



# INSTRUCTIONS

-J01276

REV. 7-17-98

Kit Number 67359-96A

## XL TACHOMETER KIT

### General

This kit is designed for installation on 1996 and later XL 1200 Custom models, and 1999 and later XL883 Custom models, equipped with an electronic speedometer and no tachometer.

#### ⚠CAUTION

**USE THE APPROPRIATE SERVICE MANUAL PROCEDURE!** Service Manuals are available from your Harley-Davidson dealer. If the procedure is not within your capabilities or you do not have the correct tools, have your Harley-Davidson dealer perform the installation.

### Installation

#### GENERAL

To install this kit, **you must remove the speedometer bracket, and speedometer before removing the fuel tank.** You will also have to remove the seat, disconnect the electronic speedometer harness from connector [65] under the seat and disconnect connector [20] between handlebar risers. Read all the instructions carefully before you begin the tachometer installation. Connector numbers in brackets, [20], are the identifying numbers used in wiring diagrams.

### Removal

#### ELECTRONIC SPEEDOMETER AND BRACKET

#### ⚠WARNING

To avoid accidental start-up of motorcycle, and possible personal injury, disconnect the battery cables (negative cable first) before performing any of the following procedures. If the battery should contact ground with the negative cable installed, the resulting sparks may cause a battery explosion resulting in personal injury.

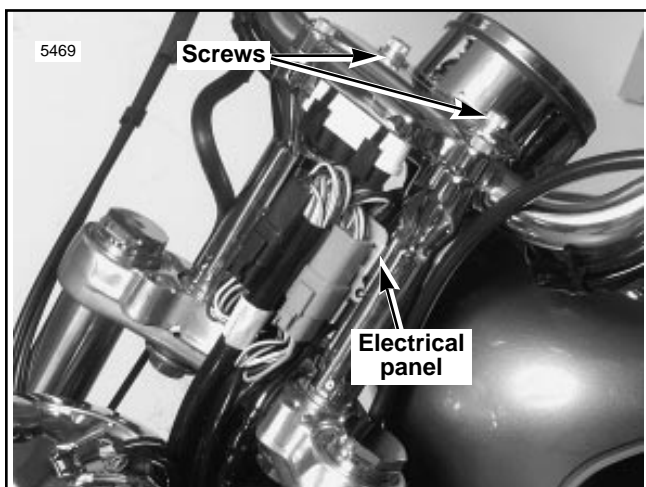


Figure 1. Front View With Riser Cover Removed

1. See Figure 1. Remove and discard handlebar clamp screws securing speedometer bracket. Gently move speedometer forward and hang from mirror with cable strap.
2. Refer to applicable Service Manual and remove seat and fuel tank following Service Manual procedures

#### ⚠WARNING

**Gasoline is extremely flammable and highly explosive. When servicing the fuel system, do not smoke or allow open flame or sparks in the vicinity. Inadequate safety precautions may result in personal injury and/or property damage.**

3. See Figure 2. Remove two bolts and washers (4) securing upper fork bracket cover (5). Remove six screws (1) that secure front (2) and rear (3) riser covers.
4. Remove rear riser cover (3) and front riser cover (2).
5. See Figures 1 and 2. Note how electrical harnesses and connectors are positioned on the front and rear of the electrical panel.
6. See Figure 3. Slide connector [20] down to disengage attachment groove.
7. See Figure 4. Press the button on connector [20] to unplug.
8. Follow the speed sensor harness (connected to speedometer) that is routed down frame backbone to connector [65] under seat.

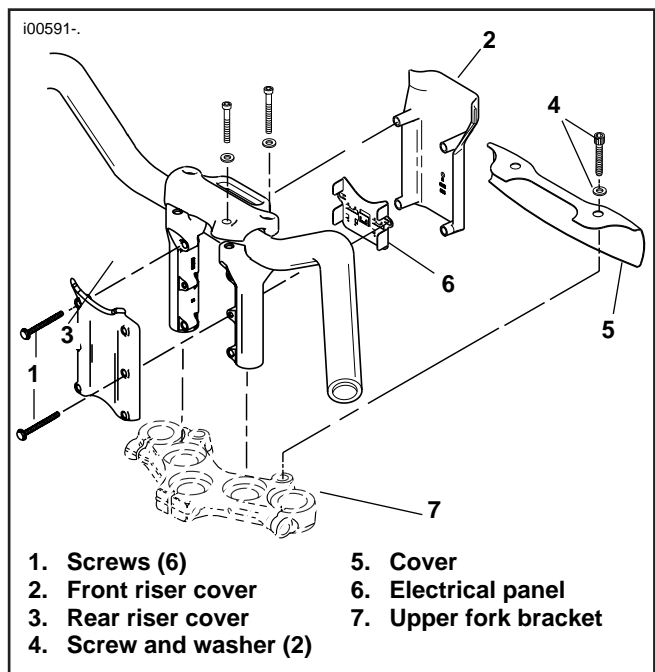
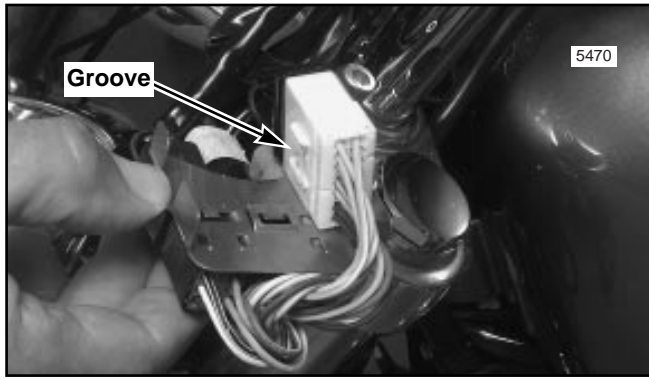
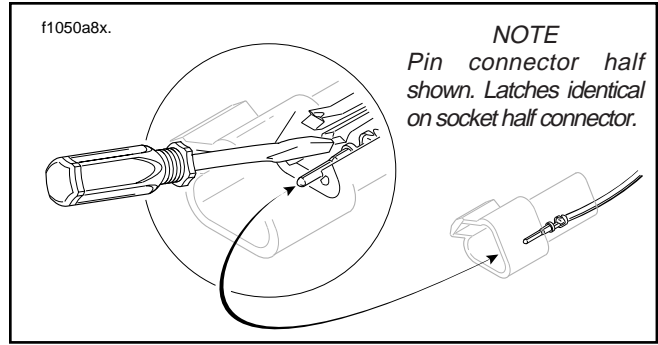


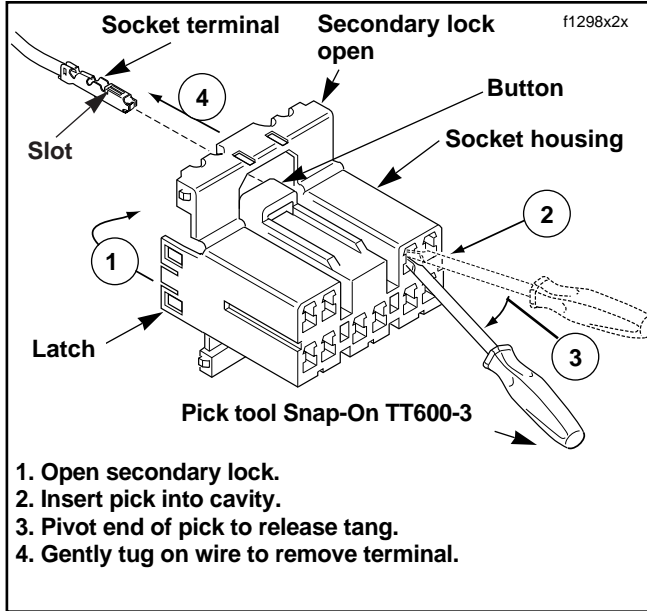
Figure 2. Removing Riser Covers



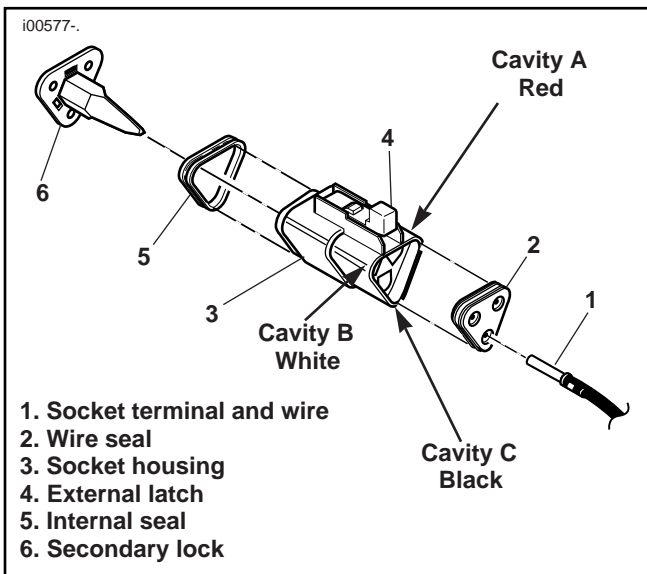
**Figure 3. Removing Connector [20]  
(1996 connector shown)**



**Figure 6. Depressing Terminal Latches**



**Figure 4. Amp Multilock Socket Connector Wire Removal**



**Figure 5. 3-Place Deutsch Socket Connector**

11. Remove the secondary locking wedge (6) as follows: Insert the blade of a small screwdriver between the socket housing (3) and locking wedge (6) inline with the socket holes. Turn the screwdriver 90 degrees to pop the wedge up.
12. See Figure 6. Gently depress terminal latches inside socket housing and back out sockets through holes in rear wire seal. Cavity letters and wire colors are shown in Figure 5. Cavity letters are molded in the housing.
13. Carefully note how the speed sensor harness is routed. Pull the speed sensor harness forward through the cable straps. Cut cable straps only if required.
14. Cut cable strap holding speedometer and bracket to mirror. Place the speedometer and bracket on a clean work bench.

**REMOVING SPEEDOMETER LEADS FROM CONNECTOR [20]**

1. See Figure 4. Bend back the latch slightly and free one side of secondary lock, then repeat the step to release the other side. Rotate the secondary lock outward on hinge to access terminals in chambers of connector housing.
2. Looking in the terminal side of the connector (opposite secondary lock), take note of cavity next to each terminal.
3. See Figure 7. Remove the following wires and terminals from connector [20] by following the procedure in step 4:

Wire Color	Cavity Number
Orange/white	1
White/green	2
Black	12

4. See Figure 4. With the flat side of pick tool against the terminal, insert the pick (Snap-On TT600-3) into the cavity until it stops. Pivot the end of the pick away from the terminal and gently tug on wire to pull terminal from chamber. Do not tug on the wire until the tang is released or the terminal will be difficult to remove. A "click" is heard if the tang is engaged but then inadvertently released. Repeat the step without releasing the tang.
5. Slide the wires removed in step 4 above out of the plastic conduit covering the wires connected to connector [20].

**REMOVING SPEEDOMETER FROM STOCK BRACKET**

1. See Figure 8. Unscrew boot (1), if necessary, from speedometer reset switch by turning it counterclockwise. Remove two cover screws (2) and the rear cover (3).

9. Slide connector [65] forward to disengage connector from T-stud.
10. See Figure 5. Depress external latch (4) and unplug the connector.

- Note position of rear speedometer gasket (4) and remove it. Gently push on rear of speedometer while simultaneously pulling speedometer and front gasket from bracket.
- Do not remove front gasket (5) from the speedometer (6).

### INSTALLING SPEEDOMETER IN DOUBLE BRACKET

#### NOTE

The tachometer will be mounted in the right side of the double bracket as received in the kit.

- See Figure 9. Feed wires from speedometer through front of left opening in double bracket. Lubricate the front and

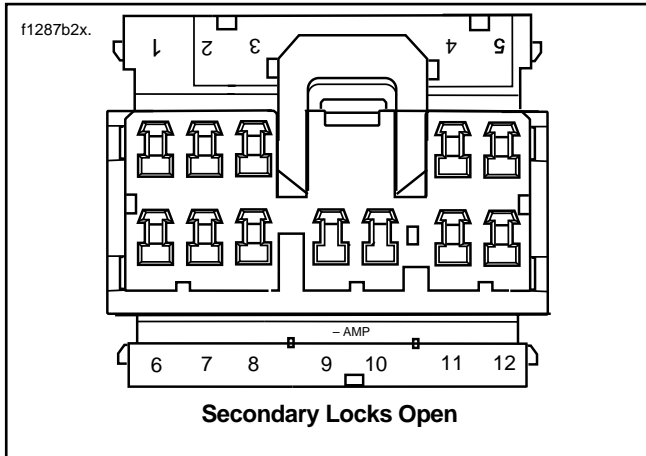


Figure 7. Terminal Numbers Stamped On Secondary Locks (12-place socket housing shown)

rear gaskets with isopropyl alcohol or glass cleaner to ease installation.

- Insert speedometer in double bracket making certain slots in speedometer are aligned with anti-rotational tabs at bottom of bracket.
- Place rear gasket in position and align gasket tabs with anti-rotational tabs. Work gasket into space between speedometer and bracket by pushing speedometer against one side of bracket while pushing gasket into position at the opposite side.

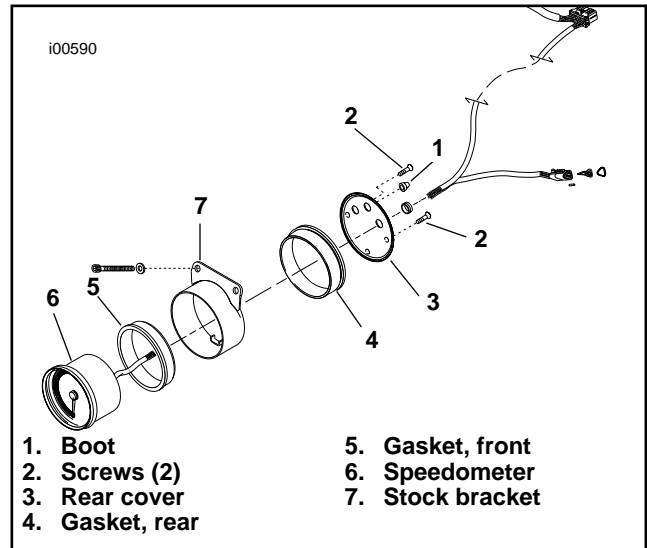


Figure 8. Removing Speedometer From Stock Bracket

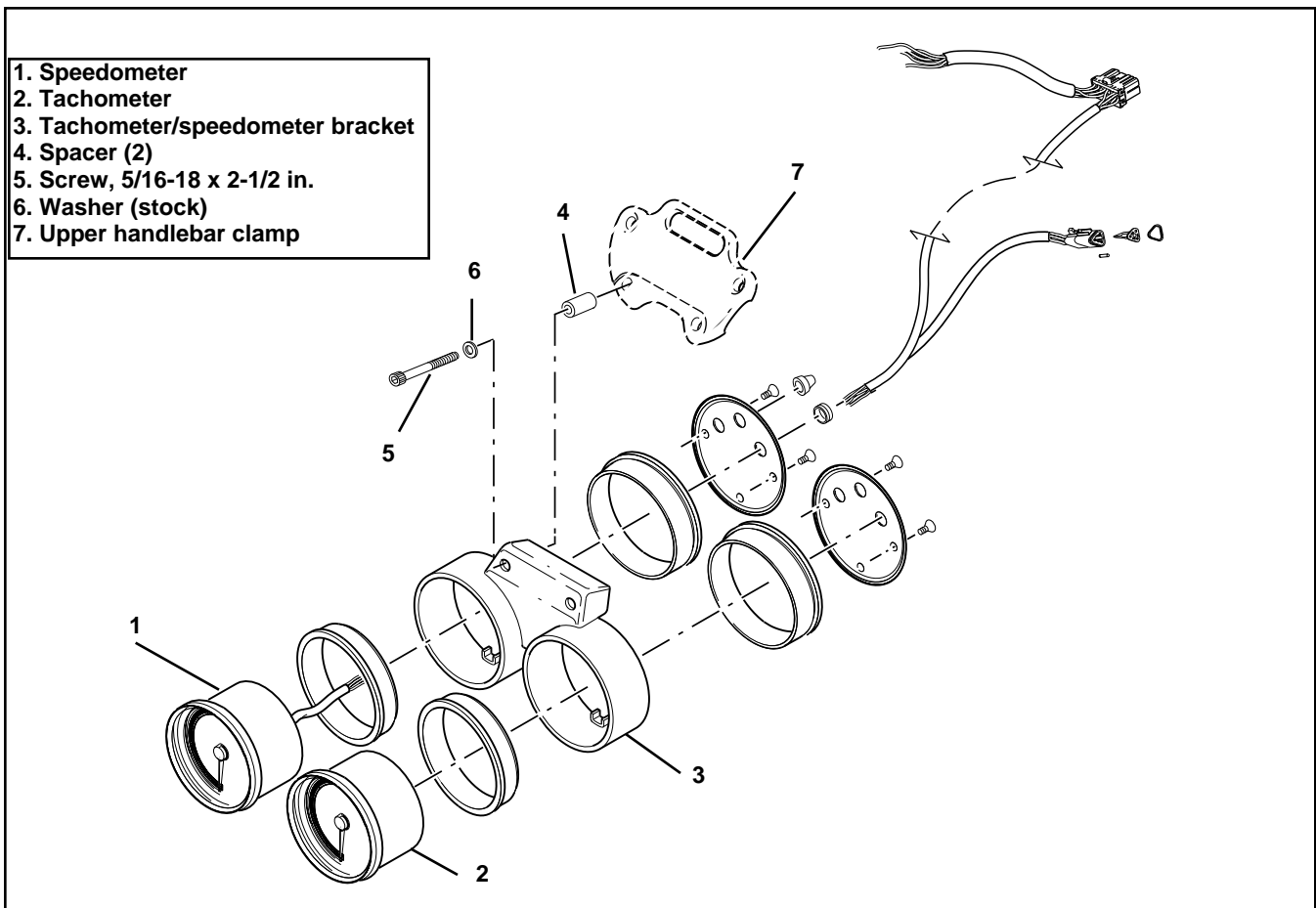
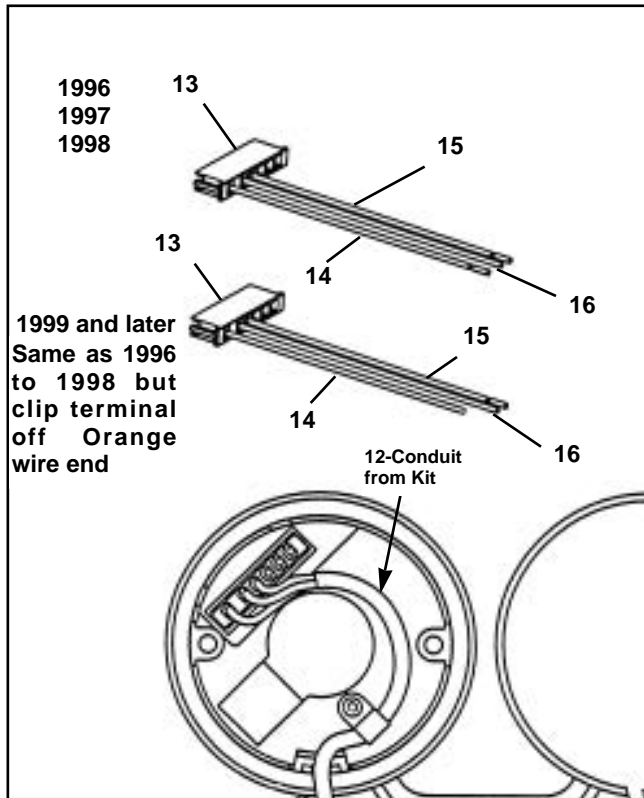


Figure 9. Exploded View Of Speedometer And Tachometer Installed In Double Bracket



**Figure 10. Connecting Harness to Tachometer (Callouts correspond to wires listed in Service Parts)**

4. Check that reset switch is in position and that all wires are positioned so they will not be pinched by rear cover.
5. Install rear cover on speedometer, install cover screws and reset switch boot.

#### ASSEMBLING TACHOMETER HARNESS

1. See Figure 10. It is necessary to assemble a harness from wires, conduit, and connector provided in kit. This harness will plug directly into the back of the tachometer (more here on how to insert terminals into Amp connector). Depending on the model year, different wires are used to make up this harness. After plugging wire ends into connector as shown, cover wires with conduit from kit.

#### CONNECTING SPEEDOMETER/TACH. GROUND LEADS

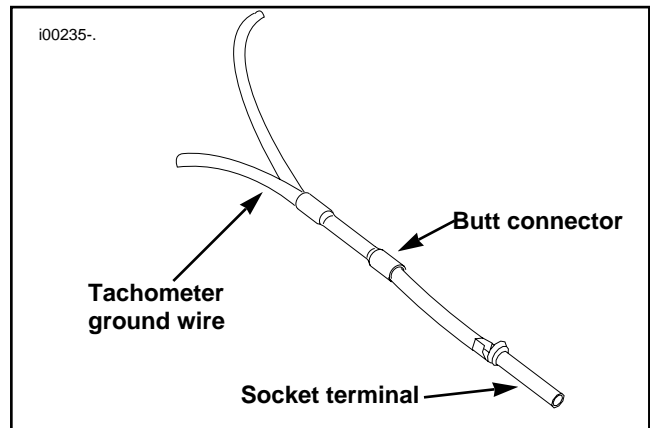
1. Cut speedometer black ground lead 1 in. from existing terminal. Strip 3/8 in. insulation from both the wire ends adjacent to the cut.
2. Strip 3/8 in. insulation from tachometer black ground lead (9).
3. See Figure 11. Using one of the butt connectors from the kit connect the ground leads as shown. Refer to "SEALED BUTT CONNECTORS" in the Service Manual for a complete procedure.

#### CONNECTING SPEEDOMETER/TACHOMETER LEADS TO CONNECTOR [20]

1. Tape the three speedometer wires with the socket terminals on their ends together and slide them through the large conduit so the terminals are positioned next to connector [20]. Place the tachometer harness next to the connector also.

#### NOTE

Make certain the slot in the terminal faces the tang in the chamber for proper installation. On the socket side of the connector, tangs are at the top of each chamber, so the socket



**Figure 11. Connecting Tachometer & Speedometer Grounds**

terminal slot (on the same side as the crimp tails) must face upward. Up and down can be determined by the position of the release button (used to separate the pin and socket halves), the button always being the top of the connector.

2. **For 1998 and earlier:** Remove tape from the speedometer wires, and insert the terminals into connector [20] as follows:

Instrument	Wire Color	Cavity Number
Speedometer	Orange/white	1
Speedometer	White/green	2
Speedometer	Black	12
Tachometer	Orange/white	6
Tachometer	Pink	7

(See Figure 12 for cavity number location.)

For 1999 and later: Insert the terminals into connector [20] as shown above; however, since there is not an open cavity in connector [20] for 1999 and later models, the Orange wire will need to be spliced into the Orange/White wire coming out of the speedometer at a convenient location. Refer to "SEALED BUTT CONNECTORS" in the Service Manual for a complete procedure.

3. See Figure 4. After all wires are in place, close the secondary locks on the socket housing.

#### INSTALLING SPEEDOMETER/TACHOMETER

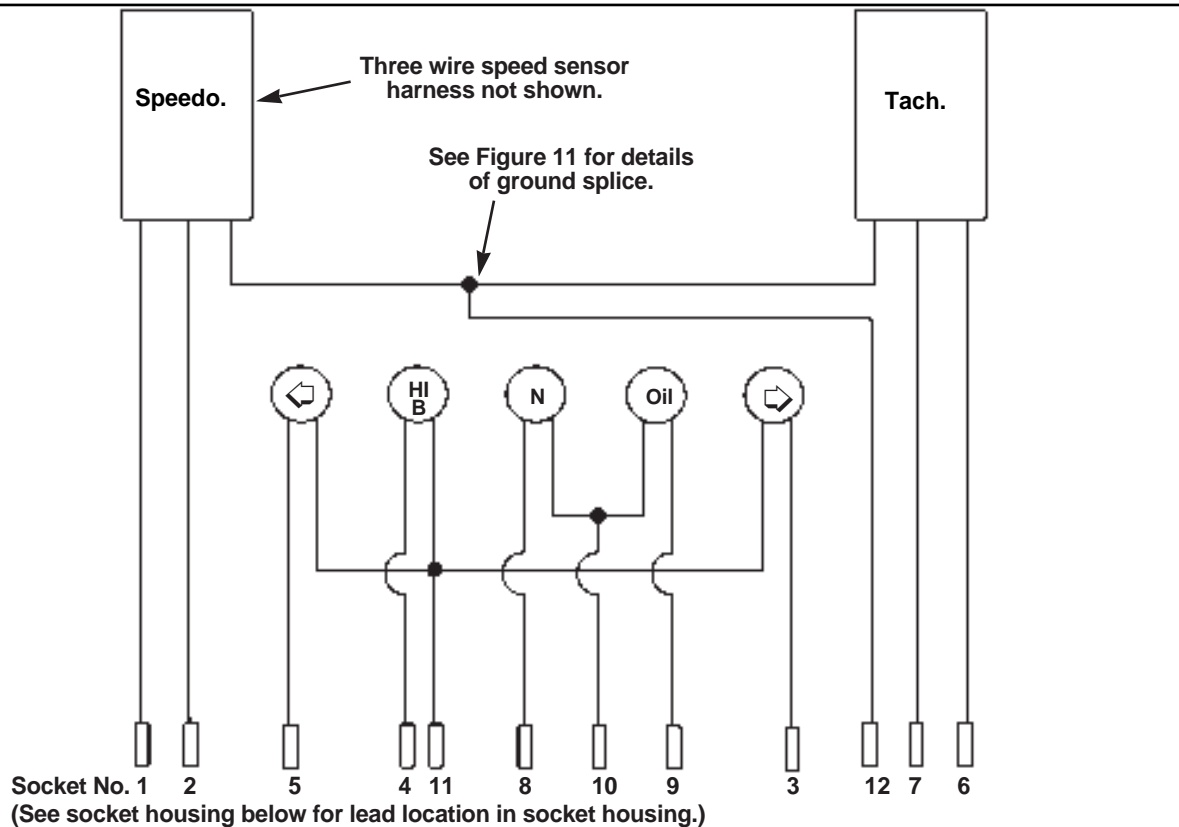
1. Hang speedometer/tachometer assembly on mirror with cable strap and connect wiring as follows:
2. Route speedometer 3-wire harness back to its original position. See Figure 5. Insert wires and terminals into connector [65].
3. See Figure 13. Install secondary lock with arrow positioned as shown.

#### NOTE

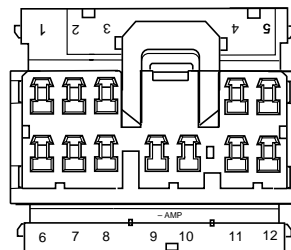
If the secondary lock (wedge) does not slide into the installed position easily, verify that all terminals are fully installed in the socket housing. The secondary lock indicates when terminals are not properly installed by not entering its fully installed position.

4. Install cable straps to replace any that were removed.
5. Mate halves of connector [65].
6. Refer to applicable Service Manual and install fuel tank.
7. See Figure 9. Install speedometer/tachometer assembly on handlebar clamp as shown using spacers and fasteners from kit. Tighten screws "snug-tight".

See Figure 3. Connect and install connector [20] on electrical panel.



f1287b2x.



Socket housing as viewed from terminal end.

#### SOCKET NO., WIRE COLORS OR MARKING\*

1. Orange/white
2. White/green
3. BN (RT) - (Brown, right turn indicator)
4. W (HB) - (WHITE, High beam)
5. V (LT) - (Violet, left turn indicator)
6. Orange/white
7. Pink
8. TN (N) - (Tan, neutral indicator)

9. GN/Y (OP) - (Green/yellow, oil pressure)
10. O or BE - Orange or blue
11. BK - black
12. BK - black, (ground for speedo. and tach.)

#### \*NOTE

The indicator light wires, socket no. 3, 4, 5, 8, 9, 10, and 11, are all black. To identify the mating wire color (in pin housing) and the circuit function the wires are marked with white letters giving color and circuit function.

#### \*NOTE ON 1998 MODELS

In 1998 the 12-place connector [20] was replaced with a 14-place connector [20]. Wires 1-12 are the same for both the 12-place and the 14-place connectors. Wires 13 and 14 were added for a police and engine check function.

Figure 12. Speedometer/Tachometer Wiring Diagram

See Figures 1 and 2. Position harnesses on electrical panel so they will not be pinched by riser covers.

8. See Figure 2. Install front (2) and rear (3) riser covers and secure with screws (1).
9. Install cover (5) and secure with screws and washers (4).
10. Refer to applicable Service Manual and install seat.

#### **⚠WARNING**

After installing seat, pull upward on front of seat to be sure

it is locked in position. If seat is loose, it could shift position during vehicle operation and startle the rider, causing loss of control and personal injury.

#### Final Checks and Adjustments

1. See Figure 9. If necessary, adjust the handlebar to the rider's normal position. Hold the handlebar and loosen rear clamp bolts. Position and adjust handlebars and tighten rear screws to 12 - 15 ft.-lbs.

**CAUTION**

When handlebar installation is complete, the upper and lower clamps have contact with the cast-in boss in front and have a slight gap at the rear.

**WARNING**

Always connect the positive battery cable first. If the positive cable should contact ground with the negative cable installed, the resulting sparks may cause a battery explosion resulting in personal injury.

2. Connect the battery cables, positive cable first.
3. Turn ignition/light switch to ON. Check that the indicator lights, signal lights and headlamp all function properly.
4. Start the engine, check the tachometer operation and check that the indicator lights are working correctly.
5. If tachometer does not function, see Figure 12 and check that all wiring connections were correctly made.
6. Test ride motorcycle to verify speedometer is functioning properly.

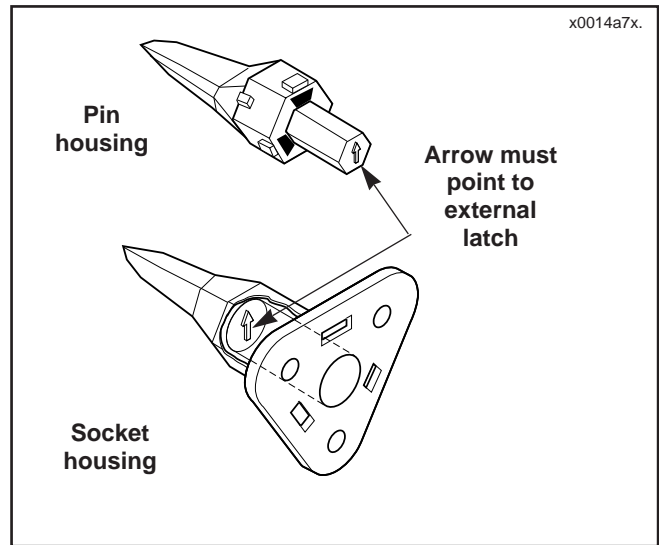


Figure 13. Secondary Lock Positioning

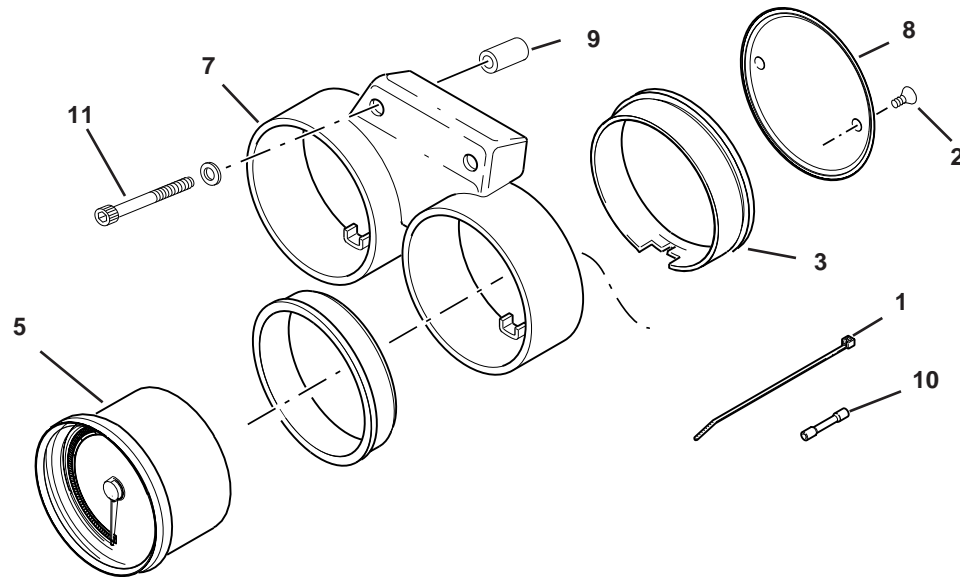


# Service Parts

Part No. 67359-96A

Date 7/98

## XL Custom Tachometer Kit



Item	Description	Part No.	Item	Description	Part No.
1	Cable strap (4)	10006	12	*1/2 in. vinyl conduit, 9 in. long	not sold
2	Screw, cover(2)	2548	13	*6-place socket housing	72081-99
3	Gasket, rear	67104-95	14	*Orange wire Socket/Amp socket	68944-98
4	Gasket, front	67121-95	15	*Pink wire Socket/Amp socket	68946-98
5	Tachometer	67152-99	16	*Black wire Socket/no terminal	68947-98
6	Speedometer amber bulb assy. (not shown)	67385-98			
7	Bracket, speedo/tach	67360-96			
8	Cover, tach. rear	67363-96			
9	Spacer (2)	67366-96			
10	Butt splice, blue	70586-93			
11	Screw, hex socket, 5/16-18 x 2-1/2 i. (2)	876A			

\*not shown. See Figure 10 for instructions on assembling connector, wires and conduit into a harness