

99-07 Superduty Pillar Gauge Pod Installation



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IMPORTANT: Before starting installation, please be sure that all items which were supplied with the kit are accounted for.

Note: These instructions are to be used in conjunction with the instructions supplied with your gauges. This instruction sheet will guide you through the process of installing a pillar mounted gauge pod.

For a simple splice connection look at figure 21. This basic type of splice can be used almost exclusively when hooking up your wiring.

Warning: Before doing any electrical work the batteries should be disconnected.

Recommended Items:

QTY	Nomenclature
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(5')	18 ga Automotive wire (White for lighting)*
(5')	18 ga Automotive wire (Black for ground)*
(6')	18 ga Automotive wire (Red for power)*
(12')	18 ga Automotive wire (**Blue for Trans/Water Temp)*
(1)	ATM Mini Fuse Tap (Bussman P/N BP-HHH-RP or equivalent)
	Corrugated wire loom (to protect wires)
	Misc. crimp terminals for 18 gauge wire (Female Spade, Ring Post, Butt, and Instant Tap)
	Misc. heat shrink tubing
	Electrical Tape
	Zip Ties
	Riffraff Diesel AIH Tapped Fitting
	1/8"-27 NPT to 1/4" barbed adapter or compression fitting (used with the AIH Tapped Fitting)
	1/4" vacuum Tee fitting (if not using Riffraff Diesel AIH Fitting)
	High Temp Copper Anti-Seize compound
	*Varies depending on gauges and installation method.
	**Any color can be used.

Recommended Tools:

Assorted sockets and wrenches (metric and sae)
Assorted screwdrivers (common and Phillips head)
Trim removal tool
Drill
Drill Bits: 3/16" 11/32"
Wire crimper, Wire strippers, Wire cutters.
1/8"-27 NPT tap and handle
Solder Iron and Solder (Optional)

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- 1) First thing to do when starting the install is to organize your components and determine what order you are going to install your gauges in your pod. Keep in mind that your pyrometer (EGT) is the most critical reading followed by transmission temperature, then boost. Install the most critical gauge in the spot that is easiest to see for you.
- 2) After you have determined which order the gauges will be installed you can now determine the wire routing for your installation.
- 3) With the gauge pod on your workbench, you can begin to build a wire harness for your lighting circuit. If using Autometer gauges you will find the bulb holders use a white wire for power and a black wire for ground. Allow the bulb connectors to extend out of the gauge pod a few inches. This will allow easy access to change the bulbs if they burn out. (figure 1)
- 4) Once you have the wire connectors positioned you can use some 18 gauge white wire to build the lighting circuit power. You can use butt connectors or instant tap connectors to tie the white lighting power wires together. This wire will be routed into the dash and to the light controls switch.
- 5) Now you need to do the same for the lighting circuit ground wires as well as the ground for the pyrometer, temperature gauge, and GPR LED ground. These can be all tied together as one harness. This wire will be routed down to the kick panel by the emergency brake pedal and attached to a factory ground bolt.
- 6) If you have a grab handle on your pillar post you will need to remove it to install the pillar mount. ('03 and newer trucks)
- 7) Test fit the pillar pod onto the factory plastic pillar surround. Make sure it fits correctly. The pillar pod will need to be inserted from the top down to fit correctly, the bottom of the pillar mount should slide into the dash opening. The top edge of the pod should end at the top edge of the pillar surround.
- 8) After you check the fit, you can remove the factory pillar surround from the truck. To remove the pillar surround, you need to pull the rubber door seal from the frame. It should come right off as it is only pressed on. (figure 2)
- 9) Now you can pull the pillar surround down and to the rear to disengage the spring clips that hold it in position. (figure 3)
- 10) The pillar surround will need to be drilled in order to make room for the wires and tubing to be routed. If you had a grab handle you may be able to use the cutouts from the handle to route the wires. If you did not have a grab handle you will need to provide a hole to route the wires. A good tool to use for drilling the plastic is a stepped drill bit like a Unibit. This will make a very clean hole in the plastic with very little effort. Make the hole large enough to provide ample room for all the wires. You can also drill multiple holes that are smaller if you choose to route the wires separately. Choose a location on the factory surround that is not enforced on the inner surface.

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- 11) Take the factory pillar and the gauge pod and align the top edges. Use some masking tape to hold the gauge pod onto the pillar so you can locate and drill the holes for the plastic push in rivets, this will require a 3/16" drill bit. Locate the push in rivet holes on the sides of the pod evenly spaced. (Figure 4)
- 12) Remove the gauge pod from the pillar surround and remove any debris from the drilling.
- 13) You can now route the wires for the pyrometer, transmission temperature probe, and GPR LED (if installed) along with the tubing for the boost gauge in the gauge pod. You will need to route a red power wire from the pyrometer and temperature/pressure gauges to the fuse panel. Also make sure you install a black ground wire for the pyrometer and temperature/pressure gauges. Keep these in the radius of the gauge pod to ensure ample room when the gauge pod is installed to the pillar surround.
- 14) Once you have all of the wires routed into the pod and have left enough room for the gauge to be removed, you can secure the wires with small zip ties. (figure 4)
- 15) Now install the gauge pod onto the pillar surround with the push in rivets. (figure 5)
- 16) Remove the fuse panel/lower dash access panel, by twisting the (4) retaining screws counter clockwise 90 degrees.
- 17) Remove the dash side vent panel, this can be done by slipping a small common screwdriver in the aft edge and applying an outward force. (figure 6)
- 18) Remove the light control switch panel. This can be done by slipping a small common screwdriver into the slot at the bottom of the switch panel. Then apply and push the screwdriver down to disengage the retainer clips. (figure 7 & 7A)
- 19) Remove the drivers side kick panel from behind the emergency brake pedal area. There is a large plastic push rivet that needs to be removed using a interior trim removal tool. (figure 8 & 8A)
- 20) You will now have access to route the wires down to the floor area.
- 21) The white 18 gauge lighting wire will be routed to the light switch opening. It will be tied to the light blue wire with the red trace on the smaller connector. You can use your choice of methods to splice this wire. Instant tap or T-Tap connections work well here. (figure 9)
- 22) Locate the black ground wire and route it to a factory ground located on the side panel. Install a ring terminal that is the correct size to the ground you chose. (figure 10)
- 23) Remove the cover from the fuse box, find a circuit that is powered with the ignition on (radio circuit works well for this). Remove the fuse and install a fuse tap into that location. Install the fuse removed from the panel and another fuse (3 amp is all that is needed) for the gauge power. (figure 11) As alternate for the power you can use the Auxiliary Idle Control connector that is attached to the forward side of the lower dash cross member. (Held in place with a plastic push rivet clip) Just tap into the red wire with the yellow trace. (figure 12)
- 24) You will have to make a small trim in the cover for the fuse box cover to allow the wire to pass through for the gauge power. You may also have to trim the inner webbing out at the fuse tap location.

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- 25) If you have an automatic truck, you can use the clutch master cylinder cutout as a wire penetration point. Since there is not a clutch master cylinder there is a plastic plug installed on the firewall that makes a great pass through for your wires. If you have a manual truck, you can drill a hole in the firewall near the factory penetrations and install a grommet to protect the wires/tubing. (figure 13 & 14)
- 26) Route the pyrometer probe wire, the transmission temperature wire, and the boost tubing through the firewall to the engine compartment. The pyrometer wiring cannot be cut, so route enough wire to the drivers side manifold near the aft end. Coil the remaining length inside the cab and tie to the dash structure to ensure it remains clear of your feet or pedal controls. The transmission sender wire can be routed along the inside of the frame rail to the drivers side of the transmission near the shift mechanism. The boost tube should be routed along the cowl panel and to the MAP line or intake spider.
- 27) At the transmission, locate and remove the pressure test port plug on the drivers side, just forward of the shift linkage. (figure 15 for 4R100). Thread in the sender to the pressure port **DO NOT OVER TIGHTEN THE SENDER!!!** It is a pipe thread so once it is tight it only needs a small amount of torque to keep it from leaking. Now you can attach a ring post terminal onto the blue wire and then you can install it onto the threaded post and install the nut. (figure 16)
- 28) Install the 1/8"-27 to 1/4" barbed fitting into the AIH tapped fitting with a small amount of thread sealer tape. Now you can trim the plastic boost tubing to fit. Install the rubber boost tube adapter to the tubing and secure it to the barbed fitting. If you chose not to install the AIH tapped fitting, you will need to cut the MAP sensor hose and install a 1/4" barbed "T" fitting. (figure 17)
- 29) At the drivers side exhaust manifold or up-pipe, you need to locate the pyrometer probe. Depending on your installation you will need to drill a hole and tap it with threads with a 1/8"-27 NPT tap. The hole size for this thread is 11/32" or 0.343". It is best to drill this hole in small steps. The manifold casting is pretty soft and drills easily. Starting with a 3/16" drill then going to 5/16" and then drilling the final size of 11/32" will ensure the hole is sized properly for the threads to be cut correctly.
- 30) It is not required to remove the manifold for this step. Careful drilling and using a vacuum will allow you to remove any small chips that may be in the exhaust. After the hole is drilled, place a vacuum at the hole to suck any loose chips out. When tapping a pipe thread you do not need to run the tap all the way in. Pipe threads are tapered and only require a portion of the tap to enter the material. If you are unsure, test fit the pyrometer probe after you have tapped a portion then if it is not enough engagement, remove and tap the hole a little deeper and recheck. When complete use a vacuum again to collect any loose metal in the manifold.

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- 31) Now that you have the threads in the manifold you need to apply a small amount of copper high temp anti-seize compound to the threads of the pyrometer probe.
- 32) Install the pyrometer probe into the threaded hole and snug down. This does not need to be over-tightened! (figure 18)
- 33) Now you can make the connections from the pyrometer probe to the wiring from the gauge. Make sure the connections are tight, then protect them from the weather.
- 34) Now you can hook up the wire to the Glow Plug Relay for the GPR LED. It is recommended to use an inline fuse at the GPR post to eliminate the risk of damage in the event the wire becomes shorted out. Any inline fuse holder will work. Use a low amperage fuse in this as there is no need for anything over 1 amp for this LED. You will need a 5/16" ring post terminal to hook directly up to the post that powers the glow plugs. (figure 20) Splice your GPR LED power wire to the inline fuse holder and install the ring post to the fuse holder. You can then remove the nut from the GPR and install the post, then re-install the nut.
- 35) You are now ready to start the truck up (after hooking the battery back up) so you can check the operation of the gauges. The GPR LED should illuminate as soon as you turn the key on and the WTS light on the dash appears. The GPR LED will remain illuminated after the WTS light extinguishes and can be on up to 2 minutes in cold temperatures. (If the engine oil temperature is warm, the GPR LED will not illuminate as the PCM does not require the glow plugs to be used to start when the engine is warmed up). The EGT gauge should begin to read a temperature rise instantly as soon as you start the engine. You should see somewhere between 300°-400° F on your EGT gauge at idle. As you increase the throttle the EGT gauge will climb. **1200°F and lower is fine all day long, but 1300°F and up should be limited to short bursts!** Boost will not register on your gauge until the truck is under a load. Transmission temperature will register after several miles of driving.
- 36) If you are installing a pressure gauge in your pod in lieu of one of the other gauges mentioned, you will need to route the wire to the appropriate location to where your sender is located.
- 37) If you are installing a water temperature gauge you will need to mount the sender in one of the coolant ports. There is one on the water pump that offers an easy installation. Make sure the sender does not interfere with the thermostat operation, it may be required to install a short sender in this location. (figure 19)

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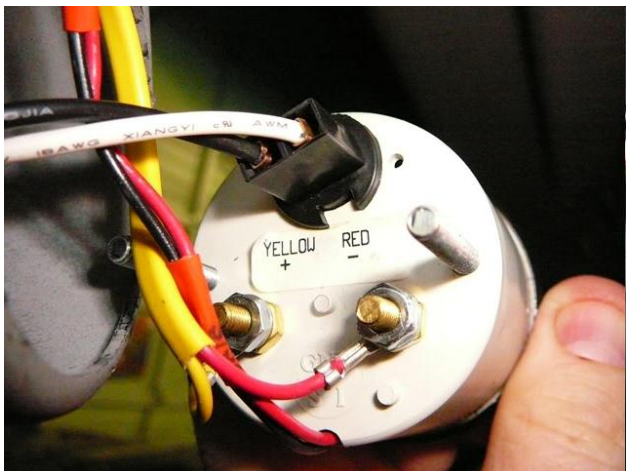


Figure 1



Figure 2



Figure 3



Figure 4



Figure 5



Figure 6

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Figure 7



Figure 7A

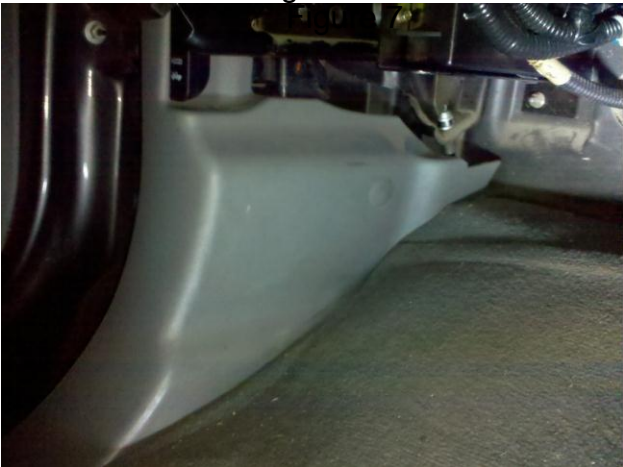


Figure 8



Figure 8A

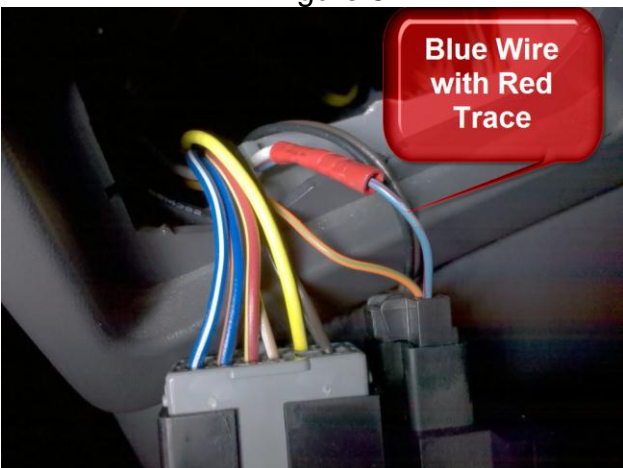


Figure 9

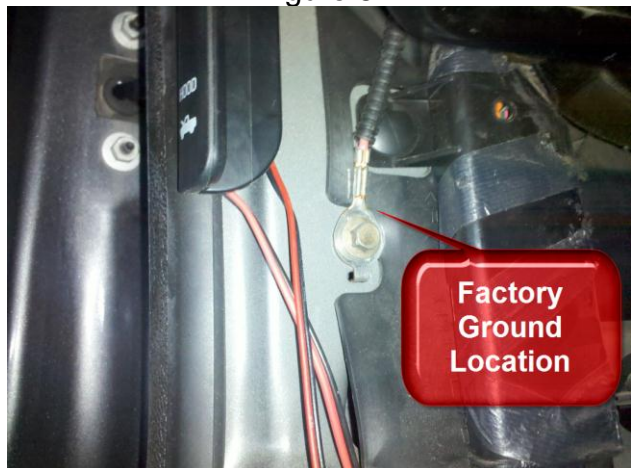


Figure 10

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Figure 11

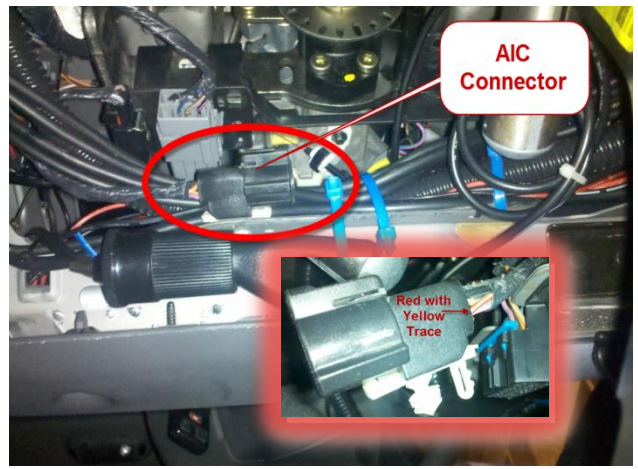


Figure 12



Figure 13



Figure 14



Figure 15



Figure 16

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Figure 17



Figure 18



Figure 19



Figure 20



Basic Wire Splice

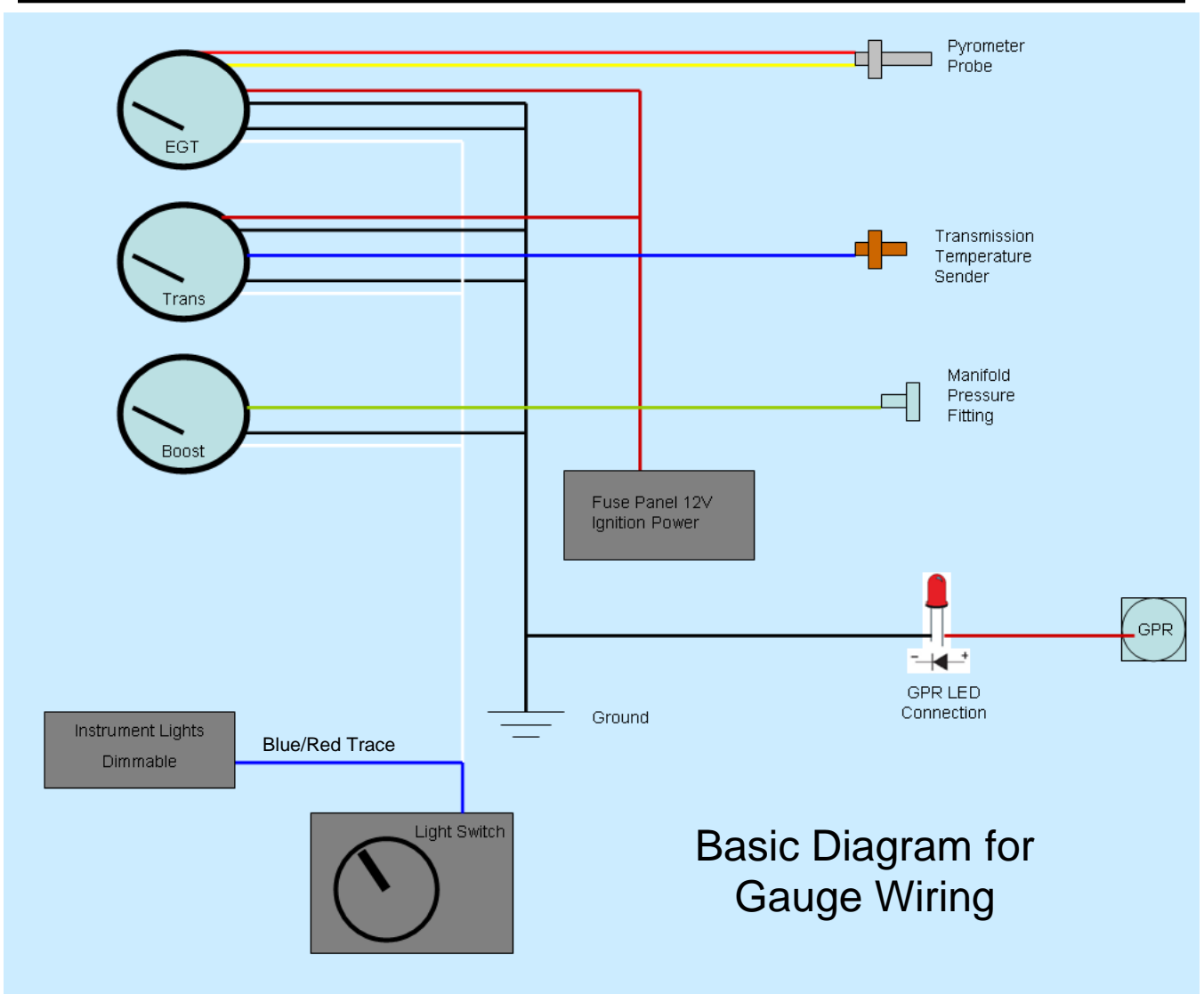
Figure 21

For a simple wire splice to branch off, strip approximately 1/2" of insulation from two wires. Then twist them together tightly. Trim excess wire to provide enough exposed strand to fit your splice terminals. Insert the wires into the terminal and crimp. Now you can strip another wire, and insert into terminal and crimp. Add a small zip-tie to the double wire at the breakout to keep the two secure.

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