

Service Bulletin G3-28

Models: 715ES, C800ES, C920ES, C920ESC, 2400ES, 2700ES

Replacing gas valve



BOSCH

Introduction

- ▶ This procedure must be performed by a licensed gas technician with a calibrated combustion gas analyzer.
- ▶ The gas valve is not gas type specific but requires different CO₂ values when calibrating for different gas types.

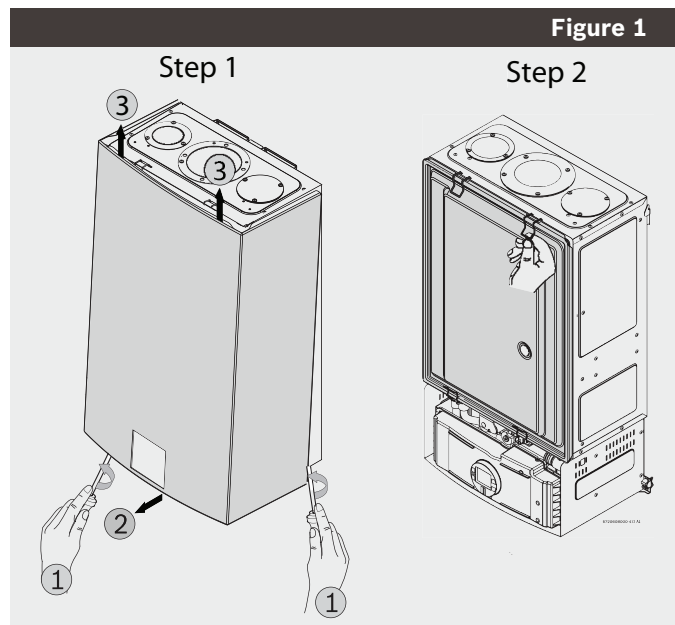
Tools needed:

- ▶ Phillips head screwdriver
- ▶ Small flat head screwdriver
- ▶ #40 Torx driver
- ▶ Combustion gas analyzer
- ▶ 30mm open end wrench or large adjustable wrench
- ▶ 4mm allen wrench

Preparation

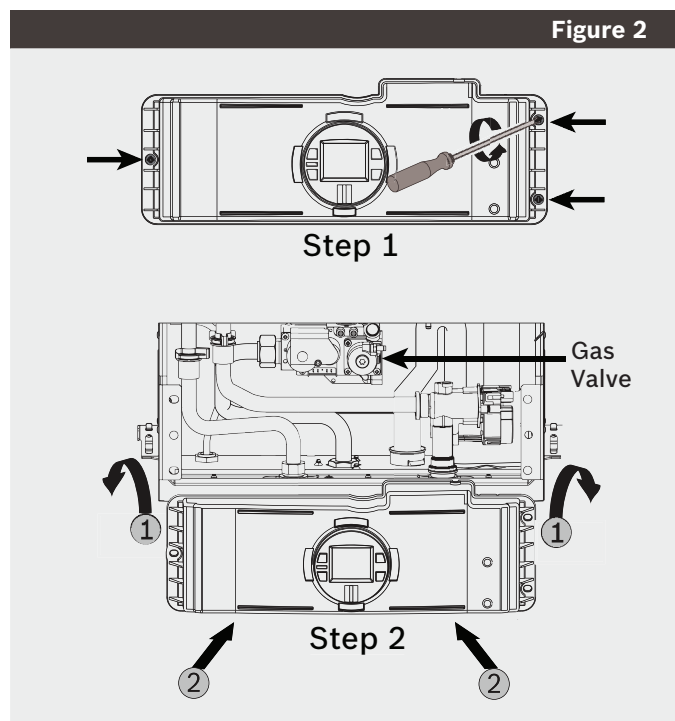
1. Unplug water heater and turn off gas to heater using installer supplied manual shut off valve.
2. Loosen two Phillips head screws located at bottom rear of cover. (Fig. 1, step 1, pos. 1).
3. Lift front cover upward and remove. (Fig. 1, step 1, pos. 2 & 3)

Figure 1



4. Remove combustion cover by unclipping two upper and two lower clips securing cover. (Fig. 1, step 2)
5. Remove 3 Phillips screws on control unit (Fig. 2, step 1). Place control unit into the service position by engaging its tabs with the holes in the horizontal sheet metal on bottom of the heater chassis. (Fig. 2, step 2).

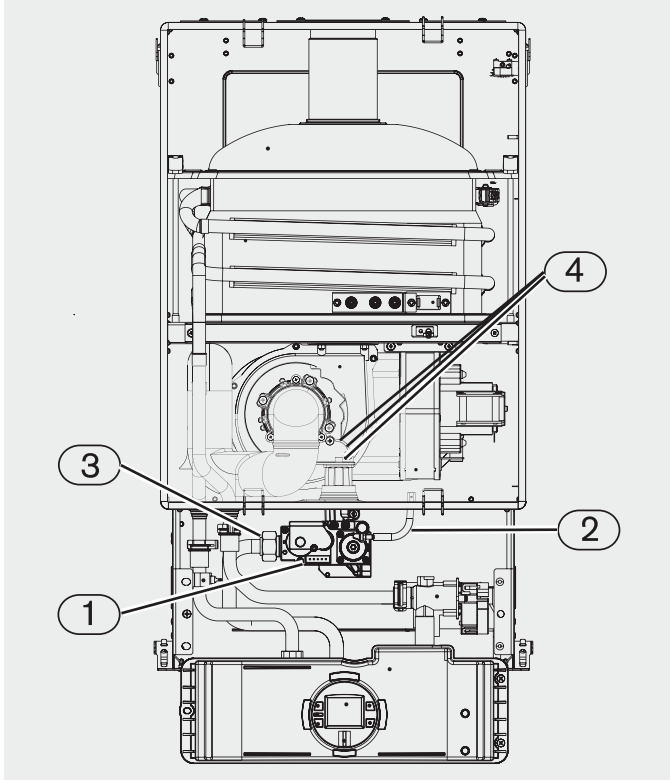
Figure 2



Removing the gas valve

1. Unplug wire connection from gas valve. (Fig. 3, pos. 1).
2. Disconnect clear silicone pressure balance tube from right side of gas valve. (Fig. 3, pos. 2)
3. Loosen and disconnect large 30mm hex nut on the left side of gas valve. (Fig. 3, pos. 3).
4. Unscrew the three 4mm allen screws from the top of the gas valve. (Fig. 3, pos. 4).
5. Remove gas valve from the water heater.

Figure 3



Installing gas valve

1. Replace both the grey fiber washer on the left side of the gas valve and the rubber gasket on the top of the gas valve.
2. Hold replacement gas valve in place and reinstall the three allen screws into the top of the gas valve. (Fig. 3, pos. 4).
3. Reinstall 30mm hex nut on the left side of gas valve. (Fig. 3, pos. 3)
4. Open manual gas shutoff valve and check for leaks at all connections.
5. Reinstall silicone pressure balance tube to right side of gas valve. (Fig. 3, pos. 2).
6. Reconnect wire connection to gas valve. (Fig. 3, pos. 1).

Calibrating gas valve

1. Reinstall combustion cover. (Fig. 1, step 2).
2. Return control unit to normal position and secure with 3 Phillips head screws. (Fig. 2)
3. Plug in water heater and push power button to the "ON" position.
4. Open a hot water tap. If heater fires, adjust CO₂ using service bulletin G3-12 Measuring and adjusting CO₂.
5. If the heater does not fire, allow the unit to display the EA error code and shut off hot water tap. The fan will continue to run to purge the heater of gasses. Continue to the next section for a rough gas valve adjustment.

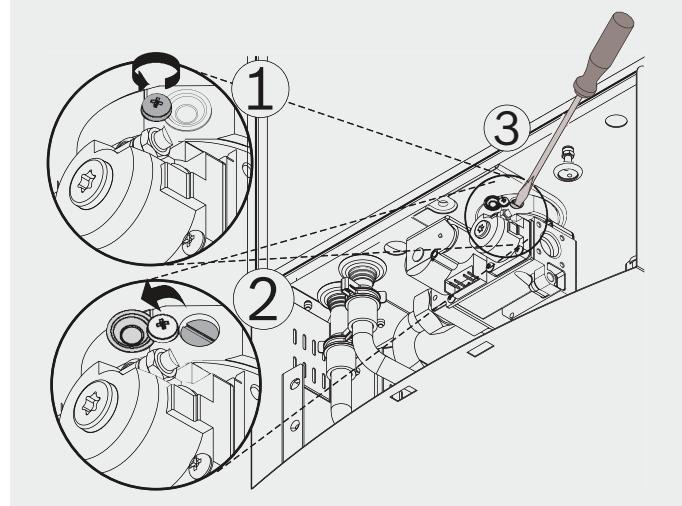
Rough gas valve adjustment

Note: Do not forcefully tighten adjustment screws past bottom out point. Stop bottoming out screw when resistance is felt. Failure

to do so will damage the gas valve.

1. Locate adjustment screw on gas valve. Loosen Phillips head screw so retaining cover can be rotated to expose brass slotted screw. (Fig. 4, pos. 1 & 2).
2. Turn brass slotted screw clockwise gently until it bottoms out and/or screw resistance increases. (Fig. 4, pos. 3).

Figure 4



3. Once the slotted screw is bottomed out, make the following adjustment to the slotted screw depending on your model and gas type. (Fig. 4, pos. 3)

For models GWH 715 ES/GWH 2700 ES/ GWH 2400 ES:

Natural Gas: 2.5 turns counter-clockwise on brass slotted screw

Liquid Propane: .75 turns counter-clockwise on brass slotted screw

For model GWH C 800 ES:

Natural Gas: 3 turns counter-clockwise on brass slotted screw

Liquid Propane: 1 turn counter-clockwise on brass slotted screw

For models GWH C920 ES/GWH C 920 ESC:

Natural Gas: 2.5 turns counter-clockwise on brass slotted screw

Liquid Propane: Leave brass slotted screw bottomed out

4. Open a hot water tap. If heater fires, adjust CO₂ using service bulletin G3-12 Measuring and adjusting CO₂. If heater still does not fire, contact Bosch Thermotechnology Corp.
5. Reinstall brass slotted screw cover and secure with Phillips screw. (Fig. 4, pos. 1 & 2).



WARNING

FAILURE TO PROPERLY CALIBRATE THE HEATER'S CO₂ LEVEL MAY RESULT IN A HAZARDOUS CONDITION CAUSING SEVERE PERSONAL INJURY OR DEATH.



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