



# INSTALLATION INSTRUCTIONS

## MSD IGNITION FOR THE BOMBARDIER DS 650 QUAD

PN 05-08-4205/PN 4205

### Parts Included:

1 - PN 05-08-4205/PN 4205 Ignition

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

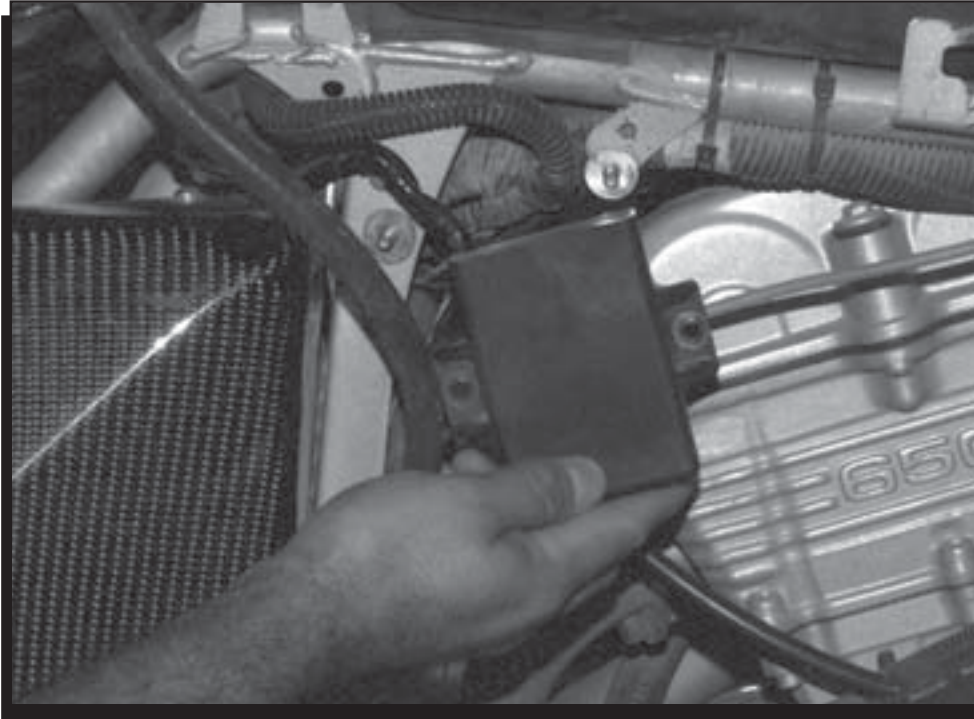
**NOTE:** It is recommended to have the Service Manual for your quad when installing the MSD Ignition system.

1. Remove the front cover by removing its four retaining screws (Figure 1. Lift the cover off, then remove the four screws holding the fuel tank cover.



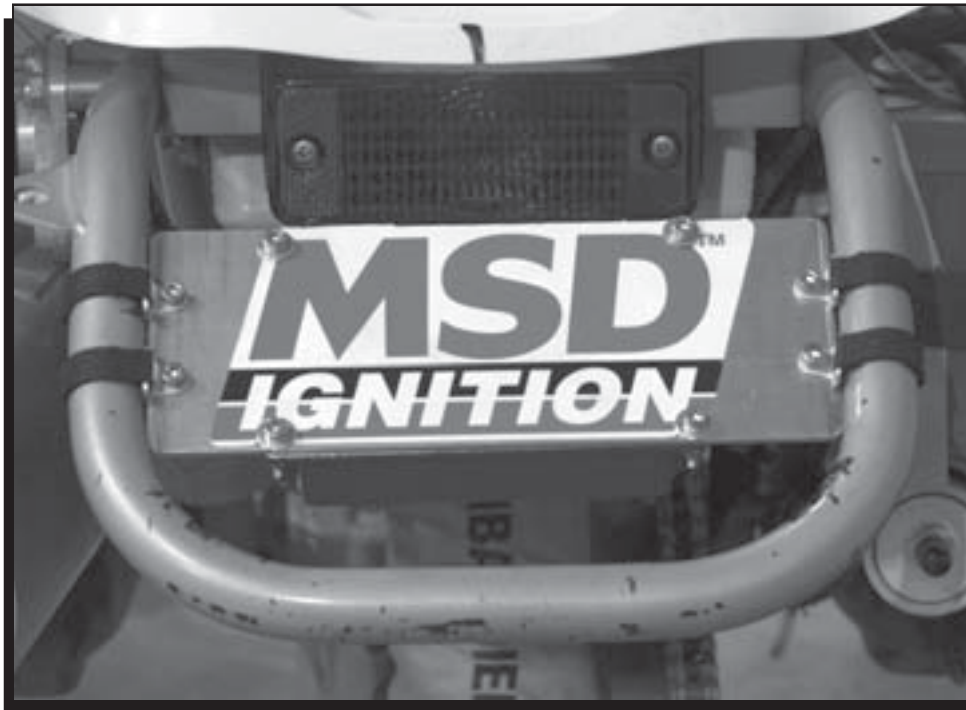
Figure 1 The 650's Front Cover.

2. On the front left side of the frame you'll see the factory CDI box (Figure 2). Remove the box. This will also be the new mount for the MSD coil.



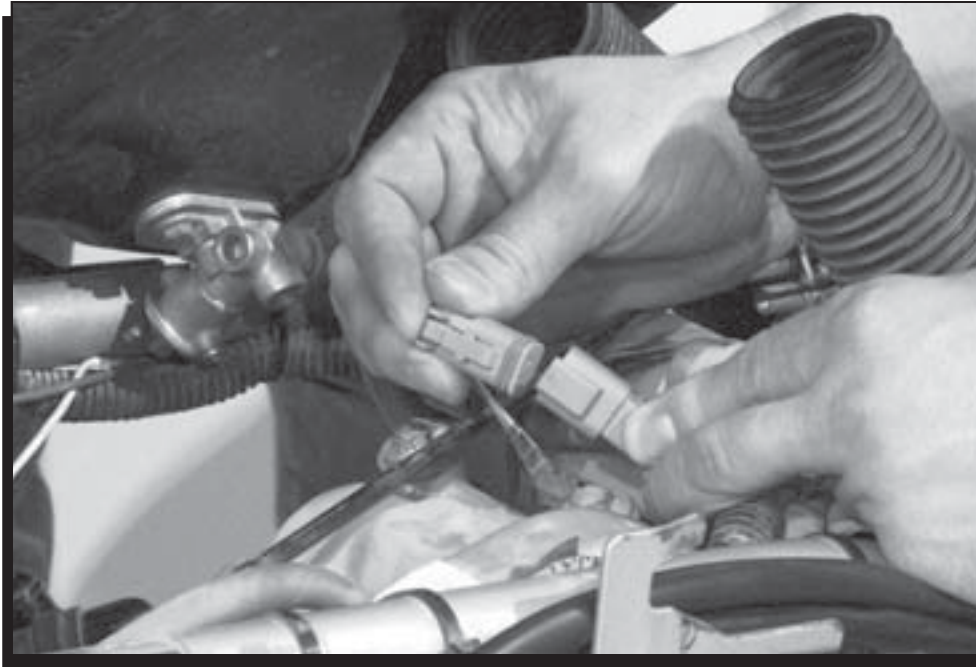
**Figure 2 Removing the Factory CDI Box.**

3. Locate the mounting plate, four strap mounts and hardware. Position the mounting plate between the frame rails. Mount the MSD to the bottom of the bracket with the supplied hardware (Figure 3).



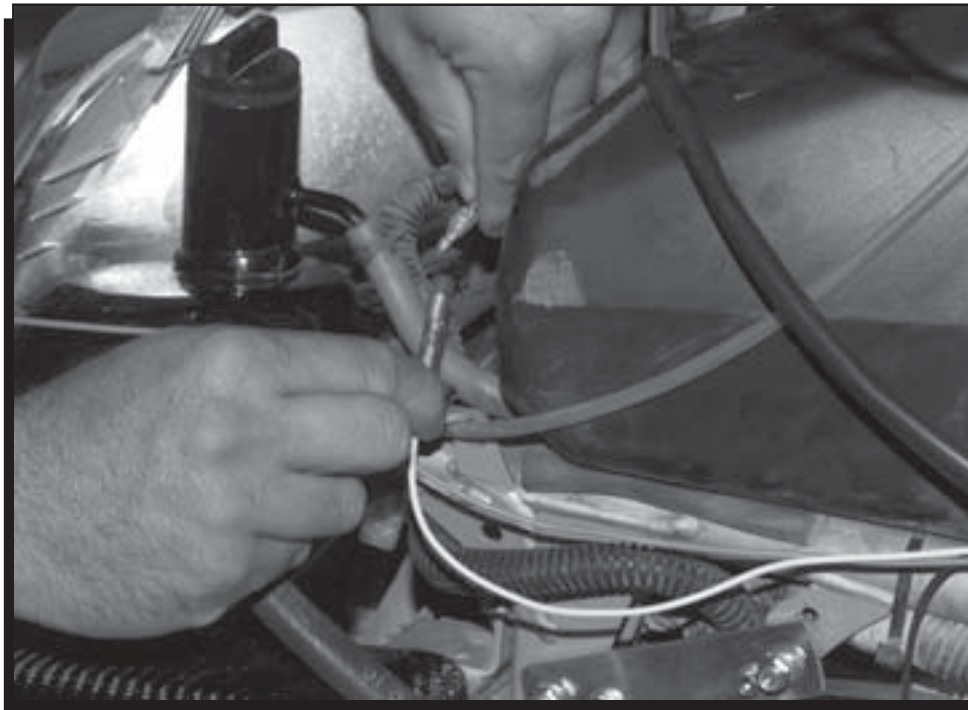
**Figure 3 Mounting the MSD Ignition.**

4. Route the wire harness along the left side of the frame. At the fuel tank, locate the factory 2-pin connector for the mag pickup. You will have to push the tank up to access the connector.
5. Connect 2-pin connector of the MSD (Green and Blue wires) to the factory mag pickup connector (Figure 4). Reposition the fuel tank and its retaining screws.



**Figure 4 Connecting the Factory Mag Pickup to the MSD Harness.**

6. Locate the factory Run Switch on the left side of the handle bars. Disconnect the Black/White factory wire and plug the MSD's White wire to the Black/White wire going to the switch (Figure 5).

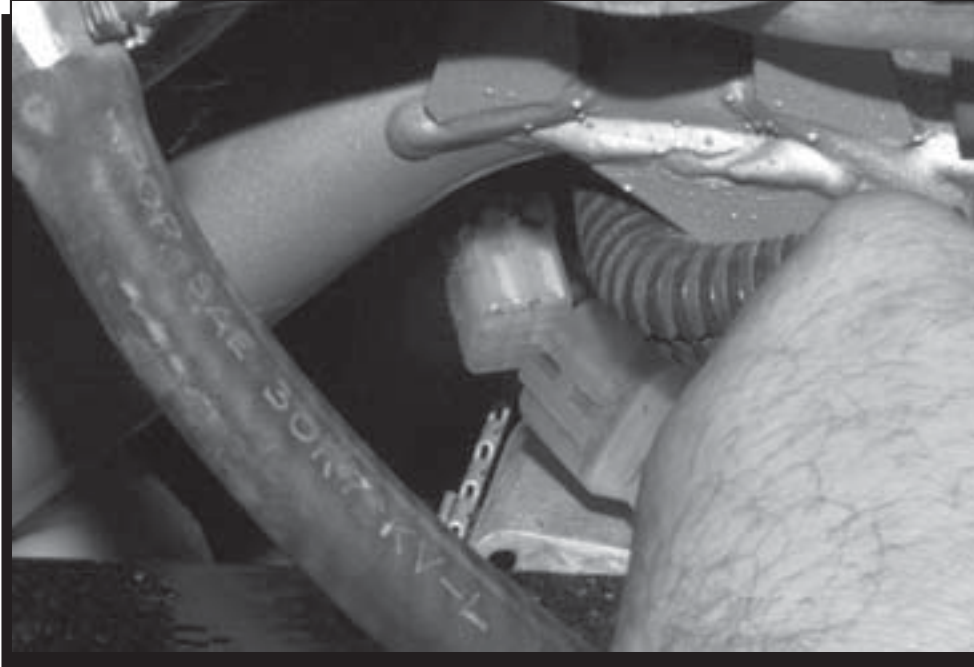


**Figure 5 Connecting the Factory Run Switch.**



7. Just under the headlamp there is a 6-pin connector. Disconnect this connector and plug-in the MSD 6-pin connector.

**NOTE:** The MSD 6-Pin connector will only have two wires, which are Orange and Violet.



**Figure 6 Disconnecting the 6-pin Harness.**

8. Locate the factory coil and remove it from its mount. Disconnect the factory Black/White wire from the coils and connect them to the MSD Coil with the supplied harness. Also connect the Black MSD wire from the harness to the coil. Route the new spark plug wires to the plugs and coils before mounting the MSD coil with the supplied hardware as shown in Figure 7.



**Figure 7 Removing the Factory Coil.**

- Connect the MSD's heavy gauge Red wire to the battery's positive (+) terminal. Connect the MSD's heavy gauge Black wire to the negative (-) terminal of the battery (Figure 8).



Figure 8 Connecting the MSD to the Battery.

**PROGRAMMING**

The DS650 stock engine has a preset timing curve that is not adjustable. The timing starts at 11° until 2,500 rpm where it starts to slope up to 25° (full advance) at 5,500 rpm. It remains at 25° for remainder of the rpm range.

The MSD Ignition provides an adjustment for a timing advance of up to 7° over the factory setting. The slope, or rate of advance, is also adjustable from 2,000 - 5,570 rpm. The MSD Ignition also has a 2° high speed retard. When set, this will retard the timing 2° total from 7,000 rpm through the rev limit setting.

These adjustments are made with the dip switches on the ignition (Figure 9).

**Note:** Switch settings can be changed while the engine is running.

**MAXIMUM TIMING**

This feature allows you to advance the timing up to 7°. The advance is added in 1° increments. The system is set at the factory for 2° of advance.

MAXIMUM TIMING				MAX SPEED REV LIMIT				
DEG	S1	S2	S3	RPM	S5	S6	S7	S8
YMT	OFF	OFF	OFF	6500	OFF	OFF	OFF	OFF
+1	ON	OFF	OFF	6750	ON	OFF	OFF	OFF
+2	OFF	ON	OFF	7000	OFF	ON	OFF	OFF
+3	ON	ON	OFF	7250	ON	ON	OFF	OFF
+4	OFF	OFF	ON	7500	OFF	OFF	ON	OFF
+5	ON	OFF	ON	7750	ON	OFF	ON	OFF
+6	OFF	ON	ON	8000	OFF	ON	ON	OFF
+7	ON	ON	ON	8250	ON	ON	ON	OFF
				8500	OFF	OFF	OFF	ON
High Speed Retard	S4			8750	ON	OFF	OFF	ON
2 Deg Retard	ON			9000	OFF	ON	OFF	ON
No Retard	OFF			9250	ON	ON	OFF	ON
				9500	OFF	OFF	ON	ON
				9750	ON	OFF	ON	ON
				10000	OFF	ON	ON	ON
				10250	ON	ON	ON	ON

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Any switch can be changed while engine is running.

DEFAULT SETTINGS

MAX. TIMING 2° (S1-S3) | MAX SPEED REV LIMIT (S4) | HOLESHOT REV LIMIT (S5-S8) | FULL TIMING RPM (S1-S8)

CUT THIS AREA OUT

HOLESHOT REV LIMIT				FULL TIMING RPM					
RPM	S1	S2	S3	S4	RPM	S5	S6	S7	S8
3000	OFF	OFF	OFF	OFF	2000	OFF	OFF	OFF	OFF
3250	ON	OFF	OFF	OFF	2250	ON	OFF	OFF	OFF
3500	OFF	ON	OFF	OFF	2500	OFF	ON	OFF	OFF
3750	ON	ON	OFF	OFF	2750	ON	ON	OFF	OFF
4000	OFF	OFF	ON	OFF	3000	OFF	OFF	ON	OFF
4250	ON	OFF	ON	OFF	3250	ON	OFF	ON	OFF
4500	OFF	ON	ON	OFF	3500	OFF	ON	ON	OFF
4750	ON	ON	ON	OFF	3750	ON	ON	ON	OFF
5000	OFF	OFF	OFF	ON	4000	OFF	OFF	OFF	ON
5250	ON	OFF	OFF	ON	4250	ON	OFF	OFF	ON
5500	OFF	ON	OFF	ON	4500	OFF	ON	OFF	ON
5750	ON	ON	OFF	ON	4750	ON	ON	OFF	ON
6000	OFF	OFF	ON	ON	5000	OFF	OFF	ON	ON
6250	ON	OFF	ON	ON	5250	ON	OFF	ON	ON
6500	OFF	ON	ON	ON	5500	OFF	ON	ON	ON
6750	ON	ON	ON	ON	5750	ON	ON	ON	ON

Figure 9 Connecting the Holeshot Rev Feature.

### MAX SPEED REV LIMIT

The rev-limiter function is variable in 250 rpm increments between 6,500 rpm to 10,250 rpm. The system is supplied with the rev-limiter preset at 9,000 rpm.

### FULL TIMING RPM

The Full Timing can be set from 2,000 rpm to 5,750 rpms in 250 rpm increments. This will tell your ignition when to be at full advance. The system is preset at 3,000 rpm.

### HIGH SPEED RETARD

When activated a 2° retard will start at 7,000 rpm and slope in through the rev limit point.

### HOLESHOT REV LIMIT

The Holeshoot rev-limit function is variable in 250 rpm increments between 3,000 rpm and 6,750 rpm. The feature will allow the racer to hold the rpm for a perfect launch. In order to activate the Holeshoot Rev-Limit you will need a Normally Open momentary switch such as the MSD PN 00-00-0520.

To connect the switch, connect one of its wires to ground and the other side to the Light Blue wire of the MSD Ignition (Figure 10). When this wire is grounded, the Holeshoot Limit will be activated.

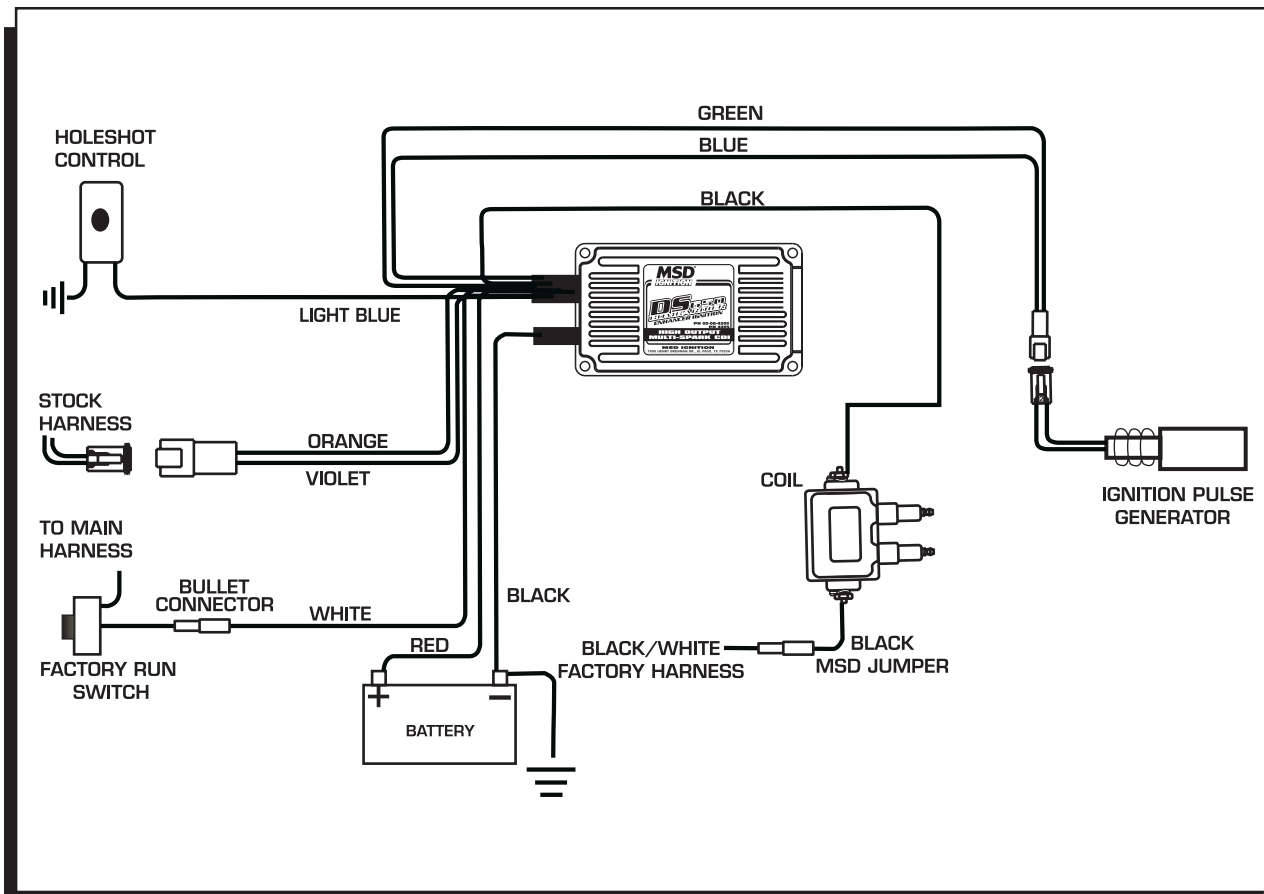


Figure10 Wiring the Holeshoot Rev Limit.

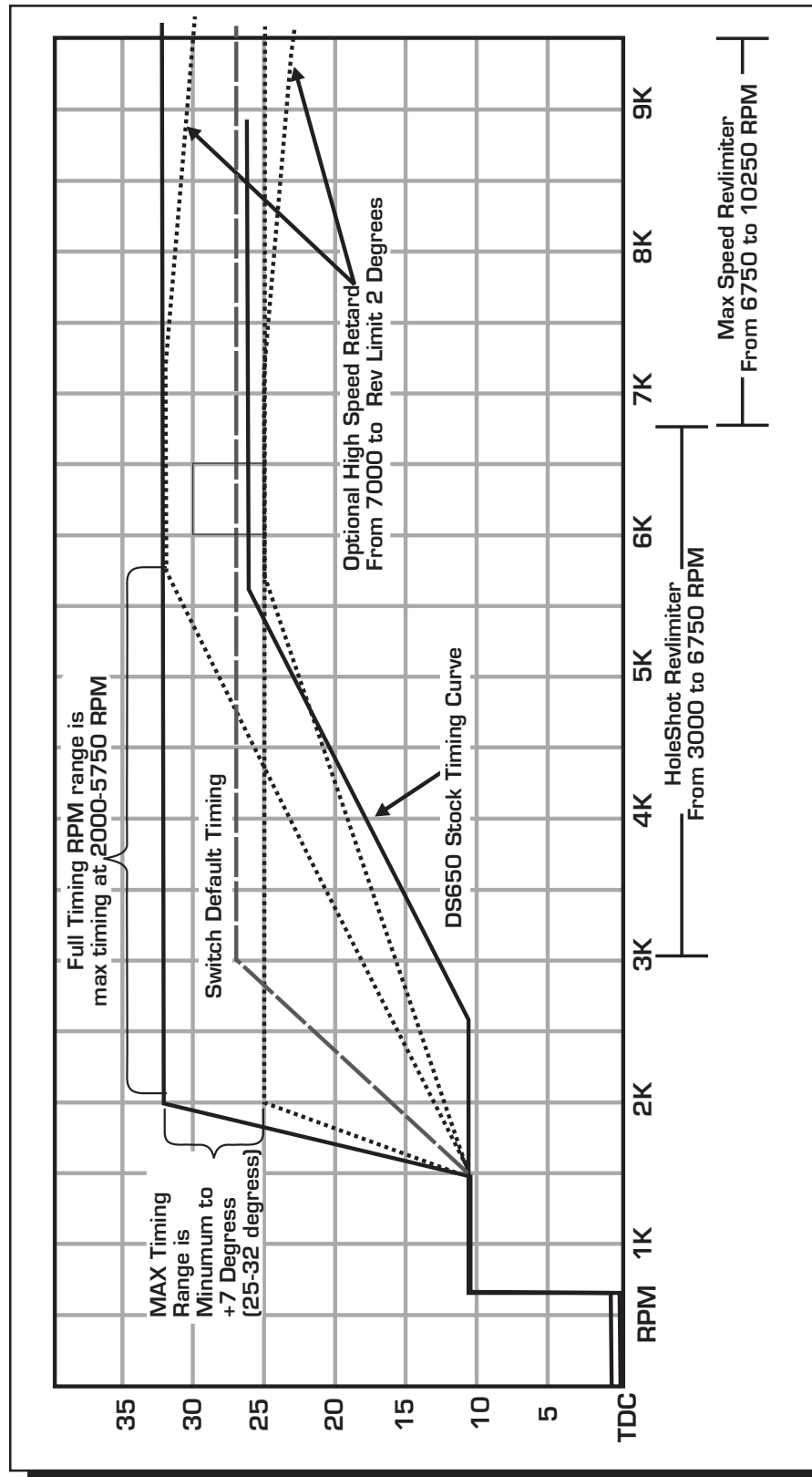


Figure 11 Chart



# INSTALLATION INSTRUCTIONS

## TECH NOTES

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### Service

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

Send the unit prepaid with proof of purchase to the attention of: **Customer Service Department, MSD Powersports, 1490 Henry Brennan Dr., El Paso Texas 79936.**

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 after receipt, COD/Cashiers Check for any charges. For more information, call the MSD Powersports Customer Service Line (915) 858-3365. MSD Powersports technicians are available from 8:00 a.m. to 5:00 p.m. Monday - Friday (Mountain Time).

### Limited Warranty

MSD Powersports warrants this product to be free from defects in material and workmanship under its intended normal use\* and if properly installed, for a period of one year from the date of original purchase. If found to be defective as mentioned above, it will be repaired or replaced at the option of MSD Powersports. Any item that is covered under this warranty will be returned free of charge through standard shipping methods. If faster service is required the customer has the option of paying for this service.

This shall constitute the sole remedy of the purchaser and the sole liability of MSD Powersports. To the extent permitted by law, the foregoing is exclusive and in lieu of all other warranties or representations whether expressed or implied, including any implied warranty of merchantability or fitness. In no event shall MSD Powersports 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 Powersports. Any modifications to this item or if it is used on an application other than what MSD Powersports 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 Powersports will accept no liability for custom applications.