HYOSUNG

2011. 05

Low Voltage Motors

3PHASE 0.4-220KW 50/60Hz

www.hyosungpni.com

Global Top Energy, Machinery & Plant Solution Provider

HYOSUNG CORPORATION
Power & Industrial Systems Performance Group

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About HYOSUNG




Hyosung Power & Industrial Systems PG is a division under Hyosung which consists of seven performance groups(PGs). In addition to establishing itself as a world-class manufacturer of electrical equipments, green technology and industrial machineries, Hyosung is also the largest producer of tire cords and spandex in the global market and the second largest supplier of ATMs in the USA.

Low Voltage Motors

CONTENTS

01 Our Business

Brief introduction of Hyosung Power & Industrial Systems

Hyosung Power & Industrial Systems Performance Group

Hyosung Power & Industrial Systems Performance Group, a comprehensive energy solution provider, boasts world-leading technology in the global power industry and has secured a competitive capability on par with that of top competitors in transformers, switchgears, motors, decelerators, industrial pumps, and wind energy business.

With globalization as one of our top priorities, we have achieved outstanding increase in sales over the past few years thanks to the enhancement in Hyosung's quality, technology, and brand recognition among overseas clients, which include North America, Europe, the Middle East, and Asia. We expect such robust performance, marked by an increasing number of orders from the overseas market, to continue in the future.

At the heart of our capability to grow as a comprehensive energy solution provider is our global organization structure. Hyosung Power & Industrial Systems Performance Group is divided into four business areas or performance units, depending on the types of flagship products: Power Systems Performance Unit, Industrial Machinery Performance Unit, Hyosung GoodSprings Performance Unit, and the Wind Energy Business Division.

Industrial Machinery Performance Unit

The Industrial Machinery Performance Unit Plays an important role in the infrastructure industry around the globe and is specialized in manufacturing all types of motors, gear reducers, generators, green energy, and industrial machines.

With the ability to produce motors with up to 20,000kW, we possess an automated production line capable of manufacturing more than 40,000 motors every month.

Our accumulated technologies and various experiences have made it possible to develop turnkey-based engineering projects including industrial plant, ropeways, energy solutions, and alternative refueling systems.

In addition, we anticipate that our efforts in innovation among rotary machinery will make significant contributions towards creating energy profitability as well as greater efficiency. With the goal to serve as a world-leading provider of industrial machinery and plant engineering, we will continue to focus on innovative energy conservation technology, enhanced reliability of new products, and development of new technologies.

02 Sustainability

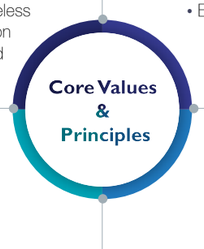
Our sustainability principles are the backbone of the way we design and manufacture products

Hyosung Way

Hyosung Way is our core values and principles instilled in all of our employees across the globe.
Enhance and enrich the quality of life for humanity with its leading technology and managment capability

GLOBAL EXCELLENCE
- Maximize the competitiveness with cealseless self-improvement effort to win in any situation
- Blaze new trails in markets around the world with a global outlook

INNOVATION
- Eliminate all inefficiencies that do not and value
- Challenge new possibilities with a positive mindser



INTEGRITY
- Uphold transparency and fairness bassed on facrs and principles
- Respect and cooperate with each to make a great workplace

ACCOUNTABILITY
- Act like owners and take charge in actions
- Never give up until acheving the goal

Quality Assurance

Hyosung strives for excellence. We believe excellence can only be achieved through absolute quality and value for customers. In order to create quality products, we believe that all of the actions of every single employee must be focused in the highest level of quality. In order to achieve such levels, we have implemented a quality assurance policy and programs that make our philosophy into a reality.
Our Quality Assurance Policy was founded based on the management policy of the president and meets the demands of ISO 9001. As a globally active company, we are committed to comprehensive and quality management through three quality strategies: quality management system, customer-focused management system, and concentration on core competencies.
The comprehensive quality management system ensures that we completely comply with all compliances and applicable legislation, codes, and standards in addition to implementing efficient operation of our management resources to eliminate unnecessary waste.
Our customer-focused management system clarifies and simplifies our first priority which is customer satisfaction. All of our work is aimed to exceed customer needs and provide exceptional value through quality standards, flexibility, and innovation.
Finally, we concentrate on our core competencies for strict quality control and continual improvement which provides quality products and cost-saving to our clients via advancement in technical capacity and technological innovation.
We implement our policy via a Quality Management Team manages research laboratories, including the Measurement Standard Laboratory, the Chemical Analysis Laboratory and the Material Analysis Laboratory to maintain a strict control over quality.

Environment Protection Policy

Hyosung understands the impact of Hyosung's activities in the environment and works to protect the environment from pollution, manages the environmental impacts of Hyosung's products and technologies, and prevents future pollution and harmful effects in the environment by investing in environmentally-friendly products and solutions.
Based on this eco-philosophy of shared responsibility, Hyosung has implemented a comprehensive environmental protection program that aims to minimize our impact on the environment and conserve resources. Our environmental policy fulfils all requirements of the ISO 14001.

03 R&D

Inspiring innovation, creation and expertise

Hyosung R&D Center identifies innovation, creation, and expertise as core value, and concentrates on world class R&D activities in the 21st century with a philosophy aspiring after customer satisfaction, quality priority, and performance orientation. Hyosung pursues to be the world's best company in the field of heavy electrical machinery, industrial & electrical electronics engineering, and energy system. Ever since establishment in 1978, R&D Center had led the development of domestic technology. Along with the Anyang and Changwon labs, the group has endeavored to produce core technology and world-class products in the areas of heavy electrical machinery, energy system, electrical electronics engineering, and industrial automation system.

Research Areas

Hyosung R&D Center engages in the activities in the field of energy system, solution & service, applied electrical and electronic technology, basic core technology, technology of improved reliability, core components, and new materials.

Energy System
- Renewable energy
  (wind system, wind turbine, wind PCS, solar system, PV PCS, fuel cell, co-generation)
- Electric Vehicle (EV charger, EV motor)

Solution & Service
- Power facility diagnosis algorithm and system
- Power facility lifecycle evaluation system
- Service solution for remote diagnosis for prevention

Applied Electrical & Electronic Technology
- Power conversion system
- Flexible AC transmission system and high voltage direct current
- Power quality solution

Basic Core Technology
- Fortified technology in structural dynamics, electromagnetics, heat transfer analysis, etc.
- Skills for system simulation, analysis and evaluation
- Business support technology

Technology with Improved Reliability
- Test data analysis and testing facility
- Analysis of lifecycle and cause of error
- Reliability assessment (environment-friendliness, durability, long-term degradation, and more)

Core Components and New Materials
- Organic and inorganic insulation materials
- Silicon forming technology
- Intelligent sensor
  (facility diagnosis, CT, PT, VT, LA, and more)

Low Voltage Motors

Hyosung Motors Range Includes

TEFC Type Motors	Flange Type Motors	ODP Type Motors	High Efficiency Motors	Pole Change Motors
Explosion Proof Motors	Inverter Motors	Crane Motors	Marine Motors	Coal-Mine Motors
Low Noise Motors	Low Vibration Motors	High Torque Motors	Brake Motors	NEMA Motors

Quality Assurance Standards

Quality Assurance

From quotation to delivery, our complete order handling is effected on the basis of an approved quality assurance system complying with the following quality standards :
DIN ISO 9001 / BVQI EN 29001 / BS 5750

Application Standard

- International Standard : IEC 34, 72, 79, IEEE
- Country Standard : KS C4202, 0914, JIS C4210, 4004, CSA M390
- Association Standard : NEMA MG1, UL 674, JEM 1400, 1401, JEC 37

The Present Status of Certification Acquisition

Country	Initiala & File No.		Application	Issued Date
Canada	CSA	LR61094 LR57819	General Motor	1986. 1
	CSA	LR61094-6	Class I Group D & Class II Group E, F, G	1994. 2
	CSA	EEV103030-1	High Efficiency Motor (1~200HP)	1995. 11
U.S.A	UL	E79167	Class I Group D & Class II Group E, F, G	1983. 4
	UL	E79167	Class I Group D (C-Face Motors)	1994. 6
	UL	E79167	Class I Group D & Class II Group E, F, G (C-Face Motor)	1995. 3
France	ISO	9001	All Motors	1993. 12
Korea	KSC	NO. 1869 NO. 3860	0.4 ~ 37kW 55, 150kW	1979. 12 1985. 2
Japan	JMITI	NO. 9681 ▽	0.7 ~ 2.2kW	1989.7
Germany	TÜV	CE	0.75 ~ 150kW	1997.12

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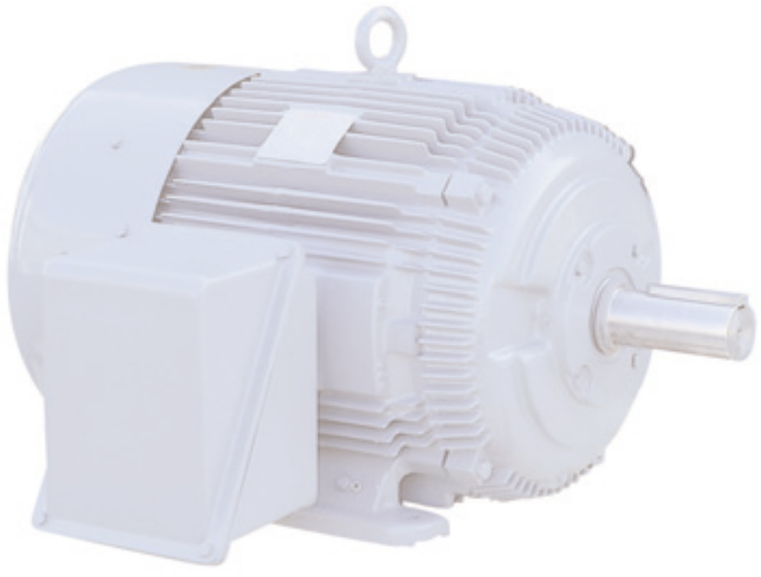
TEFC Type Motors

Standards Specification

ITEMS		Specification	
Rating		Continuous	
Insulation		F CLASS or B CLASS	
Construction Protect		Construction	Protect Grade
		ODP	IP 22
		TEFC	IP 44
Voltage & Frequency		220, 380, 400, 440, 220/380, 220/440V 50/60Hz	
Leadwire Output Type		Rubber Covered Leadwire(Mounted Ring Terminal)	
Number of Leads (60Hz)		Single Voltage : 220, 380, 440V	Direct Startung(3wire) : 11kw below Y-Δ Stating(6wire) : 11kw above
		Combination Voltage : 220/380V	Direct Starting(6wire)
		Double Voltage : 220/440V	Direct Starting(9wire) : 11KW below Y-Δ Stating(12wire) : 11kw above
Painting(Munsell No.)		7.5 BG 5/2(Light Blue Gray)	
Drive		Up to 225FR. - Belt or direct Type From 250FR. and above - Direct Type	
Rotation		C.C.W(VIEW OF DRIVE END)	
Surrounding Condition	Temperature	-20°C~+40°C	
	Humidity	less than 80%	
	Altitude	less than 1,000M	
	Installation Room	Indoor	
Place		No Corrosion, Explosive Gas, Heat, or Dewdrops and Low Dust	



Features and Specification

Construction
Cast iron. Fan guard hood is pressed steel and has a protective type grill that restricts the passage of a 12.7mm cylindrical rod.(Optional cast iron fan guard is available on special order.)

Couduit Box
Pressed steel, diagonally split and rotatable in 90° steps. Lead separator gasket seals conduit box from frame.(Optional cast iron conduit box is available on special order.)

Finish & Nameplate
Red oxide, zinc chromate primer with finish coat of semi-gloss, air drying, alkyd enamel. Stainless Steel nameplate furnished for resistance to corrosion.

Rotor
Die cast aluminum and closed slot design, surface teated for minimum rotor losses. Rotor and complete shaft assembly are dynamically balanced.

Hardware
Standard high strength, zinc plated fo, corrosion resistance.

Insulation
Class “F” nonhygroscopic system is standard and meets or exceeds NEMA and IEEE standards.

Leads
Stranded copper, suitably insulated for appropriate insulation class. All leads permanently identified.

Inner Bearing
TEFC frames 200M to 280M have an inner bearing cap of non-corrosive, zinc plated and chromated steel.

Drain Plugs
Pipe tap plugs are furnished at the low point of each end bracket. 3.18mm up to frame size 132M, and 6.35mm on frames 160M and over.

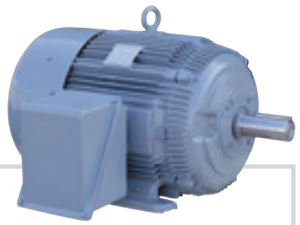
Bearings
Standard, double-shielded(one shield each side), regreasable, single row width, deep groove Conrad type made from improved, vacuum degassed steel for longer life expectancy.
Bearings are pre-packed with grease for ambient temperatures of -30°C to +50°C(-22°F to +122°F). Other temperature ranges available on special order with single shielded temperature stabilized bearings. Bearing housing is also packed with grease at time of motor assembly.

Fan
Glass fiber reinforced polyester, suitable for bi-directional rotation. Exception: All 3600 RPM in frames 280S and larger are uni-directional only and made of corrosion resistant bronze alloy.

Grease Fittings
On the fan end, TEFC motors have a tube which extends through the fan guard hood for reasing for in-service lubrication. A standard 3.18mm pipe plug is used for inlet, and a separate pressure sensitive, spring-actuated relief plug is used at the grease outlet on the bracket hub. On the shaft end, TEFC motors have a pipe plug on inlet and relief.

TEFC Type Motors

0.4kW ~ 150kW



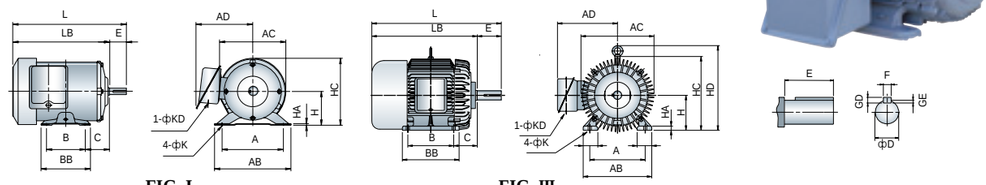


FIG. I FIG. III FIG. II FIG. V FIG. VI

UNIT : mm, kg

No.	FR.No.	FIG.	Ouy Put(kW)				Bearing		A	AA	AB	AC	AD	B	BB	C	H	HA	HC
			2P	4P	6P	8P	Drive	Non Drive											
01	71	I	0.4	0.4	-	-	6203ZZ	6202ZZ	112	-	148	148	145	90	114	45	71	4	145
02	80	II	0.75	0.75	0.4	-	6204ZZ	6203ZZ	125	35	150	180	135	100	125	50	80	8	168
03	90L	II	1.5,2.2	1.5	0.75	-	6205ZZ	6204ZZ	140	35	167	200	150	125	150	56	90	10	190
04	100L	II	-	2.2	1.5	0.75	6206ZZ	6205ZZ	160	47	196	220	180	140	174	63	100	12	214
05	112M	II	3.7	3.7	2.2	1.5	6206ZZ	6205ZZ	190	41	226	244	190	140	172	70	112	14	234
06	132S	II	5.5,7.5	5.5	3.7	2.2	6208ZZ	6206Z	216	50	264	284	213	140	178	89	132	16	274
07	132M	II	-	7.5	5.5	3.7								178	216				
08	160M	III	11,15	11	7.5	5.5	6309ZZ	6207ZZ	254	67	314	337	262	210	260	108	160	19	329
09	160L	III	18.5	15	11	7.5								254	304				
10	180M	IV	22	-	-	-	6212ZZ	6212ZZ	279	63	338	374	290	241	300	121	180	20	367
			-	18.5,22	15	11	6312ZZ												
11	180L	IV	30	-	-	-	6212ZZ	6212ZZ	279	63	338	374	290	279	338	121	180	20	367
			-	30	18.5,22	15	6312ZZ												
12	200L	IV	37	-	-	-	6212ZZ	6212ZZ	318	70	382	414	317	305	370	133	200	22	407
			-	37,45	30,37	18.5,22	6313ZZ												
13	225S	VII	45	-	-	-	6314C3	6314C3	356	79	432	465	397	286	343	149	225	25	456
			-	45	30	22	6314	6314											
14	225M	VII	55	-	-	-	6314C3	6314C3	356	79	432	465	397	311	368	149	225	25	456
			-	55	37	30	6314	6314											
15	250S-C	VII	-	-	45	37	6312	6312	406	86	485	529	428	311	368	168	250	27	515
	250S-P		-	-	45	37	6317												
16	250M-C	VII	75	75	55	45	6312	6312	406	86	485	529	428	349	406	168	250	27	515
	250M-P		-	75	55	45	6317												
17	280S-C	IX	90	90	75	55	6313	6313	457	89	546	610	510	368	439	190	280	32	585
	280S-P		-	90	75	55	NU319												
18	280M-C	IX	110	110	90	75	6313	6313	457	89	546	610	510	419	490	190	280	32	585
	280M-P		-	110	90	75	NU319												
19	280L-C	IX	132,150	132,150	-	-	6313	6313	457	89	546	610	510	508	580	190	280	32	585
	280L-C'		-	-	110	90	6319												
	280L-P		-	132,150	-	-	NU319												
	280L-P'		-	-	110	90	NU222												
20	280LL-C	IX	185	-	-	-	6313	6313	457	89	546	610	510	635	708	190	280	32	585
	280LL-C'		-	185	132,150	110	6319												
	280LL-P		-	-	-	-	NU319												
	280LL-P'		-	185	132,150	110	NU222												

0.4kW ~ 150kW (cont'd)

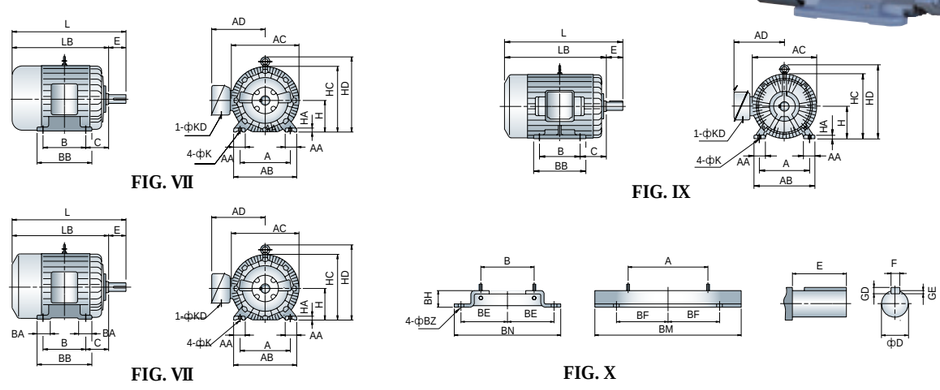


FIG. VII FIG. IX FIG. VII FIG. X

UNIT : mm, kg

No.	HD	L	LB	øK	øKD	SHAFT					WT	BASE							
						øD	E	F	GD	GE		FIG.	BE	BF	BM	BN	BH	øBZ	WT
01	-	230	200	7	22	14j6	30	5	5	5	8.5	V	-	-	-	-	-	-	-
02	-	270	230	10	22	19j6	40	6	6	6	15	V	100	88	251	202	29	13	2.1
03	-	328	278	10	22	24j6	50	8	7	7	24	V	103	95	268	228	29	10	2.7
04	259	378	318	12	28	28j6	60	8	7	7	30	V	110	114	324	278	39	13	3.8
05	282	382	322	12	28	28j6	60	8	7	7	39	V	121	114	324	278	39	13	4.3
06	317	444	364	12	28	38k6	80	10	8	5	56	V	121	133	382	280	45	13	6.2
07		482	402								70		140			318			7
08	380	593	483	15	45	42k6	110	12	8	5	109	VI	169	159	452	384	51	16	8.6
09	637	527								136			190			430			9
10	418	668	558	15	50.5	48k6	110	12	8	5	166	VI	190	178	502	430	51	16	10
11	418	706	596	15	50.5	55m6	110	14	9	5.5	182	VI	210	178	502	468	51	16	10.5
12	418	761	15	19	63	55m6	110	16	10	6	282	VI	225	203	578	528	64	19	15
		791	19			60m6	140	18	11	7									
13	527	787	677	19	91	55m6	110	15	10	5	380	X	232	229	648	522	64	19	20.5
		817				60m6	140												
14	527	812	702	19	91	55m6	110	15	10	5	420	X	244	229	648	528	64	19	21
		842				60m6	140												
15	586	846	736	24	91	55m6	110	15	10	5	522	X	251	254	730	570	77	23	29
	876					75m6	140	20	12	7.5									
16	586	884	774	24	91	55m6	110	15	10	5	575	X	270	254	730	616	77	23	29.5
	914					75m6	140	20	12	7.5									
17	656	1014	874	24	80	60m6	140	15	10	5	750	X	280	280	790	626	77	29	39
	1044					85m6	170	24	16	8									
18	656	1065	925	24	80	60m6	140	15	10	5	890	X	305	280	790	676	77	29	39.5
	1095					85m6	170	24	16	8									
19	656	1154	1014	24	80	60m6	140	15	10	5	1070	X	350	280	790	766	77	29	40.5
	1184					85m6	170	24	16	8									
	1184					85m6	170	24	16	8									
	1184					95m6	170	24	16	8									
20	656	1281	1141	24	80	60m6	140	15	10	5	1280	X	414	280	790	893	77	29	41.5
	1311					85m6	170	24	16	8									
	1311					85m6	170	24	16	8									
	1311					95m6	170	24	16	8									

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Performance Data I | 2Pole

Squirrel Cage 2Pole = 3600 r/min. (220V), 60Hz

Power (kW)	Frame	Spees (rpm)	EFF.(%)	P.F.(%)	F.L.A.(A)	L.R.A.(A)	F.L.T (kg.m)	L.R.T (kg.m)	B.D.T (kg.m)	Load GD² (kg.m²)	WT(kg)
0.4	71	3400	65.0	78.0	2.1	12.6	0.11	0.22	0.28	0.420	9
0.75	80	3420	70.0	81.0	3.5	22.7	0.21	0.46	0.53	0.513	15
1.5	90L	3420	76.5	82.0	6.3	39.3	0.43	0.86	1.08	0.951	24
2.2	90L	3430	79.5	83.5	8.7	56.5	0.62	1.12	1.43	1.212	24
3.7	112M	3450	82.5	85.0	13.8	89.7	1.05	2.1	2.63	2.147	39
5.5	132S	3460	84.5	84.0	20.3	131.9	1.55	2.33	3.10	4.631	56
7.5	132S	3470	85.5	85.0	27.1	176.1	2.11	3.8	4.85	5.843	56
11	160M	3500	86.5	85.0	39.3	255.4	3.06	4.59	6.12	6.198	109
15	160M	3500	88.0	85.0	52.6	341.9	4.18	7.11	9.20	7.097	109
18.5	160L	3500	88.5	85.0	65	422.5	5.14	7.71	9.77	7.500	136
22	180M	3520	89.0	85.0	76.4	544.0	6.09	9.14	12.18	11.20	166
30	180L	3540	89.0	86.5	102.3	717.0	8.25	12.37	16.50	12.30	182
37	200L	3540	90.0	86.5	124.8	874.0	10.18	15.27	20.36	16.00	282
45	225S	3540	90.5	87.0	150.0	900.0	12.40	16.1	28.52	16.30	380
55	225M	3540	90.5	88.0	181.2	1178.0	15.13	19.67	34.80	18.80	420
75	250M	3545	90.5	88.0	247.2	1483	20.61	24.8	45.34	30.10	575
90	280S	3545	91.0	90.0	288.4	1909	24.73	29.68	51.93	33.60	750
110	280M	3550	91.5	90.0	350.5	2138	30.18	33.2	63.38	38.20	890
132	280L	3550	92.0	90.0	418.4	2780	36.22	38.03	72.44	40.70	1070
150	280L	3550	92.0	90.0	475.4	3140	41.15	43.2	82.30	47.80	1070

Squirrel Cage 2Pole = 3000 r/min. (220V), 50Hz

Power (kW)	Frame	Spees (rpm)	EFF.(%)	P.F.(%)	F.L.A.(A)	L.R.A.(A)	F.L.T (kg.m)	L.R.T (kg.m)	B.D.T (kg.m)	Load GD² (kg.m²)	WT(kg)
0.4	71	2880	63.0	80.0	2.1	10.5	0.13	0.26	0.33	0.603	15
0.75	80	2880	72.0	83.0	3.4	19.7	0.25	0.55	0.63	0.724	15
1.5	90L	2885	78.0	90.0	5.7	34.2	0.50	1.10	1.3	1.337	24
2.2	90L	2885	81.0	85.0	8.5	42.5	0.74	1.48	1.85	1.698	24
3.7	112M	2895	82.5	86.0	13.9	83.4	1.24	2.48	3.1	3.010	39
5.5	132S	2910	83.0	85.0	20.7	124.2	1.84	2.76	3.68	6.528	56
7.5	132S	2910	85.0	87.0	26.9	161.4	2.49	4.48	5.73	8.279	56
11	160M	2925	85.0	88.0	38.9	229.5	3.66	5.49	7.32	8.694	109
15	160M	2925	86.5	88.0	52.3	313.8	4.96	8.43	10.91	10.019	109
18.5	160L	2935	85.0	86.5	66.0	495	6.18	8.65	12.36	10.500	136
22	180M	2930	86.0	87.0	77.2	618	7.3	8.0	14.6	17.1	166
30	180L	2930	86.0	87.0	105.2	843	9.9	10.9	19.8	18.3	188
37	200L	2950	86.0	88.0	128.3	1036	12.3	13.5	24.6	22.5	282
45	225S	2950	86.0	88.0	156.0	1244	14.7	16.2	29.4	22.8	380
55	250S	2960	87.0	86.0	192.9	1211	18.0	21.6	36.0	26.3	522
75	250M	2960	86.0	85.0	269.3	1791	24.5	24.5	49.0	42.1	575
90	280S	2960	90.0	85.0	308.7	2161	29.6	29.6	59.2	47.0	750
110	280M	2960	90.0	85.0	377.4	2642	36.2	36.2	72.4	53.5	890
132	280L	2960	91.0	86.0	442.6	3098	43.4	43.4	86.8	57.0	1070
150	280L	2960	91.0	86.0	503.0	3521	49.4	49.4	98.8	66.9	1090

Performance Data II | 4Pole

Squirrel Cage 4Pole = 1800 r/min. (220V), 60Hz

Power (kW)	Frame	Spees (rpm)	EFF.(%)	P.F.(%)	F.L.A.(A)	L.R.A.(A)	F.L.T (kg.m)	L.R.T (kg.m)	B.D.T (kg.m)	Load GD² (kg.m²)	WT(kg)
0.4	71	1685	66.0	66.0	2.4	14.4	0.23	0.48	0.63	1.464	9
0.75	80	1690	72.0	72.0	3.8	24.7	0.43	0.86	1.08	2.248	15
1.1	90L	1710	76.5	72.0	4.9	31.8	0.63	1.26	1.58	2.983	24
1.5	90L	1710	79.0	76.0	6.6	42.9	0.85	1.87	2.38	4.033	24
2.2	100L	1720	81.0	79.0	9.0	55.8	1.26	2.52	3.15	6.373	24
3.7	112M	1730	83.0	82.0	14.3	92.9	2.08	4.16	5.20	10.49	39
5.5	132S	1740	85.0	81.0	21.0	136.5	3.08	5.54	7.08	16.84	56
7.5	132M	1750	86.0	80.0	28.6	185.9	4.18	8.36	10.45	23.24	56
11	160M	1755	87.0	83.0	40.0	260.0	6.11	11.00	14.05	27.62	109
15	160L	1750	88.0	83.0	53.9	350.3	8.30	14.94	19.09	39.24	109
18.5	180M	1750	89.0	82.0	67.0	435.5	10.30	15.45	20.60	42.01	136
22	180M	1750	90.0	83.0	78.0	507.0	12.20	18.3	24.40	42.75	166
30	180L	1750	89.5	89.5	104.8	734.0	16.69	25.04	33.38	50.70	182
37	200L	1760	90.0	90.0	128.5	1028.0	20.47	30.71	40.94	72.80	282
45	225S	1770	92.0	92.0	150.2	1050.0	24.76	39.62	56.95	75.50	380
55	225M	1770	92.0	92.0	183.4	1186.0	30.27	54.48	71.13	91.50	420
75	250M	1770	92.5	92.5	241.8	1572.0	41.27	53.65	90.79	189.7	575
90	280S	1770	92.5	92.5	290.0	1884.0	49.53	64.38	104.01	210.8	750
110	280M	1775	93.0	93.0	348.8	2266.0	60.53	78.69	127.11	259.0	890
132	280L	1770	93.0	93.0	418.6	2720.0	72.64	94.43	145.28	300.0	1070
150	280L	1775	93.0	93.0	475.6	3090.0	82.31	98.77	164.62	370.6	1070

Squirrel Cage 4Pole = 1500 r/min. (220V), 50Hz

Power (kW)	Frame	Spees (rpm)	EFF.(%)	P.F.(%)	F.L.A.(A)	L.R.A.(A)	F.L.T (kg.m)	L.R.T (kg.m)	B.D.T (kg.m)	Load GD² (kg.m²)	WT(kg)
0.4	71	1425	73.0	70.0	2.3	11.5	0.25	0.50	0.63	2.051	15
0.75	80	1440	75.0	72.0	3.7	21.1	0.5	1.05	1.30	3.15	15
1.5	90L	1430	79.0	80.0	6.4	38.4	1.02	2.24	2.75	5.618	24
2.2	100L	1450	81.5	80.0	8.9	53.4	1.5	3.00	4.05	11.448	30
3.7	112M	1450	84.0	81.0	14.4	86.4	2.49	4.98	6.23	14.715	39
5.5	132S	1455	85.0	82.0	21.0	126.0	3.70	5.92	7.40	23.688	56
7.5	132M	1455	85.0	82.0	28.5	171.0	4.98	9.96	12.50	32.956	70
11	160M	1455	86.0	83.0	40.7	244.2	7.34	11.01	14.68	38.71	109
15	160L	1460	87.0	84.0	54.1	324.6	9.98	14.97	19.96	55.655	136
18.5	180M	1460	87.0	81.0	68.9	551	12.3	18.5	24.6	58.8	166
22	180M	1470	87.0	83.0	80.0	639	14.7	22.1	29.4	71.1	166
30	180L	1470	87.0	83.0	109.0	872	19.9	29.9	39.8	75.9	188
37	200L	1470	88.0	82.0	134.6	1076	24.5	36.8	49.0	101.9	282
45	225S	1470	88.0	83.0	161.7	1213	29.8	44.7	59.6	105.7	380
55	225M	1470	89.0	84.0	193.1	1352	36.4	51.0	72.8	128.1	420
75	250M	1470	89.0	84.0	263.2	1712	49.7	69.6	99.4	265.3	575
90	280M	1470	89.5	84.0	313.3	2038	59.6	83.4	119.2	295.1	930
110	280M	1470	90.0	85.0	377.4	2453	72.9	102.1	145.8	362.6	930
132	280L	1470	89.0	85.0	457.9	3206	87.5	113.8	175.0	420.0	1120
150	280L	1475	91.0	88.0	491.6	3195	99.1	118.9	198.2	445.0	1280

Performance Data Ⅲ | 6Pole

Squirrel Cage 6Pole = 1200 r/min. (220V), 60Hz

Power (kW)	Frame	Spees (rpm)	EFF.(%)	P.F.(%)	F.L.A.(A)	L.R.A.(A)	F.L.T (kg.m)	L.R.T (kg.m)	B.D.T (kg.m)	Load GD² (kg.m²)	WT(kg)
0.4	80	1110	64.0	66.0	2.5	15.0	0.35	0.60	0.70	3.789	15
0.75	90L	1120	70.5	67.0	4.2	25.2	0.65	1.11	1.30	6.391	24
1.5	100L	1135	77.0	72.0	7.1	43.3	1.29	2.20	2.97	10.03	30
2.2	112M	1140	79.5	73.0	9.9	59.4	1.88	3.01	3.76	14.23	39
3.7	132S	1140	82.5	75.0	15.7	98.9	3.16	5.06	6.32	23.74	56
5.5	132M	1150	84.5	72.5	23.6	141.6	4.66	6.99	9.32	39.66	70
7.5	160M	1150	85.5	76.0	30.3	196.9	6.35	9.53	13.97	45.57	109
11	160L	1160	86.5	76.0	43.3	281.4	9.24	13.86	20.33	61.71	136
15	180M	1160	88.0	77.0	58.1	389.0	12.59	18.89	25.18	70.20	166
18.5	180L	1160	88.5	77.0	71.2	484.0	15.53	23.30	31.06	80.60	182
22	180L	1160	90.5	77.5	82.3	562.0	18.47	27.71	36.94	82.20	182
30	200L	1160	90.5	78.5	110.8	742.0	25.18	35.25	50.36	132.0	282
37	200L	1160	90.0	79.5	135.8	910.0	31.06	46.59	62.12	140.0	282
45	250S	1180	92.0	87.0	147.6	960.0	37.14	50.14	81.71	334.8	522
55	250M	1180	92.0	86.0	182.5	1186.0	45.40	59.02	99.88	372.9	575
75	280S	1180	92.5	86.0	247.5	1540.0	61.91	77.39	130.01	420.2	750
90	280M	1180	92.5	85.0	300.5	1954.0	74.29	92.86	156.01	517.0	890
110	280L	1180	92.5	85.0	367.2	2386.0	90.80	113.50	190.68	679.0	1070
132	280L	1180	93.0	85.0	438.3	2848.0	108.96	136.20	228.82	701.0	1070
150	280LL	1180	93.0	85.5	495.1	3216.0	123.81	154.76	260.00	743.0	1280

Squirrel Cage 6Pole = 1000 r/min. (220V), 50Hz

Power (kW)	Frame	Spees (rpm)	EFF.(%)	P.F.(%)	F.L.A.(A)	L.R.A.(A)	F.L.T (kg.m)	L.R.T (kg.m)	B.D.T (kg.m)	Load GD² (kg.m²)	WT(kg)
0.4	80	920	65.0	60	2.7	13.5	0.39	0.66	0.78	8.946	15
0.75	90L	945	72.0	64.5	4.3	21.5	0.77	1.39	1.69	8.950	24
1.5	100L	935	76.5	75.0	7.0	42.0	1.55	1.48	3.57	19.74	30
2.2	112M	940	79.0	71.5	10.4	57.2	2.28	3.65	4.56	33.281	39
3.7	132S	945	82.0	75.0	15.8	94.8	3.82	5.73	7.64	55.317	56
5.5	132M	940	85.0	76.0	22.5	135.0	5.70	8.55	11.40	63.714	70
7.5	160M	950	85.0	76.0	30.7	184.2	7.64	11.46	15.28	86.122	109
11	160L	965	85.0	77.0	44.5	267.0	11.10	16.65	22.20	86.39	136
15	180M	970	85.0	77.0	59.1	444	14.9	22.4	29.8	112.0	166
18.5	180L	975	86.0	77.0	73.9	554	18.6	27.9	35.2	170.2	182
22	200L	975	86.0	78.0	87.2	611	22.3	33.5	44.6	190.8	282
30	200L	975	87.0	80.0	114.0	798	29.7	40.1	59.4	267.7	282
37	250S	960	88.0	81.0	136.3	953	37.5	52.5	75.0	363.9	522
45	250S	960	87.5	81.5	165.1	1156	45.6	54.7	91.2	468.7	522
55	280S	970	88.0	82.0	200.0	1401	55.2	66.2	110.4	522.1	780
75	280M	970	88.0	82.0	272.7	1909	75.2	90.2	150.4	588.3	930
90	280L	975	89.0	82.0	323.7	2427	95.0	114.0	190.0	723.8	1120
110	280L	970	90.0	81.5	359.1	2643	111.0	133.2	222.0	950.6	1120

Flange Type Motors 0.4kW ~ 150kW

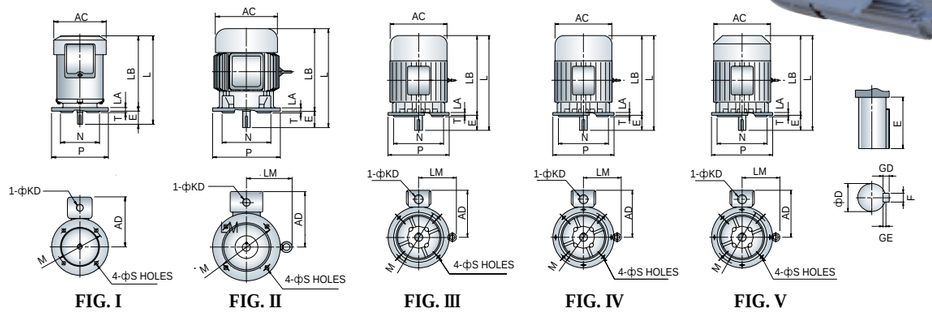


FIG. I FIG. II FIG. III FIG. IV FIG. V

IEC-Flange

UNIT : mm, kg

No.	FR.No.	FIG.	AC	AD	L	LB	M	N	P	LA	T	øS	øKD	LM	Shaft					WT
															øD	E	F	GD	GE	
01	71	Ⅰ	148	140	249	215	130	110	160	9	3	10	22	-	14j6	30	5	5	3	11
02	80	Ⅱ	180	135	300	260	165	130	200	10	3.5	12	22	-	19j6	40	6	6	3.5	30
03	90L	Ⅱ	199	150	363	313	165	130	200	12	3.5	12	22	-	24j6	50	8	7	4	32
04	100L	Ⅱ	220	160	405	345	215	180	250	13	4	15	28	145	28j6	60	8	7	4	48
05	112M	Ⅱ	244	180	400	340	215	180	250	13	4	15	28	170	28j6	60	8	7	4	52
06	132S	Ⅱ	284	200	462	382	265	230	300	16	4	15	28	185	38k6	80	10	8	5	80
07	132M	Ⅱ	284	200	500	420	265	230	300	16	4	15	28	185	38k6	80	10	8	5	87
08	160M	Ⅱ	337	266	602	492	300	250	350	16	5	19	45	220	42k6	110	12	8	5	138
09	160L	Ⅱ	337	266	646	536	300	250	350	16	5	19	45	220	42k6	110	12	8	5	146
10	180M	Ⅲ	374	288	668	558	350	300	400	20	5	19	50.5	238	48k6	110	14	9	5.5	161
11	180L	Ⅲ	374	288	706	596	350	300	400	20	5	19	50.5	238	55m6	110	16	10	6	177
12	200L	Ⅳ	414	317	791	651	400	350	450	20	5	19	63	267	60m6	140	18	11	7	277
13	225S-C	Ⅳ	465	406	787	677	400	350	450	21	5	19	63	302	55m6	110	15	10	5	390
14	225S	Ⅳ	465	406	817	677	400	350	450	21	5	19	63	302	60m6	140	15	10	5	390
15	225M-C	Ⅳ	465	406	812	702	400	350	450	21	5	19	63	302	55m6	110	15	10	5	422
16	225M	Ⅳ	465	406	842	702	400	350	450	21	5	19	63	302	60m6	140	15	10	5	422
17	250S-C	Ⅴ	529	434	846	736	500	450	550	22	5	19	63	336	55m6	110	15	10	5	549
18	250S	Ⅴ	529	434	876	736	500	450	550	22	5	19	63	336	75m6	140	20	12	7.5	549
19	250M-C	Ⅴ	529	434	884	774	500	450	550	22	5	19	63	336	55m6	110	15	10	5	602
20	250M	Ⅴ	529	434	914	774	500	450	550	22	5	19	63	336	75m6	140	20	12	7.5	602
21	280S-C	Ⅴ	610	465	1014	874	500	450	550	22	5	19	63	376	60m6	140	15	10	5	780
22	280C	Ⅴ	610	465	1044	874	500	450	550	22	5	19	63	376	85m6	170	24	16	8	780
23	280M-C	Ⅴ	610	465	1065	925	500	450	550	22	5	19	63	376	60m6	140	15	10	5	930
24	280M	Ⅴ	610	465	1095	925	500	450	550	22	5	19	63	376	85m6	170	24	16	8	930
25	280L-C	Ⅴ	610	465	1154	1014	500	450	550	22	5	19	63	376	60m6	140	15	10	5	1120
26	280L	Ⅴ	610	465	1184	1014	500	450	550	22	5	19	63	376	85m6	170	24	16	8	1120
27	280L'	Ⅴ	610	465	1184	1014	500	450	550	22	5	19	63	376	95m6	170	24	16	8	1122

D-Flange

UNIT : mm, kg

No.	FR.No.	FIG.	AC	AD	L	LB	M	N	P	LA	T	øS	øKD	LM	Shaft					WT
															øD	E	F	GD	GE	
01	90L	Ⅱ	199	150	363	313	254	229	279	13	5	13	22	-	24j6	50	8	7	4	32
02	100L	Ⅱ	220	160	405	345	254	229	279	13	4	13	28	145	28j6	60	8	7	4	48
03	112M	Ⅱ	244	180	400	340	254	229	279	13	5	13	28	170	28j6	60	8	7	4	52
04	132S	Ⅱ	284	200	462	382	254	229	279	16	5	13	28	185	38k6	80	10	8	5	80
05	132M	Ⅱ	284	200	500	420	254	229	279	16	5	13	28	185	38k6	80	10	8	5	87
06	160M	Ⅱ	337	266	602	492	318	279	356	16	5	21	45	220	42k6	110	12	8	5	138
07	160L	Ⅱ	337	266	646	536	318	279	356	16	5	21	45	220	42k6	110	12	8	5	146
08	180M	Ⅲ	374	288	668	558	318	279	356	16	5	21	50.5	238	48k6	110	14	9	5.5	161
09	180L	Ⅲ	374	288	706	596	318	279	356	16	5	21	50.5	238	55m6	110	16	10	6	177
10	200L	Ⅳ	414	317	791	651	406	356	457	19	6	21	63	267	60m6	140	18	11	7	277
11	225S-C	Ⅳ	465	406	787	677	406	356	457	19	6	21	63	302	55m6	110	15	10	5	390
12	225S	Ⅳ	465	406	817	677	406	356	457	19	6	21	63	302	60m6	140	15	10	5	390
13	225M-C	Ⅳ	465	406	812	702	406	356	457	19	6	21	63	302	55m6	110	15	10	5	422
14	225M	Ⅳ	465	406	842	702	406	356	457	19	6	21	63	302	60m6	140	15	10	5	422
15	250S-C	Ⅴ	529	434	846	736	508	457	559	25	6	21	63	336	55m6	110	15	10	5	549
16	250S	Ⅴ	529	434	876	736	508	457	559	25	6	21	63	336	75m6	170	20	12	7.5	549
17	250M-C	Ⅴ	529	434	884	774	508	457	559	25	6	21	63	336	55m6	110	15	10	5	602
18	250M	Ⅴ	529	434	914	774	508	457	559	25	6	21	63	336	75m6	170	20	12	7.5	602
19	280S-C	Ⅴ	610	465	1014	874	508	457	559	25	6	21	63	376	60m6	140	15	10	5	780
20	280S	Ⅴ	610	465	1044	874	508	457	559	25	6	21	63	376	85m6	170	24	16	8	780
21	280M-C	Ⅴ	610	465	1065	925	508	457	559	25	6	21	63	376	60m6	140	15	10	5	930
22	280M	Ⅴ	610	465	1095	925	508	457	559	25	6	21	63	376	85m6	170	24	16	8	930
23	280L-C	Ⅴ	610	465	1154	1014	508	457	559	25	6	21	63	376	60m6	140	15	10	5	1120
24	280L	Ⅴ	610	465	1184	1014	508	457	559	25	6	21	63	376	85m6	170	24	16	8	1120
25	280L'	Ⅴ	610	465	1184	1014	508	457	559	25	6	21	63	376	95m6	170	24	16	8	1122

ODP Type Motors

Features and Specification

Ventilation
All frames are two-way end ventilated. Air enters through openings in both end brackets and diacharges through frame openings at the bottom.

Service factor
Standard 1.15 service factor at 40°C(104°F) ambient for 60 cycle NEMA Design B. Design A, C and D are also available upon request.

Construction
Frame and end brackets are rugged cast iron. (Frame 90 is steel)

Conduit box
Diagonally split, rotatable in 90°steps, and made of pressed steel. Lead separator gasket seals conduit box from fram. (Optional cast iron conduit box is available on special order.)

Finish & Nameplate
Red oxide, zinc chromate primate with finish coat of semi-gloss, air drying, alkyed enamel. Stainless Steel for resistance to corrosion.

Rotor
Die cast aluminum, closed slot design and surface treated for minimum rotor losses. Rotor and complete shaft assembly are dynamically balanced.

Hardware
High strengh, zinc plated and chromated for resistance to corrosion.

Insulation
Class “B” nonhygroscopic system is standard and IEEE standards. Stator coil conductors receive multiple coatings of premium grade insulating enamel.
Slot cell is made from a laminated material which provides high dielectric strengh, great mechanical strengh, and affords a prositive moisture barrier. Glass one of the materials used, affords positive protection against “thermal cut through“ between the wire and the lamination stack. Complete wound ststor core receives multiple dips and backs of special insulating varnish.

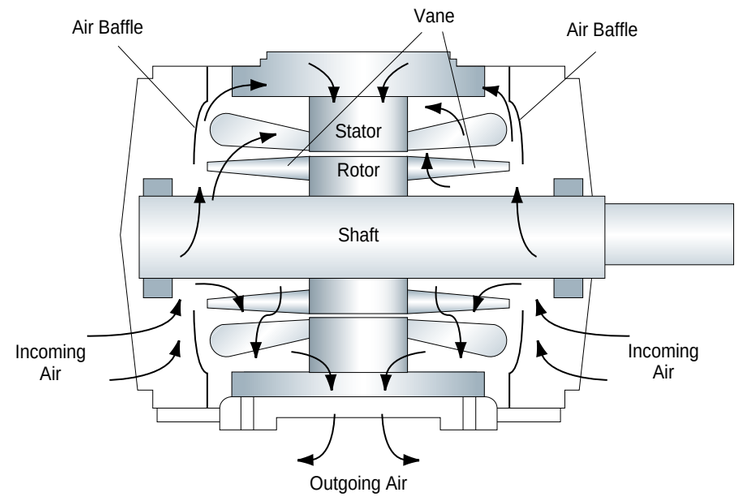
Leads
Stranded copper, suitably insulated for appropriate insulation class. All leads permanently identified.

Bearings
Standard, double-shielded(one shield each side), regreasable, single row width, deep groove Conrad type made from improved, vacuum degassed steel for longer life expectancy.
Bearings are pre-packed with grease for ambient tempertatures of -30°C to+50°C(-22°Fto+122°F). Other temperature ranges available on special order with single shielded temperature stabilized bearings. Bearing housing is also packed with greaseat time of motor assembly.

Bearings
Pipe plugs on inlet and relief.

Improved Ventilation System

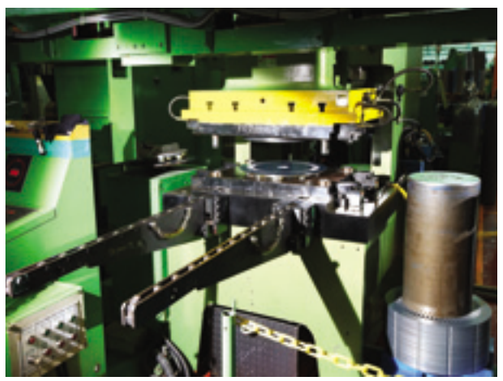
Hyosung motors are designed for improved heat dissipating capacity adopting a double end ventilation system. The gain in heat dissipating capacity is about 60% for small frames and about 30% for the larger. The generous even flow of cooling air throughout the maching provides ample cooling and assures against localized heating or hot spots.



Application
Standard applications for indor and outdoor use include clean and dry location as separate motor rooms, well kept factories where metallic and non-metallic dusts are NOT present, and office bulidings, etc.

For moist, hot tropical climates where fungi could form, special protection can be provied as an option, and at extra cost. Unless otherwise specified, tropical protection includes moisture resistant insulation, plus fungus protection on all electrical parts, windings, rotor outside diameter and stator inside diameter.

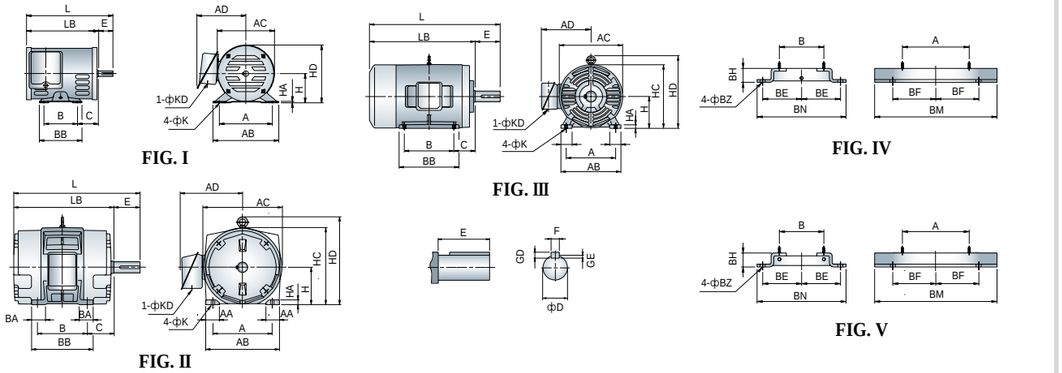
For gravel plants, pulverizers of non-combustible and non-clogging materials, additional abrasion and dust resisant protection can be supplied.



HYOSUNG

ODP Type Motors

Open Drip Proof Type 0.75kW ~ 220kW



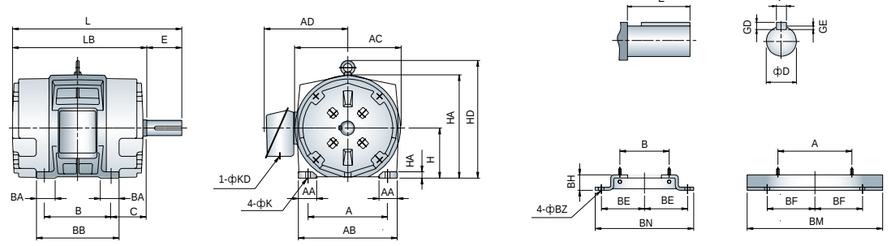
UNIT : mm, kg

No.	FR.No.	FIG.	Ouy Put(kW)				Bearing		A	AA	AB	AC	AD	B	BA	BB	C	H	HA
			2P	4P	6P	8P	Drive	Non Drive											
01	80	I	0.75	0.75	-	-	6204ZZ	6204ZZ	125	35	164	145	135	100	-	125	50	80	2.3
02	90L	I	1.5,2.2	1.5	0.75	-	6205ZZ	6205ZZ	140	38	176	159	142	125	-	152	56	90	3
03	100L	I	-	2.2	1.5	0.75	6206ZZ	6205ZZ	160	40	200	182	152	140	-	180	63	100	5
04	112M	II	3.7	3.7	2.2	1.5	6206ZZ	6205ZZ	190	40	230	198	161	140	90	180	70	112	6
05	132S	II	5.5,7.5	5.5	3.7	2.2	6208ZZ	6206ZZ	216	41	260	279	215	140	86	172	89	132	17
06	132	II	-	7.5	5.5	3.7								178	106	212			
07	160M	II	11,15	11	7.5	5.5	6309ZZ	6207ZZ	254	60	311	333	261	210	127	254	108	160	20
08	160L	II	18.5	15	11	7.5	6309ZZ	6207ZZ	254	60	311	333	261	254	149	298	108	160	20
			22	18.5	-	-	6310ZZ	6208ZZ						254	149	298			
09	180M	III	30	-	-	-	6212ZZ	6212ZZ	279	63	338	358	288	241	-	300	121	180	20
			-	22,30	15,18.5	11	6312ZZ												
10	180L	III	37	-	-	-	6212ZZ	6212ZZ	279	63	338	358	288	279	-	338	121	180	20
			-	37	22,30	15,18.5	6313ZZ												
11	200M	III	-	-	37	30	6314ZZ	6212ZZ	318	70	382	397	317	267	-	332	133	200	22

UNIT : mm, kg

No.	FR.No.	FIG.	Ouy Put(kW)				Bearing		A	AA	AB	AC	AD	B	BA	BB	C	H	HA
			2P	4P	6P	8P	Drive	Non Drive											
01	225S	VI	55	-	-	-	6314C3	6314C3	356	69	439	473	393	286	67	330	149	225	25
			-	45	-	22	6314	6314											
02	225M	VI	75	-	-	-	6314C3	6314C3	356	69	439	473	393	311	67	356	149	225	25
			-	55	37	30	6314	6314											
03	250S-C	VI	90	75	45	37	6312	6312	406	78	496	530	424	311	76	368	168	250	27
	250S-P		-	75	45	37	6317												
04	250M-C	VI	110	90	55	45	6312	6312	406	78	496	530	424	349	76	406	168	250	27
	250M-P		-	90	55	45	6317												
05	280S-C	VI	150	110	75	55	6313	6313	457	85	552	597	450	368	95	444	190	280	28
	280S-P		-	110	75	55	NU319												
06	280M-C	VI	185	150	90	75	6313	6313	457	85	552	597	450	419	95	495	190	280	28
	280M-C'		-	-	110	90	6319												
	280M-P		-	150	90	75	NU319												
	280M-P'		-	-	110	90	NU222												
07	280L-C	VI	-	-	-	-	6313	6313	457	85	552	598	450	508	95	585	190	280	28
	280L-C'		-	185	150	110	6319												
	280L-P		-	-	-	-	NU319												
	280L-P'		-	185	150	110	NU222												
08	280LL-C	VI	220	-	-	-	6313	6313	457	85	552	600	450	635	95	712	190	280	28
	280LL-C'		-	220	185	150	6319												
	280LL-P		-	-	-	-	NU319												
	280LL-P'		-	220	185	150	NU222												

Open Drip Proof Type 0.75kW ~ 220kW (cont'd)



UNIT : mm, kg

No.	HA	HD	L	LB	øK	øKD	SHAFT					WT	BASE							WT
							øD	E	F	GD	GE		FIG	BE	BF	BM	BN	BH	øBZ	
01	153	-	235	195	7	22	19j6	40	6	6	3.5	10	IV	100	88	251	202	29	13	2.1
02	170	-	284	234	10	22	24j6	50	8	7	4	16	IV	103	95	268	228	29	10	2.7
03	191	-	321	261	10	28	28j6	60	8	7	4	26	IV	110	114	324	278	39	13	3.8
04	231	279	335	275	12	28	28j6	60	8	7	4	34	IV	121	114	324	278	39	13	4.3
05	272	320	395	315	12	28	38k6	80	10	8	5	51	IV	121	133	382	280	45	13	6.2
06			433	353								57	IV	140			318			7.0
07	327	386	528	418	15	45	42k6	110	12	8	5	93	V	169	159	452	384	51	16	8.6
08	327	386	527	462	15	45	42k6	110	12	8	5	106	V	190	159	452	430	51	16	10
							48k6	110	14	9	5.5									9.0
09	359	410	668	558	15	50.5	55m6	110	16	10	6	147	V	190	178	502	430	51	16	
10	359	410	706	596	15	50.5	55m6	110	16	10	6	179	V	190	178	502	468	51	16	10.5
			736				60m6	140	18	11	7									
11	399	459	791	651	19	63	65m6	140	18	11	7	225	V	216	203	578	490	64	19	14.5

UNIT : mm, kg

No.	HA	HD	L	LB	øK	øKD	SHAFT					WT	BASE							WT
							øD	E	F	GD	GE		FIG	BE	BF	BM	BN	BH	øBZ	
01	462	533	690	580	19	63	55m6	110	15	10	5	285	VII	232	229	648	522	64	19	20.5
			720				60m6	140												
02	462	533	715	605	19	63	55m6	110	15	10	5	313	VII	244	229	648	528	64	19	21
			745				60m6	140												
03	515	586	752	642	24	63	55m6	110	15	10	5	378	VII	251	254	730	570	77	23	29
			782				75m6	140	20	12	7.5									
04	515	586	790	680	24	63	55m6	110	15	10	5	416	VII	270	254	730	616	77	23	29.5
			820				75m6	140	20	12	7.5									
05	579	650	882	742	24	63	60m6	140	15	10	5	478	VII	280	280	790	626	77	29	39
			912				85m6	170	24	16	8									
06	579	650	933	793	24	63	60m6	140	15	10	5	570	VII	305	280	790	676	77	29	39.5
			963				85m6	170	24	16	8									
			963				85m6	170	24	16	8									
			963				95m6	170	24	16	8									
07	579	650	1022	882	24	63	60m6	140	15	10	5	655	VII	350	280	790	766	77	29	40.5
			1052				85m6	170	24	16	8									
			1052				85m6	170	24	16	8									
			1052				95m6	170	24	16	8									
08	580	651	1149	1009	24	63	60m6	140	15	10	5	840	VII	414	280	790	893	77	29	41.5
			1179				85m6	170	24	16	8									
			1179				85m6	170	24	16	8									
			1179				95m6	170	24	16	8									

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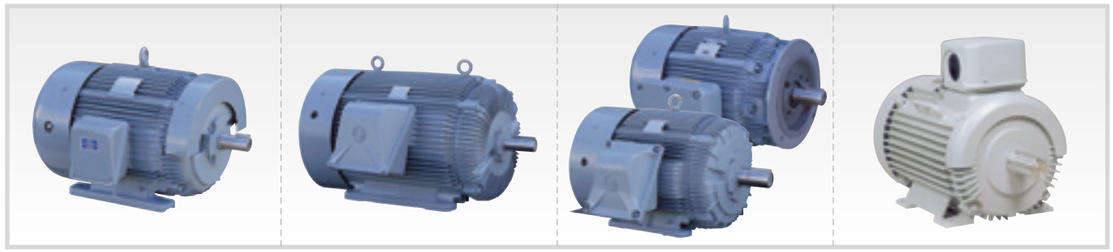
Technical Features(cont'd)

AC Motors for Specific use



Premium Efficiency Motors
- High Efficiency
- Low Noise
- CSA Approved

Two-Speed Motors
- Constant Torque
- Constant Horsepower
- Variable Torque

Explosion Proof Motors
- Ex e II T3
- Ex II B T4
- Class I, Group D & Class II, Group E.F.G
- UL Approved

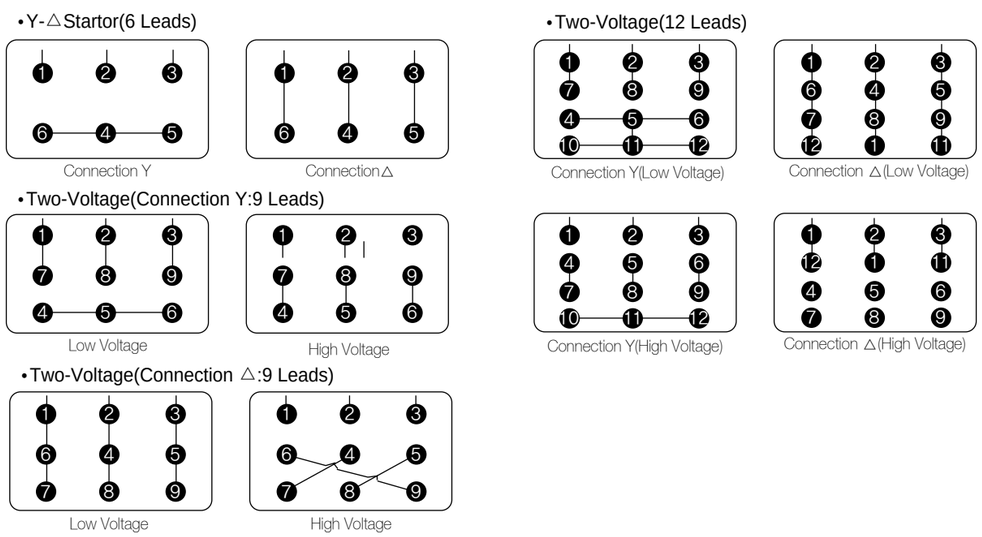
Inverter Duty Motors
- Frequency Range : 6~60Hz, 6~90Hz, 6~100Hz
- Low Operating Cost
- Various Application

Technical Features

Starting Methods

Type		Voltage	Starting Torque	Current
Direct On-line	100%	100%		100%
Y-△ Startor		57.50%	33.30%	33.30%
Soft Start with Autotransformer Direct	80% Tap	80%	64%	68%
	65% Tap	65%	42%	46%
	50% Tap	50%	25%	30%
Soft start with Resistrances Direct		80%	64%	80%
Reactor	50% Tap	50%	25%	50%
	45% Tap	45%	20%	45%
	37.5% Tap	37.50%	14%	37.50%
Part Winding Startor (Single Low Voltage)	75% Winding	100%	75%	75%
	50% Winding	100%	50%	50%

Connection Diagrams



Noise Data

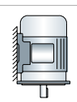
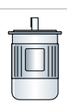
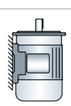
The measuring surface sound pressure LPA as well as the sound power level LWA of single-speed motors are shown in the table below.

Measuring surface sound pressure level and sound power level(dBA at 1 m From motor)

Speed	TEFC						ODP					
HP	3600		1800		1200		3600		1800		1200	
1	70	71	56	58	56	59	61	62	56	58	55	57
1.5	-	-	-	-	-	-	-	-	-	-	-	-
2	70	73	56	65	56	59	65	67	56	58	56	59
3	70	73	58	68	56	59	65	68	58	61	61	64
5	74	80	58	68	61	64	68	70	58	61	61	64
7.5	77	83	64	70	61	64	72	74	64	67	63	65
10	77	84	64	70	66	69	73	75	64	67	63	65
15	82	86	68	76	66	69	75	76	68	70	66	69
20	82	86	68	76	66	69	76	78	68	70	66	69
25	79	87	72	78	66	71	80	82	72	75	66	71
30	79	87	72	78	66	71	82	84	72	75	66	71
40	80	87	73	80	69	75	80	87	73	80	69	75
50	80	87	73	80	69	75	80	87	73	80	69	75
60	80	87	74	82	74	77	80	87	74	82	74	77
75	80	87	74	82	74	77	80	87	74	82	74	77
100	81	87	75	82	76	83	81	87	75	82	76	83
125	92	98	85	92	76	83	92	98	85	92	76	83
150	92	98	85	92	76	83	92	98	85	92	76	83
200	92	98	85	92	76	83	92	98	85	92	76	83

Values in shade area are for standard efficiency ratings.

Symbols for mounting arrangements and the installation of rotating electric machines

Horizontal Mounting		Vertical Mounting	
B3 (1M 1001)		B8 (1M 1071)	
B6 (1M 1051)		V5 (1M 2011)	
B7 (1M 1061)		V6 (1M 2031)	
B5 (1M 1001)		B3/B5 (1M 1071)	
V1 (1M 1051)		V1/V5 (1M 2011)	
V3 (1M 1061)		V3/V6 (1M 2031)	

NOTE : All data throughout the catalog subject to change without notice.

Packing dimensions and weights

(Mounting IM B3 standard design)

Frame size	Overseas shipment (Seaworthy packing) Crate dimensions mm	Tare kg (Approx.)
90S	420 x 325 x 222	26
90L		
100L		32
112M	469 x 391 x 317	41
132S	526 x 431 x 352	58
132M	564 x 431 x 352	72
160M	749 x 564 x 404	111
160L		138
180M	820 x 680 x 675	168
180L		184
200L		287
225S	980 x 830 x 805	385
225M		425
250M	1060 x 850 x 880	580
280S	1280 x 1050 x 955	755
280M		900
280L	1350 x 1050 x 955	1100
280LL		1300

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Information Slip

Company : _____

Name and Nature of Project : _____

Please fill the questions below as your inquiries and orders are allowed.

Type		**Quantity**	
kW		**Indulation Class**	
Voltage		**Temperature Rise**	℃ at Full Load
HZ		**Humidity**	%
RPM		**Location**	
Type of Driven Machine		**Ambient Temperature**	℃
Standards	☐ IEC ☐ NEMA ☐ Others( )	**Motor Data**	
Starting Method	☐ Direct-on ☐ Reactor ☐ Star-Delta ☐ Others( )	Current	No Load :
			Full Load :
			Starting :
		Power Factor	%
Terminal Box Location	Viewing on Drive End ☐ Left ☐ Right	Efficiency	%
		Noise Level	dB(A)
		Vibration Level	
Enclosure	☐ TE ☐ ODP ☐ Others( )	Torque	Full Load :
			Locked Rotor :
			Breakdown :
Mounting	☐ B3 ☐ B5 ☐ V1 ☐ V3 ☐ V5 ☐ V6 ☐ Others( )	**Cooling**	☐ Non-Ventilation ☐ Placed in air stream of driven fan ☐ Forced Ventilation ☐ Water Cooling ☐ Fan Cooling
Drive Type			
Coupling Drive	Type of Coupling :	Belt Drive	Pulley diameter(motor) : mm
	Axial Force F_A= N		Pulley width(motor) : mm
	Downthrust :		Radial Force F_R = N
	Upthrust :		Point where applied From shaft collar : mm
☐ **Space Heater**		**Painting** (Munsell No.)	☐ 7.5BG 5/2 ☐ Others( )

Remarks

Product Development History

Year	Milestones
2007	Supplied 4,900kW 6P 6.0kV motor for Europe
2006	Supplied 3,900kW 12P 11kV motor for Middle East
2004	Developed 10MVA MG-SET
2003	Manufactured 2,800kW 18P 6,600V motor
2002	Developed 6,000rpm vector inverter motor (560HP 2P) Developed 9,000kW 6P wound rotor motor
2001	Developed Q-Class motor (ESWP, CCWP)
2000	Manufactured 2,150kW, 22P, 13.2kV motor

Year	Milestones
1999	Developed 4,400kW 10P wound rotor motor
1988	Developed heavy weight torpedo propulsion motor (C.R.M)
1987	Manufactured A.C 250kW traction motor (C class) Developed 8,500kW 4P motor for BFP
1996	Fabricated the 3 millionth motor
1995	13.2kV motor for nuclear power plant (1,600HP, 24P, 13.2kV)
1994	Developed Vector Inverter Motor
1993	Developed wound rotor pole change motor (1,500kW / 750kW, 6/12P)

Global Network

HYOSUNG