



Service and Support for Operational Excellence

Motor Troubleshooting Guidelines

Low or No Voltage

1. Check voltage at motor line terminals. Voltage should correspond with the motor nameplate rating ($\pm 10\%$).
2. If correct voltage is present, check all electrical connections at the motor terminal board and wire nut connections.
3. If voltage is low or not present, check fuses/breakers, timers and switches. Check wire path and size.

Motor Won't Start

If motor hums or attempts to start, or trips breaker, or opens circuit protector, use the following steps to troubleshoot cause.

1. Check voltage at motor line terminals. Voltage should correspond with the motor nameplate rating ($\pm 10\%$). If correct voltage is not present, check for loose connections, undersized wiring, overload circuit or other causes of voltage drop.
2. Make sure start switch is adjusted correctly, and is not dirty or pitted.
3. Make sure capacitor (if used) is not shorted or open.
4. Check motors windings for opens or shorts.
5. Check for continuity through protector.
6. Turn the motor shaft by hand. If shaft is tight or doesn't turn smoothly:
 - a. Check the bearings for smooth operation.
 - b. Check for evidence of the rotor striking or rubbing against the stator.
 - c. Check for internal corrosion, cracked end frames, clogged fan or other obstruction within the motor.

Motor Overheats

1. Compare the running amps of the motor with maximum load (ML) or nameplate service factor (SF) amps. Running amps should not exceed ML or SF amps.
2. Check motor windings and capacitor (if used) for ground or short.
3. Compare terminal board connections to motor wiring diagram to insure connections are correct for applied voltage.
4. Protect motor from external heat sources.
5. Check the start switch or other control devices (if used) for proper adjustment and operation.
6. While motor is running, check voltage to motor. Should be within $\pm 10\%$ of nameplate voltage.
7. Check that load is correct for the motor.

Noisy Operation

1. Check motor bearings.
2. Check the motor coupling, brackets and other attached parts/accessories for adjustment or looseness.

Electrical Shock

Check motor windings, capacitor, and other electrical paths for ground.



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