LMT SERIES

Energy-efficient Cast Iron Three Phase Induction Motors

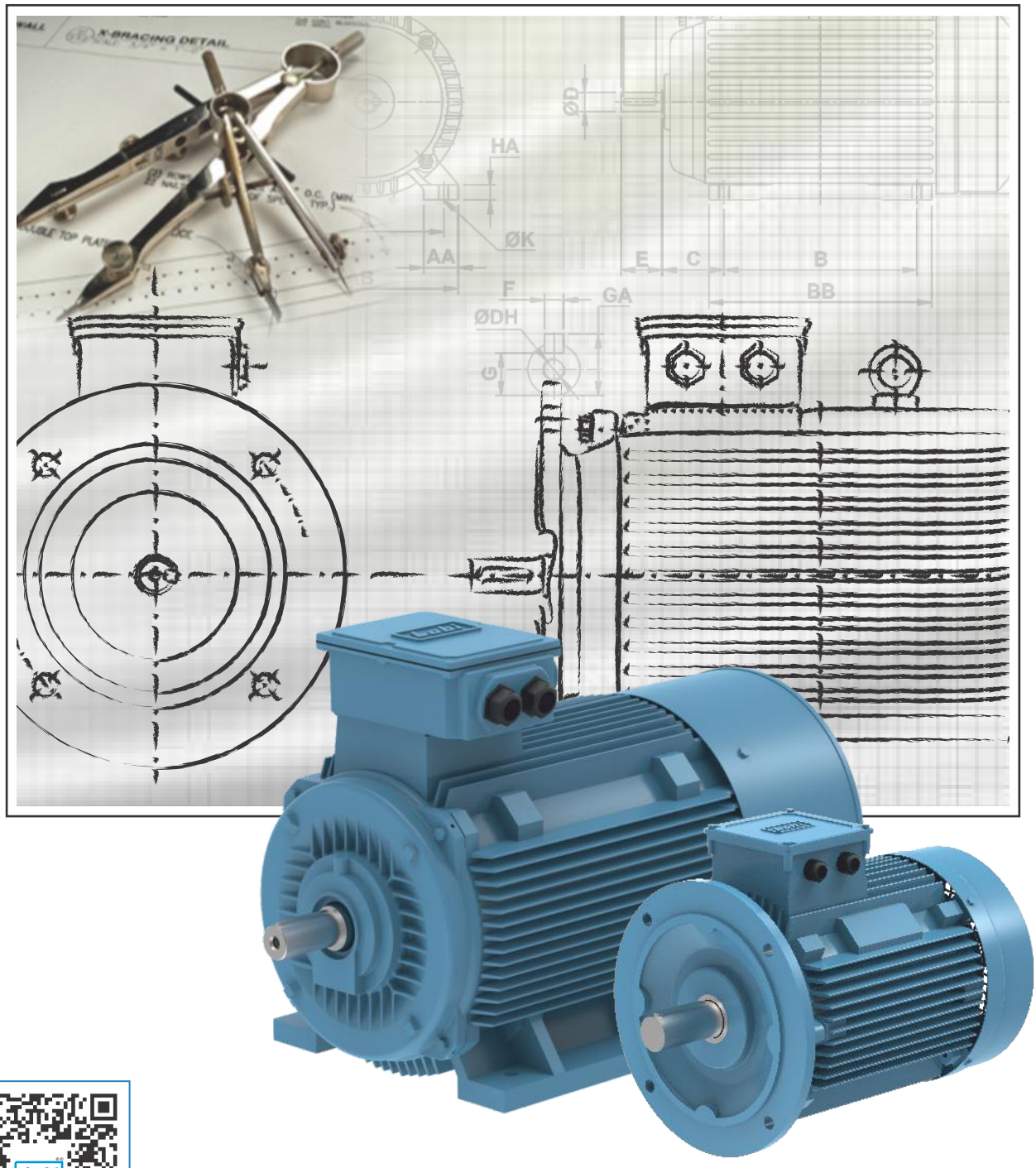
50 Hz

® ©

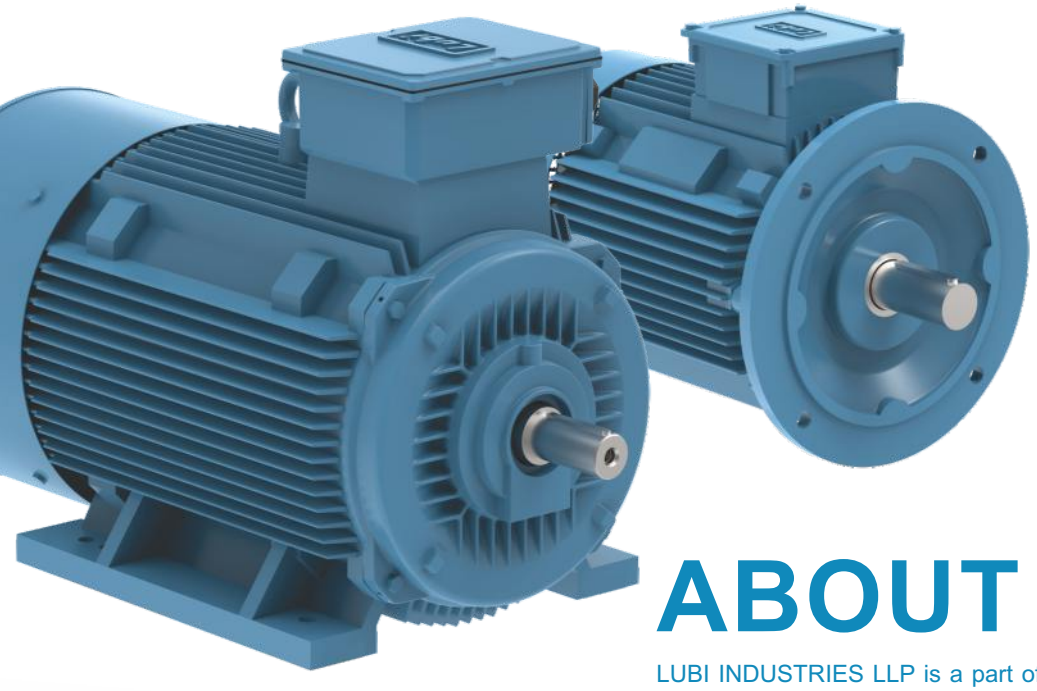
Lubi

MOTORS

CE *IE 2, IE 3*



Scan the QR code to explore our motor range



ABOUT US

LUBI INDUSTRIES LLP is a part of Lubi Group which is one of the fastest growing group of engineering companies manufacturing and marketing pumps, electric motors and providing Industrial Automation Solutions for all kinds of manufacturing industries in India.

All products manufactured by the Lubi Group are sold in the **"Lubi"** brand name. There are a total of 10 state of the art manufacturing facilities spread over a total manufacturing space of 300,000 square meters and employing more than 2000 people and producing more than 4500 different models of products for a wide range of application for industrial, agriculture, water supply and household markets.

ABOUT US

We have country wide marketing network of 20 branch offices and more than 1000 Distributors and Dealers across India. We export our products worldwide to more than 50 countries.

LUBI electric motor manufacturing plant is located in Ahmedabad is a state-of-the-art manufacturing facility for electric motor manufacturing. With a production capacity to produce more than 100,000, 3 phase cast iron motors per annum, it is one of the largest manufacturing facility for electric motors in the state of Gujarat. The manufacturing range includes electric motors from 0.25 to 430 hp.

The manufacturing strengths of the electric motor manufacturing plant are:

❒ In house foundry to produce all cast iron castings used in manufacturing of electric motors.
❒ Chemical, Metallurgical and Physical Testing Laboratory for testing of all incoming raw materials and castings produced and used in manufacturing of motors.
❒ In house aluminum die-casting facility to produce quality die-cast electric rotors.
❒ Aluminum die-cast rotor testing facility.
❒ Dynamic balancing on a 2 plane computerized machine for all electric rotors.
❒ Automated CNC machine tools for machining of all components of the electric motor.
❒ Automatic winding machines from Statomat Germany for high volume motors.
❒ Vaccum impregnation facility.
❒ Eddy current dynamometers of various sizes for type testing of electric motors.
❒ NABL Accredited laboratory for Energy Efficiency Testing as per IEEE and CSA standards.
❒ Conveyorized, electrostatic paint facility to produce top quality paint finish of the motors.

We are committed to providing our customers with on time, world class quality product at affordable prices. We are also committed to the green environment movement by offering a whole range of energy efficient electric motors. We can be your one stop shop for all your electric motor requirements.

APPLICATIONS

❒ Pumps
❒ Compressors
❒ Fans and blowers
❒ Flour mills, rolling mills, mixers
❒ Machine tools
❒ Textile and plastic machineries
❒ Printing, packaging and wood working machineries
❒ Agricultural, food processing machinery
❒ Material handling equipments
❒ Cranes, hoists and lifts
❒ Cooling towers.

FEATURES AND BENEFITS

❒ Motors are fitted with dynamically balanced aluminium die cast squirrel cage rotors.
❒ Motors are fitted with pre-lubricated antifriction ball bearings up to 132 frame.
❒ Motors are free from moisture and dust particles.
❒ Minimum electricity consumption because of special grade electrical steel used in an energy efficient optimized design.
❒ Balanced three-dimensional heat transfer principal due to special fins design of stator body.
❒ Minimum rotor losses due to use of electrolytic grade of aluminium.
❒ Minimum copper losses due to use of electrolytic grade of copper.
❒ Minimum friction losses.
❒ Low noise, smooth running motor.
❒ Reliable operation.
❒ Easy maintenance.
❒ Low payback period.
❒ Terminal box is provided on top as a standard.

SPECIFICATIONS

❒ Motor type	: AC three-phase squirrel cage induction motor
❒ Enclosure	: TEFC
❒ Frame	: 63 to 355L
❒ Mounting	: Foot, Flange and Face
❒ Rated power	: 0.37 kW to 315 kW (0.5 to 430 HP)
❒ Voltage ± variation	: 415 V ± 10%
❒ Frequency ± variation	: 50 Hz ± 5%
❒ Combined variation	: 10% (Absolute sum)
❒ Rated speed	: 3000, 1500, 1000, 750 rpm (2 pole, 4 pole, 6 pole, 8 pole)
❒ Ambient temperature	: +50°C
❒ Altitude	: Should be lower than 1000 metres above sea level
❒ Relative humidity	: Up to 100%
❒ Connection	: Up to 2.2 kW-Star connection with 3 leads & above 2.2 kW-Delta connection with 6 leads
❒ Direction of rotation	: Anticlockwise or clockwise as seen from the Driver end side
❒ Duty / Rating	: S1 / Continuous
❒ Insulation class	: Class 'F' and temperature rise limited to class 'B'
❒ Degree of protection	: IP 55
❒ Cooling method	: IC411 / Shaft mounted fan.

NOMINAL EFFICIENCY OF MOTORS & EFFICIENCY CLASS COMPARISON

Nominal efficiency (%) limits for class IE2 & IE3 50 Hz according to the IS: 12615							
P_N		2-Pole Eff. (%)		4-Pole Eff. (%)		6-Pole Eff. (%)	
kW	HP	IE2	IE3	IE2	IE3	IE2	IE3
0.75	1	77.4	80.7	79.6	82.5	75.9	78.9
1.1	1.5	79.6	82.7	81.4	84.1	78.1	81.0
1.5	2	81.3	84.2	82.8	85.3	79.8	82.5
2.2	3	83.2	85.9	84.3	86.7	81.8	84.3
3.7	5	85.5	87.8	86.3	88.4	84.3	86.5
5.5	7.5	87.0	89.2	87.7	89.6	86.0	88.0
7.5	10	88.1	90.1	88.7	90.4	87.2	89.1
11	15	89.4	91.2	89.8	91.4	88.7	90.3
15	20	90.3	91.9	90.6	92.1	89.7	91.2
18.5	25	90.9	92.4	91.2	92.6	90.4	91.7
22	30	91.3	92.7	91.6	93.0	90.9	92.2
30	40	92.0	93.3	92.3	93.6	91.7	92.9
37	50	92.5	93.7	92.7	93.9	92.2	93.3
45	60	92.9	94.0	93.1	94.2	92.7	93.7
55	75	93.2	94.3	93.5	94.6	93.1	94.1
75	100	93.8	94.7	94.0	95.0	93.7	94.6
90	120	94.1	95.0	94.2	95.2	94.0	94.9
110	150	94.3	95.2	94.5	95.4	94.3	95.1
132	180	94.6	95.4	94.7	95.6	94.6	95.4
160	215	94.8	95.6	94.9	95.8	94.8	95.6
200 to 315	270 to 430	95.0	95.8	95.1	96.0	95.0	95.8

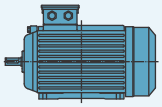
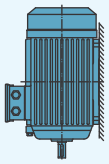
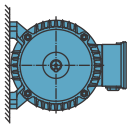
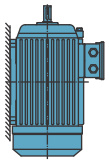
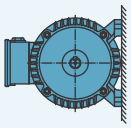
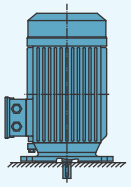
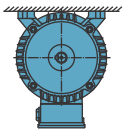
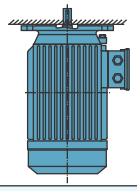
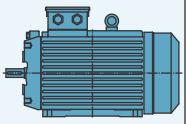
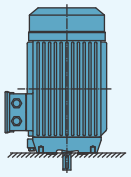
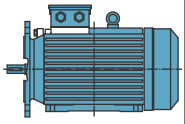
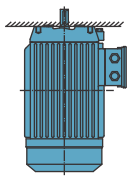
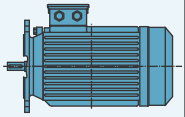
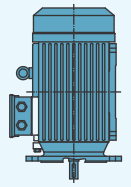
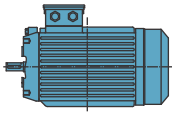
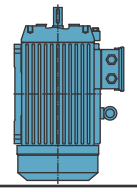
BEARING DETAILS & LUBRICATION

Frame size	Nos. of poles	Drive end bearing	Non-Drive end bearing	Regreasing interval [hours]
63	2	6201 ZZ-C3	6201 ZZ-C3	-
	4, 6, 8			-
71	2	6202 ZZ-C3	6202 ZZ-C3	-
	4, 6, 8			-
80	2	6204 ZZ-C3	6204 ZZ-C3	-
	4, 6, 8			-
90	2	6205 ZZ-C3	6205 ZZ-C3	-
	4, 6, 8			-
100	2	6206 ZZ-C3	6206 ZZ-C3	-
	4, 6, 8			-
112	2	6206 ZZ-C3	6206 ZZ-C3	-
	4, 6, 8			-
132	2, 4	6208 ZZ-C3	6208 ZZ-C3	-
	6, 8	6308 ZZ-C3	6308 ZZ-C3	-
160	2, 4, 8	6309 ZZ-C3	6209 ZZ-C3	-
	6	6310 ZZ-C3	6309 ZZ-C3	-
180	2	6310 ZZ-C3	6210 ZZ-C3	-
	4, 6, 8			-
200	2	6312 ZZ-C3	6212 ZZ-C3	-
	4, 6, 8			-
225	2	6313 ZZ-C3	6313 ZZ-C3	-
	4, 6, 8			-
250	2	6315 ZZ-C3	6215 ZZ-C3	-
	4, 6, 8			-
280	2	6317-C3	6316-C3	3000
	4, 6, 8	6317-C3	6316-C3	5000
315	2	6317-C3	6317-C3	2000
	4, 6, 8	6319-C3	6319-C3	4000
355	2	6319-C3	6319-C3	2000
	4, 6, 8	6322-C3	6319-C3	3000

• Insulated & Roller bearings can be offered at extra cost.

MOUNTING ARRANGEMENTS

Mounting arrangements for rotating electrical machines are designated. Our motors are available with the mounting arrangements as per details below, depending on design and frame size.

Horizontal shaft mounting					Vertical shaft mounting				
Mounting arrangement		Code I	Code II	Frame size	Mounting arrangement		Code I	Code II	Frame size
	Mounted by foot, foot down	IM B3	IM 1001	63 - 355		Mounted by foot, Driver end down	IM V5	IM 1011	63 - 160
	Mounted by foot, foot left (viewed from Driver-end)	IM B6	IM 1051	63 - 160		Mounted by foot, Driver end up	IM V6	IM 1031	63 - 160
	Mounted by foot, foot right (viewed from Driver-end)	IM B7	IM 1061	63 - 160		Mounted on Driver end side of flange type 'B', Driver end down	IM V1	IM 3011	63 - 355
	Mounted by foot, foot up	IM B8	IM 1071	63 - 160		Mounted on Driver end side of flange type 'B', Driver end up	IM V3	IM 3031	63 - 160
	Mounted by foot, foot down, with additional mounting on D-end side of flange type 'C'	IM B34	IM 2101	63 - 132		Mounted on Driver end side of flange type 'C', Driver end down	IM V18	IM 3611	63 - 132
	Mounted by foot, foot down, with additional mounting on D-end side of flange type 'B'	IM B35	IM 2001	63 - 355		Mounted on Driver end side of flange type 'C', Driver end up	IM V19	IM 3631	63 - 132
	Mounted on Driver end side of flange type 'B'	IM B5	IM 3001	63 - 355		Mounted by foot, with additional mounting on D-end side of flange, type 'B' D-end down	IM V15	IM 2011	63 - 160
	Mounted on Driver end side of flange type 'C'	IM B14	IM 3601	63 - 160		Mounted by foot, with additional mounting on D-end side of flange, type 'C' D-end up	IM V37	IM 2131	63 - 132

CABLE SIZE

Frame size	Maximum cable size		Cable entry size
	DOL starting	Star-Delta starting	*IE2, IE3*
63	3C x 2.5 mm²	-	1 x 3/4"
71	3C x 2.5 mm²	-	1 x 3/4"
80	3C x 4 mm²	-	1 x 3/4"
90	3C x 4 mm²	-	2 x 3/4"
100	3C x 10 mm²	2 x 3C x 10 mm²	2 x 3/4"
112	3C x 10 mm²	2 x 3C x 10 mm²	2 x 3/4"
132	3C x 10 mm²	2 x 3C x 10 mm²	2 x 1"
160	3C x 35 mm²	2 x 3C x 25 mm²	2 x 1"
180	3C x 35 mm²	2 x 3C x 25 mm²	2 x M40 x 1.5
200	3C x 120 mm²	2 x 3C x 70 mm²	2 x M50 x 1.5
225	3C x 120 mm²	2 x 3C x 70 mm²	2 x M50 x 1.5
250	3C x 120 mm²	2 x 3C x 70 mm²	2 x M63 x 1.5
280	3C x 240 mm²	2 x 3C x 150 mm²	2 x M63 x 1.5
315	3C x 240 mm²	2 x 3C x 150 mm²	2 x M63 x 1.5
355	3C x 400 mm²	2 x 3C x 300 mm²	2 x M63 x 1.5

IE 2 EFFICIENCY CLASS — MOTOR PERFORMANCE DATA - 3000 RPM (2 POLE)

Rated output P_N		Frame size	Rated speed n [min⁻¹]	Efficiency η [%]	Power factor [cos φ]	Rated current I_N at 415 V [A]	Rated Torque T_N [Nm]	DOL starting		Break down Torque / Rated Torque T_B/T_N	Moment of inertia J [kgm²]	Gross weight [kg]
kW	HP							Locked rotor current / Rated current I_L/I_N	Locked rotor Torque / Rated Torque T_L/T_N			
0.37	**0.5**	71L	2770	69.5	0.78	0.95	1.27	4.50	2.2	2.4	0.0004	13
0.5	**0.75**	71L	2820	74.1	0.79	1.4	1.88	5.00	2.4	2.6	0.00052	16
0.75	**1**	80L	2875	77.4	0.83	1.62	2.49	5.30	2.5	3.0	0.0008	20
1.1	**1.5**	80L	2875	79.6	0.84	2.20	3.65	7.00	3.2	3.8	0.0009	21
1.5	**2**	90S/L	2890	81.3	0.84	2.95	4.96	7.10	2.7	3.5	0.0012	26
2.2	**3**	90S/L	2890	83.2	0.85	4.21	7.27	6.90	2.4	3.0	0.0015	29
3.7	**5**	100L	2914	85.5	0.88	6.69	13.11	7.50	2.5	3.0	0.0050	62
5.5	**7.5**	132S	2937	87.0	0.86	10.04	17.88	7.50	2.7	3.5	0.0100	93
7.5	**10**	132S/M	2940	88.1	0.88	13.25	24.36	7.50	2.4	3.3	0.0120	101
11	**15**	160M	2930	89.4	0.89	19.00	35.85	7.60	2.2	2.9	0.0385	149
15	**20**	160M	2930	90.3	0.89	25.68	48.89	7.60	2.3	3.0	0.0466	161
18.5	**25**	160L	2937	90.9	0.89	31.50	60.15	7.40	2.3	3.1	0.0550	177
22	**30**	180M	2940	91.3	0.88	37.72	71.46	7.80	2.8	3.2	0.0810	248
30	**40**	200L	2950	92.0	0.88	51.00	97.12	7.80	2.6	3.0	0.1250	308
37	**50**	200L	2950	92.5	0.89	61.99	119.78	7.70	2.6	3.0	0.1450	328
45	**60**	225M	2960	92.9	0.89	75.07	145.19	7.50	2.4	2.6	0.2280	421
55	**75**	250M	2965	93.2	0.90	90.44	177.15	7.10	2.3	2.8	0.3050	515
75	**100**	280S/M	2970	93.8	0.90	122.55	241.16	7.40	2.5	2.8	0.6000	655
90	**120**	280S/M	2970	94.1	0.91	144.83	289.39	7.60	2.8	2.8	0.6860	703
110	**150**	315S	2975	94.3	0.91	176.65	353.11	6.90	2.4	2.8	1.1700	1078
132	**180**	315M/L	2975	94.6	0.91	211.53	423.73	7.10	2.6	2.9	1.8000	1139
160	**215**	315M/L	2975	94.8	0.92	253.08	513.61	7.10	2.5	2.9	2.1200	1241
200	**270**	315M/L	2975	95.0	0.92	316.03	642.02	6.90	2.5	2.8	2.5000	1272
250	**340**	355S/M	2980	95.0	0.92	393.80	801.17	7.00	2.5	2.8	3.1000	2088
315	**430**	355M/L	2980	95.0	0.92	495.15	1009.48	7.00	2.5	2.9	3.6000	2496

IE 2 EFFICIENCY CLASS — MOTOR PERFORMANCE DATA - 1500 RPM (4 POLE)

Rated output P_N		Frame size	Rated speed n [min^{-1}]	Efficiency η [%]	Power factor [cos φ]	Rated current I_N at 415 V [A]	Rated Torque T_N [Nm]	DOL starting		Break down Torque / Rated Torque T_B/T_N	Moment of inertia J [kgm^2]	Gross weight [kg]
kW	HP							Locked rotor current / Rated current I_L/I_N	Locked rotor Torque / Rated Torque T_L/T_N			
0.37	0.5	71L	1380	72.7	0.75	0.9	2.8	4.0	2.5	2.1	0.0009	14
0.5	0.75	80L	1400	77.1	0.75	1.5	3.9	5.0	3.7	2.8	0.0015	18
0.75	1	80L	1400	79.6	0.76	1.66	5.12	5.0	2.4	2.9	0.0022	22
1.1	1.5	90S/L	1440	81.4	0.77	2.37	7.3	6.0	3.0	3.5	0.0024	27
1.5	2	90S/L	1445	82.8	0.77	3.19	9.91	6.8	3.2	3.8	0.0030	32
2.2	3	100L	1440	84.3	0.81	4.37	14.6	7.0	3.0	3.5	0.0056	56
3.7	5	112M	1445	86.3	0.82	7.09	26.4	7.5	3.5	4.0	0.0097	67
5.5	7.5	132S/M	1455	87.7	0.83	10.32	36.1	6.4	2.2	2.8	0.0220	98
7.5	10	132S/M	1455	88.7	0.84	13.77	49.2	7.0	2.4	3.0	0.0300	108
11	15	160M	1460	89.8	0.84	19.95	71.9	6.9	2.5	2.9	0.0740	162
15	20	160L	1460	90.6	0.85	26.69	98.1	7.5	2.5	3.0	0.0920	173
18.5	25	180M	1470	91.2	0.86	32.42	120.2	7.8	2.6	3.1	0.1350	247
22	30	180L	1470	91.6	0.86	38.43	142.9	7.5	2.6	3.1	0.1600	286
30	40	200L	1470	92.3	0.86	52.07	194.9	7.1	2.4	2.9	0.2650	337
37	50	225S	1480	92.7	0.87	63.21	238.8	7.5	2.5	2.7	0.4200	383
45	60	225M	1480	93.1	0.87	76.55	290.4	7.6	2.5	2.8	0.4700	413
55	75	250M	1480	93.5	0.87	93.36	354.9	7.3	2.6	2.7	0.6600	528
75	100	280S/M	1480	94.0	0.87	126.64	484	7.6	2.7	2.7	1.1400	645
90	120	280S/M	1480	94.2	0.87	151.49	580.7	7.5	2.7	2.7	1.4200	745
110	150	315S	1485	94.5	0.88	182.67	707.4	7.1	2.7	2.9	3.4000	1080
132	180	315M/L	1485	94.7	0.88	218.51	848.9	7.3	2.7	2.9	3.5800	1167
160	215	315M/L	1485	94.9	0.89	261.34	1029	7.4	3.0	3.0	4.1000	1237
200	270	315M/L	1485	95.1	0.89	326.34	1286	7.6	3.0	3.0	4.9000	1355
250	340	355S/M	1490	95.1	0.90	401.71	1602	7.5	2.8	2.9	6.7000	1884
315	430	355M/L	1490	95.1	0.90	505.11	2019	7.4	2.6	2.8	8.4000	2090

IE 2 EFFICIENCY CLASS — MOTOR PERFORMANCE DATA - 1000 RPM (6 POLE)

Rated output P_N		Frame size	Rated speed n [min^{-1}]	Efficiency η [%]	Power factor [cos φ]	Rated current I_N at 415 V [A]	Rated Torque T_N [Nm]	DOL starting		Break down Torque / Rated Torque T_B/T_N	Moment of inertia J [kgm^2]	Gross weight [kg]
kW	HP							Locked rotor current / Rated current I_L/I_N	Locked rotor Torque / Rated Torque T_L/T_N			
0.37	0.5	80L	915	67.6	0.70	1.1	3.8	3.6	1.8	2.2	0.00188	17
0.5	0.75	80L	920	73.1	0.72	1.55	5.7	3.8	1.8	2.2	0.0024	19
0.75	1	90S/L	934	75.9	0.72	1.91	7.67	4.5	2.2	2.4	0.0030	27
1.1	1.5	90S/L	945	78.1	0.72	2.72	11.1	4.5	2.4	2.6	0.0040	29
1.5	2	100L	945	79.8	0.75	3.49	15.2	4.2	1.8	2.2	0.0082	54
2.2	3	112M	960	81.8	0.76	4.90	21.9	4.5	2.3	2.8	0.0140	64
3.7	5	132M	965	84.3	0.76	7.96	39.6	5.0	2.3	2.7	0.0360	103
5.5	7.5	132M	965	86.0	0.77	11.45	54.4	5.5	1.9	2.8	0.0400	115
7.5	10	160M	970	87.2	0.78	15.17	73.8	6.5	2.0	3.0	0.0880	175
11	15	160L	970	88.7	0.78	21.87	108.3	7.5	2.4	3.3	0.1150	192
15	20	180L	975	89.7	0.81	28.47	146.9	6.4	2.0	2.7	0.2100	260
18.5	25	200L	980	90.4	0.81	34.80	180.3	7.0	2.3	3.0	0.3100	303
22	30	200L	980	90.9	0.83	40.17	214.4	7.0	2.3	2.8	0.3500	318
30	40	225M	980	91.7	0.84	53.66	292.3	6.5	2.2	2.7	0.5340	390
37	50	250M	980	92.2	0.86	64.36	360.6	6.9	2.5	2.7	0.8250	512
45	60	280S/M	980	92.7	0.86	77.86	438.5	7.0	2.2	2.4	1.3500	628
55	75	280S/M	980	93.1	0.86	94.85	536	7.1	2.4	2.5	1.6000	677
75	100	315S	985	93.7	0.86	128.66	727.2	7.3	2.8	3.0	4.0000	1063
90	120	315M/L	985	94.0	0.86	153.74	872.6	7.1	2.7	2.9	4.6000	1143
110	150	315M/L	985	94.3	0.86	187.71	1066	7.4	2.9	2.9	5.2500	1216
132	180	315M/L	985	94.6	0.87	221.72	1280	7.6	3.0	3.1	6.2000	1338
160	215	355S/M	990	94.8	0.88	265.42	1543	7.6	3.1	3.1	9.6000	1731
200	270	355M/L	990	95.0	0.88	331.08	1929	7.8	3.0	3.0	10.800	1782
250	340	355M/L	990	95.0	0.88	413.42	2412	7.7	3.1	3.0	12.500	1884

IE 3 EFFICIENCY CLASS MOTOR PERFORMANCE DATA - 3000 RPM (2 POLE)

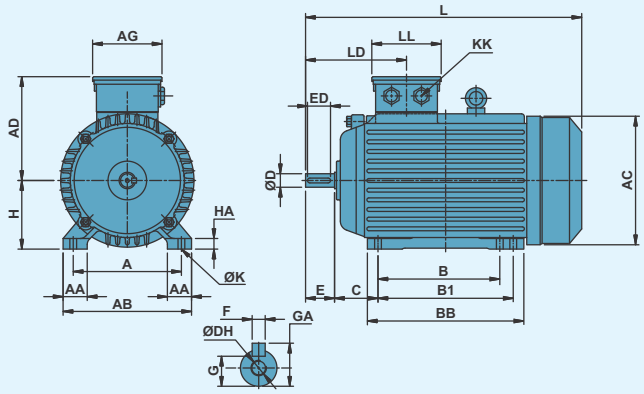
Rated output P_N		Frame size	Rated speed n [min^{-1}]	Efficiency η [%]	Power factor [cos φ]	Rated current I_N at 415 V [A]	Rated Torque T_N [Nm]	DOL starting		Break down Torque / Rated Torque T_B/T_N	Moment of inertia J [kgm^2]	Gross weight [kg]
kW	HP							Locked rotor current / Rated current I_L/I_N	Locked rotor Torque / Rated Torque T_L/T_N			
0.75	1	80L	2830	80.7	0.82	1.58	2.5	6.5	3.3	3.5	0.009	22
1.1	1.5	80L	2830	82.7	0.82	2.26	3.7	6.5	3.3	3.5	0.011	23
1.5	2	90S/L	2885	84.2	0.87	2.85	5.0	6.5	3.0	3.3	0.013	29
2.2	3	90S/L	2885	85.9	0.87	4.10	7.3	6.5	3.0	3.3	0.016	32
3.7	5	100L	2885	87.8	0.87	6.74	12.3	6.5	3.0	3.3	0.021	68
5.5	7.5	132S	2935	89.2	0.89	9.64	17.9	6.5	2.3	2.5	0.134	102
7.5	10	132S/M	2935	90.1	0.89	13.0	24.4	6.5	2.3	2.5	0.15	111
11	15	160M	2935	91.2	0.89	18.9	35.8	6.5	2.4	2.7	0.22	164
15	20	160M	2935	91.9	0.89	25.5	48.8	6.5	2.4	2.7	0.3	177
18.5	25	160L	2935	92.4	0.89	31.3	60.2	6.5	2.4	2.7	0.374	195
22	30	180M	2955	92.7	0.88	37.5	71.1	7.0	2.5	2.7	0.5	260
30	40	200L	2965	93.3	0.88	50.8	96.5	7.0	2.5	2.7	0.91	323
37	50	200L	2965	93.7	0.88	62.4	119.6	7.0	2.5	2.7	1.13	344
45	60	225M	2965	94.0	0.9	74.0	145.0	7.0	2.5	2.7	2.11	442
55	75	250M	2965	94.3	0.91	89.2	177.4	7.0	2.5	2.7	2.60	541
75	100	280S/M	2970	94.7	0.91	121	241.1	7.0	2.0	2.7	3.08	688
90	120	280S/M	2970	95.0	0.91	145	289.1	7.0	2.0	2.7	3.69	738
110	150	315S	2985	95.2	0.88	183	351.8	7.0	2.4	2.7	5.0	1132
132	180	315M/L	2985	95.4	0.88	219	422.4	7.0	2.4	2.7	6.2	1196
160	215	315M/L	2985	95.6	0.88	265	511.6	7.0	2.4	2.7	7.7	1303

IE 3 EFFICIENCY CLASS MOTOR PERFORMANCE DATA - 1500 RPM (4 POLE)

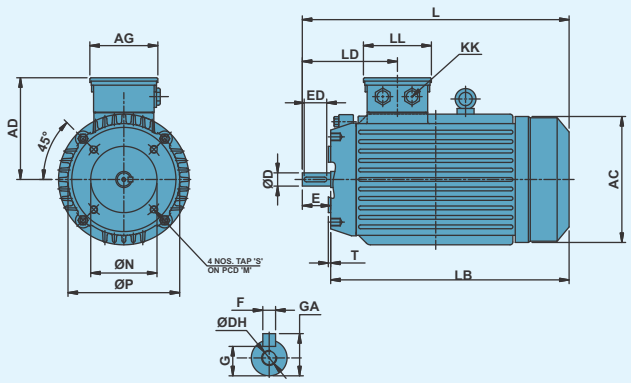
Rated output P_N		Frame size	Rated speed n [min^{-1}]	Efficiency η [%]	Power factor [cos φ]	Rated current I_N at 415 V [A]	Rated Torque T_N [Nm]	DOL starting		Break down Torque / Rated Torque T_B/T_N	Moment of inertia J [kgm^2]	Gross weight [kg]
kW	HP							Locked rotor current / Rated current I_L/I_N	Locked rotor Torque / Rated Torque T_L/T_N			
0.75	1	80L	1430	82.5	0.77	1.64	5.00	6.0	2.5	2.8	0.015	24
1.1	1.5	90S/L	1435	84.1	0.8	2.27	7.35	6.0	2.5	2.8	0.017	30
1.5	2	90S/L	1435	85.3	0.8	3.06	10.00	6.0	2.5	2.8	0.023	35
2.2	3	100L	1435	86.7	0.81	4.36	14.60	6.0	2.6	3.0	0.028	62
3.7	5	112M	1455	88.4	0.8	7.28	24.30	6.5	2.7	3.0	0.066	74
5.5	7.5	132S/M	1470	89.6	0.82	10.4	35.67	6.5	2.6	2.8	0.141	108
7.5	10	132S/M	1470	90.4	0.83	13.9	48.71	6.5	2.6	2.8	0.193	119
11	15	160M	1470	91.4	0.84	19.9	71.44	6.5	2.7	3.0	0.375	178
15	20	160L	1470	92.1	0.84	27.0	97.41	6.5	2.7	3.0	0.52	190
18.5	25	180M	1470	92.6	0.84	33.1	120.1	7.0	2.6	2.8	0.75	259
22	30	180L	1470	93.0	0.85	38.7	143.1	7.0	2.6	2.8	0.86	300
30	40	200L	1475	93.6	0.87	51.3	194.0	7.0	2.6	2.6	1.38	354
37	50	225S	1482	93.9	0.84	65.3	238.1	7.0	2.6	2.6	2.30	402
45	60	225M	1482	94.2	0.84	79.1	290.1	7.0	2.6	2.6	2.83	434
55	75	250M	1482	94.6	0.84	96.3	353.8	7.0	2.6	2.6	3.06	554
75	100	280S/M	1482	95.0	0.86	128	483.1	6.5	2.5	2.5	5.53	677
90	120	280S/M	1482	95.2	0.86	153	579.2	6.5	2.5	2.5	6.36	782
110	150	315S	1488	95.4	0.85	189	705.6	6.8	2.5	3.0	11.70	1134
132	180	315M/L	1488	95.6	0.85	226	846.7	6.8	2.5	3.0	14.0	1225
160	215	315M/L	1488	95.8	0.85	273	1029.0	6.5	2.5	3.0	16.9	1299
200	270	315M/L	1490	96.0	0.88	329	1283.8	6.5	2.0	2.4	23.3	1423
250	340	355S/M	1490	96.0	0.88	412	1597.4	6.5	2.0	2.4	32.7	1978
315	430	355M/L	1490	96.0	0.88	519	2018.8	6.5	2.0	2.4	37.9	2194

IE 3 EFFICIENCY CLASS — MOTOR PERFORMANCE DATA - 1000 RPM (6 POLE)

Rated output P_N		Frame size	Rated speed n [min^{-1}]	Efficiency η [%]	Power factor [cos φ]	Rated current I_N at 415 V [A]	Rated Torque T_N [Nm]	DOL starting		Break down Torque / Rated Torque T_B/T_N	Moment of inertia J [kgm^2]	Gross weight [kg]
kW	HP							Locked rotor current / Rated current I_L/I_N	Locked rotor Torque / Rated Torque T_L/T_N			
0.75	1	90S/L	945	78.9	0.72	1.84	7.55	4.0	2.2	2.5	0.017	30
1.1	1.5	90S/L	945	81.0	0.72	2.62	11.07	4.0	2.2	2.5	0.025	32
1.5	2	100L	945	82.5	0.72	3.51	15.19	4.5	2.0	2.5	0.029	59
2.2	3	112M	960	84.3	0.77	4.72	21.85	5.0	2.0	2.5	0.074	70
3.7	5	132M	960	86.5	0.78	7.63	36.75	5.5	2.0	2.5	0.202	113
5.5	7.5	132M	960	88.0	0.78	11.1	54.68	5.5	2.0	2.5	0.276	127
7.5	10	160M	965	89.1	0.8	14.6	74.19	5.5	2.5	2.5	0.45	193
11	15	160L	965	90.3	0.8	21.2	108.8	5.5	2.5	2.5	0.65	211
15	20	180L	970	91.2	0.82	27.9	148.0	5.5	2.5	2.5	1.20	273
18.5	25	200L	975	91.7	0.86	32.6	181.3	6.5	2.6	2.3	1.81	318
22	30	200L	975	92.2	0.88	37.7	215.6	6.5	2.6	2.3	2.10	334
30	40	225M	978	92.9	0.88	51.1	293.0	6.5	2.5	2.3	3.51	410
37	50	250M	978	93.3	0.88	62.7	360.6	6.5	2.5	2.3	3.72	538
45	60	280S/M	984	93.7	0.84	79.5	436.1	6.5	2.5	2.4	5.11	659
55	75	280S/M	984	94.1	0.86	94.6	533.1	6.0	2.4	2.4	6.16	711
75	100	315S	989	94.6	0.84	131	724.2	6.0	2.3	2.5	12.4	1116
90	120	315M/L	989	94.9	0.84	157	868.3	6.0	2.3	2.5	15.5	1200
110	150	315M/L	990	95.1	0.84	192	1058.4	6.0	2.3	2.5	18.0	1277
132	180	315M/L	990	95.4	0.86	224	1274.0	6.0	2.3	2.5	21.5	1405
160	215	355S/M	990	95.6	0.84	277	1538.6	6.0	2.0	2.5	28.7	1818
200	270	355M/L	991	95.8	0.84	346	1930.6	6.0	2.0	2.5	35.5	1871
250	340	355M/L	991	95.8	0.84	432	2410.8	6.0	2.0	2.5	43.3	1978



FOOT MOUNTED
(IM B3) MOTOR DIMENSIONAL DRAWING



"C" TYPE FLANGE MOUNTED
(IM B14) MOTOR DIMENSIONAL DRAWING

IE 2, IE3 FOOT MOUNTED (IM B3) MOTOR DIMENSIONAL DRAWING

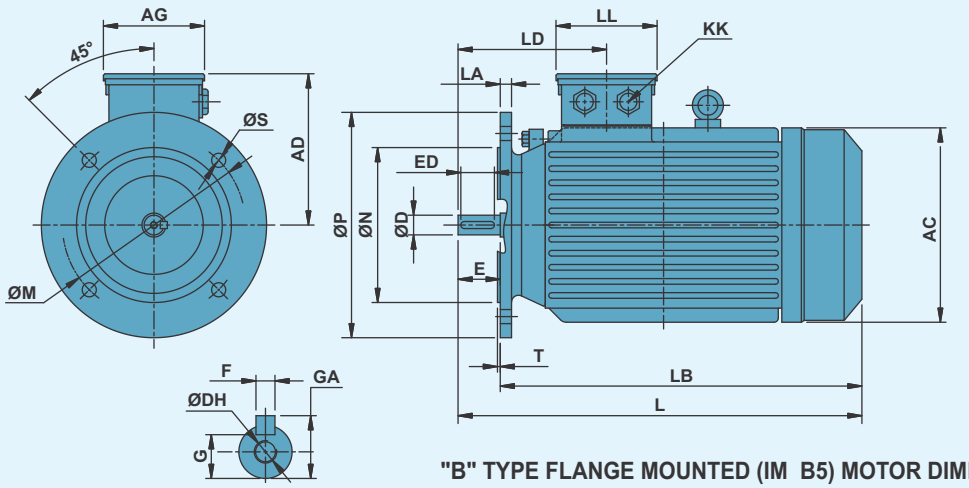
Frame	Pole	A	AA	AB	AC	AD	AG	B	B1	BB	C	D	DH	E	ED	F	G	GA	H	HA	K	KK	L	LD	LL
71L	2, 4, 6, 8	112	25	133	144	110	85	90	-	112	45	14	M5	30	25	5	11	16	71	11	7	1x3/4"	246	120	85
80L	2, 4, 6, 8	125	38	155	171	125	85	100	-	126	50	19	M6	40	34	6	15.5	21.5	80	10	10	1x3/4"	284	140	85
90S/L	2, 4, 6, 8	140	36	168	178	149	98	100	125	158	56	24	M8	50	42	8	20	27	90	13	10	2x3/4"	333	148	98
100L	2, 4, 6, 8	160	38	195	194	156	98	140	-	170	63	28	M10	60	52	8	24	31	100	14	12	2x3/4"	371	157	98
112M	2, 4, 6, 8	190	42	230	218	169	98	140	-	170	70	28	M10	60	52	8	24	31	112	14	12	2x3/4"	398	160	98
132S	2, 4, 6, 8	216	65	257	262	192	131	140	-	182	89	38	M12	80	68	10	33	41	132	18	12	2x1"	459	202	131
132S/M	2, 4, 6, 8	216	65	257	262	192	131	140	178	220	89	38	M12	80	68	10	33	41	132	18	12	2x1"	497	202	131
160M	2, 4, 6, 8	254	55	305	304	244	171	210	-	260	108	42	M16	110	96	12	37	45	160	19	15	2x1"	597	282	195
160L	2, 4, 6, 8	254	55	305	304	244	171	254	-	300	108	42	M16	110	96	12	37	45	160	19	15	2x1"	637	282	195
180M	2, 4, 6, 8	279	66	342	357	296	265	241	-	284	121	48	M16	110	96	14	42.5	51.5	180	27	15	2xM40x1.5	720	280	195
180L	2, 4, 6, 8	279	66	342	357	296	265	279	-	340	121	48	M16	110	96	14	42.5	51.5	180	27	15	2xM40x1.5	758	280	195
200L	2, 4, 6, 8	318	86	400	392	308	265	305	-	360	133	55	M20	110	96	16	49	59	200	30	19	2xM50x1.5	806	288	195
225S	4, 6, 8	356	85	450	425	330	265	286	-	370	149	60	M20	140	122	18	53	64	225	32	19	2xM50x1.5	856	325	195
225M	2	356	85	450	425	330	265	311	-	395	149	55	M20	110	96	16	49	59	225	32	19	2xM50x1.5	851	295	195
	4, 6, 8	356	85	450	425	330	265	311	-	395	149	60	M20	140	122	18	53	64	225	32	19	2xM50x1.5	881	325	195
250M	2	406	90	480	493	382	286	349	-	414	168	60	M20	140	122	18	53	64	250	24	24	2xM63x1.5	881	355	253
	4, 6, 8	406	90	480	493	382	286	349	-	414	168	65	M20	140	122	18	58	69	250	24	24	2xM63x1.5	881	355	253
280S/M	2	457	100	540	548	445	325	368	419	490	190	65	M20	140	122	18	58	69	280	42	24	2xM63x1.5	1025	362	240
	4, 6, 8	457	100	540	548	445	325	368	419	490	190	75	M20	140	122	20	67.5	79.5	280	42	24	2xM63x1.5	1025	362	240
315S	2	508	123	635	625	519	284	406	-	570	216	65	M20	140	122	18	58	69	315	43	28	2xM63x1.5	1182	394	397
	4, 6, 8	508	123	635	625	519	284	406	-	570	216	80	M20	170	150	22	71	85	315	43	28	2xM63x1.5	1212	424	397
315M/L	2	508	123	635	625	519	284	457	508	680	216	65	M20	140	122	18	58	69	315	43	28	2xM63x1.5	1292	424	397
	4, 6, 8	508	123	635	625	519	284	457	508	680	216	80	M20	170	150	22	71	85	315	43	28	2xM63x1.5	1322	424	397
355S/M	2	610	122	705	719	602	490	500	560	698	254	75	M20	140	110	20	67.5	80	355	55	28	2xM63x1.5	1394	394	401
	4, 6, 8	610	122	705	719	602	490	500	560	698	254	100	M24	210	165	28	90	106	355	55	28	2xM63x1.5	1464	464	401
355M/L	2	610	122	705	719	602	490	560	630	912	254	75	M20	140	110	20	67.5	80	355	55	28	2xM63x1.5	1615	394	401
	4, 6, 8	610	122	705	719	602	490	560	630	912	254	100	M24	210	165	28	90	106	355	55	28	2xM63x1.5	1685	464	401

Note: All dimensions in mm unless otherwise noted.

IE 2, IE3 "C" TYPE FLANGE MOUNTED (IM B14) MOTOR DIMENSIONAL DRAWING

Frame	Pole	AC	AD	AG	D	DH	E	ED	F	G	GA	KK	L	LB	LD	LL	M	N	P	S	T
71L	2, 4, 6, 8	144	110	85	14	M5	30	25	5	11	16	1x3/4"	246	216	120	85	85	70	105	M6	2.5
80L	2, 4, 6, 8	171	140	98	19	M6	40	34	6	15.5	21.5	2x3/4"	284	244	140	98	100	80	120	M6	3
90S/L	2, 4, 6, 8	178	149	98	24	M8	50	42	8	20	27	2x3/4"	333	284	169	98	115	95	140	M8	3
100L	2, 4, 6, 8	194	156	98	28	M10	60	52	8	24	31	2x3/4"	371	311	157	98	130	110	160	M8	3.5
112M	2, 4, 6, 8	218	169	98	28	M10	60	52	8	24	31	2x3/4"	398	338	160	98	130	110	160	M8	3.5
132S	2, 4, 6, 8	262	192	131	38	M12	80	68	10	33	41	2x1"	459	378	202	131	165	130	200	M12	3.5
132S/M	2, 4, 6, 8	262	192	131	38	M12	80	68	10	33	41	2x1"	497	417	202	131	165	130	200	M12	3.5
160M	2, 4, 6, 8	304	244	171	42	M16	110	96	12	37	45	2x1"	597	486	282	195	215	180	250	M12	4
160L	2, 4, 6, 8	304	244	171	42	M16	110	96	12	37	45	2x1"	637	527	282	195	215	180	250	M12	4

Note: All dimensions in mm unless otherwise noted.



"B" TYPE FLANGE MOUNTED (IM B5) MOTOR DIMENSIONAL DRAWING

IE 2, IE3

"B" TYPE FLANGE MOUNTED (IM B5) MOTOR DIMENSIONAL DRAWING

Frame	Pole	AC	AD	AG	D	DH	E	ED	F	G	GA	KK	L	LA	LB	LD	LL	M	N	P	S	T
71L	2, 4, 6, 8	144	110	85	14	M5	30	25	5	11	16	1x3/4"	246	9	216	120	85	130	110	160	10	3.5
80L	2, 4, 6, 8	171	140	98	19	M6	40	34	6	15.5	21.5	2x3/4"	284	10	244	140	98	165	130	200	12	3.5
90S/L	2, 4, 6, 8	178	149	98	24	M8	50	42	8	20	27	2x3/4"	333	10	284	169	98	165	130	200	12	3.5
100L	2, 4, 6, 8	194	156	98	28	M10	60	52	8	24	31	2x3/4"	371	11	311	157	98	215	180	250	15	4
112M	2, 4, 6, 8	218	169	98	28	M10	60	52	8	24	31	2x3/4"	398	12	338	160	98	215	180	250	15	4
132S	2, 4, 6, 8	262	192	131	38	M12	80	68	10	33	41	2x1"	459	13	378	202	131	265	230	300	15	4
132S/M	2, 4, 6, 8	262	192	131	38	M12	80	68	10	33	41	2x1"	497	13	417	202	131	265	230	300	15	4
160M	2, 4, 6, 8	304	244	171	42	M16	110	96	12	37	45	2x1"	597	13	486	282	195	300	250	350	19	5
160L	2, 4, 6, 8	304	244	171	42	M16	110	96	12	37	45	2x1"	637	13	527	282	195	300	250	350	19	5
180M	2, 4, 6, 8	357	296	265	48	M16	110	96	14	42.5	51.5	2xM40x1.5	720	18	610	280	195	300	250	350	19	5
180L	2, 4, 6, 8	357	296	265	48	M16	110	96	14	42.5	51.5	2xM40x1.5	758	18	649	280	195	300	250	350	19	5
200L	2, 4, 6, 8	392	308	265	55	M20	110	96	16	49	59	2xM50x1.5	806	16	696	288	195	350	300	400	19	5
225S	4, 6, 8	425	330	265	60	M20	140	122	18	53	64	2xM50x1.5	856	17	716	325	195	400	350	450	19	5
225M	2	425	330	265	55	M20	110	96	16	49	59	2xM50x1.5	851	17	741	295	195	400	350	450	19	5
	4, 6, 8	425	330	265	60	M20	140	122	18	53	64	2xM50x1.5	881	17	741	325	195	400	350	450	19	5
250M	2	493	382	286	60	M20	140	122	18	53	64	2xM63x1.5	881	19	741	355	253	500	450	550	19	5
	4, 6, 8	493	382	286	65	M20	140	122	18	58	69	2xM63x1.5	881	19	741	355	253	500	450	550	19	5
280S/M	2	548	445	325	65	M20	140	122	18	58	69	2xM63x1.5	1025	19	885	362	240	500	450	550	19	5
	4, 6, 8	548	445	325	75	M20	140	122	20	67.5	79.5	2xM63x1.5	1025	19	885	362	240	500	450	550	19	5
280S/M	2	548	445	325	65	M20	140	122	18	58	69	2xM63x1.5	1025	19	885	362	240	500	450	550	19	5
	4, 6, 8	548	445	325	75	M20	140	122	20	67.5	79.5	2xM63x1.5	1025	19	885	362	240	500	450	550	19	5
315S	2	625	519	284	65	M20	140	122	18	58	69	2xM63x1.5	1182	24	1042	394	397	600	550	660	24	6
	4, 6, 8	625	519	284	80	M20	170	150	22	71	85	2xM63x1.5	1212	24	1042	424	397	600	550	660	24	6
315M	2	625	519	284	65	M20	140	122	18	58	69	2xM63x1.5	1292	24	1152	394	397	600	550	660	24	6
	4, 6, 8	625	519	284	80	M20	170	150	22	71	85	2xM63x1.5	1322	24	1152	424	397	600	550	660	24	6
315L	2	625	519	284	65	M20	140	122	18	58	69	2xM63x1.5	1292	24	1152	424	397	600	550	660	24	6
	4, 6, 8	625	519	284	80	M20	170	150	22	71	85	2xM63x1.5	1322	24	1152	424	397	600	550	660	24	6
355S/M	2	719	602	490	75	M20	140	110	20	67.5	80	2xM63x1.5	1394	25	1254	394	401	740	680	800	24	6
	4, 6, 8	719	602	490	100	M24	210	165	28	90	106	2xM63x1.5	1464	25	1254	464	401	740	680	800	24	6
355M/L	2	719	602	490	75	M20	140	110	20	67.5	80	2xM63x1.5	1615	25	1475	394	401	740	680	800	24	6
	4, 6, 8	719	602	490	100	M24	210	165	28	90	106	2xM63x1.5	1685	25	1475	464	401	740	680	800	24	6

Note: All dimensions in mm unless otherwise noted.

Manufacturing Process

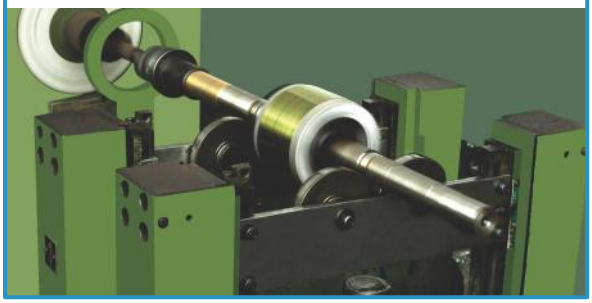
Cast Iron Foundry

Aluminum Rotor Die Casting

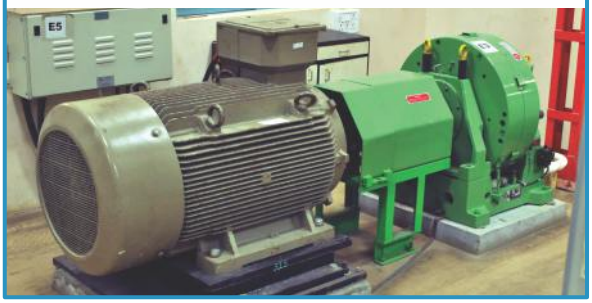
Progressive Stamping of Laminations

CNC Machining

Rotor Balancing



Dynamometer Testing



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