

Thank you for purchasing the Track Dog Racing Gauges. These instructions are for wiring the Westach brand gauges with the TDR gauge panel for all model years of the Miata. Refer to the installation instructions for wiring and installing the gauge kit into your car. There are many options as to which gauges you may want to install, but the wiring and the installation will be similar. We also offer a prewired kit to simplify your wiring. The photo below is the TDR angled gauge panel for the '99-05 Miata; the TDR gauge panel for the '90-97 Miata wiring is similar.



Minor modifications such as clearances may be required to your dash area where the gauge panel will insert depending on the combination and placement of your gauges. Additional wiring and mounting for the sensors will also need to be considered. If you are going to move your radio down and install the gauge panel on top, which is the preferred method you will need to purchase a radio removal tool from Track Dog Racing or you may find one at your local automotive parts store.

Here is a list of items and tools you may require for this installation depending on your gauge configuration.

Radio removal tool	Phillips screwdriver
Wire cutters and strippers	Soldering gun
3/16" shrink tubing	Extra wire for sensors, 20-22 gauge
Tee connection if using the water sensor	Vacuum hose
Electrical tape	Tie-wraps
Dremel tool or other cutting device if needed	Vampire connections

The two generations of Miatas, '90-97 and '99-05 dashboard requires different methods to mount the gauge panel. For this reason there are two styles of TDR gauge panels. The angled metal version works with the '99-05 style and allows the prewired gauge to snap into place. The '90-97 version is a flat plastic model that uses the individual gauge mounting bracket to hold the gauge panel up against the bezel. Some modification will be required depending on the gauge selected and the placement of that gauge.

MOUNTING GAUGES INTO '90-97 PANEL

1. Install radio into the bottom slot of the bezel until the clips are secure as shown in Photo 1-A.
2. Attach the new TDR panel into the bezel above the radio.



Photo 1-A: Radio and gauge panel mounted into bezel



Photo 1-B: Modified mounting bracket to secure gauge panel



Photo 1-C: Modified mounting bracket installed pressing against bezel



Photo 1-D: Modified mounting bracket installed pressing against bezel

3. Remove the gauge mounting brackets from each gauge and place the gauge, based on your preferences into the TDR gauge panel.
4. The gauge mounting brackets secure the gauge panel against the bezel. Modify the mounting bracket as required to press against the bezel as shown in Photo 1-B. Install remaining gauges as shown in Photos 1-C and 1-D.

MOUNTING GAUGES INTO '99-05 PANEL

5. Remove the gauge mounting brackets from each gauge and place the gauge, based on your preferences into the TDR gauge panel.
6. The mounting bracket may require removal of some material for clearances as shown in Photo 2-B. Use a sander, file or cutters to remove material as necessary. Remove a small amount and recheck.



Photo 2-A: Attach mounting bracket to the gauge

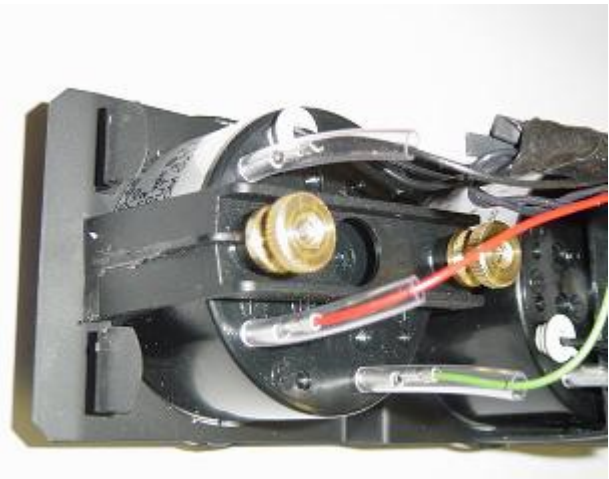


Photo 2-B: Modify the mounting bracket as required for clearances

7. Before wiring, check to make sure the gauges will install without any clearance issues as shown in Photo 2-C. The gauge set shown in Photo 2-D required notching the dashboard area for clearances. This modification will be covered by the gauge panel and will not effect any reinstallations in the future.



Photo 2-C: Modify dash as required for gauge clearances



Photo 2-D: Disconnect hazard warning light connector

INSTALLING THE LIGHT KIT

8. All year models lighting and wiring are the same. You will use only the longest light holder tube for the light kit as shown in Photo 3-A. Snap the long tube off the support and discard the remaining tubes.
9. Pull the two wires through the tube opposite of the flanged in as shown in Photo 3-B. Push the bulb into the tube. The bulb barely pushes in so don't push too hard. Installation in the gauge will support the bulb and holder.
10. The Miata uses green lighting so the green rubber cover will be used. To simplify putting the cover on, lick the bulb first to help lubricate. Put the green rubber cover over the bulb as shown in Photo 3-C. Do not pull to hard or you could damage it. The green cover may not cover 100% of the bulb; this is normal since only a small portion is exposed for lighting.

11. Remove the blank plug from the back of the gauges as shown in Photo 3-D.
12. Push the light tube into the back of the gauge as shown in Photo 3- E. It should be snug, but if it is not, use a small amount of silicon rubber or other product on the outside to hold it in place.



Photo 3-A: Light kit components



Photo 3-B: Insert the light wiring through the tube opposite of the flange end



Photo 3-C: Gently install the green rubber cover over the light bulb



Photo 3-D: Remove the blank plug from the back of the gauge

13. There is no voltage polarity with the light bulb wiring. Attach one wire from each light together with an extension wire about 18" long (not supplied). For best connections use a soldering iron followed by shrink tubing as shown in Photo 3-F. Attach the other light wire in the same manor with an extension wire about 18" long. See Gauge Installation for power source.



Photo 3-E: Install light into the back of the gauge



Photo 3-F: Attach the power leads together

INSTALLING THE WIRING HARNESS

8. The factory harness consists of three or four lead wires depending on single or double input configurations. On the back of the gauge is a number designating the input function. Push on the appropriate colored lead on to the gauge pin; make sure it is secure. The No. 4 Pin is the RED wire, 12V Positive. The No. 5 Pin is the BLACK wire, 12V Negative. The Input wiring uses a GREEN wire attached to the No. 3 Pin and a WHITE wire to the No. 2 Pin as shown in Photo 4-A.

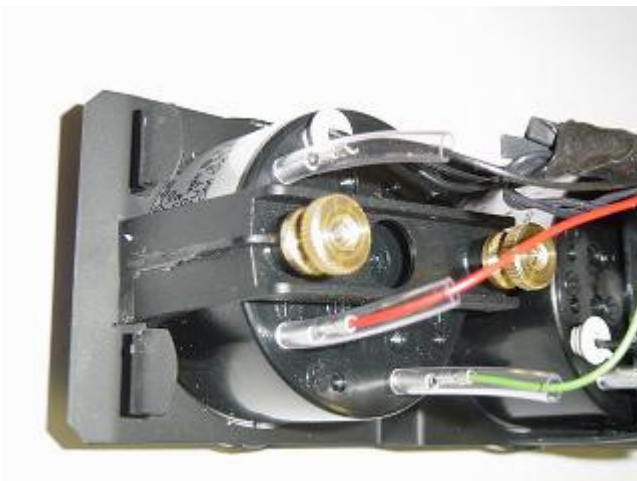


Photo 4-A: Push on the wires to the gauge pins



Photo 4-B: Bundle the wires using tie-wraps

14. The temperature sensor wires use a common ground. When you are setting up your wiring for the temperature sensor or sensors attach the ground wire with the gauge BLACK 12V Negative wire. This is required for proper reading of the sensor. Solder the wires together along with an extension wire about 18" long to be attached to a 12V Negative source. Bundle the RED wires together along with an extension wire about 18" long to be attached to a 12V Positive source. See Gauge Installation for power source.
15. Each of the Sensor wires will require extension wires long enough to reach their source of input. We usually install a 2-conductor 20 ft. lead wire that can be shortened after the sensing point is determined. Install one lead to the 12V Ground as stated above and to either the GREEN or WHITE wire. The O2 sensor wire does not require a ground wire.
16. Bundle the wires together using electrical tape and tie-wraps to secure as shown in Photo 4-B. In our TDR Wiring Kit we use plugs to simplify installation and removal. We sell the connector kits separately in 2-Pin, 6-Pin and 9-Pin configurations. Contact TDR for more information.
17. Refer to either the '90-97 or '99-05 Gauge Installation Instructions for more information such as the O2 oxygen sensor and temperature sensor connections, lighting and power sources.

We hope you will be pleased with our products. If at any time you need assistance please feel free to contact us by phone or email us at support@trackdogracing.com.

The Track Dog Racing Team

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