Smart solutions.
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DC MOTORS

LAMINATED YOKE DC MOTORS

FEATURES & APPLICATION DETAILS

INTRODUCTION

Crompton Greaves Limited, a recognized leader in the field of electrical engineering industry since 1937, offers a wide range of products and services with international quality standards.

CG offers Laminated Yoke Motors in Frame Size 100 to 315 with an output range of 1.2kW to 550kW at 1500 RPM. Mill Duty Motors, which finds application in Steel Plants, are offered in Frame Size 802 to 816 as per AISE/ IPSS Standards. Solid Yoke Motors are offered in Frames 160 to 280, with both foot and flange mounting arrangements, suitable for use in emergency applications in industries like power plants.

The features and brief details of this entire range of motors are mentioned herein in this catalogue.

The high quality standards maintained in the manufacturing and testing give superior performance- making these motors suitable for operating in all types of applications.

SALIENT FEATURES :

1. Sparkless commutation under overloads and field weakening operation range.
2. Longer Brush life due to better commutation,
3. low noise and less ripple torque, especially at low speeds- allowing the motor to coast better, due to skewed rotor construction
4. Excellent steady state and dynamic control response,
5. Compact, low weight, lower Gd2 value- allows swift mechanical response to meet frequent reversal,
6. Larger sized bearings- for longer life and trouble free operations,
7. Constant and uniform pressure; and top cushioned brushes- enhancing commutation,
8. Easy fitting and retro fitting of filters.
9. Sturdy mechanical construction,
10. Compensation :
    - Motors in Frame 100 through 280 are without compensation winding,
    - Motors in Frame 315 are with Compensation Winding,
    - Compensated Motors in Frame 250 & 280; are also being made- where the performance demands excellent dynamic performance- like in shear applications.

APPLICATIONS :

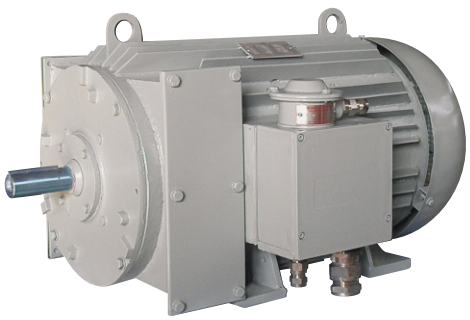
- Plastic Extruders
- Printing Machines
- Steel Industry: shear Drives, re-rolling mills, pinch rollers, coilers & uncoilers, table rollers, stretch reducing mills etc.,
- Sugar Industry: Sugar Centrifuge, Sugar Mill Drives, Crushers,
- Textile Mills
- Machine Tools
- Rubber Industry
- Cement Industry: Kiln Drive, Apron feeders, raw mill, cement mill, Mills
- Cable Industry
- Pulp & Paper Mills
- Material Handling
- Test Equipments

APPLICABLE STANDARDS :

IS 4722,

IEC 60034-1;

BS 5000 Part 99



STANDARD AND OPTIONAL FEATURES : For Frame Size of Range ASBG100 to ASBG315 under AJASA Series

Sr No	Design Parameters	Standard features	Optional features
1	Rated Armature Voltage	440 V DC	For Frame Upto ASBG132: Max 470 V DC, For Frame 160 & Above: Max 600 V DC.
2	Rated Field Voltage	220 V DC	Max Upto 500 V DC
3	Excitation Type	Shunt	Stabilized Shunt, Series, Compound *
4	Type of Mounting	B3	B35, V1, V3
5	Degree of Protection & Cooling	IP 23 & IC 06	IP 55 with IC 0041 (Surface Cooled) IP 55 with IC 0666 (Air to Air Heat Exchanger Cooled) IP 55 with IC W37A86 (Air to Water Heat Exchanger Cooled)
6	Overload Capacity & Duty Class	160% for 15 sec & Class I	125% for 2 Hrs & Class IV 150% for 2 Hrs & Class V, Any other cyclic duty applications
7	Arrangement of Terminal Box	RHS as seen from DE	Any Other Arrangement; (LHS, TOP- as seen from DE)
8	Tacho Mounting Arrangement suitable for	DTG 4000	Any other Tacho or Encoder
9	Mounting Position for Force Cooling Equipment (Blower)	TOP on NDE Side	Any other Location (RHS; LHS at NDE, RHS; LHS or TOP at DE)
10	Air Flow Direction	From NDE to DE	From DE to NDE
11	Air Filter	NIL	Dry Type Filter (Recommended for Dusty Environment)
12	Air Flow Switch	NIL	Yes
13	Bearings	Ball Bearings	Roller Bearing at DE Side; to account for high radial load application
14	Shaft End	Single Shaft Extension at DE- with Tacho mounting arrangement at NDE	Double shaft extension without tacho mounting arrangement
15	Brake mounting Arrangement	NIL	Double shaft extension with suitable flange arrangement at NDE to mount brake
16	Space heater	NIL	Resistive Heater suitable for 230 V AC; 1 Phase Supply
17	Thermal Protection	NIL	Thermisters, thermal switches, RTDs, BTDs- for alarm and tripping purposes
18	Paint Finish	631 of IS 5	Primer, Epoxy Primer and any other shades

* On demand; shunt motors with compensation windings, can be provided in frame ASBG250 & ASBG280 for application involving shear duty. These motors can accelerate & decelerate better due to compensation and low moment of inertia.

FORCED COOLING DETAILS :

Sr No	Frame	Cooling Air Flow (m^3/ sec)	Required Pressure Head (milli Bar)	Rating of the Force Cooling AC Motor
1	ASBG100	0.06	5	0.18 KW; 2 Pole
2	ASBG112	0.07	5	0.18 KW; 2 Pole
3	ASBG132	0.09	5	0.18 KW; 2 Pole
4	ASBG160	0.2	13	0.75 KW; 2 Pole
5	ASBG180	0.3	13	1.50 KW; 2 Pole
6	ASBG200	0.35	13	1.50 KW; 2 Pole
7	ASBG225	0.5	16	3.70 KW; 2 Pole
8	ASBG250	0.6	16	3.70 KW; 2 Pole
9	ASBG280	0.75	16	3.70 KW; 2 Pole
10	ASBG315	1.00	20	5.50 KW; 2 Pole

The force cooling units of the DC Motors, are driven by three phase induction motors of suitable power rating. These motors are selected strictly in accordance with the air quantity and air velocity required to ensure optimum cooling of the main dc motors.

BRUSH LIFE AND REPLACEMENT :

Sr No	Frame Size	Brush Life in Hrs
1	Up to ASBG160	15000
2	ASBG180	14000
3	ASBG200	12500
4	ASBG225	11000
5	ASBG250	11000
6	ASBG280	11000
7	ASBG315	10000

Practically sparkingless commutation is achieved with 6 pulse converter supply, even under and overload condition and specified field weakening operating speed range. As a result, the brushes have an extremely long life.

NOISE LEVELS :

CGL make laminated yoke motors achieve following noise levels :

Sr No	Frame Size	Surface Sound Pressure Level dB (A)
1	ASBG100	<70 dB (A)
2	ASBG112	<70 dB (A)
3	ASBG132	<70 dB (A)
4	ASBG160	<75 dB (A)
5	ASBG180	<75 dB (A)
6	ASBG200	<75 dB (A)
7	ASBG225	<80 dB (A)
8	ASBG250	<85 dB (A)
9	ASBG280	<85 dB (A)
10	ASBG315	<85 dB (A)

The noise levels of the motors have been calculated in accordance with DIN EN 21 680 and are well below the values permitted by EN 60034- 9.

They have been achieved both by means of design measures by optimizing the magnetic circuit and the separately driven fans.

DERATING FACTORS :

1. Deration factor due to Ambient Temperature & Altitude

Sr No	Temp	1000m	2000m	3000m	4000m
1	10 °C	1.12	1.08	1.05	1
2	20 °C	1.1	1.05	1	0.94
3	30 °C	1.06	1	0.95	0.86
4	40 °C	1	0.93	0.86	0.78
5	50 °C	0.92	0.84	0.76	0.67
6	60 °C	0.8	0.72	0.65	0.55

2. Deration factor due to Insulation:

Insulation Class F with Class B temperature rise at Rated kW : 0.8

Insulation Class H with Class F temperature rise at Rated kW : 0.8

3. Deration factor due to Overloading Class :

For application with Class I overloading (160% for 15sec) : 1.00

For application with Class IV overloading (125% for 2 Hrs) : 0.83

For application with Class V overloading (150% for 2 Hrs) : 0.70

4. Deration factor due to Protection Type and Cooling Type :

IP 23, IC 06 (SPDP, Force Cooled) : 1.0 (No Deration)

IP 23, IC 17 (SPDP, Open end duct cooling) : 1.0 (No Deration)

IP 44, 54, 55; IC 37 (TE, Closed Duct Cooling) : 1.0 (No Deration)

IP 44, 54, 55; IC 0666 (TE, Air to Air Heat Exchanger Cooled) : 0.7

IP 44, 54, 55; IC W37A86 (TE; Air to Water Heat Exchanger Cooled) : 1.0 (No Deration)

IP 44, 54, 55; IC 0041 (TE; Surface Cooled, Naturally Ventilated) : 0.15

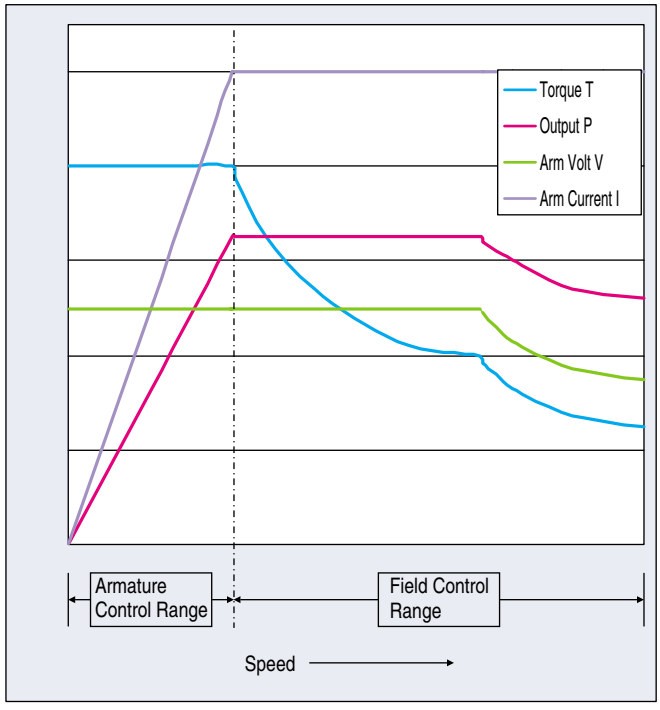
IP 23; IC 01 (SPDP; Internally Shaft Mounted Fan) : 0.30

STANDARD BEARING DETAILS :

Sr No	Frame Size	Bearing at DE	Bearing at NDE
1	ASBG100	6206 2RS	6205 2RS
2	ASBG112	6208 2RS	6206 2RS
3	ASBG132	6309 2RS	6208 2RS
4	ASBG160	6213 2RS	6213 2RS
5	ASBG180	6214 2RS	6214 2RS
6	ASBG200	6215 2RS	6215 2RS
7	ASBG225	6217 C3	6217 C3
8	ASBG250	6219 C3	6219 C3
9	ASBG280	6220 C3	6220 C3
10	ASBG315	NU224	6219 C3

Incase of applications where there will be high cantilever forces on the shaft, roller bearings with online greasing arrangement can be provided at DE; in Frame Size ASBG160 & above.

SPEED AND SPEED CONTROL :



DC Motors are operated within the armature control range until they reach the rated speed. In this range the speed of the motor is approximately proportional to armature voltage and the field current is maintained at rated value. Further, the machine can be operated by field weakening; i.e., by reducing the field current- to the maximum field weakening speed.

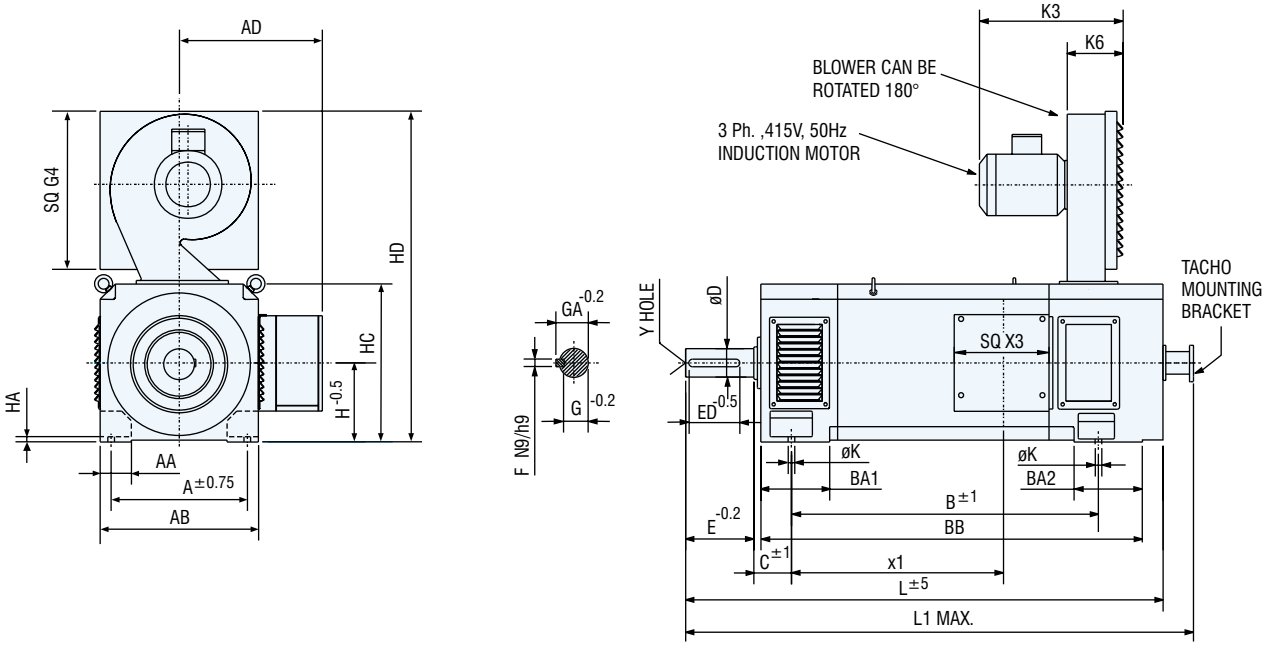
1. Armature Voltage: 440 V DC; Rated Speed: 1500 RPM; Protection: IP 23; Cooling: IC 06; Amb temp: 40 Deg C; Max Altitude: 1000 m; Overload Class I
2. The motors in Frame upto and including ASBG132 are with Insulation Class F/ F,
3. The motors in Frame ASBG160 & above are with Insulation Class H/ H,
4. Field Weakening Speed as given is indicative. Field weakening Speed Range up to 1: 3 can be offered- provided the field weakening speed is less than max safe mechanical speed.
5. For other specifications refer to nearest Sales Office.

Sr No	Frame	Rated output in kW At 1500 RPM	Rated Torque in N m	Rated Armature Current	Field Power in Watts	Efficiency in %	Max Field Weakening Speed	Max Safe Mechanical Speed	Moment of Inertia kg/m^2	Weight in kg	CG Product Code
1	ASBG100S	2.5	15.9	7.7	312	68	3350	6000	0.015	50	2.5KDC_ASBG100S
2	ASBG100M	3.7	23.6	11.2	330	70	3250	6000	0.02	61	3.7KDC_ASBG100M
3	ASBG100L	5.5	35.0	16	440	74	3100	6000	0.025	76	5.5KDC_ASBG100L
4	ASBG112M	7.5	47.7	21	400	78	3750	5400	0.0425	115	7.5KDC_ASBG112M
5	ASBG132S	11	70.0	31	616	77	2400	4600	0.09	125	11KDC_ASBG132S
6	ASBG132M	15	95.5	41	616	80	2400	4600	0.11	145	15KDC_ASBG132M
7	ASBG132L	20	127.3	52.7	968	83	2200	4600	0.14	170	20KDC_ASBG132L
8	ASBG132L	22.5	143.2	59	968	84	2200	4600	0.14	170	22.5KDC_ASBG132L
9	ASBG160A	30	191.0	78	1694	83	3000	4100	0.225	290	30KDC_ASBG160A
10	ASBG160S	40	254.6	105	1276	84	2350	4100	0.32	320	40KDC_ASBG160S
11	ASBG160M	50	318.3	131	1276	85	2700	4000	0.38	365	50KDC_ASBG160M
12	ASBG160M	56	356.5	147	1276	85	1950	4100	0.38	365	56KDC_ASBG160M
13	ASBG160L	60	381.9	158	1474	85	3000	4100	0.46	428	60KDC_ASBG160L
14	ASBG180S	70	445.6	176	2310	88	3400	3600	0.6	460	70KDC_ASBG180S
15	ASBG180S	75	477.4	189	2310	88	3400	3600	0.6	460	75KDC_ASBG180S
16	ASBG180S	80	509.2	201	2310	88	3300	3600	0.6	460	80KDC_ASBG180S
17	ASBG180M	90	572.9	228	2376	88	3300	3600	0.7	520	90KDC_ASBG180M
18	ASBG180M	100	636.5	253	2376	88	3300	3600	0.7	520	100KDC_ASBG180M
19	ASBG200S	115	732.0	292	2310	88	2800	3200	1.2	610	115KDC_ASBG200S
20	ASBG200M	135	859.3	338	2640	89	3100	3200	1.3	690	135KDC_ASBG200M
21	ASBG200M	150	954.8	374	2640	90	3050	3200	1.3	690	150KDC_ASBG200M
22	ASBG200M	158	1005.7	394	2640	90	3050	3200	1.3	690	158KDC_ASBG200M
23	ASBG225S	180	1145.8	444	2860	91	2650	3000	2.2	880	180KDC_ASBG225S
24	ASBG225M	210	1336.7	513	3190	92	2320	3000	2.5	990	210KDC_ASBG225M
25	ASBG225M	225	1432.2	552	3190	91	2320	3000	2.5	990	225KDC_ASBG225M
26	ASBG250S	235	1495.9	571	3300	92	2250	2500	3.6	1160	235KDC_ASBG250S
27	ASBG250S	280	1782.3	682	3300	92	2025	2500	3.6	1160	280KDC_ASBG250S
28	ASBG250S	295	1877.8	719	3300	92	2100	2500	3.6	1160	295KDC_ASBG250S
29	ASBG250M	325	2068.7	790	3520	93	2100	2500	4.2	1320	325KDC_ASBG250M
30	ASBG280S	400	2546.1	965	4752	93	2050	2300	6.4	1560	400KDC_ASBG280S
31	ASBG280M	450	2864.4	1080	5400	94	2000	2300	7.5	1780	450KDC_ASBG280M
32	ASBG315S	390	2482.5	960	3400	95	2000	2200	5.1	1900	
33	ASBG315M	550	3501.0	1295	3700	96	2000	2200	6.4	2040	
34	ASBG315L	550*	4200.0	1295	4300	96	2000	2200	9	2240	

* For ASBG315L; rated kW of 550 kW is offered at base speed of 1200 RPM.

LAMINATED YOKE DC MOTORS

DIMENSION CHART



FRAME	H	SHAFT EXTENSION DETAILS							FOOT HOLE DIMENSIONS										OVERALL DIMENSIONS						BLOWER DIMENSIONS		
		D	F	G	GA	E	ED	Y	A	AA	AB	B	BA1	BA2	BB	C	HA	K	AD	HC	HD	X1	L	L1	K3	K6	G4
ASBG 100S												257			290							120	460	535			
ASBG 100M	100	28	8	24	31	60	50	M10X24	160	40	198	305	60	60	340	63	9	12	190	200	445	170	505	580	235	100	220
ASBG 100L												369			405							230	570	650			
ASBG 112S	112	38	10	33	41	80	70	M12X28	190	40	220	340	100	60	420	70	10	12	220	222	470	230	585	655	235	100	220
ASBG 112M												400			480							275	645	715			
ASBG 132S												320			425							175	640	710			
ASBG 132M	132	42	12	37	45	110	90	M16X32	216	45	258	370	125	75	475	89	11	12	245	260	545	225	690	760	240	100	255
ASBG 132L												430			535							285	750	820			
ASBG 160A												530			630							245	785	852			
ASBG 160S												590			690							305	845	915			
ASBG 160M	160	60	18	53	64	140	125	M20X42	254	55	316	660	140	125	760	70	12	14	305	318	680	375	915	985	355	120	310
ASBG 160L												750			850							465	1005	1075			
ASBG 180S	180	65	18	58	69	140	125	M20X40	279	65	360	600	110	130	730	121	14	15	350	360	740	370	1020	1085	475	185	350
ASBG 180M												670			800							440	1090	1155			
ASBG 200S	200	70	20	62.5	74.5	140	125	M20X40	318	80	400	645	120	185	815	133	18	19	370	400	780	390	1090	1160	475	185	350
ASBG 200M												725			895							470	1170	1240			
ASBG 225S	225	80	22	71	85	170	140	M20X40	356	85	450	735	140	200	925	149	18	19	430	450	980	475	1290	1355	550	215	430
ASBG 225M												825			1015							565	1380	1445			
ASBG 250S	250	90	25	81	95	170	140	M24X50	406	95	500	785	150	240	1015	168	22	24	455	500	1030	530	1420	1490	530	215	430
ASBG 250M												885			1115							630	1520	1590			
ASBG 280S	280	95	25	86	100	170	140	M24X50	457	100	560	850	160	230	1100	190	22	24	485	560	1090	585	1500	1565	530	215	430
ASBG 280M												960			1210							695	1610	1675			
ASBG 315S												750			1004								1490	1650			
ASBG 315M	315	100	28	90	106	210	170	M24X65	508	110	625	840	210	210	1094	216	26	28	510	635	1185	-	1580	1740	-	-	-
ASBG 315L												930			1184								1670	1830			

Note : For Nonstandard motors, refer to nearest Sales Office.

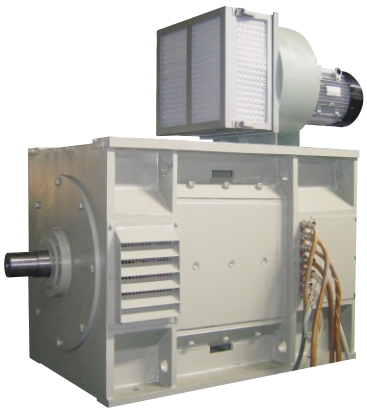
AUX MILL DUTY D.C. MOTORS TO AISE / IPSS STANDARDS

SALIENT FEATURES

- Conforming to AISE technical report no. 1-1991 / IPSS 1-03-002-94.
- Full speed, half speed and quarter speed designs available.
- Suitable for operations upto 500 volts.
- Suitable for operation on 3 phase, 6 pulse thyristor converter.
- Class 'H' insulation with class 'F' temperature rise limits.
- Armature class 'H' with VPI in solventless polyesterimide resin.
- TIG welding of armature coil connection to commutator.
- Double shaft extension 1:9.6 taper with key way paralle to taper as per AISE or 1:10 taper with key way parallel to shaft axis as per IPSS.
- Convertible between TENV & TEFV enclosure or with top mounted blower unit.
- Loose hanging leads or terminal box as required.
- Axial play of 3 mm approximately of shaft.
- Brush position of 45 deg. for easy access for maintenance (except in case of laminated yoke version).
- Motor mounting dimension can be matched to replace 600 series motors to AISE or Russian standard.

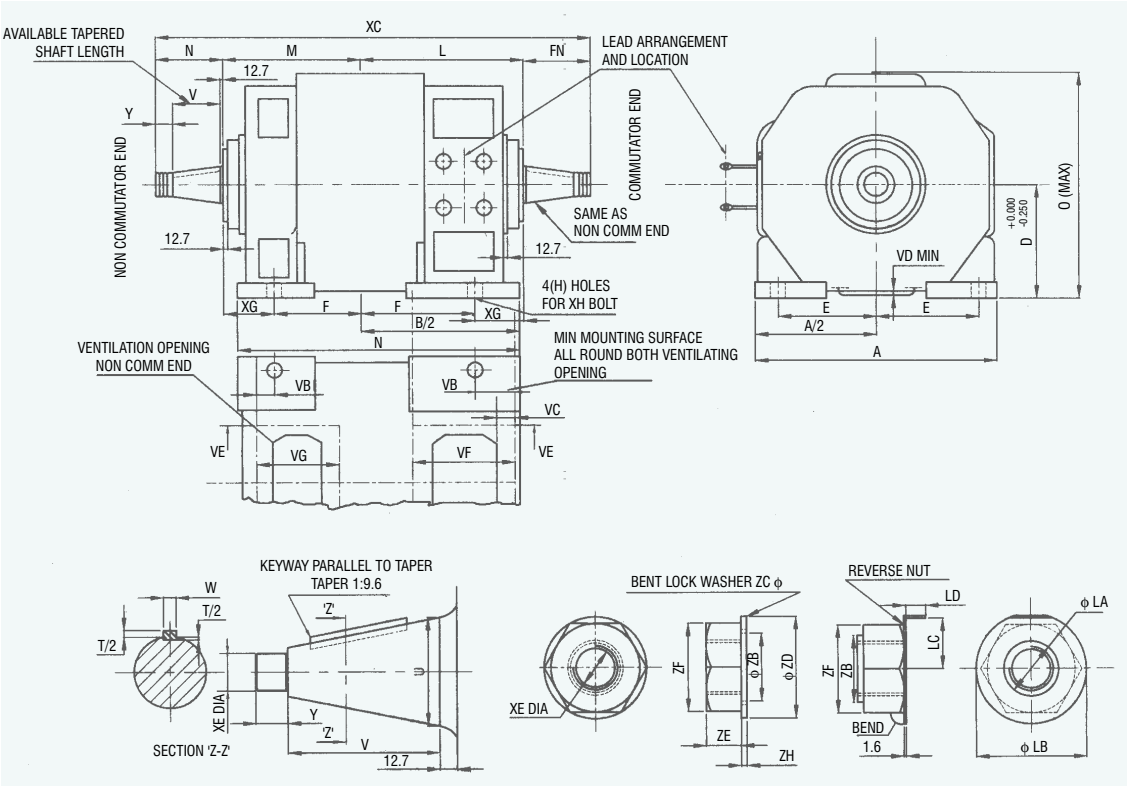
STANDARD DATA OF MILL DUTY FRAMES 802 TO 816 :

FRAME	kW RATING FORCED VENTILATED CONTINUOUS TENV ONE HOUR	BASE SPEED (RPM) AT 230V			ADJUSTABLE SPEED	SAFE SPEED (MECH)	ROTOR GD SQ	APPROX TOTAL WEIGHT
		SHUNT	COMP	SERIES		RPM	KGM SQ	KG
802C	7.5	900	900	800	900 / 1800	3600	0.8	300
803	11	800	800	725	800 / 2000	3300	1.5	400
804	15	725	725	650	725 / 1800	3000	2.6	500
806	22	650	650	575	650 / 1950	2600	4.5	700
808	37	575	575	525	575 / 1725	2300	8	900
810	52	550	550	500	550 / 1650	2200	15	1200
812	75	515	515	475	515 / 1300	1900	23	1600
814	112	500	500	460	500 / 1250	1700	36	2200
816	150	480	480	450	480 / 1200	1600	56	3000



MILL DUTY DC MOTORS

DIMENSION CHART



FRAME SIZE	A	B	XC	D	E	F	XG	H	XH	L M	O
802	381	520.7	835.02	193.68	158.75	209.55	92.25	24	M20	304.8	400
803	431.8	596.9	939.8	215.9	177.8	228.6	114.3	28	M24	342.9	445
804	457.2	647.7	990.6	228.6	190.5	241.3	127	28	M24	368.3	470
806	508	698.5	1073.15	254	209.55	266.7	127	28	M24	393.7	521
808	577.9	793.8	1206.5	285.75	238.13	314.32	130.17	35	M30	444.5	584
810	622.3	825.5	1276.36	311.15	260.35	330.2	146.05	35	M30	476.25	635
812	685.8	914.4	1397	339.73	285.75	361.95	158.75	35	M30	520.7	692
814	762	1054.1	1543.05	374.65	317.5	406.4	184.15	42	M36	590.55	762
816	825.5	1187.45	1714.5	406.4	342.9	444.5	215.9	42	M36	660.4	829

SHAFT					KEY			SHAFT NUT AND LOCK WASHER					
N FN	U	V	Y	XE	WIDTH	THK	ZB	ZC	ZD	ZE	ZF	ZG	ZH
112.71	44.45	69.85	30.16	M30X2	12.7	12.7	35	36	58.2	22	48	6	4.5
127	50.8	82.55	31.75	M36X3	12.7	12.7	41	42	68.2	24	55	7	5.5
127	50.8	82.55	31.75	M36X3	12.7	12.7	41	42	68.2	24	55	7	5.5
142.87	63.5	95.25	34.93	M42X3	12.7	12.7	47.5	48	75	27	65	7	5.5
158.75	76.2	107.95	38.1	M48X3	19.05	12.7	51.5	52	83	30	75	8	6.5
161.93	82.55	107.95	41.28	M56X4	19.05	12.7	59.5	60	91	32	85	8	6.5
177.8	92.075	120.65	44.45	M64X4	19.05	12.7	71.5	72	103	36	95	8	6.5
180.96	107.95	120.65	47.63	M80X4	25.4	19.05	89.5	90	121	40	115	8	6.5
196.85	117.475	133.35	50.8	M90X4	31.75	19.05	99.5	100	131	632	130	8	6.5

VENT DUCT FLANGE						SURFACEBEND LOCK PLATE				BEARING NO.
VB	VC	VD	VE	VF	VG	LA	LB	LC	LD	(BOTH SIDE)
22.2	9.5	9.5	184.2	120.7	55.6	31.5	63.5	25.4	6.4	NJ310
44.5	12.7	9.5	215.9	127	82.6	37.5	73	28.5	8	NJ311
57.2	12.7	9.5	228.6	139.7	69.9	37.5	73	28.5	8	NJ313
54	12.7	9.5	260.4	152.4	85.7	43.5	92.1	31.8	14.3	NJ315
50.8	12.7	19	292.1	165.1	88.9	49.5	109.5	38.1	16.7	NJ317
54	12.7	19	304.8	177.8	92.1	57.5	120.7	41.3	19	NJ319
63.5	15.9	19	349.3	209.6	123.8	65.5	127	47.6	15.9	NJ321
85.7	15.9	19	387.4	235.0	139.7	81.5	149.3	56.3	18.3	NJ324
114.3	25.4	19	406.4	279.4	168.3	91.5	165.5	66.7	15.9	Nj326

Notes :

1. Shaft Extension threading can be of inch series on request.
2. Terminal Box can be provided on request.
3. Motors with force cooling unit or heat exchangers also can be given on request.
4. Generally conform to A.I.S.E. STD.1. Can be given to I.P.S.S.1-03-002-94 standard also.
5. Laminated type of construction can be offered on request (with blower or without blower.

LT Motors Division designs and manufactures DC Motors as against customer specific specifications in solid yoke construction.

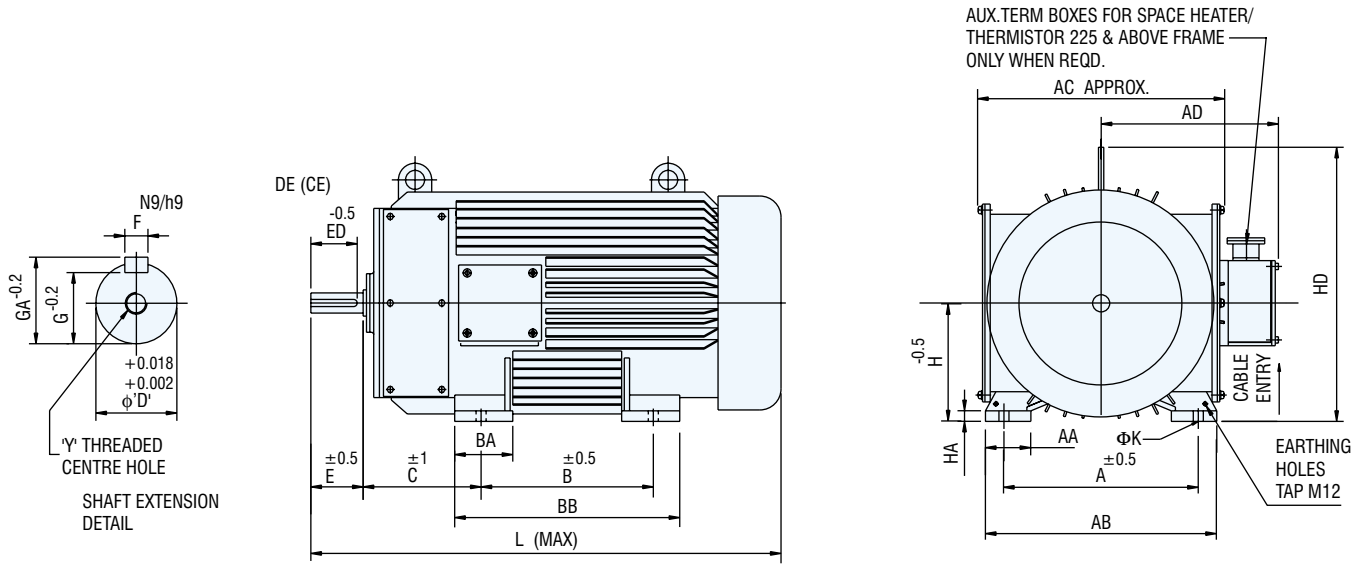
Salient features of these motors are as below :

1. Solid yoke motors are generally used in emergency applications. In power plants, during shutdown, these motors operate the critical processes; like lubrication system of turbo generators; air scanner systems of boiler systems; until the power plant is put into operation again. They are also suitable to operate in dusty and outdoor environments that prevails in cement plants, steel industry etc.,
2. Since they are used in emergency applications; they are run from battery power sources. The standard battery voltages for these motors are 110 V, 125 V & 220 V DC,
3. Stabilization of shunt winding helps these motors to have higher starting torque and therefore quick acceleration during starting. The stabilization also relieves the motor shaft from access load incase the system gets jammed for external reasons,
4. Details of the Frame Sizes :

Sr. No	Frame	Description	Mounting
1	AES160	Totally Enclosed & Surface Cooled	B3 or V1 or B35
2	AFS180, AFS225 & AFS280	Totally Enclosed & Fan Cooled	B3
3	AUS180, AUS225 & AUS280	Totally Enclosed & Fan Cooled	V1

5. Standard temperature class of these motors is Class F/ B, with Continuous duty,
6. Frame size is decided in accordance with rated output, rated voltage, rated speed, ambient temperature, temperature rise and the starting duty required.

OUTLINE DIMENSION DRAWING FOR SOLID YOKE FOOT MOUNTED D.C. MOTOR

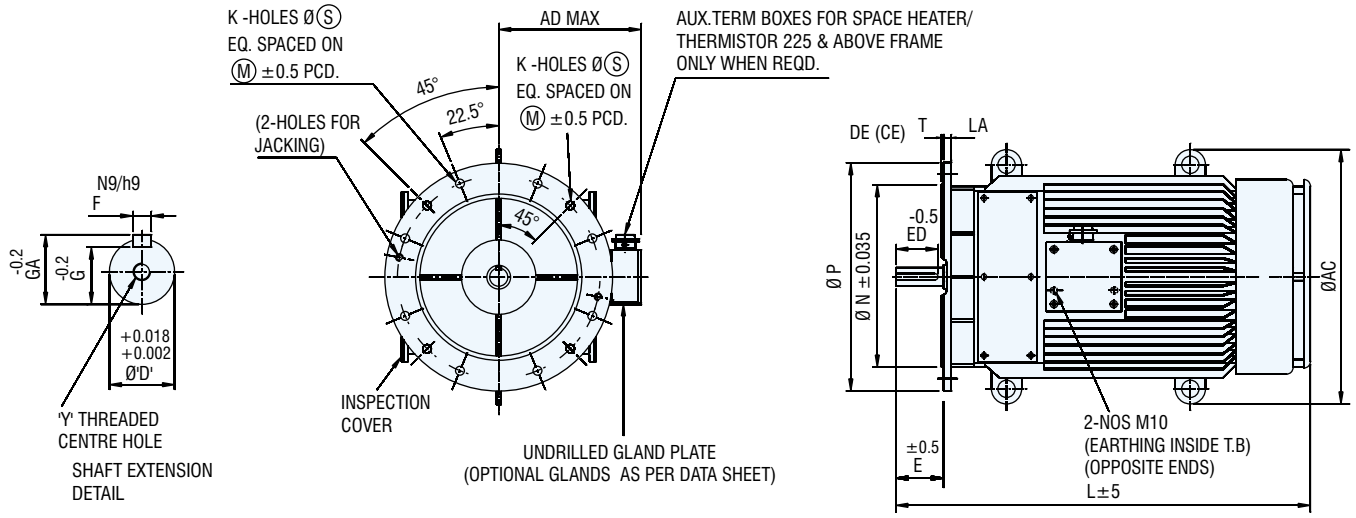


ALL DIMENSIONS ARE IN mm

FRAME	FOOT FIXING							SHAFT AND KEY *								OVERALL				
SIZE	A	B	C	H TOL.	AA	AB	BA	BB	K TOL.	D TOL.	E	ED	F TOL.	GA TOL.	G	Y	AD	AC	L	HD	HA
AFS180U	254	305	145	180.0	54	298	70	200	14.5	38.002	80	70	10.00	41.0	33.0	M12X28	265	400	610	415	14
AFS180A		305						250											650		
AFS180S		305						300	14.0	38.018			9.957	40.8	32.8				700		
AFS180M		305						350											770		
AFS225S	368	216	245	225	85	440	90	285	19.5	42.018	110	90	12.00	45.0	37.0	M16X32	360	500	815	520	20
AFS225M		270						340											875		
AFS225L		320					110	420	19.0	42.002			11.957	44.8	36.8				910		
AFS225LX		370						470											960		
AFS225X		420						520											1010		
AFS280A	457	460	232	280	90	550	100	520	24.5	75.030	140	120	20.00	79.5	67.5	M20X40	510	600	1185	635	26
AFS280S		550						610											1275		
AFS280M		595						675	24.0	75.011			19.957	79.3	67.3				1375		

NOTES : * AUXILIARY TERMINAL BOX WILL BE PROVIDED FOR SPACE HEATER TERMINATION.
* UNDRILLED GLAND PLATE IF NOT SPECIFIED.

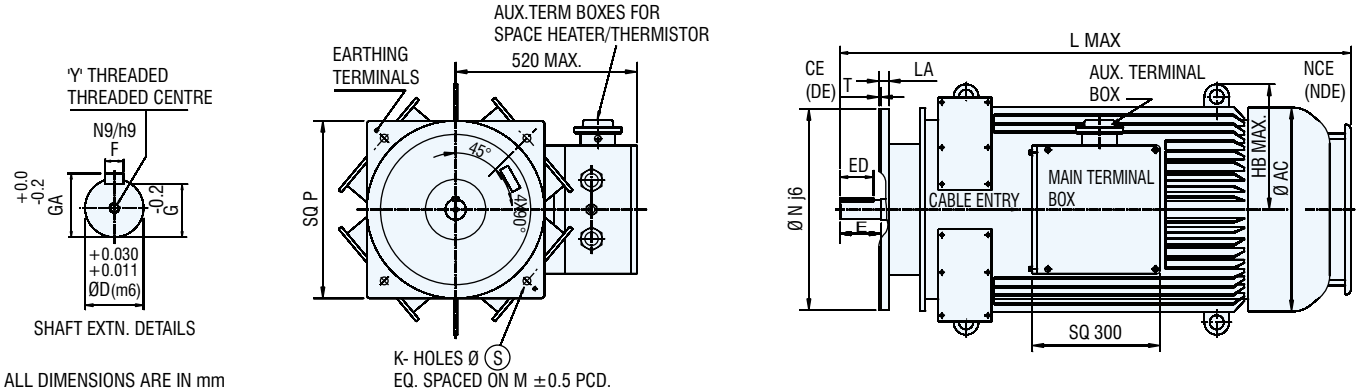
OUTLINE DIMENSION DRAWING FOR (V1) SOLID YOKE FLANGE MOUNTED D.C. MOTOR



FRAME SIZE	FLANGE FIXING							SHAFT AND KEY *						OVERALL			
	M TOL.	N TOL.	P	S	T	LA	K	D TOL.	E	ED	F TOL.	GA TOL.	G	Y	AD	AC	L	HD
AUS160M	300.5 299.5	250.00 249.96	350	19	5	15	4	48.018 48.002	80	70	14.00 13.957	51.5 51.3	42.5 42.3	M16X28	250	450	700	450
AUS180A	300.5 299.5	250.00 249.96	350	19	5	18	8	38.002 38.018	80	70	10.00 9.957	41.0 40.8	33.0 32.8	M12X28	270	500	800	500
AUS180S																	850	
AUS180M																	920	
AUS180M	400.5 399.5	350.00 349.96	450	19	5	18	8										850	
AUS225L	300.5 299.5	250.00 249.96	350	21	6	20	4	48.018 48.002	140	120	14.00 13.957	51.5 51.3	42.5 42.3	M16X32	410	535	1085	535
AUS225S	500.5 499.5	450.00 449.96	550	19	5	20	8	60.030 60.011	140	130	18.00 17.957	64.0 63.8	53.0 52.8	M20X40	410	585	945	520
AUS225M																	1005	
AUS225L																	1055	
AUS225X																	1155	

NOTES : * AUXILIARY TERMINAL BOX WILL BE PROVIDED FOR SPACE HEATER TERMINATION.
* UNDRILLED GLAND PLATE IF NOT SPECIFIED.

OUTLINE DIMENSION DRAWING FOR (V1) SOLID YOKE FLANGE MOUNTED D.C. MOTOR



ALL DIMENSIONS ARE IN mm

FRAME SIZE	FLANGE FIXING							SHAFT AND KEY *						OVERALL			
	M TOL.	N TOL.	P	S	T	LA	K	D TOL.	E	ED	F TOL.	GA TOL.	G	Y	AD	AC	L	HD
AUS280A	550.5 549.5	500.02 499.98	500	24	6	30	4	55.030 55.011	110	100	16.00 15.957	59.0 58.8	49.0 48.8	M20X40	520	500	1220	500
AUS280S																	1305	
AUS280M																	1400	

NOTES : AUX TERMINAL BOX IS PROVIDED FOR SPACE HEATER TERMINALS.
GLAND PLATE DRILLING AND GLANDS AS PER DATA SHEET. (IF NOT MENTIONED IN DATA SHEET UNDRILLED GLAND PLATE IS GIVEN)

Northen Region Sales Office :

New Delhi :
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9-10, Bahadur Shah Zafar Marg,
Near ITO Crossing, New Delhi - 110 002
Phones : (011) 23460700

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GT Road, Jalandhar - 144 001
Phones : (0181) 3240990

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Jangali Maharaj Road, Pune 5.
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Bannerghetta Road, Bilekahalli, Bangalore 560 076.
Phones : (080) 41391908

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East : 21, R.N.Mukherjee Road, Kolkata-700 001. Phones: (033) 22489160.

West : Kanjur Marg (E), Mumbai 400 042. Phones : (022) 67558590.

South : 3A, MGR Salai, Kodambakkam High Road, Nungambakkam, Chennai-600 034.
Phones : (044) 23651369.

NOTE : As the design and manufacture of Crompton Greaves electrical equipment are subject to constant improvement, the product supplied may differ in some details from the specifications and illustrations given in this booklet.
For more details, contact nearest Branch Office.

Crompton Greaves Limited

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W : www.cgglobal.com

Cat No.: LTM / DC / 10 / SEPT. 11