | 59% | 27      | 0.06 | 0.08 | 64% | 54      | 0.12 | 0.16 | 61% | 86      | 0.20 | 0.27 | 58% |
| 50    | 3360 | 67  | 8       | 0.11 | 0.14 | 54% | 14      | 0.16 | 0.22 | 64% | 31      | 0.34 | 0.46 | 63% | 48      | 0.54 | 0.74 | 62% |
|       | 1680 | 34  | 9       | 0.06 | 0.08 | 53% | 18      | 0.10 | 0.13 | 63% | 37      | 0.21 | 0.29 | 62% | 58      | 0.33 | 0.45 | 61% |
|       | 1080 | 22  | 11      | 0.05 | 0.07 | 52% | 21      | 0.08 | 0.10 | 62% | 44      | 0.16 | 0.22 | 61% | 67      | 0.25 | 0.35 | 60% |
|       | 800  | 16  | 13      | 0.03 | 0.04 | 50% | 26      | 0.04 | 0.06 | 60% | 54      | 0.10 | 0.13 | 59% | 84      | 0.15 | 0.21 | 58% |
| 60    | 3360 | 56  | 7       | 0.08 | 0.11 | 52% | 13      | 0.15 | 0.20 | 50% | 29      | 0.28 | 0.38 | 60% | 44      | 0.46 | 0.63 | 56% |
|       | 1680 | 28  | 8       | 0.05 | 0.07 | 51% | 16      | 0.09 | 0.13 | 49% | 35      | 0.18 | 0.24 | 59% | 54      | 0.29 | 0.39 | 55% |
|       | 1080 | 18  | 10      | 0.04 | 0.05 | 50% | 19      | 0.07 | 0.10 | 48% | 42      | 0.14 | 0.18 | 58% | 64      | 0.22 | 0.30 | 54% |
|       | 800  | 13  | 12      | 0.02 | 0.03 | 48% | 23      | 0.04 | 0.06 | 47% | 51      | 0.08 | 0.11 | 56% | 78      | 0.13 | 0.18 | 52% |
| 80    | 3360 | 42  | 5       | 0.04 | 0.06 | 48% | 9       | 0.07 | 0.10 | 56% | 23      | 0.20 | 0.27 | 51% | 43      | 0.35 | 0.47 | 55% |
|       | 1680 | 21  | 6       | 0.03 | 0.04 | 47% | 11      | 0.04 | 0.06 | 55% | 28      | 0.12 | 0.17 | 50% | 52      | 0.21 | 0.29 | 54% |
|       | 1080 | 14  | 7       | 0.02 | 0.03 | 46% | 13      | 0.03 | 0.05 | 54% | 33      | 0.10 | 0.13 | 49% | 61      | 0.16 | 0.22 | 53% |
|       | 800  | 10  | 8       | 0.01 | 0.02 | 45% | 16      | 0.02 | 0.03 | 52% | 41      | 0.06 | 0.08 | 48% | 76      | 0.10 | 0.13 | 51% |
| 100   | 3360 | 34  | 3       | 0.02 | 0.03 | 42% | 5       | 0.04 | 0.05 | 48% | 22      | 0.16 | 0.21 | 49% | 40      | 0.28 | 0.39 | 49% |
|       | 1680 | 17  | 4       | 0.02 | 0.02 | 41% | 7       | 0.02 | 0.03 | 47% | 26      | 0.10 | 0.13 | 48% | 48      | 0.18 | 0.24 | 48% |
|       | 1080 | 11  | 5       | 0.01 | 0.02 | 40% | 8       | 0.02 | 0.03 | 46% | 30      | 0.07 | 0.10 | 47% | 57      | 0.14 | 0.19 | 47% |
|       | 800  | 8   | 5       | 0.01 | 0.01 | 39% | 9       | 0.01 | 0.02 | 45% | 38      | 0.04 | 0.06 | 46% | 70      | 0.08 | 0.11 | 46% |

n1 = Input Speed  
n2 = Output Speed

M2 = Output Torque (Nm)  
kW = Input kW

HP = Input HP  
RD = Dynamic Efficiency

Use factor 8.85 to convert Nm to in lbs.



# I-MI - Right Angle Worm Gearboxes



## Ratings Table (Sizes 60-110)

1.0 Service Factor

| Ratio | n1   | n2  | I-MI-60 |      |      |     | I-MI-70 |      |      |     | I-MI-80 |      |       |     | I-MI-90 |       |       |     | I-MI-110 |       |       |     |
|-------|------|-----|---------|------|------|-----|---------|------|------|-----|---------|------|-------|-----|---------|-------|-------|-----|----------|-------|-------|-----|
|       |      |     | M2      | kW   | HP   | RD  | M2      | kW   | HP   | RD  | M2      | kW   | HP    | RD  | M2      | kW    | HP    | RD  | M2       | kW    | HP    | RD  |
| 7.5   | 3360 | 448 | 79      | 4.13 | 5.61 | 90% | 117     | 6.10 | 8.29 | 90% | 149     | 7.79 | 10.58 | 90% | 194     | 10.09 | 13.71 | 90% | 306      | 16.13 | 21.92 | 89% |
|       | 1680 | 224 | 97      | 2.58 | 3.50 | 88% | 142     | 3.79 | 5.16 | 88% | 181     | 4.83 | 6.57  | 88% | 235     | 6.27  | 8.52  | 88% | 372      | 10.03 | 13.63 | 87% |
|       | 1080 | 144 | 114     | 2.00 | 2.72 | 86% | 167     | 2.93 | 3.98 | 86% | 213     | 3.73 | 5.07  | 86% | 276     | 4.85  | 6.59  | 86% | 437      | 7.75  | 10.54 | 85% |
|       | 800  | 107 | 140     | 1.17 | 1.59 | 84% | 207     | 1.72 | 2.34 | 84% | 263     | 2.20 | 2.99  | 84% | 342     | 2.85  | 3.88  | 84% | 540      | 4.56  | 6.20  | 83% |
| 10    | 3360 | 336 | 73      | 2.91 | 3.96 | 88% | 126     | 5.04 | 6.85 | 88% | 133     | 5.33 | 7.24  | 88% | 176     | 7.05  | 9.59  | 88% | 345      | 13.78 | 18.73 | 88% |
|       | 1680 | 168 | 88      | 1.81 | 2.46 | 86% | 153     | 3.14 | 4.27 | 86% | 162     | 3.31 | 4.50  | 86% | 215     | 4.39  | 5.97  | 86% | 419      | 8.56  | 11.64 | 86% |
|       | 1080 | 108 | 104     | 1.39 | 1.89 | 84% | 181     | 2.43 | 3.30 | 84% | 190     | 2.56 | 3.48  | 84% | 253     | 3.40  | 4.62  | 84% | 492      | 6.63  | 9.01  | 84% |
|       | 800  | 80  | 128     | 0.82 | 1.12 | 82% | 223     | 1.43 | 1.94 | 82% | 235     | 1.50 | 2.05  | 82% | 312     | 2.00  | 2.72  | 82% | 608      | 3.89  | 5.29  | 82% |
| 15    | 3360 | 224 | 95      | 2.64 | 3.59 | 84% | 138     | 3.67 | 4.99 | 88% | 194     | 5.28 | 7.17  | 86% | 269     | 7.34  | 9.98  | 86% | 413      | 11.40 | 15.49 | 85% |
|       | 1680 | 112 | 115     | 1.65 | 2.24 | 82% | 167     | 2.34 | 3.18 | 84% | 235     | 3.29 | 4.47  | 84% | 327     | 4.57  | 6.21  | 84% | 502      | 7.10  | 9.65  | 83% |
|       | 1080 | 72  | 136     | 1.28 | 1.74 | 80% | 197     | 1.81 | 2.46 | 82% | 276     | 2.54 | 3.45  | 82% | 385     | 3.54  | 4.81  | 82% | 590      | 5.49  | 7.46  | 81% |
|       | 800  | 53  | 167     | 0.75 | 1.02 | 78% | 243     | 1.06 | 1.44 | 80% | 342     | 1.49 | 2.03  | 80% | 475     | 2.08  | 2.82  | 80% | 729      | 3.22  | 4.39  | 79% |
| 20    | 3360 | 168 | 84      | 1.75 | 2.38 | 84% | 119     | 2.55 | 3.46 | 82% | 176     | 3.74 | 5.08  | 83% | 253     | 5.36  | 7.29  | 83% | 337      | 7.31  | 9.94  | 81% |
|       | 1680 | 84  | 101     | 1.09 | 1.48 | 82% | 144     | 1.58 | 2.15 | 80% | 215     | 2.33 | 3.17  | 81% | 307     | 3.33  | 4.53  | 81% | 409      | 4.56  | 6.19  | 79% |
|       | 1080 | 54  | 119     | 0.84 | 1.14 | 80% | 169     | 1.23 | 1.67 | 78% | 253     | 1.81 | 2.46  | 79% | 361     | 2.58  | 3.51  | 79% | 481      | 3.53  | 4.80  | 77% |
|       | 800  | 40  | 147     | 0.49 | 0.67 | 78% | 209     | 0.72 | 0.98 | 76% | 312     | 1.06 | 1.44  | 77% | 446     | 1.51  | 2.06  | 77% | 594      | 2.07  | 2.82  | 75% |
| 25    | 3360 | 134 | 94      | 1.65 | 2.24 | 80% | 123     | 2.12 | 2.88 | 82% | 168     | 2.89 | 3.93  | 82% | 245     | 4.20  | 5.71  | 82% | 360      | 6.18  | 8.40  | 82% |
|       | 1680 | 67  | 113     | 1.02 | 1.39 | 78% | 150     | 1.32 | 1.79 | 80% | 205     | 1.80 | 2.45  | 80% | 298     | 2.62  | 3.56  | 80% | 437      | 3.84  | 5.23  | 80% |
|       | 1080 | 43  | 133     | 0.79 | 1.08 | 76% | 176     | 1.02 | 1.39 | 78% | 240     | 1.39 | 1.89  | 78% | 350     | 2.03  | 2.76  | 78% | 514      | 2.98  | 4.05  | 78% |
|       | 800  | 32  | 165     | 0.47 | 0.63 | 74% | 217     | 0.60 | 0.81 | 76% | 297     | 0.82 | 1.11  | 76% | 432     | 1.19  | 1.62  | 76% | 635      | 1.75  | 2.38  | 76% |
| 30    | 3360 | 112 | 106     | 1.71 | 2.32 | 73% | 147     | 2.15 | 2.92 | 80% | 219     | 3.21 | 4.36  | 80% | 294     | 4.31  | 5.86  | 80% | 467      | 6.85  | 9.31  | 80% |
|       | 1680 | 56  | 129     | 1.05 | 1.43 | 72% | 179     | 1.34 | 1.82 | 78% | 266     | 2.00 | 2.72  | 78% | 358     | 2.69  | 3.66  | 78% | 567      | 4.26  | 5.80  | 78% |
|       | 1080 | 36  | 152     | 0.81 | 1.10 | 71% | 210     | 1.04 | 1.42 | 76% | 313     | 1.55 | 2.11  | 76% | 421     | 2.09  | 2.84  | 76% | 667      | 3.31  | 4.50  | 76% |
|       | 800  | 27  | 188     | 0.48 | 0.65 | 68% | 259     | 0.61 | 0.83 | 74% | 386     | 0.91 | 1.24  | 74% | 520     | 1.22  | 1.66  | 74% | 824      | 1.94  | 2.64  | 74% |
| 40    | 3360 | 84  | 98      | 1.20 | 1.63 | 72% | 134     | 1.62 | 2.20 | 73% | 202     | 2.43 | 3.30  | 73% | 275     | 3.32  | 4.51  | 73% | 459      | 5.24  | 7.13  | 77% |
|       | 1680 | 42  | 119     | 0.74 | 1.00 | 71% | 163     | 0.99 | 1.35 | 72% | 246     | 1.50 | 2.04  | 72% | 335     | 2.05  | 2.78  | 72% | 558      | 3.27  | 4.45  | 75% |
|       | 1080 | 27  | 140     | 0.56 | 0.77 | 70% | 191     | 0.76 | 1.03 | 71% | 289     | 1.15 | 1.56  | 71% | 393     | 1.57  | 2.13  | 71% | 656      | 2.50  | 3.40  | 74% |
|       | 800  | 20  | 173     | 0.34 | 0.46 | 67% | 236     | 0.45 | 0.61 | 68% | 356     | 0.68 | 0.93  | 68% | 486     | 0.93  | 1.26  | 68% | 810      | 1.49  | 2.02  | 71% |
| 50    | 3360 | 67  | 88      | 0.91 | 1.24 | 68% | 138     | 1.40 | 1.91 | 69% | 171     | 1.74 | 2.37  | 69% | 264     | 2.69  | 3.66  | 69% | 421      | 4.12  | 5.60  | 72% |
|       | 1680 | 34  | 107     | 0.56 | 0.76 | 67% | 167     | 0.87 | 1.18 | 68% | 208     | 1.08 | 1.47  | 68% | 321     | 1.66  | 2.26  | 68% | 512      | 2.53  | 3.45  | 71% |
|       | 1080 | 22  | 125     | 0.43 | 0.58 | 66% | 197     | 0.66 | 0.90 | 67% | 245     | 0.83 | 1.12  | 67% | 377     | 1.27  | 1.73  | 67% | 601      | 1.94  | 2.64  | 70% |
|       | 800  | 16  | 155     | 0.26 | 0.35 | 64% | 243     | 0.39 | 0.54 | 65% | 302     | 0.49 | 0.67  | 65% | 466     | 0.75  | 1.03  | 65% | 746      | 0.75  | 1.03  | 65% |
| 60    | 3360 | 56  | 81      | 0.74 | 1.01 | 64% | 126     | 1.14 | 1.55 | 65% | 168     | 1.52 | 2.06  | 65% | 253     | 2.28  | 3.10  | 65% | 406      | 3.35  | 4.56  | 71% |
|       | 1680 | 28  | 99      | 0.46 | 0.62 | 63% | 153     | 0.70 | 0.96 | 64% | 205     | 0.94 | 1.27  | 64% | 307     | 1.41  | 1.91  | 64% | 493      | 2.06  | 2.81  | 70% |
|       | 1080 | 18  | 116     | 0.35 | 0.48 | 62% | 181     | 0.54 | 0.73 | 63% | 240     | 0.72 | 0.98  | 63% | 361     | 1.08  | 1.47  | 63% | 580      | 1.58  | 2.15  | 69% |
|       | 800  | 13  | 143     | 0.21 | 0.28 | 60% | 223     | 0.32 | 0.43 | 61% | 297     | 0.43 | 0.58  | 61% | 446     | 0.64  | 0.87  | 61% | 716      | 0.94  | 1.28  | 67% |
| 80    | 3360 | 42  | 79      | 0.60 | 0.82 | 58% | 98      | 0.85 | 1.15 | 51% | 164     | 1.29 | 1.75  | 56% | 211     | 1.65  | 2.25  | 56% | 345      | 2.41  | 3.27  | 63% |
|       | 1680 | 21  | 96      | 0.37 | 0.50 | 57% | 119     | 0.52 | 0.71 | 50% | 199     | 0.80 | 1.08  | 55% | 256     | 1.02  | 1.39  | 55% | 419      | 1.48  | 2.02  | 62% |
|       | 1080 | 14  | 112     | 0.28 | 0.38 | 56% | 140     | 0.40 | 0.55 | 49% | 234     | 0.61 | 0.83  | 54% | 300     | 0.79  | 1.07  | 54% | 492      | 1.14  | 1.55  | 61% |
|       | 800  | 10  | 139     | 0.17 | 0.23 | 54% | 173     | 0.24 | 0.32 | 48% | 289     | 0.36 | 0.49  | 52% | 371     | 0.46  | 0.63  | 52% | 608      | 0.67  | 0.92  | 59% |
| 100   | 3360 | 34  | 69      | 0.46 | 0.63 | 53% | 95      | 0.72 | 0.98 | 46% | 145     | 0.96 | 1.31  | 53% | 195     | 1.30  | 1.76  | 53% | 306      | 1.79  | 2.44  | 60% |
|       | 1680 | 17  | 85      | 0.29 | 0.39 | 52% | 114     | 0.45 | 0.61 | 45% | 176     | 0.59 | 0.81  | 52% | 237     | 0.80  | 1.09  | 52% | 372      | 1.11  | 1.51  | 59% |
|       | 1080 | 11  | 100     | 0.22 | 0.30 | 51% | 134     | 0.34 | 0.47 | 44% | 206     | 0.46 | 0.62  | 51% | 278     | 0.62  | 0.84  | 51% | 437      | 0.85  | 1.16  | 58% |
|       | 800  | 8   | 123     | 0.13 | 0.18 | 49% | 166     | 0.20 | 0.28 | 43% | 255     | 0.27 | 0.37  | 49% | 344     | 0.36  | 0.50  | 49% | 540      | 0.50  | 0.69  | 56% |

n1 = Input Speed  
n2 = Output Speed

M2 = Output Torque (Nm)  
kW = Input kW

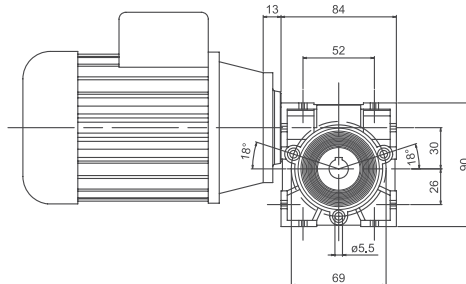
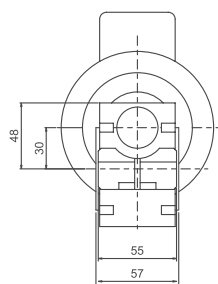
HP = Input HP  
RD = Dynamic Efficiency

Use factor 8.85 to convert Nm to in lbs.

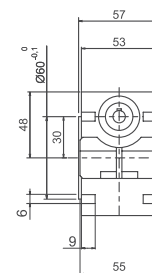
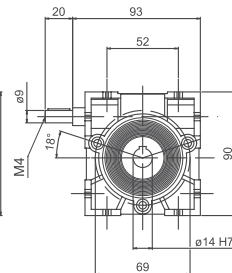


## Dimensions (Size 30)

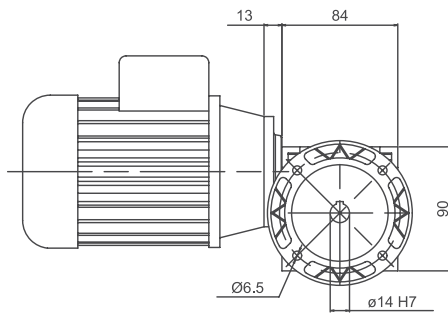
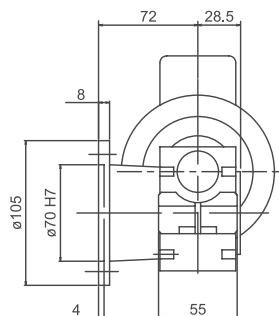
**MI 30**



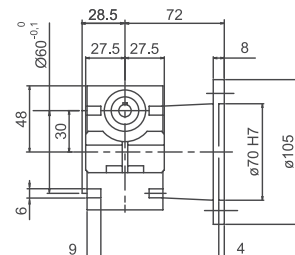
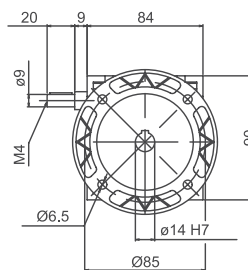
**I 30**



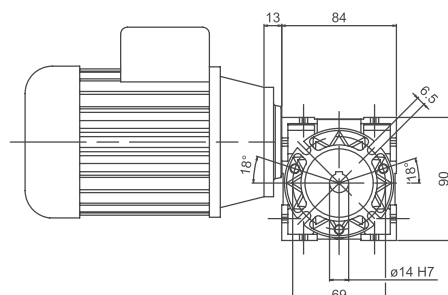
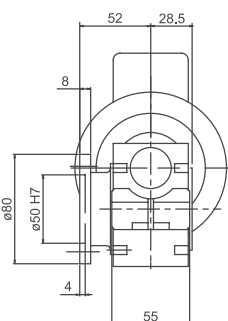
**MI 30 F**



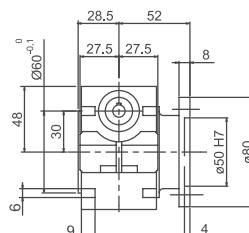
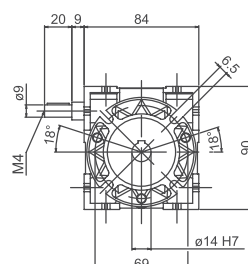
**I 30 F**



**MI 30 FBC**

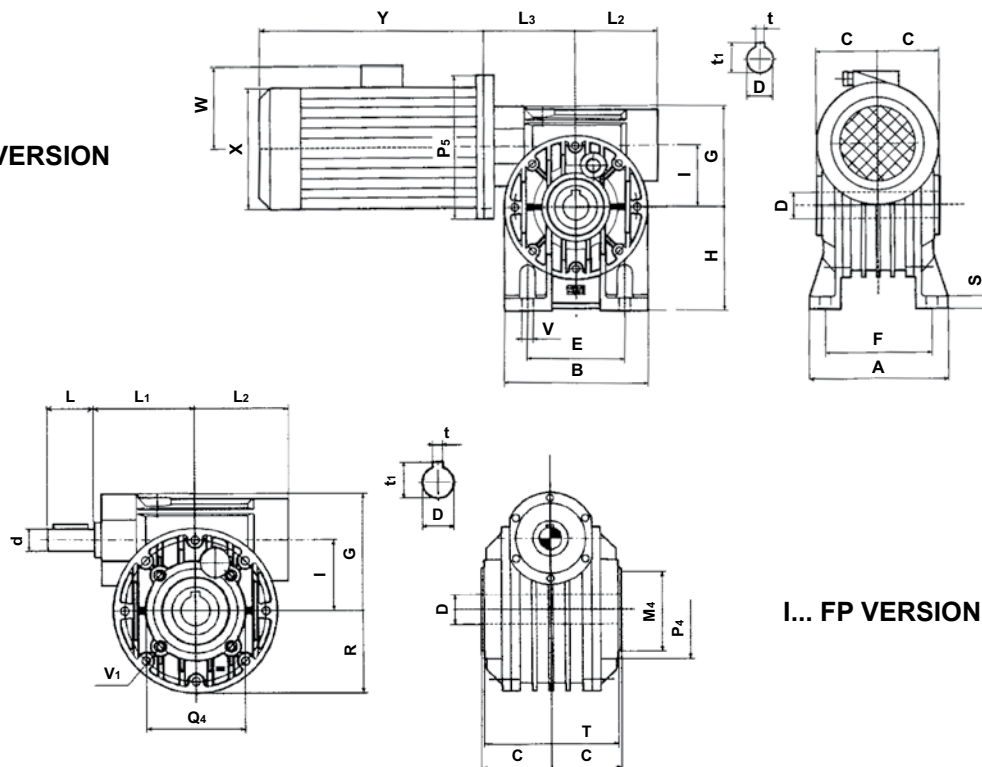


**I 30 FBC**



## Dimensions (Sizes 40-70)

**MI... A VERSION**



**I... FP VERSION**

## Right Angle Worm Base Mount or Round Body

x, y, w standard motor dimensions

| Frame Size | L <sub>3</sub> | L <sub>2</sub> | G   | R  | A   | B   | E   | F   | V  | H   | H <sub>1</sub> | H <sub>2</sub> | C    | S  | D/H <sub>7</sub> | t | t <sub>1</sub> | P <sub>5</sub> | d/j <sub>6</sub> | L  | L <sub>1</sub> | I  | T   | Q <sub>4</sub> | P <sub>4</sub> | M <sub>4</sub> /h <sub>7</sub> | V <sub>1</sub> |
|------------|----------------|----------------|-----|----|-----|-----|-----|-----|----|-----|----------------|----------------|------|----|------------------|---|----------------|----------------|------------------|----|----------------|----|-----|----------------|----------------|--------------------------------|----------------|
| 40         | 71             | 57             | 70  | 48 | 100 | 96  | 70  | 84  | 7  | 71  | 111            | 31             | 41   | 8  | 19(18)           | 6 | 21.8           | *              | 11               | 23 | 63             | 40 | 77  | 65             | 96             | 50                             | M6             |
| 50         | 82             | 64             | 84  | 56 | 114 | 112 | 85  | 96  | 9  | 85  | 135            | 35             | 49   | 10 | 24(25)           | 8 | 27.3           | *              | 14               | 30 | 73             | 50 | 93  | 75             | 88             | 60                             | M6             |
| 60         | 101            | 80             | 99  | 75 | 137 | 140 | 95  | 111 | 11 | 100 | 160            | 40             | 60   | 12 | 25               | 8 | 28.3           | *              | 19               | 40 | 86             | 60 | 104 | 85             | 105            | 70                             | M8             |
| 70         | 108            | 86             | 117 | 81 | 141 | 156 | 120 | 115 | 11 | 115 | 185            | 45             | 60.5 | 12 | 28               | 8 | 31.3           | *              | 19               | 40 | 87             | 70 | 114 | 100            | 115            | 80                             | M8             |

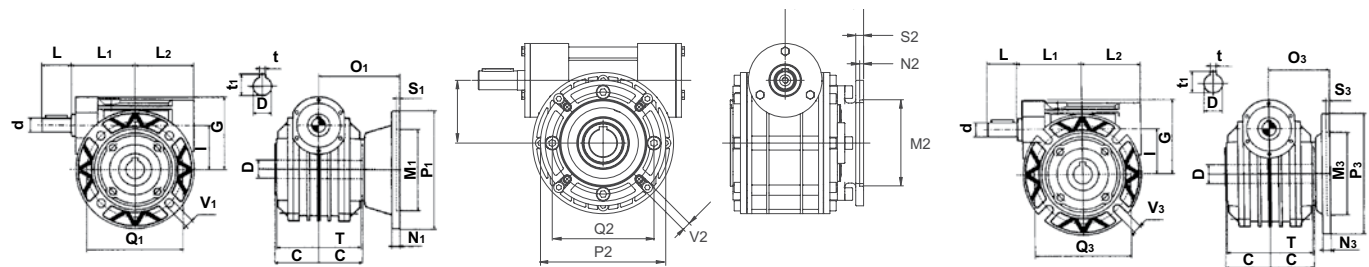
() Optional output bore size

\* According to IEC flange

**I... F VERSION**

**I...FBM VERSION**

**I... FBR VERSION**



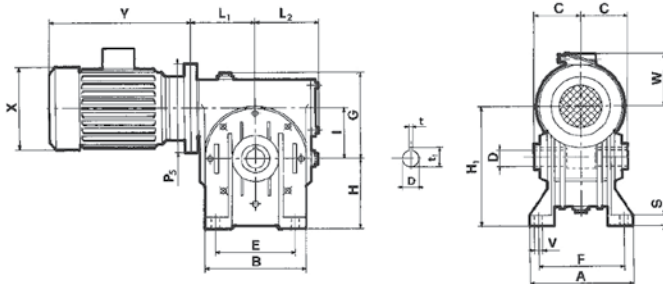
## Right Angle Worm Base Mount with Solid Input Shaft & Output Flanges

| Frame Size | L  | L <sub>1</sub> | L <sub>2</sub> | C    | T   | G   | d/j <sub>6</sub> | D/H <sub>7</sub> | Q <sub>1</sub> | Q <sub>2</sub> | Q <sub>3</sub> | M <sub>1</sub> /H <sub>7</sub> | M <sub>2</sub> /H <sub>7</sub> | M <sub>3</sub> /H <sub>7</sub> | P <sub>1</sub> | P <sub>2</sub> | P <sub>3</sub> | O <sub>1</sub> | O <sub>2</sub> | O <sub>3</sub> | S <sub>1</sub> | S <sub>2</sub> | S <sub>3</sub> | V <sub>1</sub> | V <sub>2</sub> | V <sub>3</sub> | N <sub>1</sub> | N <sub>2</sub> | N <sub>3</sub> | t | t <sub>1</sub> |
|------------|----|----------------|----------------|------|-----|-----|------------------|------------------|----------------|----------------|----------------|--------------------------------|--------------------------------|--------------------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|---|----------------|
| MI 40      | 23 | 63             | 57             | 41   | 77  | 70  | 11               | 19(18)           | 115            | 76-87          | 100            | 95                             | 60                             | 80                             | 140            | 95             | 120            | 82             | 69             | 60             | 4              | 3              | 3              | 9              | 9              | 9              | 11             | 8              | 8              | 6 | 21.8           |
| MI 50      | 30 | 73             | 67             | 49   | 93  | 84  | 14               | 24(25)           | 130            | 85-92          | 115            | 110                            | 70                             | 95                             | 160            | 110            | 140            | 92             | 93             | 75             | 4              | 4              | 4              | 10             | 10             | 10             | 11             | 10             | 10             | 8 | 27.3           |
| MI 60      | 40 | 86             | 80             | 60   | 104 | 99  | 19               | 25               | 165            | 150            | 130            | 130                            | 115                            | 110                            | 200            | 142/180        | 160            | 96.5           | 81             | 76             | 4              | 4              | 5              | 11             | 11             | 10             | 12             | 11             | 11             | 8 | 28.3           |
| MI 70      | 40 | 87             | 86             | 60.5 | 114 | 117 | 19               | 28               | 165            | 130            | 130            | 130                            | 110                            | 110                            | 200            | 200/210        | 160            | 111.5          | 85             | 85             | 5              | 4              | 5              | 13             | 11             | 11             | 12             | 12             | 12             | 8 | 31.3           |

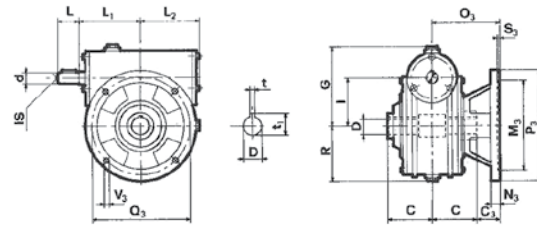
() Optional output bore size

## Dimensions (Sizes 80-175)

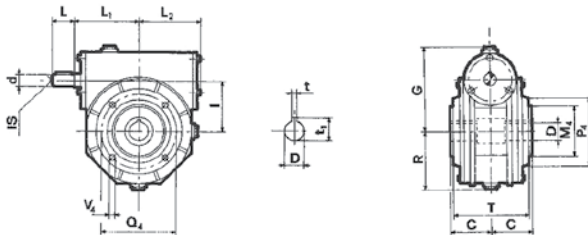
**MI... A VERSION**



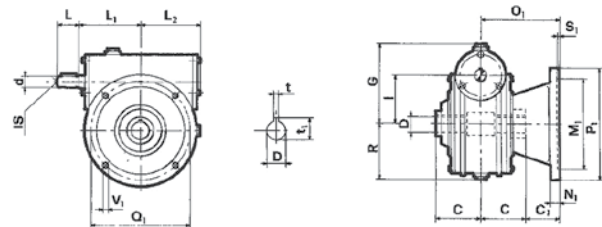
**I... FBR VERSION**



**I... FP VERSION**



**I... F VERSION**



x, y, w standard motor dimensions

| Frame Size    | A   | B   | C    | D/H <sub>7</sub> | E   | F   | S  | V  | G   | H   | H <sub>1</sub> | H <sub>2</sub> | I   | L <sub>3</sub> | L <sub>2</sub> | R   | t  | t <sub>1</sub> | P <sub>5</sub> | C <sub>1</sub> | C <sub>2</sub> | C <sub>3</sub> |
|---------------|-----|-----|------|------------------|-----|-----|----|----|-----|-----|----------------|----------------|-----|----------------|----------------|-----|----|----------------|----------------|----------------|----------------|----------------|
| <b>MI 80</b>  | 181 | 180 | 70   | 35               | 140 | 147 | 13 | 11 | 127 | 142 | 222            | 62             | 80  | 108            | 105            | 95  | 10 | 38.3           | *              | 50             | 80             | 30             |
| <b>MI 90</b>  | 198 | 210 | 75   | 38               | 160 | 164 | 15 | 13 | 139 | 150 | 240            | 60             | 90  | 128            | 124            | 111 | 10 | 41.3           | *              | 52             | 75             | 40             |
| <b>MI 110</b> | 190 | 250 | 77.5 | 42               | 200 | 160 | 18 | 13 | 170 | 172 | 282            | 62             | 110 | 149            | 144            | 141 | 12 | 45.3           | *              | 72.5           | 100.5          | 52.5           |
| <b>MI 130</b> | 225 | 280 | 95   | 48               | 240 | 190 | 18 | 15 | 194 | 200 | 330            | 70             | 130 | 165            | 160            | 155 | 14 | 51.8           | *              | 55             | 102.5          | 42.5           |
| <b>MI 150</b> | 260 | 334 | 110  | 55               | 280 | 220 | 20 | 19 | 225 | 230 | 380            | 80             | 150 | 192            | 190            | 182 | 16 | 60.3           | *              | 65             | 110            | -              |
| <b>MI 175</b> | 280 | 358 | 115  | 60               | 310 | 240 | 30 | 19 | 258 | 260 | 435            | 85             | 175 | 213            | 204            | 203 | 18 | 64.4           | *              | 95             | 140            | -              |

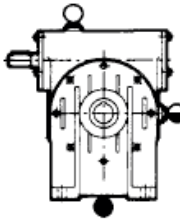
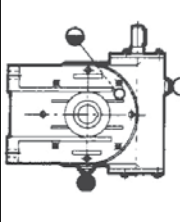
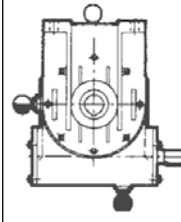
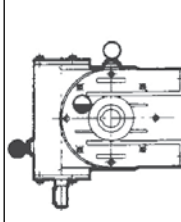
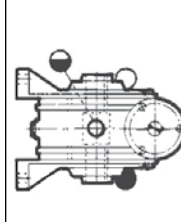
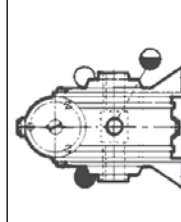
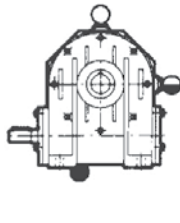
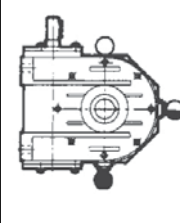
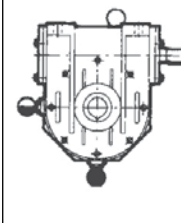
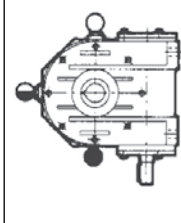
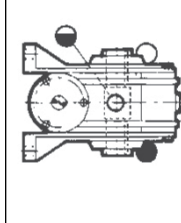
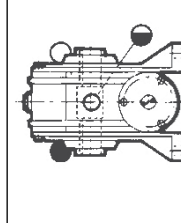
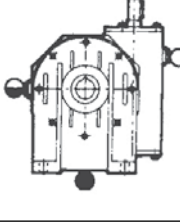
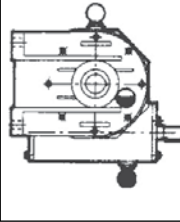
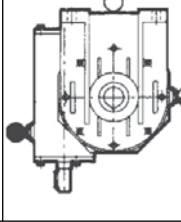
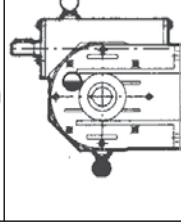
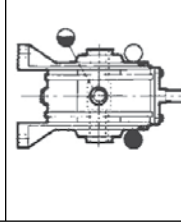
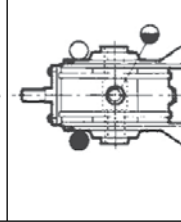
\* According to IEC flange

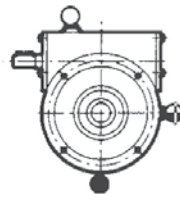
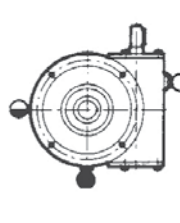
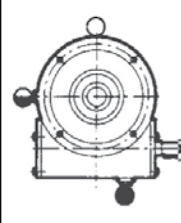
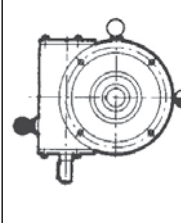
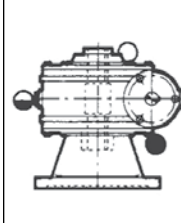
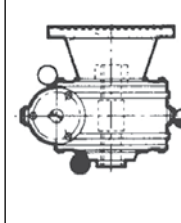
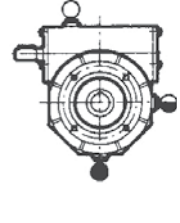
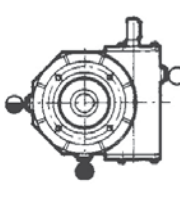
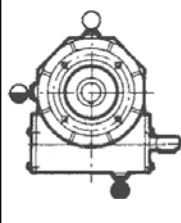
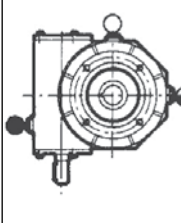
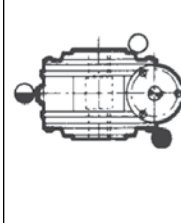
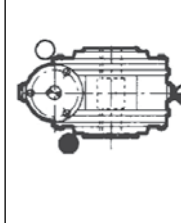
## Refer to dimensions Q2, P2 and M2 for FR Output Flange

| Frame Size    | M <sub>1</sub> /H <sub>7</sub> | M <sub>2</sub> /H <sub>7</sub> | M <sub>3</sub> /H <sub>7</sub> | M <sub>4</sub> /H <sub>7</sub> | N <sub>1</sub> | N <sub>2</sub> | N <sub>3</sub> | O <sub>1</sub> | O <sub>2</sub> | O <sub>3</sub> | P <sub>1</sub> | P <sub>2</sub> | P <sub>3</sub> | P <sub>4</sub> | Q <sub>1</sub> | Q <sub>2</sub> | Q <sub>3</sub> | Q <sub>4</sub> | S <sub>1</sub> | S <sub>2</sub> | S <sub>3</sub> | V <sub>1</sub> | V <sub>2</sub> | V <sub>3</sub> | V <sub>4</sub> | d/J <sub>6</sub> | IS  | L   | L <sub>1</sub> | T   |
|---------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|------------------|-----|-----|----------------|-----|
| <b>MI 80</b>  | 130                            | 152                            | 110                            | 110                            | 13             | 13             | 13             | 120            | 150            | 100            | 200            | 200/210        | 160            | 145            | 165            | 180            | 130            | 130            | 5              | 6              | 5              | 11.5           | 11.5           | 11.5           | M10            | 24               | M8  | 50  | 110            | 133 |
| <b>MI 90</b>  | 180                            | 152                            | 130                            | 110                            | 14             | 15             | 15             | 127            | 150            | 115            | 250            | 250            | 200            | 160            | 215            | 180            | 165            | 130            | 5              | 5              | 5              | 14             | 11             | 11             | M10            | 24               | M8  | 50  | 126            | 143 |
| <b>MI 110</b> | 180                            | 170                            | 180                            | 130                            | 18             | 18             | 18             | 150            | 178            | 130            | 250            | 300            | 250            | 200            | 215            | 230            | 215            | 165            | 5              | 5              | 5              | 15             | 12.5           | 15             | M12            | 28               | M8  | 60  | 148            | 148 |
| <b>MI 130</b> | 230                            | 180                            | 230                            | 180                            | 18             | 20             | 18             | 150            | 198            | 137.5          | 300            | 300            | 300            | 240            | 265            | 255            | 265            | 215            | 5              | 6              | 5              | 15             | 12.5           | 15             | M12            | 38               | M10 | 80  | 167            | 172 |
| <b>MI 150</b> | 250                            | 200                            | *                              | 180                            | 20             | 22             | *              | 175            | 220            | *              | 350            | 350            | *              | 250            | 300            | 280            | *              | 215            | 6              | 6              | *              | 17             | 12.5           | *              | M14            | 42               | M12 | 110 | 193            | 204 |
| <b>MI 175</b> | 300                            | 280                            | *                              | 230                            | 22             | 22             | *              | 210            | 255            | *              | 400            | 400            | *              | 300            | 350            | 350            | *              | 265            | 6              | 6              | *              | 18             | 12.5           | *              | M16            | 42               | M12 | 110 | 210            | 222 |

\* According to IEC flange

Mounting Positions

| Version | B3                                                                                 | V5                                                                                 | B8                                                                                 | V6                                                                                  | B6                                                                                   | B7                                                                                   |
|---------|------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| A       |   |   |   |   |   |   |
| B       |   |   |   |   |   |   |
| C       |  |  |  |  |  |  |

| Version                 | B5                                                                                  | B51                                                                                 | B53                                                                                 | B52                                                                                  | V1                                                                                    | V3                                                                                    |
|-------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| F<br>FBR<br>FBM<br>FBML |  |  |  |  |  |  |
| FP                      |  |  |  |  |  |  |

 Fill-in plug

 Oil level plug

 Drain plug

# U-MU - Right Angle Worm Gearboxes



## Ratings Table (Sizes 40-75)

1.0 Service Factor



| Ratio | n1   | n2  | U-MU-40 |      |      |     | U-MU-50 |      |      |     | U-MU-63 |      |      |      | U-MU-75 |      |       |     |
|-------|------|-----|---------|------|------|-----|---------|------|------|-----|---------|------|------|------|---------|------|-------|-----|
|       |      |     | M2      | kW   | HP   | RD  | M2      | kW   | HP   | RD  | M2      | kW   | HP   | RD   | M2      | kW   | HP    | RD  |
| 5     | 3360 | 672 | 29      | 2.25 | 3.06 | 90% | 49      | 3.65 | 4.96 | 94% | 86      | 6.66 | 9.05 | 0.90 | -       | -    | -     | -   |
|       | 1680 | 336 | 42      | 1.64 | 2.22 | 90% | 70      | 2.78 | 3.78 | 88% | 123     | 5.40 | 6.60 | 0.89 | -       | -    | -     | -   |
|       | 1080 | 216 | 48      | 1.23 | 1.68 | 87% | 80      | 2.07 | 2.81 | 87% | 143     | 3.69 | 5.01 | 0.87 | -       | -    | -     | -   |
|       | 800  | 160 | 58      | 0.72 | 0.98 | 84% | 97      | 1.20 | 1.63 | 85% | 170     | 2.08 | 2.83 | 0.86 | -       | -    | -     | -   |
| 7.5   | 3360 | 448 | 30      | 1.57 | 2.13 | 89% | 50      | 2.55 | 3.46 | 91% | 90      | 4.69 | 6.38 | 0.90 | 149     | 7.74 | 10.51 | 91% |
|       | 1680 | 224 | 42      | 1.13 | 1.53 | 87% | 70      | 1.86 | 2.53 | 88% | 127     | 3.40 | 4.62 | 0.88 | 215     | 5.66 | 7.70  | 89% |
|       | 1080 | 144 | 47      | 0.84 | 1.14 | 84% | 81      | 1.40 | 1.91 | 87% | 143     | 2.48 | 3.38 | 0.87 | 238     | 4.08 | 5.55  | 88% |
|       | 800  | 107 | 57      | 0.49 | 0.66 | 83% | 96      | 0.81 | 1.11 | 83% | 183     | 1.43 | 1.94 | 0.90 | 290     | 2.40 | 3.27  | 84% |
| 10    | 3360 | 336 | 31      | 1.22 | 1.66 | 88% | 50      | 1.97 | 2.68 | 90% | 94      | 3.70 | 5.03 | 0.89 | 153     | 5.99 | 8.14  | 90% |
|       | 1680 | 168 | 42      | 0.86 | 1.16 | 86% | 70      | 1.44 | 1.96 | 85% | 126     | 2.54 | 3.45 | 0.87 | 218     | 4.36 | 5.93  | 88% |
|       | 1080 | 108 | 46      | 0.63 | 0.85 | 82% | 81      | 1.09 | 1.48 | 84% | 145     | 1.92 | 2.61 | 0.86 | 238     | 3.12 | 4.24  | 86% |
|       | 800  | 80  | 57      | 0.37 | 0.51 | 80% | 95      | 0.62 | 0.84 | 80% | 185     | 1.11 | 1.51 | 0.87 | 290     | 1.85 | 2.52  | 82% |
| 15    | 3360 | 224 | 32      | 0.89 | 1.21 | 83% | 53      | 1.44 | 1.96 | 86% | 95      | 2.60 | 3.53 | 0.86 | 160     | 4.24 | 5.76  | 89% |
|       | 1680 | 112 | 42      | 0.60 | 0.81 | 82% | 70      | 0.99 | 1.34 | 83% | 131     | 1.84 | 2.51 | 0.83 | 220     | 3.01 | 4.10  | 86% |
|       | 1080 | 72  | 47      | 0.45 | 0.61 | 78% | 81      | 0.78 | 1.06 | 78% | 151     | 1.40 | 1.91 | 0.81 | 238     | 2.18 | 2.96  | 82% |
|       | 800  | 53  | 56      | 0.26 | 0.36 | 74% | 106     | 0.49 | 0.67 | 75% | 192     | 0.88 | 1.20 | 0.76 | 290     | 1.31 | 1.78  | 77% |
| 20    | 3360 | 168 | 31      | 0.67 | 0.91 | 80% | 53      | 1.13 | 1.54 | 83% | 97      | 1.98 | 2.69 | 0.87 | 167     | 3.43 | 4.66  | 86% |
|       | 1680 | 84  | 40      | 0.46 | 0.62 | 77% | 71      | 0.77 | 1.04 | 81% | 128     | 1.38 | 1.88 | 0.82 | 223     | 2.38 | 3.23  | 83% |
|       | 1080 | 54  | 44      | 0.33 | 0.45 | 75% | 76      | 0.56 | 0.77 | 76% | 141     | 1.02 | 1.38 | 0.78 | 238     | 1.68 | 2.29  | 80% |
|       | 800  | 40  | 53      | 0.20 | 0.27 | 70% | 105     | 0.39 | 0.53 | 71% | 177     | 0.59 | 0.80 | 0.79 | 290     | 1.02 | 1.39  | 74% |
| 25    | 3360 | 134 | 29      | 0.51 | 0.70 | 79% | 50      | 0.88 | 1.19 | 81% | 87      | 1.48 | 2.01 | 0.83 | 152     | 2.57 | 3.50  | 83% |
|       | 1680 | 67  | 36      | 0.34 | 0.46 | 75% | 67      | 0.62 | 0.85 | 76% | 122     | 1.09 | 1.48 | 0.79 | 203     | 1.78 | 2.42  | 80% |
|       | 1080 | 43  | 43      | 0.26 | 0.36 | 74% | 72      | 0.44 | 0.60 | 73% | 130     | 0.78 | 1.06 | 0.75 | 223     | 1.30 | 1.77  | 77% |
|       | 800  | 32  | 51      | 0.16 | 0.21 | 68% | 86      | 0.27 | 0.36 | 68% | 165     | 0.44 | 0.60 | 0.79 | 265     | 0.78 | 1.06  | 71% |
| 30    | 3360 | 112 | 34      | 0.53 | 0.73 | 75% | 59      | 0.91 | 1.23 | 76% | 109     | 1.61 | 2.19 | 0.79 | 174     | 2.52 | 3.43  | 81% |
|       | 1680 | 56  | 43      | 0.34 | 0.46 | 74% | 79      | 0.63 | 0.86 | 73% | 149     | 1.18 | 1.60 | 0.74 | 233     | 1.78 | 2.42  | 77% |
|       | 1080 | 36  | 48      | 0.27 | 0.37 | 66% | 86      | 0.48 | 0.65 | 70% | 167     | 0.90 | 1.22 | 0.70 | 252     | 1.29 | 1.75  | 74% |
|       | 800  | 27  | 61      | 0.16 | 0.22 | 65% | 95      | 0.26 | 0.36 | 63% | 199     | 0.54 | 0.73 | 0.65 | 300     | 0.79 | 1.08  | 66% |
| 40    | 3360 | 84  | 33      | 0.41 | 0.56 | 71% | 58      | 0.69 | 0.94 | 73% | 105     | 1.22 | 1.66 | 0.76 | 176     | 1.98 | 2.69  | 78% |
|       | 1680 | 42  | 43      | 0.28 | 0.38 | 67% | 74      | 0.47 | 0.63 | 70% | 136     | 0.84 | 1.14 | 0.71 | 235     | 1.43 | 1.95  | 72% |
|       | 1080 | 27  | 45      | 0.19 | 0.26 | 65% | 82      | 0.37 | 0.50 | 63% | 153     | 0.65 | 0.88 | 0.67 | 256     | 1.06 | 1.45  | 68% |
|       | 800  | 20  | 54      | 0.12 | 0.17 | 56% | 98      | 0.22 | 0.30 | 58% | 185     | 0.38 | 0.52 | 0.63 | 300     | 0.64 | 0.87  | 61% |
| 50    | 3360 | 67  | 32      | 0.33 | 0.45 | 67% | 57      | 0.58 | 0.78 | 69% | 104     | 1.02 | 1.38 | 0.72 | 166     | 1.56 | 2.12  | 75% |
|       | 1680 | 34  | 41      | 0.23 | 0.32 | 62% | 73      | 0.40 | 0.55 | 64% | 135     | 0.71 | 0.97 | 0.67 | 215     | 1.09 | 1.49  | 69% |
|       | 1080 | 22  | 43      | 0.17 | 0.23 | 58% | 81      | 0.31 | 0.42 | 60% | 148     | 0.54 | 0.73 | 0.63 | 234     | 0.82 | 1.12  | 64% |
|       | 800  | 16  | 51      | 0.10 | 0.14 | 52% | 92      | 0.18 | 0.25 | 53% | 173     | 0.31 | 0.42 | 0.59 | 270     | 0.49 | 0.67  | 57% |
| 60    | 3360 | 56  | 27      | 0.26 | 0.36 | 60% | 51      | 0.44 | 0.60 | 68% | 100     | 0.85 | 1.16 | 0.69 | 159     | 1.31 | 1.78  | 72% |
|       | 1680 | 28  | 39      | 0.19 | 0.26 | 59% | 68      | 0.33 | 0.45 | 60% | 130     | 0.61 | 0.83 | 0.63 | 206     | 0.93 | 1.26  | 65% |
|       | 1080 | 18  | 39      | 0.14 | 0.18 | 54% | 74      | 0.25 | 0.34 | 56% | 141     | 0.45 | 0.61 | 0.59 | 223     | 0.69 | 0.94  | 61% |
|       | 800  | 13  | 49      | 0.09 | 0.12 | 48% | 84      | 0.15 | 0.20 | 49% | 161     | 0.26 | 0.35 | 0.55 | 256     | 0.41 | 0.56  | 54% |
| 70    | 3360 | 48  | 25      | 0.22 | 0.30 | 57% | 49      | 0.39 | 0.53 | 63% | 92      | 0.72 | 0.98 | 0.64 | 147     | 1.11 | 1.51  | 67% |
|       | 1680 | 24  | 33      | 0.16 | 0.22 | 50% | 62      | 0.29 | 0.39 | 55% | 120     | 0.52 | 0.70 | 0.58 | 193     | 0.78 | 1.06  | 62% |
|       | 1080 | 15  | 35      | 0.12 | 0.16 | 47% | 67      | 0.22 | 0.29 | 50% | 133     | 0.40 | 0.54 | 0.54 | 213     | 0.61 | 0.83  | 56% |
|       | 800  | 11  | 42      | 0.07 | 0.10 | 42% | 78      | 0.13 | 0.17 | 46% | 139     | 0.21 | 0.29 | 0.49 | 239     | 0.35 | 0.48  | 51% |
| 80    | 3360 | 42  | 26      | 0.20 | 0.27 | 58% | 47      | 0.34 | 0.46 | 61% | 87      | 0.60 | 0.82 | 0.64 | 138     | 0.92 | 1.25  | 66% |
|       | 1680 | 21  | 33      | 0.13 | 0.18 | 55% | 62      | 0.25 | 0.34 | 54% | 115     | 0.45 | 0.61 | 0.57 | 179     | 0.66 | 0.89  | 60% |
|       | 1080 | 14  | 36      | 0.11 | 0.15 | 47% | 67      | 0.19 | 0.26 | 49% | 124     | 0.34 | 0.46 | 0.52 | 192     | 0.49 | 0.67  | 55% |
|       | 800  | 10  | 43      | 0.07 | 0.09 | 42% | 75      | 0.11 | 0.15 | 45% | 140     | 0.19 | 0.26 | 0.48 | 220     | 0.30 | 0.40  | 49% |
| 100   | 3360 | 34  | 30      | 0.20 | 0.27 | 53% | 41      | 0.26 | 0.35 | 56% | 80      | 0.48 | 0.65 | 0.59 | 128     | 0.74 | 1.00  | 61% |
|       | 1680 | 17  | 39      | 0.14 | 0.20 | 49% | 51      | 0.18 | 0.25 | 50% | 133     | 0.45 | 0.61 | 0.52 | 167     | 0.52 | 0.71  | 56% |
|       | 1080 | 11  | 39      | 0.10 | 0.14 | 43% | 57      | 0.15 | 0.20 | 44% | 119     | 0.29 | 0.39 | 0.47 | 165     | 0.37 | 0.50  | 51% |
|       | 800  | 8   | 37      | 0.05 | 0.07 | 38% | 66      | 0.09 | 0.12 | 39% | 138     | 0.17 | 0.23 | 0.43 | 211     | 0.24 | 0.34  | 45% |

n1 = Input Speed  
n2 = Output Speed

M2 = Output Torque (Nm)  
kW = Input kW

HP = Input HP  
RD = Dynamic Efficiency

Use factor 8.85 to convert  
Nm to in lbs.

## Ratings Table (Sizes 90-110) & Mounting Positions

1.0 Service Factor

| Ratio | n1   | n2  | U-MU-90 |       |       |     | U-MU-110 |       |       |     |
|-------|------|-----|---------|-------|-------|-----|----------|-------|-------|-----|
|       |      |     | M2      | kW    | HP    | RD  | M2       | kW    | HP    | RD  |
| 5     | 3360 | 672 | -       | -     | -     | -   | -        | -     | -     | -   |
|       | 1680 | 336 | -       | -     | -     | -   | -        | -     | -     | -   |
|       | 1080 | 216 | -       | -     | -     | -   | -        | -     | -     | -   |
|       | 800  | 160 | -       | -     | -     | -   | -        | -     | -     | -   |
| 7.5   | 3360 | 448 | 240     | 12.28 | 16.69 | 92% | 372      | 19.14 | 26.02 | 91% |
|       | 1680 | 224 | 344     | 8.89  | 12.08 | 91% | 536      | 13.90 | 18.89 | 90% |
|       | 1080 | 144 | 390     | 6.55  | 8.91  | 90% | 599      | 10.15 | 13.80 | 89% |
|       | 800  | 107 | 470     | 3.87  | 5.26  | 85% | 727      | 5.90  | 8.03  | 86% |
| 10    | 3360 | 336 | 243     | 9.42  | 12.80 | 91% | 401      | 15.54 | 21.12 | 91% |
|       | 1680 | 168 | 343     | 6.76  | 9.19  | 89% | 569      | 11.24 | 15.27 | 89% |
|       | 1080 | 108 | 385     | 4.96  | 6.74  | 88% | 640      | 8.20  | 11.15 | 88% |
|       | 800  | 80  | 456     | 2.91  | 3.96  | 82% | 759      | 4.72  | 6.42  | 84% |
| 15    | 3360 | 224 | 248     | 6.74  | 9.17  | 86% | 435      | 11.63 | 15.80 | 88% |
|       | 1680 | 112 | 348     | 4.72  | 6.42  | 86% | 605      | 8.21  | 11.17 | 86% |
|       | 1080 | 72  | 399     | 3.57  | 4.86  | 84% | 669      | 5.91  | 8.03  | 85% |
|       | 800  | 53  | 490     | 2.19  | 2.98  | 78% | 794      | 3.45  | 4.69  | 80% |
| 20    | 3360 | 168 | 297     | 6.10  | 8.30  | 86% | 489      | 9.90  | 13.46 | 87% |
|       | 1680 | 84  | 397     | 4.12  | 5.61  | 85% | 662      | 6.84  | 9.29  | 85% |
|       | 1080 | 54  | 428     | 2.97  | 4.04  | 81% | 731      | 4.96  | 6.75  | 83% |
|       | 800  | 40  | 520     | 1.76  | 2.40  | 77% | 863      | 2.91  | 3.96  | 78% |
| 25    | 3360 | 134 | 259     | 4.28  | 5.81  | 85% | 436      | 7.07  | 9.61  | 87% |
|       | 1680 | 67  | 347     | 2.96  | 4.02  | 83% | 583      | 4.87  | 6.62  | 84% |
|       | 1080 | 43  | 336     | 1.92  | 2.61  | 79% | 646      | 3.59  | 4.89  | 81% |
|       | 800  | 32  | 451     | 1.28  | 1.74  | 74% | 761      | 2.12  | 2.89  | 75% |
| 30    | 3360 | 112 | 338     | 4.83  | 6.65  | 82% | 491      | 6.92  | 9.40  | 83% |
|       | 1680 | 56  | 453     | 3.38  | 4.59  | 79% | 653      | 4.83  | 6.57  | 80% |
|       | 1080 | 36  | 494     | 2.47  | 3.36  | 75% | 732      | 3.62  | 4.92  | 76% |
|       | 800  | 27  | 588     | 1.45  | 1.97  | 71% | 865      | 2.14  | 2.91  | 71% |
| 40    | 3360 | 84  | 314     | 3.53  | 4.80  | 78% | 510      | 5.46  | 7.42  | 82% |
|       | 1680 | 42  | 425     | 2.49  | 3.38  | 75% | 687      | 3.87  | 5.26  | 78% |
|       | 1080 | 27  | 466     | 1.85  | 2.51  | 71% | 759      | 2.89  | 3.93  | 74% |
|       | 800  | 20  | 542     | 1.08  | 1.47  | 66% | 885      | 1.75  | 2.38  | 66% |
| 50    | 3360 | 67  | 275     | 2.54  | 3.45  | 76% | 587      | 5.24  | 7.12  | 79% |
|       | 1680 | 34  | 363     | 1.76  | 2.39  | 73% | 611      | 2.86  | 3.89  | 75% |
|       | 1080 | 22  | 404     | 1.34  | 1.82  | 68% | 660      | 2.10  | 2.86  | 71% |
|       | 800  | 16  | 458     | 0.79  | 1.07  | 61% | 771      | 1.29  | 1.76  | 62% |
| 60    | 3360 | 56  | 262     | 2.13  | 2.90  | 72% | 440      | 3.33  | 4.53  | 77% |
|       | 1680 | 28  | 341     | 1.45  | 1.97  | 69% | 575      | 2.34  | 3.18  | 72% |
|       | 1080 | 18  | 375     | 1.10  | 1.50  | 64% | 630      | 1.74  | 2.36  | 68% |
|       | 800  | 13  | 427     | 0.65  | 0.89  | 57% | 712      | 1.05  | 1.43  | 59% |
| 70    | 3360 | 48  | 248     | 1.80  | 2.44  | 70% | 421      | 2.95  | 4.01  | 72% |
|       | 1680 | 24  | 324     | 1.27  | 1.73  | 64% | 551      | 1.98  | 2.69  | 70% |
|       | 1080 | 15  | 351     | 0.96  | 1.30  | 59% | 598      | 1.53  | 2.07  | 63% |
|       | 800  | 11  | 402     | 0.56  | 0.76  | 54% | 684      | 0.91  | 1.24  | 56% |
| 80    | 3360 | 42  | 229     | 1.45  | 1.97  | 69% | 398      | 2.40  | 3.26  | 73% |
|       | 1680 | 21  | 297     | 1.03  | 1.40  | 63% | 513      | 1.69  | 2.29  | 67% |
|       | 1080 | 14  | 323     | 0.77  | 1.05  | 59% | 556      | 1.24  | 1.69  | 63% |
|       | 800  | 10  | 367     | 0.48  | 0.65  | 50% | 641      | 0.79  | 1.07  | 53% |
| 100   | 3360 | 34  | 192     | 1.04  | 1.41  | 65% | 356      | 1.82  | 2.47  | 69% |
|       | 1680 | 17  | 269     | 0.79  | 1.08  | 60% | 465      | 1.29  | 1.76  | 63% |
|       | 1080 | 11  | 290     | 0.60  | 0.82  | 55% | 601      | 1.17  | 1.59  | 58% |
|       | 800  | 8   | 355     | 0.41  | 0.56  | 45% | 573      | 0.62  | 0.84  | 49% |

n1 = Input Speed  
n2 = Output Speed

M2 = Output Torque (Nm)  
kW = Input kW

HP = Input HP  
RD = Dynamic Efficiency

Use factor 8.85 to convert Nm to in lbs.

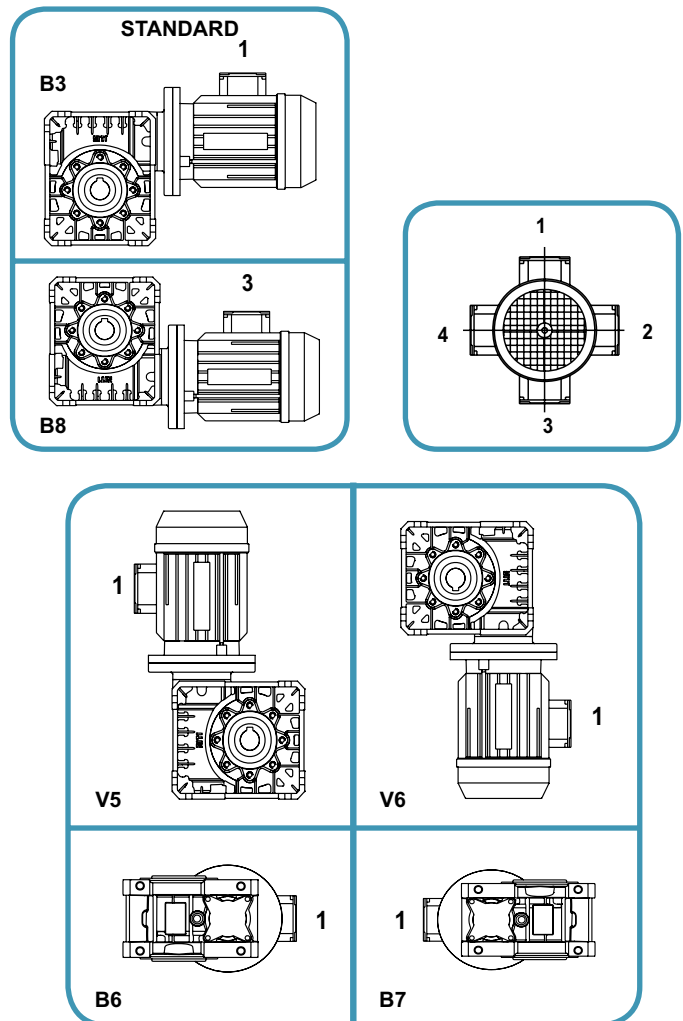


## MOUNTING POSITIONS

Always recognize the required mounting position for the gearbox. Certain orientations require special lubricants and/or bearings to achieve the normal service life of the gearbox.

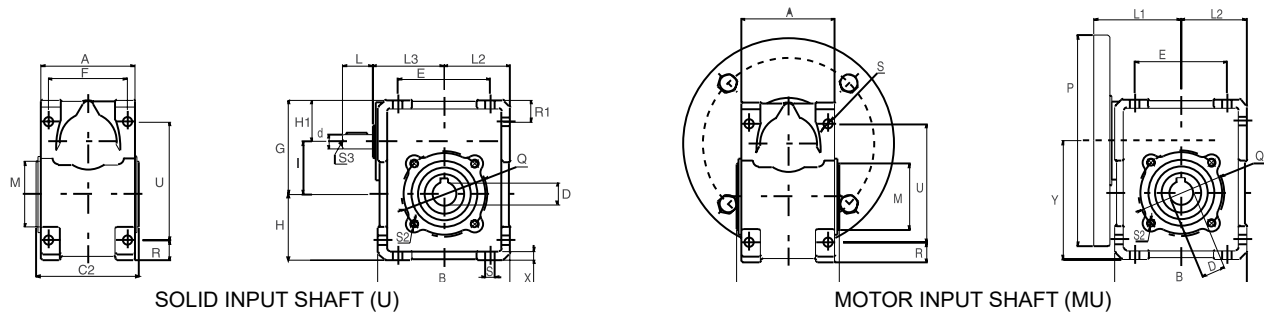
Unless specified, the gearbox will be shipped in a B3 position.

Note: Sizes 40 and 50 are suitable to be mounted in all positions.



## Dimensions

### BASE MOUNT VERSION

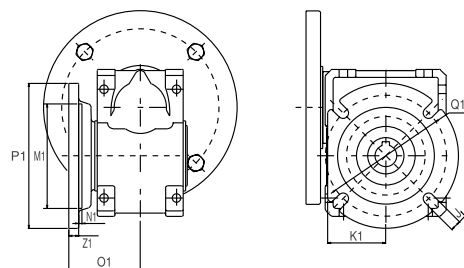


| Size | I   | DH7    | t  | t1   | d J6 | S3  | L  | L3    | L2    | E   | F   | U   | A   | B     | Y     | H     | H1   | G     | C2  | R    | M g6 | Q   | S  | S2  | X   | R1   | P  | L1 |
|------|-----|--------|----|------|------|-----|----|-------|-------|-----|-----|-----|-----|-------|-------|-------|------|-------|-----|------|------|-----|----|-----|-----|------|----|----|
| 40   | 40  | 18(19) | 6  | 20.8 | 11   | M4  | 23 | 54    | 50    | 70  | 60  | 90  | 71  | 100   | 90    | 50    | 31.5 | 71.5  | 78  | 15   | 50   | 65  | 7  | M6  | 6.5 | 16.5 | ** | ** |
| 50   | 50  | 25(24) | 8  | 28.3 | 14   | M5  | 30 | 64    | 60    | 80  | 70  | 104 | 85  | 120   | 110   | 60    | 34   | 84    | 92  | 20   | 60   | 75  | 9  | M6  | 7   | 20   | ** | ** |
| 63   | 63  | 25(28) | 8  | 28.3 | 19   | M6  | 40 | 76    | 72    | 100 | 85  | 130 | 102 | 144   | 135   | 72    | 39   | 102   | 112 | 22   | 70   | 85  | 9  | M8  | 7   | 22   | ** | ** |
| 75   | 75  | 28(35) | 8  | 31.3 | 24   | M8  | 50 | 90    | 86    | 120 | 90  | 153 | 112 | 172   | 161   | 86    | 44   | 119   | 120 | 26   | 80   | 100 | 11 | M8  | 10  | 26   | ** | ** |
| 90   | 90  | 35(38) | 10 | 38.3 | 24   | M8  | 50 | 107   | 103   | 140 | 100 | 172 | 130 | 206   | 193   | 103   | 45   | 135   | 140 | 33   | 110  | 130 | 13 | M10 | 11  | 33   | ** | ** |
| 110  | 110 | 42     | 12 | 45.3 | 28   | M10 | 60 | 131.5 | 127.5 | 170 | 115 | 210 | 144 | 252.5 | 237.5 | 127.5 | 57.5 | 167.5 | 155 | 42.5 | 130  | 165 | 14 | M12 | 14  | 42.5 | ** | ** |

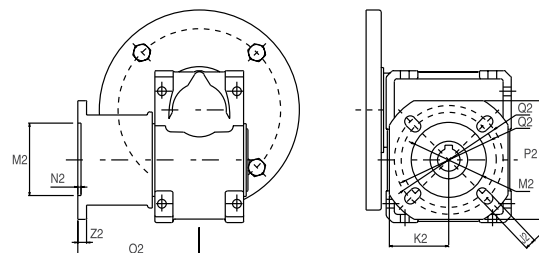
( ) Optional output bore size

\*\* Inquire for P & L1 dimensions

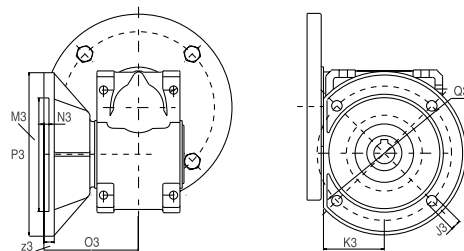
### MU... FBR VERSION



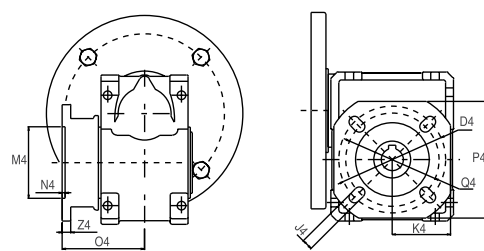
### MU... FBML VERSION



### MU... F VERSION



### MU... FBM VERSION



| Size | FBR OUTPUT FLANGE |      |     |    |    |    |       |    | FBML OUTPUT FLANGE |      |     |      |    |    |       |    | F OUTPUT FLANGE |      |     |    |    |    |      |      | FBM OUTPUT FLANGE |      |     |      |    |    |      |    |
|------|-------------------|------|-----|----|----|----|-------|----|--------------------|------|-----|------|----|----|-------|----|-----------------|------|-----|----|----|----|------|------|-------------------|------|-----|------|----|----|------|----|
|      | Q1                | M1H7 | P1  | K1 | N1 | Z1 | O1    | J1 | Q2*                | M2H7 | P2  | K2   | N2 | Z2 | O2    | J2 | Q3              | M3H7 | P3  | K3 | N3 | Z3 | O3   | J3   | Q4*               | M4H7 | P4  | K4   | N4 | Z4 | O4   | J4 |
| 40   | 100               | 80   | 120 | 48 | 3  | 8  | 59    | 9  | 76-87              | 60   | 95  | 47.5 | 4  | 7  | 97    | 9  | 115             | 95   | 140 | 52 | 4  | 9  | 81   | 9    | 76-87             | 60   | 95  | 47.5 | 4  | 7  | 67   | 9  |
| 50   | 115               | 95   | 140 | 58 | 4  | 10 | 72    | 10 | 85-92              | 70   | 110 | 55   | 5  | 10 | 120   | 11 | 130             | 110  | 160 | 61 | 4  | 10 | 89   | 10.5 | 85-92             | 70   | 110 | 55   | 5  | 10 | 90   | 11 |
| 63   | 130               | 110  | 160 | 70 | 5  | 11 | 77.35 | 11 | 138-150            | 115  | 142 | 71   | 6  | 11 | 112   | 11 | 165             | 130  | 200 | 74 | 4  | 12 | 97.3 | 11   | 138-150           | 115  | 142 | 71   | 6  | 11 | 82   | 11 |
| 75   | -                 | -    | -   | -  | -  | -  | -     | -  | 165-188            | 130  | 200 | 85   | 5  | 12 | 111.3 | 14 | -               | -    | -   | -  | -  | -  | -    | -    | 130-140           | 110  | 160 | 80   | 5  | 12 | 84.8 | 11 |
| 90   | -                 | -    | -   | -  | -  | -  | -     | -  | -                  | -    | -   | -    | -  | -  | -     | -  | -               | -    | -   | -  | -  | -  | -    | -    | 175-210           | 152  | 200 | 100  | 6  | 13 | 111  | 14 |
| 110  | -                 | -    | -   | -  | -  | -  | -     | -  | -                  | -    | -   | -    | -  | -  | -     | -  | -               | -    | -   | -  | -  | -  | -    | -    | 230-280           | 170  | 260 | 130  | 6  | 15 | 131  | 14 |

## Pre-Stage Reducers and Bushings

### P (Pre-stage Reducers)

Available ratios: 3.1/1 & 4.1/1

| Size | Oil | Weight (lbs) | Price (\$) (B14) |
|------|-----|--------------|------------------|
| P 63 | **  | 3            | \$609.00         |
| P 71 | **  | 5            | \$696.00         |
| P 80 | **  | 11           | \$772.00         |
| P 90 | **  | 16           | \$890.00         |

\*\* Oil included only when supplied with motor, at extra cost.

### High Modularity

Helical worm gearboxes suitable for modular assembly of flanges, feet and torque arms.

### High Versatility

It is possible to supply a separate kit for easy assembly on a standard gearbox.

### High Reliability

Housing built in pressure die casting aluminum.

"ZI" teeth profile on worm and wormwheels for silent operation without vibration.



### P + MU

Max input power 3.4 kW

Max torque 1053Nm

Ratios up to 404/1

| P + MU          | Max Torque Nm |
|-----------------|---------------|
| P63 - MU40      | 78            |
| P63 - MU50      | 130           |
| P63/P71 - MU63  | 250           |
| P71 - MU75      | 341           |
| P71/P80 - MU90  | 639           |
| P80/P90 - MU110 | 1053          |

### P + MI

Max input power 7.5 kW

Max torque 2500 Nm

Ratios up to 404/1

| P + MI           | Max Torque Nm |
|------------------|---------------|
| P63 - MI40       | 78            |
| P63 - MI50       | 130           |
| P63/P71 - MI60   | 236           |
| P63/P71 - MI70   | 286           |
| P71/P80 - MI80   | 520           |
| P80 - MI90       | 639           |
| P80/P90 - MI110  | 1053          |
| P90/P110 - MI130 | 1728          |
| P110 - MI150     | 2511          |

### Input Shaft Bushings

| Steel Bushings | Price (\$) |
|----------------|------------|
| 38mm to 28mm   | \$132.00   |
| 28mm to 24mm   | \$127.00   |
| 24mm to 19mm   | \$108.00   |
| 19mm to 14mm   | \$87.00    |
| 14mm to 11mm   | \$76.00    |
| 11mm to 9mm    | \$34.00    |



## (M)BH - Bevel Helical Gearboxes



### Product Information & Pricing

- Maximum Input Power of 337 kW
- Reduction Ratios from 10:1 to 226:1
- Universal Mounting Options
- Hollow, Single or Double Output Shafts



| Size   | Input Flange Size | Weight (lbs) | *MBH with B5 Input Price \$ | *BH Price \$ | ADDITIONAL FEATURES & ACCESSORIES (\$) |            |            |                     |                               |            |
|--------|-------------------|--------------|-----------------------------|--------------|----------------------------------------|------------|------------|---------------------|-------------------------------|------------|
|        |                   |              |                             |              | Output Flange                          | Torque Arm | Oil        | Double Output Shaft | OP Shaft Taper Roller Bearing | Backstop   |
| MBH56  | 63-71-80-90       | 36           | \$2,329.00                  | \$2,376.00   | \$211.00                               | \$150.00   | \$104.00   | N/A                 | \$158.00                      | N/A        |
| MBH63  | 71-80-90          | 66           | \$2,948.00                  | \$2,948.00   | \$298.00                               | \$164.00   | \$176.00   | \$261.00            | \$225.00                      | N/A        |
| MBH63  | 100-112           |              | \$3,207.00                  |              |                                        |            |            |                     |                               |            |
| MBH80  | 71-80-90          | 88           | \$4,706.00                  | \$4,669.00   | \$343.00                               | \$269.00   | \$311.00   | \$300.00            | \$400.00                      | N/A        |
| MBH80  | 100-112           |              | \$4,936.00                  |              |                                        |            |            |                     |                               |            |
| MBH80  | 132               |              | \$4,936.00                  |              |                                        |            |            |                     |                               |            |
| MBH100 | 80-90             | 159          | \$6,254.00                  | \$6,122.00   | \$483.00                               | \$368.00   | \$506.00   | \$434.00            | \$516.00                      | \$734.00   |
| MBH100 | 100-112           |              | \$6,447.00                  |              |                                        |            |            |                     |                               |            |
| MBH100 | 132               |              | \$6,769.00                  |              |                                        |            |            |                     |                               |            |
| MBH125 | 80-90             | 214          | \$8,188.00                  | \$8,023.00   | \$753.00                               | \$534.00   | \$706.00   | \$502.00            | \$614.00                      | \$1,103.00 |
| MBH125 | 100-112           |              | \$8,350.00                  |              |                                        |            |            |                     |                               |            |
| MBH125 | 132               |              | \$8,672.00                  |              |                                        |            |            |                     |                               |            |
| MBH140 | 100-112           | 452          | \$12,766.00                 | \$12,376.00  | \$903.00                               | \$1,271.00 | \$1,129.00 | \$568.00            | N/A                           | \$1,203.00 |
| MBH140 | 132               |              | \$14,215.00                 |              |                                        |            |            |                     |                               |            |
| MBH160 | 100-112           | 573          | \$17,085.00                 | \$16,633.00  | \$1,025.00                             | \$1,271.00 | \$1,804.00 | \$602.00            | N/A                           | \$1,571.00 |
| MBH160 | 132               |              | \$18,373.00                 |              |                                        |            |            |                     |                               |            |

\* MBH Pricing includes one of the following:

1) Hollow Output Bore 2) Hollow Output Bore with Pre-arranged Tapered Lock Device 3) Single Solid Shaft

## MKF - Motovariator (Speed Variator) Gearboxes

- (MK - MKF : K - KF) • Mechanical Speed Variator
- 228 to 1,200 RPM Range on 4 Pole, 60 Hz Motors • Maximum Input Power of 11 kW

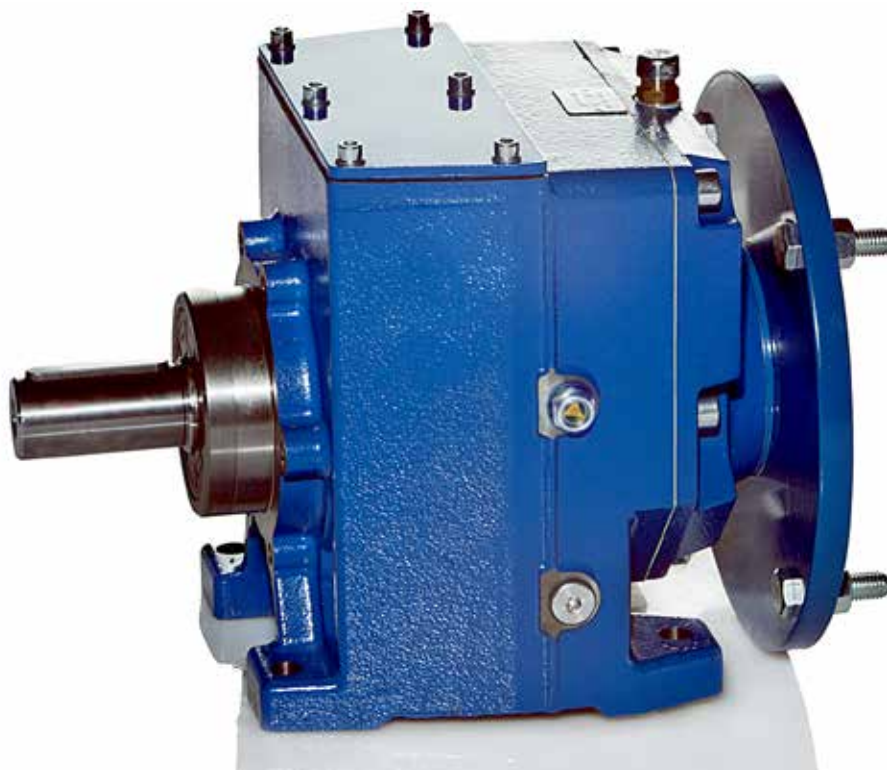
| Size   | Weight (lbs) | PAM Flange MK Price \$ | Male Input "K" Shaft Price \$ | Zero Speed Option Price \$ |
|--------|--------------|------------------------|-------------------------------|----------------------------|
| MK2    | 20           | \$1,435.00             | \$1,576.00                    | N/A                        |
| MKF2   | 20           | \$1,499.00             | \$1,625.00                    | N/A                        |
| MK5    | 40           | \$1,780.00             | \$2,031.00                    | \$1,387.00                 |
| MKF5   | 40           | \$1,885.00             | \$2,092.00                    | \$1,387.00                 |
| MK10   | 66           | \$2,275.00             | \$2,589.00                    | \$1,583.00                 |
| MKF10  | 66           | \$2,328.00             | \$2,659.00                    | \$1,583.00                 |
| MK20   | 85           | \$3,228.00             | \$3,575.00                    | \$2,132.00                 |
| MKF20  | 85           | \$3,309.00             | \$3,018.00                    | \$1,762.00                 |
| MK30   | 120          | \$4,737.00             | \$5,207.00                    | \$2,823.00                 |
| MKF30  | 120          | \$4,905.00             | \$5,336.00                    | \$2,823.00                 |
| MK50   | 225          | \$5,178.00             | \$5,763.00                    | \$2,823.00                 |
| MKF50  | 225          | \$5,316.00             | \$5,790.00                    | \$2,823.00                 |
| MK100  | 355          | \$8,236.00             | \$9,318.00                    | \$5,622.00                 |
| MKF100 | 355          | \$8,475.00             | \$9,522.00                    | \$5,622.00                 |



Contact a Lafert NA Sales Representative for Bevel Helical and Motovariator Dimensional Drawings.

Product Information & Pricing

Performance Rating Tables: Pages 54 & 55  
Dimensions: Page 56



**Performance** - Up to 336 kW, 12,000 Nm output torque, 466:1 ratio.

**Reliability** - Gears are case-hardened, quenched and stress relieved.

**Versatility** - 10 sizes with (3) input versions, multiple mounting positions.

2 Stages of Reduction

| Size       | Oil | Weight<br>(lbs) | PAM FLANGE            |                        | MALE<br>INPUT SHAFT | ADD \$     |
|------------|-----|-----------------|-----------------------|------------------------|---------------------|------------|
|            |     |                 | MNHL.../2<br>Price \$ | MNHLF.../2<br>Price \$ |                     |            |
| MNHL 16/2  | *   | 20              | \$1,347.00            | \$1,453.00             | \$1,226.00          | \$107.00   |
| MNHL 20/2  | *   | 20              | \$1,347.00            | \$1,453.00             | \$1,226.00          | \$107.00   |
| MNHL 25/2  | *   | 30              | \$1,565.00            | \$1,802.00             | \$1,450.00          | \$237.00   |
| MNHL 30/2  | *   | 50              | \$1,873.00            | \$2,222.00             | \$1,621.00          | \$349.00   |
| MNHL 35/2  | **  | 62              | \$2,558.00            | \$2,907.00             | \$2,430.00          | \$349.00   |
| MNHL 40/2  | **  | 90              | \$3,732.00            | \$4,177.00             | \$3,324.00          | \$445.00   |
| MNHL 50/2  | **  | 120             | \$5,451.00            | \$5,977.00             | \$4,440.00          | \$526.00   |
| MNHL 60/2  | **  | 230             | \$8,505.00            | \$9,098.00             | \$7,539.00          | \$595.00   |
| MNHL 70/2  | **  | 345             | \$11,150.00           | \$11,745.00            | \$10,824.00         | \$595.00   |
| MNHL 90/2  | **  | 508             | \$13,663.00           | \$14,517.00            | \$15,565.00         | \$978.00   |
| MNHL 100/2 | **  | 882             | \$22,227.00           | \$23,512.00            | \$25,135.00         | \$1,285.00 |

3 Stages of Reduction

| Size       | Oil | Weight<br>(lbs) | PAM FLANGE            |                        | MALE<br>INPUT SHAFT | ADD \$     |
|------------|-----|-----------------|-----------------------|------------------------|---------------------|------------|
|            |     |                 | MNHL.../3<br>Price \$ | MNHLF.../3<br>Price \$ |                     |            |
| MNHL 25/3  | *   | 35              | \$2,016.00            | \$2,255.00             | \$1,828.00          | \$237.00   |
| MNHL 30/3  | *   | 55              | \$2,337.00            | \$2,684.00             | \$1,913.00          | \$349.00   |
| MNHL 35/3  | **  | 62              | \$3,022.00            | \$3,369.00             | \$2,723.00          | \$349.00   |
| MNHL 40/3  | **  | 95              | \$4,342.00            | \$4,788.00             | \$3,907.00          | \$445.00   |
| MNHL 50/3  | **  | 135             | \$6,186.00            | \$6,711.00             | \$5,607.00          | \$526.00   |
| MNHL 60/3  | **  | 240             | \$9,704.00            | \$10,298.00            | \$8,737.00          | \$595.00   |
| MNHL 70/3  | **  | 390             | \$12,430.00           | \$13,024.00            | \$12,178.00         | \$595.00   |
| MNHL 90/3  | **  | 508             | \$14,475.00           | \$15,455.00            | \$15,083.00         | \$978.00   |
| MNHL 100/3 | **  | 882             | \$25,204.00           | \$26,489.00            | \$26,256.00         | \$1,285.00 |

\* Prelubricated

\*\* Oil available on request at extra cost

## Ratings Table (Sizes 20-35)

### 1750 Input RPM - 1.0 Service Factor

| NHL 20 |      |    |      | NHL 25 |      |     |      | NHL 30 |      |     |      | NHL 35 |     |     |      |
|--------|------|----|------|--------|------|-----|------|--------|------|-----|------|--------|-----|-----|------|
| I      | n2   | M2 | kW   | I      | n2   | M2  | kW   | I      | n2   | M2  | kW   | I      | n2  | M2  | kW   |
| 4.32   | 405  | 41 | 1.75 | 1.9    | 921  | 26  | 2.86 | 2.25   | 778  | 71  | 5.76 | 5.12   | 342 | 238 | 8.44 |
| 5.13   | 341  | 41 | 1.55 | 2.77   | 632  | 37  | 2.43 | 3.08   | 568  | 97  | 5.73 | 5.97   | 293 | 261 | 7.92 |
| 6.1    | 287  | 43 | 1.3  | 3.75   | 467  | 50  | 2.43 | 3.63   | 482  | 112 | 5.61 | 7      | 250 | 261 | 6.76 |
| 7.25   | 240  | 47 | 1.18 | 4.34   | 403  | 103 | 4.28 | 4.72   | 371  | 134 | 5.16 | 8.26   | 212 | 308 | 6.76 |
| 8.75   | 200  | 47 | 0.98 | 5.25   | 333  | 112 | 3.85 | 5.43   | 322  | 177 | 5.43 | 9.4    | 186 | 309 | 5.96 |
| 10.67  | 164  | 52 | 0.89 | 6.35   | 275  | 121 | 3.45 | 6.34   | 276  | 195 | 5.58 | 10.77  | 162 | 340 | 5.72 |
| 12.27  | 143  | 52 | 0.77 | 7.37   | 237  | 130 | 3.21 | 7.43   | 236  | 237 | 5.79 | 12.44  | 141 | 340 | 4.96 |
| 14.25  | 123  | 57 | 0.72 | 8.58   | 204  | 135 | 2.85 | 8.76   | 200  | 270 | 5.58 | 14.54  | 120 | 343 | 4.28 |
| 16.76  | 104  | 57 | 0.62 | 10.07  | 174  | 135 | 2.43 | 9.97   | 176  | 307 | 5.58 | 17.23  | 102 | 405 | 4.26 |
| 20.04  | 87   | 60 | 0.54 | 11.92  | 147  | 135 | 2.06 | 11.43  | 153  | 306 | 4.86 | 19.5   | 90  | 403 | 3.75 |
| 24.1   | 72.6 | 61 | 0.46 | 14.31  | 122  | 135 | 1.71 | 13.21  | 132  | 306 | 4.2  | 22.3   | 79  | 406 | 3.3  |
| 27.43  | 64   | 65 | 0.43 | 16.32  | 107  | 135 | 1.5  | 15.43  | 113  | 309 | 3.63 | 25.85  | 68  | 404 | 2.84 |
| 31.24  | 56   | 65 | 0.37 | 18.8   | 93   | 135 | 1.3  | 18.29  | 96   | 306 | 3.04 | 30.49  | 57  | 403 | 2.4  |
| 37.94  | 46   | 66 | 0.31 | 21.94  | 80   | 136 | 1.12 | 20.69  | 84.6 | 306 | 2.68 | 36.42  | 48  | 404 | 2.01 |
| 43.17  | 41   | 65 | 0.27 | 26.05  | 67   | 135 | 0.94 | 23.66  | 74   | 307 | 2.35 | 40.95  | 43  | 403 | 1.79 |
| 49.14  | 36   | 65 | 0.24 | 31.65  | 55   | 135 | 0.77 | 27.43  | 64   | 308 | 2.03 | 45.95  | 38  | 403 | 1.59 |
|        |      |    |      | 35.29  | 50   | 149 | 0.76 | 32.35  | 54   | 308 | 1.73 | 54.56  | 32  | 443 | 1.5  |
|        |      |    |      | 44.22  | 40   | 148 | 0.61 | 38.65  | 45   | 307 | 1.44 | 65.17  | 27  | 448 | 1.27 |
|        |      |    |      | 49.12  | 36   | 149 | 0.55 | 43.43  | 40   | 305 | 1.28 | 78.44  | 22  | 447 | 1.05 |
|        |      |    |      | 52.1   | 34   | 149 | 0.53 | 48.76  | 36   | 305 | 1.13 | 95.49  | 18  | 455 | 0.88 |
|        |      |    |      | 59.93  | 29   | 149 | 0.46 | 57.9   | 30   | 325 | 1.04 | 109.9  | 16  | 459 | 0.77 |
|        |      |    |      | 69.61  | 25   | 148 | 0.39 | 69.16  | 25   | 327 | 0.87 | 127.6  | 14  | 467 | 0.67 |
|        |      |    |      | 81.87  | 21   | 148 | 0.41 | 83.24  | 21   | 326 | 0.72 | 150.1  | 12  | 461 | 0.57 |
|        |      |    |      | 97.9   | 18   | 148 | 0.28 | 101.3  | 17   | 324 | 0.59 | 179.4  | 10  | 465 | 0.48 |
|        |      |    |      | 117.7  | 15   | 148 | 0.23 | 116.6  | 15   | 327 | 0.52 | 215.8  | 8   | 464 | 0.4  |
|        |      |    |      | 134    | 13   | 149 | 0.21 | 135.4  | 13   | 323 | 0.44 | 245.5  | 7   | 466 | 0.35 |
|        |      |    |      | 152.6  | 11.5 | 149 | 0.18 | 159.2  | 11   | 326 | 0.38 | 279.6  | 5   | 465 | 0.31 |
|        |      |    |      | 185.3  | 9    | 149 | 0.15 | 190.4  | 9    | 325 | 0.32 | 339.7  | 5   | 465 | 0.25 |
|        |      |    |      | 210.9  | 8    | 149 | 0.13 | 229    | 8    | 325 | 0.26 | 386.5  | 5   | 465 | 0.22 |
|        |      |    |      | 240    | 7    | 149 | 0.11 | 260.6  | 7    | 324 | 0.23 | 439.9  | 4   | 473 | 0.2  |
|        |      |    |      |        |      |     |      | 296.8  | 6    | 326 | 0.2  |        |     |     |      |
|        |      |    |      |        |      |     |      | 360.5  | 5    | 328 | 0.17 |        |     |     |      |
|        |      |    |      |        |      |     |      | 410.2  | 4    | 326 | 0.15 |        |     |     |      |
|        |      |    |      |        |      |     |      | 466.9  | 4    | 325 | 0.13 |        |     |     |      |

n2 = Output Speed  
I = Ratio

M2 = Output Torque (Nm)  
kW = Input kW

Use factor 8.85 to convert Nm to in lbs.

Ratings Table (Sizes 40-70)

1750 Input RPM - 1.0 Service Factor

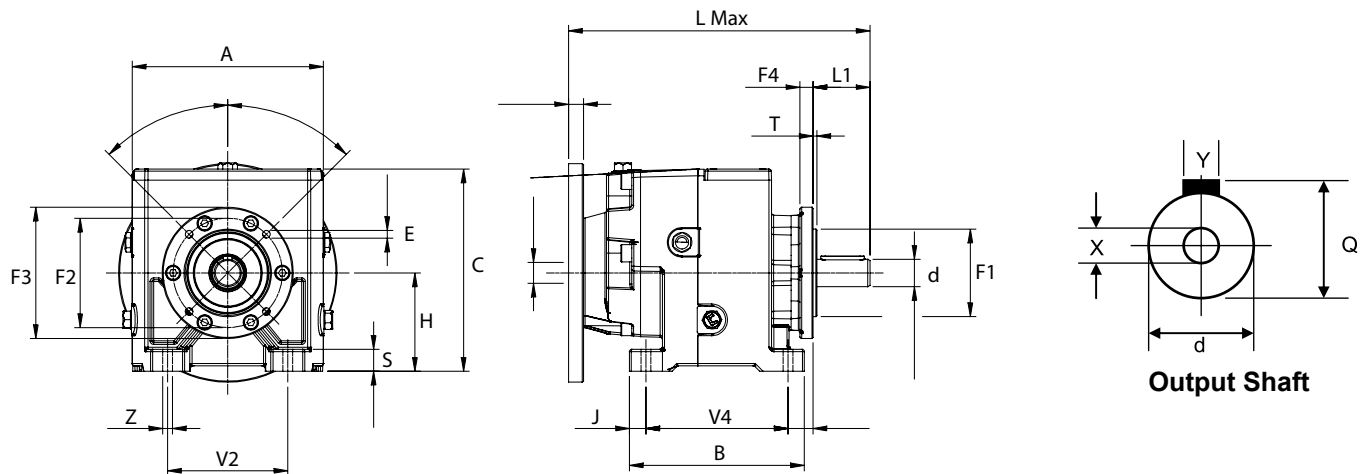
| NHL 40 |     |     |       | NHL 50 |     |      |       | NHL 60 |     |      |       | NHL 70 |     |      |       |
|--------|-----|-----|-------|--------|-----|------|-------|--------|-----|------|-------|--------|-----|------|-------|
| I      | n2  | M2  | kW    | I      | n2  | M2   | kW    | I      | n2  | M2   | kW    | I      | n2  | M2   | kW    |
| 2.27   | 771 | 128 | 10.24 | 3.07   | 570 | 283  | 16.73 | 3.76   | 465 | 694  | 33.48 | 5.52   | 317 | 1858 | 89.1  |
| 3.17   | 552 | 180 | 10.28 | 3.67   | 477 | 339  | 16.73 | 5.27   | 332 | 1161 | 39.96 | 6.53   | 268 | 1947 | 54    |
| 3.78   | 463 | 230 | 9.2   | 4.87   | 359 | 449  | 16.73 | 5.97   | 293 | 1102 | 33.48 | 7.42   | 236 | 2225 | 54    |
| 4.53   | 386 | 223 | 8.92  | 5.47   | 320 | 558  | 18.5  | 6.44   | 272 | 1209 | 34.04 | 8.86   | 198 | 2513 | 51.4  |
| 5.06   | 346 | 326 | 11.68 | 6.51   | 269 | 651  | 18.15 | 7.53   | 232 | 1352 | 32.56 | 10.2   | 172 | 2892 | 51.4  |
| 5.96   | 294 | 367 | 11.16 | 6.72   | 260 | 620  | 16.73 | 8.38   | 209 | 1487 | 32.19 | 11.25  | 156 | 3260 | 52.54 |
| 7.04   | 249 | 419 | 10.8  | 7.78   | 225 | 772  | 18    | 9.92   | 176 | 1740 | 31.82 | 13.14  | 133 | 3352 | 46.52 |
| 8.38   | 209 | 456 | 9.88  | 8.94   | 196 | 884  | 17.93 | 11.17  | 157 | 1949 | 31.64 | 14.67  | 119 | 3446 | 42.6  |
| 10.06  | 174 | 466 | 8.4   | 10.34  | 169 | 1022 | 17.93 | 13.51  | 130 | 1957 | 26.27 | 17.55  | 100 | 3542 | 36.6  |
| 11.45  | 153 | 513 | 8.12  | 12.07  | 845 | 1023 | 15.38 | 15.5   | 113 | 1945 | 22.76 | 20     | 88  | 3606 | 32.7  |
| 13.14  | 133 | 522 | 7.2   | 14.25  | 123 | 1026 | 13.05 | 17.99  | 97  | 1945 | 19.61 | 23.06  | 76  | 3699 | 29.1  |
| 15.22  | 115 | 520 | 6.2   | 16.04  | 109 | 1021 | 11.55 | 21.19  | 83  | 2138 | 18.3  | 27     | 64  | 3733 | 25.08 |
| 17.85  | 98  | 520 | 5.28  | 18.22  | 96  | 1025 | 10.2  | 25.46  | 69  | 2150 | 15.3  | 32.25  | 54  | 3717 | 20.9  |
| 21.3   | 82  | 522 | 4.44  | 20.9   | 84  | 1020 | 8.85  | 28.18  | 62  | 2136 | 13.75 | 35.59  | 49  | 3739 | 19.05 |
| 23.45  | 75  | 559 | 4.32  | 24.31  | 72  | 1105 | 8.25  | 31.44  | 56  | 2137 | 12.32 | 39.6   | 44  | 3756 | 17.2  |
| 29.05  | 60  | 558 | 3.48  | 28.76  | 61  | 1116 | 7.04  | 35.43  | 49  | 2139 | 10.96 | 44.5   | 39  | 3754 | 15.3  |
| 32.78  | 53  | 559 | 3.09  | 31.54  | 55  | 1114 | 6.4   | 40.74  | 43  | 2135 | 9.51  | 48.33  | 36  | 3694 | 14.08 |
| 37.96  | 46  | 562 | 2.68  | 38.77  | 45  | 1120 | 5.24  | 45.76  | 38  | 2136 | 8.47  | 57.77  | 30  | 3726 | 11.88 |
| 42.21  | 41  | 558 | 2.4   | 43.59  | 40  | 1116 | 4.64  | 53.3   | 33  | 2146 | 7.43  | 66.4   | 26  | 3727 | 10.34 |
| 47.4   | 37  | 558 | 2.1   | 49.93  | 35  | 1124 | 4.16  | 63.4   | 28  | 2138 | 6.21  | 76.81  | 23  | 3721 | 8.92  |
| 53.09  | 33  | 543 | 1.86  | 60.43  | 29  | 1122 | 3.42  | 76.1   | 23  | 2136 | 5.17  | 89.63  | 20  | 3722 | 7.65  |
| 56.28  | 31  | 559 | 1.83  | 70.83  | 25  | 1122 | 3.42  | 86.6   | 20  | 2144 | 4.56  | 105.8  | 17  | 3726 | 6.49  |
| 65.23  | 27  | 557 | 1.58  | 83.55  | 21  | 1117 | 2.46  | 99.4   | 18  | 2135 | 3.96  | 119.1  | 15  | 3734 | 5.78  |
| 75.97  | 23  | 557 | 1.35  | 95.1   | 18  | 1113 | 2.2   | 115.1  | 15  | 2137 | 3.42  | 135.3  | 13  | 3701 | 5.04  |
| 89.11  | 20  | 559 | 1.16  | 109    | 16  | 1119 | 1.89  | 135    | 13  | 2132 | 2.91  | 155.2  | 11  | 3708 | 4.4   |
| 105.5  | 17  | 555 | 0.97  | 125.9  | 14  | 1118 | 1.64  | 161    | 11  | 2154 | 2.46  | 180.5  | 10  | 3723 | 3.8   |
| 126.6  | 14  | 557 | 0.81  | 147.1  | 12  | 1115 | 1.4   | 177.3  | 10  | 2117 | 2.02  | 213.5  | 8   | 3721 | 3.21  |
| 144.4  | 12  | 558 | 0.71  | 174.4  | 10  | 1114 | 1.18  | 219.7  | 8   | 2125 | 1.78  | 234.2  | 7   | 3699 | 2.91  |
| 166.4  | 11  | 561 | 0.62  | 197.3  | 9   | 1109 | 1.04  | 247.9  | 7   | 2139 | 1.6   | 287.9  | 6   | 3713 | 2.38  |
| 194.2  | 9   | 557 | 0.53  | 225.6  | 7.8 | 1120 | 0.92  | 287    | 6   | 2140 | 1.38  | 323.7  | 5   | 3710 | 2.11  |
| 230.5  | 8   | 561 | 0.45  | 261.5  | 7   | 1118 | 0.79  | 319.2  | 5   | 2137 | 1.24  | 370.7  | 5   | 3719 | 1.85  |
| 280.1  | 6   | 558 | 0.367 | 308.5  | 6   | 1123 | 0.67  | 358.5  | 5   | 2134 | 1.1   |        |     |      |       |
| 312.3  | 6   | 559 | 0.33  | 368.5  | 5   | 1115 | 0.56  |        |     |      |       |        |     |      |       |
| 391.4  | 4   | 559 | 0.26  | 414.1  | 4   | 1118 | 0.5   |        |     |      |       |        |     |      |       |
| 434.7  | 4   | 559 | 0.24  | 465    | 4   | 1115 | 0.44  |        |     |      |       |        |     |      |       |

n2 = Output Speed  
I = Ratio

M2 = Output Torque (Nm)  
kW = Input kW

Use factor 8.85 to convert Nm to in lbs.

## Dimensions



| Size  | A     | B   | H   | L Max | S  | V2  | V4  | Z  | T   | L1  | C   | J    | Q    | X       | Y      | d   |
|-------|-------|-----|-----|-------|----|-----|-----|----|-----|-----|-----|------|------|---------|--------|-----|
| 20/2  | 140.5 | 90  | 75  | 208   | 13 | 110 | 50  | 9  | 1   | 40  | 129 | 30   | 22.5 | M5x12.5 | 6x6x30 | 20  |
| 25/2  | 175   | 160 | 90  | 282   | 20 | 110 | 130 | 9  | 3.5 | 50  | 185 | 15   | 28   | M8x19   | 8      | 25  |
| 25/3  | 175   | 160 | 90  | 282   | 20 | 110 | 130 | 9  | 3.5 | 50  | 185 | 15   | 28   | M8x19   | 8      | 25  |
| 30/2  | 200   | 195 | 115 | 318   | 20 | 135 | 165 | 14 | 3.5 | 60  | 241 | 17.5 | 33   | M8x19   | 8      | 30  |
| 30/3  | 200   | 195 | 115 | 318   | 20 | 135 | 165 | 14 | 3.5 | 60  | 241 | 17.5 | 33   | M8x19   | 8      | 30  |
| 35/2  | 200   | 195 | 115 | 342   | 20 | 135 | 165 | 14 | 3.5 | 70  | 241 | 17.5 | 38   | M10x22  | 10     | 35  |
| 35/3  | 200   | 195 | 115 | 342   | 20 | 135 | 165 | 14 | 3.5 | 70  | 241 | 17.5 | 38   | M10x22  | 10     | 35  |
| 40/2  | 220   | 245 | 140 | 425   | 30 | 170 | 205 | 18 | 4   | 80  | 240 | 20   | 43   | M10x22  | 12     | 40  |
| 40/3  | 220   | 245 | 140 | 425   | 30 | 170 | 205 | 18 | 4   | 80  | 240 | 20   | 43   | M10x22  | 12     | 40  |
| 50/2  | 261   | 310 | 180 | 500   | 45 | 215 | 260 | 18 | 4   | 100 | 315 | 25   | 53.3 | M12x28  | 14     | 50  |
| 50/3  | 261   | 310 | 180 | 500   | 45 | 215 | 260 | 18 | 4   | 100 | 315 | 25   | 53.3 | M12x28  | 14     | 50  |
| 60/2  | 310   | 364 | 225 | 551   | 55 | 250 | 310 | 22 | 5   | 120 | 380 | 27   | 64   | M16x36  | 18     | 60  |
| 60/3  | 310   | 364 | 225 | 551   | 55 | 250 | 310 | 22 | 5   | 120 | 380 | 27   | 64   | M16x36  | 18     | 60  |
| 70/2  | 350   | 440 | 250 | 658   | 65 | 290 | 370 | 26 | 5   | 140 | 413 | 35   | 74.5 | M16x36  | 20     | 70  |
| 70/3  | 350   | 440 | 250 | 658   | 65 | 290 | 370 | 26 | 5   | 140 | 413 | 35   | 74.5 | M16x36  | 20     | 70  |
| 90/2  | 390   | 490 | 315 | 936   | 75 | 340 | 410 | 26 | 5   | 170 | 490 | 40   | 95   | M20x42  | 25     | 90  |
| 90/3  | 390   | 490 | 315 | 936   | 75 | 340 | 410 | 26 | 5   | 170 | 490 | 40   | 95   | M20x42  | 25     | 90  |
| 100/2 | 455   | 590 | 345 | 1058  | 90 | 440 | 500 | 33 | 5   | 210 | 570 | 45   | 106  | M20x50  | 28     | 100 |
| 100/3 | 455   | 590 | 345 | 1058  | 90 | 440 | 500 | 33 | 5   | 210 | 570 | 45   | 106  | M20x50  | 28     | 100 |

## Output Flange Dimensions

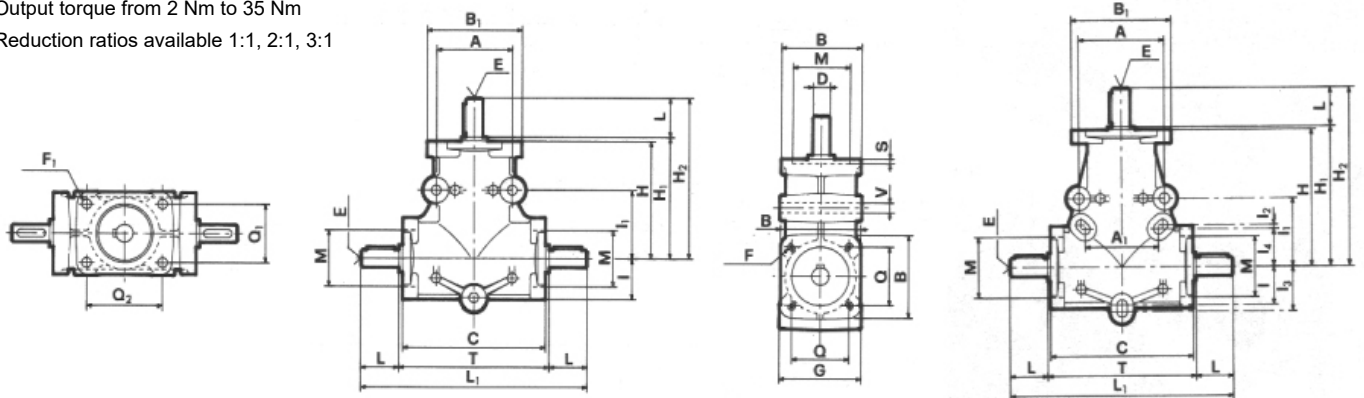
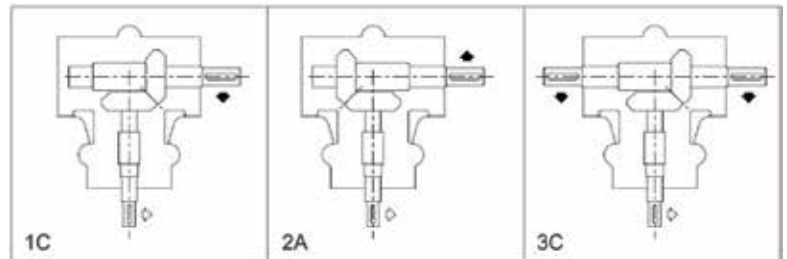
| Size    | 20 | 25  | 30   | 35   | 40   | 50  | 60  | 70  | 90  | 100 |
|---------|----|-----|------|------|------|-----|-----|-----|-----|-----|
| STYLE 1 | F1 | 80  | 80   | 110  | 110  | 180 | 230 | 250 | 300 | 450 |
|         | F2 | 100 | 100  | 130  | 130  | 215 | 265 | 300 | 350 | 500 |
|         | F3 | 120 | 120  | 160  | 160  | 250 | 300 | 350 | 400 | 550 |
|         | F4 | 7   | 12   | 10   | 10   | 13  | 13  | 18  | 22  | 25  |
|         | E  | 7   | 7    | 9    | 9    | 14  | 18  | 18  | 18  | 19  |
| STYLE 2 | F1 | 95  | 110  | 130  | 130  | 230 | 250 | 350 | 350 | -   |
|         | F2 | 115 | 130  | 165  | 165  | 265 | 300 | 400 | 400 | -   |
|         | F3 | 140 | 160  | 200  | 200  | 300 | 350 | 450 | 450 | -   |
|         | F4 | 7   | 12   | 10   | 10   | 14  | 13  | 18  | 22  | -   |
|         | E  | 9   | 9    | 11.5 | 11.5 | 14  | 18  | 18  | 18  | -   |
| STYLE 3 | F1 | 110 | 130  | 180  | 180  | -   | -   | -   | -   | -   |
|         | F2 | 130 | 165  | 215  | 215  | -   | -   | -   | -   | -   |
|         | F3 | 160 | 200  | 250  | 250  | -   | -   | -   | -   | -   |
|         | F4 | 7   | 12   | 10   | 10   | -   | -   | -   | -   | -   |
|         | E  | 9   | 11.5 | 14   | 14   | -   | -   | -   | -   | -   |

## Pricing & Dimensions

| Type | Execution | Ratios        | Weight (lbs) | Price \$   |
|------|-----------|---------------|--------------|------------|
| R9   | 1C / 2A   | 1:1, 2:1      | 4            | \$630.00   |
| R9   | 3C        | 1:1, 2:1      | 4            | \$655.00   |
| R14  | 1C / 2A   | 1:1, 2:1, 3:1 | 6            | \$696.00   |
| R14  | 3C        | 1:1, 2:1, 3:1 | 6            | \$728.00   |
| R19  | 1C / 2A   | 1:1, 2:1, 3:1 | 12           | \$1,342.00 |
| R19  | 3C        | 1:1, 2:1, 3:1 | 12           | \$1,366.00 |
| R24  | 1C / 2A   | 1:1, 2:1, 3:1 | 14           | \$1,342.00 |
| R24  | 3C        | 1:1, 2:1, 3:1 | 14           | \$1,370.00 |

- Maximum power of 7.9 kW
- Output torque from 2 Nm to 35 Nm
- Reduction ratios available 1:1, 2:1, 3:1

### Execution Options



| Size | A  | A <sub>1</sub> | C   | G  | H   | H <sub>1</sub> | H <sub>2</sub> | I  | I <sub>1</sub> | I <sub>2</sub> | I <sub>3</sub> | I <sub>4</sub> | L <sub>1</sub> | T   | V  | B  | B <sub>1</sub> | F   | F <sub>1</sub> | M <sub>H7</sub> | Q  | Q <sub>1</sub> | Q <sub>2</sub> | S   | D <sub>H7</sub> | E  | L  |
|------|----|----------------|-----|----|-----|----------------|----------------|----|----------------|----------------|----------------|----------------|----------------|-----|----|----|----------------|-----|----------------|-----------------|----|----------------|----------------|-----|-----------------|----|----|
| R 9  | 40 | -              | 75  | 43 | 60  | 61             | 81             | 20 | 35             | -              | -              | -              | 117            | 77  | 5  | 42 | 50             | M4  | 5              | 30              | 30 | 30             | 40             | 2.5 | 9               | M4 | 20 |
| R 14 | 60 | -              | 110 | 70 | 90  | 91             | 121            | 32 | 63             | -              | -              | -              | 172            | 112 | 9  | 64 | 64             | M8  | M8             | 47              | 46 | 46             | 46             | 4   | 14              | M5 | 30 |
| R 19 | 90 | 77.5           | 150 | 86 | 140 | 141            | 181            | 38 | 70             | 5              | 45             | 38             | 232            | 152 | 11 | 84 | 105            | M10 | 10.5           | 62              | 60 | 60             | 80             | 5   | 19              | M8 | 40 |
| R 24 | 90 | 77.5           | 150 | 86 | 140 | 141            | 191            | 38 | 70             | 5              | 45             | 38             | 252            | 152 | 11 | 84 | 105            | M10 | 10.5           | 62              | 60 | 60             | 80             | 5   | 24              | M8 | 50 |

## NRG - Planetary Gearboxes

### Overview



Base Mount

#### High Modularity

- Modular design with compact subgroups for easy ratio replacement (up to 4 reduction stages)

#### High Versatility

- 7 sizes with 4 input & 4 output configurations
- 2 Output support connections:
  - SM (Standard)
  - SMR (reinforced for High load)
- 3 Options of mounting positions:
  - Direct Couple
  - Foot Mount
  - Flange Mount



Output Flange

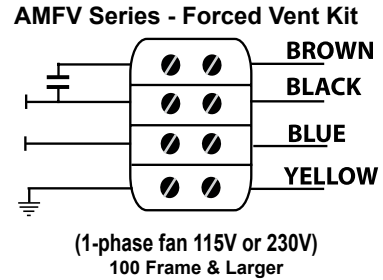
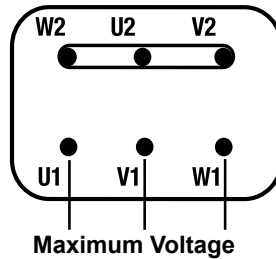
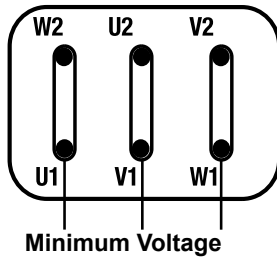
#### High Performances

- Maximum input power 45 kW
- Maximum torque of over 30,000 Nm
- Ratios up to 4,066:1

#### High Reliability

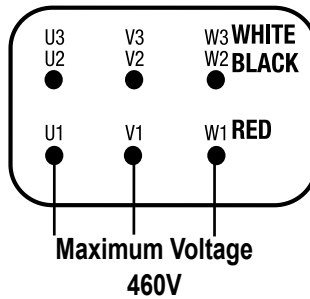
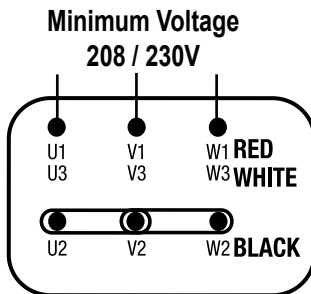
- Strengthened casing for heavy duty applications
- High resistant gears with oversized bearings
- Superior sealing for leak prevention

### 6-LEAD MOTOR CONNECTION $\Delta/Y$

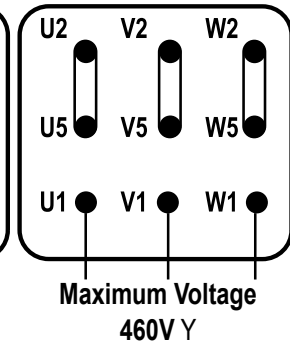
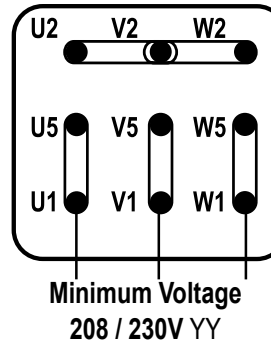


### 9-LEAD MOTOR CONNECTION YY/Y

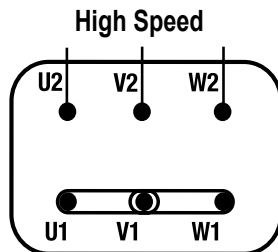
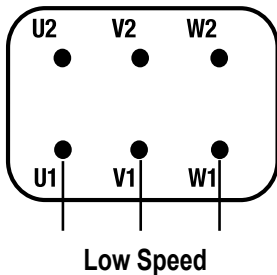
6 Post Block



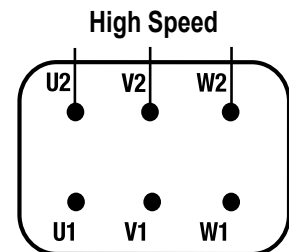
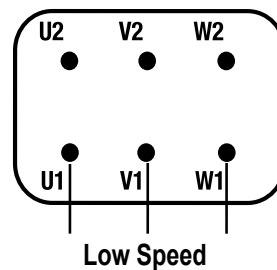
9 Post Block



### 2 SPEED (1 WINDING) - 2/4 & 4/8 POLES

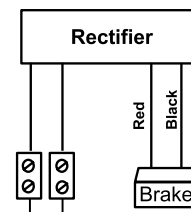
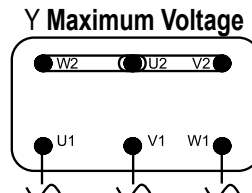
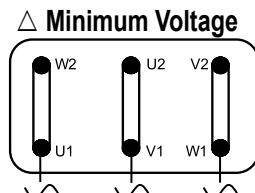
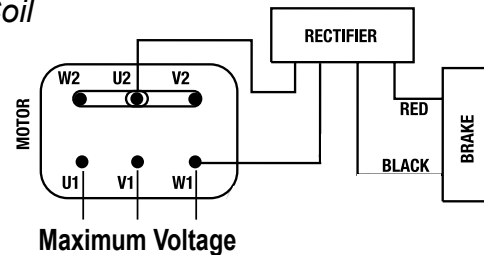
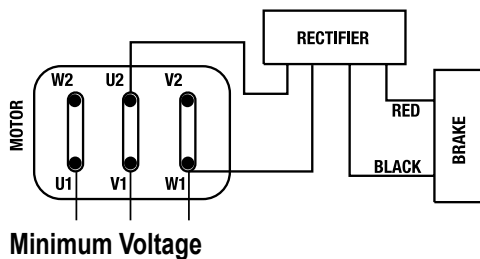


### 2 SPEED (2 WINDINGS) - 2/8, 4/6 & 6/8 POLES



### MS Type - Compact Brake Motor

*D.C. Brake Coil*



MS brake coils may be wired separately by removing the leads from the motor block and connecting to an alternate/separate power source. Alternate voltage coils are available. Always check to ensure incoming voltage matches the coil voltage.

## TERMS AND CONDITIONS OF SALE

**PRICES:** Prices shown are F.O.B. Mississauga, Ontario, Canada. All taxes are extra, where applicable. Prices are subject to confirmation at the time of ordering.

**PAYMENT TERMS:** Payment is due 30 days from the date of shipment for credit approved accounts. 2% per month finance charge will be added to any overdue account not paid after 30 days or as allowed by law. Product will remain the property of LAFERT NORTH AMERICA INC until complete payment had been made by the purchaser.

**CLAIM:** Claims for shortage or damaged goods for any collect shipment must be made to the transportation company as risk passes to the customer at the point of F.O.B. Claims for shortage or damaged goods for any prepaid shipment will be made to the transportation company as risk stands with the shipper at the point of F.O.B.

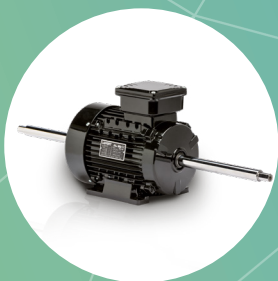
**WARRANTY:** No warranty changes or credits will be issued without prior approval from Lafert NA. Lafert Motors, SITI Gear Reducers and Sacemi Pumps are covered by a one-year warranty from date of sale or 18 months from date of manufacture, whichever comes first. This warranty is against defects in manufacture or defective material only. The seller will, at their option, either replace or repair the defective units. Warranty does not apply to improper storage, improper installation or use, modification or repair without our authorization and any other fault beyond our control.

**SELLER LIMITATION:** The seller makes no warranties respecting the suitability or fitness of these motors for any particular purpose or use. The buyer shall not, in any event, be entitled to, and the seller shall not be liable for loss of profit, direct or indirect and incidental or consequential damages of any nature. Buyer recovery from seller for any claim shall not exceed the buyer's purchase price for the product, irrespective of the claim whether in contract warranty or otherwise. No liability will be accepted for field service, removal, replacement, inspection, freight or travel charges unless previously authorized by LAFERT NORTH AMERICA INC.

**RETURN GOODS:** You must obtain prior authorization before returning any product. Product being returned must be properly packaged against breakage and be shipped freight pre-paid to LAFERT NORTH AMERICA INC or its authorized repair depot.



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5620 Kennedy Road - Mississauga  
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