

Check for single-phasing due to an open conductor, blown fuse or bad connection.

Check for under or over voltage. Should be +/-10% of nameplate voltage.

Check running current against nameplate to see if the motor is overloaded.

Voltage unbalance greater than 5%

Pole Pass Frequency Sidebands of line frequency in current (ESA) less than 35dB down = bad rotor bars.

Stator slots times running speed +/- line frequency less than 75dB down = loose stator, coils or coil ends (ESA)

of rotor bars x running speed with running speed sidebands (Vibe) may have harmonics = rotor bars. # of stator slots x running speed = stator faults. Raised noise floor.

Vibration will show signatures with a raised noise floor.

Bearings will be related to the bearing multipliers x the running speed and may have harmonics.

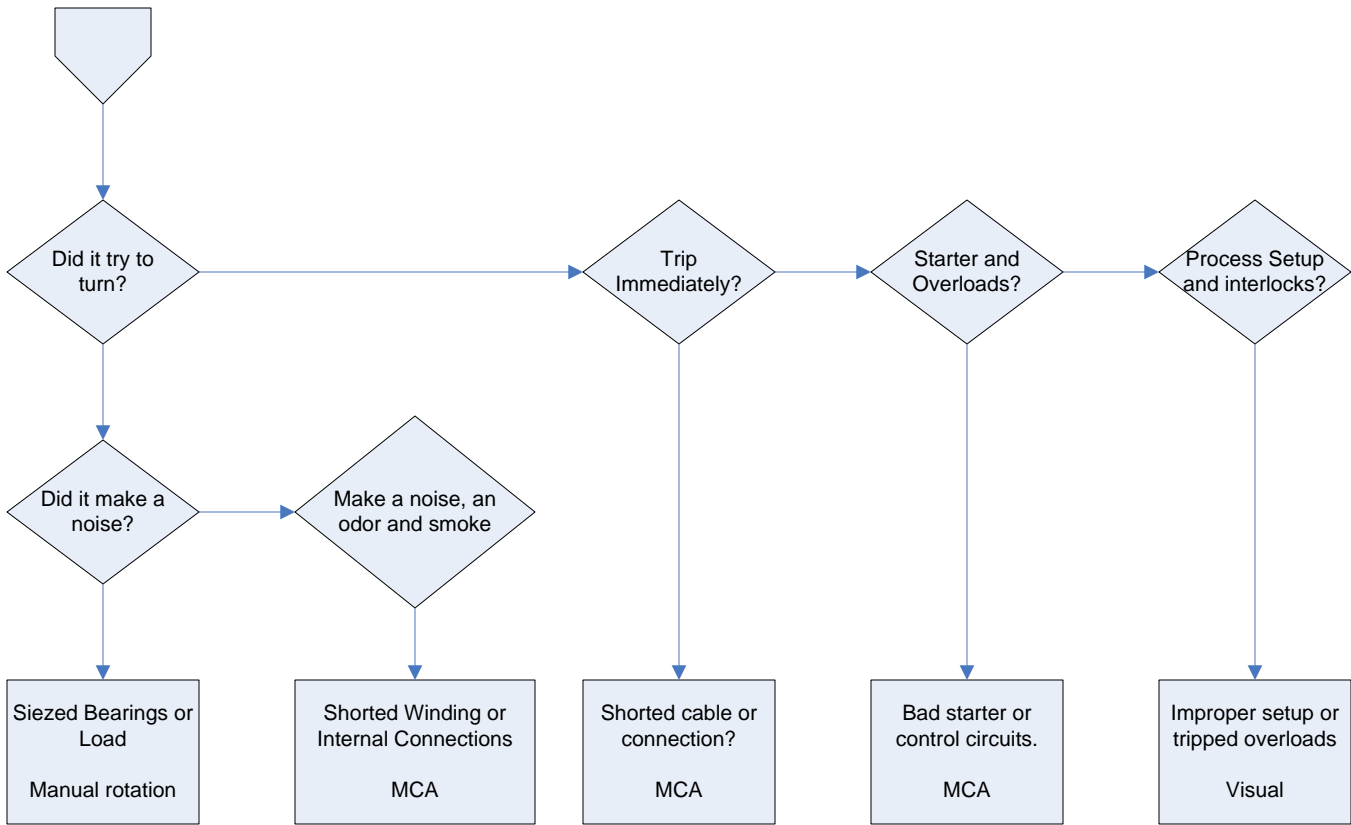
Sound-Bourne Ultrasonics may help pinpoint the source of noise.

Bad bearings will make a hiss or rumble with ultrasonics.

MCA test results greater than +/- 1 point Fi or I/F using ATPPro will indicate a short.

Insulation resistance below 5 MegOhms on less than 1,000 volt motors and below 100 MegOhms on motors over 1,000 volts is considered poor condition.

NOTE: Insulation resistance will not detect winding shorts. MCA testing includes insulation resistance testing.



May require uncoupling the motor and load to confirm.

MCA using ATPro: Use resistance to determine broken connections and short is indicated by Fi and I/F greater than +/- 1 point from average.

Disconnect both ends of cable and use ATPro manual impedance reading. Result must be greater than 1,000 Ohms of Impedance

Check for continuity through starter and control.