

One of the burners on my stove will not stay alight: what is causing this?

A gas burner equipped with a flame failure device will almost always “fail safe”. If something is wrong with the flame failure system no gas will flow from the valve.

How it Works

Inside the control valve there is a tiny solenoid (electric valve) that blocks the flow of gas: the little solenoid valve and the control valve must be open at the same time for gas to flow.

Pushing the control knob in opens the solenoid in the valve and allows the gas to flow.

If you push in on the control knob and turn it both valves will be open and gas will flow. Release the knob and the solenoid closes to prevent the gas from flowing. To get the solenoid to stay open the thermocouple must produce enough electric current to hold the solenoid open when the knob is released.

The electrical charge produced by the thermocouple (there are two dissimilar metals in the tip of the thermocouple that when heated produce a small electric charge) is not strong enough to open the solenoid, it can only hold it open so you must keep holding the knob in until the tip of the thermocouple is red hot. When the flame has heated the tip of the solenoid you can then release the control knob and the thermocouples electric charge will hold the solenoid open and allow the gas to continue flowing. As long as the thermocouple is hot it will continue to produce electricity that holds the solenoid valve open. As soon as the thermocouple cools the electric charge stops, the solenoid valve closes stopping the flow of gas.



There are three reasons why a burner will not stay alight:

- 1.** The thermocouple tip is not getting hot enough.
- 2.** The valve stem is not being pushed in far enough to open the solenoid all the way. If more than one burner is affected start with **2.**
- 3.** The electric charge from the thermocouple tip is not getting to the solenoid in the valve.
- 4.** The thermocouple has failed and needs to be replaced.

Troubleshooting

- 1.** Look at the tip of the thermocouple: is it directly in the flame when the burner is alight?
No. Check that the flame spreader is properly positioned on the burner cup, then check that the burner cap is properly positioned on the flame spreader. Try again.

Yes, this looks right: go to 2.

2. Get some fine sandpaper/wet & dry about 240 grit. Using the sand paper, clean the thermocouple. Wipe away the and clean the thermocouple with a dry cloth or paper towel.. A build up of carbon and oxide can cause a thermal barrier and prevent the thermocouple from heating up enough to activate it.

3. No change? Next check that the valve is being pushed in **all the way** in.

- push hard, turn to the high setting and attempt to light the burner again.

- No change? Remove the control knob (pull hard and wiggle). Push in firmly on the valve stem without the knob, turn to the high setting and attempt to light the burner again.

Working now?

No:↓

Either

a. The fascia plate is misaligned preventing the knob from moving in far enough to open the solenoid all the way. Solution is to loosen the top tray screws, push back and hold in place while retightening the screws.

Or

b. The knob aperture is too deep so the body of the knob is contacting the fascia before the valve stem has travelled all the way in – Solution is to pack the knob aperture with a bit of paper, cardboard etc. this will allow the knob to push the valve stem in farther to fully engage the solenoid.

4. Still not working? Next check that the thermocouple is clean and getting a good ground.

- clean the fitting where it attaches to the burner and make sure it is firmly seated in the burner.

- If there is a black carbon on the thermocouple tip it may be insulating it preventing it from getting hot enough. Buff the tip with some very fine wet dry sand paper to remove the carbon build up.

5. Still not working? Check that the valve end of the thermocouple is firmly attached to the valve and getting a good electrical connection.

6. Still not working? Replace the thermocouple.

7. Still not working? Replace the valve Solenoid. Note: the solenoids almost never fail unless corrosion has started due to water entering the system.

- Is there a port or hatch above the stove that may leak onto the stove? If enough water pools on top and floods the burner water may enter through the injectors. This may also occur if a large amount of water over flows a pot on the stove.