



# INSTRUCTIONS

J03491

2006-09-21



## BILLET LED FUEL GAUGE KIT

### GENERAL

#### Kit Number

75086-04, 75087-04, 75090-04 and 75091-04

#### Models

These LED Fuel Gauge Kits are designed to replace the original equipment (O.E.) analog fuel gauge that is mounted in a simulated left-side fuel tank cap.

Kits 75086-04 and 75087-04 have a "Six Shooter" style top to match Genuine Motor Accessory Billet Fuel Cap 62819-03.

Kits 75090-04 and 75091-04 have a "Cross" style top to match Genuine Motor Accessory Billet Fuel Cap 62816-03.

For model fitment information, please see the P&A Retail Catalog or the Parts and Accessories section of [www.harley-davidson.com](http://www.harley-davidson.com) (English only).

#### NOTE

*The instrument-panel mounted O.E. low-fuel warning lamp function will be disabled when installing these kits.*

### Additional Tools and Service Manual Required

A Terminal Pick (Snap-On TT600-3 or equivalent) will aid in the installation of this kit.

#### ⚠ WARNING

**Rider and passenger safety depend upon the correct installation of this kit. Use the appropriate service manual procedures. If the procedure is not within your capabilities or you do not have the correct tools, have a Harley-Davidson dealer perform the installation. Improper installation of this kit could result in death or serious injury. (00333b)**

#### NOTE

*This instruction sheet references Service Manual information. A Service Manual for your model motorcycle is required for this installation and is available from a Harley-Davidson Dealer.*

### Kit Contents

See Figure 5 and Table 2.

### INSTALLATION

#### ⚠ WARNING

**To prevent accidental vehicle start-up, which could cause death or serious injury, disconnect negative (-) battery cable before proceeding. (00048a)**

1. Refer to the Service Manual and follow the instructions given to remove the seat and disconnect the negative battery cable. Retain all seat mounting hardware.

#### ⚠ WARNING

**When servicing the fuel system, do not smoke or allow open flame or sparks in the vicinity. Gasoline is extremely flammable and highly explosive, which could result in death or serious injury. (00330a)**

### Analog Fuel Gauge Removal

#### NOTE

*The fuel gauge wires are routed through a tube in the fuel tank, and are secured by a clip at the bottom of the tank and, on some models, a clamp on the frame.*

*Open the clip and clamp as needed, and be sure there is enough slack in the wires to be able to lift out the gauge.*

1. At the bottom left side of the fuel tank, bend back the flexible clip slightly to free the fuel gauge conduit. Open the harness clamp on the frame if necessary to free the conduit. Gently pull on the conduit to draw the Multilock connector [117] out of the tunnel.
2. See Figure 5. Depress the pin on the socket housing side of the connector, and pull apart the pin and socket halves.
3. **For 2001-2002 Carbureted FLHR models:** Use a pick (Snap-On TT600-3) to remove the terminals from the pin housing [117A]. See AMP MULTILOCK ELECTRICAL CONNECTORS, REMOVING SOCKET/PIN TERMINALS in the Service Manual. Discard the fuel gauge, but save the pin housing for re-assembly. **For all other models:** Use a pick (Snap-On TT600-3) to remove the terminals, or clip off the wires. The fuel gauge and pin housing can be discarded.
4. **For Carbureted Models:** Remove the fuel gauge by firmly grasping and carefully pulling up (DO NOT twist) just far enough to free the gauge from the fuel tank. Disconnect the two sending unit connectors. Feed the conduit and two wires up through the tube while removing the gauge. Remove and discard the fuel gauge. **For Fuel-Injected Models:** Remove the fuel gauge by firmly grasping and carefully pulling up (DO NOT twist) on the gauge to free it from the fuel tank. Feed the conduit and three wires up through the tube while removing the gauge. Remove and discard the fuel gauge.
5. Remove and discard the rubber gasket. Proceed to **LED Gauge Installation** for the kit being installed.

## LED Gauge Installation, Kits 75087-04 and 75091-04

1. See Figure 5. Obtain the **new** LED fuel gauge (1 or 3), O-ring (4), and wiring harness (5) from the kit. Assemble the O-ring to the fuel gauge.
2. Four Phillips-head screws (11) and four star washers (12) come pre-assembled to the connections on the underside of the gauge. Remove the screws and washers to connect the wires as follows: See Figure 1. Fasten the Orange wire (1) ring terminal to the gauge connection marked "12V" and "O" with a screw and washer. Fasten the Black wire (2) ring terminal to the connection marked "GND" and "BK" with a screw and washer. Fasten the Yellow/White wire (3) ring terminal to the connection marked "Y/W" with a screw and washer.

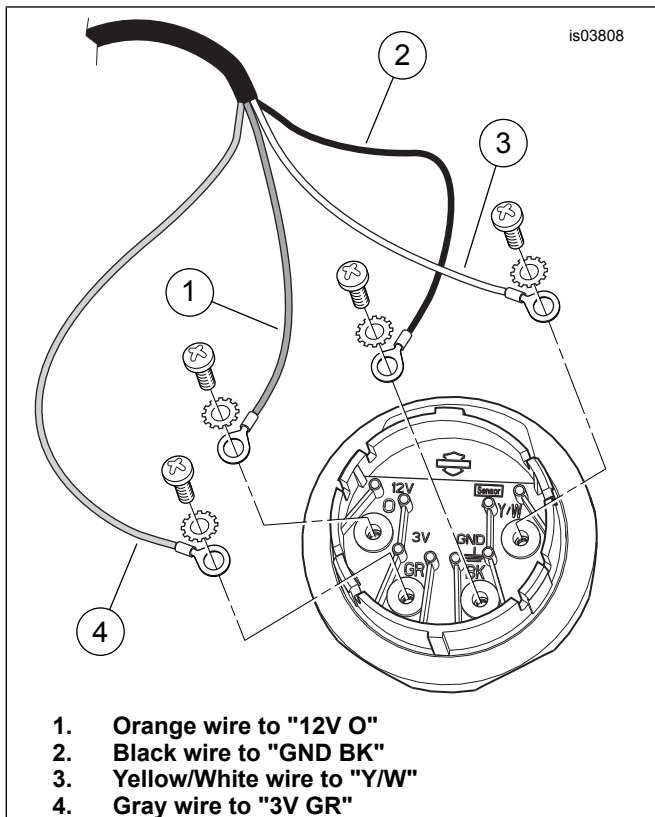


Figure 1. Wire Connections, Kits 75087-04, 75091-04

3. **For 2001-2003 fuel-injected models**, the Gray wire (4) will not be used. Cut the wire short and tape over the end with electrical tape. The Phillips-head screw can remain in the connection marked "3V" and "GR". **For 2004 and later carbureted models**, the Gray wire (4) will not be used. Cut the wire short and tape over the end with electrical tape. The Phillips-head screw can remain in the connection marked "3V" and "GR". **For 2004 and later fuel-injected models**, fasten the Gray wire (4) ring terminal to the gauge connection marked "3V" and "GR". **For ALL models:** Tighten all four Phillips-head screws to 0.4–0.9 N·m (4–7 in-lbs).

4. See Figure 5. While carefully lowering the fuel gauge, feed the wire harness down into the drain tube until the long Gray wire (B) and three short (Orange, Black, Yellow/White) wires exit the hole at the bottom of the fuel tank. Gently pull the wires (to remove slack) while installing the gauge to the fuel tank. **DO NOT** twist the gauge during installation. Hold the gauge firmly and press downward until it snaps into place.

### NOTE

*DO NOT attempt to connect the Gray wire socket terminal into the four-way pin housing.*

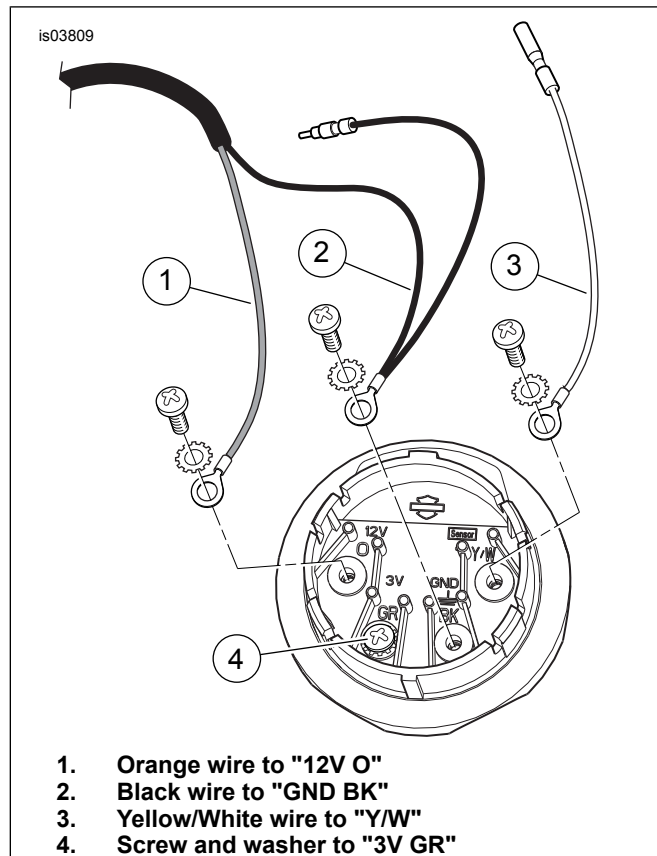
5. Install the three wires with pin terminals (D) into the correct cavities of the four-way pin housing (6) from the kit. See Table 1 and the AMP MULTILOCK ELECTRICAL CONNECTORS, INSTALLING SOCKET/PIN TERMINALS section in the Service Manual.
6. At the bottom left side of the fuel tank, mate the completed pin housing to the socket housing [117B] disconnected in **Analog Fuel Gauge Removal**, Step 3. Feed the connector into the tunnel, capturing the conduit in the flexible clip at the bottom of the tank and (if so equipped) the clamp on the frame.
7. The long Gray wire (with socket terminal) in the new gauge harness was not found on the original gauge: **For 2001-2003 fuel-injected models**, the Gray wire will not be used. Cut the wire short and tape over the end with electrical tape. Proceed to **Final Assembly**. **For 2004 and later carbureted models**, the Gray wire will not be used. Cut the wire short and tape over the end with electrical tape. Proceed to **Final Assembly**.
8. **For 2004 and later fuel-injected models**, the Gray wire will replace the Yellow/White wire found in cavity 9 of the speedometer connector [39B] (Touring or Softail models) or instrument assembly connector [20] (Dyna models). Connect the long Gray wire in the following manner:
  - a. Route the Gray wire through the tunnel under the fuel tank, then up the front of the tank.
  - b. Follow the instructions in the Service Manual to gain access to the speedometer connector [39B] (Touring or Softail) or instrument connector [20] (Dyna).
  - c. Locate the Yellow/White wire in Cavity 9 of the connector, and remove the wire and terminal from the connector. Refer to the PACKARD ELECTRICAL CONNECTORS section in the Service Manual. Following removal, either cut the Yellow/White wire short and tape over the end with electrical tape, or fold the wire back on itself and tape over the end.
  - d. Route the Gray wire to the connector and install into the now-empty Cavity 9. Re-install the rear cover of the speedometer or instrument assembly connector as required. See the Service Manual.
  - e. Install tape or wire ties along the path of the gray wire to secure it. Proceed to **Final Assembly**.

**Table 1. Wire Chart, Kits 75087-04, 75091-04**

Cavity	Wire Color
Cavity 1	Orange wire
Cavity 2	Yellow/White wire
Cavity 3	Open
Cavity 4	Black wire

## LED Gauge Installation, Kits 75086-04 and 75090-04

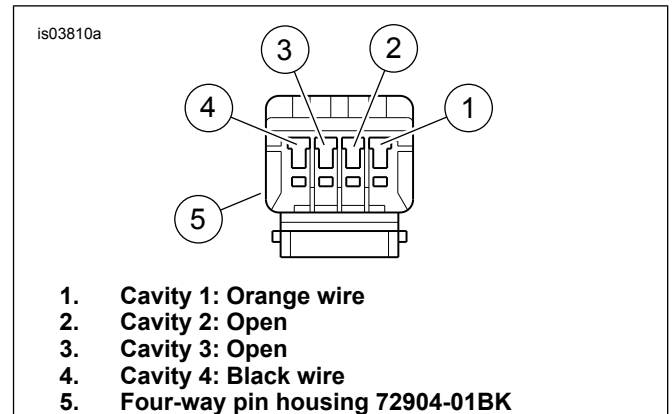
1. See Figure 5. Obtain the **new** LED fuel gauge (1 or 3), O-ring (4), wiring harness (7), and separate Yellow/White wire lead (8) from the kit. Assemble the O-ring to the fuel gauge.
2. Four Phillips-head screws (11) and four star washers (12) come pre-assembled to the connections on the underside of the gauge. Remove the screws and washers to connect the wires as follows: See Figure 2. Fasten the Orange wire (1) ring terminal to the gauge connection marked "12V" and "O" with a screw and washer. Fasten the Black wire (2) ring terminal to the connection marked "GND" and "BK" with a screw and washer. Fasten the ring terminal from the separate Yellow/ White wire (3) to the connection marked "Y/W" with a screw and washer. The screw and washer can remain in the connection marked "3V" and "GR" (4).



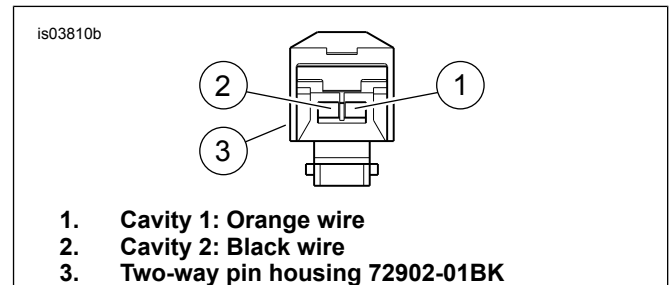
**Figure 2. Wire Connections, Kits 75086-04, 75090-04**

3. Tighten all four Phillips-head screws to 0.4–0.9 N·m (4–7 in-lbs).

4. See Figure 5. While carefully lowering the fuel gauge, feed the wire harness (7), and Yellow/White wire lead (8) down into the drain tube until the two longer (Black, Orange) wires with pin terminals (D) exit the hole at the bottom of the fuel tank. Connect the two shorter wires (Black and Yellow/White) to the sending unit connectors (see **Analog Fuel Gauge Removal**, Step 5). Gently pull the long wires (to remove slack) while installing the gauge to the fuel tank. **DO NOT** twist the gauge during installation. Hold the gauge firmly and press downward until it snaps into place.
5. **For 2001-2002 carbureted FLHR models:** Install the two wires with pin terminals (D) into the correct cavities of the four-way pin housing [117A] removed from the O.E. analog fuel gauge in **Analog Fuel Gauge Removal**, Step 4. See Figure 3 and the AMP MULTILOCK ELECTRICAL CONNECTORS, INSTALLING SOCKET/PIN TERMINALS section in the Service Manual. **For all other models:** Install the two wires with pin terminals (D) into the correct cavities of the 2-way pin housing (Figure 5, Item 9) from the kit. See Figure 4 and the AMP MULTILOCK ELECTRICAL CONNECTORS, INSTALLING SOCKET/PIN TERMINALS section in the Service Manual.



**Figure 3. Four-Way Pin Housing (Viewed From Wire End)**



**Figure 4. Two-Way Pin Housing (Viewed From Wire End)**

6. At the bottom left side of the fuel tank, mate the completed pin housing to the socket housing [117B] disconnected in **Analog Fuel Gauge Removal**, Step 3. Feed the connector into the tunnel, capturing the conduit in the flexible clip at the bottom of the tank and the clamp on the frame (if so equipped). Proceed to **Final Assembly**.

## Final Assembly

1. Apply a light coat of petroleum jelly or corrosion retardant material to the negative battery terminal. Refer to the Service Manual and follow the instructions given to re-attach the negative battery cable and install the seat.

**▲ WARNING**

After installing seat, pull upward on seat to be sure it is locked in position. While riding, a loose seat can shift causing loss of control, which could result in death or serious injury. (00070b)

**NOTE**

If the fuel gauge does not indicate the proper fuel level after installing this kit, check the connectors, then follow the troubleshooting procedures in the Service Manual.

**SERVICE PARTS****Table 2. Service Parts Table**

Kit	Item	Description (Quantity)	Part Number
Kit 75086-04 (Six-Shooter)	1	Fuel gauge, LED (includes four each of items 11 and 12)	Not sold separately
	2	Medallion, Bar and Shield logo	13883-00
	4	O-ring, fuel gauge	27730-04
	7	Wiring harness	70006-03
	8	Wire lead, Yellow/White	Not sold separately
	9	Pin housing, two-way	72902-01BK
Kit 75087-04 (Six-Shooter)	1	Fuel gauge, LED (includes four each of items 11 and 12)	Not sold separately
	2	Medallion, Bar and Shield logo	13883-00
	4	O-ring, fuel gauge	27730-04
	5	Wiring harness	70015-04
	6	Pin housing, four-way	72904-01BK
	3	Fuel gauge, LED (includes four each of items 11 and 12)	Not sold separately
Kit 75090-04 (Cross)	4	O-ring, fuel gauge	27730-04
	7	Wiring harness	70006-03
	8	Wire lead, Yellow/White	Not sold separately
	9	Pin housing, two-way	72902-01BK
	3	Fuel gauge, LED (includes four each of items 11 and 12)	Not sold separately
Kit 75091-04 (Cross)	4	O-ring, fuel gauge	27730-04
	5	Wiring harness	70015-04
	6	Pin housing, four-way	72904-01BK
	10	Hardware kit (Service only) (contains items 11 and 12)	75003-04
Items common to ALL kits	11	• Phillips-head screw (4)	Not sold separately
	12	• Star washer (4)	Not sold separately
<b>Items mentioned in text, but not included in kit:</b>			
	A	Sending unit connectors	
	B	Gray wire with socket terminal	
	C	Wire conduit	
	D	Pin terminals	

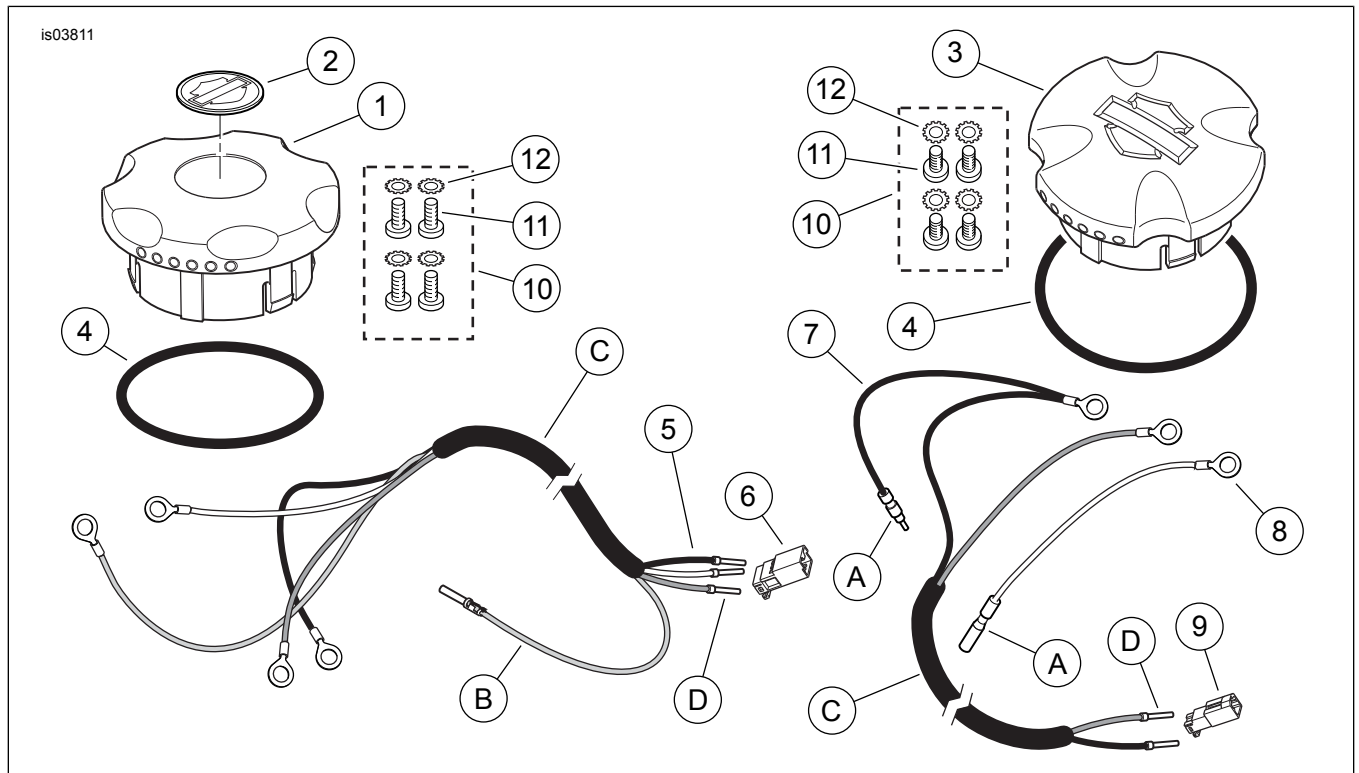


Figure 5. Service Parts, LED Fuel Gauge Kits