

Motors Removed From Storage

Before installing a motor that has been in storage for more than a few weeks:

- Thoroughly inspect and clean the motor to restore it to “as shipped” condition.
- If the motor has been subjected to vibration, disassemble it and check for bearing damage (e.g., false brinelling and fluting). Replace any damaged bearings.
- On grease-lubricated motors, the bearing cavities should have been filled with grease for storage. To protect the windings from contamination, remove the drain plugs before adding the lubricant specified on the lubrication plate. Then purge the old or excess grease from the bearing cavity by running the motor at no load for 10-20 minutes and replace the drain plugs. If any moisture is present in the purged grease, the bearings are probably rust damaged and should be replaced.
- If the motor has been stored for several years, the grease has likely dried out or separated, and the drainpipe is probably plugged up. In that case, it will be necessary to disassemble the motor, clean out the old grease and repack the bearings with the appropriate amount of the specified lubricant (see EASA’s article for information on lubricant compatibility and quantity.).
- To prevent winding contamination, drain oil-lubricated motors before moving them. After installation, fill the reservoir with the manufacturer’s recommended lubricant.
- Test the winding’s insulation resistance (IR) and dielectric absorption ratio (DAR) as described in EASA’s “Inspection and testing” article and record the results.
- If the IR and DAR test results are satisfactory, perform no-load test operation.
- Then follow the applicable procedures for “Repaired or replacement motors.”

Repaired or Replacement Motors

Before putting a repaired or replacement motor in service, briefly start it to check its operation.

- If the motor vibrates or emits unusual noises or odors, immediately de-energize it and look for the cause.
 - Magnetic or electrical problems that may exhibit themselves as vibration or noise will instantly improve when the power is shut off.
 - No improvement in such mechanical running characteristics may indicate an anomaly like rotor or driven load unbalance, or misalignment of the motor and load device.
- If the motor operates normally, allow it to reach full speed before shutting off the power.
- Always lock out and tag out the motor before connecting the driven load.
- Once the motor and driven load operate properly, record the full-load voltage and current for all three phases on the motor data sheet for this installation. If possible, also record the input power with load.
- If the motor is so equipped, monitor the bearing and winding temperatures until they reach a steady state. Document these values as well as the ambient temperature and humidity.
- For critical applications, record the initial vibration signature of the complete machine as a baseline for a predictive maintenance program (see EASA’s article on “Motor/system baselines.”)

Learn More

For more considerations regarding the installation process and startup procedures, see EASA’s materials on:

- Lubricant compatibility & quantity
- Inspection & testing
- Motor data & verification
- Moto/system baseline data

Content adapted from EASA’s “Getting The Most From Your Electric Motors.” Access the full publication at go.easa.com/electricmotors.