

INSTALLATION INSTRUCTIONS

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 the cast headlight nacelle for 86-17 FLST Softail models.

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

WARNING!: (boxed and shaded) A **WARNING!:** Indicates special procedures that must be followed to avoid injury to a motorcycle operator or person inspecting or repairing the motorcycle.

NOTE: Fits 86-17 FLST, FLSTC, FLSTF, FLSTFB, FLSTFBS Models

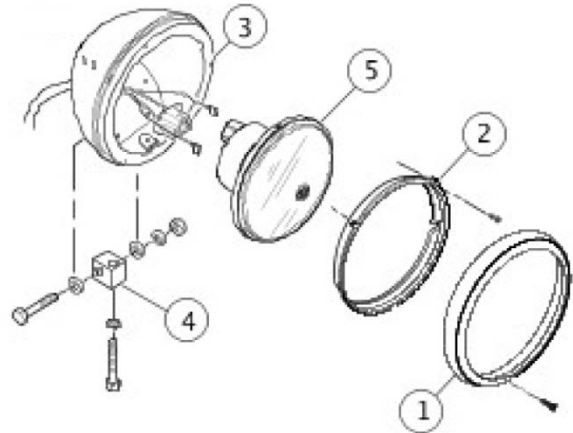
2007-later FLSTF models and 2009-later FLSTC models require separate purchase and installation of a Handlebar Riser Kit for correct clearance with the top cover.

WARNING!: To prevent accidental vehicle start-up, which could cause death or serious injury, disconnect negative (-) battery cable or remove the main fuse before proceeding. For bikes with security systems, reference the appropriate service manual to determine the correct procedure to disconnect the battery.

DRAG SPECIALTIES HEADLIGHT NACELLE FOR SOFTAIL p/n 2001-1481/1482

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PROCEDURE:



1. Trim ring.
2. Retaining ring.
3. Headlamp assembly.
4. Mounting block.
5. Lamp housing.

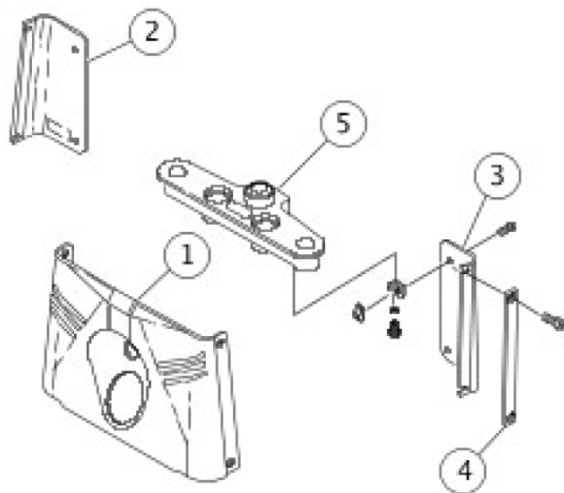
Figure 1. Headlamp Assembly

INSTALLATION

NOTE: Protect painted surfaces by covering the front fender and fuel tanks with a padded blanket to prevent scratches and dings.

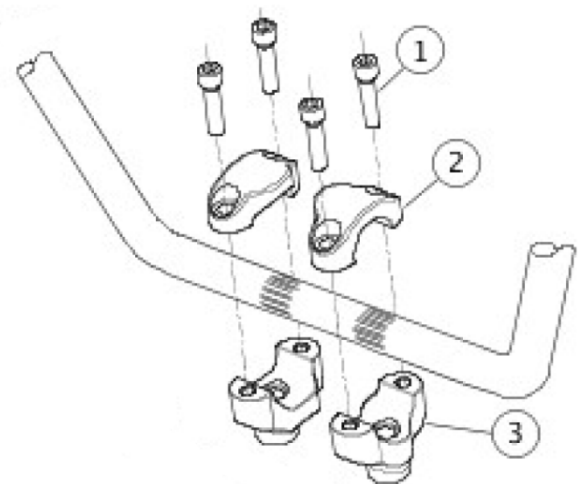
1. See **Figure 1**. Remove trim ring screw and trim ring (1).
2. Remove three retaining ring screws and retaining ring (2) from headlamp assembly (3). Pull lamp bulb out of connector.
3. Disconnect headlamp harness from headlamp housing assembly. Also, if the headlamp assembly has a position bulb, disconnect the two spade connectors from it. Remove headlamp assembly.
4. Cut the headlamp wires directly behind the headlamp connector.

5. Remove screw, washers, lockwasher, hex nut and headlamp housing from mounting block.
6. See **Figure 2**. Remove screws that hold trim strips (4), side back panels (2, 3), and front panel (1) in place. Remove panels. When removing panels, carefully remove the brake line-routing clamps from the right side back panel. **Do not** open the brake line.
7. See **Figure 1**. Remove the mounting block (4) and mounting block hardware. Do not damage the headlamp assembly during removal.



1. Front panel.
2. Right side panel.
3. Left side panel.
4. Trim strip (2).
5. Upper fork bracket.

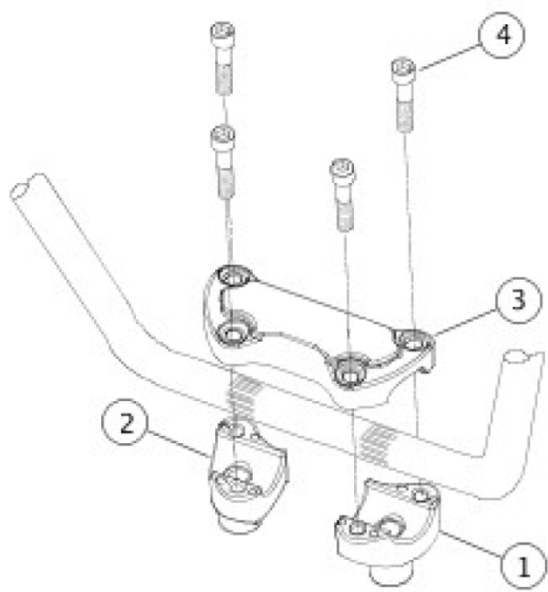
Figure 2. Front Fork Panels



1. Screw (4).
2. Riser cap (2).
3. Riser (2).

Figure 3. Riser Orientation - FLSTF

8. **2007 and later FLSTF only:** Replace handlebar risers with Handlebar Riser Kit (Part No. 56789-05) or similar:
 - a. Refer to the service manual. Remove the upper handlebar clamp. Move the assembled handlebar aside. Remove risers.
 - b. See **Figure 3**. Loosely install new risers, oriented as shown, to the upper fork bracket using the original equipment (OE) screws, lockwashers and washers. Install ground cable and internal tooth lockwasher onto the right side riser screw.
 - c. Using knurled areas of handlebar as a guide, center handlebars between handlebar risers.
 - d. Install two riser caps (2) onto the risers over the handlebar using four screws (1) from the kit.
 - e. Verify the gaps between risers and caps at the front and rear of the handlebars appear even. Tighten the riser cap screws to 12–15 ftlbs.
 - f. Tighten the riser mounting screws to 30–40 ftlbs.



1. Right riser.
2. Left riser.
3. Riser clamp.
4. Screw (4).

Figure 4. Riser Orientation - FLSTC

9. **2009 and later FLSTC only:** Replace handlebar risers with Handlebar Riser Kit (Part No. 46809-09) or similar:

- a. See the service manual. Remove upper handlebar clamp. Move assembled handlebar aside. Remove risers.
- b. See **Figure 4**. Install new risers, oriented as shown, to the upper fork bracket with the original equipment (OE) screws, lockwashers and washers. Install ground cable and internal tooth lockwasher onto the right side riser screw. Leave fasteners loose.
- c. Using knurled areas of handlebar as a guide, center handlebars between handlebar risers.
- d. Install riser clamp (3) onto the risers (1, 2) over the handlebar with four screws (4) from the kit.

e. Verify the gaps between risers and clamp at the front and rear of the handlebars appear even.

Tighten riser clamp screws to 12–16 ftlbs.

f. Tighten the riser mounting screws to 30–40 ftlbs.

10. See **Figure 10**. Install well nuts (10) into holes in nacelle halves. Install right side of nacelle (7):

a. Attach the bottom of the nacelle to the fork bracket with a $\frac{5}{8}$ in long screw (14), lockwasher (12), and two flat washers (2). Position a flat washer on both the inside and outside of the nacelle to align the nacelle flush with the fork slider covers. Leave fasteners loose.

b. Attach the top of the nacelle with a $\frac{7}{8}$ in long screw (15), lockwasher (12), and flat washer (2). Position flat washer on the outside of nacelle. Screw must not bottom out in hole. Leave fasteners loose.

c. Repeat for left side nacelle.

11. Splice headlamp harness (3) into wires cut in Step 6:

a. Strip $\frac{3}{8}$ in of insulation off each wire end being spliced.

b. Insert each wire end being spliced into opposite ends of a sealed splice connector (17).

NOTE

See **Figure 5**. Gently hold the sealed splice connector from the kit in the jaws of the crimp tool. Feed the stripped lead or leads up to the wire stop inside the metal insert in one half of the connector. Squeeze tool to crimp metal insert. Repeat for the other end of the connector to capture one or two stripped leads including, if necessary, the fuse block adapter.

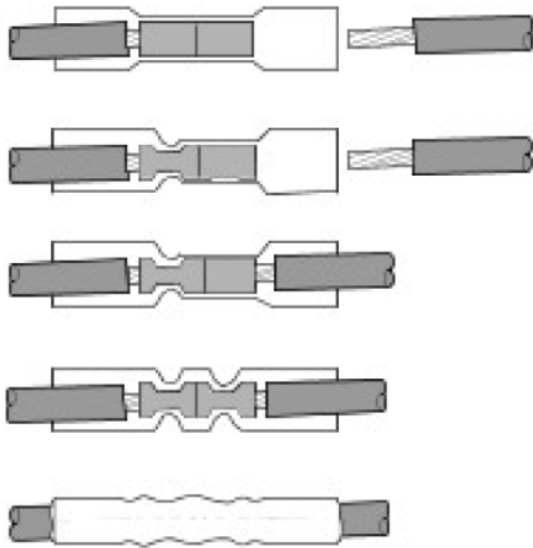


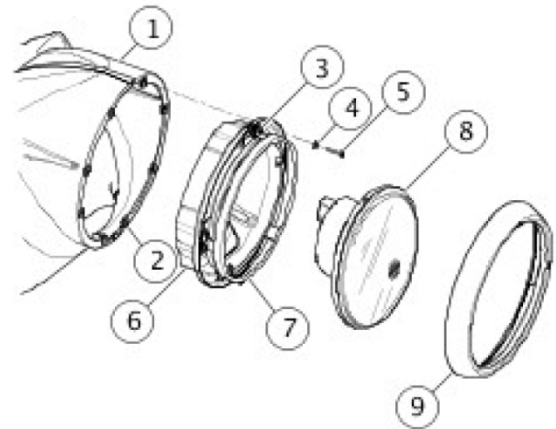
Figure 5. Splice 1 into 1 Sequence

12. Using a crimping tool, crimp the wire ends into the connector.

13. Using a suitable radiant heating device, heat the crimped splice from the center out to each end until sealant exudes out both ends of the connector and the tubing assumes a smooth cylindrical appearance.

14. See **Figure 10**. Fasten the brake line to the back of the right side nacelle piece with two brake line retaining clamps (16) from the kit. Attach the retaining clamps to the right side nacelle piece with the original $\frac{5}{8}$ in long cap screws, $\frac{1}{4}$ in ID flat washers (1) and locknuts (5) (washer installs under nut).

15. See **Figure 6**. Install the previously removed headlamp assembly (8) into the headlamp bucket (6) using the **new** retaining ring (7) and three screws (3).



1. Nacelle.
2. Well nut (8).
3. Screw (3).
4. Washer (8).
5. Screw (8).
6. Headlamp bucket assembly.
7. Retaining ring.
8. Headlamp assembly.
9. Headlamp trim ring assembly.

Figure 6. Install Headlamp

16. Connect the headlamp harness to the headlamp and bucket assembly. If the headlamp assembly has a position bulb, connect the two spade connectors to it.

17. Install the headlamp and bucket assembly into the nacelle using eight washers (4) and screws (5) from the kit.

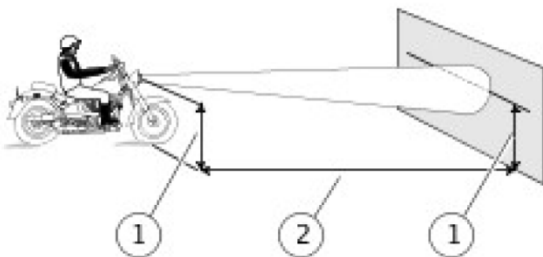
18. See **Figure 10**. Place handlebar cover (4) into position and secure with $\frac{5}{8}$ in long screws (13) and lockwashers (11).

19. Tighten all 5/16 in screws to 19 ft-lbs. Tighten headlamp screws and handlebar cover screws snugly.

1. Install the main fuse or connect negative battery cable.

2. See the service manual. Install seat.
 3. **ALL models:** Align headlamp. See the **Headlamp Adjustment** section.
 4. See **Figure 10**. Install the headlamp trim ring assembly (23-26) with screw (27).
 5. Trim the detachable windshield (if present). See the **Trimming a Detachable Windshield** section.
- COMPLETION**
- Be sure headlamp, tail and stop lamp and turn signals are operating properly before riding. After installing seat, pull upward on seat to be sure it is locked in position.
1. See the owner's manual. Check tire pressure.

Headlamp Adjustment

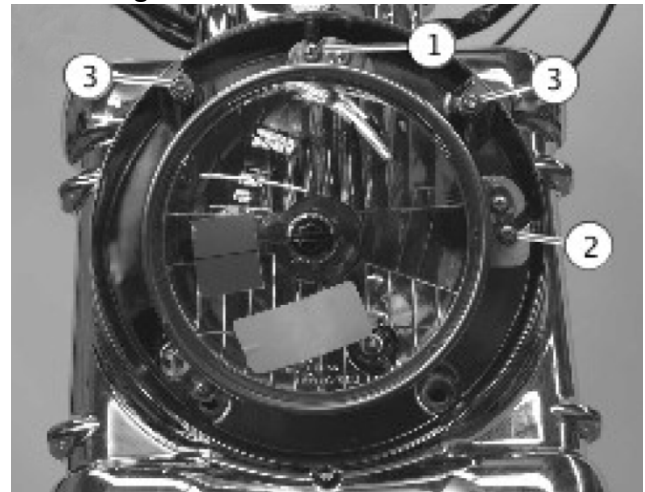


1. Level with Center of Headlamp.
2. 25 feet.

Figure 7. Headlamp Adjustment

2. Park the motorcycle on a level floor (or pavement) in an area with minimal light.
3. See **Figure 7**. Position the motorcycle 25 ft away from a screen or wall. Measure the distance from directly below the front axle to the base of the wall or screen.
4. Mark a horizontal line on the screen or wall, 35 in above the floor or pavement.
5. Load the vehicle with rider, passenger (if normally present) and any cargo normally carried. Weight compresses the vehicle suspension to riding height.
6. Stand motorcycle upright with both tires resting on floor. Hold front wheel in straight alignment (directly forward).

7. Turn ignition switch ON. Set handlebar headlamp switch to HIGH beam position.
8. Check the light beam for proper adjustment. With the beam properly adjusted:
 - a. The main beam of light (broad, flat pattern of light) is centered equally above and below the horizontal line on the screen or wall.
 - b. The main beam of the light is directed straight ahead. Properly adjusted headlamps project an equal area of light to the left and right of center.
9. If necessary, adjust the headlamp beam:
 - a. See **Figure 8**. Raise or lower the headlamp beam, as necessary, by turning the vertical adjusting screw (1). Turn the screw clockwise to raise the beam or counterclockwise to lower the beam.
 - b. Adjust the headlamp beam left or right, as necessary, by turning the horizontal adjusting screw (2). Turn the screw clockwise to adjust the beam right, or counterclockwise to adjust the beam left.
10. Turn ignition switch OFF.



1. Vertical adjustment screw.
2. Horizontal adjustment screw.
3. Trim ring mounting grommet (2).

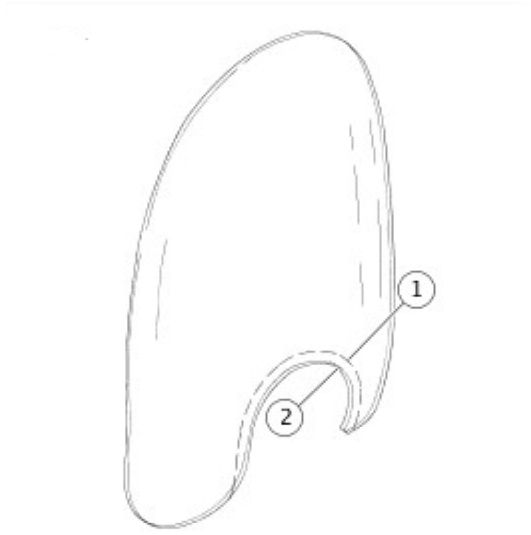
Figure 8. Headlamp Adjustment

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

Trimming a Detachable Windshield

To trim a windshield to fit the Nacelle:

1. See **Figure 9**. Cover the bottom 50 mm (2 in) of windshield closest to the headlamp contour, on both sides of the windshield, with two layers of masking tape. This tape provides a surface on which to mark the new cut, as well as keep the cut edge neat.
2. Mark the new cut location alongside, and approximately 1¼ in from the existing headlamp contour as shown in **Figure 9** as a dashed line (1).



1. Cut new contour.
2. Existing windshield contour.

Figure 9. Trimming Detachable Windshield

3. Using a sabre saw with a fine-tooth blade, carefully cut the new contour on the windshield.
4. Clean the edges of the cut with a fine-grit grinding wheel.

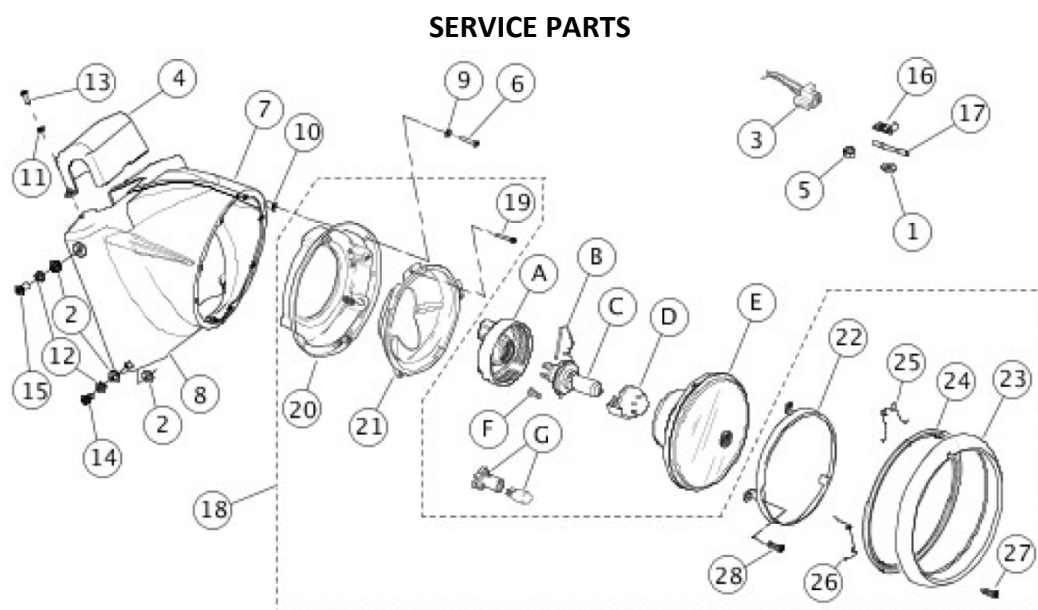


Figure 10. Service Parts, Headlamp Nacelle Kits

SERVICE PARTS

Table 1. Service Parts

ITEM	DESCRIPTION (QUANTITY)	ITEM	DESCRIPTION (QUANTITY)	ITEM	DESCRIPTION (QUANTITY)
1	Flat washer, chrome (2)	11	Lockwasher (2)	21	<ul style="list-style-type: none"> ▪ Mounting ring, headlamp (for chrome assembly) ▪ Mounting ring, headlamp (for black assembly)
2	Flat washer, chrome (6)	12	Lockwasher (4)	22	<ul style="list-style-type: none"> ▪ Ring assembly, retainer (for chrome assembly) ▪ Ring assembly, retainer (for black assembly)
3	Connector, headlamp	13	Screw, button head, hex socket (2) 1/4-20 x 5/8 in long	23	<ul style="list-style-type: none"> ▪ Headlamp trim ring, chrome (for chrome assembly) ▪ Headlamp trim ring, black (for black assembly)
4	Handlebar clamp cover, chrome Handlebar clamp cover, black	14	Screw, button head, hex socket 5/16-24 x 1/2 in long (2) 5/16-24 x 5/8 in long (2)	24	<ul style="list-style-type: none"> ▪ Gasket
5	Locknut (2)	15	Screw, button head, hex socket (2) 5/16-24 x 5/8 in long	25	<ul style="list-style-type: none"> ▪ Spring, headlamp trim ring, top
6	Screw, pan head (8)	16	Clamp (2)	26	<ul style="list-style-type: none"> ▪ Spring, headlamp trim ring, bottom (2)
7	Nacelle, left side, chrome Nacelle, left side, black	17	Sealed splice connector (3)	27	<ul style="list-style-type: none"> ▪ Screw, headlamp trim ring
8	Nacelle, right side, chrome Nacelle, right side, black	18	Headlamp mounting assembly (chrome) (consists of items 19-28) Headlamp mounting assembly (black) (consists of items 19-28)	28	<ul style="list-style-type: none"> ▪ Screw, retaining ring (3)
9	Washer (8)	19	<ul style="list-style-type: none"> ▪ Adjusting screw, headlamp 		
10	Well nut (8)	20	<ul style="list-style-type: none"> ▪ Headlamp bucket assembly 		

Items mentioned in text, but not included in kit

A	Boot, headlamp	E	Envelope, headlamp
B	Wire retaining clip	F	Screw (2)
C	Bulb, headlamp	G	Bulb, position
D	Shield, bulb		