

The "FixIt" Manual

GAS GRILL REPAIR & MAINTENANCE

By Romero Carl Hunter



WWW.CARLSGRILLTALK.COM

editing and website by: Jeanie Whitelaw
www.eyeonlife.net

Chapter 5 - Basic Grill Maintenance, Diagnostics and Trouble Shooting

"The man (or woman) of action is the debtor to suffering and pain"
Achilles (the Iliad) motto



Members Mark

Basic Grill Maintenance & Diagnostics

I know I've harped on SAFETY but, as you go through the grill, understand that the grids, warming rack and heat plates come out and go back in without much chance of changing the grill's performance or causing bodily harm (other than, maybe, dropping them on your foot). When you get to the burners, remember that the burner must go back in allowing the venturi opening to slide over the valve orifice and for the burner to set properly as it was installed by the factory. Failure to do this will result in flame around the valves and DANGER! If you get to the valves, remember that the orifices can be removed and MUST BE PUT BACK. They only need to be snug. The rest of the valve system must pass a leak test before use AND TESTED before cooking. You might change the valves but again TEST for leaks and test the grill. DON'T TAKE THE VALVES APART AS THEY ARE EASY TO SCREW UP. IF YOU'RE NOT SURE, GET HELP!!

Taking care of your grill requires a clear understanding of the DANGER of what will happen if you fail to close all the gas connections that you open, as well as the failure to find and close off a gas leak that you've detected. IF YOU'RE NOT COMFORTABLE working with the parts out of the grill OR NOT SURE OF WHAT YOU'RE DOING, GET AN APPLIANCE TECHNICIAN TO HELP YOU.

You'll need basic tools like screwdrivers, pliers, open-end wrenches, vise grips and channel locks. You will commonly find rusted screws and bolts that cannot be loosened without cutting, grinding, twisting, or drilling them out with a drill. You might want a pair of garden gloves to pull the parts out as it is usually quite greasy and rusty under the cooking grids. I've worked on gas grills for the past 25 years and am prepared to take the parts out, try a fix and then start over if it doesn't work.

Try the following steps. Work step-by-step and recheck your work to be sure that you have no gas leaks. And, check that the parts, especially the burners, are installed correctly before you relight and test the grill. FAILURE TO BE SAFE could result in FIRE, DAMAGE and INJURY!!!

1. Have a few tools and gloves ready. Shut off the gas supply, LP tank or Natural Gas outlet valve. It's better to disconnect the gas line to reinforce safety in your mind as you work.

2. Open the lid and remove the warming rack, cooking grids and heat plate (rock and grate). These parts are usually sitting inside, not bolted or pinned down. I can't think of any brands that require a bolted or pinned heat plate-rock grate.
3. You will now see the burner and the igniter-electrode system. Take a good look at the burner and the igniter system as you may have to disconnect the electrode wire from the igniter before you can get the burner out.
4. Now look to see if the burner has any pins, screws or bolts securing it to the grill. Many grill models have a straight tube burner that's secured to the back wall of the grill.
5. Remove the bolt and don't be surprised if it's rusted and won't unscrew. I try to unscrew them first then go to the channel locks and vise grips to try and twist them off. You can also try one of the sprays like "Rust Free" and let the rusted bolt soak 30 minutes or so. Then retry loosening them before going to the vise grips or grinder.
6. I've used files, hack saw blades, drills and hand held electric grinders to get the bolt head off. A small Dremel electric multi-rotary tool would probably work well.
7. Since the burners always slide over the valve orifice (jet) you have to pull the burners up and away from the valve. The Ducane grills sold at Home Depot several years ago require that the control panel be loosened and pulled away slightly from the grill to remove the burners. You'll have to look and study the grill until you figure it out. So be ready to spend time getting the burners out.
8. If the burner is out, it's always best to clean it out and brush it down. Look at the gas ports and swab the inside with a venturi brush or hanger wire. Compressed air is useful to clean it as well.
9. If your original complaint was "not enough gas", reconnect the gas and open each valve to high. See if you can feel the gas flow through the valve orifice-jets. If they are all very low, you probably have a gas flow problem through the LP or Natural Gas regulator. See Chapter 6 - LP Parts and Gas Fittings for instructions on testing and replacing it.
10. If you have good flow through the orifice and have cleaned the burner you're ready to reinstall it. First clean out the rust and burnt food on the grill bottom. I use a whisk broom with an old T-shirt under the grill to clean it. I brush everything into the grease tray or out the air openings to get it all out. If the grill is not too big I'll lay it down on its side to sweep every thing out.
11. Check and clean the electrode and the igniter. See the Chapter 10 - Igniters and Electrodes for more detail.
12. Reinstall the burners and be certain the burner opening goes over the valve orifice (jet). You may have to bend over the grill or look under the control panel to check this.
13. Relight each burner as you replace it and check the flame on high, medium & low. Compare with the other burners and with your recollection of the burners on high.
14. If the flame is inconsistent or low you have to repeat the all of the above steps. The reasons for low flame are:
 - a. Dirty, clogged or burned out burner.
 - b. Clogged orifice-see the Chapter on Valves.
 - c. Clogged gas line or faulty LP - Natural Gas regulator
15. If the flame is good and consistent on all burners then replace the heat plates, grids and warming rack. Test once more before using. **BE SURE** to check all remade gas connections before using the grill. **IF YOU SMELL** gas when you are not trying to light the grill **YOU HAVE A LEAK!!! FIND IT AND CORRECT IT!**
16. When you're satisfied the grill is working correctly you're ready to cook on it.

Trouble Shooting

You should get use to checking over the grill once a year, especially before the warranty expires at the first year from the purchase date. Check the warranty information. You will need to know what information the factory will want if you make a claim. Sometimes burners can burn through before a year is up. You'll want to make sure that crud, rust and grease aren't

an issue. Some warranties (on most grill brands) start to expire in the first year. Do your homework and make the factories pay for warranty issues.

If you haven't studied safety issues, YOU NEED TO. Do it before you use the grill again. See Chapter 2 - Basic Safety, Lighting and Grease Fires. You are responsible for knowing and practicing safety.

1. If you have hot spots on the cooking surface, they are caused by excess grease on the heat plates or a burner with holes wearing out. see Chapter 2 - Basic Safety, Lighting and Grease Fires
2. If one burner lights well, or just a little, but fades as you light the others, check the tank (LP grills with regular tanks) to be sure you've got a good gas supply. As the 20 pound regular tanks get low, the gas supply will start to fade. You can weigh the tank to see how much gas is left. Note the empty weight of the tank on the side of the handle, usually 18 pounds. Some bath scales are easy to move outside, but they are not always accurate. If you have less than 1 pound of gas, you could start seeing the pressure fade.
3. While the above problem is probably due to gas supply, it is a good idea to clean the burners and check the orifices (jets) before replacing the LP hose regulator. I like to pull the grids and heat plates and then light the burners one at a time, leaving them on as I go. If you have one burner lighting well, and then it starts going down as you light them all, usually means that it is a LP regulator problem. With Natural Gas issues you might have an old regulator problem or even a blocked or kinked gas line. See Chapter 6 - LP Parts and Gas Fittings for removal and replacement of LP hoses.
4. You may smell gas. It's not unusual to smell gas as you light the grill. You don't want to have the valves open more than 10 seconds while you try to light, as you could get a high flame into the cooking area. You don't need to have your head in the grill at the time! If you smell gas with the valves off, you have a leak. You will need to find it. Use a spray bottle with soapy water to check the valves, gas fittings and hoses. IF YOU HAVE NO EXPERIENCE WITH THESE GAS PROBLEMS, CALL A TECHNICIAN. Valves can leak over time as the grease in them dries out and causes the seal to break. YOU MUST FIND THE LEAK BEFORE USING THE GRILL AGAIN!
5. You could have flame behind the knobs after turning the valves on and lighting the grill. This is always caused by a blocked or improperly mounted burner. Burners can come loose, especially when the grill is moved. See Chapter 9 - Burners, Side Burners, Infrared Burners and Burner Air Shutters. IF YOU ARE NOT SURE, CALL A TECHNICIAN. Valve stems can leak, usually over time, but the leak can then occur in the off or on position. Go through Chapter 5 - Basic Grill Maintenance, Diagnostics and Trouble Shooting.
6. The valve knob won't turn. This is a frozen valve stem. You might be able to spray with lubricant and heat the valve with a hair dryer to get it freed up. It's sometimes possible to open the valve; clean it and re lube it. But this is best left to the techs. IT IS EASY to break the valve for good if you open it up. The screws holding them are usually rusted in. Even replacing the valve can become difficult. So, don't try unless you know what you're doing. THIS IS NOT A TASK FOR ANYONE THAT IS TECHNICALLY CHALLENGED! Also, see Chapter 11 - Valves.
7. If the grill won't get hot enough, or the flame is too low, it could be a rusted burner (you will probably have a back up flame around the valves). You may have a blocked venturi. You could have blocked orifices, or a gas supply problem. See Chapter 5 - Basic Grill Maintenance, Diagnostics and Trouble Shooting, as a guide, to find the problem. It is rarely a valve issue. I've had maybe 2 blocked valves, in over twenty five years, from factory grease and a blocked Natural Gas line. Natural Gas grills some times have copper gas lines going to the grill. Over time, as a result of impurities in the gas reacting with the copper could clog the line with copper sulfate. Most of you have LP gas grills with 20 pound LP tanks. Like I said, go through the Chapter 5 - Basic Grill Maintenance, Diagnostics and Trouble Shooting steps to get to the problem. Or, call a technician. DO

NOT take the valves apart, as you'll likely break them and they are often impossible to replace!!

8. If the grill is hard to light, go through Chapter 5 - Basic Grill Maintenance, Diagnostics and Trouble Shooting step by step, or call a technician.

Basic Grill Maintenance, Diagnostics and Trouble Shooting Images



Remove Grids and clean with wire brush



Remove and clean Heat Plates



Remove Burners



You may have a cotter pin holding down the burner to the bracket. Some burners have screws or bolts holding them, which might require grinding off.



Brush with wire brush



Use 1/16 drill bit to ream gas port



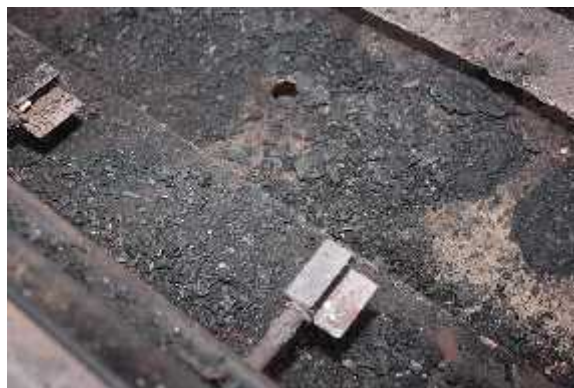
Use air hose to blow out burner-inside and outside. Canned air, used for dusting keyboards, works but not as well.



Side burner orifice



Infrared burner orifice



Check igniter and electrodes



Check and clean 3 main burner orifices, one side burner orifice and the infrared burner orifice.



Clean and blow out each orifice with compressed air



Turn off gas supply, disconnect gas line to gas valve manifold and check gas flow to grill valves. **BE SURE** to check for leaks and **TEST!!** before using grill.