

EAST COAST ELECTRICAL EQUIPMENT COMPANY

MINIMUM REQUIREMENTS FOR REMANUFACTURING ELECTRIC MOTORS

1. Inspect the windings.
2. Meg windings with a rated voltage meggar. Minimum acceptable reading is 5 megohms for 230 or 460 volt motors and 25 megohms for 2300 and 4160 volt motors. NOTE: All Meggar Tests will be initialized at 500 volts D.C. regardless of motor voltage reading before proceeding to the rated voltage.
3. Perform a Polarization Index Test at rated voltage.
4. Perform an electrical surge comparison test with a Baker Surge Tester if the meggar reading is acceptable. The surge test will be used to determine if winding faults exist that do not involve the ground wall insulation. Voltages will be applied in five equal intervals. Any reduction of a winding fault will result in the voltage being reduced and the test terminated.

<u>Motor Voltage</u>	<u>Surge Test Voltage</u>
460	2000
2300	5600
4160	9000
6900	15000
13800	28000

5. Dielectric insulation test (DC hi-potential) is performed.
6. Inspect the shaft, bearing clearances and mic all mechanical fits. Replace anti-friction, ball and roller bearings. Sleeve bearings to be replaced or rebabbited if necessary.
7. Inspect for damaged frames or welded footings (cracks, previous welds, etc.).
8. Perform a core loss test on both the stator and rotor.
9. The rotor will be inspected for loose, bent or open rotor bars, as well as defective end rings. A single phase open rotor test will be performed as well as a growler test.
10. Dynamically balance the rotor.
11. The motor will be run unloaded for one hour minimum or until bearing temperature stabilizes at full voltage.
12. Check the magnetic center on the shaft and check that end play is within acceptable limits.
13. Winding resistance test is performed.
14. Record the no load amperes and rated voltage per phase.
15. Any heater and RTD circuits will be checked for continuity, type and operation.
16. All surfaces (inside and out) to include stator, end bells, rotating assemblies and parts, will be completely cleaned and painted where applicable.
17. Vibration readings will be made at full operating temperature with a full half key installed the entire length of the keyway slot and flush with the end of the shaft. Double amplitude bearing housing vibrations in any tangential or parallel direction (horizontal, vertical, axial) will not exceed values listed below. In addition, see notes 1 & 2.

<u>Speed in RPM</u>	<u>Displacement PK-PK</u>	<u>PK-PK Unfiltered</u>	<u>Velocities - Filtered</u>
	<u>Filter in @ Running Speed (in Mils)</u>	<u>In./Sec.</u>	<u>In./Sec.</u>
3600	0.50	0.75	0.10
1800	1.00	1.50	0.10
1200	1.25	1.80	0.10

NOTE: 1 & 2

- (1) Readings taken at full voltage and stabilized bearing temperatures. Run a minimum of one hour or until all bearing temperatures stabilize at no load. Bearing temperatures, amperage and speed will be recorded.
 - (2) On two pole motors, vibration amplitude at two times speed (or 7200 RPM) must be less than 0.000250 inches. (or .250 mils)
18. If customer requires, we will furnish a Load test (dynamometer) to 150% of rated nameplate HP (without exceeding equipment limits) for an extra charge.
 19. Motors requiring oil will be shipped without oil and tagged in several places with a noticeable colored tag stating that oil must be added. The rotor will be blocked to prevent movement during shipment.
 20. Air gap measurements will be made on each end of the rotor at 90 degree intervals. The maximum and minimum air gap measurements preferably will not differ by more than plus or minus 5% and in no cases will the measurement differ by more than 10%.
 21. A detailed visual inspection of the entire motor will be performed externally and internally. Any motor, regardless of the electrical or mechanical test passed, will be viewed unfavorable and possibly rejected if the internal or external visual inspection concludes that the motor is in poor shape or had not been properly stored and maintained.