



Bharat Bijlee has developed a special series of Cane un-loader motors for unloading cane at sugar mills. These motors are designed after thorough study of the Cane un-loader application in sugar mills.

Application

These motors are primarily crane duty motors suitable for very high no. of switching per hour. These motors can be used for lifting applications where high switching frequencies lead to overheating and burnouts. These motors are developed with specially designed squirrel cage rotor and they readily replace Slipring induction motors.

Salient Features

- **Very high no. of switching:** These motors are suitable for very high no. of switching i.e. 900 starts/stop per hour which includes inching and plugging.
- **Special winding & impregnation:** The stators are wound with dual coated (DC) winding wires as per IS13730 part 13 and winding is impregnated with VPI process. This improves the thermal withstand capacity of the motor.
- **Robust construction:** Shaft material is given special heat treatment to withstand high intermittent load. These motors have special squirrel cage die cast rotors which ensure minimum maintenance and trouble free operation.
- **Forced cooling:** This ensures continuous cooling of the motor.
- **Built in thermal protection:** Built in thermal protection is provided by embedding thermostats in the winding. This ensures protection of the motor against failure due to excessive heating caused by severe starting duty, single phasing, overloading, low voltage etc.
- **Compact design:** Compact in size as the auxiliary fan motor used for forced Cooling is an integral part of the main motor.

Product Range

Frame Size	kW range
160L to 225M	11 to 30

Electrical Features

Operating Conditions:

- Supply Voltage : 415V ± 10%
- Frequency : 50Hz ± 5%
- Combined Variation : ± 10%
- Duty : S5, 50% CDF, 900 Switching per hour.

Ambient

Motors are designed for ambient temperature of 45°C.

Altitude

Motor are designed for altitude up to 1000m above mean sea level.

Insulation

The motors are provided with class F insulation scheme with temperature limited to class B limits.

Mechanical Features

Construction:

TEFC Horizontal foot mounting (B3) as per IS 1231.
TEFC Horizontal flange mounting (B5) as per IS 2223.

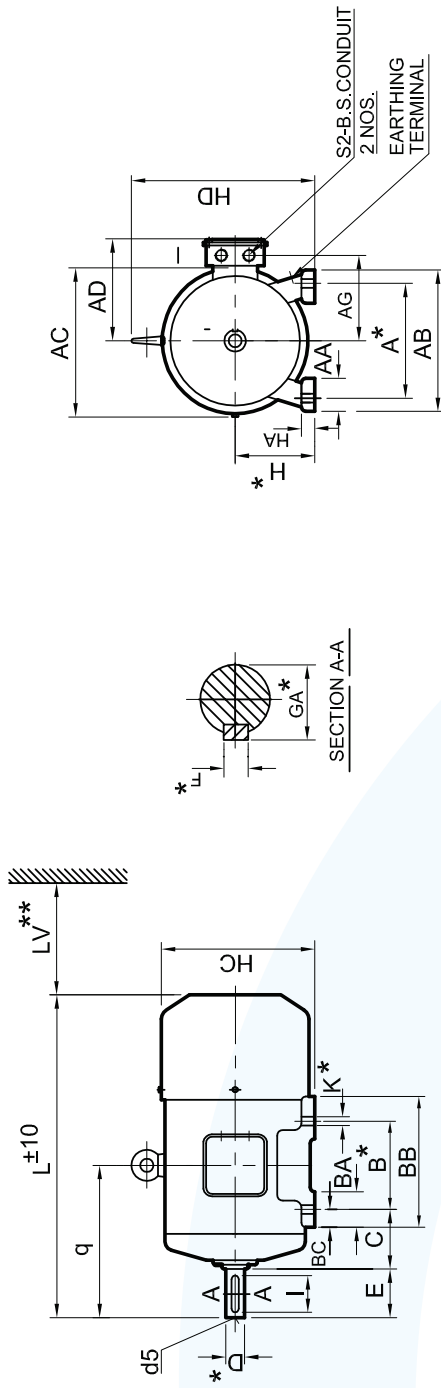
Terminals Box Location

As standard practice terminal box will be located on RHS when viewed from DE side. However motors can be offered with Terminal Box location on LHS when viewed from DE side or top on request.



Rated Output		Frame Size IEC	Type Ref. B3 Construction	Operating Characteristic at Rated output			Starting Current to rated current Ratio	Starting torque to rated Torque Ratio	Pullout torque to rated torque Ratio	Rotor GD ² kgm ²	Net Weight B3 Constr. kg
kW	HP			Rated Speed RPM	Rated Current Amps	Rated Torque kg.m					
11	15	160L	MF16L673	965	21.6	11.1	5.5	2.25	2.30	0.4	140
15	20	180M	MF18L613	940	29	15.5	5.5	2.25	2.30	0.68	190
18.5	25	180L	MF18L633	950	36.9	19.0	5.5	2.25	2.30	0.82	220
22	30	200L	MF20L633	955	43	22.4	5.5	2.25	2.30	1.2	260
30	40	225M	MF22M643	975	54	30.0	5.5	2.25	2.30	2.42	395

Dimensional Details: Cane Unloader Motor Type MF Foot Mounted (B3) TEFC Frame 160L-225M



IEC Fr. size	Pole	GENERAL										FIXING		T. BOX				SHAFT									
		A*	B*	C	H*	K*	AB	BB	AA	BA	BC	HA	HC	HD	AD	L	AC	LV**	q	AG	S2 B.S.C.	D*	E	F*	GA*	I	d5
160L	6	254	254	108	160	15	310	294	58	70	23	20	318	366	246	779	316	60	345	204	1"	42	110	12	45	105	M16
180L	6	279	279	121	180	15	344	319	65	70	23	26	357	412	280	922	354	70	371	225	1 1/2"	48	110	14	51.5	100	M16
200L	6	318	305	133	200	19	398	355	85	85	28	32	397	462	319	965	394	80	396	249	2"	55	110	16	59	100	M20
225M	6	356	311	149	225	19	436	361	85	85	28	34	450	509	344	1037	450	90	445	273	2"	60	140	18	64	130	M20

TABLE A

Dimension	Tolerance	Specification
A, B	±0.75	
H	-0.5	
K	+0.430	IS : 1231
	+0.520	15 Ø
	19 Ø	

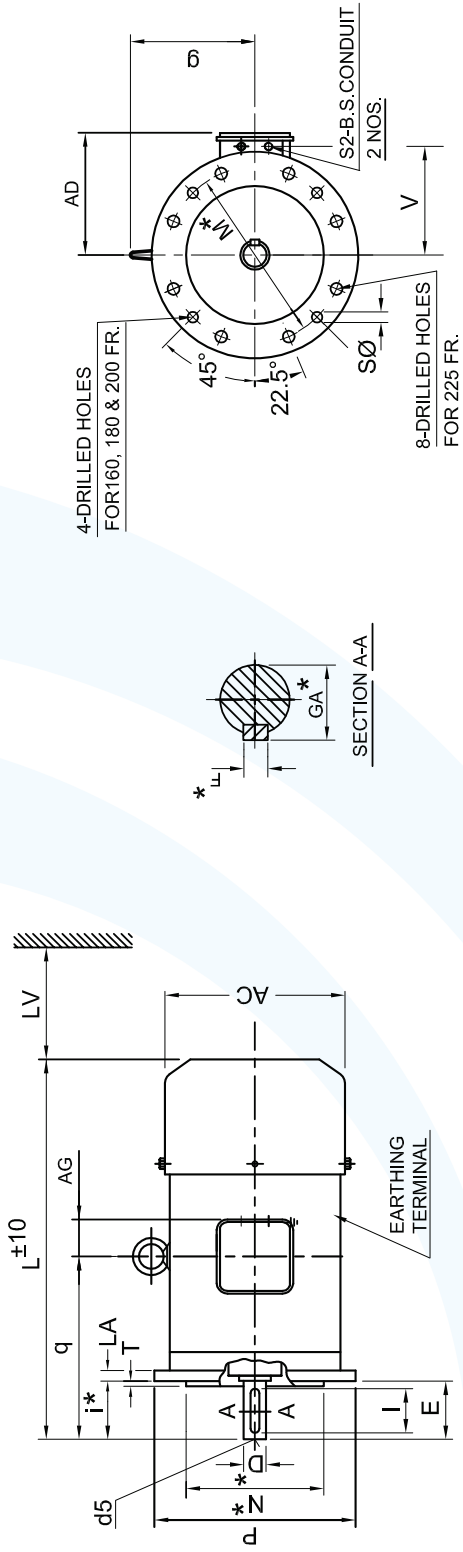
*Refer TABLE A for tolerances

Dimension	Tolerance	Specification
D	k6	42, 48 Ø
	m6	55, 60 Ø
GA, F		IS : 1231
		IS : 2540
d5(centering)		IS : 2540

- Online re-greasing arrangement is provided in frame sizes 225M
- Also suitable for B6, B7, B8, V5 & V6 mounting as per IS 2253
- Key / key way fit : h9/N9
- ** Minimum distance for efficient cooling of motor to be maintained by user

All dimensions are in mm unless otherwise specified. CAT-F-1622-3-1

Dimensional Details: Cane Unloader Motor Type MF Flange Mounted (B5) TEFC Frame 160L-225M



IEC Fr. size	FIXING										GENERAL										T. BOX					SHAFT				
	Pole	P	N*	M*	i*	S	T	LA	AD	AC	L	LV**	g	V	q	AG	S2 B.S.C.	D*	E	F*	GA*	I	d5							
160L	6	350	250	300	110	19	5	13	246	316	779	60	206	204	345	63	1"	42	110	12	45	105	M16							
180L	6	350	250	300	110	19	5	13	280	354	922	70	232	225	371	97	1 1/2"	48	110	14	51.5	100	M16							
200L	6	400	300	350	110	19	5	15	319	394	965	80	262	249	396	172	2"	55	110	16	59	100	M20							
225M	6	450	350	400	140	19	5	16	344	450	1037	90	284	273	445	172	2"	60	140	18	64	130	M20							

TABLE A

Dimension	Tolerance	Specification
N	j6	OVER 450
M	±0.5	OVER 265
i	±1.5	OVER 85

*Refer TABLE A for tolerances

Dimension	Tolerance	Specification
D	k6	42.48 Ø
	m6	55.60 Ø
GA,F		IS : 2048
d5(centering)		IS : 2540

- Online re-greasing arrangement is provided in frame sizes 225M
- Also suitable for V1 & V3 mounting as per IS 2253
- Key / key way fit : h9 / N9
- ** Minimum distance for efficient cooling of motor to be maintained by user

All dimensions are in mm unless otherwise specified.
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