



**Burned Fuse Blocks
Commercial Electric Heavy Duty Water Heater**

Burned fuse block from a commercial electric (heavy duty) water heater.

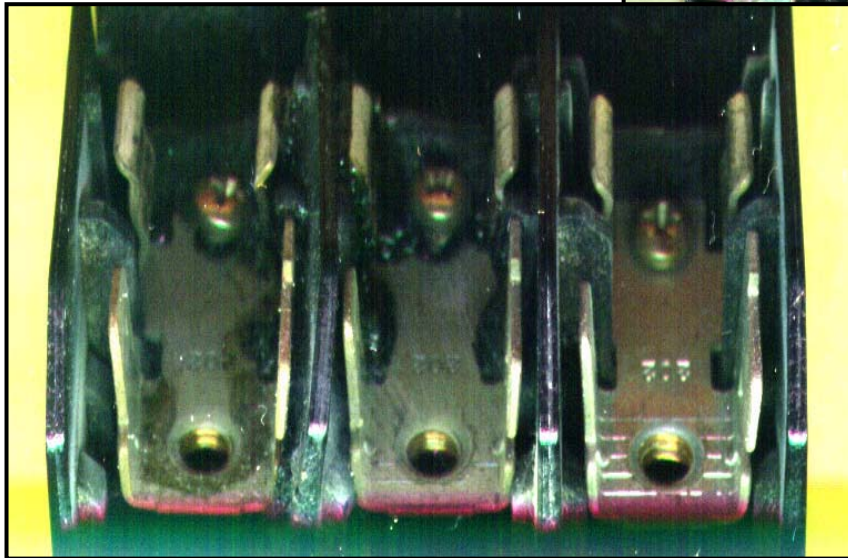
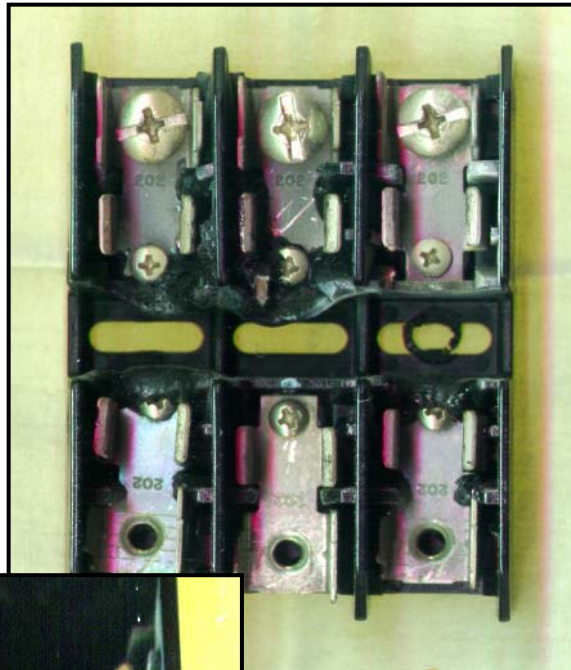
Notice the melted plastic?

This was caused by electrical heat energy – sometimes referred to as ampacity.

The natural heat of the steel tank coupled with the insulation layer did not cause this! If you don't believe me, take this home and boil it in a pot of water. It will NOT melt.

Two principal things to look for:

- Undersized application – water heater is too small for the demand.
- Loose connections.



See the small screw on the right. Looks like it is tight and flush. Also notice there is not any melting or charring!! Look at the two on the left. Clearly, they are backed out of their sockets. If so, then the metal vibrated under electrical load caused by the loose connection and the fuses eventually failed. When

checked, this is what the technician found.

Although some vibration is normal, this condition is not. Make sure all electrical connections are clean and tight. Periodically remove the fuses from their clips to make sure the screws holding the seats to the fuse block are tight.