

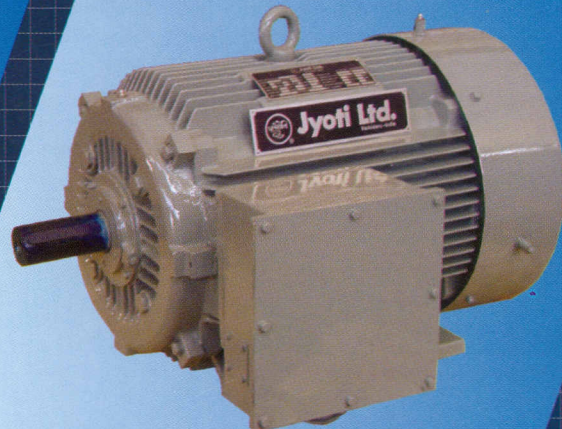
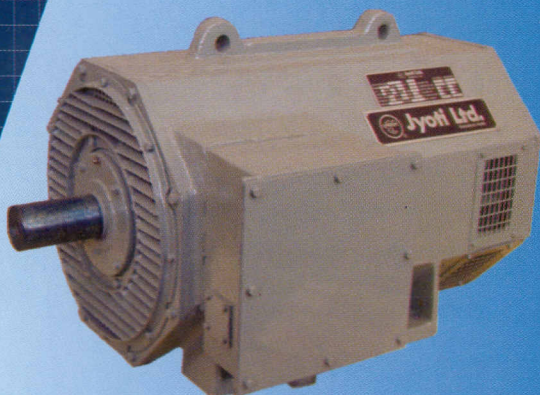
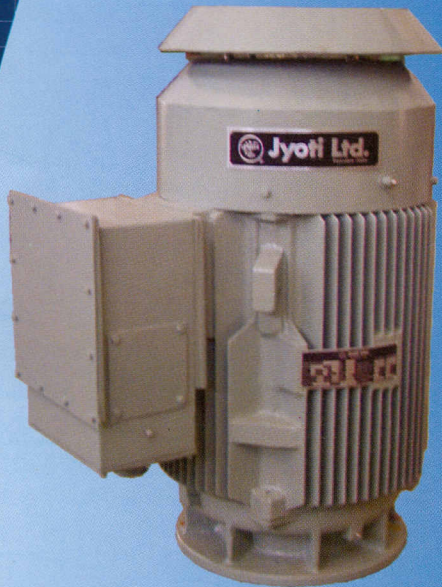


RWTUV



'Jyoti' Low Tension A.C. Motors (Above 225 frame)

Design for
performance you insist



INTRODUCTION

Demand for electrical drives for modern industrial & agricultural applications calls for a variety of Induction Motors. We, at Jyoti Ltd., manufacture a wide range of standard and special purpose motors. They are the result of Fifty years of manufacturing experience in the field of Roating Electrical Machine backed by a Modern Research and Development Centre.

'Jyoti' Motors are rugged in the construction, compact in size, light in weight and suitable for continous operation for prolonged periods requiring minimum attention. 'Jyoti' Motors conform to Indian Standards I.S. 325

This bulletin covers the salient features of standard Squirrel-cage Induction Motors of T.E.F.C (Totally Enclosed Fan Cooled) and S.P.D.P. (Screen Protected Drip Proof) enclosure in horizontal as well as vertical mounting and SPDP enclosure in horizontal slipring motors above 225 frame. The following are the type designations of 'Jyoti' L.T. Motors

- CTF : Squirrel-cage, totally enclosed, fan cooled, horizontal motor (IP-54/55)
- CD : Squirrel-cage, screen protected, drip-proof, horizontal motor(IP-21/23)
- CVTF : Squirrel-cage, totally enclosed, fan cooled, vertical hollow shaft motor (IP-54/55)
- CUTF : Squirrel-cage, totally enclosed, fan cooled, vertical solid shaft motor (IP-54/55)
- CVD : Squirrel-cage, screen protected drip proof vertical hollow shaft motor(IP-21)
- CUD : Squirrel-cage, screen protected, drip-proof, veritcal solid shaft motor (IP-21)
- WD : Slip-ring, screen protected, drip proof horizontal motor (IP-21/23)
- FCTF : Flange (IS : 2223) mounted solid shaft motor (IP-54/55)

APPLICATIONS

'Jyoti' L.T. Motors are ideally suited for applications like Pumps, Fans, Blowers, Presses, Grinders, Compressors, Crushers, Conveyors, general and special purpose machines etc.

They are also suitable for working in environment where dirt, fluff, metal-swarf, cutting compounds and other impurities are present

STANDARD OPERATING CONDITIONS

Jyoti' L.T. Motors are suitable for the following operating conditions as per I.S. 325

Supply	: 415V, 3Ph, 50Hz
Voltage Variation	: $\pm 10\%$
Frequency Variation	: $\pm 5\%$
Combined Voltage and Frequency variation	: Any combination of above
Ambient Temperature	: 45°C
Duty	: S1, Continuous
Altitude	: Not more than 1000M above M.S.L

Motors with other voltages, and for higher ambient temperature, higher altitude and other atmospheric conditions can also be supplied on request.

ELECTRICAL PERFORMANCE

The performance of these motors conforms to I.S. 325. The motors are designed to give rated output at standard operating conditions mentioned above. Use of class 'F' insulation ensures optimum functioning of the motors for a temperature rise of 100°C measured by the resistance method, over and ambient temperature of 45°C. However our motors are designed for Class 'B' temperature rise

All 'Jyoti' motors are suitable for Direct-On-Line (D.O.L) Star-Delta Auto Transformer starting as well as soft starter (FCMA). Detailed electrical performance data can be supplied on special request.

MECHANICAL CONSTRUCTION

TYPE OF ENCLOSURE

- All TEFC ,motors are supplied in IP-55 enclosure as per I.S. 4691.
- All SPDP motors are supplied in IP-21/IP-23 enclosure as per I.S. 4691.
- Different types of enclosures other than the above to match client's requirement can be supplied on special request.

MOUNTING DIMENSIONS

The dimensions of horizontal foot mounted construction (B3) motors are as per IS:1231 and vertical flange mounted construction (V1) motors are as per IS 2254 & IS 2223.

COOLING

The designation of cooling for TEFC motors in IC 411. For SPDP motors it is IC 01, as per IS: 6362.

FRAME

In general, frame of the motor body are made from Cast Iron or Steel Fabricated which ensures ruggedness and high resistance to vibration. The mounting feet are an integral part of the body in horizontal motors.

STATOR

Stator stack are made of low loss silicon steel laminations conforming to IS:648. They are either directly fitted into the motor body or the stack is held in position on body stacking ribs. The stacks are subjected to compression of pre-determined value to make a compact and rigid assembly.

ROTOR

Rotor stack are made of low loss silicon steel stampings and stacked either directly on precision machined carbon steel shaft or on a spider. Motor up to 280 frame are with aluminium die cast rotors and above 280 frame are with bar fabricated construction. Rotors are dynamically balanced on highly sensitive electronic dynamic balancing machine. The limits of the vibration are within the specified values of IS:12075. In case of slipring motors, wire or copper strip winding, is inserted with special precaution.

INSULATION

The insulation in these motors is of class 'F' suitable for working temperature upto 155° C. Material are so used as to suit electrical, mechanical, thermal and environmental conditions. Enamelled winding wires as per IS:13730 are used for adequate electrical insulation and good thermal properties. The overhangs are well shaped and are rigidly braced to withstand high stresses developed during starting. Vacuum impregnation with thermosetting varnish is applied to strengthen the windings and to improve heat transfer. It also gives protection against moisture

BEARINGS

Anti-friction bearings are used in all 'Jyoti' motors. In horizontal & vertical motors, the normal practice is to use Ball / Cylindrical roller bearing at drive-end and deep groove ball bearing at non-drive end.

In vertical hollow shaft motors, the standard practice is to use angular contact heavy duty thrust bearing. These are located at the top to take the thrust load of pump and ball bearing of adequate capacity are provided at the bottom. The floating bearings arrangement at the bottom ensures safety of these bearings against possible damage due to imposition of the thrust loads and axial expansion of shaft.

Ball bearings are grease-lubricated with lithium base grease having a drop-point more than 160° C. These bearings are regreaseable and located in bearing house of adequate size. Roller thrust bearings are oil-bath lubricated. Adequately designed relubrication arrangement is provided. Bearings are designed for long operating life.

For vertical motors in frame size 315 and above, spherical roller thrust bearing are used at top to take up the thrust load and this bearing is oil lubricated

VIBRATION AND NOISE LEVEL

The vibration level of these motors conforms to IS: 12075 and the noise level of these motors is in accordance with IS : 12065 Special requirements will be taken care if specified by the client.

TERMINAL BOX

Motors are provided with 6 terminals so that they can be started with Star / Delta or Auto Transformer Starter. The terminals are stud type for good mechanical strength and have adequate current carrying capacity. The Terminal Box is properly gasketed for protection against weather and provided with glands suitable to receive aluminium / copper cables. The terminal box can be adjusted in steps of 90° C for suitable cable entry.

SLIP-RING ASSEMBLY

Sliprings are made of high quality bronze with ample creepage path. Brush grades are selected with due consideration of wear, heating and climatic conditions.

EARTHING TERMINALS

Two numbers diametrically opposite brass earthing bolts are provided for earthing connections.

PAINT

Motors are painted with synthetic enamel air drying paint in shade No. 631 smoke grey as per IS: 5

NON-REVERSE RATCHET FOR VERTICAL MOTORS

Vertical hollow shaft motors are provided for pumps application with this unique protection, to protect against reverse running of pump.

The standard direction of rotation for vertical hollow shaft motor is anti-clockwise looking from top.

The vertical hollow shaft motors are suitable for coupling the pump at the top.

LIFTING HOOKS

Lifting hooks of adequate capacity are provided at the top or side of motor body to lift the motor for the purpose of installation, alignment, repairs and over-hauling.

INSPECTION AND TESTS

Each and every material used in manufacturing 'Jyoti' motor is thoroughly checked during incoming stage and during manufacturing process. Every 'Jyoti' motor is subjected to strict quality control inspection and final testing as per IS : 325.

INSTALLATION AND MAINTENANCE

A manual giving installation and maintenance instruction is enclosed with every motor in its packing case. Please follow instructions carefully

Note

We also make LT motors in frames 200 and below and HT motors in 3.3KV, 6.6KV and 11KW. For details please refer separated bulletins of L. T.A.C. Motors (Upto 200 frame) and High Voltage Induction Motors respectively

SPECIFICATIONS

FRAME SIZES AND RATINGS

- TEFC-CTF motors are manufactured in frame sizes from 225 to 450 frames.
- SPDP-CD motors are manufactured in frame sizes from 225 to 450 frames.
- SPDP-WD motors are manufactured in frames sizes from 225 to 450.
- SPDP-CVD/CUD (VHS/VSS) motors are manufactured in frame sizes from 225 to 355.
- TEFC-CVTF/CUTF (VHS/VSS) motors are manufactured in frame sizes from 225 to 400.
- Sugar-Cane cutter leveller motors are supplied in frames upto WD-400.

Designs for standard motors are available upto 450 kW.

SPECIAL MACHINES

- Auxillary Motors for Railways



FOR FURTHER ENQUIRIES
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