P-329 SL 26-260 G3 Gas Valve Replacement Kit Instructions

Warning

This replacement kit shall be installed by a qualified service agency in accordance with the manufacturer's instructions and all applicable codes and requirements of the authority having jurisdiction. If the information in these instructions is not followed exactly, a fire, an explosion or production of carbon monoxide may result causing property damage, personal injury or loss of life.

The qualified service agency is responsible for the proper installation of this kit. The installation is not proper and complete until the operation of the converted appliance is checked as specified in the manufacturer's instructions supplied with the kit.

Note

Replacement gas valves are not shipped pre-calibrated. Gas valves require pre-calibration to produce a flammable gas-air mixture.

Installation of these gas valves requires the use of a flue gas analyzer.

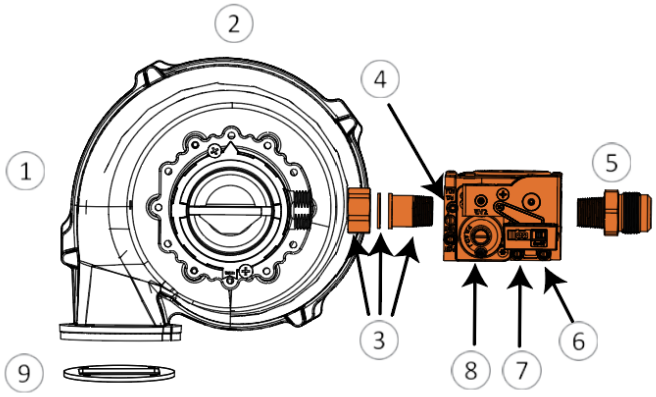
For more information, see *Pre-calibration of the replacement gas valve on page 2*.

Gas Valve - SL 26-260 G3			
	Part #	Description	Quantity
	180-166	Gas valve	1
	250-742	Gasket, gas valve coupler	1
	250-768	Pipe ½" gas valve coupler	1
	250-741	¾ nut ½" gas valve coupler	1
	250-426	Fitting, ¾" JIC to ½" NPT	1

When to Install the P-329 Gas Valve replacement kit

Install the P-329 kit when the gas valve fails to open or does not hold calibration.

SL 260 G3 SIT Gas Valve Assembly



1	Combustion fan
2	Venturi mixing device
3	Gas valve coupler and gasket
4	High fire (gas:air) adjustment
5	Gas valve inlet compression coupling/ nut
6	Inlet gas pressure port
7	Manifold pressure port
8	Low fire (offset pressure)
9	Fan gasket

Pre-calibration of the replacement gas valve

Note

If the replacement gas valve has a factory calibration sticker present proceed to *Removal of the gas valve on page 3*.

Generally a replacement gas valve will not have the calibration sticker present.

It is imperative that the replacement is pre-calibrated before installation.

1. Turn the high-fire gas/air ratio screw (4) clockwise to the closed position, in the direction of the (-) sign, using a flathead screwdriver.
2. Refer to *Table 1* , and based on the fuel source, turn the high-fire gas/air ratio screw counter-clockwise the appropriate number of turns.
3. Remove the cap from the zero offset (low-fire) adjustment screw (9).

4. Turn the zero offset (low-fire) adjustment screw counter-clockwise approximately ¾ of a turn , in the direction of the (-) sign, using a flathead screwdriver. Replace the cap.

Boiler Model	Pre-calibration Counter-clockwise Turns Open	
	Natural Gas	Propane
SL 26-260	15	14

Table 1 *Pre-calibration turns for replacement gas valve based on fuel type*

Note

A ladder or step may be required to have a clear vertical view of the work area.

Do not attempt to remove the assemblies without a clear view, as damage to the connectors, screws or refractory may occur.

Removal of the gas valve

Preparing the boiler

1. Confirm the boiler model from the rating plate.
2. Remove call(s) for heat.
3. Remove power to the boiler at a wall switch or a breaker.
4. Shut off gas supply to the boiler.

   Do not drain the boiler unless freezing conditions are expected during this procedure.

5. Allow the boiler to cool down.

Removing the gas valve

1. Remove the front door cover.
2. Remove the top panel of the appliance to access the gas valve.
3. Disconnect the electrical wire from the gas valve.
4. Support the compression coupling using a wrench to and unscrew the compression nut.
5. Separate the gas line pipe from the gas valve.
6. Unscrew the coupler nut. Remove and discard the gas valve and gasket.

Reassembly and Start-up

Reassembly

1. Attach and tighten the 3/4" fitting on the flexible gas line to the new gas valve supplied with P-329.
2. Insert the new gasket supplied with P-329 between the gas valve and the venturi mixing device.
3. Attach the gas valve to the venturi mixing device using the new brass coupler nut supplied with P-329.
4. Tighten the fitting and coupler.
5. Reinstall the top panel of the boiler.

Start-up

1. Restore the gas supply by opening the gas control valve.
2. Restore the power.
3. When the boiler is in "Standby," restore the call for heat and test for normal operation.
4. Check connections for leaks during operation, using an approved leak detection solution to soap test all joints.
5. Perform a combustion analysis and test for proper operation.
6. Reinstall the front door cover.

Combustion Testing and Adjustment SL 26-260 G3

Danger

Making adjustments to the IBC gas valve without a properly calibrated gas combustion analyzer and by people who are not trained and experienced in its use is extremely dangerous.

Failure to use an analyzer can result in an immediate hazard.

A combustion test checks that the gas valve is operating properly in the field. To perform a combustion test, you must be a qualified, trained and licensed gas fitter.

Model Number	High Fire Input
SL 26-260 G3	260 MBH

***Table 2** - Rated input of a converted boiler*

Normal ignition system sequence of operation:

The boiler control, upon a call for heat or DHW:

turns on the combustion fan for a 20-second pre-purge and,

energizes the spark electrode and gas valve for a 4-second trial for ignition.

If the burner does not light, the process is repeated until the burner lights and flame is detected.

After 3 trials for ignition, the boiler locks out and will need to be manually reset by clearing the error on the touchscreen controller (**(Status) > Clear Errors**).

> **Note**
>
> If the touchscreen controller has a *blue background UI*, to clear the error:
>
> **Main Menu > Diagnostics > Advanced Diagnostics > Clear Errors > Yes > OK**

The boiler automatically resets after 60 minutes, if no action is taken.

Performing combustion testing and low fire adjustment

1. Turn on the boiler's external gas shut-off valve.
2. Give the boiler a call for heat.
3. Follow steps 4 and 5 below based on the controller touchscreen color to set the heat-out value for the maximum and minimum MBH:
4. Run the boiler at high fire by setting the heat-out value in Test Operation mode to the boiler's **maximum MBH**:

Black Touchscreen UI	Blue Touchscreen UI
Select ●●●**(More)** > **Test Operation**	**Main Menu > Diagnostics > Advanced Diagnostics > Test Operation**
Select **Fan Test: Heat Output** box and enter the maximum 260 MBH (76kWs) using the number pad.	

5. Set the heat-out value in Test Operation mode to the **minimum MBH** for the boiler:

Black Touchscreen UI	Blue Touchscreen UI
Select ●●● **(More)** > **Test Operation**.	**Main Menu > Diagnostics > Advanced Diagnostics > Test Operation**
Select **Fan Test: Heat Output** box and enter the minimum 26 MBH (7kWs) using the number pad.	

6. Adjust the low fire according to the Table for Combustion Test Target Ranges - CO_2
   a. Use a screwdriver and turn clockwise to raise the CO_2% (to richen).
   b. Turn counter-clockwise to lower CO_2%.

> **Caution**
>
> The low fire screw is particularly sensitive.
>
> To avoid major fuel changes that may dramatically impact the system, start adjusting by ⅛ of a turn until the analyzer measures a change, then adjust by increments of 1/16 of a turn.
>
> If changing direction on this adjustment you may notice a significant backlash.

7. Check the results and confirm the correct settings when you return the boiler to high fire, and then to low fire.

> **Note**
>
> Clock the gas meter to confirm full maximum rating plate input.

8. Set the heat to zero (0) and return to the home screen.
9. Remove the call for heat.
10. If a manometer is connected to the gas valve inlet gas pressure port:
    a. Turn off the gas supply at the external gas shut-off valve.
    b. Disconnect the manometer.
    c. Tighten the inlet pressure port screw with a screwdriver.
11. Remove the analyzer probe, and install the test port plug.
12. Turn on the gas supply shut off valve.

Fuel	High fire		Low fire		CO max PPM
	Range %	Target %	Range %	Target %	
Natural Gas	9.0 - 10.0	9.5	8.2 - 9.2	8.7	<150
Propane	10.3 - 11.3	10.8	9.3 -10.3	9.8	< 250

Table for Combustion Test Target Ranges - CO_2