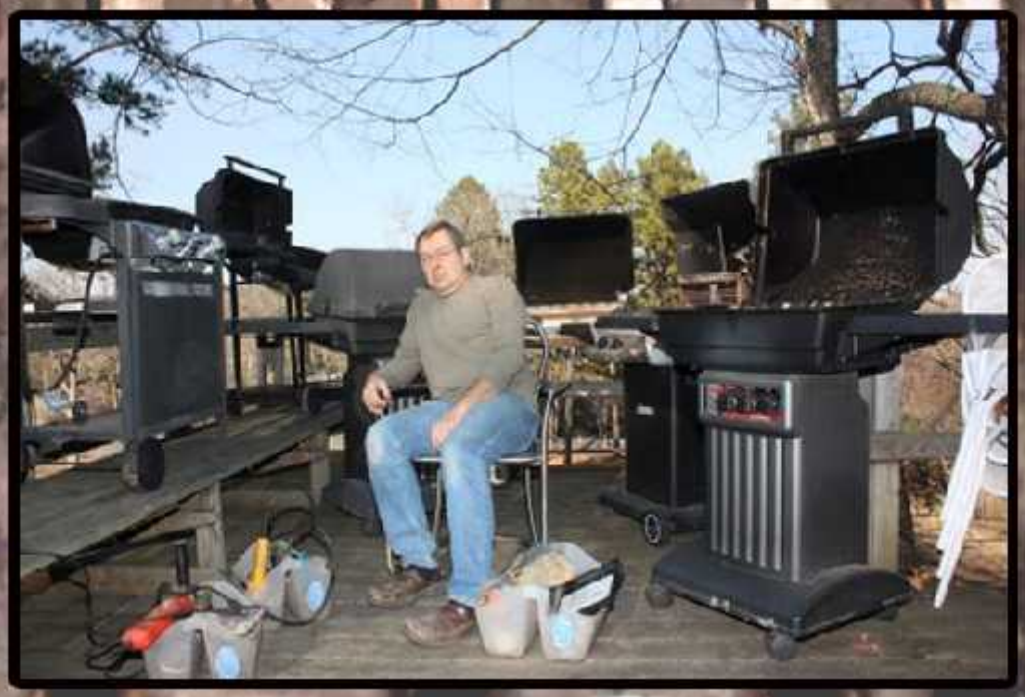
The “FixIt” Manual

GAS GRILL REPAIR & MAINTENANCE

By Romero Carl Hunter



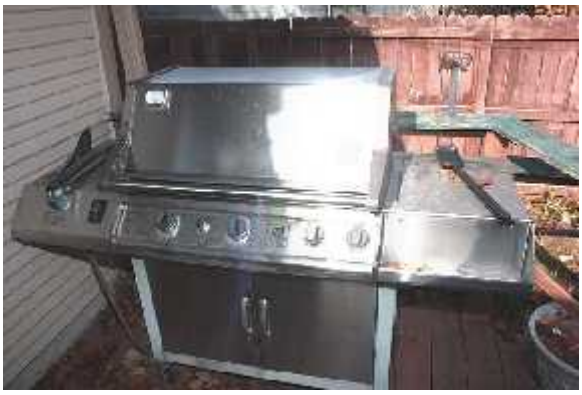
WWW.CARLSGRILLTALK.COM

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

Chapter 14 - Natural Gas to LP Gas Grill Conversion

“Experientia docet” **Experience teaches- Tacitus**

“Caveat Emptor” **Let the buyer beware! Legal phrase**



Members Mark Y0101XC IMG 1770

DANGER! If you have no experience with gas appliances *GET SOME HELP!* And, regardless, *RECHECK YOUR WORK* for leaks!

Here we are once again in a part of grill repair and maintenance that requires forethought, study, preparation and, better yet, experience. *YOUR FAILURE* to secure gas lines against leaks and installation of burners incorrectly will cause fire where it shouldn’t be. Cross threading valves or gas fittings ruins them. And, they won’t hold gas. Read this carefully and come to a careful decision on whether to move ahead yourself, hire a technician or abandon the project. Going from Natural Gas to LP might require changing the valves or adjusting them. *STUDY FIRST*, get prices, and weigh the risk!!!

Converting a Natural Gas grill to LP gas is harder than LP to Natural Gas conversion. All that is needed with a LP to Natural conversion is enlarging the orifices with a numbered drill bit to match the BTU requirements for that model. The orifice holes for Natural Gas are bigger than LP Gas. You must change the gas regulator and gas connector, of course. LP requires a tank regulator unless you're using LP gas off of a house or building LP gas line. Natural Gas grills usually work well enough using the house gas pressure.

To convert from Natural Gas to LP Gas will require changing the orifices. Finding the replacements can be difficult since many factories won’t sell the orifices by themselves. That brings us to the first step in Natural Gas to LP grill conversion: *IF YOU FAIL* to change orifices and hook up to LP gas you will get *VERY HIGH FLAMES* and it could be *DANGEROUS!* You won't be able to use the grill like this.

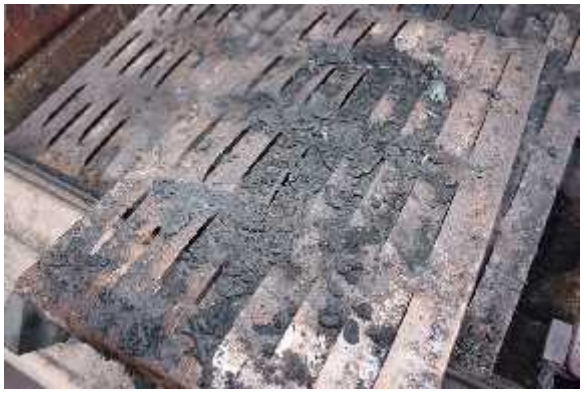
1. Your choice is to find the replacement orifices for the valves and make sure they are drilled to the correct LP size. Or, you can plug the old orifices with high heat epoxy putty and re-drill them. Try contacting the factory first. Sometimes they will sell conversion kits. If they don’t, try "aftermarket” dealers like www.clagrills.com. You will need to be sure you have a match. Be sure to ask the factory or dealer to confirm that the item you order fits your model. Many factories have several different orifices, so you will need to do your home work on this step. If you can't find the orifices with the factories or "aftermarket:" dealers, you can try a gas valve and orifice dealer like

www.andersonforrester.com. They will want a picture of the orifice on a tape measure, so be ready to send that. You'll need to know the BTU's per orifice (LP gas in this case). Ask them to drill the orifices. Or, you can check on-line for a drill chart. They use numbered drill bits which can also be found at local hardware stores and auto part stores. You can find more information by doing a web search for "gas grill conversion". I have used high heat epoxy putty to plug the orifice and re-drill. But, this requires more time and you need your own drill bits.

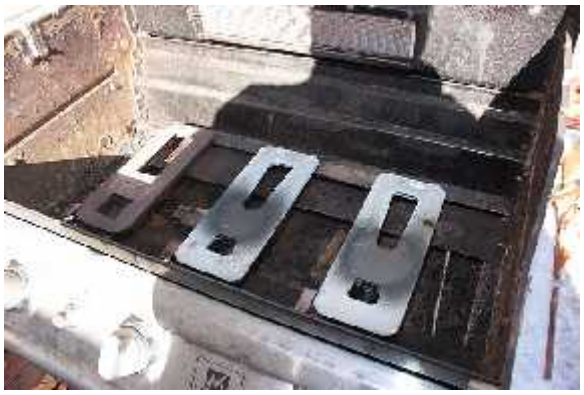
2. By now you've probably removed all the grill parts that are in the way; the grids, racks, heat plates and burners. If not, do so to get to the valve where the orifice is screwed in (the end where the gas comes from). Later, when you put it back you on, you will need to finger tighten. This is the only place tightening against pressure leaks is not important. *ALWAYS CHECK FOR GAS LEAKS*. There is no gas in the valve in front of the orifice unless the valve is open. And, if it’s open, the gas is going out of the valve through the orifice.
3. Check the valves to see if you can remove the orifices. If so, replace them with the new ones for LP Gas. The side burner and the rotisserie burner usually have different orifices and you may have a harder time replacing them. You might have to remove the valve assembly to get to the valves. Broilmaster and MHP grills have a valve stem with an adjustable screw that can be adjusted for LP or Natural Gas. You'll have to make those adjustments with a tiny screw driver on the low flame setting when everything else is done.
4. The old Ducane and most Weber grill models require changing the valve as well. The internal holes that are drilled in the valve setting are too high going from LP to Natural Gas. You would notice, after the conversion is made, that there is too much heat when the valves are in the low position. You can compensate for this without changing the valve by using the Off-High setting to adjust the flames. But it requires a little practice and closely watching the flame.
5. Remove the old gas connector and the Natural Gas regulator (if there is one) and hook up the LP hose-regulator. Connect to the LP tank and open the tank valve. Check with soapy water on the fittings for leaks.
6. Once you have connected the LP hose and regulator you can install the burners and check the flame. LP burners require that the air shutter on the burner venturi to be about half closed to get the best blue flame. They need to be open all the way to get a rich blue flame using Natural Gas. Experiment by trying different positions on the air shutter and checking the flame. Some burners have no adjustments and you may have to improvise a bigger opening to get a blue flame. Some cast iron burners have a bolt in the neck of the venturi close to the air shutter opening which would be screwed in slightly for LP and adjusted out for Natural Gas. Too much air in the air shutter can result in a ’jet effect" and the flame may pop out, and then relight.
7. Assuming you've made "no leak" gas connections and checked your burner flames; AND you've been lucky enough to have the valves work in their High-Medium-Low positions; you should now recheck your work. Look for leaks and recheck your flames. I hope you remembered to hook up the electrodes to the igniters. Reinstall the heat plates and grids. You are ready to cook.
8. If your flame is too high when the knob is in the low position, get a flashlight, pull the knob and look down the stem shaft. Broilmaster and MHP have a screw that when it is screwed in all the way, that is the setting for LP. When the screw is out about 3 revolutions, that is the setting for Natural Gas. I like to have the grids and plates out then light the burners and turn to low. Then I'll use a tiny screw driver to either screw in or out (for Natural Gas) and watch the flame. *NATURALLY, BE CAREFUL* about where your face is in this procedure. Be careful *NOT TO* unscrew the stem shaft screw (inside the valve stem)!
9. *IF YOU'RE NOT CERTAIN OF YOUR WORK, RECHECK IT OR CALL A TECHNICIAN.*

Natural Gas to LP Gas Grill Conversion Images

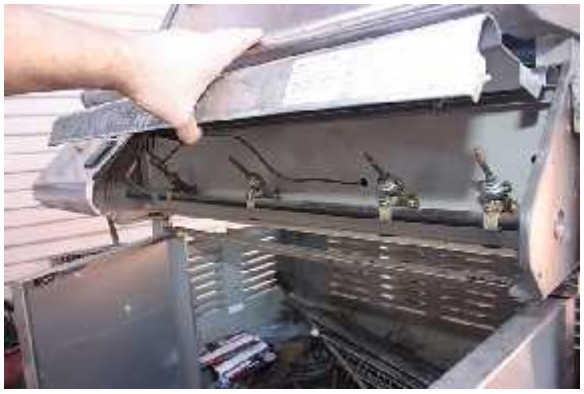
Remove grids (assuming you’ve turned off and disconnected the gas supply!!)



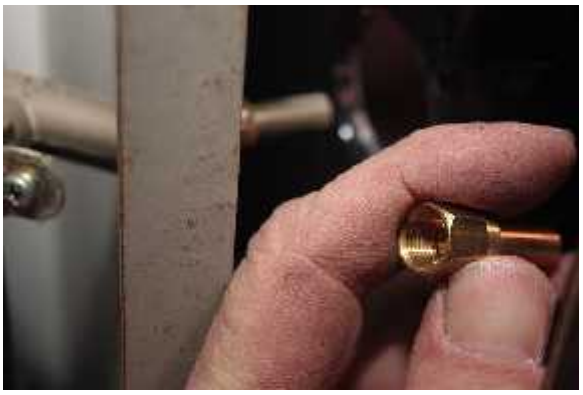
Remove heat plates



Remove burners



I had to remove some side shelf and side burner screws to get to the control panel screws. But after removing the bottom two screws on each panel, I could rotate the panel up to reveal the valves. It’s easier to see the orifices on the ends of the valve opposite the knob ends.

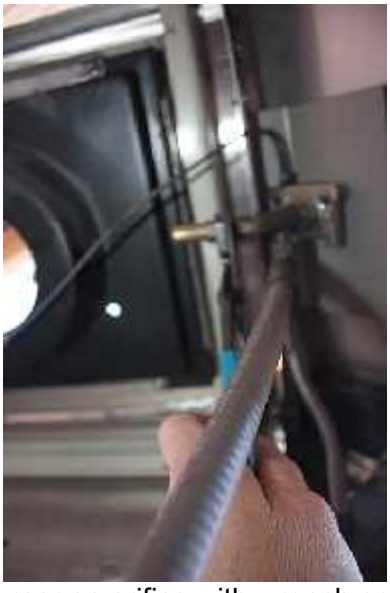


Remove the 3 main orifices and replace with the correctly drilled LP orifices. Be careful not to cross thread and be sure that the snug is tight enough, as that fitting has no real pressure when valve is open.

Side burner - remove grate

Remove cotter pin holding side burner under shelf.

Remove side burners



Loosen side burner on orifice with wrench or channel locks.

Remove side burner orifice (you may have to get one from www.andersonforrester.com) or re plug the old one with high heat epoxy putty and re drill).

Remove back cover to rotisserie infrared burner cover on back of grill.

This is the infrared orifice fitting in burner venturi opening.

Disconnect gas line to rotisserie orifice fitting to venturi opening.

Loosen nut holding orifice fitting to venturi opening.

Remove nut holding the fitting - *DO NOT DROP!!! Or LOSE!!!*

DON’T DROP IT!!!

Orifice fitting and orifice

You’ll have to find a new orifice to re-drill (maybe www.andersonforrester.com), or plug with high heat epoxy and redrill. CLA does not have this orifice. Install the re-drilled orifice and reinstall the orifice fitting and the gas line to rotisserie burner.

Reconnect the gas line to grill. Check for leaks, install burners and test each one as you to be sure the burner is connected right. Install the heat plates and grids. Re-test the grill thoroughly before reusing and chase down any hint of gas leaks.