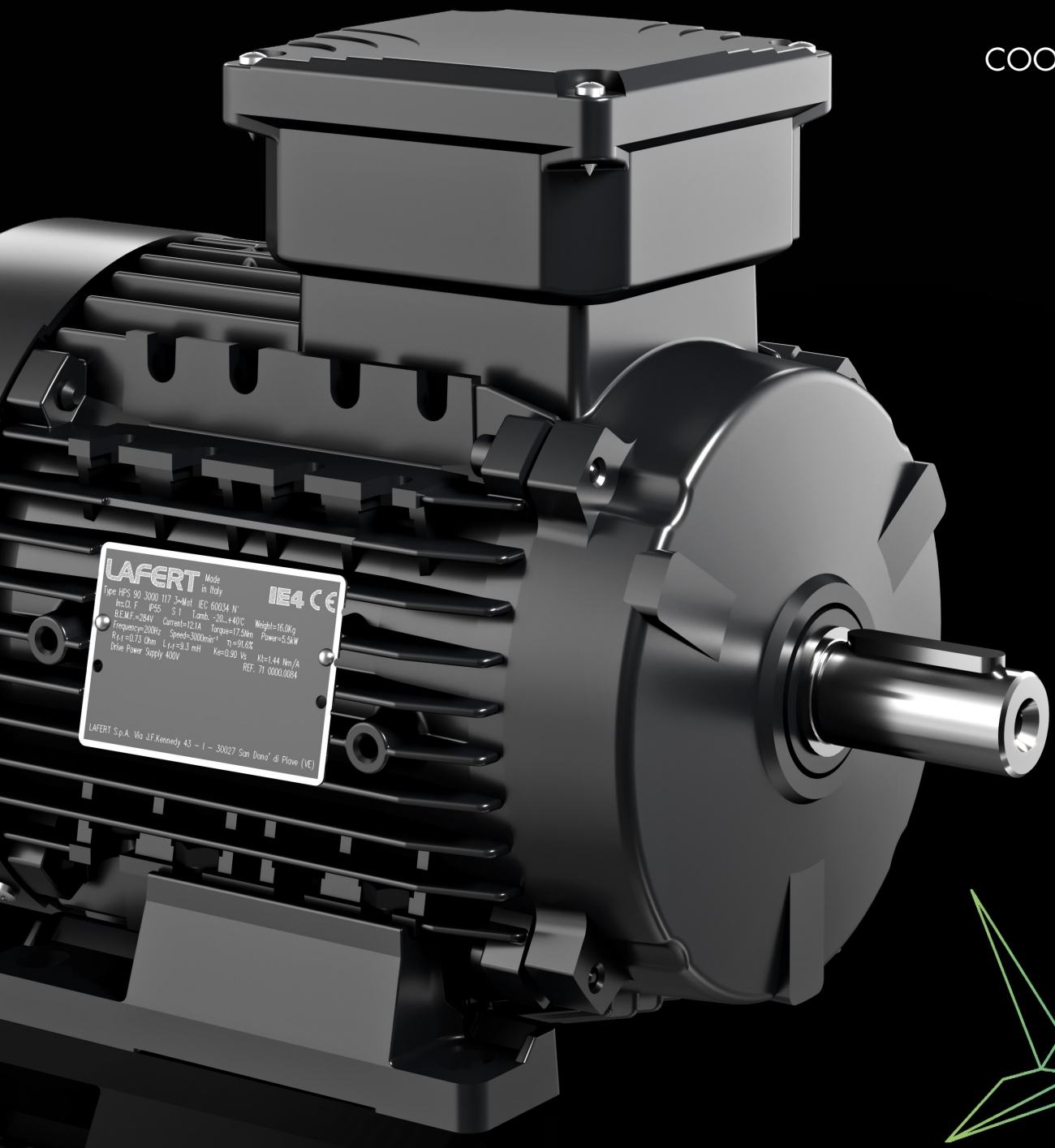
LAFERT NORTHAMERICA

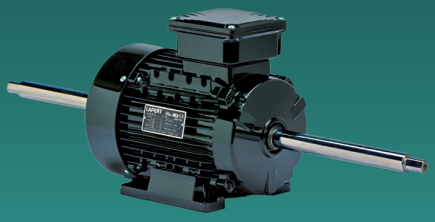
PRODUCT CATALOGUE

METRIC MOTORS
GEARBOXES
COOLANT PUMPS



2026

IE3 IE4 IE5



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 | LNA.INFO@SHI-G.COM

IE4 IE5 c UL us

PTDA EASA The Electro-Mechanical Authority AMERICAN CLEAN POWER

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.

Index

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

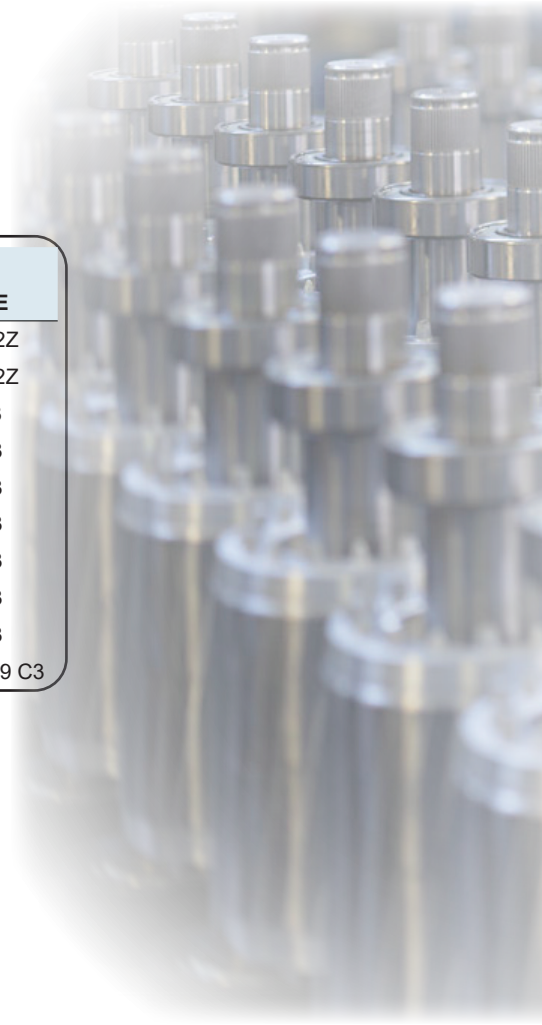
Rotors are “squirrel-cage” design, constructed of pressure die cast aluminum or aluminum alloy and dynamically balanced. Steel shafts (C40) can be either standard or specially made to your requirements. Standard motors have the shaft extending from one end of the motor only. Extensions from both ends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

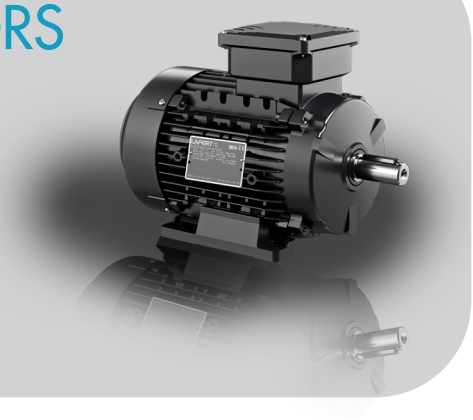
NEW - IE4 THREE-PHASE MOTORS

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

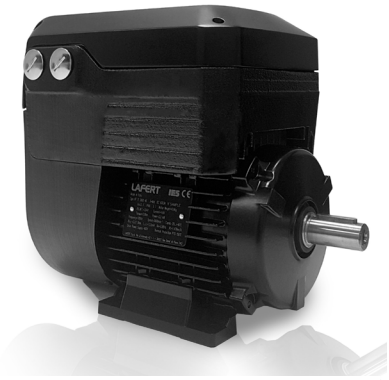
HP Combi is a range of highly efficient motor and variable frequency drive (VFD) packaged solutions which combine industry-leading permanent magnet (PM) synchronous motor technology from Lafert with dedicated drive platforms engineered to deliver maximum energy cost savings and system performance for 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 HVACR 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.

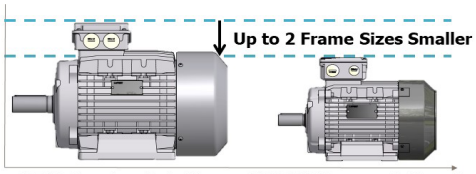
HPS - High Performance Standalone Permanent Magnet AC Motors

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.



NEMA Premium Induction Frame 112

HPS IE4 Permanent Magnet Frame 90

5.5 kW – 2 Pole	5.5 kW – 3600 rpm
IEC Frame 112 78 lbs [35.5 kg]	IEC Frame 90 35 lbs [16 kg]

HPS Series IE4 - 3600 RPM - Values @ 460V

Dimensions: Page 24

Part Number	NEMA C-Flange Mount	Rated Power Pn kW	Rated Torque Mn Nm	Peak Torque Mpk Nm	Voltage Constant Ke Vs	Torque Constant Speed Kt Nm/A	BEMF at Rated Speed En Vrs	Rated Current In Arms	Efficiency HPS η %	Weight 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 Pn kW	Rated Torque Mn Nm	Peak Torque Mpk Nm	Voltage Constant Ke Vs	Torque Constant Speed Kt Nm/A	BEMF at Rated Speed En Vrs	Rated Current In Arms	Efficiency HPS η %	Weight 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	Torque	EFF.	Full Load Amps		Weight	Price ($)
	kW	HP	Min^{-1}	Nm	100%	460 V	575 V	(lbs)	
AMPH 80Z AA2	0.75	1.00	3525	2.00	85.0	1.50	1.20	21	$878
AMPH 80Z BA2	1.10	1.50	3490	3.00	85.4	2.00	1.60	25	$961
AMPH 80Z CA2	1.50	2.00	3460	4.10	85.5	2.80	2.20	30	$993
AMPH 90S AA2 ◉	1.50	2.00	3515	4.10	85.5	2.80	2.20	37	$1,273
AMPH 90L BA2 ◉	2.20	3.00	3480	6.00	86.5	3.80	3.00	41	$1,666
AMPH 90L DA2 ◉	3.00	4.00	3510	8.20	88.5	5.30	4.20	45	$1,723
AMPH 100L AA2	3.00	4.00	3515	8.20	88.5	4.90	3.90	52	$1,832
AMPH 100L CA2	4.00	5.50	3530	10.80	88.5	7.40	5.90	59	$2,155
AMPH 112M BA2	4.00	5.50	3520	10.90	88.5	6.20	5.00	81	$2,361
AMPH 112M CA2	5.50	7.50	3530	14.90	89.5	8.90	7.10	81	$2,962
AMPH 112M DA2	7.50	10.00	3530	20.30	90.2	11.90	9.50	90	$2,966
AMPH 132S ZA2	5.50	7.50	3540	14.80	89.5	8.80	7.00	93	$3,108
AMPH 132S TA2	7.50	10.00	3540	20.20	90.2	12.00	9.60	106	$3,875
AMPH 132M TA2	9.20	12.40	3545	24.80	90.2	14.50	11.60	111	$4,399
AMPH 132M RA2	11.00	15.00	3535	29.70	91.0	17.70	14.20	133	$4,745
AMPH 132M ZA2	15.00	20.00	3530	40.60	91.0	23.50	18.80	150	$5,612
AMPH 160M YA2	11.00	15.00	3550	29.60	91.0	17.00	13.60	199	$4,922
AMPH 160M ZA2	15.00	20.00	3555	40.30	91.0	23.40	18.70	203	$6,482
AMPH 160L ZA2 *	18.50	25.00	3555	49.70	91.7	31.00	24.80	239	$7,668
AMPH 160L TA2 *	22.00	30.00	3540	59.30	91.7	35.80	28.60	239	$8,397
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	Torque	EFF.	Full Load Amps		Weight	Price ($)
	kW	HP	Min^{-1}	Nm	100%	460 V	575 V	(lbs)	
AMPH 80Z AA4	0.75	1.00	1740	4.10	85.5	1.45	1.20	24	$1,051
AMPH 90S AA4 ◉	1.10	1.50	1745	6.00	86.5	2.20	1.80	42	$1,239
AMPH 90L BA4 ◉	1.50	2.00	1735	8.30	86.5	2.90	2.30	42	$1,404
AMPH 90L CA4 ◉	1.80	2.40	1730	9.90	86.5	3.80	3.00	42	$1,596
AMPH 100L AA4 +	2.20	3.00	1760	11.90	89.5	3.80	3.00	55	$1,861
AMPH 100L BA4 +	3.00	4.00	1765	16.20	89.5	5.30	4.20	70	$2,132
AMPH 112M BA4	4.00	5.50	1760	21.70	89.5	6.90	5.50	79	$2,387
AMPH 132S AA4	5.50	7.50	1770	29.70	91.7	9.00	7.20	132	$3,340
AMPH 132M BA4	7.50	10.00	1765	40.50	91.7	12.50	10.40	143	$3,813
AMPH 132M CA4	9.20	12.40	1765	49.80	91.7	15.20	13.80	156	$4,518
AMPH 132M DA4	11.00	15.00	1770	59.70	92.4	18.50	14.80	170	$4,922
AMPH 160M AA4	11.00	15.00	1770	58.30	92.4	18.60	15.00	230	$5,836
AMPH 160L BA4	15.00	20.00	1770	80.00	93.0	24.80	19.80	272	$7,572
AMPH 160L CA4	18.50	25.00	1770	99.80	93.6	32.50	26.00	243	$8,140
AMPH 160L DA4	22.00	30.00	1770	118.60	93.6	35.60	28.50	298	$8,731
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^{-1}	Torque	EFF 100%	Full Load Amps		Weight (lbs)	Price ($)
	kW	HP		Nm		460 V	575 V		
AMPH 90S AA6 ◉	0.75	1.00	1155	6.2	82.5	2.05	1.65	41	$1,632
AMPH 100L AA6 +	1.10	1.50	1175	8.9	87.5	2.50	2.00	64	$2,354
AMPH 112M AA6	1.10	1.50	1180	8.9	87.5	2.50	2.00	78	$2,753
AMPH 112M BA6	1.50	2.00	1180	12.1	88.5	3.50	2.80	83	$3,105
AMPH 112M CA6	1.80	2.40	1170	14.7	88.5	3.90	3.10	83	$3,534
AMPH 132S AA6	2.20	3.00	1175	17.9	89.5	4.70	3.80	105	$3,852
AMPH 132S BA6	3.00	4.00	1175	24.4	89.5	6.40	5.10	108	$4,223
AMPH 132M CA6	4.00	5.50	1175	32.5	89.5	7.90	6.30	113	$4,873
AMPH 160M AA6	5.50	7.50	1180	44.5	91.0	9.80	7.80	189	$6,648
AMPH 160M BA6	7.50	10.00	1180	60.7	91.0	13.60	10.90	234	$7,523
AMPH 160L CA6	9.20	12.40	1175	74.8	91.0	16.40	13.10	257	$8,655

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

AMPH frame sizes from 90 to 160 have removable feet.

+ 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 - △△/△).

6 POLE - 1200 RPM

Part Number	Output Power		Speed Min^{-1}	Torque	EFF 100%	Full Load Amps		Weight (lbs)	Price ($)
	kW	HP		Nm		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^{-1}	Torque	EFF 100%	Full Load Amps		Weight (lbs)	Price ($)
	kW	HP		Nm		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

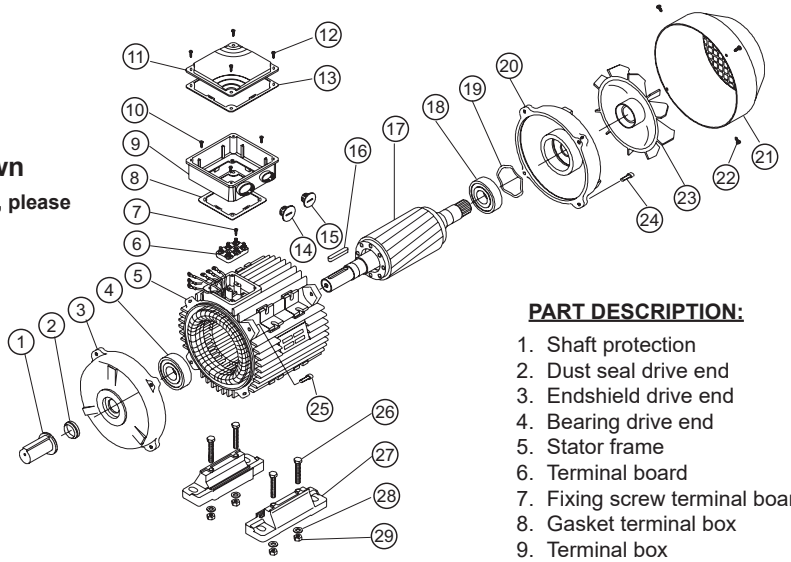
AM Motors (cURus approved)

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 460 V	Full Load Amps 575 V	Torque Nm	Speed Min^{-1}	Weight (lbs)	Price ($)
ST 56 S2 *	0.18	0.40	0.29	0.39	3300	7	$494
ST 63 C2 *	0.25	0.55	0.45	0.57	3120	8	$497
ST 63 S2 *	0.35	0.75	0.60	0.75	3310	9	$503
ST 63 L2 *	0.50	1.10	0.90	1.09	3265	10	$520
ST 71 C2	0.50	0.95	0.75	1.08	3300	13	$529
ST 71 S2	0.75	1.40	1.10	1.58	3380	14	$536
ST 71 L2	1.00	1.85	1.50	2.15	3320	16	$601

4 POLE - 1800 RPM

Part Number	HP	Full Load Amps 460 V	Full Load Amps 575 V	Torque Nm	Speed Min^{-1}	Weight (lbs)	Price ($)
ST 56 S4 *	0.12	0.40	0.29	0.55	1560	6	$494
ST 63 C4 *	0.18	0.45	0.35	0.79	1630	7	$497
ST 63 S4 *	0.25	0.60	0.50	1.12	1590	9	$501
ST 63 A4 *	0.33	0.80	0.65	1.44	1630	9	$503
ST 71 C4	0.35	0.85	0.65	1.56	1600	13	$519
ST 71 S4	0.5	1.10	0.90	2.16	1650	13	$526
AM 71 ZCA4	0.75	1.50	1.20	3.20	1670	16	$591
ST 80 C4	0.75	1.50	1.20	3.18	1680	18	$595

6 POLE - 1200 RPM

Part Number	HP	Full Load Amps 460 V	Full Load Amps 575 V	Torque Nm	Speed Min^{-1}	Weight (lbs)	Price ($)
ST 63 C6 *	0.12	0.55	0.45	0.87	980	10	$780
ST 71 C6	0.25	0.80	0.65	1.70	1050	14	$805
ST 71 S6	0.35	1.00	0.80	2.44	1020	15	$814
ST 80 C6	0.50	1.15	0.90	3.27	1090	18	$837
ST 80 S6	0.75	1.60	1.30	4.90	1090	21	$906

8 POLE - 900 RPM

Part Number	HP	Full Load Amps 460 V	Full Load Amps 575 V	Torque Nm	Speed Min^{-1}	Weight (lbs)	Price ($)
ST 71 C8	0.20	0.60	0.50	1.87	760	13	$946
ST 80 C8	0.35	1.00	0.80	3.08	810	18	$1,161
ST 90S C8 ◉	0.50	1.60	1.25	4.40	810	25	$1,411
ST 90L S8 ◉	0.75	2.30	1.85	6.60	810	33	$1,587

* 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.

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 (lbs)	FULL LOAD AMPS 460 V	FULL LOAD AMPS 575 V	Price ($)
FB 63 S2/4 *	0.40/0.27	10	0.80/0.62	0.64/0.50	$1,032
FB 71 C2/4	0.60/0.40	17	1.36/0.96	1.09/0.77	$1,217
FB 80 C2/4	0.80/0.60	19	1.44/1.12	1.15/0.90	$1,372
FB 80 S2/4	1.00/0.75	25	1.76/1.44	1.41/1.15	$1,461
FB 80 L2/4	1.50/1.10	32	2.48/1.92	1.98/1.54	$1,549
FB 90L C2/4 ◉	2.10/1.60	34	3.12/2.72	2.50/2.18	$2,053
FB 90L S2/4 ◉	2.60/1.90	38	3.60/2.88	2.88/2.30	$2,237
FB 100L C2/4	3.40/2.50	47	4.72/3.60	3.78/2.88	$2,664
FB 100L L2/4	4.00/3.00	50	6.16/4.64	4.93/3.71	$2,697
FB 100L S2/4	4.50/3.50	51	6.56/5.28	5.25/4.22	$3,133
FB 112M C2/4	6.00/4.50	80	8.16/5.76	6.53/4.61	$4,329
FB 132S ZA2/4	8.00/6.40	101	9.60/9.60	7.68/7.68	$5,825
FB 132M ZA2/4	11.00/9.00	121	13.60/12.80	10.88/10.24	$6,810
FB 160M ZA2/4	14.50/11.70	192	18.00/17.60	14.40/14.08	$10,563
FB 160L ZA2/4	22.50/17.00	225	24.80/22.80	19.84/18.24	$16,079
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

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

Part Number	HP	Weight (lbs)	FULL LOAD AMPS 460 V	FULL LOAD AMPS 575 V	Price ($)
FB 71 C4/6	0.35/0.25	16	0.64/0.56	0.51/0.45	$1,573
FB 80 A4/6	0.50/0.35	18	0.84/0.80	0.67/0.64	$1,816
FB 80 C4/6	0.75/0.50	22	1.28/1.12	1.02/0.90	$1,932
FB 90L C4/6 ◉	1.20/0.80	36	2.00/2.00	1.60/1.60	$2,418
FB 100L L4/6	1.50/1.00	54	2.88/2.08	2.30/1.66	$2,813
FB 100L C4/6	2.00/1.20	73	3.12/2.32	2.50/1.86	$3,106
FB 112M C4/6	2.50/1.80	74	3.92/3.36	3.14/2.69	$3,874
FB 112M S4/6	3.50/2.50	81	4.96/4.24	3.97/3.39	$4,772
FB 132S ZA4/6	4.00/3.00	95	7.60/6.00	6.08/4.80	$5,357
FB 132M ZA4/6	6.70/4.30	119	9.40/8.30	7.52/6.64	$10,458
FB 160M YA4/6	10.00/6.80	185	13.20/9.60	10.56/7.68	$11,511
FB 160M ZA4/6	12.20/8.00	198	18.40/13.60	14.72/10.88	$13,092
FB 160L ZA4/6	16.00/11.00	220	19.20/18.40	15.36/14.72	$17,941
FB180L ZA4/6	22.50/15.00	331	INQUIRE	INQUIRE	$23,493

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

Part Number	HP	Weight (lbs)	FULL LOAD AMPS 460 V	FULL LOAD AMPS 575 V	Price ($)
FB 80 C2/8	0.50/0.15	21	1.04/0.56	0.83/0.45	$2,186
FB 80 S2/8	0.75/0.15	26	1.12/0.67	0.9/0.54	$2,356
FB 90L C2/8 ◉	1.00/0.25	35	2.00/0.92	1.6/0.74	$2,908
FB 90L S2/8 ◉	1.50/0.40	43	2.64/1.20	2.11/0.96	$3,183
FB 100L S2/8	2.00/0.50	45	2.80/1.60	2.24/1.28	$3,444
FB 100L L2/8	2.50/0.60	45	3.44/1.76	2.75/1.41	$4,044
FB 112M C2/8	2.50/1.45	78	4.00/2.96	3.2/2.37	$4,772
FB 112M L2/8	3.00/0.75	79	4.40/1.60	3.52/1.28	$5,119
FB 132S C2/8	4.00/1.00	81	6.90/4.00	5.52/3.2	$6,227
FB 132M S2/8	6.00/1.50	94	7.60/5.60	6.08/4.48	$8,021

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

Part Number	HP	Weight (lbs)	FULL LOAD AMPS 460 V	FULL LOAD AMPS 575 V	Price ($)
FB 71 C4/8	0.35/0.18	15	0.56/0.64	0.45/0.51	$1,434
FB 80 C4/8	0.50/0.25	17	0.83/0.63	0.66/0.50	$1,594
FB 80 S4/8	0.70/0.35	20	1.12/1.04	0.90/0.83	$1,682
FB 90S C4/8 ◉	1.00/0.50	30	1.68/1.44	1.34/1.15	$2,122
FB 90L S4/8 ◉	1.30/0.70	35	1.92/1.76	1.54/1.41	$2,398
FB 100L C4/8	1.90/0.90	48	2.72/2.80	2.18/2.24	$2,664
FB 100L S4/8	2.50/1.20	56	3.30/3.10	2.64/2.48	$2,911
FB 112M C4/8	2.40/1.40	70	3.36/3.20	2.69/2.56	$3,465
FB 112M S4/8	3.00/1.80	75	4.16/3.68	3.33/2.94	$4,094
FB 132S ZA4/8	5.20/2.80	95	7.68/5.76	6.14/4.61	$5,961
FB 132M ZA4/8	6.50/3.50	119	9.36/6.72	7.49/5.38	$6,822
FB 132M L4/8	7.50/4.00	135	9.73/7.20	7.78/5.76	$7,385
FB 160M C4/8	8.50/5.50	165	9.60/9.60	7.68/7.68	$8,653
FB 160M YA4/8	10.00/5.50	185	13.20/11.36	10.56/9.09	$10,520
FB 160M ZA4/8	12.20/7.00	198	16.80/14.40	13.44/11.52	$13,311
FB 160L ZA4/8	17.00/10.00	220	18.40/18.40	14.72/14.72	$15,968
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

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

Part Number	HP	Weight (lbs)	FULL LOAD AMPS 460 V	FULL LOAD AMPS 575 V	Price ($)
FB 71 C6/8	0.30/0.15	16	0.70/0.46	0.56/0.37	$1,639
FB 80 C6/8	0.50/0.25	21	1.09/0.72	0.87/0.58	$2,168
FB 90L C6/8 ◉	0.75/0.40	36	1.68/1.48	1.34/1.18	$3,147
FB 100L C6/8	1.00/0.60	52	1.84/1.68	1.47/1.34	$3,394
FB 112M C6/8	1.30/0.90	70	2.48/1.84	1.98/1.47	$4,077
FB 112M S6/8	2.00/1.00	80	3.60/1.84	2.88/1.47	$4,635
FB 132S ZA6/8	2.20/1.80	95	5.52/4.16	4.42/3.33	$6,221
FB 132M ZA6/8	3.90/3.00	119	6.64/4.72	5.31/3.78	$8,017
FB 160M YA6/8	5.50/4.00	185	9.20/6.32	7.36/5.06	$10,445
FB 160M ZA6/8	7.50/5.50	198	12.16/9.60	9.73/7.68	$13,264
FB 160L ZA6/8	10.00/7.50	220	14.40/11.60	11.52/9.28	$14,703
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)

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^{-1}	Max Brake Torque (Nm)	Weight (lbs)	Price ($)
AMBZ 63 ZAA2 *	0.25	0.44	0.57	3120	3.5	12	$1,654
AMBZ 63 ZBA2 *	0.33	0.58	0.71	3310	3.5	13	$1,636
AMBZ 63 ZCA2 *	0.50	0.87	1.09	3265	3.5	14	$1,761
AMBZ 71 ZAA2	0.50	0.73	1.08	3300	3.5	18	$1,735
AMBZ 71 ZBA2	0.75	1.10	1.58	3380	7.5	20	$1,796
AMBZ 71 ZCA2	1.00	1.40	2.15	3320	7.5	22	$1,924
AMBZ 80 ZAA2	1.00	1.50	2.09	3410	7.5	27	$2,067
AMBZ 80 ZBA2	1.50	2.00	3.14	3400	15.0	32	$2,156
AMBZ 80 ZCA2	2.00	2.50	4.19	3400	15.0	36	$2,264
AMBZ 90S AA2 ◉	2.00	2.10	4.18	3410	15.0	41	$2,699
AMBZ 90S BA2 ◉	2.50	2.50	5.21	3420	15.0	41	$2,864
AMBZ 90L CA2 ◉	3.00	3.60	6.25	3420	15.0	48	$2,977
AMBZ 90L DA2 ◉	4.00	4.50	8.27	3445	40.0	60	$3,140
AMBZ 100L AA2	4.00	4.10	8.27	3445	40.0	63	$3,483
AMBZ 100L BA2	5.50	5.60	11.59	3380	40.0	64	$3,836
AMBZ 100L CA2	7.50	7.30	15.72	3400	40.0	78	$4,089
AMBZ 112M AA2	5.50	5.90	11.42	3430	40.0	76	$4,340
AMBZ 112M BA2	7.50	7.30	15.44	3460	40.0	83	$4,754
AMBZ 112M CA2	10.00	10.00	20.59	3460	75.0	106	$5,037
AMBZ 132S YA2	7.50	7.60	15.35	3480	75.0	124	$6,559
AMBZ 132S ZA2	10.00	10.60	20.65	3450	75.0	137	$7,243
AMBZ 132M ZA2	12.50	12.10	25.37	3510	75.0	148	$8,087
AMBZ 132M RA2	15.00	15.20	30.93	3455	75.0	159	$8,450
AMBZ 132M TA2	20.00	20.00	40.67	3504	150.0	183	$9,021
AMBZ 160M VA2	15.00	16.50	30.27	3530	150.0	234	$11,117
AMBZ 160M XA2	20.00	19.30	40.37	3530	150.0	271	$12,155
AMBZ 160L XA2	25.00	25.70	50.31	3540	150.0	302	$13,587
AMBZ 160L RA2	30.00	27.10	60.55	3530	150.0	302	$15,824

6 POLE - 1200 RPM

Part Number	HP	Full Load Amps 575 V	Torque Nm	Speed Min^{-1}	Max Brake Torque (Nm)	Weight (lbs)	Price ($)
AMBZ 63 ZAA6 *	0.12	0.36	0.83	1030	3.5	15	$1,828
AMBZ 71 ZAA6	0.25	0.62	1.70	1050	7.5	20	$1,865
AMBZ 71 ZBA6	0.33	0.80	2.16	1090	7.5	21	$1,917
AMBZ 80 ZAA6	0.50	0.91	3.27	1090	7.5	26	$2,178
AMBZ 80 ZBA6	0.75	1.30	4.90	1090	15.0	32	$2,306
AMBZ 90S AA6 ◉	1.00	1.70	6.25	1140	15.0	39	$2,796
AMBZ 90L BA6 ◉	1.50	2.50	9.29	1150	40.0	52	$3,041
AMBZ 100L AA6	2.00	3.60	12.39	1150	40.0	59	$3,525
AMBZ 100L BA6	2.50	3.60	15.49	1150	40.0	69	$3,790
AMBZ 112M AA6	3.00	4.10	18.59	1150	40.0	80	$4,515
AMBZ 112M CA6	4.00	4.60	24.78	1150	75.0	117	$5,234
AMBZ 132S ZA6	4.00	5.20	24.78	1150	75.0	124	$6,666
AMBZ 132M YA6	5.50	7.00	34.07	1150	75.0	137	$7,243
AMBZ 132M ZA6	7.50	9.40	46.46	1150	150.0	177	$8,208
AMBZ 160M ZA6	10.00	11.60	61.95	1150	150.0	269	$11,456
AMBZ 160L ZA6	15.00	15.60	92.93	1150	150.0	315	$13,273

4 POLE - 1800 RPM

Part Number	HP	Full Load Amps 575 V	Torque Nm	Speed Min^{-1}	Max Brake Torque (Nm)	Weight (lbs)	Price ($)
AMBZ 63 ZAA4 *	0.16	0.36	0.70	1630	3.5	12	$1,562
AMBZ 63 ZBA4 *	0.25	0.51	1.12	1590	3.5	13	$1,626
AMBZ 63 ZCA4 *	0.33	0.58	1.44	1630	3.5	14	$1,683
AMBZ 71 ZAA4	0.33	0.73	1.47	1600	3.5	17	$1,724
AMBZ 71 ZBA4	0.50	0.91	2.16	1650	7.5	19	$1,757
AMBZ 71 ZCA4	0.75	1.20	3.24	1650	7.5	22	$1,810
AMBZ 80 ZAA4	0.75	1.20	3.18	1680	7.5	27	$1,978
AMBZ 80 ZBA4	1.00	1.70	4.22	1690	15.0	32	$2,064
AMBZ 80 ZCA4	1.50	2.00	6.44	1660	15.0	34	$2,213
AMBZ 90S AA4 ◉	1.50	2.10	6.36	1680	15.0	39	$2,541
AMBZ 90L BA4 ◉	2.00	2.70	8.60	1656	40.0	48	$2,715
AMBZ 90L CA4 ◉	2.50	3.10	10.60	1680	40.0	51	$2,968
AMBZ 90L DA4 ◉	3.00	3.90	12.72	1680	40.0	56	$3,056
AMBZ 100L AA4	3.00	3.50	12.65	1690	40.0	64	$3,248
AMBZ 100L BA4	4.00	5.00	16.76	1700	40.0	70	$3,540
AMBZ 100L CA4	5.50	6.40	23.32	1680	75.0	85	$3,894
AMBZ 112M AA4	5.50	5.70	22.78	1720	75.0	97	$4,432
AMBZ 112M BA4	7.50	8.00	30.98	1725	75.0	97	$4,664
AMBZ 132S AA4	7.50	7.80	31.16	1715	75.0	135	$6,485
AMBZ 132M BA4	10.00	10.60	41.18	1730	75.0	154	$7,238
AMBZ 132M CA4	12.50	10.90	50.89	1750	150.0	196	$7,621
AMBZ 132M DA4	15.00	16.00	61.84	1728	150.0	196	$8,987
AMBZ 160M AA4	15.00	15.30	61.07	1750	150.0	260	$11,128
AMBZ 160L BA4	20.00	19.60	81.42	1750	150.0	300	$12,261
AMBZ 160L CA4	25.00	26.60	101.78	1750	250.0	344	$15,651
AMBZ 160L DA4	30.00	32.00	122.13	1750	250.0	340	$16,277

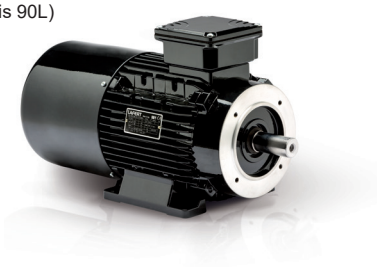
8 POLE - 900 RPM

Part Number	HP	Full Load Amps 575 V	Torque Nm	Speed Min^{-1}	Max Brake Torque (Nm)	Weight (lbs)	Price ($)
AMBZ 71 ZAA8	0.16	0.65	1.50	760	7.5	20	$2,223
AMBZ 80 ZAA8	0.33	0.87	2.90	810	7.5	26	$2,383
AMBZ 90S AA8 ◉	0.50	1.30	4.40	810	15.0	38	$2,968
AMBZ 90L BA8 ◉	0.75	2.00	6.60	810	15.0	46	$3,135
AMBZ 100L AA8	1.00	1.90	8.69	820	40.0	59	$3,681
AMBZ 100L BA8	1.50	2.90	12.88	830	40.0	70	$4,079
AMBZ 112M AA8	2.00	3.50	17.17	830	40.0	100	$4,801
AMBZ 132S ZA8	3.00	4.20	25.15	850	75.0	143	$6,888
AMBZ 132M ZA8	4.00	5.70	33.14	860	150.0	163	$7,549
AMBZ 160M YA8	5.50	6.50	45.56	860	150.0	229	$10,698
AMBZ 160M ZA8	7.50	8.50	62.13	860	150.0	267	$11,442
AMBZ 160L ZA8	10.00	11.00	83.82	850	150.0	313	$12,713

* 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 460 V	Full Load Amps 575 V	Torque Nm	Speed Min^{-1}	Max Brake Torque (Nm)	Weight (lbs)	Price ($)
AAF 63 C2 *	0.25	0.55	0.45	0.57	3120	4.9	17	$1,706
AAF 63 S2 *	0.35	0.75	0.6	0.75	3310	4.9	18	$1,754
AAF 63 L2 *	0.50	1.1	0.9	1.09	3265	4.9	19	$1,816
AAF 71 C2	0.50	0.95	0.75	1.08	3300	10.8	29	$1,789
AAF 71 S2	0.75	1.4	1.1	1.58	3380	10.8	30	$1,852
AAF 71 L2	1.00	1.85	1.5	2.15	3320	10.8	32	$1,983
AAF 80 C2	1.00	1.8	1.4	2.09	3410	19.6	43	$2,131
AAF 80 S2	1.50	2.3	1.9	3.14	3400	19.6	45	$2,223
AAF 80 L2	2.00	2.8	2.3	4.19	3400	19.6	47	$2,334
AAF 90S C2 ◉	2.00	3.2	2.5	4.18	3410	34.3	57	$2,841
AAF 90S L2 ◉	2.50	3.9	3.1	5.21	3420	34.3	59	$3,014
AAF 90L S2 ◉	3.00	4.6	3.7	6.25	3420	34.3	64	$3,134
AAF 100L C2	4.00	5.7	4.5	8.27	3445	54.0	73	$3,667
AAF 100L S2	5.50	7.5	6	11.59	3380	54.0	80	$4,038
AAF 112M C2	5.50	7.8	6.2	11.42	3430	88.3	112	$4,568
AAF 112M S2	7.50	10.1	8.1	15.44	3460	88.3	119	$5,004
AAF 132S L2	7.50	10.5	8.4	15.35	3480	166.8	149	$6,904
AAF 132S C2	10.00	13.5	10.8	20.65	3450	166.8	162	$7,625
AAF 132M S2	12.50	17.1	13.7	25.37	3510	166.8	177	$8,513
AAF 132M A2	15.00	19.8	15.8	30.93	3455	166.8	184	$8,895
AAF 160M C2	15.00	18.6	14.9	30.1	3550	264.9	275	$11,701
AAF 160M S2	20.00	24	19.2	40.08	3555	264.9	298	$12,795
AAF 160L L2	25.00	29.6	23.7	50.03	3560	264.9	326	$14,302

6 POLE - 1200 RPM

Part Number	HP	Full Load Amps 460 V	Full Load Amps 575 V	Torque Nm	Speed Min^{-1}	Max Brake Torque (Nm)	Weight (lbs)	Price ($)
AAF 63 C6 *	0.12	0.55	0.45	0.87	980	4.9	19	$2,399
AAF 71 C6	0.25	0.80	0.65	1.70	1050	10.8	30	$1,923
AAF 71 S6	0.35	1.00	0.80	2.44	1020	10.8	31	$1,976
AAF 80 C6	0.50	1.15	0.90	3.27	1090	19.6	37	$2,245
AAF 80 S6	0.75	1.60	1.30	4.90	1090	19.6	40	$2,378
AAF 90S C6 ◉	1.00	2.20	1.80	6.25	1140	34.3	51	$2,943
AAF 90L S6 ◉	1.50	3.10	2.50	9.33	1145	34.3	58	$3,201
AAF 100L C6	2.00	4.10	3.30	12.39	1150	54.0	69	$3,711
AAF 100L S6	2.50	4.70	3.80	15.49	1150	54.0	76	$3,990
AAF 112M C6	3.00	4.90	3.90	18.59	1150	88.3	109	$4,755
AAF 112M A6	4.00	6.50	5.20	24.78	1150	88.3	128	$5,509
AAF 132S C6	4.00	6.90	5.50	24.78	1150	88.3	150	$7,017
AAF 132M S6	5.50	9.20	7.40	34.07	1150	88.3	163	$7,625
AAF 132M A6	7.50	12.60	10.00	46.46	1150	88.3	193	$8,640
AAF 160M C6	10.00	13.90	11.10	60.89	1170	264.9	309	$12,059
AAF 160L S6	15.00	19.80	15.80	91.73	1165	264.9	341	$13,972

◉ 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 460 V	Full Load Amps 575 V	Torque Nm	Speed Min^{-1}	Max Brake Torque (Nm)	Weight (lbs)	Price ($)
AAF 63 C4 *	0.18	0.45	0.35	0.79	1630	4.9	18	$1,615
AAF 63 S4 *	0.25	0.60	0.50	1.12	1590	4.9	19	$1,676
AAF 63 A4 *	0.33	0.80	0.65	1.44	1630	4.9	20	$1,734
AAF 71 C4	0.35	0.85	0.65	1.56	1600	10.8	26	$1,772
AAF 71 S4	0.50	1.10	0.90	2.16	1650	10.8	28	$1,810
AAF 71 L4	0.70	1.60	1.25	2.97	1680	10.8	30	$1,866
AAF 80 C4	0.75	1.50	1.20	3.18	1680	19.6	38	$2,039
AAF 80 S4	1.00	2.00	1.60	4.22	1690	19.6	41	$2,128
AAF 80 L4	1.30	2.60	2.10	5.58	1660	19.6	43	$2,282
AAF 90S C4	1.50	2.50	2.00	6.36	1680	34.3	50	$2,675
AAF 90L S4	2.00	3.30	2.70	8.60	1656	34.3	56	$2,858
AAF 90L L4	2.50	3.90	3.10	10.60	1680	34.3	60	$3,124
AAF 100L C4	3.00	5.00	4.00	12.65	1690	54.0	76	$3,419
AAF 100L S4	4.00	6.30	5.10	16.76	1700	54.0	84	$3,726
AAF 112M S4	5.50	7.60	6.30	22.78	1720	88.3	118	$4,666
AAF 112M/4	7.50	9.70	7.80	30.80	1735	88.3	136	$4,910
AAF 132S S4	7.50	10.50	8.40	30.98	1725	166.8	161	$6,826
AAF 132M A4	10.00	14.20	11.40	41.54	1715	166.8	184	$7,619
AAF 132M L4	12.50	16.60	13.30	50.89	1750	166.8	217	$8,022
AAF 160M C4	15.00	19.10	15.30	60.72	1760	264.9	315	$11,714
AAF 160L BA4	20.00	25.00	20.00	80.96	1760	264.9	344	$12,906

8 POLE - 900 RPM

Part Number	HP	Full Load Amps 460 V	Full Load Amps 575 V	Torque Nm	Speed Min^{-1}	Max Brake Torque (Nm)	Weight (lbs)	Price ($)
AAF 71 C8	0.20	0.60	0.50	1.87	760	10.8	28	$2,406
AAF 80 C8	0.35	1.00	0.80	3.08	810	19.6	36	$2,884
AAF 90S C8 ◉	0.50	1.60	1.25	4.40	810	34.3	56	$3,342
AAF 90L S8 ◉	0.75	2.30	1.85	6.60	810	34.3	62	$3,530
AAF 100L C8	1.00	2.40	1.95	8.69	820	54.0	69	$4,145
AAF 100L S8	1.50	3.60	2.90	12.88	830	54.0	80	$4,595
AAF 112M C8	2.00	4.30	3.40	17.17	830	88.3	119	$5,407
AAF 132S C8	3.00	5.90	4.80	25.15	850	88.3	163	$7,757
AAF 132M S8	4.00	7.50	6.00	33.14	860	88.3	182	$8,502
AAF 160M C8	5.50	8.60	6.90	45.30	865	264.9	266	$12,050
AAF 160M S8	7.50	12.50	10.00	61.42	870	264.9	290	$12,887
AAF 160L L8	10.00	15.40	12.30	86.88	820	264.9	306	$14,318

* 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 460 V	Full Load Amps 575 V	Price ($)
AAFB 63 S2/4 *	0.40/0.27	19	0.80/0.62	0.64/0.50	$2,282
AAFB 71 C2/4	0.60/0.40	33	1.36/0.96	1.09/0.77	$2,533
AAFB 80 C2/4	0.80/0.60	43	1.44/1.12	1.15/0.90	$2,820
AAFB 80 S2/4	1.00/0.75	50	1.76/1.44	1.41/1.15	$2,917
AAFB 80 L2/4	1.50/1.10	57	2.48/1.92	1.98/1.54	$3,013
AAFB 90L C2/4 ◉	2.10/1.60	63	3.12/2.72	2.50/2.18	$3,724
AAFB 90L S2/4 ◉	2.60/1.90	66	3.60/2.88	2.88/2.30	$3,900
AAFB 100L C2/4	3.40/2.50	76	4.72/3.60	3.78/2.88	$4,634
AAFB 100L L2/4	4.00/3.00	77	6.16/4.64	4.93/3.71	$4,839
AAFB 100L S2/4	4.50/3.50	80	6.56/5.28	5.25/4.22	$5,281
AAFB 112M C2/4	6.00/4.50	121	8.16/5.76	6.53/4.61	$6,814
AAFB 132S S2/4	7.50/6.00	163	9.60/9.60	7.68/7.68	$9,383
AAFB 132M L2/4	11.00/9.00	181	13.60/12.80	10.88/10.24	$10,527
AAFB 160M C2/4	15.00/12.00	317	18.00/17.60	14.4/14.08	$15,453
AAFB 160L S2/4	20.00/17.00	333	24.80/22.80	19.84/18.24	$17,102

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

Part Number	HP	Weight (lbs)	Full Load Amps 460 V	Full Load Amps 575 V	Price ($)
AAFB 71 C4/6	0.35/0.25	32	0.64/0.56	0.51/0.45	$2,917
AAFB 80 A4/6	0.50/0.35	42	0.84/0.80	0.67/0.64	$3,322
AAFB 80 C4/6	0.75/0.50	46	1.28/1.12	1.02/0.90	$3,446
AAFB 90L C4/6 ◉	1.20/0.80	64	2.00/2.00	1.60/1.60	$4,190
AAFB 100L L4/6	1.50/1.00	83	2.88/2.08	2.30/1.66	$4,851
AAFB 100L C4/6	2.00/1.20	102	3.12/2.32	2.50/1.86	$5,140
AAFB 112M C4/6	2.50/1.80	115	3.92/3.36	3.14/2.69	$6,201
AAFB 112M S4/6	3.50/2.50	124	4.96/4.24	3.97/3.39	$7,087
AAFB 132M C4/6	5.50/3.50	187	7.60/6.00	6.08/4.80	$9,809
AAFB 160M C4/6	7.50/5.00	265	10.80/8.00	8.64/6.40	$14,991
AAFB 160M S4/6	10.00/6.50	289	13.20/9.60	10.56/7.68	$15,810
AAFB 160L L4/6	13.00/9.00	311	20.00/13.60	16.00/10.88	$17,273

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

Part Number	HP	Weight (lbs)	Full Load Amps 460 V	Full Load Amps 575 V	Price ($)
AAFB 80 C2/8	0.50/0.15	40	1.04/0.56	0.83/0.45	$3,709
AAFB 80 S2/8	0.75/0.15	51	1.12/0.67	0.90/0.54	$3,868
AAFB 90L C2/8 ◉	1.00/0.25	58	2.00/0.92	1.60/0.74	$4,875
AAFB 90L S2/8 ◉	1.50/0.40	73	2.64/1.20	2.11/0.96	$4,875
AAFB 100L S2/8	2.00/0.50	76	2.80/1.60	2.24/1.28	$5,452
AAFB 100L L2/8	2.50/0.60	77	3.44/1.76	2.75/1.41	$6,066
AAFB 112M C2/8	2.50/1.45	119	4.00/2.96	3.20/2.37	$7,087
AAFB 112M L2/8	3.00/0.75	120	4.40/1.60	3.52/1.28	$7,427
AAFB 132S C2/8	4.00/1.00	158	6.90/4.00	5.52/3.20	$10,052
AAFB 132M S2/8	6.00/1.50	184	7.60/5.60	6.08/4.48	$11,804

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

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

Part Number	HP	Weight (lbs)	Full Load Amps 460 V	Full Load Amps 575 V	Price ($)
AAFB 71 C4/8	0.35/0.18	31	0.56/0.64	0.45/0.51	$2,852
AAFB 80 C4/8	0.50/0.25	45	0.83/0.63	0.66/0.50	$3,158
AAFB 80 S4/8	0.70/0.35	45	1.12/1.04	0.90/0.83	$3,234
AAFB 90S C4/8 ◉	1.00/0.50	58	1.68/1.44	1.34/1.15	$3,918
AAFB 90L S4/8 ◉	1.30/0.70	63	1.92/1.76	1.54/1.41	$4,223
AAFB 100L C4/8	1.90/0.90	75	2.72/2.80	2.18/2.24	$4,804
AAFB 112M C4/8	2.40/1.40	111	3.36/3.20	2.69/2.56	$5,924
AAFB 112M S4/8	3.00/1.80	117	4.16/3.68	3.33/2.94	$6,540
AAFB 132S C4/8	5.00/2.80	159	7.68/5.76	6.14/4.61	$9,476
AAFB 132M S4/8	6.50/3.50	195	9.36/6.72	7.49/5.38	$10,323
AAFB 160M C4/8	8.50/5.50	256	9.60/9.60	7.68/7.68	$14,648
AAFB 160L S4/8	10.00/6.50	278	13.20/11.36	10.56/9.09	$16,221
AAFB 160L L4/8	14.00/8.00	299	16.80/14.40	13.44/11.52	$17,750

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

Part Number	HP	Weight (lbs)	Full Load Amps 460 V	Full Load Amps 575 V	Price ($)
AAFB 71 C6/8	0.30/0.15	31	0.70/0.46	0.56/0.37	$2,977
AAFB 80 C6/8	0.50/0.25	45	1.09/0.72	0.87/0.58	$3,678
AAFB 90L C6/8 ◉	0.75/0.40	64	1.68/1.48	1.34/1.18	$4,839
AAFB 100L C6/8	1.00/0.60	80	1.84/1.68	1.47/1.34	$5,452
AAFB 112M C6/8	1.30/0.90	112	2.48/1.84	1.98/1.47	$6,407
AAFB 112M S6/8	2.00/1.00	121	3.60/1.84	2.88/1.47	$6,951
AAFB 132M A6/8	3.00/1.70	154	5.52/4.16	4.41/3.33	$10,052
AAFB 132M C6/8	4.00/2.30	185	6.64/4.72	5.31/3.77	$11,822
AAFB 160M C6/8	6.50/3.50	285	9.20/6.32	7.36/5.06	$17,037
AAFB 160L S6/8	8.00/4.50	307	12.16/9.60	9.73/7.68	$19,147

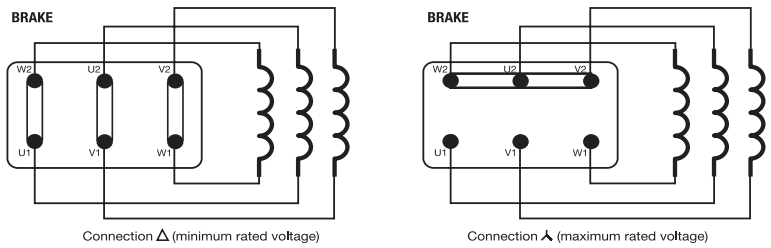
* Non-removable feet - Side mount only (F2 standard/ F1 upon request)
◉ S/L dual set of holes on base (actual frame is 90L)

Frame sizes from 71 to 160 have removable feet.

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.

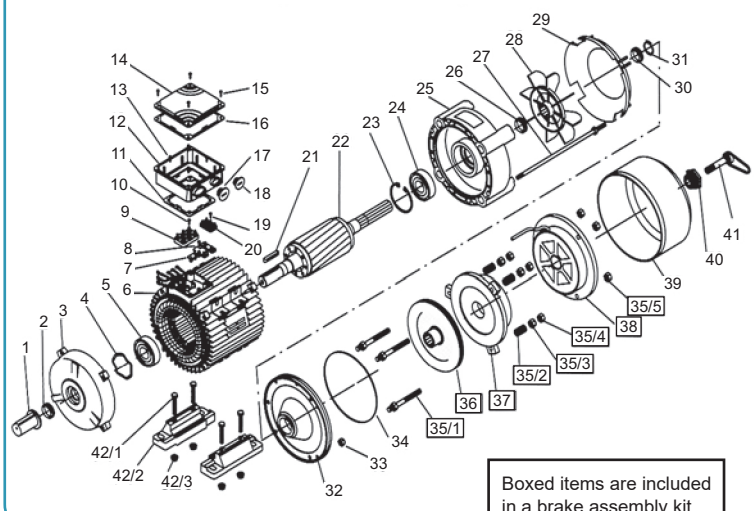
AIR GAP REGULATION:
The air gap i.e., the distance between the electromagnet (38) and the countermagnet (37) must be carefully set between 0.5 and 0.8mm. If this distance is not carefully maintained because of worn disk brakes or incorrect adjustment procedures, vibration of the countermagnet or even 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
2 Dust seal drive end
3 End shield drive end
4 Preload washer
5 Bearing drive end
6 Slater frame
7 Terminal board support (for sizes 63 ... 112)
8 Fixing screw terminal board support (for sizes 63... 112]
9 Motor terminal board
10 Fixing screw motor terminal board
11 Gasket terminal box
12 Terminal box
13 Fixing screw terminal box
14 Gasket terminal box lid
15 Terminal box lid
16 Fixing screw terminal box lid
17 Blank gland plug
18 Blank gland plug
19 Fixing screw brake terminal board (for sizes 63... 112)
20 Brake terminal board (for sizes 63... 112)
21 Motor key
22 Rotor complete
23 Circlip
24 Bearing non drive end
25 End shield non-drive end
26 Dust seal
27 Tie rod
28 Fan
29 Fan cover
30 Dust seal (for IP55 only)
31 Circlip for fan locking
32 Brake support flange
33 Tie rod fixing nut
34 O-ring (for IP55 only)
35 Brake adjusting fixing kit:
[35/1] guiding column
[35/2] braking spring
[35/3] self-locking nut
[35/4] electromagnet locking nut
[35/5] electromagnet locking nut
36 Brake disk
37 Countermagnet (Brake anchor)
38 Electromagnet
39 Brake cover
40 Nipple
41 Manual brake release lever
42 Foot kit (1 foot} for sizes 71 - 160
42/1 fixing screw
42/2 foot
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 460 V	Full Load Amps 575 V	Rated Torque Nm	Speed Min^{-1}	Max Brake Torque (Nm)	Weight (lbs)	Price ($)
MS 63 C2 *	0.25	0.55	0.45	0.57	3120	3	11	$1,482
MS 63 S2 *	0.35	0.75	0.60	0.75	3310	3	12	$1,520
MS 63 L2 *	0.50	1.10	0.90	1.09	3265	3	12	$1,540
MS 71 C2	0.50	0.95	0.75	1.08	3300	4	15	$1,618
MS 71 S2	0.75	1.40	1.10	1.58	3380	4	16	$1,705
MS 71 L2	1.00	1.85	1.50	2.15	3320	4	18	$1,782
MS 80 C2	1.00	1.80	1.40	2.09	3410	7	23	$1,888
MS 80 S2	1.50	2.30	1.90	3.14	3400	7	26	$2,033
MS 80 L2	2.00	2.80	2.30	4.19	3400	7	29	$2,154
MS 90S C2 ◉	2.00	3.20	2.50	4.18	3410	7	32	$2,447
MS 90S L2 ◉	2.50	3.90	3.10	5.21	3420	7	36	$2,717
MS 90L S2 ◉	3.00	4.60	3.70	6.25	3420	7	40	$2,850
MS 90L DA2 ◉	4.00	5.80	4.60	8.19	3480	7	50	$3,049
MS 100L C2	4.00	5.70	4.50	8.27	3445	13	51	$3,368
MS 100L S2	5.50	7.50	6.00	11.59	3380	13	58	$3,747
MS 100L CA2	7.50	9.20	7.40	15.31	3490	13	68	$3,898
MS 112M C2	5.50	7.80	6.20	11.42	3430	13	67	$4,069
MS 112M S2	7.50	10.10	8.10	15.44	3460	13	81	$4,495
MS 112M CA2	10.00	12.30	9.80	20.24	3520	13	86	$4,803
MS 132S L2	7.50	10.50	8.40	15.35	3480	30	95	$5,214
MS 132S C2	10.00	13.50	10.80	20.65	3450	30	108	$6,555
MS 132M S2	12.50	17.10	13.70	25.37	3510	30	127	$7,143
MS 132M A2	15.00	19.80	15.80	30.93	3455	30	129	$8,029
MS 160M VA2	15.00	18.60	14.90	30.10	3550	30	193	$8,626
MS 160M XA2	20.00	24.00	19.20	40.08	3555	30	232	$10,316
MS 160L XA2	25.00	29.60	23.70	50.03	3560	30	263	$12,290
MS 160L RA2	30.00	33.50	26.80	60.21	3550	30	263	$13,279

6 POLE - 1200 RPM

Part Number	HP	Full Load Amps 460 V	Full Load Amps 575 V	Rated Torque Nm	Speed Min^{-1}	Max Brake Torque (Nm)	Weight (lbs)	Price ($)
MS 63 C6 *	0.12	0.55	0.45	0.87	980	3	12	$2,072
MS 71 C6	0.25	0.80	0.65	1.70	1050	4	16	$1,810
MS 71 S6	0.35	1.00	0.80	2.44	1020	4	17	$1,874
MS 80 C6	0.50	1.15	0.90	3.27	1090	7	23	$2,048
MS 80 S6	0.75	1.60	1.30	4.90	1090	7	25	$2,195
MS 90S C6 ◉	1.00	2.20	1.80	6.25	1140	7	30	$2,513
MS 90L S6 ◉	1.50	3.10	2.50	9.33	1145	7	38	$2,798
MS 100L C6	2.00	4.10	3.30	12.39	1150	13	46	$3,264
MS 100L S6	2.50	4.70	3.80	15.49	1150	13	56	$3,608
MS 112M C6	3.00	4.90	3.90	18.59	1150	13	73	$4,346
MS 112M A6	4.00	6.50	5.20	24.78	1150	13	87	$5,091
MS 132S C6	4.00	6.90	5.50	24.78	1150	30	95	$6,052
MS 132M S6	5.50	9.20	7.40	34.07	1150	30	108	$6,522
MS 132M A6	7.50	12.60	10.00	46.46	1150	30	136	$7,566
MS 160M ZA6	10.00	13.90	11.10	60.89	1170	30	230	$8,817
MS 160L ZA6	15.00	19.80	15.80	91.73	1165	30	275	$11,959

4 POLE - 1800 RPM

Part Number	HP	Full Load Amps 460 V	Full Load Amps 575 V	Rated Torque Nm	Speed Min^{-1}	Max Brake Torque (Nm)	Weight (lbs)	Price ($)
MS 63 C4 *	0.18	0.45	0.35	0.79	1630	3	10	$1,439
MS 63 S4 *	0.25	0.60	0.50	1.12	1590	3	12	$1,488
MS 63 A4 *	0.33	0.80	0.65	1.44	1630	3	12	$1,531
MS 71 C4	0.35	0.85	0.65	1.56	1600	4	15	$1,608
MS 71 S4	0.50	1.10	0.90	2.16	1650	4	16	$1,667
MS 71 L4	0.70	1.60	1.25	2.97	1680	4	19	$1,759
MS 71 ZCA4	0.75	1.50	1.20	3.20	1670	4	21	$1,768
MS 80 C4	0.75	1.50	1.20	3.18	1680	7	23	$1,864
MS 80 S4	1.00	2.00	1.60	4.22	1690	7	25	$1,934
MS 80 L4	1.30	2.60	2.10	5.58	1660	7	28	$2,103
MS 90S C4 ◉	1.50	2.50	2.00	6.36	1680	7	32	$2,298
MS 90L S4 ◉	2.00	3.30	2.70	8.60	1656	7	36	$2,509
MS 90L L4 ◉	2.50	3.90	3.10	10.60	1680	7	41	$2,791
MS 90L DA4	3.00	5.00	4.00	12.50	1710	7	46	$2,929
MS 100L C4	3.00	5.00	4.00	12.65	1690	13	50	$3,078
MS 100L S4	4.00	6.30	5.10	16.76	1700	13	56	$3,401
MS 100L CA4	5.50	8.20	6.60	22.78	1720	13	66	$3,759
MS 112M S4	5.50	7.60	6.30	22.78	1720	13	74	$4,120
MS 112M BA4	7.50	9.70	7.80	30.80	1735	13	86	$4,740
MS 132S S4	7.50	10.50	8.40	30.98	1725	30	106	$5,713
MS 132M A4	10.00	14.20	11.40	41.54	1715	30	126	$6,710
MS 132M RA4	12.50	16.60	13.30	50.89	1750	30	164	$7,568
MS 132M TA4	15.00	19.90	15.90	61.42	1740	30	164	$8,237
MS 160M XA4	15.00	19.10	15.30	60.72	1760	30	218	$8,444
MS 160L XA4	20.00	25.00	20.00	80.96	1760	30	260	$10,890
MS 160L ZA4	25.00	31.30	25.00	101.20	1760	30	280	$12,682
MS 160L RA4	30.00	37.30	29.80	122.13	1750	30	283	$13,481

8 POLE - 900 RPM

Part Number	HP	Full Load Amps 460 V	Full Load Amps 575 V	Rated Torque Nm	Speed Min^{-1}	Max Brake Torque (Nm)	Weight (lbs)	Price ($)
MS 71 C8	0.20	0.60	0.50	1.87	760	4	16	$2,016
MS 80 C8	0.35	1.00	0.80	3.08	810	7	23	$2,451
MS 90S C8 ◉	0.50	1.60	1.25	4.40	810	7	30	$2,848
MS 90L S8 ◉	0.75	2.30	1.85	6.60	810	7	38	$3,082
MS 100L C8	1.00	2.40	1.95	8.69	820	13	46	$3,566
MS 100L S8	1.50	3.60	2.90	12.88	830	13	57	$4,051
MS 112M C8	2.00	4.30	3.40	17.17	830	13	88	$4,727
MS 132S C8	3.00	5.90	4.80	25.15	850	30	114	$6,324
MS 132M S8	4.00	7.50	6.00	33.14	860	30	134	$7,225
MS 160M YA8	5.50	8.60	6.90	45.30	865	30	190	$7,895
MS 160M ZA8	7.50	12.50	10.00	61.42	870	30	226	$9,477
MS 160L ZA8	10.00	15.40	12.30	86.88	820	30	273	$11,753

* 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 fl/lbs, multiply by 7.231

Different brake (DC) coil voltages are available upon request:

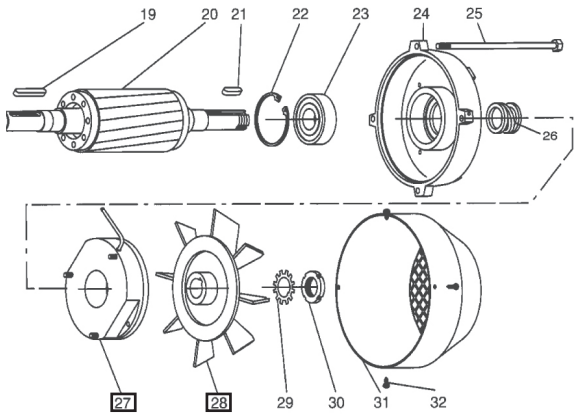
ACTUAL 148V-DC - for 575V units (SS2 half wave)
206V-DC - for 460V units (STD1 full wave)

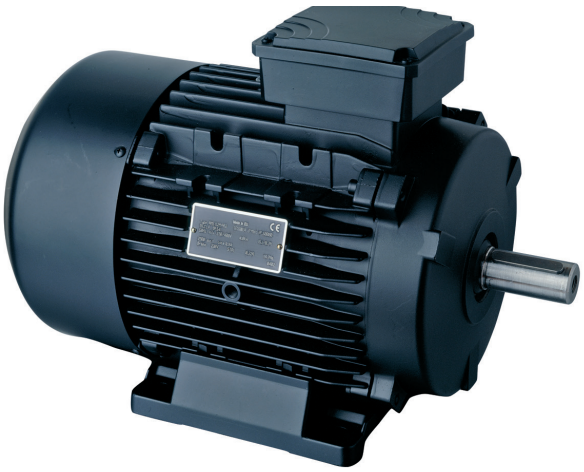
OPTIONAL 24V-DC
103V-DC - STD1

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

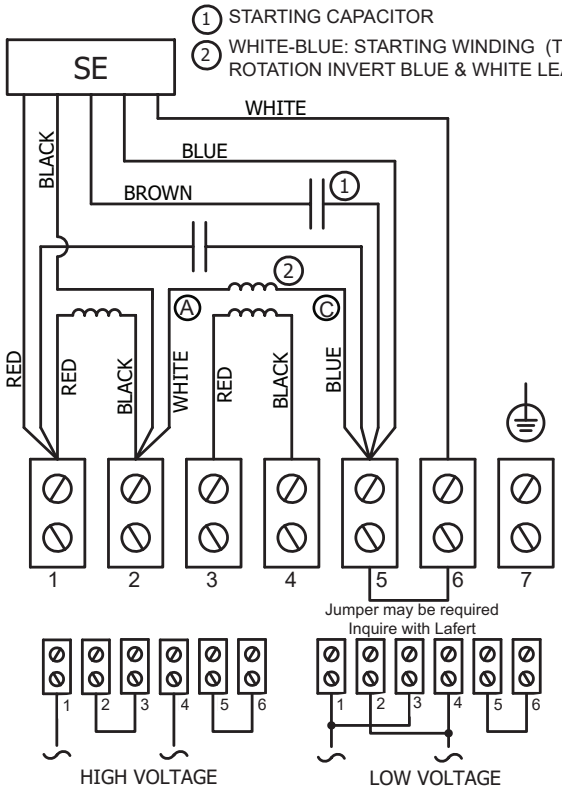
BOXED ITEMS ARE INCLUDED IN A BRAKE ASSEMBLY KIT

Single Phase Motor - Capacitor Start & Run Connection Diagrams

Dual Voltage

DVE Series

DVE Motor List: Page 19

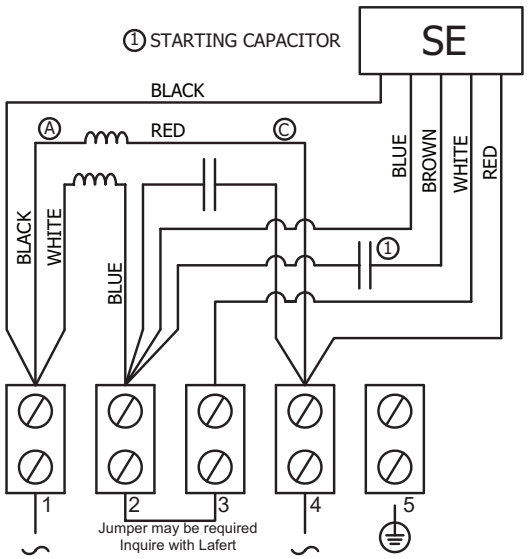


To Change Direction of Rotation, Switch Lead "A" with Lead "C"
DVE Motors are designed for high starting torque applications. DVE motors feature capacitor start and run making them suitable for most applications (i.e. Gearboxes, pumps, and machine tools).

Single Voltage

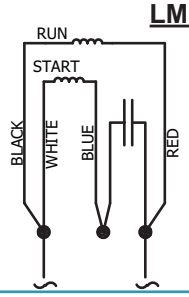
LME Series

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



TO REVERSE ROTATION INVERT BLUE AND WHITE LEADS

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-1	115V Full Load Amps	115V Run Cap (µf)	115V (LME) Start Cap (µf)	115V (LME) Current Relay	230V Full Load Amps	230V Run Cap (µf)	230V (LME) Start Cap (µf)	230V (LME) Current Relay	LM Price ($)	LME Price ($)
LM 56 C2 *	0.15	8	0.32	3300	2.5	16.0	-	-	1.2	4.0	-	-	$633	-
LM(E) 63 C2 *	0.15	10	0.32	3300	2.4	16.0	53+20%	SE02	1.2	4.0	16+20%	SE02	$641	$847
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	$650	$865
LM(E) 63 L2 *	0.33	12	0.66	3465	3.7	25.0	53+20%	SE01	1.8	8.0	20+20%	SE01	$707	$896
LM(E) 71 C2	0.50	16	1.00	3340	8.7	20.0	36+20%	SE02	3.8	12.5	30+20%	SE01	$782	$1,027
LM(E) 71 S2	0.75	19	1.50	3450	7.9	16.0	53+20%	SE02	3.8	16.0	30+20%	SE02	$861	$1,105
LM(E) 80 C2	1.00	25	2.10	3450	12.0	60.0	124+20%	SE01	5.8	16.0	30+20%	SE02	$1,001	$1,267
LM(E) 80 S2	1.50	25	3.10	3345	13.6	50.0	161+20%	SE01	6.7	25.0	124+20%	SE02	$1,058	$1,372
LM(E) 80/2	2.00	32	3.10	3450	16.8	60.0	189+20%	SE02	8.1	50.0	161+20%	SE02	$1,390	$1,795
LM(E) 90S C2 ◉	1.50	36	3.10	3440	16.0	60.0	189+20%	SE02	7.5	50.0	124+20%	SE03	$1,302	$1,622
LM(E) 90L S2 ◉	2.00	38	4.30	3350	22.0	70.0	189+20%	SE02	11.0	36.0	108+20%	SE02	$1,423	$1,746
LM(E) 90L L2 ◉	2.50	41	5.00	3450	23.0	50.0	161+20%	SE02	11.5	40.0	124+20%	SE02	$1,563	$1,880
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	$1,794	$2,145
LME 100L S2	5.00	58	10.50	-	-	-	-	-	21.0	50.0	161+20%	SE02	-	$3,041

4 POLE - 1800 RPM

Part Number	HP	Weight (lbs)	Rated Torque Nm	Speed Min-1	115V Full Load Amps	115V Run Cap (µf)	115V (LME) Start Cap (µf)	115V (LME) Current Relay	230V Full Load Amps	230V Run Cap (µf)	230V (LME) Start Cap (µf)	230V (LME) Current Relay	LM Price ($)	LME Price ($)
LM 56 S4 *	0.12	8	0.52	1650	2.0	25.0	-	-	0.9	6.3	-	-	$633	-
LM(E) 63 A4 *	0.15	10	0.60	1700	2.4	16.0	30+20%	SE02	1.2	8.0	16+20%	SE01	$641	$847
LM(E) 63 C4 *	0.25	11	1.00	1680	3.1	25.0	30+20%	SE01	1.6	8.0	16+20%	SE01	$676	$885
LM(E) 71 C4	0.33	16	1.35	1620	4.6	12.5	30+20%	SE02	2.2	10.0	16+20%	SE02	$756	$1,001
LM(E) 71 S4	0.40	17	1.60	1730	5.9	16.0	20+20%	SE02	2.8	12.5	30+20%	SE01	$791	$1,037
LM(E) 71 L4	0.50	19	2.10	1700	6.5	25.0	30+20%	SE01	3.2	16.0	53+20%	SE02	$881	$1,125
LM(E) 80 C4	0.50	22	2.05	1710	5.5	50.0	124+20%	SE01	2.8	12.5	30+20%	SE02	$941	$1,209
LM(E) 80 S4	0.75	25	3.10	1710	9.1	50.0	124+20%	SE01	4.6	12.5	53+20%	SE01	$980	$1,245
LM(E) 80 L4	1.00	28	4.20	1700	10.6	50.0	124+20%	SE01	4.9	20.0	88+20%	SE01	$1,024	$1,289
LM(E) 90L C4 ◉	1.50	34	6.25	1700	15.0	50.0	124+20%	SE02	8.3	25.0	108+20%	SE01	$1,334	$1,652
LM(E) 90L S4 ◉	2.00	39	8.60	1630	22.0	60.0	108+20%	SE02	10.0	31.5	124+20%	SE01	$1,464	$1,780
LM(E) 100L C4	2.50	50	10.10	1710	25.0	50.0	161+20%	SE02	12.0	50.0	124+20%	SE01	$1,791	$2,139
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	$1,945	$2,291
LME 112M /4	5.00	76	21.00	-	-	-	-	-	22.0	60.0	2x108+20%	SE02	-	$3,039

6 POLE - 1200 RPM

Part Number	HP	Weight (lbs)	Rated Torque Nm	Speed Min-1	115V Full Load Amps	115V Run Cap (µf)	115V (LME) Start Cap (µf)	115V (LME) Current Relay	230V Full Load Amps	230V Run Cap (µf)	230V (LME) Start Cap (µf)	230V (LME) Current Relay	LM Price ($)	LME Price ($)
LM(E) 71 C6	0.20	18	1.50	1100	3.8	25.0	53+20%	SE02	1.8	6.3	12.5+20%	SE01	$1,101	$1,441
LM(E) 80 C6	0.35	19	2.10	1150	4.6	40.0	108+20%	SE02	2.2	10.0	30+20%	SE02	$1,271	$1,565
LM(E) 80 S6	0.50	22	3.10	1150	5.9	50.0	124+20%	SE02	2.7	12.5	40+20%	SE01	$1,415	$1,711
LM(E) 90L C6 ◉	0.75	36	4.80	1100	10.0	90.0	124+20%	SE02	4.7	31.5	64+20%	SE02	$1,862	$2,337
LM(E) 90L S6 ◉	1.00	40	6.50	1110	10.2	50.0	88+20%	SE02	5.0	31.5	64+20%	SE02	$1,996	$2,481
LM(E) 100L C6	1.50	42	9.30	1130	16.6	170.0	189+20%	SE02	7.8	40.0	88+20%	SE03	$2,210	$2,591
LM(E) 100L S6	2.00	50	13.10	1090	20.0	140.0	189+20%	SE01	10.2	40.0	88+20%	SE01	$2,330	$2,705

◉ 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^{-1}	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	$1,058
DVE 63 S2 *	0.25	3.2/1.6	0.51	3320	10.0	30+20%	SE02	12	$1,076
DVE 63 L2 *	0.33	3.5/1.7	0.70	3330	16.0	53+20%	SE01	13	$1,114
DVE 71 C2	0.50	7.0/3.5	1.00	3380	25.0	53+20%	SE01	16	$1,275
DVE 71 S2	0.75	7.5/4.0	1.52	3450	20.0	53+20%	SE02	19	$1,370
DVE 80 C2	1.00	13.0/6.5	2.10	3450	31.5	108+20%	SE01	26	$1,577
DVE 80 S2	1.50	14.7/7.3	3.20	3300	50.0	161+20%	SE01	30	$1,706
DVE 90S C2 ◉	1.50	19.6/10.0	3.00	3440	70.0	124+20%	SE02	34	$2,015
DVE 90L S2 ◉	2.00	22.0/11.0	4.30	3350	40.0	124+20%	SE02	40	$2,169
DVE 90L L2 ◉	2.50	24.0/12.5	5.00	3450	40.0	161+20%	SE02	42	$2,339
DVE 90L A2 ◉	3.00	31.5/16.5	6.15	3420	60.0	161+20%	SE02	43	$2,576
DVE 100L C2	3.00	25.8/14.3	6.20	3405	50.0	161+20%	SE01	55	$2,666

4 POLE - 1800 RPM

Part Number	HP	115/230V Full Load Amps	Rated Torque Nm	Speed Min^{-1}	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	$1,058
DVE 63 C4 *	0.25	3.2/1.6	1.05	1660	8.0	30+20%	SE02	11	$1,104
DVE 71 C4	0.33	4.8/2.4	1.35	1720	12.5	30+20%	SE02	16	$1,244
DVE 71 S4	0.40	7.0/3.5	1.70	1630	12.5	25+20%	SE02	19	$1,289
DVE 71 L4	0.50	6.5/3.2	2.10	1715	25.0	53+20%	SE02	19	$1,397
DVE 80 C4	0.50	6.0/3.0	2.05	1710	50.0	124+20%	SE01	22	$1,502
DVE 80 S4	0.75	7.8/3.6	3.20	1660	16.0	53+20%	SE01	25	$1,546
DVE 80 L4	1.00	10.8/5.4	4.20	1700	40.0	124+20%	SE01	29	$1,604
DVE 90L D4 ◉	1.50	16.2/8.2	6.20	1660	40.0	108+20%	SE02	34	$2,051
DVE 90L E4 ◉	2.00	20.5/10.3	8.50	1680	50.0	124+20%	SE02	39	$2,216
DVE 100L C4	2.50	26.0/13.0	10.10	1700	50.0	124+20%	SE02	51	$2,658
DVE 100L S4	3.00	30.0/15.0	12.40	1690	60.0	324+20%	SE02	53	$2,843

6 POLE - 1200 RPM

Part Number	HP	115/230V Full Load Amps	Rated Torque Nm	Speed Min^{-1}	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	$1,791
DVE 80 C6	0.33	4.6/2.3	2.10	1150	40	108+20%	SE02	20	$1,944
DVE 80 S6	0.50	5.9/3.0	3.10	1150	50	124+20%	SE02	23	$2,124
DVE 90L C6 ◉	0.75	9.0/4.5	4.80	1100	25	64+20%	SE02	37	$2,903
DVE 90L S6 ◉	1.00	11.0/5.5	6.50	1100	50	88+20%	SE02	40	$3,085
DVE 100L C6 +	1.50	15.8/7.9	9.10	1150	170	189+20%	SE02	42	$3,219
DVE 100L S6 ++	2.00	20.0/10.0	13.10	1090	140	189+20%	SE02	50	$3,366

◉ 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 (50**µf**+50**µf**+70**µf**)
++ A total of 2 run capacitors are being used (70**µf**+70**µf**)

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 460 V	Full Load Amps 575 V	Rated Torque Nm	Speed Min^{-1}	Weight (lbs)	Price ($)
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 460 V	Full Load Amps 575 V	Rated Torque Nm	Speed Min^{-1}	Weight (lbs)	Price ($)
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 460 V	Full Load Amps 575 V	Rated Torque Nm	Speed Min^{-1}	Weight (lbs)	Price ($)
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

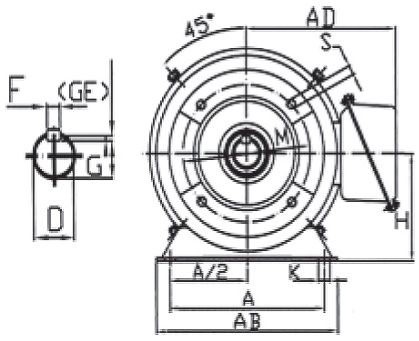
Part Number	Price ($)
FLS 63B5	149.00
FLS 71B5	254.00
FLS 80B5	271.00

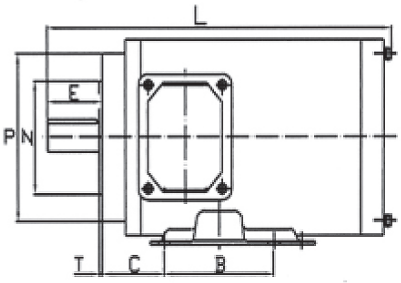
FLS B14 Flanges

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

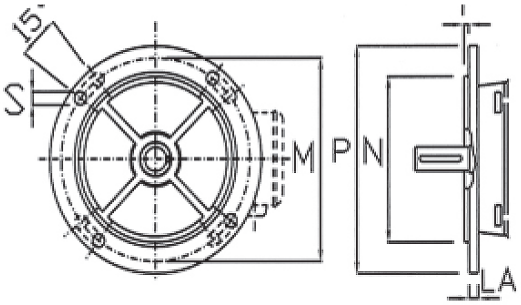
NOTE: Lowest 1 of 8 drain plugs must be removed to allow proper drainage.
(4 drain plugs located on front end-bell and 4 located on non-drive end-bell)

IM B3 & IM B34 - C Flange





IM B5 - D Flange



(Totally Enclosed Non-Ventilated)

Dimensions in mm

Motor Type	A	A/2	B	C	D	E	F	G	H	K	AB	AC	AD	L	B14 FLANGE M	N	P	S	T	B5 FLANGE 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

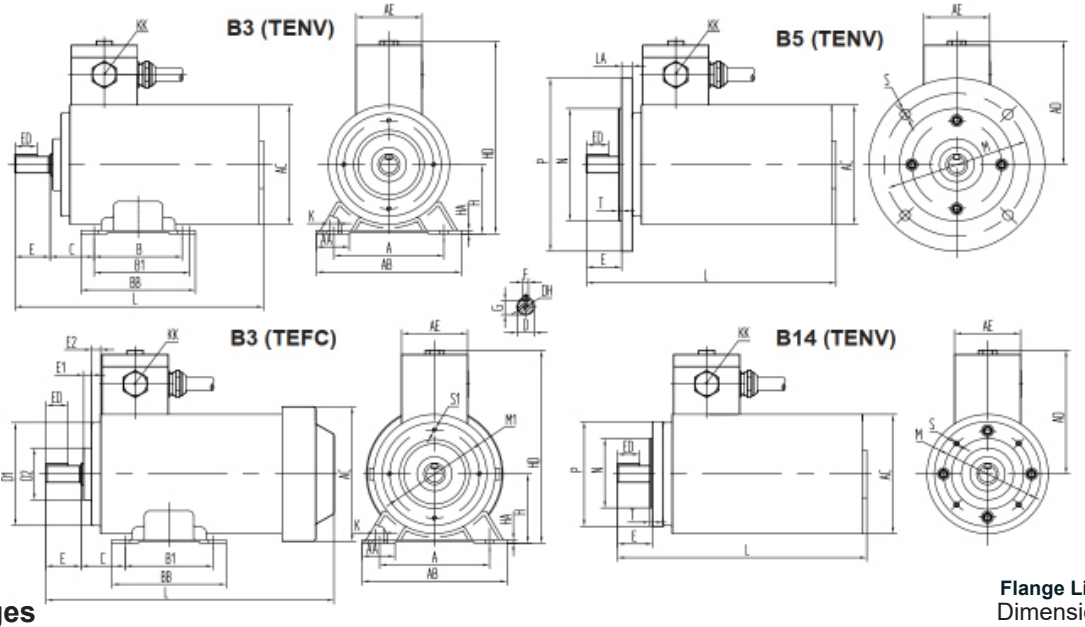
2 POLE - 3600 RPM

Part Number	Enclosure	HP	Full Load Amps 460 V	Full Load Amps 575 V	Rated Torque Nm	Speed Min^{-1}	Weight (lbs)	Price ($)
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

4 POLE - 1800 RPM

Part Number	Enclosure	HP	Full Load Amps 460 V	Full Load Amps 575 V	Rated Torque Nm	Speed Min^{-1}	Weight (lbs)	Price ($)
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

* Premium Efficiency



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	255	10	2-M20x1.5	75	12	40	375	415
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	B5 M	B5 N	B5 P	B5 S	B5 T	B14 M	B14 N	B14 P	B14 S	B14 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

LAFERT NORTHAMERICA

Cooling Fans

	Motor Type	Frame Size	Part Number	Dimensions (mm) Bore	Dimensions (mm) OD	Price ($)
ALUMINUM	ST/ LM(E)/ DVE	56	XVA000040000	9	85	$154
		63	XVA000110000	14	90	$212
	ST/ AM/ LM(E)/ DVE	71	XVA003220000	14	128	$228
		80	XVA003320000	19	143	$287
	ST/ LM(E)/ DVE	90	XVA003420000	24	162	$312
		100 / 112	XVA003540000	28	180	$338
		132	XVA000710000	40	230	$425
		160	XVA000810000	45	270	$519
PLASTIC	ST/ LM(E)/ DVE	56	XVN003060000	9	90	$96
		63	XVN003160000	14	110	$96
	ST/ AM/ LM(E)/ DVE	71	XVN003260000	14	128	$112
		80	XVN003310000	19	135	$112
	AMPH	80	XVN003350000	19	110	$112
	ST/ LM(E)/ DVE	90	XVN003410000	24	155	$119
	AMPH	90	XVN003450000	24	135	$119
		90L (DA2)	XVN003470000	24	129	$119
		100 (2 Pole)	XVN003550000	28	135	$179
	ST/ LM(E)/ DVE/ AMPH	100 / 160	XVN003520000	28	164	$179
	ST/ LM(E)/ DVE	112	XVN003610000	28	190	$179
	AMPH	112	XVN003650000	28	135	$179
		132 (2 Pole)	XVN003750000	40	135	$312
		132	XVN003770000	40	164	$312
	ST	132	XVN00081	40	220	$312

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) Depth	Dimensions (mm) OD	Price ($)
METAL	ST/ LM(E)/ DVE	56	XCR007020000	52	110	$49
		63	XCR007120000	52	124	$49
	ST/ AM/ LM(E) / AMPH	71	XCR007220000	67	139	$52
		80	XCR007320000	68	156	$66
	ST/ LM(E)/ DVE	90	XCR007420000	70	180	$87
		100	XCR007520000	85	195	$95
	AMPH	100 (2 Pole)	XCR00051-AMPH	120	195	$95
		100 (4-6 Pole) +	XCR007570000 +	195	195	$95
		112	XCR007620000	95	222	$131
		112M (DA2)	XCR007660000	120	220	$131
		132S ++	XCR00071-S ++	90	250	$166
		132M ++	XCR00071-M ++	130	250	$166
		132L ++	XCR00071-L ++	190	250	$166
		160M	XCR00081-AMPH160M	130	315	$208
		160L	XCR00081-AMPH160L	150	315	$343
PLASTIC	ST/ LM(E)/ DVE	56	XCR007010000	52	110	$49
		63	XCR0007110000	58	124	$49
	ST/ AM/ LME(E)/ DVE	71	XCR0007210000	67	139	$52
		80	XCR0007310000	65	156	$66
	ST/ AMPH	90	XCR0007410000	70	180	$87
	ST/ LM(E)	100	XCR0007510000	85	195	$95
	ST/ LM(E)/ AMPH	90	XCR0007410000	70	180	$87
	AMPH	90L (DA2)	XCR00045-AMS	92	180	$87
		112M (DA2)	XCR007660000	120	220	$131
	ST/ LM(E)/ AMPH	112	XCR0007610000	95	222	$131

+ 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	$119	FL56B14	65	50	$119
FL63B5	115	95	$119	FL63B14	75	60	$119
FL71B5	130	110	$119	FL71B14	85	70	$119
FL80B5	165	130	$149	FL80B14	100	80	$133
FL90B5	165	130	$180	FL90B14	115	95	$152
FL100B5 *	215	180	$253	FL100B14 *	130	110	$227
FL112B5	215	180	$253	FL112B14	130	110	$244
FL132B5	265	230	$465	FL132B14	165	130	$335
FL160B5	300	250	$684	FL160B14	215	180	$635

* 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

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

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	$169	FL63B5I71	$180	FL63B14R56	$180	FL56B14I63	$180
FL71B5R56	$169	FL71B5I80	$223	FL71B14R63	$180	FL63B14I71	$180
FL71B5R63	$169			FL80B14R63	$200	FL63B14I80	$200
FL80B5R63	$208			FL80B14R71	$200	FL71B14I80	$200
FL80B5R71	$208			FL90B14R71	$227	FL71B14I90	$223
FL90B5R71	$253			FL90B14R80	$227	FL80B14I90	$223
FL100B5R71	$356			FL100B14R90	$340	FL80B14I100	$333
FL100B5R80	$356			FL112B14R90	$381	FL90B14I100	$340
FL100B5R90	$356			FL132B14R100	$503	FL100B14I132	$503
FL112B5R90 *	$356			FL132B14R112	$503	FL112B14I132	$503
FL132B5R112	$654			FL160B14R132**	$954		
FL160B5R132 **	$958						

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

Dimensions: Page 29

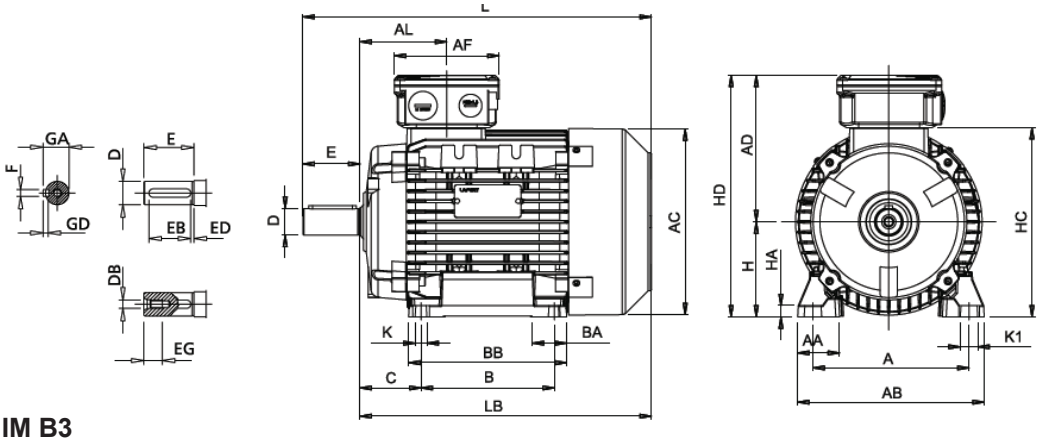
* Shaft machining required at additional cost.

** 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.

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

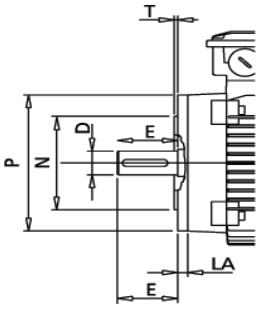
IM B3

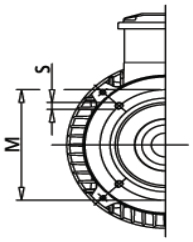
H (Frame)	A	B	C	K[1)]	AB	BB	AD[2)]	HD[2)]	AC	HC	HA	K1	L	L(N)**	LB	LB (N)**
56	90	71	36	6	107	86	92	148	110	109	8	9	188	-	168	-
71	112	90	45	8	135	108	114	185	142	142	9	17	245	10.433”	215	8.386”
90 S/L	140	100/125	56	10	170	150	148	238	177	181	11	15	317	12.638”	267	10.512”
112 M	190	140	70	12.5	220	176	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[3)]	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

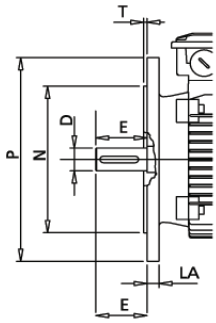
* For HPS 160M in 18.5kW, refer to HPS 160L dimension

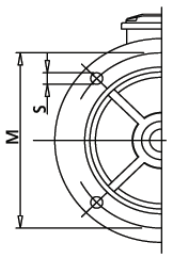
IM B14 - C Flange



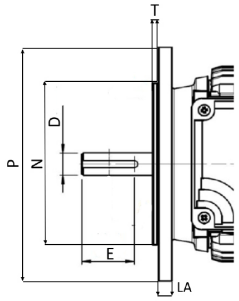


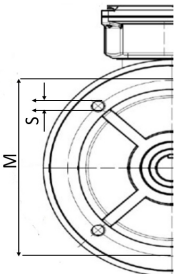
IM B5 - D Flange





NEMA - C Flange



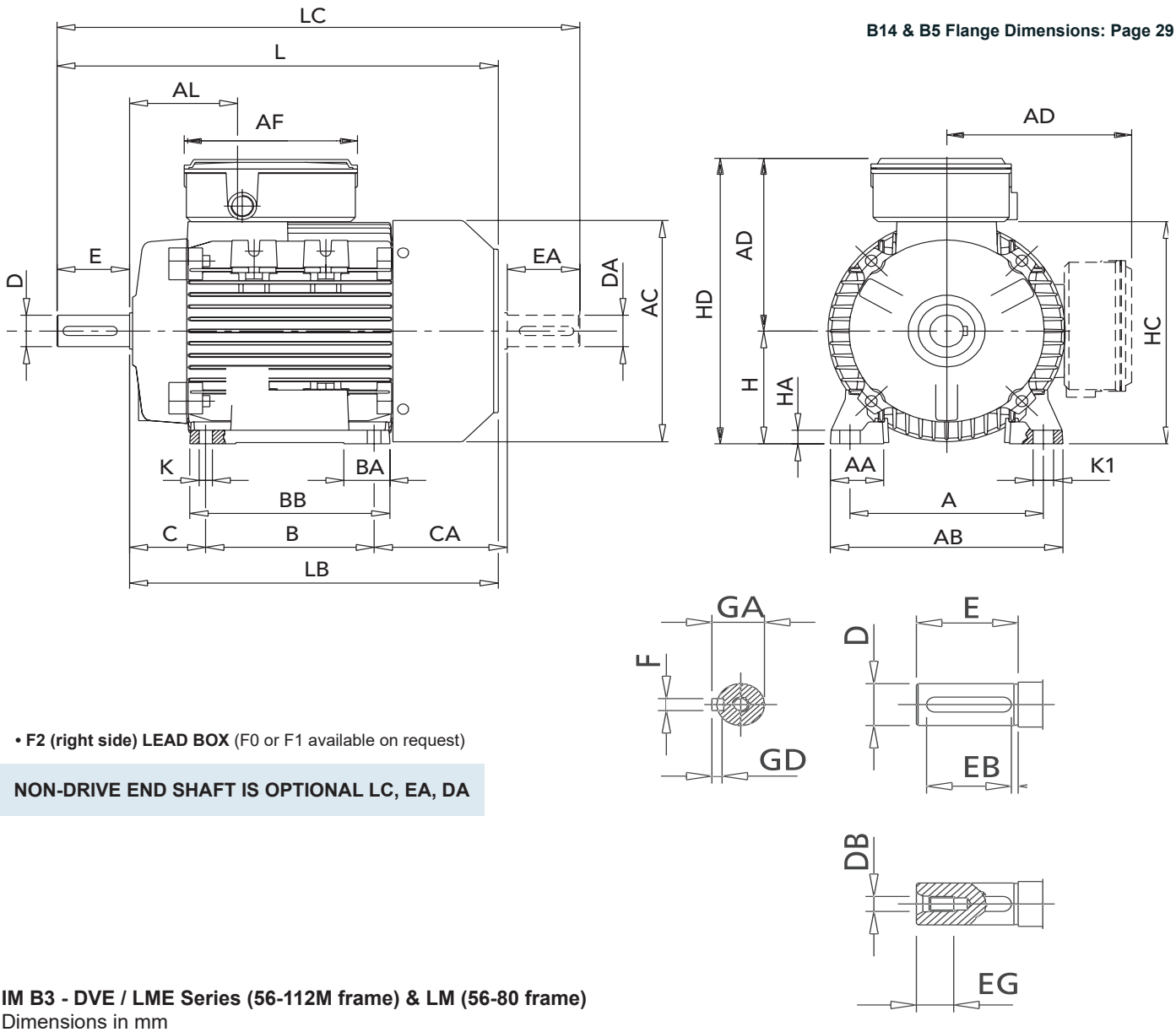


	Dimensions in Milimeters																		Dimensions in Inches					
Frame	**B14 FLANGE**						**B14 FLANGE (Increasing)**						**B5 FLANGE**						**NEMA C-FLANGE**					
	P	**N**	**LA**	**M**	**T**	**S[1)]**	**P**	**N**	**LA**	**M**	**T**	**S[1)]**	**P**	**N**	**LA**	**M**	**T**	**S[1)]**	**P**	**N**	**LA**	**M**	**T**	**S[1)]**
56	80	50	8	65	2.5	M5	105	70	8	85	2.5	M6	120	80	7	100	2.5	M6	-	-	-	-	-	-
71	105	70	11	85	2.5	M6	140	95	8	115	3	M8	160	110	10	130	3.5	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	200	130	12	165	3.5	M10	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	250	180	14	215	4.0	M12	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	300	230	14	265	4.0	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	350	250	15	300	5.0	M16	-	-	-	-	-	-

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

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

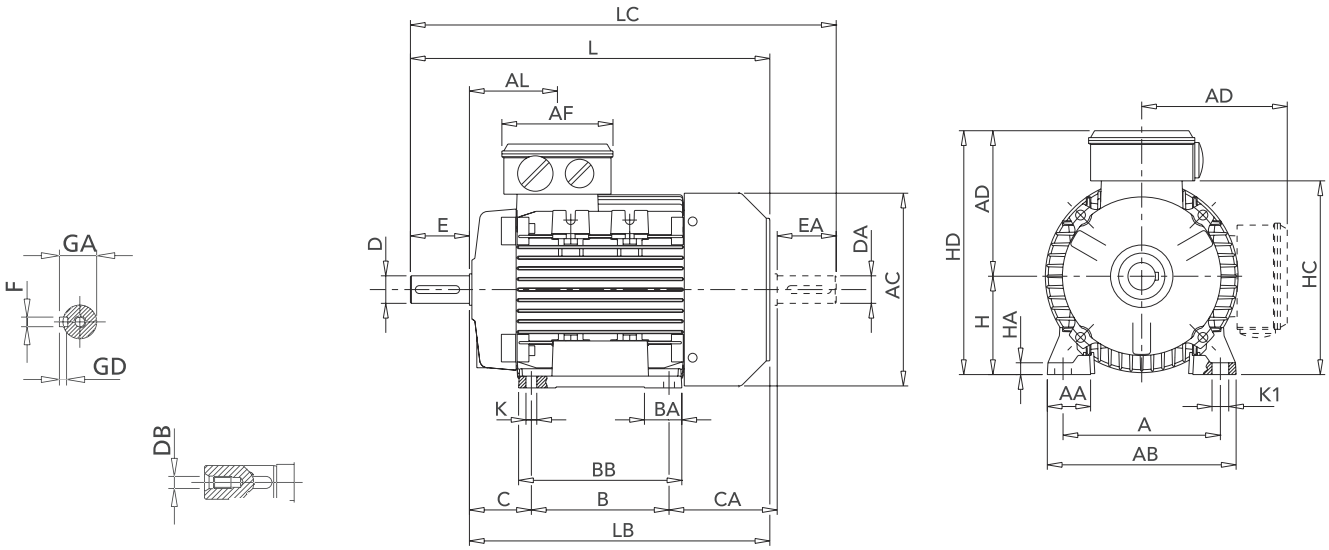
IM B3 - DVE / LME Series (56-112M frame) & LM (56-80 frame)
Dimensions in mm

H (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 & 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

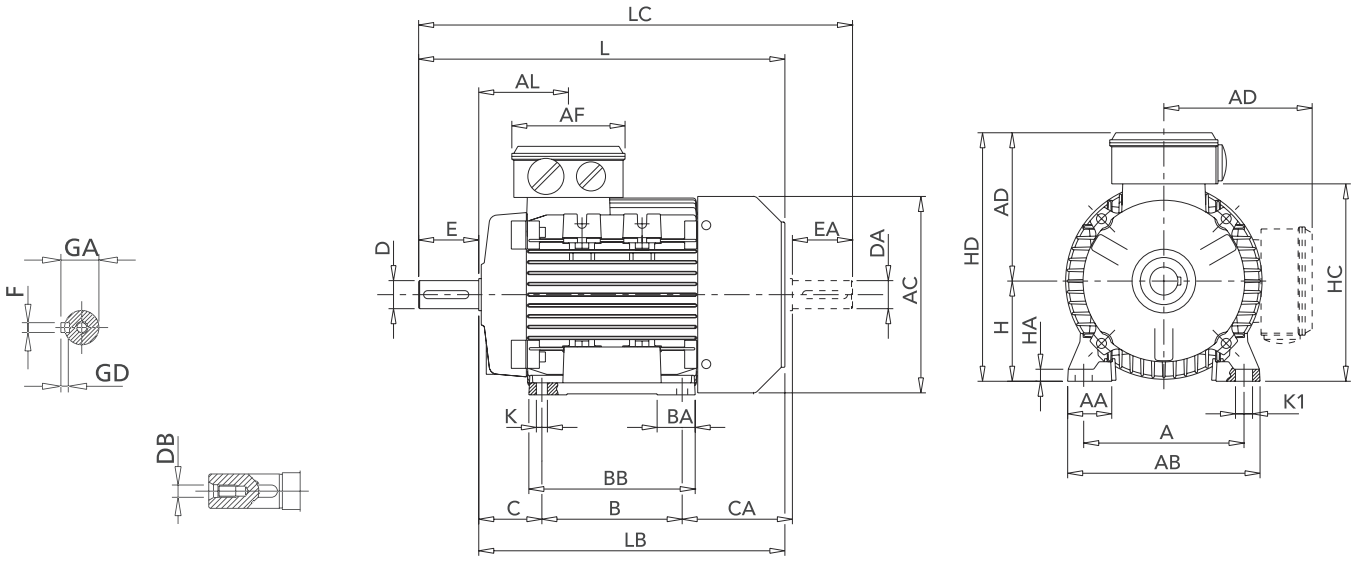
Frame H	A	B	C	K[1]	AB	BB	AD[2]	HD[2]	AC	HC	HA	K1	AL	AF	BA	AA	D/DA	E/EA	F	GD	GA	DB[3]	CA	L	LB	LC
56 *	90	71	36	6	107	86	92	148	110	109	8	9	61	92	27	27	9	20	3	3	10.2	M3	64	188	168	211
63 *	100	80	40	7	120	100	96	159	124	120	8	11	63	92	29	30	11	23	4	4	12.5	M4	72	211	188	238
71	112	90	45	8	135	108	110	181	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[4]	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[5]	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

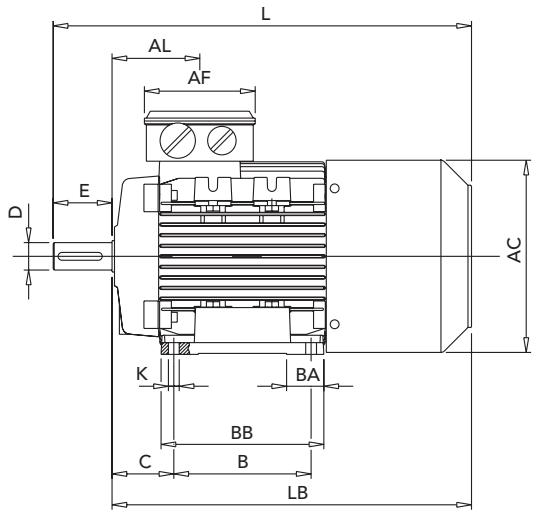
Frame H	Pole	HP	A	B	C	K[1]	AB	BB	AD[2]	HD[2]	AC	HC	HA	K1	AL	AF	BA	AA	D/DA	E/EA	F	GD	GA	DB[3]	CA	L	LB	LC
80	2-4	all	125	100	50	10	153	125	140	220	160	162	9.5	14	79	116	28.5	34.5	19	40	6	6	21.5	M6	89	272	232	319
90S	2-4	all	140	100	56	10	170	150	149	239	180	181	11	15	85	116	53	37	24	50	8	7	27	M8	116	317	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

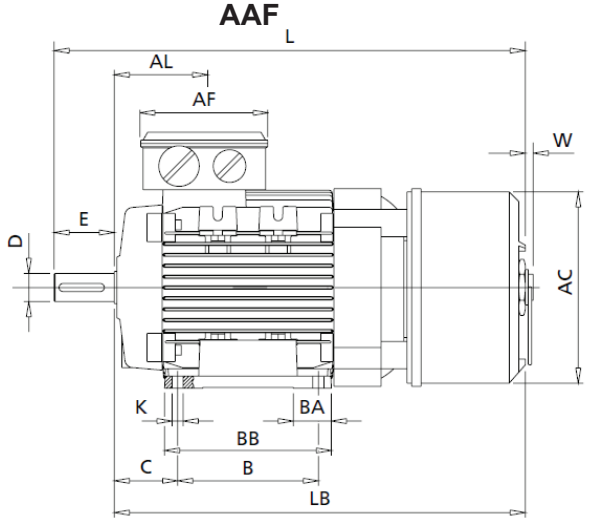
IM B3 Dimensions (Aluminum Frame)

B14 & B5 Flange Dimensions: Page 29

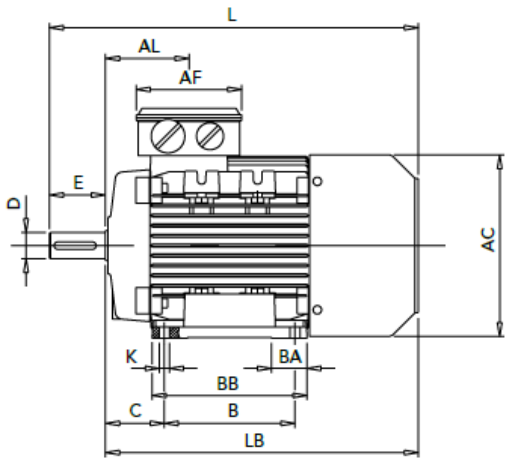
AMBZ



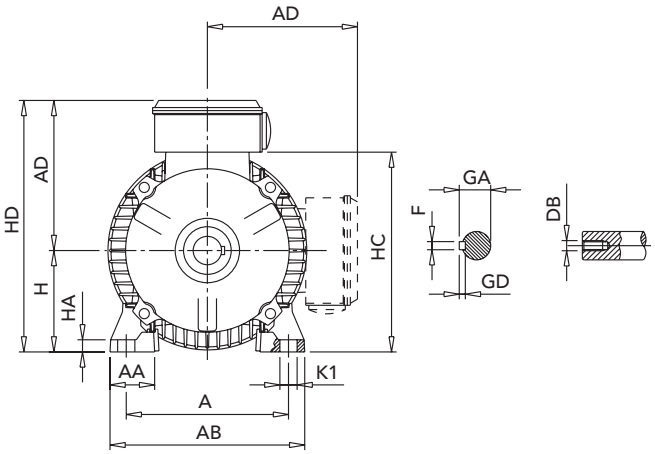
AAF



MS



Brake Motor Drive-End



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[1]	AB	BB	AD[2]	HD[2]	HC	HA	K1	AL	AF	BA	AA	D	E	F	GD	GA	DB[3]	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[4]	254	254	108	14	320	310	237	397	317	23	18	168	150	65	76	42	110	12	8	45	M16	316	790	680	-	-	-	-	-	-	-

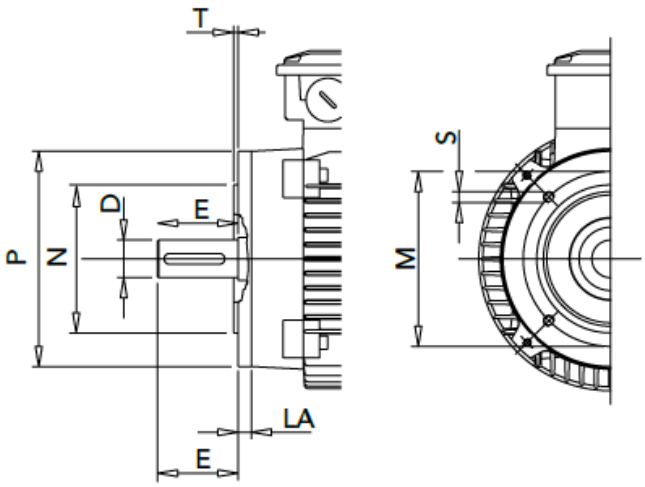
1) Clearance hole for screw 4) Only for LD A4
2) Maximum dimension
3) Centering holes in shaft extensions to SIN 332 part 2

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

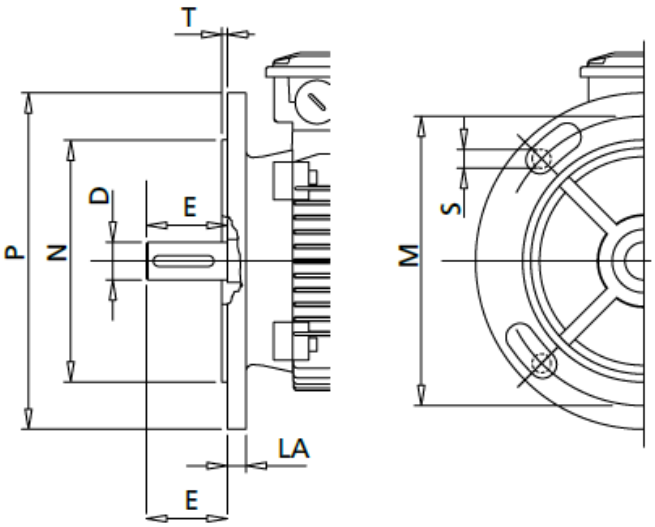
IM B14 / IM B5 - Flange Dimensions

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

	B14						B14 Reduced	B14 Increased	B5						B5 Reduced	B5 Increased
Frame	**M**	**N**	**P**	**S**	**T**	**LA**	**Frame**	**Frame**	**M**	**N**	**P**	**S**	**T**	**LA**	**Frame**	**Frame**
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 **	-

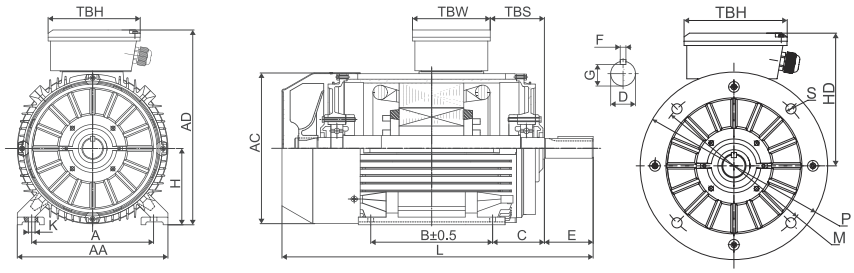
* Shaft machining required at additional cost.

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

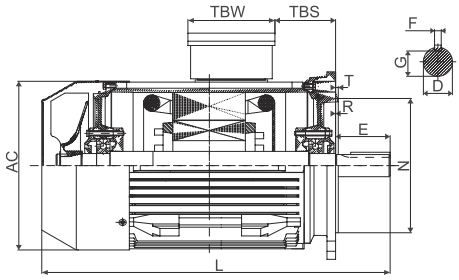
NOTE: Please inquire for all B5 increased/reduced flanges as they may require motor customization. An additional charge may be applicable.

Mounting (132-315 Cast Iron Frames) Dimensions

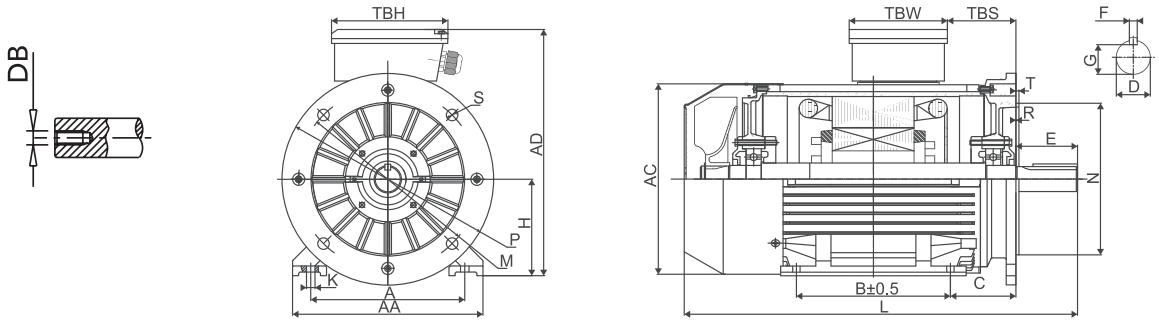
IM B3



IM B5 - D Flange



IM B35



Installation & Overall Dimensions

Dimensions in mm

• F0 Lead Box

Frame 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 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

CE Marking
Complies with the European Directive

Ex Marking
Specific Marking for Explosion Protection

Equipment Group
I - Mining - Below ground application
II - Surface - Above ground application

Equipment Category

Area classification:
Zone 1 (Gas or Vapor)
Zone 2 (Gas or Vapor)
Zone 21 (Dust)
Zone 22 (Dust)

Zone 1 or 21: An area in which an explosive mixture is likely to occur in normal operation
Zone 2 or 22: An area in which an explosive mixture is not likely to occur in normal operation and if it occurs it will exist only for a short time

Explosion Atmosphere
G = Gas / Vapor
D = Dusts

Equipment Protection Level
G = Gas or D = Dust
a / b / c = Zones 0 / 1 / 2 respectively

Temperature Class
Maximum Surface Temperature
T1 = 450 °C
T2 = 300 °C
T3 = 200 °C
T4 = 135 °C
T5 = 100 °C
T6 = 85 °C

Apparatus Group
II = Gases/ Vapor
III = Dust
A/B/C = Level of risk with C being the highest risk

Explosion Protection
Ex = Flameproof
Ex db = Increased Safety
Ex db eb = Flameproof with increase Safety Terminal Box
ExnA = Non-sparking
Extd = In the presence of combustible dust

Zone Classification

Usage area in the presence of **GAS**	Usage area in the presence of **DUSTS**	Hazardous level of the operational **ZONE**
Zone 0	Zone 20	Explosive atmosphere **ALWAYS PRESENT**
Zone 1	Zone 21	Explosive atmosphere **PROBABLE**
Zone 2	Zone 22	Explosive atmosphere **UNLIKELY**

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	**T1**	450	842
from 300 to 450	**T2**	300	572
from 200 to 300	**T3**	200	392
from 135 to 200	**T4**	135	275
from 100 to 135	**T5**	100	212
from 85 to 100	**T6**	85	185

Product Information

Special Features & Optional Types

Typical Variants
- Motors with brakes
- 2GD motors for areas classified as zone 21 and zone 22 (Dust)

Electrical Variants
- Non-standard voltages and frequencies (maximum voltage 1000V)
- Motors suitable for frequency inverter drive
- Motors with encoder
- Motors with forced ventilation (from frame size 80)
- Motors for tropical climates
- Motors for low ambient temperatures
- Motors insulated to class H
- Motors with bimetallic detector; thermistor PTC or thermistor PT100
- Motors with anti-condensation heaters
- Motors with special electrical design
- Single-phase motors with capacitor fitted in a large size terminal box (EEx-d, max 59 µF)

Mechanical Variants
- Special flanges and shafts
- Double ended shafts
- Cable gland fitted to terminal box
- Terminal box with special cable entries
- Motors without terminal box and with loose cables
- Ingress protection IP56 - IP65 - IP66
- Motors with condensation drainage valves
- Motors with special bearing (uni-directional, with sensors, with rollers, insulated, oversized, thrust bearings)
- Motors with a rain cap or sun shield, water-shedding disc
- Low noise emission version

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

Efficiency Regulations can be exempt per the following conditions:

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.

Flameproof Motor Purchasing Checklist

Power Rating	_____ kW
Synchronous Speed	_____ RPM
Phase	_____ Ph
Frequency	_____ Hz
Voltage	_____ V
Destination (Country)	
Starting & Control	_____ D.o.L _____ VFD
Torque	_____ Constant _____ Variable
Protection Scheme	_____ TEFC _____ Ex db _____ Ex db eb _____ Ex'na
Temperature Class	T_____ (1,2,3,4,5 or 6)
Zone Classification	_____ (Gas 1 or 2) _____ (Dust 21 or 22)
Grouping	_____ (I, IIA, IIB, IIC)
Insulation Class	_____ Class F
Temperature Rise	_____ Class B
Ambient Temperature	_____ (40°C, 45°C, 50°C, 55°C)
IP rating	IP _____ (IP55, IP56, IP other)
IC Rating	_____ IC411 _____ IC416 _____ IC _____
Paint Standard	_____ C2 _____ C3 _____ C4 _____ C5i Other: _____
Finish Colour	_____ RAL 5010 (standard) Other: _____
Main Terminal Box (MTB)	_____ F0 _____ F _____
Termination IEC 60034-8	_____ Standard Terminal Block _____ Flying Leads
Bearings Arrangement	_____ Anti Friction Ball _____ Roller Type _____ Sealed Other: _____
Mounting	_____ B3 Foot Mounted _____ B5 _____ B14 _____ B34 _____ B35 _____ V1
Service Factor	_____ 1.0 _____ 1.15
Certifications	_____ ATEX _____ IEC ex (On Request) Other: _____
Efficiency Classification	_____ IE1 Standard High _____ IE2 ePACT _____ IE3 Efficient (Europe)
Special Features	_____ Thermistors _____ Thermostats _____ 100 Ω platinum RTDs _____ 2-phase wired to MTB _____ Space Heaters_____V AC Other: _____

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.

Dimensions: Page 34 & 35

2 POLE - 3600 RPM

	ATEX CERTIFIED		Weight	Full Load Amps		Rated Torque
Part Number	Kw	HP	(lbs)	460 V	575 V	Nm
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

4 POLE - 1800 RPM

	ATEX CERTIFIED		Weight	Full Load Amps		Rated Torque
Part Number	Kw	HP	(lbs)	460 V	575 V	Nm
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

6 POLE - 1200 RPM

	ATEX CERTIFIED		Weight	Full Load Amps		Rated Torque
Part Number	Kw	HP	(lbs)	460 V	575 V	Nm
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

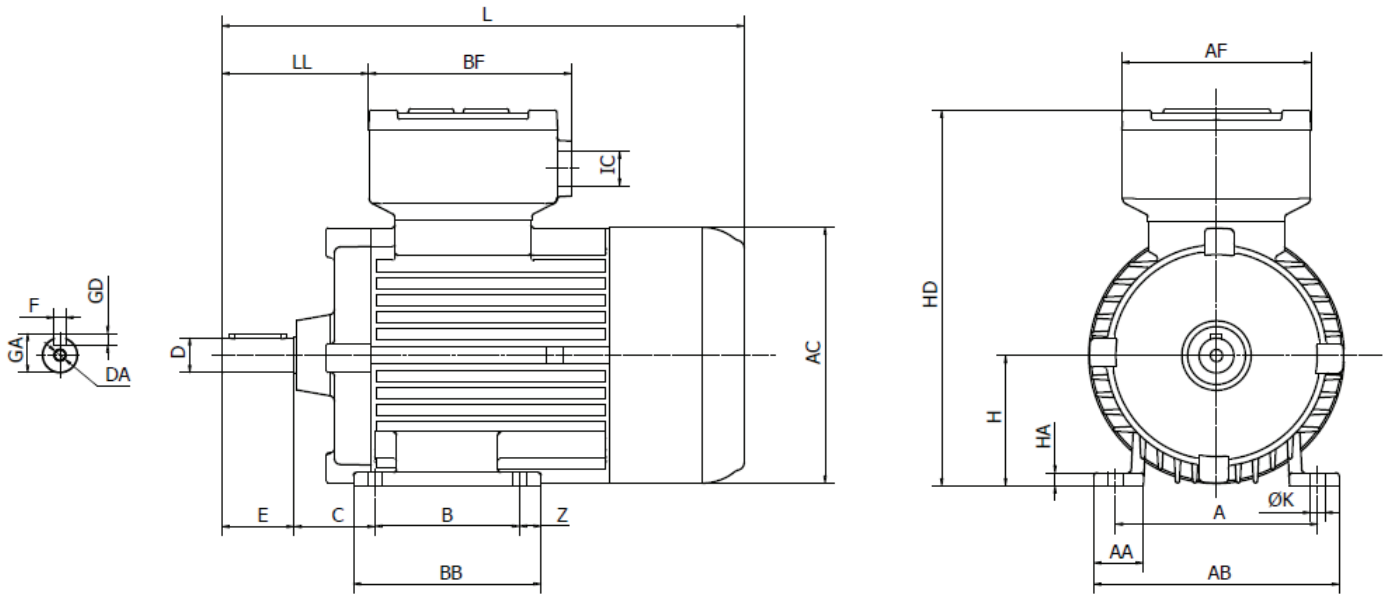
8 POLE - 900 RPM

	ATEX CERTIFIED		Weight	Full Load Amps		Rated Torque
Part Number	Kw	HP	(lbs)	460 V	575 V	Nm
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**

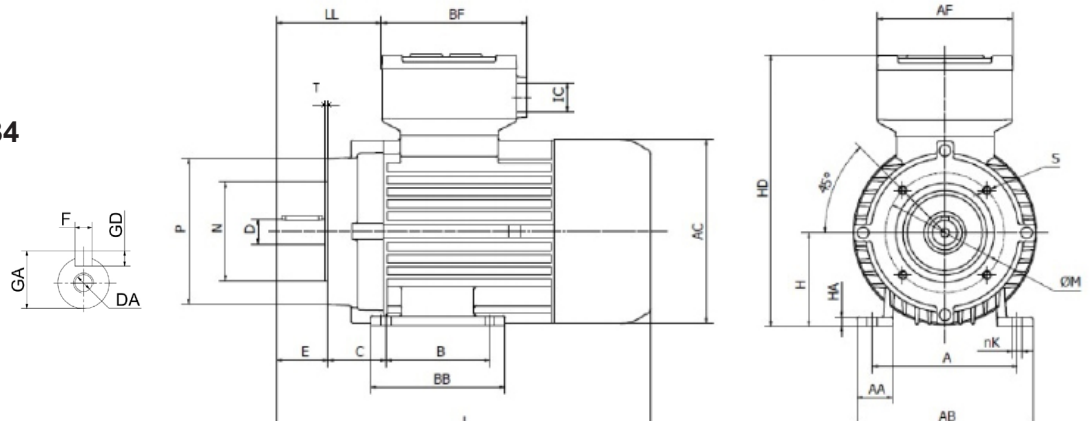
IM B3 - MAK Series
Dimensions in mm

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

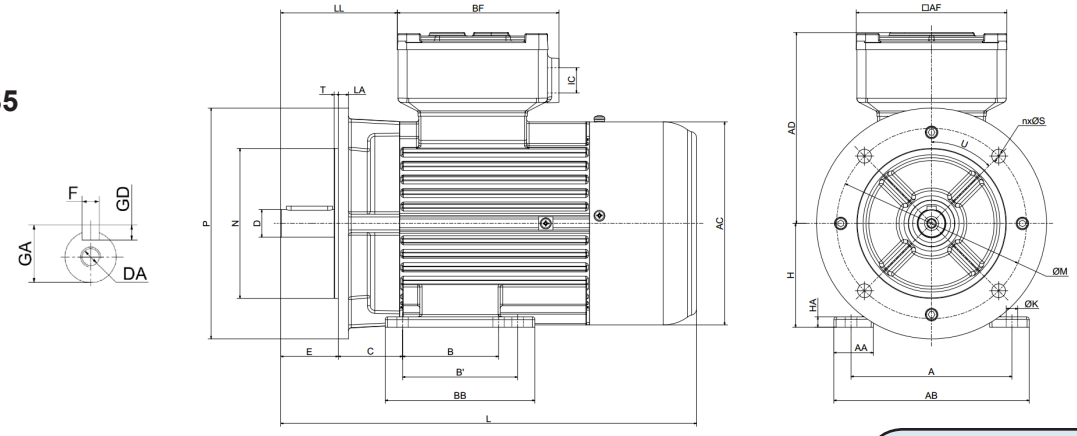
Ground
1 in the terminal box 1 on the frame

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

																			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 & 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)*

Dimensions: Page 37
Alternate Designs: Page 38

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

Part Number	HP	Full Load Amps 460V	Full Load Amps 575V	Suction Height B (mm)	Price ($)
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 460V	Full Load Amps 575V	Suction Height B (mm)	Weight (lbs)	Price ($)
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

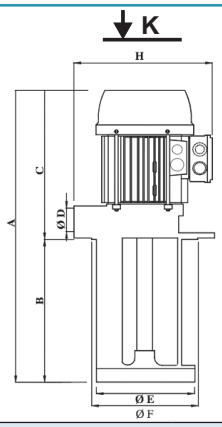
US Gallons per minute / Prevalence Head in Meters — Head in Meters

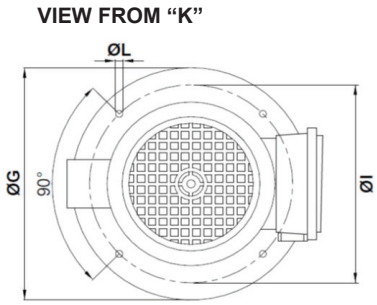
Part Number	HP	Gas Thread	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
SPV 12	0.12	3/4"	15	12	9	6	2	-	-	-	-	-	-	-	-	-	-	-
SPV 18	0.18	3/4"	17	15	13	10	6	1	-	-	-	-	-	-	-	-	-	-
SPV 25	0.25	3/4"	19	17	15	13	10	5	-	-	-	-	-	-	-	-	-	-
SPV 33	0.33	3/4"	21	19	17	14	11	7	1	-	-	-	-	-	-	-	-	-
SPV 50	0.50	1 1/4"	44	41	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)



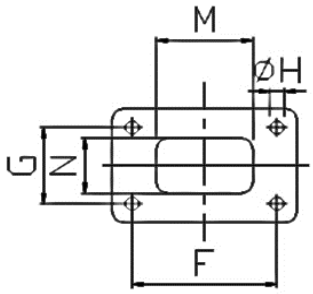


Part Number	HP	A	B	Weight (lbs)	C	D - Gas Thread	E	F	G	H	I	L	Mounting Holes
SPV 12 / SPV 18	0.12 / 0.18	255/285	90/120 T	6/7	165	3/4"	98	100	130	151	115	7	4
		335/385	170/220 T	7									
		435/515	270/350 T	7/8									
SPV 25 / SPV 33	0.25 / 0.33	300/330	90/120 T	10 / 11	210	3/4"	98	100	130	170	115	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									

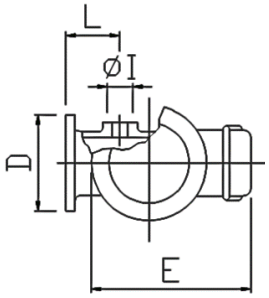
* Cast Iron T = TRI mode for glass processing machinery

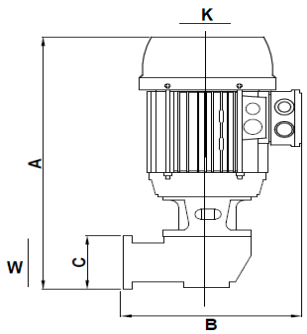
SQ - Side Mount

View from "W" (Flange Details)



View from "K"



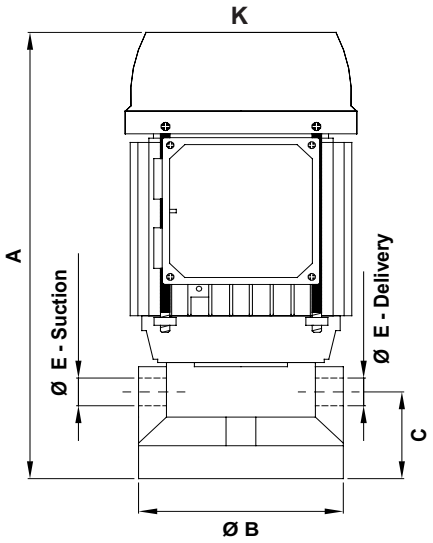


Type SQ - Side Mount

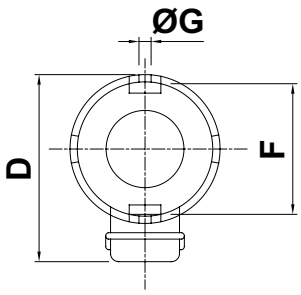
Part Number	Absorbed kW	HP	Weight (lbs)	US Gallons/Minute - Prevalence Head (m)					Dimensions (mm)												Price ($)
				0	1	2	3	4	A	B	C	D	E	F	G	H	I	L	M	N	
SQ 56	0.16	0.18	9	15.9	12.7	9.2	7.1	2.9	265	170	60	95	140	75	45	7	3/8"	51	50	30	$886
SQ 63	0.30	0.25	11	21.1	18.2	14.3	10.8	7.1	300	180	60	95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

Type AU - Self Priming

Dimensions



View from "K"



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:

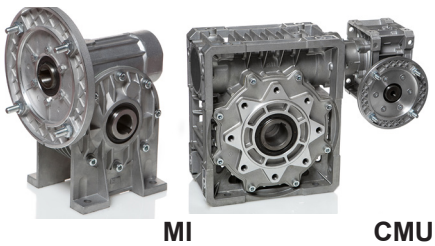
- machine tools (milling and turning machines-machining centres)
- glass processing machinery
- filtration systems

Featured SITI Gearboxes

Range

Right Angle Worm Gearboxes (Pages 40-51)

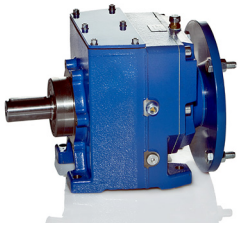
- Available with stainless steel output shaft
- Maximum input power of 55 kW
- Hollow, or solid output shaft in single or double design
- Single and double reduction available
- Ratios 5:1 to 100:1 (single stage reduction) and up to 10,000:1 (combination gearboxes)
- Various input sizes



MI CMU

Inline Helical Gearboxes (Pages 53-56)

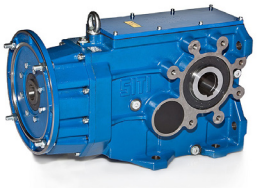
- Ratios up to 466:1
- Maximum torque 12,000 Nm
- Maximum input power of 336 kW
- Tough - strengthened by ribs for maximum performance
- IEC shaft & flange inputs/outputs
- Designed to fit standard IEC motors
- Base or various motor flange outputs
- 10 sizes with 3 input versions



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

LAFERT NORTHAMERICA

MI - I Series Worm Gearboxes

Size	Oil	Weight (lbs)	MI Series Price $	I Series Price $ (Factory Option)	ADDITIONAL FEATURES & ACCESSORIES (Add $) 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	$474.00	$419.00	$28.00	$28.00	-	-	-	-	$117.00	-
MI 30	*	5	$543.00	$471.00		$56.00	-	$100.00	$110.00	-	$136.00	-
MI 40	*	8	$640.00	$548.00	$63.00	$53.00	$58.00	$118.00	$176.00	$107.00	$163.00	$342.00
MI 50	*	10	$822.00	$712.00	$69.00	$62.00	$69.00	$186.00	$205.00	$139.00	$207.00	$427.00
MI 60	*	21	$1,149.00	$951.00	$85.00	$80.00	$90.00	$205.00	$252.00	$193.00	$261.00	$664.00
MI 70	*	24	$1,183.00	$1,063.00	$100.00	$92.00	$104.00	$226.00	$281.00	$229.00	$298.00	$749.00
MI 80	*	38	$1,730.00	$1,555.00	$123.00	$304.00	$335.00	$263.00	$313.00	$291.00	$435.00	$953.00
MI 90	*	48	$1,877.00	$1,666.00	$150.00	$388.00	$430.00	$272.00	$312.00	$305.00	$473.00	$1,134.00
MI 110	**	69	$2,618.00	$2,329.00	$166.00	$662.00	-	$317.00	$348.00	$460.00	$662.00	$1,456.00
MI 130	**	107	$4,272.00	$3,844.00	$506.00	$912.00	-	$425.00	$518.00	$469.00	$1,078.00	-
MI 150	**	161	$5,953.00	$5,406.00	$627.00	$1,194.00	-	$546.00	$714.00	-	$1,501.00	-
MI 175	**	248	$9,221.00	$8,536.00	$960.00	$2,307.00	-	$724.00	$870.00	-	$2,323.00	-

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

Ex ATEX Approved and Inox version/stainless steel available upon request

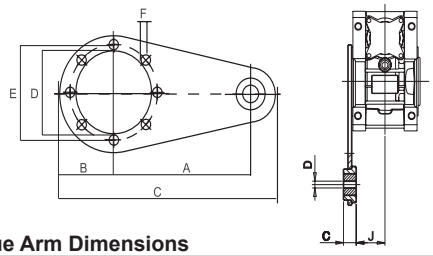
MI Performance Rating Tables: Page 42 & 43
MI Dimensions: Page 44 - 46
MI Mounting Positions: Page 47

MU - U Series Worm Gearboxes

Size	Oil	Weight (lbs)	MU Series Price $	U Series Price $ (Factory Option)	ADDITIONAL FEATURES & ACCESSORIES (Add $) Output Flanges (F, FBR, FBM, FBML)	Single Output Shaft	Double Output Shaft	Torque Arm	Double Input Shaft
MU 40	*	6	$705.00	$607.00	$58.00	$130.00	$194.00	$118.00	$179.00
MU 50	*	8	$904.00	$784.00	$69.00	$206.00	$225.00	$153.00	$227.00
MU 63	*	12	$1,302.00	$1,169.00	$90.00	$225.00	$276.00	$210.00	$317.00
MU 75	*	20	$1,812.00	$1,711.00	$105.00	$251.00	$334.00	$256.00	$478.00
MU 90	*	30	$2,062.00	$1,830.00	$327.00	$298.00	$347.00	$282.00	$520.00
MU 110	*	42	$2,881.00	$2,562.00	$430.00	$349.00	$385.00	$334.00	$725.00

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

MU Performance Rating Tables: Page 48 & 49
MU Dimensions: Page 50
MU Mounting Positions: Page 49



MU - Output Shaft Dimensions

Size	A	A_1	B	C	B_1	C_1	Dh_7	d	L	b_1	t_1
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

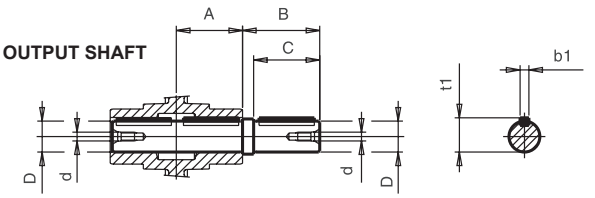
MI - Output Shaft Dimensions

Size	A	A_1	B	C	Dh_7	d	L	b_1	t_1
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

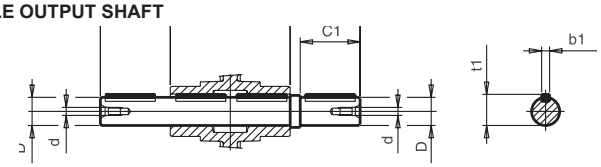
MI / MU - Torque Arm Dimensions

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	-

SINGLE OUTPUT SHAFT



DOUBLE OUTPUT SHAFT



Service Factors

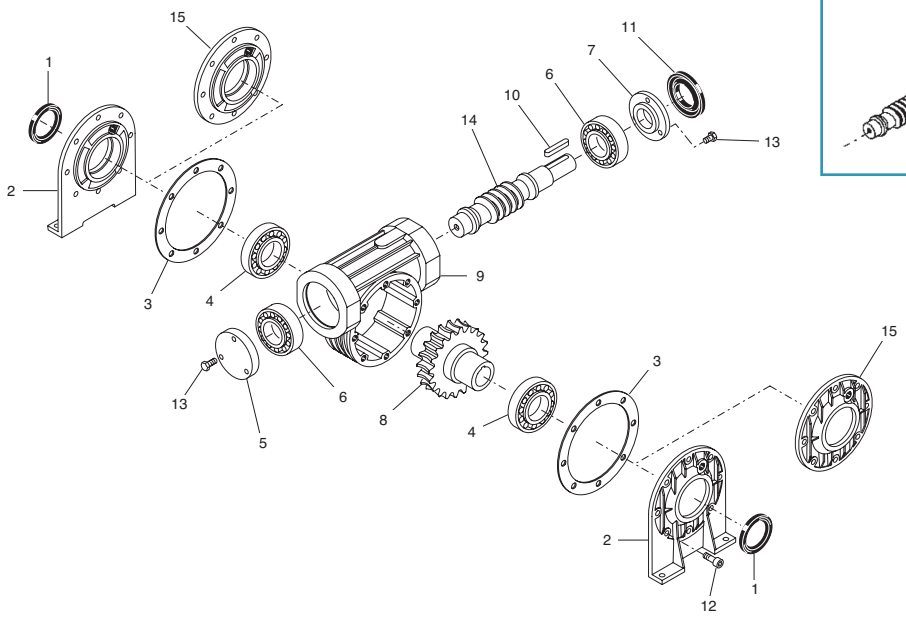
The following table provides the service factors relating to the most common applications in which Right Angle Worm Gearboxes are utilized. For applications that do not appear in the table, the relative value may be selected by taking into account the following characteristics:

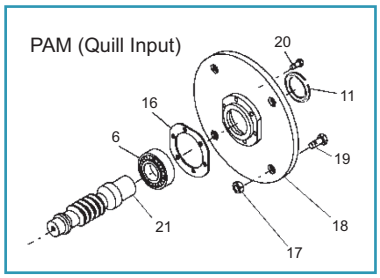
- Applied Load, Number of Working Hours per Day, and Number of Start/Stops per hour.

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





PARTS DESCRIPTION

1. Oil Seal
2. Foot
3. Gasket
4. Bearing
5. Cover
6. Bearing
7. Cover
8. Crown Gear
9. Body
10. Key
11. Oil Seal
12. Screw
13. Screw
14. Worm Screw
15. Flange
16. Gasket
17. Nut
18. Flange
19. Screw
20. Screw
21. 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

Ratings Table (Sizes 25-50)

1.0 Service Factor

			I-MI-25				I-MI-30				I-MI-40				I-MI-50			
Ratio	n1	n2	M2	kW	HP	RD	M2	kW	HP	RD	M2	kW	HP	RD	M2	kW	HP	RD
	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%
7.5	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%
	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%
10	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%
	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%
15	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%
	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%
20	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%
	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%
25	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%
	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%
30	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%
	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%
40	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%
	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%
50	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%
	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%
60	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%
	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%
80	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%
	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%
100	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.

Ratings Table (Sizes 60-110)

1.0 Service Factor

			I-MI-60				I-MI-70				I-MI-80				I-MI-90				I-MI-110			
Ratio	n1	n2	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%	466	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

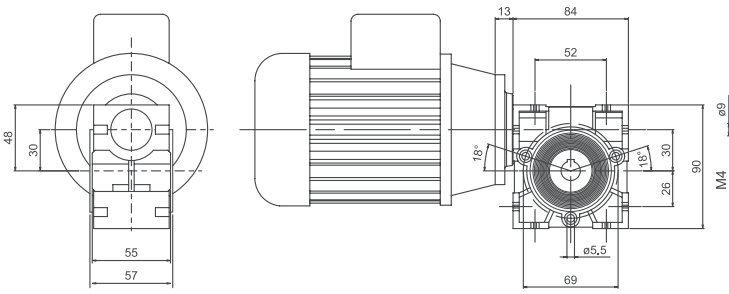
M2 = Output Torque (Nm)
kW = Input kW

HP = Input HP
RD = Dynamic Efficiency

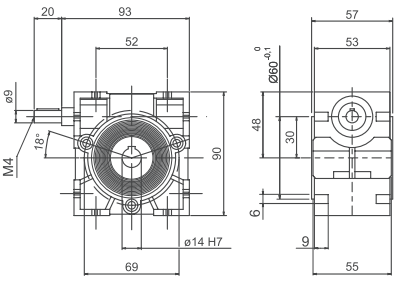
Use factor 8.85 to convert Nm to in lbs.

Dimensions (Size 30)

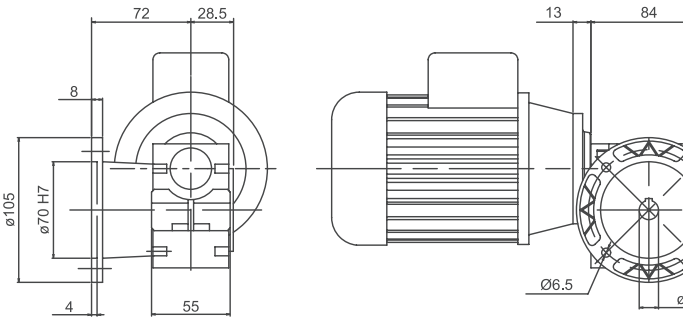
MI 30



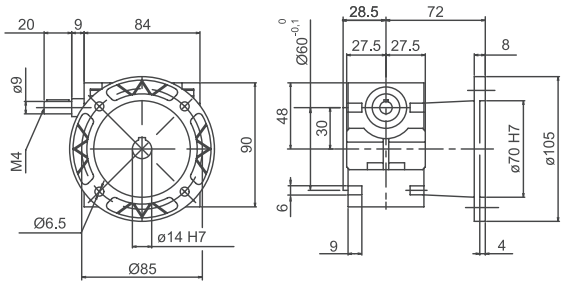
I 30



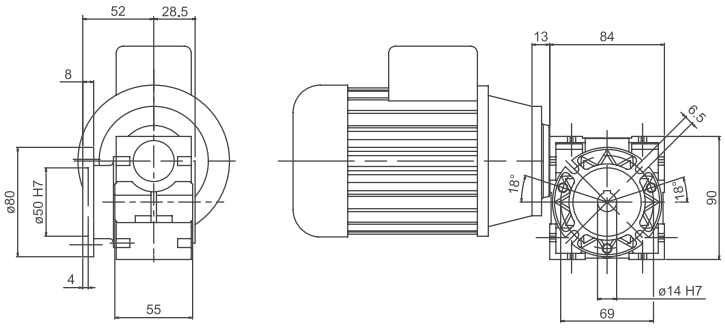
MI 30 F



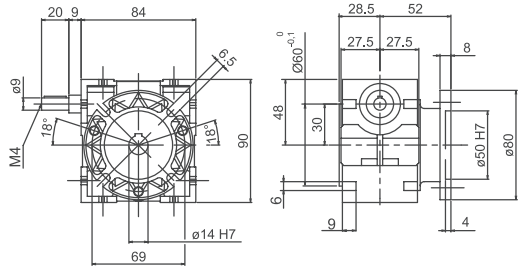
I 30 F



MI 30 FBC

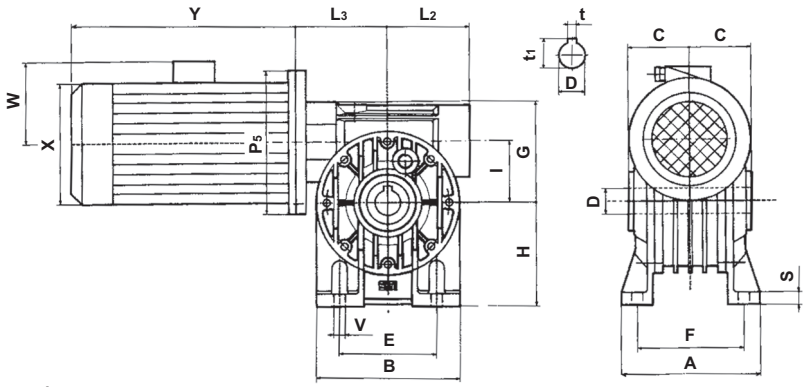


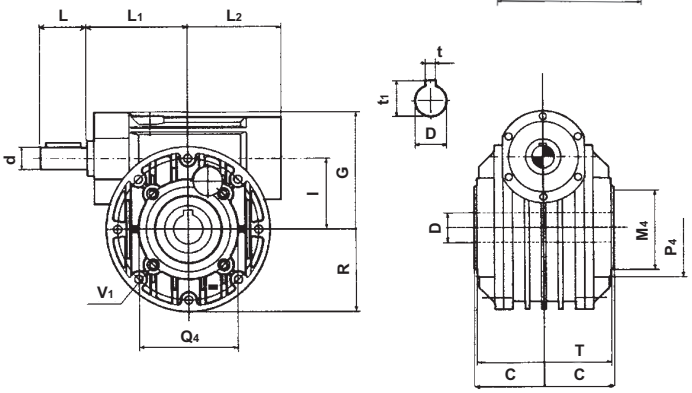
I 30 FBC



Dimensions (Sizes 40-70)

MI... A VERSION





I... FP VERSION

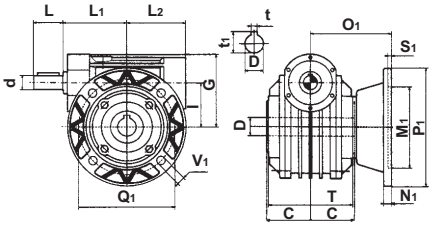
Right Angle Worm Base Mount or Round Body

x, y, w standard motor dimensions

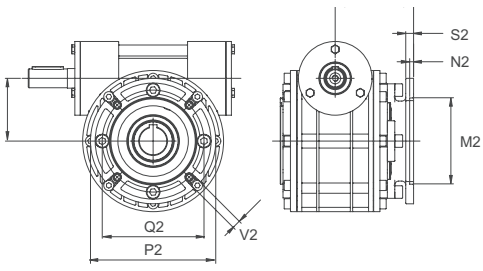
Frame Size	L_3	L_2	G	R	A	B	E	F	V	H	H_1	H_2	C	S	D/H_7	t	t_1	P_5	d/j_6	L	L_1	I	T	Q_4	P_4	M_4/h_7	V_1
40	71	57	70	48	100	96	70	84	7	71	111	31	41	8	19(18)	6	21.8	*	11	23	63	40	77	65	96	50	M6
50	82	64	84	56	114	112	85	96	9	85	135	35	49	10	24(25)	8	27.3	*	14	30	73	50	93	75	88	60	M6
60	101	80	99	75	137	140	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

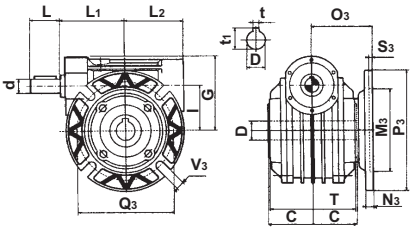
I... F VERSION



I...FBM VERSION



I... FBR VERSION



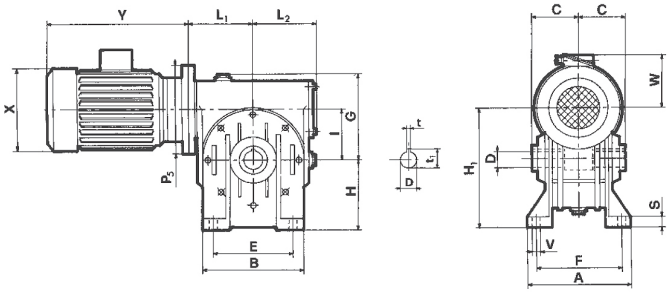
Right Angle Worm Base Mount with Solid Input Shaft & Output Flanges

Frame Size	L	L_1	L_2	C	T	G	d/j6	D/H7	Q_1	Q_2	Q_3	M_1/H_7	M_2/H_7	M_3/H_7	P_1	P_2	P_3	O_1	O_2	O_3	S_1	S_2	S_3	V_1	V_2	V_3	N_1	N_2	N_3	t	t_1
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

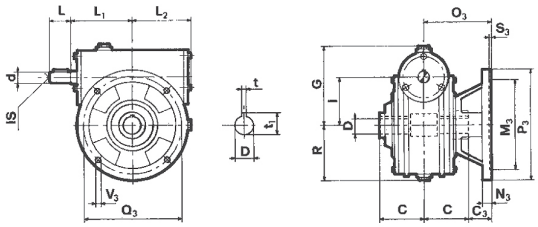
( ) Optional output bore size

Dimensions (Sizes 80-175)

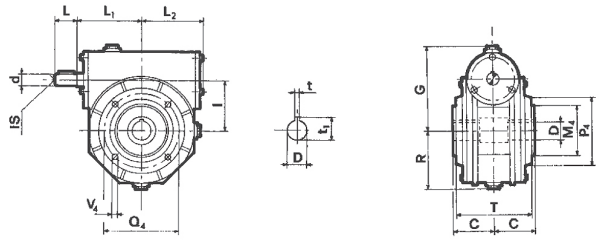
MI... A VERSION



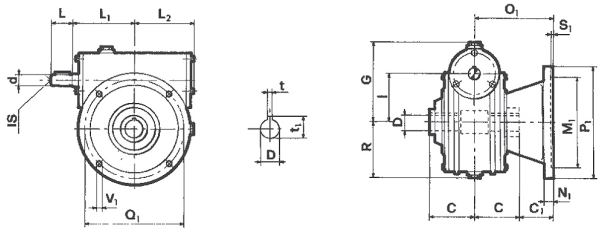
I... FBR VERSION



I... FP VERSION



I... F VERSION



x, y, w standard motor dimensions

Frame Size	A	B	C	D/H7	E	F	S	V	G	H	H1	H2	I	L3	L2	R	t	t1	P5	C1	C2	C3
MI 80	181	180	70	35	140	147	13	11	127	142	222	62	80	108	105	95	10	38.3	*	50	80	30
MI 90	198	210	75	38	160	164	15	13	139	150	240	60	90	128	124	111	10	41.3	*	52	75	40
MI 110	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
MI 130	225	280	95	48	240	190	18	15	194	200	330	70	130	165	160	155	14	51.8	*	55	102.5	42.5
MI 150	260	334	110	55	280	220	20	19	225	230	380	80	150	192	190	182	16	60.3	*	65	110	-
MI 175	280	358	115	60	310	240	30	19	258	260	435	85	175	213	204	203	18	64.4	*	95	140	-

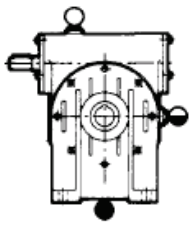
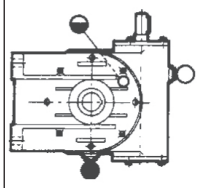
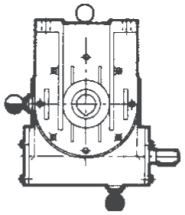
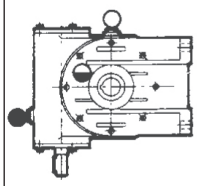
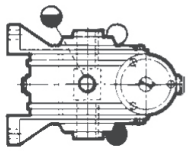
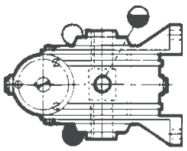
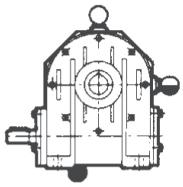
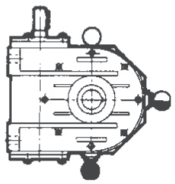
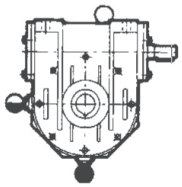
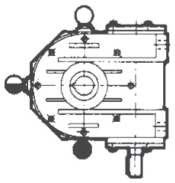
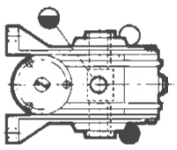
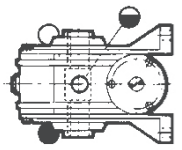
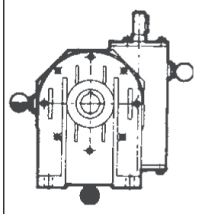
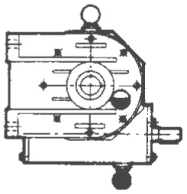
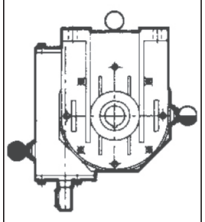
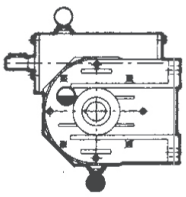
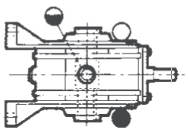
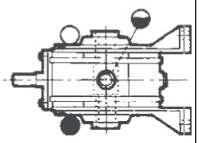
* According to IEC flange

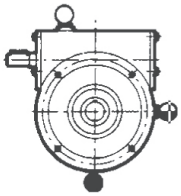
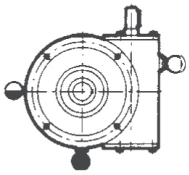
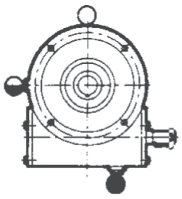
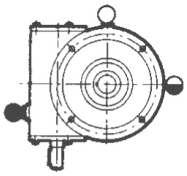
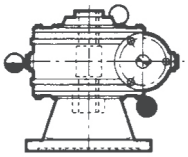
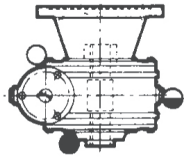
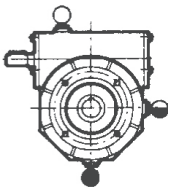
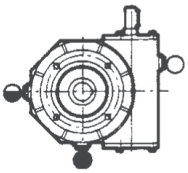
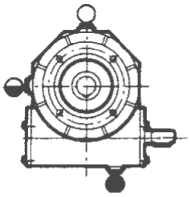
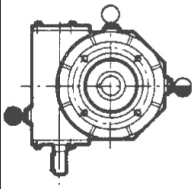
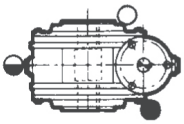
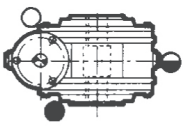
Refer to dimensions Q2, P2 and M2 for FR Output Flange

Frame Size	M1/ H7	M2/ H7	M3/ H7	M4/ H7	N1	N2	N3	O1	O2	O3	P1	P2	P3	P4	Q1	Q2	Q3	Q4	S1	S2	S3	V1	V2	V3	V4	d/J6	IS	L	L1	T
MI 80	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
MI 90	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
MI 110	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
MI 130	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
MI 150	250	200	*	180	20	22	*	175	220	*	350	350	*	250	300	280	*	215	6	6	*	17	12.5	*	M14	42	M12	110	193	204
MI 175	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 FBR FBM FBML						
FP						

◯ Fill-in plug ◒ Oil level plug ● Drain plug

Ratings Table (Sizes 40-75)

1.0 Service Factor

			U-MU-40				U-MU-50				U-MU-63				U-MU-75			
Ratio	n1	n2	M2	kW	HP	RD	M2	kW	HP	RD	M2	kW	HP	RD	M2	kW	HP	RD
	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	-	-	-	-
5	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	-	-	-	-
	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%
7.5	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%
	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%
10	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%
	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%
15	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%
	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%
20	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%
	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%
25	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%
	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%
30	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%
	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%
40	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%
	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%
50	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%
	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%
60	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%
	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%
70	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%
	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%
80	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%
	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%
100	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.

LAFERT NORTHAMERICA

Ratings Table (Sizes 90-110) & Mounting Positions

1.0 Service Factor

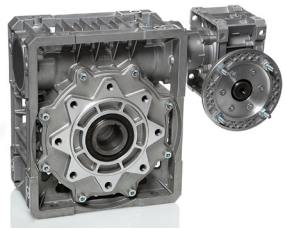
			U-MU-90				U-MU-110			
Ratio	n1	n2	M2	kW	HP	RD	M2	kW	HP	RD
	3360	672	-	-	-	-	-	-	-	-
	1680	336	-	-	-	-	-	-	-	-
5	1080	216	-	-	-	-	-	-	-	-
	800	160	-	-	-	-	-	-	-	-
	3360	448	240	12.28	16.69	92%	372	19.14	26.02	91%
	1680	224	344	8.89	12.08	91%	536	13.90	18.89	90%
7.5	1080	144	390	6.55	8.91	90%	599	10.15	13.80	89%
	800	107	470	3.87	5.26	85%	727	5.90	8.03	86%
	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%
10	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%
	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%
15	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%
	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%
20	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%
	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%
25	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%
	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%
30	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%
	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%
40	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%
	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%
50	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%
	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%
60	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%
	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%
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%
	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%
80	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%
	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%
100	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.

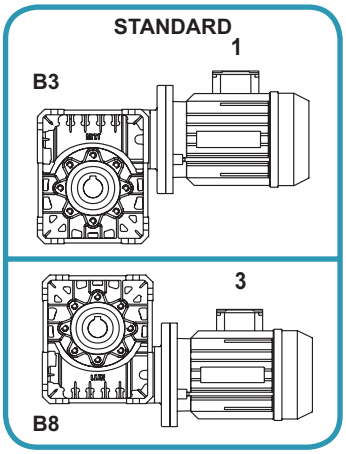


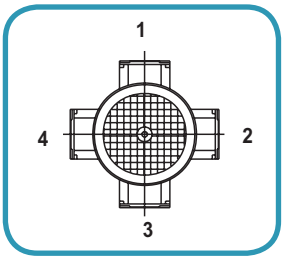
MOUNTING POSITIONS

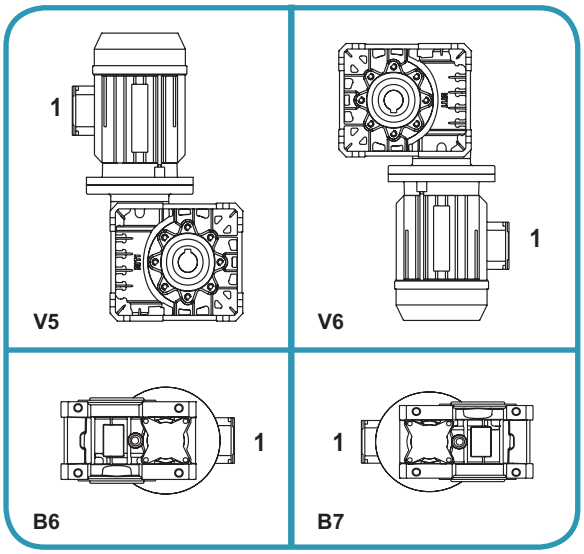
Always recognize the required mounting position for the gearbox. Certain orientations require special lubricants and/or bearings to achieve the normal service life of the gearbox.

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

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

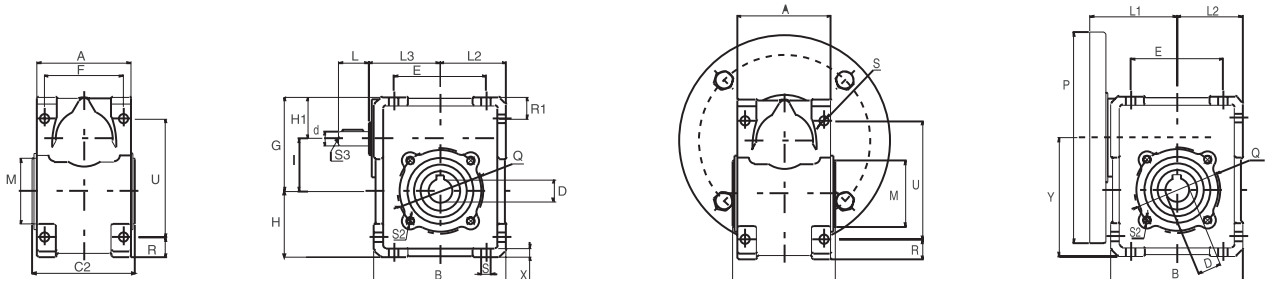






Dimensions

BASE MOUNT VERSION



SOLID INPUT SHAFT (U)

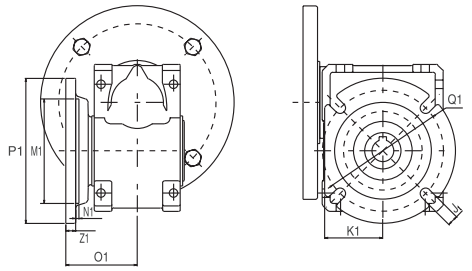
MOTOR INPUT SHAFT (MU)

Size	I	D H7	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	**	**

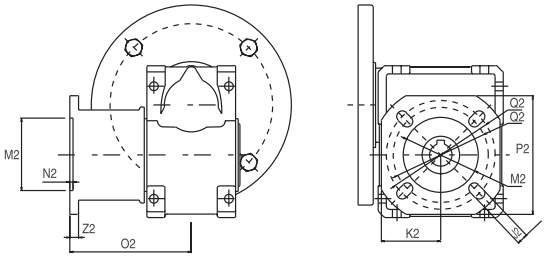
( ) Optional output bore size

** Inquire for P & L1 dimensions

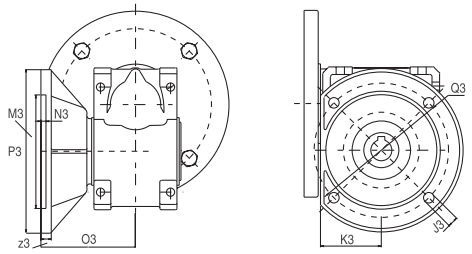
MU... FBR VERSION



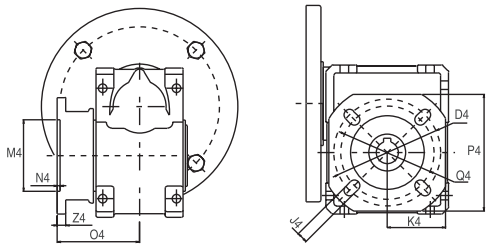
MU... FBML VERSION



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	$580.00
P 71	**	5	$663.00
P 80	**	11	$735.00
P 90	**	16	$848.00

*** 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.

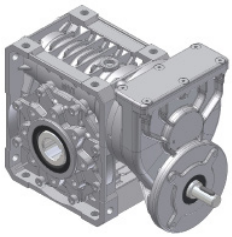
High Versatility

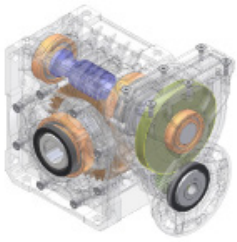
It is possible to supply a seperate kit for easy assembly on a standard gearbox.

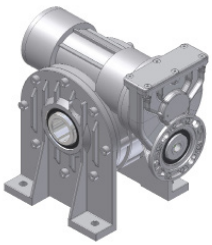
High Reliability

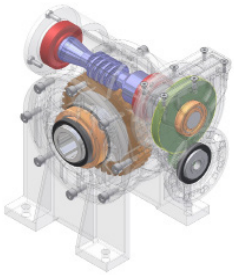
Housing built in pressure die casting aluminum.

"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

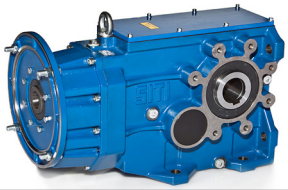
Input Shaft Bushings

Steel Bushings	Price ($)
38mm to 28mm	$126.00
28mm to 24mm	$121.00
24mm to 19mm	$103.00
19mm to 14mm	$83.00
14mm to 11mm	$72.00
11mm to 9mm	$32.00

(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



					ADDITIONAL FEATURES & ACCESSORIES ($)					
Size	**Input Flange Size**	**Weight (lbs)**	***MBH with B5 Input Price $**	***BH Price $**	**Output Flange**	**Torque Arm**	**Oil**	**Double Output Shaft**	**OP Shaft Taper Roller Bearing**	**Backstop**
MBH56	**63-71-80-90**	36	$2,218.00	$2,263.00	$201.00	$143.00	$99.00	N/A	$150.00	N/A
MBH63	**71-80-90**	66	$2,808.00	$2,808.00	$284.00	$156.00	$168.00	$249.00	$214.00	N/A
MBH63	**100-112**		$3,054.00							
MBH80	**71-80-90**		$4,482.00							
MBH80	**100-112**	88	$4,701.00	$4,447.00	$327.00	$256.00	$296.00	$286.00	$381.00	N/A
MBH80	**132**		$4,701.00							
MBH100	**80-90**		$5,956.00							
MBH100	**100-112**	159	$6,140.00	$5,830.00	$460.00	$350.00	$482.00	$413.00	$491.00	$699.00
MBH100	**132**		$6,447.00							
MBH125	**80-90**		$7,798.00							
MBH125	**100-112**	214	$7,952.00	$7,641.00	$717.00	$509.00	$672.00	$478.00	$585.00	$1,050.00
MBH125	**132**		$8,259.00							
MBH140	**100-112**	452	$12,158.00	$11,787.00	$860.00	$1,210.00	$1,075.00	$541.00	N/A	$1,146.00
MBH140	**132**		$13,538.00							
MBH160	**100-112**	573	$16,271.00	$15,841.00	$976.00	$1,210.00	$1,718.00	$573.00	N/A	$1,496.00
MBH160	**132**		$17,498.00							

*** 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

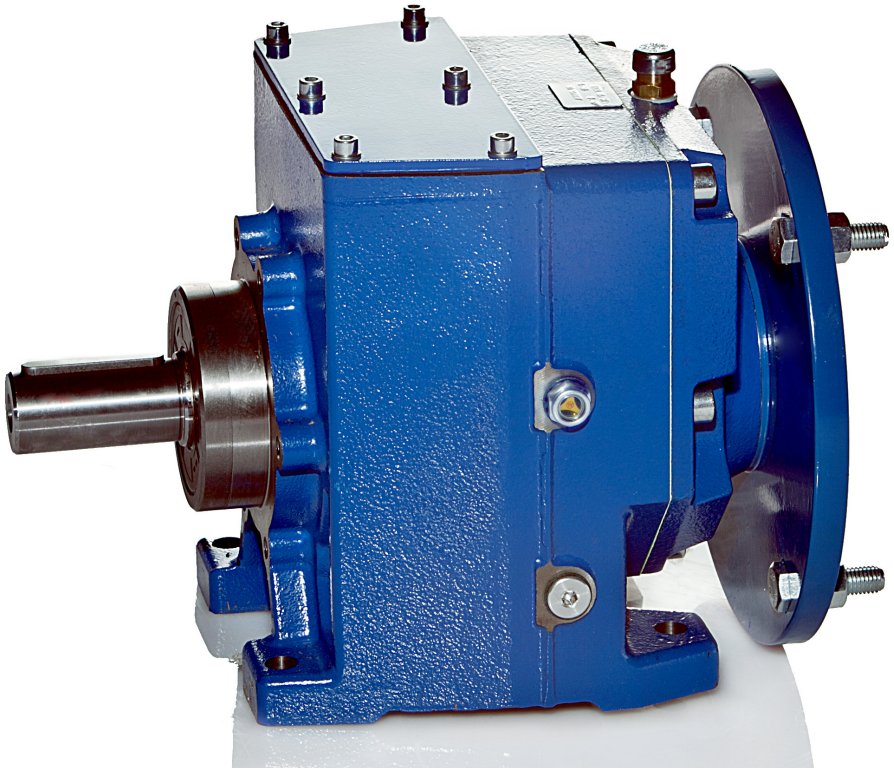
- (MK - MKF : K - KF) • Mechanical Speed Variator
- 228 to 1,200 RPM Range on 4 Pole, 60 Hz Motors • Maximum Input Power of 11 kW

Size	**Weight (lbs)**	**PAM Flange MK Price $**	**Male Input "K" Shaft Price $**	**Zero Speed Option Price $**
MK2	20	$1,367.00	$1,501.00	N/A
MKF2	20	$1,428.00	$1,548.00	N/A
MK5	40	$1,695.00	$1,934.00	$1,321.00
MKF5	40	$1,795.00	$1,992.00	$1,321.00
MK10	66	$2,167.00	$2,466.00	$1,508.00
MKF10	66	$2,217.00	$2,532.00	$1,508.00
MK20	85	$3,074.00	$3,405.00	$2,030.00
MKF20	85	$3,151.00	$2,874.00	$1,678.00
MK30	120	$4,511.00	$4,959.00	$2,689.00
MKF30	120	$4,671.00	$5,082.00	$2,689.00
MK50	225	$4,931.00	$5,489.00	$2,689.00
MKF50	225	$5,063.00	$5,514.00	$2,689.00
MK100	355	$7,844.00	$8,874.00	$5,354.00
MKF100	355	$8,071.00	$9,069.00	$5,354.00

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 (lbs)	PAM FLANGE		MALE INPUT SHAFT	ADD $
			MNHL.../2 Price $	MNHLF.../2 Price $	NHL.../2 Price $	Output Flange
MNHL 16/2	*	20	$1,283.00	$1,384.00	$1,168.00	$102.00
MNHL 20/2	*	20	$1,283.00	$1,384.00	$1,168.00	$102.00
MNHL 25/2	*	30	$1,490.00	$1,716.00	$1,381.00	$226.00
MNHL 30/2	*	50	$1,784.00	$2,116.00	$1,544.00	$332.00
MNHL 35/2	**	62	$2,436.00	$2,769.00	$2,314.00	$332.00
MNHL 40/2	**	90	$3,554.00	$3,978.00	$3,166.00	$424.00
MNHL 50/2	**	120	$5,191.00	$5,692.00	$4,229.00	$501.00
MNHL 60/2	**	230	$8,100.00	$8,665.00	$7,180.00	$567.00
MNHL 70/2	**	345	$10,619.00	$11,186.00	$10,309.00	$567.00
MNHL 90/2	**	508	$13,012.00	$13,826.00	$14,824.00	$931.00
MNHL 100/2	**	882	$21,169.00	$22,392.00	$23,938.00	$1,224.00

3 Stages of Reduction

Size	Oil	Weight (lbs)	PAM FLANGE		MALE INPUT SHAFT	ADD $
			MNHL.../3 Price $	MNHLF.../3 Price $	NHL.../3 Price $	Output Flange
MNHL 25/3	*	35	$1,920.00	$2,148.00	$1,741.00	$226.00
MNHL 30/3	*	55	$2,226.00	$2,556.00	$1,822.00	$332.00
MNHL 35/3	**	62	$2,878.00	$3,209.00	$2,593.00	$332.00
MNHL 40/3	**	95	$4,135.00	$4,560.00	$3,721.00	$424.00
MNHL 50/3	**	135	$5,891.00	$6,391.00	$5,340.00	$501.00
MNHL 60/3	**	240	$9,242.00	$9,808.00	$8,321.00	$567.00
MNHL 70/3	**	390	$11,838.00	$12,404.00	$11,598.00	$567.00
MNHL 90/3	**	508	$13,786.00	$14,719.00	$14,365.00	$931.00
MNHL 100/3	**	882	$24,004.00	$25,228.00	$25,006.00	$1,224.00

* *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)

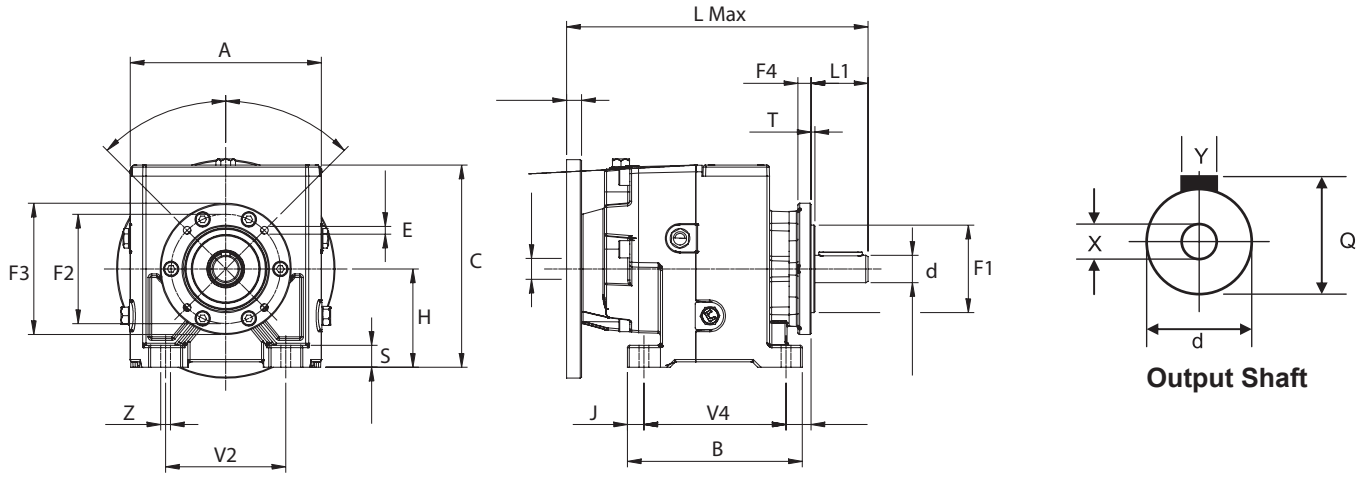
1750 Input RPM - 1.0 Service Factor

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

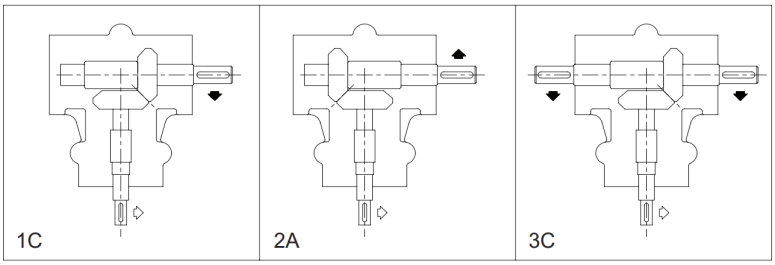
Output Flange Dimensions

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

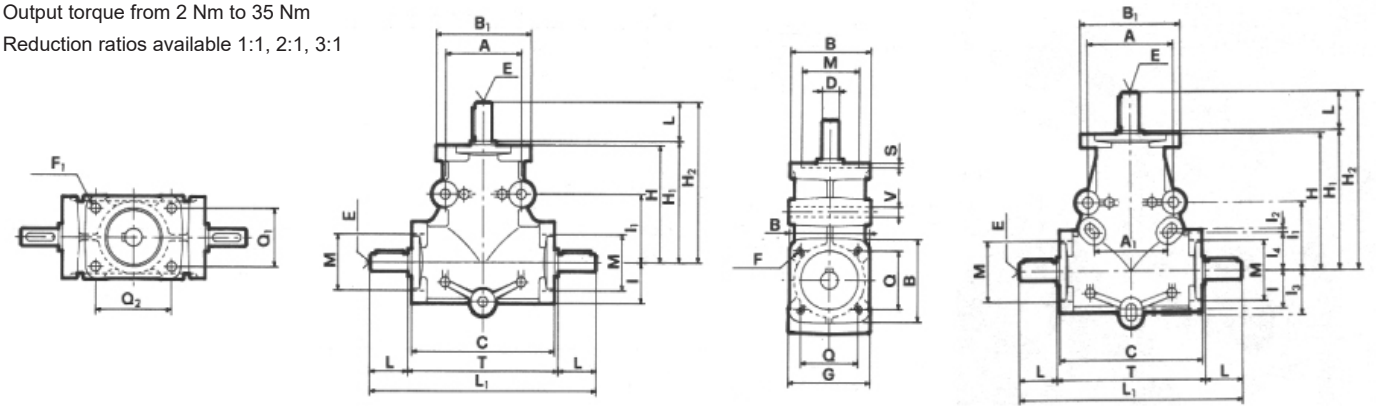
Pricing & Dimensions

Type	Execution	Ratios	Weight (lbs)	Price $
R9	1C / 2A	1:1, 2:1	4	$600.00
R9	3C	1:1, 2:1	4	$624.00
R14	1C / 2A	1:1, 2:1, 3:1	6	$663.00
R14	3C	1:1, 2:1, 3:1	6	$693.00
R19	1C / 2A	1:1, 2:1, 3:1	12	$1,278.00
R19	3C	1:1, 2:1, 3:1	12	$1,301.00
R24	1C / 2A	1:1, 2:1, 3:1	14	$1,278.00
R24	3C	1:1, 2:1, 3:1	14	$1,305.00

Execution Options



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



Size	A	A_1	C	G	H	H_1	H_2	I	I_1	I_2	I_3	I_4	L_1	T	V	B	B_1	F	F_1	M_{h7}	Q	Q_1	Q_2	S	D_{h7}	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)

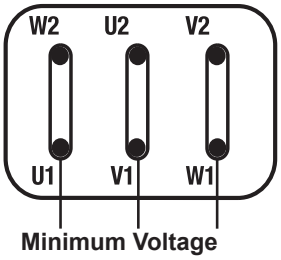
High Versatility
- 7 sizes with 4 input & 4 output configurations
- 2 Output support connections:
  - SM (Standard)
  - SMR (reinforced for High load)
- 3 Options of mounting positions:
  - Direct Couple
  - Foot Mount
  - Flange Mount

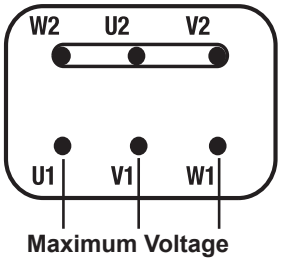
Output Flange

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

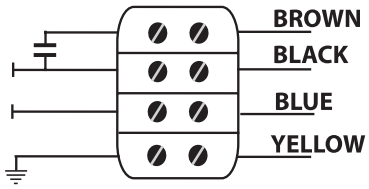
High Reliability
- Strengthened casing for heavy duty applications
- High resistant gears with oversized bearings
- Superior sealing for leak prevention

6-LEAD MOTOR CONNECTION △ / Y





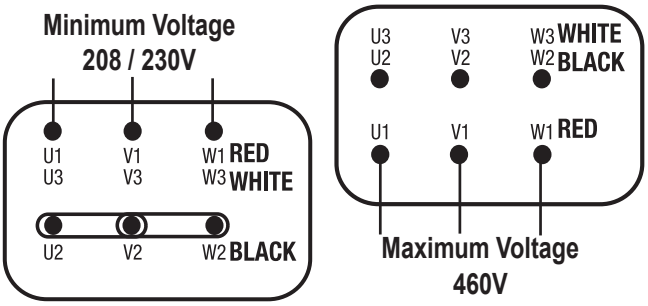
AMFV Series - Forced Vent Kit



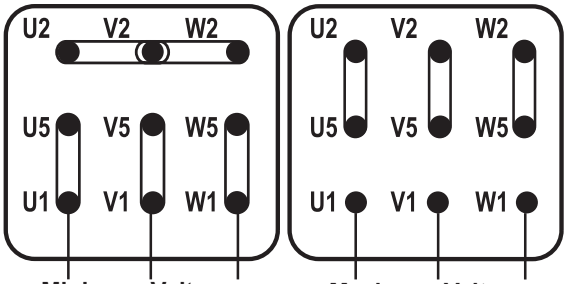
(1-phase fan 115V or 230V)
100 Frame & Larger

9-LEAD MOTOR CONNECTION YY / Y

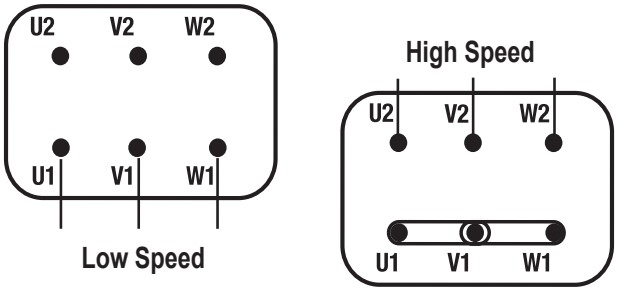
6 Post Block



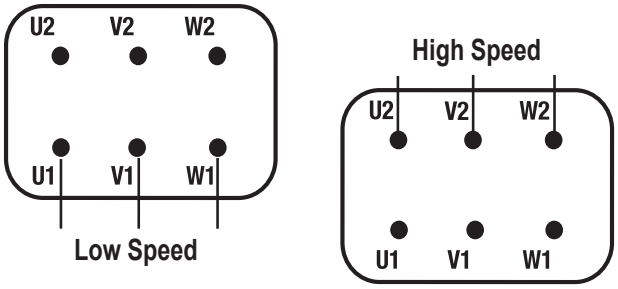
9 Post Block



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

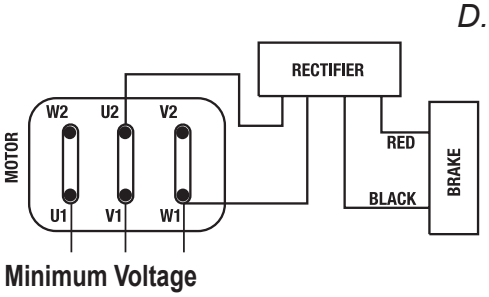


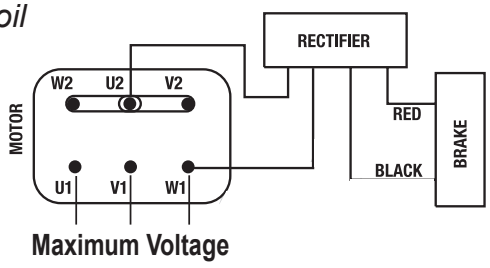
2 SPEED (2 WINDINGS) - 2/8, 4/6 & 6/8 POLES



MS Type - Compact Brake Motor

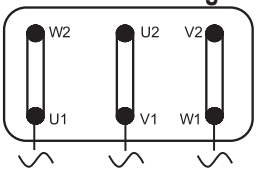
D.C. Brake Coil



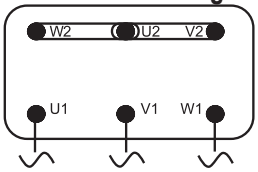


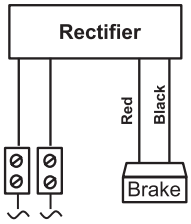
MS brake coils may be wired separately by removing the leads from the motor block and connecting to an alternate/separate power source. Alternate voltage coils are available. Always check to ensure incoming voltage matches the coil voltage.

△ Minimum Voltage



Y Maximum 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.

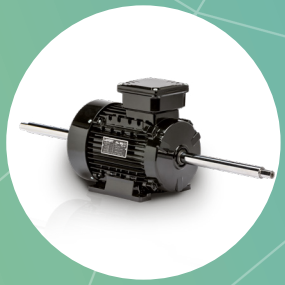
CLAIM: Claims for shortage or damaged goods for any collect shipment must be made to the transportation company as risk passes to the customer at the point of F.O.B. Claims for shortage or damaged goods for any prepaid shipment will be made to the transportation company as risk stands with the shipper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

HIGH PERFORMANCE MOTORS & DRIVES



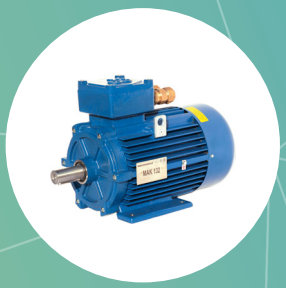
CUSTOM BUILT MOTORS

BRAKE MOTORS

BRUSHLESS SERVO MOTORS

GEARBOXES

STAINLESS STEEL MOTORS



EXPLOSION PROOF MOTORS

COOLANT PUMPS

LAFERTGROUP
Member of Sumitomo Drive Technologies

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Lafert North America Inc.
5620 Kennedy Road - Mississauga
Ontario L4Z 2A9
Canada

Phone 905-629-1939 - Fax 905-629-2852
lna.info@shi-g.com - www.lafertna.com

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