Owner's Manual

2004-UP DIGITAL SPEEDOMETER MODULE
P/N ASM1609, ASM1610

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CHAPTER 1   INTRODUCTION

The Thunder Heart Performance HD Replacement Digital Speedometer is a direct replacement for the factory speedometer on 2004-up Harleys. As such, it is fully compatible with the J1850 data bus. . It combines a digital speedometer and tachometer with a built-in performance computer and information center to allow riders unprecedented access to useful information.

In addition to the standard speed, RPM, and odometer functions, the Digital Speedometer Module displays "engine vitals," performance measurements, and configurable alarms. All this, with a programmable shift light!
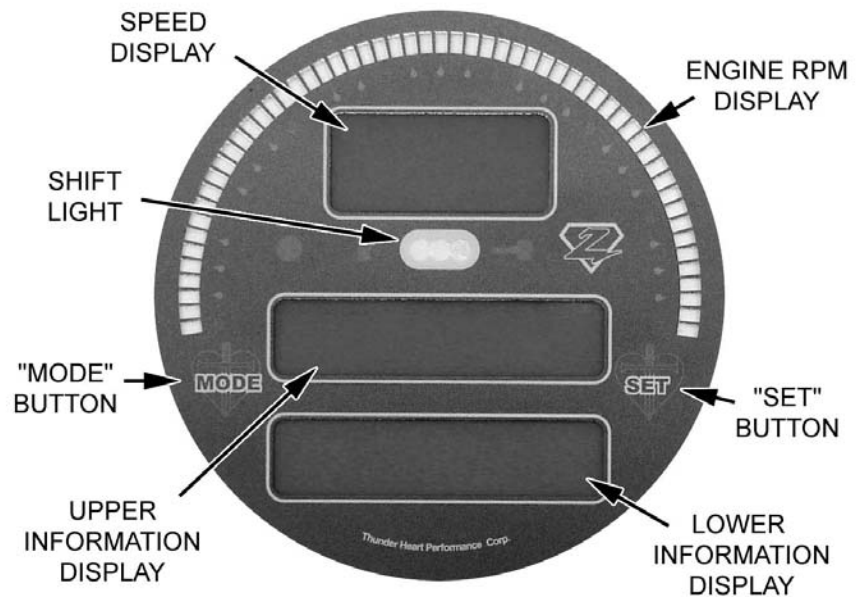

WARNING!   ALL PERFORMANCE MEASUREMENTS ARE NOT TO BE PERFORMED ON PUBLIC ROADS.

WARNING!   DO NOT ATTEMPT TO PRESS ANY OF THE BUTTONS ON THE SPEEDOMETER WHILE RIDING THE MOTORCYCLE.

CHAPTER 2   SPEEDOMETER INSTALLATION

The following procedure details the removal of the factory speedometer and installation of the digital speedometer on Softail models, however the process is similar for all other models:

1. Remove the nut and washer (item #4 in the accompanying exploded view) that secures the console (#5) to the fuel tank.

2. Lay a clean shop rag on the fuel tank and flip the console over to expose the underside of the console.

3. Separate the 12-pin harness connector (#2) from the speedometer.

4. Unscrew the rubber cover from the "trip" reset switch (#6) on the left side of the console.

5. Remove the "trip" switch from the console.

6. Pry between the three tabs that hold the back clamp (#7) to the speedometer (#1). Remove the back clamp from the speedometer.

7. Remove the speedometer from the console.

8. Remove the gasket (#3) from the speedometer.

9. Installation is the reverse of removal.
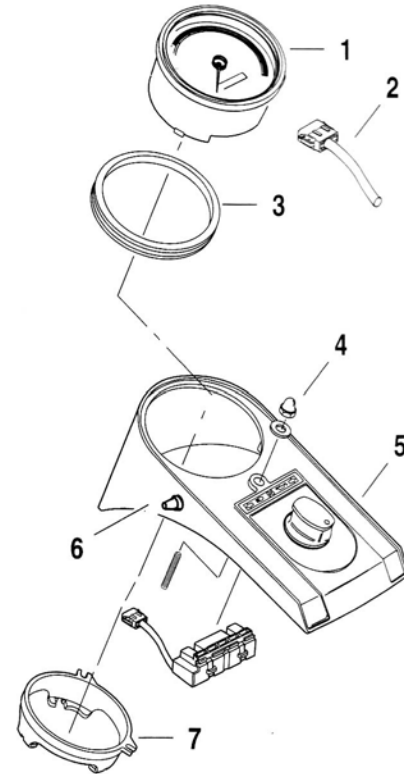
CHAPTER 3   SPEEDOMETER OPERATION

When the motorcycle key switch is ON, the speedometer will enter "normal" mode. Pressing the MODE button will cycle through the following display options:

Odometer (ODOM) displays the mileage since the speedometer was installed.

Trip (TRIP) displays the mileage since the last time the "trip" button was pressed.

Head Temp (H TEMP) displays the cylinder head temperature in degrees F.

Battery V (BATT V) displays the battery voltage.

Fuel (FUEL) displays the fuel level in gallons.

Miles Per Gallon (MPG) displays the fuel economy in miles per gallon.

Range (RANGE) displays the calculated range (in miles) until the tank reaches its empty value.

Horsepower (POWER) to perform the horsepower test, follow these steps:

Note: *Make sure that HP TST is set to "ON" (for information see "Configuration Mode.")*

1. Press the MODE button until "POWER" appears on the information display.

2. Make sure the motorcycle is stopped.

3. Press the SET button. "REC" will appear on the information display. The speedometer will begin recording for 30 seconds.

4. Accelerate being sure not to spin the rear tire, as this will inflate the results.

5. When the speedometer is finished recording, "RDY" will appear on the information display.

6. To play back what the speedometer recorded, press the SET button. The run will begin to replay, with horsepower displayed on the lower information display.

0-60 Test (0-60) to perform the 0-60 test, follow these steps:

Note: *Make sure that 0-60 is set to "ON" (for information see "Configuration Mode.")*

1. Press the MODE button until "0-60" appears on the information display.

2. Make sure the motorcycle is stopped.

3. Press the SET button. "--.-" will appear on the lower information display. The speedometer will begin recording as soon as it senses the motorcycle has begun to move.

4. Accelerate to 60 mph being sure not to spin the rear tire, as this will affect the results.

5. To play back what the speedometer recorded, press the SET button. The run will begin to replay, with the time displayed on the lower information display.

CHAPTER 4   SPEEDOMETER CONFIGURATION

4.1   Configuration Mode Operation

1. Make sure the motorcycle key switch is OFF.

2. Press and hold the MODE button.

3. Turn the motorcycle key switch ON. "CONFIG" will be displayed on the speedomter face.

4. Press the MODE button to select the function to be configured

5. Press the SET button to select a higher value

6. Press the TRIP (on the side of the motorcycle console) to select a lower value.

7. Press the MODE button to save your changes and move to the next value you wish to change.

Note: Failing to press the MODE button after you have made a change will cause to you lose your changes.

8. Turn the motorcycle key switch off.

4.2   Configurable Parameters

Speed Alarm (SPD AL) sets the speed at which the speed display flashes.

Shift Light (SHIFT) sets the engine RPM at which the shift lights turn on.

Temperature Alarm (TMP AL) sets the cylinder head temperature (in degrees F) at which the temperature alarm is activated.

Battery Alarm (BAT AL) sets the battery voltage at which the battery alarm is activated. This can warn the rider of a charging system failure.

Dim Mode Brightness (DIMVAL) sets the brightness of the display in "dim" or "night" mode.

Fuel Empty (FUEL E) is used for calculating fuel economy and range. Drain the fuel tank (or run it as low as you wish), and press the SET button.

Fuel Full (FUEL F) is used for calculating fuel economy and range. Fill the tank with a known amount of fuel. Use the SET and "trip" buttons to select the amount of fuel you put into the tank.

Horsepower Test (HP TST) activates the horsepower test mode. If ON is selected, enter the following values:

Vehicle Weight (V WGHT) sets the vehicle weight used for calculating horsepower.

Tip: *Weigh you and your motorcycle on a truck scale or at the local race track.*

Drag Coefficient (DRAG C) sets the drag coefficient for your motorcycle. This increases the accuracy of the horsepower test at higher vehicle speeds. To use the correct value for your motorcycle, use 2.00 as a starting point (for softails).

Tip: *You can fine-tune your drag coefficient by observing a horsepower change at the same RPM in different gears. For example, if your horsepower is less at 5000 RPM in 4th gear than second gear, your drag coefficient is too low. Adjust the drag coefficient up until the horsepower in each gear (at the same RPM) agree.*

0-60 Test (0-60) activates the 0-60 mph test mode.

CHAPTER 5   CARING FOR YOUR SPEEDOMETER

To keep your speedometer looking and working great for years to come, follow these simple guidelines:

- Only wash your speedometer face with mild detergent.

WARNING DO NOT USE ANY STRONG SOLVENTS TO CLEAN THE FACE. DAMAGE TO THE SPEEDOMETER FACE MAY RESULT!

- Do not use a pressure washer directly on the face of the speedometer.

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.

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