

# **INSTALLATION INSTRUCTIONS**

## **MSD Digital Retard Control PN 8975**

**IMPORTANT:** Read the Instructions before attempting installation.

### **Parts Included:**

- 1 - Retard Control, PN 8975
- 4 - Mounting Screws

**Note:** The Digital Retard Control must be used with an MSD 6, 7, 8 or 10 Series Ignition Control. Do not use solid core spark plug wires.

## **OPERATION**

The MSD Digital Retard Control uses a high speed RISC microcontroller to control the timing output signal. This controller can make extremely quick compensations to the output signals while keeping timing accuracy to within 1°. The circuits are thoroughly debounced and isolated to create protection against Electro Magnetic Interference (EMI).

There are four stages of retard that can be activated independently or together for a total sum of retards. Each stage is adjustable from 0° - 9°. The maximum amount of retard is 20° even if the total of the stages is more. There is also an optional start retard circuit that can be programmed for 5°, 10°, 15° or 20°.

## **MOUNTING**

The Digital Retard Control can be mounted under the hood, but should be away from direct engine heat sources. Make sure all of the wiring reaches their connections. Use the unit as a template to mark the location of the mounting holes. Remove the unit and drill the holes using an 1/8" drill bit. Use the supplied screws to mount the Control.

<b>WIRING</b>	
<b>RED</b>	This is the On/Off wire. Connects to switched 12 volts.
<b>BLACK</b>	Connects to Ground.
<b>YELLOW</b>	Trigger output. Connects to the MSD Ignition's White Wire.
<b>TRIGGER INPUTS</b>	
There are two input trigger circuits. <b>The wires will never be connected at the same time.</b>	
<b>WHITE</b>	Connects to points or the amplifier trigger wire.
<b>GREEN/VIOLET 2-Pin Connector</b>	Connects to the magnetic pickup of the distributor or crank trigger. Green is negative, Violet is positive.
<b>RETARD CONTROL WIRES</b>	
When more than one channel is activated at a time, the retard amounts are cumulative (Example: 4° on the first stage, 3° on the second and 3° on the third, equal a total of 10°). The total amount of retard that can occur is 20° even if it is programmed for more.	
<b>BROWN</b>	Retard 1, Activated when removed from ground.
<b>ORANGE</b>	Retard 2, Activated when removed from ground.
<b>GRAY</b>	Retard 3, Activated when removed from ground.
<b>DARK BLUE</b>	Retard 4, Activated when removed from ground.
<b>Note:</b> If you are not using all of the retards, set the rotary dial to 0° or ground the inactive circuit's activation wire(s).	

## PROGRAMMING

### CYLINDER SELECT

The Digital Retard is programmed at the factory for operation on 8-cylinder engines. If installing the Control on a different style engine, the number of cylinders will need to be selected on the Cylinder Select Dial (Figure 1).

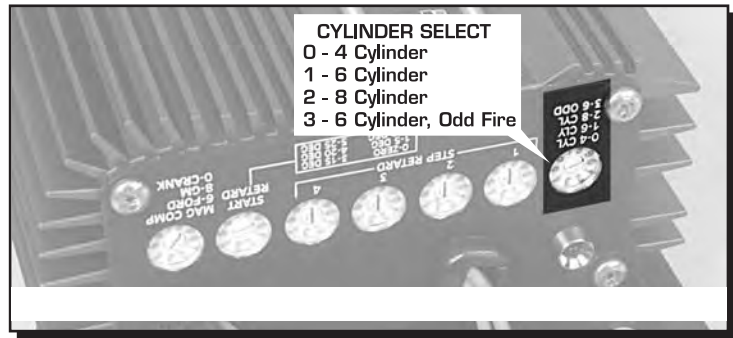


Figure 1 Programming the Cylinder Select.

### MAGNETIC COMPENSATION CIRCUIT

This circuit provides a timing compensation for different style magnetic pickups. Magnetic pickups can have varying thresholds and being able to program the style pickup you use provides a more accurate and stable timing signal. This adjustment is more important for engines using crank triggers or locked-out distributors. If you are using the White wire to trigger the MSD, no adjustment is necessary.

**Note:** It is recommended to check your Total timing to ensure the best setting for your application.

### START RETARD

When programmed, the Start Retard will retard the timing during cranking to ease starting. The amount is adjustable with the rotary dial on the side of the unit (Figure 2). The retard will be activated only during cranking and will remain activated until the engine reaches 800 rpm where it then returns to the set mechanical timing. If the engine speed drops below 500 rpm, the Start Retard will activate again.

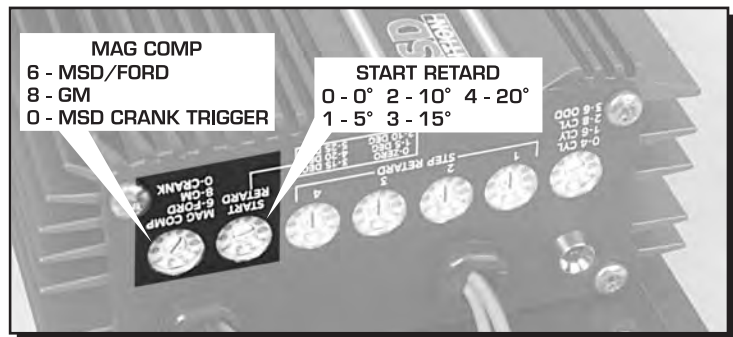


Figure 2 Programming the Pickup Compensation and Start Retard.

### RETARD RATE

There are four different stages of retard that are activated by individual wires. When the corresponding wire is removed from ground that retard amount is activated. Each retard selector switch is adjustable from 0° to 9° (Figure 3).

When more than one channel is activated at a time, the retard amounts are cumulative (Example: 4° on the first stage, 3° on the second and 3° on the third equal a total of 10°). The total amount of retard that can occur is 20° even if it is programmed for more.

**Note:** If you are not using all of the retards, set the rotary dial to 0° or ground the inactive circuit's activation wire(s).

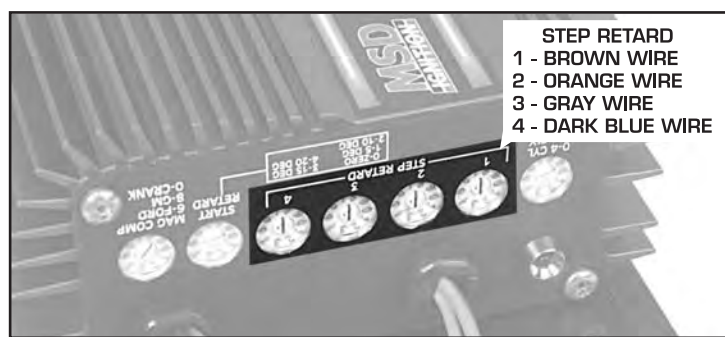
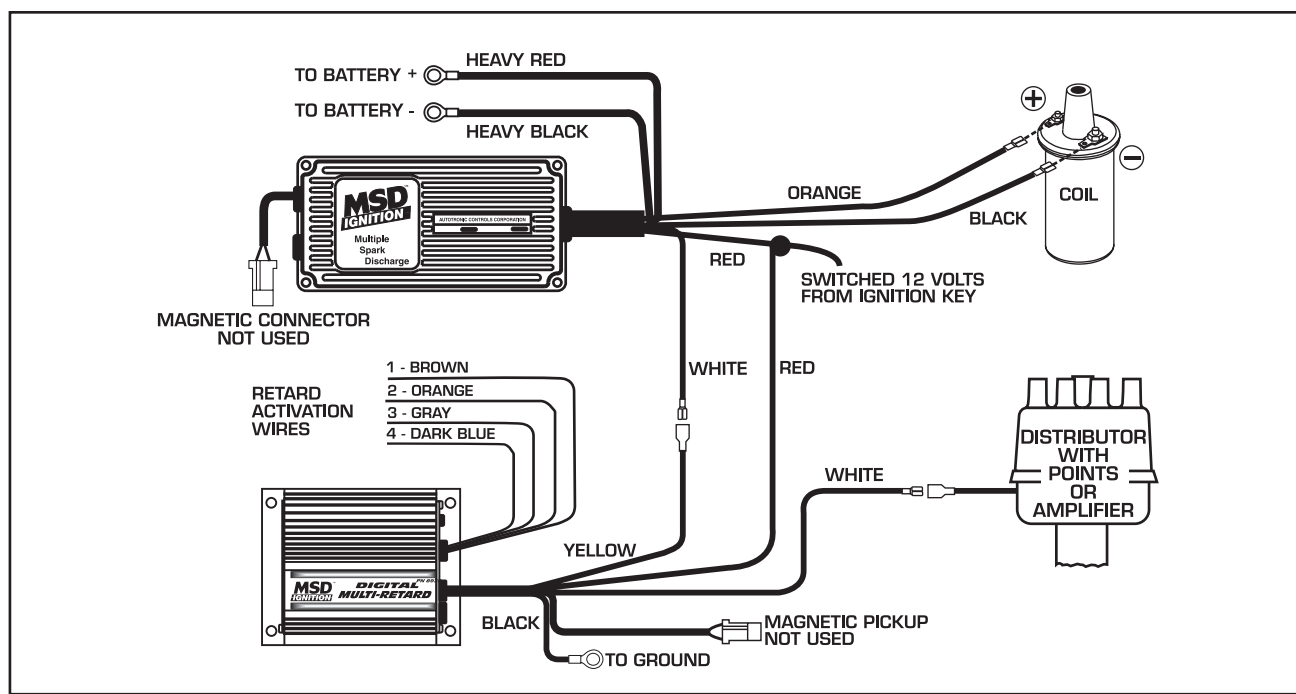
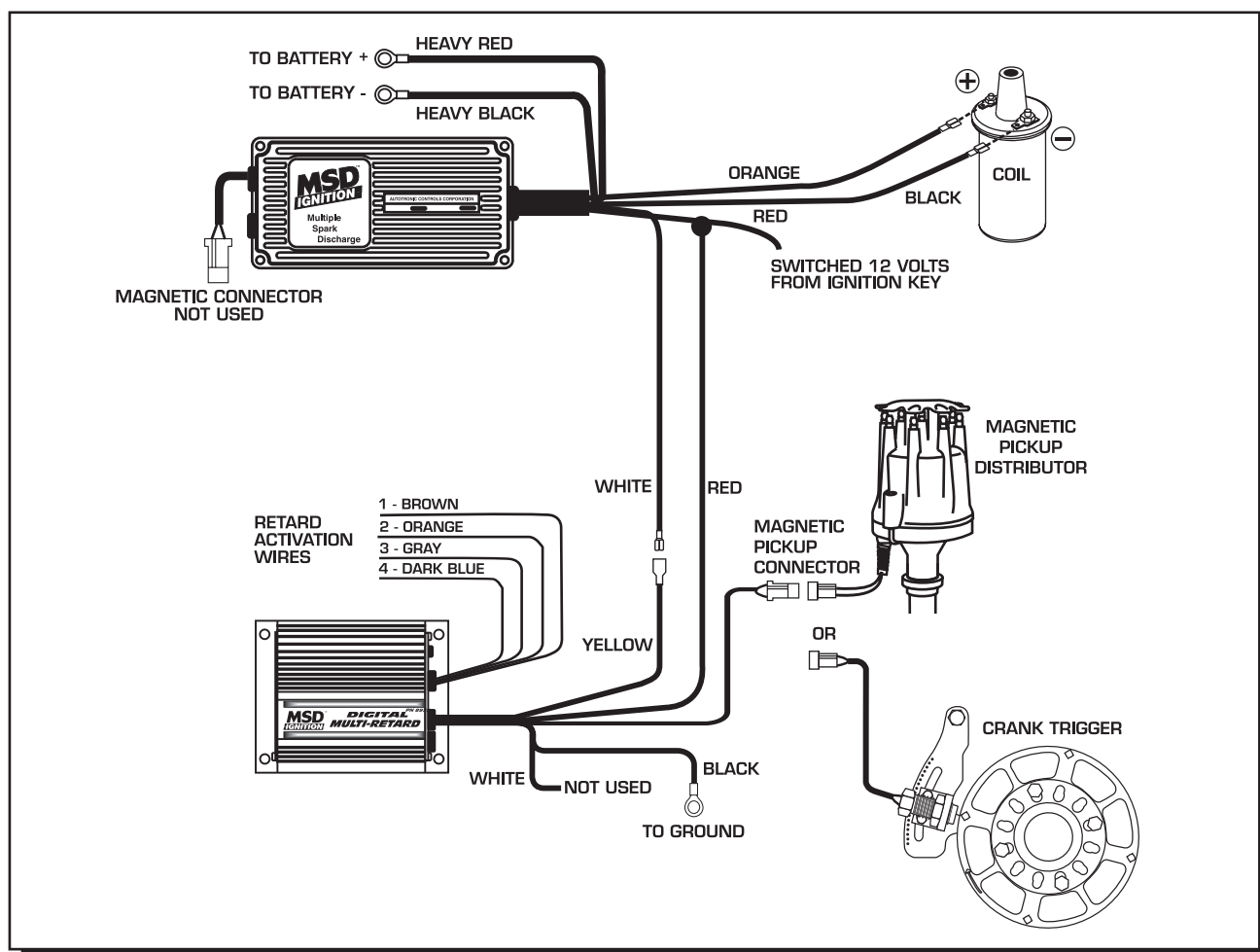


Figure 3 Retard Stages and Activation Wires.



### Figure 4 Wiring an MSD 6 Series Ignition with Points/Amplifier.



### Figure 5 Wiring an MSD 6 Series Ignition with a Mag Pickup.

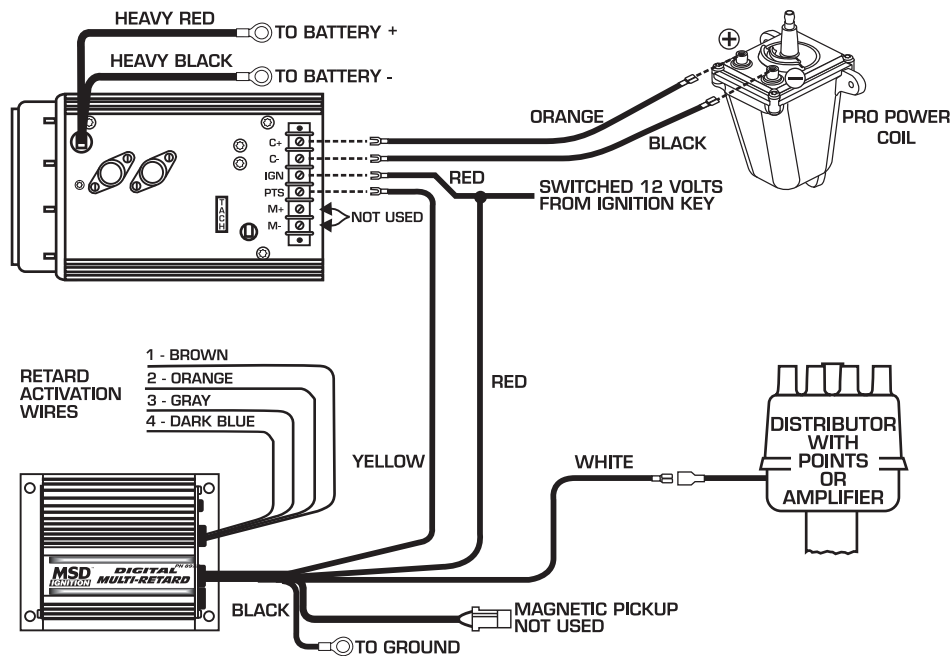


Figure 6 Wiring an MSD 7 Series Ignition with Points/Amplifier.

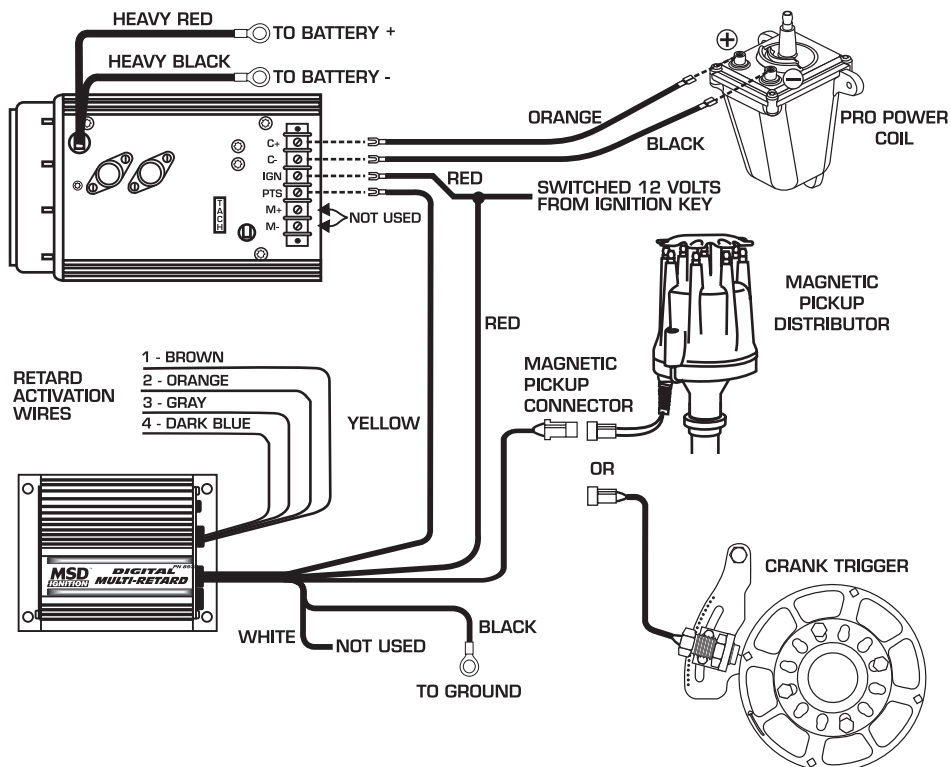


Figure 7 Wiring an MSD 7 Series Ignition with a Mag Pickup.

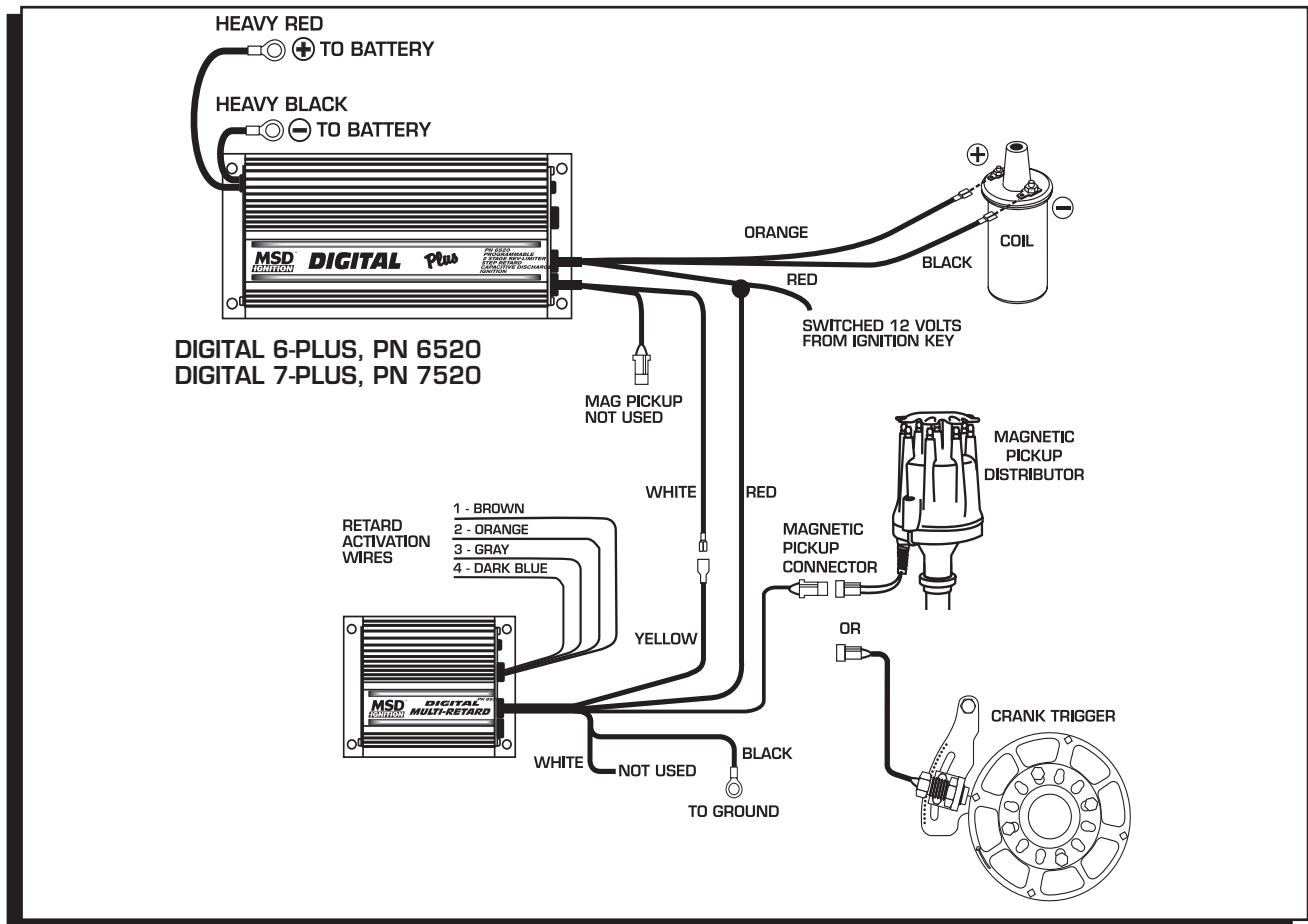


Figure 8 Wiring a Digital 6-Plus or 7-Plus Ignition with a Mag Pickup.

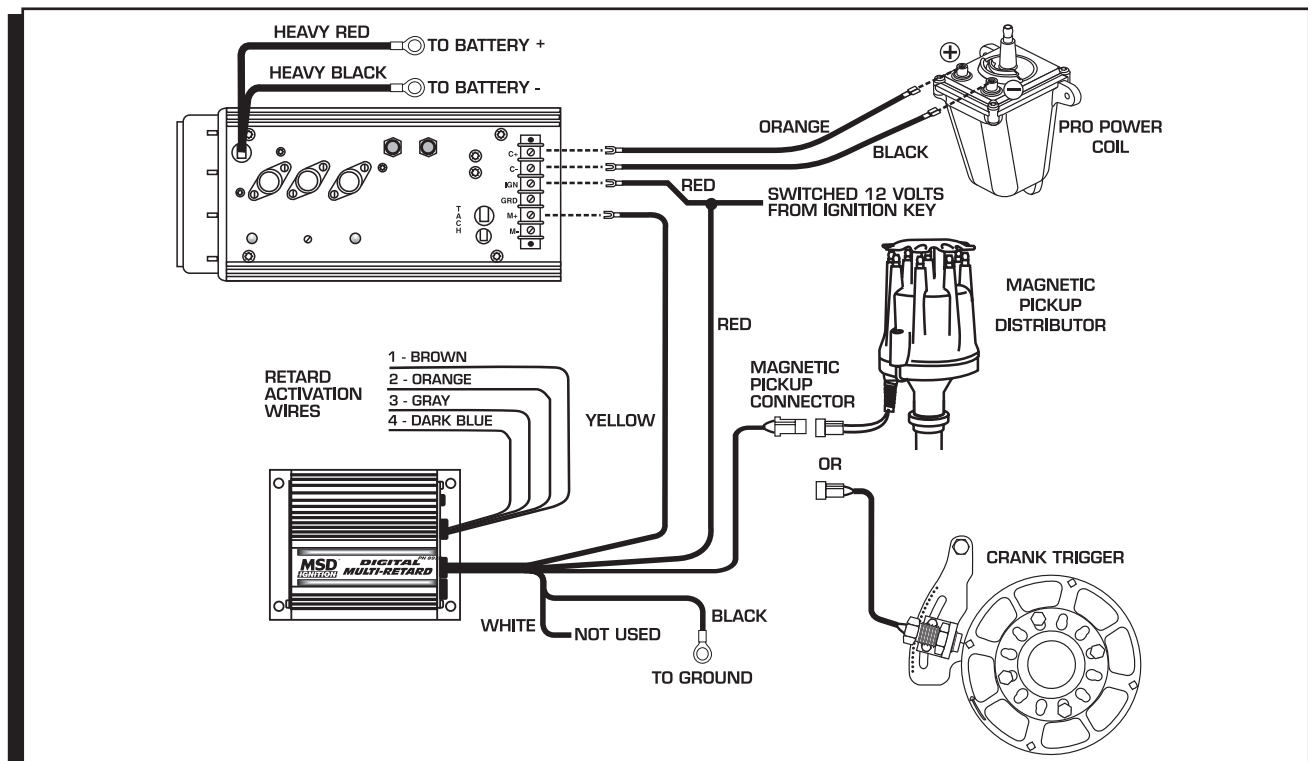


Figure 9 Wiring to an MSD 8 with a Mag Pickup.



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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.