

# INSTALLATION INSTRUCTIONS

**DRAG SPECIALTIES**  
**ELECTRONIC SPEEDOMETER**  
P/N 2210-0172/0173/0174/0175  
2210-0257/0258/0259/0260

## ATTENTION INSTALLER (if other than owner):

Please forward this Instruction Sheet to the purchaser of this product. These instructions contain valuable information necessary to the end user.

## INTRODUCTION:

These instructions describe the procedure for properly installing this programmable electronic speedometer with digital odometer. Review instructions carefully before beginning, as they contain important information. Please retain for future reference.

Particularly important information is distinguished in these instructions by the following notations.

**NOTE: A NOTE** provides key information to make procedures easier or clearer.

**CAUTION: A CAUTION** indicates special procedures that must be followed to avoid damage to the motorcycle and/or accessories.

**WARNING!: A WARNING** indicates special procedures that must be followed to avoid injury to a motorcycle operator or person inspecting or repairing the motorcycle.

## TOOLS REQUIRED:

Soldering iron  
Electrical solder  
Heat shrink tubing  
Wire stripper  
Wiring schematic for motorcycle  
Tape measure

## PROCEDURE:

Please read all instructions before beginning installation.

**CAUTION:** We recommend that all electrical connections be made with solder and covered with heat shrink for safety and reliability.

## NOTE:

These instructions are not for one model specifically. Your motorcycle may differ slightly from what is described in the instructions, but installation should be similar. You will need a wiring schematic for your motorcycle to wire this speedometer correctly.

1. Place the motorcycle on a level and secure area. Disconnect the battery.
2. Refer to the appropriate factory service manual and remove the OEM speedometer
3. Mount the new speedometer in the desired location.
4. Locate and route the orange, green and either one of the black wires exiting from the center of the rear of the gauge to the existing OEM speedometer sensor wiring. You may extend or shorten the gauge wires as needed for your application.



## NOTE:

We strongly suggest that you solder all electrical connections and cover with heat shrink tube, or use OEM style electrical connectors. If using a non-OEM style sensor, refer to the wiring instructions included with the sensor.

5. The OEM speedometer sensor should have three wires: one red, one white, and one black. Connect the wires as follows.
6. Connect the red wire from the speedometer sensor with the orange wire from the speedometer.
7. Connect the black wire from the speedometer sensor to either of the black wires from the speedometer.
8. Connect the white wire from the speedometer sensor to the green wire from the speedometer.
9. Route the red wire from the speedometer to a switched 12-volt power source that is protected by a fuse.
10. Route the other black wire from the speedometer to a ground terminal on the chassis or the negative battery terminal.
11. Secure the mode reset button using both the double-sided foam tape and the nylon wire tie. The reset button may be mounted where it is most convenient for the rider.
12. Plug the mode reset switch wire connector into the matching connector from the speedometer.
13. Check all wire routing to make sure that there are no pinched wires and all wires are secured from any moving parts.



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14. Reconnect the positive battery cable and check operation of all electrical components before test-riding the motorcycle.
15. To operate the mode reset switch: A brief momentary push on the red button will cycle the odometer between the two trip meters and the standard odometer. If the red button is held in while the trip meter is showing, either of the trip meters can be reset to zero. The standard odometer cannot be reset to zero.

**NOTE:** If you push and hold the red button for two seconds or longer while the odometer is showing, you will enter the programming mode. If this happens, first press and release the red button and then repeatedly press and hold the red button, going through the manual programming steps with no changes until the odometer reappears. If you make any changes, the speedometer will have to be re-programmed.

### PROGRAMMING THE ELECTRONIC SPEEDOMETER.

1. There are two different ways to program the speedometer. The first, and also the simplest, is "Automatic Calibration by driving a known distance". The second is Manual Calibration by determining the correct number of electronic pulses per mile. The speedometer is capable of being calibrated between 3,000 & 90,000 pulses per mile.
2. The speedometer is calibrated by using the red push button for the odometer.

### CALIBRATING BY DRIVING A KNOWN DISTANCE:

- NOTE:** There are two different methods of switching modes used with the mode reset switch. The first is "press and release", which is a momentary push and then release of the red button. The second is "press and hold", which is a push and hold in of the red button for 2 seconds.
3. With the odometer reading the total distance, press and hold the red button until an "A" appears in the odometer window.
  4. To start the known distance, press and hold the red button again until 00000 appears. Put the motorcycle in gear and ride it exactly one mile, speed is not critical. The window should record the number of pulses it recorded in the one mile distance. Using two consecutive mile marker posts or other known distance is considered the best practice.
  5. Press and hold the red button again until the total distance on the odometer again shows. Calibration should be complete.
  6. To test, ride the motorcycle one mile at 60 MPH, which should take 60 seconds.

### CALIBRATING BY THE MANUAL METHOD:

7. Place the motorcycle on a stand so that the wheel that generates the pulses is off the ground.
8. Place the speedometer in calibration mode by completing step # 3 above.
9. Carefully rotate the wheel 10 complete revolutions to get the pulse/10 revolutions amount.

**NOTE:** Read the number of pulses per 10 revolutions on the odometer of the speedometer. Divide this number by 10 to get the number of pulses per tire revolution.

10. Determine the circumference of the tire/wheel combination.

**NOTE:** Simplest method to determine circumference is to carefully measure around the tire at its largest diameter. Optional method is to determine circumference by using the following formula: Tire Diameter x 3.14159 = Circumference

11. To determine the number of electronic pulses per mile, use the following formula:

$$\frac{63360 \times \# \text{ OF PULSES PER TIRE RPM}}{\text{CIRCUMFERENCE}} = \text{PULSES PER MILE.}$$

12. We now need to enter the new pulse/distance ratio into the speedometer.

**NOTE:** The total number of pulses per mile must range between 3,000 and 90,000. If you do not fall within this range, you must use a different method of generating the electronic pulses. Generally this is a minimum of 5 pulses per tire revolution, but this can vary depending on tire diameter.

13. Place the speedometer back into calibration mode by completing step #1.
14. Press and release the red button; a "P" should show in the odometer window.
15. Press and hold the red button until the current pulse ratio appears in the odometer window. The first digit should be flashing.
16. Repeatedly press and release the red button until the correct digit appears flashing in the window.

**NOTE:** If the pulse/distance ratio that you are entering has only 4 digits, you must enter a "0" as the first digit, such as "04572".

17. Next to move to the second digit, press and hold the red button until the second digit starts flashing.
18. Press and release the red button until the correct second digit appears.
19. Press and hold the red button to move to the third digit.
20. Repeat steps 16 through 19 until all digits have been programmed. After the last digit has been programmed, press and hold the red button to return to the normal odometer setting.
21. Programming should now be complete.
22. To test, ride the motorcycle one mile at 60 MPH, which should take 60 seconds.

**WARNING!** Before operating motorcycle, be sure all hardware is tight.

