

2010-Current, Fourth Generation Truck

Gauge Wiring

The cigarette lighter power wires are a good source for “ignition-on” power for gauges. If you don’t mind having the gauges lights on at all times, you can use power from the lighter to operate the gauge lights.

Gauge Lights

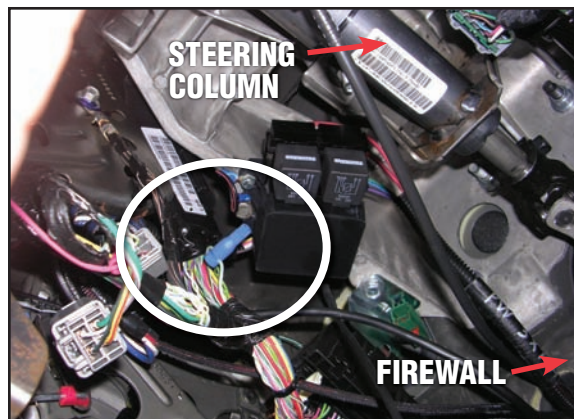
Unlike previous year trucks where you could simply remove the dimmer switch and tap into the wiring for power to your gauge lights, the 2010-current, Fourth Generation trucks have a complex wiring system that uses a body control model to operate electrical components.

While it is easy to remove the dimmer switch and air vent (use a plastic pry tool and it pops right out), a tap into the wiring does not give sufficient amperage to operate the lights. Please advise us if we missed something obvious.

So, we went in search of a circuit that is on when the headlights are on. Tracing a wire from the truck’s exterior cab lights back to a wiring harness junction under the knee bolster, we found a white wire/green stripe that could be used for 12-volt power to the gauge lights. If you would like to adjust the lights you will need to add a dimmer to the circuit.

To remove the knee bolster you need to remove two Phillips head screws at the bottom of the panel. Now the only thing holding the panel in place are about eight plastic expansion clips. Pull horizontally outward to remove the panel. For easy access under this panel, we took some extra time to remove the OBD-II plug-in and the hood release.

If you wish to make knee bolster removal easier in the future, remove several of the “tang” that hold the OBD-II plug-in and hood release in place as well as several of the plastic expansion lips on the knee bolster.



With the knee bolster removed, here is a picture of the wiring for the exterior cab lights.

If you have any other ideas for gauge lighting in the 2010-Current trucks please share them with us.

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If you need more assistance, we are only a phone call away.

(770) 886-2500

Monday–Friday
8:30am–5:30pm EST

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Installation: Gauge Install Tips

Gauge-to-Pod Installation Tip

In the kit provided by the gauge manufacturer you will have lots of hardware and brackets to keep the gauge securely in its pod. Throw the hardware away. That's right, throw it away.

We know that the gauge will eventually need a replacement light. If you use the hardware, you'll have to remove the entire gauge pod (and wiring?) to remove the hardware, to remove the gauge, to get to the light.

Save yourself the trouble. If you install the gauge using a light interference fit between the gauge and the pod, the gauge can be removed from the front of the pod. This greatly simplifies after-the-fact maintenance.

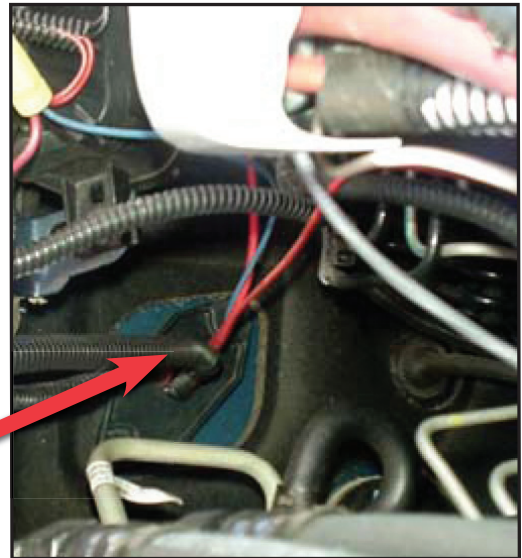
If the fit is too tight, lightly sand the area from the pod. If the fit is too loose, add some dimension to the gauge with a revolution or two of electrical tape.

Firewall Pass Through Tip

On the automatic transmission equipped trucks, the pass-through is easy. Remove the plate that covers where the clutch pedal and hydraulic cylinder would have been. Drill the hole through the plate and reinstall.

For the manual transmission equipped trucks, we suggest using the outside corner of truck's existing rubber boot that encases the steering column.

The "clutch plate".



EGT Probe Installation

The 6.7-liter engine has heat shields that make it difficult to access the exhaust manifold. In order to drill and tap for the EGT probe, you remove the air intake snorkel and use a right-angle drill with a 5/16" drill bit. Stuff a rag into the open turbocharger inlet. With a hammer and a punch, make a dent at the approximate location of cylinder number four's exhaust outlet.

Drill in the horizontal plane at the mid-section of the exhaust manifold. In this location any scrap metal will fall on the bottom of the round exhaust manifold and can be retrieved with a magnet. As you come close to drilling into the manifold, pause to blow away the metal shavings. Put grease on the drill bit to catch the shavings as you drill through. Ditto the 1/8 NPT tap.



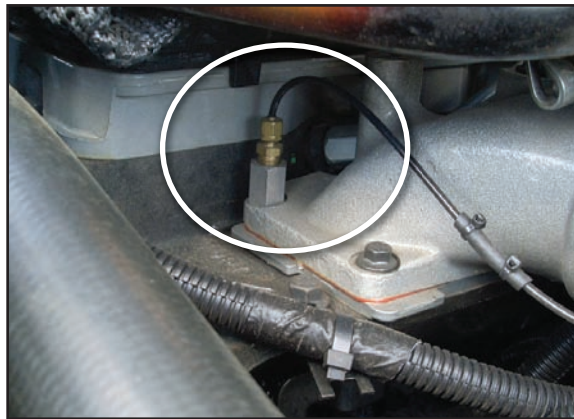
Installation: Gauge Install Tips

Use a small mechanic's magnet that will pass through the tapped hole to the bottom wall of the manifold to retrieve drill and tap shavings. Clean the shavings from the magnet, then search for more shavings. Repeat until the magnet comes back clean. Repeat again. The balance of any metal shavings will blow past the turbo exhaust wheel at initial start up and should not be a concern.

Install the EGT probe and run the wiring through the firewall and to the back of your EGT gauge. Project complete.

Boost Connection

We picked a location close to the firewall to install the boost bolt. Any of the inner row bolts (closest to valve cover) will do. On the gauge side, if the line is rubber, instead of plastic with compression fittings, use a small tie wrap to ensure that the boost line does not pop off of the gauge.



This photo shows the boost-bolt and boost line installed in a 6.7-liter engine.

Transmission Temperature

Please see supplemental instructions if you purchased the Westach temp gauge with dipstick sending unit.

We highly recommend installing the temperature sending unit directly in the transmission drain pan. This provides consistent readings and gives a good idea of overall temperature of the fluid. Install the sending unit in any flat side of the pan. The right (passenger's side) side has a small flat section near the middle that will not interfere with the fluid pickup and will not block the bolts that fasten the pan in place. If you opted for the B&M drain plug to assist in mounting, drop the pan, drain, and drill the 1/2" hole in the side of the pan and install the plug.

A no-leak tip: use epoxy (JB Weld) around the internal edges of the plug to prevent fluid leakage. Install the 1/8 NPT sensor with Teflon tape.

Gauge Testing/Tips

Boost – Be advised that upon initial start up, you will not register a boost “number.” It takes engine load to make exhaust flow; thus intake boost pressure. Take the truck for a test drive. You will find the boost pressure will parallel the position of your accelerator pedal. A typical 60 mph, half-throttle boost number is 8–10 psi. Full throttle equals full boost, which should be around 26 psi for the 6.7-liter engine(s).

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Pyrometer, 6.7-Liter Engine Guidelines

We have found that the 6.7-liter engine's exhaust is hotter than we've ever seen. Seldom do we see the temperature below 500°. For example, at cruise speed the 5.9-liter was 600°; now with the 6.7-liter engine 900° is the norm. I've seen the regeneration cycle keep the EGT at 1200° (with the previous 5.9-liter engine a 1200° reading would go hand-in-hand with lots of boost), with 0psi boost. So, hot is the way the 6.7 operates.

Be advised that at initial start-up and idle the registered temperature reading will only be 250° – 350°F (ambient air temperature and location of the sensor are the reasons for the variance). It takes engine load to make the EGT escalate.

Transmission Temperature

The lower you can keep the temperature, the longer your transmission is likely to last. The oil viscosity starts to break down around 240°F, and the transmission will be much happier below this point. Maximum oil temperature in the pan should not exceed 250°F. If the temperature rises above this point, pull over and fast idle the engine in neutral for a few minutes to cool the transmission fluid.