INSTALLATION INSTRUCTIONS

MSD Boost Retard Module for the Power Grid System PN 7762

ONLINE PRODUCT REGISTRATION: Register your MSD product online. Registering your product will help if there is ever a warranty issue with your product and helps the MSD R&D team create new products that you ask for! Go to www.msdperformance.com/registration.

Parts Included:
1 - Module
Mounting Hardware

Required Items for Operation:
1 - MSD Power Grid PN 7730
1 - MSD CAN-hub PN 7740

The Boost Retard Module for the Power Grid System allows for engine timing changes based on pressure in the manifold. The Boost Retard Module also lets the user set several other functions including an Over-boost setting, a Boost Pressure Switch and Data Acquisition of the manifold pressure.

Over-Boost: Allows the user to set an over-boost limit that will disable the ignition if that limit is exceeded.

Boost Pressure Switch: There is an Orange output wire that switches to ground when the desired boost pressure is reached. The Orange wire can sync 2 amps of current (continuous) to ground. When higher current is required, use of a relay with the Orange wire is needed.

Data Acquisition: The Module provides data recording of the manifold pressure for boost or vacuum. All Power Grid Modules work through MSD's CAN-Bus system. The Power Grid Modules are plug and play installations but may require extension harnesses for remote wiring. NOTE: Do NOT cut the wires to the CAN-Bus Harness. In the event an extension harness is needed to mount the unit in the desired location MSD offers the following extension harnesses-

- 2' CAN-Bus extension PN 7782
- 4' CAN-Bus extension PN 7784
- 6' CAN-Bus extension PN 7786

The Boost Retard Module utilizes a ¼" Camozzi (push lock) pneumatic fitting. The fitting is not interchangeable. Attempting to change the fitting will damage the circuit board and is not recommended by MSD.

INSTALLATION

Mount and install the Boost Retard Module in the vehicle. Plug the Boost Retard Module into the CAN-Hub. The Boost Retard Module is programmed through the USB connector on the Power Grid Controller, PN 7730.

Note: In order to program the Boost Retard Modules, the ignition power to the Power Grid System must be turned to the "ON" position.

WIRING

MSD 7762 Wiring			
Wire Grouping	**Wire Color**	**Function**	**Description**
6-PIN CONN (To Hub/Modules)	RED	MSD CAN HI	Supplies 12V switched power to add on module units. Also communicates between modules and Power Grid System Controller. This connector is used only with Modules added to the system.
	BROWN	SHIELD	
	RED	POWER OUT	
	BLACK	MSD CAN LO	
	Black	MSD CAN GND	
Loose Wire	Orange	SWITCHED GND	This wire is normally open to ground. Once activated, this wire will sync 2A of current to ground. Use of a relay is recommended with this wire (Figure 1).

RED LED

The LED indicates that the module is communicating with MSD View.
Without a connection to a PC or Laptop the LED will be "Off".

PROGRAMMING

There are three tabs in MSD View used to manipulate the Boost Retard Module:

- Settings
- Map Timing
- Data Acquisition

The Boost Retard Module operates off Relative Pressure (Boost/Vacuum). The Module measures absolute pressure and then calculates the Relative Pressure. The barometric pressure is calibrated when the ignition is turned to the “ON” position for approximately six seconds with no major pressure fluctuations and no engine RPM.

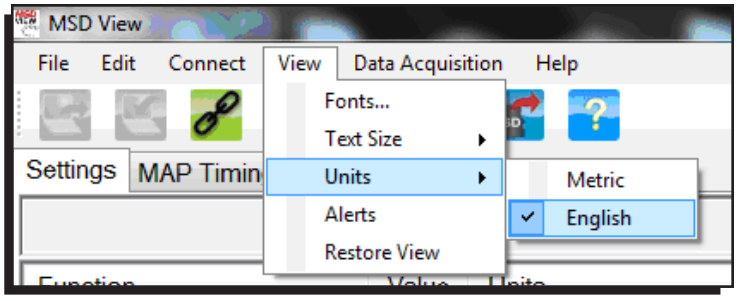

Figure 1 Selecting Display Units.

Changes made to the settings in the MSD View software are live. This means that setting changes do NOT have to be transferred in to unit.
The Boost Retard Module can display pressure in either KPa or PSI. The display of these units can be changed by clicking on “View”=>”Units” and checking off “Metric (KPa)” or “English (PSI)” (Figure 1)

SETTINGS

The Settings tab allows for changes to the Over-boost Shutdown/Over-boost Hysteresis and the Pressure Switch on Above/Pressure Switch Hysteresis (Figure 2).

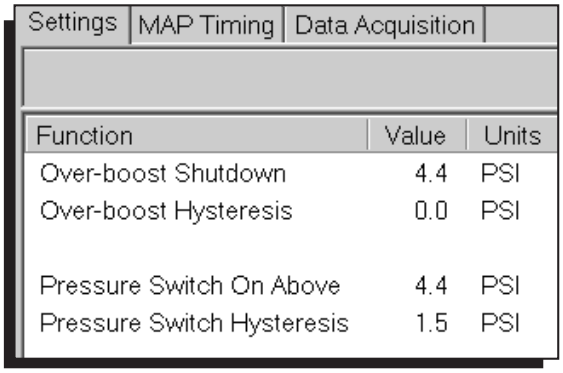

Figure 2 Settings Screen

MAP TIMING

The Map Timing tab allows for timing changes based off of boost pressure. The horizontal line in Figure 3 at the zero point for manifold pressure is the zero point for timing. Points added above this line will add timing, while points added below this line will retard timing. The vertical line in Figure 3 at the zero point for ignition timing is the zero point in terms of relative pressure. Any points added to the left of this line will manipulate timing in terms of engine vacuum, while points added to the right of this line will manipulate timing in terms of boost pressure.

The MAP timing curve allows for up to 30 different dots added to the curve. Pressure adjustments can be made in 0.1psi increments from -14.5psi to 43.5psi. Timing adjustments can be made in .1° increments with a maximum of 20° timing advance/timing retard. Figure 3

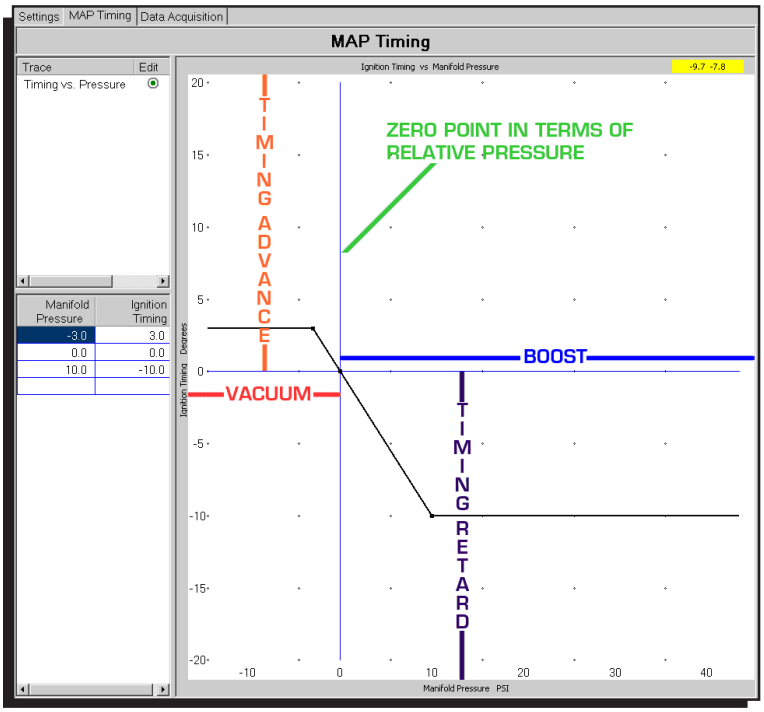

Figure 3 Mapping the Timing in the View Software

Note: The timing changes in the Boost Retard Module total up with the timing changes in the Power Grid. For example, if two step retards are programmed to retard 20°, and the boost retard is programmed to pull 5°, the sum of the Power Grid retard will be 25° in the event that all three retards are active at the same time. The Power Grid will not retard more then 30° total, even if the sum of all the retards exceed 30°.

OVER BOOST SHUTDOWN

When the MAP pressure reading increases above the Pressure value programmed in the unit it will shut off the ignition system. Generally this setting is set above the maximum amount of boost desired during the run. The default Over Boost Shutdown setting is 4.4psi. The Over-Boost Shutdown setting can be raised to 43.5 psi in .1psi increments.

Note: If this setting is lower than the maximum amount of boost, it will cause the ignition to shut off unexpectedly.

Over Boost Hysteresis: The Over Boost Hysteresis is the amount of boost pressure drop before the ignition will restart. If the Over Boost Shutdown is set at 25psi and is set off while the Over Boost Hysteresis is set at 5psi, the boost pressure must drop below 20psi (25 -5) before the ignition will re-fire. The default Over Boost Hysteresis is set at 0.0psi and can be raised to 43.5psi in .1psi increments.
Pressure Switch On Above: The Pressure Switch On Above setting closes the Orange wire to ground once boost pressure increases above the programmed setting. This wire is capable of sinking 2A of current. MSD recommends use of a relay with this function. The Pressure Switch On Above default setting is 4.4psi and can be raised to 43.5 psi in .1psi increments.
Pressure Switch Hysteresis: The Pressure Switch Hysteresis setting opens the Orange wire from ground once boost pressure drops below the Pressure Switch On minus the Hysteresis setting. If the Pressure Switch On Above is set at 25psi and the Pressure Switch Hysteresis is set at 5psi, the boost pressure must drop below 20psi before the orange wire will open from ground. The default setting for the Pressure Switch Hysteresis is 1.5psi.

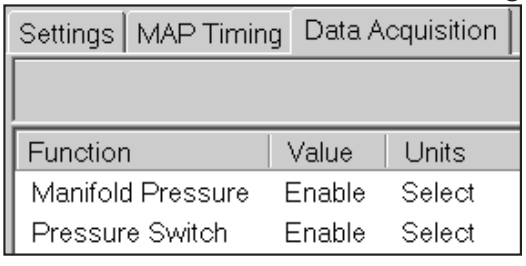

Figure 4

DATA ACQUISITION

The Data Acquisition tab allows for the Manifold Pressure or Pressure switch setting to be enabled or disabled in the Power Grid data acquisition (Figure 4). The traces for Manifold Pressure or the Pressure switch will record in the same time frame as the other traces in the Power Grid data acquisition ONLY. The Boost Retard Module data acquisition does NOT output to Racepak through the VNET module.

Note: When the Over Boost Shutdown activates, it will display as an active rev-limiter in the data acquisition file

BOOST ACTIVATION SWITCH

The Orange wire can be used to activate a device based on boost pressure. If the device requires more than 2-amps, a relay is required. Figure 5 shows a typical example.

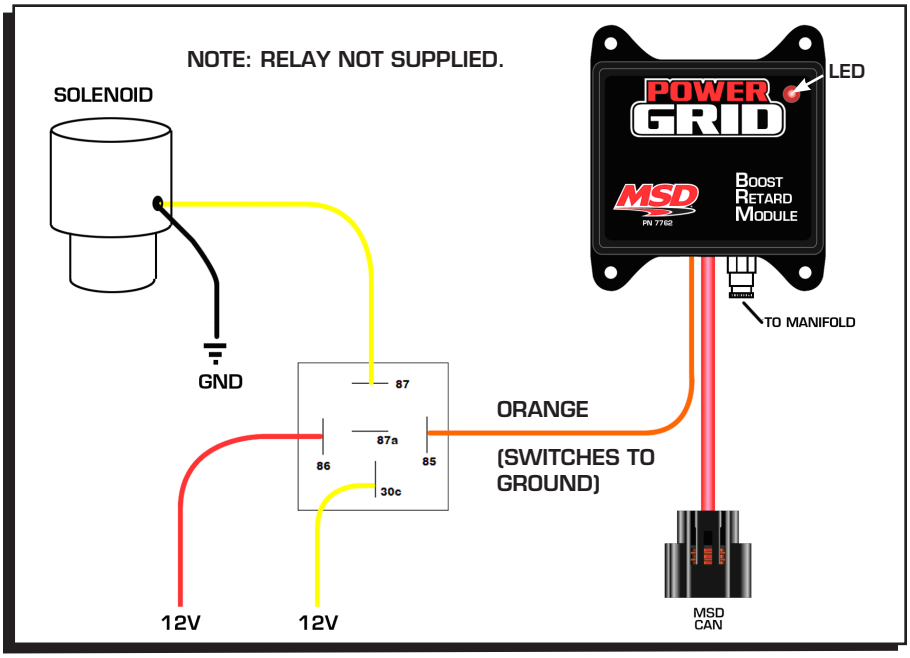

Figure 5 Connecting the Optional Activation Wire

Service

In case of malfunction, this MSD component will be repaired free of charge according to the terms of the warranty. When returning MSD components for warranty service, **Proof of Purchase** must be supplied for verification. After the warranty period has expired, repair service is based on a minimum and maximum fee.

All returns must have a Return Material Authorization (RMA) number issued to them before being returned. To obtain an RMA number please contact MSD Customer Service at 1 (888) MSD-7859 or visit our website at www.msdperformance.com/rma to automatically obtain a number and shipping information.

When returning the unit for repair, leave all wires at the length in which you have them installed. Be sure to include a detailed account of any problems experienced, and what components and accessories are installed on the vehicle. The repaired unit will be returned as soon as possible using Ground shipping methods (ground shipping is covered by warranty). For more information, call MSD at (915) 855-7123. MSD technicians are available from 7:00 a.m. to 5:00 p.m. Monday - Friday (mountain time).

Limited Warranty

MSD warrants this product to be free from defects in material and workmanship under its intended normal use*, when properly installed and purchased from an authorized MSD dealer, for a period of one year from the date of the original purchase. This warranty is void for any products purchased through auction websites. If found to be defective as mentioned above, it will be repaired or replaced at the option of MSD. Any item that is covered under this warranty will be returned free of charge using Ground shipping methods.

This shall constitute the sole remedy of the purchaser and the sole liability of MSD. To the extent permitted by law, the foregoing is exclusive and in lieu of all other warranties or representation whether expressed or implied, including any implied warranty of merchantability or fitness. In no event shall MSD or its suppliers be liable for special or consequential damages.

*Intended normal use means that this item is being used as was originally intended and for the original application as sold by MSD. Any modifications to this item or if it is used on an application other than what MSD markets the product, the warranty will be void. It is the sole responsibility of the customer to determine that this item will work for the application they are intending. MSD will accept no liability for custom applications.

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