



TROUBLESHOOTING BLOWN MOTOR FUSES

Fuses blow for only one reason - the fuseable link gets too hot and melts. The most common cause is too much current going through the fuse. Poor connections also cause fuses to get hot and blow, even if the load is not excessive. Following are some basic troubleshooting steps for finding the cause of blown fuses.

1. Check the fuse size against the current load. For motor loads, a time delay fuse should have a rating of no less than 100% and no more than 125% of the full load running current.
2. Check the voltage with the motor off and the motor running. A low voltage to start with usually indicates a problem with incoming voltage or voltage drop due to undersized wire or poor connections. A drop in voltage when the motor runs usually indicates an undersized service.
3. Check the voltage at the disconnect, and then as close as possible to the motor, with the motor running. A drop in voltage indicates a poor connection or undersized wire.
4. Check all connections for tightness. Check fuse clips for good contact. Poor connections will heat up.
5. Check starter contacts for resistance. Check voltage on both sides of starter with motor running.
6. Check the current draw of the motor using an inductive ammeter. Compare the reading to the nameplate full load amps. If the current exceeds the nameplate, check for the following:
 - A. Low or high voltage at motor
 - B. Motor overload:
 1. Too much car weight / too much or too little counterweight (traction)
 2. Guide shoes, plunger, or other components binding
 3. Excessive pressure drop in hydraulic system
 4. Too much load on motor bearings - bad bearing or excessive preload
 5. Bad winding - usually exhibits other symptoms - noise, smoke, etc.
 6. Undersized motor

If there is no evidence of A or B 1-5, contact us so we can determine if there is a problem with motor sizing. Have the following information ready when you call:

1. Job name or number
2. Horsepower, full load amps, and voltage rating of motor
3. Actual voltage measured as close to motor as possible with motor running
4. Ammeter readings
5. If hydraulic job, full load pressure at valve.

The Bussman Company has an excellent guide to fuse application and troubleshooting; anyone who works with fuses should get a copy.