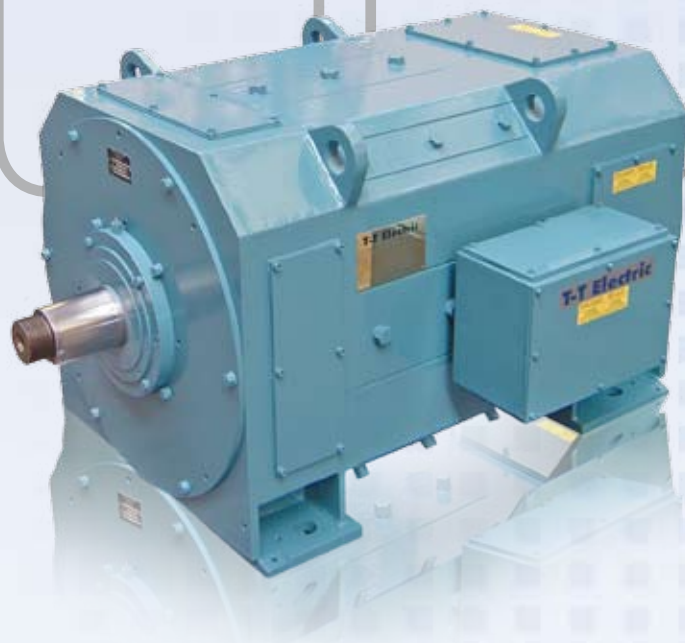


Mill Duty DC Motors

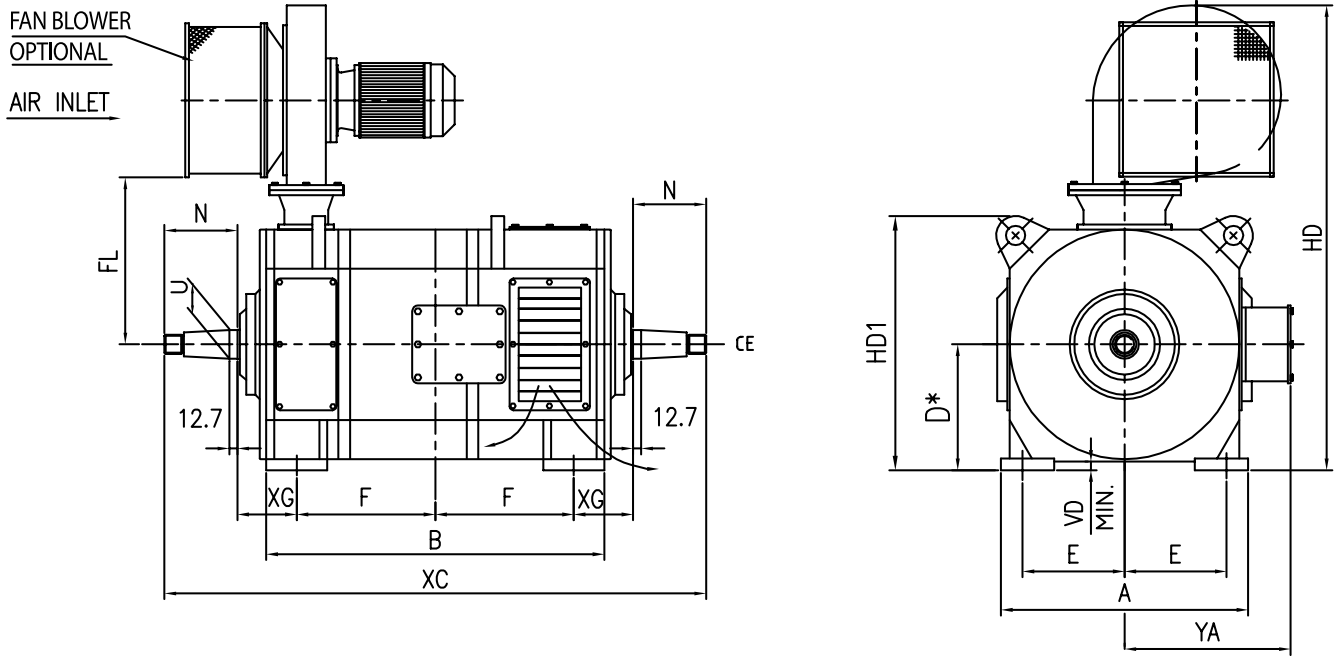
Brochure-2008/04 E

800 Series
7.5-187 kW
10-250 HP

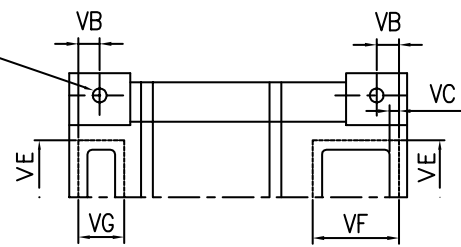


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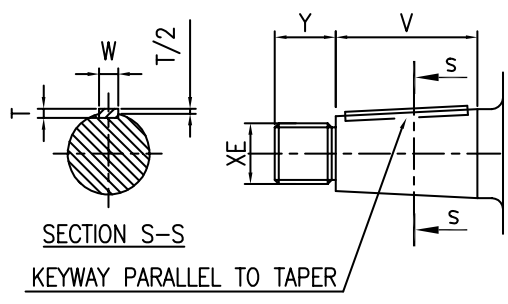
Dimensions



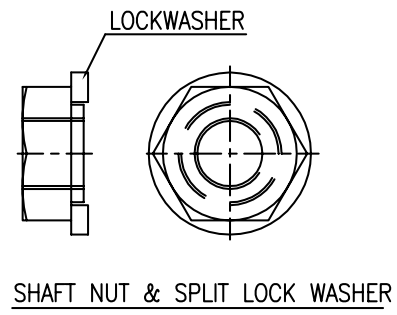
4 HOLES ØH THRO'
FOR XH BOLT
(MIN. MOUNTING SURFACE
ALLROUND BOTH VENTILATION
OPENINGS)



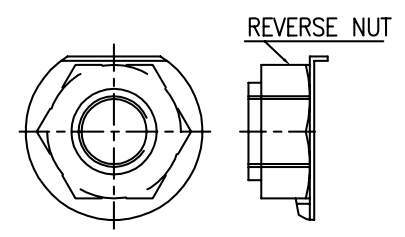
NOTE:—
*TOLERANCE ON D
802 TO 806: +0.0
-0.5
808 TO 818: +0.0
-1.0



SHAFT EXTENSION DETAILS FOR 1 : 9.6 TAPER



SHAFT NUT & SPLIT LOCK WASHER



BENT LOCKPLATE

All dimensions in mm

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	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	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	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	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	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	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	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	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	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	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	25	19	457	305	181	810

Mill Duty Motors

T-T Electric proposes a series of Mill Duty DC motors between 7.5 and 187 kW (10 – 250 HP) in A.I.S.E. frame sizes 802 to 818.

TT Electric Mill Duty motors conform to A.I.S.E. No. 1-1991 in regards to output and physical dimensions, and are therefore interchangeable with any other brand of A.I.S.E. standard motors of the same size.

The Mill Duty motors are suitable for operation with the latest generation of thyristor convertors. The fully laminated stator design of the motors permits a very high rate of change of current, meeting the steel mill requirements of high dynamic response and repetitive overload capability. The motors are fully compensated, offering the benefits of enhanced commutation margin in a wide constant power speed range, and good stability independently of motor load. This design, however, does not allow for a split stator frame, as stipulated by the A.I.S.E standard.

The shaft of these motors is easily removed and replaced, and can be offered with taper extensions 1:9.6 or 1:10.

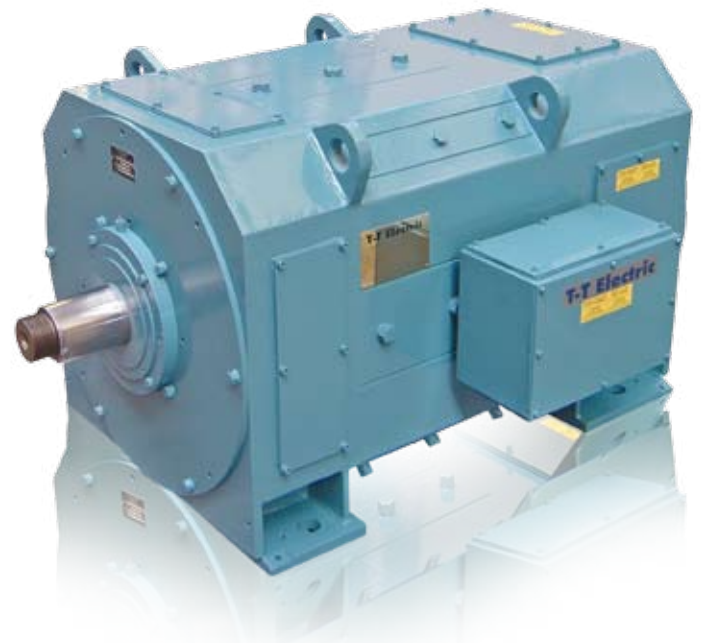
The 800 series is available in FULL SPEED, HALF SPEED and QUARTER SPEED options, in order to meet the specific requirements of steel industry.

As standard, the Mill Duty motors are mutually convertible from enclosure type Totally Enclosed Non-Ventilated (TENV) to Totally Enclosed Force Ventilated (TEFV). Other enclosure types, e.g Drip Proof Blower Ventilated or Drip Proof Pipe Ventilated, are available on request.

The ruggedness and reliability of the motors ensure safe operation with long life expectancy. The LAKC Mill Duty motors can also be used in other heavy duty applications.

BASIC Design Characteristics

- Suitable for operation with adjustable DC voltages from thyristor convertors (230 V - 460 V - 500 V)
- Fully laminated stator, main poles and interpoles
- Fully compensated machines ensuring good commutation also in the field weakening range
- Convertible motors from TEFV (Totally Enclosed Force Ventilated) to TENV (Totally Enclosed Non Ventilated)
- Removable and replaceable shaft with two tapered extensions
- D-end and N-end heavy duty roller bearings
- Easily removable bearing housings
- Insulation class H with temperature rise limited to 110 °C for longer life expectancy
- High dynamic response, with a current change rate of 250 times the nominal current per second
- A large number of options and accessories ensuring high flexibility
- Max armature voltage 500 V



Technical Data

Motor Data at U_a = 230 V

Frame	TENV S2-60' or TEFV S1 (continuous)						TENV S2-30'			TENV S3-30% (3)								
	Power		Speed - min ⁻¹				Series			Series			Compound			Shunt		
	kW	HP	Series	Compound (1)	Shunt	Adjustable Speed (2)	kW	HP	min ⁻¹	kW	HP	min ⁻¹	kW	HP	min ⁻¹	kW	HP	min ⁻¹
802	7.5	10	800	900	900	900/1800	10	13.5	675	7.5	10	800	7	9.5	940	7	9	1000
803	11	15	725	800	800	800/2000	14	19	620	11	15	725	11	14.5	840	10	14	880
804	15	20	650	725	725	725/1800	19	26	580	15	20	650	14	18.5	775	13	17	800
806	22	30	575	650	650	650/1950	29	39	500	22	30	575	21	28.5	690	18	25	715
808	37	50	525	575	575	575/1725	49	65	450	30	40	570	28	37.5	625	26	35	630
810	52	70	500	550	550	550/1650	68	90	440	45	60	550	39	52.5	615	34	45	600
812	75	100	475	515	515	515/1300	101	135	420	64	85	525	56	75	580	45	60	565
814	110	150	460	500	500	500/1250	150	200	400	86	115	515	82	110	565	64	85	560
816	150	200	450	480	480	480/1200	199	265	400	110	150	500	105	140	540	82	110	535
818	187	250	410	435	435	435/1100	244	325	360	139	185	485	124	165	490	98	130	470

- (1) 50% series - 50% shunt or straight shunt
- (2) A light stabilizing series field may be used as required to obtain these speed ranges.
Speed variation by field weakening at constant power.
- (3) Continuously repeated duty cycle of 5 min duration, with 90 sec load.
Power off for 210 sec with shunt field continuously excited.
 - Max. armature voltage 500 V.
 - All motors are laminated yoke, non-split, compensated.

Motor Characteristics

Frame	Maximum Mechanical Speed	Rotor GD2		Max Field Power	Motor Weight		Air Requirement for TEFV					
							Air Flow		Static Pressure at Inlet			
									Drive End		Non-Drive End	
min-1	kgm ²	lbft ²	W	kg	lb	m ³ /h	CFM	Pa	"H ₂ O	Pa	"H ₂ O	
802	3600	1.4	8.3	450	275	605	270	160	250	1	130	1/2
803	3300	3	18	525	370	810	340	200	320	1 1/4	130	1/2
804	3000	6.2	36.5	900	460	1010	425	250	320	1 1/4	130	1/2
806	2600	10	59	1100	625	1375	570	340	380	1 1/2	190	3/4
808	2300	20	118	1400	860	1890	720	430	380	1 1/2	190	3/4
810	2200	29	171	1500	1175	2585	890	530	450	2	260	1 1/4
812	1900	36	212	1950	1575	3465	1275	755	510	2 1/4	380	1 3/4
814	1700	70	413	2250	2150	4730	1530	905	570	2 1/4	260	1 1/4
816	1600	180	1060	2250	2910	6400	2040	1210	640	2 1/2	320	1 1/2
818	1500	212	1250	2400	3550	7810	2720	1610	760	3	380	1 3/4

Overloads

Permissible Stall Current For TENV Motors

% Load	% Rated Speed		% Load	Time
	at 230 V	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.

Motor Data for Full, Half and Quarter Speed Motors

Frame		Ua = 230 V			Ua = 460 V		
		Speed	Power		Speed	Power	
		min-1	kW	HP	min-1	kW	HP
802	F	900	7.5	10	1885	15.5	20
	H	405	3.4	4.5	900	7.6	10
	Q	160	1.3	1.7	404	3.3	4.4
803	F	800	11	15	1670	23	30
	H	365	5	6.6	800	11	15
	Q	145	2	2.6	360	5	6.6
804	F	725	15	20	1510	30	40
	H	330	7	9.3	725	15	20
	Q	125	3	4	330	7.5	10
806	F	650	22	30	1355	46	60
	H	300	10	13.3	650	22	30
	Q	125	4	5.3	305	10.3	13.5
808	F	575	37	50	1195	76.5	100
	H	265	17	22.5	575	37	50
	Q	115	7.5	10	275	18	24
810	F	550	52	70	1140	108	140
	H	255	24	32	550	52	70
	Q	110	10.5	14	260	25	33
812	F	515	75	100	1070	156	200
	H	240	35	46.5	515	75	100
	Q	110	16	21	260	38	50
814	F	500	110	150	1045	234	300
	H	230	52	69	500	112	150
	Q	105	24	32	251	57	75
816	F	480	150	200	1000	311	400
	H	222	69	92	480	150	200
	Q	97	30	40	228	71	94
818	F	435	187	250	905	389	500
	H	201	87	116	435	187	250
	Q	90	39	52	212	92	122

* Motor data for TEFV motors only.



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