

## 7. TROUBLESHOOTING:

Below is a list of the most common trouble-shooting questions. If you still cannot determine the problem, please contact your nearest EASA repair shop.

FAILURE	REASON
Motor won't start.	<ol style="list-style-type: none"><li>1. Inadequate power supply.</li><li>2. Failed or locked-out protection switch.</li><li>3. Broken wiring.</li><li>4. Over-loaded motor.</li><li>5. Seized load.</li><li>6. Starter or controller contact failure.</li><li>7. The voltage is too low.</li></ol>
Motor won't withstand load.	<ol style="list-style-type: none"><li>1. Rated value of the overload protection is too low.</li><li>2. Winding failure, phase failure.</li><li>3. Y-connection for <math>\Delta</math>-connection.</li><li>4. The voltage is too low.</li></ol>
Motor overheats.	<ol style="list-style-type: none"><li>1. Over-load.</li><li>2. The voltage is too high or too low.</li><li>3. Y-connection for <math>\Delta</math>-connection.</li><li>4. <math>\Delta</math>-connection for Y -connection.</li><li>5. Poorly ventilated, clogged vents, or broken fan.</li></ol>
Bearing overheats.	<ol style="list-style-type: none"><li>1. Bearing is damaged.</li><li>2. Insufficient grease or deteriorated grease.</li><li>3. Mixed other grease with lithium grease.</li><li>4. Excessive overhung load.</li></ol>

If you are still having issues, call your nearest authorized EASA repair shop or contact your nearest authorized distributor.



[www.elektrimmotors.com](http://www.elektrimmotors.com) or call **855-Go-Elektrim**



*SOLUTIONS TO MEET YOUR NEEDS*

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## INSTRUCTIONS FOR THE INSTALLATION, OPERATION AND MAINTENANCE OF ELEKTRIM THREE PHASE INDUCTION MOTORS

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## 1. CHECK ON RECEIPT:

Please check the following items on receipt:

- 1.1 Check for shipping damage and ensure there are no parts or accessories missing.
- 1.2 Read carefully the nameplate rating and connection diagrams.
- 1.3 Rotate the shaft manually and ensure that it rotates freely. (For IP55 motors, it may be a little stiff due to the double lip seal.) For larger motors, the shafts may be locked for transportation purposes. If so, unlock the shafts before rotating.
- 1.4 Open the terminal box and check the insulation resistance with a hand-cranked megger of not over 500 volts. The value should not be less than 5 M ohm.

In case of problems, please contact the nearest authorized EASA service center with the nameplate data and the nature of the problem.

## 2. INSTALLATION ENVIRONMENT:

Environment affects proper functioning of motors. Please note the following:

- A. Ambient temperature should be between  $-15^{\circ}\text{C}$ ~ $40^{\circ}\text{C}$ . If altitude is over 1000 meters the motor may have to be de-rated – please contact your sales representative.
- B. Good ventilation is very important. If cooling air is impeded, high motor temperature and premature failure will result. Maintain clearances of 20cm for proper motor ventilation and cooling air circulation.
- C. Motor should be installed on a solid and secure foundation free of vibration or shocks
- D. Power supply
  - a. The supplied voltage should be stable and adequate to prevent excessive voltage drop under starting or full load conditions.
  - b. Conductors must be of an adequate size to prevent voltage drop at the motor terminals.
- E. Connect the motor to the power leads and, if applicable, connect thermal protectors, all as indicated in the connection diagram on the nameplate of the motor.

## 3. INSTALLATION:

- 3.1 Driven equipment can be connected via coupling, sprocket, or pulley. Direct coupled is recommended for 2-pole motors over 5HP.
- 3.2 Ensure proper alignment practice when installing sprockets or pulleys or couplings. Sprockets and pulleys should be mounted as close to the motor frame as possible in order to reduce overhung load on the shaft.

## 4. RUNNING:

### CHECK BEFORE STARTING

- 4.1.1 Check for proper and adequate power supply and that fuses, disconnects, circuit breakers, starters, and other safety and protection devices are properly installed in the motor circuit.
- 4.1.2 Check that the frame and/or terminal box of the motor is properly grounded.
- 4.1.3 Check that the connections to the motor leads are sound, and that all insulation is in good condition and that terminations are properly spaced apart.

## STARTING

- 4.2.1 Start the motor without load and test run for about 30 minutes.
- 4.2.2 Check direction of rotation. To change rotation, simply interchange any 2 of the 3 power leads.
- 4.2.3 Check that the supplied voltage is within  $\pm 5\%$  of that shown on the nameplate. Voltage imbalance greater than 5% will overheat the motor.
- 4.2.4 If motor does not run after 2 successive cold starts, correct the problem and then wait at least 30 minutes before attempting further starts.

## 5. MAINTENANCE:

- 5.1 For motors running 24 hours a day, a knockdown examination should be made every year.
- 5.2 Maintenance of bearings:
  - 5.2.1 Except closed-type ball bearings, all other bearings are of open type and can be re-greased from time to time.
  - 5.2.2 After 5,000 hours, bearings should be re-lubricated. **USE SAME BRAND GREASE or SIMILAR COMPATIBLE LITHIUM BASED GREASE. NOTE: NORMALLY IT IS LITHIUM BASED GREASES OTHERWISE SPECIALIZATIONS SUPPLIED. DO NOT MIX DIFFERENT GREASE WITH EACH OTHER.**
    - a. Stop the motor. Lock out the starting switch.
    - b. Thoroughly clean off, and where applicable, remove the grease discharge plugs from the bearing housing.
    - c. Remove any hardened grease in the discharge port with a stiff wire or rod.
    - d. Add grease with grease gun until a small amount of new grease shows at the discharge port.
    - e. Remove excess grease and run the motor 1/2 hour before replacing drain plug.
    - f. Put motor back in operation.

**Caution: Do not lubricate motor while in operation since excess grease may be forced through the bearings and into the motor. Do not over-grease as excess grease accumulation on the motor windings reduces insulation life.**

## 6. STORAGE AND TRANSPORTATION

- 6.1 Motor should be stored in a warm and dry location. The shafts should be periodically rotated.
- 6.2 Motor should not be stacked too high. Ensure proper ventilation of the bottom motors.
- 6.3 Store the motor in its normal operating position.