



*Your Best Source for Metric Motors,
Gearboxes & Coolant Pumps*

*Providing innovations
for a **GREENER** tomorrow*

2013

Product Catalogue & Price List

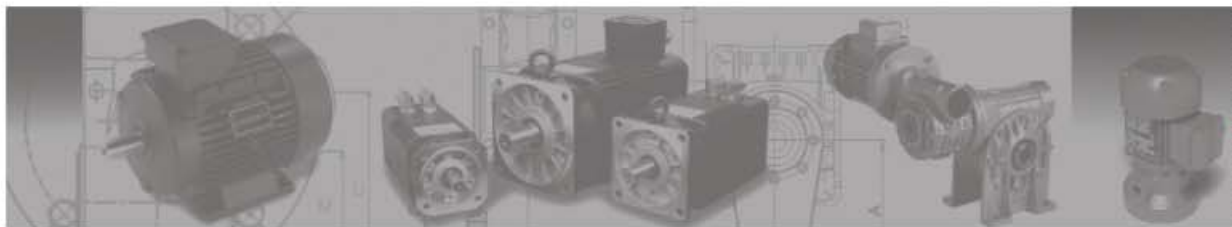
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GENERAL MECHANICAL CHARACTERISTICS

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 as they are bolted on separately. Frame sizes 56 - 160 are pressure die cast aluminum. Frame sizes 180 - 315 are cast iron. 180 frame motors may be stocked in either material depending on motor design.

FLANGES

Frame sizes 56 - 160 have pressure die cast aluminum flanges. All types 180 - 315 have cast iron flanges and end shields. Special sizes and shapes are available upon request in die cast aluminum at additional charges.

BEARINGS

The bearings mounted on our motors are the best available. 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.

FRAME SIZE	56	63	71	80	90	100	112	132	160	180-2	180-4/6/8
Drive End	6201-2Z	6202-2Z	6203-2Z	6204-2Z	6205-2Z	6206-2Z	6306-2Z	6208-2Z	6309-2Z	6211	6311
Non-Drive End	6201-2Z	6202-2Z	6203-2Z	6204-2Z	6205-2Z	6206-2Z	6306-2Z	6208-2Z	6309-2Z	6211	6211
FRAME SIZE	200-2	200-4/6/8	225-2	225-4/6/8	250-2	250-4/6/8	280-2	280-4/6/8	315-2	315-4/6/8	
Drive End	6212	6312	6313	6313	6314	6314	6316	6316	6317	N319	
Non-Drive End	6212	6212	6313	6313	6314	6314	6316	6316	6314	6319	

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 also be supplied. All our bearings are pre-loaded axially with compensating rings of tempered steel. 180-315 have regreasable bearings; both drive and non-drive end shields are equipped with grease fittings.

COOLING

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

FAN COVER

Frame sizes 56 - 112 are either a plastic-nylon composite, aluminum, or rolled steel. Sizes 132 - 180 are rolled steel and larger than 200 frame sizes are cast iron or rolled steel depending on model.

ROTORS

Rotors are a "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 (AB/EB) are normally painted with a semi-gloss black paint (RAL9005). Explosion proof motors (AB/EB) 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.

GENERAL MECHANICAL CHARACTERISTICS

TYPE OF PROTECTION

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.

IP	The first two letters are a reference to the type of protection provided.
1st number	From 0 to 6, indicates progressively the level of protection against electrical contact, and/or protection of the motor against entry of foreign bodies.
2nd number	From 0 to 8, indicates progressively the level of protection against the entry of water.

DEGREE OF PROTECTION

IP54 —————	The first number indicates complete protection against contact with live or moving parts inside the casing. Protection against harmful dust deposits. Dust is not prevented from entering, but must not interfere with the proper functioning of the motor. The second number indicates protection against water sprayed on the motor from any direction.
IP55 —————	The first number indicates complete protection against contact with live or moving parts inside the casing. Protection against harmful dust deposits. Dust is not prevented from entering, but must not interfere with the proper functioning of the motor. The second number indicates protection against water jet from a nozzle onto the motor from any direction.
IP56 —————	The first number indicates complete protection against contact with live or moving parts inside the casing. Protection against harmful dust deposits. Dust is not prevented from entering, but must not interfere with the proper functioning of the motor. The second number indicates protection against heavy seas or water projected in powerful jets.
IP67 —————	The first number indicates complete protection against contact; no ingress of dust. The second number indicates 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).

NOTE

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

RECOMMENDATION

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

HPI - Integral Design - Targeted towards OEM Specific Applications

Lafert's High Performance motors are offered with the added convenience of a surface mounted, PWM output and electronic control. This marriage has garnered the HPI acronym.

The convergence of these technologies allows for simple set up and integration to the application, resulting in fast installation. Such a money saving feature is key, especially when considering large facilities with multiple installation requirements.

Simple and effective, this approach to motor control allows the user to effortlessly connect to line power, eliminating wire costs between the drive and motor. Thanks to our method of production, units are designed specifically to the application challenges. Such intimate knowledge serves as a large advantage as the limits will be preset to the controls and optimal performance will be guaranteed.

Our design surpasses that of those in the competition by utilizing Rare Earth surface mounted permanent magnets to a specially skewed rotor. Such standards ensure full and dense magnetic flux with demagnetizing resistance.

- Compact & Lightweight Design: Up to 50% smaller frame sizes than units with comparable power capacities.
- Eliminates Reflective Wave Voltage: Distance between control and motor can result in Standing Wave or Reflective Wave phenomena. With the controls integral to the unit, such distances are removed from the equation, thus successfully preventing premature failures.
- Saves on cabinet space: No requirement for separate control panel and cabinets.
- Simple and singular set up: On board, optimally selected controls provides for 1 spot set up and guaranteed compatible performance.
- Suitable for a vast array of applications. Typically they include: Ventilation (Fans), Fluid Transfer (Pumps), Conveyors, Web Handling & more!
- Production Range: 2 and 4 pole designs from 1 through to 30hp.
- Motor frame sizes from IEC 80 to 180.
- Versatile mounting capability: B3, B34, B35, B14 and B34 available.
- PTO Thermal Protection.
- Rotor is equipped with surface mount Rare Earth Permanent Magnets
- Insulation Class F with B rise.
- IP55 Ingress Protection across entire range
- Feedback options include: Resolver, Encoder, Hall Sensor and Tachometer. (Open Loop operation is standard)
- PWM Carrier frequency range: From 4kHz to 12kHz
- Output Frequency Limit: 400Hz
- Four 0-24VDC user selectable NPN/PNP Digital Inputs available
- 1 Programmable Analogue Voltage Input: 0-10VDC
- 1 Programmable Analogue Current Input: 0/4-20mA
- 1 Programmable Relay Output
- Unit can be programmed via keypad or via PC using Lafert Software
- Output Rating: 150% Overload for 60 seconds and 175% overload for 2 seconds.
- Serial Bus Communication: RS485 or CANbus. CANopen for cascade mode.
- Input Voltage Range: 1ph, 200-240V up to 3 horsepower & 3ph, 230/460V +/- 10% for the entire range.



Brushless Servo Motors

Boasting one of the most complete lines of servo motors available in the market, Lafert offers Servo units with nominal torques from 0.3Nm to 150Nm and Direct Drive motors from 8Nm to 1000Nm. Due to our integrated manufacturing process, we are one of the few independent manufacturers that can supply a wide range of tailor made and standard products for the Automation field, providing excellent flexibility, versatility and cost effectiveness. Subjected to gruelling climatic and strict load tests, our Brushless servo motors are specifically engineered to meet today's challenging automation applications.

Typical Standard features include:

- Low loss Ferrite-Silicone core lamination stack and peripheral surface mounted Rare Earth Magnet rotor.
- Nickel Chromium steel alloy shafts
- Permanently lubricated 2ZC3 bearings (-40DegC to 140DegC rated)
- Die cast flange, endshields and cover.
- Extruded aluminium case.
- Feedback options: 2, 4 and 6 pole Resolvers, Encoder, brushless AC Tachometer and Hall-Effect Sensors.
- Thermal sensor over temperature protection.
- Right Angle, straight and swivel type connectors for both power and feedback connections.
- IMB5 Mounting (V1 and V3 available)
- Large Speed Range: 1200, 2000, 3000, 4000 and 6000 rpm designs to choose from.
- Natural Convection & Radiation Cooling.
- Class F Insulation
- IP65 degree of ingress Protection across the entire range with option to increase to IP67
- 140DegC trip PTO Thermal protection (NTC/PTC types available)
- Rapid acceleration and deceleration: Up to 90.00 rad/sec²
- Low Speed Torque Ripple elimination due to superior distribution of the rotor magnetic filed.
- Reduced dimentions

Additional optional features include:

Failsafe Holding Brake: Fitted in the flanged endshield, equipped with permanent magnets and electromagnetic release.

Forced Ventilation: Our typical design does not require this as we have allowed for heat dissipation in the most gruelling processes. However, in cases where extreme ambients are present or where the torque output needs to be increased, this method of cooling allows for up to 30% increase in output.

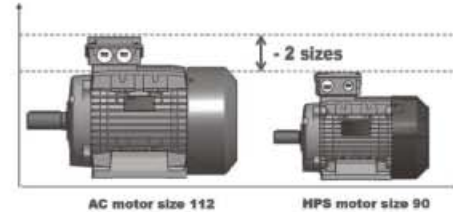
Water Cooling Jacket for high ambient applications and also where increasing output power is deemed necessary.

IE4* Efficiency Level - Super Premium efficiency (Specially Designed for its energy saving potential and renewable energy applications.

The new Lafert High Performance motor combines the technology of both brushless permanent magnet servo motors and conventional AC induction motors.

The following features of our HP Motors may vary depending on series and type:

- Integral construction (HPI range) or stand-alone drive (HPS range) • Sensorless control or with Feedback Device • Serial isolated RS485 (eventually for "Cascade" connection) or serial isolated CANBus • Mounting: IM B3, B5, B14, B34, B35 • Admissible environmental temperature: from -15 °C up to +40 °C, with altitudes 1000m above sea level
- Drive operating voltage: 230 or 460 Vac
- Insulation class: "F"; temperature rise to class B (TEFC execution)
- IP55 degree of protection for the whole range
- On-Off PTO switch for thermal protection (NTC and PTC are available)
- Optional feedback by choice: resolver, encoder, tachometer and Hall sensors (several combinations may be added to this list)
- Reduced size & weight by approximately 50% compared to a standard AC motor
- Rare earth permanent magnet rotors
- Motor Power rating: .75HP - 40HP
- Available speeds: 1500, 1800, 3000, 3600, 4500 rpm



Notes:

It is necessary to source a Variable Frequency Drive that can accept BEMF parameter details in order to successfully commutate the motor shaft. "Variable Frequency Drives must have a 0% slip algorithm to run PM synchronous motors."

*Standard Lafert flange will be used - Surcharge may apply for installation,

see page 25 for dimensional drawing

* Pending approval by IEC

HPS - STAND ALONE MOTOR 3600 RPM

Type	Size	Rated power	Rated torque	Peak torque	Voltage constant	Torque constant speed	BEMF at rated speed	Rated current	Efficiency HPS	Weight	List Price
		Pn kW	Mn Nm	Mpk Nm	Ke Vs	Kt Nm/A	En Vrs	In Arms	η %	lbs	\$
3600 min ⁻¹											
HPS71 3600 16	71	0.75	2.0	6.0	0.73	1.26	272	1.6	90.0%	11	779.00
HPS71 3600 23	71	1.1	2.9	8.8	0.73	1.26	272	2.3	90.9%	12	877.00
HPS71 3600 32	71	1.5	4.0	11.9	0.73	1.26	272	3.2	91.6%	13	952.00
HPS71 3600 46	71	2.2	5.8	17.5	0.73	1.26	272	4.6	91.8%	15	1,060.00
HPS90 3600 46	S-L	2.2	5.8	17.5	0.73	1.26	272	4.6	91.7%	22	1,152.00
HPS90 3600 63	S-L	3.0	8.0	23.9	0.73	1.26	272	6.3	92.4%	26	1,316.00
HPS90 3600 84	S-L	4.0	10.6	31.8	0.73	1.26	272	8.4	92.8%	31	1,413.00
HPS90 3600 116	S-L	5.5	14.6	43.8	0.73	1.26	272	11.6	93.3%	35	1,715.00
HPS112 3600 116	M	5.5	14.6	43.8	0.73	1.26	272	11.6	93.2%	51	1,996.00
HPS112 3600 158	M	7.5	19.9	59.7	0.73	1.26	272	15.8	93.9%	57	2,189.00
HPS112 3600 232	M	11.0	29.2	87.5	0.73	1.26	272	23.2	94.3%	66	2,441.00
HPS112 3600 317	M	15.0	39.8	119.4	0.73	1.26	272	31.7	94.5%	73	3,131.00
HPS132 3600 317	M	15.0	39.8	119.4	0.73	1.26	272	31.7	94.2%	112	4,494.00
HPS132 3600 391	XL	18.5	49.1	147.2	0.73	1.26	272	39.1	94.6%	128	5,441.00
HPS132 3600 465	XXL	22.0	58.4	175.1	0.73	1.26	272	46.5	95.0%	143	6,237.00
HPS132 3600 634	XXL	30.0	79.6	238.7	0.73	1.26	272	63.4	95.1%	159	6,573.00

HPS - STAND ALONE MOTOR 1800 RPM

Type	Size	Rated power	Rated torque	Peak torque	Voltage constant	Torque constant speed	BEMF at rated speed	Rated current	Efficiency HPS	Weight	List Price
		Pn kW	Mn Nm	Mpk Nm	Ke Vs	Kt Nm/A	En Vrs	In Arms	η %	lbs	\$
1800 min ⁻¹											
HPS71 1800 12	71	0.55	2.9	8.8	1.45	2.5	272	1.2	87.7%	11	779.00
HPS71 1800 16	71	0.75	4.0	11.9	1.45	2.5	272	1.6	88.4%	12	877.00
HPS71 1800 23	71	1.1	5.8	17.5	1.45	2.5	272	2.3	88.9%	14	952.00
HPS71 1800 32	71	1.5	8.0	23.9	1.45	2.5	272	3.2	89.4%	15	1,060.00
HPS90 1800 32	S-L	1.5	8.0	23.9	1.45	2.5	272	3.2	91.2%	22	1,152.00
HPS90 1800 46	S-L	2.2	11.7	35.0	1.45	2.5	272	4.6	91.6%	26	1,316.00
HPS90 1800 64	S-L	3.0	15.9	47.7	1.45	2.5	272	6.3	92.1%	31	1,413.00
HPS90 1800 84	S-L	4.0	21.2	63.7	1.45	2.5	272	8.4	92.4%	37	1,715.00
HPS112 1800 84	M	4.0	21.2	63.7	1.45	2.5	272	8.4	92.5%	51	1,996.00
HPS112 1800 116	M	5.5	29.2	87.5	1.45	2.5	272	11.6	92.6%	57	2,189.00
HPS112 1800 158	M	7.5	39.8	119.4	1.45	2.5	272	15.8	93.3%	66	2,441.00
HPS112 1800 232	M	11.0	58.4	175.1	1.45	2.5	272	23.2	94.0%	73	3,131.00
HPS132 1800 232	M	11.0	58.4	175.1	1.45	2.5	272	23.2	94.2%	112	4,494.00
HPS132 1800 317	XXL	15.0	79.6	238.7	1.45	2.5	272	31.7	94.6%	128	5,441.00
HPS132 1800 391	XXL	18.5	98.1	294.4	1.45	2.5	272	39.1	94.9%	143	6,237.00

3-Phase: 60Hz standard

1.15 Service Factor (SF) • Available in 208 230/460V - 333/575V

Frame sizes 100 and above available in 575/990V version • Frame sizes 132 and above available in 460/776V • TEFC

Threaded hole in output shaft is standard • Squirrel Cage • Class F • IP55 • IEC - CEI - UNEL MEC - AMPH/LNP Motors (CSA Approved)

Motors (cURus approved) - (UL recognized are Class 'B') • Compliant with EISA regulations

LNP = 15:1 (Constant Torque) Turn Down

Higher turn down (Constant Torque) - Please inquire

See pages 27 to 29 for AMPH dimensional drawings (for frames 90 to 160L)
See pages 30 for LNP cast iron dimensional drawings (for frames 180 to 315L)

2 POLE - 3600 RPM

Type	Output Power kW	HP	speed min ⁻¹	torque Nm	EFF. 100%	Full Load Amps 460 V	575 V	Weight (lbs)	List Price \$
AMPH 90S AA2	1,5	2	3515	4.1	85.5	2.8	2.3	31	831.00
AMPH 90L BA2	2,2	3	3480	6.0	86.5	3.8	3.1	35	1,089.00
AMPH 100L AA2	3	4	3515	8.2	88.5	4.9	4.0	50	1,198.00
AMPH 112M BA2	4	5,5	3540	10.8	88.5	6.5	5.2	74	1,543.00
AMPH 112M CA2	5,5	7,5	3530	14.9	89.5	8.9	7.2	74	1,937.00
AMPH 132S ZA2	5,5	7,5	3540	14.8	89.5	8.7	7.0	117	2,031.00
AMPH 132S TA2	7,5	10	3540	20.2	90.2	11.9	9.6	123	2,533.00
AMPH 132M TA2	9,2	12,4	3545	24.8	90.2	14.4	11.7	130	2,876.00
AMPH 132M RA2	11	15	3535	29.7	91.0	17.7	14.3	130	3,102.00
AMPH 160M YA2	11	15	3550	29.6	91.0	17.0	13.8	194	3,218.00
AMPH 160M ZA2	15	20	3555	40.3	91.0	23.9	19.3	229	4,238.00
AMPH 160L ZA2	18,5	25	3555	49.7	91.7	30.6	24.4	229	5,013.00
AMPH 160L TA2	22	30	3540	59.3	91.7	35.3	28.7	229	5,490.00
LNP 180M E2 +	22	30	3555	59.1	91.7	33.8	27.1	464	5,519.00
LNP 200L D2 +	30	40	3555	80.6	92.4	46.3	37.1	520	7,891.00
LNP 200L E2 +	37	50	3560	99.3	93.0	55.5	44.4	552	8,610.00
LNP 225M E2 +	45	60	3560	120.7	93.6	68.6	54.9	706	10,679.00
LNP 250M E2 +	55	75	3565	147.3	93.6	83.8	67.0	915	13,275.00
LNP 280S E2 +	75	100	3565	200.9	94.1	111.2	88.9	1228	16,199.00
LNP 280M E2 +	90	120	3564	200.9	95.0	129.3	103.4	1398	18,404.00
LNP 315S D2 + +	110	150	3555	241.1	95.0	159.7	127.8	2196	33,664.00
LNP 315M E2 + +	132	180	3560	295.5	95.4	191.7	153.3	2419	35,359.00
LNP 315L D2 + +	160	215	3560	295.5	95.4	233.9	187.1	2597	36,565.00
LNP 315L F2 + +	200	270	3565	354.1	95.8	294.4	235.5	2664	40,003.00

4 POLE - 1800 RPM

Type	Output Power kW	HP	speed min ⁻¹	torque Nm	EFF. 100%	Full Load Amps 460 V	575 V	Weight (lbs)	List Price \$
AMPH 90S AA4	1,1	1,5	1745	6.0	86.5	2.2	1.8	36	810.00
AMPH 90L BA4	1,5	2	1735	8.2	86.5	2.9	2.4	36	918.00
AMPH 90L CA4	1,8	2,4	1730	9.9	86.5	3.5	2.8	36	1,045.00
AMPH 112M BA4	4	5,5	1760	21.7	89.5	6.9	5.6	79	1,560.00
AMPH 132S ZA4	5,5	7,5	1760	29.9	91.7	9.3	7.5	143	2,183.00
AMPH 132M ZA4	7,5	10	1760	40.7	91.7	13.0	10.4	174	2,493.00
AMPH 132M TA4	9,2	12,4	1760	49.9	91.7	15.9	12.7	216	2,954.00
AMPH 160M ZA4	11	15	1770	59.4	92.4	18.6	15.1	251	3,416.00
AMPH 160L ZA4	15	20	1765	81.2	93.0	26.3	21.0	265	4,434.00
LNP 180M D4 +	18,5	25	1730	93.6	93.6	28.5	22.8	355	5,387.00
LNP 180L E4 +	22	30	1740	120.7	93.6	33.2	26.5	410	5,758.00
LNP 200L D4 +	30	40	1740	164.6	94.1	45.5	36.4	540	7,408.00
LNP 225S D4 +	37	50	1745	202.5	94.5	61.4	49.1	710	9,082.00
LNP 225M E4 +	45	60	1745	246.3	95.0	74.3	59.5	770	10,989.00
LNP 250M E4 +	55	75	1750	300.1	95.4	82.2	65.8	1015	13,580.00
LNP 280S D4 +	75	100	1755	408.1	95.4	109.6	87.7	1370	17,351.00
LNP 280M E4 +	90	120	1760	488.3	95.4	128.7	103.0	1502	19,390.00
LNP 315S D4 + +	110	150	1760	590.1	95.4	160.1	128.1	2240	33,203.00
LNP 315M E4 + +	132	180	1780	708.2	95.8	190.1	152.1	2463	36,071.00
LNP 315L D4 + +	160	215	1780	857.9	95.8	229.4	183.5	2712	39,470.00
LNP 315L F4 + +	200	270	1781	1072.4	96.2	289.9	231.9	3535	42,890.00

⊙ = S/L dual set of holes on base (actual frame is 90L) (+) = indicates a cast iron frame / removeable feet optional
 9L = indicates 9 lead hook up at 230/460V (YY/Y connection) (++) = indicates a cast iron frame / feet are not removable
 Select sizes are available with dual mounting holes on the base

1.15 Service Factor (SF) • Available in 208 230/460V - 333/575V

Frame sizes 100 and above available in 575/990V version • Frame sizes 132 and above available in 460/776V • TEFC

Threaded hole in output shaft is standard • Squirrel Cage • Class F • IP55 • IEC - CEI - UNEL MEC - HE/LNA Motors (CSA Approved)

AMH/AAMH motors (cURus approved) - (UL recognized are Class 'B') • Compliant with EPACT regulations and are NRCAN approved

See pages 27 to 29 for dimensional drawings

2 POLE - 3600 RPM IE2

Part Number	HP	EFF	Weight (lbs)	List Price \$
HE 100L F2 9L	4.00	87.5	51	982.00

4 POLE - 1800 RPM IE2

Part Number	HP	EFF	Weight (lbs)	List Price \$
HE 100L E4 9L	3.00	87.7	50	859.00
HE 100L F4 9L	4.00	87.6	68	1,008.00

6 POLE - 1200 RPM IE2 Design H - High Torque

Part Number	HP	EFF	Weight (lbs)	List Price \$
AMH 90S AA6 9L	1.00	80.0	33	854.00
AMH 90L BA6 9L	1.20	80.0	38	990.00
AMH 112M BA6 9L	2.00	86.5	45	1108.00
AMH 112M CA6 9L	3.00	87.5	86	1,459.00
AMH 132S YA6 9L	4.00	83.5	123	1,910.00
AMH 132M YA6 9L	5.50	87.5	150	2,153.00
AMH 132M TA6 9L	7.50	89.5	160	2,625.00
AMH 160M ZA6 9L	10.00	89.5	213	3,203.00
AMH 160L ZA6 9L	12.50	89.5	225	3,614.00
AMH 160L TA6 9L	15.00	90.2	285	4,996.00

8 POLE - 900 RPM IE2

Part Number	HP	EFF	Weight (lbs)	List Price \$
LNP 180L E8+	15.00	88.5	430	5,705.00
LNP 200L E8+	20.00	89.5	571	7,898.00
LNP 225 S/M E8+	25.00	89.5	611	9,586.00
LNP 225 S/M D8+	30.00	91.0	668	10,511.00
LNP 250M E8+	40.00	91.0	922	12,742.00
LNP 280S D8+	50.00	91.7	1177	16,301.00
LNP 280M E8+	60.00	91.7	1341	18,207.00
LNP 315S D8++	75.00	93.0	2242	29,915.00
LNP 315M E8++	100.00	93.0	2465	34,524.00
LNP 315L D8++	120.00	93.0	2597	39,001.00
LNP 315L E8++	150.00	93.6	2752	42,150.00

6 POLE - 1200 RPM IE3

Part Number	HP	EFF	Weight (lbs)	List Price \$
LNP 180L D6+	20.00	91.7	415	5,793.00
LNP 200L D6+	25.00	93.0	555	7,324.00
LNP 200L E6+	30.00	93.0	571	7,960.00
LNP 225 S/M D6+	40.00	94.1	761	10,332.00
LNP 250 S/M E6+	50.00	94.1	924	12,670.00
LNP 280 S/M D6+	60.00	94.5	1140	16,229.00
LNP 280 S/M E6+	75.00	94.5	1170	18,064.00
LNP 315S D6++	100.00	95.0	2218	32,895.00
LNP 315M E6++	120.00	95.0	2419	34,635.00
LNP 315L D6++	150.00	95.0	2575	38,589.00
LNP 315L E6++	180.00	95.0	2708	42,237.00

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

9L = indicates 9 lead hook up at 230/460V (YY/Y connection) except for 160L - 2 POLE ΔΔ/Δ

6L = indicates 6 lead hook up at 230/460V (Δ/Y connection)

(+) = indicates a cast iron frame / removeable feet optional

(++) = indicates a cast iron frame / feet are not removable

Select sizes are available with dual mounting holes on the base

Frame sizes from 71 to 160 have removable feet.



3-Phase: 60Hz standard

ST / AM / AAM Motors • 1.15 Service Factor (SF) • Available in 208 230/460V - 333/575V

Frame sizes 100 and above available in 575/990V version • Frame sizes 132 and above available in 460/776V • TEFC • IP55

Squirrel cage • Threaded hole in output shaft is standard • Class F • IEC - CEI - UNEL MEC - ST Motors (CSA Approved)

AM/AAM motors (cURus approved) - (UL recognized are Class 'B')

See pages 27 to 29 for dimensional drawings

2 POLE - 3600 RPM

Part Number	HP	Full Load Amps		speed min ⁻¹	Weight (lbs)	List Price \$
		460V	575V			
ST 56 S2	0.18	0.40	0.29	3300	7	311.00
ST 63 C2	0.25	0.60	0.44	3120	8	313.00
ST 63 S2	0.35	0.80	0.58	3310	9	318.00
ST 63 L2	0.50	1.2	0.87	3265	10	328.00
ST 71 C2	0.50	1.0	0.73	3300	13	333.00
ST 71 S2	0.75	1.5	1.1	3380	14	338.00
ST 71 L2	1.00	1.9	1.4	3320	16	379.00
ST 80 C2	1.00	2.0	1.5	3410	18	387.00
ST 80 S2	1.50	2.7	2.0	3400	21	439.00
ST 80 L2	2.00	3.4	2.5	3400	24	485.00
ST 100L S2*	5.50	8.2	5.9	3450	50	940.00
ST 100L T2*	7.50	11	5.6	3430	71	1,000.00

4 POLE - 1800 RPM

Part Number	HP	Full Load Amps		speed min ⁻¹	Weight (lbs)	List Price \$
		460V	575V			
ST 56 S4	0.12	0.40	0.29	1560	6	311.00
ST 63 C4	0.18	0.50	0.36	1630	7	313.00
ST 63 S4	0.25	0.70	0.51	1590	9	317.00
ST 63 A4	0.33	0.80	0.58	1630	9	318.00
ST 71 C4	0.35	1.0	0.73	1600	13	327.00
ST 71 S4	0.50	1.3	0.91	1650	13	332.00
AM 71Z CA4	0.75	1.6	1.2	1660	16	372.00
ST 80 C4	0.75	1.7	1.2	1680	18	376.00
ST 80 S4	1.00	2.3	1.7	1690	20	404.00
AM 80Z CA4	1.50	2.9	2.1	1660	24	475.00
ST 100L S4*	4.00	6.9	5.0	1700	49	822.00
ST 100L /4*	5.50	8.7	6.5	1700	55	873.00

6 POLE - 1200 RPM

Part Number	HP	Full Load Amps		speed min ⁻¹	Weight (lbs)	List Price \$
		460V	575V			
ST 63 C6	0.12	0.47	0.36	980	10	491.00
ST 71 C6	0.25	0.85	0.62	1050	14	508.00
ST 71 S6	0.35	1.1	0.8	1020	15	514.00
ST 80 C6	0.50	1.05	0.91	1090	18	527.00
ST 80 S6	0.75	1.8	1.3	1090	21	571.00
6-POLE: 1200 RPM IEC Design H - High Torque						
ST 90S C6 ⊕	1.00	2	1.7	1140	26	683.00
ST 90L S6 ⊕ 9L	1.50	3.5	2.5	1145	33	792.00
ST 100L C6 9L	2.00	4.5	3.6	1150	39	886.00
ST 100L S6 9L	2.50	4.7	3.6	1150	48	1,025.00
ST 112M C6	3.00	5.1	4.1	1150	54	1,167.00
ST 112M S6	3.50	5.7	5.2	1170	65	1,372.00
ST 112M A6	4.00	6.5	5.2	1150	85	1,403.00
AAM 132S ZA6	4.00	6.6	4.9	1160	107	1,528.00
AAM 132M ZA6	7.50	11.6	10.2	1165	136	2,100.00
AAM 132M TA6	10.00	14	12.9	1183	148	2,562.00
AAM 160M ZA6	10.00	13.7	13.2	1164	219	2,891.00
AAM 160L ZA6	15.00	19.4	15.5	1175	245	3,997.00

8 POLE - 900 RPM

Part Number	HP	Full Load Amps		speed min ⁻¹	Weight (lbs)	List Price \$
		460V	575V			
ST 71 C8	0.20	.94	0.68	760	13	598.00
ST 80 C8	0.35	1.2	0.87	810	18	732.00
ST 90S C8 ⊕	0.50	1.8	1.3	810	25	806.00
ST 90L S8 ⊕	0.75	2.7	2	810	33	905.00
ST 100L C8	1.00	2.8	1.9	820	39	1,053.00
ST 100L S8	1.50	4	2.9	830	50	1,256.00
ST 112M C8	2.00	4.7	3.5	830	77	1,267.00
AAM 132S ZA8	3.00	6	4.8	850	112	1,725.00
AAM 132M ZA8	4.00	8.3	6.64	860	124	1,935.00
AAM 160M YA8	5.50	9	7.1	855	209	2,866.00
AAM 160M ZA8	7.50	11.4	9.1	860	231	3,205.00
AAM 160L ZA8	10.00	15	12.5	840	245	3,716.00

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

9L = indicates 9 lead hook up at 230/460V (YYY connection)

* Available in United States ONLY

** Available in United States ONLY @ 575V

Frame sizes from 71 to 160 have removable feet.



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

1.15 Service Factor (SF) • Available in 208 230/460V or 333/575V • Brake voltage same as motor voltage
Adjustable brake torque • Manual Release • TEFC • Squirrel Cage • Class F • IP54
IEC - CEI - UNEL MEC - CSA Approved - (UL recognized are Class 'B')

See page 31 for dimensional drawings • Older designed brake motors are referred to as AF

2 POLE - 3600 RPM

Part Number	HP	Full Load Amps 460V	575V	Speed min	Max Brake Torque (Nm)	Weight (lbs)	List Price \$
AAF 63 C2	0.25	0.60	0.44	3120	4.9	17	985.00
AAF 63 S2	0.35	0.80	0.58	3310	4.9	18	1,013.00
AAF 63 L2	0.50	1.2	0.87	3265	4.9	19	1,048.00
AAF 71 C2	0.50	1.0	0.73	3300	10.8	29	1,033.00
AAF 71 S2	0.75	1.5	1.1	3380	10.8	30	1,069.00
AAF 71 L2	1.00	1.9	1.4	3320	10.8	32	1,145.00
AAF 80 C2	1.00	2.0	1.5	3410	19.6	43	1,231.00
AAF 80 S2	1.50	2.7	2.0	3400	19.6	45	1,284.00
AAF 80 L2	2.00	3.4	2.5	3400	19.6	47	1,348.00
AAF 90S C2	2.00	2.9	2.1	3410	34.3	57	1,526.00
AAF 90S L2	2.50	3.4	2.5	3420	34.3	59	1,619.00
AAF 90L S2	3.00	4.4	3.6	3420	34.3	64	1,683.00
AAF 100L C2	4.00	5.0	4.1	3445	54.0	73	1,970.00
AAF 100L S2	5.50	6.8	5.6	3380	54.0	80	2,169.00
AAF 112M C2	5.50	7.1	5.9	3430	88.3	112	2,453.00
AAF 112M S2	7.50	8.8	7.3	3460	88.3	119	2,688.00
AAF 132S L2	7.50	9.2	7.6	3480	166.8	149	3,708.00
AAF 132S C2	10.00	12.8	10.6	3450	166.8	162	4,095.00
AAF 132M S2	12.50	14.7	12.1	3510	166.8	177	4,572.00
AAF 132M A2	15.00	18.4	15.2	3455	166.8	184	4,777.00
AAF 160M C2	15.00	20.0	16.5	3530	264.9	272	6,285.00
AAF 160M S2	20.00	23.4	19.3	3530	264.9	298	6,872.00
AAF 160L L2	25.00	31.0	25.7	3540	264.9	326	7,681.00

6 POLE - 1200 RPM

Part Number	HP	Full Load Amps 460V	575V	Speed min	Max Brake Torque (Nm)	Weight (lbs)	List Price \$
AAF 63 C6	0.12	0.47	0.36	980	4.9	19	1,385.00
AAF 71 C6	0.25	0.85	0.62	1050	10.8	30	1,110.00
AAF 71 S6	0.35	1.1	0.80	1020	10.8	31	1,141.00
AAF 80 C6	0.50	1.1	0.91	1090	19.6	37	1,297.00
AAF 80 S6	0.75	1.8	1.3	1090	19.6	40	1,373.00
AAF 90S C6	1.00	2.0	1.7	1140	34.3	51	1,581.00
AAF 90L S6	1.50	3.5	2.5	1145	34.3	58	1,720.00
AAF 100L C6	2.00	4.5	3.6	1150	54.0	69	1,993.00
AAF 100L S6	2.50	4.7	3.6	1150	54.0	76	2,143.00
AAF 112M C6	3.00	5.1	4.1	1150	88.3	109	2,553.00
AAF 112M A6	4.00	5.7	4.6	1150	88.3	128	2,959.00
AAF 132S C6	4.00	6.5	5.2	1150	88.3	150	3,769.00
AAF 132M S6	5.50	8.7	7.0	1150	88.3	163	4,095.00
AAF 132M A6	7.50	11.7	9.4	1150	166.8	193	4,640.00
AAF 160M C6	10.00	14.5	11.6	1150	264.9	309	6,477.00
AAF 160L S6	15.00	19.5	15.6	1150	264.9	341	7,504.00

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

NOTE:

- AF/AFB brake motors - the brake assembly has been redesigned to (AAF/AAFB) and is not compatible with previous designs
- Previous design brake parts are also available upon request. Please inquire
- Special brake voltages available. Please inquire

DIFFERENCES BETWEEN OLD & NEW STYLE BRAKES

(AF) Old Style Brake Motors

- Needs Thrust Bearings
- Needs Gear
- Metal Release Key
- Brake Support Separate From Endbell
- Small Hole On Brake Cover

(AAF) New Style Brake Motors

- No Thrust Bearings
- No Gear
- Plastic Release Key
- Brake Support Plus Endbell (One Assembly)
- Large Hole On Brake Cover

4 POLE -1800 RPM

Part Number	HP	Full Load Amps 460V	575V	Speed min	Max Brake Torque (Nm)	Weight (lbs)	List Price \$
AAF 63 C4	0.18	0.50	0.36	1630	4.9	18	932.00
AAF 63 S4	0.25	0.70	0.51	1590	4.9	19	968.00
AAF 63 A4	0.33	0.80	0.58	1630	4.9	20	1,002.00
AAF 71 C4	0.35	1.0	0.73	1600	10.8	26	1,024.00
AAF 71 S4	0.50	1.3	0.91	1650	10.8	28	1,045.00
AAF 71 L4	0.70	1.6	1.2	1680	10.8	30	1,078.00
AAF 80 C4	0.75	1.7	1.2	1680	19.6	38	1,177.00
AAF 80 S4	1.0	2.3	1.7	1690	19.6	41	1,229.00
AAF 80 L4	1.30	2.6	1.9	1660	19.6	43	1,318.00
AAF 90S C4	1.50	2.9	2.1	1680	34.3	50	1,436.00
AAF 90L S4	2.0	3.4	2.7	1656	34.3	56	1,535.00
AAF 90L L4	2.50	4.1	3.1	1680	34.3	60	1,678.00
AAF 100L C4	3.0	5.6	3.5	1690	54.0	76	1,836.00
AAF 100L S4	4.0	6.9	5.0	1700	54.0	84	2,001.00
AAF 112M S4	5.50	7.9	5.7	1720	88.3	118	2,506.00
AAF 112M L4	7.50	12.1	8.0	1725	88.3	136	2,637.00
AAF 132S S4	7.50	11.8	7.8	1715	166.8	161	3,666.00
AAF 132M A4	10.50	15.5	10.6	1730	166.8	184	4,092.00
AAF 132M L4	12.50	16.0	10.9	1750	166.8	217	4,308.00
AAF 160M C4	15.00	19.8	13.5	1750	264.9	315	6,291.00
AAF 160L S4	20.0	28.7	19.6	1750	264.9	344	6,933.00

8 POLE -900 RPM

Part Number	HP	Full Load Amps 460V	575V	Speed min	Max Brake Torque (Nm)	Weight (lbs)	List Price \$
AAF 71 C8	0.20	.94	0.68	760	10.8	28	1,389.00
AAF 80 C8	0.35	1.2	0.87	810	19.6	36	1,665.00
AAF 90S C8	0.50	1.8	1.3	810	34.3	56	1,795.00
AAF 90L S8	0.75	2.7	2.0	810	34.3	62	1,896.00
AAF 100L C8	1.00	2.8	1.9	820	54.0	69	2,226.00
AAF 100L S8	1.50	4.0	2.9	830	54.0	80	2,467.00
AAF 112M C8	2.00	4.7	3.5	830	88.3	119	2,904.00
AAF 132S C8	3.00	5.7	4.2	850	88.3	163	4,166.00
AAF 132M S8	4.00	7.7	5.7	860	88.3	182	4,566.00
AAF 160M C8	5.50	8.7	6.5	860	264.9	266	6,472.00
AAF 160M S8	7.50	11.4	8.5	860	264.9	290	6,922.00
AAF 160L L8	10.00	14.8	11.0	850	264.9	306	7,690.00



Exploded View See Page 32

AFB/AAFB Motors - 2-Speed Brake Motors



3-Phase: 60 Hz standard - AC 6 Lead - Coil brake

1.0 Service Factor (SF) • Available in 230V or 460V or 575V • Adjustable brake torque • Manual release • TEFC
Squirrel Cage • Class F • IP54 • IEC - CEI - UNEL MEC - CSA Approved - (UL recognized are Class 'B')

See page 31 for dimensional drawings • Older designed brake motors are referred to as AFB

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

Part Number	HP	Weight (lbs)	List Price \$
AAFB 63 S2/4	0.40/0.27	19	1,318.00
AAFB 71 C2/4	0.60/0.40	33	1,463.00
AAFB 80 C2/4	0.80/0.60	43	1,629.00
AAFB 80 S2/4	1.00/0.75	50	1,684.00
AAFB 80 L2/4	1.50/1.10	57	1,740.00
AAFB 90L C2/4 ☉	2.10/1.60	63	2,000.00
AAFB 90L S2/4 ☉	2.60/1.90	66	2,094.00
AAFB 100L C2/4	3.40/2.50	76	2,489.00
AAFB 100L L2/4	4.00/3.00	77	2,599.00
AAFB 100L S2/4	4.50/3.50	80	2,837.00
AAFB 112M C2/4	6.00/4.50	121	3,660.00
AAFB 132S S2/4	7.50/6.00	163	5,040.00
AAFB 132M L2/4	11.00/9.00	180	5,654.00
AAFB 160M C2/4	15.00/12.00	317	8,300.00
AAFB 160L S2/4	20.00/17.00	332	9,186.00

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

Part Number	HP	Weight (lbs)	List Price \$
AAFB 71 C4/8	0.35/0.18	31	1,647.00
AAFB 80 C4/8	0.50/0.25	45	1,823.00
AAFB 80 S4/8	0.70/0.35	45	1,867.00
AAFB 90S C4/8 ☉	1.00/0.50	58	2,105.00
AAFB 90L S4/8 ☉	1.30/0.70	63	2,269.00
AAFB 100L C4/8	1.90/0.90	75	2,581.00
AAFB 112M C4/8	2.40/1.40	111	3,182.00
AAFB 112M S4/8	3.00/1.80	117	3,513.00
AAFB 132S C4/8	5.00/2.80	158	5,089.00
AAFB 132M S4/8	6.50/3.50	195	5,545.00
AAFB 160M C4/8	8.50/5.50	256	7,868.00
AAFB 160L S4/8	10.00/6.50	278	8,712.00
AAFB 160L L4/8	14.00/8.00	299	9,534.00

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

Part Number	HP	Weight (lbs)	List Price \$
AAFB 71 C4/6	0.35/0.25	16	1,684.00
AAFB 80 A4/6	0.50/0.35	18	1,918.00
AAFB 80 C4/6	0.75/0.50	22	1,989.00
AAFB 90L C4/6 ☉	1.20/0.80	36	2,251.00
AAFB 100L L4/6	1.50/1.00	54	2,606.00
AAFB 100L C4/6	2.00/1.20	73	2,761.00
AAFB 112M C4/6	2.50/1.80	74	3,331.00
AAFB 112M S4/6	3.50/2.50	81	3,807.00
AAFB 132M C4/6	5.50/3.50	118	5,269.00
AAFB 160M C4/6	7.50/5.00	174	8,052.00
AAFB 160M S4/6	10.00/6.50	198	8,492.00
AAFB 160L L4/6	13.00/9.00	220	9,277.00

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

Part Number	HP	Weight (lbs)	List Price \$
AAFB 71 C6/8	0.30/0.15	16	1,720.00
AAFB 80 C6/8	0.50/0.25	21	2,123.00
AAFB 90L C6/8 ☉	0.75/0.40	36	2,599.00
AAFB 100L C6/8	1.00/0.60	52	2,928.00
AAFB 112M C6/8	1.30/0.90	70	3,441.00
AAFB 112M S6/8	2.00/1.00	80	3,733.00
AAFB 132M A6/8	3.00/1.70	86	5,399.00
AAFB 132M C6/8	4.00/2.30	117	6,350.00
AAFB 160M C6/8	6.50/3.50	194	9,150.00
AAFB 160L S6/8	8.00/4.50	215	10,284.00

NOTE:

- AFB/AAFB brake motors - the brake assembly has been redesigned to (AAFB/AAFB) and is not compatible with previous designs
- Previous design brake parts are also available upon request. Please inquire
- Source brake voltages available. Please inquire

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

Part Number	HP	Weight (lbs)	List Price \$
AAFB 80 C2/8	0.50/0.15	21	2,142.00
AAFB 80 S2/8	0.75/0.15	26	2,233.00
AAFB 90L C2/8 ☉	1.00/0.25	35	2,470.00
AAFB 90L S2/8 ☉	1.50/0.40	43	2,618.00
AAFB 100L S2/8	2.00/0.50	60	2,928.00
AAFB 100L L2/8	2.50/0.60	70	3,258.00
AAFB 112M C2/8	2.50/1.45	78	3,807.00
AAFB 112M L2/8	3.00/0.75	79	3,989.00
AAFB 132S C2/8	4.00/1.00	81	5,399.00
AAFB 132M S2/8	6.00/1.50	94	6,339.00

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



1.0 Service Factor (SF) • Available in 230V or 460V or 575V • Constant torque • Threaded hole in output shaft • TEFC
Squirrel Cage • Class F • IP55 • IEC - CEI • UNEL MEC - CSA Approved - cURus approved - (UL recognized are Class 'B')

FB = See pages 27 to 29 for dimensional drawings (For frames 63 to 160L)

FB = See page 30 for dimensional drawings (For frames 180 and larger)

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

Part Number	HP	Weight (lbs)	List Price \$
FB 63 S2/4	0.40/0.27	10	622.00
FB 71 C2/4	0.60/0.40	17	734.00
FB 80 C2/4	0.80/0.60	19	827.00
FB 80 S2/4	1.00/0.75	25	881.00
FB 80 L2/4	1.50/1.10	32	934.00
FB 90L C2/4 ☉	2.10/1.60	34	1,086.00
FB 90L S2/4 ☉	2.60/1.90	38	1,184.00
FB 100L C2/4	3.40/2.50	47	1,408.00
FB 100L L2/4	4.00/3.00	50	1,427.00
FB 100L S2/4	4.50/3.50	51	1,657.00
FB 112M C2/4	6.00/4.50	80	2,290.00
FB 132S ZA2/4	8.00/6.40	101	3,082.00
FB 132M ZA2/4	11.00/9.00	121	3,603.00
FB 160M ZA2/4	14.50/11.70	192	5,589.00
FB 160L ZA2/4	22.50/17.00	225	8,507.00
FB 180M ZA2/4	26.50/20.00	287	9,296.00
FB 180L ZA2/4	31.00/24.00	309	11,031.00
FB 200L P2/4	39.00/32.50	507	14,853.00
FB 200L R2/4	45.00/35.00	562	15,722.00
FB 225S P2/4	52.00/40.00	716	18,183.00
FB 225M P2/4	63.00/46.00	728	20,540.00
FB 250M P2/4	79.00/68.00	1025	26,936.00
FB 280S V2/4	98.00/82.00	1279	36,544.00
FB 280M V2/4	114.00/95.00	1367	43,611.00
FB 315S ZE2/4	156.00/116.00	1896	52,368.00
FB 315M ZE2/4	170.00/136.00	2073	64,319.00
FB 315L ZE2/4	204.00/163.00	2470	69,370.00

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

Part Number	HP	Weight (lbs)	List Price \$
FB 71 C4/6	0.35/0.25	16	948.00
FB 80 A4/6	0.50/0.35	18	1,095.00
FB 80 C4/6	0.75/0.50	22	1,164.00
FB 90L C4/6 ☉	1.20/0.80	36	1,279.00
FB 100L L4/6	1.50/1.00	54	1,489.00
FB 100L C4/6	2.00/1.20	73	1,643.00
FB 112M C4/6	2.50/1.80	74	2,050.00
FB 112M S4/6	3.50/2.50	81	2,525.00
FB 132S ZA4/6	4.00/3.00	95	2,834.00
FB 132M ZA4/6	6.70/4.30	119	5,533.00
FB 160M YA4/6	10.00/6.80	185	6,091.00
FB 160M ZA4/6	12.20/8.00	198	6,927.00
FB 160L ZA4/6	16.00/11.00	220	9,492.00
FB 180L ZA4/6	22.50/15.00	331	12,348.00

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

Part Number	HP	Weight (lbs)	List Price \$
FB 80 C2/8	0.50/0.15	21	1,318.00
FB 80 S2/8	0.75/0.15	26	1,420.00
FB 90L C2/8 ☉	1.00/0.25	35	1,538.00
FB 90L S2/8 ☉	1.50/0.40	43	1,684.00
FB 100L S2/8	2.00/0.50	45	1,823.00
FB 100L L2/8	2.50/0.60	45	2,140.00
FB 112M C2/8	2.50/1.45	78	2,525.00
FB 112M L2/8	3.00/0.75	79	2,708.00
FB 132S C2/8	4.00/1.00	81	3,295.00
FB 132M S2/8	6.00/1.50	94	4,244.00

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

Part Number	HP	Weight (lbs)	List Price \$
FB 71 C4/8	0.35/0.18	15	864.00
FB 80 C4/8	0.50/0.25	17	961.00
FB 80 S4/8	0.70/0.35	20	1,014.00
FB 90S C4/8 ☉	1.00/0.50	30	1,123.00
FB 90L S4/8 ☉	1.30/0.70	35	1,268.00
FB 100L C4/8	1.90/0.90	48	1,408.00
FB 112M C4/8	2.40/1.40	70	1,833.00
FB 112M S4/8	3.00/1.80	75	2,166.00
FB 132S ZA4/8	5.20/2.80	95	3,154.00
FB 132M ZA4/8	6.50/3.50	119	3,610.00
FB 132M L4/8	7.50/4.00	135	3,908.00
FB 160M C4/8	8.50/5.50	165	4,578.00
FB 160M YA4/8	10.00/5.50	185	5,567.00
FB 160M ZA4/8	12.20/7.00	198	7,042.00
FB 160L ZA4/8	17.00/10.00	220	8,449.00
FB 180L ZA4/8	24.00/15.00	331	12,015.00
FB 200L P4/8	31.00/20.00	485	15,237.00
FB 200L R4/8	39.00/24.00	562	18,819.00
FB 225S P4/8	43.00/28.00	684	20,567.00
FB 225M P4/8	50.00/35.00	695	24,047.00
FB 250M P4/8	63.00/43.00	1080	29,970.00
FB 280S V4/8	82.00/60.00	1279	38,333.00
FB 280M V4/8	95.00/71.00	1367	47,923.00
FB 315S ZE4/8	136.00/82.00	1742	58,903.00
FB 315M ZE4/8	163.00/100.00	1896	74,936.00
FB 315L ZE4/8	200.00/120.00	2183	90,618.00

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

Part Number	HP	Weight (lbs)	List Price \$
FB 71 C6/8	0.30/0.15	16	989.00
FB 80 C6/8	0.50/0.25	21	1,307.00
FB 90L C6/8 ☉	0.75/0.40	36	1,665.00
FB 100L C6/8	1.00/0.60	52	1,796.00
FB 112M C6/8	1.30/0.90	70	2,158.00
FB 112M S6/8	2.00/1.00	80	2,453.00
FB 132S ZA6/8	2.20/1.80	95	3,292.00
FB 132M ZA6/8	3.90/3.00	119	4,242.00
FB 160M YA6/8	5.50/4.00	185	5,526.00
FB 160M ZA6/8	7.50/5.50	198	7,018.00
FB 160L ZA6/8	10.00/7.50	220	7,780.00
FB 180L ZA6/8	15.00/11.50	331	11,151.00

* NOTE: 132 AND UP SUBJECT TO AVAILABILITY

* NOTE: LARGER 2-SPEED MOTORS AVAILABLE

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



MS Motor - Compact Rectified DC Brake



3-Phase : 60 Hz standard

1.15 Service Factor (SF) • Available in 208 230/460V - 333/575V • Brake voltage standard 230V-AC into rectifier with 460V motor or 333V-AC into rectifier with 575V motors • Constant brake torque • TEFC • Squirrel Cage • Class F • IP54
IEC - CEI - UNEL MEC - CSA Approved - (UL recognized are Class 'B')

See page 27 to 29 for dimensional drawings

2 POLE - 3600 RPM

Part Number	HP	Full Load Amps 460V	575V	Speed min	Max Brake Torque (Nm)	Weight (lbs)	List Price \$
MS 63 C2	0.25	0.60	0.44	3120	4.9	11	889.00
MS 63 S2	0.35	0.80	0.58	3310	4.9	12	912.00
MS 63 L2	0.50	1.2	0.87	3265	4.9	12	924.00
MS 71 C2	0.50	1.0	0.73	3300	10.8	15	971.00
MS 71 S2	0.75	1.5	1.1	3380	10.8	16	1,023.00
MS 71 L2	1.00	1.9	1.4	3320	10.8	18	1,069.00
MS 80 C2	1.00	2.0	1.5	3410	19.6	23	1,133.00
MS 80 S2	1.50	2.7	2.0	3400	19.6	26	1,220.00
MS 80 L2	2.00	3.4	2.5	3400	19.6	29	1,293.00
MS 90S C2	2.00	2.9	2.1	3410	34.3	32	1,395.00
MS 90S L2	2.50	3.4	2.5	3420	34.3	36	1,549.00
MS 90L S2	3.00	4.4	3.6	3420	34.3	40	1,625.00
MS 100L C2	4.00	5.0	4.1	3445	54.0	51	1,920.00
MS 100L S2	5.50	6.8	5.6	3380	54.0	58	2,136.00
MS 112M C2	5.50	7.1	5.9	3430	88.3	67	2,319.00
MS 112M S2	7.50	8.8	7.3	3460	88.3	81	2,562.00
MS 132S L2	7.50	9.2	7.6	3480	166.8	95	3,269.00
MS 132S C2	10.00	12.8	10.6	3450	166.8	108	3,736.00
MS 132M S2	12.50	14.7	12.1	3510	166.8	127	4,072.00
MS 132M A2	15.00	18.4	15.2	3455	166.8	129	4,577.00

6 POLE - 1200 RPM

Part Number	HP	Full Load Amps 460V	575V	Speed min	Max Brake Torque (Nm)	Weight (lbs)	List Price \$
MS 63 C6	0.12	0.47	0.36	980	4.9	12	1,245.00
MS 71 C6	0.25	0.85	0.62	1050	10.8	16	1,087.00
MS 71 S6	0.35	1.1	0.80	1020	10.8	17	1,125.00
MS 80 C6	0.50	1.1	0.91	1090	19.6	23	1,230.00
MS 80 S6	0.75	1.8	1.3	1090	19.6	25	1,317.00
MS 90S C6	1.00	2.0	1.7	1140	34.3	30	1,432.00
MS 90L S6	1.50	3.5	2.5	1145	34.3	38	1,595.00
MS 100L C6	2.00	4.5	3.6	1150	54.0	46	1,860.00
MS 100L S6	2.50	4.7	3.6	1150	54.0	56	2,057.00
MS 112M C6	3.00	5.1	4.1	1150	88.3	73	2,478.00
MS 112M A6	4.00	5.7	4.6	1150	88.3	87	2,902.00
MS 132S C6	4.00	6.5	5.2	1150	88.3	95	3,449.00
MS 132M S6	5.50	8.7	7.0	1150	88.3	108	3,717.00
MS 132M A6	7.50	11.7	9.4	1150	166.8	136	4,312.00

* MS motors are approximately the same dimensions as the ST/AM (standard) type motors

⊙ = S/L dual set of holes on base (actual frame is 90L)
See Page 53 for connection diagram

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 Range Braking Torque (Kgm)
63/71 frame 0.40
80/90 frame 0.70
100/112 frame 1.4
132 frame 3.1

* To convert KGM to fl/lbs, multiply by 7.231

Different brake (DC) coil voltages
also available upon request

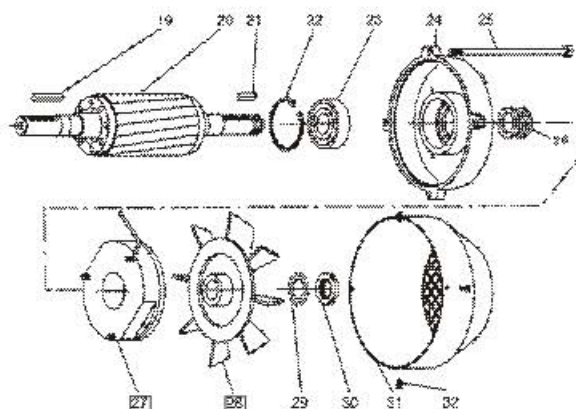
ACTUAL 148V-DC - for 575V Units
200V-DC - for 460V Units
OPTIONAL 24V-DC
103V-DC - STD1

4 POLE -1800 RPM

Part Number	HP	Full Load Amps 460V	575V	Speed min	Max Brake Torque (Nm)	Weight (lbs)	List Price \$
MS 63 C4	0.18	0.50	0.36	1630	4.9	10	864.00
MS 63 S4	0.25	0.51	0.51	1590	4.9	12	893.00
MS 63 A4	0.33	0.58	0.58	1630	4.9	12	919.00
MS 71 C4	0.35	0.73	0.73	1600	10.8	15	965.00
MS 71 S4	0.50	0.91	0.91	1650	10.8	16	1,000.00
MS 71 L4	0.70	1.2	1.2	1680	10.8	19	1,056.00
MS 80 C4	0.75	1.2	1.2	1680	19.6	23	1,118.00
MS 80 S4	1.00	1.7	1.7	1690	19.6	25	1,161.00
MS 80 L4	1.30	1.9	1.9	1660	19.6	28	1,263.00
MS 90S C4	1.50	2.1	2.1	1680	34.3	32	1,311.00
MS 90L S4	2.00	2.7	2.7	1656	34.3	36	1,430.00
MS 90L L4	2.50	3.1	3.1	1680	34.3	41	1,591.00
MS 100L C4	3.00	3.5	3.5	1690	54.0	50	1,755.00
MS 100L S4	4.00	5.0	5.0	1700	54.0	56	1,939.00
MS 112M S4	5.50	5.7	5.7	1720	88.3	74	2,349.00
MS 132S S4	7.50	8.0	8.0	1725	166.8	106	3,256.00
MS 132M A4	10.00	7.8	7.8	1715	166.8	126	3,825.00

8 POLE - 900 RPM

Part Number	HP	Full Load Amps 460V	575V	Speed min	Max Brake Torque (Nm)	Weight (lbs)	List Price \$
MS 71 C8	0.20	0.94	0.68	760	10.8	16	1,210.00
MS 80 C8	0.35	1.2	0.87	810	19.6	23	1,471.00
MS 90S C8	0.50	1.8	1.3	810	34.3	30	1,623.00
MS 90L S8	0.75	2.7	2.0	810	34.3	38	1,757.00
MS 100L C8	1.00	2.8	1.9	820	54	46	2,033.00
MS 100L S8	1.50	4.0	2.9	830	54	57	2,308.00
MS 112M C8	2.00	4.7	3.5	830	88.3	88	2,694.00
MS 132S C8	3.00	5.7	4.2	850	88.3	114	3,606.00
MS 132M S8	4.00	7.7	5.7	860	88.3	134	4,118.00



Part description:

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

BOXED ITEMS ARE INCLUDED IN A BRAKE ASSEMBLY KIT

1.0 Service Factor (SF) • Available in 208-230/460V or 333/575V • Cooling fans in 115V or 230V - AC single phase

Threaded hole in output shaft • TEFV • Squirrel Cage • Class F • IP55

IEC - CEI - UNEL MEC - cURus Approved - (UL recognized are Class 'B')

See pages 27 to 29 for dimensional drawings

2 POLE - 3600 RPM

Part Number	HP	Weight (lbs)	List Price \$
AMFV 71 ZAA2	0.50	16	767.00
AMFV 71 ZBA2	0.75	17	809.00
AMFV 71 ZCA2	1.00	19	848.00
AMFV 80Z AA2	1.00	22	1,065.00
AMFV 80Z BA2	1.50	25	1,118.00
AMFV 80Z CA2	2.00	28	1,170.00
AMFV 90S AA2 ☉	2.00	33	1,246.00
AMFV 90S BA2 ☉	2.50	36	1,339.00
AMFV 90L CA2 ☉	3.00	40	1,401.00
AMFV 100L AA2 △	4.00	49	1,949.00
AMFV 100L BA2 △	5.50	56	2,025.00
AMFV 100L CA2 △	7.50	77	2,164.00
AMFV 112M AA2 △	5.50	67	2,318.00
AMFV 112M BA2 △	7.50	81	2,517.00
AMFV 132S YA2	7.50	86	2,866.00
AMFV 132S ZA2	10.00	101	3,095.00
AMFV 132M ZA2	12.50	120	3,395.00
AMFV 132M RA2	15.00	122	3,809.00
AMFV 132M TA2	20.00	205	4,129.00
AMFV 160M VA2	15.00	183	4,473.00
AMFV 160M XA2	20.00	219	5,103.00
AMFV 160L XA2	25.00	250	5,845.00
AMFV 160L RA2	30.00	253	6,313.00
AMFV 180M XA2	30.00	265	7,328.00
AMFV 180M RA2	40.00	334	8,738.00

4 POLE - 1800 RPM

Part Number	HP	Weight (lbs)	List Price \$
AMFV 71 ZAA4	0.35	16	765.00
AMFV 71 ZBA4	0.50	16	791.00
AMFV 71 ZCA4	0.75	19	838.00
AMFV 80Z AA4	0.75	22	1,055.00
AMFV 80Z BA4	1.00	24	1,090.00
AMFV 80Z CA4	1.50	27	1,175.00
AMFV 90S AA4 ☉	1.50	32	1,208.00
AMFV 90L BA4 ☉	2.00	37	1,285.00
AMFV 90L CA4 ☉	2.50	41	1,363.00
AMFV 100L AA4 △	3.00	48	1,829.00
AMFV 100L BA4 △	4.00	51	2,000.00
AMFV 112M AA4 △	5.50	74	2,318.00
AMFV 112M BA4 △	7.50	79	2,604.00
AMFV 132S ZA4	7.50	99	2,855.00
AMFV 132M ZA4	10.00	119	3,221.00
AMFV 132M LA4	12.50	150	3,691.00
AMFV 132M TA4	15.00	175	4,260.00
AMFV 160M XA4	15.00	208	4,679.00
AMFV 160L XA4	20.00	247	5,320.00
AMFV 160L ZA4	25.00	293	6,131.00
AMFV 180M XA4	25.00	280	6,745.00
AMFV 180L XA4	30.00	323	7,451.00
AMFV 180L RA4	40.00	356	8,361.00

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

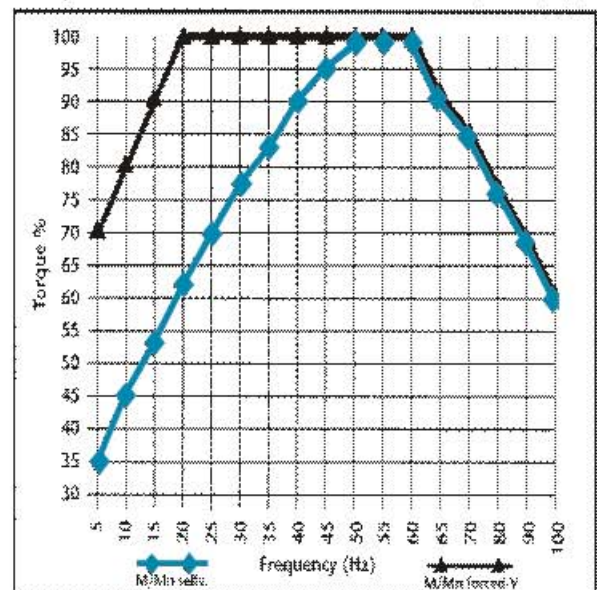
△ External Fans Available in 230V only

- 115V or 230V fan
- 0 - 100 Hz capability
- Full torque at a low as 20 Hz

See page 53 for fan connection diagram



Torque behaviour in forced-ventilated or self-ventilated motors



LM(E) Motors - Single Phase



60 Hz Standard

1.0 Service Factor (SF) • Available in 115V or 230V • TEFC • Squirrel Cage • Class F • IP54 • IEC - CEI - UNEL MEC - CSA Approved
(UL recognized are Class 'B')

See page 26 for dimensional drawings

Available options:

- Self braking • Thermal protection • Custom shafts and flanges available

2 POLE - 3600 RPM

Part Number	HP	Weight (lbs)	List Price \$ LM	List Price \$ LME
LM 56 C2	0.15	8	373.00	N/A
LM(E) 63 C2	0.15	10	377.00	499.00
LM(E) 63 S2	0.25	11	384.00	510.00
LM(E) 63 L2	0.33	12	416.00	528.00
LM(E) 71 C2	0.50	16	461.00	605.00
LM(E) 71 S2	0.75	19	507.00	650.00
LM(E) 80 C2	1.00	25	590.00	747.00
LM(E) 80 S2	1.50	25	623.00	809.00
LM(E) 80 T2	2.00	32	820.00	1,065.00
LM(E) 90S C2 ☉	1.50	36	695.00	865.00
LM(E) 90L S2 ☉	2.00	38	760.00	931.00
LM(E) 90L L2 ☉	2.50	41	834.00	1,003.00
LM(E) 100L C2	3.00	54	957.00	1,144.00

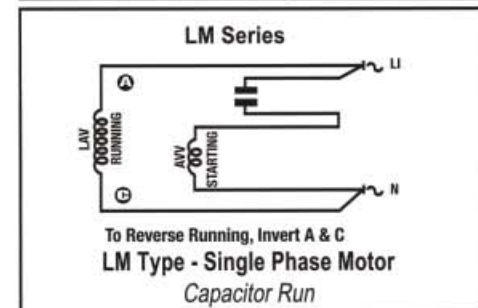
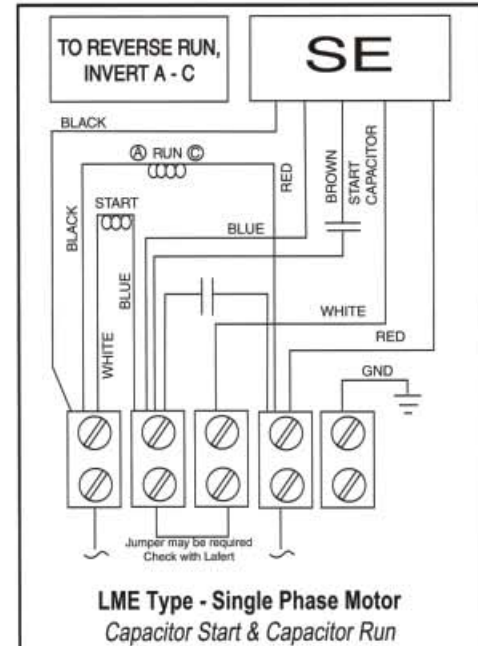
4 POLE - 1800 RPM

Part Number	HP	Weight (lbs)	List Price \$ LM	List Price \$ LME
LM 56 S4	0.12	8	373.00	N/A
LM(E) 63 A4	0.15	10	377.00	499.00
LM(E) 63 C4	0.25	11	398.00	521.00
LM(E) 71 C4	0.33	16	446.00	590.00
LM(E) 71 S4	0.40	17	466.00	611.00
LM(E) 71 L4	0.50	19	519.00	663.00
LM(E) 80 C4	0.50	22	554.00	712.00
LM(E) 80 S4	0.75	25	578.00	734.00
LM(E) 80 L4	1.00	28	603.00	760.00
LM(E) 90L C4 ☉	1.50	34	712.00	881.00
LM(E) 90L S4 ☉	2.00	39	781.00	950.00
LM(E) 100L C4	2.50	50	956.00	1,141.00
LM(E) 100L S4	3.00	53	1,038.00	1,221.00
LM(E) 112M /4	5.00	76	1,414.00	1,621.00

6 POLE - 1200 RPM

Part Number	HP	Weight (lbs)	List Price \$ LM	List Price \$ LME
LM(E) 71 C6	0.20	18	648.00	849.00
LM(E) 80 C6	0.35	19	748.00	922.00
LM(E) 80 S6	0.50	22	834.00	1,008.00
LM(E) 90L C6 ☉	0.75	36	993.00	1,246.00
LM(E) 90L S6 ☉	1.00	40	1,065.00	1,323.00
LM(E) 100L C6	1.50	42	1,179.00	1,382.00
LM(E) 100L S6	2.00	50	1,243.00	1,443.00

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



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. (LM type) Please call for availability.

LME MOTORS

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



1.0 Service Factor (SF) • Available in 115/230V • TEFC

Squirrel Cage • Class F • IP54 • IEC - CEI - UNEL MEC - CSA Approved • (UL recognized are Class 'B')

See page 26 for dimensional drawings

2 POLE - 3600 RPM

Part Number	HP	Weight (lbs)	RUN CAP (μF)	START CAP (μF)	List Price \$
DVE 63 C2	0.15	11	16	16+25%	602.00
DVE 63 S2	0.25	12	25	31.5+25%	612.00
DVE 63 L2	0.33	12	25	31.5+25%	635.00
DVE 71 C2	0.50	16	25	40+25%	726.00
DVE 71 S2	0.75	19	16	31.5+25%	780.00
DVE 80 C2	1.00	25	80 (40) x 2	180+25%	897.00
DVE 80 S2	1.50	33	50	150+25%	971.00
DVE 90S C2	⊗ 1.50	34	120	156+25%	1,038.00
DVE 90L S2	⊗ 2.00	40	100	180+25%	1,117.00
DVE 90L L2	⊗ 2.50	41	120	125+25%	1,206.00
DVE 90L A2	⊗ 3.00	43	120	150+25%	1,327.00
DVE 100L C2	3.00	54	150	125+25%	1,373.00

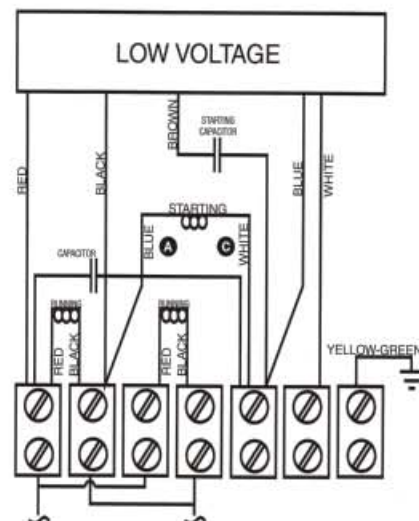
4 POLE - 1800 RPM

Part Number	HP	Weight (lbs)	RUN CAP (μF)	START CAP (μF)	List Price \$
DVE 63 A4	0.15	10	25	16+25%	602.00
DVE 63 C4	0.25	11	25	31.5+25%	627.00
DVE 71 C4	0.33	16	12.5	31.5+25%	708.00
DVE 71 S4	0.40	17	16	31.5+25%	734.00
DVE 71 L4	0.50	19	25	31.5+25%	796.00
DVE 80 C4	0.50	22	50	156+25%	855.00
DVE 80 S4	0.75	25	50	125+25%	880.00
DVE 80 L4	1.00	28	50	125+25%	912.00
DVE 90L D4	⊗ 1.50	34	50	125+25%	1,057.00
DVE 90L E4	⊗ 2.00	39	60	156+25%	1,142.00
DVE 100L C4	2.50	50	150	125+25%	1,370.00
DVE 100L S4	3.00	52	130	125+25%	1,465.00

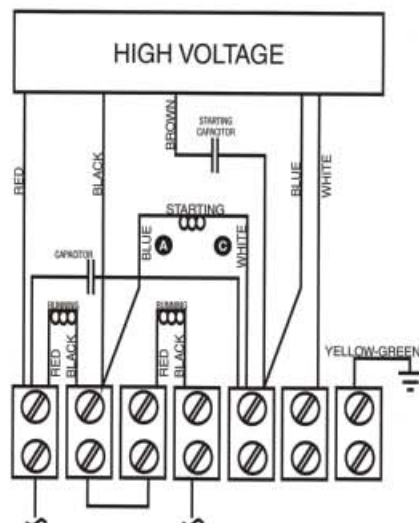
6 POLE - 1200 RPM

Part Number	HP	Weight (lbs)	RUN CAP (μF)	START CAP (μF)	List Price \$
DVE 71 C6	0.20	18	25	50+25%	1,020.00
DVE 80 C6	0.35	19	40	100+25%	1,107.00
DVE 80 S6	0.50	22	50	125+25%	1,209.00
DVE 90L C6	⊗ 0.75	36	90	100+25%	1,496.00
DVE 90L S6	⊗ 1.00	40	120	180+25%	1,590.00
DVE 100L C6	1.50	42	170	156+25%	1,659.00
DVE 100L S6	2.00	50	140	156+25%	1,734.00

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

DVE Type


DVE Type - Single Phase Motor
Capacitor Start & Capacitor Run



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).

Stainless Steel Motors - Cost effective stainless alternative

1.15 Service Factor (SF) • Available in IEC 63 to 112 frame sizes in 2, 4 and 6 poles • 230/460V or 333/575V 60 Hz

All Stainless Steel Construction • IP56 wash down • Class F insulation • Drain holes at 90° positions

Etched nameplate • Available in B3, B14 and B5 mounting • TENV and TEFC • CSA Safety approvals • Turn Down Ratio 4:1 CT 10:1 VT

2 POLE - 3600 RPM

Part Number	Enclosure	HP	Weight (lbs)	List Price \$
LA63S2	TENV	0.33	18	569.00
LA71C2	TENV	0.50	26	648.00
LA71S2	TENV	0.75	31	675.00
LA80C2	TENV	1.00	33	838.00
LA80S2	TEFC	1.50	39	856.00
LA90SC2	TEFC	2.00	53	1,063.00
LA90LS2	TEFC	3.00	67	1,118.00
LA100LC2	TEFC	4.00	82	1,572.00
LA112MC2	TEFC	5.50	110	2,365.00

4 POLE - 1800 RPM

Part Number	Enclosure	HP	Weight (lbs)	List Price \$
LA63S4	TENV	0.25	18	563.00
LA71C4	TENV	0.35	19	651.00
LA71S4	TENV	0.50	24	677.00
LA80C4	TENV	0.75	39	816.00
LA80S4	TENV	1.00	45	895.00
LA90SC4	TEFC	1.50	48	976.00
LA90LS4	TEFC	2.00	60	1,081.00
LA100LC4	TEFC	3.00	75	1,422.00
LA100LS4	TEFC	4.00	93	1,570.00
LA112MS4	TEFC	5.50	120	2,364.00

6 POLE - 1200 RPM

Part Number	Enclosure	HP	Weight (lbs)	List Price \$
LA71C6	TENV	0.25	25	761.00
LA71S6	TENV	0.35	25	792.00
LA80C6	TENV	0.50	40	937.00
LA80S6	TENV	0.75	45	1,059.00
LA90SC6	TEFC	1.00	45	1,155.00
LA90LS6	TEFC	1.50	60	1,373.00
LA100LC6	TEFC	2.00	85	1,619.00
LA112MC6	TEFC	3.00	105	2,600.00

FLS B5 Flanges

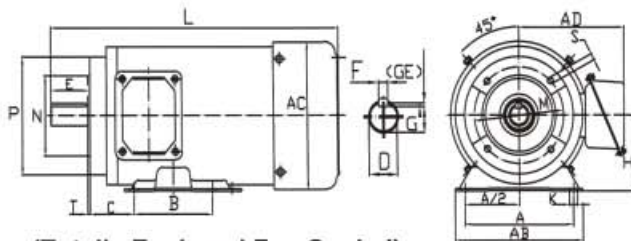
Part Number	List Price \$
FLS 63B5	91.00
FLS 71B5	156.00
FLS 80B5	166.00
FLS 90B5	191.00
FLS 100B5	226.00
FLS 112B5	485.00

FLS B14 Flanges

Part Number	List Price \$
FLS 63B14	88.00
FLS 71B14	146.00
FLS 80B14	164.00
FLS 90B14	188.00
FLS 100B14	222.00
FLS 112B14	435.00

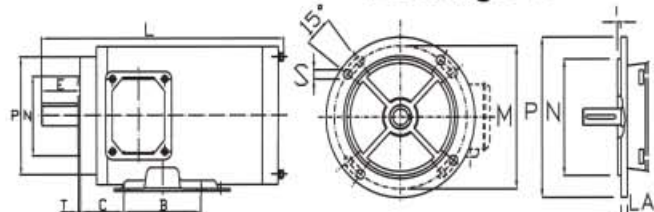
NOTE: Lowest drain plug must be removed to allow proper drainage
Welded on terminal box also available - add 10%

Base & B14 flange "C"



(Totally Enclosed Fan Cooled)

B5 flange "D"



(Totally Enclosed Non-Ventilated)

- Perfect for the food processing and pharmaceutical industries • 300 series Stainless Steel construction on all exterior parts • Double gaskets in conduit box
- Paint free housing • Laser etched nameplate on frame body • Wash down protected • Sanitary • Durable • All IEC Frames

All dimensions in mm

Motor Type	B14 FLANGE															B5 FLANGE									
	A	A/2	B	C	D	E	F	G	H	K	M	N	P	S	T	#HOLES	AB	AC	AD	L	M	N	P	S	T
(Totally Enclosed Non-Ventilated)																									
LA63	100	55.0	80	40	11	23	4	8.5	63	7	75	60	90	M5	2.5	4	125	122	112	241	115	95	140	9.5	3.0
LA71	112	56.0	90	45	14	30	5	11.0	71	7	85	70	105	M6	2.5	4	140	140	118	238	130	110	160	9.5	3.5
LA80	125	62.5	100	50	19	40	6	15.5	80	10	100	80	120	M6	3.0	4	150	154	122	272	165	130	200	11.5	3.5

Motor Type	B14 FLANGE															B5 FLANGE									
	A	A/2	B	C	D	E	F	G	H	K	M	N	P	S	T	#HOLES	AB	AC	AD	L	M	N	P	S	T
(Totally Enclosed Fan Cooled)																									
LA80	125	62.5	100	50	19	40	6	15.5	80	10	100	80	120	M6	3.0	4	150	154	122	340	165	130	200	11.5	3.5
LA90S	140	70.0	100	56	24	50	8	20.0	90	10	115	95	140	M8	3.0	4	165	174	140	370	165	130	200	11.5	3.5
LA90L	140	70.0	125	56	24	50	8	20.0	90	10	115	95	140	M8	3.0	4	165	174	140	415	165	130	200	11.5	3.5
LA100L	160	80.0	140	63	28	60	8	24.0	100	12	130	110	160	M8	3.5	4	190	197	150	403	215	180	250	14.0	4.0
LA112M	190	95.0	140	66	28	60	8	24.0	112	12	130	110	160	M8	3.5	4	220	233	170	475	215	180	250	14.0	4.0

See page 53 for connection diagrams

Stainless Steel Motors - IP67 "Ultra Protection"

IP67 * Class "F" * 1.15 Service Factor (SF) - Available in IEC 63 to 80 frame sizes in 2 & 4 poles * 230/460V or 333/575V 60hz * All stainless steel 304 construction (Shafts are made in SS420 steel grade) * Etched nameplate * Available in B3, B14, B5 mounting * TENV design * CSA safety approvals * Welded lead box equipped with stainless steel cable glands & 1 meter of 4 core double insulated cable* Includes Thermistors (150° Celsius)



2 POLE - 3600 RPM

Part Number	HP	Full Load Amps 460V	575V	Speed min -1	Weight (lbs)	List Price \$
LA 63 1-2	0.25	0.35	0.31	3430	19	730.00
LA 63 2-2	0.35	0.48	0.40	3420	21	768.00
LA 71 1-2	0.50	0.69	0.58	3450	23	875.00
LA 71 2-2	0.75	1.00	0.91	3430	25	911.00
LA 80 1-2	1.00	1.36	1.14	3450	40	1131.00
LA 80 2-2	1.50	1.95	1.66	3470	46	1156.00

4 POLE - 1800 RPM

Part Number	HP	Full Load Amps 460V	575V	Speed min -1	Weight (lbs)	List Price \$
LA 63 2-4	0.25	0.48	0.39	1700	21	760.00
LA 71 1-4	0.35	0.58	0.47	1740	24	879.00
LA 71 2-4	0.50	0.83	0.67	1740	25	914.00
LA 80 1-4	0.75	1.24	0.99	1730	37	1102.00
LA 80 2-4	1.00	1.62	0.31	1730	42	1208.00

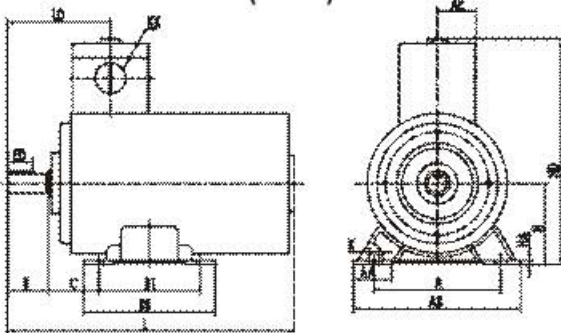
FLP 63B5 Flanges

Part Number	List Price \$
FLP 63B5	91.00
FLP 71B5	156.00
FLP 80B5	166.00

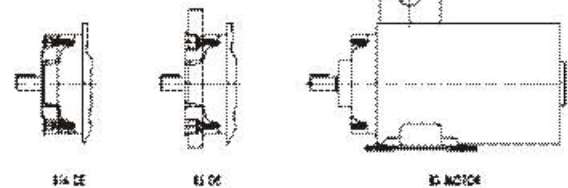
FLP 63B14 Flanges

Part Number	List Price \$
FLP 63B14	88.00
FLP 71B14	146.00
FLP 80B14	164.00

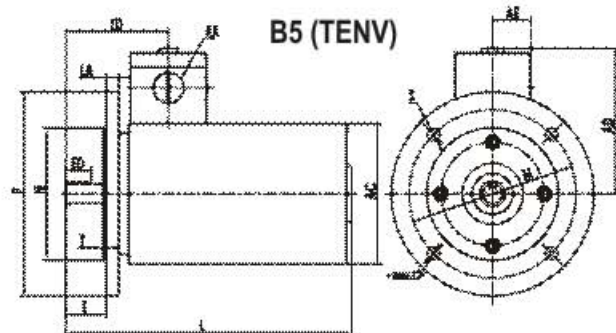
B3 (TENV)



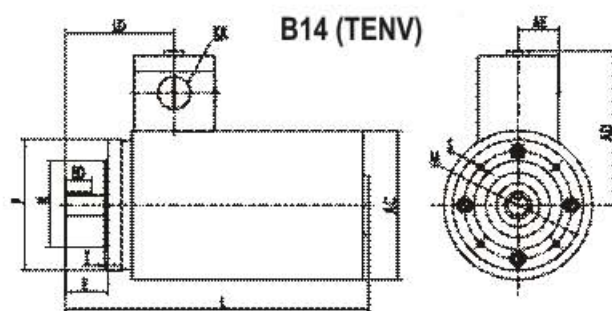
Modular Flange Kit Design



B5 (TENV)



B14 (TENV)



B3	A	AA	AB	BB	HA	B	B1	C	D	DH	E	F	G	H	HD	K	KK METRIC	LD	AE	ED	L TENV
63	100	25.5	125	110	4	80	N/A	40	11	M3	23	4	8.5	63	180	7	2-M20X1.5	93	33.5	13	260
71	112	30	140	140	4	90	N/A	45	14	M4	30	5	11	71	200	7	2-M20X1.5	97.5	33.5	20	275
80	125	37.5	165	130	4	100	N/A	50	19	M6	40	6	15.5	80	225	10	2-M25X1.5	101.5	38	25	285

B5/B14	AC	AD	D	DH	E	F	G	K	KK				LD	AE	ED	L	M		N		P		S		T	
									METRIC								B5	B14	B5	B14	B5	B14	B5	B14	B5	B14
63	118	128	11	M3	23	4	8.5	7	2-M20X1.5	93	33.5	13	260	115	75	95	60	140	90	10	M5	3.5	3			
71	128	130	14	M4	30	5	11	7	2-M20X1.5	97.5	33.5	20	275	130	85	110	70	160	105	10	M6	3.5	3			
80	138	145	19	M6	40	6	15.5	10	2-M25X1.5	101.5	38	25	285	165	100	130	80	200	120	12	M6	3.5	3.5			

Explosion Proof

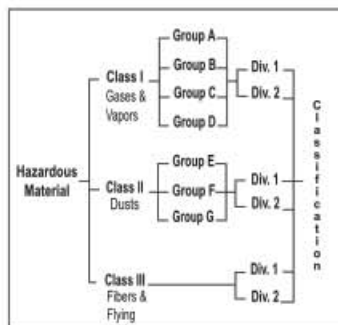
Important Note: Lafert North America offers and distributes 'Explosion Proof Motors' but it is the purchaser's responsibility to ensure that proper enclosure classification is obtained according to the 'Hazardous Area' in which the product is to be used in.

Descriptions and technical features listed on this chart may not be considered as binding. Under no circumstances should this publication be considered a contractual obligation.

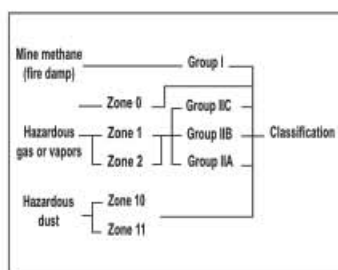
Cemp Proposal For Atex And Nec Classifications					
	N E C			A T E X	
	Class	Division	Zone	Zone	Motor Category / Type of protection
G A S	I Gases, vapors, liquids	1 May exist all the time	0 Exist all the time	0 Exist all the time	1G CEI EN 50284 (double protection)
			1 Likely to exist	1 Likely to exist	2G EEx-d • EEx-de EEx-e
		2 Not likely to exist	2 Not likely to exist	2 Not likely to exist	3G EEx-nA
D U S T	II Combustible Dust	1 May exist all the time		20 Exist all the time	1D Currently not expected
				21 Likely to exist	2GD EEx-d • EEx-de IP6X
	2 Not likely to exist*			22 Conductive dust Not likely to exist	2GD EEx-d • EEx-de IP6X
				22 Non conductive dust Not likely to exist	3GD EEx-nA • IP5X
	III Ignitable fibers & flying	1**			
		2**		22 Non conductive dust Not likely to exist	3D IP5X

* Conductive dust in Class II is always Division 1.
** Class III does not include conductive materials; Division 1 refers to manufacturing process areas; Division 2 refers to areas outside manufacturing process.

Classification for Hazardous Areas
North American Classifications



European Classifications



COMBUSTION TEMPERATURES OF GASES, VAPOURS AND GROUPS

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

Classification of the more common combustible gases and vapours according to temperature class and group

Group	Temperature classes					
	T1	T2	T3	T4	T5	T6
I	Methane (firedamp)					
IIA	Acetic Acid Acetone Ammonia Benzene Benzole Butanone Carbon Monoxide Ethane Ethyl acetate Ethyl chloride Methane Methanol Methyl acetate Methyl alcohol Methyl chloride Naphtalene Propane Toluene Xylene	Acetic anhydride I amyl acetate n butane n butyl alcohol Amylic alcohol Butyl acetate Cyclohexanon Ethyl alcohol Iso butylic alcohol Liquified gas Natural gas Propyl acetate	Cyclohexane Cyclohexanal Decano Diesel fuels Gasoline Heating oil Heptane Hexane Jet fuels Pentane *Petroleum	Acetaldehyde Ether		
IIB	Coke-oven gas Water gas (carburetted)	1,3 butadiene Ethylene Ethylbenzene Ethylene oxide	Hydrogen sulfide Isoprene *Petroleum	Ethyl ether		
IIC	Hydrogen	Acetylene				Ethyl nitrate

* depending on composition

Dangerous Areas and Zones

Zones susceptible to gas

When the hazard is due to the presence of gas, vapors or mists of flammable substances, the European directive 1999/92/EC envisages a classification in three zones defined as follows:

Zone 0 - Areas constantly susceptible to an explosive atmosphere, or for long periods of time. Power equipment with double insulation must be installed in this area.

Zone 1 - Areas where an explosive atmosphere is likely to develop during normal conditions.
Only flameproof electric motors or motors with added protection means can be installed in this zone (for the latter, restrictions by the standards apply).

Zone 2 - Areas rarely susceptible to an explosive atmosphere and for a short period of time.
Flameproof motors or motors with added protection can be installed in this zone, as well as non-sparking motors.

Zones susceptible to dust

When the hazard is due to the presence of combustible dust, the European directive 1999/92/EC envisages a classification in three zones defined as follows:

Zone 20 - Areas constantly susceptible to an explosive atmosphere, or for long periods of time.
Power apparatus cannot be installed in this zone.

Zone 21 - Areas where an explosive atmosphere is likely to develop during normal conditions.
Electric motors certified in compliance with the ATEX directive with IP6X protection rating can be installed in this zone

Zone 22 - Areas rarely susceptible to an explosive atmosphere, and only for a short period of time. In the presence of conductive dust, electric motors certified in compliance with the ATEX directive with protection rating IP6X can be installed in this zone, whereas in the presence of non conductive dust, motors with protection rating IP5X and a declaration of conformity issued by the manufacturer can be installed.

Dangerous areas classified by zones

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 classes (for gas atmospheres)

The electrical apparatus is classified into 6 classes according to the maximum surface temperatures.

The maximum temperature is the highest temperature which is attained in service under conditions described in the standards, by any part of the electrical apparatus, which, could ignite the surrounding atmosphere.

For electric motors this is:

- the temperature of the outside surface of the enclosure for 'd' and 'p' protection modes;
- the temperature of any internal or external point for type of protection 'e' or 'n'.

Ignition temperature of medium relative to limit temperature [°C]	Temperature class	Maximum surface temperature of electrical equipment including 40° C ambient temperature	
		[°C]	[°F]
over 450	T 1	450	842
from 300 to 450	T 2	300	572
from 200 to 300	T 3	200	392
from 135 to 200	T 4	135	275
from 100 to 135	T 5	100	212
from 85 to 100	T 6	85	185

Special Features & optional types

Main versions

- Motors with brakes.
- 2GD motors for areas classified as zone 21 and zone 22 (Dust).
- Group I motors (for mines).

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 100).
- 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 50 pF).

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.
- Motors protection IP56 - IP65 - IP66.
- Motors with condensation drainage valves.
- Motors with special bearings (uni-directional, with sensors, with rollers, insulated, oversized, thrust bearings).
- Motors with a rain cap or sun shield, water-shedding disc.
- (F1 or F2) Side terminal box, 180 to 225 frames only.
- Feet can be removed and repositioned to allow side orientation of 280 and 315 frames terminal boxes.
- Low noise emission version.

Explosion Proof

Available in 208-230/460V or 333/575V • Threaded hole in output shaft is standard • TEFC • Squirrel Cage • Class F

IP55 - Terminal box IP56 • ATEX Certification • Flameproof enclosure EExd IIB T4 (other enclosures available such as EEx-d IIC T4)

See page 34 and 35 for dimensional drawings • Single Phase, Two Speed and Brake motor designs available on request.

2 POLE - 3600 RPM

ATEX CERTIFIED			Weight
Part Number	List Price \$	HP	(lbs)
AB30 63 A2	1,379.00	0.25	27
AB30 63 B2	1,463.00	0.33	27
AB30 71 A2	1,552.00	0.50	33
AB30 71 B2	1,705.00	0.75	33
AB30 80 A2	1,742.00	1.00	44
AB30 80 B2	1,922.00	1.50	44
AB30 90S 2	2,072.00	2.00	66
AB30 90L 2	2,338.00	3.00	66
AB30 100L A2	2,917.00	4.00	88
AB30 112M 2	3,663.00	5.50	143
AB30 132S A2	4,697.00	7.50	176
AB30 132S B2	5,405.00	10.00	176
AB30 132M B2	6,651.00	12.50	198
AB30 132M L2	7,194.00	15.00	198
AB30 160M A2	7,893.00	15.00	341
AB30 160M B2	9,642.00	20.00	341
AB30 160L A2	11,211.00	25.00	374
EB30 180M 2	14,076.00	30.00	506
EB30 200L A2	18,721.00	40.00	649
EB30 200L B2	21,970.00	50.00	693
EB30 225M 2	27,617.00	60.00	836
EB30 250M 2	36,378.00	75.00	990

4 POLE - 1800 RPM

ATEX CERTIFIED			Weight
Part Number	List Price \$	HP	(lbs)
AB30 63 A4	1,350.00	0.18	27
AB30 63 B4	1,431.00	0.25	27
AB30 71 A4	1,492.00	0.33	33
AB30 71 B4	1,576.00	0.50	33
AB30 80 A4	1,674.00	0.75	44
AB30 80 B4	1,757.00	1.00	44
AB30 90S 4	2,027.00	1.50	66
AB30 90L 4	2,263.00	2.00	66
AB30 100L A4	2,708.00	3.00	88
AB30 100L B4	3,249.00	4.00	88
AB30 112M 4	4,160.00	5.50	143
AB30 132S B4	4,765.00	7.50	176
AB30 132M B4	5,895.00	10.00	176
AB30 132M L4	7,040.00	11.80	198
AB30 160M B4	8,339.00	15.00	341
AB30 160L B4	9,793.00	20.00	374
EB30 180M 4	12,569.00	25.00	506
EB30 180L 4	15,035.00	30.00	539
EB30 200L B4	19,248.00	40.00	693
EB30 225S 4	23,645.00	50.00	781
EB30 225M 4	27,617.00	60.00	836
EB30 250M 4	36,090.00	75.00	990

6 POLE - 1200 RPM

ATEX CERTIFIED			Weight
Part Number	List Price \$	HP	(lbs)
AB30 63 B6	1,500.00	0.12	27
AB30 71 A6	1,554.00	0.25	33
AB30 71 B6	1,694.00	0.35	33
AB30 80 A6	1,775.00	0.50	44
AB30 80 B6	1,846.00	0.75	44
AB30 90S 6	2,182.00	1.00	66
AB30 90L 6	2,431.00	1.50	66
AB30 100L B6	2,976.00	2.00	88
AB30 112M 6	3,590.00	3.00	143
AB30 132S B6	5,251.00	4.00	176
AB30 132M B6	5,642.00	5.50	176
AB30 132M L6	6,010.00	7.50	198
AB30 160M B6	8,710.00	10.00	341
AB30 160L 6	11,476.00	15.00	374
EB30 180L 6	16,082.00	20.00	539
EB30 200L A6	17,343.00	25.00	649
EB30 200L B6	21,539.00	30.00	693
EB30 225M 6	28,580.00	40.00	836
EB30 250M 6	37,292.00	50.00	990

8 POLE - 900 RPM

ATEX CERTIFIED			Weight
Part Number	List Price \$	HP	(lbs)
AB30 63 B8	1,574.00	0.06	27
AB30 71 B8	1,814.00	0.20	33
AB30 80 A8	2,099.00	0.25	44
AB30 80 B8	2,496.00	0.33	66
AB30 90S 8	2,882.00	0.50	66
AB30 90L 8	3,014.00	0.75	88
AB30 100L A8	3,445.00	1.00	88
AB30 100L B8	3,874.00	1.50	88
AB30 112M 8	4,228.00	2.00	143
AB30 132S B8	6,051.00	3.00	176
AB30 132M B8	6,651.00	4.00	198
AB30 160M A8	8,049.00	5.50	341
AB30 160M B8	9,832.00	7.50	341
AB30 160L 8	11,571.00	10.00	374
EB30 180L 8	16,621.00	15.00	539
EB30 200L B8	20,915.00	20.00	693
EB30 225S 8	27,779.00	25.00	781
EB30 225M 8	29,665.00	30.00	836
EB30 250M 8	41,396.00	40.00	990

Explosion Proof Motors do not meet
Energy Efficiency Regulations

NORTH AMERICAN CERTIFICATION MUST BE OBTAINED BY USER

RUN CAPACITORS	Part Number	µF	Motor Type 115V	Motor Type 230V	List Price \$	* requires 2 run capacitors each please enquire
	XCE 00004	4		56C2:63C2	18.00	
	XCE 00006.3	6.3		56S4:63S2:71C6	20.00	
	XCE 00061	8		63L2:63A4:LM63C4	20.00	
	XCE 00081	10		LME63C4:80C6:LM71C4	26.00	
	XCE 00101	12.5	71C4:63A4	71C2:LME71C4:71S4:80C4:80S4:80S8	26.00	
	XCE 00143	16	56C2:63C2:71S2:71S4	71S2:71L4	29.00	
	XCE 00163	20		80L4	36.00	
	XCE 00182	25	56S4:63L2:63S2:63C4:71C2:71L4:71C6	80C2:80S2:90C4	39.00	
	XCE 00202	31.5		90S4:90S6	45.00	
	XCE 00261	36		90C2:90S2	48.00	
	XCE 00281	40	80C2*:80C6:90C6*	90L2:100S6	56.00	
	XCE 00322	50	80S2:80C4:80L4:80S6:90S2*:90C4:100C4	100C2:100C4:100S4:100C6:90C6	66.00	
	XCE 00333	60	90C2*:90L2*:90S4:90S6*	112/M4	81.00	
	XCE 00341	70			98.00	

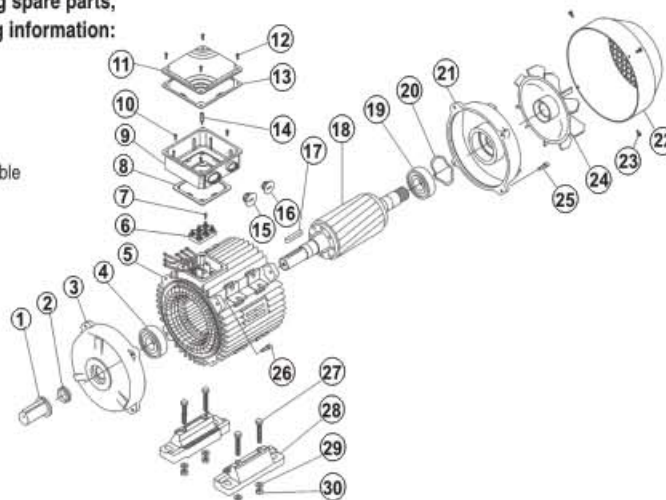
START CAPACITORS	Part Number	µF	Motor Type 115V	Motor Type 230V	List Price \$	For DVE capacitor rating see page 17
	XCE 00421	16+25%	63C2	63S4:63C4:70C8	29.00	
	XCE 00441	31.5+25%	63L2:63S2:63A4:63C4:71C4:71S4:71L4:71C6	63C2:63S2:63L2:71C2:71S2:71C4:71S4:80C4:80C6:71L4	33.00	
	XCE 00446	40+25%	71C2:71S2	80S6	45.00	
	XCE 00451	50+25%	80S6	80S4	45.00	
	XCE 00471	80+25%		80C2:80L4:90S6:90C2	52.00	
	XCE 00481	100+25%	80C2:80C6	90S2:90C4:100C6:80S2:90C6:112M4 (100µF X2)	62.00	
	XCE 00488	120+25%	80C4:80L4:80S4:90L2:90S4:90C6	80S2:90C2:90L2:90S4:100C4:100S6	79.00	
	XCE 00493	150+25%	90S6:100C4:80S4	100C2	84.00	
	XCE 00496	180+25%	90C2:90S2	100S4	91.00	

VENTILATION FANS	Plastic	Metal	Motor		To Fit	Blade Dimensions		List Price \$	
	Part #	Part #	ST/AM	HE	Shaft	Plastic	Metal	Plastic	Metal
	XVN 00011	XVA 00001	56		9mm	*90mm	+92mm	47.00	74.00
	XVN 00021	XVA 00011	63		14mm	*110mm	+92mm	47.00	102.00
	XVN 00031	XVA 00021	71	90(2/4):100(2):112(2)	14mm	*112mm	+115mm	54.00	109.00
	XVN 00032	-	71(N)†	100(4)	14mm	*130mm	-	54.00	-
	XVN 00041	XVA 00031	80	112(4)	19mm	*130mm	+135mm	54.00	138.00
	XVN 00051	XVA 00041	90		24mm	*146mm	+165mm	57.00	150.00
	XVN 00061	XVA 00051	100		28mm	**159mm	**185mm	86.00	163.00
	XVN 00071	XVA 00061	112		28mm	**190mm	**200mm	107.00	168.00
	XVN 00081	XVA 00071	132		40mm	**236mm	**230mm	150.00	205.00
		XVA 00081	160		45mm	**270mm		175.00	250.00
		XVA 00091			48mm	**331mm		199.00	299.00

NOTE: Fans for newer designed motors may vary. Please check with the technical department for specific requirements.
 * = press-on fit ** = set on mounting + = set screw type † = 71(N) new design 71 frame plastic fans
 Cooling fans are also available for motor frame sizes 200, 225 and 250 on request • Metal fans are pressure die cast aluminum
 Plastic fans are glass reinforced 160C polypropylene • HE motors have non-standard fan sizes

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

- Designation of Spare Part
- Motor Type
- Mounting Arrangement
- Motor Serial Number
- Product # (E-No) - when available



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 board
9. Terminal box
10. Fixing screw terminal box
11. Terminal box lid
12. Fixing screw terminal box lid
13. Gasket terminal box lid
14. Earthing terminal
15. Blank gland plug
16. Blank gland plug
17. Key
18. Rotor complete
19. Bearing non-drive end
20. Pre-load washer
21. Endshield non-drive end
22. Fan cover
23. Fixing screw for fan cover
24. Fan
25. Fixing bolt endshield non-drive end
26. Fixing bolt endshield drive end
27. Fixing bolt motor feet
28. Motor feet
29. Fixing washer motor feet
30. Fixing nut motor feet

Combinations of Flanges &

Frame Sizes

For ST, HE, FB, AAF, MS, LME, DVE,
AMFV (up to 132 frame) Series Motors

B14 'C' Flange	List Price \$	B5 'D' Flange	List Price \$
FL56B14	54.00	FL56B5	54.00
FL63B14	54.00	FL63B5	54.00
FL71B14	54.00	FL71B5	54.00
FL80B14	61.00	FL80B5	67.00
FL90B14	67.00	FL90B5	80.00
FL100B14	101.00	FL100B5	113.00
FL112B14	108.00	FL112B5	113.00
FL132B14	149.00	FL132B5	207.00
FL160B14	283.00	FL160B5	304.00

Machined for shaft oil seals
NEMA flanges available

For AB/EB Series Motors (Explosion Proof Motors)

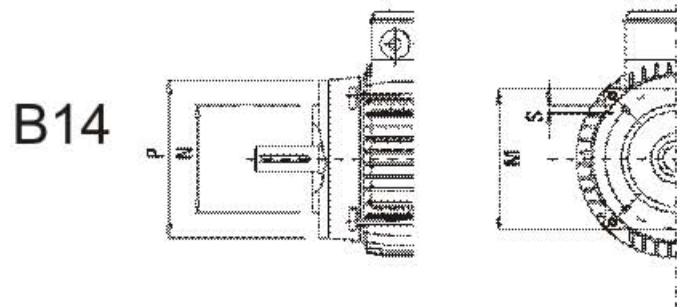
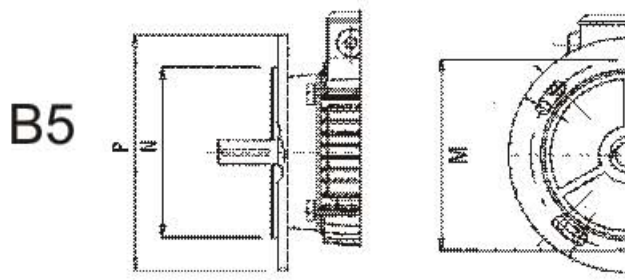
B14 'C' Flange	List Price \$	B5 'D' Flange	List Price \$
FLB63B14	337.00	FLB63B5	337.00
FLB71B14	337.00	FLB71B5	337.00
FLB80B14	398.00	FLB80B5	398.00
FLB90B14	438.00	FLB90B5	438.00
FLB100B14	545.00	FLB100B5	545.00
FLB112B14	657.00	FLB112B5	657.00
FLB132B14	736.00	FLB132B5	736.00
FLB160B14	846.00	FLB160B5	846.00
		FLB180B5	932.00
		FLB200B5	1,014.00
		FLB225B5	1,126.00
		FLB250B5	1,321.00

For LNP Series Motors (cast iron 180 frame and larger)

B5 'D' Flange	List Price \$
FLT 180B5	308.00
FLT 200B5	508.00
FLT 225B5	818.00
FLT 250B5	861.00
FLT 280B5	1,045.00
FLT 315B5	1,509.00

Increasing and Reducing Flanges

M = centre to centre bolt hole circle
N = Inside diameter
P = Outside diameter



B5 Flanges

Motor Frame Size	M	N	P	B5 Reduced	B5 Increased
56	100	80	120	-	-
63	115	95	140	56	71
71	130	110	160	63/56*	80/90
80	165	130	200	71/63	-
90	165	130	200	71*	100/112**
100	215	180	250	90/80/71*	-
112	215	180	250	90 */**	-
132S	265	230	300	112**	-
132M	265	230	300	112	-
160	300	250	350	132***	-
180	300	250	350	-	-
200	350	300	400	-	-
225	400	350	450	-	-
250	500	450	550	-	-
280	500	450	550	-	-

B14 Flanges

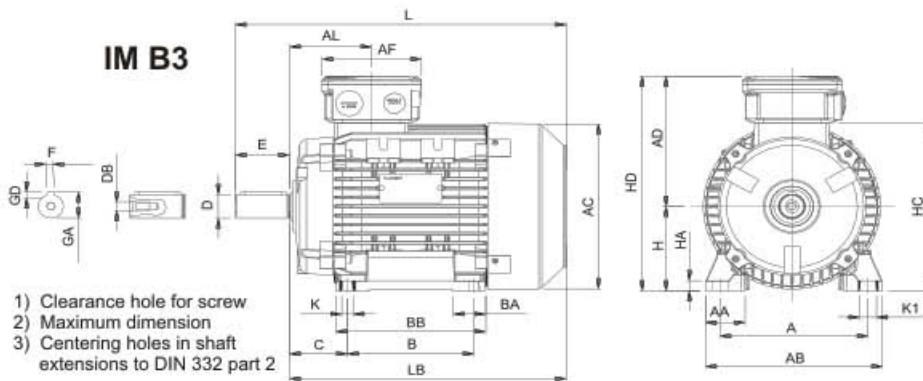
Motor Frame Size	M	N	P	B14 Reduced	B14 Increased
56	65	50	80	-	63
63	75	60	90	56	71/80
71	85	70	105	63	80/90
80	100	80	120	71/63	90/100
90	115	95	140	80/71	100/112
100	130	110	160	90	132
112	130	110	160	-	132
132S	165	130	200	112/100	-
132M	165	130	200	112/100	-
160***	215	180	250	-	-

NOTE: B5 increased and reducing flanges may require motor windings to be pressed.
An additional charge may be applicable.

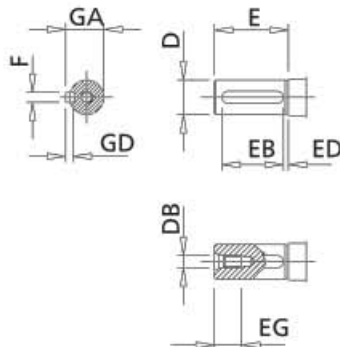
* = May require windings pressed at additional cost
** = Shaft machining required at additional cost
*** = May require bearing change at additional cost

For increasing and reducing flanges please call for pricing
Flanges for AF and AAF brake motors require mounting hole-threads to be re-drilled.

**HPS FRAME SIZE 71 - 132
ALUMINIUM ALLOY FRAME**

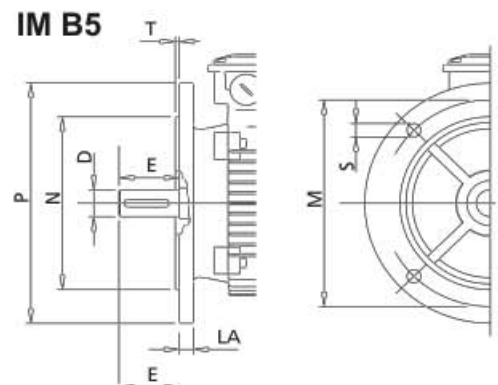
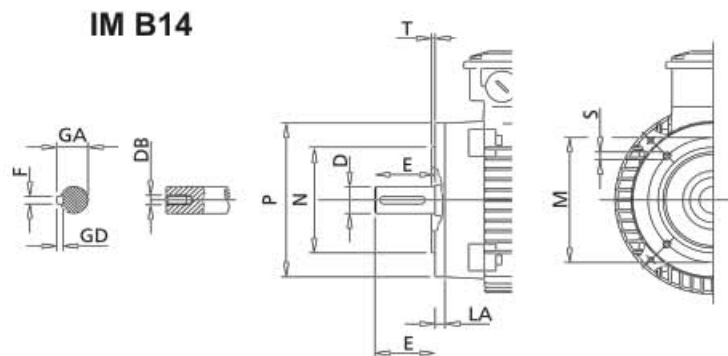


IEC	H	A	B	C	K ¹⁾	AB	BB	AD ²⁾	HD ²⁾	AC	HC	HA	K1	L	LB	AL	AF	BA	AA	D/DA	E/EA	F/FA	GD	GA/GC	DB ³⁾
71	71	112	90	45	7	144	109	112	183	142	142	9	17	245	215	75	93	22	30	14	30	5	5	16	M5
90S	90	140	100	56	10	170	150	148	238	180	181	11	15	317	267	85	110	28/53	37	24	50	8	7	27	MB
90L	90	140	125	56	10	170	150	148	238	180	181	11	15	317	267	85	110	28/53	37	24	50	8	7	27	MB
112M	112	190	140	70	12.5	220	175	171	283	225	226	15	19	388	328	92	110	46	48	28	60	8	7	31	M10
112XL	112	190	140	70	12	220	175	171	283	225	226	15	19	410	350	92	110	46	48	28	60	8	7	31	M10
132M	132	216	178	89	12	256	218	195	327	248	261	17	20	482	402	120	133	45	59	38	80	10	8	41	M12
132XL	132	216	178	89	12	256	218	195	327	248	261	17	20	505	425	120	133	45	59	38	80	10	8	41	M12
132XXL	132	216	178	89	12	256	218	195	327	248	261	17	20	556	476	120	133	45	59	38	80	10	8	41	M12



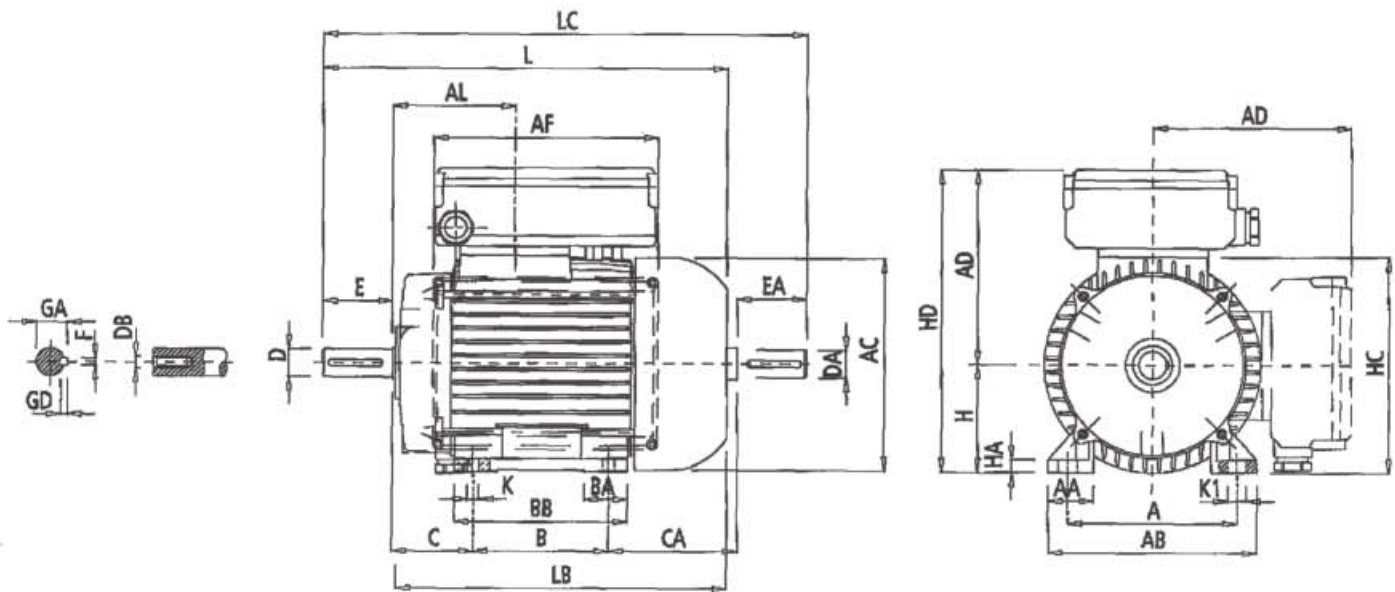
IEC	D	E	F h9	GD	GA	DB	EG	EB	ED
71	14j6	30	5	5	16	M5	12.5	20	4
90S-L	24j6	50	8	7	27	M8	19	40	4
112M-XL	28j6	60	8	7	31	M10	22	50	4
132M-XL-XXL	38k6	80	10	8	41	M12	28	70	5

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



SMALL FLANGE B14							INCREASED FLANGE B14						FLANGE B5					
IEC	P	N	LA	M	T	S ¹⁾	P	N	LA	M	T	S ¹⁾	M	N	P	T	LA	S ¹⁾
71	105	70	11	85	2.5	M6	140	95	8	115	2.5	M8	130	110	160	3.5	10	M8
90S-L	140	95	10	115	3	M8	160	110	9	130	3.5	M8	165	130	200	3.5	12	M10
112M-XL	160	110	10	130	3.5	M8	200	130	12	165	3.5	M10	215	180	250	4	14	M12
132M-XL-XXL	200	130	30	165	3.5	M10	250	180	12	215	4	M12	265	230	300	4	14	M12

1) Clearance hole for screw



- See page 28 for B5 flange dimensions
- See page 29 for B14 flange dimensions
- F2 LEAD BOX IS STANDARD

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

Series LME & DVE Mounting IM B3

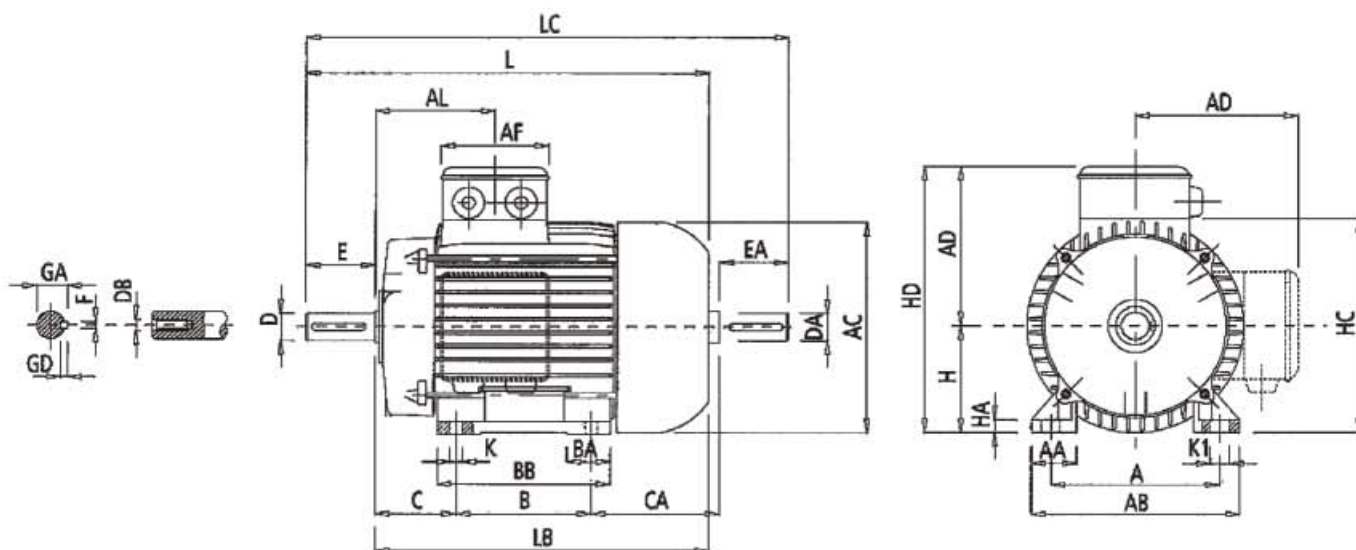
All dimensions in mm

Frame	H	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
56	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
63	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
71	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
80	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
90S	90	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
90L	90	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
100L	100	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
112M	112	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

LM Series (56-80)
Mounting IM B3

All dimensions in mm

Frame	H	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
56	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
63	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
71	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
80	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



- See page 28 for B5 flange dimensions
- See page 29 for B14 flange dimensions
- F2 LEAD BOX IS STANDARD

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

MS Compact brake motor non-drive end shaft is not standard size - Please inquire

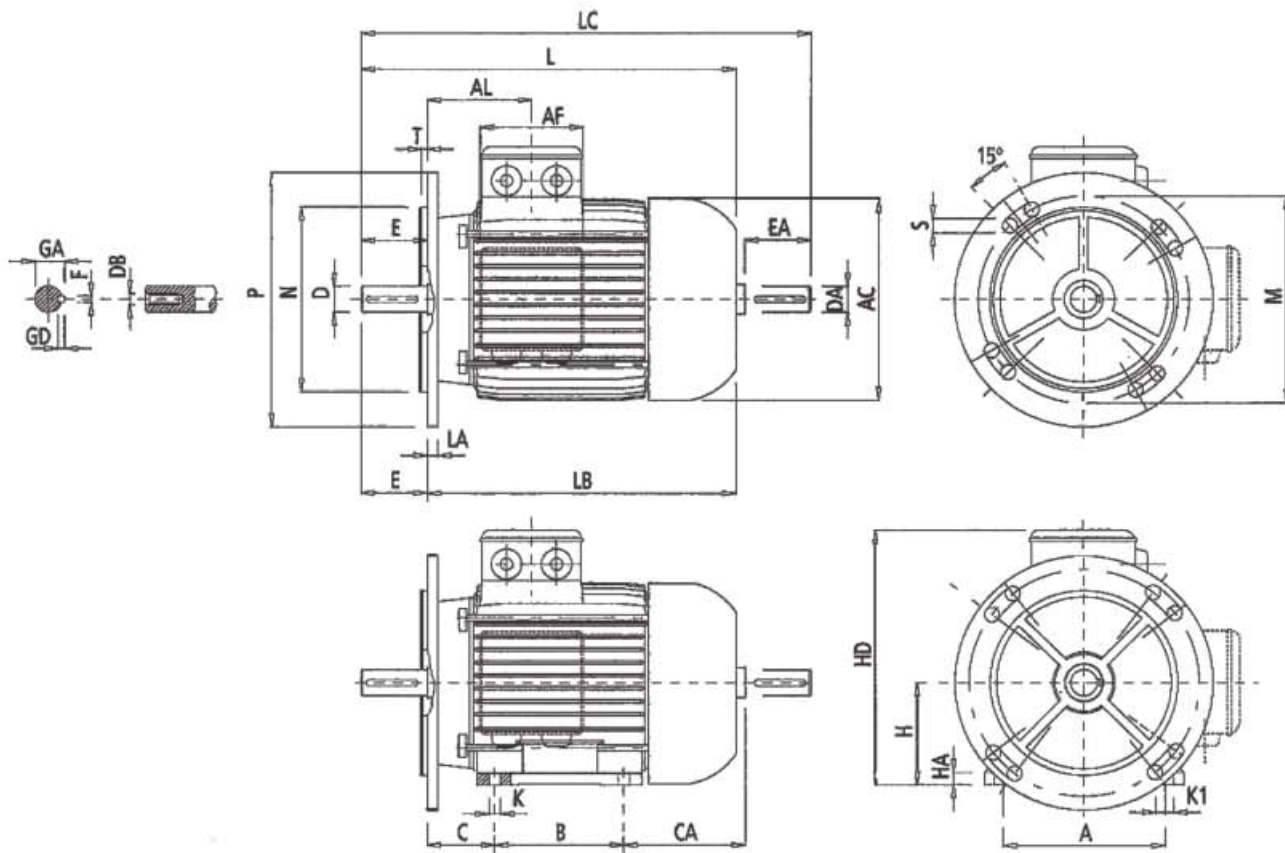
Frame Construction B3

All dimensions in mm

																														Forced Ventilation		
Type	H	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	AMFV	MS			
																												L	LB	L		
56	56	90	71	36	6	107	86	63	98	154	104	110	8	9	189	169	210	62	96	27	27	9	20	3	3	10.2	M3	-	-	-		
63	63	100	80	40	7	120	100	73	105	168	122	122	8	11	214	191	239	63	96	28	30	11	23	4	4	12.5	M4	-	-	226		
71	71	112	90	45	7	135	109	80	119	190	142	144	9	11	243	213	275	69	96	28	31	14	30	5	5	16	M5	308	278	255		
80	80	125	100	50	9	154	125	89	131	211	160	162	10	14	277	237	319	83	124	35	33	19	40	6	6	21.5	M6	361	321	294		
90S	90	140	100	56	9	170	125	101	140	230	180	181	11	15	307	257	357	84	124	37	37	24	50	8	7	27	M8	392	342	340		
90L	90	140	125	56	9	170	150	101	140	230	180	181	11	15	332	282	382	84	124	37	37	24	50	8	7	27	M8	417	367	340		
100L	100	160	140	63	11	192	166	110	147	247	195	200	12	17	373	313	433	91	124	42	44	28	60	8	7	31	M10	462	402	379		
HE100LF4	100	160	140	63	11	192	166	110	147	247	195	200	12	17	400	340	460	91	124	42	44	28	60	8	7	31	M10	-	-	-		
112M	112	190	140	70	12	220	175	126	163	275	222	226	15	19	394	334	456	93	124	46	48	28	60	8	7	31	M10	480	420	396		
132S	132	216	140	89	12	256	180	134	195	327	248	261	17	20	442	362	523	100	132	45	59	38	80	10	8	41	M12	562	482	480		
132M	132	216	178	89	12	256	218	136	195	327	248	261	17	20	482	402	563	120	132	45	59	38	80	10	8	41	M12	582	502	500		
132L	132	216	178	89	12	256	218	166	195	327	248	261	17	20	512	432	593	120	132	45	59	38	80	10	8	41	M12	612	532	658		
160M	160	254	210	108	14	320	270	180	234	394	317	316	23	18	610	500	718	146	148	65	76	42	110	12	8	45	M16	670	560	614		
160L	160	254	254	108	14	320	310	180	234	394	360	316	23	18	654	544	762	168	148	65	76	42	110	12	8	45	M16	715	605	658		

Verify dimensions for AMPH motors with Lafert

3-Phase Motors



• F2 LEAD BOX IS STANDARD

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

MS Compact brake motor non-drive end shaft is not standard size - Please inquire

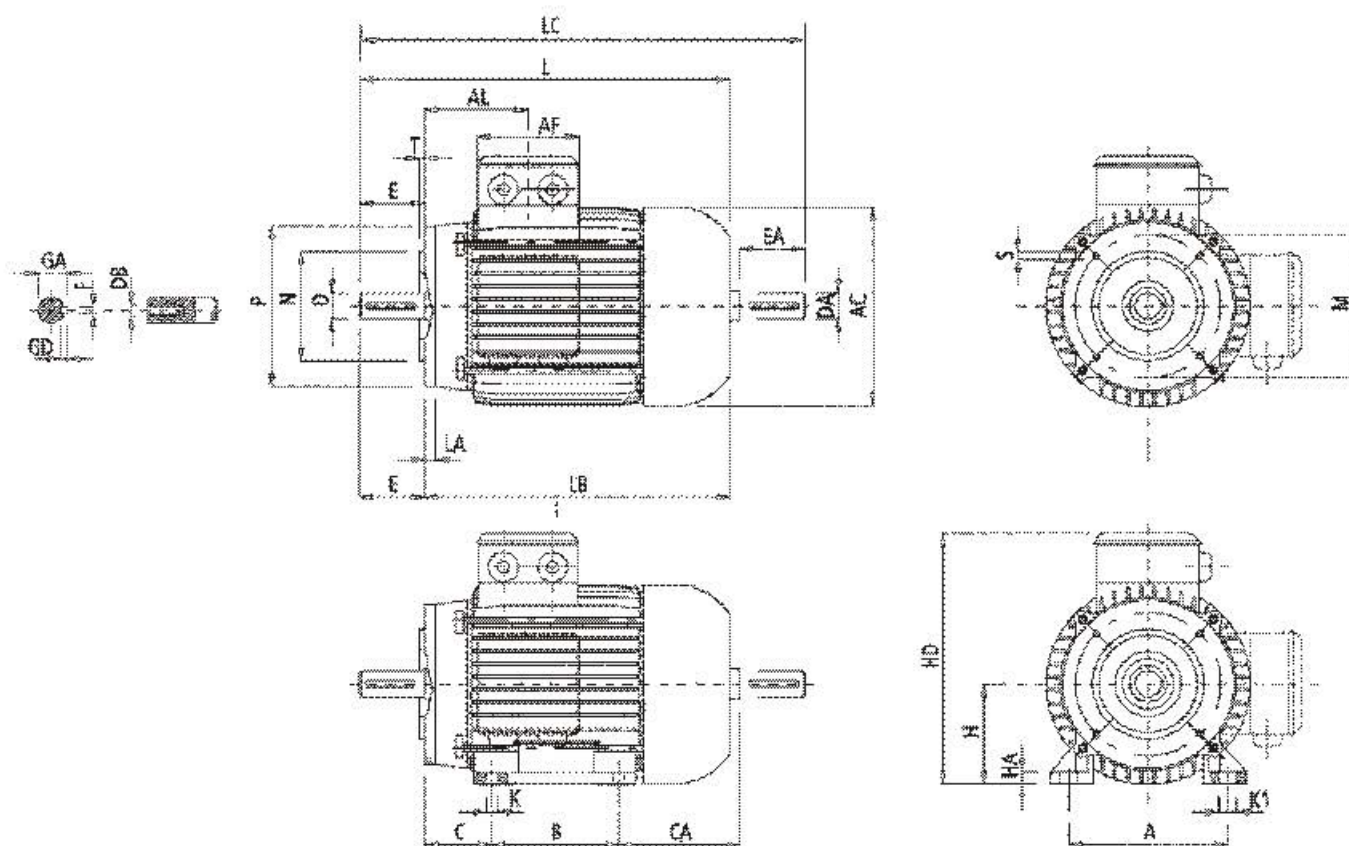
Frame Construction B5

D Flange

All dimensions in mm

All dimensions in mm																													Forced Ventilation		
Type	M	N	P	T	LA	S	H	A	B	C	K	CA	HD	AC	HA	K1	L	LB	LC	AL	AF	D/DA	E/EA	F	GD	GA	DB	AMFV	MS		
																												L	LB	L	
56	100	80	120	2.5	7	7	56	90	71	36	6	63	154	104	8	9	189	169	210	62	96	9	20	3	3	10.2	M3	-	-	-	
63	115	95	140	3	9	9.5	63	100	80	40	7	73	168	122	8	11	214	191	239	63	96	11	23	4	4	12.5	M4	-	-	226	
71	130	110	160	3.5	10	9.5	71	112	90	45	7	80	190	142	9	11	243	213	275	69	96	14	30	5	5	16	M5	308	278	255	
80	165	130	200	3.5	11	11.5	80	125	100	50	9	89	211	160	10	14	277	237	319	83	124	19	40	6	6	21.5	M6	361	321	294	
90S	165	130	200	3.5	12	11.5	90	140	100	56	9	101	230	180	11	15	307	257	357	84	124	24	50	8	7	27	M8	392	342	340	
90L	165	130	200	3.5	12	11.5	90	140	125	56	9	101	230	180	11	15	332	282	382	84	124	24	50	8	7	27	M8	417	367	340	
100L	215	180	250	4	14	14	100	160	140	63	11	110	247	195	12	17	373	313	433	91	124	28	60	8	7	31	M10	462	402	379	
HE100LF4	215	180	250	4	14	14	100	160	140	63	11	110	247	195	12	17	400	340	460	91	124	28	60	8	7	31	M10	-	-	-	
112M	215	180	250	4	14	14	112	190	140	70	12	126	275	222	15	19	394	334	456	93	124	28	60	8	7	31	M10	480	420	396	
132S	265	230	300	4	14	14	132	216	140	89	12	134	327	248	17	20	442	362	523	100	132	38	80	10	8	41	M12	562	482	480	
132M	265	230	300	4	14	14	132	216	178	89	12	136	327	248	17	20	482	402	563	120	132	38	80	10	8	41	M12	582	502	500	
160M	300	250	350	5	15	18	160	254	210	108	14	180	394	317	23	18	610	500	718	146	148	42	110	12	8	45	M16	670	560	658	
160L	300	250	350	5	15	18	160	254	254	108	14	180	394	317	23	18	654	544	762	168	148	42	110	12	8	45	M16	715	605	614	

Verify dimensions for AMPH motors with Lafert



- F2 LEAD BOX IS STANDARD

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

MS Compact brake motor non-drive end shaft is not standard size - Please inquire

Frame Construction B14

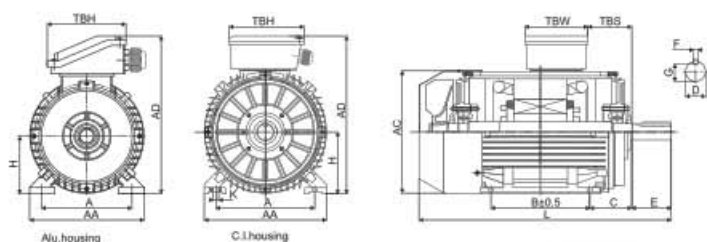
C Flange

All dimensions in mm

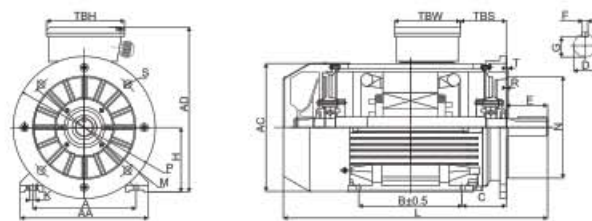
All dimensions in mm																											Forced Ventilation			
Type	M	N	P	T	LA	S	H	A	B	C	K	CA	HD	AC	HA	K1	L	LB	LC	AL	AF	D/DA	E/EA	F	GD	GA	DB	AMFV	MS	
																												L	LB	L
56	65	50	80	2.5	7	M5	56	90	71	36	6	63	154	104	8	9	189	169	210	62	96	9	20	3	3	10.2	M3	-	-	-
63	75	60	90	2.5	9	M5	63	100	80	40	7	73	167.5	122	8	11	214	191	239	63	96	11	23	4	4	12.5	M4	-	-	226
71	85	70	105	2.5	11	M6	71	112	90	45	7	80	189.5	141.5	9	11	243	213	275	69	96	14	30	5	5	16	M5	308	278	255
80	100	80	120	3	11	M6	80	125	100	50	9	89	211	159.5	10	14	277	237	319	83	124	19	40	6	6	21.5	M6	361	321	294
90S	115	95	140	3	11	M8	90	140	100	56	9	101	229.5	179.5	11	15	307	257	357	84	124	24	50	8	7	27	M8	392	342	340
90L	115	95	140	3	11	M8	90	140	125	56	9	101	229.5	179.5	11	15	332	282	382	84	124	24	50	8	7	27	M8	417	367	340
100L	130	110	160	3.5	14	M8	100	160	140	63	11	110	247	195	12	17	373	313	433	91	124	28	60	8	7	31	M10	462	402	379
HE100LF4	130	110	160	3.5	14	M8	100	160	140	63	11	110	247	195	12	17	400	340	460	91	124	28	60	8	7	31	M10	-	-	-
112M	130	110	160	3.5	14	M8	112	190	140	70	12	126	274.5	222	15	19	394	334	456	93	124	28	60	8	7	31	M10	480	420	396
132S	165	130	200	3.5	30	M10	132	216	140	89	12	134	327	248	17	20	442	362	523	100	132	38	80	10	8	41	M12	562	482	480
132M	165	130	200	3.5	30	M10	132	216	178	89	12	136	327	248	17	20	482	402	563	120	132	38	80	10	8	41	M12	582	502	500
160M	215	180	250	4	36	M12	160	254	210	108	14	180	394	317	23	18	610	500	717.5	146	148	42	110	12	8	45	M16	670	560	658
160L	215	180	250	4	36	M12	160	254	254	108	14	180	394	317	23	18	654	544	761.5	168	148	42	110	12	8	45	M16	715	605	614

Verify dimensions for AMPH motors with Lafert

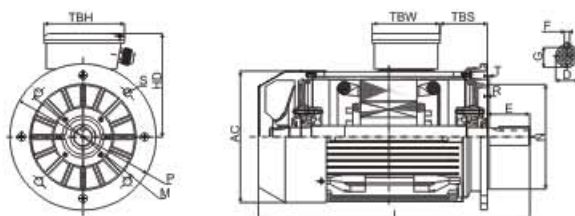
3-Phase: Premium Efficiency (Cast Iron Frames)



IM B3 **Figure 1**



IM B35 **Figure 2**

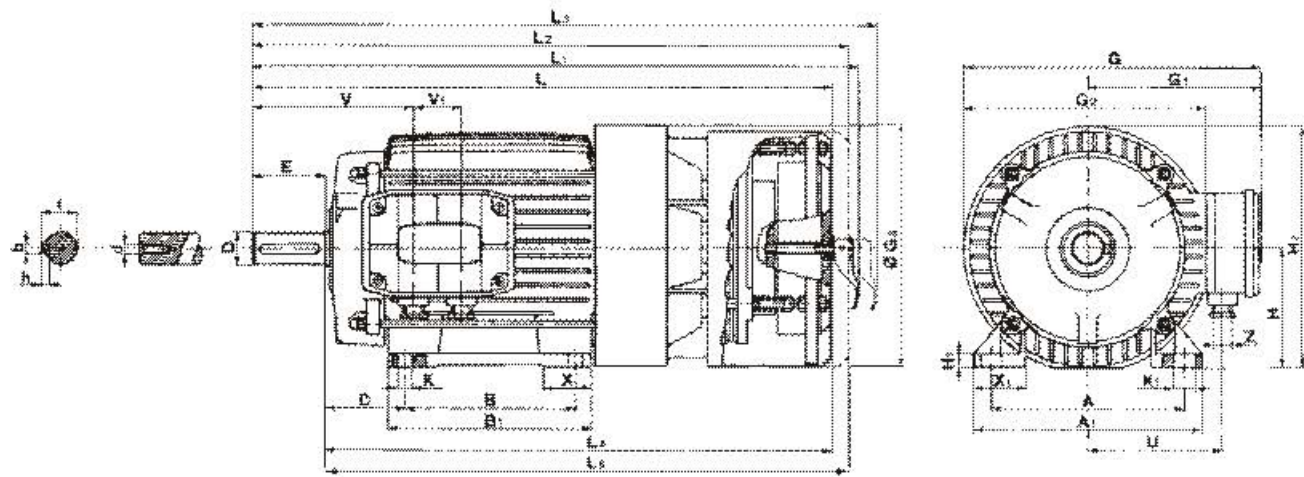


IM B5 **Figure 3**

Overall & Installation Dimensions (all in mm)

Frame	Foot Mounting					Shaft					General							
	H	A	B	C	D	E	F	G	K	AA	AD	HD	AC	L	TBS	TBW	TBH	
180M/L	180	279	241/279	121	48	110	14	42.5	15	348	439	259	360	687/725	160/180	162	187	
200L	200	318	305	133	55	110	16	49	19	388	497	297	399	768	192	186	233	
225S	4,8	225	356	286	149	60	140	18	53	19	436	553	328	465	814	190	186	233
225M	2	225	356	311	149	55	110	16	49	19	436	553	328	465	809	202	186	233
	4,6,8	225	356	311	149	60	140	18	53	19	436	553	328	465	839	202	186	233
250M	2	250	406	349	168	60	140	18	53	24	484	616	366	506	918	233	218	260
	4,6,8	250	406	349	168	65	140	18	58	24	484	616	366	506	918	233	218	260
280S/M	2	280	457	368/419	190	65	140	18	58	24	557	668	388	559	984/1035	265	218	260
	4,6,8	280	457	368/419	190	75	140	20	67.5	24	557	668	388	559	984/1035	265	218	260
315S	2	315	508	406	216	65	140	18	58	28	630	840	525	680	1160	130	350	430
	4,6,8	315	508	406	216	80	170	22	71	28	630	840	525	680	1190	130	350	430
315M/L	2	315	508	457/508	216	65	140	18	58	28	630	840	525	680	1310	130	350	430
	4,6,8	315	508	457/508	216	80	170	22	71	28	630	840	525	680	1340	130	350	430

Frame	Bearings		Cable Gland	B5					
	Drive End	Non-Drive End		N	M	P	S	T	R
180M/L		6311C3	2-M32×1.5	250	300	350	4-19	5	0
200L		6312C3	2-M40×1.5	300	350	400	4-19	5	0
225S	4,8			350	400	450	8-19	5	0
225M	2	6313C3	2-M50×1.5	350	400	450	8-19	5	0
	4,6,8			350	400	450	8-19	5	0
250M	2	6314C3	2-M50×1.5	450	500	550	8-19	5	0
	4,6,8			450	500	550	8-19	5	0
280S/M	2	6316C3	2-M50×1.5	450	500	550	8-19	5	0
	4,6,8			450	500	550	8-19	5	0
315S/M/L	2	6317C3	2-M63×1.5	550	600	660	8-24	6	0
	4,6,8	NU319 6319C3		550	600	660	8-24	6	0



* See page 28 for B5 flange dimensions
* See page 29 for B14 flange dimensions

Frame Construction B3
with feet
All dimensions in mm

Frame	H	A	B	C	K	D	E	A1	B1	G	G1	G2	G3	H1	H2	K1	L	L1	L2*	L3*	L4	L5*	U	V	V1	Z	X	X1	b	h	t	d*
63	63	100	80	40	7	11	23	120	100	166.5	101.5	134	130	8	128	11	301	320	314	333	278	291	69	68	36	M16 M20	28	30	4	4	12.5	M4
71	71	112	90	45	7	14	30	135	109	189.5	114.5	147.5	150	9	146	11	340	360	353	373	310	323	82	84	36	M16 M20	28	31	5	5	16	M5
80	80	125	100	50	9	19	40	154	125	218	133	167	170	10	165	14	382	400	395	413	342	355	97	105	36	M20 M25	35	33	6	6	21.5	M6
90S	90	140	100	56	9	24	50	170	125	236.5	141.5	187	190	11	185	15	415	430	428	443	365	378	106	120	36	M20 M25	37	37	8	7	27	M8
90L	90	140	125	56	9	24	50	170	150	236.5	141.5	187	190	11	185	15	440	455	453	468	390	403	106	120	36	M20 M25	37	37	8	7	27	M8
100L	100	160	140	63	11	28	60	192	166	254	149	204	210	12	205	17	486	500	500	514	426	440	118	137	36	M20 M25	42	44	8	7	31	M10
112M	112	190	140	70	12	28	60	220	175	279.5	164.5	229	230	15	227	19	530	545	545	560	470	485	130	151	36	M20 M25	46	48	8	7	31	M10
132S	132	216	140	89	12	38	80	256	180	333	195	268	276	17	270	20	625	640	-	-	545	2 disc	150	194.5	45	M32 X2	45	59	10	8	41	M12
132M	132	216	178	89	12	38	80	256	218	333	195	268	276	17	270	20	665	680	-	-	585	2 disc	150	194.5	45	M32 X2	45	59	10	8	41	M12
160M	160	254	210	108	14	42	110	320	270	385	235	310	332	23	328	18	747	770	-	-	637	2 disc	172	260	50	M40 X2	65	76	12	8	45	M16
160L	160	254	254	108	14	42	110	310	310	385	235	310	332	23	328	18	791	814	-	-	681	2 disc	172	260	50	M40 X2	65	76	12	8	45	M16

3-Phase Brake Motors

The main features of this type of motor are low weight and its ability to stop immediately, without recourse to external mechanical devices, if the supply voltage is cut off. This presents some obvious advantages...

SAFETY:

In the event of a power failure, the motor, and the machinery it is driving, will stop immediately.

BRAKING SPEED:

If the supply voltage is cut off, braking is SAFE, POWERFUL and FAST. The "dead" time created by the inertia of rotating parts is reduced to a minimum.

STOPPING POWER:

Braking power is independent of the direction of rotation.

BRAKING ACCURACY:

The instant braking action of these motors is particularly suited to situations where accurate positioning and ability to repeat is essential.

BRAKING TORQUE:

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 WITHOUT AXIAL MOVEMENT OF THE MOTOR SHAFT:

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.

ABSENCE OF AUXILIARY ELECTRICAL DEVICES:

The need for current rectifiers or transformers is eliminated by using the same supply voltage and frequency as the motor.

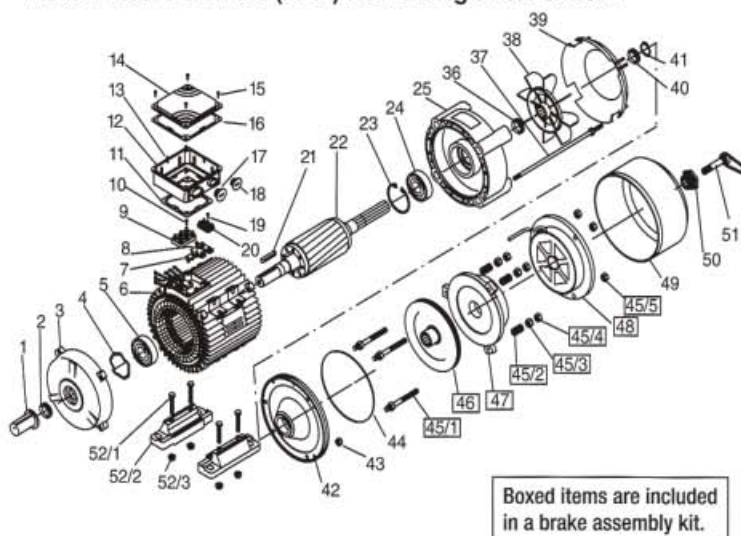
SEPARATE CONTROLS AND ELECTRICAL SUPPLY:

The standard configuration includes two separate terminal blocks supplying electrical current and controls. One supplies the brake, the other supplies the motor.

ENDURANCE:

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.

Parts Break-Down for (AAF) New Design Brake Motor



Part description:

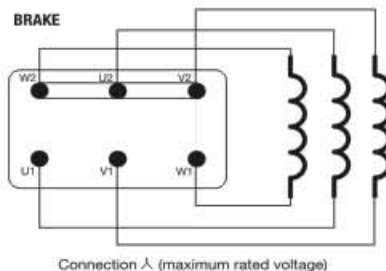
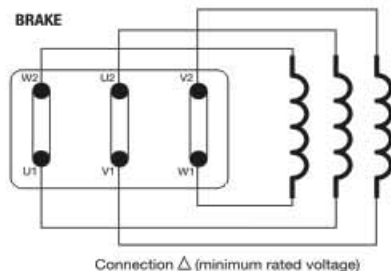
- | | |
|--|---|
| 1 Shaft protection | 36 Dust seal |
| 2 Dust seal drive end | 37 Tie rod |
| 3 Endshield drive end | 38 Fan |
| 4 Pre-load washer | 39 Fan cover |
| 5 Bearing drive end | 40 Dust seal (for IP55 only) |
| 6 Stator frame | 41 Circlip for fan locking |
| 7 Terminal board support (for sizes 63 ... 112) | 42 Brake support flange |
| 8 Fixing screw terminal board support (for sizes 63 ... 112) | 43 Tie rod fixing nit |
| 9 Motor terminal board | 44 O-ring (for IP55 only) |
| 10 Fixing screw motor terminal board | 45 Brake adjusting/fixing kit: |
| 11 Gasket terminal box | 45/1 guiding column |
| 12 Terminal box | 45/2 braking spring |
| 13 Fixing screw terminal box | 45/3 self locking nut |
| 14 Gasket terminal box lid | 45/4 electromagnet locking nut |
| 15 Terminal box lid | 45/5 electromagnet locking nut |
| 16 Fixing screw terminal box lid | 46 Brake disk |
| 17 Blank gland plug | 47 Brake anchor |
| 18 Blank gland plug | 48 Electromagnet |
| 19 Fixing screw brake terminal board (for sizes 63 ... 112) | 49 Brake cover |
| 20 Brake terminal board (for sizes 63 ... 112) | 50 Nipple |
| 21 Motor key | 51 Hand release |
| 22 Rotor complete | 52 Foot kit (1 foot) (for sizes 71 ... 132 a) |
| 23 Circlip | 52/1 fixing screw |
| 24 Bearing non-drive end | 52/2 foot |
| 25 Endshield non-drive end | 52/3 fixing nut b) |
- a) for size 63 feet integral with the case
b) for size 132 washer and nut

AF & AFB Ranges:

Lafert's classic AF and AFB range of brake motors are characterized by a powerful, precise and almost instant braking action. This series is especially suited to loads where high inertia masses must be driven from rest, and where the load could lead to dangerous

structural stresses.

This new feature has been achieved by fitting an additional mass onto the shaft of the motor and regulating the mechanical braking action by proper adjustment of the pressure springs.



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 (51) if the brake has one. Remove the brake cover (49). Release the six wires connecting the brake to the terminal board (20). Unscrew the nuts (45/5) and remove the electromagnet (48) from the pilot pin (45/1). Place the new electromagnet on the pilot pin. Replace and tighten the nuts (45/3). Adjust the nuts (45/4) 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 (51) if the brake has one. Unscrew the nuts (45/5) and remove the electromagnet (48). Unscrew nuts (45/4) and (45/3) and extract the spring (45/2) and countermagnet (47) and extract the disk brake (46).

With clean hands, install the new disk brake. Take precaution that the 0-ring (44) is properly installed on the brake support flange (42). Make sure the disk brake has a minimum clearance of .2mm from the friction path.

Replace the countermagnet (47) and spring (45/2) and replace nuts (45/3) and (45/4).

Replace the electromagnet and nuts (45/5). Be sure to maintain an air gap of between 0.5 and 0.8mm.

Review the following paragraphs for information on how to

regulate the air gap and braking torque.

AIR GAP REGULATION:

The air gap ie., the distance between the electromagnet (48) and the countermagnet (47) 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 (45/4) and (45/5). Be sure to maintain an air gap of between 0.5 and 0.8mm.

BRAKE TORQUE REGULATION:

The braking torque is proportional to the pressure exerted by the springs (45/2) and may be varied by adjusting the self-locking nuts (45/3). The pressure of the springs must be as uniform as possible.

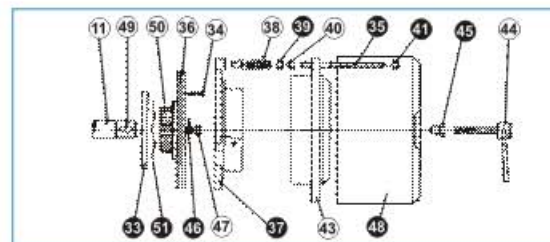
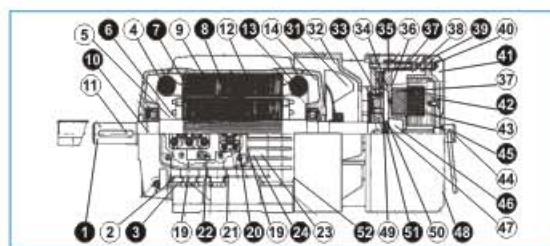
When applying the brake, the electromagnet (48) should attract the countermagnet (47) and hold it without creating vibration in order to achieve maximum braking torque.

To reduce the braking torque, loosen the self-locking nuts (45/3) further until the desired amount of torque has been achieved.

KEY to AF-AF/B SERIES

- | | |
|---|-----------------------------|
| 1. Axis Protection | 31. Fan |
| 2. Nut | 32. Brake Supporting Flange |
| 3. Spring Washer | 33. Thrust Bearing |
| 4. Front Cover | 34. Self Threading Screws |
| 5. Spring Ring | 35. Pilot Pin |
| 6. Front Bearing | 36. Disk Brake Pad |
| 7. Winding | 37. Countermagnet |
| 8. Stator | 38. Spring |
| 9. Frame | 39. Self Locking Nut |
| 10. Key | 40. Nut |
| 11. Shaft | 41. Nut |
| 12. Rotor | 42. Air Gap |
| 13. Rear Bearing | 43. Electromagnet |
| 14. Rear Cover | 44. Manual Release Handle |
| 19. Motor Terminal Board | 45. Connection |
| 19'. Brake Terminal Board | 46. Split Washer |
| 20. Self Threading Screws | 47. Screw |
| 21. Cable Pressure Bolt | 48. Brake Cover |
| 22. Terminal Board Cover (Inf. Section) | 49. Key |
| 23. Terminal Board Cover (Sup. Section) | 50. Gears |
| 24. Self Threading Screws | 51. Split Ring |
| | 52. Tension Rod |

Old Design Brake Parts (AF/AFB)



Explosion Proof Motors



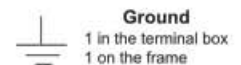
Single & 3-Phase Available

Explosion Proof - B3

All dimensions in mm

Note: New Design dimensions may vary - Please Inquire

Frame	A	AA	AB	AC	AD	AF	AL	B	BC	BB	C	H	HA	HD	K	L	LC	LM	LL	AO
63	100	25	125	122	130	116	90	80	12	105	40	63	10	193	7	235	268	262	0	21
71	112	32	140	140	145	116	105	90	11	112	45	71	10	216	7	295	343	322	0	21
80	125	37	160	157	162	116	93	100	15	130	50	80	11	242	9	327	377	354	0	21
90S	140	45	175	177	166	116	130	100	12	155	56	90	12	256	9	383	451	410	0	21
90L	140	45	175	177	166	116	130	125	12	155	56	90	12	256	9	383	451	410	0	21
100	160	45	200	198	175	116	120	140	15	170	63	100	15	275	12	418	488	448	0	21
112	190	45	235	220	220	180	150	140	17	175	70	112	16	332	12	470	543	507	0	30
132S	216	56	272	255	230	180	150	140	22	222	89	132	18	362	12	528	605	577	0	30
132M	216	56	272	255	230	180	150	178	22	222	89	132	18	362	12	528	605	577	0	30
160M	254	64	318	316	250	180	235	210	25	305	108	160	22	410	14	705	820	750	48	30
160L	254	64	318	316	250	180	235	254	25	305	108	160	22	410	14	705	820	750	48	30
180M	279	71	350	359	290	260	212	241	25	329	121	180	25	470	14	750	870	795	49	44
180L	279	71	350	359	290	260	212	279	25	329	121	180	25	470	14	750	870	795	49	44
200	318	75	393	395	305	260	232	305	27	360	133	200	30	505	18	790	903	835	43	44
225S	356	75	431	445	345	260	244	286	35	380	149	225	33	570	18	880	1028	925	38	44
225M2	356	75	431	445	345	260	244	311	35	380	149	225	33	570	18	850	968	895	38	44
225M4-8	356	75	431	445	345	260	244	311	35	380	149	225	33	570	18	880	1028	925	38	44
250M2	406	95	500	445	345	260	263	349	33	415	168	250	37	595	24	900	1047	945	38	44
250M4-8	406	95	500	445	345	260	263	349	33	415	168	250	37	595	24	900	1047	945	38	44



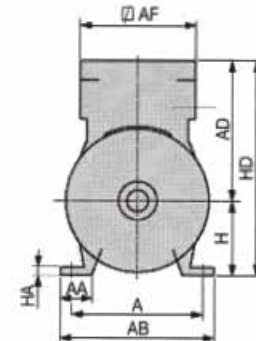
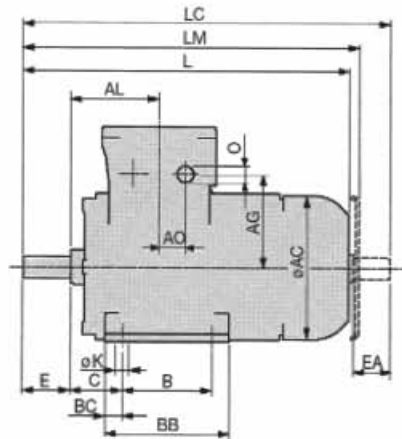
Explosion Proof - B5 & B14

All dimensions in mm

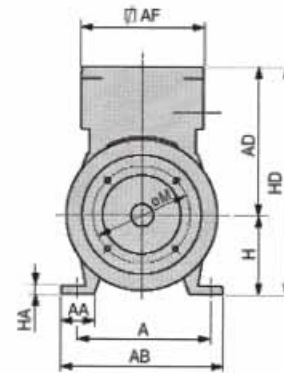
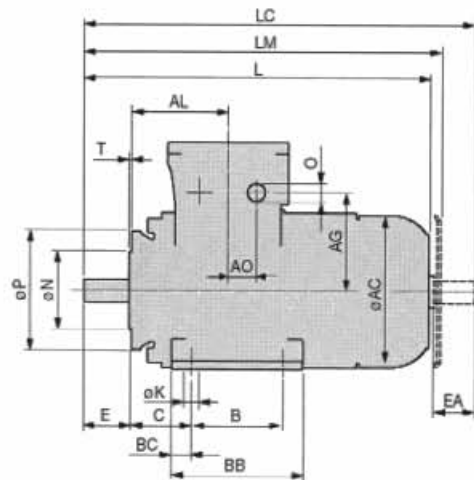
Frame	UNI 6125	AG	D/DA	E/EA	F/FA	GA/GC	GD/DC	DB/DC	M(B5)	N(N5)	P(P5)	S(B5)	T	M(B14)	N(B14)	P(B14)	S(B14)	T
63	1 X GK3/4	94	11j6	23	4	12.5	4	M4	115	95j6	140	10	3	75	60j6	90	M5	2.5
71	1 X GK3/4	108	14j6	30	5	16	5	M5	130	110j6	160	10	3.5	85	70j6	105	M6	2.5
80	1 X GK3/4	115	19j6	40	6	21.5	6	M6	165	130j6	200	12	3.5	100	80j6	120	M6	3
90S	1 X GK3/4	121	24j6	50	8	27	7	M8	165	130j6	200	12	3.5	115	95j6	140	M8	3
90L	1 X GK3/4	121	24j6	50	8	27	7	M8	165	130j6	200	12	3.5	115	95j6	140	M8	3
100	1 X GK3/4	128	28j6	60	8	31	7	M10	215	180j6	250	15	4	130	110j6	160	M8	3.5
112	2 XGK1	151	28j6	60	8	31	7	M10	215	180j6	250	15	4	130	110j6	160	M8	3.5
132S	2 XGK1	169	38k6	80	10	41	8	M12	265	230j6	300	15	4	165	130j6	200	M10	3.5
132M	2 XGK1	169	38k6	80	10	41	8	M16	265	230j6	300	15	4	165	130j6	200	M10	3.5
160M	2 XGK1	194	42k6	110	12	45	8	M16	300	250h6	350	19	5					
160L	2 X GK1	194	42k6	110	12	45	8	M16	300	250h6	350	19	5					
180M	2 X GK1 1/2	227	48k6	110	14	51.5	9	M16	300	250h6	350	19	5					
180L	2 X GK1 1/2	227	48k6	110	14	51.5	9	M20	300	250h6	350	19	5					
200	2 X GK1 1/2	241	55m6	110	16	59	10	M20	350	300h6	400	19	5					
225S	2 X GK1 1/2	282	60m6	140	18	64	11	M20	400	350h6	450	19	5					
225M2	2 X GK1 1/2	282	55m6	110	16	59	10	M20	400	350h6	450	19	5					
225M4-8	2 X GK1 1/2	282	60m6	140	18	64	11	M20	400	350h6	450	19	5					
250M2	2 X GK1 1/2	282	60m6	140	18	64	11	M20	500	450h6	550	19	5					
250M4-8	2 X GK1 1/2	282	65m6	140	18	69	11	M20	500	450h6	550	19	5					

Note: 225 to 250 have 8 holes on flanges

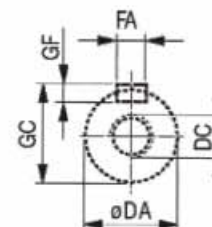
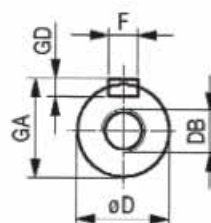
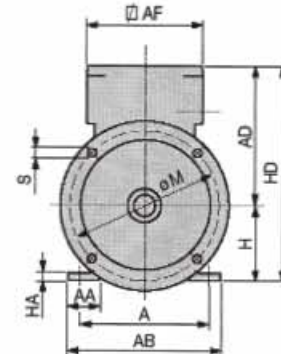
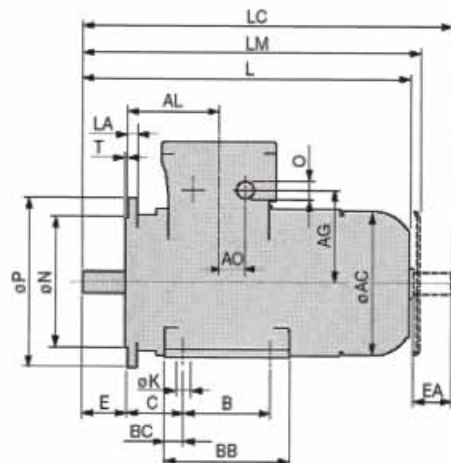
IM B3



IM B34



IM B35



3-Phase

Available in 208-230/460V or 333/575V • 3600 RPM

Immersion pumps • Approved by Electrical Safety Field Evaluation Group • SPV pumps are CUL/US approved

Single-Phase available at additional cost (made only on request with a typical lead time of 4-5 days)

CUL/US approved

Part #	Full Load Amps			Suction Height B (mm)	Weight (lbs)	Price \$
	HP	480V	575V			
SPV 12	0.12	0.33	0.32	90-120-170-220-270-350	8	553.00
SPV 18	0.18	0.34	0.31	90-120-170-220-270-350	8	596.00
SPV 25	0.25	0.50	0.25	90-120-170-220-270-350	11	910.00
SPV 33	0.33	0.50	0.32	90-120-170-220-270-350	12	998.00
SPV 50	0.50	1.65	1.20	200-270-350-440-550	23	1,264.00
SPV 75	0.75	2.00	1.40	200-270-350-440-550	25	1,410.00
SPV 100	1.00	2.10	1.67	200-270-350-440-550	29	2,041.00
SPV 150	1.50	2.60	2.30	200-270-350-440-550	32	2,137.00

IMM 63/A	0.25	0.58	0.45	150-200-250-300	13	910.00
IMM 63/B	0.33	0.90	0.70	150-200-250-300	14	998.00
IMM 71/A	0.50	1.60	1.30	200-250-325-440	25	1,264.00
IMM 71/B	0.75	1.90	1.60	200-250-325-440	27	1,410.00
IMM 80/A	1.00	1.90	1.60	200-250-300-350-530	40	2,041.00
IMM 80/B	1.50	2.80	2.30	200-250-300-350-530	41	2,137.00
IMM 90/A 350	2.00	5.0	3.9	350	93	3,311.00
IMM 90/A 450				450	106	3,448.00
IMM 90/A 600				600	108	3,585.00
IMM 90/A 800				800	110	3,703.00
IMM 90/B 350	3.00	6.2	4.9	350	108	3,824.00
IMM 90/B 450				450	109	3,941.00
IMM 90/B 600				600	110	4,058.00
IMM 90/B 800				800	114	4,222.00
IMM 100/B 350	5.00	8.6	6.8	350	117	4,398.00
IMM 100/B 450				450	118	4,508.00
IMM 100/B 600				600	120	4,617.00
IMM 100/B 800				800	122	4,795.00



Low cost replacement pumps for tool and cutting machines as well as for the glass grinding and printing industries.

FLOW PERFORMANCE

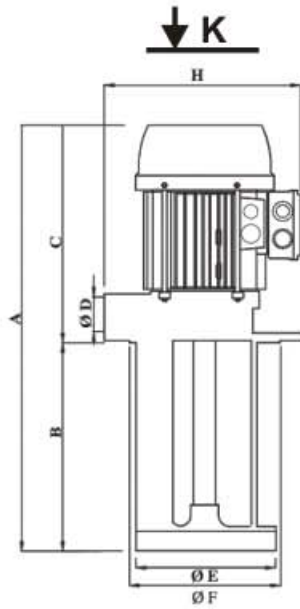
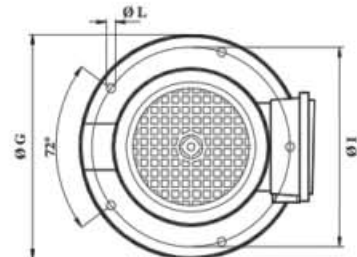
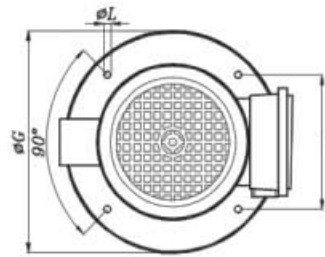
US Gallons per minute / Prevalence Head in feet

Head in feet

Type	HP	Gas Thread	0	3	6	9	12	15	20	23	26	30	33	39	46	52	60	
SPV 12	0.12	3/4"	15	12	9	5	2	-	-	-	-	-	-	-	-	-	-	G
SPV 18	0.18	3/4"	17	15	12	9	6	1	-	-	-	-	-	-	-	-	-	a
SPV 25	0.25	3/4"	19	17	15	12	8	5	-	-	-	-	-	-	-	-	-	l
SPV 33	0.33	3/4"	21	18	16	13	11	7	1	-	-	-	-	-	-	-	-	l
SPV 50	0.50	1 1/4"	57	55	53	48	44	39	34	28	24	18	11	1	-	-	-	o
SPV 75	0.75	1 1/4"	63	61	57	53	48	43	39	34	29	24	17	8	-	-	-	n
SPV 100	1.00	1 1/4"	70	66	63	59	55	51	46	41	37	31	26	16	10	-	-	s
SPV 150	1.50	1 1/4"	75	72	68	64	60	56	52	46	41	37	29	24	15	6	-	per
IMM 63/A	0.25	3/4"	26	22	17	15	11	6	1	-	-	-	-	-	-	-	-	M
IMM 63/B	0.33	3/4"	28	25	23	20	18	15	11	7	2	-	-	-	-	-	-	l
IMM 71/A	0.50	1"	52	49	46	44	41	38	35	31	28	24	18	10	-	-	-	n
IMM 71/B	0.75	1"	57	54	52	49	47	45	42	39	36	32	29	20	10	-	-	u
IMM 80/A	1.00	1 1/4"	75	71	67	64	60	56	52	47	43	38	33	20	8	-	-	t
IMM 80/B	1.50	1 1/4"	102	101	97	94	91	88	84	80	76	72	67	59	48	34	14	e
IMM 90/A	2.00	2"	165	159	149	140	133	124	111	95	70	29	5	-	-	-	-	
IMM 90/B	3.00	2"	223	219	209	200	191	180	170	160	150	138	126	102	22	-	-	
IMM 100/B	5.00	2 1/2"	317	306	296	285	277	269	258	247	237	225	212	187	165	110	49	

SPV versions Valox body (plastic)
IMM sizes from 63 to 80 in cast aluminum pump body
IMM sizes 90 and 100 in steel pump body

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


VIEW FROM "K"


SPV 12 IMM 63/A
 SPV 18 IMM 63/B
 SPV 25 IMM 90/A
 SPV 33 IMM 90/B
 SPV 50 IMM 100/B
 SPV 75
 SPV 100
 SPV 150

IMM 71/A
 IMM 71/B
 IMM 80/A
 IMM 80/B

Sacemi Coolant Pumps

Type	HP	A	B	C	D - Gas Thread	E	F	G	H	I	L	Mounting Holes
SPV 12/SPV 18	0.12/0.18	255	90	165	3/4"	98	100	130	151	115	7	4
		285	120									
		335	170									
		385	220									
		435	270									
SPV 25/SPV 33	0.25/0.33	515	350		3/4"	98	100	130	170	115	7	4
		300	90	210								
		330	120									
		380	170									
		430	220									
SPV 50/SPV 75	0.50/0.75	480	270		1 1/4"	138	140	180	215	160	9	4
		560	350									
		460	200	260								
		530	270									
		610	350									
SPV 100/SPV 150	1.00/1.50	700	440		1 1/4"	138	140	180	230	160	9	4
		810	550									
		500	200	300								
		570	270									
		650	350									
IMM 63/A // IMM 63/B	0.25/0.33	740	440		3/4"	128	-	180	190	150	9	4
		850	550									
		355	150	205								
		405	200									
		455	250									
IMM 71/A // IMM 71/B	0.50/0.75	505	300		1"	190	-	230	225	204	9	5
		440	200	240								
		490	250									
		565	325									
		680	440									
IMM 80/A // IMM 80/B	1.00/1.50	485	200	285	1 1/4"	202	220	250	260	235	9	5
		535	250									
		585	300									
		635	350									
		815	530									
IMM 90/A // IMM 90/B	2.00/3.00	695	350	345	2"	235	240	300	130	270	13	4
		795	450									
		945	600									
		1145	800									
		730	350	380								
IMM 100/B	5.00	830	450		2 1/2"	235	240	300	145	270	13	4
		980	600									
		1180	800									

Type SQ - Side Mount

Type	A	B	C	D	E	F	G	H	I	L	Weight (lbs)	Price \$
SQ 56S	255	170	60	95	140	75	45	7	3/8"	53	9	570
SQ 63S	300	180	60	95	158	75	45	7	1/2"	53	11	857

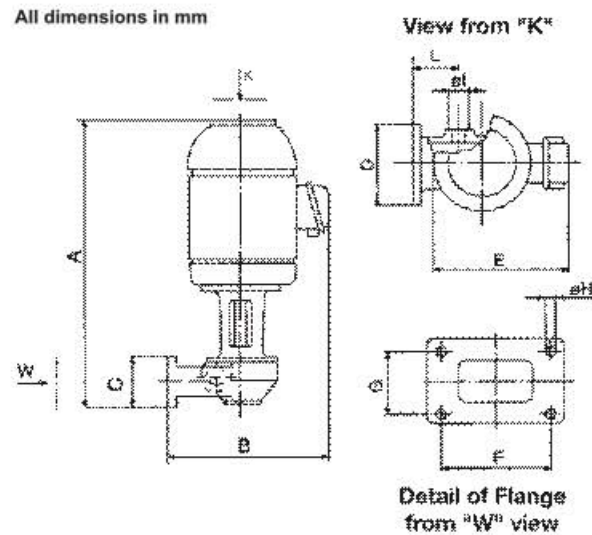
US Gallons per minute / Prevalence Head in feet

Type	Absorbed kW	HP	0	3	6	9	12
SQ 56S	0.16	0.18	19	17	13	9	-
SQ 63S	0.30	0.25	26	24	21	16	10

TYPE SQ - Side Mounted



All dimensions in mm



Type AU - Self Priming

Type	A	B	C	D	E	F	G	Weight (lbs)	Price \$
AU 56	215	115	48	144	3/8"	95	7	10	711
AU 63	270	115	48	165	1/2"	95	7	12	1,058

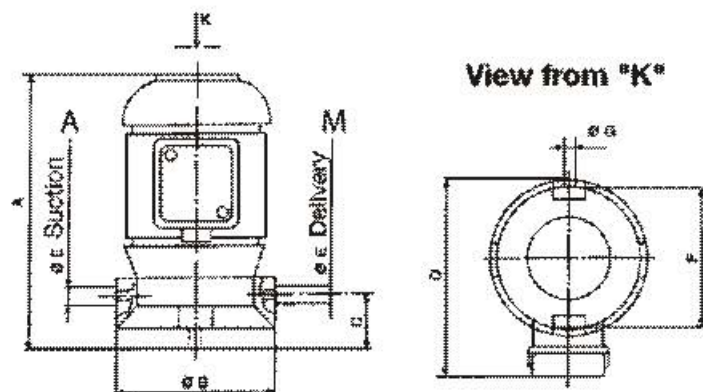
US Gallons per minute / Prevalence Head in feet

Type	Absorbed kW	HP	0	6	12	18	24	30	36
AU 56	0.16	0.18	3.7	3.2	2.7	2.2	1.8	1.3	0.8
AU 63	0.30	0.25	5.3	4.8	4.3	3.8	3.3	2.9	2.4

TYPE AU - Self Priming



All dimensions in mm



Right Angle Worm Gear Reducers



I Series (Solid Input Shaft)

- Reduction Ratios from 7.5:1 to 100:1
- Power from 0.06kW to 30kW
- Output torque from 4N·m to 3900N·m
- "ZI" profiles on worms and wormwheels



Optional Mountings

- Taper roller bearings on Input Shafts
- Lifetime oil lubrication
- Modular construction of Output Flanges, Feet and Torque Arm



MI Series (Motor Input Shaft)

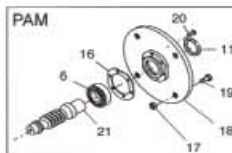
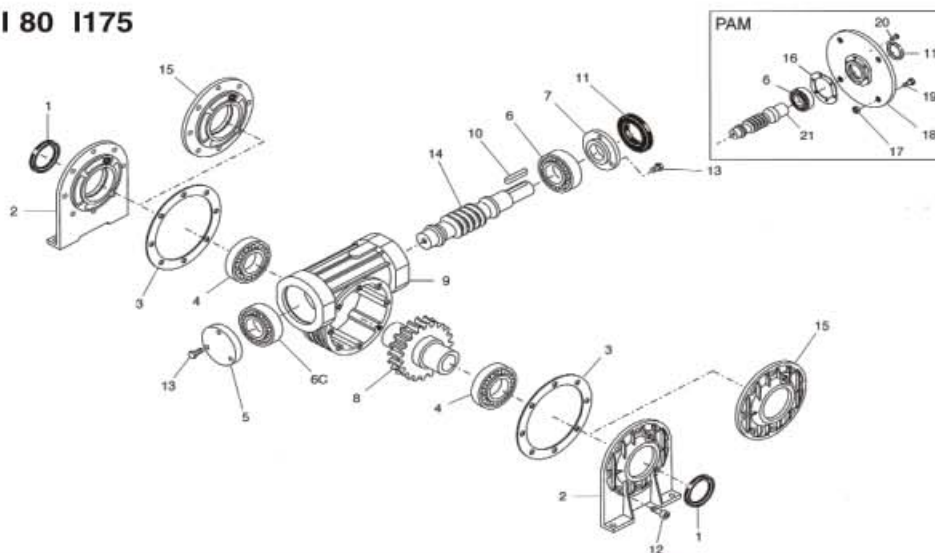
- Combined Worm gearboxes available upon request
- Power from 0.09kW to 5.5kW
- Output torque from 30N·m to 2500N·m



Primary Reduction

- Additional Primary Reduction to MI Series
- Reduction ratios of up to 300:1
- Belt drive available on P48 and P60 models
- Pressure Die Cast Aluminum frames

I 80 I175



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

Right Angle Worm Gear Reducers

The following table gives the service factors relating to the most common applications. For all other applications which 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 starts/stops per hour (i.e. application intermittency). When brake motors are used, the values in the table must be multiplied by 1.12

Load Classification	Application	Starts/h	Average operating hours per day			
Easy starting, smooth operation, small masses to be accelerated	Centrifugal pumps • Belt Conveyors with uniformly distributed load • Bottling machines • Auxiliary controls of machine tools • Rotary gearpumps • Fans • Power generators	< 2	< 2	2 to 8	9 to 16	17 to 24
		< 10	0.75	1	1.25	1.5
Starting with moderate loads, uneven operating conditions, medium size masses to be accelerated	Belt conveyors with varied load with transfer of bridge trucks for light duty • Levelling machines • Shakers and mixers for liquids with variable density and viscosity • Machines for the food industry (kneading troughs, mincing machines, slicing machines, etc.) • Sifting machines for sand gravel • Textile industry machines • Cranes, hoists, goodsifts.	< 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
Uneven operation, heavy loads, larger masses to be accelerated	Machinery for bricks, tiles and clay • Kneaders • Compressors and alternate pumps with 1 or more cylinders • Milling machines • Lifting winches with buckets • Rotating furnaces • Heavy fans for mining purposes • Conveyors with violent jerks • Mixers • Concrete mixers • Machine-tools • Planning machines • Rolling-mills • Mills • Presses of all kinds • Alternate saws	< 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

Performance Wormboxes with Service Factor = 1.0

i = Ratio

n_1 = Input Speed

n_2 = Output Speed

M_2 = Output Torque

kW_1 = Input Power in kW

HP_1 = Input Power in HP

RD = Dynamic Efficiency

MI 30	i	n_1	n_2	M_2	kW_1	HP_1	RD
	7.5	240	1800	19.9	0.44	0.60	0.84
	10	180	1800	13.9	0.38	0.51	0.82
	15	120	1800	14.1	0.28	0.37	0.77
	20	90	1800	13.8	0.22	0.29	0.72
	25	72	1800	15.9	0.19	0.26	0.75
	30	60	1800	17.6	0.20	0.27	0.65
	40	45	1800	15.6	0.13	0.18	0.67
	50	36	1800	15.0	0.11	0.14	0.63
	60	30	1800	12.5	0.10	0.13	0.49
	80	22.5	1800	9.3	0.05	0.06	0.55
	100	18	1800	5	0.02	0.03	0.47

MI 40	i	n_1	n_2	M_2	kW_1	HP_1	RD
	7.5	240	1800	21.9	0.77	1.03	0.86
	10	180	1800	22.5	0.60	0.80	0.85
	15	120	1800	25.1	0.47	0.63	0.81
	20	90	1800	29.8	0.43	0.58	0.78
	25	72	1800	28.9	0.34	0.45	0.76
	30	60	1800	32.3	0.35	0.47	0.70
	40	45	1800	31.2	0.28	0.37	0.64
	50	36	1800	31.2	0.23	0.31	0.62
	60	30	1800	30.1	0.19	0.26	0.59
	80	22.5	1800	23.3	0.13	0.18	0.50
	100	18	1800	22.9	0.11	0.14	0.48

MI 50	i	n_1	n_2	M_2	kW_1	HP_1	RD
	7.5	240	1800	49.1	1.44	1.93	0.86
	10	180	1800	45.0	1.21	1.62	0.84
	15	120	1800	50.3	0.95	1.27	0.80
	20	90	1800	45.5	0.66	0.88	0.78
	25	72	1800	44.8	0.54	0.72	0.75
	30	60	1800	56.5	0.60	0.80	0.71
	40	45	1800	49.2	0.46	0.61	0.61
	50	36	1800	48.5	0.36	0.48	0.61
	60	30	1800	45.5	0.31	0.42	0.55
	80	22.5	1800	43.5	0.23	0.31	0.54
	100	18	1800	40.7	0.19	0.26	0.48

MI 60	i	n_1	n_2	M_2	kW_1	HP_1	RD
	7.5	240	1800	80.9	2.77	3.72	0.88
	10	180	1800	73.9	1.94	2.61	0.86
	15	120	1800	96.6	1.78	2.38	0.82
	20	90	1800	84.4	1.16	1.56	0.82
	25	72	1800	95.2	1.10	1.48	0.78
	30	60	1800	108	1.13	1.51	0.72
	40	45	1800	99.4	0.79	1.06	0.71
	50	36	1800	88.9	0.60	0.80	0.67
	60	30	1800	82.2	0.49	0.66	0.63
	80	22.5	1800	79.8	0.40	0.53	0.57
	100	18	1800	71.7	0.31	0.42	0.52

MI 70	i	n_1	n_2	M_2	kW_1	HP_1	RD
	7.5	240	1800	119	4.08	5.47	0.88
	10	180	1800	128	3.37	4.52	0.86
	15	120	1800	140	2.51	3.36	0.84
	20	90	1800	121	1.70	2.28	0.80
	25	72	1800	125	1.42	1.90	0.80
	30	60	1800	149	1.44	1.93	0.78
	40	45	1800	136	1.07	1.43	0.72
	50	36	1800	141	0.94	1.25	0.68
	60	30	1800	128	0.76	1.01	0.64
	80	22.5	1800	100	0.56	0.76	0.50
	100	18	1800	96	0.48	0.64	0.45

MI 80	i	n_1	n_2	M_2	kW_1	HP_1	RD
	7.5	240	1800	152	5.20	6.97	0.88
	10	180	1800	136	3.56	4.78	0.86
	15	120	1800	197	3.53	4.73	0.84
	20	90	1800	180	2.51	3.36	0.81
	25	72	1800	171	1.93	2.59	0.8
	30	60	1800	222	2.15	2.88	0.78
	40	45	1800	205	1.61	2.16	0.72
	50	36	1800	175	1.16	1.56	0.68
	60	30	1800	171	1.01	1.35	0.64
	80	22.5	1800	166	0.85	1.14	0.55
	100	18	1800	146	0.64	0.85	0.52

MI 90	i	n_1	n_2	M_2	kW_1	HP_1	RD
	7.5	240	1800	197	6.74	9.04	0.88
	10	180	1800	180	4.73	6.34	0.86
	15	120	1800	274	4.92	6.60	0.84
	20	90	1800	257	3.59	4.81	0.81
	25	72	1800	249	2.82	3.78	0.80
	30	60	1800	299	2.89	3.88	0.78
	40	45	1800	280	2.20	2.94	0.72
	50	36	1800	269	1.79	2.40	0.68
	60	30	1800	255	1.50	1.01	0.64
	80	22.5	1800	215	1.10	1.48	0.55
	100	18	1800	199	0.86	1.16	0.52

MI 110	i	n_1	n_2	M_2	kW_1	HP_1	RD
	7.5	240	1800	311	10.79	14.46	0.87
	10	180	1800	35	9.20	12.34	0.86
	15	120	1800	420	7.63	10.23	0.83
	20	90	1800	342	4.80	6.56	0.79
	25	72	1800	366	4.14	5.55	0.80
	30	60	1800	474	4.58	6.14	0.78
	40	45	1800	466	3.57	4.71	0.75
	50	36	1800	428	2.72	3.65	0.71
	60	30	1800	412	2.27	2.98	0.70
	80	22.5	1800	350	1.60	2.14	0.62
	100	18	1800	310	1.19	1.59	0.59

Right Angle Worm Gear Reducers

MI - I Series Worm Gearboxes

Worm Gearboxes			ADDITIONAL FEATURES AND ACCESSORIES										
Size	MI Series Price \$	I Series Price \$ (Factory Option)	Base per Side Price (Add \$)	Output Flange F or FBR (Add \$)	Output Flange FR (Add \$)	Output Flange FBM (Add \$)	Single Output Shaft (Add \$)	Double Output Shaft (Add \$)	Torque Arm (Add \$)	Double Input Shaft (Add \$)	Torque Limited (Add \$)	Oil	Weight (lbs)
I 25	370.00	327.00	21.00	21.00 F	-	-	-	-	-	89.00	-	*	3
MI 30	424.00	367.00	-	42.00 FBC/F	-	-	75.00	83.00	-	103.00	-	*	5
MI 40	483.00	414.00	46.00	39.00	-	42.00	86.00	128.00	78.00	118.00	249.00	*	8
MI 50	620.00	537.00	50.00	45.00	-	50.00	136.00	149.00	101.00	151.00	311.00	*	10
MI 60	867.00	717.00	62.00	59.00	146.00	65.00	149.00	183.00	140.00	210.00	483.00	*	21
MI 70	893.00	802.00	73.00	67.00	349.00	75.00	164.00	204.00	167.00	217.00	545.00	*	24
MI 80	1,284.00	1,154.00	88.00	212.00	279.00	233.00	183.00	218.00	167.00	311.00	682.00	*	38
MI 90	1,392.00	1,235.00	108.00	278.00	297.00	307.00	195.00	224.00	167.00	339.00	811.00	*	48
MI 110	1,942.00	1,727.00	206.00	474.00	513.00	-	227.00	249.00	218.00	473.00	1,042.00	**	69
MI 130	3,116.00	2,804.00	356.00	641.00	661.00	-	299.00	365.00	330.00	759.00	-	**	107
MI 150	4,343.00	3,944.00	441.00	840.00	826.00	-	384.00	503.00	330.00	1,056.00	-	**	161
MI 175	6,725.00	6,226.00	675.00	1,624.00	INQUIRE	-	510.00	612.00	-	1,635.00	-	**	248

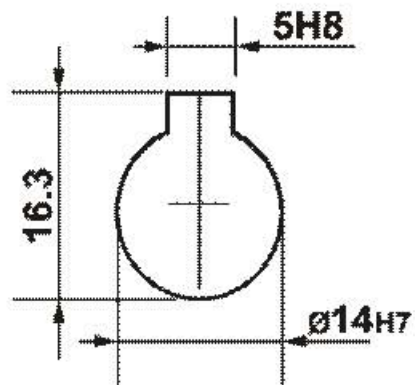
* = Prelubricated for life
 ** = Oil available on request

- Please see pages 40 to 44 for dimensional drawings
- Standard ratios from 7.5 to 100 with a single worm and wheel gear set
- ATEX Approved Gearboxes can be supplied - Please inquire

PAM refers to Pre-Arranged Motor mounting (i.e. input flanges and hollow input shaft)
 FAM refers to Flange portion of PAM • Special shafts available on request

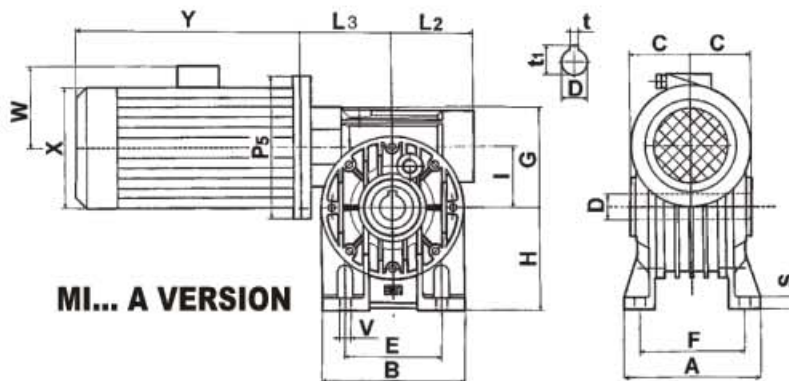
Steel Bushings	List Price \$
38mm to 28mm	92.00
28mm to 24mm	89.00
24mm to 19mm	75.00
19mm to 14mm	61.00
14mm to 11mm	53.00
11mm to 9mm	24.00

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

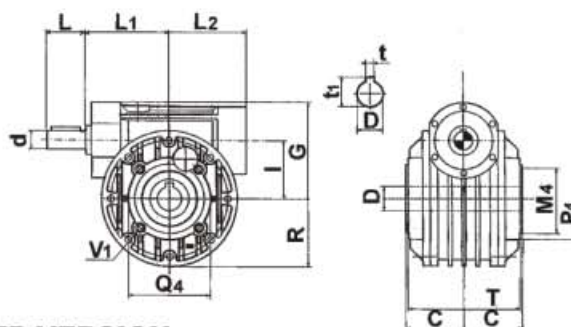


+ = x, y, w standard motor dimensions
* = According to IEC flange

L3	40	50	60	70
56B5	68.5	-	-	-
56B14	72	-	-	-
63B5	70	80	-	-
63B14	70	80	-	-
71B5	71	81	95	97
71B14	71	81	97	97
80B5	-	82	95	97
80B14	-	81	94	99
90B5	-	-	101	97
90B14	-	-	100	98
100B5	-	-	-	108.5
100B14	-	-	-	107



MI... A VERSION

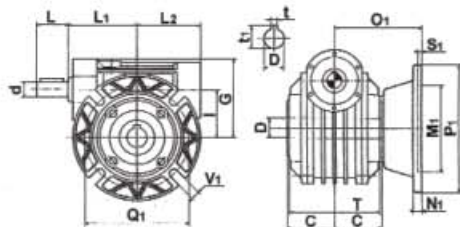


I... FP VERSION

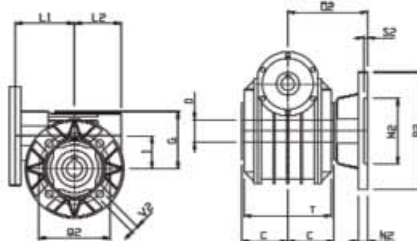
Worm Right Angle Base or Round Body

+ = x, y, w standard motor dimensions * = According to IEC flange

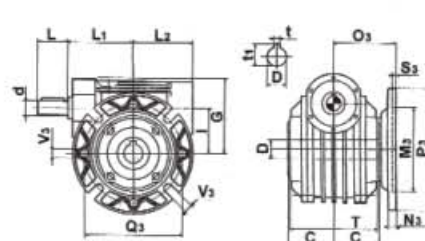
Frame Size	L ₃	L ₂	G	R	A	B	E	F	V	H	H ₁	H ₂	C	S	D/H ₇	t	t ₁	P ₅	d _{f/6}	L	L ₁	I	T	Q ₄	P ₄	M ₄ /h ₇	V ₁
40	+	57	70	48	100	96	70	84	7	71	111	31	41	8	19(18)	6	21.8	*	11	23	63	40	77	65	96	50	M6
50	+	64	84	56	114	112	85	96	9	85	135	35	49	10	24(25)	8	27.3	*	14	30	73	50	93	75	88	60	M6
60	+	80	99	75	137	140	95	111	11	100	160	40	60	12	25	8	28.3	*	19	40	86	60	104	85	105	70	M8
70	+	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



I... F VERSION



MI... FR VERSION

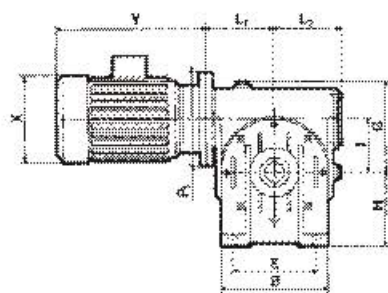


I... FBR VERSION

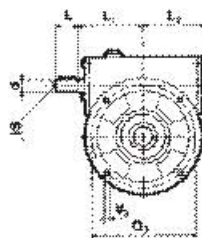
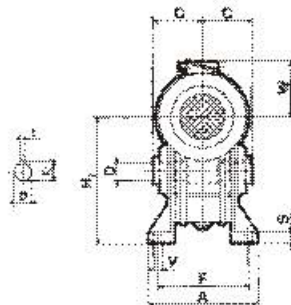
Worm Right Angle with Output Flanges

Frame Size	L	L ₁	L ₂	C	T	G	d _{f/6}	D _{H/7}	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
40	23	63	57	41	77	70	11	19(18)	115	87	100	95	60	80	140	120	120	82	60	60	4	3	3	9	9	9	11	8	8	6	21.8
50	30	73	67	49	93	84	14	24(25)	130	90	115	110	70	95	160	125	140	92	85	75	4	4	4	10	10	10	11	10	10	8	27.3
60	40	86	80	60	104	99	19	25	165	150	130	130	115	110	200	180	160	96.5	116	76	4	4	5	11	11	10	12	11	11	8	28.3
70	40	87	86	60.5	114	117	19	28	165	150	130	130	115	110	200	200	160	111.5	116	85	5	4	5	13	11	11	12	12	12	8	31.3

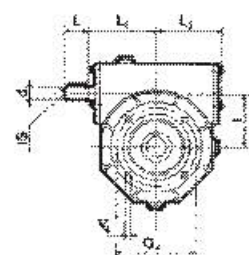
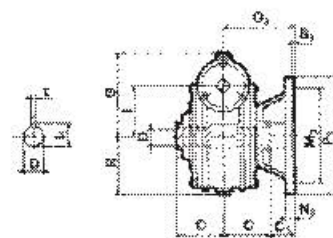
Note: FR Version now replaced by FBM Version - Please enquire - Refer to page 46 for dimensions



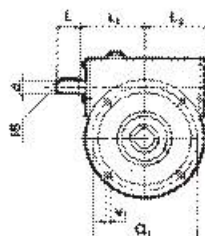
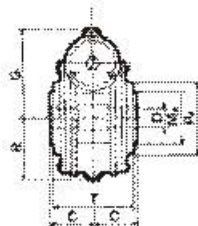
MI... A VERSION



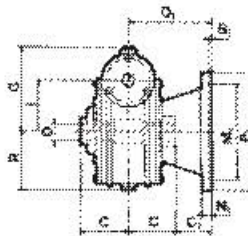
I... FBR VERSION



I... FP VERSION



I... F VERSION



+ = x, y, w standard motor dimensions * = According to IEC flange

Frame Size	A	B	C	D/H ₇	E	F	S	V	G	H	H ₁	H ₂	I	L ₁	L ₂	R	t	t ₁	P ₅	C ₁	C ₂	C ₃
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	-

Please refer to dimensions Q2, P2, and M2 for FR output flange

Frame Size	M ₁ /H ₇	M ₂ /H ₇	M ₃ /H ₇	M ₄ /H ₇	N ₁	N ₂	N ₃	O ₁	O ₂	O ₃	P ₁	P ₂	P ₃	P ₄	Q ₁	Q ₂	Q ₃	Q ₄	S ₁	S ₂	S ₃	V ₁	V ₂	V ₃	V ₄	D/J ₆	IS	L	L ₁	T
MI 80	130	152	110	110	13	13	13	120	150	100	200	210	160	145	165	180	130	130.0	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	130.0	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	165.0	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	215.0	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	*	215.0	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	*	265.0	6	6	*	18	12.5	*	M16	42	M12	110	210	222

Right Angle Worm Gear Reducers (MU) & Pre-stage (P) units

MU - U Series Worm Gearboxes

Size	MU Series Price \$	U Series Price \$	ADDITIONAL FEATURES AND ACCESSORIES						
			Output Flanges F, FBR, FBM, FBML Price \$	Single Output Shaft Price \$	Double Output Shaft Price \$	Torque Arm Price \$	Double Input Shaft Price \$	Oil	Weight (lbs)
MU 40	532.00	457.00	42.00	95.00	141.00	86.00	131.00	*	6
MU 50	682.00	591.00	50.00	150.00	163.00	111.00	165.00	*	8
MU 63	982.00	882.00	65.00	163.00	201.00	153.00	231.00	*	12
MU 75	1,344.00	1,269.00	75.00	180.00	239.00	183.00	342.00	*	20
MU 90	1,529.00	1,357.00	233.00	213.00	248.00	183.00	372.00	*	30
MU 110	2,136.00	1,900.00	307.00	250.00	275.00	239.00	519.00	*	42

Inox version/stainless steel - add 40%

* = Prelubricated for life

** = Oil available on request at extra cost



Solid Input Shaft (U Series)



Motor Input Shaft (MU Series)

MU Right Angle Reducers

- Square Die-cast aluminum housing
- As low as 5:1 ratio and as high as 100:1
- Different mounting options available

- Can be ordered in Stainless Steel (INOX) housing, suited for the food processing and pharmaceutical industries and highly corrosive areas

P (Prestage Reducers)

Size	PAM Flange B14 Price \$	Oil	Weight (lbs)
P 63	465.00	**	3
P 71	532.00	**	5
P 80	590.00	**	11
P 90	680.00	**	16

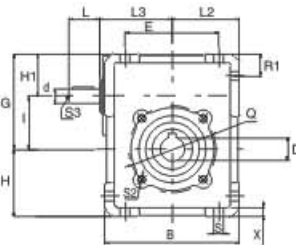
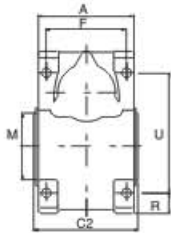
** = Oil available on request at extra cost



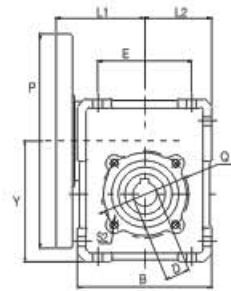
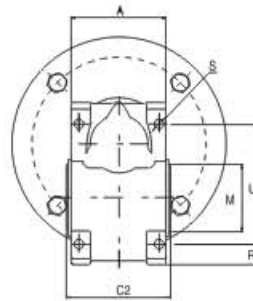
- Prestage units designed to multiply ratio
- Ratios available - 3:1 and 4:1 (Total ratio as high as 400:1)
- Available with IEC METRIC B14 input flanges
- Compact design

Right Angle Worm Gear Reducers (MU)

BASE-MOUNT VERSION



SOLID INPUT SHAFT (U)



MOTOR INPUT SHAFT (MU)

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

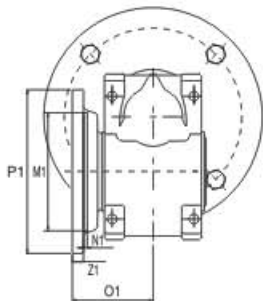
() = Optional output bore size

* = Output flange holes are elongated

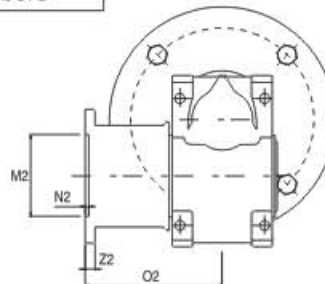
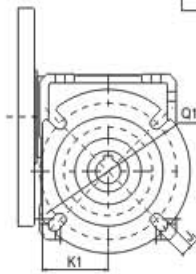
P & L1 dimensions - please inquire



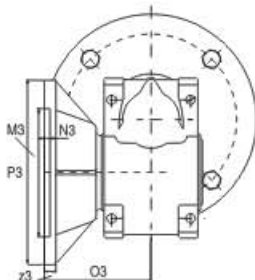
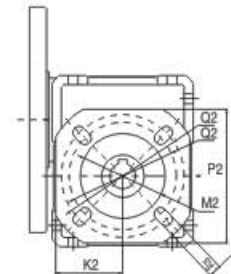
hollow output bore



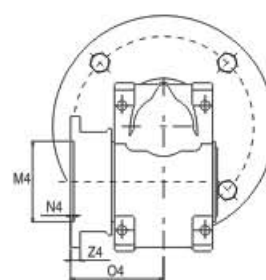
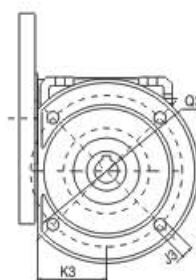
MU... FBR VERSION



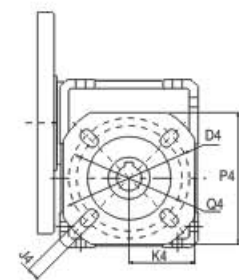
MU... FBML VERSION



MU... F VERSION



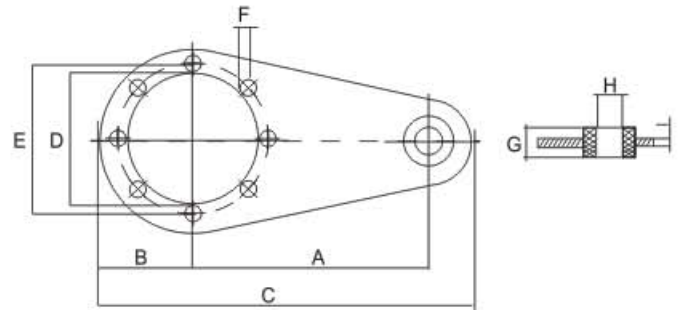
MU... FBM VERSION



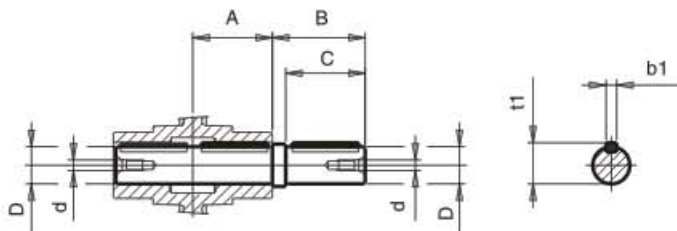
Frame Size	FBR OUTPUT FLANGE								FBML OUTPUT FLANGE								F OUTPUT FLANGE								FBM OUTPUT FLANGE							
	Q1	M1H7	P1	K1	N1	Z1	O1	J1	Q2*	M2H7	P2	K2	N2	Z2	O2	J2	Q3	M3H7	P3	K3	N3	Z3	O3	J3	Q4*	M4H7	P4	K4	N4	Z4	O4	J4
40	100	80	120	48	3	8	59	9	76-87	60	95	47.5	4	7	97	9	115	95	140	52	4	9	81	9	76-87	60	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

MI Torque Arm Dimensions

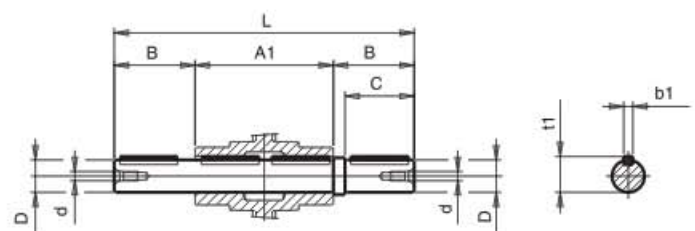
	A	B	C	D	E	F	G	H	I
I-MI 40	100	40	170	50	65	7	20	10	4
I-MI 50	100	44	180	60	75	7	20	10	4
I-MI 60	150	53	233	70	85	9	20	10	6
I-MI 70	200	62.5	300	80	100	9	25	14	6
I-MI 80	200	77.5	315	110	130	11	25	14	6
I-MI 90	200	77.5	315	110	130	11	25	14	6
I-MI 110	250	100	387.5	130	165	13	25	14	6
I-MI 130	300	120	465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



SINGLE OUTPUT SHAFT



DOUBLE OUTPUT SHAFT



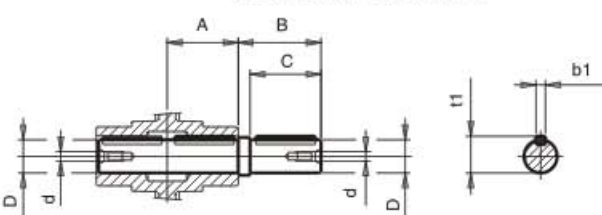
MI Output Shaft Dimensions

Sizes	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

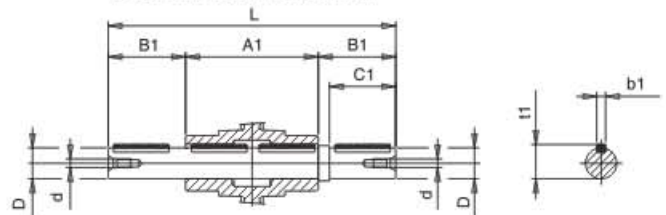
MI Output Shaft Dimensions

Sizes	A	A ₁	B	C	Dh ₇	d	L	b ₁	t ₁
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

SINGLE OUTPUT SHAFT



DOUBLE OUTPUT SHAFT

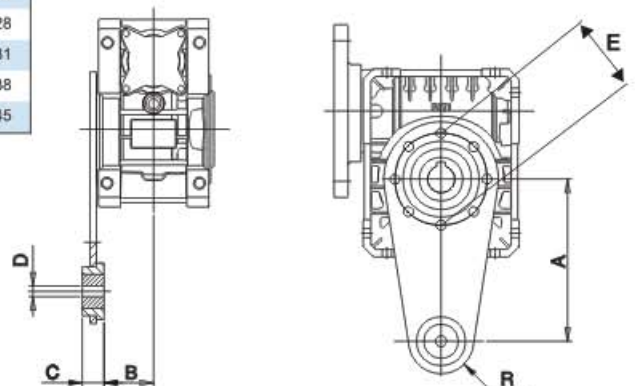


MU Single and Extended Output Shaft Dimensions

Sizes	A	A ₁	B	B ₁	C	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

MU Torque Arm Dimensions

	A	B	C	D	E	R
U-MU 40	100	29.5	20	10	65	30
U-MU 50	100	35.5	20	10	75	36
U-MU 63	150	46	20	10	85	30
U-MU 75	200	47.5	25	14	100	37.5
U-MU 90	200	57.5	25	14	130	37.5
U-MU 110	250	64.5	25	14	165	37.5



Gearboxes

MHL - HL Series

Helical Inline Gearboxes with 2 Stages of Reduction

Size	PAM Flange MHL.../2 Price \$	Male Input Shaft HL.../2 Price \$	PAM Flange+ MHLF.../2 Price \$	Output Flange (ONLY) Price \$	Oil	Weight (lbs)
MHL 16/2	965.00	878.00	994.00	212.00	*	20
MHL 20/2	965.00	878.00	994.00	234.00	*	20
MHL 25/2	1,121.00	1,041.00	1,154.00	270.00	**	30
MHL 30/2	1,343.00	1,162.00	1,383.00	298.00	**	50
MHL 40/2	2,672.00	2,379.00	2,751.00	377.00	**	90
MHL 50/2	3,806.00	3,103.00	3,922.00	ENQUIRE	**	120
MHL 60/2	5,938.00	5,261.00	6,118.00	ENQUIRE	**	230
MHL 70/2	8,230.00	7,558.00	8,488.00	ENQUIRE	**	345

* = Prelubricated for life

** = Oil available on request

+ = Gearbox Available in Round Body when output flange is required

Helical Inline Gearboxes with 3 Stages of Reduction

Size	PAM Flange MHL.../3 Price \$	Male Input Shaft HL.../3 Price \$	PAM Flange+ MHLF.../3 Price \$	Output Flange (ONLY) Price \$	Oil	Weight (lbs)
MHL 25/3	1,445.00	1,310.00	1,478.00	270.00	**	35
MHL 30/3	1,673.00	1,371.00	1,715.00	298.00	**	55
MHL 40/3	3,110.00	2,800.00	3,190.00	350.00	**	95
MHL 50/3	4,319.00	3,914.00	4,433.00	ENQUIRE	**	135
MHL 60/3	6,775.00	6,100.00	6,964.00	ENQUIRE	**	240
MHL 70/3	9,177.00	8,506.00	9,433.00	ENQUIRE	**	390

Please see page 49 for dimensional drawings

- MHL-HL Series
- Power from 0.09kW to 45kW
- Output torque from 35Nm to 5500Nm
- Reduction ratios up to 50:1 for versions with two (2) stages and up to 450:1 for versions with three (3) stages

- Helical Inline Gearboxes
- Versions available with solid input shaft or PAM flange
- Available with base or output flange mounting



MHLF Series

New design gearboxes will be referred to as MNHL and NHL



MHL Series

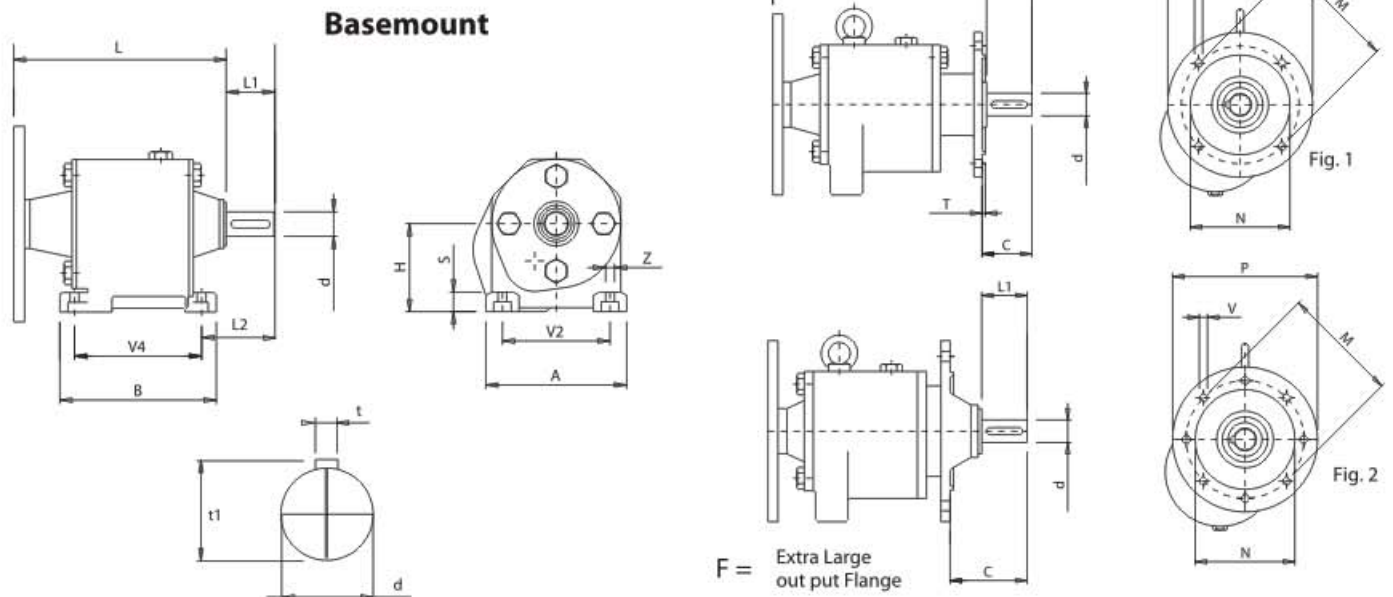


MNHL Series

Note: Ratios available vary depending on the frame of the reducer and the number of reduction stages of the gearbox - please enquire

Helical Inline Gearbox Dimensions

MHL...PAM



Basemount

Size	A	B	H	L ₁	L ₂	L Max	S	T	V ₂	V ₄	Z	d	t	t ₁
20/2	132	90	75	40	58	168	13	3	110	50	9	16	5	18
												20	6	22.5
25/2	144	160	90	50	75	223	20	3.5	110	130	9	25	8	28
25/3	144	160	90	50	75	219	20	3.5	110	130	9	25	8	28
30/2	190	200	115	60	90	255	25	3.5	135	165	14	30	8	33
30/3	190	200	115	60	90	243	25	3.5	135	165	14	30	8	33
40/2	230	245	140	80	115	314	30	4	170	205	18	40	12	43
40/3	230	245	140	80	115	303	30	4	170	205	18	40	12	43
50/2	290	310	180	100	140	406	45	4	215	260	18	50	14	53.5
50/3	290	310	180	100	140	359	45	4	215	260	18	50	14	53.5
60/2	340	364	225	120	160	431	55	5	250	260	22	60	18	64
60/3	340	364	225	120	160	417	55	5	250	310	22	60	18	64
70/2	400	440	250	140	225	518	65	5	290	310	26	70	20	74.5
70/3	400	440	250	140	225	502	65	5	290	370	26	70	20	74.5

Output Flange Mount

Output Flange Dimensions

Size	M	N	P	T	C	Fig
20/2 F	100	80	120	3	44	1
20/3 F	100	80	120	3.5	55	1
25/2 F	130	110	160	9.5	55	1
25/3 F	165	130	200	4	85	2
30/2 F	130	110	160	3.5	65	1
30/3 F	165	130	200	3.5	65	1
	215	180	250	4	80	2

Size	M	N	P	T	C	Fig
40/2 F	215	180	250	4	86	1
40/3 F	265	230	300	4	130	2
50/2 F	265	230	300	4	110	1
50/3 F	300	250	350	5	150	2
60/2 F	300	250	350	5	130	1
60/3 F	400	350	450	5	190	2
70/2 F	300	250	350	5	135	1
70/3 F	400	350	450	5	195	2

Variators & Motorized Variators

All Motovariators include a solid output shaft • Zero speed option may be added to selected motovariator types

Output speeds from 2RPM to 2,000RPM • Power ranges from 0.12kW to 11kW • Output torque from 1.5Nm to 3,000Nm

Versions combined with bevel helical gearboxes offer output torque of up to 6,000Nm

MK - (F) Series

Motovariator Gearbox

(MK - MKF : K - KF)

Size	PAM Flange MK Price \$	Male Input Shaft K Price \$	Zero Speed Option (Add) Price \$	Weight
MK 2	1,040.00	1,142.00	-	20
MKF 2	1,086.00	1,178.00	-	20
MK 5	1,290.00	1,472.00	970.00	40
MKF 5	1,366.00	1,515.00	970.00	40
MK 10	1,649.00	1,876.00	1,107.00	66
MKF 10	1,686.00	1,926.00	1,107.00	66
MK 20	2,242.00	2,484.00	1,429.00	85
MKF 20	2,298.00	2,536.00	1,429.00	85
MK 30	3,291.00	3,617.00	1,893.00	120
MKF 30	3,407.00	3,707.00	1,893.00	120
MK 50	3,596.00	4,004.00	1,893.00	225
MKF 50	3,694.00	4,022.00	1,893.00	225
MK 100	5,722.00	6,474.00	3,768.00	355
MKF 100	5,887.00	6,615.00	3,768.00	355

Motovariator with Helical Gears

(MK.../1 - MKF.../1)

Size	PAM Flange MK Price \$	Male Input Shaft K Price \$	Zero Speed Option (Add) Price \$	Weight
MK 2/1	1,437.00	1,516.00	-	29
MKF 2/1	1,437.00	1,516.00	-	29
MK 5/1	1,855.00	1,947.00	956.00	49
MKF 5/1	1,855.00	1,947.00	956.00	49
MK 10/1	2,416.00	2,520.00	1,090.00	75
MKF 10/1	2,416.00	2,520.00	1,090.00	75
MK 20/1	3,117.00	3,199.00	1,408.00	95
MKF 20/1	3,117.00	3,199.00	1,408.00	95
MK 30/1	4,594.00	4,928.00	1,867.00	150
MKF 30/1B	4,594.00	4,928.00	1,867.00	150
MK 50/1	5,029.00	5,364.00	1,867.00	310
MKF 50/1B	5,029.00	5,364.00	1,867.00	310
MK 100/1	8,094.00	8,653.00	3,714.00	441
MKF 100/1B	8,094.00	8,653.00	3,714.00	441



Motovariator MKF with output flange

Motovariator with Helical Gears

(MK.../2 - MKF.../2)

Size	PAM Flange MK Price \$	Male Input Shaft K Price \$	Zero Speed Option (Add) Price \$	Weight
MK 2/2	1,570.00	1,697.00	-	36
MKF 2/2	1,570.00	1,697.00	-	36
MK 5/2	2,129.00	2,196.00	956.00	55
MKF 5/2	2,129.00	2,196.00	956.00	55
MK 10/2	2,863.00	2,966.00	1,090.00	84
MKF 10/2	2,863.00	2,966.00	1,090.00	84
MK 20/2	3,548.00	3,601.00	1,408.00	115
MKF 20/2	3,548.00	3,601.00	1,408.00	115
MK 30/2	5,727.00	6,030.00	1,867.00	185
MKF 30/2	5,727.00	6,030.00	1,867.00	185
MK 50/2	6,762.00	6,456.00	1,867.00	322
MKF 50/2	6,762.00	6,456.00	1,867.00	322
MK 100/2	9,900.00	10,434.00	3,714.00	575
MKF 100/2	9,900.00	10,434.00	3,714.00	575

NOTE: OIL IS NOT INCLUDED FOR FRAMES 30, 50 & 100

PLEASE ENQUIRE FOR ADDITIONAL COST



Motorvariator MK with base

MOT & OT			MOT.../3 & OT.../3			MOT & OT through MOT.../3 & OT.../3						Oil	Weight (lbs) MOT/MOT3
SIZE	PAM Flange MOT Price \$	Male Input Shaft OT Price \$	SIZE	PAM Flange Mount MOT.../3 Price \$	Male Input Shaft OT.../3 Price \$	Back Stop Device Price (Add) \$	Torque Arm Price (Add) \$	Double Input Shaft Price (Add) \$	Output Flange Price (Add) \$	Single Output Shaft Price (Add) \$	Double Output Shaft Price (Add) \$		
MOT 56	1,374.00	1,254.00	MOT 56/3	1,602.00	1,447.00	345.00	241.00	367.00	64.00	167.00	205.00	*	31/35
MOT 63	1,784.00	1,531.00	MOT 63/3	2,209.00	1,984.00	416.00	587.00	473.00	194.00	204.00	274.00	**	38/42
MOT 80	2,904.00	2,485.00	MOT 80/3	3,167.00	2,826.00	520.00	692.00	661.00	210.00	249.00	325.00	**	64/71
MOT 100	4,015.00	3,625.00	MOT 100/3	4,582.00	4,226.00	772.00	769.00	880.00	290.00	340.00	458.00	**	108/115
MOT 125	6,277.00	5,124.00	MOT 125/3	7,185.00	6,716.00	965.00	925.00	1,053.00	476.00	532.00	671.00	**	192/199
MOT 160	9,713.00	9,131.00	MOT 160/3	11,092.00	10,639.00	1,236.00	1,122.00	1,348.00	648.00	708.00	850.00	**	360/370

* = Prelubricated for life
 ** = Oil available on request



MOT Series

- Power from 0.12kW to 80kW
- Output torque from 120Nm to 4350Nm
- Reduction ratios from 10:1 to 180:1



MBH Series

- Highly Compact
- Modular
- Versatile

SIZE	Input flange Sizes	PAM Flange IEC (B5) MBH Price \$	Male Input Shaft BH Price \$	Output Flange Price \$	Torque Arm Price \$	Oil Price \$	Single Output Shaft Price \$	Double Output Shaft Price \$	Taper Roller Bearing Price \$	Backstop Device Price \$
MBH 63	71-80-90	2,163.00	2,136.00	209.00	114.00	125.00	174.00	183.00	157.00	Not available
MBH 63	100-112	2,324.00								
MBH 80	71-80-90	3,324.00	3,298.00	233.00	183.00	211.00	213.00	205.00	273.00	Not available
MBH 80	100-112	3,486.00								
MBH 80	132	3,636.00	4,324.00	330.00	251.00	345.00	292.00	296.00	352.00	501.00
MBH 100	80-90	4,418.00								
MBH 100	100-112	4,554.00								
MBH 100	132	4,782.00								
MBH 125	80-90	5,784.00	5,667.00	513.00	364.00	481.00	457.00	342.00	416.00	751.00
MBH 125	100-112	5,897.00								
MBH 125	132	6,125.00								
MBH 140	100-112	9,017.00	8,743.00	616.00	866.00	769.00	532.00	387.00	Not available	820.00
MBH 140	132	10,041.00								
MBH 160	100-112	12,068.00	11,749.00	699.00	866.00	1,230.00	609.00	410.00	Not available	1,070.00
MBH 160	132	12,978.00								

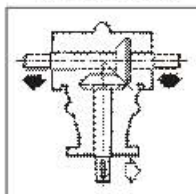
Gearboxes

R Series

Type	Configuration Figure #	Ratios	Price \$	Weight (lbs)
R 9	2/3	1:1, 2:1	438.00	4
R 9	1	1:1, 2:1	455.00	4
R 14	2/3	1:1, 2:1, 3:1	484.00	6
R 14	1	1:1, 2:1, 3:1	505.00	6
R 19	2/3	1:1, 2:1, 3:1	933.00	12
R 19	1	1:1, 2:1, 3:1	949.00	12
R 24	2/3	1:1, 2:1, 3:1	933.00	14
R 24	1	1:1, 2:1, 3:1	952.00	14

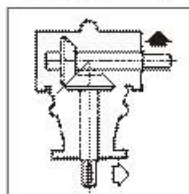
- Power from 0.12kW to 10 kW
- Output torque from 2Nm to 35Nm
- Reduction ratios available 1:1, 2:1, 3:1

EXECUTION 3C



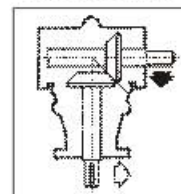
BEVEL GEAR UNIT FIG 1

EXECUTION 2A

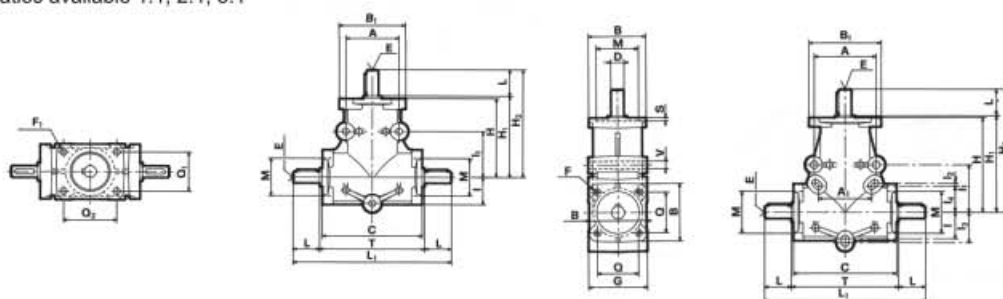


BEVEL GEAR UNIT FIG 2

EXECUTION 1C



BEVEL GEAR UNIT FIG 3



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 Series

SITI Planetary Gearboxes



Base mount

High Modularity

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

High Versatility

- 6 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



Out put flange

High Performances

- Max Input power 200 kw
- Max torque 25000 Nm
- Ratios Upto 3657:1

High Reliability

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



Customized Motors

A wide range of Customized Motors with special execution, in order to optimize electric and mechanical design for particular markets or specific OEM requests.

Single-phase, Three-phase and Brake Motors manufactured ad hoc for non-standard applications according to customer demand. Customized flanges and shafts, special electrical design for each duty request, complete tailor-made design, AC or DC brake coils to fit any application, and provide solutions to special environmental conditions.



RP2 - Shaft Mounted Helical Gearboxes



Frame Sizes & Output Torque Ratings

Frame Size	Nm max
RP2 71/2	480
RP2 91/2	806
RP2 111/2	1235
RP2 131/2	1715
RP2 151/2	2229
RP2 181/2	3429
RP2 221/2	6876
RP2 260/2	10000

High Versatility

- 8 sizes that offer a wide range of possible mounting positions

High Performances

- Max input power 140kW.
- Max torque 10,000 Nm.
- Ratio up to 30/1

High Reliability

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

MD - Double Worm Wheel Gearboxes



General Features:

MD Style (gearboxes) consist of one worm-gear and two identical worm-wheels having the same number of teeth, same module and helix angle resulting with opposite direction in rotation.

The torque delivered by the worm-gears is uniformly distributed between the two axis with the possibility of negligible differences in friction between the two output sides.

MD type gearboxes are only manufactured with pre-arranged for motor mounting (PAM) capability. MD reducers are suited to be used on mixers and agitators.

All units of the MD range are supplied without oil plugs and are pre-lubricated for life with synthetic oil.

Additional services that put Lafert NA ahead of the competition!

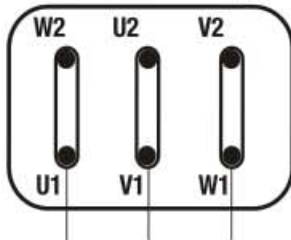
- Quote request answered promptly
- Orders filled same-day on stocked items
- **24 Hour Services 1.800.661.6413** - calls forwarded to Lafert sales representative emergency after-hours
- Custom made shafts
- Washdown duty motors IP56 & IP67
- Motors treated for service in corrosive atmospheres
- Special voltages & frequencies
- Thermistors or Klaxons added to windings
- Anti-condensation heaters installed
- Special mounting options (increased/reduced flanges in stock)
- No minimum charge

Wiring Diagrams

Refer to pages 16 and 17 for different Connection Diagrams

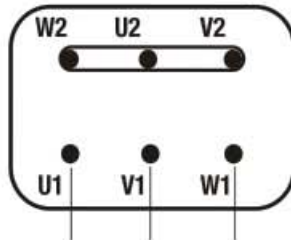
AM/HE/ST/LA/SSP LNA/LTE/LNP

Minimum Voltage



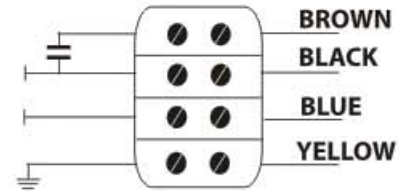
6-LEAD MOTOR CONNECTION

Maximum Voltage



AMFV Type - Forced Vent Kit (1-phase fan 115v or 230v)

For 100 frame and larger

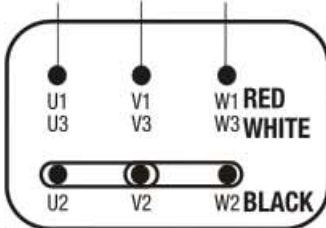


HE/ST/AMPH/9-LEAD MOTOR CONNECTION

(Also for ST 6pole and AMH 90-112 frames)

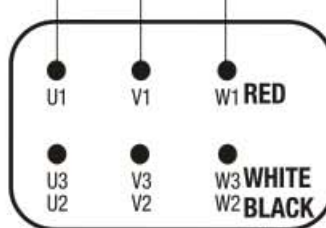
Minimum Voltage

208 / 230V



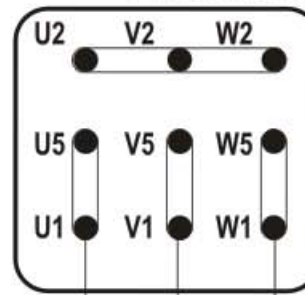
Maximum Voltage

460V

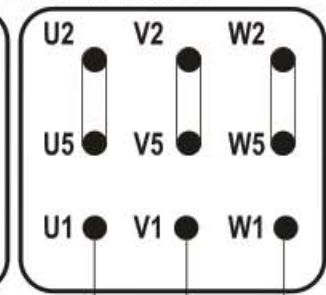


AAM/AAMH 132 frame Y/Y/Y

9-LEAD MOTOR CONNECTION



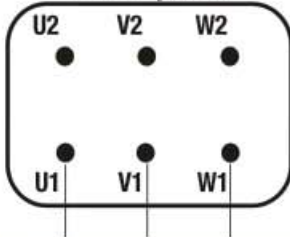
208/230V Y Y



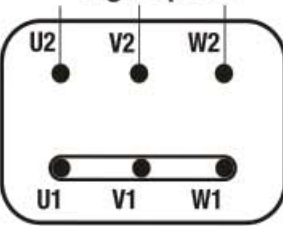
460V Y

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

Low Speed

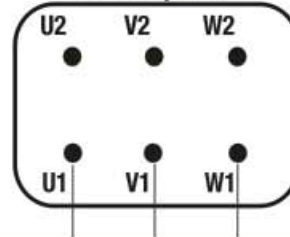


High Speed

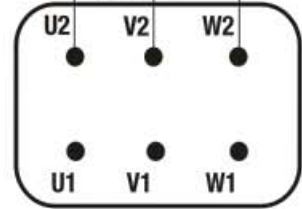


FB 2 SPEED (2 WINDINGS) (2/8 4/6 & 6/8 POLES)

Low Speed

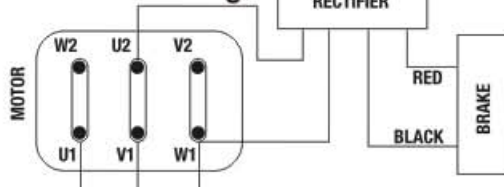


High Speed



MS Type - Compact Brake Motor D.C. Brake Coil

Minimum Voltage



Maximum Voltage

