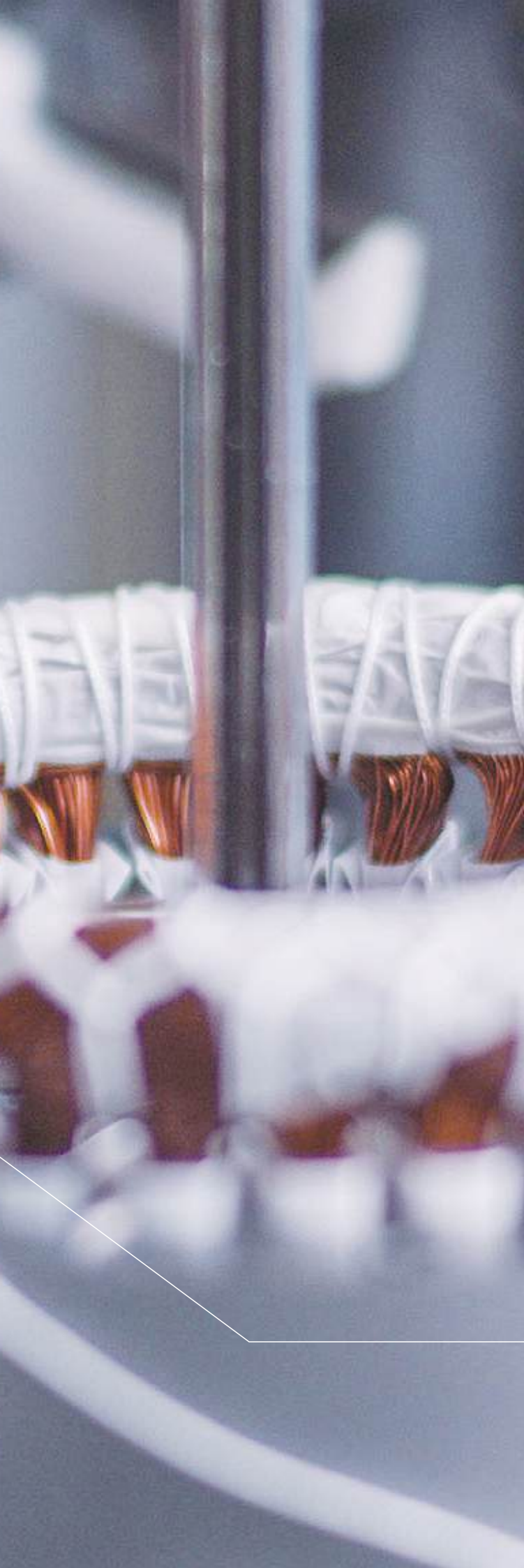




الکتروموتورهای صنعتی

Industrial Motors





Industrial Motors

الکتروموتورهای صنعتی





SPINNING YOUR WORLD

TO REPRESENT A UNIQUE EVOLUTION



الکتروژن در یک نگاه

شرکت الکتروژن به عنوان بزرگ‌ترین عرضه کننده الکتروموتورهای خانگی و صنعتی با طراحی و تولید بیش از پنجاه مدل موتور، متنوع‌ترین سبد محصول حال حاضر کشور را در اختیار کلیه مصرف‌کنندگان داخلی و خارجی قرار داده است. این شرکت در جایگاه یکی از مهم‌ترین قطب‌های صنعتی ایران از سال ۱۳۶۹ فعالیت خود را آغاز نمود و هم‌اکنون با در اختیار داشتن بیش از ۱۵۰۰ نیروی متخصص و توانمند در فضایی به وسعت ۱۶۵/۰۰۰ متر مربع، در استان تهران فعالیت می‌کند.

الکتروژن با تکیه بر ظرفیت‌های عظیم تولیدی و پیشینه‌ای درخشان در امر صادرات به کشورهای منطقه، رویکردی توسعه‌محور، عملگرا و مبتکرانه را جهت نفوذ به سایر بازارهای معتبر جهانی دنبال می‌کند.



خلاقیت مسیری رو به تحول است، ما در آن مسیر حرکت می‌کنیم!

بهبود سطح زندگی مصرف‌کنندگان از اولویت‌های هر مجموعه تولیدی‌ست و می‌تواند مقدمات رشد و تعالی آن مجموعه را فراهم کند. این مهم محقق نخواهد شد مگر با بهره‌مندی از دانش متخصصان، اجرای ایده‌های نوآورانه و تسلط بر زوایای متعدد صنعت. الکتروژن نیز با تکیه بر دستاوردهای گذشته و اهداف آتی، همواره در مسیر دستیابی به راهکارهای نوین و تولید محصولات کاربردی گام بر می‌دارد و در مسیر توسعه روزافزون در حرکت است.

Industrial Motors

الکتروموتورهای صنعتی



Certification for Laboratory Accreditation & Verification of Compliance





درباره الکتروموتورهای صنعتی

موتورهای الکتریکی از جمله محصولاتی هستند که در صنایع متفاوت نقشی اثرگذار را ایفاء می‌کنند. این محصولات با کاربردهای متعدد، ویژگی‌های عملکردی و تنظیمات خاص، تولید و در مصارف متفاوتی مانند سیستم‌های صنعتی، لوازم خانگی، تجهیزات پزشکی، محصولات الکترونیکی، ربات‌ها، خودروهای الکتریکی، ابزارهای ماشین‌کاری، فضاپیماها و تجهیزات نظامی مورد بهره‌برداری قرار می‌گیرند. الکتروموتورها به عنوان اجزاء اصلی پمپ‌ها، آسانسورها، نوارهای نقاله، جرثقیل‌ها و ... صنایع کوچک و بزرگ را به خود وابسته کرده‌اند.

در این میان موتورهای القایی با ویژگی‌های خاص و کاربردهای وسیع بهترین انتخاب برای تولیدکنندگان لوازم خانگی و صنعتی محسوب می‌شوند. هزینه ساخت پائین، ساختار محکم، قابلیت عملکرد در شرایط محیطی مختلف، عدم نیاز به تعمیرات و نگهداری ویژه از مهم‌ترین ویژگی‌هایی است که موجب شده این موتورها مورد توجه و استقبال کارخانه‌های تولیدی قرار بگیرند. این جریان توسط آمارهای ارائه شده جهانی که در زمینه فروش موتورهای القایی گردآوری و منتشر شده نیز قابل تأیید است.



Industrial Motors

الکتروموتور های صنعتی





Three-Phase Motors (Aluminium Frame)

موتورهای سه فاز فریم آلومینیوم

IEC Three-Phase Squirrel-Cage Motors

Standard Motors up to Frame Size 160

Technical Data

Aluminium Housing, Basic Version

IE1								Starting Torque	Starting Current	
Rated Output kW	Size	Type	Rated Speed rpm	Nominal Efficiency	Power Factor	Rated Current at 400v A	Rated Torque Nm	For Direct-on-Line starting as multiple of the rated		Weight Kg
								Torque	Current	
3000 rpm, 2-pole, 50 Hz, 400V										
0.18 0.25	63	34185	2805	52.8	0.79	1.08	0.60	1.7	3.4	4
		34255	2835	58.2	0.75	1.44	0.84	1.9	3.6	5
0.37 0.55	71	35375	2755	63.9	0.79	1.06	1.30	2.2	3.4	6
		35555	2750	69.0	0.79	1.46	1.90	2.2	3.7	7
0.75 1.1	80	37754	2835	72.1	0.86	1.75	2.50	2.1	5.2	9
		37115	2840	75.0	0.86	2.45	3.70	2.5	5.7	12
1.5 2.2	90	39154	2835	77.2	0.85	3.30	5.10	2.6	5.5	13
		39224	2855	79.7	0.85	4.70	7.40	2.8	6.5	15
3	100	42033	2835	81.5	0.87	6.10	10.0	3.2	6.4	20
4	112	45044	2935	83.1	0.85	8.20	13.0	3.3	8.3	25
5.5 7.5	132	48553	2910	84.7	0.88	10.7	18.0	1.8	5.7	35
		48753	2925	86.0	0.88	14.3	24.0	2.2	6.8	40
11 15 18.5	160	51113	2925	87.6	0.86	21.0	36.0	2.0	5.7	60
		51153	2935	88.7	0.85	28.5	49.0	2.4	6.8	68
		51183	2935	89.3	0.87	34.5	60.0	2.7	7.6	78
1500 rpm, 4-pole, 50 Hz, 400V										
0.12 0.18	63	41124	1360	50.0	0.71	0.85	0.84	1.6	2.5	5
		41184	1360	57.0	0.71	1.12	1.30	1.9	2.8	5
0.25 0.37	71	36254	1365	61.5	0.73	0.80	1.80	1.8	3.0	6
		36374	1350	66.0	0.75	1.08	2.70	2.0	3.2	7
0.55 0.75	80	38557	1385	70.0	0.79	1.44	3.80	2.1	3.7	10
		38754	1385	72.1	0.76	1.85	5.20	2.1	3.6	11
1.1 1.5	90	40115	1410	77.5	0.76	2.60	7.50	2.1	5.0	12
		40154	1410	77.2	0.80	3.35	10.0	2.4	4.7	15
2.2 3	100	43225	1420	80.0	0.70	5.60	15.0	2.2	5.0	18
		43035	1420	82.7	0.76	6.90	20.0	2.4	5.6	22
4	112	46045	1425	84.0	0.81	8.40	27.0	2.0	5.6	27
5.5 7.5	132	49553	1450	84.7	0.82	11.2	36.0	2.3	5.7	38
		49753	1450	86.0	0.82	15.2	49.0	2.6	6.6	44
11 15	160	52113	1460	87.6	0.81	22.5	72.0	2.7	6.9	62
		52153	1460	88.7	0.82	30.0	98.0	3.0	7.5	73

IEC Three-Phase Squirrel-Cage Motors

Standard Motors up to Frame Size 160

Technical Data

Aluminium Housing, Basic Version

IE1								Starting Torque	Starting Current	
Rated Output kW	Size	Type	Rated Speed rpm	Nominal Efficiency	Power Factor	Rated Current at 400v A	Rated Torque Nm	For Direct-on-Line starting as multiple of the rated		Weight Kg
								Torque	Current	
1000 rpm, 6-pole, 50 Hz, 400V										
0.09	63	41093	895	42.7	0.63	0.84	1.3	1.8	2.0	4
0.18 0.25	71	36183 36256	800 860	45.5 52.1	0.67 0.71	0.84 0.98	2.2 2.8	1.9 2.0	2.0 2.2	5 6
0.37 0.55	80	38375 38556	915 900	59.7 65.8	0.70 0.72	1.23 1.68	3.9 5.8	1.6 1.7	2.7 2.7	9 12
0.75 1.1	90	89753 89113	940 925	70.0 72.9	0.67 0.69	2.30 3.15	7.6 11	2.0 2.2	3.8 3.8	13 15
1.5	100	44153	940	75.2	0.74	3.90	15	2.0	4.0	19
2.2	112	47224	940	77.7	0.72	5.70	22	2.6	4.6	25
3 4 5.5	132	50033 50043 50553	955 955 955	79.7 81.4 83.1	0.74 0.76 0.75	7.30 9.30 12.7	30 40 55	2.0 2.3 2.7	4.6 5.2 5.7	34 39 48
7.5 11	160	53753 53113	970 965	84.7 86.4	0.73 0.77	17.5 24.0	74 109	2.1 1.9	5.5 5.9	72 92

IEC Three-Phase Squirrel-Cage Motors

Standard Motors up to Frame Size 160

Technical Data

Aluminium Housing, Basic Version

IE2	Size	Type	Rated Speed rpm	Nominal Efficiency	Power Factor	Rated Current at 400v A	Rated Torque Nm	Starting Torque	Starting Current	Weight Kg	
Rated Output kW								For Direct-on-Line starting as multiple of the rated			
								Torque	Current		
3000 rpm, 2-pole, 50 Hz, 400V											
0.18 0.25	63	34184 34254	2850 2835	60.4 64.8	0.78 0.81	0.55 0.69	0.60 0.80	2.2 1.9	4.5 4.1	4 5	
0.37 0.55		71	35374 35554	2770 2780	69.5 74.1	0.81 0.80	0.95 1.34	1.28 1.89	2.5 2.6	4.1 4.6	6 7
0.75 1.1	80		37753 37114	2830 2835	77.4 79.6	0.74 0.83	1.90 2.40	2.60 3.70	3.4 2.7	5.8 6.0	9 11
1.5 2.2		90	39153 39223	2860 2830	81.3 83.5	0.82 0.85	3.30 4.60	5.10 7.50	2.3 2.3	4.8 5.2	13 15
3 4	100		42034	2905	84.6	0.84	6.10	9.90	2.3	7.0	20
	112	45043	2910	85.8	0.83	8.20	13.0	2.0	6.1	27	
5.5 7.5	132	48555 48755	2930 2930	87.0 88.1	0.87 0.85	10.5 14.2	18.0 24.0	2.7 2.5	7.6 7.3	40 43	
11 15 18.5		160	51115 51155 51185	2945 2945 2945	89.4 90.3 90.9	0.85 0.88 0.90	21.0 27.5 34.0	36.0 49.0 60.0	2.6 2.4 3.0	7.6 7.8 8.3	67 75 85
1500 rpm, 4-pole, 50 Hz, 400V											
0.12 0.18	63		41123 41183	1350 1335	59.1 64.7	0.60 0.65	0.52 0.70	0.86 1.30	3.0 2.7	3.0 3.1	5 5
0.25 0.37		71	36253 36373	1380 1390	68.5 72.7	0.70 0.65	0.78 1.25	1.70 2.60	2.4 2.4	3.6 3.5	6 7
0.55 0.75	80		38553 38753	1410 1420	77.1 79.6	0.67 0.73	1.60 1.80	3.80 5.00	2.2 2.2	3.7 5.2	10 11
1.1 1.5		90	40114 40153	1425 1410	81.4 82.8	0.78 0.74	2.50 3.70	7.40 10.0	2.3 2.6	5.0 5.1	13 16
2.2 3	100		43224 43034	1455 1455	84.3 85.5	0.81 0.82	4.65 6.20	14.0 20.0	2.1 2.0	6.9 6.9	21 25
4		112	46044	1460	86.6	0.81	8.20	26.0	2.5	7.1	29
5.5 7.5	132	49555 49755	1450 1450	88.0 88.7	0.76 0.80	11.5 15.0	36.0 49.0	2.0 2.1	5.3 5.6	42 49	
11 15		160	52115 52155	1460 1460	89.5 90.6	0.88 0.90	20.8 27.0	71.0 97.0	2.2 2.2	5.7 5.9	71 83

IEC Three-Phase Squirrel-Cage Motors

Standard Motors up to Frame Size 160

Technical Data

Aluminium Housing. Basic Version

IE2								Starting Torque	Starting Current	
Rated Output kW	Size	Type	Rated Speed rpm	Nominal Efficiency	Power Factor	Rated Current at 400v A	Rated Torque Nm	For Direct-on-Line starting as multiple of the rated		Weight Kg
								Torque	Current	
1000 rpm, 6-pole, 50 Hz, 400V										
0.37 0.55	80	38374 38554	925 925	67.6 73.1	0.69 0.63	1.14 1.80	3.8 5.6	2.1 2.1	4.0 3.5	10 12
0.75 1.1	90	89754 89114	935 935	75.9 78.1	0.70 0.70	2.05 2.90	7.7 11	2.0 2.2	4.1 4.4	13 16
1.5	100	44154	945	79.8	0.67	4.2	15	2.0	4.1	25
2.2	112	47225	945	81.8	0.63	6.60	22	2.5	4.4	29
3 4 5.5	132	50034 50045 50555	970 955 955	83.3 84.6 86.0	0.72 0.66 0.68	7.20 10.5 13.5	30 40 55	1.6 1.6 1.9	5.0 4.4 4.4	38 50 57
7.5 11	160	53755 53115	960 950	87.2 88.7	0.77 0.82	16.0 22.5	75 110	1.9 1.6	5.3 5.1	77 93

IEC Three-Phase Squirrel-Cage Motors

Standard Motors up to Frame Size 160

Technical Data

Aluminium Housing, Basic Version

IE3								Starting Torque	Starting Current	
Rated Output kW	Size	Type	Rated Speed rpm	Nominal Efficiency	Power Factor	Rated Current at 400v A	Rated Torque Nm	For Direct-on-Line starting as multiple of the rated		Weight Kg
								Torque	Current	
3000 rpm, 2-pole, 50 Hz, 400V										
0.18 0.25	63	34183 34253	2780 2770	65.9 69.7	0.65 0.74	0.60 0.72	0.63 0.86	3.5 3.3	4.5 4.7	4 5
0.37 0.55	71	35373 35553	2800 2800	73.8 77.8	0.80 0.70	1.00 1.50	1.30 1.90	3.0 3.2	4.8 5.6	6 7
0.75 1.1	80	37755 37113	2850 2860	80.7 82.7	0.86 0.69	1.56 2.90	2.50 3.60	2.6 3.8	6.2 6.5	11 12
1.5 2.2	90	39155 39225	2910 2910	84.2 85.9	0.86 0.88	3.00 4.20	4.90 7.20	2.7 2.6	8.1 8.3	15 20
3 4	100	42035 45045	2900 2945	87.1 88.1	0.81 0.89	6.50 7.40	9.80 13.0	3.2 2.5	8.1 9.1	26 35
5.5 7.5	132	48554 48754	2945 2950	89.2 90.1	0.88 0.92	9.90 13.1	18.0 24.5	2.5 1.9	8.9 8.3	43 57
11 15 18.5	160	51114 51154 51184	2955 2955 2955	91.2 91.9 92.4	0.89 0.86 0.90	19.6 27.0 32.0	35.5 48.0 60.0	2.4 3.5 2.8	7.9 10 9.0	75 85 95
1500 rpm, 4-pole, 50 Hz, 400V										
0.12 0.18	63	41125 41185	1425 1380	64.8 69.9	0.71 0.72	0.38 0.52	0.81 1.25	2.3 2.2	4.4 4.6	6 7
0.25 0.37	71	36255 36375	1390 1380	74.2 77.3	0.65 0.70	0.74 1.00	1.70 2.60	2.6 2.8	3.9 4.3	7 8
0.55 0.75	80	38555 38755	1430 1450	81.3 82.5	0.68 0.75	1.50 1.75	3.60 4.9	2.8 2.7	5.3 7.1	11 15
1.1 1.5	90	40113 40155	1440 1445	84.1 85.3	0.78 0.80	2.40 3.15	7.30 9.90	2.9 2.9	6.9 7.3	16 20
2.2 3	100	43223 43033	1445 1450	86.7 87.7	0.67 0.80	5.50 6.20	14.3 20.0	2.5 3.1	6.0 8.0	30 30
4	112	46043	1460	88.6	0.82	7.90	26.0	2.4	7.1	35
5.5 7.5	132	49554 49754	1465 1465	89.6 90.4	0.78 0.80	11.5 15.0	36.0 49.0	2.3 3.0	6.6 8.1	65 65
11 15	160	52114 52154	1470 1465	91.4 92.1	0.82 0.83	20.5 28.5	71.0 97.0	2.5 2.8	8.0 7.9	83 100

IEC Three-Phase Squirrel-Cage Motors

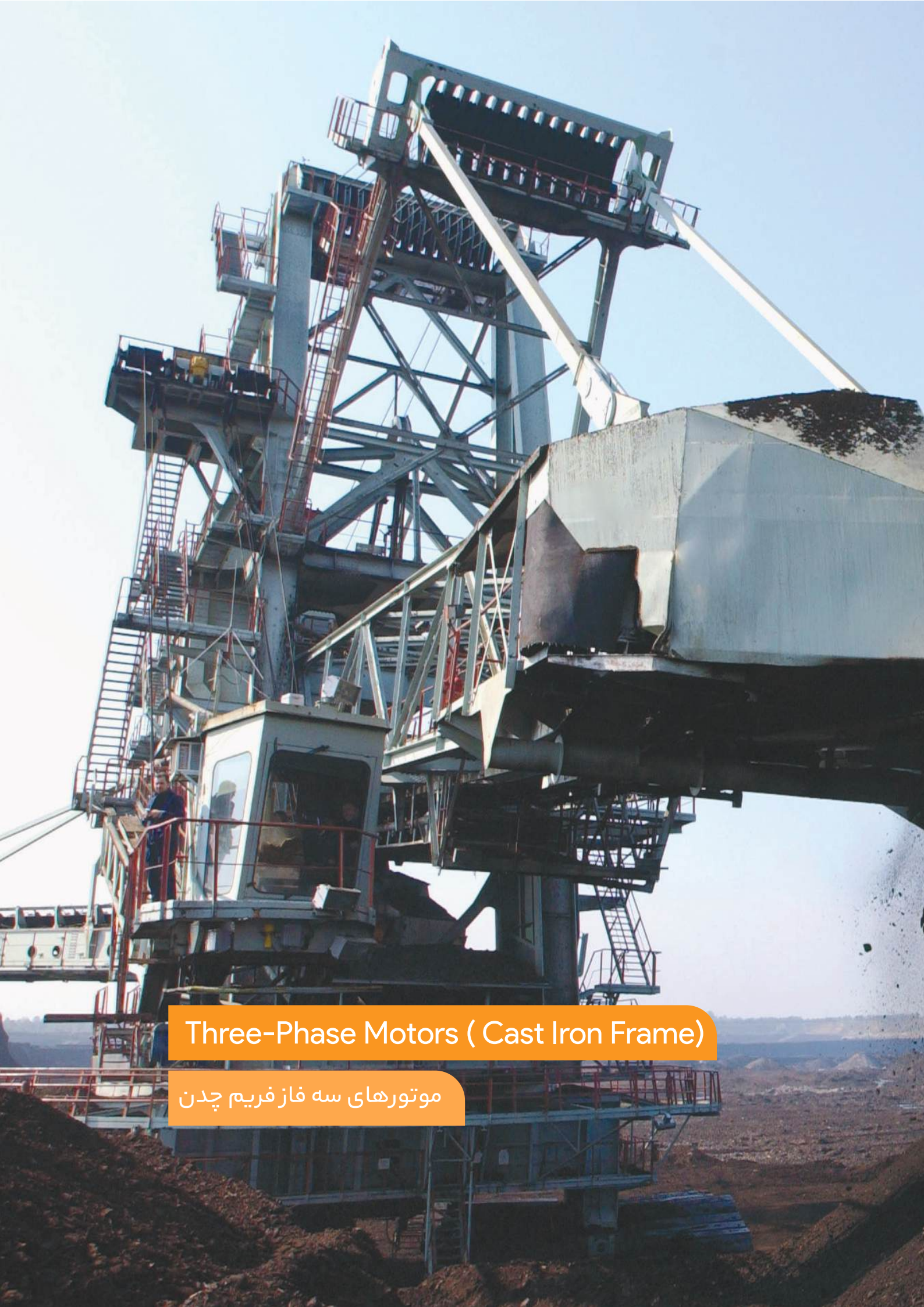
Standard Motors up to Frame Size 160

Technical Data

Aluminium Housing, Basic Version

IE3								Starting Torque	Starting Current	
Rated Output kW	Size	Type	Rated Speed rpm	Nominal Efficiency	Power Factor	Rated Current at 400v A	Rated Torque Nm	For Direct-on-Line starting as multiple of the rated		Weight Kg
								Torque	Current	
1000 rpm, 6-pole, 50 Hz, 400V										
0.37 0.55	80	38373 38558	935 935	73.5 77.2	0.64 0.67	1.15 1.53	3.8 5.6	1.9 2.5	3.5 4.5	12 15
0.75 1.1		90	89755 89115	945 950	78.9 81.0	0.70 0.66	1.96 2.95	7.6 11	2.2 2.8	4.6 5.0
1.5	100		44155	970	82.5	0.73	3.60	14.8	1.9	5.2
2.2	112	47224	970	84.3	0.75	5.00	22	2.2	5.6	34
3 4 5.5	132	50035	960	85.6	0.66	7.70	29	1.7	4.3	42
		50044	975	86.8	0.73	9.10	39	2.2	6.2	46
		50554	975	88.0	0.72	12.5	54	2.7	6.8	58
7.5 11	160	53754	985	89.1	0.81	15.0	73	2.3	7.9	95
		53114	980	90.3	0.80	22.0	107	2.9	6.8	105





Three-Phase Motors (Cast Iron Frame)

موتورهای سه فاز فریم چدن

IEC Three-Phase Squirrel-Cage Motors

Standard Motors Frame Size 180 to 315

Technical Data

Cast Iron Housing, Basic Version

IE1								Starting Torque	Starting Current	
Rated Output kW	Size	Type	Rated Speed rpm	Nominal Efficiency	Power Factor	Rated Current at 400v A	Rated Torque Nm	For Direct-on-Line starting as multiple of the rated		Weight Kg
								Torque	Current	
3000 rpm, 2-pole, 50 Hz, 400V										
22	180	56223	2945	89.9	0.87	40.5	71.0	2.5	7.7	150
30	200	59305	2950	90.7	0.83	58.0	97.0	2.5	7.3	195
37		59373	2955	91.2	0.88	67.0	120	2.7	8.2	230
45	225	62453	2960	91.7	0.88	80.0	145	2.3	6.7	280
55	250	65553	2970	92.1	0.88	98.0	177	2.0	6.7	360
75	280	68755	2965	92.7	0.88	135	241	2.2	6.8	500
90		68903	2975	93.0	0.88	159	289	2.5	7.1	530
110	315 S	71113	2982	93.3	0.86	198	352	2.3	7.5	680
132	315 M	71133	2982	93.5	0.89	230	423	2.3	7.6	740
160	315 L	71163	2982	93.8	0.91	270	512	2.3	7.4	880
200		71203	2982	94.0	0.92	335	640	2.2	7.1	1000
1500 rpm, 4-pole, 50 Hz, 400V										
18.5	180	57185	1470	89.3	0.80	36.0	120	2.2	7.3	160
22		57225	1465	89.9	0.84	41.0	143	2.7	8.0	170
30	200	60303	1472	90.7	0.83	58.0	195	2.3	6.9	220
37	225	63373	1475	91.2	0.85	69.0	240	2.3	7.0	260
45		63455	1475	91.7	0.86	81.0	291	2.6	7.2	300
55	250	66555	1470	92.1	0.82	101	356	2.4	6.1	390
75	280	69753	1485	92.7	0.85	137	482	2.3	7.0	500
90		69903	1482	93.0	0.87	161	580	2.2	6.5	560
110	315 S	72113	1488	93.3	0.84	205	706	2.3	6.5	690
132	315 M	72133	1488	93.5	0.85	240	847	2.5	6.8	760
160	315 L	72163	1486	93.8	0.86	285	1028	2.7	7.2	940
200		72203	1486	94.0	0.87	355	1285	2.5	6.9	1140

IEC Three-Phase Squirrel-Cage Motors

Standard Motors Frame Size 180 to 315

Technical Data

Cast Iron Housing. Basic Version

IE1	Size	Type	Rated Speed rpm	Nominal Efficiency	Power Factor	Rated Current at 400v A	Rated Torque Nm	Starting Torque	Starting Current	Weight Kg
Rated Output kW								For Direct-on-Line starting as multiple of the rated		
								Torque	Current	
1000 rpm, 6-pole, 50 Hz, 400V										
15	180	58153	975	87.7	0.77	32.0	147	2.3	6.1	155
18.5	200	61183	978	88.6	0.79	38.0	181	2.5	6.3	200
22		61223	980	89.2	0.79	45.0	214	2.8	6.8	220
30	225	64303	978	90.2	0.82	59.0	293	2.7	6.0	270
37	250	67373	980	90.8	0.82	72.0	361	2.7	6.0	330
45	280	70453	986	91.4	0.84	85.0	436	2.6	7.0	440
55		70553	986	91.9	0.85	102	533	2.6	6.7	500
75	315S	73753	988	92.6	0.83	141	725	2.5	7.1	660
90	315M	73903	988	92.9	0.83	168	870	2.6	7.3	740
110	315L	73113	988	93.3	0.86	198	1063	2.6	6.8	880
132		73133	986	93.5	0.86	235	1276	3.0	7.5	1030
160		73163	986	93.8	0.86	285	1546	3.1	7.7	1160

IEC Three-Phase Squirrel-Cage Motors

Standard Motors Frame Size 180 to 315

Technical Data

Cast Iron Housing, Basic Version

IE2								Starting Torque	Starting Current	
Rated Output kW	Size	Type	Rated Speed rpm	Nominal Efficiency	Power Factor	Rated Current at 400v A	Rated Torque Nm	For Direct-on-Line starting as multiple of the rated		Weight Kg
								Torque	Current	
3000 rpm , 2-pole, 50 Hz, 400V										
22	180	56225	2940	91.3	0.85	41.0	71.0	2.7	7.4	145
30	200	59304	2960	92.0	0.87	54.0	97.0	2.5	6.9	200
37		59374	2960	92.5	0.88	66.0	119	2.7	7.4	225
45	225	62455	2955	92.9	0.85	83.0	145	2.7	7.8	295
55	250	65554	2970	93.2	0.88	97.0	177	2.3	6.8	360
75	280	68754	2978	93.8	0.86	134	240	2.5	7.2	490
90		68905	2970	94.2	0.87	155	289	2.5	7.1	530
110	315S	71114	2982	94.3	0.90	187	352	2.4	7.3	720
132	315M	71134	2982	94.6	0.91	220	423	2.4	7.2	880
160	315L	71164	2982	94.8	0.91	265	512	2.3	7.0	930
200		71204	2982	95.0	0.92	330	640	2.5	7.3	1130
1500 rpm , 4-pole, 50 Hz, 400V										
18.5	180	57184	1465	91.2	0.84	35.0	121	2.5	7.2	160
22		57224	1465	91.6	0.84	41.5	143	2.6	7.3	170
30	200	60305	1460	92.3	0.87	56.0	195	2.5	6.7	230
37	225	63375	1470	92.7	0.87	68.0	240	2.3	6.6	280
45		63454	1475	93.1	0.82	85.0	291	2.5	6.9	305
55	250	66554	1480	93.5	0.85	100	355	2.7	6.8	385
75	280	69755	1480	94.0	0.85	137	482	2.5	6.8	550
90		69905	1483	94.2	0.85	163	578	2.6	7.3	570
110	315S	72114	1490	94.5	0.86	195	705	2.7	7.4	740
132	315M	72135	1490	94.7	0.87	230	846	2.7	7.1	870
160	315L	72164	1490	94.9	0.87	280	1025	2.8	7.2	940
200		72204	1490	95.1	0.87	350	1282	2.1	7.5	1140

IEC Three-Phase Squirrel-Cage Motors

Standard Motors Frame Size 180 to 315

Technical Data

Cast Iron Housing. Basic Version

IE2	Size	Type	Rated Speed rpm	Nominal Efficiency	Power Factor	Rated Current at 400v A	Rated Torque Nm	Starting Torque	Starting Current	Weight Kg
Rated Output kW								For Direct-on-Line starting as multiple of the rated		
								Torque	Current	
1000 rpm, 6-pole, 50 Hz, 400V										
15	180	58154	975	89.7	0.78	31.0	147	2.5	6.0	155
18.5	200	61184	978	90.4	0.82	36.0	181	2.4	5.8	200
22		61224	978	90.9	0.82	42.5	215	2.5	6.2	220
30	225	64304	980	91.7	0.83	57.0	292	2.5	5.6	300
37	250	67374	982	92.2	0.83	70.0	360	2.8	6.0	370
45	280	70454	985	92.7	0.84	83.0	436	2.7	6.3	460
55		70554	986	93.1	0.86	99	533	2.5	6.4	510
75	315S	73754	988	93.7	0.84	138	725	2.5	6.7	660
90	315M	73904	988	94.0	0.84	165	870	2.6	6.9	730
110	315L	73114	988	94.3	0.86	196	1063	2.7	7.0	940
132		73134	988	94.6	0.86	235	1276	3.0	7.5	990
160		73164	988	94.8	0.86	285	1546	3.1	7.7	1160

IEC Three-Phase Squirrel-Cage Motors

Standard Motors Frame Size 180 to 315

Technical Data

Cast Iron Housing, Basic Version

IE3								Starting Torque	Starting Current	
Rated Output kW	Size	Type	Rated Speed rpm	Nominal Efficiency	Power Factor	Rated Current at 400v A	Rated Torque Nm	For Direct-on-Line starting as multiple of the rated		Weight Kg
								Torque	Current	
3000 rpm, 2-pole, 50 Hz, 400V										
22	180	56224	2950	92.7	0.89	38.5	71.0	2.3	7.5	160
30 37	200	59303	2955	93.3	0.87	53.0	97.0	2.5	7.0	225
		59376	2955	93.7	0.88	65.0	120	2.5	7.1	250
45	225	62454	2960	94.0	0.89	78.0	145	2.4	6.9	315
55	250	65555	2970	94.3	0.86	99.0	177	2.3	6.7	385
75 90	280	68753	2975	94.7	0.89	128	241	2.4	6.8	510
		68904	2975	95.0	0.90	152	289	2.4	7.2	590
110	315S	71115	2982	95.2	0.91	183	352	2.4	7.1	750
132	315M	71135	2982	95.4	0.91	220	423	2.5	7.2	880
160 200	315L	71165	2982	95.6	0.92	265	512	2.8	7.8	980
		71205	2982	95.8	0.92	330	640	2.5	7.2	1150
1500 rpm, 4-pole, 50 Hz, 400V										
18.5 22	180	57183	1470	92.6	0.82	35.0	120	2.5	7.2	165
		57223	1470	93.0	0.83	41.0	143	2.3	6.8	170
30	200	60304	1470	93.6	0.84	55.0	195	2.6	7.3	240
37 45	225	63374	1478	93.9	0.86	66.0	239	2.5	6.4	285
		63453	1478	94.2	0.86	80.0	291	2.6	6.6	340
55	250	66553	1482	94.6	0.87	96	354	2.5	6.8	420
75 90	280	69754	1485	95.0	0.86	133	482	2.5	6.9	570
		69904	1485	95.2	0.87	157	579	2.6	7.2	670
110	315S	72115	1486	95.4	0.83	202	706	2.6	6.8	760
132	315M	72134	1485	95.6	0.85	230	846	2.8	7.3	960
160	315L	72165	1488	95.8	0.88	275	1025	2.9	7.3	990
200		72205	1487	96.0	0.86	350	1284	3.2	7.4	1190
250		72255	1483	96.0	0.86	435	1610	2.8	7.9	1250

IEC Three-Phase Squirrel-Cage Motors

Standard Motors Frame Size 180 to 315

Technical Data

Cast Iron Housing. Basic Version

IE3	Size	Type	Rated Speed rpm	Nominal Efficiency	Power Factor	Rated Current at 400v A	Rated Torque Nm	Starting Torque	Starting Current	Weight Kg
Rated Output kW								For Direct-on-Line starting as multiple of the rated		
								Torque	Current	
1000 rpm, 6-pole, 50 Hz, 400V										
15	180	58155	975	91.2	0.80	29.5	147	2.3	5.9	180
18.5	200	61185	978	91.7	0.79	37.0	181	2.5	5.6	215
22		61225	978	92.2	0.79	43.5	215	2.5	5.6	230
30	225	64305	982	92.9	0.83	56.0	292	2.6	6.6	325
37	250	67375	985	93.3	0.85	67.0	359	2.7	7.0	405
45	280	70455	988	93.7	0.85	82.0	435	3.0	6.8	510
55		70555	986	94.1	0.85	99.0	532	3.3	7.2	560
75	315S	73755	990	94.6	0.84	136	723	2.6	7.5	750
90	315M	73905	991	94.9	0.85	161	867	2.5	6.7	890
110	315L	73115	991	95.1	0.84	199	1060	2.8	7.2	990
132		73135	992	95.4	0.82	245	1271	3.3	8.0	1130
160		73165	992	95.6	0.86	295	1540	3.5	8.5	1260





Three-Phase Electrical Motors (Dimensional Specification)

اطلاعات ابعادی موتورهای سه فاز

IEC Three-Phase Squirrel-Cage Motors

Foot-Mounted Motor, IMB3

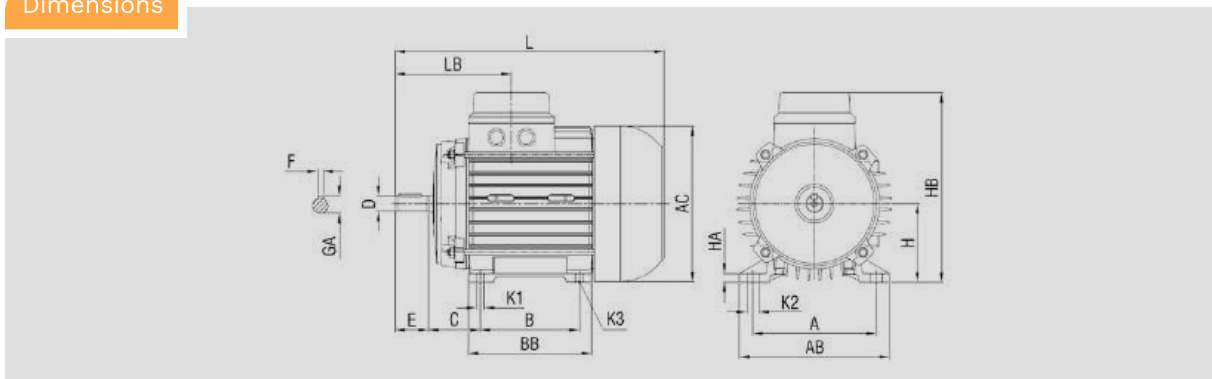
Aluminium Housing

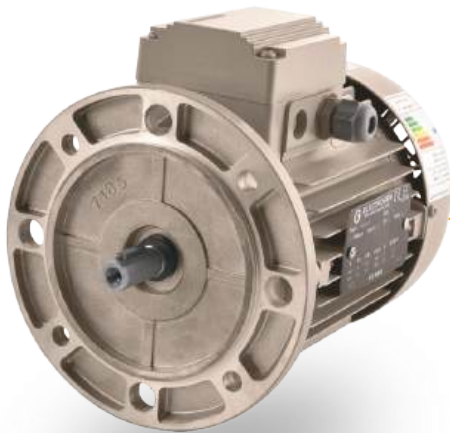


Technical Data

Frame Size	No. of Poles	Dimension drawing according to IEC																	
		H	B	A	C	K1	K2	K3	D	E	F	GA	HA	BB	AB	AC	HB	LB	L
63	2-8	63	80	100	40	7	12	M6	11	23	4	12.5	7	101	120	124	157	91.5	208
71		71	90	112	47				14	30	5	16	11	108	136	141	176	105	244
80		80	100	125	50	9	16.5	M8	19	40	6	21.5	12	125	150	159	203	118	273
90		90	125	140	56	10	17.5		24	50	8	27	15	155	174	176	216	133	327
100		100	140	160	63	12	21	M10	28	60		31	16	175	193	194	238	148	402
112		112		190	70				38	80	10			176	233	218	260	154	432
132		132	178	216	89	12	22	M12	38	80	10	41	23	218	262	259	327	193	532
160		160	254	254	108	12.5	23		42	110	12	45		302	318	313	388	264	620

Dimensions





IEC Three-Phase Squirrel-Cage Motors

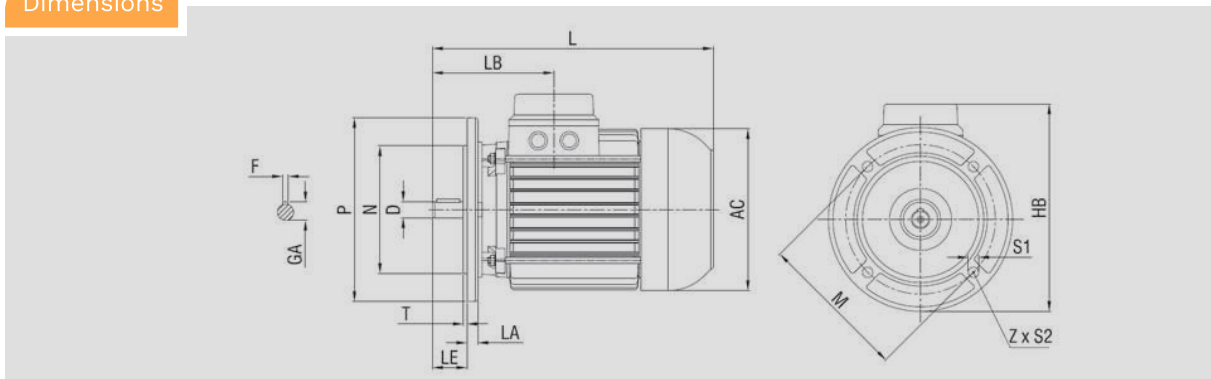
Flange-Mounted Motor, IMB5

Aluminium Housing

Technical Data

Frame Size	No. of Poles	Dimension drawing according to IEC																
		P	N	M	LA	T	D	LE	F	GA	AC	HB	Z	S1	S2	LB	L	
63	2-8	140	95	115	11	3	11	23	4	12.5	124	164	4	9	M8	91.5	208	
71		160	110	130	9	3.5	14	30	5	16	141	185				105	244	
80		200	130	165	11		19	40	6	21.5	159	223		12	M10	118	273	
90						24	50	8	27	176	226	133				327		
100		250	180	215	15	4	28		60	8	31	194		262	13	M12	148	402
112								218				272		154			432	
132		299	230	265	17	5	38	80	10	41	259	346		14.5			193	532
160		350	250	300	19													
														17	M16	264	620	

Dimensions



IEC Three-Phase Squirrel-Cage Motors Foot and Flange-Mounted Motor, IMB35

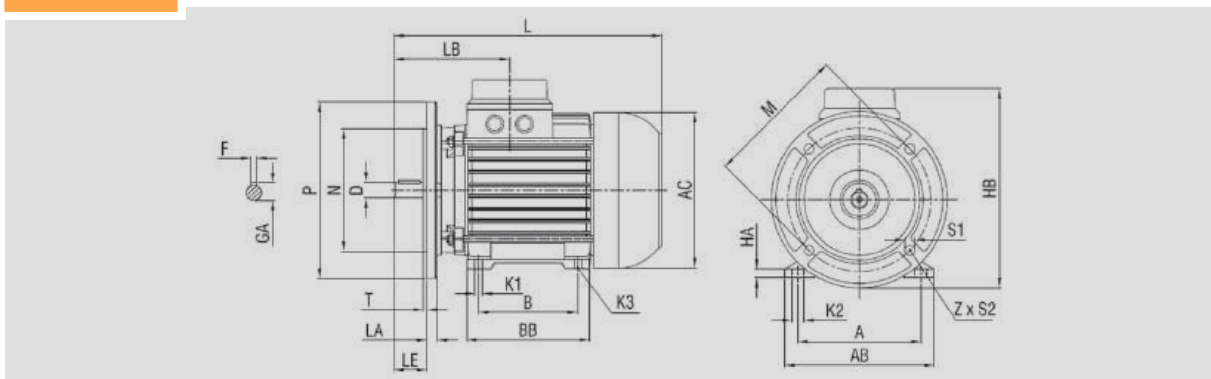
Aluminium Housing



Technical Data

Frame Size	No. of Poles	Dimension drawing according to IEC																							
		P	N	M	LA	T	D	LE	F	GA	AC	HB	Z	S1	S2	LB	L	B	A	K1	K2	K3	HA	BB	AB
63	2-8	140	95	115	11	3	11	23	4	12.5	124	164	4	9	M8	91.5	208	80	100	7	12	M6	7	101	120
71		160	110	130	9	3.5	14	30	5	16	141	185				105	244	90	112				11	108	136
80		200	130	165	11		19	40	6	21.5	159	223		12	M10	118	273	100	125	9	16.5	M8	12	125	150
90						24	50	8	27	176	226	133				327	125	140	10	17.5	15		155	174	
100		250	180	215	15	4	28		60	31	194	262		13	M12	148	402	140	160	12	21	M10	16	175	193
112							218	272	154		432	190				176	233								
132		299	230	265	17	38	80	10	41	259	346	14.5			193	532	178	216	12	22			218	262	
160		350	250	300	19	5	42	110	12	45	313	404		17	M16	264	620	254	254	12.5	23	M12	23	302	318

Dimensions





IEC Three-Phase Squirrel-Cage Motors

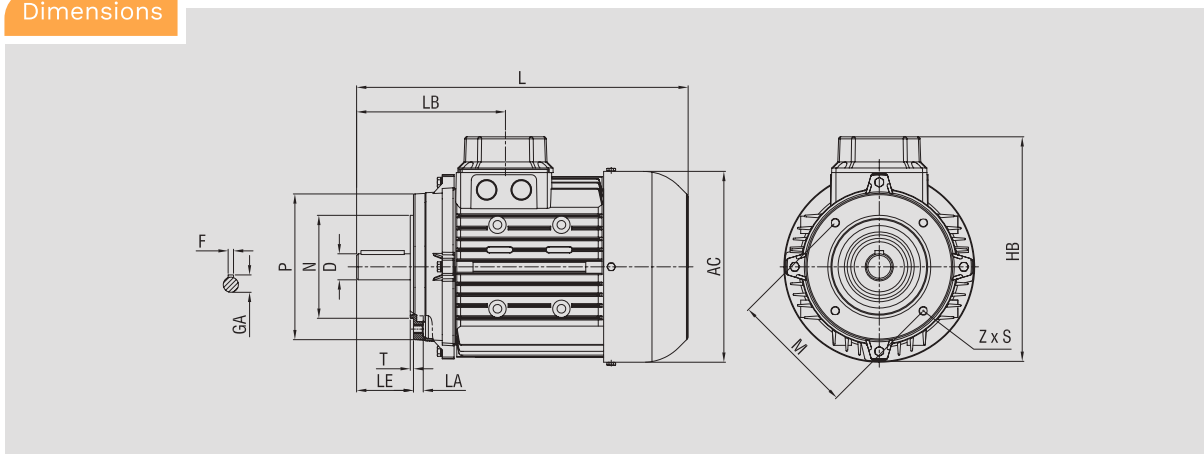
Flange-Mounted Motor, IMB14

Aluminium Housing

Technical Data

Frame Size	Housing Material		No. of Poles	Dimension drawing according to IEC														
	Cast Aluminium	Cast Iron		P	N	M	LA	T	D	LE	AC	HB	L	LB	Z	S	F	GA
63	Yes	No	2-8	90	60	75	9.5	2.5	11	23	124	156	208	91.5	4	M6	4	12.5
71				106	70	85		3	14	30	141	174	244	105			5	16
80				119	80	100	9		19	40	159	203	273	118			6	21.5
90				135	95	115			24	50	176	215	327	133		M8	8	27
100				160	110	130	16.5	3.5	28	60	194	235	402	148				31
112											218	257	432	154				

Dimensions



IEC Three-Phase Squirrel-Cage Motors Foot and Flange-Mounted Motor, IMB34

Aluminium Housing

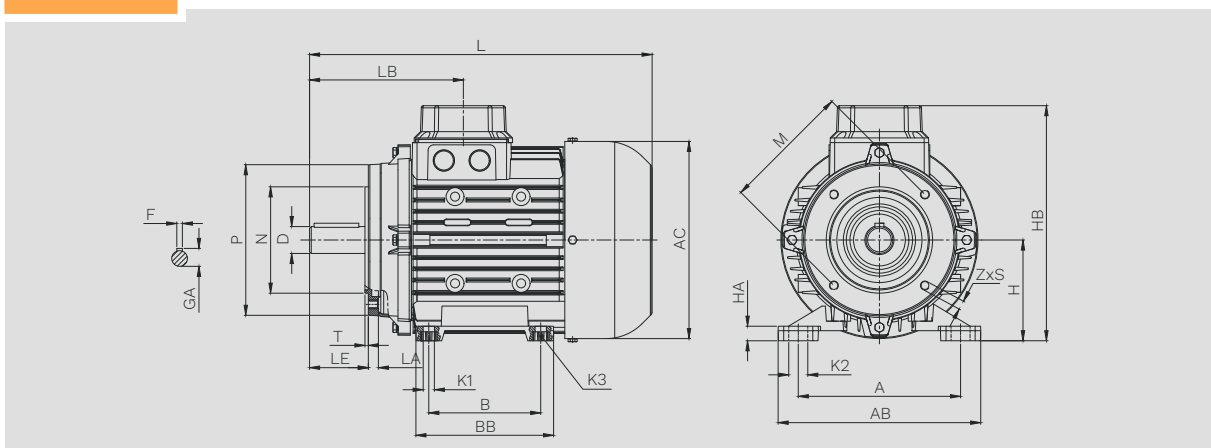


Technical Data

Dimension drawing according to IEC

Frame Size	No. of Poles	Dimension drawing according to IEC																									
		P	N	M	LA	T	D	LE	F	GA	AC	HB	Z	S	LB	L	B	A	K1	K2	K3	HA	BB	AB			
63	2-8	90	60	75	9.5	2.5	11	23	4	12.5	124	157	4	M6	91.5	208	80	100	7	12	M6	7	101	120			
71		106	70	85		3	14	30	5	16	141	176			105	244	90	112				11	108	136			
80		119	80	100	9		19	40	6	21.5	159	203			118	273	100	125	9	16.5	M8	12	125	150			
90		135	95	115			24	50	8	27	176	216		M8	133	327	125	140	10	17.5		15	155	174			
100		160	110	130			16.5	3.5		28	60	8			31	194	238	148	402	140	160	12	21	M10	16	175	193
112																218	260	154	432		190		176			233	

Dimensions



IEC Three-Phase Squirrel-Cage Motors

Foot-Mounted Motor, IMB3

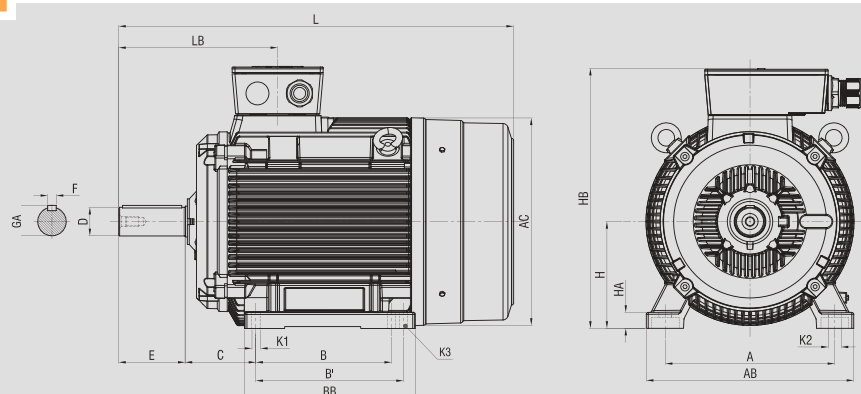
Cast Iron Housing



Technical Data

Frame Size	No. of Poles	Dimension drawing according to IEC																						
		H	B	B`	A	C	K1	K2	K3	D	E	F	GA	HA	BB	AB	AC	HB	LB	L				
160	2-8	160	254	-	254	108	12.5	23	M12	42	110	12	45	23	302	318	313	388	264	620				
180		180	239	279	279	121	14	19		48		14	51.5	19	328	344	355	438	268	668				
200		200	305	-	318	133	18	26	M16	55		16	59	27	355	377	395	500	307	728				
225	2 4-8	225	286	311	357	149	19	27		60	140	18	64	34	357	437	438	548	304 334	802 836				
250	2 4	250	349	-	405	168	24	30	M20	65				69	40	408	486	489	644	373	881			
280	2 4	280	368	419	460	190				75		20	79.5			479	546	547	725	350	960			
315 S	2 4	315	406	457	508	216	28	35	M24	65 80	140 170	18 22	69 85	50	547	610	616	828	378 408	1063 1093				
315 M	2 4		457	508						80 170	22 85	596	408		1254									
315 L	2 4									65 80	140 170	18 22	69 85		630				378 408	1380 1410				

Dimensions





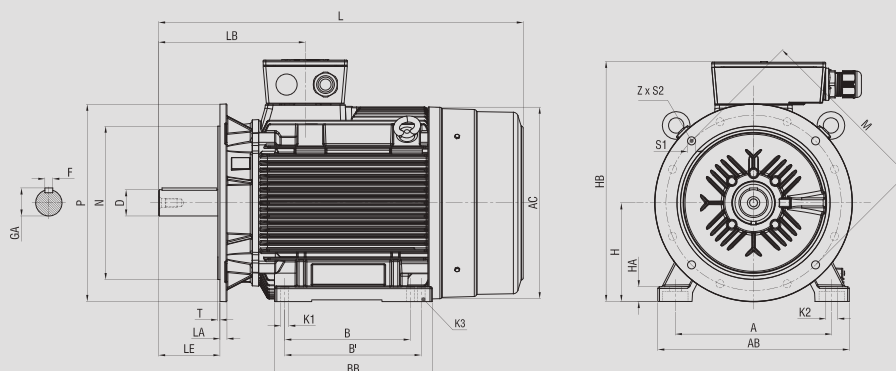
IEC Three-Phase Squirrel-Cage Motors Foot and Flange-Mounted Motor, IMB35

Cast Iron Housing

Technical Data

Frame Size	No. of Poles	Dimension drawing according to IEC																																		
		P	N	M	LA	T	D	LE	F	GA	AC	HB	Z	S1	S2	LB	L	B	B`	A	K1	K2	K3	HA	BB	AB										
160	2-8	350	250	300	19	5	42	110	12	45	313	404	4	17	18.5	M16	264	620	254	-	254	12.5	23	M12	23	302	318									
180		400	300	350	13		48		14	51.5	355	438		268			664	239	279	279	14	19	19		328	344										
200		450	350	400	15		55		16	59	395	500		307			728	305	-	318	18	26	M16	27	355	377										
225	2 4-8	450	350	400	16		60	140	18	64	438	548	8	18.5			304 334	802 836	286	311	357	19		27	M16	34	357	437								
250	2 4	550	450	500	18		65		69	489	644	373					881	349	-	405	24	30	M20	40		408	486									
280	2 4						75		20	79.5	547	725					350	960	368	419					460	479	546									
315 S	2 4	660	550	600	23	6	65	140	18	69	616	828	8	24	M20	378	1063	406	457	508	28	35	M24	50	547	610										
	26				80		170	22	85	408						1093	596																			
315 M	2 4				23		65	140	18	69						616	828	8	24						M20		378	1224	457	508	508	28	35	M24	50	596
	2				26		80	170	22	85						408	1254	630																		
315 L	4				23		65	140	18	69						616	828	8	24						M20		378	1380								408

Dimensions







Single-Phase Motors

موتورهای تک فاز تک خازنه و دو خازنه

IEC Single-Phase Capacitor Run Motors

Standard Motors up to Frame Size 100

Technical Data

Aluminium Housing, Basic Version

Rated Output kW	Size	Type	Rated Speed rpm	Nominal Efficiency %	Power Factor	Rated Current at 220 V A	Rated Torque Nm	Starting Torque	Starting Current	Capacitor	Capacitor Voltage	Efficiency Class
								For Direct-on-Line starting as multiple of the rated				
								Torque	Current			
3000 rpm, 2-pole, 50 Hz												
0.18 0.25	63	34180 34250	2830 2750	60.3 64.8	1 0.99	1.4 1.8	0.61 0.87	0.73 0.45	4.6 3.0	10 10	400 450	IE2 IE2
0.37 0.55		71	35370 35550	2860 2850	71.4 74.5	1 0.95	2.6 3.5	1.2 1.9	0.50 0.40	3.8 4.3	12 16	450 450
0.75 1.1	80		37750 37110	2830 2820	77.4 75	0.98 0.95	4.6 6.7	2.6 3.7	0.45 0.40	3.2 3.6	30 35	400 400
1.5 2.2		90	39150 39220	2840 2870	77.2 79.7	0.99 0.96	8.7 13	5.1 7.3	0.40 0.40	3.5 3.8	40 50	400 400
1500 rpm, 4-pole, 50 Hz												
0.12 0.18	63	41120 41180	1370 1325	52.3 54.5	0.98 0.94	1.1 1.6	0.85 1.25	0.54 0.55	2.2 2.2	6 7	450 450	IE1 IE0
0.25 0.37		71	36250 36370	1420 1390	68.5 65	0.98 0.96	1.8 2.7	1.7 2.6	0.50 0.30	2.8 3.5	14 16	400 450
0.55 0.75	80		38550 38750	1420 1420	70.2 72.1	0.98 1	3.6 4.6	3.7 5	0.50 0.40	2.6 2.6	35 30	400 400
1.1 1.5		90	40110 40150	1430 1425	75.5 77	0.97 0.98	6.8 9.2	7.3 10	0.32 0.33	3.0 3.2	35 50	450 400
2.2	100		43220	1435	78.1	0.98	13.2	14.5	0.31	3.0	70	400

*Flange-mounted (B5) and foot mounted (B3) are available for all type of motors.

IEC Single-Phase Capacitor Run & Start (CRS) Motors

Standard Motors up to Frame Size 112

Technical Data

Aluminium Housing, Basic Version

Rated Output kW	Size	Type	Rated Speed rpm	Nominal Efficiency %	Power Factor	Rated Current at 220 V A	Rated Torque Nm	Starting Torque	Starting Current	Capacitor		Efficiency Class
								For Direct-on-Line starting as multiple of the rated		Permanent μF	Start μF	
								Torque	Current			
3000 rpm, 2-pole, 50 Hz												
0.18	63	34188	2830	60.3	1	1.4	0.61	2.0	4.6	10	30	IE2
0.25		34258	2750	64.8	0.99	1.8	0.87	2.0	4.7	10	30	IE2
0.37	71	35378	2860	71.4	1	2.6	1.2	1.9	4.6	12	40	IE2
0.55		35558	2850	74.5	0.95	3.5	1.9	1.9	4.4	16	60	IE2
0.75	80	37758	2830	77.4	0.98	4.6	2.6	2.0	4.2	30	60	IE2
1.1		37118	2820	75	0.95	6.7	4.3	2.0	4.4	35	80	IE1
1.5	90	39158	2840	77.2	0.99	8.7	5.1	1.8	4.3	40	100	IE1
2.2		39228	2840	79.7	0.99	12.4	7.3	1.8	4.4	50	140	IE1
1500 rpm, 4-pole, 50 Hz												
0.12	63	41128	1370	52.3	0.98	1.1	0.85	1.6	3.4	6	20	IE1
0.18		41188	1325	54.5	0.94	1.6	1.25	1.6	3.8	7	25	IE0
0.25	71	36258	1415	67.4	0.99	1.8	1.7	1.9	3.8	14	30	IE2
0.37		36378	1390	65	0.95	2.8	2.6	1.9	3.9	16	40	IE0
0.55	80	38558	1420	70.2	0.98	3.6	3.7	1.8	4.0	35	60	IE1
0.75		38758	1420	76	1	4.6	5	1.8	4.0	30	80	IE1
1.1	90	40118	1420	75	0.96	7.0	7.3	1.9	4.3	35	125-158	IE1
1.5		40158	1420	77.2	0.96	9.3	10	1.8	4.2	50	125-158	IE1
2.2	100	43228	1435	78.1	0.95	13.1	14.5	1.8	4.4	70	175	IE0
2.2	112	46224	1450	76.1	0.66	21	14.5	2.3	4.2	-	2x(125-158)	IE0





Single-Phase Electrical Motors (Dimensional Specification)

اطلاعات ابعادی موتورهای تک فاز

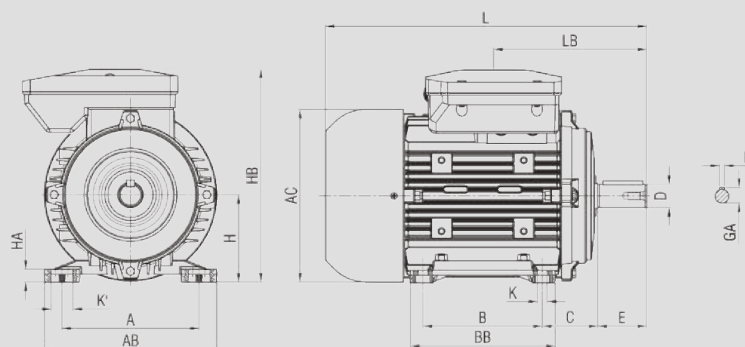
IEC Single-Phase Capacitor Run Motors Foot-Mounted Motor, IMB3



Technical Data

Frame Size	No. of Poles	Dimension drawing according to IEC																
		H	B	A	C	K	K`	D	E	F	GA	HA	BB	AB	AC	HB	LB	L
63	2-8	63	80	100	40	M6	12	11	23	4	12.5	7	101	120	124	155	91.5	208
71		71	90	112	47			14	30	5	16	11	108	136	141	186	105	244
80		80	125	125	50	M8	16.5	19	40	6	21.5	12	125	150	159	209	118	273
90		90		140	56			24	50	8	27	15	155	174	176	219	133	327
100		100	140	160	63	M10	21	28	60		31	16	175	193	194	244	148	402
112		112		190	70		22						176	233	218	265	154	432

Dimensions





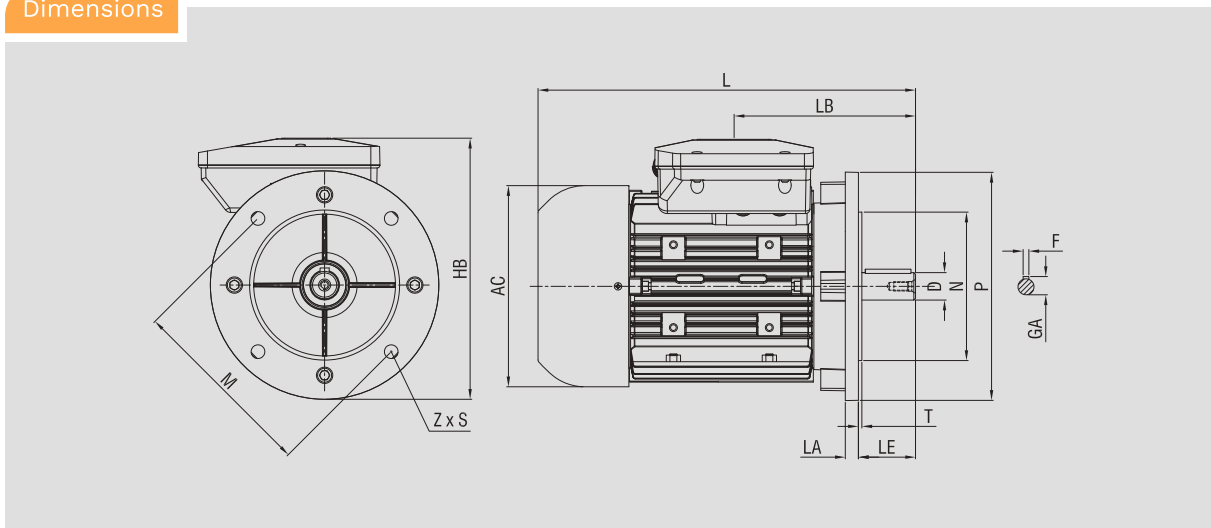
IEC Single-Phase Capacitor Run Motors

Flange-Mounted Motor, IMB5

Technical Data

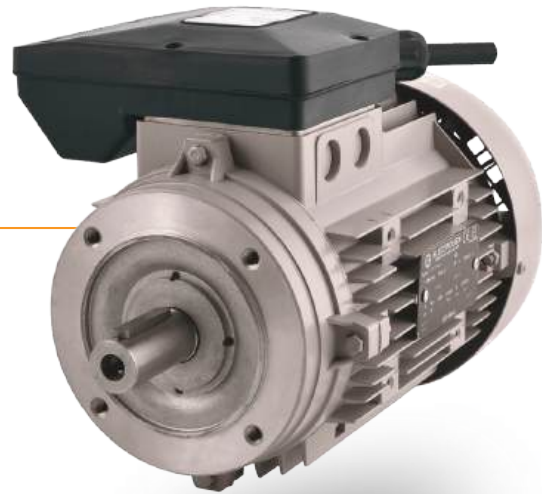
Frame Size	No. of Poles	Dimension drawing according to IEC														
		P	N	M	LA	T	D	LE	F	GA	AC	HB	Z	S	LB	L
63	2-8	140	95	115	11	3	11	23	4	12.5	124	162	4	M8	91.5	208
71		160	110	130	9	3.5	14	30	5	16	141	195			105	244
80		200	130	165	11		19	40	6	21.5	159	230		M10	118	273
90						24	50	8	27	176	133				327	
100		250	180	215	15	4	28				60	31		194	269	M12
112								218	278	154				432		

Dimensions



IEC Single-Phase Capacitor Run Motors

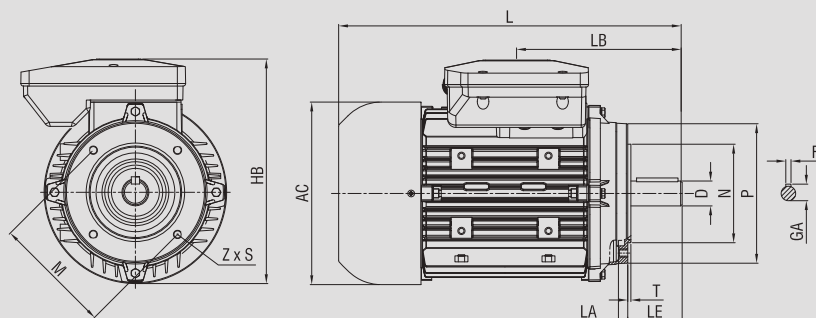
Flange-Mounted Motor, IMB14



Technical Data

Frame Size	No. of Poles	Dimension drawing according to IEC														
		P	N	M	LA	T	D	LE	F	GA	AC	HB	Z	S	LB	L
63	2-8	90	60	75	9.5	2.5	11	23	4	12.5	124	155	4	M6	91.5	208
71		106	70	85		3	14	30	5	16	141	186			105	244
80		119	80	100	9		19	40	6	21.5	159	209			118	273
90		135	95	115			24	50	8	27	176	217		M8	133	327
100		160	110	130	16.5	3.5	28	60		31	194	242			148	402
112											218	265				154

Dimensions



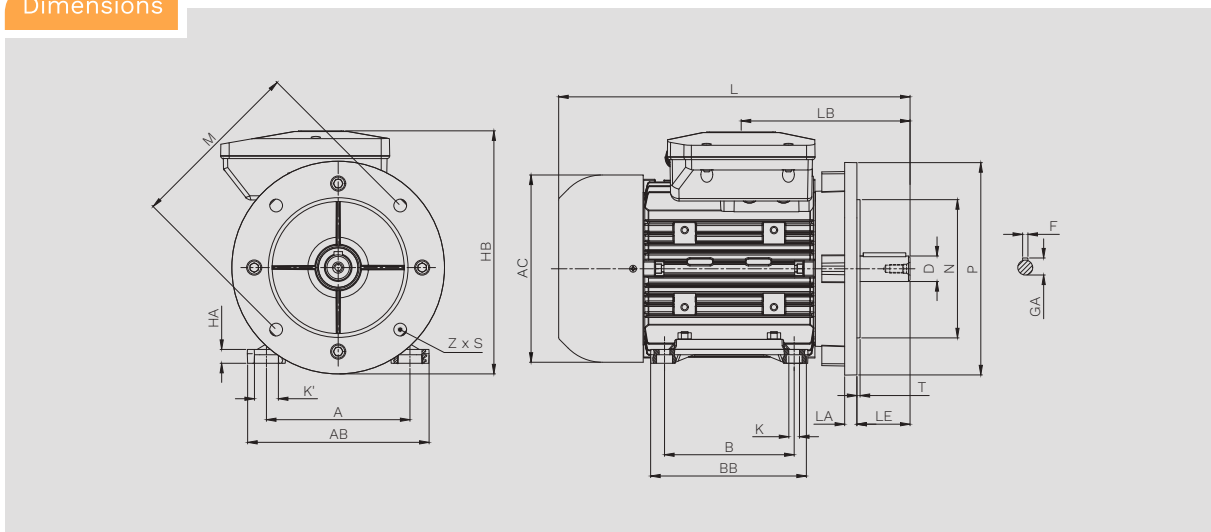


IEC Single-Phase Capacitor Run Motors Foot and Flange-Mounted Motor, IMB35

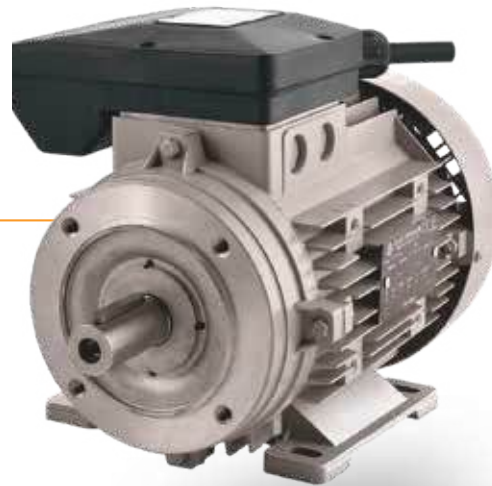
Technical Data

Frame Size	No. of Poles	Dimension drawing according to IEC																					
		P	N	M	LA	T	D	LE	F	GA	AC	HB	Z	S	LB	L	A	B	K	K`	HA	BB	AB
63	2-8	140	95	115	11	3	11	23	4	12.5	124	162	4	M8	91.5	208	100	80	M6	12	7	101	120
71		160	110	130	9	3.5	14	30	5	16	141	195			105	244	112	90		12	11	108	136
80		200	130	165	11		19	40	6	21.5	159	229		M10	118	273	125	125	M8	16.5	12	125	150
90		200					24	50	8	27	176	230			133	327	140			17.5	15	155	174
100		250	180	215	15	4	28	60		31	194	269		M12	148	402	160	140	M10	21	16	175	193
112		250									218	278			154	432	190	140		22		176	233

Dimensions



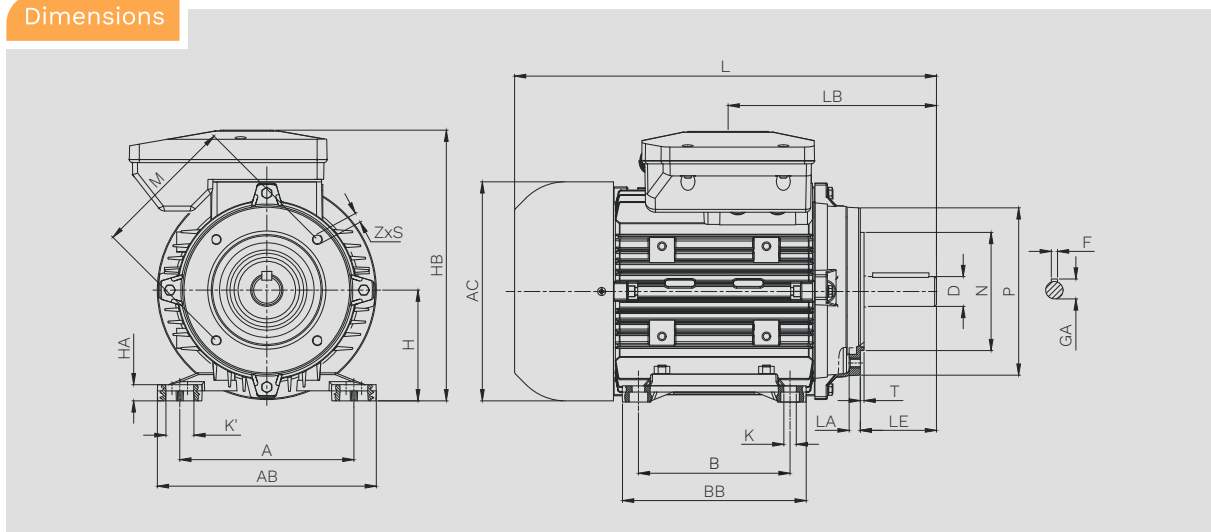
IEC Single-Phase Capacitor Run Motors Foot and Flange-Mounted Motor, IMB34



Technical Data

Frame Size	No. of Poles	Dimension drawing according to IEC																						
		P	N	M	LA	T	D	LE	F	GA	AC	HB	Z	S	LB	L	B	A	K	K'	HA	BB	AB	
63	2-8	90	60	75	9.5	2.5	11	23	4	12.5	124	155	4	M6	91.5	208	80	100	M6	12	7	101	120	
71		106	70	85		3	14	30	5	16	141	186			105	244	90	112		M8	17.5	15	155	174
80		119	80	100	9		19	40	6	21.5	159	209			118	273	100	125	16.5		12	125	150	
90		135	95	115			24	50	8	27	176	219			133	327	125	140	17.5	15	155	174		
100		160	110	130	16.5	3.5	28	60		8	31	194		244	M8	148	402	140	160	M10	21	16	175	193
112												218		265		154	432		190		22		176	233

Dimensions



IEC Single-Phase Capacitor Run & Start Motors

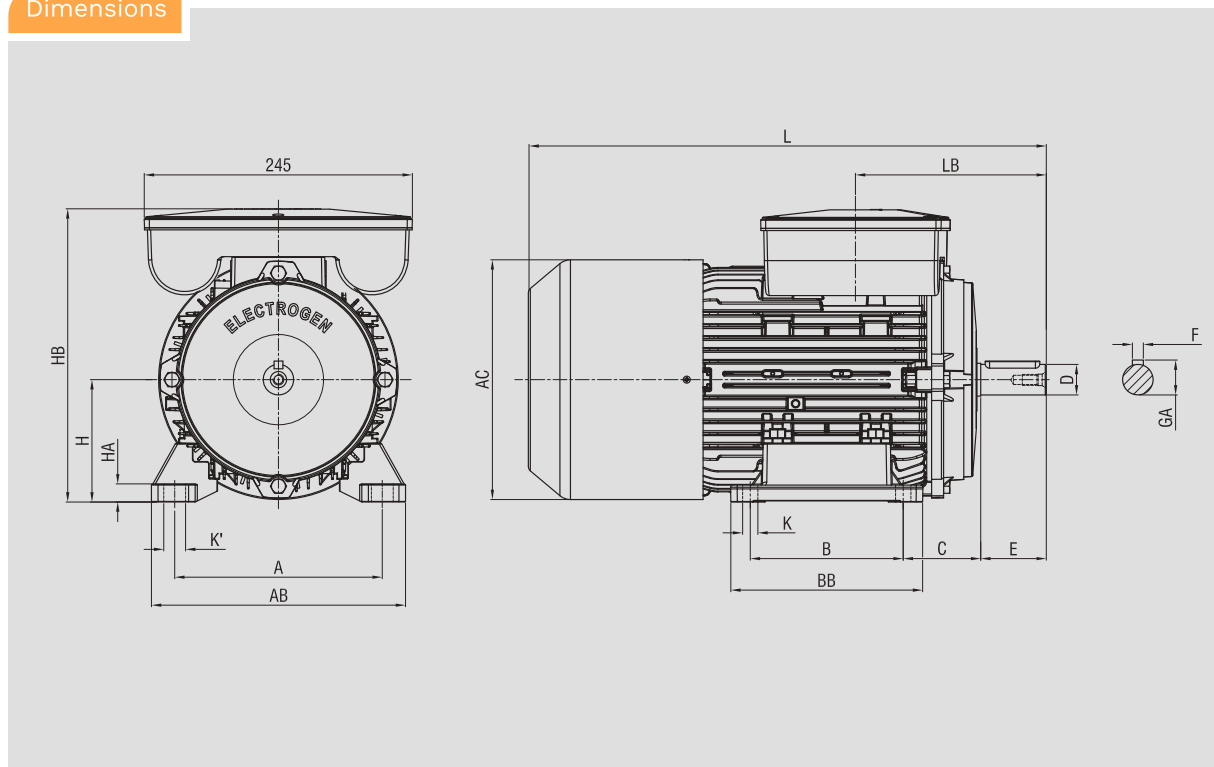
Foot-Mounted Motor, IMB3



Technical Data

Frame Size	No. of Poles	Dimension drawing according to IEC																
		H	B	A	C	K	K'	D	E	F	GA	HA	BB	AB	AC	HB	LB	L
90	2-4	90	125	140	57	M8	17.5	24	50	8	27	15	155	174	176	226	155	365
100		100	140	160	63	M10	21	28	60		31	16	175	193	195	247	170	437
112		112	140	190	70		22						176	233	220	265	157	474

Dimensions





Note: _____

Handwriting practice lines consisting of 20 horizontal dashed lines.



الکتروموتورهای صنعتی

لیست قطعات یدکی

A close-up photograph of a person's hand, wearing an orange sleeve, holding a silver metal rod. The hand is positioned over a black tray filled with various mechanical parts and tools. In the background, several red-handled screwdrivers are visible, along with a series of silver metal rods and a row of circular metal components. The image is slightly blurred, emphasizing the hand and the rod it holds.

Industrial Motors

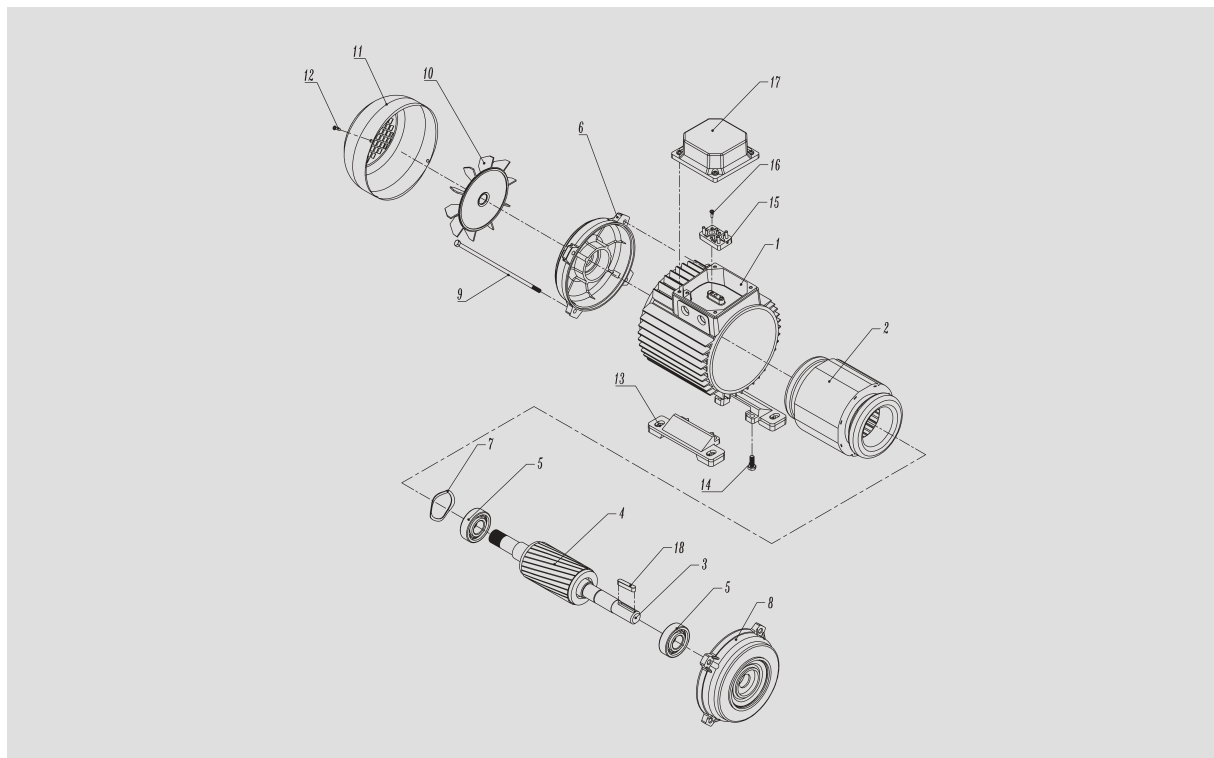
Spare Parts

IEC Three-Phase Squirrel-Cage Motors

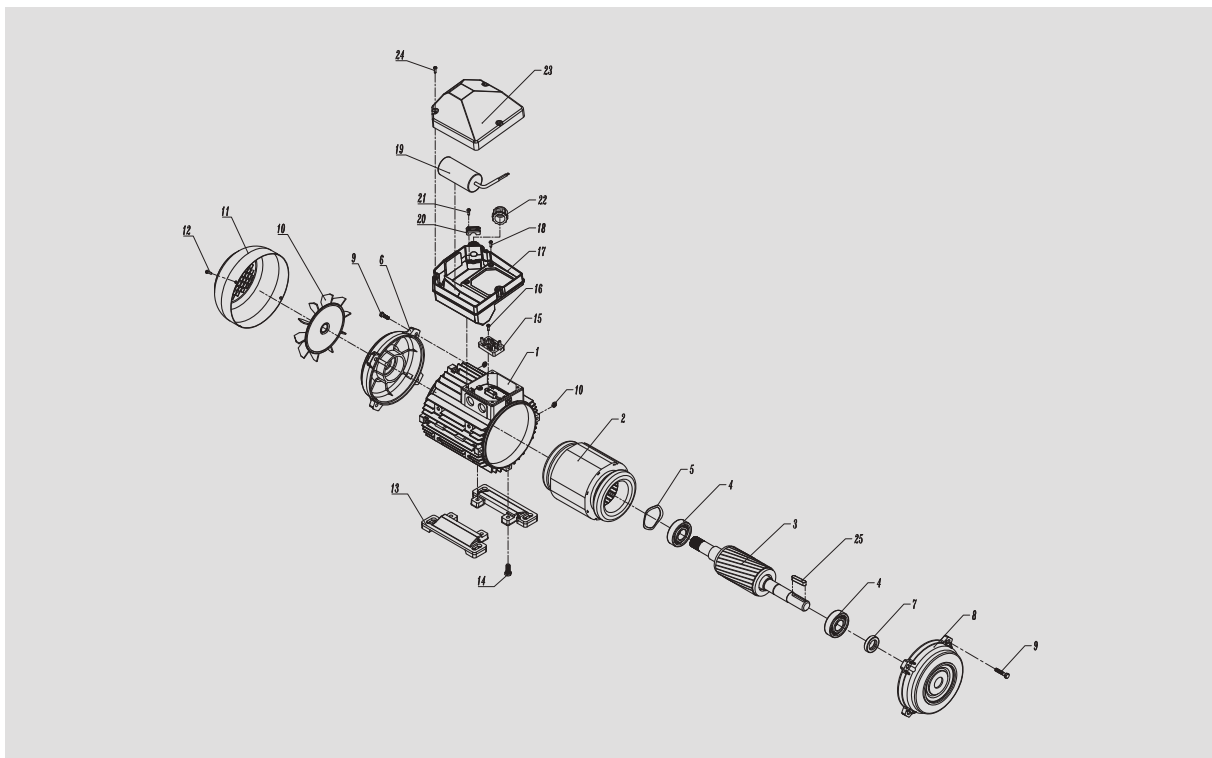
Standard Motors up to Frame Size 315

Spare Parts

Part No.	Designation	Part No.	Designation
1	Frame	10	Fan
2	Stator	11	Fan Cover
3	Shaft	12	Screw
4	Rotor	13	Frame Feet
5	Ball Bearing	14	Screw for Frame Feet
6	Endshield, ND-end	15	Terminal board
7	Wave Spring	16	Screw
8	Endshield, D-end	17	Terminal box Cover
9	Screw	18	Shaft Key



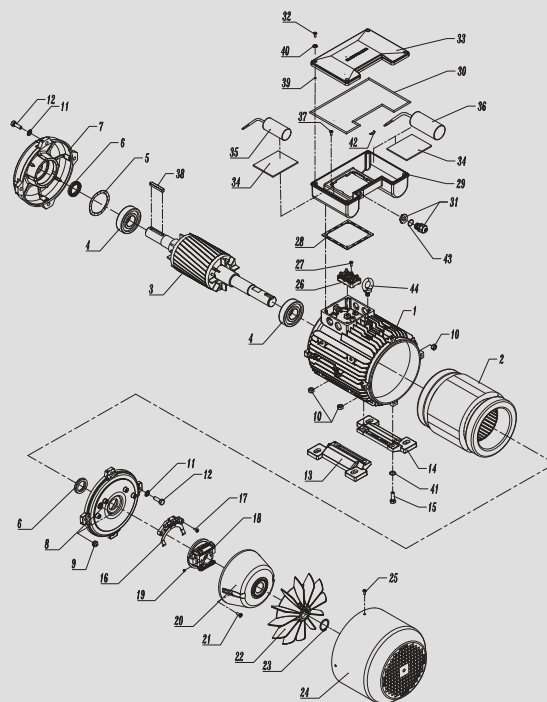
Part No.	Designation	Part No.	Designation
1	Frame	14	Screw
2	Stator	15	Terminal Board
3	Rotor	16	Screw
4	Ball Bearing	17	Terminal Box
5	Wave Spring	18	Screw
6	Endshield, ND-end	19	Capacitor
7	V-ring	20	Cable Clip
8	Endshield, D-end	21	Screw
9	Screw	22	Terminal Box Nut
10	Fan	23	Terminal Box Cover
11	Fan Cover	24	Screw
12	Screw	25	Shaft Key
13	Frame Feet	26	



IEC Single-Phase Capacitor Run & Start Motors

Spare Parts

Part No.	Designation	Part No.	Designation	Part No.	Designation
1	Frame	17	Screw	33	Capacitor Box Cover
2	Stator	18	Centrifugal Switch (CS)	34	Thermal Insulator
3	Rotor	19	Screw	35	Run Capacitor
4	Ball Bearing	20	CS Plastic Cover	36	Start Capacitor
5	Wave Spring	21	Screw	37	Screw
6	Lip Seal	22	Fan	38	Shaft Key
7	Endshield,D-end	23	CirClip	39	O-ring
8	Endshield,ND-end	24	Fan Cover	40	Washer
9	Gland	25	Screw	41	Washer
10	Nut	26	Terminal Board	42	Resistor
11	Washer	27	Screw	43	Gland O-ring
12	Screw	28	Sealant Rubber	44	Eye-Bolt
13	Frame Foot(Left)	29	Capacitor Box		
14	Frame Foot(Right)	30	Sealant Foam		
15	Screw	31	Gland		
16	Switch Contact	32	Screw		





Note: _____

Handwriting practice lines consisting of 20 horizontal dashed lines.





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میدان کاج، خیابان سرو غربی، پلاک ۱۷

