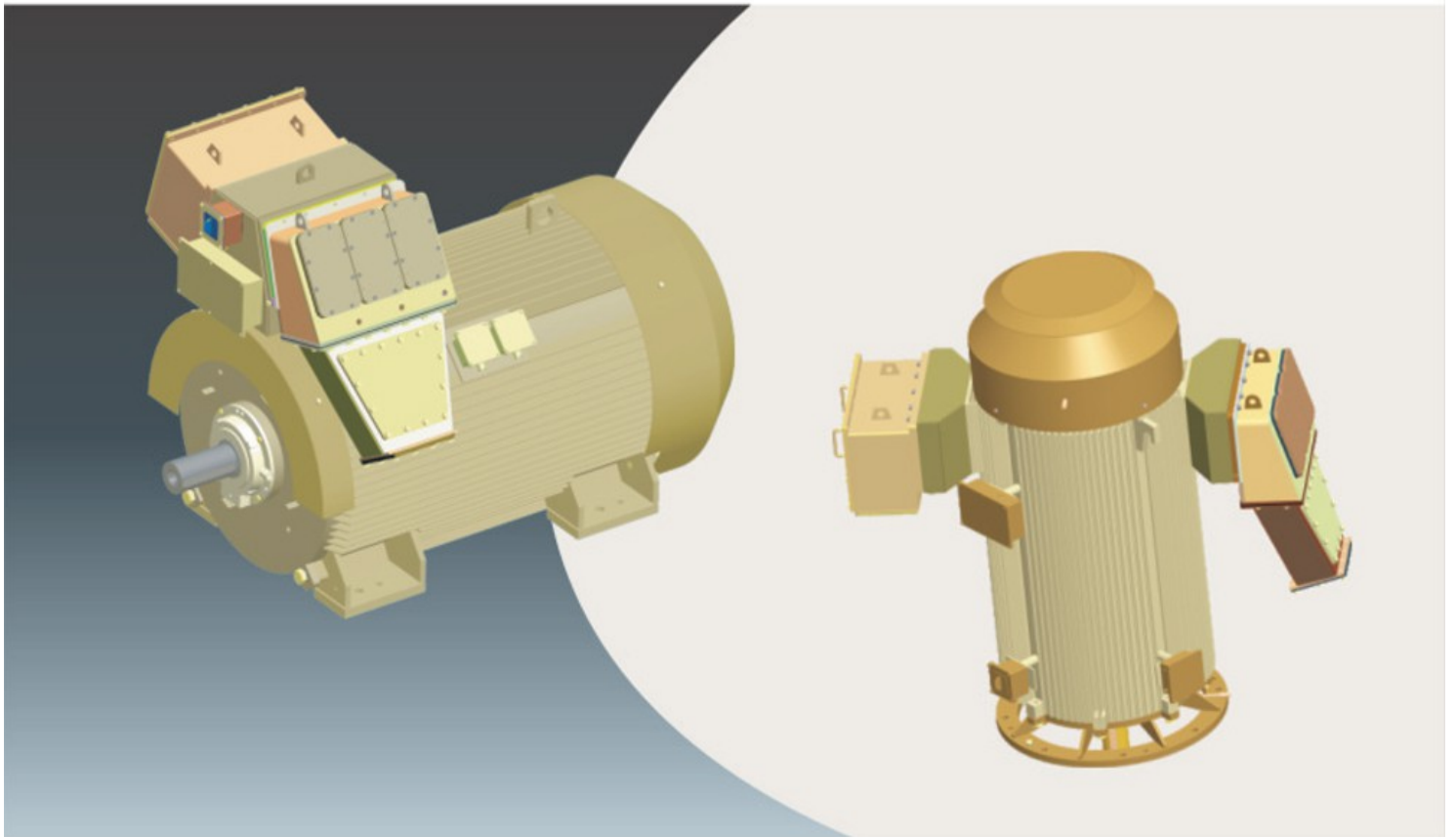




**Jyoti Ltd.**  
Water • Power • Progress

'Jyoti'  
High Voltage Induction Motors  
(TEFC Series)



Designed for  
the performance you insist



## INTRODUCTION

The 'Jyoti' High Voltage Induction Motors are used for numerous and varied applications in the industries. It is necessary to carefully match the design parameters of the motors with the requirements of driven equipment to ensure satisfactory operation and performance.

Long experience in design, development and manufacturing of rotating electrical machines has enabled Jyoti to successfully design, manufacture and deliver H.T. Motors for various applications in thermal and nuclear power stations, cement plants, coal industries, fertilizer plants and water supply and irrigation projects, etc. The H.T. Motors are designed for high operating efficiency to reduce the operating cost and conserve energy.

These motors adopt quality materials, skilled workmanship resulting in low operation cost, low noise, low vibration, high reliability and ease of convenience, for installation and maintenance.

## SPECIAL FEATURES :

**Jyoti H.T. Motors have the following Special Features :**

- Type tested PSTB
- Robust Coils wound stator using proven insulation system.
- Design Ambient Temperature of 50°C
- Stator Coil type tested for impulse level, as per IEC 60034-15.
- Winding bracing suitable for out-of-phase reclosing.
- Modular construction.
- Low vibration level
- Optimized performance
- Special cage bar for low starting current
- Bearing life more than 40,000 hours

## Specification of 'Jyoti Induction Motors'

Rating	: 150 to 1000 kW
Voltage	: 3300 / 6600 Volts,
Voltage variation	: ±10%
Frequency	: 50 Hz
Frequency variation	: ±5%
Combined variation	: +10%
Sync. Speed	: 1500/ 1000/ 750 rpm
Type	: Squirrel cage
Mounting	: Horizontal / Vertical
Enclosure	: TEFC
Degree of Protection	: IP-54 / IP-55
Cooling Type	: IC-0141
Insulation	: Class-F
Temperature Rise	: Limited to Class-B
Bearing	: Antifriction Ball / Roller Bearings
Lubrication	: Grease lubricated
Accessories	: 1.RTDs for winding 2.RTDs for bearings 3.Space Heaters 4.Dial Type Thermometer

## Terminal Box :

1. Phase Segregated Terminal Box (Mains)
2. Star Point Terminal Box
3. Accessories Terminal Box for RTD, BTD, & anti Condensation Heaters

## 3.0 BRIEF CONSTRUCTIONAL DETAILS

The motors are of finned construction, and frame is steel fabricated, thus motors are light in weight and rigid in construction. The frame construction is such that it provides convenience for repair and maintenance.

## STATOR :

The stator stack is built from high permeability, low loss, both side insulated silicon steel laminations. The stator stack assembled with coils to form an individual assembly, is then hydraulically pressed into the stator housing and welded.

The windings are of class F insulation, but used in accordance with temperature rise limitation of Class-B insulation. Epoxy mica glass and flexible mica composite is used for coils straight and overhang portion. Insulation for coils are resin rich or resin poor. For total winding stress grading conducting tapes are used for coils rated voltage 6.6 kV and above. The stator-winding overhangs are rigidly supported and braced at the end portion. The stator stack with winding is impregnated under vacuum and pressure (VPI). Therefore, the motor is reliable in insulation properties, good in electrical and mechanical strength and protected against humid environment.

## ROTOR :

Squirrel cage rotors are made with different types of rotor bar sections, depending upon starting torque requirements. Rotor is either aluminum die cast or of fabricated construction having copper bars, brazed to S.C. rings using high silver content brazing alloys. Complete rotor is then impregnated using class F varnish and baked.

Rotor is balanced dynamically on precision balancing machine.

## BEARINGS :

In general, horizontal motors are provided with anti-friction ball / roller bearings. In case of vertical motors roller bearing is used at DE side and thrust bearing is used on NDE side. Thrust bearing size is selected considering thrust load from driven equipment. The bearings are lubricated using lithium base high temperature grease or oil-bath lubricated.

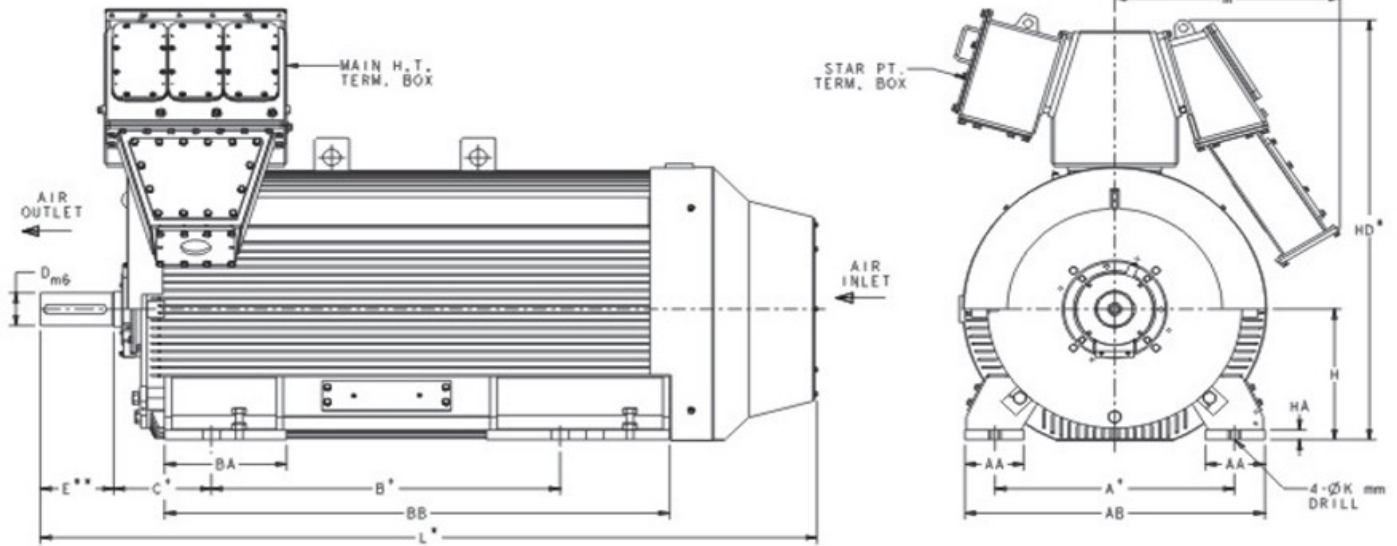
## TERMINAL BOX :

The main lead terminal box is of phase-segregated type with IP-55 protection. It is type tested for 500 at 6.6 for 0.25 seconds at CPRI. For star point and rotor terminal box, bushing and stud construction are used. Separate terminal boxes are provided for all accessories.

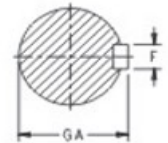
Ground terminals are provided on motor body as well as both inside and outside the main lead terminal box.

The motors are treated with relevant corrosion protection and painted with colour as per IS :5, with required shade.

The cable entry can be turned to 180° position. The number of cable glands will be given as per customer requirement.



FRAME	A+	AA	AB	B+	BB	BA	C+	Dm6	E**	F	GA	H	HA	HD*	M	L*	K
CHT-315	508	120	628	710-800-900	960	250	216	90	170	25	95	315	30	1105	650	1800	28
CHT-355	610	120	730	800-900-1000	1100	300	254	100	210	28	106	355	30	1300	650	1900	28
CHT-400	686	160	850	900-1000-1120	1200	300	280	100	210	28	106	400	30	1350	650	2100	35
CHT-450	750	160	910	1000-1120-1250	1350	400	315	110	210	28	116	450	30	1400	650	2300	35
CHT-500	900	200	1100	1120-1250-1400	1480	450	315	120	210	32	127	500	50	1520	650	2500	35
CHT-560	1000	230	1230	1250-1400-1600	1650	600	335	160	240	40	169	560	50	1655	650	3000	40
CHT-630	1120	250	1370	1400-1600-1800	1850	750	355	180	300	45	190	630	50	1750	650	3500	42

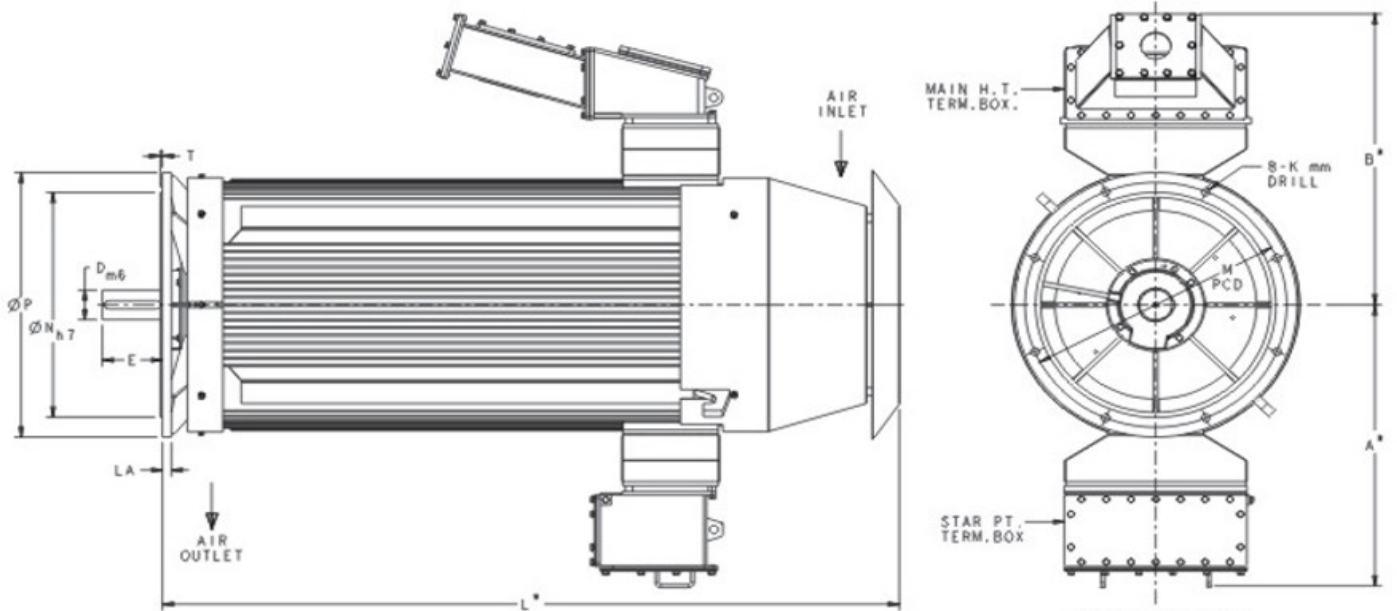


All dimensions are in mm.

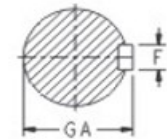
\*\* These dimensions may vary by  $\pm 0.5$ mm

\* These dimensions may vary by  $\pm 15$ mm

+ These dimensions may vary by  $\pm 1.5$ mm



FRAME	M	N	P	Dm6	E	F	GA	LA	L*	K	B*	A*	T
CUT-315	740	680	800	90	170	25	95	25	1725	22	850	800	6
CUT-355	740	680	800	100	210	28	106	25	1905	24	865	825	6
CUT-400	940	880	1000	100	210	28	106	25	2160	28	905	860	6
CUT-450	1080	1000	1150	110	210	28	116	25	2330	28	955	910	6
CUT-500	1250	1120	1320	125	210	32	127	32	2560	28	980	940	8/6
CUT-560	1320	1250	1400	160	240	40	169	40	3060	28	1070	1040	8/6
CUT-630	1320	1250	1400	180	300	45	190	45	3560	28	1250	1200	8/6



All dimensions are in mm.

\* These dimensions may vary by  $\pm 15$ mm

DETAIL OF SHAFT EXTN.

## Jyoti-TEFC Squirrel Cage Motors at 50°C Ambient and Class F with B limit Rise (i.e. 70°C Rse)

Frame	3300 Volts- 50 Hz			6600 Volts- 50 Hz			
	Pole	4	6	8	4	6	8
315		160	160	160	200	180	
		180	180	180	220	200	
		200	200		250		
		220	220				
		250					
		265					
355		280	250	200	280	220	180
		300	280	220	300	250	200
		315	300	250	315	280	220
		335	315	265	335	300	
		355	335				
		375					
400		400	355	280	355	335	250
		450	375	300	375	355	280
		500	400	315	400	375	300
		560	450	335	450	400	315
		600	500	355	500	450	335
			530	375	530	475	355
				400			375
				425			
450		630	560	450	560	500	400
		710	630	500	630	560	450
		800	710	560	710	630	500
		900	800	600	800	710	530
		1000	850		900	750	
					950		

Note : For more details about wound rotor motor, contact our office.



**FOR FURTHER ENQUIRIES  
PLEASE CONTACT**

**BRANCH  
OFFICES**

**Rotating Electrical Machines Division**

Nanubhai Amin Marg, Industrial Area,  
P.O. Chemical Industries,  
Vadodara-390 003.

Phones : 0091-265-3054444, 3054589

Fax : 0091-265-2281871, 2280671

E-Mail : rem@jyoti.com

hrem@jyoti.com

srem@jyoti.com

Website : <http://www.jyoti.com>

- **Ahmedabad** : 406, Akshat Tower, Opp. Rajpath Club, Havmor Restaurant Lane, Bodakdev, Ahmedabad-380 054. Ph. : 079-26870980, Fax : 079-26871051, Email : ahmedabad@jyoti.com, jyotiahm@gmail.com
- **Bangalore** : No. 94, 10th Cross, East Park Road, Malleswaram., Bangalore-560003. Telefax : 080-23562248 E-Mail : bangalore@jyoti.com
- **Chennai** : VEE DEE YEM Complex, 1st Floor, 270, Lloyds Road, Royapettah, Chennai 600014, Ph. : 044-28131754, Fax : 044-28133178, E-Mail : chennai@jyoti.com
- **Indore** : Office No. 502, 5th Floor, Capt. C.S. Naidu Arcade, Nr. Greater kailash Hospital, Old Palasia, Indore 452 001. Telefax : 0731-2542621, E-mail : indore@jyoti.com, jyotiindore@rediffmail.com
- **Kolkata** : 45, Jhowtalla Road, Syed Amir Ali Avenue, Kolkata-700 019, Ph. : 033-22902056, 32487527 Fax : 033-22875267, E-Mail : kolkata@jyoti.com
- **Mumbai** : Narsinh Sadan, Flat No. 102, 1st Floor, 1st Road, Golibar, Santacruz (East), Mumbai-400 055. Ph. : 022-26134403 (D), 26122848, Fax : 022-26100717, E-Mail : mumbai@jyoti.com
- **New Delhi** : 7, Jantar Mantar Road, New Delhi-110 001. Ph. : 011-23340576, Telefax : 011-23340205, E-mail : delhi@jyoti.com
- **Pune** : "Omkar", Plot No. 14, Sevanand Society, Sant Nagar, off Pune Satara Road, Pune-411 009. Ph. : 020-24231420, E-Mail : hemant\_hsg@yahoo.co.in
- **Secunderabad** : 5-4-187/7, 1st Floor, Karbala Maidan, M.G.Road, Secunderabad - 500 003. Ph. : 040-27544587(D), 27541608, Fax : 040-27543673, E-Mail : jyotisec@yahoo.com, jyotisec@jyoti.com

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