Ignition Enhancer for 650 and 701 Yamaha Engines
PN 4253

Important: Read these instructions before attempting any installation.

The Enhancer Ignition is a direct replacement for the stock CDI unit. No modifications in mounting or wiring are necessary. The Enhancer increases spark energy and includes an adjustable Rev Control and an engine protecting Holeshot/Engine Overtemp RPM Limiter. The timing curve is also modified to improve low end and mid range while maintaining top end performance.

Note: It is recommended that on the initial start up after installation of the Enhancer, that the ignition timing be left in the factory setting.

Note: It is recommended that you have the Service Manual for your craft.

Parts Included In This Kit:
1 - Enhancer Ignition PN 4253
2 - 6mm x 20mm Stainless Steel Flat Washers

2 - 6mm x 20mm Stainless Steel Hex Bolts
2 - Zip ties

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

INSTALLATION

1. Disconnect the negative battery cable.
2. Remove the electrical box from its mount. Refer to the Service Manual.
3. Remove the 14 screws and open the electrical box.
4. Remove the screws holding the stock CDI unit. Disconnect the wires and remove the unit.
5. Connect the color coded wires of the Enhancer to the factory wiring harness. Refer to Figure 1 for wiring. Make sure all connections are tight and fully seated. The PINK wire coming from the Enhancer is for the Holeshot/Overtemp feature and is explained in following sections.
6. The Enhancer Ignition will have an additional RED Wire that splits. This will connect just before the in-line fuse (See Fig. 1).
7. The Enhancer Ignition will have two WHITE Wires. The WHITE Wire with a **Male** connector will attach to the factory WHITE/RED Wire. (You may need to use the supplied jumper if your WHITE/RED Wire also has a **Male** connector.) The WHITE Wire with a **Female** connector will attach to the factory WHITE Wire.
8. Position the Enhancer Ignition in the stock mount. Route the wires so they are secure. Install the supplied retaining screws and washers. If you plan on adjusting the Rev Limiter, do not assemble the electrical box. Refer to Adjusting the Rev Limiter in the following section. The Rev Limiter is set at the factory at 8,000 rpm.
9. Install the top of the electrical box making sure that the rubber seal is in place and no wires are out of position. Install the 14 screws and mount the electrical box.
10. Connect the negative battery cable.

Note: Before starting the engine, make sure all wires and lines are mounted away from the engine and exhaust.

Note: If you are installing the Enhancer Ignition on a late model Yamaha Watercraft and find that the connector on the Enhancers White wire does not match the connector on the factory White/Red wire, then you need to install the supplied White jumper wire. This jumper will allow the connectors on the White and White/Red wires to match (See the insert in Figure1).
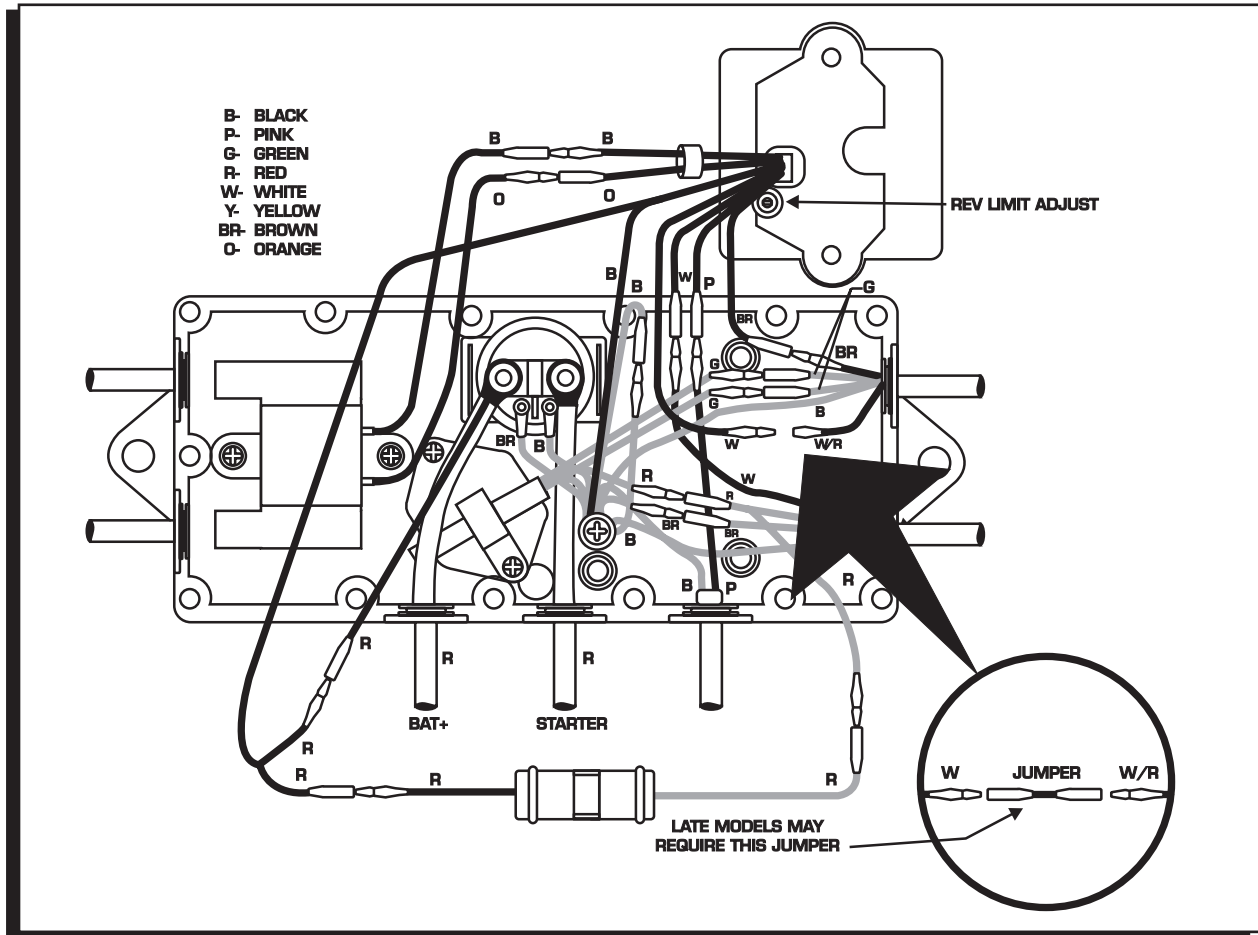

Figure 1   Wiring the Ignition Enhancer.
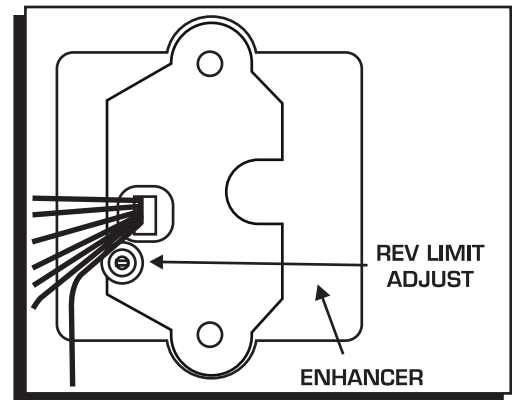
ADJUSTING THE REV LIMITER

The adjustable Rev Limiting function of the Enhancer Ignition is pre-set at the factory at 8,000 rpm. Its adjustable range is from 5,500-9,000 rpm. With this in mind, every 1/3 turn is approximately 1,100 rpm.

Note: While we feel 8,000 RPM is a safe setting it is the customer's responsibility to know the limits of their engine.

1. Using an 8mm wrench, loosen the lock-down nut on the potentiometer shaft by turning it counterclockwise (Figure 2).
2. To **increase** the rpm limit, turn the potentiometer shaft clockwise. If you turn the shaft until it stops, the rev limit will be set at 9,000 rpm. To **decrease** the rpm limit, turn the shaft counterclockwise. If you turn the shaft until it stops, the rev limit will be set at 5,500 rpm.

Note: Do not force the adjusting shaft beyond its limit stops.

3. Once you have the desired rpm limit set, tighten the locknut on the potentiometer. Hold the shaft in place with a screwdriver as you tighten the nut to prevent the rpm limit from changing.

Figure 2 The Adjustable RPM Potentiometer.

CONNECTING THE HOLESHOT/OVERTEMP RPM LIMITER

The PINK Wire of the Enhancer Ignition is for the Holeshot/Overtemp feature. There are several options in the way this feature can be used.

The Holeshot feature of the Enhancer Ignition is designed for use at the starting line. When activated, the Holeshot feature limits the engine rpm at approximately 3,200 - 3,600 rpm with the throttle fully open. This feature provides more consistent holeshots. To use the Holeshot feature, you will need the Holeshot Switch (PN 4372). The Overtemp feature limits the engine rpm to approximately 3,600 rpm if the engine reaches a damaging temperature.

HOLESHOT FEATURE ONLY
This installation provides you with the Holeshot feature only.

1. Connect one side of the Holeshot Switch (PN 4372, not supplied) to the PINK wire of the Enhancer. Connect the other wire of the Holeshot Switch to ground (Figure 3).

HOLESHOT/ENGINE OVERTEMP FEATURE
This installation provides you with the Overtemp feature only. Refer to Figure 1 for wiring.

1. Connect the PINK wire of the Enhancer to the PINK wire of the factory temperature sensor.

2. Splice one side of the Holeshot Switch (PN 4372, not included) into the PINK wire of the Enhancer. Connect the other wire of the Holeshot Switch to ground (Figure 3).
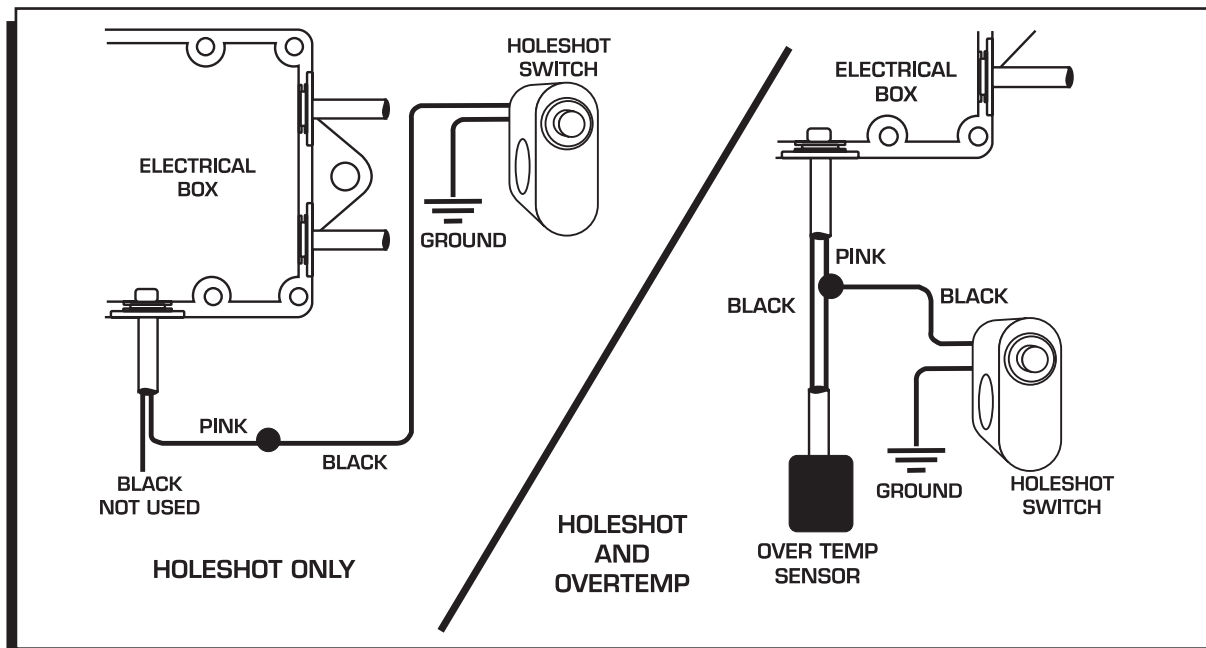
Figure 3 Connecting the Holeshot Feature.

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.