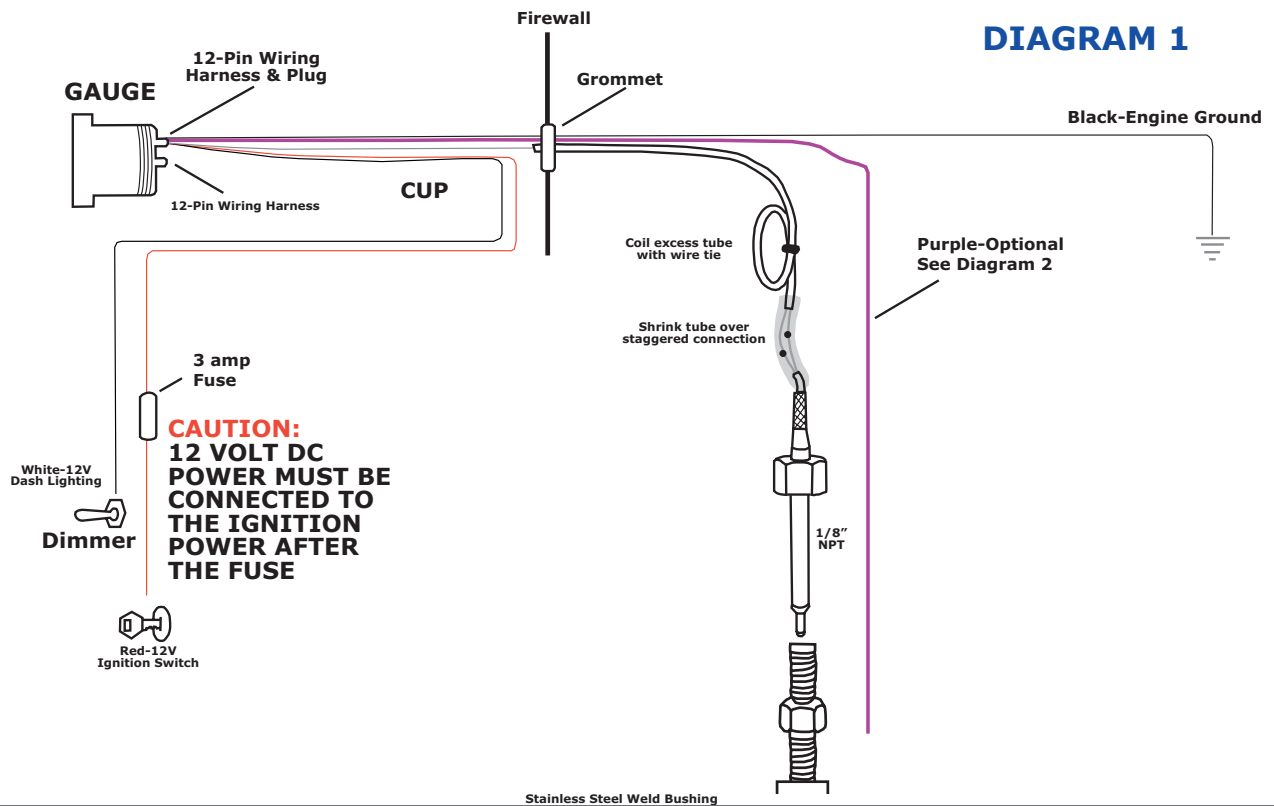
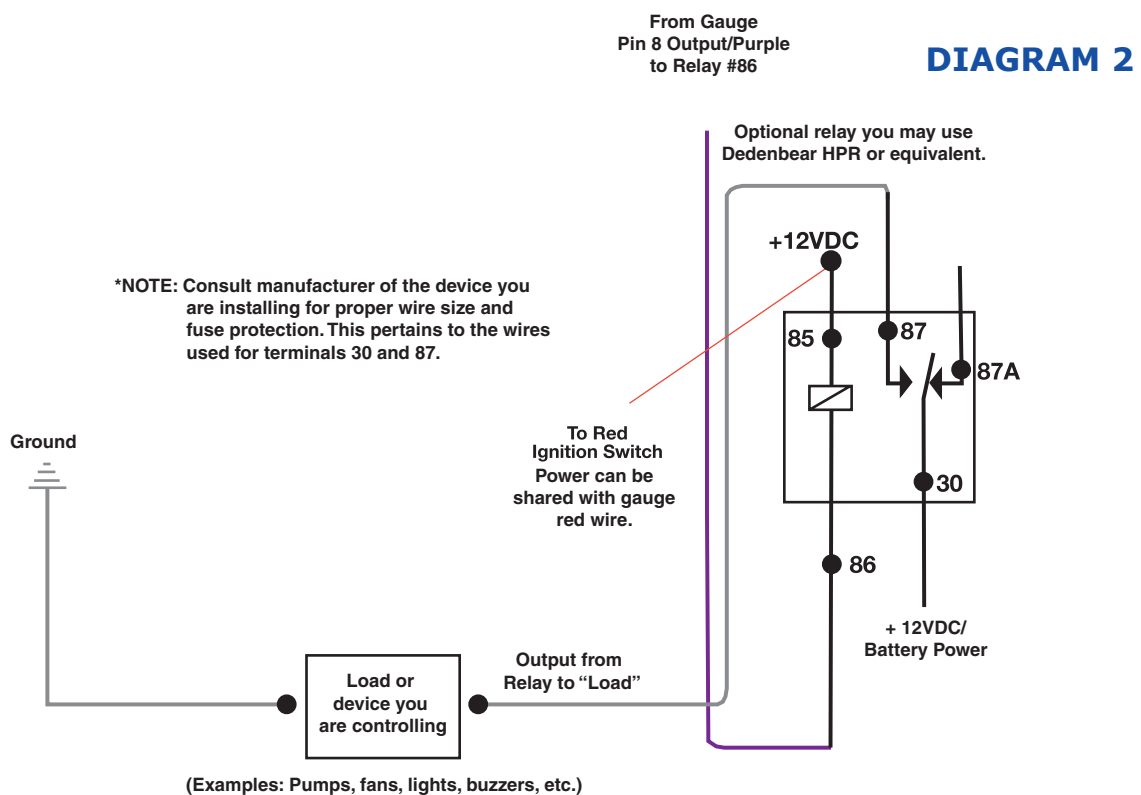


Wiring Installation Instructions for : PYROMETER 2 1/16" Spek Pro Professional Racing Gauge

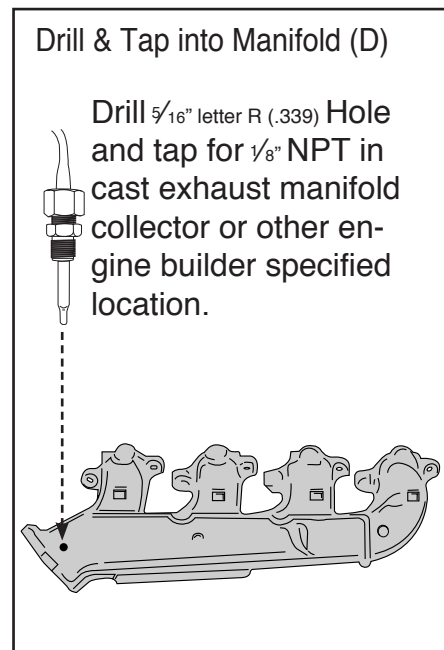
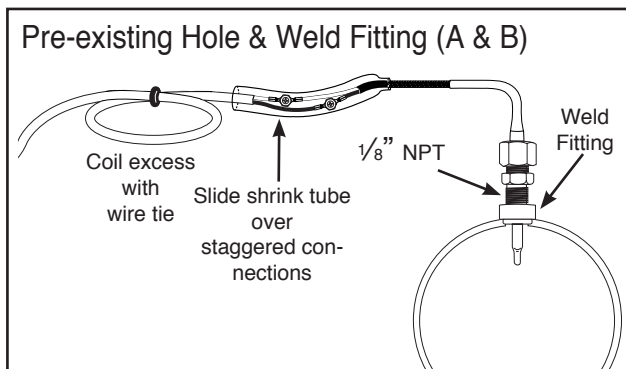


Optional: Wiring a Relay for Gauge Controlled Output



Probe Installation

1. Begin by installing the thermocouple in the exhaust. For turbo engines, install the probe 1-2 inches from the turbo exhaust outlet or you may install the probe prior to the turbo. You may consult an engine builder or tuner for recommendations for which probe location is best for you. If installing pre-turbo, removal of the pipe or manifold may be necessary to avoid metal shavings in the turbo. For non-turbo engines, install the probe 1-2 inches from the cylinder head. The probe can be mounted three different ways, so please use the method best suited for your needs.
 - A) Pre-existing 1/8" NPT Threaded Hole: Simply screw the threaded fitting into the hole, insert the probe and tighten the nut already on the probe from the factory. Make sure the probe is oriented so the wires do not come in contact with, or become too close to, the manifold or other hot engine parts.
 - B) Weld Fitting: Drill a 9/16" hole and weld in the supplied bushing being careful not to distort the bushing. The bushing must be welded and not braised into the manifold or exhaust header. Screw the threaded fitting into the hole, insert the probe and tighten the nut already on the probe. Make sure the probe is oriented so the wires do not come into contact with, or become too close to, the manifold or other hot engine parts.
 - C) Drill & Tap into Manifold Method: You may drill a cast iron manifold with a 5/16" letter R (.339) drill bit and follow through with a 1/8" NPT pipe tap.
2. With your probe installed, the extension wire can now be connected to the probe and routed from the gauge. Pull the large shrink tube back from the screw connections on the probe. Attach the staggered end of the extension wire with the small (No. 6) ring terminals to the probe using the #6 screw and self locking nuts. Attach them Red to Red and Yellow to Yellow. Slide the shrink tube over the staggered connections to protect them. Do not shrink this tube until after the installation is complete, and correct operation is verified. If a heat source is not available the open ends may be closed with wire ties.
3. The extension wire is an integral part of the pyrometer calibration. It may not be shortened or lengthened without effecting the gauge calibration. You'll need to determine a suitable location to coil the excess and tie it loosely with a wire tie. (Loosely tying the excess coil prevents embrittlement caused by vibration.) Pass the extension wire through the fire wall using an existing hole or use the rubber grommet provided to protect the wire from damage.



Programming:

The programming is achieved in steps, using the middle button on the face of the gauge. Think of the middle button, as a “Mode” button. The Left & Right buttons are basically “Down” & “Up” buttons. Please note, that each push & release of the buttons require about a 1 second push to activate. A quick tap may not register to the gauge, that you have pushed the button. This built in delay is intentional to prevent accidental setting changes.

Illumination Brightness (when no power from dash lighting is used)

This is one of the only steps that you do NOT use the middle button for. Simply push and hold the left button to lower the brightness, or push and hold the right button to increase the brightness. The gauge pointer will raise and lower with the brightness to indicate current brightness relative to min. and max., however will return to normal reading almost immediately after the last button push.

Wiring:

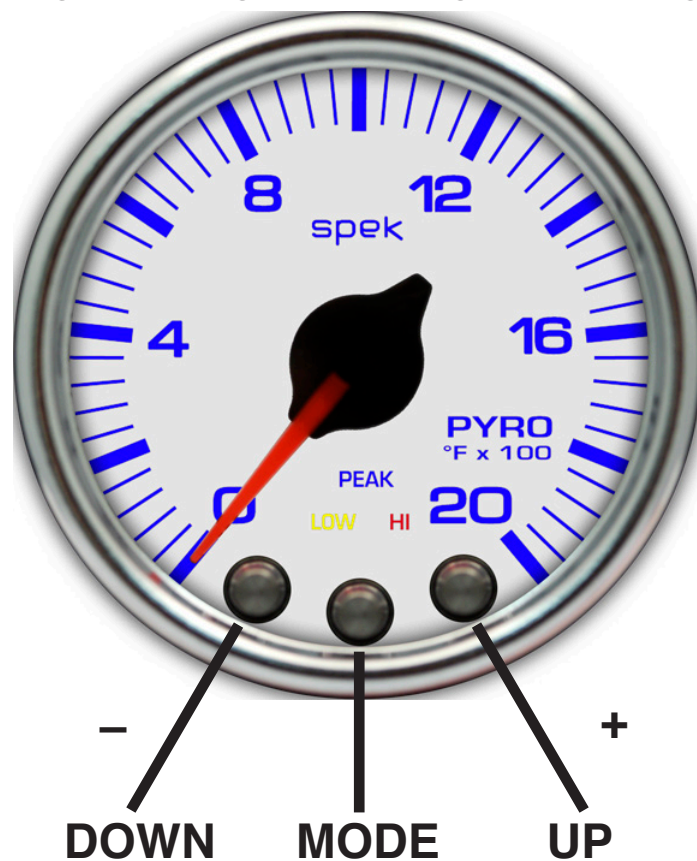
Red: Switched, key on power. Protect with 3 amp automotive fuse.

Black: Engine ground.

White: Dash lights dimming circuit (power controlled, not ground controlled)

Purple: Used for triggering (grounding) relay coil high set point of the gauge is triggered.

Programming and Using Your Gauge



Programming: Cont.

Peak

With power on, the first press and release of the middle button will display PEAK. The pointer will move to the peak reading, and the word PEAK will continue to flash. If no button is pushed for about 30 seconds, the gauge will default back to the current reading, and peak automatically clears. To clear the peak, without waiting for the time-out, push either the left or the right button while in Peak-Mode. If you do not want peak cleared, then push and release the middle button 5 times to cycle through all of the remaining menus and back to normal operation.

High Warn Set Point

Push and release the middle button 2 times. The pointer will move to the current high set point, and the word HI will continue to flash. While in HI set mode, push and hold left button to move set point lower or push and hold right button to move the set point higher. If no button is pushed for about 30 seconds the gauge will default back to the current reading. It will also store the last HI set point adjustment. When readings are above high set point, the word HI will illuminate, and gauge lighting will turn red.

Low Warn Set Point

The pyrometer does not have an active LOW warning, even though it has a LOW warning set point. This feature should be ignored.

Gauge Illumination Color Set Point

Push and release the middle button 4 times. The pointer will move to a predetermined reading on the scale (associated with the current color chosen), and the face illumination will begin to flash about once every second. The words PEAK, LOW, and HI will also flash together about once every second. Push and release the left button to move the pointer down which also changes the illumination color. Push and release the right button to move the pointer back up, which changes the illumination color. Each left and right button push requires about a 1-second push. If no button is pushed for about 30 seconds the gauge will default back to the current reading and the last color selected will be stored. If no color (illumination color off) is selected, the lighting will remain off except for the lit pointer. The face will still warn and light up in red if a low warning is detected.

Changing Lit Pointer Brightness

Push and release the middle button 5 times. The color will continue to flash like it does in Gauge Illumination Color Set mode, however the PEAK, HI, and LOW indicators will no longer be flashing. Now press and hold the left button and the middle button at the same time. The pointer will step all the way up to maximum gauge reading while you are holding the pair of buttons in. Release the buttons when maximum gauge reading is achieved. The illumination will turn off (except for the pointer). You may use the left and right buttons to adjust the pointer brightness. You may either press and release the middle button to store it and to return to normal function, or just let it time out after about 30 seconds.

Demo Mode

While in Gauge Illumination Color Set Point mode, push and hold the middle button and the right button at the same time, and continue to hold until the pointer reaches maximum reading. Release the two buttons. The gauge will now continuously operate in Demo mode (changing colors, and sweeping back and forth) until any button is pushed and released. It will then return to normal operation.

Factory Reset

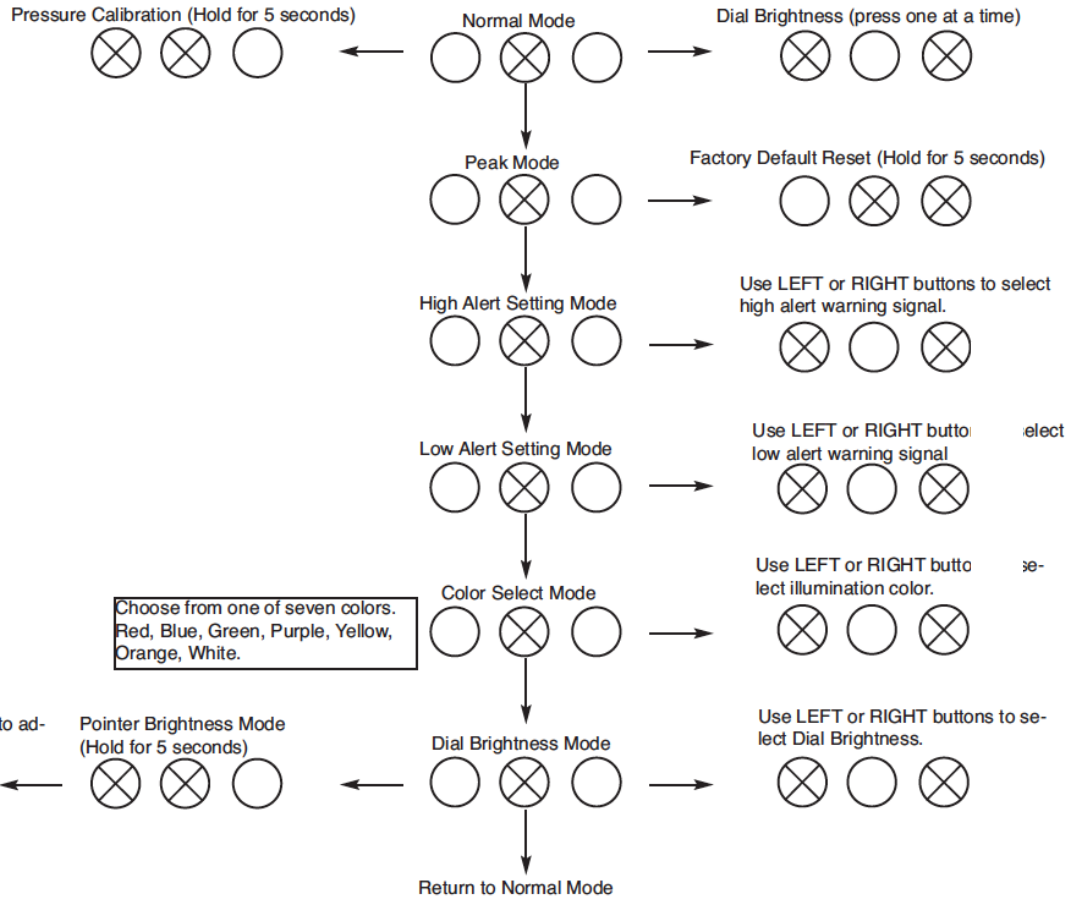
While in PEAK mode, press and hold the middle button and the right button at the same time until the pointer moves to maximum reading. Release both buttons. The gauge will now reset to all factory default settings.

Gauge Output Control Wire (purple wire).

The purple wire can be used to ground/activate a relay if you want to control another device whenever the gauge goes into HIGH warning. The purple wire will ground the "coil-side" of a common relay, with a maximum load capability of 1.5A (on the purple wire). Generally you would run a key-on power source to terminal 85. Run the purple wire to terminal 86. Connect your power source (most cases battery positive) for the device that you want to control to terminal 30. Terminal 87 will now be that same power source leading to your controlled device anytime the relay is activated (when EGT goes to your HIGH Warn Set Point. See Diagram 2.)



Oil/Water Pressure Programming Quick Reference Guide



○ ⊗ ○ = Save changes and advance to next menu

⊗ = Depressed Button

⊗ ○ ⊗ = When pressed together exit menu without changes