P-9057 Water Pressure Sensor Kit Instructions

Included in this kit:

Water Pressure Sensor - VFC, SL G1/G2/G3			
	Part #	Description	Quantity
	240-006	Water pressure sensor	1
	150-043	Water pressure sensor O-ring	1

Notes

- If the wiring harness is damaged, a new plug connector can be purchased (P-9068). This will have to be spliced into the sensor harness, color for color.
- VFC boilers manufactured before 2005 use a **red** water pressure sensor. The black sensor in this kit requires a brass adaptor (P-9085) to be compatible with these red sensors.

Replacing the sensor

1. Remove the call for heat.
2. When the controller displays "Standby," remove power to the boiler.
3. Remove the front door panel.
4. Allow the boiler to cool down to the surrounding temperature.
5. Use a towel to protect the boiler cabinet.
6. Drain the boiler and break the vacuum at the top of the heat exchanger.
7. Pull back the small retaining clip and lift the plug up to release and disconnect the sensor plug from the electrical harness.
8. Unscrew the old sensor by hand, counterclockwise.
9. Install the new sensor by hand, screwing clockwise to 15 to 20 in·lb, or to 1.7 to 2.3 Nm.

Caution

Do not overtighten the sensor. It is possible to weaken or strip the nylon threads of the sensor with excessive torque. Do not use tools to install the water pressure sensor.

The water seal is made by the O-ring. If the specified torque fails to make a watertight seal, the O-ring should be replaced.

10. Follow the above steps in reverse, starting from step 8.

VFC models - Testing the two sensors ("No Water Flow" error)

The VFCs compare two water pressure sensors in their flow-proving routine. These two sensors can be tested for accuracy if it has first been proven that there is flow through the boiler (e.g. by listening for turbulence through a partially-closed isolation valve, while the boiler pump is being controlled by the board).

To test the sensors for accuracy:

1. Remove the call for heat.
2. Allow the primary pump post-purge to complete.
3.

Five-button Controllers

Go to **Main Menu > Advanced Diagnostics**. The Inlet and Outlet pressures will be displayed as raw data.

Inlet Pressure	340
Outlet Pressure	330

5-button controller pressure sensor readings

If the pressure sensors are accurate, the Inlet sensor will register a slightly higher pressure than the Outlet sensor under static conditions (due to the Inlet sensor being under an additional 22" of water column). This difference should be 10 points, +/- 2.

Touchscreen Controllers

Go to **Main Menu > Diagnostics > Sensors**. For software versions 2.0 and later, go to **Status > Sensors and Channels > Sensors**. The Inlet and Outlet P(ressures) will be displayed in psi.

Inlet P:	39.3 psi
Outlet P:	38.4 psi

Touchscreen controller pressure sensor readings

If the pressure sensors are accurate, the Inlet sensor will register a slightly higher pressure than the Outlet sensor under static conditions (due to the Inlet sensor being under an additional 22" of water column). The difference should be 0.9 psi.

4. If the correct pressure difference is not observed in rest conditions, then one of the pressure sensors is inaccurate. Technicians may elect to change both at the same time, or try to reveal which sensor is inaccurate or unresponsive by performing the following:

    a. Isolate the boiler.
    b. Drain a small amount of water from the boiler.

    If a sensor is defective or fouled, it will often fail to respond to the dropping pressure.

Maintenance

The system fluid should be maintained at a pH between 6.6 and 8.5. Systems with glycol must be pH-tested to ensure that acidity is not causing premature wear on the water pressure sensor. System fluid should be kept free of sediment and calcium.