FUEL PRESSURE GAUGE AND SENSOR INSTALLATION INSTRUCTIONS

ICON KEY
CAUTION
Tools may be required
Shown in picture

1 Disconnect batteries. Do not reconnect battery power until system is fully configured to avoid risk of shock or fire.

2 Find a location where fuel pressure can be measured such as a test port on the fuel pressure regulator or aftermarket lift pump. This may require adapter fittings to accommodate the 1/8" NPT sensor threads. See engine-specific notes on page 3 for details.

DO NOT attempt to install in a location exposed to fuel rail pressure on common rail systems, as these systems typically operate at over 20,000 PSI.

3 Install the new sensor. Pressure sensor threads are 1/8" NPT.

Many Emission Control Devices are connected to OEM sensors or switches. Be careful not to disable these when installing a sensor.

4 If leakage occurs at the sensor, tighten one-quarter turn at a time until leakage stops. If necessary, thread sealant such as Teflon tape may be used.

When using a torque wrench, tighten approximately 1.69nm/15 lb-in. or slightly more, if leakage occurs. Do not use the body of the sensor to tighten! Use only the hex and the correct wrench. Do not over tighten!

5 Connect the pressure sensor to the pressure sensor harness by pressing the connector into the slot.

Figure 1: Pressure sensor and harness.

6 Route the sensor harness to the intended gauge mounting location, using grommets as appropriate when passing through the firewall.

7 Trim the sensor harness wires to length, leaving enough length to allow the gauge to be pulled from the pod or mounting location without disconnecting the connector.

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8 Install the three sensor harness wires along with the individual red, orange and black wires into the orange insulation displacement connector (see Fig.2 for positions), using the included wire insertion tool (R72023). Follow the directions with the tool. DO NOT strip the wire ends, the connector will pierce the wire insulation, and the insulation helps hold the wire into the connector. Each wire must be pushed completely to the bottom of its groove in the connector to ensure a good electrical connection. Note that the 3 sensor harness wires run only between the gauge and the sensor, not connecting to any other power or ground. Connect the other end of each of the remaining wires as follows:

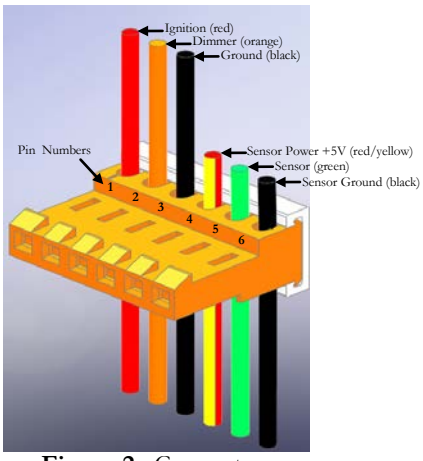


Figure 2: Connector.

Pin	Wire Color	Function
1	Red	Ignition
2	Orange	Dimmer
3	Black	Ground
4	Red/Yellow	Sensor Power +5V
5	Green	Sensor
6	Black	Sensor Ground

- *Ignition* – The red wire should be connected to one wire of the included fuse holder using the included crimp splice, and the other wire of the fuse holder connected to a circuit that switches on with the key switch. Install the included 1 amp fuse in the fuse holder

  Use only 1 amp fuses, higher amperage fuse may cause damage to the gauge or to the vehicle.

- *Dimmer* – Connect the orange wire to the factory gauge dimmer circuit by either tapping into the in-cab fuse block or by connecting directly to the wire running from the dimmer on the headlight switch.

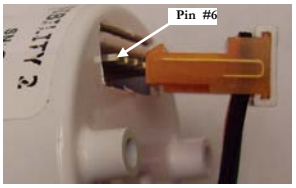
- *Ground* – The black wire in pin #3 should connect to a clean ground on the vehicle such as the battery negative terminal or a factory ground bolt.

Slide the white dust cover over the orange connector once the wires are securely installed.

NOTE: The gauge backlighting will only illuminate if both the ignition supply AND the backlighting circuits are on.

OPTIONAL: Daisy Chain Your Gauges – If multiple EV^2 gauges are being installed in one location (such as a pod), you may use a single set of the Ignition, Dimmer, and Ground wires to connect all of the gauges. Simply pass the wires from one orange connector to the next one in a "daisy chain" configuration. A single 1-amp fuse will protect up to 12 EV^2 gauges.

9 Install the connector onto the back of the gauge (angled portion on end of connector pointing up as shown in photo), and then secure the gauge in its mounting location. If drilling a mounting hole in a panel to mount this gauge, the hole size should be 2.040". Mounting Kit R19999 is available for larger mounting holes up to 2.200".



NOTE!!! The orange connector MUST be installed in the direction shown. It is possible to force it in backwards far enough to make an electrical connection which may damage the gauge!

10 Secure all wiring so that it does not interfere with moving parts or chafe on sharp edges. This may be accomplished by routing the wiring within the factory wire harness sheath, using wire ties and sheathing, and using appropriate grommets when passing through the firewall.

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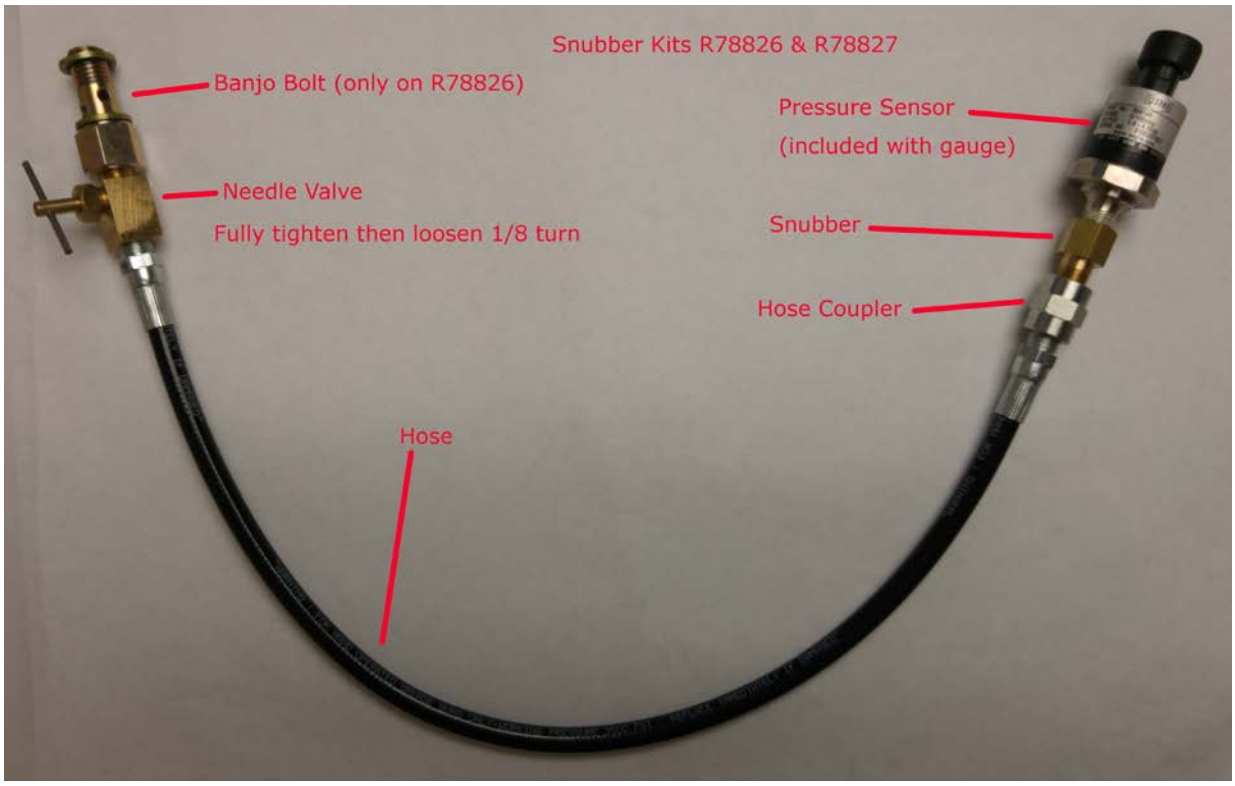
11 Software updates: Attribute programmer R82003 may be used to activate and set the integral warning light, adjust the backlighting, and filter out pulsations in the measured pressure. For optimum filtering of pulsations set Sensor Scan Rate to 115 and Weight to 0.04.

12 Engine specific information:

Cummins 1989-2002:
Use ISSPRO Snubber Kit R78826 if using factory fuel filter housing with banjo bolt connections. The kit consists of a tapped banjo bolt, a needle valve (fully tighten handle then loosened 1/8-turn), a section of hose, a female-female coupler, and an orifice snubber, which are installed in the above listed order. If using the stock fuel filter housing, the banjo bolt should be installed on fuel filter output banjo fitting (for the hose which runs to the injection pump, typically on the bottom of the fuel filter housing). Installing on the other (injection pump) side of the same hose will place the sensor too close to the pulsations of the injection pump. After installation and tightening of fittings, secure the hose and sensor to existing hoses, brackets or wiring to protect them from damage and interference with moving parts.



If using an aftermarket fuel filter system such as a FASS or Airdog with self-contained fuel filters, use Snubber Kit R78827 (same as above kit R78826 but without the banjo bolt) with the needle valve installed in the test port of the fuel system (typically in the main block near the outlet). If installing in a tee-fitting in the fuel supply hose, use the same kit and install the tee as far from the injection pump as possible.

Powerstroke 1994.5-1997 – install Snubber Kit R78827 as shown above, with the needle valve installed in the test port of the fuel pressure regulator.

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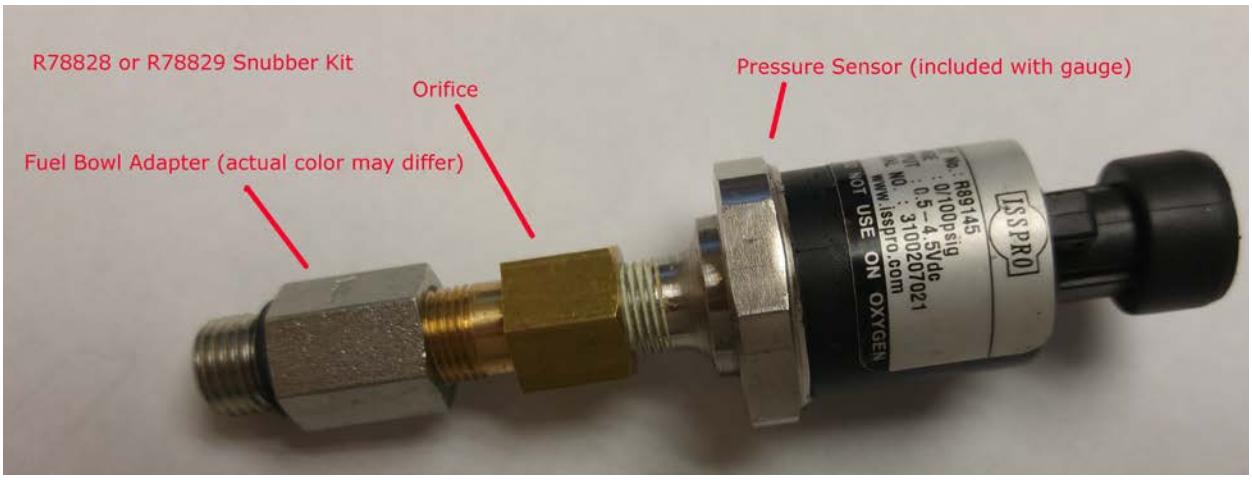
Powerstroke 1999-2003 – install Snubber Kit R78828 with the 7/16-20 SAE O-ring adapter threaded into the test port on the fuel bowl, followed by the orifice valve and the pressure sensor. Additional adapter fittings such as 45° angle 1/8" NPT fittings may be required to clear other items on engine.



Powerstroke 2003.5-2007 – install Snubber Kit R78829 with the M12x1.5 O-ring adapter threaded into the test port on the fuel bowl, followed by the orifice valve and the pressure sensor. Additional adapter fittings such as 45° angle 1/8" NPT fittings may be required to clear other items on engine.

Cummins 2003-2012 – If using stock fuel supply lines with a banjo bolt, use tapped banjo bolt R7743 for installing the sensor. If using an aftermarket fuel filter system such as a FASS or Airdog with self-contained fuel filters, install the sensor in the test port on the aftermarket fuel system.

Cummins 2012 – present - If using stock fuel supply lines a tee fitting must be added for installing the sensor. If using an aftermarket fuel filter system such as a FASS or Airdog with self-contained fuel filters, install the sensor in the test port on the aftermarket fuel system.

Duramax 2001-present – a fuel pressure gauge is only used with an aftermarket lift pump; install the pressure sensor in the test port of the lift pump.

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