

ALTA

PERFORMANCE

R53 BOOST GAUGE INSTALL

052009

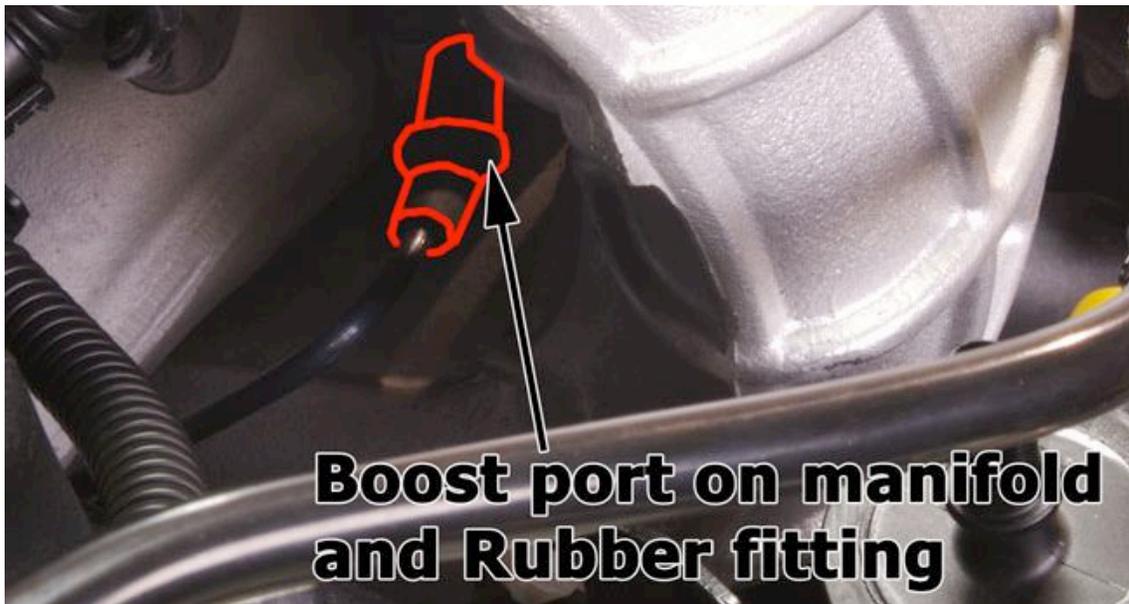
Thank you for purchasing the ALTA Performance gauge pod. Installation should only be performed by persons experienced in the proper operation of Mini electrical and body systems. Please read through all the instructions before performing the installation.

SPECIAL NOTES:

- Use of the factory service manual, can be very helpful during the installation. These can be purchased as the dealership, or online. <http://www.realoem.com> has diagrams for the entire car, which can also be helpful.
- These instructions are for installing a Prosport Boost Gauge in conjunction with the ALTA gauge pod. There are included instructions with Prosport Gauges, but we recommend using ours as they are tailored to your Mini.
- Included with your Prosport Gauges is extra hardware that will not be used. We recommend using the hardware included with your ALTA gauge pod, as these are tailored specifically to your Mini.
- Gauge fits into gauge pod by using the included foam tape. Use roughly 2" of foam tape (or go about half way around gauge) and install behind bezel of gauge. When pushing in gauge slightly twist gauge into place. If gauge is not tight enough pull out gauge and install slightly more foam tape.
- It is possible that wires can change colors or function over time. It is very important to use a volt meter to probe for proper voltages when. A volt meter is something that can be found at a Radioshack or any electronics store.
- There is a buzzer that is built into Prosport gauges which is part of the warning system. When you first turn on the gauges this buzzer will sound off. It can be turned off by pushing button on front of gauge while buzzer is buzzing during startup.
- The small buttons on the face of the gauge can rattle slightly. A small bit of silicone, or twisting the bezal slightly will keep it tight.

Gauge Installation Instructions

- 1) Disconnect battery. Battery is located in boot under lower floor panel.
- 2) Raise hood, and locate port on passenger side of vehicle under intake manifold. This port can be accessed better by unclipping some of the fuel hoses, and electrical connectors surrounding it.



- 3) Using long needle nose pliers, reach under manifold and pull off rubber fitting and hose from intake manifold.
- 4) Use supplied tee and connect one leg of tee to OEM rubber fitting, one leg to a short 3" piece of 5/32" vacuum hose, and the remaining leg to the remaining 5/32" vacuum hose.



- 5) Reconnect 3" long, 5/32" hose to port on intake manifold. (NOTE: The use of long needle nose pliers will help reach to fitting.)
- 6) Route remaining 5/32" hose under intercooler toward intake system. This hose will be connected to pressure sensor fitting.
- 7) Locate Prosport pressure sensor fitting, and bolt to front of air box using OEM bolt. This step may vary slightly if aftermarket intake is installed. The below picture represents the general area to install it. Make sure to install supplied filter along the hose.
- 8) Reconnect battery, and proceed to electrical install.



SHOWN WITHOUT VACUUM HOSE CONNECTED TO PRESSURE SENSOR FOR ILLUSTRATION PURPOSES

Electrical Installation

SPECIAL NOTES Regarding Wire Color Codes:

- Red wire goes to BATTERY+/12V Constant
- Black wire goes to Chassis Ground/-12v
- White wire and Orange wire can be varied to produce different gauge colors. (Please follow chart below)

Day Time (Headlights off)	Night time (Headlights on)	Installation
White Back-lighting	White Back-lighting	White wire connects to switched 12 volts Orange wire leave disconnected
Red Back-lighting	Red Back-lighting	White wire leave disconnected Orange wire connects to switched 12 volts
White Back-lighting	Red Back-lighting	White wire connects to switched 12 volts Orange wire connects to illumination power
Red Back-lighting	White Back-lighting	White wire connects to illumination power Orange wire connects to switched 12 volts

- 1) Locate firewall passage hole. This hole is a small grommited hole that has existing wires running through it. On the R53, this hole is located next to the power brake booster. On the R56, this hole is located directly below Sound generator, which is behind the air box.
- 2) Using a sharp tool open up grommit in firewall to allow for wires to pass through



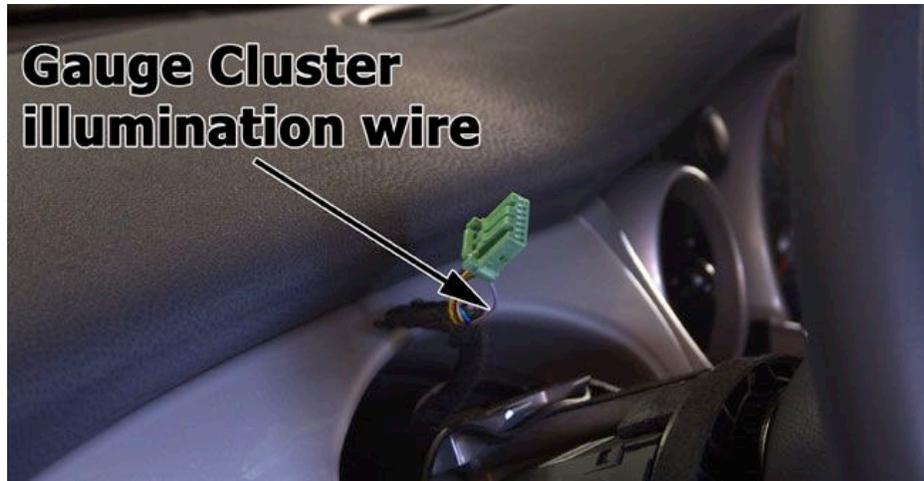
- 3) Carefully push sensor wire harness through firewall grommet. Locate wire on inside of vehicle, and carefully pull through until length of wire in engine bay is the proper length to connect to sensor. Use Zip ties to secure sensor wire harness to no-moving parts under hood.
- 4) Remove lower dash panel from drivers side of car. This is removed by pulling from top of panel, and pivoting down toward floor.
- 5) Remove lower portion of steering column by removing (2) torx screws and unsnapping from side of column.



- 6) Locate wire harness for steering wheel and probe to find switched 12v source. The Green wire w/blue strip, and yellow hatches should be a good switched 12v source. Double check by probing with ignition switched on and off. Once wire is found, use supplied T-Tap to tap into wire.



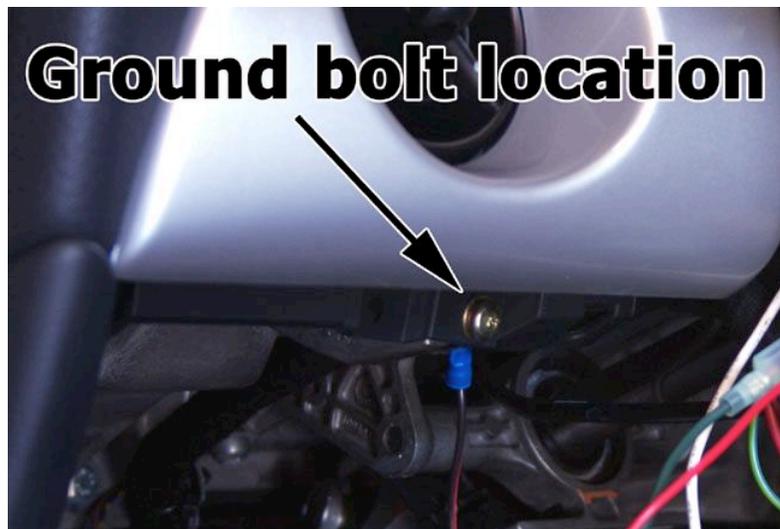
- 7) Remove gauge cluster (instructions above) and locate grey wire on green plug. This wire represents the illumination power wire. Tap into this wire using supplied T-Tap.



- 8) Locate OBD2 plug and probe for constant 12volts. This wire should be a Red wire w/blue stripe and yellow hatch. Using supplied T-Tap, tap into wire.



- 9) Locate proper chassis ground using bolt that threads into steel part of car. We recommend using the bolt as indicated below. Using supplied Black wire, install ring terminal to one end and install behind bolt.



- 10) Install power wire harness to either of the outer two, 4 pins receptacles on the back of the gauge. Connect supplied butt connectors to each of the 4 wires (Black, Red, Orange, and White). **SPECIAL NOTE: If another gauge is going to be installed, used supplied gauge jumper harness and connect to open 4 pin connector on gauge to one of the other 4 pin connectors on other gauge. Make sure you use only the outer 4 pin connectors.**
- 11) Connect supplied wires to gauge power wire harness using supplied butt connectors. Make sure to strip back wire, and match the colors of the wires to the wires on the gauge power wire harness.
- 12) Connect Red wire to the constant 12v source (on OBD2 plug), Connect Black wire to chassis ground. Follow the above chart for orange and white wires.
- 13) Finally connect sensor wire harness to center of gauge. Make sure that the sensor wire harness gets plugged into the matching gauge.
- 14) Test gauges by turning on ignition, make sure gauges illuminate as desired. If gauges are correct, continue with reinstalling steering wheel column cover, and lower dash panel.
- 15) Continue with installing gauge pod as described above.
- 16) Continue with a test drive to ensure gauges read properly. Temp gauges may take a few minutes to start showing readings.

Peak and Warning Setup

- Gauges come with audible alarm turned on. To turn off (which we highly recommend) during power on stage, hold down peak/warning button.
- Gauges have a built in peak reading. This is used by pressing the peak/warning button one time. This will display the gauge's highest reading. To clear peak reading, hold down peak/warning button for 3 seconds.
- Gauges also have built in warning. When the gauges go above this set point they will illuminate the small red light and make an audible alarm if turned on. To set warning, hold down the Peak/Warning button for 6 seconds. Gauges are now in setting mode and needle indicates warning setting. To adjust in small increments, push peak/warning button in short bursts. To adjust more coarsely, push and hold peak/warning button. When setting is adjusted, let gauge sit for 6 seconds to return to normal mode.

GAUGE TECH

"What should my gauges read" is a common question. While this answers varies greatly we have put together a short description of what to expect. These are general statements, and the actual reading may vary from car to car.

- **BOOST GAUGE-** The boost gauge reads from vacuum to boost. Your Supercharged Mini has an increasing boost curve. This means that at low RPM boost will be lower than at redline. The stock boost curve is around 8psi-10psi. Cars with 15% reduction pulleys will see roughly 10-15PSI. This reading can vary with altitude, and with different engine modifications.
- **EGT GAUGE-** EGT is Exhaust Gas Temperature. This is a probe that installs into the exhaust system and measures the temperature of the exhaust. This is a good indication on how hard your engine is working. A properly tuned engine rarely sees above 1500F. When temps get to 1650F on up, things are getting into the danger zone. This can indicate your engine is running a lean AFR mixture, or something has gone wrong. When EGT's reach this temp, things can start to melt, like catalytic converters.
- **OIL TEMP-** The oil temp gauge reads oil temp by tapping into part of the lubrication system. This reading is also a good way to determine engine load. Normal temps are around 200 degrees. During track events, or prolonged high speed racing, oil temps can climb to 230+ degrees. Levels above this are considered dangerous as oil viscosity becomes lower. This can cause bearing failure and or premature wearing of certain components. Oil temp can be used to judge when your engine is up to temp.
- **COOLANT TEMP-** While the name is obvious, this gauge is missing from R56 model cars. Normal readings are in the 190-200 degrees. This is considered Normal Operating Temperature (NOT)
- **OIL PRESSURE-** Oil pressure gauges show oil pressure. Oil pressure can vary quite a bit. When the engine is cold the pressure is much higher than when it is warmed up. This is due to the oil being thicker. When warmed up, oil pressure varies with RPM. At idle the pressure will be in the 30PSI range. As the RPMs' increase, so will pressure. But there is a factory release point around 90psi, which is reached around 4500 RPM or so.

For questions & comments please contact

TECH@ALTAMINIPERFORMANCE.COM

503-222-MINI

AIM contact ALTAPERRINSALES