



# Owner's Manual

Ignition Upgrade Module for 2004-up  
Carbureted Harley Davidson Motorcycles  
P/N ASM5075



**Thunder Heart Performance Corporation**  
120 Industrial Drive  
White House, TN 37188  
[www.thunder-heart.com](http://www.thunder-heart.com)

**MANUAL P/N EI5075**  
Revision 7/15/05



# TABLE OF CONTENTS

**CHAPTER 1 INTRODUCTION ..... 1**  
 1.1 Special Note Regarding Speedometer Calibration ..... 1  
**CHAPTER 2 IGNITION INSTALLATION..... 1**  
 2.1 Dyna Models ..... 1  
 2.2 Touring Models..... 2  
 2.3 Softail Models ..... 2  
 2.4 Sportster Models ..... 3  
**CHAPTER 3 AUXILIARY INPUTS/OUTPUTS ..... 3**  
**WARRANTY..... 4**

## CONTACTING THUNDER HEART PERFORMANCE CORP.

Mailing Address ..... P.O. Box 76  
 White House, TN 37188

Shipping Address ..... 120 Industrial Drive  
 White House, TN 37188

Phone ..... 615-672-8811

Fax..... 615-672-1353

Tech Support E-mail..... techsupport@thunder-heart.com

Website..... www.thunder-heart.com



## CHAPTER 1 INTRODUCTION

Looking to add some zap to your 2004 Harley? Look no further than Thunder Heart's 2004 Ignition Upgrade Module!

The ASM5075 bolts directly in place of the factory ignition module. The included Smart Link software allows the user to fully program the front and rear spark timing and rev limit.

In addition, the ASM5075 has four additional outputs to control a "stage" rev limiter, a shift light or nitrous relay, and a tachometer output for use with most aftermarket tachs!

### 1.1 Special Note Regarding Speedometer Calibration

Your module is shipped with a speedometer calibration value for a Softail (except FXSTD). However, if you own a different motorcycle, or have made modifications to your motorcycle that affect the speedometer calibration (such as pulley ratios or replaced the tire with different diameter), you will need to adjust the speedometer calibration.

Refer to the (included) SMART LINK III IGNITION SOFTWARE OWNER'S MANUAL, "Basic Settings", "Speedo Cal" section for instruction on how to change the speedometer calibration value.

## CHAPTER 2 IGNITION INSTALLATION

### 2.1 Dyna Models

1. Disconnect the negative battery cable.
2. Grasp the sides of the electrical caddy (located next the ignition coil) and pull outward to remove.
3. Remove the relay and fuse panels from the electrical caddy.
  - a. Insert a small screwdriver into the slot under each fuse and relay panel.
  - b. Using a screwdriver, disengage the panel from the electrical caddy.
4. Disconnect the main fuse connector from the electrical caddy
  - a. Remove the main fuse from the connector
  - b. Insert small screwdrivers into the slots on each side of the main fuse
  - c. Depress the tabs of the main fuse connector to disengage it from the electrical caddy

5. Depress the tab located on the electrical caddy securing the TSM/TSSM. Pull it from the electrical caddy. Disconnect the TSM/TSSM connector.
6. Slide the data link connector towards the front of the motorcycle to disengage it from the electrical caddy.
7. Disconnect the ignition control module connector.
8. Disconnect the ignition coil connector and spark plug cables from the coil.
9. Remove the electrical caddy fasteners (3 total).
10. Remove the wiring from the electrical caddy.
11. Remove the fasteners securing the factory ignition control module from the electrical caddy.
12. Installation of the Digital Ignition Module is the reverse of removal.

## 2.2 Touring Models

1. Disconnect the negative battery cable.
2. Remove the right saddlebag.
3. Gently pull the side cover from the frame downtubes (no tools required).
4. Depress the external latches and use a rocking motion to remove the electrical connector from the ignition control module.
5. Remove the two socket screws to detach the ignition control module from the electrical bracket.
6. To install the Digital Ignition Module, install and tighten the socket screws to 50-60 **in-lbs**. The remainder of installation is the reverse of removal.

## 2.3 Softail Models

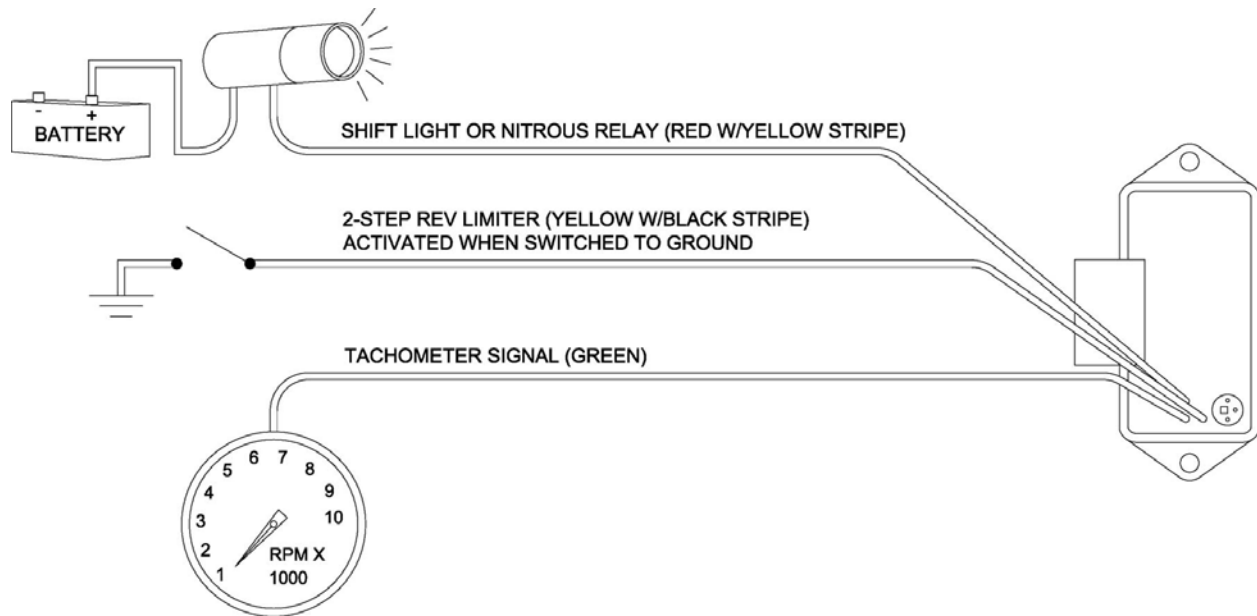
1. Remove the seat.
2. Disconnect the negative battery cable.
3. Remove the two screws to free the ignition control module from the mounting bracket.
4. Depress the external latches and use a rocking motion to remove the electrical connector from the ignition control module.
5. To install the Digital Ignition Module, install and tighten the socket screws to 15-21 **in-lbs**. The remainder of installation is the reverse of removal.

## 2.4 Sportster Models

1. Remove the seat.
2. Disconnect the negative battery cable from the crankcase, and disconnect the positive battery cable from the battery.
3. Depress the external latches and use a rocking motion to remove the electrical connector from the ignition control module.
4. Remove the two lock nuts securing the ignition module from the motorcycle.
5. To install the Digital Ignition Module, install and tighten the lock nuts to 12-15 **in-lbs**. The remainder of installation is the reverse of removal.

## CHAPTER 3 AUXILIARY INPUTS/OUTPUTS

The Digital Ignition Module is supplied with additional auxiliary inputs and outputs. These are “flying leads” that run directly from the ignition module face (see Figure 1). Use the following wiring diagram to hook up these features:



### Shift Light or Nitrous Relay (Red with Yellow Stripe)

This wire supplies GROUND to a shift light nitrous relay at the RPM specified with the SmartLink software. Connect the other wire of your shift light or relay to 12v+

### 2-Step Rev Limiter (Yellow with Black Stripe)

When this wire is GROUNDED, the 2-step rev limiter is activated. This is generally connected to a momentary pushbutton that connects to ground.

**Tachometer Signal (Green)**

Connect this wire to the signal input of an aftermarket tachometer.

## WARRANTY

Thunder Heart Performance Corp. will repair or replace any parts that have manufacturing defects only under the following conditions:

- The customer must return the product to the original place of purchase.
- The product must be returned within one year of the original distribution sale date.
- All returns must be accompanied with a copy of the receipt.
- The product must be individually tagged with a completed description of the problem or defect.
- All returned items must be packaged and shipped in the same manner as Thunder Heart originally shipped them to the dealer.

Thunder Heart Performance Corp. reserves the right to repair or replace the product at Thunder Heart's discretion. We do not offer refunds or credit for the returned product. In addition, any product that is misused or otherwise damaged by the end customer will be billed for any repair or replacement costs associated with the damage.