

Pacific Performance Engineering, Inc.  
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# ***2001-2010 GM Trucks*** **Pyrometer Gauge Kit** **Installation Guide**

## **DISCLAIMER OF LIABILITY**

This is a performance product increases horsepower above and beyond factory specifications. As a result, more horsepower creates more stress on the drivetrain components, which could result in drivetrain failure. Note: Legal in California only for racing vehicles which may never be used on the highway.

This agreement sets forth the terms and conditions for the use of this product. The installation of this product indicates that the Buyer has read and understands this agreement and accepts the terms and conditions.

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The Buyer is solely responsible for all warranty issues from the manufacturer.

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Under no circumstances will the Seller be liable for any damage or expenses incurred by reason of the use or sale of any such equipment. In the event that the buyer does not agree with this agreement: the buyer may promptly return this product, in a new and unused condition in its original packaging, with a dated proof of purchase to the place of purchase within ten (10) days from date of purchase for a full refund. The installation of this product indicates that the buyer has read and understands this agreement and accepts its terms and conditions.

## INSTALLATION:

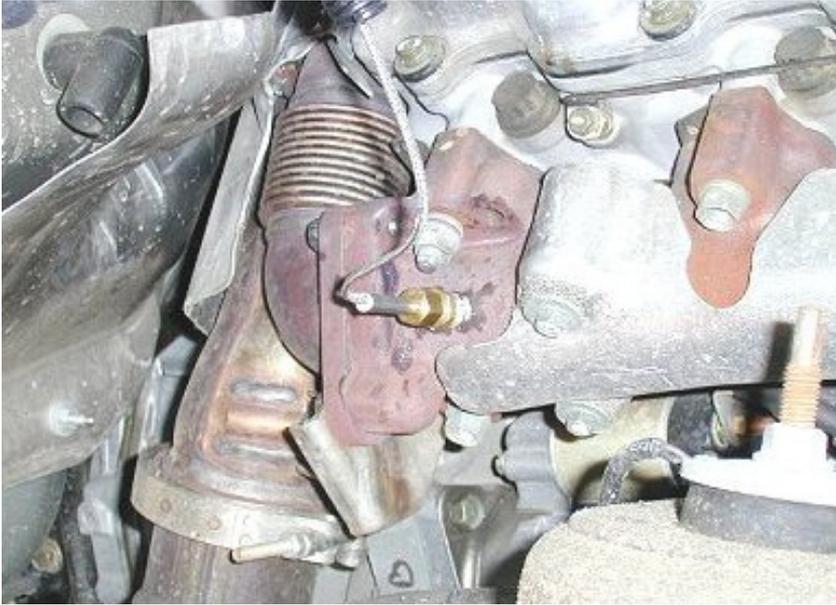
The gauges simply press into place (no additional hardware is needed). The truck's A-pillar molding is removed by working your fingers behind the top edge, to the left of the visor, then pulling back and to the right. The metal spring clamp shown here will pull out. The bottom of the factory A-pillar molding can then be pulled straight back, while you lift the molding out of the recess in the dash.



You will need to cut an oval shaped opening in the original A-pillar molding to allow the boost pressure tube and gauge wiring to pass through. It is best to make the opening in the molding a few inches below the bottom gauge location. We have also found that a trial fit of the gauge pod to the molding will help you locate the position for the oval shaped hole. Now you will want to lay the fully assembled and painted gauge pod onto the dash. Run the boost pressure tube and all of the wiring down through the opening at the foot of the A-pillar opening in the dash, and out through the fuse-block panel access on the side of the dash.

Tip the A-pillar assembly up and onto the truck's A-pillar frame, and begin moving the pod/molding into position while taking-up any slack in the wiring and boost tube as the pillar pod is slid into place. The 6' thermo-coupler wire and boost pressure tube need to be pushed through the large rubber grommet located on the left side of the firewall. Cut a 1" slit in the boot, tape the wire/tube to a stiff rod and then push them through. This boot is double-sided, so you'll need to make a slit in both sides. Once you complete the wire/tube routing, a bead of black silicone sealer is needed to re-seal the boot around the wires and tubing. Splice into the 1/4" rubber pressure line that is part of the Duramax turbo wastegate actuator. You may need additional fittings / adaptors to make this connection. Reading boost pressure at this point will be upstream of the intercooler, which could be 1-2 PSI higher than the actual intake manifold pressure. Given the variables involved, this is as accurate as it needs to be, and is certainly easier than drilling/tapping the aluminum intake.





We chose to drill a  $21/64$ " hole and tap it for a port in the  $1/8$ " NPT the exhaust manifold for a more accurate exhaust temperature reading. A turbocharger can absorb anywhere between  $100^{\circ}$  and  $300^{\circ}$  F, depending on the engine RPM and load, as the exhaust heat turns into mechanical energy and spins the turbine.

Placing the thermo-coupler in the down pipe (after the turbo) will produce more variability in temperature response and will produce a lower overall temperature. An "after the turbo" thermo-coupler location makes it more difficult to evaluate exhaust temperature.

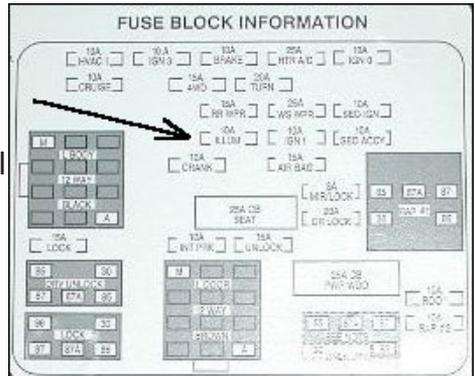
Drilling and tapping on the upstream side of the turbocharger might be a little disconcerting, but the following method is both safe and easy. It probably wouldn't take a very large piece of metal to damage the turbine blades, but doing it correctly greatly reduces the chance of damage. Access to the passenger side exhaust manifold is through the front wheel-well.

The plastic wheel-well liner is quickly removed by first removing the plastic snaps around its perimeter (shown on the right). There are also two plastic "ratchet fasteners" that attach a wire loom to the inside of the wheel-well liner. One more ratchet fastener holds the plastic wheel-well to the air box frame. Use a heat gun or a hair dryer to soften the plastic ratchet fasteners, and then push/pull them out. Most auto parts stores will have replacements if you damage the original ones.



**Tip:** Turn the engine on and leave it idling and put grease on the drill bit. This way the drill bit will catch most of the scrap metal or it will be blown out. The drill bit you will need is for a 1/8" NPT pipe thread. Likewise, any small metal chips created while tapping the hole with a 1/8" NPT tap will also be blown out.

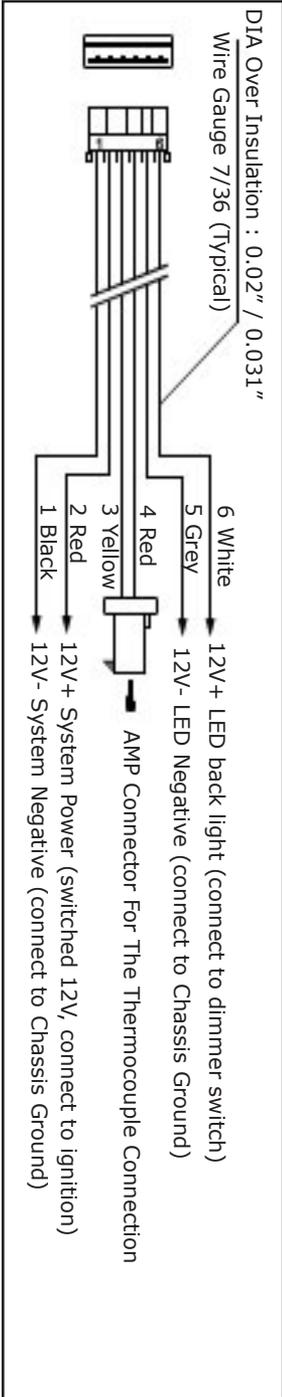
Once the gauge pod, boost tube, and thermo-coupler have been installed, you can make the final wiring connections to the fuse block. An outline of your fuse panel can be found on the flipside of the fuse box cover. The arrow points to the "ILLUM" fuse, which is the dash panel illumination lamp fuse. This power source varies with the dash light dimmer. The "cold" side of the fuse is on the right. Connecting your lamp power source connection to the "cold" side of the fuse means that power to the gauge lamps will be fused. The fuse taps illustrated earlier will work to bring power out for the gauge connections. Just to the right of the "ILLUM" fuse is the "IGN1" fuse. The IGN1 fuse is hot with the ignition key in the "RUN" position, and will be used to power the signal conditioning circuit box used in conjunction with the EGT gauge.





The photo on the left shows both the power and ground connections. The ground connection used is a stud that can be double-nutted with a 6mm nut with a crimon electrical connection. Both the gauge lamp grounds and the gauge ground connections are made at this point.

### 6 PIN Female Molex Connector Used For Stepper Motor Pyrometer Connections











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