How to Fix 19 Common Furnace Problems

Whether you have a conventional gas furnace or a high efficiency gas furnace, understanding how your furnace/heating system works is important. You need to understand the basic workings of the appliance so you know what to look for when there is something wrong.

Let’s take a look at a conventional furnace and tips to solve its more common problems. (If you feel uncomfortable with any of these do-it-yourself steps, then make a service call to a trusted professional. Saving a few dollars is not worth the uncertainty or a dangerous event involving the furnace.)
Problem 1
Check Your Thermostat to make sure it’s ON

It may sound silly, but check the thermostat to ensure it is set on “heat” and that it is set at least five degrees above room temperature. You might be surprised how many service calls are made without checking this! Here are a few thermostat checks to conduct yourself:

Step 1:

Check the battery on the thermostat. You may need to change the batteries on your thermostat. If your home’s thermostat unit runs on batteries, be sure you are changing them at least once a year, or as needed.

Some thermostats are wired to the house’s electrical system, while others use batteries. How is yours powered? Sometimes those that use batteries will flash a low-battery symbol when they need a replacement.

Step 2:

Open the thermostat and gently blow any dust or debris that may have clogged it.

Step 3:

Make sure the date and time is correct on electronic or programmable models - the system may be on a timer.

Step 4:

Check the breaker. If on, turn off the breaker and check the fuse for the furnace.
Problem 2
Furnace is Not Producing Heat - Try to Reset Home Circuit Breaker

There are any number of minor reasons why this could occur. First, confirm that the thermostat is set to “Heat.” Then, try moving the dial up or down a few degrees to check if a noticeable difference is felt.

If there is no result, check to see if perhaps a circuit breaker or fuse was tripped or blown.

**How to Test Home Breakers:**

Go to your home's breaker panel and look for the circuit that controls the furnace. You’re looking to see whether it’s thrown to the “Off” position, or whether it’s in the middle.

1. Manually test the breaker. Flip it back and forth.

2. Make sure it is staying in the “On” position.

This will reset the breaker. If this does not do the trick, you have a problem with either the wiring in the circuit or the circuit breaker itself. If you have a digital multimeter the next steps are for you:

*How to Test Home Breakers With a Digital Multimeter*
Problem 3
Furnace is Not Producing Enough Heat - Check and Change Your Clogged Filter

A furnace that struggles to produce heat is a different matter from one that has somehow stopped working.

In the case of a poor-performing furnace that doesn’t heat the home sufficiently, first ensure that the air filter is clean and in good condition, if not new.

Check and Change Your Clogged Filter

This is a simple but essential part of furnace maintenance. One of the most common reasons to have a furnace not working is a clogged filter. It also happens to be the easiest maintenance chore.

Replacing your furnace filter regularly is a quick and simple task, and goes a long way in protecting HVAC components and improving your inside air quality.

Locate your filter

Some furnaces have their filter in the intake. This most likely looks like a grate in a floor, ceiling or wall. Other filters reside in the furnace itself.

Check your filter

You can tell if the time has come to change it by holding it up to the light. If no light shines through, the filter needs changing. A dusty, dirty smell from the vents when the blower turns on is another good sign you should change your furnace filter.
Replace your filter

Make sure your furnace is turned off. No air should be coming out. Check the direction your filter points. Filters are made to trap matter blown from one direction. Installing your filter upside-down can reduce its effectiveness.

Cleaning the debris that builds up on your filters will aid with the flow of air. When your air filter is clogged, your air handler must work harder to compensate for the blockage of air flow. In addition to driving up your utility bill, the reduced air flow through your heating and cooling system can cause your heat exchanger to overheat and shut off too quickly.

“Filters clean the air headed into the furnace and the heated air sent back into the house. A dirty, clogged filter limits the airflow, eventually causing heat and pressure to build up in the furnace.

Newer, more efficient furnaces are sensitive to the problem and will often shut down before a dirty filter causes more trouble. For other units, the furnace will continue to run but with less heat output and reduced efficiency.”
If your furnace is not operating, one of the first things you should do is check the safety switch on the furnace door. A furnace door safety switch prevents the fan and burner from coming on while the access panel is removed.

Furnaces have a safety switch that pops out when the door is removed. The door must be in place for the switch to be activated and for the furnace to operate.

If you discover you need to install a new safety switch, follow the step by step instructions on “How to Install a Furnace Door Safety Switch.”

**Step 1**

Shut the power off

**Step 2**

Prep the blower door

**Step 3**

Wire the safety switch

**Step 4**

Check and test the installation
This may seem like an obvious tip, but sometimes homeowners with busy lives forget to pay attention to areas of their home like the basement.

A basement can become cluttered, which in turn can lead to the area around the furnace being filled with miscellaneous possessions and debris. Not only does a clean furnace function better, it looks better.

Avoid storing flammable substances or materials near your furnace. Crowding your furnace can lead to unexpected fires, significant damage to your home and danger to your family and pets.

However convenient it may seem to simply “store it there” for the summer, consider the chance that you may well forget any items you’ve left on or near your furnace. Don’t take chances, give your furnace the room it needs to operate safely.

Additionally, vacuum and clean regularly around your furnace. While you may have removed any and all flammable items from the area, remember that dust and lint can build up and create a fire hazard. An excess amount of dust and lint can also cause your filter to become clogged sooner than usual, requiring more frequent replacement.
Problem 6
Look at the Burner Flames

The most common failures associated with your burners can come from contamination. You will want to inspect your burners to make sure they are free from debris.

You want to make sure your burners are clean and one way to do this is to look at the flames.

Are they blue and even?

Then your burner is likely clean. If they are yellow, you probably have dirty burners. You can clean your burners with a vacuum cleaner; just make sure to turn the power and the gas off first. Another area you should clean with a vacuum cleaner is the region around the blower.

Dust can accumulate during the summer. Therefore, it’s very important to check and clean the furnace burners before the start of the colder seasons.

A combination of condensation and soot can cause burners to function improperly, and may cause other furnace problems as well. The burner assembly should be cleaned annually or replaced if the existing one is in poor condition.
When preparing your furnace for winter, it is important to make sure all the components of your heating system are clean and in working order.

The furnace blower's main function is to draw heat from the furnace and distribute it throughout the house. Keeping a furnace blower lubricated will extend the life of your furnace.

Here are 8 easy and detailed steps How to Oil a Furnace Blower Motor, courtesy of SFGate:

1. Turn off the circuit breaker at the main electrical panel that supplies the furnace's power. Use a non-contact circuit tester to verify that the power is effectively off.
2. Remove the furnace's access panel by detaching the screws with a screwdriver. Place the panel aside.
3. Locate the blower motor assembly near the base of the furnace. Remove the bolts securing the blower motor to the furnace's main assembly with a wrench. Carefully pull the blower motor assembly out from the furnace assembly. Do not overstretched the connected wires; allow the blower motor to sit just outside of the furnace on the floor.
4. Locate the set screw on the side of the blower motor housing. Loosen the set screw with an Allen head screwdriver. Detach the bolts connecting the housing with the internal motor with a wrench. Slowly pull the motor from the housing.
5. Visually locate the oil ports on the motor and shaft. They should be clearly marked with labels. Depending on the manufacturer, there might be two or three oil ports. Consult the owner's manual for specific port locations and quantity.
6. Squeeze two to three drops of oil into each port. Each blower motor manufacturer will stipulate the specific oil needed for its motor component. Consult the blower's manual for particular oil specifications.
7. Reverse steps 1 through 4 to reattach the blower motor to the furnace.
8. Activate the furnace at the thermostat and run the system through its normal cycles. The blower motor should run smoothly with the new oil.
A bad limit switch could cause the blower to run continuously, and as a result, it will significantly shorten the lifespan of the blower.

Having a technician replace the limit switch will quickly solve that problem.

**How can I test whether my furnace issue is the limit switch or the thermostat?**

“If the high limit switch was bad, the furnace should not fire. When the high limit switch trips, the flame/heating element will be shut off and the blower will continue to run to clear the heat. The blower will continue to run until either the system is reset, or the limit switch closes.”

“Limit switches are normally closed, and they should always fail open. Which means when they go bad, or the temperature gets too high they open the circuit.

If the circuit is open, you’ll want to replace the limit switch.”
Problem 9
Check Your Electric Ignition or Pilot Control

Gas furnace operation can function with a pilot light or have electronic control, which eliminates the need for a constant flame.

A faulty ignition system such as those found on furnaces with a thermocouple, can significantly reduce the ability of the furnace to properly heat the home. Drafts or clogs in your heating system can result in your pilot light going out.

Many newer systems ignite electrically, rather than by a standing pilot light.

Action steps you can take yourself include:

**Step 1**

Turn the furnace power switch off and back on (the ignition may need to be reset).

**Step 2**

Turn off power and gas to the furnace to allow inspection of heating element. Do not touch the heating element, but if it looks cracked or damaged, you’ll need to replace the igniter.

**Step 3**

With manual in hand for the furnace, go through the steps recommended by the manufacturer to troubleshoot operation. As with the pilot light, you can do damage to the system and your property if you skip steps or safety procedures during this task.

**Step 4**

Follow the directions and if it doesn’t work, call for service.
Problem 10
Heating or Rapid Cycling Problems

In the case of a furnace turning on and off again too quickly, many causes exist. As always, the first may be a dirty or worn-out air filter. If you haven't replaced it within very recent memory, try doing so — it's a quick and easy fix.

When to call a professional:

If a new filter doesn't solve the problem, you may have a more serious situation. There may be an issue with the blower motor and belts, both of which require the service of a professional.
Problem 11
Furnace Does Not Blow Air

Look into the inspection window on the furnace. Make sure the blower is clear of any debris. Also, there should be a flashing light; green or red.

Check the manual to be sure. If the light is green, it’s okay; if red, call for service. And if there is no light, the furnace problem may be with the thermostat, the blower motor, the run capacitor, furnace control board or transformer.
Problem 12
Gas Furnace Blower Runs Continuously

The blower is located between the return ductwork and the furnace. Cool air is sent by the blower into the heat exchanger and warmed before entering the plenum and then sent throughout your home by the supply ducts.

A constantly running furnace that doesn’t shut off can be a sign of a needed repair. Check to ensure that your thermostat is not set to “continuous fan”.

Turn the temperature down to see if this measure solves the problem.

A gas furnace blower that does not turn off could also indicate a problem with a faulty limit control switch. (which may need resetting or replacing).
Rumbling, squeaking and rattles aren't normal. The sounds may indicate a mechanical problem, airflow reductions or a clogged burner.

Sometimes a furnace may be running fine, but loudly. If you can tell the noise is a result of the air running through the ductwork, one solution may be to insulate your ductwork to cut down on the noise.

If the actual furnace system is making odd noises, this can occur when the pilot light is improperly adjusted or the blower motor lubrication ports need oiling. There may also be an issue with the belts or even the burner.

What are the different noises coming from your furnace?

**Pinging or popping sounds** - could be thermal expansion- the ductwork expanding and contracting as it heats and cools.

**Rattling noises** - loose panels may need to be tightened.

**Squealing noises** - could be a belt that connects the motor to the fan slipped. Or the belt needs replacement.

**Grinding sounds** - probably time to call a furnace repair technician. The motor bearings need repair. ([Source](source))

The Spruce; a site dedicated to offering practical, real-life tips to help you create your best home; came up with their list of identifying furnace sounds.

Ranging from scraping, thumping, humming, banging and rumbling, they provide a list of common furnace related noises and their possible causes to better describe the problem to your technician.
Walk through the entire house and check the vents to ensure nothing is blocking them.

A curtain or piece of furniture may be obstructing the openings of one or more vents, preventing heat flow.
The flame sensor is a crucial safety feature on your gas heating equipment. It safeguards your furnace against the unsafe burning of fuel, and a dirty flame sensor may cause your furnace to function improperly.

Typically, the flame sensor comes in the form of a rod that can be found near the back of the furnace, right in the path of the burner.

**How to Clean the Sensor:**

**Step 1**

Turn off power to the furnace at the breaker box

**Step 2**

If possible, remove the sensor from the furnace

**Step 3**

Scrub the sensor gently to remove dust and other residues

**Step 4**

Reattach the sensor

**Step 5**

Resume power to the furnace
Over time, if the flame sensor is not cleaned appropriately, oxidation or carbon buildup can restrict the flame sensor’s ability to work properly, which can cause the furnace to malfunction.

“The way to determine if an unclean flame sensor is causing a furnace malfunction is to take a micro amp draw reading, which an expert furnace technician can provide you.

If a dirty flame sensor is the guilty party, the furnace expert will clean the sensor with steel wool. If dirt was the only factor, you will see a significantly higher amp reading. If the reading does not change, a technician will proceed with the furnace repair diagnostic process.” What a Flame Sensor is and Why it Matters
Problem 16
Inspect Gas Line

Check the entire gas line from the main inlet to the furnace burners.

While standing at the furnace, follow the gas line. It may be closed, or the switch may have been turned off.

Check to see if your hot water tank is working. If not, it may be a gas supply issue to the house. The gas line should be set on “Open”.

Also, if the furnace has a pilot light, check to see if it is lit. Sometimes, a pilot light can be extinguished in the off-season.

Re-lighting the pilot is a simple process. Instructions are usually posted on the side of the furnace.

If the pilot light does not stay on after a few attempts, you may need a repair from a professional.
“If you have a furnace that vents out the side of the house, make sure nothing is blocking the intake or exhaust. If either of the pipes is covered with screen mesh (like window screen), replace it with 1/2-in.-mesh hardware cloth.

If ice is clogging one of the pipes, you have a bigger problem somewhere in the system. Clear it off and call a technician to find out why it’s happening.

If you have a heat pump, clear away grass and leaves from the fins of the outdoor compressor unit. Before heating season starts, hose it down gently from the top to rinse dirt and debris out of the housing.” (Source)
Furnaces are designed and built to last many years, but none of them keep running forever.

If your particular heating unit has reached or passed the manufacturer’s warranty period, you may not be getting all of the heating productivity that you’re paying for.

It might be time to replace your HVAC system.
I know this article showed you how to fix some of the common furnace problems.

Have you experienced any of the do-it-yourself repairs?

Having your system inspected periodically, and at least as often as the manufacturer recommends, can prevent a minor repair from becoming a major endeavor.

Remember while attempting do-it-yourself repairs can be satisfying and cost effective, it is important to be sure that you have the skills before attempting any work on your furnace.

If the tips do not help you to detect or solve problems or if they are above your skill-level, you may need the services of a furnace repair professional.

It’s so important to maintain seasonal cleaning and tune-ups for your HVAC system. It is a forgotten system until it stops working.
Central Heating & Air Conditioning Co. was built from the ground up by Stewart Unsdorfer. Starting with nothing but a knack for building and repairing electrical systems, Stewart has been in the HVAC business for more than 25 years.

He is a state licensed heating and A/C contractor, as well being certified in design, fabrication, layout and installation of forced air heating / cooling systems. Customers may contact Stewart at any time. He is always happy to help answer any questions or concerns about heating and cooling in Cleveland, Ohio.