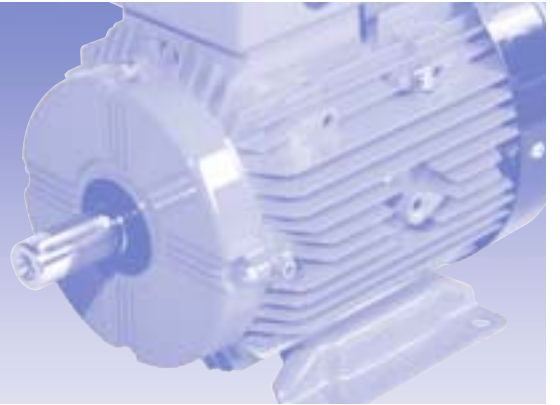


# W high efficiency aluminium motors

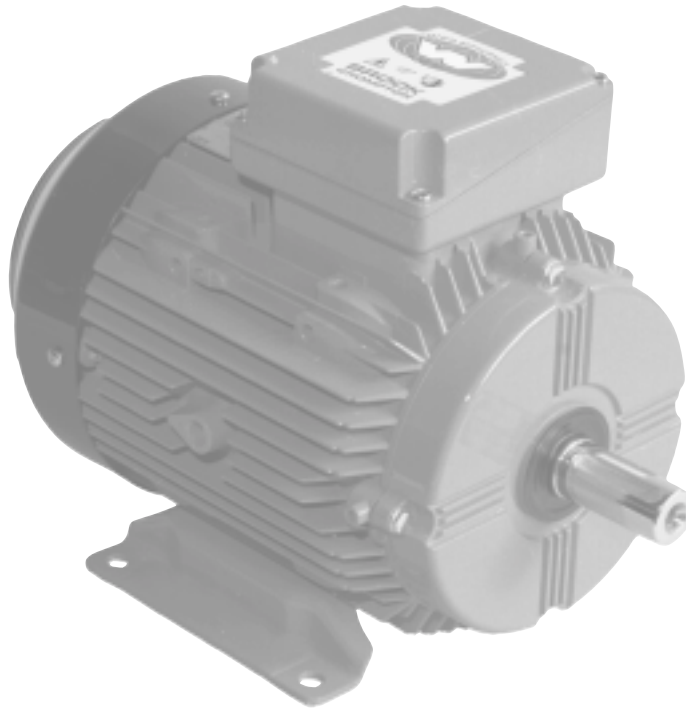


Frames 63 to 200L



**BROOK  
CROMPTON**

# W high efficiency aluminium motors 63 to 200L



## Brook Crompton

Brook Crompton is a leading manufacturer of electric motors for the global industrial market, with motor solutions which benefit a wide range of customers.

Our products are used in almost every industrial activity including water treatment, building services, chemical/petrochemicals, general processing and manufacturing where they drive fans, pumps, compressors and conveyors, amongst other things.

Brook Crompton incorporates many well known names including Brook Motors, Crompton Parkinson, Electrodrives, Newman, Bull Electric and Hawker Siddeley Electric Motors.

We have extensive stocks of motors around the world, backed-up by a network of distributors, ensuring excellent local support wherever needed.

## Quality assurance

Stringent quality procedures are observed from first design to finished product in accordance with the ISO9001 documented quality systems.

All of our factories have been assessed to meet these requirements, a further assurance that only the highest possible standards of quality are accepted.

## W high efficiency range

The Brook Crompton aluminium motor range covers products with outputs as little as 0.07kW to 37kW in frame sizes W-DA63S to W-DA200L. They are widely used in a diverse range of applications from food and drink to water and sewage. From heating and ventilation to refrigeration. Some of the benefits of aluminium over cast iron, include, high resistance to corrosion and atmospheric attack (except chlorine, salt-laden or sulphuric acid) and the fact that aluminium is approximately one third the weight of cast iron.

## Multi-Mount

By simply changing the position of the feet, the user is able to obtain right, left or top mounted terminal box positions and by removing the standard endshield you can change it for a flange or face version.

## Benefits include:

- high efficiency for low running costs
- low noise levels
- Eurovoltage: 400 V  $\pm$  10% 50 Hz
- dual frequency: 50 Hz and 60 Hz
- high power factors
- high torque with smooth acceleration and low current
- 2-year warranty
- IP55 protection

## Efficiency

Brook Crompton are an approved manufacturer of ac electric motors within the UK Government's Enhanced Capital Allowance (ECA) scheme.

A wide range of single and multi-speed motors are included on the UK Energy Technology List. Please check the ECA scheme website: [www.eca.gov.uk](http://www.eca.gov.uk) at time of purchase for current listing.

# Standards and environment

## Standards

Standards						
Motors of aluminium construction can be manufactured to the international standards listed below:						
Range	International	National standard				North American*
Standard	IEC	BS	VDE	DIN	NF	NEMA
Outputs	–	BS 5000 part 10	–	DIN 42673, DIN 42677	NF C51-110	MG1 part 10
Performance	IEC 60034-1	BS EN 60034-1	VDE 0530 part 1	–	NF C51-111	MG1 part 12
Dimensions	IEC 60072-1	BS 4999 part 141	–	DIN 42673, DIN 42677	NF C51-105, NF C51-120	MG1 part 4
Mounting	IEC 60034-7	BS EN 60034-7	–	DIN 42950	NF C51-117	MG1 part 4
Degrees of protection	IEC 60034-5	BS EN 60034-5	–	DIN 40050	NF C51-115	MG1-1.26B

standard BS and European specification motor complies  
 optional  
 BS specification motor complies except flange tolerances to IEC 60072-1 Annex C.1.7 Option 1  
 European specification motors

Motors complying with IEC 60034-1 also comply with many of the national standards of other European countries, eg CEI 203 (Italy), NBN7 (Belgium), NEN 3173 (Netherlands), SEN 2601 01 (Sweden)

\* Motors to NEMA standards have CSA approval and generally comply with Canadian (EEMAC) standards  
 Motors can be supplied to CSA standard C390 (energy efficient) and USA 'EPAAct' legislation  
 Motors certified by Underwriters Laboratories Inc (UL) can be supplied on request. The UL mark and certification number will be on each rating plate to show product compliance and certification.

## Environment Enclosure

All motors have degrees of IP protection as defined in IEC 60034-5 (BS EN 60034 part 5).

### European directives

Three European directives apply in varying degrees to ac induction motors. Brook Crompton comply in the following manner:

## Motor cooling

Motors are cooled in accordance with BS EN 60034-6. The normal arrangement is IC411 (Totally Enclosed Fan Ventilated) via a fan mounted at the non-drive end. Alternative methods of cooling available on request.

Compliance with European directives applying to AC induction motors			
Directives	Low voltage (LV)	Machinery (MD)	Electromagnetic compatibility (EMC)
<b>Reference numbers</b>	73/23/EEC	89/392/EEC	89/336/EEC
	93/68/EEC	91/368/EEC	92/31/EEC
		93/44/EEC	93/68/EEC
		93/68/EEC	
<b>Motor CE marked</b>	Yes	No	No
<b>Standards</b>	EN 60034	Not applicable	EN 60034-1
<b>Documentation for customers' technical file</b>	Declaration of conformity	Certificate of incorporation	Statement <sup>(1)</sup>
<b>Safety instructions with every motor</b>	Yes	Yes	Yes
<b>Comment</b>	Relevant electrical equipment operating between 50 to 1000 volts AC	Statement <sup>(2)</sup>	Component

<sup>(1)</sup> Motors operating from a correctly applied, sinusoidal (AC) supply meet the requirements of the EMC directive and are within the limits specified in standard EN 60034-1

<sup>(2)</sup> When installed in accordance with our customer safety and installation and maintenance instructions, they can be put into service only when the machinery into which they are being incorporated, has been declared to be in conformity with the machinery directive in accordance with Article 4(2) and Annex IIB of that Directive (98/37/EEC)

# Performance data

3000 min<sup>-1</sup> (2 pole)

Rated power  
Full load speed in revolutions per minute  
Frame reference and size  
Full load current at rated voltage  
Efficiency  
Power factor  
Full load torque  
Direct on line starting torque ratio  
Direct on line starting current ratio  
Direct on line pull out torque ratio  
Direct on line pull up torque  
Star delta starting torque ratio (n)  
Star delta starting current ratio  
Star delta pull up torque  
Rotor inertia Wk<sup>2</sup>  
Mean sound pressure level @ 1m on no load

P <sub>N</sub> kW (hp)	n min <sup>-1</sup>	Type	I <sub>N</sub>			η 1.0 P <sub>N</sub> 0.75 P <sub>N</sub> 0.5 P <sub>N</sub>	Cos Ø 1.0 P <sub>N</sub> 0.75 P <sub>N</sub> 0.5 P <sub>N</sub>	M <sub>N</sub> Nm	M <sub>A</sub> M <sub>N</sub>	I <sub>A</sub> I <sub>N</sub>	M <sub>K</sub> M <sub>N</sub>	M <sub>S</sub> M <sub>N</sub>	M <sub>A</sub> M <sub>N</sub> Y	I <sub>A</sub> I <sub>N</sub> Y	M <sub>S</sub> M <sub>N</sub> Y	J kgm <sup>2</sup>	L <sub>PA</sub> dB(A)
			380 V A	400 V A	415 V A												
0.18 (0.25)	2810	W-DA63SF	0.65	0.62	0.62	{ 60.0 0.70 55.0 0.61 46.0 0.50 }	0.61	1.9	3.5	2.4	1.7	-	-	-	0.0005	52	
0.25 (0.33)	2810	W-DA63SG	0.76	0.72	0.72	{ 64.0 0.78 63.0 0.68 57.0 0.57 }	0.85	2.3	4.5	2.5	2.1	-	-	-	0.00063	52	
0.37 (0.5)	2815	W-DA71SG	0.92	0.88	0.88	{ 72.0 0.84 73.0 0.76 71.0 0.63 }	1.26	1.8	5.0	2.1	1.6	-	-	-	0.00052	51	
0.55 (0.75)	2820	W-DA71SK	1.29	1.23	1.23	{ 74.0 0.87 75.0 0.81 73.0 0.70 }	1.86	1.9	5.0	2.1	1.6	-	-	-	0.00063	51	
0.75 (1.0)	2850	W-DA80ME	1.77	1.69	1.69	{ 77.0 0.87 77.0 0.77 73.0 0.65 }	2.5	2.2	5.5	2.5	2.2	-	-	-	0.0014	56	
1.1 (1.5)	2870	W-DA80MJ	2.51	2.39	2.39	{ 81.0 0.82 81.0 0.75 78.0 0.63 }	3.7	2.7	6.7	2.7	2.4	-	-	-	0.0019	56	
1.5 (2.0)	2870	W-DA90SF	3.4	3.2	3.2	{ 82.0 0.82 83.0 0.75 81.0 0.63 }	5.0	2.5	6.0	3.0	2.2	-	-	-	0.0023	66	
2.2 (3.0)	2850	W-DA90LM	4.6	4.4	4.4	{ 84.0 0.86 85.0 0.81 83.0 0.71 }	7.4	2.5	6.3	3.0	2.2	-	-	-	0.0028	66	
3 (4.0)	2890	W-DA100LJ	6.0	5.7	5.7	{ 86.5 0.88 87.0 0.83 86.5 0.75 }	10	3.0	7.8	3.1	2.6	-	-	-	0.005	60	
4 (5.5)	2870	W-DA112MM	7.6	7.2	7.2	{ 88.0 0.91 89.0 0.89 89.0 0.85 }	13.3	3.0	7.8	3.1	2.8	0.85	2.8	0.80	0.008	60	
5.5 (7.5)	2910	W-DA132SE	10.5	10	10	{ 89.5 0.89 89.5 0.85 88.0 0.73 }	18.1	2.7	8.2	3.1	2.4	0.80	2.4	0.75	0.015	66	
7.5 (10)	2900	W-DA132SJ	14	13.3	13.3	{ 89.5 0.91 90.0 0.89 89.0 0.82 }	24.7	2.5	8.2	3.0	2.3	0.75	2.5	0.70	0.02	66	
11 (15)	2940	W-DA160MB	20.6	19.6	19.6	{ 91.0 0.89 91.0 0.86 90.0 0.79 }	35.8	2.2	7.8	3.0	1.8	0.65	2.5	0.60	0.039	68	
15 (20)	2940	W-DA160MJ	27.6	26.3	26.3	{ 91.5 0.90 91.5 0.88 91.0 0.80 }	48.8	2.2	8.0	3.1	1.9	0.65	2.6	0.60	0.045	68	
18.5 (25)	2940	W-DA160LR	34	32	32	{ 92.5 0.91 92.5 0.89 92.0 0.81 }	60.2	2.4	8.7	3.2	1.9	0.78	2.7	0.65	0.056	68	
22 (30)	2950	W-DA180ME	39	37	37	{ 93.0 0.92 93.0 0.90 92.5 0.84 }	71.4	2.2	9.0	3.1	1.9	0.65	2.8	0.60	0.094	68	
30 (40)	2940	W-DA200LLF	56	53	53	{ 91.4 0.89 91.6 0.87 90.2 0.80 }	97.4	2.3	8.5	3.1	2.0	0.75	2.7	0.65	0.12	73	
37 (50)	2940	W-DA200LRF	68	64	64	{ 92.0 0.90 92.0 0.87 91.2 0.81 }	120.2	2.3	8.6	3.0	2.0	0.75	2.7	0.65	0.15	73	

# Performance data

1500 min<sup>-1</sup> (4 pole)

Rated Power  
Full load speed in revolutions per minute  
Frame reference and size  
Full load current at rated voltage  
Efficiency  
Power factor  
Full load torque  
Direct on line starting torque ratio  
Direct on line starting current ratio  
Direct on line pull out torque ratio  
Direct on line pull up torque  
Star delta starting torque ratio (%)  
Star delta starting current ratio  
Star delta pull up torque  
Rotor inertia J/kg<sup>2</sup>  
Mean sound pressure level @ 1m on no load

P <sub>N</sub> kW (hp)	n min <sup>-1</sup>	Type	I <sub>N</sub>			η		Cos φ		M <sub>N</sub> Nm	M <sub>A</sub> M <sub>N</sub>	I <sub>A</sub> I <sub>N</sub>	M <sub>K</sub> M <sub>N</sub>	M <sub>S</sub> M <sub>N</sub>	M <sub>A</sub> M <sub>N</sub> Y	I <sub>A</sub> I <sub>N</sub> Y	M <sub>S</sub> M <sub>N</sub> Y	J kgm <sup>2</sup>	L <sub>PA</sub> dB(A)
			380 V A	400 V A	415 V A	1.0 P <sub>N</sub> 0.75 P <sub>N</sub> 0.5 P <sub>N</sub>	1.0 P <sub>N</sub> 0.75 P <sub>N</sub> 0.5 P <sub>N</sub>												
0.12 (0.166)	1360	W-DA63SF	0.50	0.47	0.47	{ 59.0 52.0 42.0 }	{ 0.62 0.53 0.40 }			0.85	1.9	2.75	2.0	1.65	-	-	-	0.0005	39
0.18 (0.25)	1370	W-DA63SG	0.67	0.63	0.63	{ 62.0 58.0 51.0 }	{ 0.66 0.56 0.44 }			1.25	2.2	3.1	2.2	2.0	-	-	-	0.00063	39
0.25 (0.33)	1400	W-DA71SJ	0.84	0.8	0.8	{ 69.0 68.0 62.0 }	{ 0.65 0.55 0.44 }			1.71	1.8	4.0	2.2	1.6	-	-	-	0.00084	38
0.37 (0.5)	1410	W-DA71SK	1.17	1.11	1.11	{ 71.0 69.0 63.0 }	{ 0.68 0.57 0.45 }			2.5	1.8	4.0	2.2	1.6	-	-	-	0.00087	38
0.55 (0.75)	1410	W-DA80ME	1.66	1.58	1.58	{ 75.0 75.0 70.0 }	{ 0.67 0.57 0.45 }			3.7	2.0	4.2	2.2	1.8	-	-	-	0.0015	47
0.75 (1)	1410	W-DA80MG	1.97	1.88	1.88	{ 78.0 79.0 77.0 }	{ 0.74 0.65 0.50 }			5.1	2.0	4.4	2.2	1.6	-	-	-	0.0019	47
1.1 (1.5)	1410	W-DA90SE	2.76	2.63	2.63	{ 79.5 80.0 78.0 }	{ 0.76 0.66 0.52 }			7.5	2.2	5.1	2.5	2.0	-	-	-	0.0028	54
1.5 (2)	1420	W-DA90LK	3.7	3.5	3.5	{ 81.0 82.0 80.0 }	{ 0.77 0.68 0.55 }			10.1	2.5	5.6	2.8	2.2	-	-	-	0.0035	54
2.2 (3)	1415	W-DA100LJ	5.2	4.9	4.9	{ 81.0 82.5 82.5 }	{ 0.80 0.73 0.61 }			14.8	2.0	5.5	2.1	1.8	-	-	-	0.008	54
3 (4.0)	1415	W-DA100LR	6.8	6.5	6.5	{ 82.6 84.0 83.9 }	{ 0.81 0.75 0.61 }			20.2	2.1	5.7	2.4	1.9	-	-	-	0.009	54
4 (5.5)	1440	W-DA112MR	8.9	8.5	8.5	{ 84.2 85.2 83.5 }	{ 0.81 0.74 0.60 }			26.5	2.5	6.9	2.9	2.1	0.75	2.2	0.65	0.011	56
5.5 (7.5)	1445	W-DA132SF	11.9	11.3	11.3	{ 85.7 86.5 85.5 }	{ 0.82 0.76 0.65 }			36.3	2.4	7.0	2.9	2.1	0.70	2.2	0.60	0.019	59
7.5 (10)	1445	W-DA132MB	15.9	15.2	15.2	{ 87.0 88.3 87.6 }	{ 0.82 0.76 0.63 }			49.6	2.4	7.2	3.1	2.0	0.70	2.2	0.60	0.025	59
11 (15)	1470	W-DA160MJ	21.9	20.9	20.9	{ 91.5 91.5 90.5 }	{ 0.83 0.79 0.67 }			71.5	2.5	7.7	2.9	2.0	0.65	2.3	0.50	0.068	63
15 (20)	1470	W-DA160LR	29.4	28	28	{ 92.0 92.5 91.5 }	{ 0.84 0.79 0.68 }			97.5	2.5	7.7	2.9	2.0	0.65	2.3	0.50	0.084	63
18.5 (25)	1470	W-DA180ME	36	34	34	{ 92.5 92.5 91.5 }	{ 0.84 0.79 0.64 }			120	2.8	8.4	3.2	2.2	0.80	2.6	0.65	0.16	62
22 (30)	1470	W-DA180LJ	43	41	41	{ 93.0 93.0 92.0 }	{ 0.84 0.80 0.69 }			143	2.5	7.5	2.9	2.0	0.75	2.2	0.60	0.19	62
30 (40)	1465	W-DA200LRF	58	55	55	{ 91.4 91.9 91.1 }	{ 0.86 0.84 0.75 }			196	2.3	7.5	2.8	2.0	0.70	2.2	0.60	0.23	65

# Performance data

1000 min<sup>-1</sup> (6 pole)

Rated power  
Full load speed in revolutions per minute  
Frame reference and size  
Full load current at rated voltage  
Efficiency  
Power factor  
Full load torque  
Direct on line starting torque ratio  
Direct on line starting current ratio  
Direct on line pull out torque ratio  
Direct on line pull up torque  
Star delta starting torque ratio (1)  
Star delta starting current ratio  
Star delta pull up torque  
Rotor inertia MJk<sup>2</sup>  
Mean sound pressure level @ 1m on no load

P <sub>N</sub> kW (hp)	n min <sup>-1</sup>	Type	I <sub>N</sub>			η		Cos φ		M <sub>N</sub> Nm	M <sub>A</sub> M <sub>N</sub>	I <sub>A</sub> I <sub>N</sub>	M <sub>K</sub> M <sub>N</sub>	M <sub>S</sub> M <sub>N</sub>	M <sub>A</sub> M <sub>N</sub> Y	I <sub>A</sub> I <sub>N</sub> Y	M <sub>S</sub> M <sub>N</sub> Y	J kgm <sup>2</sup>	L <sub>PA</sub> dB(A)
			380 V A	400 V A	415 V A	1.0 P <sub>N</sub> 0.75 P <sub>N</sub> 0.5 P <sub>N</sub>	1.0 P <sub>N</sub> 0.75 P <sub>N</sub> 0.5 P <sub>N</sub>												
0.07 (0.094)	880	W-DA63SG	0.36	0.34	0.33	{ 47.0 42.0 33.0	{ 0.63 0.56 0.49			0.76	2.0	2.5	2.2	1.8	-	-	-	0.00063	40
0.09 (0.125)	930	W-DA71SG	0.42	0.40	0.40	{ 55.0 52.0 47.0	{ 0.59 0.50 0.40			0.93	1.7	2.5	1.9	1.5	-	-	-	0.00081	44
0.12 (0.166)	900	W-DA71SG	0.58	0.55	0.55	{ 53.0 50.0 43.0	{ 0.59 0.50 0.40			1.24	1.4	3.5	1.7	1.3	-	-	-	0.00081	44
0.18 (0.25)	910	W-DA71SK	0.79	0.75	0.75	{ 61.0 59.0 53.0	{ 0.57 0.50 0.39			1.87	1.7	3.0	1.9	1.5	-	-	-	0.00097	44
0.25 (0.33)	920	W-DA71SR	1.11	1.06	1.06	{ 61.0 59.0 53.0	{ 0.56 0.49 0.38			2.6	1.7	3.0	1.9	1.5	-	-	-	0.00124	44
0.37 (0.5)	920	W-DA80MG	1.33	1.27	1.27	{ 69.0 68.0 64.0	{ 0.61 0.51 0.40			3.8	2.0	3.7	2.2	1.8	-	-	-	0.0015	49
0.55 (0.75)	920	W-DA80MM	1.86	1.77	1.77	{ 71.0 71.0 68.0	{ 0.63 0.54 0.41			5.7	2.0	3.7	2.3	1.8	-	-	-	0.0021	49
0.75 (1)	920	W-DA90SG	2.23	2.12	2.12	{ 74.0 74.0 72.0	{ 0.69 0.59 0.45			7.8	2.2	4.1	2.4	2.0	-	-	-	0.0028	65
1.1 (1.5)	940	W-DA90LT	3.4	3.2	3.2	{ 78.0 77.0 75.0	{ 0.63 0.52 0.41			11.2	2.8	4.5	3.0	2.5	-	-	-	0.0039	65
1.5 (2)	930	W-DA100LR	4.5	4.3	4.3	{ 79.0 79.0 77.0	{ 0.64 0.54 0.42			15.4	2.0	4.2	2.3	2.0	-	-	-	0.009	58
2.2 (3)	950	W-DA112MS	5.8	5.5	5.5	{ 82.5 82.5 80.5	{ 0.70 0.60 0.47			22.1	2.8	5.8	2.8	2.3	-	-	-	0.014	54
3 (4)	965	W-DA132SG	7.5	7.1	7.1	{ 86.0 86.0 84.0	{ 0.71 0.64 0.52			29.8	2.2	6.5	2.7	1.7	0.65	2.1	0.55	0.023	58
4 (5.5)	960	W-DA132ML	9.5	9	9	{ 86.5 86.5 86.0	{ 0.74 0.67 0.55			39.8	2.1	6.2	2.6	1.6	0.60	2.0	0.50	0.027	58
5.5 (7.5)	960	W-DA132MM	12.9	12.3	12.3	{ 87.0 87.0 86.5	{ 0.74 0.67 0.54			54.7	2.0	5.5	2.5	1.6	0.60	2.0	0.50	0.029	58
7.5 (10)	975	W-DA160MM	16.8	16	16	{ 90.0 90.5 89.0	{ 0.75 0.70 0.60			73.4	1.8	6.5	2.8	1.7	0.55	2.1	0.5	0.10	59
11 (15)	975	W-DA160LV	23.8	22.7	22.7	{ 91.0 91.0 89.5	{ 0.77 0.72 0.60			108	2.0	7.5	2.8	1.9	0.60	2.5	0.50	0.12	59
15 (20)	975	W-DA180LM	33	31	31	{ 91.0 91.0 89.5	{ 0.78 0.73 0.60			147	2.4	6.5	2.8	2.2	0.65	2.2	0.60	0.23	59

# Performance data

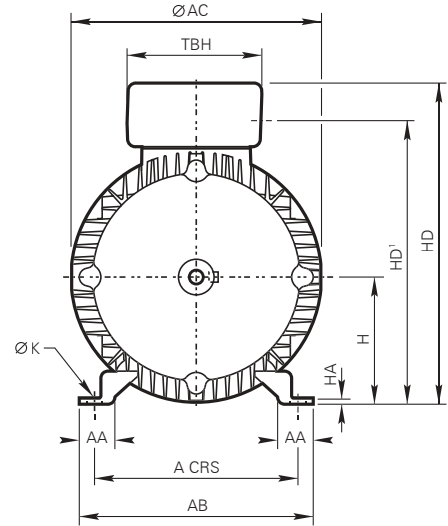
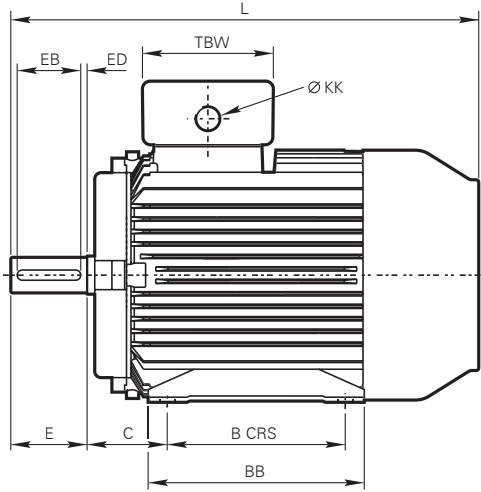
750 min<sup>-1</sup> (8 pole)

Rated power $P_N$ kW (hp)	Full load speed in revolutions per minute n min <sup>-1</sup>	Frame reference and size Type	Full load current at rated voltage $I_N$			Efficiency $\eta$ $\frac{1.0 P_N}{0.75 P_N}$ $\frac{0.75 P_N}{0.5 P_N}$	Power factor Cos $\phi$ $\frac{1.0 P_N}{0.75 P_N}$ $\frac{0.75 P_N}{0.5 P_N}$	Full load torque $M_N$ Nm	Direct on line starting torque ratio $\frac{M_A}{M_N}$	Direct on line starting current ratio $\frac{I_A}{I_N}$	Direct on line pull out torque ratio $\frac{M_K}{M_N}$	Direct on line pull up torque ratio $\frac{M_S}{M_N}$	Star delta starting torque ratio <sup>(1)</sup> $\frac{M_A}{M_N}$ Y	Star delta starting current ratio <sup>(1)</sup> $\frac{I_A}{I_N}$ Y	Star delta starting current ratio pull up torque $\frac{M_S}{M_N}$ Y	Rotor inertia $Wk^2$ J kgm <sup>2</sup>	Mean sound pressure level @ 1m on no load $L_{PA}$ dB(A)
			380 V A	400 V A	415 V A												
0.18 (0.25)	695	<b>W-DA80MG</b>	1.01	0.96	0.96	<b>55.0 0.49</b> { 52.0 0.42 44.0 0.34	2.5	2.2	2.7	2.5	2.0	-	-	-	0.0017	46	
0.25 (0.33)	695	<b>W-DA80MM</b>	1.26	1.2	1.2	<b>59.0 0.51</b> { 56.5 0.43 49.0 0.34	3.5	2.2	2.9	2.5	2.0	-	-	-	0.0021	46	
0.37 (0.5)	700	<b>W-DA90SG</b>	1.71	1.63	1.63	<b>62.0 0.53</b> { 59.0 0.44 51.0 0.34	5.1	2.3	3.0	2.5	2.1	-	-	-	0.0028	50	
0.55 (0.75)	680	<b>W-DA90LM</b>	2.4	2.3	2.3	<b>64.0 0.54</b> { 62.0 0.44 55.0 0.33	7.6	2.3	3.3	2.7	2.1	-	-	-	0.0035	50	
0.75 (1)	690	<b>W-DA100LR</b>	2.77	2.64	2.64	<b>69.5 0.59</b> { 68.0 0.49 61.0 0.40	10.4	1.8	3.2	2.1	1.7	-	-	-	0.009	53	
1.1 (1.5)	690	<b>W-DA100LS</b>	3.9	3.7	3.7	<b>71.5 0.60</b> { 70.5 0.51 68.0 0.39	15.2	1.8	3.2	2.1	1.7	-	-	-	0.0095	53	
1.5 (2)	690	<b>W-DA112MS</b>	4.6	4.4	4.4	<b>74.5 0.66</b> { 74.0 0.56 71.0 0.44	20.7	1.9	4.0	2.0	1.7	-	-	-	0.015	57	
2.2 (3)	720	<b>W-DA132SM</b>	6.2	5.9	5.9	<b>82.5 0.65</b> { 83.0 0.57 80.0 0.45	29.2	1.6	5.0	2.4	1.5	-	-	-	0.029	57	
3 (4)	720	<b>W-DA132MR</b>	8.2	7.8	7.8	<b>84.0 0.66</b> { 84.0 0.58 82.0 0.45	39.8	1.6	5.0	2.4	1.4	-	-	-	0.031	57	
4 (5.5)	725	<b>W-DA160ME</b>	10.4	9.9	9.9	<b>86.0 0.68</b> { 86.0 0.64 84.0 0.51	52.7	1.6	5.5	2.5	1.4	0.5	1.7	0.45	0.09	53	
5.5 (7.5)	725	<b>W-DA160MM</b>	13.9	13.2	13.2	<b>87.0 0.69</b> { 87.0 0.65 85.5 0.52	72.4	1.6	5.7	2.5	1.4	0.5	1.7	0.45	0.11	53	
7.5 (10)	725	<b>W-DA160LV</b>	18.2	17.3	17.3	<b>88.0 0.71</b> { 88.0 0.65 86.0 0.52	98.8	1.6	6.0	2.5	1.4	0.5	1.8	0.45	0.14	53	
11 (15)	730	<b>W-DA180LM</b>	27.6	26.3	26.3	<b>90.0 0.67</b> { 90.0 0.59 88.0 0.48	143.9	2.0	4.5	2.5	1.7	0.63	1.4	0.55	0.24	58	

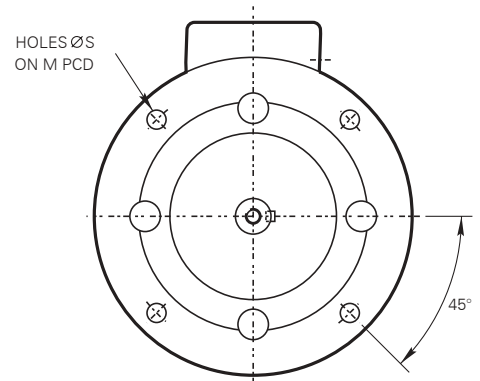
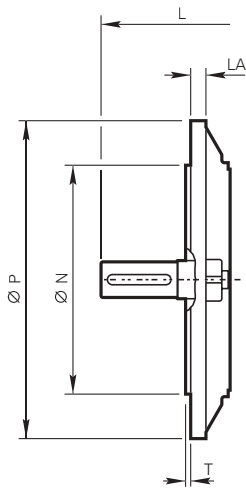
# Dimensions

Foot, flange and face mounting - frame sizes 63 to 200

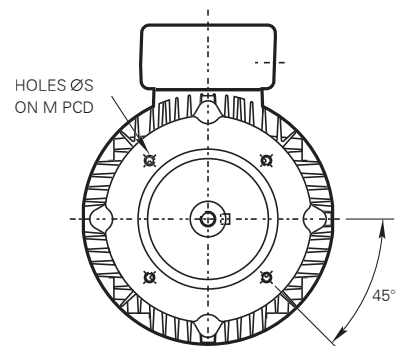
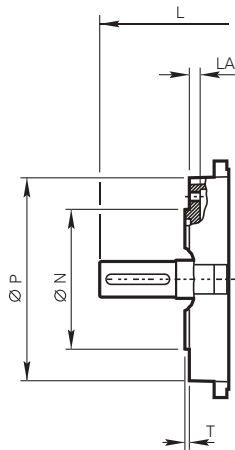
IM B3  
IM 1001  
Mounting options



IM B5/IM B35  
IM 3001/IM 2001  
Mounting options



IM B14/IM B34  
IM 3601/IM 2101  
Mounting options



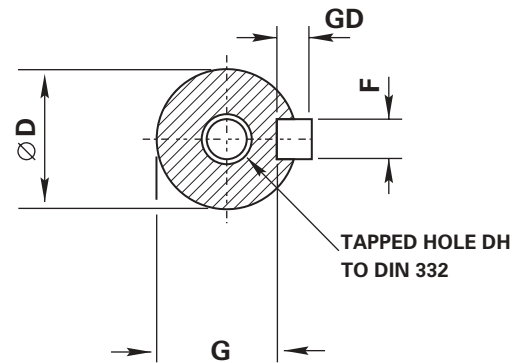


Foot, flange and face mounting - frame sizes 63 to 200

Type	General													Terminal box		
	A	B	C	H	K	L	AA	AB	AC	BB	HA	HD	HD'	TBW	TBH	KK
W-DA63S	100	80	40	63	7	207	19	119	126	100	2	163	138	86	86	20
W-DA71S	112	90	45	71	7	238	19	131	140	110	2	186	162	86	86	20
W-DA80M	125	100	50	80	10	278	27	157	160	127	4	212	183	86	86	20
W-DA90S	140	100	56	90	10	322	28	164	178	150	4	225	201	86	86	20
W-DA90L	140	125	56	90	10	322	28	164	178	150	4	225	201	86	86	20
W-DA100L	160	140	63	100	12	368	28	184	199	170	4	254	223	106	106	20
W-DA112M	190	140	70	112	12	382	35	218	215	170	4	279	245	127	127	25
W-DA132S	216	140	89	132	12	451	38	242	255	208	5	320	287	127	127	25
W-DA132M	216	178	89	132	12	451	38	242	255	208	5	320	287	127	127	25
W-DA160M	254	210	108	160	15	605	49	304	314	304	5	400	356	140	140	32
W-DA160L	254	254	108	160	15	605	49	304	314	304	5	400	356	140	140	32
W-DA180M	279	241	121	180	15	667	50	329	358	329	6	440	396	140	140	32
W-DA180L	279	279	121	180	15	667	50	329	358	329	6	440	396	140	140	32
W-DA200L	318	305	133	200	19	667	74	382	358	359	15	460	-	140	140	32

Type	IM B5 mounting						IM B14 mounting					
	M	N	P	S	T	LA	M	N	P	S	T	LA
W-DA63S	115	95	140	10	3	7	75	60	90	M5	2.5	7
W-DA71S	130	110	160	10	3.5	7	85	70	105	M6	2.5	9
W-DA80M	165	130	200	12	3.5	12	100	80	120	M6	3	9
W-DA90S	165	130	200	12	3.5	10	115	95	140	M8	3	9
W-DA90L	165	130	200	12	3.5	10	115	95	140	M8	3	9
W-DA100L	215	180	250	14.5	4	12	130	110	160	M8	3.5	12.5
W-DA112M	215	180	250	14.5	4	12	130	110	164	M8	3.5	13
W-DA132S	265	230	300	14.5	4	12	165	130	200	M10	3.5	14
W-DA132M	265	230	300	14.5	4	12	165	130	200	M10	3.5	14
W-DA160M	300	250	350	18.5	5	13	215	180	250	M12	4	13
W-DA160L	300	250	350	18.5	5	13	215	180	250	M12	4	13
W-DA180M	300	250	350	18.5	5	15	-	-	-	-	-	-
W-DA180L	300	250	350	18.5	5	15	-	-	-	-	-	-
W-DA200L	350	300	400	19	5	19	-	-	-	-	-	-

Type	Shaft							
	D	E	F	G	GD	EB	ED	DH
W-DA63S	11	23	4	8.5	4	10	13	M4 x 10
W-DA71S	14	30	5	11	5	20	5	M5 x 12.5
W-DA80M	19	40	6	15.5	6	32	4	M6 x 16
W-DA90S	24	50	8	20	7	40	5	M8 x 19
W-DA90L	24	50	8	20	7	40	5	M8 x 19
W-DA100L	28	60	8	23.9	7	50	5	M10 x 22
W-DA112M	28	60	8	23.9	7	50	5	M10 x 22
W-DA132S	38	80	10	33	8	70	5	M12 x 28
W-DA132M	38	80	10	33	8	70	5	M12 x 28
W-DA160M	42	110	12	37	8	100	5	M16 x 36
W-DA160L	42	110	12	37	8	100	5	M16 x 36
W-DA180M	48	110	14	42.5	9	100	5	M16 x 36
W-DA180L	48	110	14	42.5	9	100	5	M16 x 36
W-DA200L	55	110	16	49	10	100	5	M20 x 42

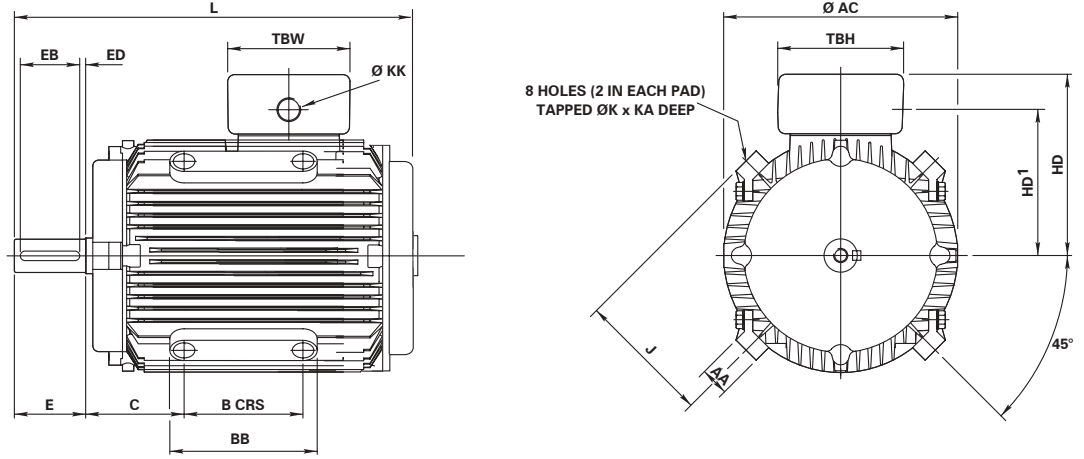


# Dimensions

## Pad/rod mounting

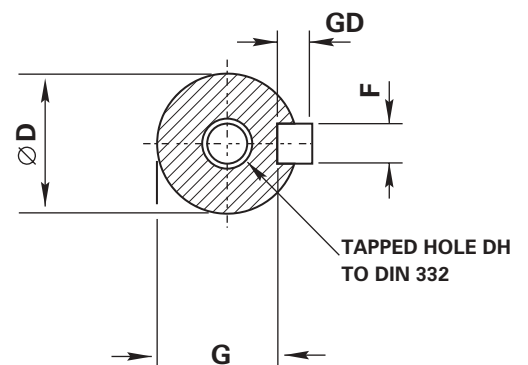
IM B30, IM V30, IM V31  
IM 9201, IM 9211,  
IM 9231

Mounting options



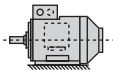
Type	General											Terminal box		
	B	C	J	K	L	AA	AC	BB	HD	HD <sup>1</sup>	KA	TBW	TBH	KK
W-DA63S-P	90	45	70	M8	180	18	126	119	100	75	12	86	86	M20
W-DA71S-P	90	45	83.5	M8	203.5	17	140	107	115	91	12	86	86	M20
W-DA80L-P	90	55	95	M12	253	23	160	113	127	103	14	86	86	M20
W-DA90L-P	90	73.5	103	M12	299	24	178	114	135	111	13	86	86	M20
W-DA100L-P	100	83	112.5	M12	322	24	199	124	154	123	15	106	106	M20
W-DA112M-P	100	90	125	M12	336	24	215	124	167	133	18	127	127	M25
W-DA132S-P	140	108	150	M16	392	35	255	175	188	155	19	127	127	M25
W-DA132M-P	140	108	150	M16	392	35	255	175	188	155	19	127	127	M25
W-DA160L-P	200	135	181	M20	533	35	314	245	240	196	22	140	140	M32
W-DA180L-P	200	160.5	202	M20	590	35	358	235	260	216	22	140	140	M32

Type	Shaft							
	D	E	F	G	GD	EB	ED	DH
W-DA63S-P	11	23	4	8.5	4	10	13	M4 x 10
W-DA71S-P	14	30	5	11	5	20	5	M5 x 12.5
W-DA80L-P	19	40	6	15.5	6	32	4	M6 x 16
W-DA90L-P	24	50	8	20	7	40	5	M8 x 19
W-DA100L-P	28	60	8	23.9	7	50	5	M10 x 22
W-DA112M-P	28	60	8	23.9	7	50	5	M10 x 22
W-DA132S-P	38	80	10	33	8	70	5	M12 x 28
W-DA132M-P	38	80	10	33	8	70	5	M12 x 28
W-DA160L-P	42	110	12	37	8	100	5	M16 x 36
W-DA180L-P	48	110	14	42.5	9	100	5	M16 x 36

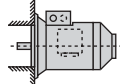


# Mounting options

## Horizontal shaft:



**IM B3**  
**IM 1001**  
foot mounted



**IM B5**  
**IM 3001**  
flange at DE  
no feet



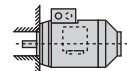
**IM B6**  
**IM 1051**  
foot wall mounted with  
feet on left-hand side  
when viewed from DE



**IM B7**  
**IM 1061**  
foot wall mounted with  
feet on right-hand side  
when viewed from DE

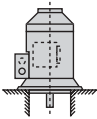


**IM B8**  
**IM 1071**  
ceiling mounted  
with feet  
above motor

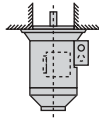


**IM B14**  
**IM 3601**  
face at DE  
no feet

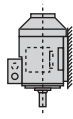
## Vertical shaft:



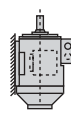
**IM V1**  
**IM 3011**  
flange at DE  
shaft down  
no feet



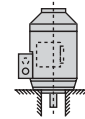
**IM V3**  
**IM 3031**  
flange at DE  
shaft up  
no feet



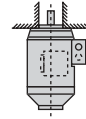
**IM V5**  
**IM 1011**  
vertical foot  
wall mounted  
shaft down



**IM V6**  
**IM 1031**  
vertical foot  
wall mounted  
shaft up



**IM V18**  
**IM 3611**  
face at DE  
shaft down  
no feet



**IM V19**  
**IM 3631**  
face at DE  
shaft down  
no feet

# Approximate shipping specifications

Type	Net weight (kg)	Gross weight (kg)	Cubage (m <sup>3</sup> )
W-DA63	5	5.4	0.01
W-DA71	6.5	6.9	0.01
W-DA80M	9	10	0.02
W-DA90S	12.5	13.5	0.03
W-DA90L	14.5	15.5	0.03
W-DA100L	24.3	27	0.038
W-DA112M	29.4	33	0.05
W-DA132S	45	50	0.071
W-DA132M	50	56	0.076
W-DA160M	84	100	0.125
W-DA160L	95	106	0.125
W-DA180M	118	132	0.253
W-DA180L	126	141	0.253
W-DA200L	133	148	0.253

# Technical information: Mechanical

## Bearings and greasing arrangements

Bearings are pre-packed with a lithium complex based grease or Polyurea.

Regreasing facilities are available on request. See table opposite.

Standard and re-greasing facilities		
Type	Lithium complex	Polyurea
80 - 200	Esso Unirex N3 with temperature range of -30°C to +140°C	EA6 with a temperature range of -40°C to +160°C

Bearing references and oil seals						
Type	Mounting	Number of poles	Bearings		Oil seals – bore x O/D x width in mm	
			Drive end	Non-drive end	Drive end	Non-drive end
W-DA63	All	All	62022Z	62022Z	15 x 24 x 5	15 x 24 x 5
W-DA71	All	All	60032Z	60032Z	17 x 28 x 6	17 x 28 x 6
W-DA80	All	All	62042Z	60032Z	20 x 30 x 7	15 x 24 x 5
W-DA90	All	All	62052Z	62032Z	25 x 35 x 7	17 x 28 x 6
W-DA100	All	All	62062Z	62052Z	30 x 42 x 7	25 x 37 x 7
W-DA112	All	All	62062Z	62052Z	30 x 42 x 7	25 x 37 x 7
W-DA132	All	All	62082Z	63052Z	40 x 52 x 7	25 x 37 x 7
W-DA160	All	All	63092Z	63072Z	45 x 60 x 8	35 x 47 x 7
W-DA180	All	All	63102Z	63082Z	50 x 65 x 8	40 x 52 x 7
W-DA200	All	All	62122Z	63102Z	60 x 75 x 8	50 x 65 x 8

Grease life at 80°C bearing temperature x 10 <sup>5</sup> hours								
Type	3000 min <sup>-1</sup>		1500 min <sup>-1</sup>		1000 min <sup>-1</sup>		750 min <sup>-1</sup>	
	Horizontal	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal	Vertical
W-DA63	30	30	30	30	30	30	30	30
W-DA71	30	30	30	30	30	30	30	30
W-DA80	30	30	30	30	30	30	30	30
W-DA90	30	30	30	30	30	30	30	30
W-DA100	30	30	30	30	30	30	30	30
W-DA112	30	30	30	30	30	30	30	30
W-DA132	30	25	30	30	30	30	30	30
W-DA160	29	19	30	30	30	30	30	30
W-DA180	24	16	30	30	30	30	30	30
W-DA200	22	14	30	30	30	30	30	30

# Technical information: Mechanical

## Axial and radial loads

Maximum permissible external axial and radial loads in Newtons*								
Type	Poles	Horizontal shaft		Vertical shaft				Maximum permissible radial load at end of shaft (horizontal mounting)
		Load towards motor	Load away from motor	Shaft up		Shaft down		
				Load towards motor	Load away from motor	Load towards motor	Load away from motor	
W-DA63	2	324	480	316	491	335	472	434
	4	253	409	245	420	264	401	372
	6	280	436	272	448	292	428	396
W-DA71	2	236	392	227	405	249	383	340
	4	207	363	196	380	224	352	314
	6	189	345	174	362	206	330	292
W-DA80	2	339	539	321	565	362	521	774
	4	303	503	283	530	330	583	729
	6	284	484	260	516	316	460	646
	8	296	496	272	528	328	472	662
W-DA90	2	444	684	421	716	476	661	915
	4	398	638	366	682	442	606	854
	6	349	589	309	641	401	549	720
	8	369	609	334	656	416	574	747
W-DA100	2	781	1101	743	1159	839	1063	1295
	4	710	1030	655	1107	787	975	1215
	6	560	880	506	963	643	826	1145
	8	580	900	521	985	665	841	1018
W-DA112	2	768	1088	715	1170	850	1035	1295
	4	690	1010	612	1131	811	932	1202
	6	541	861	463	979	659	783	1141
	8	565	885	487	1003	683	807	1009
W-DA132	2	1355	1707	1266	1838	1486	1618	2114
	4	1253	1605	1130	1779	1427	1482	2068
	6	1167	1519	1035	1711	1359	1387	1968
	8	997	1349	858	1556	1204	1210	1600
W-DA160	2	2144	2639	1951	2920	2425	2446	3613
	4	2123	2618	1895	2959	2464	2390	3738
	6	1973	2468	1669	2905	2410	2164	3544
	8	1464	1959	1144	2358	1863	1639	3233
W-DA180	2	2711	3274	2465	3667	3104	3027	4374
	4	2749	3312	2426	3801	3238	2988	4556
	6	2575	3138	2166	3785	3222	2728	4334
	8	2266	2829	1850	3469	2906	2412	3979
W-DA200	2	4422	4985	4094	5475	4912	4656	3770
	4	4739	5302	4350	5910	5347	4913	3965

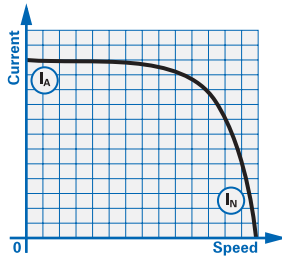
\* All figures are based on L<sub>na</sub> bearing life of 20,000 hours. L<sub>na</sub> = adjusted L10 life rating taking account of:  
 • reliability • material improvements • lubrication conditions

# Performance data – page notes

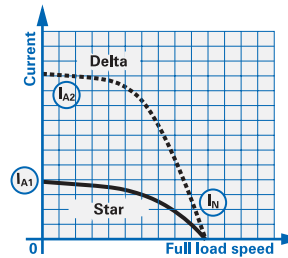
DOL starting  
(BS EN 60034-12 Design N)

Star delta starting  
(BS EN 60034-12 Design NY)

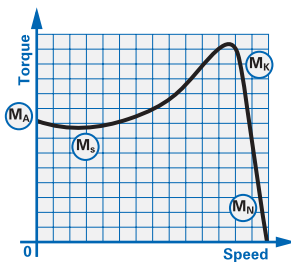
Typical speed/current curve



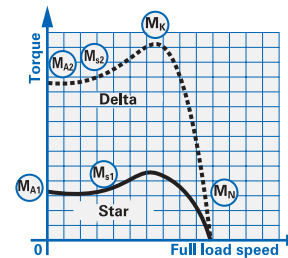
Typical speed/current curve



Typical speed/torque curve



Typical speed/torque curve



- (I<sub>A</sub>) Starting current
- (I<sub>N</sub>) Full load current
- (M<sub>A</sub>) Starting torque or locked rotor torque
- (M<sub>S</sub>) Pull up torque or run up torque
- (M<sub>K</sub>) Pull out torque or breakdown torque
- (M<sub>N</sub>) Full load torque

Torque/speed curves for specific motors can be supplied on request

During the run up period in Star, there must be an adequate excess of motor torque over the load torque. The change to delta must not occur until the motor is near the operating speed.

Refer to Brook Crompton for running up against a load in excess of 70% full load during Star/Delta starting

Max 525 V on frame size 63SF

Motors are wound for either 220-240/380-415 volts or 380-415/660-720 volts

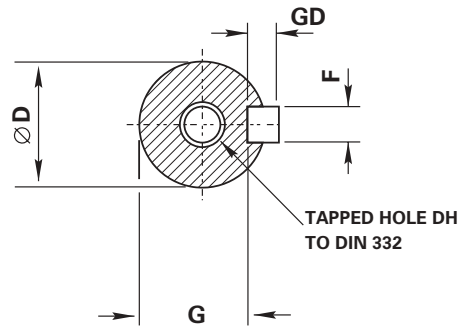
$$J \text{ (WK}^2 \text{ or WR}^2) = \frac{GD^2}{4}$$

$$J \text{ in lb ft}^2 = \frac{\text{kgm}^2}{0.042}$$

Where a tolerance is given in one direction only, there is no limit in the opposite direction

# Dimensions – page notes

Shaft		
Dim D	British and European	
	Tol	Limits
11 to 18	j6	+0.008 -0.003
19 to 28	j6	+0.009 -0.004
32 to 48	k6	+0.018 +0.002
55	m6	+0.030 +0.011



Flange		
Dim N	IEC 72-1 Annex C.I.7 Option 1	
	Tol	Limits
95 and 110	j6	+0.013 -0.009
130 to 180	j6	+0.014 -0.011
230 to 250	h6	+0.016 -0.013
300	h6	+0.000 -0.032

Face		
Dim N	IEC 72-1 Annex C.I.7 Option 1	
	Tol	Limits
60 and 80	j6	+0.012 -0.007
95 and 110	j6	+0.013 -0.009
130 and 180	j6	+0.014 -0.011

All dimensions in millimetres

Drain holes are standard on frames 160-180 and on request for frames 63-132

Cable entry can be arranged in any one of four positions at 90° intervals

No eyebolts on frame sizes 63-100

On frame sizes 63-90 the terminal box is offset towards the non-drive end

Dimensions should not be used for installation purposes unless specially endorsed

B5 mounted motors have suffix '-D' in the frame reference, eg W-DA132MR-D and B3/B5 mounted motors have suffix '-H' in the frame reference, eg W-DA132MR-H

B14 mounted motors have suffix 'C' in the frame reference, eg W-DA132MR-C and B3/B14 mounted motors have suffix '-H' in the frame reference, eg W-DA132MR-H

Pad mounted motors have suffix '-P' in the frame reference, eg W-DA132MR-P and rod mounted motors have suffix '-R' in the frame reference, eg W-DA132MR-R

# Rotating Electrical Machines

## Worldwide sales and service network

Every care has been taken to ensure the accuracy of the information contained in this publication, but, due to a policy of continuous development and improvement the right is reserved to supply products which may differ slightly from those illustrated and described in this publication

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