

[A furnace control board](#) is its brain. It's much the same as any **computer circuit board**. It operates all functions — and in the order they occur. It controls everything the furnace does during each heating cycle.

Because they are sophisticated electronic, circuit boards - they can fail and must be replaced — and can be an expensive repair on a Hi-E furnace. There are reasons why one might fail early.

Replacing a furnace control board costs up to \$1,000, so it's worth the effort to do what you can to ensure yours lasts as long as possible. You will learn about the more common causes of the failure - and how to extend its service-life.

Oftentimes, owners discover they have a cracked heat-exchanger during a “no heat” service call. Their furnace shut down because air (coming through the crack in the heat exchanger) was blowing flames outside their designated area. The rollout switches sent a message to the control board, and it shut the furnace down.

- The **Limit Switch** tells the control board the furnace is warm enough to turn the blower fan on. It also monitors if the furnace is getting too hot. If it's too hot, the limit switch tells the control board. The control board shuts gas off. It will shut the furnace off temporarily (until it cools down) or completely (because overheating keeps occurring).

The control board turns the **Blower Fan** on. The fan moves air through the furnace, removing the heat and sending it into the house.

- The **Thermostat** determines the home's temperature matches its setting and tells the control board. The control board shuts off gas to the burners, then the induced draft motor, and finally the blower fan motor. The heating cycle is complete.