

Technical Service Bulletin:

Combustion Adjustment Procedure

Models: All Bosch Greenstar Boiler Models



BOSCH



Please read this entire document prior to proceeding with any work.



WARNING:

- ▶ This bulletin is intended to provide technical guidance only to professionals who are licensed and qualified to work on gas-fired combustion equipment. If you are not qualified or equipped to work on such equipment, please obtain the services of such a professional.

If you need to search for a suitable contractor, please visit this webpage: <https://www.bosch-thermotechnology.us/us/en/residential/service/dealer-locator/dealersearch/>

NOTICE:

- ▶ This bulletin is a supplement to all Bosch Greenstar Installation Manuals, and its recommendations must be met to ensure the longevity of the product and to maintain full warranty coverage.



If you have any questions regarding the information provided in this document, please contact the Bosch Technical Support Department by phone at 1-800-283-3787, or via email at boiler.techsupport@us.bosch.com



This procedure is written for LP or natural gas adjustment. Note that some Greenstars may NOT include an LP gas orifice in the kit. This is normal and is not a case of missing parts. The boiler needs only to have the Code plug swapped for LP gas conversion.

Gas Pressure Check

First check for proper gas pressure at the gas valve inlet port using a digital manometer. Pressure must be 3.5" water column for natural gas or 8" water column for propane. Then proceed as follows.

Adjustment Procedure

If the burner will not fire or if you do not have the orifice, see step 9. Otherwise, follow the steps below.

1. Press the power button and the Greenstar will go into its purge and fill cycle (on first power-up) to fill the condensate trap. It will run for a few minutes. If the trap is already full of water, you can bypass this process by pressing the "Emissions" button (see instruction step 2). Once complete, you can start to set gas to air ratio with a combustion analyzer.

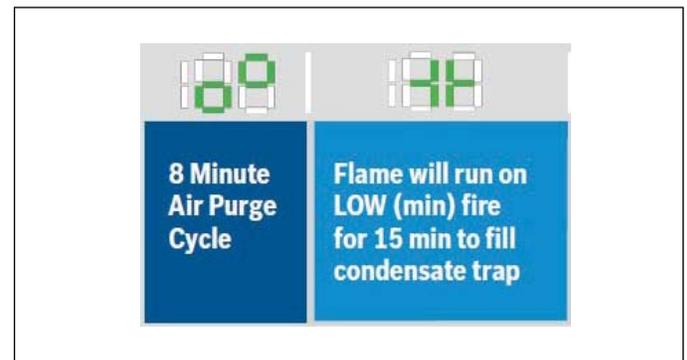


Figure 1

2. To start the process, press the Emissions button. It has an image of a chimney sweep on a ladder (see Figure 2).

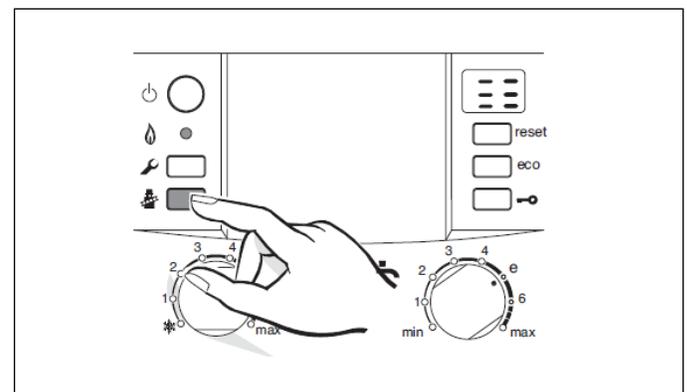


Figure 2

- Set high fire first. Press the “emissions” button to force the Greenstar to full power. The display must show six green dashes (see Figure 3). You should hear the boiler go to 100%. The target values are shown below on the right. You may need to press the button more than once. You **MUST BE** at 100% for proper adjustment.



Figure 3

Gas Type	Maximum Nominal Output	
	CO ₂	O ₂
NG	9.4%	4.0%
LP/Propane	11.0%	4.2%

Table 1

- The throttle is underneath the gray plastic cap; turning the throttle is setting gas VOLUME. Remove the cap & adjust as needed.

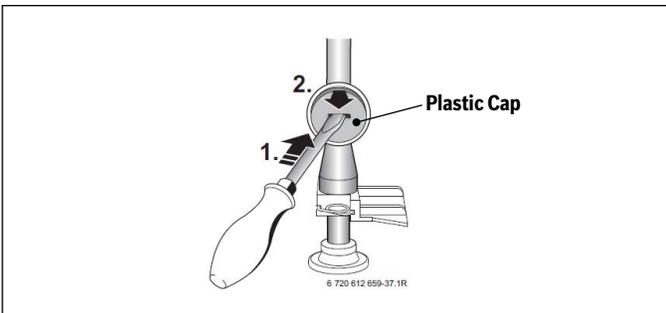


Figure 4

- Turn the throttle just a few degrees (like the thickness of a nickel) and WAIT for at least 30 seconds before making a change. Get close to your target and then go set low fire. You will have to recheck high fire again after setting low fire, since one affects the other.

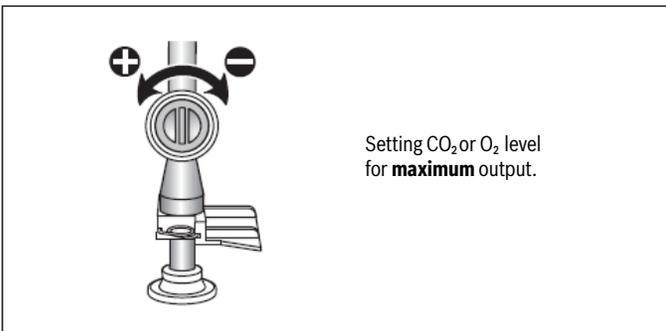


Figure 5

- Now force the Greenstar into low fire to set the gas valve screw. Press the “emissions” button on the control panel until the display shows two green dashes (see Figure 6). The boiler fan will slow and the burner flame will shrink. The target values are shown below on the right. You may need to press the button more than once.



Figure 6

Gas Type	Minimum Nominal Output	
	CO ₂	O ₂
NG	8.6%	5.5%
LP/Propane	10.4%	5.1%

Table 2

- The gas valve is a negative pressure type, and turning this screw is setting gas PRESSURE. To set low fire, remove the plug on the gas valve and turn the adjusting screw just a few degrees (like the thickness of a nickel) and WAIT for at least 30 seconds before making a change. Get close to your target, and then go back and check high fire at the throttle one more time. Be sure to change your boiler output using the emissions button each time you switch between high and low fire.

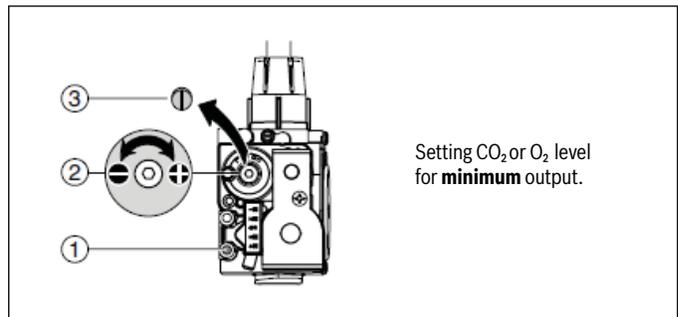


Figure 7

- You may have to go back and forth between low and high to get it perfect, but it should easily fall into spec after a couple of adjustments. **INSURE THAT CO IS UNDER 200 PPM.** Once done, put the cover plug back in the gas regulator assembly. Press the emissions button until it is no longer illuminated, and the boiler will return to normal operation. Remove your analyzer probe, close up the test port and replace the rating sticker on the side of the boiler if you changed to LP gas. You are done with the combustion setting process.
- Use this step only if the burner **WILL NOT FIRE** or if you do **NOT HAVE** an orifice! The preliminary setting for the throttle is one full turn Counter-clockwise from closed. Bottom the throttle by turning it clockwise (lightly, without force), and then back it out one full turn. Bottom the gas valve by turning the adjusting screw clockwise (lightly, without force), and then make three full turns counter-clockwise to set low fire adjustment. Use your gas analyzer and fine-tune the settings as shown in steps 1 through 8. **WATCH FOR HIGH CO** to prevent damage to your analyzer, and recheck gas pressure with a manometer and adjust if needed.



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