Construction:

Brake Motors are used for various applications where instantaneous stopping of the driven load is required. The operation of the brake is **"FAIL SAFE TYPE"** i.e. normally ON. When the electrical power to the motor is cut–off or the power fails, the brake is applied.

Brake motor is a combination of an A.C. induction motor and an electromagnetic AC or DC brake. The electromagnetic brake is mounted on the non–driving end of the motor.

DC brake motors are provided with a rectifier which provides the required DC voltage to the brake coil which in turn operates the brake. The supply to the rectifier is fed from any two terminals (between any two phases) in the main terminal box of the motor.

General applications of Brake motors are printing machinery, textile machinery, rolling mills, cranes & hoists, material handling equipments, machine tools etc.

Working:

When the power to the motor is switched off, a braking torque is generated which presses the armature plate of the brake against the mounting flange. When the supply resumes, a magnetic field is produced in the brake coil and this pulls the armature plate against the spring force and the shaft is now free to rotate.

Range of Hindustan Brand Brake Motors:

KW	: 0.093 t 55.0 kW
Pole	: 2P, 4P, 6P & 8P
Mounting	: B3, B5, B14 & combinations
Frame	: 63 to 250MX
Motor Voltage	: 415V±10% or as required
Frequency	: 50Hz±5% or as required
Braking torque	: Up to 800Nm
Brake coil voltage	: 190V DC (Other voltages on request)
Protection	: IP54
Duty cycle	: S1 – S8

SPECIAL FEATURES:

- The brake motors are simple & rugged & so easy for maintenance.
- No separate DC supply is required as the rectifier is provided which gives the required DC voltage for energisation of the brake.
- The rectifier is mounted inside the main terminal box so no separate terminal box required.

General guidelines for selection of suitable Brake Model:

The Brakes are rated by torque & selection of suitable model can be made by calculating the required torque, rating of the brake & then matching it with static torque.

Torque (Nm) = 9550 x (KW / RPM) x Safety Factor (SF)

where kW-Kilowatts of motor,

RPM-Speed of motor,

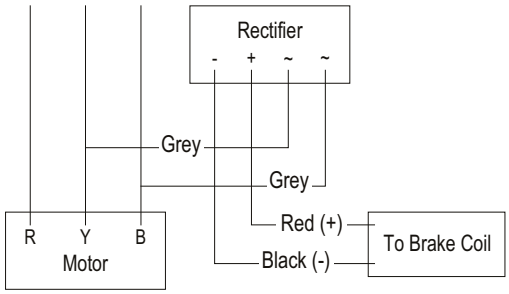
SF-Safety Factor depending on type of prime mover & load.

For electric motor, SF = 2 to 3

For diesel engine, SF = 4 to 5

For compressor, SF = 5 to 6.

Brake Coil Connection Diagram:



Brake coil is energized by DC side switching as shown in the diagram.

Applications:

Hindustan Brake motors can be used in many applications. A few of them are listed below;

- Machine tools
- Textile machinery
- Cranes & hoists
- Printing Machinery
- Material handling equipments
- Geared motors
- Cable reeling drums
- Rolling mills

Enquiry Details:

When placing an enquiry, please furnish the following details;

- Application details
- Motor power & speed
- Brake size / required braking torque
- Mounting
- No. of start/stops per hour
- Duty cycle

Note:

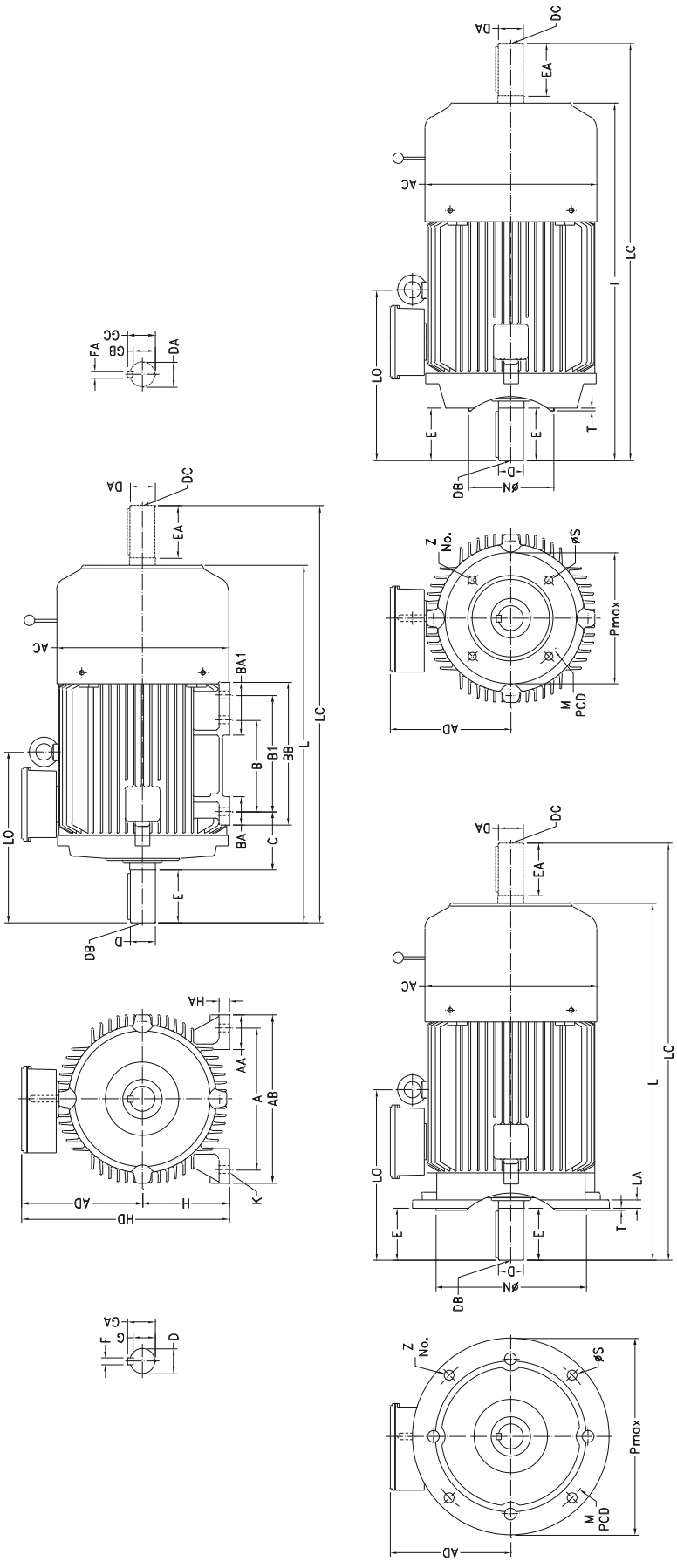
1. Selection chart is a general guideline for selection of brake size. If braking torque required is other than that mentioned in selection chart, this can be provided on request.
2. Brake motors with safety factor less than 2 are not suitable for crane/hoisting applications.
3. The motor must never be switched "ON" unless brake is energised & the brake should never be de-energised when the motor is "ON".
4. Brake motors with higher braking torque can also be provided on request.

SELECTION CHART - BRAKE MOTOR

Output		Frame Size	Type Designation	Speed (rpm)	Motor Torque (Nm)	Brake Size	Brake Torque (Nm)	Safety Factor	Brake Rel. Time (ms)
KW	HP								
2 POLE									
0.18	0.25	63	2KB2 060-02	2900	0.59	06	4	6.74	35
0.25	0.33	63	2KB2 063-02	2900	0.82	06	4	4.86	35
0.37	0.50	71	2KB2 070-02	2810	1.26	06	4	3.18	35
0.55	0.75	71	2KB2 073-02	2840	1.85	06	4	2.16	35
0.75	1.0	80	2KB2 080-02	2845	2.52	08	8	3.18	65
1.1	1.5	80	2KB2 083-02	2845	3.69	08	8	2.17	65
1.5	2.0	90S	2KB2 090-02	2870	4.99	10	16	3.20	90
2.2	3.0	90L	2KB2 096-02	2870	7.32	10	16	2.18	90
3.7	5.0	100L	2KB2 106-02	2900	12.19	12	32	2.62	120
5.5	7.5	132S	2KB2 130-02	2925	17.97	14	60	3.34	150
7.5	10.0	132S	2KB2 131-02	2925	24.50	14	60	2.45	150
9.3	12.5	160M	2KB2 163-02	2930	30.33	16	100	3.30	180
11.0	15.0	160M	2KB2 164-02	2935	35.81	18	150	4.19	300
15.0	20.0	160M	2KB2 165-02	2940	48.75	18	150	3.08	300
18.5	25.0	160L	2KB2 166-02	2940	60.13	18	150	2.49	300
22.0	30.0	180M	2KB2 183-02	2950	71.26	18	150	2.11	300
30.0	40.0	200L	2KB2 206-02	2955	97.01	20	260	2.68	400
37.0	50.0	200L	2KB2 207-02	2955	119.64	20	260	2.17	400
45.0	60.0	225M	2KB2 223-02	2965	145.02	25	400	2.76	500
55.0	75.0	250M	2KB2 253-02	2965	177.24	25	400	2.26	500
6 POLE									
0.18	0.25	71	2KB2 073-06	915	1.88	06	4	2.13	35
0.25	0.33	71	2KB2 074-06	915	2.61	08	8	3.06	65
0.37	0.50	80	2KB2 080-06	925	3.82	08	8	2.09	65
0.55	0.75	80	2KB2 083-06	930	5.65	10	16	2.83	90
0.75	1.0	90S	2KB2 090-06	935	7.66	12	32	4.18	120
1.1	1.5	90L	2KB2 096-06	935	11.24	12	32	2.85	120
1.5	2.0	100L	2KB2 106-06	945	15.17	14	60	3.96	150
2.2	3.0	112M	2KB2 123-06	950	22.13	14	60	2.71	150
3.7	5.0	132S	2KB2 130-06	950	37.21	18	150	4.03	300
5.5	7.5	132M	2KB2 133-06	955	55.03	18	150	2.73	300
7.5	10.0	160M	2KB2 163-06	970	73.88	18	150	2.03	300
9.3	12.5	160L	2KB2 166-06	970	91.61	20	260	2.84	400
11.0	15.0	160L	2KB2 167-06	970	108.36	20	260	2.40	400
15.0	20.0	180L	2KB2 186-06	970	147.76	25	400	2.71	500
18.5	25.0	200L	2KB2 206-06	975	181.30	25	400	2.21	500
22.0	30.0	200L	2KB2 207-06	975	215.60	31	600	2.78	500
30.0	40.0	225MX	2KB2 223-06	975	294.00	31	600	2.04	500
37.0	50.0	250MX	2KB2 253-06	980	360.75	31	800	2.22	500

Output		Frame Size	Type Designation	Speed (rpm)	Motor Torque (Nm)	Brake Size	Brake Torque (Nm)	Safety Factor	Brake Rel. Time (ms)
KW	HP								
4 POLE									
0.12	0.16	63	2KB2 060-04	1380	0.83	06	4	4.81	35
0.18	0.25	63	2KB2 063-04	1380	1.25	06	4	3.21	35
0.25	0.33	71	2KB2 070-04	1390	1.72	06	4	2.33	35
0.37	0.50	71	2KB2 073-04	1390	2.54	08	8	3.15	65
0.55	0.75	80	2KB2 080-04	1420	3.70	08	8	2.16	65
0.75	1.0	80	2KB2 083-04	1415	5.06	10	16	3.16	90
1.1	1.5	90S	2KB2 090-04	1430	7.35	12	32	4.35	120
1.5	2.0	90L	2KB2 096-04	1430	10.02	12	32	3.19	120
2.2	3.0	100L	2KB2 106-04	1440	14.60	14	60	4.11	150
3.7	5.0	112M	2KB2 123-04	1445	24.47	14	60	2.45	150
5.5	7.5	132S	2KB2 130-04	1450	36.24	18	150	4.14	300
7.5	10.0	132M	2KB2 133-04	1450	49.42	18	150	3.04	300
9.3	12.5	160M	2KB2 163-04	1455	61.07	18	150	2.46	300
11.0	15.0	160M	2KB2 164-04	1455	72.24	18	150	2.08	300
15.0	20.0	160L	2KB2 166-04	1455	98.51	20	260	2.64	400
18.5	25.0	180M	2KB2 183-04	1460	121.07	20	260	2.15	400
22.0	30.0	180L	2KB2 186-04	1460	143.98	25	400	2.78	500
30.0	40.0	200L	2KB2 206-04	1465	195.67	25	400	2.04	500
37.0	50.0	225SX	2KB2 220-04	1470	240.50	31	600	2.49	500
45.0	60.0	225MX	2KB2 223-04	1475	291.51	31	600	2.06	500
55.0	75.0	250MX	2KB2 253-04	1480	355.08	31	800	2.25	500
8 POLE									
0.12	0.16	71	2KB2 073-08	680	1.69	06	4	2.37	35
0.18	0.25	80	2KB2 080-08	685	2.51	08	8	3.19	65
0.25	0.33	80	2KB2 083-08	690	3.46	08	8	2.31	65
0.37	0.50	90S	2KB2 090-08	695	5.09	12	32	6.29	120
0.55	0.75	90L	2KB2 096-08	700	7.51	12	32	4.26	120
0.75	1.0	100L	2KB2 106-08	705	10.16	14	60	5.90	150
1.1	1.5	100L	2KB2 107-08	700	15.02	14	60	4.00	150
1.5	2.0	112M	2KB2 123-08	710	20.19	14	60	2.97	150
2.2	3.0	132S	2KB2 130-08	715	29.40	18	150	5.10	300
3.7	5.0	160M	2KB2 163-08	722	48.97	18	150	3.06	300
5.5	7.5	160M	2KB2 164-08	720	72.99	18	150	2.06	300
7.5	10.0	160L	2KB2 166-08	723	99.12	20	260	2.62	400
9.3	12.5	180M	2KB2 183-08	725	122.57	20	260	2.12	400
11.0	15.0	180L	2KB2 186-08	727	144.57	25	400	2.77	500
15.0	20.0	200L	2KB2 206-08	730	196.34	25	400	2.04	500
18.5	25.0	225SX	2KB2 220-08	732	241.49	31	600	2.48	500
22.0	30.0	225MX	2KB2 223-08	733	286.78	31	600	2.09	500
30.0	40.0	250MX	2KB2 253-08	733	391.06	31	800	2.05	500

DIMENSIONS OF FOOT (B3), FLANGE (B5) & FACE (B14) MOUNTED BRAKE MOTORS



DIMENSIONS OF FOOT (B3), FLANGE (B5) & FACE (B14) MOUNTED MOTORS

Frame Size	No. of Poles	Brake Size	General					Foot mounted motors (B3)													DE Shaft						NDE Shaft						Flange mounted motors (B5)							Face mounted motors (B14)					
			L	LC	LO	AC	AD	A	B	B1	C	H	K	AA	AB	BB	BA	BA1	HA	HD	D	E	F	GA	G	DB	DA	EA	FA	GC	GB	DC	P max	M PCD	øN	øS	Z No.	T max	LA	P max	M PCD	øN	øS	Z No.	T max
63	2,4	6	270	297	-	124	106	100	80	-	40	63	7	27	122	102	27	27	6	169	11	23	4	12.5	8.5	M4	9	20	3	10.2	7.2	M3	140	115	95	10	4	3	9	90	75	60	M5	4	2.5
71	2,4,6,8	8	315	342	-	140	115	112	90	-	45	71	7	28	134	112	26	26	8	186	14	30	5	16	11	M5	11	23	4	12.5	8.5	M4	160	130	110					105	85	70	M6		
80	4(0.37kW), 6(0.25kW)		350	384				125	100	-	50	80	10	30	150	124	31	36	9	205	19	40	6	21.5	15.5	M6	14	30	5	16	11	M5	200	165	130	12		3.5	10	120	100	80			3
90S	2,4,6,8	10	365	399	-	158	125	125	100	-	50	80	10	30	150	124	31	36	9	205	19	40	6	21.5	15.5	M6	14	30	5	16	11	M5												
90L	4(0.75kW)		405	439																																								
	2		411	448						-						124		37																											
	4,6,8	12		458																	24	50	8	27	20	M8	19	40	6	21.5	15.5	M6												
	2	10	436	473	-	180	133	140	100	125	56	90	10	33	168	149	33	62	10	223							14	30	5	16	11	M5												
	8	12		483																							19	40	6	21.5	15.5	M6												
	4,6		467	514																																								
100L	2	12	519	575	221	198	175	160	140	-	63	100	12	43	200	180	53	46	14	275	28	60	8	31	24	M10	24	50	8	27	20	M8	250	215	180	15	4	4	11	160	130	110	M8	4	3.5
	4,6,8	14	485	541																																								
112M	4		537	593	228	222	185	190			70	112	12	53	230	180	53	47	15	297																								
	6,8		495	551																																								
132S	2		556	623	260	262	205	216	178		89	132	12	52	256	180	47	47	16	337	38	80	10	41	33	M12	28	60	8	31	24	M10	300	265	230				12	200	165	130	M12		
	4,6,8	18	580	647																																							
132M	2	14	594	661												218		85																											
	4,6		618	685																																								
160M	2,4,6,8	18	715	802	354	314	216	254	210	-	108	160	15	64	304	260	65	60	20	376	42	110	12	45	37	M16	38	80	10	41	33	M12	350	300	250	19	5	5	13	250	215	180	M12	4	4
160L	2		759	846						254						304		104																											
	4,6,8	20	774	861																																								
180M	2	18	776	894	381	354	236	279	241	-	121	180	15	65	335	297	66	66	24	416	48		14	51.5	42.5		42	110	12	45	37	M16	350	300	250					-					
	4,8	20																																									
180L	4,6,8	25	833	951						279						335		103																											
200L	2	20	905	1025	416	395	276	318	305	-	133	200	19	84	386	365	74	74	26	476	55		16	59	49	M20	48		14	51.5	42.5		400	350	300				15						
	4,6,8	25																																									
	6(22.0kW)	31	933	1053																																							
225M	2	25	1025	1145	436	435	297	356	286	311	149	225	19	92	428	371	74	95	28	522	60	140	18	64	53		55		16	59	49	M20	450	400	350		8		16						
225SX	4,8	31	1055	1175	466																																							
225MX	4,6,8																																											
250M	2	25	1115	1240	483	481	319	406	349	-	168	250	24	105	490	433	93	93	38	569	65			69	58		60	140	18	64	53		550	500	450				18						
250MX	4,6,8	31		1270																																							

Note: 1) Suffix "X" denotes motors other than 2 pole motors.