

INSTALLATION AND MAINTENANCE INSTRUCTIONS

Definition:

The motor you have purchased will supply driving power to various machines, and industrial equipment. It is manufactured according to Turkish Standards TS 3067 and EN 60034.

Safety:

TEE three phase general purpose motors comply with the recent valid technical standards.

All repair and servicing operations on motors must be carried out when the equipment is electrically isolated and the motor and driven machine are at standstill.

The motors should only be transported, installed, connected, commissioned, maintained, and operated by skilled persons familiar with all relevant safety standards and mounting specifications.

Assembly and Operation:

Please consider the following points for assembly and operation of the motor:

- Do not neglect to check the motors for any transport damage prior to installation.
- Always use eyebolt for lifting (mounted on size 112 and larger models). Do not lift the motor from the shaft end unless otherwise specified.
- Ensure motors are adequately protected during transportation and storage. If stored for a long time, the motors must be protected against dust, moisture and other harmful factors.

Please follow the procedure below if the motor has been out of use for a long time.

-Examine the bearings and replace them if necessary.

-Check the insulation resistance. If the insulation resistance measured at 25°C and 500V is below 2 Mohm, the motor must be dried at 80°C.

Assembly to Driven Machine:

The rotors are dynamically balanced with half key.

To fit a half coupling on the motor shaft easily, please ensure the shaft end is clean.

It is advised to heat coupling elements up to 60-80°C before securing them on to the shaft.

Caution: The use of a hammer is not permitted for fitting the couplings to the shaft.

Please ensure right pulley diameter and appropriate belt tension.

One of the major factors extending the life time of motors is the alignment of the motor shafts and the driven machine. Please note that even a minor misalignment may soon damage the bearings.

While operating the motor and the driven elements such as couplings or pulleys, check radial/axial forces to protect the bearings against damage.

During assembly, the space below the feet of the motor must be filled with steel shims if necessary. Please ensure the motor is centered accurately, and the bolts are fastened properly.

Motors are delivered with either open or sealed bearings according to type of motor. Open bearings must be relubricated every 20.000 hours for 4 (or more) pole designs, 10.000 hours for 2 pole designs. Under extraordinary conditions, such as exceptionally high moisture levels or temperatures above 40 °C, more frequent lubrication is necessary. For re-lubrication, amount of grease should be 1/3 of the space between nests. Sealed bearings must be replaced when damaged.

Power Connection:

The standard terminal box has 6 connection leads. Short circuit links should be connected as follows:

W2	U2	V2
I	I	I
U1	V1	W1
I	I	I
L1	L2	L3

Delta Connection (Δ)

W2	--	U2	--	V2
U1	V1	W1		
I	I	I		
L1	L2	L3		

Star Connection (Y)

Important Note: As a rule; lower voltage value on the motor label is for the Delta connection, and the higher one is for the Star connection. These values must be noted, and the mode of connection must be selected according to phase-to-phase supply voltage. For example, a motor of 230V/400 V must run only with Star connection when connected to a 400 V supply.

Star-Delta starting operation is possible for motors normally operating in Delta. In this case, all short circuit links must be removed, and 6 leads must be connected to the starting device. This mode of operation is used in applications (fan, centrifugal pump, etc.) which use low voltage and require a low starting torque. The motor must not be left to operate continuously in starting position (Star connection).

Normally, 2 and 4 pole motors up to (and including) 3 kW
 6 pole motors up to (and including) 2.2.kW
 8 pole motors up to (and including) 1.5 kW

are wound for 400 V (Star Connection).

Motors with higher power ratings are wound for 400 V (Delta Connection).

Grounding

According to VDE 0530, all motors must be grounded from the terminal marked “ground” in the terminal box.

Protection:

The motors must be protected against short circuit, phase loss, and overloads by proper fuses, thermal-magnetic switches or electronic protection circuits. The nameplate values are valid where the ambient temperature does not exceed 40°C and altitude is less than 1000 m. The permissible voltage variation according to VDE 0530 is $\pm 5\%$ at the rated output and rated frequency.

Spare Parts:

Please specify model, and serial number stated on the nameplate when ordering spare parts from your dealer.

Sound and Vibration Levels:

Sound levels of TEE motors are shown in the Table 1. Maximum r.m.s. value of vibration velocity is 2.8 mm/s for 160 and higher frame 2-pole motors and 1.8 mm/s for the rest of the motors.

Check-points

- Check data on your nameplate
- Check that the voltage and frequency comply with the above data
- Check protection devices
- Secure electrical connections
- Check ambient temperature
- Ensure that the cable connection box is fixed and cable entries are properly sealed
- Check that mounting bolts are secure

Important Notes:

The motors should be handled by qualified persons.

Please ensure that shaft, and the electrical terminals are connected properly. The normal rotation of the motor is clockwise facing the drive end. But if connected incorrectly, it may reverse causing a hazard to machinery and personnel. Therefore, please check the rotation of motor before connecting it to driven unit.

TEE guarantees that its motors comply with this instruction manual. The removal of parts or dismantling of the motor will automatically void this warranty.

The above instructions are valid for the motor you have purchased. TEE reserves the right to alter these instructions.

Please contact your dealer for items not covered in this leaflet.

The motors which has a starting current level of bigger than 31A in three phase type, necessary precaution has to be taken according to the limits of EN 61000-3-3 and EN 61000-3-11, or the motors must be connected to a network which has a service current capacity bigger than 100A per phase.

Handling of Discarded Motor

The discarded motor at the end of its useful life must be recycled in accordance with the national law. The all materials (steel, cast iron, copper, aluminum, plastics used in insulation materials) used for manufacturing of the motors subject to material recycling after the all parts are separated. All oil and grease should be disposed or incinerated according to the ordinance of waste oils. Electronic components of the motor must be recycled separately from other parts.

MAX. SOUND LEVELS dB (A)

FRAME POLE	100	112	132	160	180	200	225	250
2P	74	76	77	79	79	80	84	84
4P						71	75	75

Table 1

Note:

- 1) Levels are measured while the motors are running at no load.
- 2) Sound levels of the motors which are not shown in the table are less than 70 dB (A).