

**HASCON**  
electric motor

# Squirrel-cage motors



## Standards and regulations

HC motors are built to comply with the requirements of the following international standards and regulations.

1. International Electrotechnical Commission-IEC 60034 IEC 60072.
2. British Standards-BS5000 and BS4999.
3. Australian Standards-AS 1359.
4. The requirements for European CE marking, Low Voltage Directive 73/23 (1973), modified by Directive 93/68 (1993) and the EMC-Directive 89/336. These HC motors are designed for use with other machinery, and they should only be used if the complete machinery is in conformity with the provisions of the Directive for Safety of Machinery (89/392/EEC).
5. CEMEP agreement-all motors with standard rating included in this catalogue comply with efficiency class eff2 and bear the corresponding label on the rating plate.

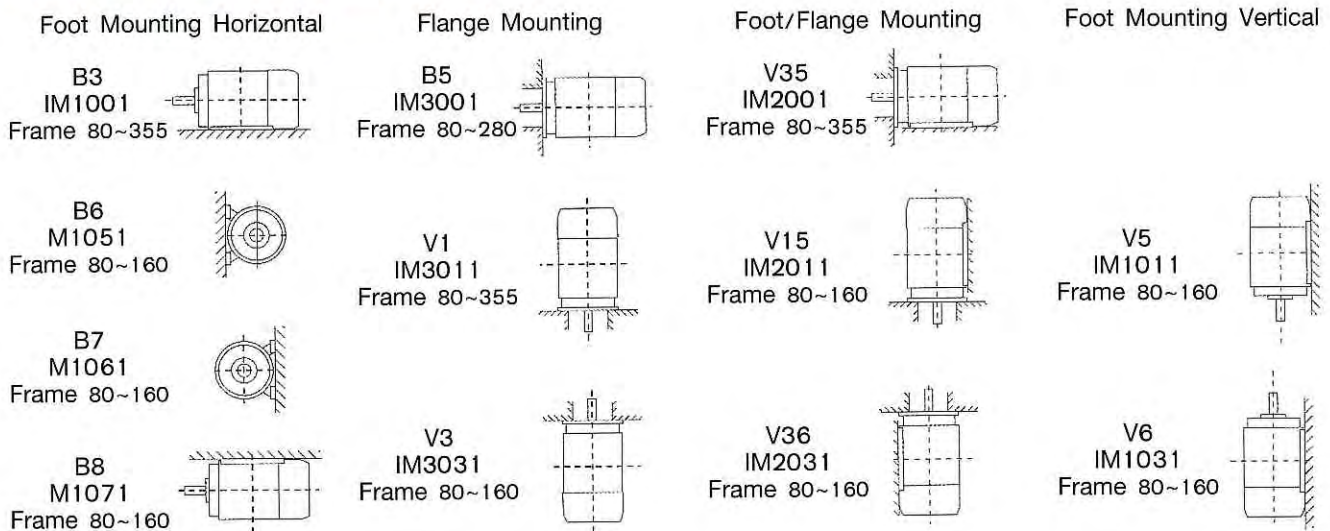
Motors comply with efficiency class eff1 are available on request.

Standards	IEC	CENELEC	BS
General requirements for electrical machines	60034-1	EN 60034-1	4999-1 4999-69
Methods of determining losses and efficiency	60034-2	HD 53 2	4999-34
Degrees of protection	60034-5	EN 60034-5	4999-20
Methods of cooling	60034-6	EN 60034-6	4999-21
Mounting arrangements	60034-7	EN 60034-7	4999-22
Terminal markings and direction of rotation	60034-8	HD 53 8 S4	4999-3
Noise limits	60034-9	EN60034-9	4999-51
Starting performance	60034-12	EN60034-12	4999-112
Mechanical vibration	60034-14	EN60034-14	4999-50
Standard voltages	60038	HD 472 S1	
Dimensions and output ratings	60072		
Mounting dimensions and relationship framesizes-output ratings	60072	HD 231	4999-10 51-110
Shaft dimensions	60072	HD 231	4999-10
Classification of environmental conditions	600721-2-1		
Insulation material	60085		

### Degrees of protection (IEC 60034-5)

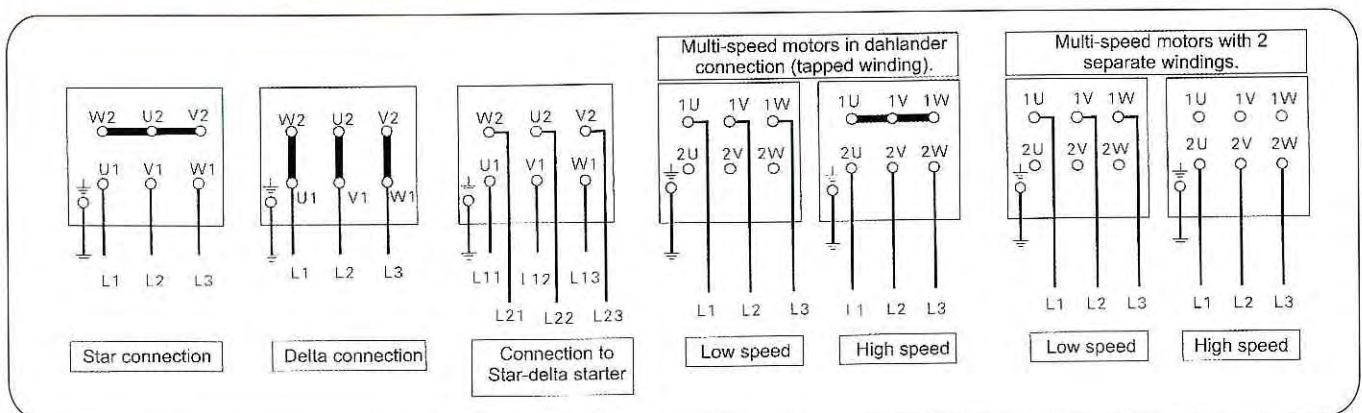
Designation	First numeral	Second numeral
	Protection against contact and ingress of foreign bodies. Protection against hazardous "Live" parts and moving mechanical parts	protection against water
5	Ingress of dust is not totally prevented, but dust shall not interfere with the satisfactory operation of equipment. A probe of 1 mm diameter shall not penetrate the enclosure.	Water projected in jets against the enclosure from any direction will have no harmful effects.
6	No ingress of dust	Water projected in power jets shall have no harmful effects.

### Mounting arrangements (IEC 60034-7)



### Connection diagrams

#### Three phase motors with cage rotor



# Squirrel-cage motors



## Performance data

2 Pole-3000 rpm synchronous speed 50Hz

Motor type	Rated output kW	Rated speed rpm	IFL 380V (AMP)	IFL 400V (AMP)	IFL 415V (AMP)	IST IFL	EFF %	Power factor	Rated torque Nm	TST TFL	TM TFL	M of J kgm <sup>2</sup>	Noise level LW dB(A)	Net weight kg
HC-801-2	0.75	2840	1.8	1.7	1.67	5.5	75.5	0.83	2.5	2.3	2.6	0.0008	67	14
HC-802-2	1.1	2840	2.6	2.5	2.4	5.6	76.2	0.84	3.7	2.3	2.6	0.0009	67	15
HC-90S-2	1.5	2850	3.4	3.2	3.1	6.1	79.5	0.85	5	2.5	2.9	0.0012	72	20
HC-90L-2	2.2	2850	4.8	4.6	4.4	6.1	81.7	0.85	7.4	2.7	2.9	0.0014	72	24
HC-100L-2	3	2880	6.3	6	5.8	6.5	83.1	0.87	10	2.7	2.9	0.0039	76	30
HC-112M1-2	4	2880	8.2	7.8	7.6	6.5	84.2	0.88	13.3	2.6	2.9	0.0055	77	38
HC-112M2-2	5.5	2880	11.1	10.5	10.2	7.7	85.7	0.88	13.3	2.7	3.2	0.0076	78	43
HC-132S1-2	5.5	2900	11.1	10.5	10.2	6.9	85.9	0.88	18.1	2.3	2.6	0.011	80	57
HC-132S2-2	7.5	2900	14.9	14.2	13.5	6.9	87.2	0.88	24.5	2.5	2.8	0.013	80	61
HC-132M-2	11	2910	21.4	20.4	19.7	6.2	88.4	0.88	36.2	2.2	2.4	0.028	83	73
HC-160M1-2	11	2930	21.1	20.1	19.4	6.7	88.7	0.89	35.8	2.6	2.9	0.038	86	101
HC-160M2-2	15	2930	28.6	27.2	26.2	6.7	89.5	0.89	48.8	2.6	2.9	0.045	86	111
HC-160L-2	18.5	2930	34.6	32.9	31.8	6.8	90.2	0.90	60.4	2.5	2.8	0.055	86	126
HC-180M-2	22	2940	41	38.9	37.6	6.6	90.6	0.90	71.4	2.6	2.8	0.076	89	176
HC-200L1-2	30	2950	55.4	52.6	50.7	6.5	91.5	0.90	97.2	2.5	2.7	0.124	92	226
HC-200L2-2	37	2950	67.9	64.5	62.2	6.5	92	0.90	119.8	2.4	2.6	0.139	92	245
HC-225M-2	45	2970	82.1	78	75.3	6.8	92.5	0.90	144.8	2.4	2.6	0.233	92	280
HC-250M1-2	55	2970	99.6	94.6	91.3	6.8	93.2	0.90	177	2.5	2.8	0.312	93	379
HC-250M2-2	75	2970	135.1	128.4	123.8	6.5	93.7	0.90	241.3	2.3	3.2	0.412	94	466
HC-280S-2	75	2970	134.8	128.1	123.5	6.7	93.9	0.90	241.3	2.4	2.7	0.597	94	512
HC-280M1-2	90	2970	159.5	151.5	146.1	6.7	94.2	0.91	289.5	2.4	2.7	0.675	94	578
HC-280M2-2	110	2970	194.7	185	178.3	6.5	94.3	0.91	353.9	2	2.5	0.86	96	733
HC-315S-2	110	2980	194.6	184.9	178.2	6.6	94.4	0.91	352.7	2	2.5	1.18	96	845
HC-315M-2	132	2980	233	221.4	213.4	6.6	94.6	0.91	423.2	2.1	2.5	1.55	96	942
HC-315L1-2	160	2980	282.1	270	258.4	6.7	94.7	0.91	513	1.9	2.4	1.76	99	1019
HC-315L2-2	200	2980	347.7	330.1	318.4	6.7	95	0.92	641.2	1.9	2.4	2.02	99	1177
HC-355M-2	250	2980	432.3	410.8	395.9	6.5	95.5	0.92	801.5	1.6	2.3	3.56	103	1740
HC-355L-2	315	2980	543	515.9	497.3	6.5	95.8	0.92	1010	1.6	2.3	4.1	103	1920

■ IFL=full load current ■ IST=locked rotor current ■ TST=locked rotor torque ■ TM=maximum torque ■ TFL=full load torque

## 4 Pole-1500 rpm synchronous speed 50Hz

Moter type	Rated output kW	Rated speed rpm	IFL 380V (AMP)	IFL 400V (AMP)	IFL 415V (AMP)	IST IFL	EFF %	Power factor	Rated torque Nm	TST TFL	TM TFL	M of J kgm <sup>2</sup>	Noise level LW dB(A)	Net weight kg
HC-80M1-4	0.55	1390	1.6	1.5	1.4	5.5	71.4	0.75	3.8	2.2	2.4	0.002	58	13
HC-80M2-4	0.75	1390	2.1	2	1.9	5.6	73.5	0.76	5.2	2.2	2.4	0.002	58	14
HC-90S-4	1.1	1400	2.9	2.7	2.6	5.4	76.2	0.77	7.5	2.2	2.5	0.002	61	20
HC-90L-4	1.5	1400	3.8	3.5	3.4	5.2	78.7	0.78	10.2	2.4	2.6	0.003	61	23
HC-100L1-4	2.2	1420	5.1	4.9	4.7	6.0	81.0	0.81	14.8	2.3	2.6	0.007	64	29
HC-100L2-4	3	1420	6.8	6.4	6.2	6.1	82.7	0.82	20.2	2.3	2.7	0.007	64	33
HC-112M-4	4	1440	8.8	8.4	8.1	6.5	84.5	0.82	26.5	2.3	2.8	0.01	65	40
HC-132S-4	5.5	1440	11.7	11.2	10.8	6.8	85.7	0.83	36.5	2.3	2.9	0.021	71	59
HC-132M1-4	7.5	1440	15.6	14.8	14.3	6.5	87.1	0.84	49.8	2.4	3	0.03	71	69
HC-132M2-4	11	1440	22.6	21.4	20.7	6.8	88.4	0.84	73	2.2	2.7	0.057	75	99
HC-160M-4	11	1460	22.5	21.3	20.6	6.9	88.6	0.84	72	2.3	2.9	0.075	75	109
HC-160L-4	15	1460	30.3	28.5	27.5	6.8	89.5	0.85	98.2	2.3	2.9	0.092	75	130
HC-180M-4	18.5	1470	36.2	34.4	33.2	6.4	90.2	0.86	120.2	2.3	2.9	0.139	76	165
HC-180L-4	22	1470	42.9	40.7	39.3	6.9	90.7	0.86	143	2.3	2.9	0.158	76	180
HC-200L-4	30	1470	57.5	54.7	52.7	6.8	92.1	0.86	195	2.4	2.9	0.262	79	240
HC-225S-4	37	1480	69.7	66.2	64.6	6.5	92.7	0.87	238.9	2.2	2.7	0.406	81	278
HC-225M-4	45	1480	84.5	80.3	77.4	6.3	93.0	0.87	290.5	2.3	2.5	0.469	81	308
HC-250M1-4	55	1480	103	97.8	94.3	6.4	93.3	0.87	355.1	2.2	2.5	0.66	83	402
HC-250M2-4	75	1480	138.4	131.4	126.7	6.2	93.6	0.88	483.9	2.3	2.6	0.88	86	488
HC-280S-4	75	1480	138.1	131.1	126.4	6.8	93.8	0.88	483.9	2.1	2.8	1.12	86	540
HC-280M1-4	90	1480	165	157	152	6.9	94.1	0.88	580.7	2.2	2.7	1.46	86	615
HC-280M2-4	110	1480	201	191	184	6.5	94.5	0.89	709.8	2.1	2.3	2.68	93	717
HC-315S-4	110	1480	200.5	190.5	183.6	6.5	94.7	0.88	709.8	1.9	2.7	3.11	93	870
HC-315M-4	132	1480	240	228	220	6.8	95	0.88	851.8	2.3	3.2	3.29	93	990
HC-315L1-4	160	1480	287	273	263	6.6	95.2	0.89	1032	2.6	3	3.79	97	1053
HC-315L2-4	200	1480	358	340	328	6.4	95.4	0.89	1290	2.2	2.8	4.49	97	1243
HC-355M-4	250	1490	441	419	405	6.2	95.6	0.90	1603	1.9	2.9	5.67	101	1745
HC-355L-4	315	1490	555	527	509	6.1	95.8	0.9	2020	2.1	3.1	6.66	101	1957

■ IFL=full load current ■ IST=locked rotor current ■ TST=locked rotor torque ■ TM=maximum torque ■ TFL=full load torque

# Squirrel-cage motors

## Performance data



### 6 Pole-1000 rpm synchronous speed 50Hz

Motor type	Rated output kW	Rated speed rpm	IFL 380V (AMP)	IFL 400V (AMP)	IFL 415V (AMP)	IST IFL	EFF %	Power factor	Rated torque Nm	TST TFL	TM TFL	M of J kgm <sup>2</sup>	Noise level LW dB(A)	Net weight kg
HC-80M1-6	0.37	890	1.3	1.2	1.1	4.4	62.5	0.70	4	1.9	2.3	0.002	54	14
HC-80M2-6	0.55	890	1.8	1.7	1.6	4.5	65.0	0.72	5.9	2.1	2.4	0.003	54	16
HC-90S-6	0.75	910	2.3	2.2	2.1	4.1	69.1	0.72	7.9	2.3	2.7	0.003	57	20
HC-90L-6	1.1	910	3.2	3	2.9	4.6	72.0	0.73	11.5	2.3	2.7	0.004	57	23
HC-100L-6	1.5	920	4.1	3.9	3.7	5	76.0	0.75	15.6	2.4	2.8	0.007	61	29
HC-112M-6	2.2	940	5.6	5.3	5.1	5.2	79.1	0.76	22.4	2.1	2.5	0.014	65	38
HC-132S-6	3	960	7.4	7	6.8	5.6	81.3	0.76	29.9	1.9	2.5	0.029	69	54
HC-132M1-6	4	960	9.7	9.2	8.9	6.2	82.3	0.76	39.8	2.1	2.7	0.036	69	62
HC-132M2-6	5.5	960	12.8	12.2	11.7	6.5	84.7	0.77	54.7	2.3	2.8	0.045	69	69
HC-160M-6	7.5	970	17.1	16.2	15.6	5.6	86.6	0.77	73.9	2	2.6	0.088	73	103
HC-160L-6	11	970	24.5	23.2	22.4	5.8	87.6	0.78	108.3	2.1	2.4	0.116	73	121
HC-180L-6	15	970	31.6	30.1	28.9	5.7	89.0	0.81	147.7	2	2.4	0.207	73	173
HC-200L1-6	18.5	970	38.5	36.6	35.2	6.7	90.2	0.81	182.2	2.2	2.8	0.315	76	221
HC-200L2-6	22	970	44.7	42.5	40.9	6.6	90.2	0.83	216.7	2.3	2.9	0.36	76	236
HC-225M-6	30	980	59.3	56.4	54.3	6.8	91.5	0.84	292.5	2.2	2.7	0.547	76	301
HC-250M-6	37	980	70.1	67.4	64.9	6.2	92.2	0.86	360.7	2	2.5	0.834	78	370
HC-280S-6	45	980	86	82	79	6.1	92.5	0.86	438.7	1.9	2.5	1.39	80	478
HC-280M1-6	55	980	105	100	96	6.7	92.9	0.86	536.2	2.1	2.7	1.65	80	535
HC-280M2-6	75	985	140	133	128	5.8	93.6	0.87	727.2	2.1	2.3	3.21	85	682
HC-315S-6	75	990	142	135	129	6.5	93.7	0.86	723.8	2	2.7	4.11	85	790
HC-315M-6	90	990	170	161	155	6.2	93.9	0.86	868.6	2.0	2.6	4.28	85	880
HC-315L1-6	110	990	206	196	188	6	94.5	0.86	1062	1.9	2.7	5.45	85	997
HC-315L2-6	132	990	244	232	223	5.8	94.6	0.87	1274	2.0	2.7	6.12	85	1103
HC-355M1-6	160	990	291	276	266	6.3	95.1	0.88	1544	1.6	2.8	8.85	92	1400
HC-355M2-6	200	990	362	343	331	6.6	95.4	0.88	1930	2.0	2.9	9.55	92	1780
HC-355L-6	250	990	451	429	413	6.5	95.7	0.88	2413	1.6	3	10.3	92	2050

■ IFL=full load current   ■ IST=locked rotor current   ■ TST=locked rotor torque   ■ TM=maximum torque   ■ TFL=full load torque

## 8 Pole-750 rpm synchronous speed 50Hz

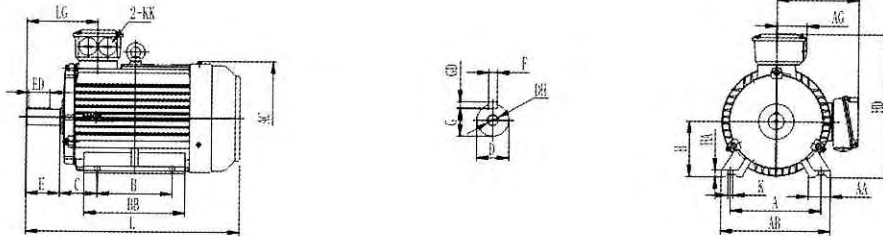
Motor type	Rated output kW	Rated speed rpm	IFL 380V (AMP)	IFL 400V (AMP)	IFL 415V (AMP)	IST IFL	EFF %	Power factor	Rated torque Nm	TST TFL	TM TFL	M of J kgm <sup>2</sup>	Noise level LW dB(A)	Net weight kg
HC-80M1-8	0.18	630	0.88	0.83	0.8	2.9	51.2	0.61	2.8	2	2.2	0.002	52	14
HC-80M2-8	0.25	640	1.15	1.09	1.05	3	54.2	0.61	3.7	2.1	2.4	0.003	52	16
HC-90S-8	0.37	660	1.48	1.41	1.36	3.4	62.2	0.61	5.4	2	2.2	0.004	56	20
HC-90L-8	0.55	660	2.16	2.06	1.98	3.5	63.3	0.61	8	2.1	2.3	0.004	56	23
HC-100L1-8	0.75	690	2.41	2.29	2.21	3.5	70.5	0.67	10.4	2	2.2	0.008	59	31
HC-100L2-8	1.1	690	3.35	3.18	3.06	3.6	72.4	0.69	15.2	2.2	2.4	0.01	59	35
HC-112M-8	1.5	690	4.4	4.2	4	3.9	74.5	0.7	20.8	2.4	2.6	0.017	61	38
HC-132S-8	2.2	710	5.9	5.6	5.4	4.3	79.3	0.71	29.6	2.3	2.5	0.031	64	52
HC-132M-8	3	710	7.8	7.4	7.1	4.4	80.1	0.73	40.4	2.2	2.4	0.01	64	61
HC-160M1-8	4	720	10.2	9.7	9.3	4.4	81.6	0.73	53.1	2.2	2.5	0.075	68	90
HC-160M2-8	5.5	720	13.6	12.9	12.4	5	83.3	0.74	73	2.2	2.4	0.093	68	102
HC-160L-8	7.5	720	17.7	16.8	16.2	5.7	85.9	0.75	99.5	2.1	2.3	0.126	68	122
HC-180L-8	11	730	25.4	24.1	23.2	5.6	87.8	0.75	144	2.3	2.5	0.203	70	150
HC-200L-8	15	730	34	32.3	31.1	5.5	88.3	0.76	196.3	2.1	2.4	0.339	73	212
HC-225S-8	18.5	730	41	39	37.5	5.6	90.2	0.76	242.1	2.2	2.6	0.491	73	285
HC-225M-8	22	740	47.2	44.8	43.2	5.4	90.8	0.78	284	2.1	2.4	0.547	73	385
HC-250M-8	30	740	63.3	60.1	57.9	5.3	91.2	0.79	387.3	2.2	2.5	0.83	75	378
HC-280S-8	37	740	77.5	73.6	71	5.6	91.8	0.79	477.7	2.3	2.7	1.39	76	485
HC-280M-8	45	740	94.1	89.4	86.1	5.2	92.0	0.79	581	2.1	2.8	1.65	76	568
HC-315S-8	55	740	110.8	105.3	101.5	5.7	93.1	0.81	710.1	1.9	2.5	4.79	82	745
HC-315M-8	75	740	150.1	142.6	137.5	5.9	93.7	0.81	968.3	2.1	2.8	5.58	82	805
HC-315L1-8	90	740	177.4	168.5	162.4	6.2	94	0.82	1162	2.3	2.9	6.37	82	998
HC-315L2-8	110	740	216.4	205.6	198.1	6	94.2	0.82	1420	2.2	2.8	7.23	82	1175
HC-355M1-8	132	740	259.4	246.4	237.5	6.4	94.3	0.82	1704	1.9	2.7	7.55	90	1580
HC-355M2-8	160	740	313.7	298	287.3	6.3	94.5	0.82	2066	1.7	2.6	11.73	90	1680
HC-355L-8	200	740	386.2	366.9	353.6	6.5	94.8	0.83	2582	1.8	2.9	12.86	90	1995

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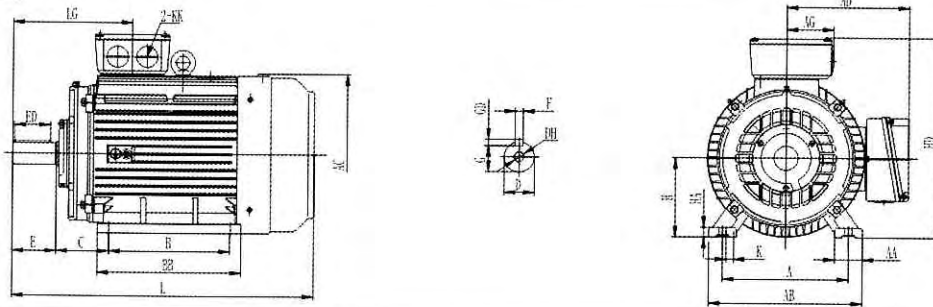
# Squirrel-cage motors

## Dimensions foot mount B3

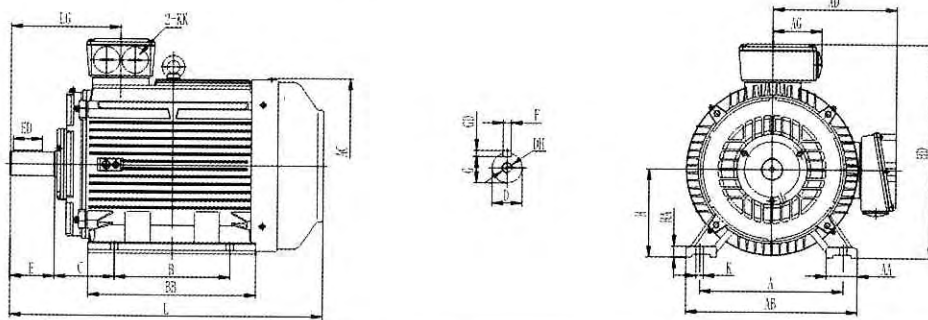
HC-80~132



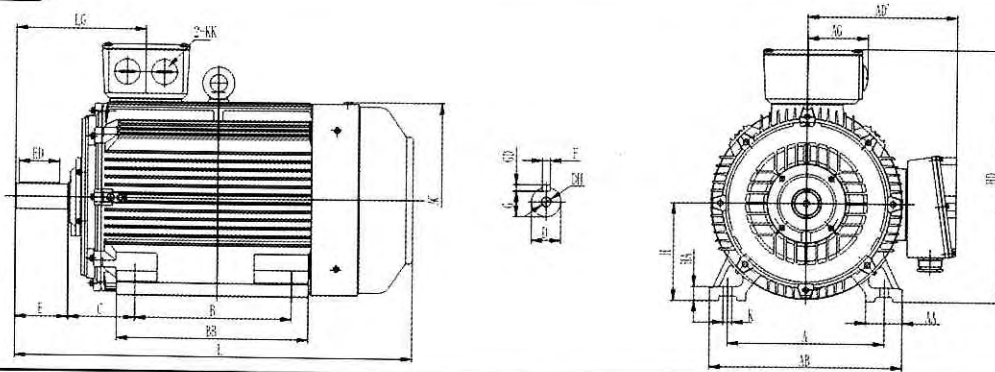
HC-160~200



HC-225~280



HC-315~355





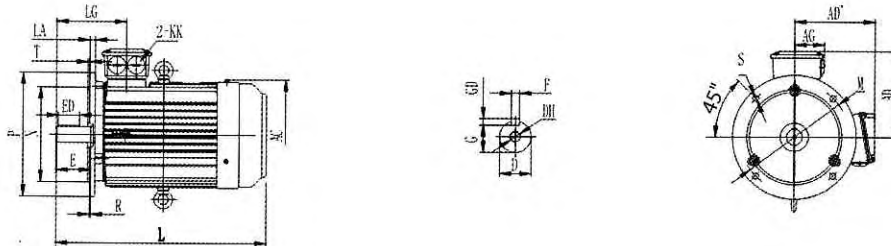
Frame size	A	AA	AB	AC	AD	AG	B	BB	C	D	DH	E	ED	F	G	GD	H	HA	HD	K	KK	L	LG
80M	125	34	160	175	140	51	100	130	50	19	M6 x 16	40	25	6	15.5	6	80	10	230	10	M25 x 1.5	295	106
90S	140	36	180	190	150	60	100	135	56	24	M8 x 19	50	40	8	20	7	90	12.5	260	10	M25 x 1.5	320	124
90L	140	36	180	190	150	60	125	160	56	24	M8 x 19	50	40	8	20	7	90	12.5	260	10	M25 x 1.5	345	124
100L	160	40	200	215	160	60	140	182	63	28	M10 x 22	60	45	8	24	7	100	14	275	12	M25 x 1.5	385	140
112M	190	45	230	236	185	75	140	195	70	28	M10 x 22	60	45	8	24	7	112	14	310	12	M32 x 1.5	410	145
132S	216	52	265	275	205	75	140	205	89	38	M12 x 28	80	63	10	33	8	132	16	350	12	M32 x 1.5	480	169
132M	216	52	265	275	205	75	178	245	89	38	M12 x 28	80	63	10	33	8	132	16	350	12	M32 x 1.5	520	169
160M	254	65	320	330	250	95	210	260	108	42	M16 x 36	110	90	12	37	8	160	19	425	14.5	M40 x 1.5	610	270
160L	254	65	320	330	250	95	254	305	108	42	M16 x 36	110	90	12	37	8	160	19	425	14.5	M40 x 1.5	655	270
180M	279	74	350	380	270	95	241	297	121	48	M16 x 36	110	90	14	42.5	9	180	22	460	14.5	M40 x 1.5	680	277
180L	279	74	350	380	270	95	279	327	121	48	M16 x 36	110	90	14	42.5	9	180	22	460	14.5	M40 x 1.5	720	277
200L	318	75	395	420	325	120	305	370	133	55	M20 x 42	110	90	16	49	10	200	25	515	18.5	M50 x 1.5	760	300
225S(4-8P)	356	75	436	465	335	120	286	355	149	60	M20 x 42	140	110	18	53	11	225	28	560	18.5	M50 x 1.5	825	340
225M(2P)	356	75	436	465	335	120	311	380	149	55	M20 x 42	110	90	16	49	10	225	28	560	18.5	M50 x 1.5	820	310
225M(4-8P)	356	75	435	465	335	120	311	380	149	60	M20 x 42	140	110	18	53	11	225	28	560	18.5	M50 x 1.5	850	340
250M(2P)	406	88	495	520	370	160	349	440	168	60	M20 x 42	140	110	18	53	11	250	33	620	24	M63 x 1.5	925	353
250M1(4-8P)	406	88	495	520	370	160	349	440	168	65	M20 x 42	140	110	18	58	11	250	33	620	24	M63 x 1.5	925	353
250M2(4P)	406	88	495	520	370	160	349	440	168	70	M20 x 42	140	110	20	62.5	12	250	33	620	24	M63 x 1.5	935	353
280S(2P)	457	103	550	570	400	160	368	495	190	65	M20 x 42	140	110	18	58	11	280	35	685	24	M63 x 1.5	960	350
280S(4-8P)	457	103	550	570	400	160	368	495	190	75	M20 x 42	140	110	20	67.5	12	280	35	685	24	M63 x 1.5	975	350
280M(2P)	457	103	550	570	400	160	419	535	190	65	M20 x 42	140	110	18	58	11	280	35	685	24	M63 x 1.5	1000	350
280M1(4-8P)	457	103	550	570	400	160	419	535	190	75	M20 x 42	140	110	20	67.5	12	280	35	685	24	M63 x 1.5	1015	350
280M2(4-8P)	457	103	550	570	400	160	419	535	190	80	M20 x 42	170	140	22	71	14	280	35	685	24	M63 x 1.5	1060	380
315S(2P)	508	120	630	650	495	195	406	515	216	65	M20 x 42	140	110	18	58	11	315	45	820	28	M63 x 1.5	1160	387
315M(2P)	508	120	630	650	495	195	457	625	216	65	M20 x 42	140	110	18	58	11	315	45	820	28	M63 x 1.5	1270	387
315L(2P)	508	120	630	650	495	195	508	625	216	65	M20 x 42	140	110	18	58	11	315	45	820	28	M63 x 1.5	1270	387
315S(4-8P)	508	120	630	650	495	195	406	515	216	80	M20 x 42	170	140	22	71	14	315	45	820	28	M63 x 1.5	1190	417
315M(4-8P)	508	120	630	650	495	195	457	625	216	80	M20 x 42	170	140	22	71	14	315	45	820	28	M63 x 1.5	1300	417
315L(4-8P)	508	120	630	650	495	195	508	625	216	80	M20 x 42	170	140	22	71	14	315	45	820	28	M63 x 1.5	1300	417
355M(2P)	610	125	735	735	640	330	560	775	254	75	M24 x 50	140	110	20	67.5	12	355	49	1000	28	M63 x 1.5	1500	420
355L(2P)	610	125	735	735	640	330	630	775	254	75	M24 x 50	140	110	20	67.5	12	355	49	1000	28	M63 x 1.5	1500	420
355M(4-8P)	610	125	735	735	640	330	560	775	254	95	M24 x 50	170	140	25	86	14	355	49	1000	28	M63 x 1.5	1530	450
*355M(4-8P)	610	125	735	735	640	330	560	775	254	100	M24 x 50	210	160	28	90	16	355	49	1000	28	M63 x 1.5	1570	490
355L(4-8P)	610	125	735	735	640	330	630	775	254	95	M24 x 50	170	140	25	86	14	355	49	1000	28	M63 x 1.5	1530	450
*355L(4-8P)	610	125	735	735	640	330	630	775	254	100	M24 x 50	210	160	28	90	16	355	49	1000	28	M63 x 1.5	1570	490

\* These motors can also be supplied. Please state the dimensions of the shaft extension on order.

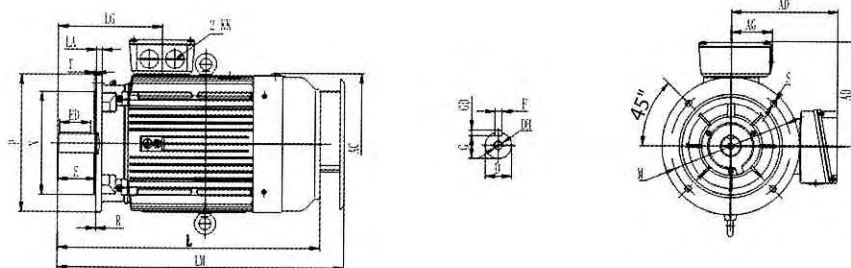
# Squirrel-cage motors

## Dimensions flange mount B5 and V1

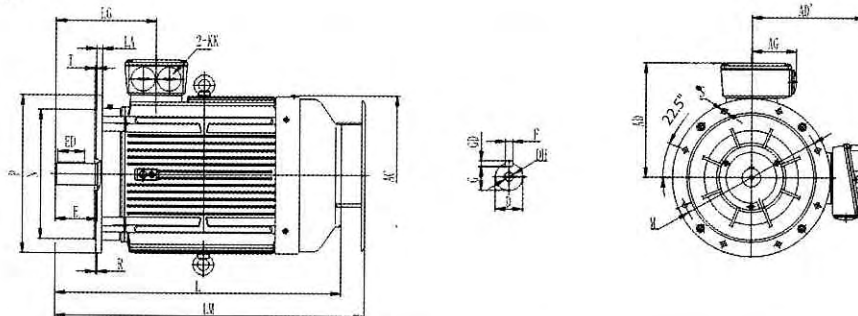
HC-80~132



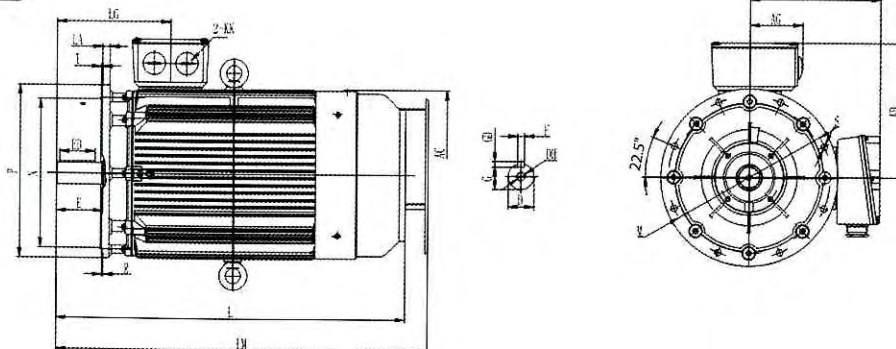
HC-160~200



HC-225~280



HC-315~355



Frame size	AC	AD	AD'	AG	D	DH	E	ED	F	G	GD	KK	L	LA	LG	M	N	P	S	T
80M	175	150	140	51	19	M6x16	440	25	6	15.5	6	M25x1.5	295	12	106	165	130	200	12	3.5
90S	190	165	150	60	24	M8x19	50	40	8	20	7	M25x1.5	320	12	124	165	130	200	12	3.5
90L	190	165	150	60	24	M8x19	50	40	8	20	7	M25x1.5	345	12	124	165	130	200	12	3.5
100L	215	170	160	60	28	M10x22	60	45	8	24	7	M25x1.5	385	14	140	215	180	250	14.5	4
112M	236	195	185	75	28	M10x22	60	45	8	24	7	M32x1.5	410	14	145	215	180	250	14.5	4
132S	275	215	205	75	38	M12x28	80	63	10	33	8	M32x1.5	480	14	169	265	230	300	14.5	4
132M	275	215	205	75	38	M12x28	80	63	10	33	8	M32x1.5	520	14	169	265	230	300	14.5	4
160M	330	265	250	95	42	M16x36	110	90	12	37	8	M40x1.5	610	15	270	300	250	350	18.5	5
160L	330	265	250	95	42	M16x36	110	90	12	37	8	M40x1.5	655	15	270	300	250	350	18.5	5
180M	380	280	270	95	48	M16x36	110	90	14	42.5	9	M40x1.5	680	15	277	300	250	350	18.5	5
180L	380	280	270	95	48	M20x42	110	90	14	42.5	9	M40x1.5	720	15	277	300	250	350	18.5	5
200L	420	315	325	120	55	M20x42	110	90	16	49	10	M50x1.5	760	17	300	350	300	400	18.5	5
225S(4-8P)	465	335	335	120	60	M20x42	140	110	18	53	11	M50x1.5	825	20	340	400	350	450	18.5	5
225M(2P)	465	335	335	120	55	M20x42	110	90	16	49	10	M50x1.5	820	20	310	400	350	450	18.5	5
225M(4-8P)	465	335	335	120	60	M20x42	140	110	18	53	11	M50x1.5	850	20	340	400	350	450	18.5	5
250M(2P)	520	375	370	160	60	M20x42	140	110	18	53	11	M63x1.5	925	20	353	500	450	550	18.5	5
250M1(4-8P)	520	375	370	160	65	M20x42	140	110	18	58	11	M63x1.5	925	20	353	500	450	550	18.5	5
250M2(4P)	520	375	370	160	70	M20x42	140	110	20	62.5	12	M63x1.5	925	20	353	500	450	550	18.5	5
280S(2P)	570	405	400	160	65	M20x42	140	110	18	58	11	M63x1.5	960	22	350	500	450	550	18.5	5
280S(4-8P)	570	405	400	160	75	M20x42	140	110	20	67.5	12	M63x1.5	975	22	350	500	450	550	18.5	5
280M(2P)	570	405	400	160	65	M20x42	140	110	18	58	11	M63x1.5	1000	22	350	500	450	550	18.5	5
280M1(4-8P)	570	405	400	160	75	M20x42	140	110	20	67.5	12	M63x1.5	1015	22	350	500	450	550	18.5	5
280M2(4P)	570	405	400	160	80	M20x42	170	140	22	71	14	M63x1.5	1060	22	450	550	450	550	18.5	5
315S(2P)	650	500	495	195	65	M20x42	140	110	18	58	11	M63x1.5	1160	24	387	600	550	660	24	6
315M(2P)	650	500	495	195	65	M20x42	140	110	18	58	11	M63x1.5	1270	24	387	600	550	660	24	6
315L(2P)	650	500	495	195	65	M20x42	140	110	18	58	11	M63x1.5	1270	24	387	600	550	660	24	6
315S(4-8P)	650	500	495	195	80	M20x42	170	140	22	71	14	M63x1.5	1190	24	417	600	550	660	24	6
315M(4-8P)	650	500	495	195	80	M20x42	170	140	22	71	14	M63x1.5	1300	24	417	600	550	660	24	6
315L(4-8P)	650	500	495	195	80	M20x42	170	140	22	71	14	M63x1.5	1300	24	417	600	550	660	24	6
355M(2P)V1	735	645	640	330	75	M24x50	140	110	20	67.5	12	M63x1.5	1500	25	420	740	680	800	24	6
355L(2P)V1	735	645	640	330	75	M24x50	140	110	20	67.5	12	M63x1.5	1500	25	420	740	680	800	24	6
355M(4-8P)V1	735	645	640	330	95	M24x50	170	140	25	86	14	M63x1.5	1530	25	450	740	680	800	24	6
*355M(4-8P)V1	735	645	640	330	100	M24x50	210	160	28	90	16	M63x1.5	1570	25	490	740	680	800	24	6
355L(4-8P)V1	735	645	640	330	95	M24x50	170	140	25	86	14	M63x1.5	1530	25	450	740	680	800	24	6
*355M(4-8P)V1	735	645	640	330	100	M24x50	210	160	28	90	16	M63x1.5	1570	25	490	740	680	800	24	6

The 'R' dimension is zero.

The motors of B5 are supplied only up to frame size 315

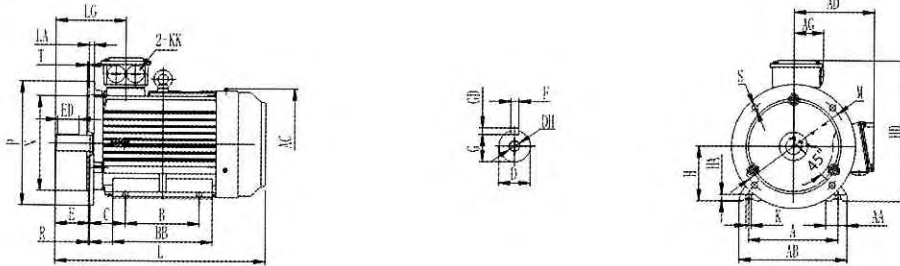
\* These motors can also be supplied. Please state the dimensions of the shaft extension on order.

# Squirrel-cage motors

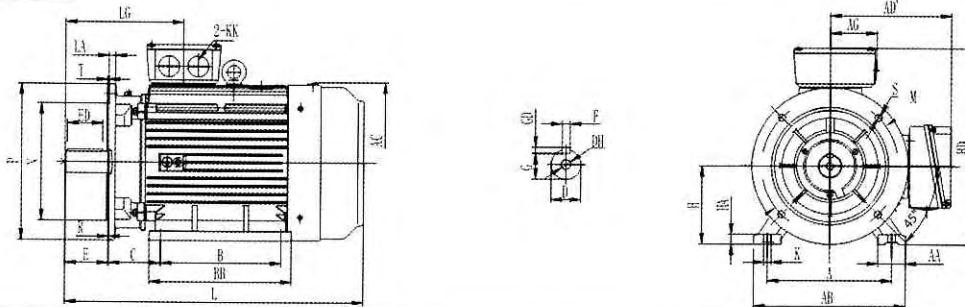
## Dimensions foot-flange mount B35



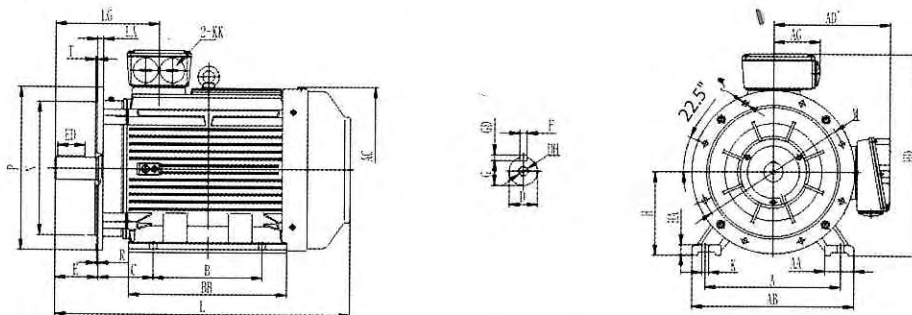
HC-80~132



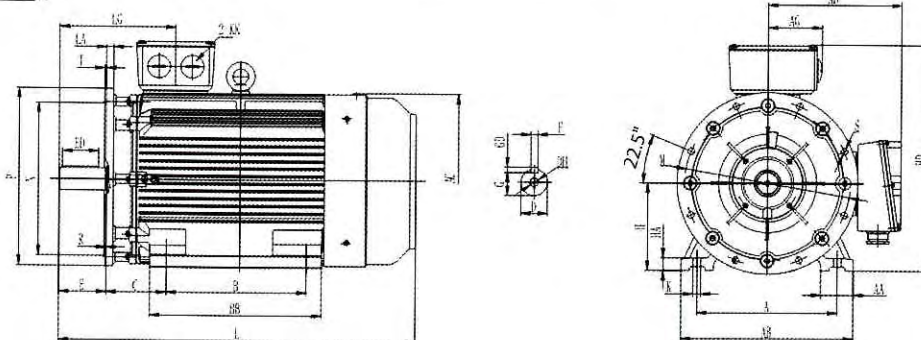
HC-160~200



HC-225~280

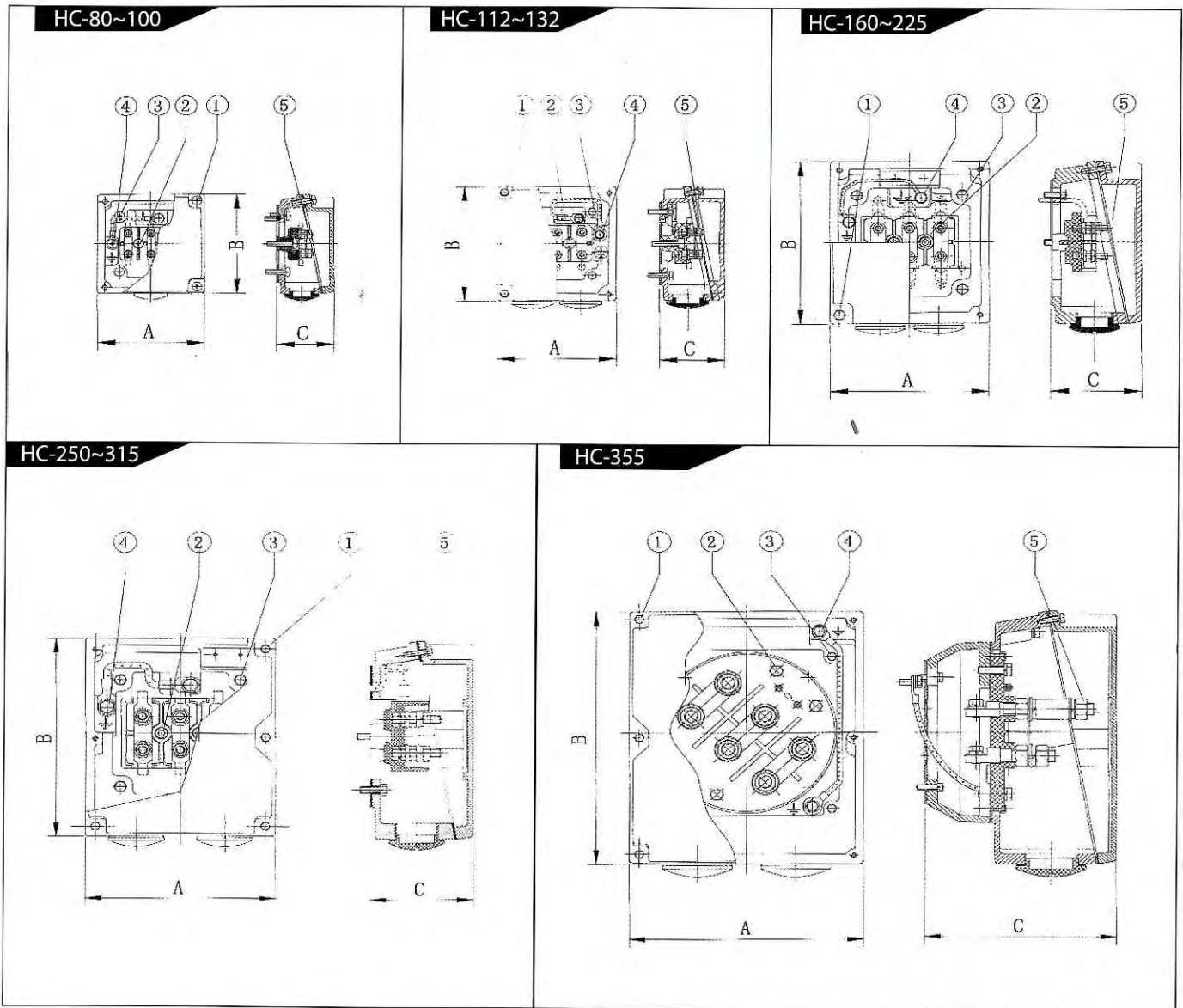


HC-315~355



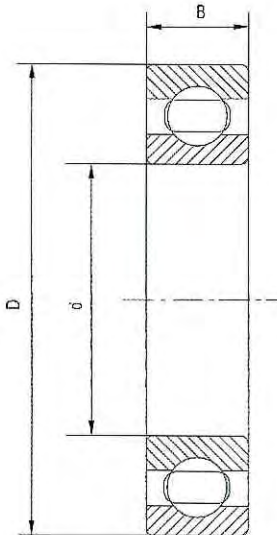
# Squirrel-cage motors

## Top terminal box



FRAME	A	B	C	1	2	3	4	5	METRIC GLAND SIZE	PG GLAND SIZE
HC-80	95	95	56	M5X16	M5X25	M5X16	M5X12	M4	M25X1.5	PG16
HC-90-100	105	109	56	M5X16	M5X25	M5X16	M5X12	M4	M25X1.5	PG16
HC-112-132	117	125	65	M5X16	M5X25	M5X20	M5X16	M5	2XM32X1.5	2XPG21
HC-160-180	155	177	87	M6X16	M6X25	M6X16	M6X12	M6	2XM40X1.5	2XPG29
HC-200-225	179	215	107	M6X25	M8X35	M8X20	M8X16	M8	2XM50X1.5	2XPG36
HC-250-280	217	261	120	M6X30	M8X35	M18X30	M10X20	M10	2XM63X1.5	2XPG42
HC-315	279	331	165	M8X35	M10X45	M10X30	M10X20	M12	2XM63X1.5	2XPG48
HC-355	334	410	278	M8X30	M12X80	M12X30	M10X25	M20	2XM63X1.5	2XPG48

### Bearing data



Frame	DE	NDE	d	D	B
HC-80	6204 ZZ C3	6204 ZZ C3	20	47	14
HC-90	6205 ZZ C3	6205 ZZ C3	25	52	15
HC-100	6206 ZZ C3	6206 ZZ C3	30	62	16
HC-112	6306 ZZ C3	6306 ZZ C3	30	72	19
HC-132	6308 ZZ C3	6308 ZZ C3	40	90	23
HC-160	6309 C3	6309 C3	45	100	25
HC-180	6311 C3	6311 C3	55	120	29
HC-200	6312 C3	6312 C3	60	130	31
HC-225	6313 C3	6313 C3	65	140	33
HC-250(Horizontal)	6314 C3	6314 C3	70	150	35
HC-250(Vertical)	6314 C3	7314	70	150	35
HC-280-2P(Horizontal)	6314 C3	6314 C3	70	150	35
HC-280-2P(Vertical)	6314 C3	7314	70	150	35
HC-280-4-8(Horizontal)	6317 C3	6317 C3	85	180	41
HC-280-4-8(Vertical)	6317 C3	7317	85	180	41
HC-315 2 P(Horizontal)	6316 C3	6316 C3	80	170	39
HC-315 2 P(Vertical)	6316 C3	7316	80	170	39
HC-315 4-8P(Horizontal)	N319	6319 C3	95	200	45
HC-315 4-8P(Vertical)	N319	7319	95	200	45
HC-355 2P(Horizontal)	6319 C3	6319 C3	95	200	45
HC-355 2P(Vertical)	6319 C3	7319	95	200	45
HC-355 4-8 P(Horizontal)	N322	6322 C3	110	240	50
HC-355 4-8 P(Vertical)	N322	7322	110	240	50

- HC motors are equipped with bearings from excellent manufacturers.
- In general the bearings have C3 clearances.
- Motors of frame sizes 80–132 are fitted with life-lubricated bearings.
- Motors of frame sizes 160–355 are fitted with open bearings and regreasing device. Depending on the useful life of grease, open bearings must be regreased in good time so that the scheduled bearing service life is reached.

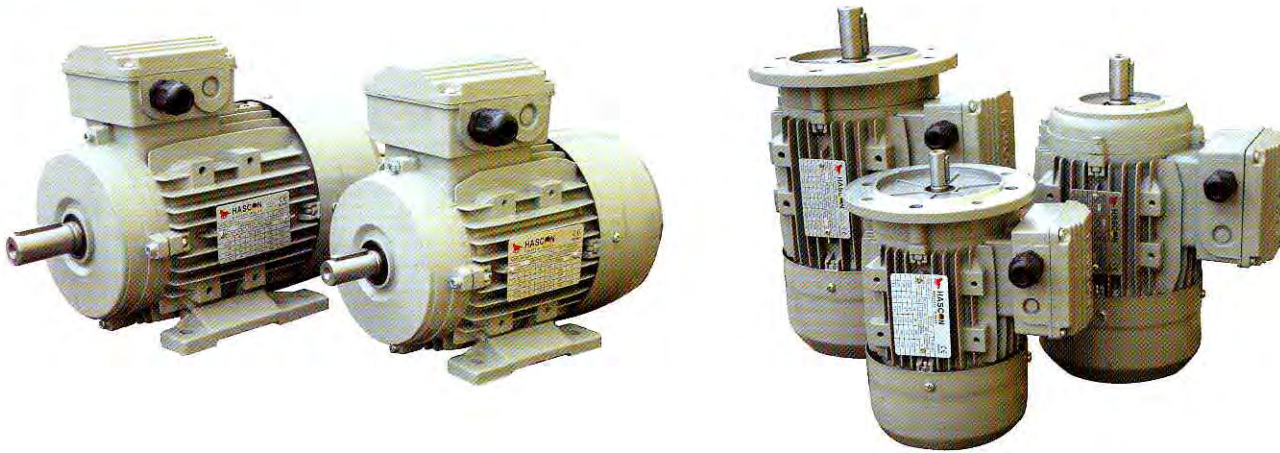
Frame size	Drive end bearing	Non-drive end bearing	Reqreasing period hours for operating temperatures up to 70 C			Quantity of grease in bearing chamber grams
			<3600r/min	<1800r/min	<1200r/min	
HC-160	6309 C3	6309 C3	6000	12000	18000	13
HC-180	6311 C3	6311 C3	4000	11000	16000	15
HC-200	6312 C3	6312 C3	3500	8500	13000	20
HC-225	6313 C3	6313 C3	3000	6000	9000	22
HC-250	6314 C3	6314 C3	2000	5000	8000	23
HC-280 2P	6314 C3	6314 C3	1200	-	-	30
HC-280 4-8P	6317 C3	6317 C3	-	4000	6000	30
HC-315 2P	6316 C3	6316 C3	1200	-	-	30
HC-315 4-8P	N319	6319 C3	-	2000	3000	45
HC-355 2P	6319 C3	6319 C3	1200	-	-	30
HC-355 4-8P	N322	6322 C3	-	1400	2200	60

Notes:

1. Vertical motors should be greased twice as often as horizontal motors.
  2. Regreasing time should be reduced if bearing operating temperature is in excess of 70°C
- HASCON reserves right to make changes to this brochure without notices.

# HA SERIES THREE-PHASE ASYNCHRONOUS MOTORS

## Aluminum housing



HA series aluminum housing three-phase asynchronous motors, with latest design in entirety, are made of selected quality materials and conform to the IEC standard. HA motors have good performance, safety and reliable operation, nice appearance, and can be maintained very conveniently, while with low noises, little vibration and at the same time light weight and simple construction. These series motors can be used for general drive.

### Technical Data @50Hz

Model	Power (kW)	Current (A)			Current (A)			Current (A)			Speed (r/min)	Eff. (%)	Power Factor	Tstart/Tn (Times)	Tmax/Tn (Times)	Tmax/Tn (Times)	Is/In (Times)	Noise dB(A)	W.t. (Kg)
		220V	380V	660V	230V	400V	690V	240V	415V	720V									
HA561-2	0.09	0.64	0.37	0.21	0.61	0.35	0.20	0.58	0.34	0.19	2670	57	0.65	2.2	2.4	1.6	6	58	2.8
HA562-2	0.12	0.74	0.43	0.25	0.70	0.40	0.23	0.67	0.39	0.22	2730	62	0.69	2.2	2.4	1.6	6	58	3.2
HA563-2	0.18	1.0	0.58	0.34	0.96	0.56	0.32	0.93	0.54	0.31	2750	65	0.72	2.2	2.4	1.6	6	59	3.5
HA631-2	0.18	1.00	0.58	0.33	0.95	0.55	0.32	0.92	0.53	0.31	2710	63	0.75	2.2	2.4	1.6	6	61	4
HA632-2	0.25	1.29	0.75	0.43	1.23	0.71	0.41	1.19	0.69	0.40	2710	65	0.78	2.2	2.4	1.6	6	61	4.4
HA633-2	0.37	1.92	1.11	0.64	1.82	1.05	0.61	1.76	1.02	0.59	2710	65	0.78	2.2	2.4	1.6	6	62	4.9
HA711-2	0.37	1.76	1.02	0.59	1.67	0.97	0.56	1.61	0.93	0.54	2730	70	0.79	2.2	2.4	1.6	6	64	5.6
HA712-2	0.55	2.57	1.49	0.86	2.45	1.42	0.82	2.36	1.36	0.79	2760	71	0.79	2.2	2.4	1.6	6	64	6.1
HA713-2	0.75	3.33	1.93	1.11	3.18	1.83	1.06	3.06	1.77	1.02	2730	72	0.82	2.2	2.4	1.5	6	65	7
HA801-2	0.75	3.21	1.86	1.07	3.06	1.77	1.02	2.94	1.70	0.98	2770	73	0.84	2.2	2.4	1.5	6	67	9.1
HA802-2	1.1	4.56	2.64	1.52	4.35	2.51	1.45	4.18	2.42	1.39	2770	76.2	0.83	2.2	2.4	1.5	6	67	10.2
HA803-2	1.5	6.04	3.50	2.01	5.87	3.32	1.92	5.54	3.20	1.85	2800	78.5	0.83	2.2	2.4	1.5	6	70	11.7
HA90S-2	1.5	5.97	3.46	1.99	5.76	3.28	1.90	5.47	3.16	1.82	2840	78.5	0.84	2.2	2.4	1.5	6	72	12
HA90L1-2	2.2	8.39	4.85	2.80	8.0	4.61	2.66	7.69	4.45	2.56	2840	81	0.85	2.2	2.4	1.4	6	72	15
HA90L2-2	3	11.08	6.42	3.69	10.56	6.10	3.52	10.16	5.88	3.39	2840	82.6	0.86	2.2	2.4	1.4	6	74	18.5
HA100L1-2	3	10.96	6.34	3.65	10.44	6.03	3.48	10.04	5.81	3.35	2840	82.6	0.87	2.2	2.3	1.4	7	76	22.3
HA100L2-2	4	14.33	8.30	4.78	13.65	7.88	4.55	13.14	7.60	4.38	2850	84.2	0.87	2.2	2.3	1.4	7.5	77	25.2
HA112M-2	4	14.33	8.30	4.78	13.65	7.88	4.55	13.14	7.60	4.38	2880	84.2	0.87	2.2	2.3	1.4	7.5	77	26.7
HA112L-2	5.5	19.14	11.08	6.38	18.23	10.53	6.08	17.54	10.15	5.85	2880	85.7	0.88	2.2	2.3	1.2	7.5	78	30.2
HA132S1-2	5.5	19.14	11.08	6.38	18.23	10.53	6.08	17.54	10.15	5.85	2900	85.7	0.88	2	2.2	1.2	7.5	80	38.5
HA132S2-2	7.5	25.71	14.88	8.57	24.49	14.14	8.16	23.57	13.63	7.86	2920	87	0.88	2	2.2	1.2	7.5	80	42.2
HA132M1-2	9.2	30.86	17.85	10.28	29.87	17.25	9.96	28.26	16.34	9.42	2930	88	0.89	2	2.2	1.2	7.5	81	51.4
HA132M2-2	11	36.28	21.01	12.09	34.57	19.96	11.52	33.26	19.23	11.09	2930	88.4	0.9	2	2.2	1.2	7.5	83	58.8
HA160M1-2	11	36.28	21.01	12.09	34.57	19.96	11.52	33.26	19.23	11.09	2940	88.4	0.9	2	2.2	1.2	7.5	86	75
HA160M2-2	15	48.39	28.01	16.13	46.09	26.61	15.36	44.35	25.62	14.78	2940	89.4	0.91	2	2.2	1.2	7.5	86	88
HA160L-2	18.5	59.28	34.32	19.76	56.47	32.6	18.82	54.34	31.43	18.11	2940	90	0.91	2	2.2	1.1	7.5	86	99

**Technical Data @50Hz**

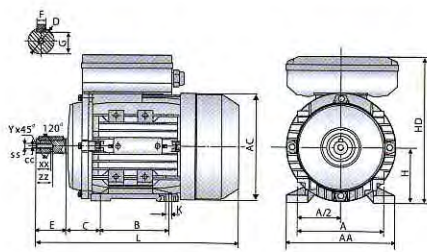
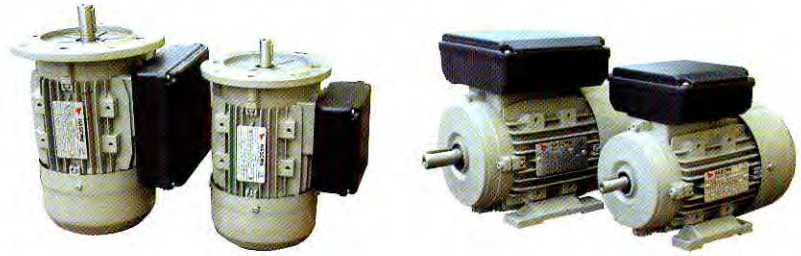
Model	Power (KW)	Current (A)			Current (A)			Current (A)			Speed (r/min)	Eff. (%)	Power Factor	Tstart/Tn (Times)	Tmax/Tn (Times)	Tmax/Tn (Times)	Is/In (Times)	Noise dB(A)	W.t. (Kg)
		220V	380V	660V	230V	400V	690V	240V	415V	720V									
HA561-4	0.06	0.55	0.32	0.18	0.52	0.30	0.17	0.50	0.29	0.17	1320	48.5	0.59	2.3	2.4	1.7	6	50	3
HA562-4	0.09	0.77	0.45	0.26	0.74	0.43	0.25	0.71	0.41	0.24	1320	50	0.61	2.3	2.4	1.7	6	50	3.3
HA563-4	0.12	0.96	0.56	0.32	0.92	0.53	0.31	0.88	0.51	0.29	1320	52	0.63	2.2	2.4	1.7	6	51	3.5
HA631-4	0.12	0.86	0.50	0.29	0.82	0.47	0.27	0.79	0.46	0.26	1350	57	0.64	2.2	2.4	1.7	6	52	3.9
HA632-4	0.18	1.23	0.71	0.41	1.17	0.68	0.39	1.13	0.65	0.38	1350	59	0.65	2.2	2.4	1.7	6	52	4.3
HA633-4	0.25	1.66	0.96	0.55	1.58	0.91	0.53	1.52	0.88	0.51	1350	60	0.66	2.2	2.4	1.7	6	54	4.8
HA711-4	0.25	1.52	0.88	0.51	1.45	0.84	0.48	1.39	0.81	0.46	1350	60	0.72	2.2	2.4	1.7	6	55	5.4
HA712-4	0.37	2.02	1.17	0.67	1.92	1.11	0.64	1.85	1.07	0.62	1370	65	0.74	2.2	2.4	1.7	6	55	6.2
HA713-4	0.55	2.92	1.69	0.97	2.78	1.60	0.93	2.67	1.55	0.89	1380	66	0.75	2.2	2.4	1.7	6	57	7.3
HA801-4	0.55	2.87	1.66	0.96	2.74	1.58	0.91	2.63	1.52	0.88	1370	67	0.75	2.2	2.4	1.7	6	58	9
HA802-4	0.75	3.50	2.03	1.17	3.34	1.93	1.11	3.21	1.86	1.07	1380	72	0.78	2.2	2.4	1.5	6	58	10
HA803-4	1.1	4.86	2.81	1.62	4.63	2.67	1.54	4.45	2.57	1.48	1390	76.2	0.78	2.2	2.4	1.5	6	60	12.3
HA90S-4	1.1	4.80	2.78	1.60	4.57	2.64	1.52	4.40	2.54	1.47	1400	76.2	0.79	2.2	2.4	1.5	6	61	12.1
HA90L-4	1.5	6.27	3.63	2.09	5.97	3.45	1.99	5.75	3.32	1.92	1400	78.5	0.8	2.2	2.4	1.5	6	61	14.6
HA90L2-4	2.2	8.91	5.16	2.97	8.45	4.90	2.83	8.17	4.72	2.72	1400	81	0.8	2.2	2.4	1.	7	63	18.3
HA100L1-4	2.2	8.80	5.09	2.93	8.38	4.84	2.79	8.07	4.66	2.69	1420	81	0.81	2.2	2.3	1.5	7	64	21
HA100L2-4	3	11.77	6.81	3.92	11.21	6.47	3.74	10.79	6.24	3.60	1420	82.6	0.81	2.2	2.3	1.5	7	64	24.7
HA100L3-4	4	15.20	8.80	5.07	14.18	8.36	4.83	13.94	8.06	4.65	1430	84.2	0.82	2.2	2.2	1.5	7	65	29
HA112M-4	4	15.02	8.70	5.01	14.31	8.26	4.77	13.77	7.96	4.59	1430	84.2	0.83	2.2	2.2	1.5	7	65	30.5
HA112L-4	5.5	20.29	11.75	6.76	19.33	11.16	6.44	18.60	10.76	6.20	1440	85.7	0.83	2.2	2.2	1.4	7	68	34.8
HA132S-4	5.5	20.05	11.61	6.68	19.1	11.03	6.37	18.38	10.63	6.13	1450	85.7	0.84	2.2	2.2	1.4	7	71	40.4
HA132M-4	7.5	26.62	15.41	8.87	25.35	14.64	8.45	24.40	14.11	8.13	1450	87	0.85	2.2	2.2	1.4	7	71	49.6
HA132L1-4	9.2	32.46	18.79	10.82	30.92	17.85	10.31	29.76	17.21	9.92	1460	87.5	0.85	2.2	2.2	1.4	7.5	74	56.6
HA132L2-4	10	35.08	20.31	11.69	33.42	19.3	11.14	32.16	18.60	10.72	1460	88	0.85	2.2	2.2	1.4	7.5	74	58.6
HA132L3-4	11	37.97	21.98	12.66	36.17	20.88	12.06	34.81	20.13	11.60	1460	88.4	0.86	2.2	2.2	1.4	7.5	74	64
HA160M-4	11	37.54	21.73	12.51	35.76	20.64	11.92	34.41	19.90	11.47	1460	88.4	0.87	2.2	2.2	1.4	7	75	78
HA160L-4	15	51.18	29.63	17.06	48.76	28.15	16.25	46.92	27.13	15.64	1460	88.4	0.87	2.2	2.2	1.4	7.5	75	98
HA631-6	0.09	0.92	0.53	0.31	0.88	0.51	0.29	0.85	0.49	0.28	840	42	0.61	2	2	1.5	3.5	50	4.2
HA632-6	0.12	1.129	0.65	0.38	1.08	0.62	0.36	1.03	0.60	0.34	850	45	0.62	2	2	1.5	3.5	50	4.8
HA711-6	0.18	1.28	0.74	0.43	1.22	0.70	0.41	1.17	0.68	0.39	880	56	0.66	1.6	1.7	1.5	4	52	6
HA712-6	0.25	1.6	0.92	0.53	1.51	0.87	0.50	1.46	0.84	0.49	900	59	0.7	2.1	2.2	1.5	4	52	6.5
HA713-6	0.37	2.31	1.34	0.77	2.2	1.27	0.73	2.11	1.22	0.70	890	61	0.69	2	2.1	1.5	4	54	7.2
HA801-6	0.37	2.24	1.30	0.75	2.13	1.23	0.71	2.05	1.19	0.68	900	62	0.7	1.9	1.9	1.5	4	56	8.2
HA802-6	0.55	2.99	1.73	1.00	2.85	1.65	0.95	2.74	1.59	0.91	900	67	0.72	2	2.3	1.5	4	56	9.9
HA803-6	0.75	4.02	2.33	1.34	3.83	2.21	1.28	3.69	2.13	1.23	900	68	0.72	2	2.3	1.5	4	58	11.3
HA90S-6	0.75	3.96	2.29	1.32	3.77	2.18	1.26	3.63	2.10	1.21	920	69	0.72	2.2	2.2	1.5	5.5	59	11.7
HA90L-6	1.1	5.49	3.18	1.83	5.23	3.02	1.74	5.03	2.91	1.68	925	72	0.73	2.2	2.2	1.3	5.5	59	15.1
HA100L-6	1.5	7.00	4.05	2.33	6.67	3.85	2.22	6.42	3.71	2.14	945	74	0.76	2.2	2.2	1.3	6	61	19.1
HA112M-6	2.2	9.74	5.64	3.25	9.28	5.36	3.09	8.93	5.16	2.98	955	78	0.76	2.2	2.2	1.3	6	64	25.4
HA132S-6	3	13.11	7.59	4.37	12.49	7.21	4.16	12.02	6.95	4.01	960	79	0.76	2	2	1.3	6.5	64	36.1
HA132M1-6	4	17.16	9.93	5.72	16.35	9.44	5.45	15.73	9.10	5.24	960	80.5	0.76	2	2	1.3	6.5	68	45
HA132M2-6	5.5	22.58	13.08	7.53	21.51	12.42	7.17	20.70	11.97	6.90	960	83	0.77	2	2	1.3	6.5	68	55.5
HA132L-6	7.5	30.07	17.41	10.02	28.65	16.54	9.55	27.57	15.94	9.19	960	85	0.77	2	2	1.3	6.5	68	60
HA160M-6	7.5	28.61	16.56	9.54	27.25	15.73	9.08	26.22	15.17	8.74	960	86	0.8	2	2.2	1.3	6.5	68	72
HA160L-6	11	41.76	24.18	13.92	39.78	22.97	13.26	38.28	22.14	12.76	960	87.5	0.79	2	2.2	1.3	6.5	73	92
HA711-8	0.09	0.88	0.51	0.29	0.84	0.48	0.28	0.81	0.47	0.27	680	48	0.56	1.5	1.7	1.3	3	50	6
HA712-8	0.12	1.05	0.61	0.35	1.00	0.58	0.33	0.96	0.55	0.32	690	51	0.59	1.6	1.7	1.3	2.7	50	6.8
HA801-8	0.18	1.52	0.88	0.51	1.45	0.84	0.48	1.39	0.80	0.46	680	51	0.61	1.5	1.7	1.3	2.8	52	9.9
HA802-8	0.25	1.92	1.11	0.64	1.83	1.06	0.61	1.76	1.02	0.59	680	56	0.61	1.6	2	1.3	2.7	52	10.9
HA803-8	0.37	2.45	1.42	0.82	2.33	1.35	0.78	2.24	1.30	0.75	680	63	0.63	1.6	1.8	1.3	2.8	56	14.8
HA90S-8	0.55	3.36	1.95	1.12	3.21	1.85	1.07	3.08	1.78	1.03	680	66	0.65	1.6	1.8	1.3	3	56	17.2
HA100L1-8	0.75	4.45	2.58	1.48	4.24	2.45	1.41	4.08	2.36	1.36	710	66	0.67	1.7	2.1	1.3	3.5	59	17.5
HA100L2-8	1.1	5.81	3.36	1.94	5.54	3.20	1.85	5.33	3.08	1.78	710	72	0.69	1.7	2.1	1.2	3.5	59	19.7
HA112M-8	1.5	7.82	4.53	2.61	7.45	4.30	2.48	7.17	4.15	2.39	710	74	0.68	1.8	2.1	1.2	4.2	61	25.6
HA132S-8	2.2	10.84	6.28	3.61	10.33	5.96	3.44	9.94	5.75	3.31	720	75	0.71	2	2	1.2	5.5	64	35.5
HA132M-8	3	14.01	8.11	4.67	13.34	7.70	4.45	12.84	7.43	4.28	720	77	0.73	2	2	1.2	5.5	64	45
HA160M1-8	4	17.97	10.41	5.99	17.12	9.89	5.71	16.48	9.53	5.49	730	80	0.73	1.9	2.1	1.2	6	68	60
HA160M2-8	5.5	23.36	13.52	7.79	22.25	12.85	7.42	21.41	12.38	7.14	720	83.5	0.74	2	2.2	1.2	6	68	72
HA160L-8	7.5	30.87	17.87	10.29	29.41	17.0	9.8	28.30	16.37	9.43	720	85	0.75	1.9	2.2	1.2	6	68	92



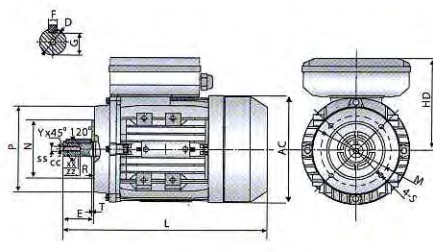


HAL motors have good performance, safety and reliable operation, nice appearance and, can be maintained very conveniently, while with low noises, little vibration and at the same time of lightweight and simple construction. The composite performance is good, the multiple of starting torque is 1.8~2.5.

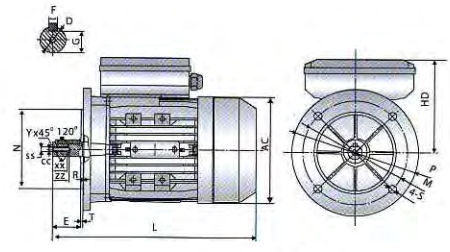
These series motors are suitable for the occasion where the requirements of big starting torque and high over load, such as air-compressors, pumps, fans, medical apparatus and instruments, and many other small machines.



**IMB3**



**IMB14**



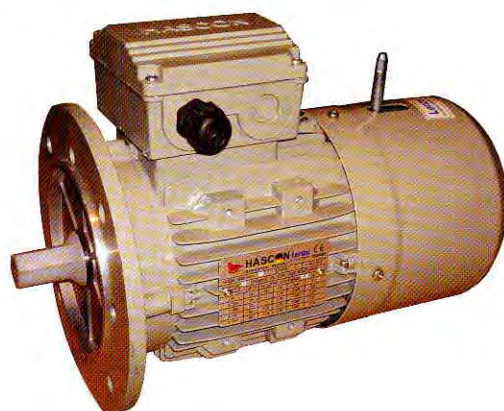
**IMB5**

**Overall & Installation Dimensions**

Frame Size	MOUNTING DIMENSIONS																OVERALL DIMENSIONS					SHAFT END SCREW DIMENSIONS									
	IMB3								IMB14				IMB5																		
	A	B	C	D	E	F	G	H	K	M	N	P	R	S	T	M	N	P	R	S	T	AA	AC	AD	HD	L	SS	XX	ZZ	CC	Y
63	100	80	40	11	23	4	8.5	63	7X10	75	60	90	0	M5	2.5	115	95	140	0	φ 10	3.0	120	130	179	116	212	M4	10	15	3.3	0.8
71	112	90	45	14	30	5	11	71	7X10	85	70	105	0	M6	2.5	130	110	160	0	φ 10	3.5	132	145	194	123	255	M5	12	18	4.2	0.8
80	125	100	50	19	40	6	15.5	80	10X13	100	80	120	0	M6	3.0	165	130	200	0	φ 12	3.5	157	165	223	143	290	M6	16	22	5	1
90S	140	100	56	24	50	8	20	90	10X13	115	95	140	0	M8	3.0	165	130	200	0	φ 12	3.5	172	185	240	150	335	M8	20	25	6.8	1
90L	140	125	56	24	50	8	20	90	10X13	115	95	140	0	M8	3.0	165	130	200	0	φ 12	3.5	172	185	240	150	365	M8	20	25	6.8	1
100L	160	140	63	28	60	8	24	100	12X15	130	110	160	0	M8	3.5	215	180	250	0	φ 15	4.0	196	205	260	160	445	M10	22	28	8.5	1.5
112M	190	140	70	28	60	8	24	112	12X15	130	110	160	0	M8	3.5	215	180	250	0	φ 15	4.0	222	230	295	183	453	M10	22	28	8.5	1.5

**TECHNICAL DATA @230V**

Model	Power (kW)	Current (A)	Speed (r/min)	Eff. (%)	Power Factor	Rated Torque (N.M)	Tstart/Tn (Times)	Tmax/Tn (Times)	Starting Current (A)	Run Capacitor (μ f/V)	Start Capacitor (μ f/V)	Noise dB(A)	W.t. (Kg)
HAL631-2	0.18	1.31	2750	65	0.92	0.63	2.5	1.7	8	8 μ F/450V	40 μ F/250V	70	4.2
HAL632-2	0.25	1.76	2760	67	0.92	0.87	2.5	1.7	10	10 μ F/450V	50 μ F/250V	73	4.7
HAL711-2	0.37	2.42	2780	70	0.95	1.27	2.5	1.7	15	12 μ F/450V	75 μ F/250V	75	5.3
HAL712-2	0.55	3.45	2790	73	0.95	1.88	2.5	1.7	20	16 μ F/450V	100 μ F/250V	76	7.4
HAL801-2	0.75	4.54	2800	74	0.97	2.59	2.5	1.7	30	20 μ F/450V	100 μ F/250V	76	9.5
HAL802-2	1.1	6.45	2810	76	0.97	3.74	2.5	1.7	40	25 μ F/450V	150 μ F/250V	79	11.2
HAL90S-2	1.5	8.62	2810	78	0.97	5.10	2.5	1.8	55	40 μ F/450V	150 μ F/250V	84	14
HAL90L-2	2.2	12.5	2810	79	0.97	7.48	2.2	1.8	75	50 μ F/450V	250 μ F/250V	84	17
HAL100L-2	3.0	16.6	2830	80	0.98	10.12	2.2	2.0	95	60 μ F/450V	400 μ F/300V	88	25
HAL112M-2	3.7	20.5	2850	80	0.98	12.40	2.0	2.0	120	60 μ F/450V	500 μ F/300V	90	30.5
HAL631-4	0.12	1.04	1350	55	0.91	0.85	2.5	1.6	6	10 μ F/450V	40 μ F/250V	64	4
HAL632-4	0.18	1.54	1360	56	0.91	1.26	2.5	1.6	8.5	12 μ F/450V	40 μ F/250V	64	4.8
HAL711-4	0.25	1.94	1380	61	0.92	1.73	2.5	1.6	10	14 μ F/450V	50 μ F/250V	66	5.9
HAL712-4	0.37	2.80	1380	62.5	0.92	2.56	2.5	1.5	15	16 μ F/450V	75 μ F/250V	68	6.9
HAL801-4	0.55	3.80	1400	67	0.94	3.75	2.5	1.7	20	20 μ F/450V	100 μ F/250V	71	9.6
HAL802-4	0.75	4.75	1410	73	0.94	5.08	2.5	1.7	30	25 μ F/450V	150 μ F/250V	71	10.8
HAL90S-4	1.1	6.76	1410	74.5	0.95	7.45	2.2	1.8	40	30 μ F/450V	150 μ F/250V	74	13.5
HAL90L-4	1.5	9.03	1420	76	0.95	10.09	2.2	1.8	55	40 μ F/450V	200 μ F/250V	79	16.5
HAL100L1-4	2.2	12.6	1430	78	0.97	14.69	2.2	1.8	75	50 μ F/450V	300 μ F/250V	79	24
HAL100L2-4	3	17.0	1440	79	0.97	19.90	2.2	1.8	95	60 μ F/450V	400 μ F/250V	83	30
HAL112M-4	3.7	20.7	1440	80	0.97	24.54	2.0	2.0	120	60 μ F/450V	500 μ F/250V	86	36



#### HAB series -enclosed construction externally ventilated -sizes 63 ~ 160

The brake-motors of the HAB series result from coupling an asynchronous three-phase motor and an electromagnetic D.C. brake unit. Due to their reliability and operating safety, as well as their quick braking time (connection & disconnection time = 5~80 milliseconds) they are suitable for a great variety of applications, as:

- Braking of loads or torques on the driving shaft.
- Braking of rotating masses to reduce any lost-time.
- Braking operations to increase the set-up precision.
- Braking of machine parts, according to safety rules.

#### 2 poles-3000rpm-50Hz

Brake motors have a  $\pm 6\%$  tolerance on the supply voltage

Model	Power (KW)	Speed (r/min)	Eff. (%)	Power factor	Rated Current (A)			Tstart/Tn (Times)	Tmax/Tn (Times)	Tmin/Tn (Times)	Is/In	Noise dB(A)
					230V	400V	690V					
HAB631-2	0.18	2710	63	0.75	0.95	0.55	0.32	2.2	2.4	1.6	6	61
HAB632-2	0.25	2710	65	0.78	1.23	0.71	0.41	2.2	2.4	1.6	6	61
HAB633-2	0.37	2710	65	0.78	1.82	1.05	0.61	2.2	2.4	1.6	6	62
HAB711-2	0.37	2730	70	0.79	1.67	0.97	0.56	2.2	2.4	1.6	6	64
HAB712-2	0.55	2760	71	0.79	2.45	1.42	0.82	2.2	2.4	1.6	6	64
HAB713-2	0.75	2730	72	0.82	3.18	1.83	1.06	2.2	2.4	1.5	6	65
HAB801-2	0.75	2770	73	0.84	3.06	1.77	1.02	2.2	2.4	1.5	6	67
HAB802-2	1.1	2770	76.2	0.83	4.35	2.51	1.45	2.2	2.4	1.5	6	67
HAB803-2	1.5	2800	78.5	0.83	5.87	3.32	1.92	2.2	2.4	1.5	6	70
HAB90S-2	1.5	2840	78.5	0.84	5.76	3.28	1.90	2.2	2.4	1.5	6	72
HAB90L1-2	2.2	2840	81	0.85	8.0	4.61	2.66	2.2	2.4	1.4	6	72
HAB90L2-2	3	2840	82.6	0.86	10.56	6.10	3.52	2.2	2.4	1.4	6	74
HAB100L1-2	3	2840	82.6	0.87	10.44	6.03	3.48	2.2	2.3	1.4	7	76
HAB100L2-2	4	2850	84.2	0.87	13.65	7.88	4.55	2.2	2.3	1.4	7.5	77
HAB112M-2	4	2880	84.2	0.87	13.65	7.88	4.55	2.2	2.3	1.4	7.5	77
HAB112L-2	5.5	2880	85.7	0.88	18.23	10.53	6.08	2.2	2.3	1.2	7.5	78
HAB132S1-2	5.5	2900	85.7	0.88	18.23	10.53	6.08	2	2.2	1.2	7.5	80
HAB132S2-2	7.5	2920	87	0.88	24.49	14.14	8.16	2	2.2	1.2	7.5	80
HAB132M1-2	9.2	2930	88	0.89	29.87	17.25	9.96	2	2.2	1.2	7.5	81
HAB132M2-2	11	2930	88.4	0.9	34.57	19.96	11.52	2	2.2	1.2	7.5	83
HAB160M1-2	11	2940	88.4	0.9	34.57	19.96	11.52	2	2.2	1.2	7.5	86
HAB160M2-2	15	2940	89.4	0.91	46.09	26.61	15.36	2	2.2	1.2	7.5	86
HAB160L-2	18.5	2940	90	0.91	56.47	32.6	18.82	2	2.2	1.1	7.5	86

### 4 Poles-1500 rpm-50Hz

Brake motors have a (+/-)6% tolerance on the supply voltage

Model	Power (KW)	Speed (r/min)	Eff. (%)	Power factor	Rated Current (A)			Tstart/Tn (Times)	Tmax/Tn (Times)	Tmin/Tn (Times)	Is/In	Noise dB(A)
					230V	400V	690V					
HAB631-4	0.12	1350	57	0.64	0.82	0.47	0.27	2.2	2.4	1.7	6	52
HAB632-4	0.18	1350	59	0.65	1.17	0.68	0.39	2.2	2.4	1.7	6	52
HAB633-4	0.25	1350	60	0.66	1.58	0.91	0.53	2.2	2.4	1.7	6	54
HAB711-4	0.25	1350	60	0.72	1.45	0.84	0.48	2.2	2.4	1.7	6	55
HAB712-4	0.37	1370	65	0.74	1.92	1.11	0.64	2.2	2.4	1.7	6	55
HAB713-4	0.55	1380	66	0.75	2.78	1.60	0.93	2.2	2.4	1.7	6	57
HAB801-4	0.55	1370	67	0.75	2.74	1.58	0.91	2.2	2.4	1.7	6	58
HAB802-4	0.75	1380	72	0.78	3.34	1.93	1.11	2.2	2.4	1.6	6	58
HAB803-4	1.1	1390	76.2	0.78	4.63	2.67	1.54	2.2	2.4	1.6	6	60
HAB90S-4	1.1	1400	76.2	0.79	4.57	2.64	1.52	2.2	2.4	1.6	6	61
HAB90L-4	1.5	1400	78.5	0.8	5.97	3.45	1.99	2.2	2.4	1.6	6	61
HAB90L2-4	2.2	1400	81	0.8	8.45	4.90	2.83	2.2	2.4	1.5	7	63
HAB100L1-4	2.2	1420	81	0.81	8.38	4.84	2.79	2.2	2.3	1.5	7	64
HAB100L2-4	3	1420	82.6	0.81	11.21	6.47	3.74	2.2	2.3	1.5	7	64
HAB100L3-4	4	1430	84.2	0.82	14.18	8.36	4.83	2.2	2.3	1.5	7	65
HAB112M-4	4	1430	84.2	0.83	14.31	8.26	4.77	2.2	2.2	1.5	7	65
HAB112L-4	5.5	1440	85.7	0.83	19.33	11.16	6.44	2.2	2.2	1.4	7	68
HAB132S-4	5.5	1450	85.7	0.84	19.1	11.03	6.37	2.2	2.2	1.4	7	71
HAB132M-4	7.5	1450	87	0.85	25.35	14.64	8.45	2.2	2.2	1.4	7	71
HAB132L1-4	9.2	1460	87.5	0.85	30.92	17.85	10.31	2.2	2.2	1.4	7.5	74
HAB132L2-4	10	1460	88	0.85	33.42	19.3	11.14	2.2	2.2	1.4	7.5	74
HAB132L3-4	11	1460	88.4	0.86	36.17	20.88	12.06	2.2	2.2	1.4	7.5	74
HAB160M-4	11	1460	88.4	0.87	35.76	20.64	11.92	2.2	2.2	1.4	7	75
HAB160L-4	15	1460	88.4	0.87	48.76	28.15	16.25	2.2	2.2	1.4	7.5	75

### 6 Poles-1000 rpm-50Hz

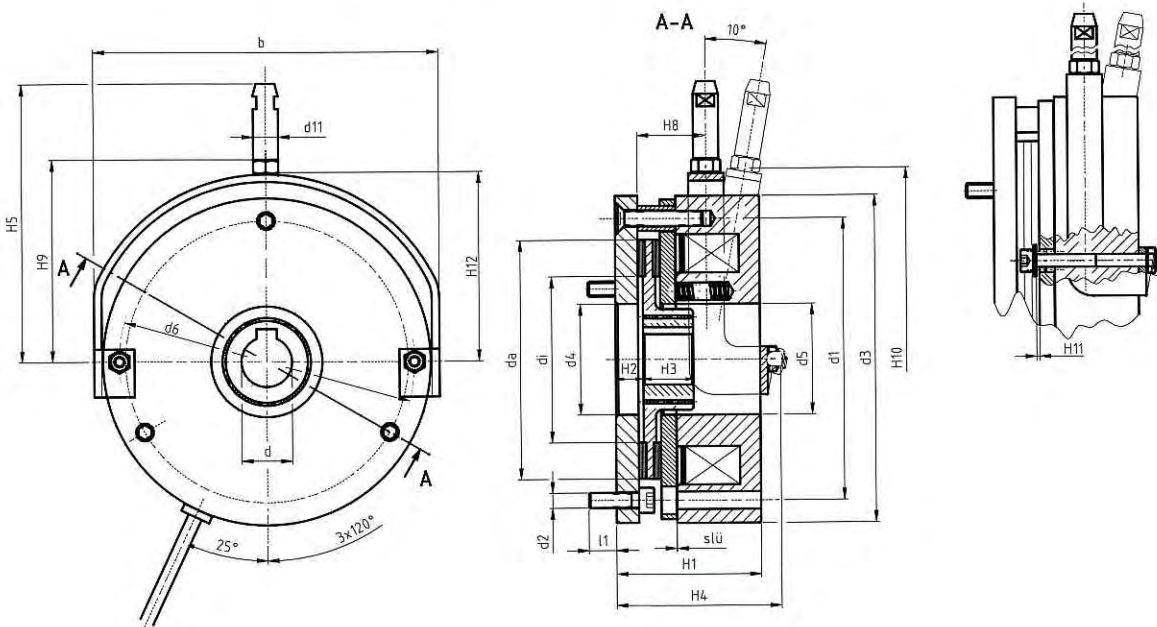
Brake motors have a (+/-)6% tolerance on the supply voltage

Model	Power (KW)	Speed (r/min)	Eff. (%)	Power factor	Rated Current (A)			Tstart/Tn (Times)	Tmax/Tn (Times)	Tmin/Tn (Times)	Is/In	Noise dB(A)
					230V	400V	690V					
HAB631-6	0.09	840	42	0.61	0.88	0.51	0.29	2	2	1.5	3.5	50
HAB632-6	0.12	850	45	0.62	1.08	0.62	0.36	2	2	1.5	3.5	50
HAB711-6	0.18	880	56	0.66	1.22	0.70	0.41	1.6	1.7	1.5	4	52
HAB712-6	0.25	900	59	0.7	1.51	0.87	0.50	2.1	2.2	1.5	4	52
HAB713-6	0.37	890	61	0.69	2.2	1.27	0.73	2	2.1	1.5	4	54
HAB801-6	0.37	900	62	0.7	2.13	1.23	0.71	1.9	1.9	1.5	4	56
HAB802-6	0.55	900	67	0.72	2.85	1.65	0.95	2	2.3	1.5	4	56
HAB803-6	0.75	900	68	0.72	3.83	2.21	1.28	2	2.3	1.5	4	58
HAB90S-6	0.75	920	69	0.72	3.77	2.18	1.26	2.2	2.2	1.5	5.5	59
HAB90L-6	1.1	925	72	0.73	5.23	3.02	1.74	2.2	2.2	1.3	5.5	59
HAB100L-6	1.5	945	74	0.76	6.67	3.85	2.22	2.2	2.2	1.3	6	61
HAB112M-6	2.2	955	78	0.76	9.28	5.36	3.09	2.2	2.2	1.3	6	64
HAB132S-6	3	960	79	0.76	12.49	7.21	4.16	2	2	1.3	6.5	64
HAB132M1-6	4	960	80.5	0.76	16.35	9.44	5.45	2	2	1.3	6.5	68
HAB132M2-6	5.5	960	83	0.77	21.51	12.42	7.17	2	2	1.3	6.5	68
HAB132L-6	7.5	960	85	0.77	28.65	16.54	9.55	2	2	1.3	6.5	68
HAB160M-6	7.5	960	86	0.8	27.25	15.73	9.08	2	2.2	1.3	6.5	68
HAB160L-6	11	960	87.5	0.79	39.78	22.97	13.26	2	2.2	1.2	6.5	73



### Spring-operated brake INT ORQ BFK457-06 ... 16

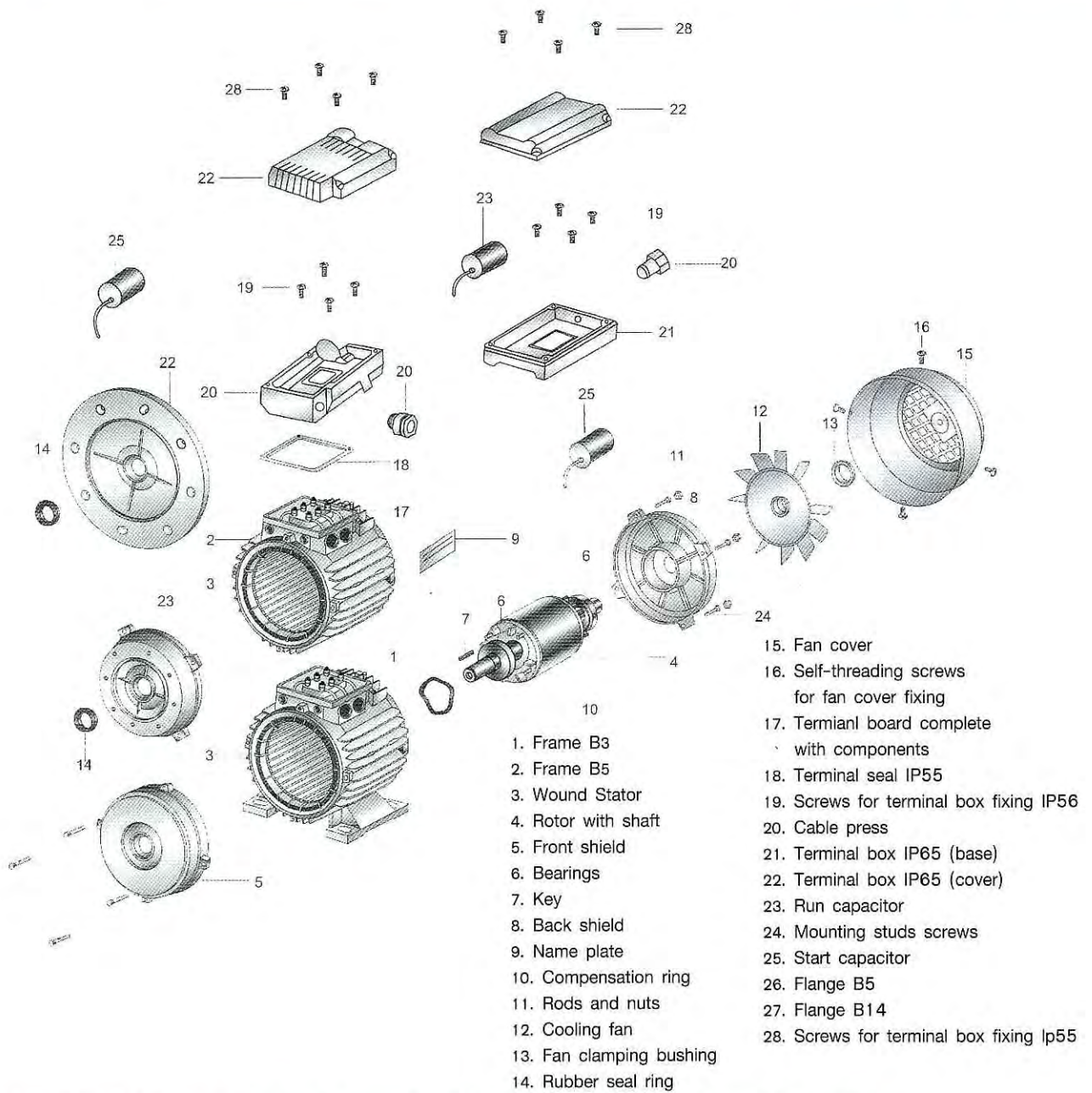
Basic and compact design with assembled manual release



Size	M <sub>K</sub>	M <sub>K max</sub>	P <sub>20°</sub>	b	d <sup>H7</sup> pilot	d <sup>H7</sup> standard	d <sup>H7</sup> max.	d1	d2	d3	d4	d5	d6	d7	d11	da	di	H1	H2
06	4	6	20	90	10	11/1 2/1 4/1 5	15	72	3xM4	84	31	31	77	M4x30	8	60	40	41.3	7.5
08	8	12	25	108	10	11/1 2/1 4/1 5/20	20	90	3xM5	102	42	41.5	93.5	M5x35	8	77	47	49.8	8.5
10	16	23	30	137	10	15/20	20	112	3xM6	130	44	44	117	M5x40	10	95	66	56.4	10
12	32	46	40	157	14	20/25	25	132	3xM6	150	52	52	136.3	M5x45	10	115	70	62.4	10
14	60	95	50	174	14	20/25/30	30	145	3xM8	165	60	60	150	M6x55	12	124	80	77.3	13
16	80	125	55	203	15	25/30/35/38	38	170	3xM8	190	70	70	174.5	M6x60	12	149	104	83.5	13.3

Size	M <sub>K</sub>	M <sub>K max</sub>	H3	H4	H5	H6	H8	H9	H10	H11	H12	l1*	l2	S <sub>li</sub> ±0.1	S <sub>li max</sub> at M <sub>K</sub>	S <sub>li max</sub> at M <sub>K max</sub>	m (kg)
06	4	6	18	45.3	107	15.8	15.8	53	52.4	1	49	6	400	0.2	0.6	0.4	1.1
08	8	12	20	54.8	118	16.3	16.3	64	64	1	59	9	400	0.2	0.6	0.45	1.9
10	16	23	20	61.4	142	27.4	27.4	79	77.3	1	74	12	400	0.2	0.7	0.5	3.8
12	32	46	25	67.4	162	29.4	29.4	89	88.3	1	84	12	400	0.3	0.8	0.5	5.7
14	60	95	30	83.3	201	33	33	100	99.7	1	94	14	400	0.3	0.8	0.5	8.6
16	80	125	30	89.5	250	37.4	37.5	116	114.8	1	108	14	600	0.3	0.9	0.6	12.0

\* Please contact the manufacturer if a different mounting surface made of steel is used.



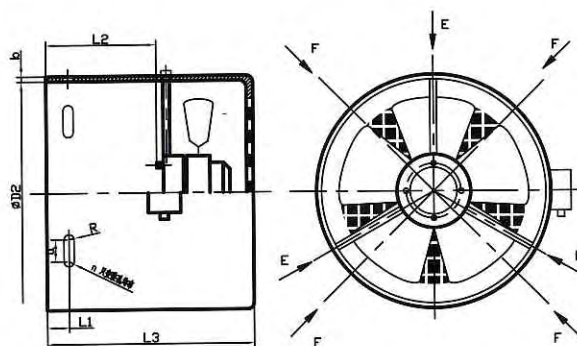
This catalogue is only a reference for users. The concrete data be changed please contact with us before ordering.

Frame size	Poles	Driving end bearings	Nondriving end bearings	Oilseal	Thread of Cable Gland
56	2/4	6201ZZ-C3	6201ZZ-C3	12X22X5	M16
63	2/4	6201ZZ-C3	6201ZZ-C3	12X24X7	M16
71	2/4/6	6202ZZ-C3	6202ZZ-C3	15X25X7	M20
80	2/4/6/8	6204ZZ-C3	6204ZZ-C3	20X34X7	M20
90	2/4/6/8	6205ZZ-C3	6205ZZ-C3	25X37X7	M25
100	2/4/6/8	6206ZZ-C3	6206ZZ-C3	30X42X7	M25
112	2/4/6/8	6306ZZ-C3	6206ZZ-C3	30X42X7	M25
132	2/4/6/8	6308ZZ-C3	6208ZZ-C3	40X58X8	M32

# Forced fan cooling

## Performance & dimensions

Model	Voltage Frequency (V/Hz)	Input (W)	Speed (r.p.m.)	Input (A)	Air flow (m <sup>3</sup> /h)	Air pressure (pa)	Noise (dB)
G-71A	380V/50Hz	25	2800	0.07	300	50	50
G-80A	380V/50Hz	27	2800	0.07	350	60	52
G-90A	380V/50Hz	28	2800	0.07	500	80	55
G-100A	380V/50Hz	50	2800	0.14	650	82	57
G-112A	380V/50Hz	65	2800	0.21	1000	110	60
G-132A	380V/50Hz	55	1400	0.21	880	70	60
G-160A	380V/50Hz	55	1400	0.22	1100	40	60
G-180A	380V/50Hz	55	1400	0.23	1200	55	60
G-200A	380V/50Hz	70	1400	0.31	2500	65	60
G-225A	380V/50Hz	135	1400	0.32	3800	80	60
G-250A	380V/50Hz	185	1400	0.57	4200	85	62
G-280A	380V/50Hz	200	1400	0.64	5000	100	62
G-315A	380V/50Hz	500	1400	1.80	6000	150	62



Model	∅ D2	L1	L2	L3	R	n
G-71	138 <sup>+1</sup> <sub>0</sub>	13	56	153	2.5	3
G-80	154 <sup>+1</sup> <sub>0</sub>	16.5	85	172	2.5	3
G-90	173 <sup>+1</sup> <sub>0</sub>	17	91	178	2.5	3
G-100	195 <sup>+1</sup> <sub>0</sub>	19	92	180	3	3
G-112	219 <sup>+1</sup> <sub>0</sub>	18.5	100	188	3	3
G-132	256 <sup>+1</sup> <sub>0</sub>	18.5	110	210	3	3
G-160	311 <sup>+1</sup> <sub>0</sub>	20	149	255	3.5	4
G-180	354 <sup>+1</sup> <sub>0</sub>	34	189	297	3.5	4
G-200	395 <sup>+1</sup> <sub>0</sub>	40	189	300	3.5	4
G-225	445 <sup>+1</sup> <sub>0</sub>	45	220	367	4	4
G-250	500 <sup>+1</sup> <sub>0</sub>	54.5	230	388	4.5	4.5
G-280	550 <sup>+1</sup> <sub>0</sub>	63	260	420	5	5
G-315	630	70	310	500	5	5

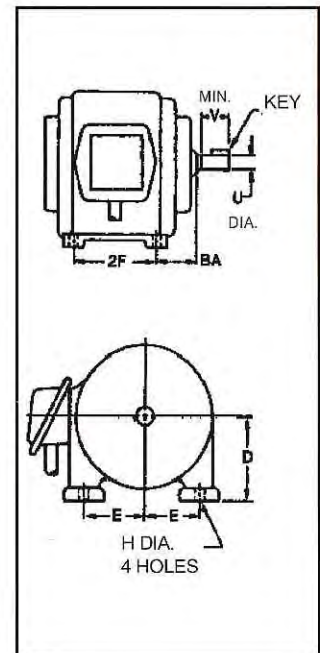
## NEMA Frame Designation

### Frame Assignments

HP	Motor Speed, RPM				HP	Motor Speed, RPM			
	3600	1800	1200	900		3600	1800	1200	900
1/8 - 1/3	-	48	-	-	15	215T,256U	254T,284U	284T,324U	286T,326U
1/8 - 1/2	48	-	56	-	20	254T,284U	256T,286U	286T,326U	324T,364U
1/6	-	-	48	-	25	256T,286U	284T,324U	324T,364U	326T,365U
1/3 - 1	-	56	-	-	30	284TS,324S	286T,326U	326T,365U	364T,404U
3/4 - 1	56	-	-	-	40	286TS,326S	324T,364U	364T,404U	365T,405U
1/2	-	-	-	143T	50	324TS,364US	326T,365U,365US	365T,405U	404T,444U
3/4	-	-	143T	145T	60	326TS,365US	324TS▲,404U,404US	404T,444U	405T,445U
1	-	143T	145T	182T	75	364TS,404US	365TS▲,405U,405US	405T,445U	444T
1 1/2	143T	145T	182T	184T	100	365TS,405US	404TS▲,444US	444T	445T
2	145T	145T	184T	213T	125	404TS,444US	405TS▲,445US	445T	-
3	145T	182T	213T	215T,254U	150	405TS,445US	444TS▲	-	-
5	182T	184T	215T,254U	254T,256U	200	444TS	445TS▲	-	-
7 1/2	184T	213T,254U	254T,256U	256T,284U	250	445TS	-	-	-
10	213T,254U	215T,256U	256T,284U	284T,286U	-	-	-	-	-

### Motor Frame Dimensions

Frame size	D	E	2F	H Dia. (4) Holes	U Dia.	BA	V Min.	Key
48	3	2 1/8	2 3/4	11/32	1/2	2 1/2	-	3/64 FLAT
56	3 1/2	2 7/16	3	11/32	5/8	2 3/4	-	3/16 x 3/16 x 1 3/8
143T	3 1/2	2 3/4	4	11/32	7/8	2 1/4	2	3/16 x 3/16 x 1 3/8
145T	3 1/2	2 3/4	5	11/32	7/8	2 1/4	2	3/16 x 3/16 x 1 3/8
182T	4 1/2	3 3/4	4 1/2	13/32	1 1/6	2 3/4	2 1/2	1/4 x 1/4 x 1 3/4
184T	4 1/2	3 3/4	5 1/2	13/32	1 1/6	2 3/4	2 1/2	1/4 x 1/4 x 1 3/4
213T	5 1/4	4 1/4	5 1/2	13/32	1 3/8	3 1/2	3 1/8	5/16 x 5/16 x 2 3/8
215T	5 1/4	4 1/4	7	13/32	1 3/8	3 1/2	3 1/5	5/16 x 5/16 x 2 3/8
254U	6 1/4	5	8 1/4	17/32	1 3/8	4 1/4	3 1/2	5/16 x 5/16 x 2 3/4
254T	6 1/4	5	8 1/4	17/32	1 5/8	4 1/4	3 3/4	3/8 x 3/8 x 2 7/8
256U	6 1/4	5	10	17/32	1 3/8	4 1/4	3 1/2	5/16 x 5/16 x 2 3/4
256T	6 1/4	5	10	17/32	1 5/8	4 1/4	3 3/4	3/8 x 3/8 x 2 7/8
284U	7	5 1/2	9 1/2	17/32	1 5/8	4 3/4	4 5/8	3/8 x 3/8 x 3 3/4
284T	7	5 1/2	9 1/2	17/32	1 7/8	4 3/4	4 3/8	1/2 x 1/2 x 3 1/4
284TS	7	5 1/2	9 1/2	17/32	1 5/8	4 3/4	3	3/8 x 3/8 x 1 7/8
286U	7	5 1/2	11	17/32	1 5/8	4 3/4	4 5/8	3/8 x 3/8 x 3 3/4
286T	7	5 1/2	11	17/32	1 7/8	4 3/4	4 3/8	1/2 x 1/2 x 3 1/4
286TS	7	5 1/2	11	17/32	1 5/8	4 3/4	3	3/8 x 3/8 x 1 7/8
324U	8	6 1/4	10 1/2	21/32	1 7/8	5 1/4	5 3/8	1/2 x 1/2 x 4 1/4
324T	8	6 1/4	10 1/2	21/32	2 1/8	5 1/4	5	1/2 x 1/2 x 3 7/8
324TS	8	6 1/4	10 1/2	21/32	1 7/8	5 1/4	3 1/2	1/2 x 1/2 x 2
326U	8	6 1/4	12	21/32	1 7/8	5 1/4	5 3/8	1/2 x 1/2 x 4 1/4
326T	8	6 1/4	12	21/32	2 1/8	5 1/4	5	1/2 x 1/2 x 3 7/8
326TS	8	6 1/4	12	21/32	1 7/8	5 1/4	3 1/2	1/2 x 1/2 x 2
364U	9	7	11 1/4	21/32	2 1/8	5 7/8	6 1/8	1/2 x 1/2 x 5
364US	9	7	11 1/4	21/32	1 7/8	5 7/8	3 1/2	1/2 x 1/2 x 2
364T	9	7	11 1/4	21/32	2 3/8	5 7/8	5 5/8	5/8 x 5/8 x 4 1/4
364TS	9	7	11 1/4	21/32	1 7/8	5 7/8	3 1/2	1/2 x 1/2 x 2
365U	9	7	12 1/4	21/32	2 1/8	5 7/8	6 1/8	1/2 x 1/2 x 5
365US	9	7	12 1/4	21/32	1 7/8	5 7/8	3 1/2	1/2 x 1/2 x 2
365T	9	7	12 1/4	21/32	2 3/8	5 7/8	5 5/8	5/8 x 5/8 x 4 1/4
365TS	9	7	12 1/4	21/32	1 7/8	5 7/8	3 1/2	1/2 x 1/2 x 2
404U	10	8	12 1/4	13/16	2 3/8	6 5/8	6 7/8	5/8 x 5/8 x 5 1/2
404US	10	8	12 1/4	13/16	2 1/8	6 5/8	4	1/2 x 1/2 x 2 3/4
404T	10	8	12 1/4	13/16	2 7/8	6 5/8	7	3/4 x 3/4 x 5 5/8
404TS	10	8	12 1/4	13/16	2 1/8	6 5/8	4	1/2 x 1/2 x 2 3/4
405U	10	8	13 3/4	13/16	2 3/8	6 5/8	6 7/8	5/8 x 5/8 x 5 1/2
405US	10	8	13 3/4	13/16	2 1/8	6 5/8	4	1/2 x 1/2 x 2 3/4
405T	10	8	13 3/4	13/16	2 7/8	6 5/8	7	3/4 x 3/4 x 5 5/8
405TS	10	8	13 3/4	13/16	2 1/8	6 5/8	4	1/2 x 1/2 x 2 3/4
444U	11	9	14 1/2	13/16	2 7/8	7 1/2	8 3/8	3/4 x 3/4 x 7
444US	11	9	14 1/2	13/16	2 1/8	7 1/2	4	1/2 x 1/2 x 2 3/4
444T	11	9	14 1/2	13/16	3 3/8	7 1/2	8 1/4	7/8 x 7/8 x 6 7/8
444TS	11	9	14 1/2	13/16	2 3/8	7 1/2	4 1/2	5/8 x 5/8 x 3
445U	11	9	16 1/2	13/16	2 7/8	7 1/2	8 3/8	3/4 x 3/4 x 7
445US	11	9	16 1/2	13/16	2 1/8	7 1/2	4	1/2 x 1/2 x 2 3/4
445T	11	9	16 1/2	13/16	3 3/8	7 1/2	8 1/4	7/8 x 7/8 x 6 7/8
445TS	11	9	16 1/2	13/16	2 3/8	7 1/2	4 1/2	5/8 x 5/8 x 3



▲ When these motors are used with V-belt or chain drives, the correct frame size is the one with the suffix "S" omitted-consult manufacturer.