

INSTALLATION INSTRUCTIONS

MSD Timing Retard Control for Chrysler Hemi® PN 8684

Parts Included:

1 - Timing Retard Control Unit

1 - Parts Bag

1 - Vehicle-specific Plug-N-Play Wire Harness

WARNING: During installation, disconnect the battery cables. When disconnecting, always remove the Negative cable first and install it last.

FEATURES

The MSD Timing Retard Control for late model Hemi engines plugs into the stock wiring harness and gives you control of ignition timing retard. Retard is adjustable for boosted or nitrous applications.

The timing retard feature allows the simple installation of a nitrous system as well as adding boost from a turbo or supercharger. When used alone, the Step Retard function can pull up to 30° of timing.

For boosted applications, the optional MSD 4-BAR MAP Sensor, PN 2314, is easily connected to the Timing Retard Control. This sensor will measure up to 45 psi of boost, to which the user can program up to 20° of retard. When used in conjunction with the Boost Retard function, the Step Retard is limited to 30°. Combined with the Step Retard, this means the Timing Retard Control can retard timing ignition up to a maximum of 50°.

The Timing Retard Control does not modify ignition timing at idle or low engine speeds. Above 1800 rpm the timing retard functions become active and begins to ramp timing in several revolutions of crankshaft rotation until it reaches the desired timing. The timing is also ramped back to stock over several revolutions when the engine rpm falls below 1500 rpm.

INSTALLATION

The Timing Retard Control connects directly to the stock wiring harness connectors at the crank and cam pickups, between the sensors and the ECU.

WIRING	
RED	On/Off wire. Connects to switched ignition 12 volts (Powered while cranking and when key is in the run position). Note: Do not connect Red wire to coil positive.
BLACK	Connects to Ground.
BLUE	Step retard, Active when supplied with 12 volts.
GRAY	Tach output. 12 volt square wave, 30% duty. V8 only (4 pulses per rev).

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The Red wire must be connected so it powers On concurrently when the key is in the run position. The Cam In and Out and Crank In and Out connectors are plug and play. Simply disconnect the factory harness and insert the Timing Retard Control connectors in the appropriate locations. Refer to Figure 2 for sensor locations. The optional MAP Sensor is connected with the 3-pin connector.

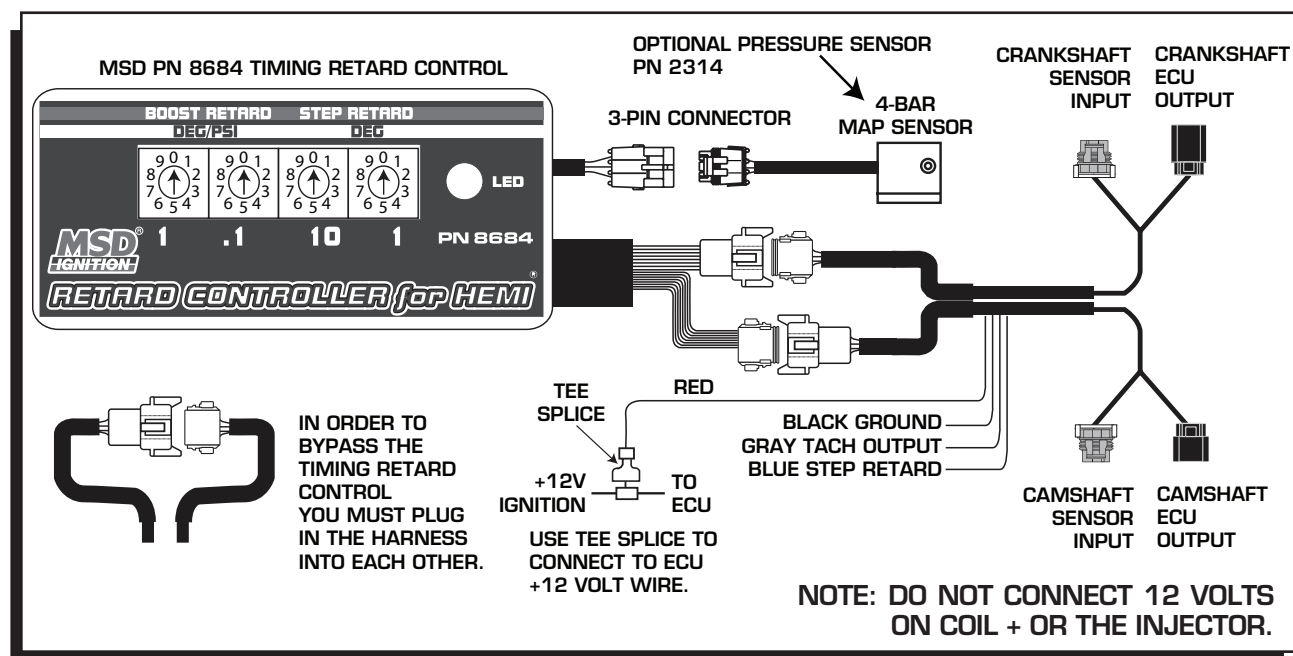


Figure 1 Wiring the Timing Retard Control.

OPERATION AND PROGRAMMING

The Timing Retard Control has four 10-position rotary switches that allow the user to select ignition timing values for each of the following:

Step Retard, Blue wire activated	0° to 30°
Boost Retard, requires MAP Sensor	0° to 2.9° per pound of boost with a max Retard of 20° in .1° increments.
Step and Boost Retard	Up to 30° Step Retard plus max Boost Retard ranges of 20° for a max Retard of 50°.

SWITCH POSITION TABLE

Boost Retard	
1°/PSI Retard Switch Position	.1°/PSI Retard Switch Position
0=0°	0=.0° 3=.3° 6=.6° 9=.9°
1=1°	1=.1° 4=.4° 7=.7°
2 thru 9=2°	2=.2° 5=.5° 8=.8°

Step Retard	
10° Retard Switch Position	1° Retard Switch Position
0=0°	0=0° 3=3° 6=6° 9=9°
1=10°	1=1° 4=4° 7=7°
2=20°	2=2° 5=5° 8=8°

LED

A flashing LED on the controller indicates that the controller has not acquired the cam and crank tooth patterns. It will use pass-through timing from the sensors below 1800 rpm or above 1800 rpm anytime the LED is flashing. Once the Timing Retard Control has learned the tooth patterns the LED will remain illuminated with no flashing when the engine rpm is above 1800 rpm, indicating the timing is being controlled, not passed through. Raise the rpm above 1800 rpm and verify the LED goes steady. This will verify the unit has learned the tooth pattern and is operational.

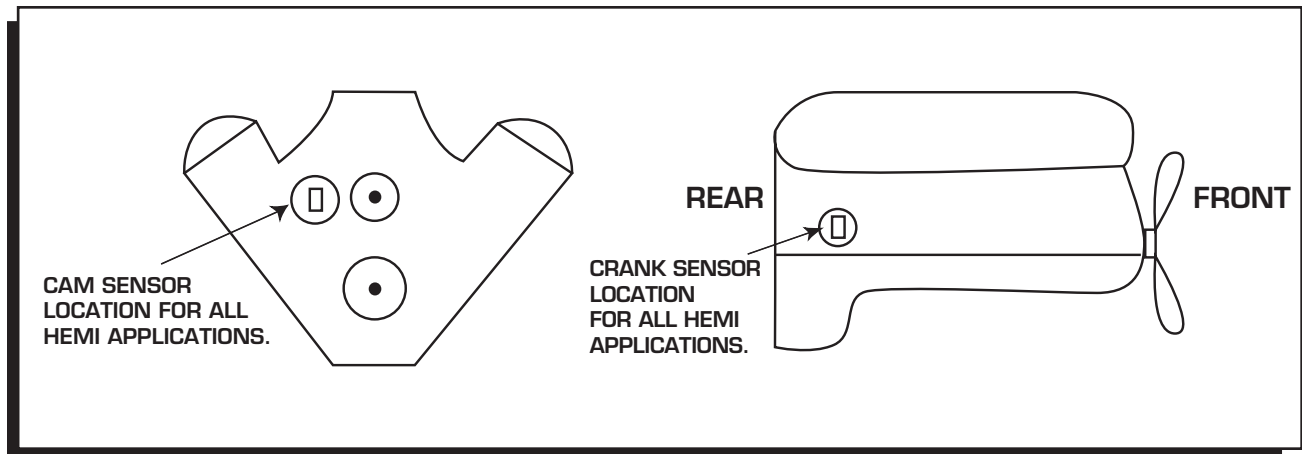


Figure 2 Cam and Crank Sensor locations.

TECH NOTES

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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 Ignition at (915) 855-7123. MSD technicians are available from 7:00 a.m. to 6:00 p.m. Monday - Friday (mountain time).

*Intended normal use means that this item is being used as was originally intended and for the original application as sold by MSD Ignition. Any modifications to this item or if it is used on an application other than what MSD Ignition 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 Ignition will accept no liability for custom applications.