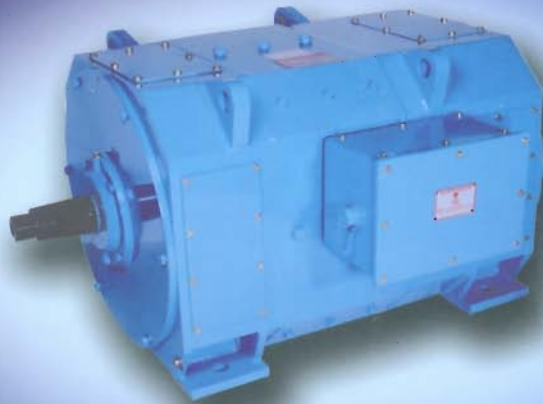


MILL DUTY DC MOTORS 800 SERIES



● ROBUST ● RELIABLE ● EFFICIENT

FRAMES: 802 TO 818
RATINGS: 7.5kw TO 187kw



INTEGRATED ELECTRIC CO .PVT.LTD.

Bengaluru, India

Established in 1982 **integrated electric**, (IEC) a multi product enterprise manufactures high quality electrical rotating machines and drives for various industrial applications. IEC has three units in Bangalore, manufacturing **DC Motors AC Motors AC Generators and AC variable speed drives** in an impressive range and variety.

IEC manufactures Mill Duty DC motors between 7.5kW to 187kW in AISE frame sizes 802 to 818.

Integrated Electric Mill Duty Motors Robust – Reliable – Efficient

The mill duty DC motors conform to AISE No. 1 – 1991 and IPSS:1-03-002-94 and are designed to meet all the stringent application requirements of steel plants like ruggedness, high dynamic response, repetitive overload capability and reliability. These motors are not only suitable for operation in the steel rolling mill environment but can also be used in applications which call for robust drives to meet arduous duty conditions.

The motor designs ensure optimum utilization of the internal space, considering electrical, mechanical and magnetic design aspects and thus offers better margins on temperature and commutation. Keeping in mind the varied requirements of the steel industry these motors are available in FULL SPEED, HALF SPEED AND QUARTER SPEED options.

The motors are manufactured in class 'H' Insulation. For continuous duty ratings at an ambient temperature of 45° C the temperature rise is restricted to 75 K by the thermometer method and 110 K by the resistance method.

The motors are suitable for operation with adjustable voltages from thyristor converters. The motors are generally suitable for an armature voltage of 230 V DC and can produce twice the output at 460 V DC with correspondingly higher speeds. The motors are also suitable for operation up to 500 V DC as stipulated by AISE and IPSS. The totally enclosed force ventilated (TEFV) and the totally enclosed Non – ventilated (TENV) motors are mutually convertible by using suitable cover plates. The motors can be taper shaft extensions of 1:9.6 or 1:10 as required by the application.

Salient Features:

- Laminated Yoke
- Armature core is built with replaceable shaft.
- High Dynamic Response-di/dt > 250 In/Sec.
- TIG welding of armature conductors to commutator risers for high current requirements.
- Vacuum Pressure Impregnation of armatures provide better insulation properties and hence increased reliability.
- Shaft made of EN 24 – alloy steel

- Class H insulation
- Fully compensated machines ensure spark free commutation throughout speed range even under weakened field conditions.

Design & Manufacturing

'Care' is the buzzword in IEC. We specialize in designing and manufacturing high quality, tailor-made machines and are capable of delivering them within short delivery times.

Our design departments acts with rapidity and precision to select and design machines which address the nuances of every individual application. Our suppliers too are conditioned to act quickly and deliver high quality components. Our inspection plan ensures that there is smooth transition when the machines are taken up for production.

Critical items like the commutator are manufactured in-house and rigorous monitoring and testing ensure that their performance and reliability meet our high standards. We have complete fabrication and machining facilities for stators to ensure dimensional accuracy.

Our facilities include the following:

- Design center • Commutator Shop • Fabrication Shop
- Coil Winding Shop • Rotor Assembly Shops • Machine Shops • Final Assembly Shops • Testing Facilities

Some important machines are listed below:

- CNC Machining Center • Vertical Turret Lathe
- Horizontal Boring Machine • Automatic Tig Welding Machine • CNC Coil Winding Machine • CNC Insulation Cutting Machine • Vacuum Impregnation Plant • 3 Ton Balancing Machine • 3000-Amp Testing Facility

ISO 9001 Company

IEC has ISO 9001 certification for design development and production of DC machines. Our quality systems ensure that our product quality is consistent and our machines are delivered on time. Indeed our market reputation for a high product quality is a reflection of our carefully thought-out systems, and thousands of our customers in India and abroad would affirm this.

Geared up for service

IEC's sales and service offices in Delhi, Mumbai, Chennai, Hyderabad, Ahmedabad, Ranchi, Kolkata, and Bangalore are staffed with experienced personnel. From assisting in selection of the best machine for an application, to commissioning and servicing machines at site, they are capable of resolving all issues promptly. Full equipped service center at Bangalore is adept at expediting emergency repairs. Thus, when you buy from IEC, you buy a life time commitment for service.

LIST OF APPLICATIONS AND REFERENCES

Hot Strip Mill Roller Tables	Shears	Cranes	Material Handling	Auxiliary Drives	Screw Down
Jindal Iron & Steel Jindal Vijayanagar Steel Tata Steel	Indian Iron & Steel Visakhapatnam Steel	Indian Iron & Steel ZCCM: Zambia	CIMMCO NMDC	Essar Steels, Ispat Industries, Maharashtra Seamless Tubes, Mahindra Ugine, Visakhapatnam Steel	Jindal Vijayanagar Steel

MOTOR DATA

Frame	Maximum Mechanical Speed (rpm)	Bearings (CE&NCE)	Max Field Power (Watts)	Induction Motor Rating** (for TEFV)	Air Requirement for Continuous Forced Ventilated Ratings		
					Quantity	Static Pr. At Inlet (mm.WG)	
						m ³ /Sec	NCE
ILMD 802	3600	NJ 310	450	0.37kW/2 Pole	0.075	25	13
ILMD 803	3300	NJ 311	525	0.37kW/2 Pole	0.095	32	13
ILMD 804	3000	NJ 313	900	0.37kW/2 Pole	0.118	32	13
ILMD 806	2600	NJ 315	1100	1.5 kW/2 Pole	0.158	38	19
ILMD 808	2300	NJ 317	1400	2.2 kW/2 Pole	0.200	38	19
ILMD 810	2200	NJ 319	1500	2.2 kW/2 Pole	0.248	45	26
ILMD 812	1900	NJ 321	1950	2.2 kW/2 Pole	0.354	51	38
ILMD 814	1700	NJ 324	2250	2.2 kW/2 Pole	0.425	57	26
ILMD 816	1600	NJ 326	2250	5.5 kW/ 4 Pole	0.566	64	32
ILMD 818	1500	NJ 328	2400	5.5 Kw/ 4 Pole	0.755	76	38

**415 V, 3 Ph, 50Hz, TEFC, AC Motor conforming to IS 325.

RATING CHART

Frame	Totally Enclosed 1 Hr Or Force Ventilated Continuous					TENV Series Motor 30-Min	TENV 30% Time-on-Duty Cycle#						Rotor GD2 Kam ²	Motor Weight Kg	
	kW	rpm					kW	rpm	Series		Compound				Shunt
		Series	Compound	Shunt	Adjustable Speed**	kW			rpm	kW	rpm	kW	rpm	kW	rpm
ILMD 802	7.5	800	900	900	900/1800	10	675	7.5	800	7	940	7	1000	1.4	275
ILMD 803	11	725	800	800	800/2000	14	620	11	725	11	840	10	880	3	370
ILMD 804	15	650	725	725	725/1800	19	580	15	650	14	775	13	800	6.2	460
ILMD 806	22	575	650	650	650/1950	29	500	22	575	21	690	18	715	10	625
ILMD 808	37	525	575	575	575/1725	49	450	30	570	28	625	26	630	20	860
ILMD 810	52	500	550	550	550/1650	68	440	45	550	39	615	34	600	29	1175
ILMD 812	75	475	515	515	515/1300	101	420	64	525	56	580	45	565	36	1575
ILMD 814	110	460	500	500	500/1250	150	400	86	515	82	565	64	560	70	2150
ILMD 816	150	450	480	480	480/1200	199	400	110	500	105	540	82	535	180	2910
ILMD 818	187	410	435	435	435/1100	244	360	139	485	124	490	98	470	212	3550

** A light stabilizing series field may be used as required to obtain these speed ranges.

Continuously repeated duty cycle of 5 min duration with load on for 90 sec, Power off for 210 sec, with shunt field continuously excited.

- Ratings declared are at 230 V armature voltage.
- Max. armature voltage 500 V.
- All motors are laminated yoke, non-split, compensated.

RATING CHART FOR FULL, HALF & QUARTER SPEED MILL DUTY DC MOTORS

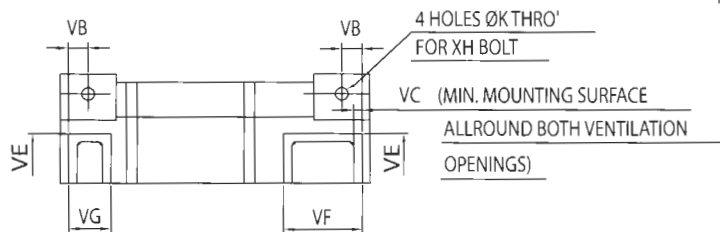
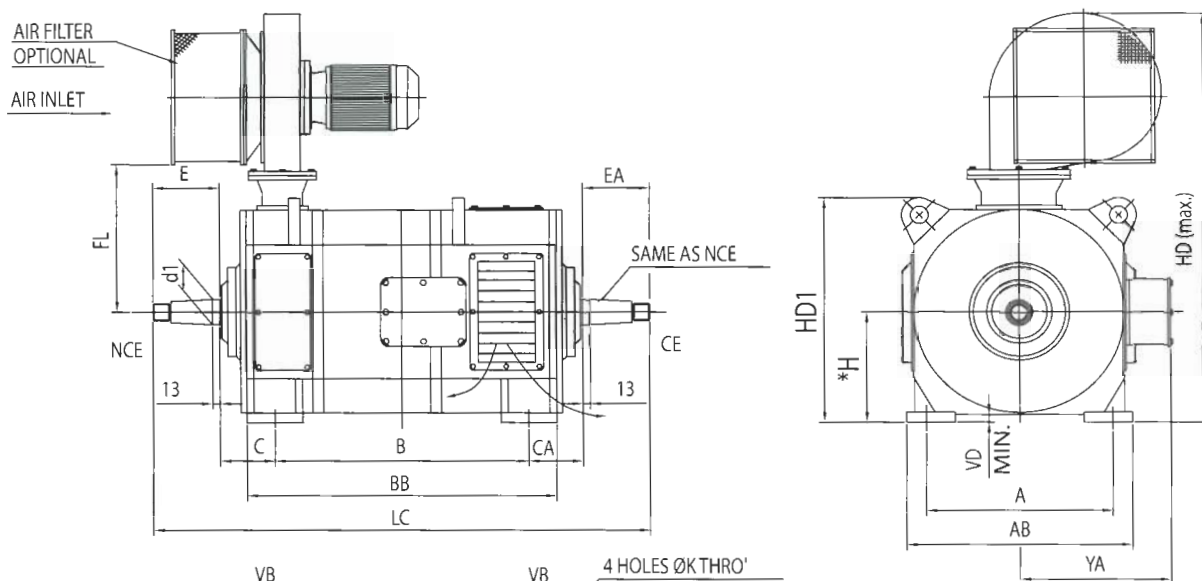
Frame	Ref	Speed at		Power at	
		230 V	230 V	230 V	460 V
ILMD 802	F	900	1885	7.5	15.5
	H	405	900	3.4	7.6
	Q	160	404	1.3	3.3
ILMD 803	F	800	1670	11	23
	H	365	800	5	11
	Q	145	360	2	5
ILMD 804	F	725	1510	15	31
	H	330	725	7	15
	Q	135	330	3	7.5
ILMD 806	F	650	1355	22	46
	H	300	650	10	22
	Q	125	305	4	10.3
ILMD 808	F	575	1195	37	76.5
	H	265	575	17	37
	Q	115	275	7.5	18
ILMD 810	F	550	1140	52	108
	H	255	550	24	52
	Q	110	260	10.5	25
ILMD 812	F	515	1070	75	156
	H	240	515	35	75
	Q	110	260	16	38
ILMD 814	F	500	1045	112	234
	H	230	500	52	112
	Q	105	251	24	57
ILMD 816	F	480	1000	150	311
	H	222	480	69	150
	Q	97	228	30	71
ILMD 818	F	435	905	187	389
	H	201	435	87	187
	Q	90	212	39	92

Legend: F-Full Speed; H- Half Speed; Q- Quarter Speed

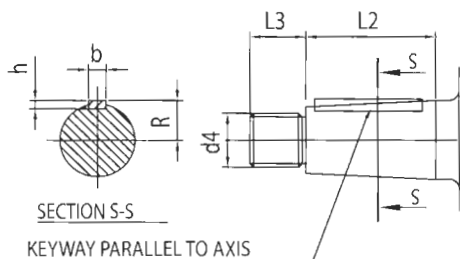
- The ratings declared above are for forced ventilation only.
- For special requirements, please contact Works.
- We can also offer these motors with CACA & CACW cooling with corresponding ratings in frames 810 & above

OVERLOADS			PERMISSIBLE STALL CURRENT FOR TENV MOTORS	
% Load	% Rated Speed		% Load	Time
	at 230V	at 460V		
300	200	100	300	15 Sec.
250	250	140	200	30 Sec.
200	300	200	100	2 Min.
			50	5 Min.
			40	1 Hr.

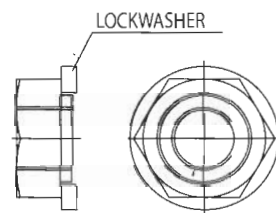
DIMENSION SHEET : IPSS



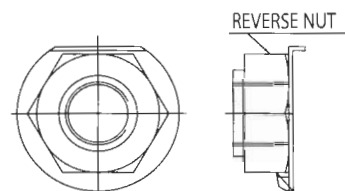
NOTE:-
*TOLERANCE ON H
802 TO 806: +0.0
 -0.5
808 TO 818: +0.0
 -1.0



SHAFT EXTENSION DETAILS FOR 1:10 TAPER



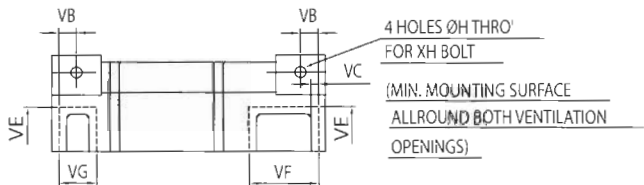
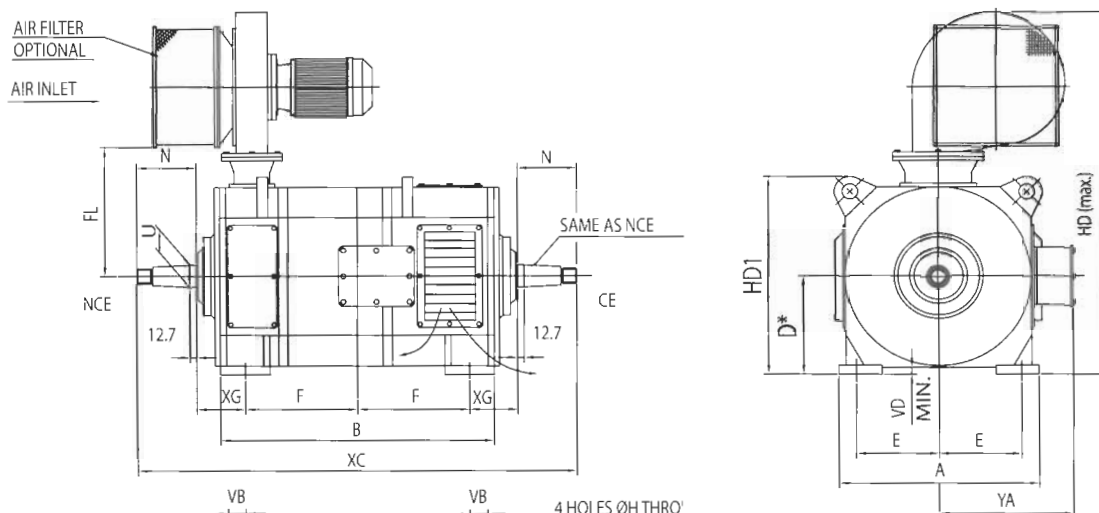
SHAFT NUT & SPLIT LOCK WASHER



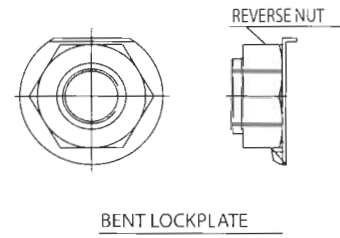
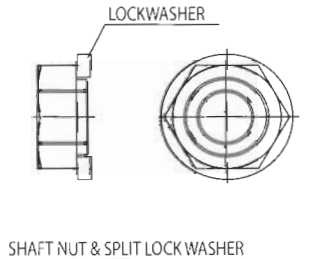
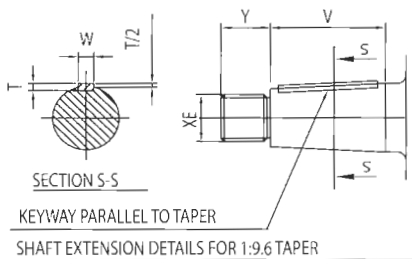
BENT LOCKPLATE

Frame	GENERAL DIMENSIONS											SHAFT				KEY			VENT DUCT FLANGE SURFACE								
	AB	BB	LC	H	A	B	C/CA	K	XH	HD1	HD	FL	E/EA	d1	L2	L3	d4	b	h	R	VB	VC	VD	VE	VF	VG	YA
802	381	521	835	194	318	419	95	24	M20	400	750	265	113	45	70	30	M30X2	12	8	23.8	22	10	10	184	121	56	420
803	432	597	940	216	356	457	114.5	28	M24	445	780	290	127	50	82	32	M36X3	12	8	26.0	45	13	10	216	127	83	450
804	457	648	990	229	382	482	127	28	M24	475	910	360	127	50	82	32	M36X3	12	8	26.0	57	13	10	229	140	70	470
806	508	699	1073	254	420	533	127	28	M24	510	1050	372	143	65	95	35	M42X3	16	10	34.1	54	13	10	260	152	86	515
808	578	794	1206	286	476	628	130	35	M30	584	1170	425	159	75	108	38	M48X3	18	11	38.8	51	13	19	292	165	89	545
810	622	825	1276	311	520	660	147	35	M30	645	1230	450	161	85	108	40	M56X4	20	12	44.3	54	13	19	305	178	92	560
812	686	914	1397	340	572	724	158.5	35	M30	675	1280	475	178	95	120	45	M64X4	22	14	49.5	64	16	19	345	210	124	620
814	762	1054	1543	375	635	813	184	42	M36	770	1355	515	181	110	120	48	M80X4	25	14	57.0	86	16	19	387	235	140	660
816	826	1188	1715	406	686	889	216	42	M36	835	1505	525	197	120	133	51	M90X4	28	16	62.7	114	25	19	406	279	168	750
818	914	1218	1794	451	762	990	203	48	M42	930	1725	635	199	130	146	40	M100X4	28	16	67.4	98	25	19	457	305	181	810

DIMENSION SHEET : AISE



NOTE:-
 * TOLERANCE ON D
 802 TO 806: +0.0
 -0.5
 808 TO 818: +0.0
 -1.0



Frame	GENERAL DIMENSIONS												SHAFT				KEY		VENT DUCT FLANGE SURFACE								
	A	B	XC	D	E	F	XG	H	XH	HD1	HD	FL	N	U	V	Y	XE	W	T	VB	VB	VC	VD	VE	VF	VG	YA
802	381	521	835	194	159.0	209.5	95.0	24	M20	400	750	265	113	44.45	70.0	30.3	25.40	12.70	12.70	22	22	10	10	184	121	56	420
803	432	597	940	216	178.0	228.5	114.5	28	M24	445	780	290	127	50.80	82.5	31.8	31.75	12.70	12.70	45	45	13	10	216	127	83	450
804	457	648	990	229	191.0	241.0	127.0	28	M24	475	910	360	127	50.80	82.5	31.8	31.75	12.70	12.70	57	57	13	10	229	140	70	470
806	508	699	1073	254	210.0	266.5	127.0	28	M24	510	1050	372	143	63.50	95.0	35.3	38.10	12.70	12.70	54	54	13	10	260	152	86	515
808	578	794	1206	286	238.0	314.0	130.0	35	M30	584	1170	425	159	76.20	107.9	38.4	50.80	19.05	12.70	51	51	13	19	292	165	89	545
810	622	825	1276	311	260.0	330.0	147.0	35	M30	645	1230	450	161	82.55	107.9	40.4	57.15	19.05	12.70	54	54	13	19	305	178	92	560
812	686	914	1397	340	286.0	362.0	158.5	35	M30	675	1280	475	178	92.08	120.6	44.7	63.50	19.05	12.70	64	64	16	19	345	210	124	620
814	762	1054	1543	375	317.5	406.5	184.0	42	M36	770	1355	515	181	107.95	120.6	47.7	76.20	25.40	19.05	86	86	16	19	387	235	140	660
816	826	1188	1715	406	343.0	444.5	216.0	42	M36	835	1505	525	197	117.48	133.4	50.9	82.55	31.75	19.05	114	114	25	19	406	279	168	750
818	914	1218	1794	451	381.0	495.0	203.0	48	M42	930	1725	635	199	127.00	146.0	40.3	88.90	31.75	25.40	98	98	25	19	457	305	181	810



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