Energy Efficient

EFF1 / EPAct Motors

C US

E

ISO 9001

CE

Crompton Greaves

EVERYDAY SOLUTIONS

L T MOTORS DIVISION

Crompton Greaves Ltd., a pioneering leader with more than 67 years of experience and expertise in the management of electric energy, is today India's largest private sector enterprise in electrical engineering. The Company has 28 manufacturing units in India, 19 branch offices in India and many distributors all over the world . Recently Crompton Greaves has acquired Pauwels Group Belgium and their Transformer manufacturing facilities in 5 countries to reckon its position in International market. Today CG is amongst the top 10 manufacturer of transformer in the world. It is also the undisputed leader in India and a recognized manufacturer in International market for many other products including LT Motors.

L T Motors division, for the past six decades has lead the industry in India developing motors that deliver greater performance and reliability while using less electricity.

The motors are manufactured at the Crompton Greaves State-of-the-art plant at Ahmednagar, consistently ensuring conformance to International standards for energy conservation and environment preservation.

ENERGY EFFICIENT MOTORS

Crompton Greaves has developed a complete range of high efficiency motors conforming to mandated efficiency standards of Eff level 1 as per CEMEP or EPAct 92 Energy Efficient standard as per NEMA MG-1 or other applicable standards in rest of the world. The efficiencies are tested as per CSA 390, Method 1 (equivalent to IEEE 112, Method B) calling for actual measurement of stray load losses. Each motor is tested in sophisticated test plant with high accuracy test equipments and data acquisition instrumentation. The test plant is approved by CSA.

These motors are available in TEFC construction in IEC and NEMA frames for use in safe areas and also in flameproof enclosure for use in Hazardous areas.

Motors are marked with

for EPAct efficiencies and safety compliance.
The motors are listed by DOE. DOE No. CC047A

Special design Features :

Efficiencies at 50% and 75% load are close to the full load efficiencies for true energy saving.
Energy efficiency is achieved by the following steps in design and construction of the motors

- Low-loss and superior magnetizing quality cores are used to minimize iron loss
- Stator and rotor lamination designs are optimized to reduce copper loss. Thicker conductors and more copper contents reduce copper loss due to low resistance.
- Friction & Windage losses are reduced by optimized design of fan and fan cover.
- The components are made with high accuracy and close tolerances to maintain uniform air gap between stator and rotor and reduce stray load losses.
- The Aluminium Motors are featured with Multi-Mount facility. By simply changing the position of the feet, the user is able to obtain right, left or top mounted terminal box positions. By replacing the driving end endshield with a face or flange endshield, the motor mounting can be changed to face / flange.

Benefits :

Higher efficiency is available from 50 % to 100 % load. The Eff curve is almost flat resulting in higher energy savings as in most of the cases the motor is not always fully loaded.

The special design features also result in lower operating temperatures, which enhance the life of motor and reduce the maintenance costs.

These motors have inherently low noise and vibration and help in conservation of environment.

Crompton Greaves energy efficient motors are packed with a unique feature, which no other manufacturer offers. These motors have high power factor compared to other Eff-1 motors available in market. The higher power factor reduces the currents in the supply cables thus reducing the cable loss, Sometimes this allows even a lower cable size saving tremendously on capital costs. Saving is also made by reducing capacitors required to improve power factor.

Manufacturing range:

0.18 kW to 450 kW, (2 pole to 8 pole)
Frame sizes: 63 to 400 for TEFC
80 to 315 for Flame proof
The entire range is available in IEC frames sizes (metric range) and also in NEMA frames

Conform to following standards:

- NEMA MG-1
- CSA-390-93
- CEMEP EFF-1 Category
- MEPS High Efficiency level as per AS/NZS 1359.5

IMPORTANCE OF ENERGY EFFICIENCY :

Growing cost of energy calls for power saving at each possible step of manufacturing. Electric motor driven systems used in industrial processes consume more than 70 percent of electricity used in industry, hence best possible technology is being applied for achieving highest possible efficiency values.

ENERGY COST & LIFE TIME COST :

If we compare initial purchase price of the motor with the cost of energy it uses over it working lifetime, the initial cost represents less than two percent of its lifetime cost in most of the cases.

Energy cost for a 15 years usage at $0.1 / kWH is staggering $7200 as compared to buying cost of $216. Also the energy kWH rate is likely to only go up in future.

PERFORMANCE DATA
3 - PHASE TEFC SCR ENERGY EFFICIENT INDUCTION MOTOR

VOLTAGE : 415
FREQUENCY : 50 Hz

TYPE : SQUIRREL CAGE (SCR)
RATING : CONTINUOUS
INSULATION : CLASS 'F'
AMBIENT : 40 DEG C
TEMP. RISE (R) : 80 DEG C

DEGREE OF PROTECTION : IP55
FRAME SIZE : GD ALUMINIUM
ND CAST IRON

OUTPUT		POLE	FRAME SIZE	FL RPM	FLC AMPS.	FLT Kg-m	EFFICIENCY (%)			POWER FACTOR			DOL STG.		POT % FLT	GD.^{2} KGM.^{2}	NET WT. kG
kW	HP						FL	3/4 LOAD	1/2 LOAD	FL	3/4 LOAD	1/2 LOAD	STG.T % FLT	STG.C % FLC			
0.37	0.50	2	GD71	2820	0.95	0.13	70.2	70.2	68.2	0.79	0.72	0.60	250	500	300	0.002	7.0
		4	GD71	1400	1.00	0.26	73.0	73.0	71.0	0.70	0.58	0.43	225	600	275	0.004	7.0
		6	GD80	910	1.05	0.40	69.4	69.4	67.4	0.71	0.63	0.52	210	400	260	0.011	10/17
		8	GD90S	680	1.40	0.53	66.8	66.8	64.8	0.57	0.50	0.40	170	400	220	0.015	13/22
0.55	0.75	2	GD71	2800	1.30	0.19	74.0	74.0	72.0	0.78	0.72	0.60	250	500	300	0.002	7.0
		4	GD80	1410	1.25	0.37	78.0	78.0	76.0	0.78	0.75	0.64	200	500	250	0.007	10/17
		6	GD80	910	1.55	0.58	72.0	72.0	70.0	0.71	0.63	0.52	200	400	250	0.011	10/17
		8	GD90L	680	1.80	0.78	71.1	71.1	69.1	0.60	0.48	0.37	150	400	200	0.021	13/22
0.75	1.00	2	GD80	2820	1.65	0.26	77.0	77.0	75.0	0.81	0.73	0.62	250	600	300	0.003	10/17
		4	GD80	1410	1.70	0.52	82.5	82.5	80.5	0.78	0.75	0.64	200	500	250	0.007	10/17
		6	GD90S	935	2.00	0.78	74.6	74.6	72.6	0.72	0.65	0.58	200	400	250	0.015	13/22
		8	GD100L	700	2.55	1.04	73.8	73.8	71.8	0.58	0.51	0.41	175	400	225	0.030	19/32
1.10	1.50	2	GD80	2820	2.35	0.38	82.8	82.8	80.8	0.82	0.77	0.70	200	600	250	0.004	10/17
		4	GD90S	1415	2.40	0.76	83.8	83.8	81.8	0.78	0.75	0.64	200	500	250	0.014	13/22
		6	GD90L	935	2.75	1.15	77.3	77.3	75.3	0.72	0.65	0.58	200	500	250	0.021	16/25
		8	GD100L	700	3.30	1.53	76.2	76.2	74.2	0.62	0.57	0.47	160	400	210	0.034	19/35
1.50	2.00	2	GD90S	2830	3.00	0.52	84.1	84.1	82.1	0.82	0.77	0.70	225	600	275	0.006	13/22
		4	GD90L	1415	3.00	1.03	85.0	85.0	83.0	0.81	0.78	0.71	200	600	250	0.019	16/25
		6	GD100L	935	3.60	1.56	79.6	79.6	77.6	0.72	0.65	0.58	200	500	250	0.030	19/32
		8	GD112M	700	3.90	2.09	77.9	77.9	75.9	0.68	0.60	0.52	190	400	240	0.057	29/45
2.20	3.00	2	GD90L	2830	4.40	0.76	85.6	85.6	83.6	0.82	0.77	0.70	225	650	275	0.008	16/25
		4	GD100L	1440	4.30	1.49	86.4	86.4	84.4	0.82	0.78	0.72	200	600	250	0.030	19/32
		6	GD112M	935	5.00	2.29	82.2	82.2	80.2	0.75	0.70	0.60	200	500	250	0.048	29/42
3.70	5.00	2	GD100L	2875	7.20	1.25	87.5	87.5	85.5	0.82	0.77	0.70	250	650	300	0.022	19/36
		4	GD112M	1440	7.20	2.50	88.3	88.3	86.3	0.81	0.76	0.69	200	600	250	0.052	29/42
		6	GD132S	950	8.00	3.79	85.1	85.1	83.1	0.76	0.73	0.63	200	600	250	0.174	42/68
5.50	7.50	2	GD132S	2865	9.70	1.87	88.6	88.6	86.6	0.89	0.85	0.80	250	600	300	0.034	29/45
		4	GD132S	1450	10.60	3.69	89.2	89.2	87.2	0.81	0.80	0.75	250	600	300	0.131	42/68
		6	GD132M	950	11.30	5.64	86.8	86.8	84.8	0.78	0.75	0.68	200	600	250	0.214	45/79
7.50	10.00	2	GD132S	2880	13.70	2.54	89.5	89.5	87.5	0.85	0.82	0.76	200	650	250	0.062	45/68
		4	GD132M	1455	13.80	5.02	90.1	90.1	88.1	0.84	0.82	0.74	250	650	300	0.161	45/79
3.7	5.0	8	ND160M	710	8.0	5.08	83.0	83.0	81.0	0.74	0.70	0.62	150	700	200	0.46	125
5.5	7.5	8	ND160M	710	12.0	7.55	85.1	85.1	83.1	0.74	0.70	0.62	150	700	200	0.46	125
7.5	10.0	6	ND160M	975	11.0	5.49	88.1	88.1	86.1	0.80	0.76	0.68	200	700	250	0.46	125
		8	ND160L	710	12.0	7.55	86.4	86.4	84.4	0.76	0.72	0.64	150	700	200	0.64	148
9.3	12.5	2	ND160M	2920	16.0	3.10	90.0	90.0	88.0	0.88	0.86	0.78	225	700	275	0.13	125
		4	ND160M	1460	17.0	6.20	90.5	90.5	88.5	0.84	0.81	0.73	175	700	225	0.31	125
		6	ND160L	975	18.0	9.29	89.3	89.3	87.3	0.80	0.76	0.68	200	700	250	0.59	148
		8	ND180L	720	20.0	12.58	87.3	87.3	85.3	0.74	0.70	0.60	175	700	225	0.99	174
11	15	2	ND160M	2920	19.0	3.67	90.5	90.5	88.5	0.88	0.86	0.78	225	700	275	0.13	125
		4	ND160M	1460	21.0	7.34	91.0	91.0	89.0	0.82	0.79	0.70	200	700	250	0.36	125
		6	ND160L	975	21.0	10.99	89.7	89.7	87.7	0.80	0.76	0.68	200	700	250	0.64	148
		8	ND180L	720	23.0	14.88	88.1	88.1	86.1	0.74	0.70	0.60	175	700	225	1.16	210

50 Hz

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OUTPUT		POLE	FRAME SIZE	FL RPM	FLC AMPS.	FLT Kg-m	EFFICIENCY (%)			POWER FACTOR			DOL STG.		POT % FLT	GD.^{2} KGM.^{2}	NET WT. kG
kW	HP						FL	3/4 LOAD	1/2 LOAD	FL	3/4 LOAD	1/2 LOAD	STG.T % FLT	STG.C % FLC			
15	20	2	ND160M	2920	26.0	5.00	91.3	91.3	89.3	0.88	0.86	0.79	225	700	275	0.17	125
		4	ND160L	1460	27.0	10.01	91.8	91.8	89.8	0.85	0.83	0.75	200	700	250	0.47	148
		6	ND180L	975	29.0	14.98	90.5	90.5	88.5	0.79	0.73	0.66	225	700	275	1.16	210
		8	ND200L	725	33.0	20.15	89.0	89.0	87.0	0.71	0.65	0.55	225	700	275	2.14	282
18.5	25	2	ND160L	2920	32.0	6.17	91.8	91.8	89.8	0.88	0.86	0.79	225	700	275	0.21	148
		4	ND180M	1475	33.0	12.22	92.2	92.2	90.2	0.84	0.80	0.72	200	700	250	0.81	174
		6	ND200L	975	34.0	18.48	91.3	91.3	89.3	0.84	0.82	0.73	200	700	250	1.69	282
		8	ND225S	725	38.0	24.85	89.8	89.8	87.8	0.75	0.71	0.63	175	700	225	3.24	345
22	30	2	ND180M	2930	40.0	7.31	92.2	92.2	90.2	0.83	0.80	0.72	225	700	275	0.44	164
		4	ND180L	1475	39.0	14.53	92.6	92.6	90.6	0.84	0.80	0.72	200	700	250	0.95	210
		6	ND200L	975	40.0	21.98	91.8	91.8	89.8	0.84	0.82	0.78	200	700	250	2.04	282
		8	ND225M	725	45.0	29.56	90.2	90.2	88.2	0.75	0.71	0.63	175	700	225	3.61	375
30	40	2	ND200L	2950	50.0	9.91	92.9	92.9	90.9	0.90	0.89	0.87	200	700	250	0.80	282
		4	ND200L	1475	50.0	19.81	93.2	93.2	91.2	0.89	0.86	0.78	250	700	300	1.62	282
		6	ND225M	980	53.0	29.82	92.6	92.6	90.6	0.85	0.82	0.73	200	700	250	3.61	375
		8	ND250M	735	61.0	39.76	91.5	91.5	89.5	0.75	0.71	0.63	175	700	225	4.82	473
37	50	2	ND200L	2950	61.0	12.22	93.3	93.3	91.3	0.90	0.89	0.87	200	700	250	0.89	282
		4	ND225S	1480	62.0	24.35	93.6	93.6	91.6	0.89	0.86	0.78	250	700	300	2.64	345
		6	ND250M	980	66.0	36.77	93.0	93.0	91.0	0.84	0.81	0.72	250	700	300	4.82	473
		8	ND280S	735	75.0	49.03	91.9	91.9	89.9	0.75	0.71	0.63	200	700	250	8.01	600
45	60	2	ND225M	2955	71.0	14.83	93.7	93.7	91.7	0.94	0.92	0.88	225	700	275	1.87	375
		4	ND225M	1480	75.0	29.61	93.9	93.9	91.9	0.89	0.86	0.78	250	700	300	3.13	375
		6	ND280S	980	79.0	44.72	93.4	93.4	91.4	0.85	0.82	0.73	250	700	300	8.01	600
		8	ND280M	725	90.0	60.46	92.4	92.4	90.4	0.75	0.71	0.63	175	700	225	9.89	670
55	75	2	ND250M	2955	87.0	18.13	94.0	94.0	92.0	0.94	0.92	0.88	175	700	225	2.79	473
		4	ND250M	1475	91.0	36.32	94.2	94.2	92.2	0.89	0.86	0.82	200	700	250	3.45	473
		6	ND280M	980	95.0	54.66	93.8	93.8	91.8	0.86	0.82	0.74	175	700	225	9.89	670
		8	ND315S	740	113.0	72.39	93.0	93.0	91.0	0.73	0.66	0.56	250	700	300	14.12	900
75	100	2	ND280S	2975	123.0	24.55	94.6	94.6	92.6	0.90	0.86	0.78	225	700	275	7.14	600
		4	ND280S	1480	122.0	49.36	94.7	94.7	92.7	0.90	0.88	0.84	250	700	300	7.21	600
		6	ND315S	987	129.0	74.01	94.2	94.2	92.2	0.86	0.82	0.74	250	700	300	14.12	900
		8	ND315M	740	153.0	98.72	93.5	93.5	91.5	0.73	0.66	0.56	200	700	250	18.98	950
90	120	2	ND280M	2975	146.0	29.47	95.0	95.0	93.0	0.90	0.86	0.78	225	700	275	8.18	670
		4	ND280M	1480	146.0	59.23	95.0	95.0	93.0	0.90	0.88	0.84	250	700	300	8.26	670
		6	ND315M	987	154.0	88.81	94.5	94.5	92.5	0.86	0.82	0.74	250	700	300	17.00	950
		8	ND315L	740	178.0	118.46	94.0	94.0	92.0	0.75	0.72	0.68	250	700	300	29.85	1160
110	150	2	ND315S	2965	171.0	36.13	95.0	95.0	93.0	0.94	0.91	0.84	200	700	250	6.63	900
		4	ND315S	1488	175.0	72.00	95.2	95.2	93.2	0.92	0.88	0.80	225	700	275	11.62	900
		6	ND315M	987	188.0	108.55	94.6	94.6	92.6	0.86	0.82	0.74	250	700	300	18.98	950
		8	ND315L	740	216.0	144.78	94.3	94.3	92.3	0.75	0.72	0.68	250	700	300	29.85	1160
132	180	2	ND315M	2965	205.0	43.36	95.3	95.3	93.3	0.94	0.90	0.82	200	700	250	7.97	950
		4	ND315M	1488	209.0	86.40	95.5	95.5	93.5	0.92	0.88	0.80	225	700	275	13.98	950
		6	ND315L	985	225.0	130.53	94.9	94.9	92.9	0.86	0.82	0.74	250	700	300	29.85	1160
		8	ND315L	740	259.0	173.74	94.7	94.7	92.7	0.75	0.72	0.68	225	700	275	29.85	1160
160	215	2	ND315L	2975	248.0	52.38	95.5	95.5	93.5	0.94	0.92	0.90	175	700	225	16.37	1160
		4	ND315L	1490	258.0	104.59	95.8	95.8	93.8	0.90	0.86	0.78	200	700	250	24.97	1160
		6	ND315L	990	272.0	157.41	95.1	95.1	93.1	0.86	0.82	0.74	250	700	300	29.85	1160

NEMA EPAct

60 Hz

EFF I

PERFORMANCE DATA
3 - PHASE TEFC SCR ENERGY EFFICIENT INDUCTION MOTOR

VOLTAGE : 230/460 OR 575
FREQUENCY : 60 Hz

TYPE : SQUIRREL CAGE (SCR)
RATING : CONTINUOUS
INSULATION : CLASS 'F'
AMBIENT : 40 DEG C
TEMP. RISE (R) : 80 DEG C

DEGREE OF PROTECTION : IP55
FRAME SIZE : GD ALUMINIUM
ND CAST IRON

OUTPUT		POLE	FRAME SIZE	FL RPM	FLC AMPS			FLT Kg-m	EFFICIENCY (%)			POWER FACTOR			DOL STG.		POT %FLT	GD.2 KGM.2	NET WT. kg.
kW	HP				@ 230V	@ 460V	@ 575V		FL	3/4 LOAD	1/2 LOAD	FL	3/4 LOAD	1/2 LOAD	STG.T %FLT	STG.C %FLC			
0.18	0.25	2	GD63	3240	0.84	0.42	0.34	0.054	68	67	64	0.79	0.72	0.6	300	5	350	0.001	5.6
		4	GD63	1600	0.86	0.43	0.34	0.11	69	68	65	0.76	0.73	0.6	200	4	250	0.003	5.6
		6	GD71	1080	1.02	0.51	0.41	0.16	65	64	60	0.68	0.6	0.5	200	4	250	0.004	7
		8	GD80	805	1.74	0.87	0.7	0.22	52	52	46	0.5	0.42	0.32	210	4	260	0.011	10
0.25	0.33	2	GD63	3240	1.15	0.57	0.46	0.075	70	69	66	0.78	0.75	0.64	275	5	325	0.001	5.6
		4	GD63	1600	1.13	0.57	0.45	0.15	73	73	71	0.76	0.73	0.6	200	4	250	0.003	5.6
		6	GD71	1080	1.42	0.71	0.57	0.23	65	64	60	0.68	0.6	0.5	200	4	250	0.004	7
		8	GD80	805	2.16	1.08	0.87	0.3	58	57	52	0.5	0.42	0.32	200	4	250	0.011	10
0.37	0.5	2	GD71	3240	1.59	0.8	0.64	0.11	73	73	71	0.8	0.76	0.68	275	5.5	325	0.002	7
		4	GD71	1680	1.59	0.79	0.63	0.21	77	76	74	0.76	0.73	0.6	225	6	275	0.004	7
		6	GD80	1090	1.9	0.95	0.76	0.33	69	68	66	0.71	0.63	0.52	210	4	260	0.011	10
		8	GD90S	815	2.51	1.25	1	0.44	65	64	60	0.57	0.5	0.4	170	4	220	0.015	13
0.55	0.75	2	GD71	3380	2.16	1.08	0.87	0.16	76	75	73	0.84	0.8	0.72	275	6	325	0.002	7
		4	GD80	1680	2.36	1.18	0.94	0.32	77	76	74	0.76	0.73	0.6	225	6	275	0.007	10
		6	GD80	1090	2.82	1.41	1.13	0.49	69	68	66	0.71	0.63	0.52	210	4	260	0.011	10
		8	GD90L	815	3.18	1.59	1.27	0.66	69	68	64	0.63	0.54	0.45	150	4	200	0.021	16
0.75	1	2	GD80	3380	3.02	1.51	1.21	0.22	79	78	76	0.79	0.72	0.6	275	6	325	0.003	10
		4	GD80	1690	3.02	1.51	1.21	0.43	80	79	77	0.78	0.75	0.64	200	5	250	0.007	10
		6	GD90S	1120	3.27	1.63	1.31	0.65	80	79	77	0.72	0.65	0.58	200	4	250	0.015	13
		8	GD100L	815	4.04	2.02	1.62	0.9	74	74	72	0.63	0.54	0.45	150	4	200	0.03	19
1.1	1.5	2	GD80	3385	4.08	2.04	1.63	0.32	82.5	82	80	0.82	0.78	0.7	225	6	275	0.004	10
		4	GD90S	1690	4.21	2.11	1.69	0.63	84	84	82	0.78	0.75	0.64	200	5	250	0.014	13
		6	GD90L	1120	4.95	2.48	1.98	0.96	78.5	78	76	0.71	0.63	0.52	200	4.3	250	0.021	16
		8	GD100L	840	5.69	2.85	2.28	1.28	77	76	74	0.63	0.54	0.45	175	4	225	0.034	19
1.5	2	2	GD90S	3385	5.47	2.73	2.19	0.43	84	84	82	0.82	0.78	0.7	225	6	275	0.006	13
		4	GD90L	1700	5.53	2.77	2.21	0.86	84	84	82	0.81	0.77	0.69	200	5	250	0.019	16
		6	GD100L	1120	6.42	3.21	2.57	1.3	81.5	81	79	0.72	0.65	0.58	200	4	250	0.03	19
		8	GD112M	840	6.71	3.36	2.68	1.74	82.5	82	80	0.68	0.6	0.5	190	4	240	0.057	30
2.2	3	2	GD90L	3395	7.88	3.94	3.15	0.63	85.5	85	83	0.82	0.78	0.7	225	6	275	0.008	16
		4	GD100L	1700	7.79	3.9	3.12	1.26	87.5	87.5	86	0.81	0.77	0.69	200	5	250	0.030	19
		6	GD112M	1120	8.77	4.38	3.51	1.91	87.5	87.5	86	0.72	0.65	0.58	200	4	250	0.048	30
		8	GD132S	850	9.01	4.5	3.6	2.52	84	84	82	0.73	0.68	0.56	180	4.5	230	0.174	50
3	4	2	GD100L	3395	10.19	5.09	4.08	0.86	84	84	82	0.88	0.84	0.76	275	6	325	0.022	19
		4	GD100L	1725	10.5	5.25	4.2	1.69	87.5	87.5	86	0.82	0.78	0.7	200	6	250	0.052	19
		6	GD132S	1120	11.5	5.7	4.6	2.61	87.5	87.5	86	0.75	0.7	0.6	200	5	250	0.174	50
		8	GD132M	850	11.7	5.9	4.7	3.44	85.5	85	83	0.75	0.7	0.6	180	6	230	0.214	50
3.7	5	2	GD112M	3480	11.9	6.0	4.8	1.04	87.5	87.5	86	0.89	0.85	0.77	275	7.7	300	0.03	30
		4	GD112M	1740	12.8	6.4	5.1	2.07	87.5	87.5	86	0.83	0.79	0.71	230	7.2	280	0.34	30
		6	GD132M	1160	14.2	7.1	5.7	3.11	87.5	87.5	86	0.75	0.7	0.6	210	6.5	240	0.97	50
		8	GD132M	850	14.5	7.2	5.8	4.24	85.5	85	83	0.75	0.70	0.60	180	600	230	0.214	50.0
4	5.5	2	GD112M	3450	13.0	6.5	5.2	1.13	87.5	87.5	86	0.88	0.84	0.75	250	650	300	0.03	30
		4	GD112M	1730	14.0	7.0	5.6	2.25	88.5	88.5	88	0.81	0.76	0.69	200	600	250	0.057	30
		6	GD132M	1140	14.5	7.3	5.8	3.42	87.5	87.5	86	0.79	0.75	0.68	200	550	250	0.214	50
		8	ND160M	850	15.9	7.9	6.3	4.58	85.5	85	83	0.74	0.7	0.62	150	500	200	0.46	121
5.5	7.5	2	GD132S	3480	17.3	8.7	6.9	1.54	88.5	88.5	88	0.9	0.88	0.86	210	7.3	240	0.034	50
		4	GD132S	1740	18.4	9.2	7.3	3.08	89.5	89.5	89	0.84	0.8	0.72	210	6.8	240	0.131	50
		6	GD132M	1164	19.7	9.9	7.9	4.6	87.5	87.5	86	0.8	0.76	0.68	200	6.3	250	0.214	50
		8	ND160M	850	21.8	10.9	8.7	6.3	85.5	85	83	0.74	0.7	0.62	150	500	200	0.46	121

NEMA EPAct

60 Hz

EFF I

OUTPUT		POLE	FRAME SIZE	FL RPM	FLC AMPS @ 230V	FLC AMPS @ 460V	FLC AMPS @ 575V	FLT Kg-m	EFFICIENCY (%) FL	EFFICIENCY (%) 3/4 LOAD	EFFICIENCY (%) 1/2 LOAD	POWER FACTOR FL	POWER FACTOR 3/4 LOAD	POWER FACTOR 1/2 LOAD	DOL STG. STG.T %FLT	DOL STG. STG.C %FLC	POT %FLT	GD.2 KGM.2	NET WT. kg.
kW	HP																		
7.5	10	2	GD132S	3480	23.4	11.7	9.3	2.1	89.5	89.5	89	0.9	0.88	0.86	210	6.9	240	0.06	50
		4	GD132M	1750	25.0	12.5	10.0	4.17	89.5	89.5	89	0.84	0.8	0.72	210	6.5	240	0.161	50
		6	ND160M	1170	26.3	13.1	10.5	6.24	89.5	89.5	89	0.8	0.76	0.68	200	5.9	250	0.46	121
		8	ND160L	860	28.0	14.0	11.2	8.49	88.5	88.5	88	0.76	0.72	0.64	150	500	200	0.64	143
11	15	2	ND160M	3504	34.8	17.4	13.9	3.06	90.2	90.2	89	0.88	0.84	0.76	250	6.6	300	0.13	121
		4	ND160M	1752	36.1	18.1	14.4	6.12	91	91	89.5	0.84	0.8	0.72	200	6.6	250	0.36	121
		6	ND160L	1170	38.3	19.1	15.3	9.16	90.2	90.2	89	0.80	0.76	0.68	200	7	250	0.64	143
		8	ND180L	860	41.7	20.8	16.7	12.46	89.5	89.5	89	0.74	0.7	0.6	175	500	225	1.16	204
15	20	2	ND160M	3504	47.4	23.7	19.0	4.17	90.2	90.2	89	0.88	0.84	0.76	250	6.1	300	0.17	121
		4	ND160L	1752	49.3	24.6	19.7	8.34	91	91	89.5	0.84	0.8	0.72	200	5.8	250	0.47	143
		6	ND180L	1170	51.2	25.6	20.5	12.49	92	91.5	90	0.8	0.76	0.68	225	5.5	275	1.16	204
		8	ND200L	865	59.3	29.6	23.7	16.89	89.5	89.5	89	0.71	0.65	0.55	225	500	275	2.14	254
18.5	25	2	ND160L	3504	58.0	29.0	23.2	5.14	91	91	89.5	0.88	0.84	0.76	275	6.3	325	0.21	143
		4	ND180M	1770	59.8	29.9	23.9	10.18	92.4	92.4	91	0.84	0.8	0.72	200	6.1	250	0.81	174
		6	ND200L	1170	60.3	30.1	24.1	15.4	91.7	91.5	90	0.84	0.8	0.72	200	6.1	250	1.69	254
		8	ND225S	870	67.5	33.8	27.0	20.71	91.7	91.5	90	0.75	0.71	0.63	175	500	225	3.24	350
22	30	2	ND180M	3504	66.0	33.0	26.4	6.12	91	91	89.5	0.92	0.9	0.86	275	6.7	325	0.44	174
		4	ND180L	1770	69.5	34.7	27.8	12.11	92.4	92.4	91	0.86	0.82	0.74	200	6.2	250	0.95	204
		6	ND200L	1170	71.2	35.6	28.5	18.31	92.4	92.4	91	0.84	0.8	0.72	200	6	250	2.04	254
		8	ND225M	870	79.7	39.8	31.9	24.63	92.4	92.4	91	0.75	0.71	0.63	175	550	225	3.61	380
30	40	2	ND200L	3528	90.6	45.3	36.2	8.28	92.4	92.4	91	0.9	0.88	0.86	200	6.3	250	0.8	254
		4	ND200L	1770	91.0	45.5	36.4	16.51	93	93	91	0.89	0.85	0.77	250	6.4	300	1.62	254
		6	ND225M	1176	95.3	47.6	38.1	24.85	93	93	91	0.85	0.81	0.73	200	6.1	250	3.61	380
		8	ND250M	880	108.0	54.0	43.2	33.2	93	93	91	0.75	0.71	0.63	175	550	225	4.82	500
37	50	2	ND200L	3540	111.7	55.8	44.7	10.18	92.4	92.4	91	0.9	0.88	0.86	200	6.4	250	0.9	254
		4	ND225S	1776	112.2	56.1	44.9	20.29	93	93	91	0.89	0.85	0.77	250	6.4	300	2.64	350
		6	ND250M	1176	118.9	59.4	47.6	30.64	93	93	92	0.84	0.8	0.72	250	6	300	4.82	500
		8	ND280S	880	134.0	67.0	53.6	40.95	92.4	92.4	91	0.75	0.71	0.63	200	500	250	8.01	620
45	60	2	ND225M	3546	129.0	65.0	52.0	12.36	93	93	91	0.94	0.92	0.88	225	6.7	275	1.87	380
		4	ND225M	1776	136.0	68.0	54.0	24.68	93.6	93.6	92	0.89	0.85	0.77	250	6.4	300	3.13	380
		6	ND280S	1164	141.0	71.0	56.0	37.65	94.1	94	92.5	0.85	0.81	0.73	200	6.1	250	4.82	620
		8	ND280M	880	160.0	80.0	64.0	49.81	94.1	94	92.5	0.75	0.71	0.63	175	500	225	9.89	700
55	75	2	ND250M	3546	158.0	79.0	63.0	15.11	93	93	91	0.94	0.92	0.88	175	6.9	225	1.8	500
		4	ND250M	1770	165.0	82.0	66.0	30.27	94.1	94	92.5	0.89	0.85	0.77	200	6.6	250	3.45	500
		6	ND280M	1164	174.0	87.0	70.0	46.02	94.5	94.5	92.5	0.84	0.8	0.72	200	6.2	250	9.89	700
		8	ND315S	885	200.0	100.0	80.0	60.53	94.5	94.5	92.5	0.73	0.66	0.56	200	550	300	14.12	1055
75	100	2	ND280S	3546	214.0	107.0	86.0	20.6	93.6	93.6	92	0.94	0.92	0.88	150	6.7	200	3.4	620
		4	ND280S	1770	232.0	116.0	93.0	41.27	94.5	94.5	92.5	0.86	0.82	0.74	200	6.2	250	7.21	620
		6	ND315S	1170	251.0	125.0	100.0	62.44	95	94.5	93.5	0.79	0.75	0.67	200	6.1	250	14.12	1055
		8	ND315M	885	276.0	138.0	110.0	82.54	93.5	93.5	91.5	0.73	0.66	0.56	200	6	250	18.98	1130
90	120	2	ND280M	3550	272.0	136.0	109.0	24.69	94.5	94.5	92.5	0.88	0.84	0.76	150	6.8	200	3.8	700
		4	ND280M	1775	272.0	136.0	109.0	49.39	94.5	94.5	92.5	0.88	0.84	0.76	175	6.8	225	8.26	700
		6	ND315M	1170	287.0	143.0	115.0	74.92	95	94.5	93.5	0.83	0.79	0.71	200	6.5	250	17	1130
		8	ND315M	885	307.0	153.0	123.0	99.05	94.5	94.5	92.5	0.78	0.74	0.66	250	600	300	17	1130
110	150	2	ND315S	3550	328.0	164.0	131.0	30.18	94.5	94.5	92.5	0.89	0.85	0.77	150	7	200	5.82	1055
		4	ND280M	1775	334.0	167.0	134.0	60.36	95	94.5	93.5	0.87	0.83	0.75	175	6.8	225	11.62	700
		6	ND315M	1170	359.0	179.0	144.0	91.57	95	94.5	93.5	0.81	0.77	0.69	200	6.4	250	18.98	1130
		8	ND315L	888	391.0	196.0	157.0	120.65	94.1	94	92.5	0.75	0.7	0.6	250	6	300	29.85	1200
132	180	2	ND315M	3560	373.0	187.0	149.0	36.11	94.5	94.5	92.5	0.94	0.92	0.88	200	6	250	7.8	1130
		4	ND315M	1785	388.0	194.0	155.0	72.03	95	95	94	0.9	0.88	0.86	200	6	250	13.9	1130
		6	ND315L	1185	406.0	203.0	162.0	108.5	95	94.5	93.5	0.86	0.82	0.74	250	6	300	29.85	1200
		8	ND315L	888	468.0	234.0	187.0	144.78	94.5	94.5	92.5	0.75	0.7	0.6	225	6	275	29.85	1200
150	200	2	ND315M	3550	445.0	223.0	178.0	41.15	95	94.5	93.5	0.89	0.85	0.77	150	6.8	200	8	1130
		4	ND315M	1775	456.0	228.0	182.0	82.31	95	94.5	93.5	0.87	0.83	0.75	175	6.7	225	15.6	1130
		6	ND315L	1170	489.0	245.0	196.0	124.87	95	94.5	93.5	0.81	0.77	0.69	200	6.3	250	29.85	1200
		8	ND355L	890	534.0	267.0	213.0	164.16	94.1	94	92.5	0.75	0.7	0.6	150	6	200	33.16	1500

NEMA EPAct

60 Hz EFF 1

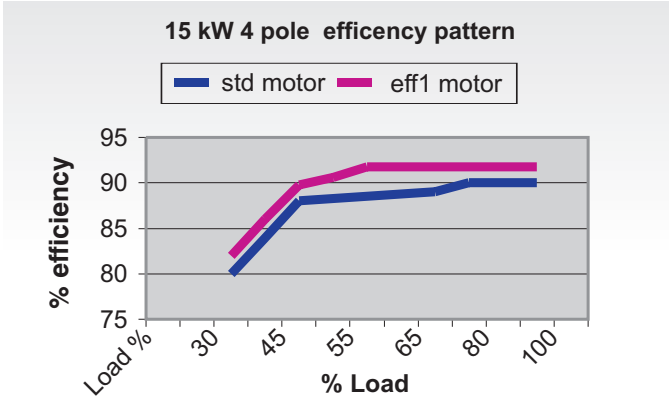
OUTPUT		POLE	FRAME SIZE	FL RPM	FLC AMPS			FLT Kg-m	EFFICIENCY (%)			POWER FACTOR			DOL STG.		POT %FLT	GD.2 KGM.2	NET WT. kg.
kW	HP				@ 230V	@ 460V	@ 575V		FL	3/4 LOAD	1/2 LOAD	FL	3/4 LOAD	1/2 LOAD	STG.T %FLT	STG.C %FLC			
185	250	2	ND315L	3550	553.0	277.0	221.0	50.76	95.4	95	94	0.88	0.84	0.76	150	6.6	200	12.4	1200
		4	ND315L	1775	562.0	281.0	225.0	101.52	95	94.5	93.5	0.87	0.83	0.75	175	6.5	225	22.5	1200
		6	ND315L	1170	589.0	294.0	236.0	154.01	95	94.5	93.5	0.83	0.79	0.71	200	6.2	250	32	1200
		8	ND355LX	890	655.0	328.0	262.0	202.46	94.5	94.5	92.5	0.75	0.7	0.6	135	5	185	61.4	2150
220	300	2	ND355L	3575	629.0	315.0	252.0	59.94	95.4	94.5	93	0.92	0.9	0.86	200	6	250	18.3	1500
		4	ND355L	1785	658.0	329.0	263.0	120.04	95.4	95	93.5	0.88	0.86	0.82	175	6	225	25	1500
		6	ND355LX	1190	692.0	346.0	277.0	180.07	95	94.5	93.5	0.84	0.81	0.73	160	6	225	61.4	2150
		8	ND355LX	890	801.0	400.0	320.0	240.76	94.5	94.5	92.5	0.73	0.66	0.56	135	5	185	61.4	2150
300	400	2	ND355LX	3575	858.0	429.0	343.0	81.73	95.4	95	94	0.92	0.88	0.8	200	6	250	27.87	2150
		4	ND355LX	1790	901.0	450.0	360.0	163.24	95	95	93.5	0.88	0.86	0.82	175	6	225	31.6	2150
		6	ND355LX	1192	939.0	469.0	376.0	245.13	95.5	95	94	0.84	0.81	0.73	150	6	200	39.52	2150
335	450	2	ND355LX	3575	983.0	491.0	393.0	91.27	95.1	95.1	93.5	0.9	0.86	0.78	150	6	200	27.87	2150
		4	ND355LX	1790	1003.0	501.0	401.0	182.28	95.3	95	92	0.88	0.86	0.82	150	6	200	31.6	2150
		6	ND355LX	1192	1048.0	524.0	419.0	273.73	95.5	95	94	0.84	0.81	0.73	150	6	200	39.52	2150
375	500	2	ND400L	3575	1098.0	549.0	439.0	102.17	95.3	95	92	0.9	0.86	0.78	150	6.5	200	30	2400
		4	ND355LX	1790	1146.0	573.0	458.0	204.05	95.5	95	92	0.86	0.82	0.74	150	6	200	40	2150
		6	ND400LX	1192	1196.0	598.0	478.0	306.42	96	96	94	0.82	0.78	0.7	150	6	200	98	2400
400	535	2	ND400L	3575	1171.0	585.0	468.0	108.98	95.3	95	92	0.9	0.86	0.78	150	6.5	200	35	2400
		4	ND400L	1790	1223.0	611.0	489.0	217.65	95.5	95	92	0.86	0.82	0.74	150	6	200	44	2400
		6	ND400LX	1192	1276.0	638.0	510.0	326.85	96	96	94	0.82	0.78	0.7	150	6	200	98	2400
450	600	4	ND400L	1790	1375.0	688.0	550.0	244.86	95.5	95	92	0.86	0.82	0.74	150	6	200	44	2400

Applications :

The benefits of using these motors are maximum in continuous duty applications like Blowers, Compressors, Fans, Exhausters, Pumps etc.

Best performance even at partial loads :

In many applications the load factor of the motor will range between 60% to 80%. The efficiency curve of standard motor is drooping in nature i.e there is a sharp fall in efficiency at partial loads. But the energy efficient motors have a flat efficiency curve and hence the fall in efficiency is marginal. Thus energy saving is significant even in part loads.



Assessing cost effectiveness of energy efficient motors :

Savings :

Savings are calculated as follows :-

kW - out put of motor in kW

E1 - efficiency of standard motor

E2 - efficiency of energy efficient motor

$$X = \left(\frac{kW}{E1} - \frac{kW}{E2} \right)$$

$$\text{Savings} = X * \left(\begin{matrix} \text{working} \\ \text{Hour's} \end{matrix} \right) * \left(\begin{matrix} \text{working} \\ \text{days} \end{matrix} \right) * \left(\text{tariff} \right)$$

EXAMPLE

3.7 kW 4 pole motor in frame ND112M

Std motor eff 2 : 85 % eff 1 : 88.3 %

Price Eff 2 : $166 Eff 1: $216

Working hours 16 per day, working days 300 in a year, power rate $ 0.1 per KWH

X = 0.1626

RS Savings = 0.1626X16X300X0.1

= $78 per year

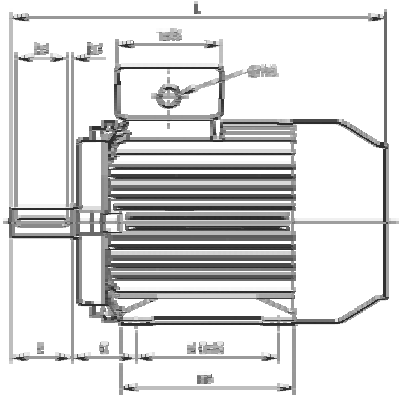
Extra investment $ 50

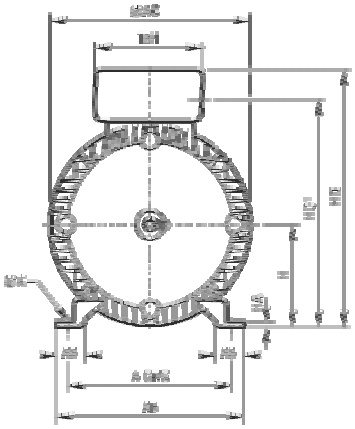
Payback period = 8 months

So it makes a great deal of sense to choose an eff1 level motor whenever a motor is needed to drive any applications. Combining this with usual Crompton greaves motors reliability, the wise choice is Crompton greaves EFF1 motor.

Dimensions

Foot Mounting : Frame Sizes 63 to 132M

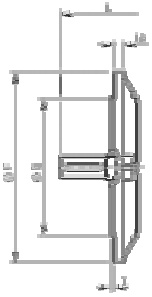




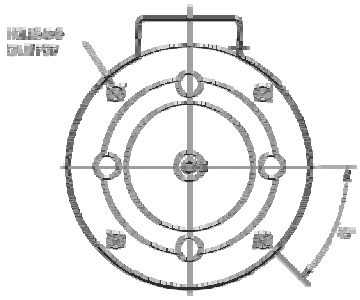
Type	General A	B	C	H	K	L	AA	AB	AC	BB	HA	HD	HD1	TBW	Terminal box TBH	KK
G-D A63S	100	80	40	63	7	207	19	119	126	100	2	163	138	86	86	20
G-D A71S	112	90	45	71	7	238	19	131	140	110	2	186	162	86	86	20
G-D A80M	125	100	50	80	10	278	27	157	160	127	4	212	183	86	86	20
G-D A90S	140	100	56	90	10	322	28	164	178	150	4	225	201	86	86	20
G-D A90L	140	125	56	90	10	322	28	164	178	150	4	225	201	86	86	20
G-D A100L	160	140	63	100	12	368	28	184	199	170	4	254	223	106	106	20
G-D A112M	190	140	70	112	12	382	35	218	215	170	4	279	245	127	127	25
G-D A132S	216	140	89	132	12	451	38	242	255	208	5	320	287	127	127	25
G-D A132M	216	178	89	132	12	451	38	242	255	208	5	320	287	127	127	25

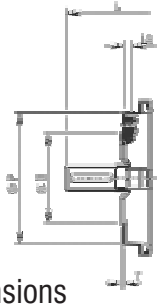
Approximate shipping specifications

Type	Net weight (kg)	Gross weight (kg)	Cubage (m^3)
G-D A63S	5	5.4	0.01
G-D A71S	6.5	6.9	0.01
G-D A80M	9	10	0.02
G-D A90S	12.5	13.5	0.03
G-D A90L	14.5	15.5	0.03
G-D A100L	24.3	27	0.038
G-D A112M	29.4	33	0.05
G-D A132S	45	50	0.071
G-D A132M	50	56	0.076

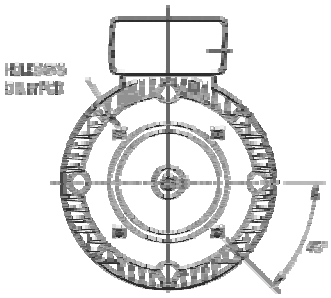


Type	IMB5 M	mounting N	P	S	T	LA
G-D A63S	115	95	140	10	3	7
G-D A71S	130	110	160	10	3.5	7
G-D A80M	165	130	200	12	3.5	12
G-D A90S	165	130	200	12	3.5	10
G-D A90L	165	130	200	12	3.5	10
G-D A100L	215	180	250	14.5	4	12
G-D A112M	215	180	250	14.5	4	12
G-D A132S	265	230	300	14.5	4	12
G-D A132M	265	230	300	14.5	4	12



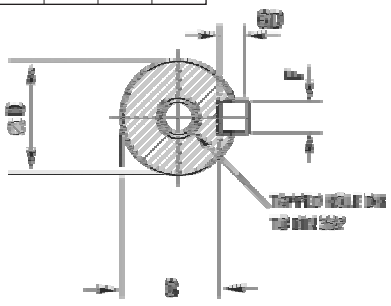


Type	IM B14 M	mounting N	P	S	T	LA
G-D A63S	75	60	90	M5	2.5	7
G-D A71S	85	70	105	M6	2.5	9
G-D A80M	100	80	120	M6	3	9
G-D A90S	115	95	140	M8	3	9
G-D A90L	115	95	140	M8	3	9
G-D A100L	130	110	160	M8	3.5	12.5
G-D A112M	130	110	164	M8	3.5	13
G-D A132S	165	130	200	M10	3.5	14
G-D A132M	165	130	200	M10	3.5	14



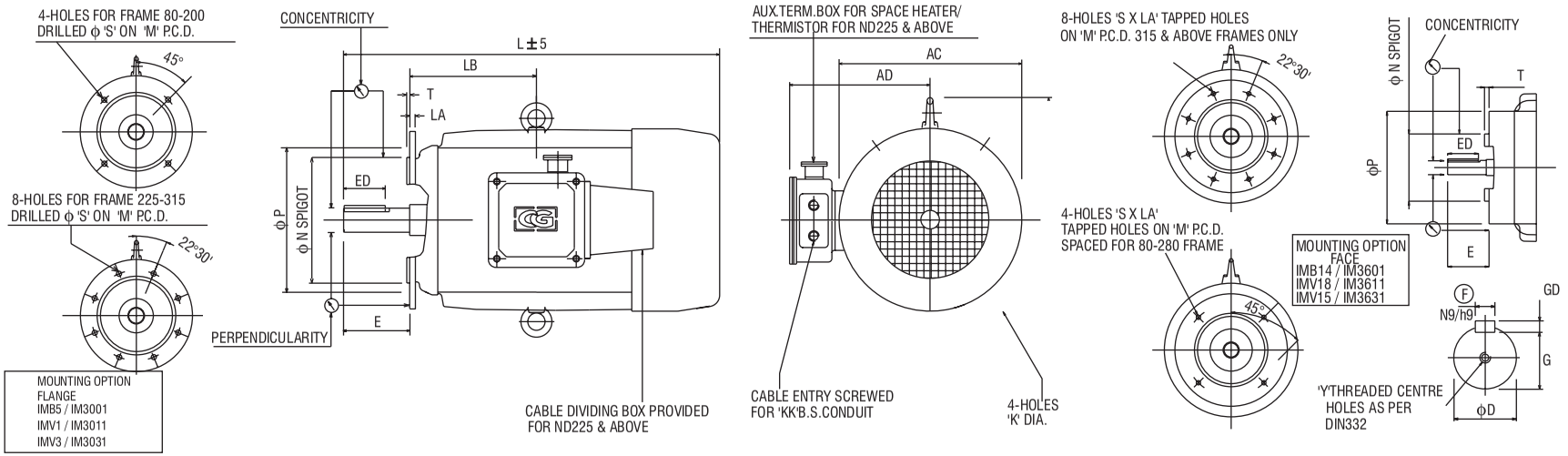
Shaft Dimensions

Type	Shaft D	E	F	G	GD	EB	ED	DH
G-D A63S	11	23	4	8.5	4	10	13	M4X10
G-D A71S	14	30	5	11	5	20	5	M5X12.5
G-D A80M	19	40	6	15.5	6	32	4	M6X16
G-D A90S	24	50	8	20	7	40	5	M8X19
G-D A90L	24	50	8	20	7	40	5	M8X19
G-D A100L	28	60	8	23.9	7	50	5	M10X22
G-D A112M	28	60	8	23.9	7	50	5	M10X22
G-D A132S	38	80	10	33	8	70	5	M12X28
G-D A132M	38	80	10	33	8	70	5	M12X28



Dimensions

Flange / Face Mounting : Frame Sizes 160 to 355



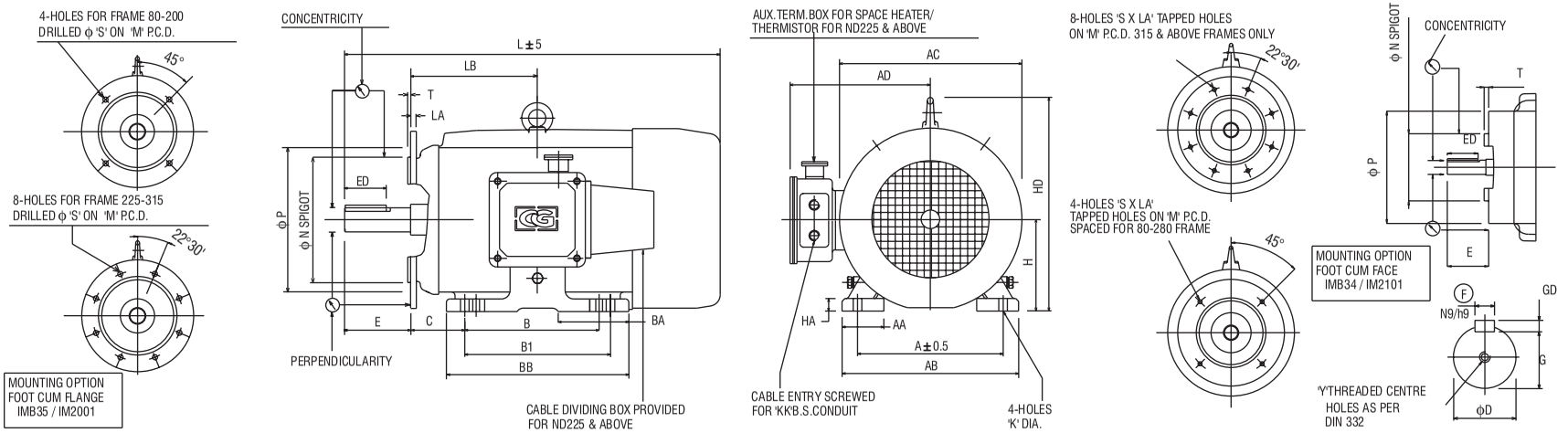
FRAME	FLANGE FIXING						FACE FIXING					SHAFT AND KEY *							OVERALL (MAX)					
SIZE	M TOL.	N TOL.	P	S	LA	T	M TOL.	N TOL.	P	SXLA	T	D TOL.	E	ED	F TOL.	GD TOL.	G	Y	AD	AC	L	LB	HD	KK
ND160M												42.018			12.00	8.00	37.0				660	213		
ND160L	300.5	250.016	350		18		215.5	180.014	250			42.002			11.957	7.91	36.8		275	318	705	235	376	
ND180M	299.5	249.987					214.5	179.989		M12X20		48.018	110	80	14.00	9.00	42.5	M16x32			746	241.5		2 Nos-1"
ND180L											5	48.002			13.957	8.91	42.3		295	352	784	260.5	418	
ND200L	350.5 349.5	300.018 299.982	400	19	15	5	265.5 264.5	230.016 229.987	300			55.030 55.011			16.00 15.957	10.00 9.91	49.0 48.8		345	428	873	285.5	480	
ND225S	400.5	350.018	450		19		300.5	250.016	350	M16X20		60.030					53.0	M20x40	375	470	955	304.5	534	
ND225M	399.5	349.982					299.5	249.987				60.011			18.00	11.00	52.8							2 Nos-1.5"
ND250S												65.030			17.957	10.91	58.0		405	500	1020	342.5	598	
ND250M	500.5	450.020	550		19							65.011	140	110			57.8							
ND280S	499.5	449.980										75.030			20.00	12.00	67.5		430	536	1170	399.5	642	
ND280M												75.011			19.948	11.91	67.3		515					
ND315S			660		25							80.030			22.00		71.0		510	588	1340	444.5	725	
ND315M	601.0	550.022										80.011	170	140	21.948	14.00	70.8							2 Nos-2"
ND315L	599.0	549.978		24		6						90.035			25.00	13.91	81.0		570	655	1490	530.5	755	
ND355S												90.013			24.948		80.8							
ND355M	741.0	680.025	800		28							100.035	210	160	28.000	16.00	90.0	M24x50	600	670	1513	570	760	2 Nos-2.5"
ND355L	739.0	679.975										100.013			27.948	15.89	89.8							
ND355LX																				720	1570	591	827	

GEOMETRICAL TOLERANCES					
CONCENTRICITY IN MICRON		PERPENDICULARITY N MICRON		RUNOUT IN MICRON	
SPIGOT DIA 'N'	NORM.	OUTSIDE DIA 'P'	NORM.	SHAFT ϕ	NORM.
80-95	80	120-140	80	18-30	35
110-230	100	160-300	100	30-50	50
250-450	125	350-550	125	50-80	60
550-680	160	660-800	160	80-120	70

SHAFT DETAILS FOR ⩾ 3000 RPM MOTORS							
FRAME SIZE	D TOL.	E	ED	F TOL.	GD TOL.	G	L
ND225S	55.030	110	80	16.00	10.0	49.0	850
ND225M	55.011			15.957	9.91	48.8	
ND250S	60.030	140	110	18.00 17.957	11.00 10.91	53.0	940
ND250M	60.011					52.8	
ND280S	65.030 65.011					58.0 57.8	1085
ND280M							
ND315S							1200
ND315M							
ND315L	70.030 70.011			20.00 19.948	12.00 11.91	62.5 62.3	1345
ND355 S/M/L	75.030 75.011	170	140			67.5 67.3	1473
ND355LX							1530

Dimensions

Foot cum Flange / Face Mounting : Frame Sizes 160 to 355



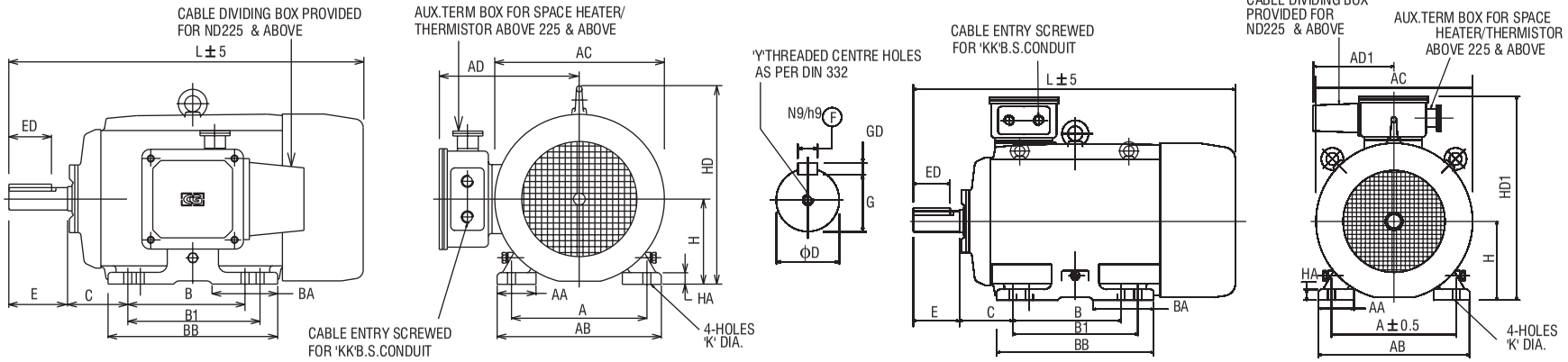
FRAME	FOOT FIXING										FLANGE FIXING						FACE FIXING					SHAFT AND KEY *							OVERALL (MAX)					
SIZE	A	B	B1	C	H TOL.	AA	AB	BA	BB	K TOL.	M TOL.	N TOL	P	S	LA	T	M TOL.	N TOL.	P	SXLA	T	D TOL.	E	ED	F TOL.	GD TOL.	G	Y	AD	AC	L	LB	HD	KK
ND160M	254	210		108	160.0	73	308	76	254	15.5	300.5	250.016	350	19	18	5	215.5	180.014	250	M12X20	5	42.018	110	80	12.00	8.00	37.0	M16x32	275	318	660	213	376	2 Nos-1"
ND160L		254			159.7				298													42.002			11.957	7.91	36.8				705	235		
ND180M	279	241		121	180.0	84	348	95	286	15.0	299.5	249.987					214.5	179.989				48.018			14.00	9.00	42.5		295	352	746	241.5	418	
ND180L		279			179.7				323													48.002			13.957	8.91	42.3				784	260.5		
ND200L	318	305		133	200.0	66	381	115	356	19.5	350.5	300.018	400		15		265.5	230.016	300			55.030			16.00	10.00	49.0		345	428	873	285.5	480	
					199.5						349.5	299.982					264.5	229.987				55.011			15.957	9.91	48.8							
ND225S	356	286	-	149	225.0	70	425	102	375	19.0	400.5	350.018	450		19		300.5	250.016	350	M16X20		60.030			18.00	11.00	53.0		375	470	955	304.5	534	2 Nos-1.5"
ND225M		-	311		224.5						399.5	349.982					299.5	249.987				60.011					52.8							
ND250S	406	311	-	168	250.0	80	483	135	419	24.5	500.5	450.020	550		19							65.030			17.957	10.91	58.0		405	500	1020	342.5	598	
ND250M		-	349		249.5																	65.011	140	110			57.8	M20x40						
ND280S	457	368	-	190	280.0	100	538	167	487	24.0	499.5	449.980										75.030			20.00	12.00	67.5		430	536	1170	399.5	642	
ND280M		-	419		279.0																	75.011			19.948	11.91	67.3		515					
ND315S	508	406	-	216	315.0	110	597	164	533	28.5	601.0	550.022	660	24	25	6						80.030	170	140	22.00	14.00	71.0		510	588	1340	444.5	725	2 Nos-2"
ND315M		-	457		314.0						599.0	549.978										80.011			21.948		70.8							
ND315L	508	508	-				610	230	740													90.035			25.00	13.91	81.0	M24x50	570	655	1490	530.5	755	
																						90.013			24.948		80.8							
ND355S	610	500	-	254	355.0		710	253	745	28.0	741.0	680.025	800		28							100.035	210	160	28.000	16.00	90.0		600	670	1513	570	760	2 Nos-2.5"
ND355M		-	560		354.0						739.0	679.975										100.013			27.948	15.89	89.8							
ND355L		630	-																															
ND355LX								250	880																					720	1570	591	827	

SHAFT DETAILS FOR 3000 RPM MOTORS : PLEASE SEE ON PAGE NO.

GEOMETRICAL TOLERANCES : PLEASE SEE ON PAGE NO.

Dimensions

Foot Mounting : Frame Sizes 160 to 355



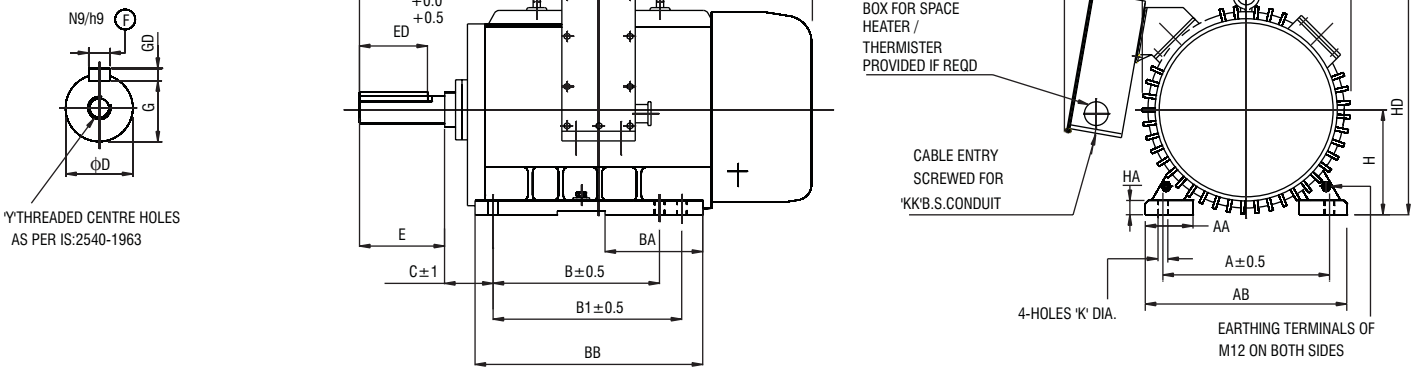
MOUNTING OPTION
FOOT
IMB3 / IM1001
IMB6 / IM1051
IMB7 / IM1061
IMB8 / IM1071
IMV5 / IM1011
IMV6 / IM1031

FRAME SIZE	FOOT FIXING										SHAFT AND KEYWAY							OVERALL (MAX)							
	A	B	B1	C	H	AA	AB	BA	BB	K	D	E	ED	F	G	GD	Y x DEEP	AD	AD1	AC	L	HD	HD1	HA	KK
ND160M	254	210	-	108	160.0	73	308	76	254	15.5	42.018	110	80	12.00	8.00	37.0	M16x32	275	-	318	605	376	435	22	2Nos-1"
ND160L		254			159.7				298	15.0	42.002			11.957	7.91	36.8					650				
ND 180M	279	241	-	121	180.0	84	348	95	286	15.5	48.018	110	80	14.00	9.00	42.5		295		352	677	418	475	22	
ND 180L		279	-		179.7				323	15.0	48.002			13.957	8.91	42.3					715				
ND 200L	318	305	-	133	200.0	66	381	115	356	19.5	55.030	110	80	16.00	10.00	49.0	M20x40	345	285	428	805	480	545	25	2Nos.-1.5"
					199.5					19.0	55.011			15.957	9.91	48.8									
ND 225S	356	286	-	149	225.0	70	425	102	375	19.5	60.030	140	110	18.00	11.00	53.0		375		470	880	534	600	25	
ND 225M		-	311		224.5					19.0	60.011			17.957	10.91	52.8									
ND 250S	406	311	-	168	250.0	80	483	135	419	24.5	65.030	140	110	18.00	11.00	58.0		405		500	940	598	730	32	
ND 250M		-	349		249.5					24.0	65.011			17.957	10.91	57.8									
ND 280S	457	368	-	190	280.0	100	538	167	487	24.5	75.030	140	110	20.00	12.00	67.5		430		536	1085	642	810	35	2Nos.-2"
ND 280M		-	419		279.0					24.0	75.011			19.948	11.91	67.3		515							
ND 315S	508	406	-	216	315.0	110	597	164	533	28.5	80.030	170	140	22.00	14.00	71.0		510	375	588	1230	725	845	38	
ND 315M		-	457		314.0					28.0	80.011			21.948	13.91	70.8									
ND 315L	508	508	-	216	315.0	110	610	230	740	28.5	90.035	170	140	25.00	14.00	81.0	M24x50	570	420	655	1375	755	885	35	
					314.0					28.0	90.013			24.948	13.91	80.8									
ND355S	610	500	-	254	355.0	110	710	253	745	28.5	100.035	210	160	28.000	16.00	90.0		560		672	1513	760	950	40	2Nos.-2.5"
ND355M		-	560		354.0					28.0	100.013			27.948	15.98	89.8									
ND355L		630	-																						
ND355LX								250	880									600		720	1570	827			

SHAFT DETAILS FOR ⩾ 3000 RPM MOTORS							
FRAME SIZE	D TOL.	E	ED	F TOL.	GD TOL.	G	L
ND225S	55.030	110	80	16.00	10.0	49.0	850
ND225M	55.011			15.957	9.91	48.8	
ND250S	60.030	140	110	18.00	11.00	53.0	940
ND250M	60.011			17.957	10.91	52.8	
ND280S	65.030					58.0	1085
ND280M	65.011					57.8	
ND315S							1200
ND315M							
ND315L	70.030			20.00	12.00	62.5	1345
	70.011			19.948	11.91	62.3	
ND355 S/M/L	75.030	170	140			67.5	1473
ND355LX	75.011					67.3	1530

Dimensions

Foot Mounting : Frame Size 400



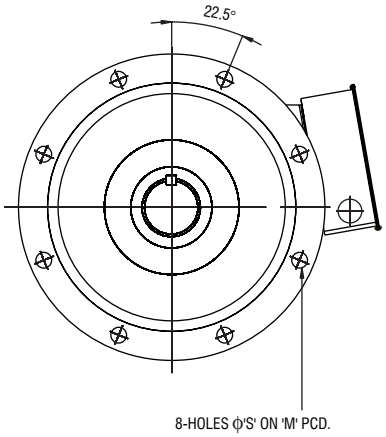
ALL DIMENSIONS ARE IN mm

FRAME SIZE	FOOT FIXING										SHAFT AND KEY #							OVERALL					
	A	B	B1	C	H TOL.	AA	AB	BA	BB	K TOL.	DTOL.	E	ED	F TOL.	GD	G	Y	AD	AC	L	HD	HA	KK
ND400LX	686	800	900	280	400 399	195	845	400	1057	35.0 34.5	100.035 100.013	210	160	28.00 27.948	16.00 15.89	90.0 89.8	M24x50	790	860	1865	1060	40	2- N0S X 3"

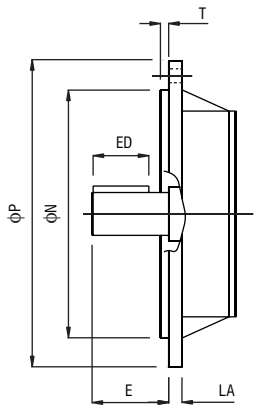
SHAFT DETAILS FOR ⩾ 3000 RPM MOTORS							
SHAFT AND KEY							
D TOL.	E	ED	F TOL.	GD TOL.	G	L	Y
85.035 85.013	170	140	22.00 21.95	14.00 13.91	76.0 75.8	1825	M24x50

Dimensions

Flange Mounting : Frame Size 400



FLANGE FIXING					
M	N	P	S	T	LA
940	880.025 879.975	1000	22	6	28



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