

ADJUSTMENT

For the correct air pressure, see Section 2.18 REAR AIR SUSPENSION.

REMOVAL

NOTE

If replacing both shock absorbers, remove and install one shock at a time. Remove and install the second shock only after the first shock is installed, but before the air suspension system is pressurized.

1. Place the motorcycle on a hydraulic center stand with the rear wheel raised off the ground.
2. Remove saddlebags. See Section 2.26 SADDLEBAG, REMOVAL.

⚠ WARNING

Exercise caution when bleeding air from the air valve. Moisture combined with lubricant (either from shock assembly or drip oiler in the air compressor lines) may be ejected onto the rear wheel, tire and/or brake components and adversely affect traction and/or braking efficiency, which could result in death or serious injury.

3. Remove protective cap from air valve. Using a no-loss AIR SUSPENSION PUMP AND GAUGE (Part No. HD-34633), add 3-5 psi (20.7-34.5 kPa) to purge lines of any oil.
4. Depress pin in valve to bleed air from shocks.
5. Depress collar on compression fitting to release air tube. See Figure 2-94.
6. Remove the upper shock mounting bolt with lockwasher and flat washer. See lower frame of Figure 2-95.
7. Remove the lower shock mounting bolt with lockwasher and flat washer. Remove the shock absorber assembly from the motorcycle.

CAUTION

Never lay the shock absorber down. Always keep the shock absorber upright in a fully vertical position. Laying the shock absorber down with the air line removed can cause the oil to drain out through the compression fitting. Any loss of oil requires replacement of the shock absorber.

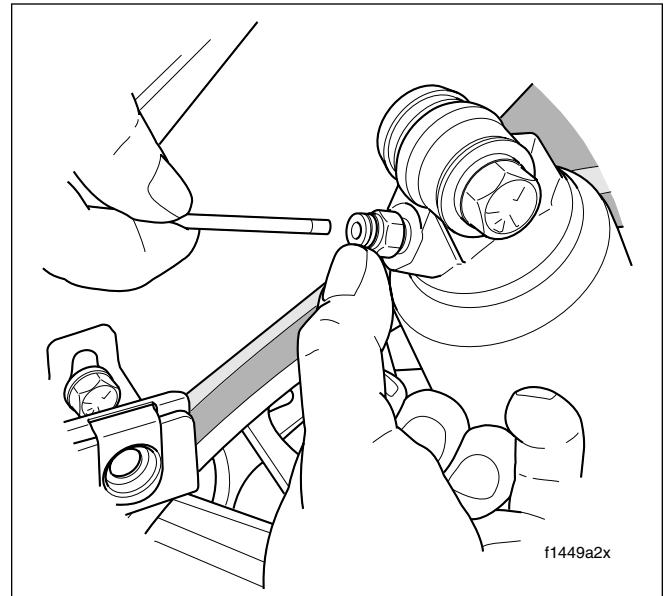


Figure 2-94. Depress Collar on Fitting and Pull Out Air Inlet Tube

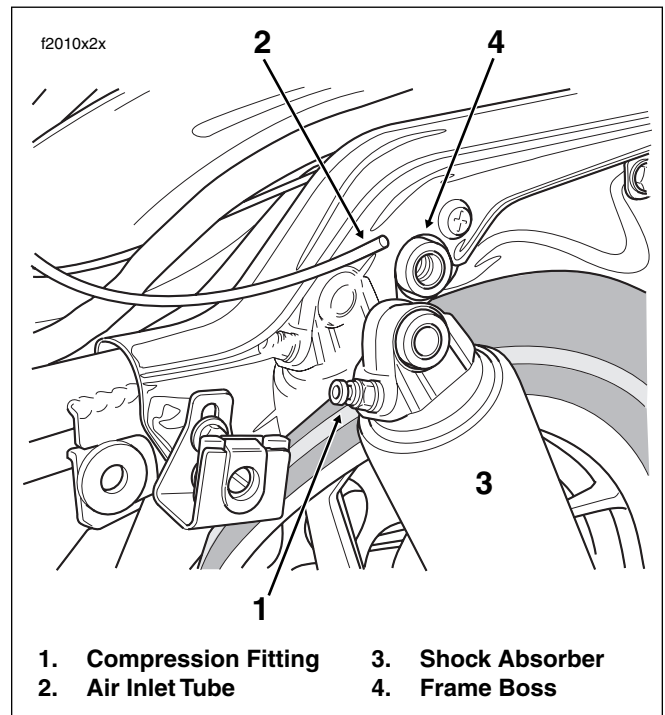


Figure 2-95. Remove Upper Shock Mounting Bolt (Left Side View)

DISASSEMBLY

NOTE

Air shocks are not repairable. Replace the shocks if damaged, worn or any sign of leakage is observed.

CLEANING AND INSPECTION

1. Examine the rubber mounting bushings for cracks or wear. Examine the shock for leaks. The unit should not leak and should compress slightly easier than it extends. Compare the action of the shock with a new one to judge if it is worn. Replace the shock if necessary.
2. Clean and examine the shock mounting hardware. Replace parts that are worn or damaged.

ASSEMBLY

NOTE

If the compression fittings were removed, apply PIPE SEALANT WITH TEFLON to the threads before assembly.

INSTALLATION

CAUTION

Never lay the shock absorber down. Always keep the shock absorber upright in a fully vertical position. Laying the shock absorber down with the air line removed can cause the oil to drain out through the compression fitting. Any loss of oil requires replacement of the shock absorber.

1. Install lockwasher and flat washer on the lower shock mounting bolt. Insert bolt through the shock bottom bushing.
2. Apply two or three drops of Loctite Medium Strength Threadlocker 243 (blue) to threads.
3. Start bolt into rear swingarm mount. Tighten bolt to 35-40 ft-lbs (47-54 Nm).
4. Install lockwasher and flat washer on the upper shock mounting bolt. Insert bolt through the shock upper bushing.
5. Apply two or three drops of Loctite Medium Strength Threadlocker 243 (blue) to threads.
6. Start bolt into frame boss. Tighten bolt to 33-35 ft-lbs (45-48 Nm).
7. Insert air tube into compression fitting until it bottoms. Gently tug on tube to verify that it is locked in place.

NOTE

If replacing both shock absorbers, remove and install the other shock at this time.

8. Pressurize rear air suspension system and check for leaks. For the correct air pressure, see Section [2.18 REAR AIR SUSPENSION](#).
9. Install saddlebags. See Section [2.26 SADDLEBAG, INSTALLATION](#).

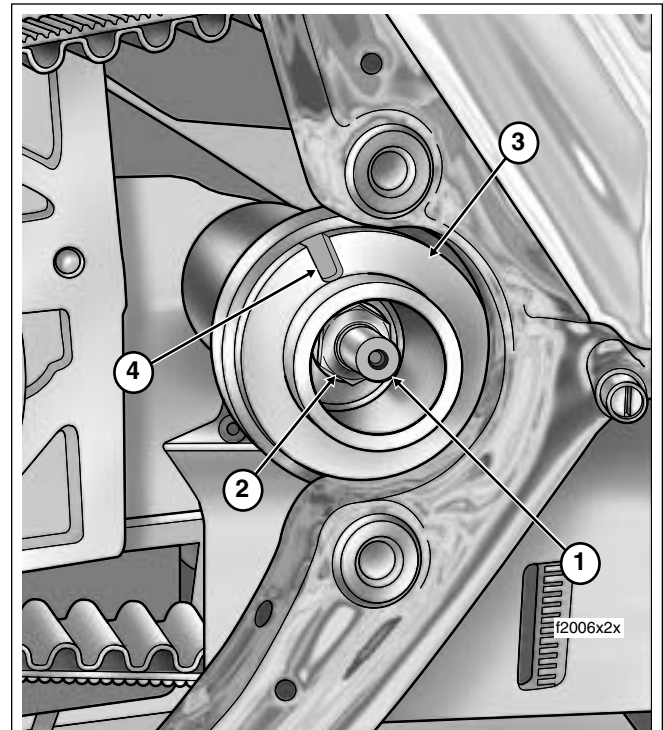
REMOVAL

1. Remove saddlebags. See Section 2.26 [SADDLEBAG, REMOVAL](#).
2. Remove socket screw with lockwasher to remove passenger footboard from rear swingarm bracket. Repeat step on opposite side of motorcycle.
3. Remove left side muffler as follows:
 - a. Open worm drive clamps to remove heat shield from crossover pipe in front of muffler.
 - b. Using a bungee cord, tie the muffler to the lower saddlebag support rail.
 - c. Loosen TORCA clamp between crossover pipe and muffler.

NOTE

To facilitate removal, spray PB Blaster or other suitable penetrating oil in and around joint of exhaust pipes. For best results, be sure to allow sufficient time for the penetrating oil to work.

- d. Remove two screws (with lockwashers) to detach muffler from lower saddlebag support rail.
 - e. Remove bungee cord to release muffler from lower saddlebag support rail.
4. On models equipped with low profile shock absorbers (FLHS and FLHX), remove left side lower saddlebag support rail as follows:
 - a. Remove outside T40 TORX screw (and flange nut) to release saddlebag support rail from saddlebag support bracket.
 - b. Remove T40 TORX screw to release opposite end of saddlebag support rail from frame weldment.
5. Place the motorcycle on a hydraulic center stand. Slide a block of wood beneath the oil pan to support the weight of the transmission once the pivot shaft is removed.
6. Standing on right side of motorcycle, remove E-clip from groove at end of axle.
7. Remove cone nut and adjuster cam from axle.
8. Using a soft mallet, gently tap end of axle towards left side to loosen. Catching external spacers on right and left side of hub, pull axle free of wheel and rear swingarm.
9. Pull wheel to release brake disc from caliper. Pry inner and outer brake pads back for additional clearance, if necessary. Use a putty knife with a wide thin blade to avoid scoring or scratching the brake disc.



- | | |
|----------------|-----------------|
| 1. Pivot Shaft | 3. Rubber Mount |
| 2. Locknut | 4. Slot |

Figure 2-96. Remove Rear Swingarm Bracket (Left Side View)

10. Remove caliper from anchor weldment on rear swingarm, and carefully hang over lower saddlebag support rail.
11. Roll wheel forward and slip belt off sprocket. Move wheel out from beneath rear fender.
12. Remove belt guard from bottom of left side swingarm. First remove two rear screws, and then loosen front screw. Push belt guard toward the front of the motorcycle until screw engages large end of slot, and then remove.
13. Remove lower shock mounting bolt (with lockwasher and flat washer) to release shock absorber from rear swingarm mount. Repeat step on opposite side of motorcycle.
14. Remove two bolts (with lockwashers) to free rear swingarm bracket from left side of motorcycle frame. See [Figure 2-96](#).
15. Moving to right side of motorcycle, leave rear swingarm bracket installed, but remove decorative chrome plug.

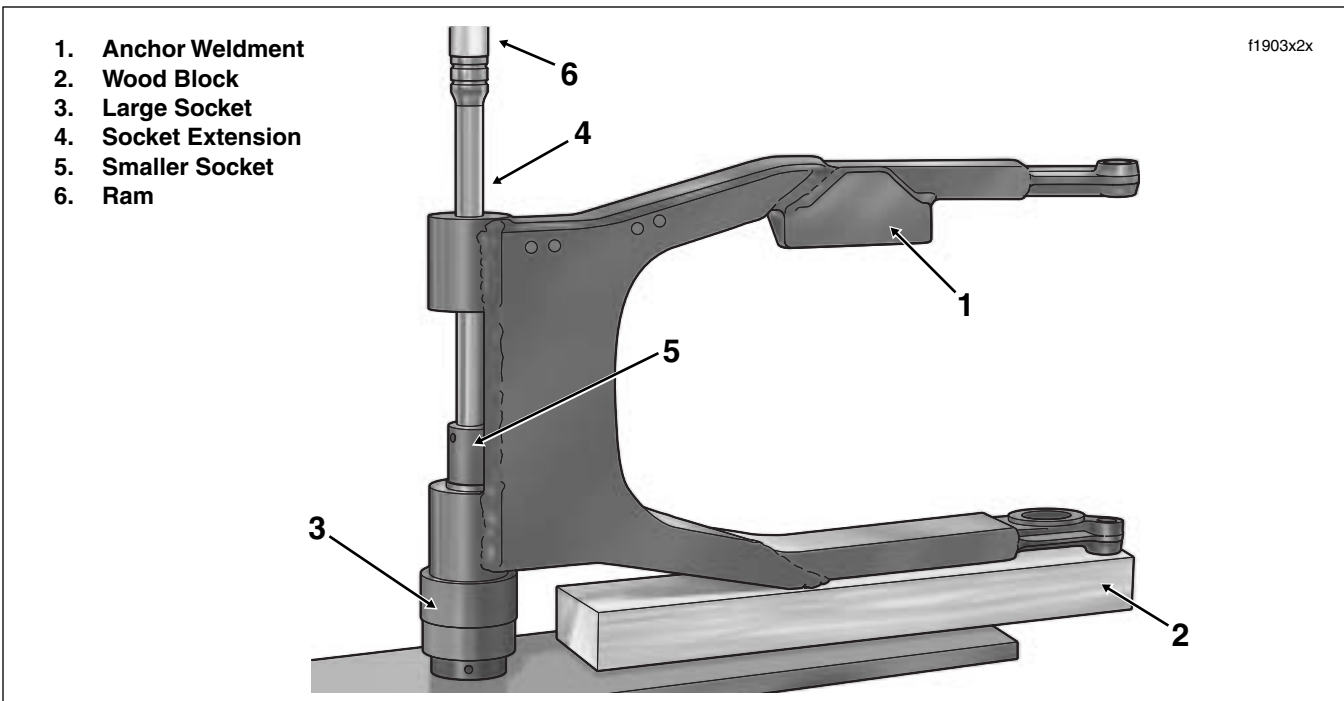


Figure 2-97. Press Out Drive Side Bearing

16. Open two cable clips on T-studs at top of right side swingarm. Free rear brake line hose from cable clips.

NOTE

For best results, insert blade of small screwdriver into gap at side of clip and gently rotate end of screwdriver to pop open.

17. Holding left side nut within rubber mount, remove right side locknut from end of pivot shaft. Remove cup washer.
18. Using a suitable drift, tap pivot shaft toward left side of motorcycle.
19. Moving to left side, pull pivot shaft assembly (pivot shaft, locknut, cup washer, rubber mount and outer spacer) out of transmission mount and left side swingarm. See [Figure 2-101](#).
20. Standing at rear of motorcycle, work rear swingarm free of transmission mount and rear swingarm brackets.
21. Remove outer spacer from right side swingarm tube.
22. Remove rubber mount from behind right side swingarm bracket.

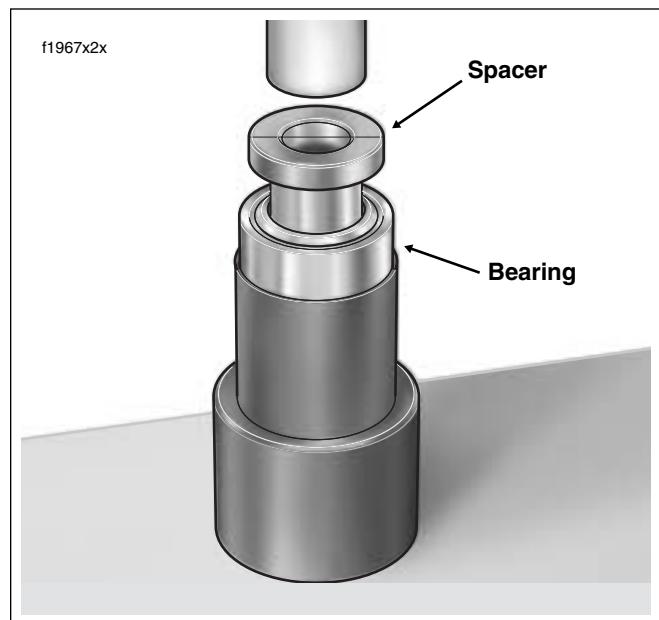


Figure 2-98. Press Spacer Into Bearing

DISASSEMBLY/ASSEMBLY

Bearing Removal

1. Move rear swingarm to an hydraulic press.

2. Place swingarm on its side, so that the brake side is on top. The brake side is easily recognized by the anchor weldment for mounting of the brake caliper.
3. Support the swingarm with a block of wood and a large socket as shown in [Figure 2-97](#). Verify that assembly is square and the bearing bore is completely vertical.

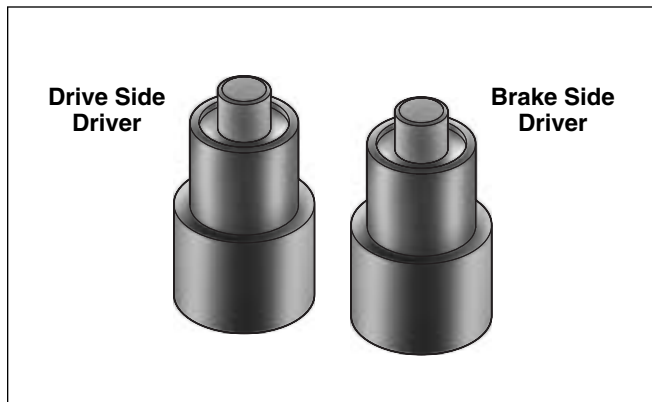


Figure 2-99. Rear Swingarm Bearing Installer (HD-45327)

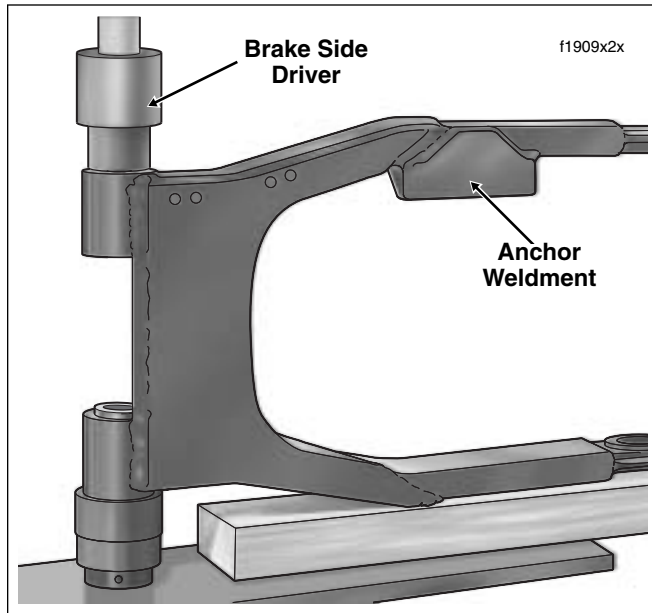


Figure 2-100. Press In Brake Side Bearing

4. Slide driver handle (or long socket extension) through the brake side swingarm tube and bearing until it contacts driver (or smaller socket) placed on inboard side of drive side bearing.
5. Center driver handle (or long socket extension) under ram and press drive side bearing from rear swingarm.
6. Remove tools from rear swingarm. Turn swingarm over and repeat steps 3-5 to press out brake side bearing.

Bearing Installation

1. Obtain **new** rear swingarm bearings. Bearings and spacers must be assembled before installation. Proceed as follows:
 - a. Obtain REAR SWINGARM BEARING INSTALLER (HD-45327). See [Figure 2-99](#).

- b. With the nose topside, center one of the drivers under ram of hydraulic press.
 - c. Place bearing over nose of driver. With the collar topside, place spacer over nose and into bearing. See [Figure 2-98](#).
 - d. Apply pressure to spacer until it bottoms in bearing.
 - e. Repeat step to assemble second swingarm bearing.
2. Install assembled bearings into rear swingarm. Proceed as follows:
 - a. Place swingarm on its side, so that the brake side is on top. The brake side is easily recognized by the anchor weldment for mounting of the brake caliper.
 - b. With the spacer inboard, insert bearing into outboard side of brake side swingarm tube.
 - c. Insert driver stamped "Brake Side" into swingarm tube until it contacts installed bearing. Center driver under ram and press on brake side bearing until shoulder on tool makes contact with casting of swingarm. See [Figure 2-100](#).
 - d. Remove tool and turn rear swingarm over. With the spacer inboard, insert bearing into outboard side of drive side swingarm tube.
 - e. Insert driver stamped "Drive Side" into swingarm tube until it contacts installed bearing. Center driver under ram and press on drive side bearing until it bottoms. Shoulder on tool will **not** make contact with casting of swingarm.
 - f. Remove tool from swingarm. Remove swingarm from hydraulic press.

Pivot Shaft Disassembly

1. Partially install locknut on right side of pivot shaft. Install second locknut on right side until it contacts the first. Holding first locknut to prevent rotation of shaft, remove left side locknut. See [Figure 2-101](#).
2. Remove cup washer, rubber mount and outer spacer.
3. Remove right side locknuts from pivot shaft.

Pivot Shaft Assembly

1. With larger OD outboard, slide outer spacer onto left side of pivot shaft until counterbore contacts shoulder on shaft.
2. Install rubber mount with the flat side inboard toward outer spacer.
3. Install cup washer with the concave side facing in toward the rubber mount.
4. Apply two drops of Loctite Medium Strength Threadlocker 243 (blue) to threads of left side locknut, and then start on shaft.

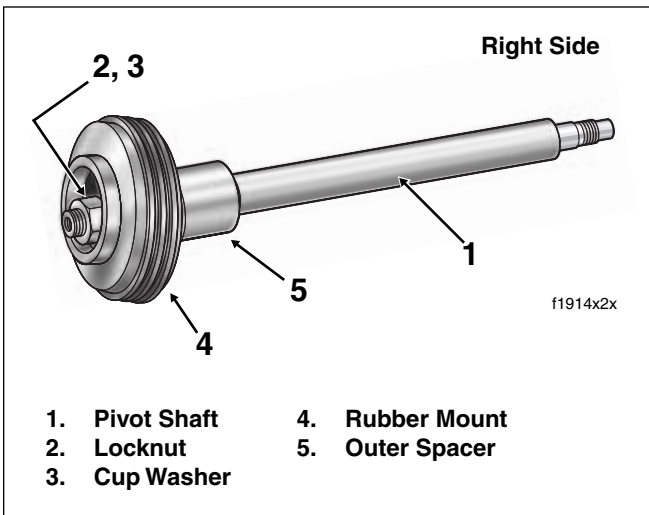


Figure 2-101. Pivot Shaft Assembly

5. Partially install locknut on right side of pivot shaft. Install second locknut on right side until it contacts the first. Holding second locknut to prevent rotation of shaft, tighten left side locknut to 40-45 ft-lbs (54-61 Nm).
6. Remove right side locknuts from pivot shaft.

INSTALLATION

1. With the slot on the outboard side between the twelve and one o'clock positions, install rubber mount behind rear swingarm bracket on right side of motorcycle. Be sure that index tab cast on inboard side of bracket fully engages slot in rubber mount.
2. Place outer spacer into right side swingarm tube.
3. With the belt on the inboard side of the left side swingarm, work the rear swingarm into position between the transmission mount and the rear swingarm brackets. Use a rubber mallet and carefully tap swingarm into position, if necessary.
4. The pivot shaft secures the rear swingarm and transmission to the motorcycle frame. See [Figure 2-101](#). Install the pivot shaft as follows:
 - a. Coat pivot shaft with Loctite ANTI-SEIZE LUBRICANT.
 - b. From left side of motorcycle, slide pivot shaft assembly (pivot shaft, locknut, cup washer, rubber mount and outer spacer) through left side swingarm and transmission mount. After exiting right side swingarm, guide end of pivot shaft through holes in rubber mount and right side swingarm bracket.
 - c. With the concave side inboard, slide cup washer onto end of pivot shaft.
 - d. Install locknut on pivot shaft. Holding left side nut on pivot shaft, tighten locknut to 40-45 ft-lbs (54-61 Nm). Now hold right side nut and tighten left side locknut using the same torque value.
 - e. Carefully raise swingarm up and down slightly to verify movement (and that assembly is not in a bind).
 - f. Install decorative chrome plug in right side rear swingarm bracket.
 - g. Moving to left side of motorcycle, rotate the rubber mount so that the slot is between the eleven and twelve o'clock positions. Install left side swingarm bracket fitting index tab into rubber mount slot. See [Figure 2-96](#).
 - h. Install two bolts (with lockwashers) to secure left side swingarm bracket to motorcycle frame. Tighten bolts to 34-42 ft-lbs (46-57 Nm).
5. Install lockwasher and flat washer on the lower shock mounting bolt. Insert bolt through the shock bottom bushing. Apply two or three drops of Loctite Medium Strength Threadlocker 243 (blue) to threads. Start bolt into rear swingarm mount. Tighten bolt to 35-40 ft-lbs (47-54 Nm). Repeat step on opposite side of motorcycle.
6. Install belt guard at bottom of left side swingarm. Push belt guard toward the rear of the motorcycle until front screw engages small end of slot. Install two rear screws, and then tighten front screw.
7. Capture rear brake line hose in two cable clips at top of right side swingarm. Snap cable clips closed.
8. Place wheel in rear swingarm. Slide wheel far enough forward to slip belt over sprocket and then slide the wheel back.

CAUTION

Do not bend or fold belt backward or into loops smaller than 5 inches (127 mm) in diameter. Sharp bending can weaken the belt and cause premature failure.

9. Seat caliper on anchor weldment of rear swingarm. Position wheel in swingarm, so that brake disc is centered between brake pads.
10. Coat the axle with Loctite ANTI-SEIZE LUBRICANT.
11. With the larger OD on the outboard side, hold external spacer between rear swingarm and belt sprocket. Slide axle through left side of rear swingarm, external spacer, and belt sprocket into wheel hub.
12. When axle emerges from hub on brake disc side of wheel, push axle through **short** external spacer, caliper bracket and right side of rear swingarm.

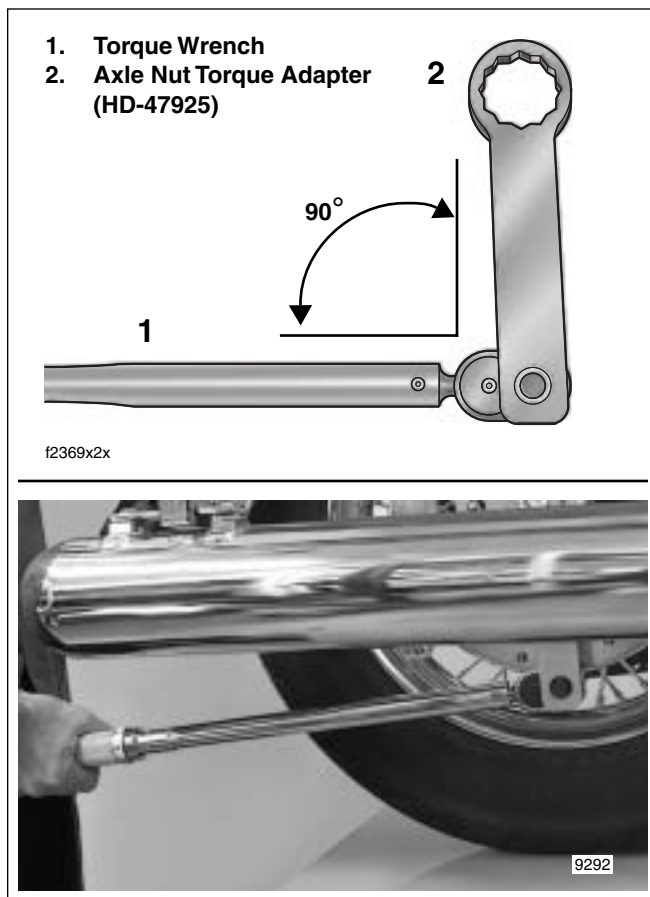


Figure 2-102. Install Tool Perpendicular to Torque Wrench

13. Rotate axle so that the flat on the threaded end is top-side. With the thumb down and the cam forward, install adjuster cam on end of axle.
14. Apply a thin film of ANTI-SEIZE LUBRICANT to the inboard side of the cone nut avoiding contact with threads. Install cone nut on axle, but finger tighten only.
15. Obtain torque wrench with 1/2 inch drive head and AXLE NUT TORQUE ADAPTER (HD-47925). Proceed as follows:

NOTE

The Axle Nut Torque Adapter simplifies the belt adjustment procedure by allowing the cone nut to be properly tightened without having to remove the right side muffler. The tool also can be used to loosen the cone nut, as well as rotate the weld nut on the left side.

- a. Install torque adapter perpendicular to torque wrench as shown in [Figure 2-102](#).
- b. Insert tool up between rear wheel and muffler to capture cone nut. For best clearance with muffler, be sure torque adapter is on the outboard side.

CAUTION

Since any extension can act as a torque multiplier, the torque wrench must be perpendicular to the torque adapter when the cone nut is tightened. The 90 degree orientation between the tools cancels the multiplier effect and prevents the cone nut from being over-tightened. If the torque adapter is kept inline with the torque wrench, the multiplier effect is in force and parts damage will occur.

- c. Verify that adjuster cam just contacts weld nub on both sides of rear swingarm. If necessary, push wheel forward slightly to achieve the desired result. Snug the cone nut to 15-20 ft-lbs (20-27 Nm). See [Figure 2-103](#).

16. Obtain the BELT TENSION GAUGE (HD-35381A), or install adapter (HD-35381-3) on old style gauge. See [Figure 2-104](#).

Apply 10 lbs. (4.5 kg) of force at the midpoint of the bottom belt strand. At the loosest spot in the belt, deflection should be as follows:

Table 2-7. Belt Deflection in the Air

Orientation	Inches	Millimeters
Motorcycle Upright With Rear Wheel in the Air	3/16 - 1/4	4.8 - 6.4
<p>NOTE See Section 1.10 DRIVE BELT for belt deflection specification with motorcycle on jiffy stand.</p>		

17. If belt is too tight, move to step 18 to increase belt deflection. If belt is too loose, reduce belt deflection as described below:
 - a. Rotate weld nut on left side of axle in a clockwise direction.
 - b. Check belt deflection. Apply 10 lbs. (4.5 kg) of force at the midpoint of the bottom belt strand. Belt deflection should be within the range specified in [Table 2-7](#).
 - c. If belt is still too loose, repeat steps 17(a) through 17(b). If belt is now too tight, move to step 18.
18. If belt is too tight, increase belt deflection as follows:
 - a. Rotate weld nut on left side of axle in a counter-clockwise direction.
 - b. Push wheel forward slightly so that adjuster cam just contacts weld nub on both sides of rear swingarm. See [Figure 2-103](#).
 - c. Check belt deflection. Apply 10 lbs. (4.5 kg) of force at the midpoint of the bottom belt strand. Belt deflection should be within the range specified in [Table 2-7](#).

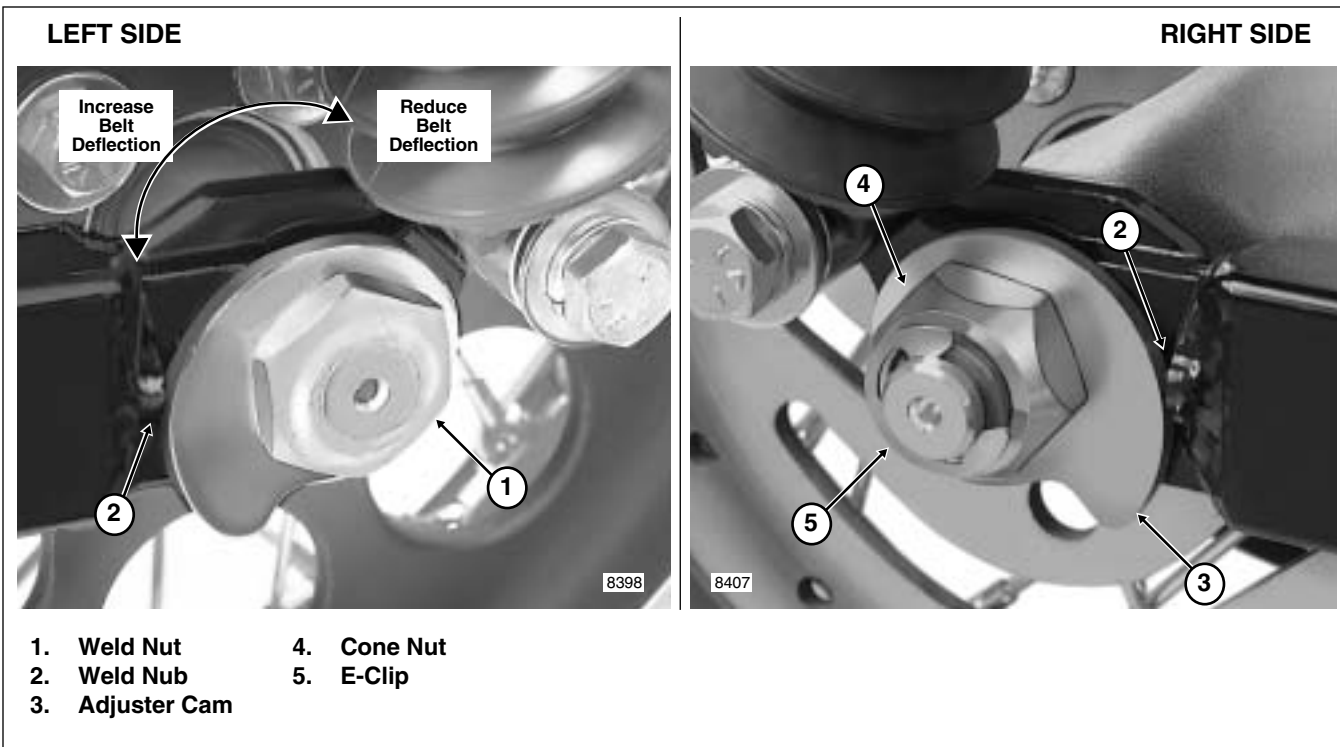


Figure 2-103. Move Rear Wheel Forward Until Adjuster Cams Just Contact Weld Nubs

- d. If belt is still too tight, repeat steps 18(a) through 18(c). If belt is now too loose, move to step 17.

19. **Holding** weld nut on left side of axle, tighten cone nut on right side to 95-105 ft-lbs (128.8-142.4 Nm).

NOTE

If the axle moves during tightening of the cone nut, then the belt deflection procedure must be restarted.

20. Recheck belt deflection to verify that it is still within specification.

If the belt deflection is not within specification, loosen cone nut and then snug to 15-20 ft-lbs (20-27 Nm) before returning to step 17.

21. With the flat side out, install **new** E-clip in groove on right side of axle.

22. Depress rear brake pedal several times to set brake pads to proper operating position within caliper.

WARNING

After servicing brakes and before moving motorcycle, pump brakes to build brake system pressure. Insufficient pressure can adversely affect brake performance, which could result in death or serious injury. (00279a)

23. On models equipped with low profile shock absorbers (FLHS and FLHX), install left side lower saddlebag support rail as follows:

- At rear left side of motorcycle, start outside T40 TORX screw (and flange nut) to fasten saddlebag support rail to saddlebag support bracket.
- Start T40 TORX screw to fasten opposite end of saddlebag support rail to frame weldment.
- Alternately tighten screws to 15-20 ft-lbs (20-27 Nm).

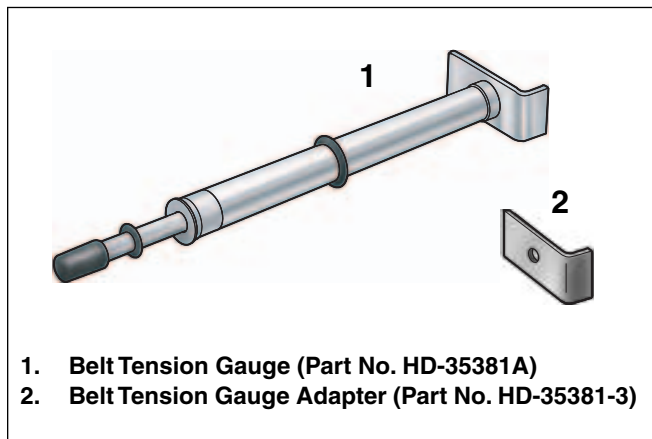


Figure 2-104. Obtain Belt Tension Gauge

24. Install left side muffler as follows:

NOTE

TORCA clamps have eliminated the need for silicone or graphite tape during assembly. To ensure sealing integrity and prevent the possibility of leakage, always discard TORCA clamps whenever they are removed.

- Slide **new** TORCA clamp onto free end of crossover pipe.
- Using a bungee cord, tie muffler to lower saddlebag support rail. Install muffler on crossover pipe. Place TORCA clamp into position between crossover pipe and muffler.
- Install two screws (with lockwashers) to fasten the muffler to the lower saddlebag support rail. Alternately tighten screws to 96-144 **in-lbs** (10.8-16.3 Nm).
- Verify that exhaust pipes are in alignment and do not contact the motorcycle frame or mounted components.
- Tighten the TORCA clamp to 45-60 ft-lbs (61-81 Nm).
- Open worm drive clamps and install heat shield on crossover pipe. Position each worm drive clamp so

that screw is on the outboard side in the most accessible position and then tighten to 20-40 **in-lbs** (2.3-4.5 Nm).

- Remove bungee cord from muffler.

NOTE

Verify that the exhaust pipes and heat shields do not contact the motorcycle frame or any mounted components. Contact will cancel the effect of the rubber isolation mounts and transmit vibration to the rider.

- Install socket screw with lockwasher to fasten passenger footboard to rear swingarm bracket. Tighten screw to 30-35 ft-lbs (40.7-47.5 Nm). Repeat step on opposite side of motorcycle.

- Install saddlebags. See Section 2.26 **SADDLEBAG, INSTALLATION**.

NOTE

*At the required service interval (see Section 1.2 **MAINTENANCE SCHEDULE**), remove the decorative chrome plugs in the rear swingarm brackets and check the torque on the pivot shaft locknuts. See Figure 2-105. Holding right side nut on the pivot shaft, tighten left side locknut to 40-45 ft-lbs (54-61 Nm). Then hold left side nut and tighten right side locknut using the same torque value.*

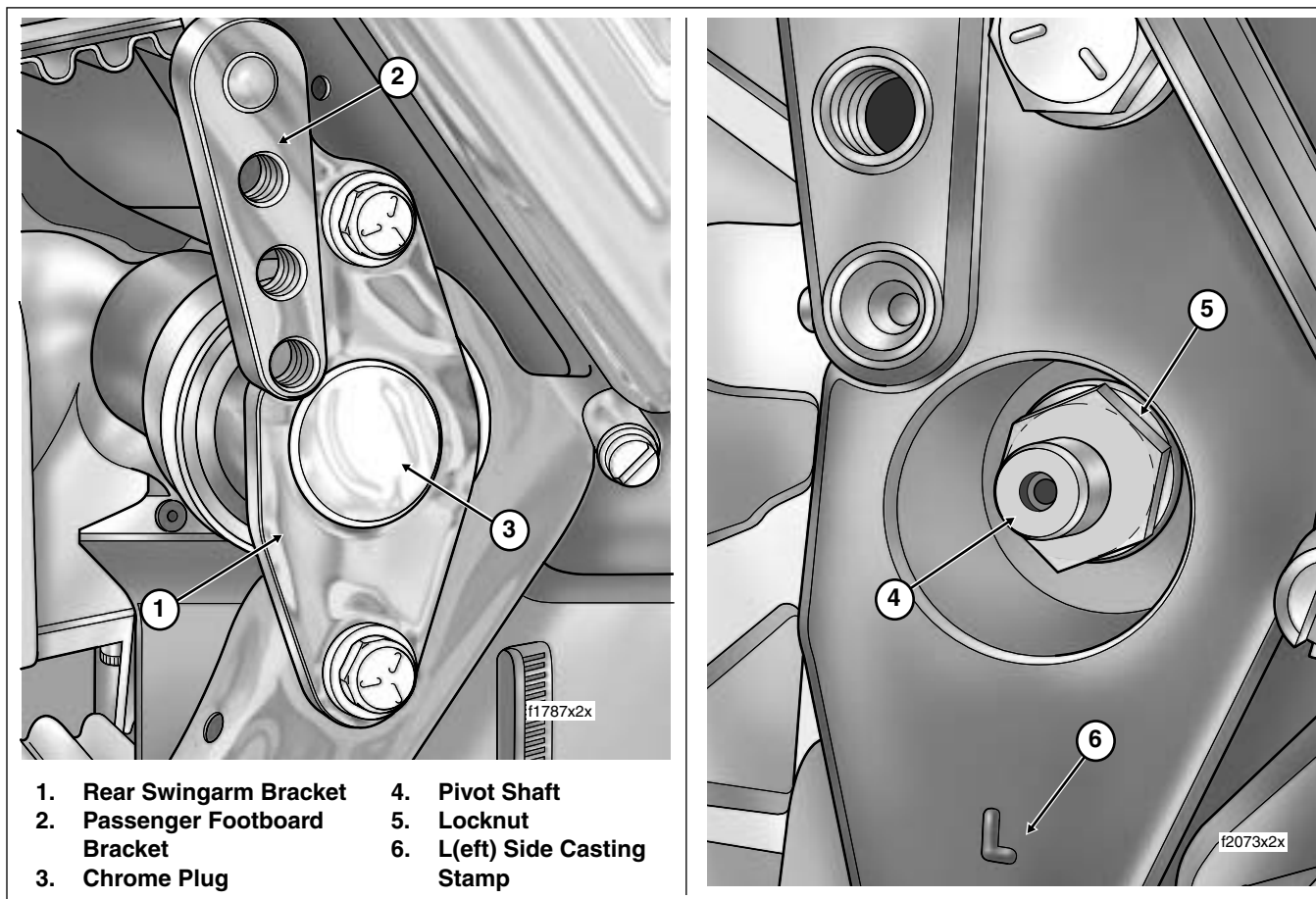


Figure 2-105. Remove Chrome Plugs and Check Pivot Shaft Locknut Torque (Left Side View)

THROTTLE CABLES (NON-CRUISE)

2.21

ADJUSTMENT

NOTE

For throttle and idle cable adjustment or replacement on cruise equipped models, see Section 8.31 CRUISE CONTROL (FLHRC, FLHTCU, FLTR).

The throttle control must operate freely without binding. With the tension adjuster screw backed off, the throttle grip must freely return to the closed (idle) position. The throttle control also must open and close freely when the front wheel is turned to both the right and left fork stops. If the throttle grip does not return to the idle position freely, check the adjuster screw tension. If the adjuster screw is backed off, inspect the cables for short bends.

WARNING

Do not overtighten the tension adjuster screw. An overtightened screw will prevent the engine from automatically returning to idle in an emergency situation. This can lead to loss of vehicle control, which could result in death or serious injury.

1. Slide rubber boot off throttle cable adjuster mechanism. See Figure 2-106. Holding cable adjuster with a 3/8 inch wrench, loosen jam nut turning in a clockwise direction. Back jam nut away from cable adjuster until it stops. Turn cable adjuster clockwise until it contacts jam nut. Repeat procedure on idle cable adjuster.
2. Point the front wheel straight ahead. Gently turn the throttle grip so that the throttle is wide open (fully counterclockwise) and then hold in position. Now turn the cable adjuster counterclockwise until the throttle cam stop just touches the stop plate on the carburetor/induction module. See Figure 2-107. Release the throttle grip, turn cable adjuster counterclockwise an additional 1/2-1 full turn, and then tighten the jam nut against the cable adjuster. Cover cable adjuster mechanism with rubber boot.
3. Turn the front wheel full right. Turn the idle cable adjuster counterclockwise until the cable housing just touches the spring in the cable guide (as seen through slot). Work the throttle grip to verify that the throttle cable returns to the idle position when released. If the cable does not return to idle, turn the cable adjuster clockwise slightly until the correct response is achieved. Tighten jam nut against the cable adjuster and cover cable adjuster mechanism with rubber boot.

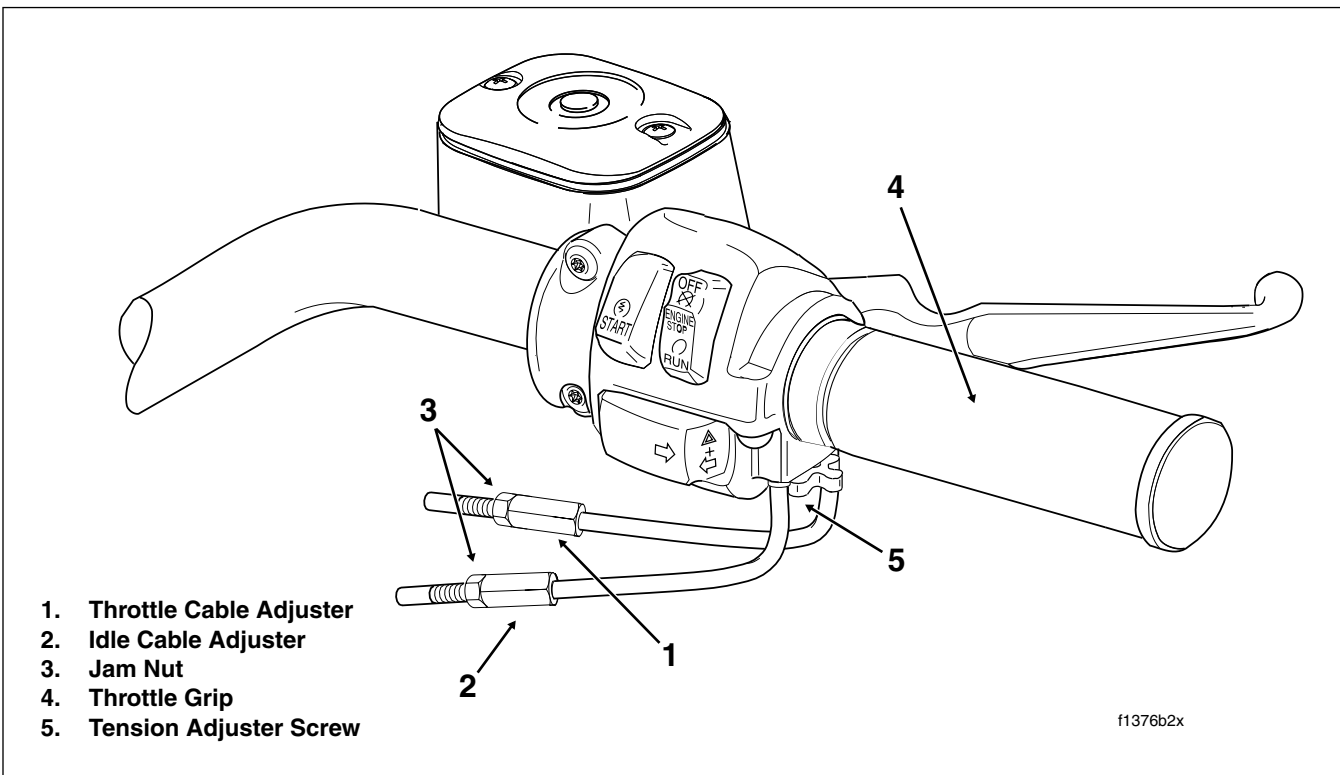


Figure 2-106. Throttle Cable Assembly - Throttle Side (FLHR)

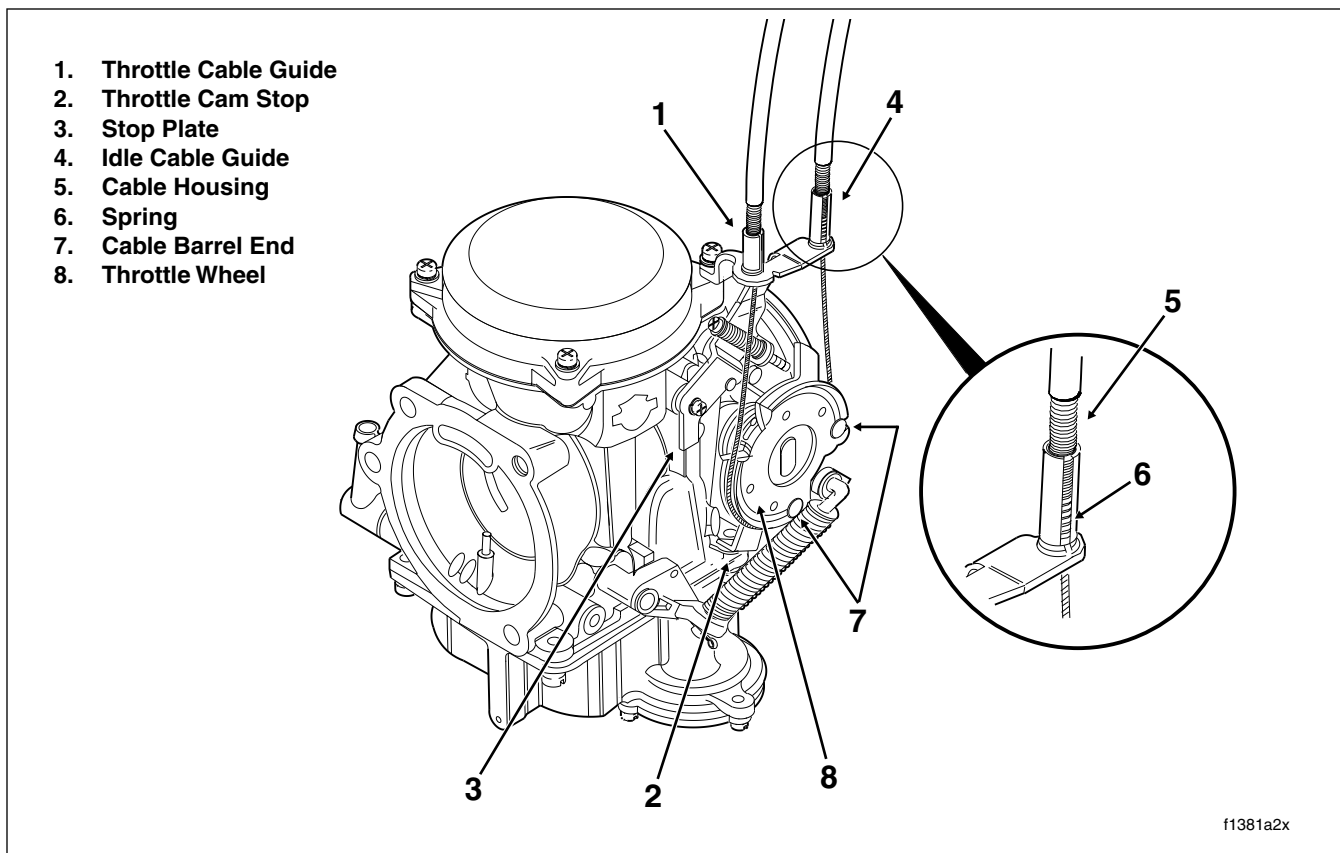


Figure 2-107. Throttle Cable Assembly - Carburetor Side

REMOVAL

THROTTLE SIDE

CAUTION

Do not remove the switch housing assembly without first placing the 5/32 inch (4.0 mm) cardboard insert between the brake lever and lever bracket. Removal without the insert may result in damage to the rubber boot and plunger of the Front Stoplight Switch.

NOTE

Use the eyelet of an ordinary cable strap if the cardboard insert is not available.

1. Place the cardboard insert between the brake lever and lever bracket. See [Figure 2-108](#).
2. Using a T25 TORX drive head, remove the upper and lower switch housing screws.
3. Using a T27 TORX drive head, loosen the upper screw securing the handlebar clamp to the master cylinder housing. Remove the lower clamp screw with flat washer.

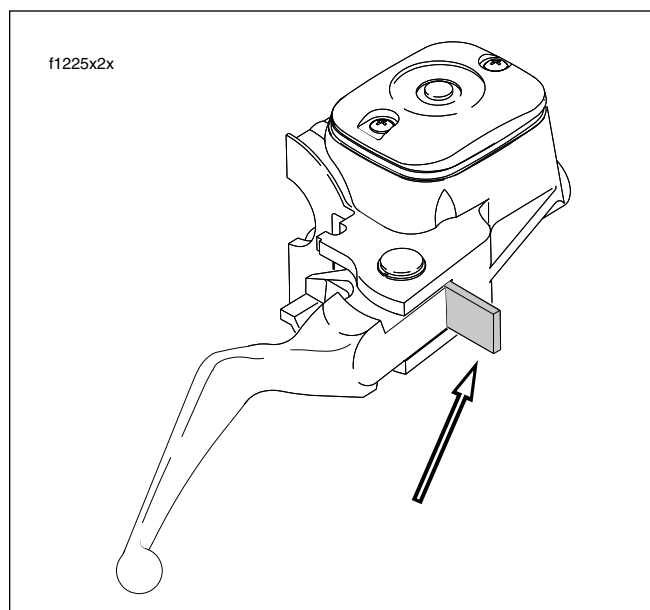


Figure 2-108. Install Cardboard Insert

4. Remove the brass ferrules from the notches on the inboard side of the throttle control grip. Remove the ferrules from the cable end fittings.

5. Remove the friction shoe from the end of the tension adjuster screw.

NOTE

The friction shoe is a loose fit and may fall out or become dislodged if the lower switch housing is turned upside down or shaken.

6. Remove the throttle control grip from the end of the handlebar.
7. Pull the crimped inserts at the end of the throttle and idle cable housings from the lower switch housing.

For best results, use a rocking motion while pulling. Place a drop of light oil on the retaining rings, if necessary. Remove the cables from the switch housing.

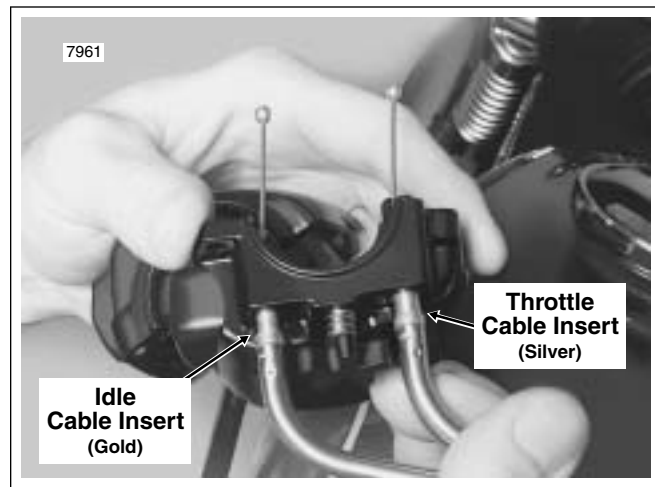


Figure 2-109. Install Throttle/Idle Cables in Lower Switch Housing

CARBURETOR/INDUCTION MODULE SIDE

1. Remove the air cleaner and backplate. See Section [4.5 AIR CLEANER, REMOVAL](#).
2. Raise fuel tank to access cables in area of frame backbone. For carbureted models, see Section [4.7 FUEL TANK \(CARBURETED\)](#), [PARTIAL REMOVAL](#), [FLHX](#), [FLHT](#), or [FLHR/S](#). For fuel injected models, see Section [9.4 FUEL TANK \(FUEL INJECTED\)](#), [PARTIAL REMOVAL](#), [FLHXI](#), [FLHT/C/U/I](#), [FLTRI](#), or [FLHR/C/S/I](#).
3. **Carbureted:** Using a needle nose pliers, carefully pull idle cable barrel from upper inboard hole in throttle wheel. Pull throttle cable barrel from remaining hole. Release idle and throttle cables from guides in throttle cable bracket. See [Figure 2-107](#).

Induction Module: Using a needle nose pliers, carefully pull idle cable barrel from upper hole in throttle wheel. Pull throttle cable barrel from lower hole. Using slots, release idle and throttle cables from guides in throttle cable bracket. See [Figure 2-111](#).

4. Free cables from J-clamp riveted to right side of frame backbone.
5. If present, remove screw (with flat washer) to release J-clamp from wellnut in right side of steering head. Remove J-clamp from cables.

CLEANING AND INSPECTION

1. Clean all parts in a non-flammable cleaning solvent and blow dry with compressed air.

2. Inspect the cables for damage or wear. Replace the cables if frayed, kinked or bent.
3. Obtain tube of Lubit-8 Tufoil Chain and Cable Lube (HD Part No. 94968-85TV- 1/4 fl. oz.). Insert pin of tube between throttle cable and cable housing. Squirt a few drops of lubricant into cable housing moving pin around cable OD. Repeat the procedure squirting a few drops between the idle cable and cable housing.

INSTALLATION

THROTTLE SIDE

1. Apply a light coating of graphite to the handlebar and inside surface of the switch housings.
2. Push the throttle and idle cables into the lower switch housing until they snap in place. See [Figure 2-109](#). Proceed as follows:

Note the different diameter inserts crimped into the end of the throttle and idle cable housings.

Push the larger diameter insert (silver) on the throttle cable housing into the larger hole in front of the tension adjuster screw.

Push the smaller diameter insert (gold) on the idle cable housing into the smaller hole at the rear of the tension adjuster screw.

NOTE

To aid assembly, place a drop of light oil on the retaining rings of the crimped inserts. Always replace the retaining rings if damaged or distorted.

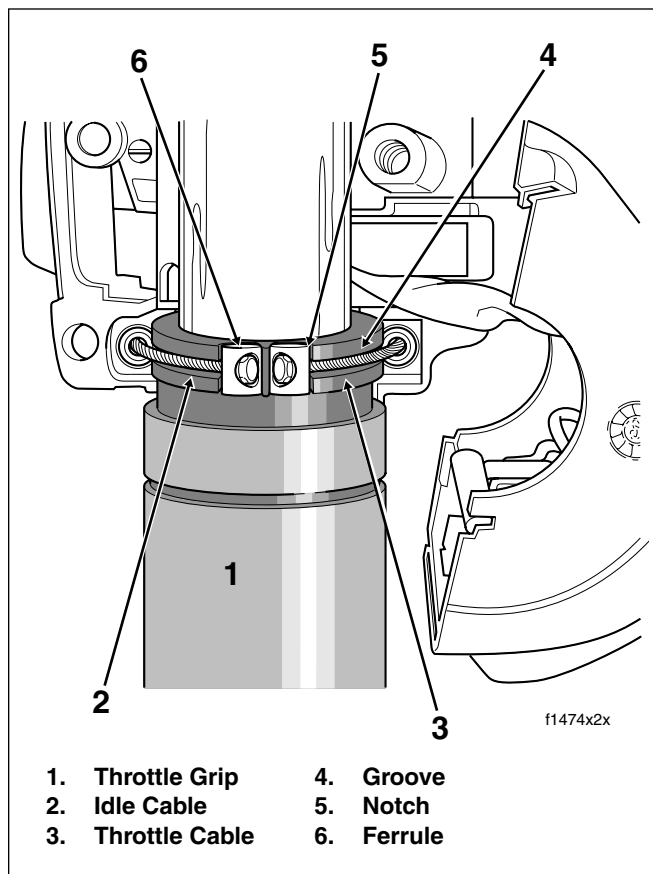


Figure 2-110. Install Throttle/Idle Cables

3. With the concave side facing upward, install the friction shoe so that the pin hole is over the point of the adjuster screw.

NOTE

The friction shoe is a loose fit and may fall out or become dislodged if the lower switch housing is turned upside down or shaken.

4. Slide the throttle control grip over the end of the right handlebar until it bottoms against the closed end. Rotate the grip so that the ferrule notches are at the top. To prevent binding, pull the grip back about 1/8 inch (3.2 mm).
5. Position the lower switch housing beneath the throttle control grip. Install the brass ferrules onto the cables so that the end fittings seat in the ferrule recess. Seat the ferrules in their respective notches on the throttle control grip. Verify that the cables are captured in the grooves molded into the grip. See [Figure 2-110](#).
6. Position the upper switch housing over the handlebar and lower switch housing. Verify that the wire harness conduit runs in the depression at the bottom of the handlebar.
7. Start the upper and lower switch housing screws, but do not tighten.

8. Position the brake lever/master cylinder assembly inboard of the switch housing assembly engaging the tab on the lower switch housing in the groove at the top of the brake lever bracket.
9. Align the holes in the handlebar clamp with those in the master cylinder housing and start the lower screw (with flat washer). Position for rider comfort. Beginning with the top screw, tighten the screws to 60-80 **in-lbs** (6.8-9.0 Nm) using a T27 TORX drive head.
10. Using a T25 TORX drive head, tighten the lower and upper switch housing screws to 35-45 **in-lbs** (4-5 Nm).

NOTE

Always tighten the lower switch housing screw first so that any gap between the upper and lower housings is at the front of the switch assembly.

11. Remove the cardboard insert between the brake lever and lever bracket.
12. Turn the Ignition/Light Key Switch to IGNITION and apply brake lever to test operation of brake lamp.

CARBURETOR/INDUCTION MODULE SIDE

1. Route the throttle and idle cables as follows:

FLHX, FLHT/C: Route the cables downward following the brake line to the inner fairing. Pass the cables through the inner fairing grommet and then loop them toward the rear along the right side of the steering head.

FLHR/C: Route the cables downward following the right handlebar to the handlebar clamp shroud. Pass the cables through the opening in the shroud and then loop them toward the rear along the right side of the steering head. Capture cables in J-clamp and then start screw (with flat washer) to fasten J-clamp to wellnut in right side of steering head. Tighten screw to 9-18 **in-lbs** (1.0-2.0 Nm).

2. Route the throttle and idle cables rearward along the right side of the frame backbone. After passing through J-clamp riveted to frame backbone, route cables downward to carburetor/induction module.
3. **Carbureted:** Install sleeve on throttle cable housing into shorter cable guide in throttle cable bracket. Drawing throttle cable downward, fit barrel end into lower outboard hole in throttle wheel. Install sleeve and spring on idle cable housing into longer cable guide inserting barrel end into upper inboard hole in throttle wheel. See [Figure 2-107](#).

Induction Module: Install sleeve on throttle cable housing into cable guide at top of throttle cable bracket. Drawing throttle cable downward, fit barrel end into lower hole in throttle wheel. Install sleeve and spring on idle cable housing into cable guide at bottom of throttle cable bracket inserting barrel end into upper hole in throttle wheel. See [Figure 2-111](#).

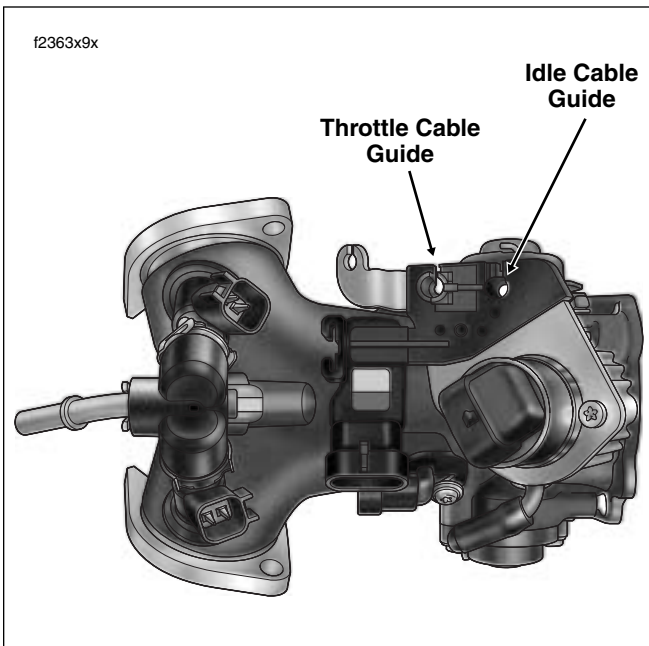


Figure 2-111. Throttle Cable Assembly - Induction Module Side

4. Tighten cables as necessary to keep barrel ends from dislodging. Verify that cables are seated in channel of throttle wheel. Verify operation by turning throttle grip and observing cable action. Adjust throttle cables as described under [ADJUSTMENT](#).
5. Install fuel tank. For carbureted models, see Section [4.7 FUEL TANK \(CARBURETED\), INSTALLATION \(AFTER PARTIAL REMOVAL\)](#), or [FLHR/S](#). For fuel injected models, see Section [9.4 FUEL TANK \(FUEL INJECTED\), INSTALLATION \(AFTER PARTIAL REMOVAL\)](#), [FLHXI](#), [FLHT/C/U/I](#), [FLTRI](#), or [FLHR/C/S/I](#).
6. Install the air cleaner assembly. See Section [4.5 AIR CLEANER, INSTALLATION](#).

LUBRICATION

1. See [REMOVAL, THROTTLE SIDE](#), in this section, steps 1-5.
2. Move upper switch housing to the side in order to access lower housing.

CAUTION

Lubit-8 Tufoil Chain and Cable Lube contains detergents. Keep out of reach of children. Contact with eyes may result in minor or moderate injury.

3. Obtain tube of Lubit-8 Tufoil Chain and Cable Lube (HD Part No. 94968-85TV- 1/4 fl. oz.). Insert pin of tube between throttle cable and cable housing inside lower switch housing. Squeeze tube to squirt a quantity of lubricant into cable housing moving pin around cable OD. See [Figure 2-112](#).
4. Repeat the procedure squirting a quantity of lubricant between the idle cable and cable housing.
5. See [INSTALLATION, THROTTLE SIDE](#), in this section, steps 3-12.
6. Turn the Ignition/Light Key Switch to IGNITION and apply brake lever to test operation of brake lamp.

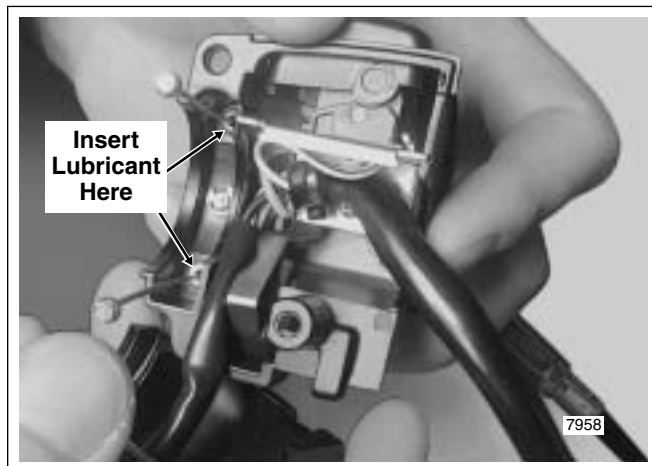


Figure 2-112. Right Handlebar Lower Switch Housing

ADJUSTMENT

See Section 1.8 CLUTCH ADJUSTMENT.

REMOVAL

1. Remove maxi-fuse. See Section 8.3 SYSTEM FUSES, MAXI-FUSE, REMOVAL.
2. To access the clutch release cover assembly, remove right side exhaust system. See Section 2.38 EXHAUST SYSTEM, REMOVAL.
3. Remove the magnetic drain plug at the bottom right side of the oil pan and drain the transmission lubricant into a suitable container. Remove the filler plug/dipstick.
4. Slide rubber boot off clutch cable adjuster. Holding cable adjuster with 1/2 inch wrench, loosen jam nut using 9/16 inch wrench. Back jam nut away from cable adjuster. Move adjuster toward jam nut to introduce free play at hand lever. See Figure 2-113.
5. Remove retaining ring from pivot pin groove at bottom of clutch lever bracket. Remove pivot pin.
6. Remove clutch hand lever from clutch lever bracket. If necessary, remove two T27 TORX screws (with flat washers) to release handlebar clamp from clutch lever bracket.
7. Remove anchor pin and clutch cable eyelet from clutch hand lever. See Figure 2-114.
8. Remove six socket head screws and washers to free clutch release cover from transmission case. Remove and discard gasket. See Figure 2-115.

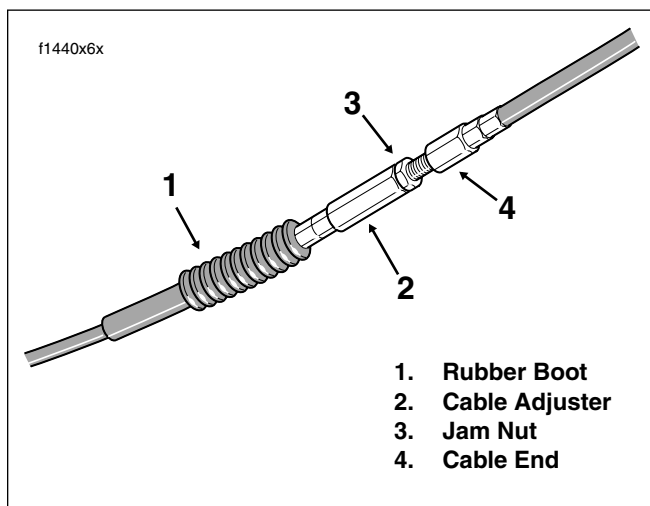


Figure 2-113. Clutch Cable Adjuster Mechanism

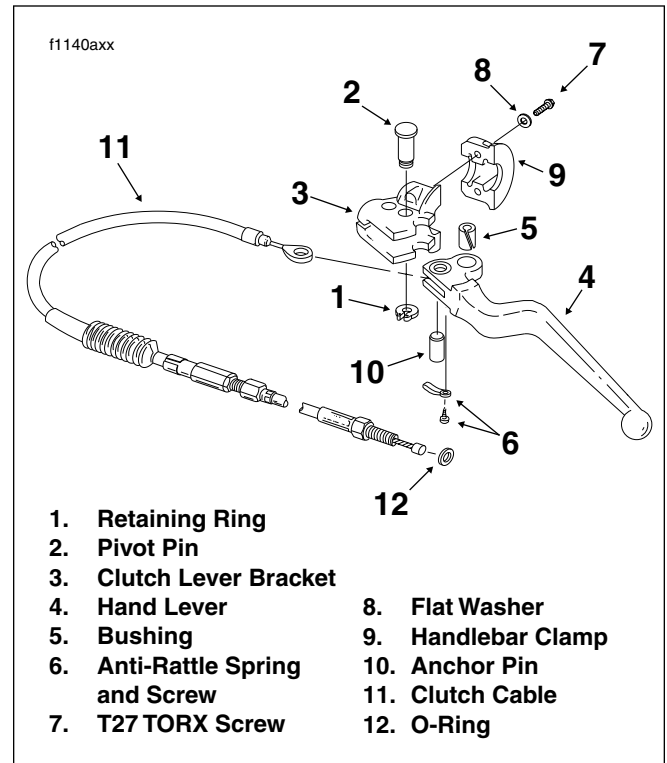


Figure 2-114. Clutch Hand Lever Assembly

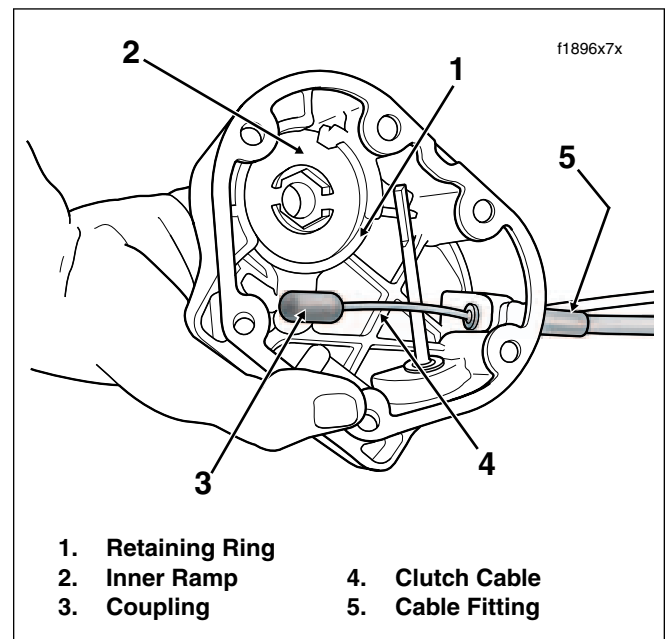


Figure 2-115. Clutch Release Cover Assembly

WARNING

Wear safety glasses or goggles when removing or installing retaining rings. Retaining rings can slip from the pliers and could be propelled with enough force to cause serious eye injury. (00312a)

9. Remove retaining ring securing ball and ramp mechanism to clutch release cover.
10. Lift inner ramp out of clutch release cover and turn the assembly over so that ball sockets are facing outboard. Remove hook of ramp from button on coupling. Remove coupling from clutch cable end.
11. Remove balls from outer ramp sockets. Remove outer ramp from clutch release cover.
12. Unscrew the cable fitting from the clutch release cover. Remove clutch cable and fitting.
13. Cut cable strap in hole of crossbrace to free clutch cable from right frame downtube. See [Figure 2-116](#). Continue as follows:

FLHR/C/S: Remove T40 TORX screw with flat washer (FLHRS) or acorn nut (FLHR/C) to release clutch cable from P-clamp fastened to upper fork bracket. See [Figure 2-117](#).

FLTR: Release clutch cable from cable clip anchored in hole on left side of instrument nacelle.

FLHX, FLHT/C/U: Remove the outer fairing. See Section [2.30 UPPER FAIRING/WINDSHIELD \(FLHX, FLHT/C/U\), OUTER FAIRING/WINDSHIELD, REMOVAL](#). Cut cable strap to release clutch cable from left fairing bracket. See [Figure 2-118](#).

14. Remove clutch cable from motorcycle.

NOTE

If ball and ramp or throwout bearing and clutch pushrod need service, see Section [7.5 CLUTCH RELEASE COVER](#).

INSTALLATION

1. See [Figure 2-114](#). Insert clutch cable eyelet into groove of clutch hand lever aligning eyelet with hole without bushing. Insert anchor pin through lever and eyelet.
2. Insert lever into groove of clutch lever bracket fitting sleeve at end of cable housing into bore on inboard side of bracket.
3. Align hole in hand lever with hole in bracket and install pivot pin. Install retaining ring in pivot pin groove.
4. If removed, install two T27 TORX screws (with flat washers) to secure handlebar clamp to clutch lever bracket. See [Figure 2-114](#). Starting with the top screw, tighten screws to 60-80 **in-lbs** (6.8-9.0 Nm).
5. Start clutch cable routing as follows:

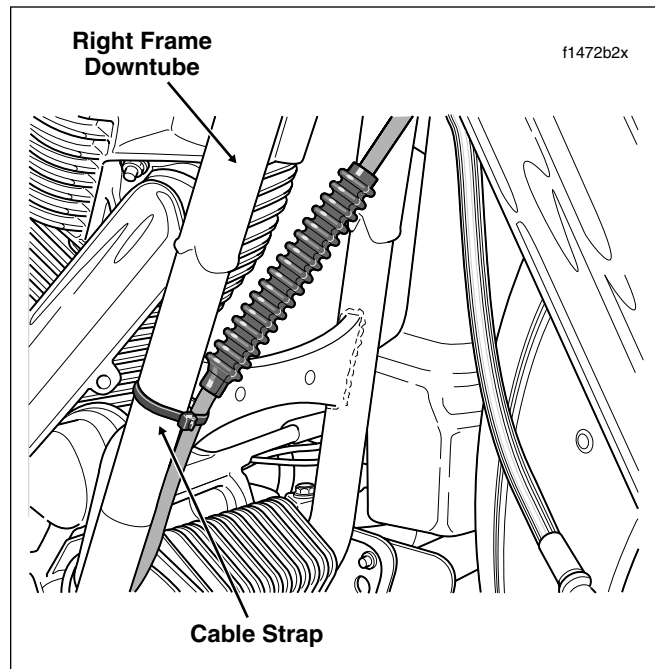


Figure 2-116. Clutch Cable Routing (Right Side View)

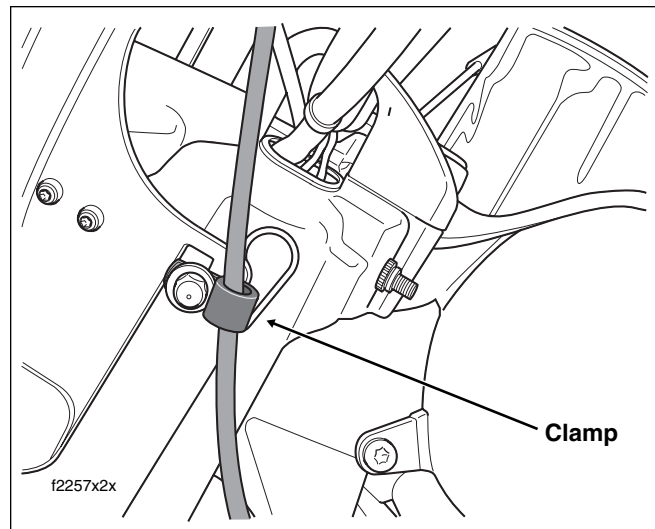


Figure 2-117. Clutch Cable Routing - FLHR/C (Left Side View)

FLHR/C/S: Capture clutch cable in P-clamp and fasten to upper fork bracket using T40 TORX screw with flat washer (FLHRS) or acorn nut (FLHR/C). Orient P-clamp as shown in [Figure 2-117](#). On left side of steering head, run cable downward between engine guard and front of left frame downtube.

FLTR: Capture clutch cable in cable clip and anchor clip in hole on left side of instrument nacelle. Run cable forward and then rearward beneath instrument nacelle following left side of steering head. Run cable downward between engine guard and front of left frame downtube.

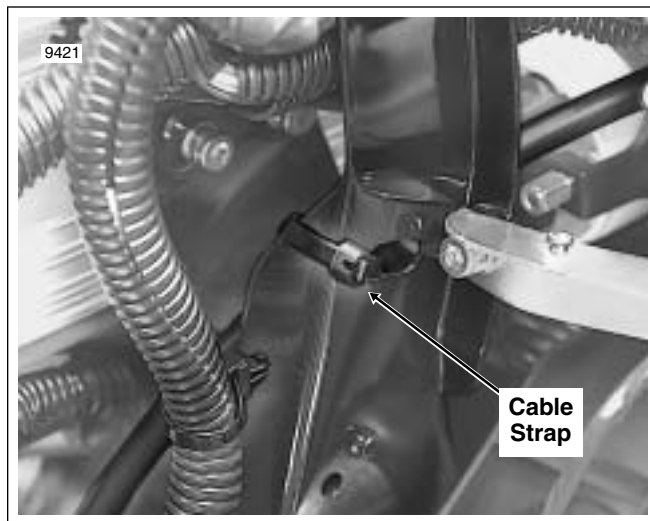


Figure 2-118. Secure Clutch Cable to Fairing Bracket

FLHX, FLHT/C/U: Feed clutch cable through grommet on left side of inner fairing. Route cable on inboard side of left fairing bracket between upper and lower wings of radio (or storage box) support bracket. Cable strap clutch cable to left fairing bracket using oblong hole at this location. See [Figure 2-118](#). Run cable downward along left side of steering head, and then between engine guard and front of left frame downtube. Install the outer fairing. See Section 2.30 **UPPER FAIRING/WINDSHIELD (FLHX, FLHT/C/U), OUTER FAIRING/WINDSHIELD, INSTALLATION**.

6. Complete clutch cable routing as follows:

All Models: Continue downward progression while crossing to right side of motorcycle and then run cable between outboard side of voltage regulator and inboard side of right frame downtube. Threading cable strap through hole in crossbrace, secure clutch cable to downtube as shown in [Figure 2-116](#). Following inboard side of frame downtube, route cable between bottom of cam cover and top of lower frame tube to area of clutch release cover.

7. Inspect cable fitting O-ring and replace if damaged or deformed. Install clutch cable fitting into clutch release cover. See [Figure 2-115](#). Do not tighten cable fitting at this time.
8. Place outer ramp in clutch release cover recess with tang in cover slot.
9. Apply a multi-purpose grease to the balls and outer ramp sockets. Place a ball in each of three outer ramp sockets.
10. Hold coupling with button facing outboard. Place cable end in recess of coupling. With ball sockets facing outboard, place hook of inner ramp on button of coupling. Holding inner ramp and coupling together, turn the assembly over.

11. Place inner ramp (ball socket side down) over balls in outer ramp sockets.

⚠ WARNING

Wear safety glasses or goggles when removing or installing retaining rings. Retaining rings can slip from the pliers and could be propelled with enough force to cause serious eye injury. (00312a)

12. Install the retaining ring so that the opening is to the right of the outer ramp tang slot in the clutch release cover.
13. Verify that the two locating dowels are in place on the right side of the transmission case. Hang a **new** gasket on the dowels.
14. Holding the clutch release cover in position, install six socket head screws. Tighten screws to 84-132 **in-lbs** (9.5-14.9 Nm).
15. Tighten clutch cable fitting to 36-60 **in-lbs** (4-7 Nm).

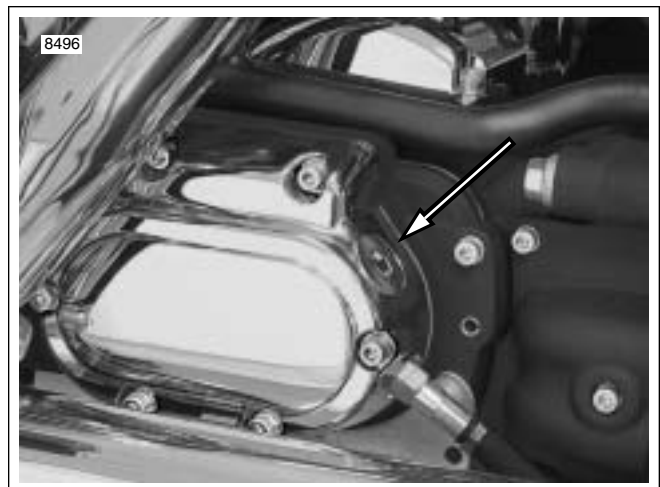


Figure 2-119. Clutch Release Cover

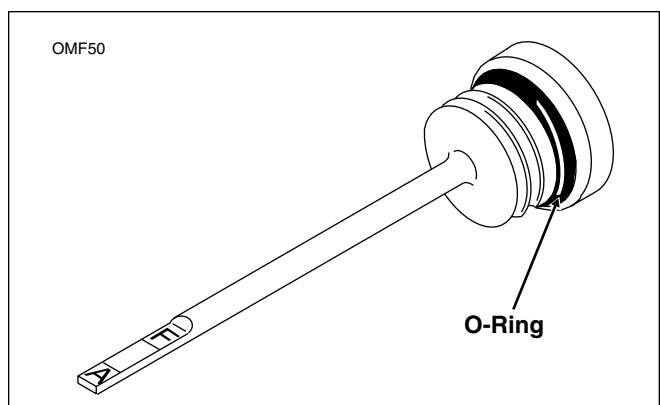


Figure 2-120. Transmission Lubricant Filler Plug/Dipstick

16. Check the O-ring on the transmission drain plug for tears, cuts or general deterioration. Replace as necessary.

CAUTION

Do not overtighten filler plugs or drain plugs. Overtightening plugs can cause leaks.

17. Install transmission the drain plug. Tighten the plug to 14-21 ft-lbs (19-28 Nm).
18. Remove the filler plug from the clutch release cover, if installed. See [Figure 2-119](#). Check the O-ring for tears, cuts or general deterioration. Replace as necessary. See [Figure 2-120](#).
19. Fill the transmission with 20-24 oz. (590-710 ml) of transmission lubricant or until the lubricant level on the dipstick of the filler plug is at the F(ULL) mark with the motorcycle in a level, upright position and the filler plug resting on the threads. Use only Harley-Davidson FORMULA+ TRANSMISSION AND PRIMARY CHAINCASE LUBRICANT, Part No. 99851-05 (quart).
20. Install the transmission filler plug/dipstick in the clutch release cover. Tighten the plug to 25-75 **in-lbs** (2.8-8.5 Nm).

21. Adjust the clutch cable. See Section [1.8 CLUTCH ADJUSTMENT](#).
22. Install right side exhaust system. See Section [2.38 EXHAUST SYSTEM, INSTALLATION](#).
23. Install maxi-fuse. See Section [8.3 SYSTEM FUSES, MAXI-FUSE, INSTALLATION](#).

HANDLEBAR ADJUSTMENT

1. Remove maxi-fuse. See Section [8.3 SYSTEM FUSES, MAXI-FUSE, REMOVAL](#).
2. **FLHR/C/S:** Remove the handlebar clamp shroud. See Section [2.32 WINDSHIELD/HEADLAMP NACELLE \(FLHR/C/S\), NACELLE REMOVAL \(FLHR/C\)](#), steps 1-11, or [NACELLE REMOVAL \(FLHRS\)](#), steps 1-7.

FLTR: Remove the instrument bezel. See Section [2.31 UPPER FAIRING/WINDSHIELD \(FLTR\), BEZEL, REMOVAL](#).

FLHX, FLHT/C/U: Remove the fairing cap. See Section [2.30 UPPER FAIRING/WINDSHIELD \(FLHX, FLHT/C/U\), FAIRING CAP, REMOVAL](#).

3. Loosen rear screws on the upper handlebar clamps. On FLTR models, loosen the front screws instead.
4. Position handlebars for rider posture and comfort.
5. To be sure that the handlebars are centered, verify that the knurled area on the outboard side of the left side handlebar clamp is equal to that on the right side.
6. Snug upper handlebar clamp screws.
7. Slowly turn handlebars to the full right fork stop and then the full left fork stop to be sure there is no contact with the fuel tank. If contact occurs and handlebars are properly aligned, raise handlebars as necessary until the proper clearance is obtained.
8. Tighten the upper handlebar clamp screws to 12-16 ft-lbs (16.3-21.7 Nm).
9. **FLHR/C/S:** Install the handlebar clamp shroud. See Section [2.32 WINDSHIELD/HEADLAMP NACELLE \(FLHR/C/S\), NACELLE INSTALLATION \(FLHR/C\)](#), steps 3-15, or [NACELLE INSTALLATION \(FLHRS\)](#), steps 5-13.

FLTR: Install the instrument bezel. See Section [2.31 UPPER FAIRING/WINDSHIELD \(FLTR\), BEZEL, INSTALLATION](#).

FLHX, FLHT/C/U: Install the fairing cap. See Section [2.30 UPPER FAIRING/WINDSHIELD \(FLHX, FLHT/C/U\), FAIRING CAP, INSTALLATION](#).

10. If necessary, adjust left and right handlebar switch controls as follows:
 - a. Loosen the two T27 TORX screws securing the handlebar clamp to the clutch lever bracket (left) or master cylinder housing (right).
 - b. Position switch controls for rider posture and comfort.

- c. Beginning with the top screw, tighten the screws to 60-80 in-lbs (6.8-9.0 Nm).

11. Install maxi-fuse. See Section [8.3 SYSTEM FUSES, MAXI-FUSE, INSTALLATION](#).

HANDLEBAR REMOVAL

1. Remove maxi-fuse. See Section [8.3 SYSTEM FUSES, MAXI-FUSE, REMOVAL](#).
2. Place blanket or protective cover over front of fuel tank to protect against scratches or other damage.
3. **FLHR/C/S:** Remove the handlebar clamp shroud. See Section [2.32 WINDSHIELD/HEADLAMP NACELLE \(FLHR/C/S\), NACELLE REMOVAL \(FLHR/C\)](#), steps 1-11, or [NACELLE REMOVAL \(FLHRS\)](#), steps 1-7.

FLTR: Remove the instrument nacelle. See Section [2.31 UPPER FAIRING/WINDSHIELD \(FLTR\), INSTRUMENT NACELLE, REMOVAL](#).

FLHX, FLHT/C/U: Remove the fairing cap. See Section [2.30 UPPER FAIRING/WINDSHIELD \(FLHX, FLHT/C/U\), FAIRING CAP, REMOVAL](#). Remove the radio (or storage box). See Section [8.32 ADVANCED AUDIO SYSTEM \(FLHX, FLHTC/U, FLTR\), RADIO \(STORAGE BOX\), REMOVAL](#).

4. Remove the left and right handlebar switch controls. See Section [8.22 HANDLEBAR SWITCHES, REMOVAL](#).
5. Remove upper handlebar clamp screws (with flat washers). Remove upper handlebar clamps and handlebar.

HANDLEBAR INSTALLATION

1. Place **new** handlebars on lower handlebar clamps. Install upper handlebar clamps and loosely install clamp screws (with flat washers).
2. To be sure that the handlebars are centered, verify that the knurled area on the outboard side of the left side handlebar clamp is equal to that on the right side.
3. Snug upper handlebar clamp screws.
4. Slowly turn handlebars to the full right fork stop and then the full left fork stop to be sure there is no contact with the fuel tank. If contact occurs and handlebars are properly aligned, raise handlebars as necessary until the proper clearance is obtained.

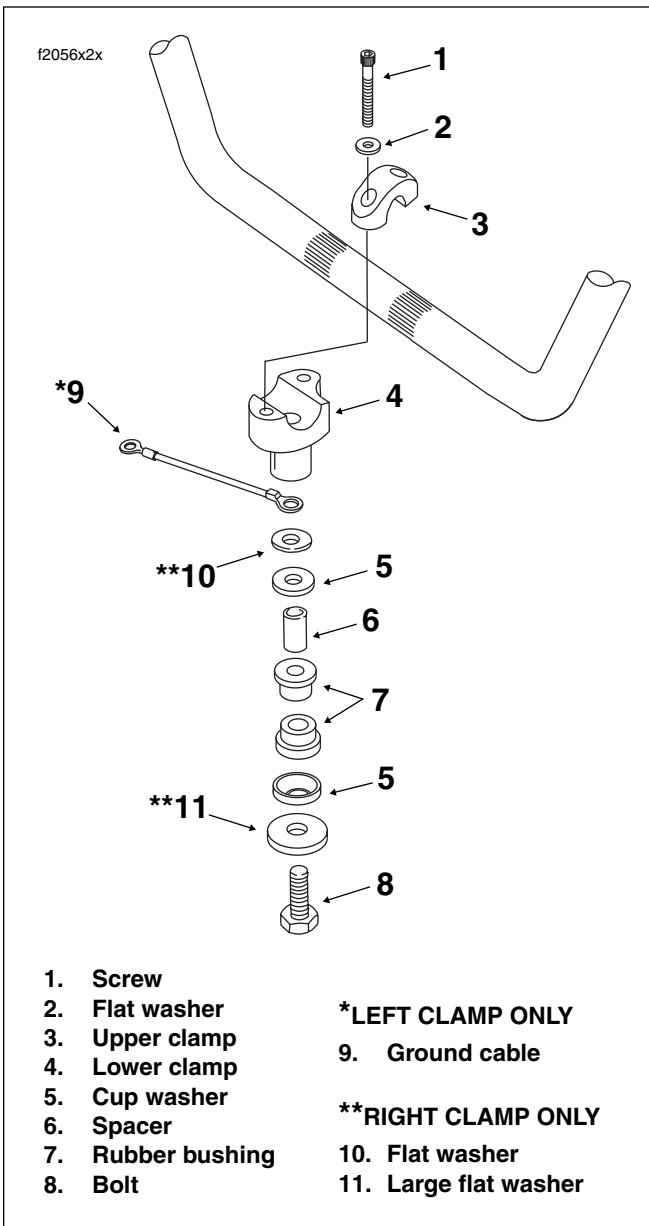


Figure 2-121. Handlebar Clamp Assemblies

5. Tighten upper handlebar clamp screws as follows:
 - a. Tighten front screws until upper and lower handlebar clamps make contact.
 - b. Tighten rear screws to 12-16 ft-lbs (16.3-21.7 Nm).
 - c. Tighten front screws to 12-16 ft-lbs (16.3-21.7 Nm).

NOTE

A slight gap will exist between the upper and lower clamps at the rear of the handlebars after tightening.

6. Install the left hand grip. See [LEFT HAND GRIP, INSTALLATION](#), in this section.

7. Install the left and right handlebar switch controls. See Section [8.22 HANDLEBAR SWITCHES, INSTALLATION](#).
8. **FLHR/C/S:** Install the handlebar clamp shroud. See Section [2.32 WINDSHIELD/HEADLAMP NACELLE \(FLHR/C/S\)](#), [NACELLE INSTALLATION \(FLHR/C\)](#), steps 3-15, or [NACELLE INSTALLATION \(FLHRS\)](#), steps 5-13.

FLTR: Install the instrument nacelle. See Section [2.31 UPPER FAIRING/WINDSHIELD \(FLTR\)](#), [INSTRUMENT NACELLE, INSTALLATION](#).

FLHX, FLHT/C/U: Install the fairing cap. See Section [2.30 UPPER FAIRING/WINDSHIELD \(FLHX, FLHT/C/U\)](#), [FAIRING CAP, INSTALLATION](#). Install the radio (or storage box). See Section [8.32 ADVANCED AUDIO SYSTEM \(FLHX, FLHTC/U, FLTR\)](#), [RADIO \(STORAGE BOX\), INSTALLATION](#).

9. Install maxi-fuse. See Section [8.3 SYSTEM FUSES, MAXI-FUSE, INSTALLATION](#).
10. Turn the ignition/light key switch to IGNITION and test each handlebar switch for proper operation.
11. Apply front brake hand lever to test operation of brake lamp.
12. Adjust idle and throttle control cables as follows:

Non-Cruise: See Section [2.21 THROTTLE CABLES \(NON-CRUISE\), ADJUSTMENT](#).

Cruise Equipped: See Section [8.31 CRUISE CONTROL \(FLHRC, FLHTCU, FLTR\)](#), [CABLE ADJUSTMENT](#).

LEFT HAND GRIP

REMOVAL

1. Remove the left handlebar switch controls. See Section [8.22 HANDLEBAR SWITCHES, REMOVAL](#).
2. Use a sharp blade to carefully cut rubber and then peel off handlebar.
3. Thoroughly clean handlebar to remove all residual adhesive.

INSTALLATION

WARNING

HARLEY-DAVIDSON ADHESIVE contains **METHYL ETHYL KETONE**, a chemical known to the State of California to cause cancer or other reproductive harm.

⚠ WARNING

Use **HARLEY-DAVIDSON ADHESIVE** in well ventilated areas only. Vapors are flammable and can be harmful to breath. Avoid contact with eyes, mucous membranes, or prolonged contact with skin. Keep out of reach of children.

1. Obtain a **new** left hand grip and HARLEY-DAVIDSON ADHESIVE (Part No. 99839-95). Apply a coat of the adhesive to the inside surface of the grip one inch (25.4 mm) from the open end. Apply a coat to the end of the handlebar.
2. Immediately push grip completely onto end of handlebar using a twisting motion. Do not hesitate when installing grip or adhesive may dry before installation is complete.

NOTE

If the left hand grip is patterned, align it with the pattern on the right grip with the throttle in the fully closed position.

3. Let 6-8 hours elapse (at 70° F.) to allow adhesive to fully cure.
4. Install the left handlebar switch controls. See Section **8.22 HANDLEBAR SWITCHES, INSTALLATION**.

RUBBER MOUNTS

NOTE

For complete disassembly of the handlebar clamp assemblies and/or to replace the rubber mounts, proceed as follows.

REMOVAL

General

1. Turn fork to left fork stop and loosen right side bolt at bottom of upper fork bracket. Turn fork to right fork stop and loosen left side bolt at bottom of upper fork bracket.
2. Remove handlebars. See **HANDLEBAR REMOVAL** in this section.

Right Side

3. Holding lower handlebar clamp to prevent rotation, turn bolt at bottom of upper fork bracket until free.
4. Remove lower handlebar clamp, flat washer and cup washer at top of upper fork bracket. See **Figure 2-122**.
5. Pull bushing from fork bracket bore and discard. See **Figure 2-123**.
6. Moving to bottom of upper fork bracket, remove bolt, large flat washer and cup washer. See **Figure 2-124**.
7. Pull bushing and spacer from fork bracket bore. Remove spacer from bushing. See **Figure 2-125**. Discard bushing.

Left Side

8. Holding lower handlebar clamp to prevent rotation, turn bolt at bottom of upper fork bracket until free.
9. Remove lower handlebar clamp, ground wire ring terminal and cup washer at top of upper fork bracket.
10. Pull bushing from fork bracket bore and discard. See **Figure 2-123**.
11. Moving to bottom of upper fork bracket, remove bolt and cup washer.
12. Pull bushing and spacer from fork bracket bore. Remove spacer from bushing. See **Figure 2-125**. Discard bushing.

INSTALLATION

Right Side

1. Insert spacer into **new** bushing until flush with outboard side of collar. See **Figure 2-125**.
2. Insert bushing into bore at bottom of upper fork bracket fitting collar of bushing over lip of boss.

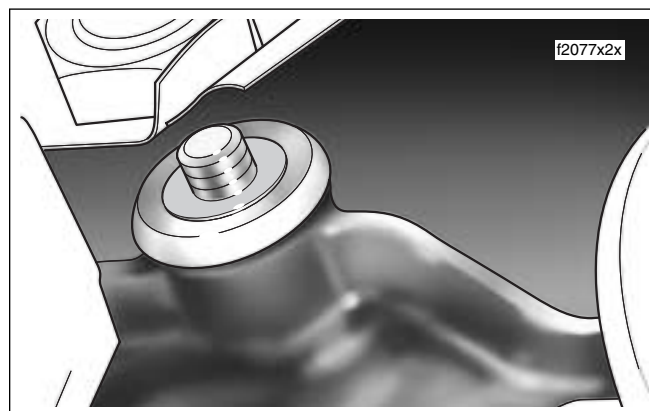


Figure 2-122. Remove Flat Washer and Upper Cup Washer (Right Side)

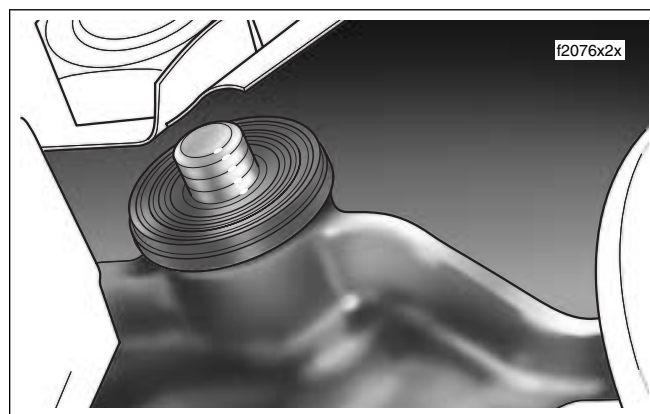


Figure 2-123. Remove Upper Bushing (Right Side)

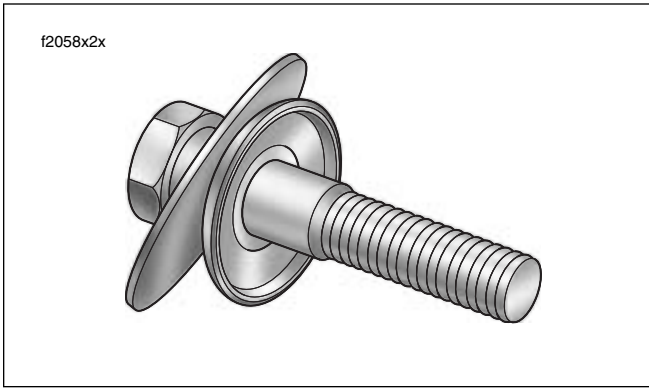


Figure 2-124. Remove Bolt, Large Washer and Lower Cup Washer (Right Side)

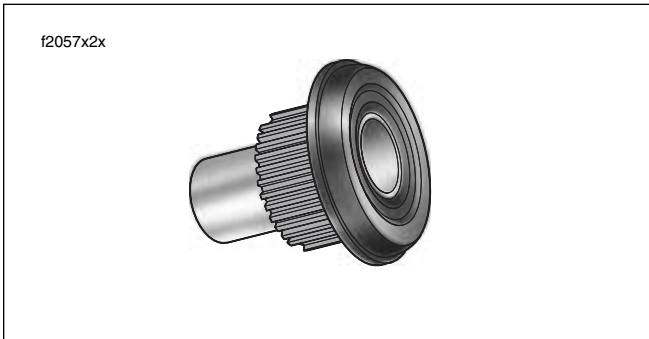


Figure 2-125. Remove Spacer From Lower Bushing

3. Install large flat washer and cup washer on bolt. See [Figure 2-124](#). Insert bolt into bushing fitting concave side of cup washer over collar of bushing.
4. Moving to top of upper fork bracket, insert bushing into bore fitting collar of bushing over lip of boss. See [Figure 2-123](#).
5. Install cup washer over threaded end of bolt fitting concave side over collar of bushing. Install flat washer. See [Figure 2-122](#).
6. Apply two or three drops of Loctite Medium Strength Threadlocker 243 (blue) to threads of bolt and start lower handlebar clamp. Holding clamp to prevent rotation, turn bolt at bottom of upper fork bracket until snug.

Left Side

7. Insert spacer into **new** bushing until flush with outboard side of collar. See [Figure 2-125](#).
8. Insert bushing into bore at bottom of upper fork bracket fitting collar of bushing over lip of boss.
9. Install cup washer on bolt. Insert bolt into bushing fitting concave side of cup washer over collar of bushing.

10. Moving to top of upper fork bracket, insert bushing into bore fitting collar of bushing over lip of boss. See [Figure 2-123](#).
11. Install cup washer over threaded end of bolt fitting concave side over collar of bushing. Install ground wire ring terminal.
12. Apply two or three drops of Loctite Medium Strength Threadlocker 243 (blue) to threads of bolt and start lower handlebar clamp. Holding clamp to prevent rotation, turn bolt at bottom of upper fork bracket until snug.

General

13. Install handlebars and upper handlebar clamps. See [HANDLEBAR INSTALLATION](#) in this section, steps 1-5.
14. Turn fork to left fork stop and tighten right side bolt at bottom of upper fork bracket to 30-40 ft-lbs (40.7-54.2 Nm). Turn fork to right fork stop and tighten left side bolt to the same torque value.
15. Complete assembly of motorcycle. See [HANDLEBAR INSTALLATION](#) in this section, steps 7-12.

ALL MODELS (EXCEPT FLHX)

Removal

1. Remove acorn nut and lock washer. Remove threaded stem of mirror from hole in clutch or brake lever bracket. See [Figure 2-126](#).

Installation

1. Insert threaded stem of mirror into hole in clutch or brake lever bracket.
2. Install lock washer and acorn nut.
3. Adjust mirror as necessary and tighten acorn nut to 60-96 **in-lbs** (6.8-10.8 Nm).

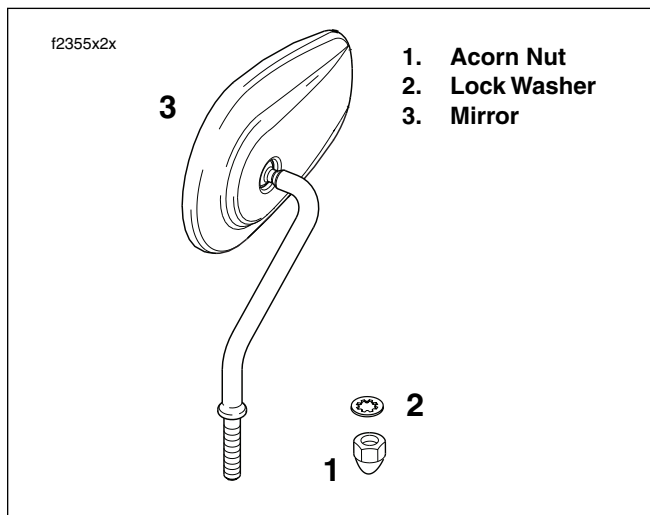


Figure 2-126. Mirror Assembly (All Models Except FLHX)

FLHX

Removal

1. Remove outer fairing. See Section 2.30 [UPPER FAIRING/WINDSHIELD \(FLHX, FLHT/C/U\), OUTER FAIRING/WINDSHIELD, REMOVAL](#).
2. Standing at front of inner fairing, remove flange nut and plastic washer. Remove mirror. See [Figure 2-127](#).

Installation

1. With the rounded side of the mirror on the outboard side (and the bar and shield logo right side up), insert threaded stud and index pin on swivel block through holes in inner fairing. See [Figure 2-128](#). The letters "L" or "R" are stamped on the swivel blocks to differentiate between left and right side mirrors.

2. With the post on the outboard side, place the plastic washer against the inner fairing engaging two holes in washer with threaded stud and index pin. The letters "L" or "R" are stamped on the posts to differentiate between left and right side washers.
3. Install flange nut on threaded stud and tighten to 20-30 **in-lbs** (2.3-3.4 Nm). See [Figure 2-127](#).
4. Adjust mirror as necessary.
5. Install outer fairing. See Section 2.30 [UPPER FAIRING/WINDSHIELD \(FLHX, FLHT/C/U\), OUTER FAIRING/WINDSHIELD, INSTALLATION](#).



Figure 2-127. Remove Outer Fairing (FLHX)

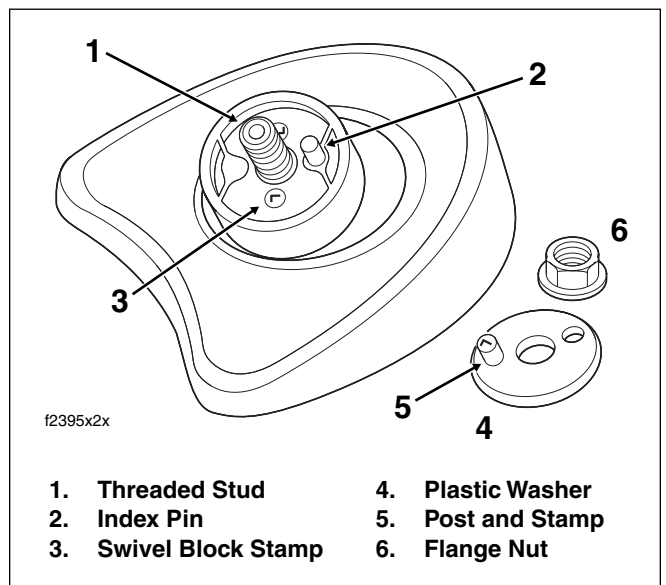


Figure 2-128. Left Side Mirror Assembly (FLHX)

FLHR

REMOVAL

1. Remove Phillips screw to detach passenger seat mounting bracket from top of rear fender. See [Figure 2-129](#). Slightly lift up back of passenger seat and carefully slide toward rear of motorcycle to detach from front seat mounting bracket nuts.

NOTE

The FLHR seat can be converted to a solo seat by removal of the passenger section. When the solo seat configuration is desired, turn the passenger seat upside down and locate the chrome plug pressed into the seat frame hole. See inset of [Figure 2-129](#). Remove the plug and press into the seat retention nut hole using finger pressure only.

2. Using the 5/8 hex, remove two nuts from studs to free front seat mounting bracket from rear fender.

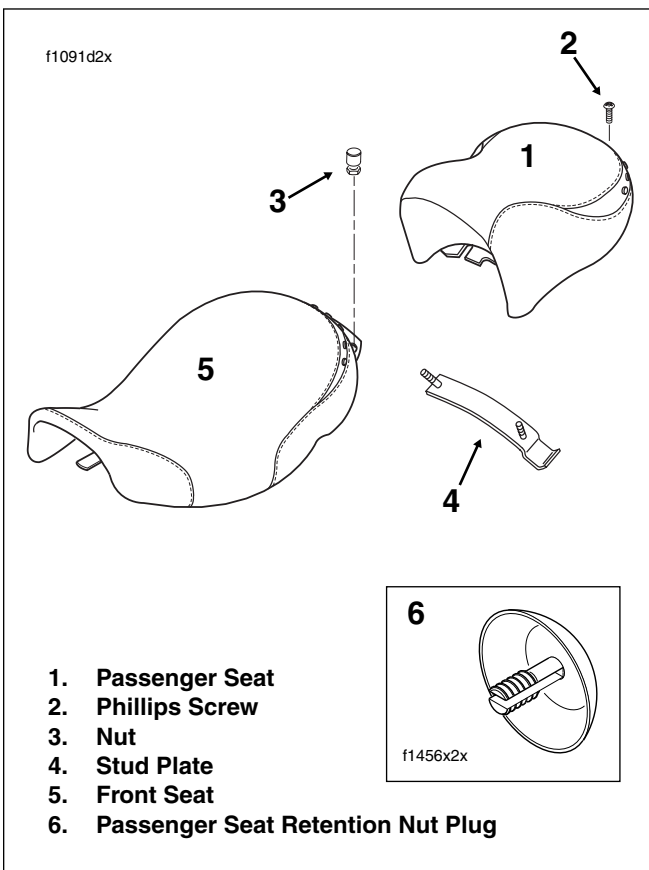


Figure 2-129. Seat Assembly - FLHR

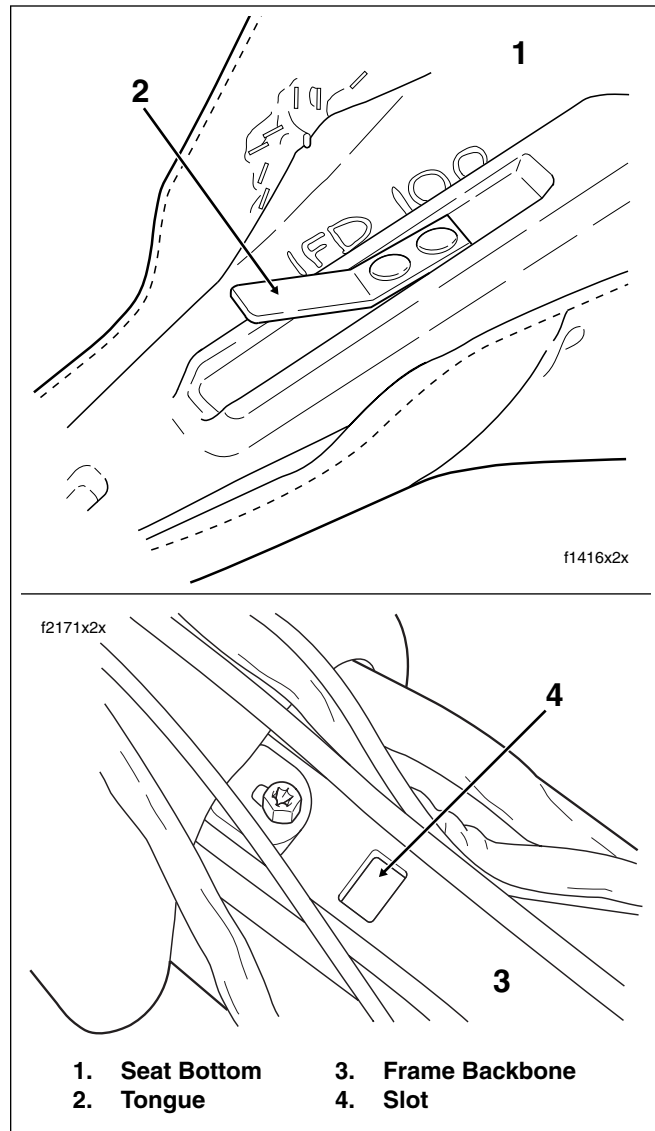


Figure 2-130. Seat Mounting

3. Push front seat rearward to free tongue from slot in frame backbone. See [Figure 2-130](#).

INSTALLATION

1. Position front seat on frame with mounting bracket at rear.
2. Firmly push front of seat downward and rearward until tongue engages slot in frame backbone. See [Figure 2-130](#). Push seat forward until studs are centered in slots of mounting bracket.

3. Using the 5/8 hex, install two nuts on studs to secure front seat mounting bracket to rear fender.
4. Install passenger seat fitting slots on passenger seat front mounting bracket between rounded caps and hex of front seat mounting bracket nuts.
5. Push passenger seat forward until rear fender seat retention nut is centered in hole of rear mounting bracket. Install Phillips screw and tighten to 20-40 **in-lbs** (2.3-4.5 Nm).

NOTE

If seat retention nut is damaged or lost, see [SEAT RETENTION NUT REPLACEMENT](#) for instructions.

⚠ WARNING

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

FLHRC

REMOVAL

1. Remove right side saddlebag. See Section [2.26 SADDLEBAG, REMOVAL](#).
2. Remove bolt (with flat washer) to remove passenger seat strap and saddlebag front mounting bracket from chrome frame tube cover.
3. Using slots in seat, carefully pull passenger seat strap from seat. See [Figure 2-131](#).
4. Remove Phillips screw to detach seat mounting bracket from top of rear fender.
5. Push seat rearward to free tongue at front of seat from slot in frame backbone. See [Figure 2-130](#).
6. Remove seat from frame.

INSTALLATION

1. Place seat on frame backbone.
2. Firmly push front of seat downward and rearward until tongue engages slot in frame backbone. See [Figure 2-130](#).
3. Push seat forward until rear fender seat retention nut is centered in hole of mounting bracket. Install Phillips screw and tighten to 20-40 **in-lbs** (2.3-4.5 Nm).

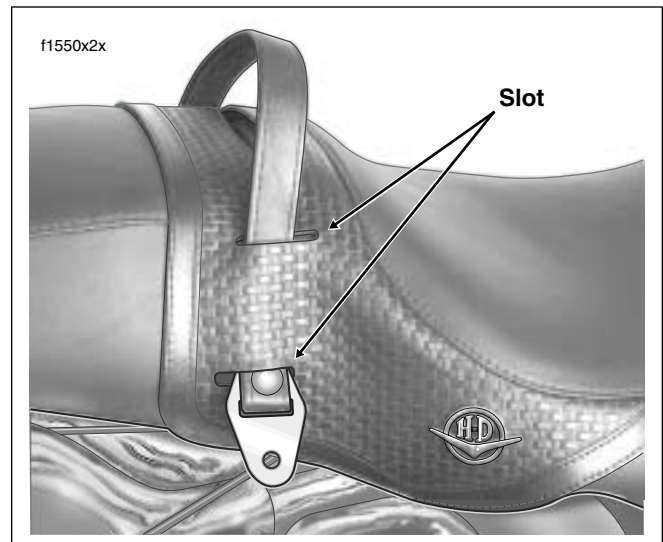


Figure 2-131. Route Passenger Seat Strap Through Slots in Seat - FLHRC

NOTE

If seat retention nut is damaged or lost, see [SEAT RETENTION NUT REPLACEMENT](#) for instructions.

⚠ WARNING

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

4. Using slots in seat, route free end of passenger seat strap to right side of motorcycle. See [Figure 2-131](#).
5. Insert bolt with flat washer through passenger seat strap and slotted hole of saddlebag front mounting bracket. Insert bolt into forward hole in chrome frame tube cover. Snug saddlebag front mounting bracket bolt, but do not tighten.
6. Install right side saddlebag. See Section [2.26 SADDLEBAG, INSTALLATION](#).
7. Using an open end/box wrench, tighten saddlebag front mounting bracket bolt to 60-96 **in-lbs** (6.8-10.8 Nm).

FLHRS, FLHX, FLTR

REMOVAL

CAUTION

Removing seat without first removing passenger seat strap will result in damage to rear fender paint.

1. Remove right side saddlebag. See Section [2.26 SADDLEBAG, REMOVAL](#).
2. Remove bolt (with flat washer) to remove passenger seat strap and saddlebag front mounting bracket from chrome frame tube cover. Draw free end of passenger seat strap to left side of motorcycle.
3. Remove Phillips screw to detach seat mounting bracket from top of rear fender.
4. Push seat rearward to free tongue at front of seat from slot in frame backbone. See [Figure 2-130](#).
5. Remove seat from frame.

INSTALLATION

1. Place seat on frame backbone.
2. Firmly push front of seat downward and rearward until tongue engages slot in frame backbone. See [Figure 2-130](#).
3. Push seat forward until rear fender seat retention nut is centered in hole of mounting bracket. Install Phillips screw and tighten to 20-40 **in-lbs** (2.3-4.5 Nm).

NOTE

If seat retention nut is damaged or lost, see [SEAT RETENTION NUT REPLACEMENT](#) for instructions.

WARNING

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

4. Draw free end of passenger seat strap to right side of motorcycle. Insert bolt with flat washer through passenger seat strap and slotted hole of saddlebag front mounting bracket. Insert bolt into forward hole in chrome frame tube cover. Snug saddlebag front mounting bracket bolt, but do not tighten.
5. Install right side saddlebag. See Section [2.26 SADDLEBAG, INSTALLATION](#).
6. Using an open end/box wrench, tighten saddlebag front mounting bracket bolt to 60-96 **in-lbs** (6.8-10.8 Nm).

FLHT

REMOVAL

CAUTION

Removing seat without first removing passenger seat strap will result in damage to rear fender paint.

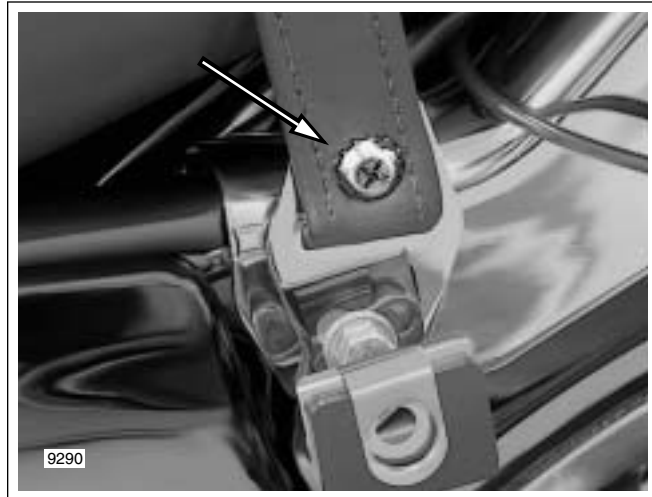


Figure 2-132. Seat Strap Bracket Screw (FLHT/C/U)

1. Remove left side saddlebag. See Section [2.26 SADDLEBAG, REMOVAL](#).
2. Remove Phillips screw to release passenger seat strap from seat strap bracket. A firm tug may be necessary to free end of strap from slot of seat strap bracket. See [Figure 2-132](#).
3. Draw free end of passenger seat strap to right side of motorcycle.
4. Remove Phillips screw to detach seat mounting bracket from top of rear fender.
5. Push seat rearward to free tongue at front of seat from slot in frame backbone. See [Figure 2-130](#).
6. Remove seat from frame.

INSTALLATION

1. Place seat on frame backbone.
2. Firmly push front of seat downward and rearward until tongue engages slot in frame backbone. See [Figure 2-130](#).
3. Push seat forward until rear fender seat retention nut is centered in hole of mounting bracket. Install Phillips screw and tighten to 20-40 **in-lbs** (2.3-4.5 Nm).

NOTE

If seat retention nut is damaged or lost, see [SEAT RETENTION NUT REPLACEMENT](#) for instructions.

WARNING

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

4. Draw free end of passenger seat strap to left side of motorcycle.
5. Start Phillips screw to fasten passenger seat strap to seat strap bracket. Feed end of strap into slot of seat strap bracket and tighten Phillips screw to 48-72 **in-lbs** (5.4-8.1 Nm). See [Figure 2-132](#).
6. Install left side saddlebag. See Section [2.26 SADDLEBAG, INSTALLATION](#).

FLHTC/U

REMOVAL

1. Remove left side saddlebag. See Section [2.26 SADDLEBAG, REMOVAL](#).
2. Remove Phillips screw to release passenger seat strap from seat strap bracket. A firm tug may be necessary to free end of strap from slot of seat strap bracket. See [Figure 2-132](#).
3. Draw free end of passenger seat strap to right side of motorcycle.
4. Open Tour-Pak to move passenger seat backrest out of the way.

NOTE

The Tour-Pak must be moved to one of two rearward positions to access the seat mounting bracket screw. If installed in the forward position, remove Tour-Pak and install in a rearward position. See Section [2.27 TOUR-PAK](#) for more information.

5. Remove Phillips screw to detach seat mounting bracket from top of rear fender.
6. To protect finish of Tour-Pak, cover rear seat mounting bracket with palm of hand.
7. While pushing seat forward, raise rear of seat until bracket clears top of Tour-Pak. Push seat rearward slightly to free tongue at front of seat from slot in frame backbone. See [Figure 2-130](#).
8. Remove seat from frame.

INSTALLATION

1. Place seat on frame backbone.
2. To protect finish of Tour-Pak, cover rear seat mounting bracket with palm of hand.
3. While raising rear of seat approximately 3 inches (76.2 mm), use other hand to firmly push front of seat downward and rearward until tongue engages slot in frame backbone. See [Figure 2-130](#).

4. Push seat forward until rear fender seat retention nut is centered in hole of mounting bracket. Install Phillips screw and tighten to 20-40 **in-lbs** (2.3-4.5 Nm).

NOTE

If seat retention nut is damaged or lost, see [SEAT RETENTION NUT REPLACEMENT](#) for instructions.

WARNING

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

5. Draw free end of passenger seat strap to left side of motorcycle.
6. Start Phillips screw to fasten passenger seat strap to seat strap bracket. Feed end of strap into slot of seat strap bracket and tighten Phillips screw to 48-72 **in-lbs** (5.4-8.1 Nm). See [Figure 2-132](#).
7. Install left side saddlebag. See Section [2.26 SADDLEBAG, INSTALLATION](#).

SEAT RETENTION NUT REPLACEMENT

1. Slide retention nut over tapered end of cable strap so that larger OD of nut rests on cable strap eyelet. From bottom of rear fender, feed cable strap up through fender hole.
2. See [Figure 2-133](#). With tab on retention nut seated in notch of fender hole, pull up on cable strap to hold nut snug against underside of rear fender. From the side opposite the tab, slide on the retention washer to lock the position of the retention nut. Remove cable strap.

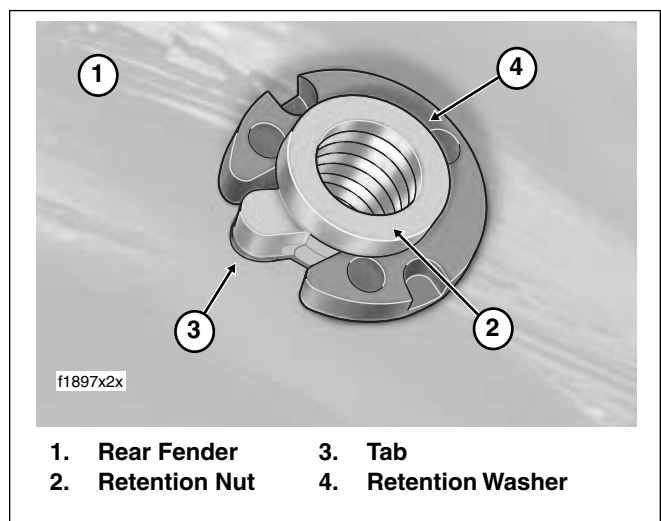


Figure 2-133. Seat Retention Nut and Washer

OPENING

NOTE

Maximum recommended load for each saddlebag is 15 lbs.

FLHRC

1. Raise the decorative buckle and press tabs on both sides of catch to release from receptacle. Repeat step to release second catch. See upper frame of [Figure 2-134](#).
2. Rotate hinge on outboard side of saddlebag to open lid.

FLHRS

1. Depress button on front inboard side of saddlebag, and while holding button in, raise lid. See lower frame of [Figure 2-134](#).

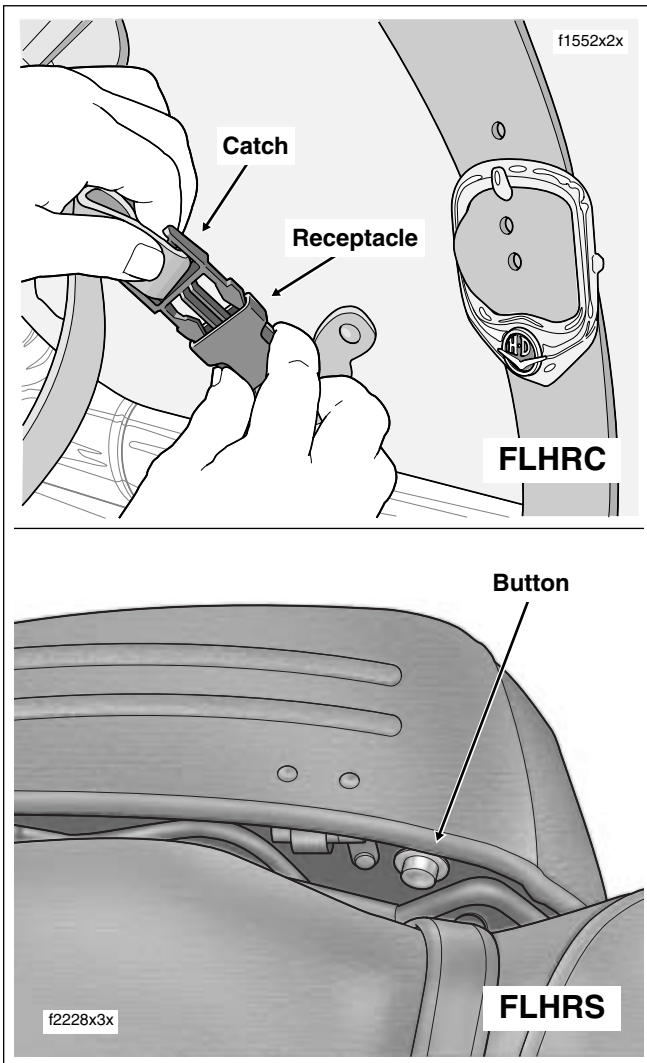


Figure 2-134. Open Saddlebag (FLHRC/S)

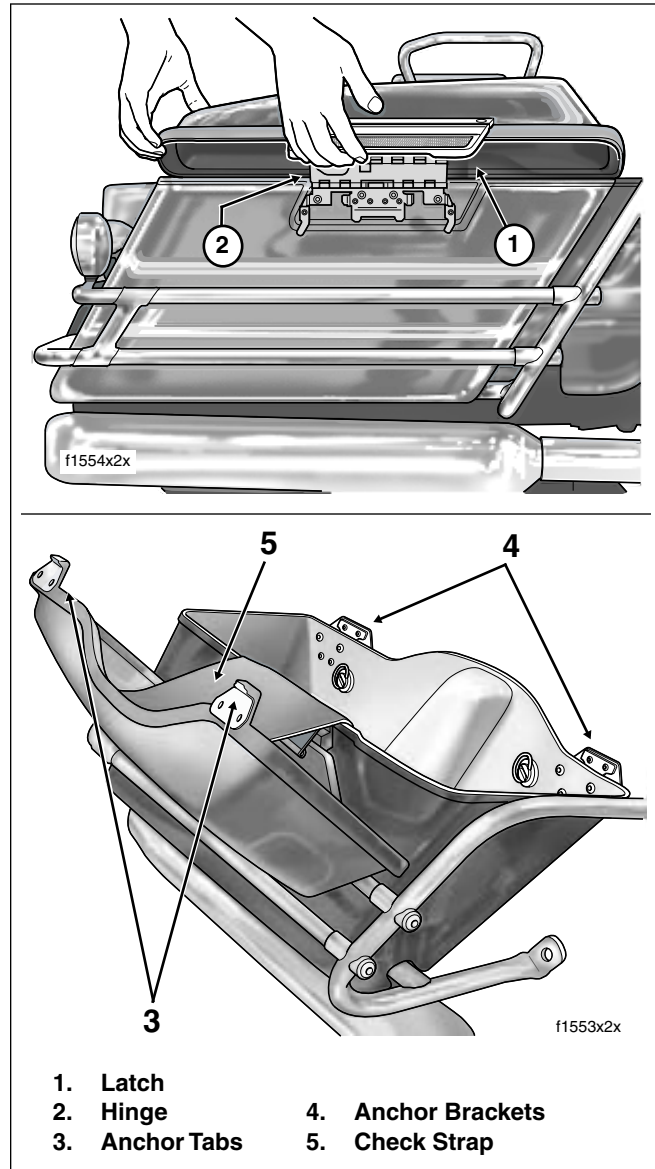


Figure 2-135. Open Saddlebag (FLHR, FLHX, FLHT/C/U, FLTR)

2. Rotate hinge on inboard side of saddlebag to open lid.

FLHR, FLHX, FLHT/C/U, FLTR

1. Use key to unlock lid latch if locked.
2. Pull bottom of latch outward and then lift upward raising outboard corners of saddlebag lid. See upper frame of [Figure 2-135](#).
3. With top of lid tilted toward motorcycle, carefully lift inboard side of lid upward disengaging front and rear anchor tabs from anchor brackets.

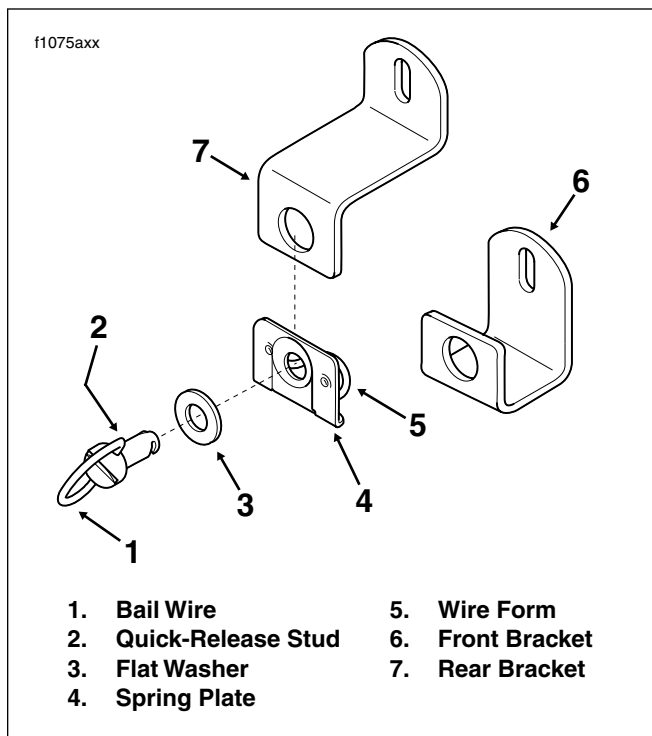


Figure 2-136. Saddlebag Quick-Release Fasteners

- Pivot lid on latch hinge to open. A nylon check strap suspends the lid in the open position. See lower frame of [Figure 2-135](#).

CLOSING

FLHRC

- Rotate hinge on outboard side of saddlebag to close lid.
- Insert catch into receptacle until tabs fully engage. Repeat step to secure second catch. See upper frame of [Figure 2-134](#).

FLHRS

- Rotate hinge on inboard side of saddlebag to close lid. Lid latches automatically.

FLHR, FLHX, FLHT/C/U, FLTR

- Rotate lid to closed position engaging both anchor tabs with bottom of anchor brackets. Press bottom of latch inward until it snaps closed. See lower frame of [Figure 2-135](#).
- Use key to lock lid latch.

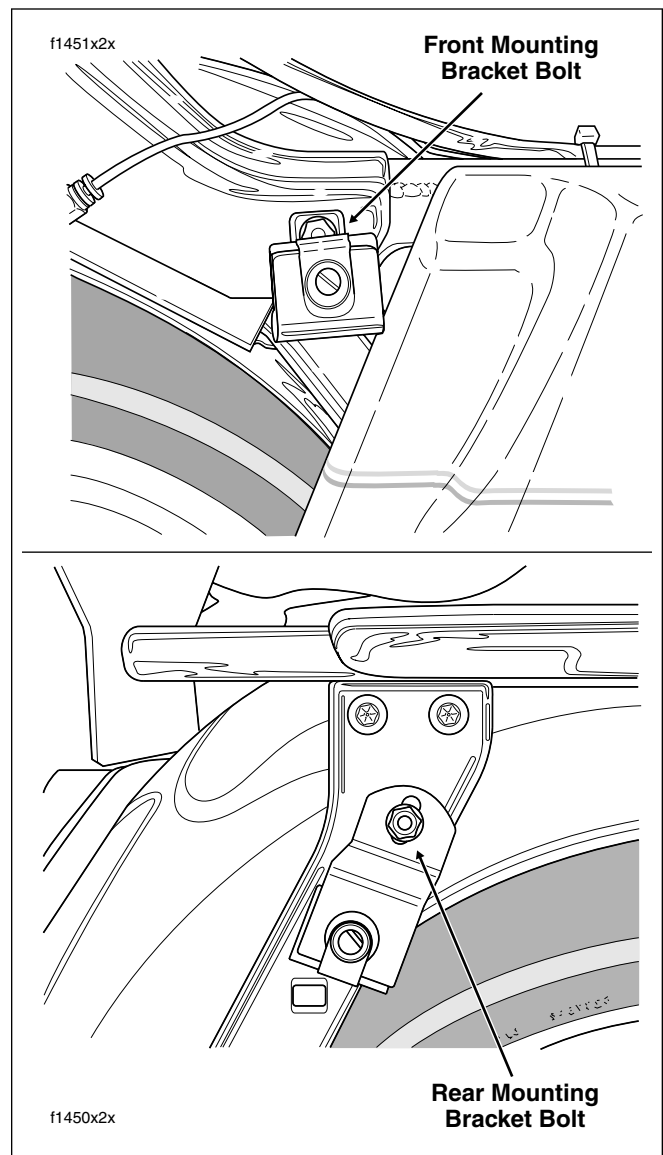


Figure 2-137. Saddlebag Mounting Bracket Bolts (Right Side View)

REMOVAL

- Open saddlebag. See [OPENING](#) in this section.
- Grasp bail wire inside saddlebag and rotate each stud a full 1/4 turn in a counter-clockwise direction. Remove bail head studs with flat washers. See [Figure 2-136](#).

NOTE

On some HDI motorcycles, the bail wire has been removed from the quick release stud. In these cases, turn the stud by engaging the slotted end with a large screwdriver.

- Remove saddlebag.

INSTALLATION

1. Position saddlebag on motorcycle.
2. Place flat washers on bail head studs.
3. With groove at end of stud held in a horizontal position, insert stud through holes in saddlebag and front mounting bracket. When groove engages wire form of spring plate on inboard side of bracket, turn stud clockwise a full 1/4 turn until it snaps in place. Install rear bail head stud in the same manner.

NOTE

On some HDI motorcycles, the bail wire has been removed from the quick release stud. In these cases, turn the stud by engaging the slotted end with a large screwdriver.

NOTE

Molded rubber insert at bottom of saddlebag must fit snugly on lower saddlebag support rail. If saddlebag is not fully seated, use an open end/box wrench to loosen bolts securing mounting brackets to saddlebag support and frame. See [Figure 2-137](#). Alternately tighten bolts to 60-96 **in-lbs** (7-11 Nm) after seating saddlebag.

4. Close saddlebag. See [CLOSING](#) in this section.

LATCH SPRING REPLACEMENT (FLHR, FLHX, FLHT/C/U, FLTR)

REMOVAL

1. Lay clean pad or blanket on work bench to protect painted surfaces of saddlebag.
2. Remove saddlebag from motorcycle leaving lid open. See [REMOVAL](#) in this section.
3. Lay saddlebag flat on pad with the inboard side facing up and the lid closest to you.
4. Remove two T20 TORX screws to release check strap from lid.
5. Remove two T15 TORX screws to release check strap from saddlebag.
6. Remove two remaining T15 TORX screws to remove latch from saddlebag. Move saddlebag back and out of the way.

CAUTION

This procedure assumes that the latch is **NOT** removed from the saddlebag lid. If there is doubt as to whether the procedure can be accomplished without scratching painted surfaces of the lid, then remove the five remaining T15 TORX screws to completely remove latch.

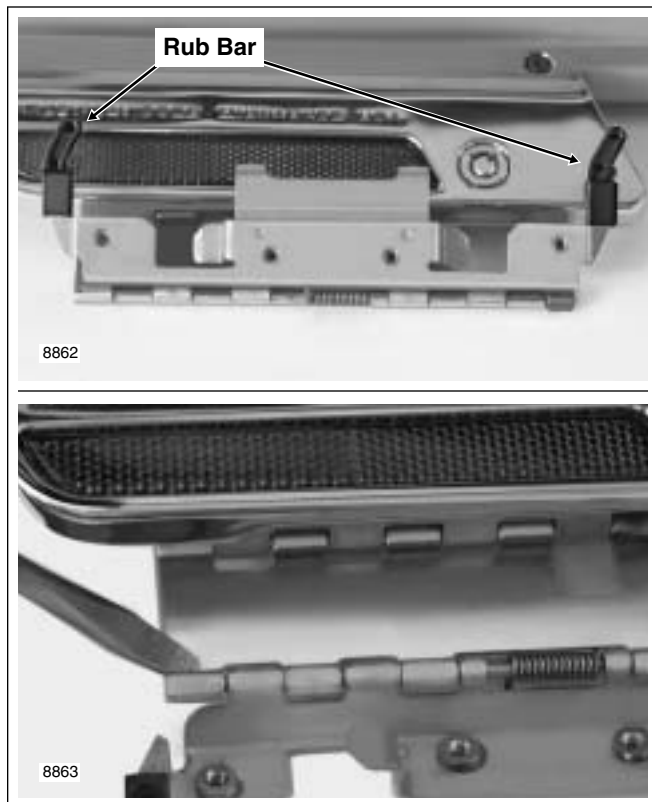


Figure 2-138. Lid Right Side Up With Latch on Near Side

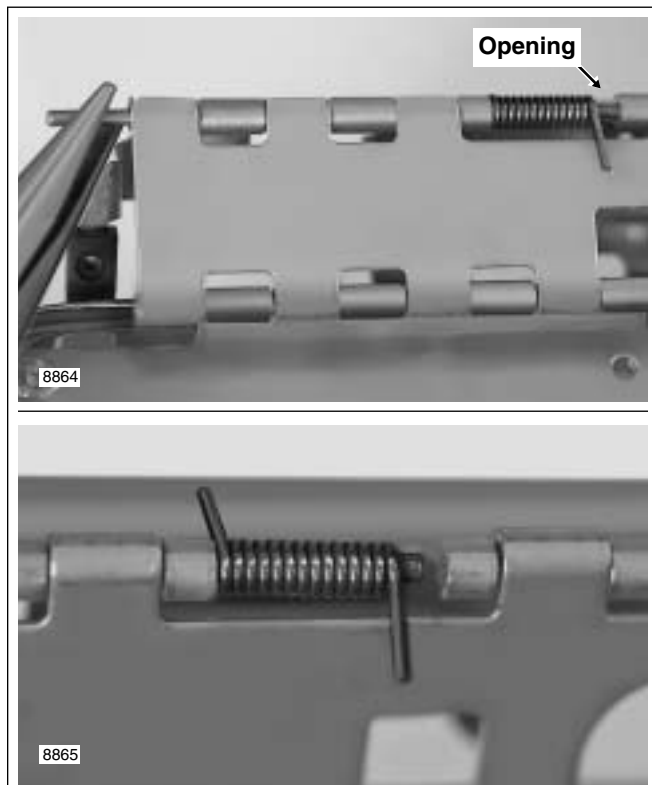


Figure 2-139. Lid Up Side Down With Latch on Far Side

7. Position lid right side up with latch closest to you.
8. Raise latch slightly and rotate hinge on inboard side so that it is topside with the two plastic rub bars pointed upward. See upper frame of [Figure 2-138](#).
9. Rotate rub bar section of hinge to expose hinge pin and spring. Using a flat tip screwdriver, carefully bend crimped end link outward. See lower frame of [Figure 2-138](#).

NOTE

The end link on opposite side of hinge has a weld spot that prevents pin removal.

10. Reposition lid so that it is upside down with the latch farthest from you. Rotate hinge so that plastic rub bars are positioned beneath latch and spring is topside.
11. Using a needle nose pliers, grasp pin through opening just outboard of the spring and push toward the crimped link side. Work pin in this manner until end can be seen exiting crimped link. See upper frame of [Figure 2-139](#). If necessary, pry crimped link outward a little more to achieve the desired result.
12. Grasping end with needle nose pliers, slowly pull pin from links until spring can be slid off opposite end. Only pull pin as far as necessary to remove spring. See lower frame of [Figure 2-139](#).

INSTALLATION

1. Slide **new** spring onto end of pin. Orient spring as shown in lower frame of [Figure 2-139](#).
2. Slide pin back through links. Using tapered end of needle nose pliers, push end of pin into crimped link
3. Reposition lid so that it is right side up with latch closest to you. As before, raise latch slightly and rotate hinge on inboard side so that it is topside with plastic rub bars pointing upward. Now rotate rub bar section of hinge to expose hinge pin and spring. See [Figure 2-138](#).
4. Holding lid down with elbow, if necessary, use a pliers to bend crimped link back into its original position, so that pin is captured and will not back out of hinge.
5. Reposition lid so that it is upside down with the latch farthest from you. Move saddlebag forward for reinstallation of lid. Align four holes in saddlebag with those in latch.
6. Install two inboard T15 TORX screws to fasten latch to saddlebag. Alternately tighten screws to 20-25 **in-lbs** (2.3-2.8 Nm).
7. Align holes in check strap with those in lid and saddlebag. Orient check strap so that logo is topside with the bottom of the bar and shield on the lid side.
8. Install two T15 TORX screws to fasten check strap and latch to saddlebag. Alternately tighten screws to 20-25 **in-lbs** (2.3-2.8 Nm).

9. Install two T20 TORX screws to fasten check strap to lid. Alternately tighten screws to 18-20 **in-lbs** (2.0-2.3 Nm).
10. Close saddlebag and install on motorcycle. See [INSTALLATION](#) in this section.

CABLE ASSEMBLY/LATCH/SCRIPT (FLHRS)

CABLE ASSEMBLY

Removal

1. Open saddlebag. See [OPENING](#) in this section.
2. Remove two screws on inboard side of saddlebag to release plastic shroud. See upper frame of [Figure 2-140](#).
3. Depress wireform and pull button from hole in saddlebag. See lower frame of [Figure 2-140](#).
4. Remove sleeve from hole in saddlebag.
5. Moving to inboard side of saddlebag lid, remove lock ring from hole at end of latch pin. See left frame of [Figure 2-141](#).
6. Pull latch pin from metal shroud, saddlebag bracket and latch. Remove metal shroud.

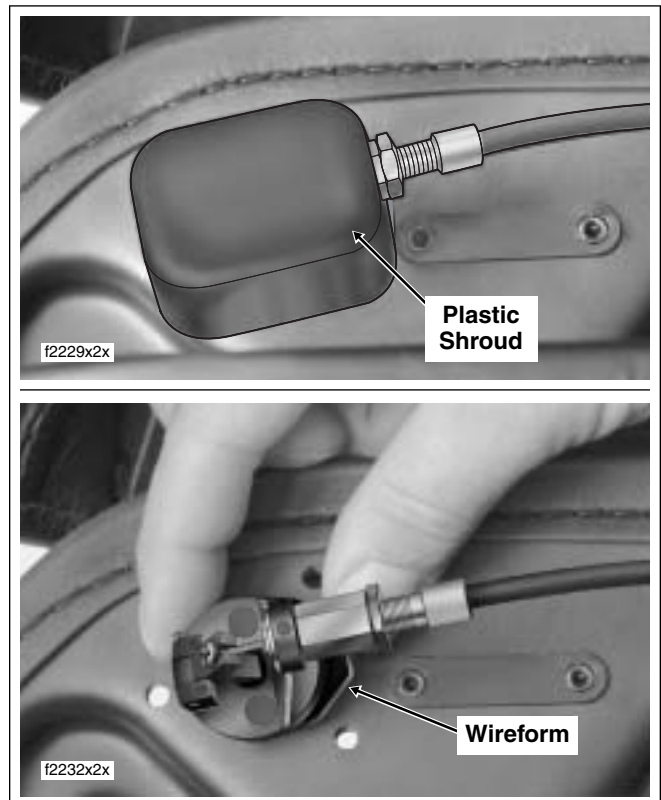


Figure 2-140. Remove Button Assembly

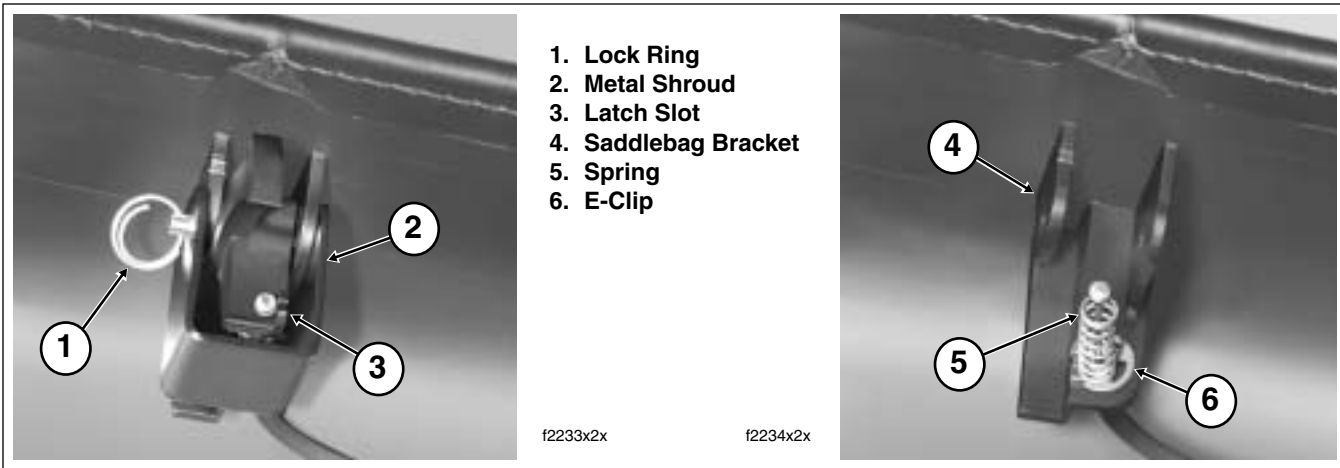


Figure 2-141. Remove Latch Assembly

7. Depress spring and pull on cable ball end to remove from slot in latch. Remove latch.
8. Remove spring from cable. See right frame of [Figure 2-141](#).
9. Remove e-clip from groove in cable end fitting.
10. Pull cable end fitting from hole in saddlebag bracket.
11. Release cable from channel running along inboard edge of saddlebag.
9. Install metal shroud over latch and saddlebag bracket. At rear of assembly, insert latch pin through metal shroud, saddlebag bracket and latch until end exits front hole in shroud.
10. Install lock ring into hole at end of latch pin. See left frame of [Figure 2-141](#).
11. Close and open saddlebag lid several times to verify that latch locks every time. Adjust cable if necessary.

Installation

1. From the outboard side, insert sleeve into hole in saddlebag.
2. On the inboard side, depress wireform and slide button into sleeve. Release wireform. Gently tug on assembly to verify that wireform has engaged groove in sleeve to lock button in place. See lower frame of [Figure 2-140](#).
3. Holding plastic shroud with the relief positioned over the cable adjuster, install two screws from inboard side of saddlebag. See upper frame of [Figure 2-140](#).
4. Capture cable in channel running along inboard edge of saddlebag.
5. Install cable end fitting into hole in saddlebag bracket.
6. With the rounded edge of the e-clip on the same side as the rounded edge of the saddlebag bracket, install e-clip into groove in cable end fitting.
7. Pull up on cable ball end and install spring on cable. See right frame of [Figure 2-141](#).

NOTE

Verify that ball end on opposite side of cable is installed in pivot of button assembly. See [Figure 2-142](#).

8. Position latch between saddlebag bracket with the cable slot inline with the cable ball end. Depress spring and capture cable ball end in slot of latch.

Adjustment

1. Open saddlebag. See [OPENING](#) in this section.
2. Remove two screws on inboard side of saddlebag to release plastic shroud. See upper frame of [Figure 2-140](#).
3. Back jam nut away from body hex. See [Figure 2-142](#).
4. Turn body hex toward or away from jam nut until closest part of latch is approximately 3/8 inch (9.5 mm) from inboard side of saddlebag lid.

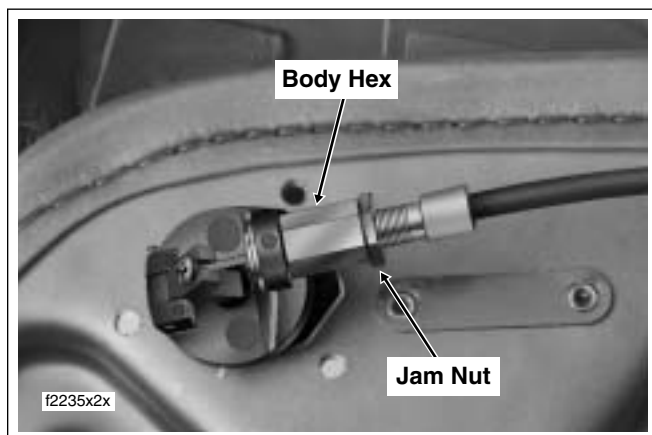


Figure 2-142. Cable Adjustment

5. Turn jam nut until it makes firm contact with body hex.
6. Holding plastic shroud with the relief positioned over the cable adjuster, install two screws from inboard side of saddlebag. See upper frame of [Figure 2-140](#).
7. Close and open saddlebag lid several times to verify that latch locks every time. Readjust if necessary.

LATCH

Removal

1. Open saddlebag. See [OPENING](#) in this section.
2. Moving to inboard side of saddlebag lid, remove lock ring from hole at end of latch pin. See left frame of [Figure 2-141](#).
3. Pull latch pin from metal shroud, saddlebag bracket and latch. Remove metal shroud.
4. Depress spring and pull on cable ball end to remove from slot in latch. Remove latch.

Installation

1. Position **new** latch between saddlebag bracket with the cable slot inline with the cable ball end. Depress spring and capture cable ball end in slot of latch.
2. Install metal shroud over latch and saddlebag bracket. At rear of assembly, insert latch pin through metal shroud, saddlebag bracket and latch until end exits front hole in shroud.
3. Install lock ring into hole at end of latch pin. See left frame of [Figure 2-141](#).
4. Close saddlebag. See [CLOSING](#) in this section.

SCRIPT

Removal

1. Open saddlebag. See [OPENING](#) in this section.

CAUTION

Do not remove push nuts unless script replacement is necessary. Push nuts are damaged during removal and studs on script may be bent or broken.

2. From inside saddlebag, pry push nuts from studs. Discard push nuts.
3. Remove script from side of saddlebag.

Installation

1. Install **new** script on side of saddlebag inserting studs through holes.

CAUTION

Always install push nuts on the end studs first. If center stud is not done last, end stud can sometimes come out of saddlebag hole during installation of the second push nut. If this occurs, forcing the last stud in can bend stud or script and enlarge saddlebag hole.

2. From inside saddlebag, install **new** push nuts onto studs. For best results, install push nuts on the end studs first.
3. Close saddlebag. See [CLOSING](#) in this section.

SADDLEBAG GUARD/SUPPORT RAIL

REMOVAL

1. Remove saddlebag from motorcycle. See [REMOVAL](#) in this section.
2. Disassemble saddlebag guard, support and/or rails as necessary. See [Figure 2-143](#).

INSTALLATION

1. Assemble saddlebag guard, support and/or rails as necessary. Replace any damaged parts. See [Figure 2-143](#).
2. Install saddlebag on motorcycle. See [INSTALLATION](#) in this section.

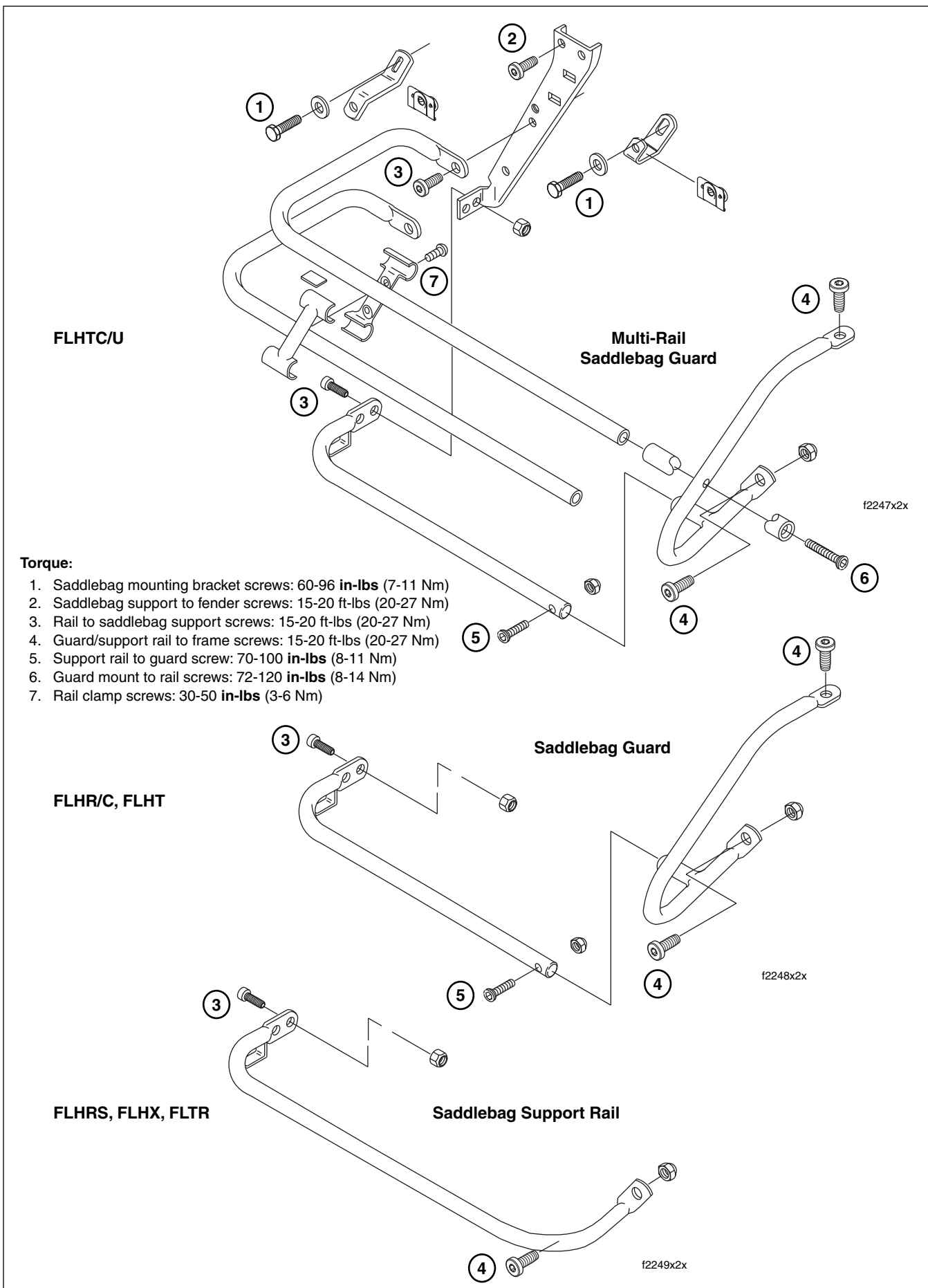


Figure 2-143. Saddlebag Guards/Support Rail

FLHTC

REMOVAL

1. Open Tour-Pak. Remove rubber mat.
2. Rotate knurled lock ring in a counter-clockwise direction to separate pin and socket halves of radio antenna cable connector [51]. Release cable from two adhesive clips at bottom of Tour-Pak.
3. Disconnect Tour-Pak lights connector [12], 3-place Multilock. See [Figure 2-144](#).
4. Pull grommet into Tour-Pak and remove from main harness conduit.
5. Feed main harness conduit and connectors through hole in Tour-Pak. See [Figure 2-145](#).
6. Holding nylon cap locknuts at bottom of luggage rack rail, remove four hex head bolts (with flat washers) from inside Tour-Pak. Luggage rack spacers will become free as locknuts are removed.
7. Holding button head bolt at rear center hole, remove locknut (and flat washer) from inside Tour-Pak to release Tour-Pak from luggage rack. Be sure to have a firm grasp on the Tour-Pak as the bolt is removed. See [Figure 2-146](#).

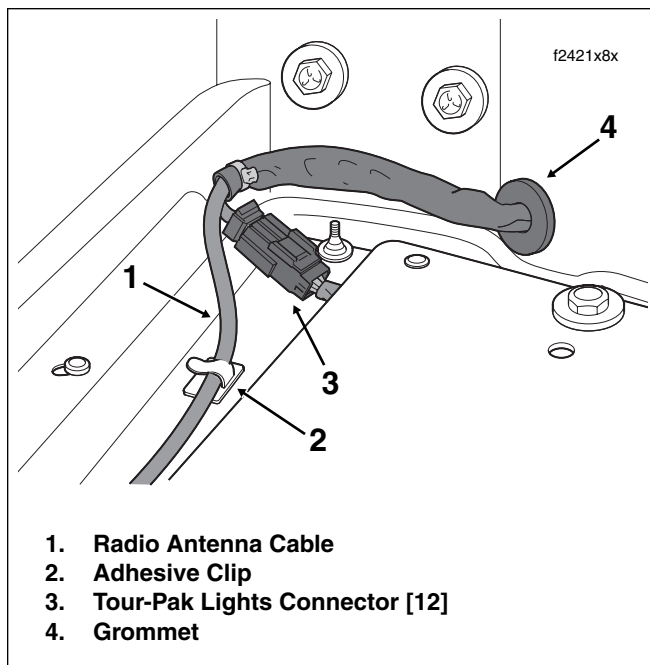


Figure 2-144. Disconnect Tour-Pak Lights Connector

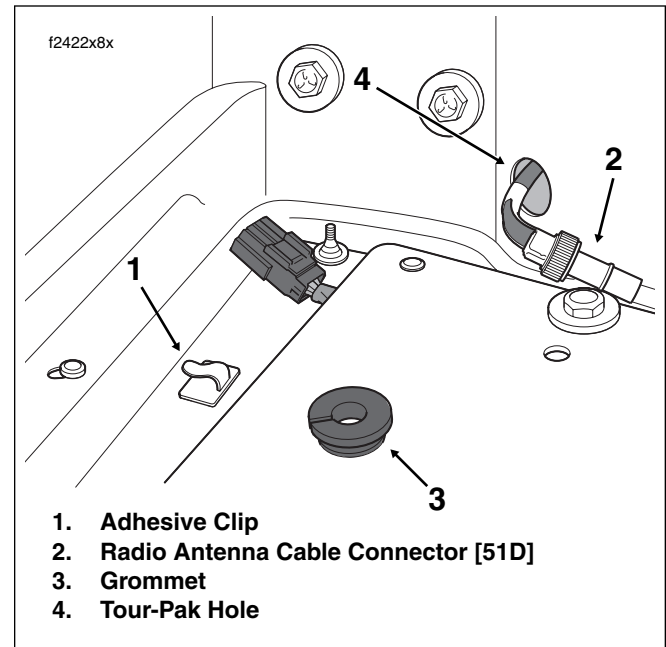


Figure 2-145. Feed Main Harness Thru Tour-Pak Hole

INSTALLATION

1. Place Tour-Pak on luggage rack and open lid.
2. Align rear center hole in Tour-Pak with same hole in luggage rack. Slide button head bolt through spacer (concave side up), luggage rack and Tour-Pak holes. From inside Tour-Pak, install flat washer, radio antenna ground ring terminal and locknut on bolt. With concavity on spacer inline with the rail, hold locknut and tighten bolt until snug.

CAUTION

Always install hex head bolts from inside Tour-Pak. If hex head bolts are installed upside down, then loss of a nylon cap could cause the end of a bolt to tear the molded liner and scratch objects, such as helmets, stored inside the Tour-Pak.

3. From inside Tour-Pak, install two hex head bolts (with flat washers) in two front Tour-Pak and luggage rack holes (one each side). At bottom of luggage rack, install spacer (concave side up) and nylon cap locknut on each bolt. With concavity on spacer inline with the rail, hold locknut and tighten each bolt until snug.
4. Position two spacers between bottom of luggage rack and tabs of license plate bracket. Slide two hex head bolts (with flat washers) through two center holes in Tour-Pak and luggage rack, and then through spacers

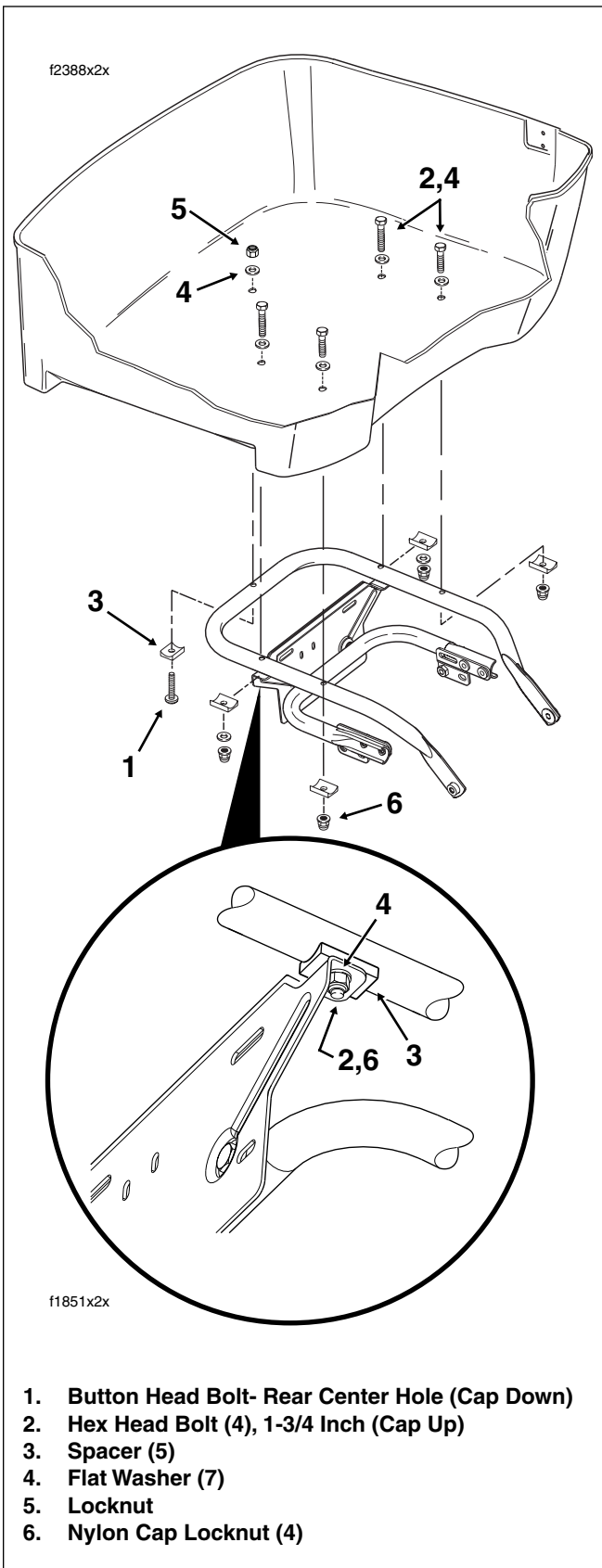


Figure 2-146. Install Tour-Pak Mounting Bolts

and tabs of license plate bracket. If necessary, loosen two hex head bolts at back of license plate bracket to align holes in tabs with bolts. Install flat washers and nylon cap locknuts on bolts and tighten until snug. See inset of [Figure 2-146](#).

5. In a crosswise pattern, alternately tighten five bolts to 96-108 **in-lbs** (10.8-12.2 Nm). Be sure that concavity on each spacer is inline with the rail and has not rotated out of position.
6. Standing on left side of motorcycle, feed socket connectors and main harness conduit through hole in Tour-pak. Capture conduit in grommet. Install grommet in hole with the larger OD facing inside.
7. Connect Tour-pak lights connector [12], 3-place Multilock. See [Figure 2-144](#).
8. Rotate knurled lock ring in a clockwise direction to mate pin and socket halves of radio antenna cable connector [51]. Capture cable in two adhesive clips at bottom of Tour-Pak.
9. Install rubber mat. Close Tour-Pak.

FLHTCU

REMOVAL

1. Open Tour-Pak. Open map pocket and remove acorn nuts (with flat washers). Remove map pocket and molded liner from Tour-Pak.
2. Depress external latch and rotate housing to release bulb socket from left side of Tour-Pak.
3. Rotate knurled lock ring in a counterclockwise direction to separate pin and socket halves of radio antenna cable connector [51]. Release cable from two adhesive clips at bottom of Tour-Pak.
4. Disconnect Tour-Pak lights connector [12], 3-place Multilock. See [Figure 2-144](#).
5. Pull grommet into Tour-Pak and remove from main harness conduit.
6. Feed main harness conduit and connectors through hole in Tour-Pak. See [Figure 2-145](#).
7. Release rear headset receptacle from bracket at bottom of left side speaker box.
8. Remove trim ring and gently pull on wire harness to draw rear speaker/passenger controls connector [42], 6-place Deutsch, out of left side speaker box. Depress external latch and use a rocking motion to separate pin and socket halves.
9. Moving to right side of motorcycle, disconnect CB antenna cable connector [50]. Release cable from two adhesive clips at bottom of Tour-Pak. See [Figure 2-147](#).

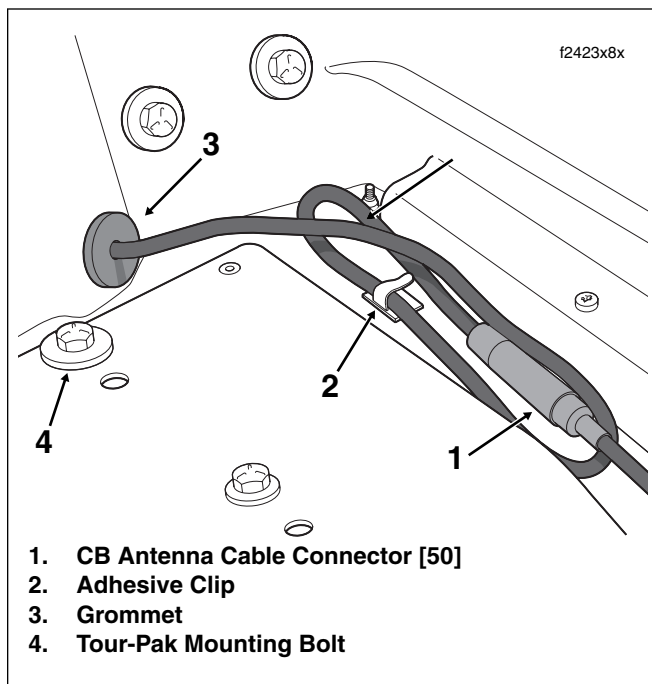


Figure 2-147. Disconnect CB Antenna Cable Connector

10. Pull right side grommet into Tour-Pak and remove from CB antenna cable. Feed CB antenna cable through hole in Tour-Pak.
11. Remove trim ring and gently pull on wire harness to draw rear speaker/passenger controls connector [41], 6-place Deutsch, out of right side speaker box. Depress external latch and use a rocking motion to separate pin and socket halves.
12. Holding nylon cap locknuts at bottom of luggage rack rail, remove four hex head bolts (with flat washers) from inside Tour-Pak. Luggage rack spacers will become free as locknuts are removed.
13. Holding button head bolt at rear center hole, remove locknut (and flat washer) from inside Tour-Pak to release Tour-Pak from luggage rack. Be sure to have a firm grasp on the Tour-Pak as the bolt is removed. See [Figure 2-146](#).

INSTALLATION

1. Place Tour-Pak on luggage rack and open lid.
2. Align rear center hole in Tour-Pak with same hole in luggage rack. Slide button head bolt through spacer (concave side up), luggage rack and Tour-Pak holes. From inside Tour-Pak, install flat washer, radio antenna ground ring terminal and locknut on bolt. With concavity on spacer inline with the rail, hold locknut and tighten bolt until snug.

CAUTION

Always install hex head bolts from inside Tour-Pak. If hex head bolts are installed upside down, then loss of a nylon cap could cause the end of a bolt to tear the molded liner and scratch objects, such as helmets, stored inside the Tour-Pak.

3. From inside Tour-Pak, install two hex head bolts (with flat washers) in two front Tour-Pak and luggage rack holes (one each side). At bottom of luggage rack, install spacer (concave side up) and nylon cap locknut on each bolt. With concavity on spacer inline with the rail, hold locknut and tighten each bolt until snug.
4. Position two spacers between bottom of luggage rack and tabs of license plate bracket. Slide two hex head bolts (with flat washers) through two center holes in Tour-Pak and luggage rack, and then through spacers and tabs of license plate bracket. If necessary, loosen two hex head bolts at back of license plate bracket to align holes in tabs with bolts. Install flat washers and nylon cap locknuts on bolts and tighten until snug. See inset of [Figure 2-146](#).
5. In a crosswise pattern, alternately tighten five bolts to 96-108 **in-lbs** (10.8-12.2 Nm). Be sure that concavity on each spacer is inline with the rail and has not rotated out of position.
6. Connect rear speaker/passenger controls connector [41], 6-place Deutsch. Feed connector back up into right side speaker box pressing trim ring into hole.
7. Pass CB antenna cable through hole in Tour-Pak. Capture cable in grommet. Install grommet in hole with the larger OD facing inside.
8. Connect CB antenna cable connector [50]. Capture cable in two adhesive clips at bottom of Tour-Pak. See [Figure 2-147](#).
9. Moving to opposite side of motorcycle, connect rear speaker/passenger controls connector [42], 6-place Deutsch. Feed connector back up into left side speaker box pressing trim ring into hole.
10. Capture rear headset receptacle in bracket at bottom of left side speaker box.
11. Feed socket connectors and main harness conduit through hole in Tour-pak. Capture conduit in grommet. Install grommet in hole with the larger OD facing inside.
12. Connect Tour-pak lights connector [12], 3-place Multilock. See [Figure 2-144](#).
13. Rotate knurled lock ring in a clockwise direction to mate pin and socket halves of radio antenna cable connector [51]. Capture cable in two adhesive clips at bottom of Tour-Pak.
14. Install bulb socket on left side of Tour-pak.

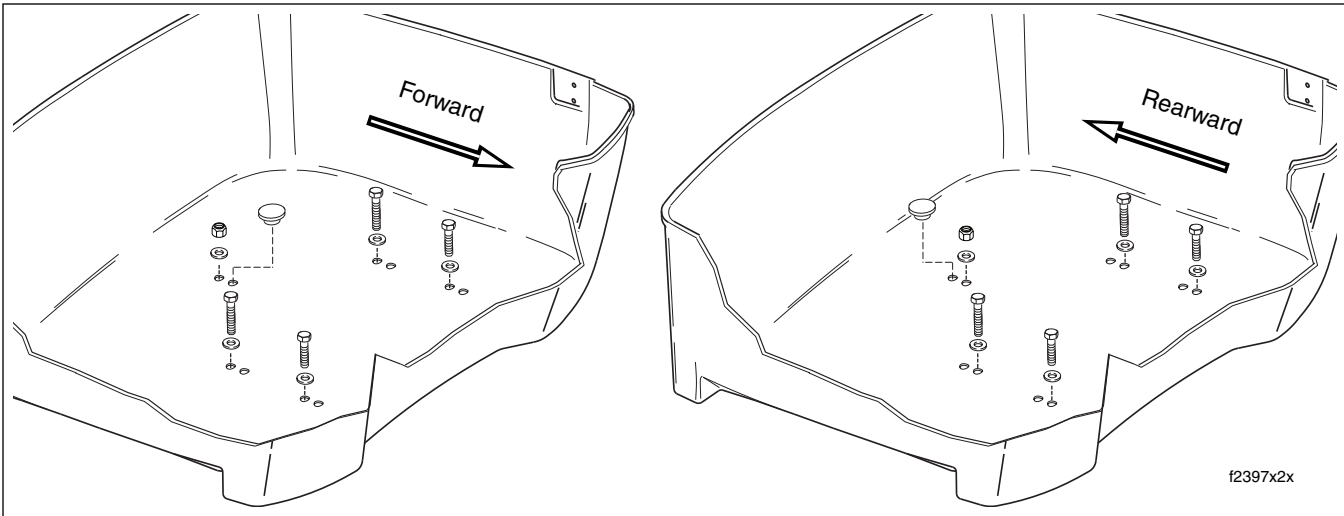


Figure 2-148. Adjust Position of Tour-Pak for Passenger Comfort

15. Install molded liner in Tour-Pak. Install map pocket and secure using acorn nuts (with flat washers). Close Tour-Pak.

ADJUSTMENT

NOTE

The Tour-Pak can be moved forward/rearward approximately one inch for best passenger comfort.

1. Proceed as follows:

FLHTC: Open Tour-Pak. Remove rubber mat.

FLHTCU: Open Tour-Pak. Open map pocket and remove acorn nuts (with flat washers). Remove map pocket and molded liner from Tour-Pak.

2. From inside Tour-Pak, remove plastic plug from unused rear center hole.
3. Holding nylon cap locknuts at bottom of luggage rack rail, remove four hex head bolts (with flat washers) from inside Tour-Pak. Luggage rack spacers will become free as locknuts are removed.
4. Holding button head bolt at rear center hole, remove locknut (and flat washer) from inside Tour-Pak to release Tour-Pak from luggage rack. Be sure to have a firm grasp on the Tour-Pak as the bolt is removed. See [Figure 2-146](#).
5. Move Tour-Pak to the forward/rearward position. See [Figure 2-148](#).
6. Align rear center hole in Tour-Pak with same hole in luggage rack. Slide button head bolt through spacer (concave side up), luggage rack and Tour-Pak holes. From inside Tour-Pak, install flat washer, radio antenna ground

ring terminal and locknut on bolt. With concavity on spacer inline with the rail, hold locknut and tighten bolt until snug.

CAUTION

Always install hex head bolts from inside Tour-Pak. If hex head bolts are installed upside down, then loss of a nylon cap could cause the end of a bolt to tear the molded liner and scratch objects, such as helmets, stored inside the Tour-Pak.

7. From inside Tour-Pak, install two hex head bolts (with flat washers) in two front Tour-Pak and luggage rack holes (one each side). At bottom of luggage rack, install spacer (concave side up) and nylon cap locknut on each bolt and tighten until snug.
8. Verify that two spacers are in position between bottom of luggage rack and tabs of license plate bracket. Slide two

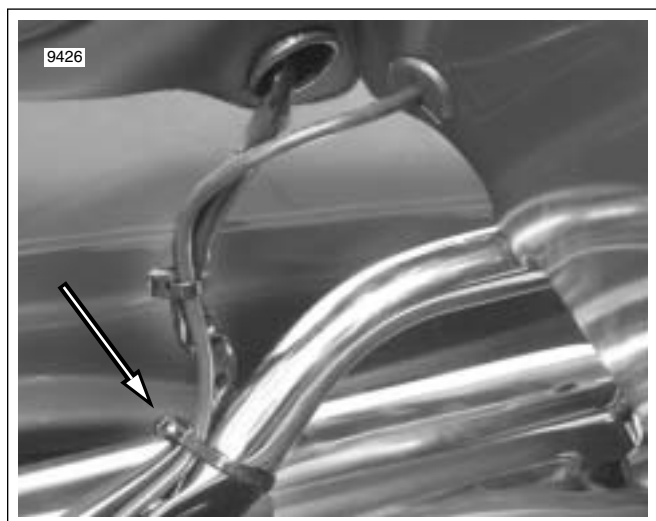


Figure 2-149. Right Side Luggage Rack Rail (FLHTCU)

hex head bolts (with flat washers) through two center holes in Tour-Pak and luggage rack, and then through spacers and tabs of license plate bracket. Install flat washers and nylon cap locknuts on bolts and tighten until snug. See inset of [Figure 2-146](#).

9. In a crosswise pattern, alternately tighten five bolts to 96-108 **in-lbs** (10.8-12.2 Nm).
10. Verify that wire harness to Tour-pak is not bunched or stretched at any point. Rearrange wire harness slightly if necessary. Install **new** cable straps capturing wire harness and luggage rack rails if rearrangement required cutting of existing cable straps. See [Figure 2-149](#).
11. From inside Tour-Pak, install plastic plug in unused rear center hole. See [Figure 2-148](#).
12. Proceed as follows:

FLHTC: Install rubber mat. Close Tour-Pak.

FLHTCU: Install molded liner in Tour-Pak. Install map pocket and secure using acorn nuts (with flat washers). Close Tour-Pak.

LOCKSET, HINGES, LATCHES, CATCHES, TETHER, TETHER BRACKETS

LOCKSET

Removal

NOTE

For replacement of the lockset catch, see *BODY LATCHES/ LOCKSET CATCH* in this section.

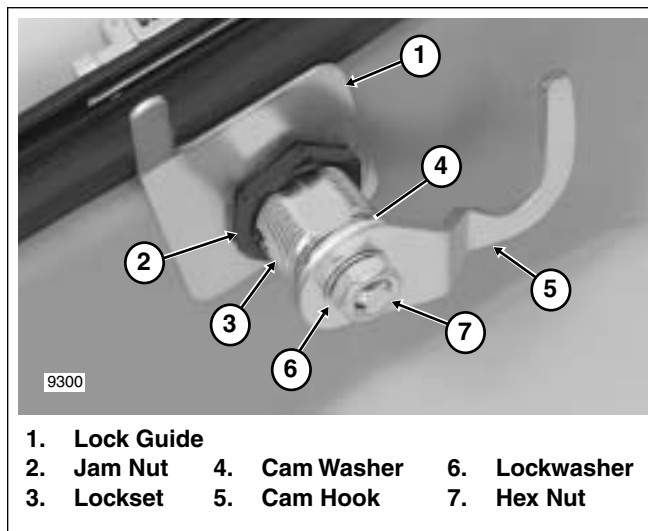


Figure 2-150. Lockset Assembly

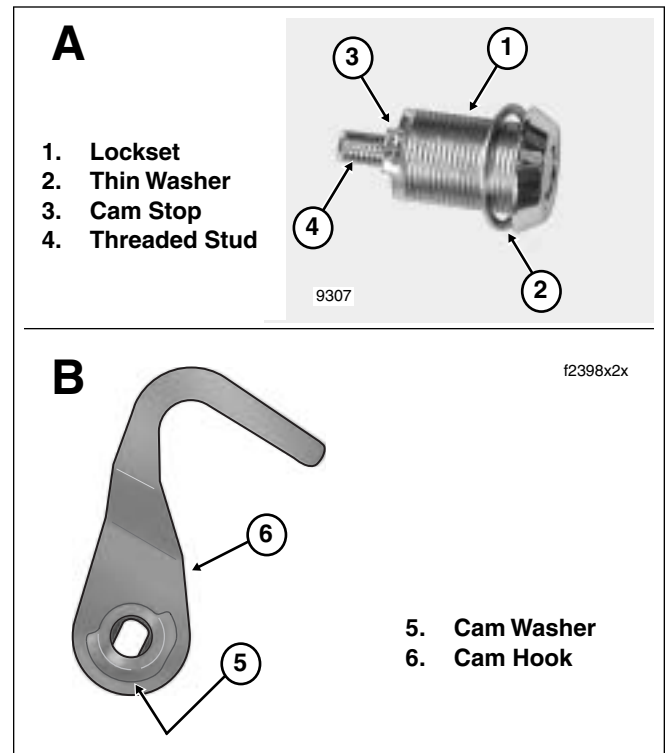


Figure 2-151. Lockset Mechanism

1. At inside of Tour-Pak lid, remove hex nut, internal tooth lockwasher, cam hook and cam washer. Remove jam nut and lock guide. See [Figure 2-150](#).
2. At outside of Tour-Pak, remove lockset. Remove thin washer from threaded body of lockset. See A of [Figure 2-151](#).

Installation

1. Slide thin washer down threaded body of lockset. See A of [Figure 2-151](#).
2. With cam stop facing toward front of Tour-Pak lid, install lockset into hole.
3. Install lock guide over threaded body of lockset oriented with finger at rear and pointing toward bottom of Tour-Pak lid. See [Figure 2-150](#).
4. Install jam nut and tighten to 30-45 **in-lbs** (3.4-5.1 Nm).
5. Verify that groove in threaded stud of lockset is facing rear of Tour-Pak lid. Use key to rotate threaded stud, if necessary.
6. Align cam hook and cam washer as shown in B of [Figure 2-151](#). With the cam hook toward the front of Tour-Pak lid and cam washer on the inboard side, slide assembly down threaded stud.
7. Install internal tooth lockwasher and hex nut onto threaded stud. Tighten hex nut to 25-35 **in-lbs** (2.8-4.0 Nm).

HINGES

Removal

1. Remove tether. See TETHER, REMOVAL, steps 1-2.
2. Holding hinge pin with a T25 TORX bit (inboard side), remove T15 TORX screw (outboard side).
3. Remove hinge pin from hinge.
4. Repeat steps 2-3 to remove second hinge pin. Remove Tour-Pak lid.
5. Using a 3/16 inch drill bit, drill out eight rivets from inside Tour-Pak.
6. Remove hinge and backplates.

Installation

1. With the head of the **new** rivet on the outboard side of the Tour-Pak, slide rivet through holes in hinge, Tour-Pak and backplate.
2. Obtain RIVET TOOL (HD-39787A). See [Figure 2-152](#).
3. Orient tool so that head of rivet is seated in depression of drive head. Turn adjuster thumbscrew in or out of handle until both ends of rivet are captured.
4. Slowly squeeze handle of tool to compress rivet. Turn adjuster thumbscrew slightly in a clockwise direction and then squeeze handle again to further compress rivet. Repeat step as necessary until rivet is fully installed.

NOTE

Compress rivet in small increments only. This method provides for best retention and alignment of parts and avoids possible damage to tool and painted surfaces of Tour-Pak.

5. Repeat steps 1-4 to install remaining rivets.
6. Install lid onto Tour-Pak engaging upper and lower hinges.
7. Install hinge pin with the T25 TORX bit recess on the inboard side of the hinge.

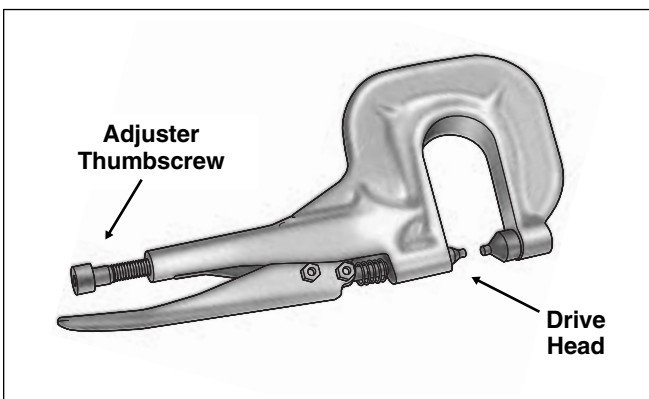


Figure 2-152. Rivet Tool (HD-39787A)

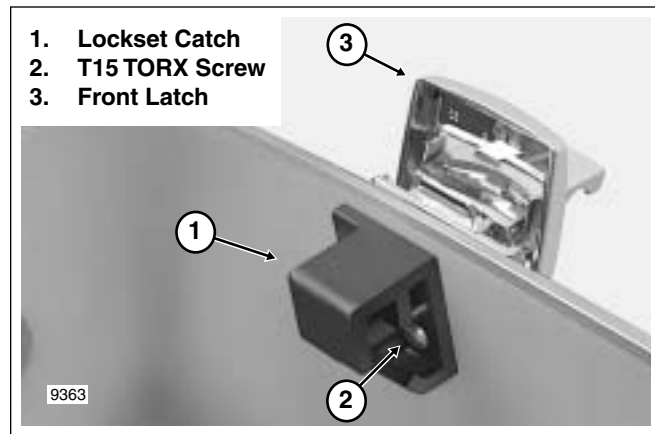


Figure 2-153. Front Latch Assembly

8. Apply a small dab of Loctite High Strength Threadlocker 262 (red) to threads of T15 TORX screw.
9. Install T15 TORX screw into hinge pin and tighten to 20-25 **in-lbs** (2.3-2.8 Nm).
10. Repeat steps 7-9 to install second hinge pin.
11. Install tether. See TETHER, INSTALLATION, steps 1-4.

LATCHES/LOCKSET CATCH

Removal

1. Remove two T15 TORX screws (with flat washers) to release rear latch and spacer from right side of Tour-Pak.
2. Remove two T15 TORX screws to release front latch, spacer and lockset catch from Tour-Pak. See [Figure 2-153](#).

Installation

1. From inside Tour-Pak, slide two short T15 TORX screws (with flat washers) through rear holes on right side of Tour-Pak.
2. With open side of spacer facing Tour-Pak and rib at bottom, slide spacer over ends of screws.
3. Apply a small dab of Loctite Medium Strength Threadlocker 243 (blue) to threads of screws and start into threaded bosses on latch. Properly oriented, portion of latch not mated with spacer should be at the top.
4. Alternately tighten screws to 20-25 **in-lbs** (2.3-2.8 Nm).
5. Slide two long T15 TORX screws through holes in lockset catch. From inside Tour-Pak, slide screws through front holes on right side of Tour-Pak. Properly oriented, flat side of lockset catch should be topside. See [Figure 2-153](#).
6. With open side of spacer facing Tour-Pak and rib at bottom, slide spacer over ends of screws.

7. Apply a small dab of Loctite Medium Strength Threadlocker 243 (blue) to threads of screws and start into threaded bosses on latch. Properly oriented, portion of latch not mated with spacer should be at the top.
8. Alternately tighten screws to 20-25 **in-lbs** (2.3-2.8 Nm).

CATCHES

Removal

1. Using a 3/16 inch drill bit, drill out two rivets from inside Tour-Pak lid.
2. Remove catch and backplate.

Installation

1. With the head of the **new** rivet on the outboard side of the Tour-Pak, slide rivet through holes in catch, Tour-Pak lid and backplate.
2. Install rivets. See HINGES, INSTALLATION, steps 2-4.

TETHER

Removal

CAUTION

Exercise caution to keep lid from opening beyond the normal 90° of travel or damage to painted surfaces can occur.

1. Remove T15 TORX screw from threaded boss on tether bracket. See [Figure 2-154](#).
2. Remove tether eyelet and wave spring from threaded boss.
3. Repeat steps 1-2 to remove opposite end of tether from second tether bracket.

Installation

1. With the concave side toward the tether bracket, install wave spring onto threaded boss.
2. Install tether eyelet onto threaded boss.
3. Apply a small dab of Loctite High Strength Threadlocker 262 (red) to threads of T15 TORX screw.
4. Install screw into threaded boss and tighten to 20-25 **in-lbs** (2.3-2.8 Nm). See [Figure 2-154](#).
5. Repeat steps 1-4 to fasten opposite end of tether to second tether bracket.

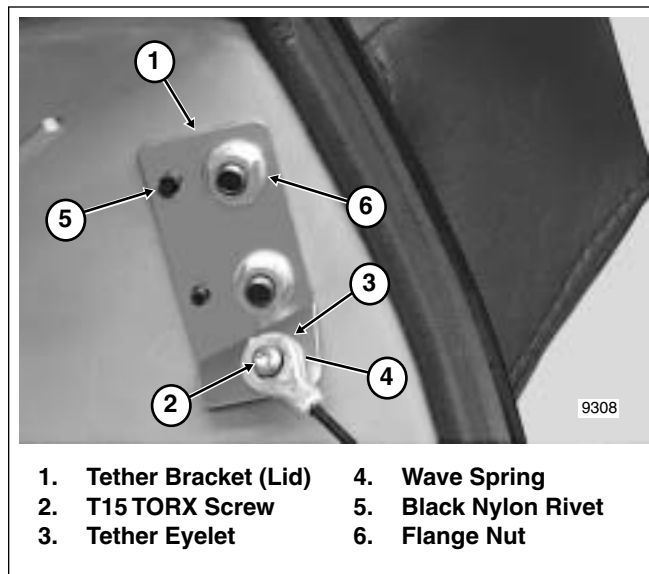


Figure 2-154. Tour-Pak Tether Bracket Assembly

TETHER BRACKETS

Removal

Tour-Pak

1. Remove tether. See TETHER, REMOVAL, steps 1-2.
2. Using a 3/16 inch drill bit, drill out four rivets from inside Tour-Pak.
3. Remove tether bracket and backplate.

Tour-Pak Lid

1. Remove tether. See TETHER, REMOVAL, steps 1-2.
2. From inside Tour-Pak lid, center a 3/32 inch punch on pin at center of black nylon rivet. Using a small hammer, gently tap pin out of rivet. At outside of Tour-Pak, pull rivet from holes in tether bracket, Tour-Pak lid and passenger backrest bracket. Repeat step to remove second nylon rivet. See [Figure 2-154](#).
3. Remove two flange nuts from studs of passenger backrest bracket and remove tether bracket.

Installation

Tour-Pak Lid

1. From inside Tour-Pak lid, install tether bracket on studs of passenger backrest bracket and start flange nuts. See [Figure 2-154](#).

2. At outside of Tour-Pak, insert black nylon rivet through holes in passenger backrest bracket, Tour-Pak lid and tether bracket. Insert pin into head of rivet until flush. Install second rivet in the same manner.
3. Alternately tighten flange nuts to 40-60 **in-lbs** (4.5-6.8 Nm).
4. Install tether. See TETHER, INSTALLATION, steps 1-4.

Tour-Pak

1. With the head of the **new** rivet on the outboard side of the Tour-Pak, slide rivet through holes in backplate, Tour-Pak and tether bracket (with the threaded boss topside).
2. Install rivets. See HINGES, INSTALLATION, steps 2-4.
3. Install tether. See TETHER, INSTALLATION, steps 1-4.

GENERAL

All domestic model Ultra Tour-Paks are equipped with side marker lights. Ultra models also have rear wrap-around lights, each of which contains a 2-filament lamp. One filament is a supplemental brake light and the other a supplemental tail lamp.

SIDE MARKER LIGHTS (FLHTCU)

REMOVAL

1. Open Tour-Pak. Open map pocket and remove acorn nuts (with flat washers). Remove map pocket and molded liner from Tour-Pak.
2. Disconnect side marker lights connector, 2-place Multilock.
3. Remove two T15 TORX screws and feed socket through hole in Tour-Pak to release side marker lights. See [Figure 2-155](#).

INSTALLATION

1. Feeding socket through hole in Tour-Pak, place side marker lights into position. See [Figure 2-155](#).
2. Align threaded bosses in side marker lights with holes in Tour-Pak. Install two T15 TORX screws and alternately tighten to 20-25 **in-lbs** (2.3-2.8 Nm).
3. Connect side marker lights connector, 2-place Multilock.
4. Install molded liner in Tour-Pak. Install map pocket and secure using acorn nuts (with flat washers). Close Tour-Pak.

TOUR-PAK LIGHTS HARNESS

REMOVAL

1. Remove Tour-Pak. See [Section 2.27 TOUR-PAK, FLHTCU, REMOVAL](#). Move Tour-Pak to bench area.
2. Open Tour-Pak. Holding hex head screw inside Tour-Pak (rear right corner), remove flange nut at bottom to release loading coil bracket. Remove hex head screw with external tooth lockwasher.
3. Depress external latch and remove bulb socket of both left and right side wrap-around lights. See [Figure 2-156](#).
4. Disconnect two side marker lights connectors, 2-place Multilocks. Release conduit from two adhesive clips at rear of Tour-Pak.



Figure 2-155. Side Marker Lights Assembly (FLHTCU)

5. Close Tour-Pak. Turn Tour-Pak over and remove five remaining flange nuts at bottom.
6. Place Tour-Pak topside up and open lid. Reach inside Tour-Pak and remove metal plate pulling threaded studs from holes at bottom.
7. Remove masking tape as necessary to release Tour-Pak lights harness.

INSTALLATION

1. Place Tour-Pak lights harness at bottom of Tour-Pak as shown in [Figure 2-156](#). Adjust harness so that Multilock connectors are outboard of the metal plate, when installed, and conduit is routed through gaps in ribbing. Use masking tape as necessary to fix position of harness and connectors.

CAUTION

If conduit is not routed through gaps in ribbing, and connectors are not outboard of the metal plate, tightening of the flange nuts can pinch wires or crack connectors.

2. Install metal plate at bottom of Tour-Pak so that threaded studs exit holes at bottom.
3. Connect two side marker lights connectors, 2-place Multilocks. Capture conduit in two adhesive clips at rear of Tour-Pak.
4. Install bulb socket of both left and right side wrap-around lights.
5. Align hole in loading coil bracket with holes in rear right corner of metal plate and Tour-Pak. Slide hex head screw (with external tooth lockwasher) through holes. At bottom of Tour-Pak, install flange nut.

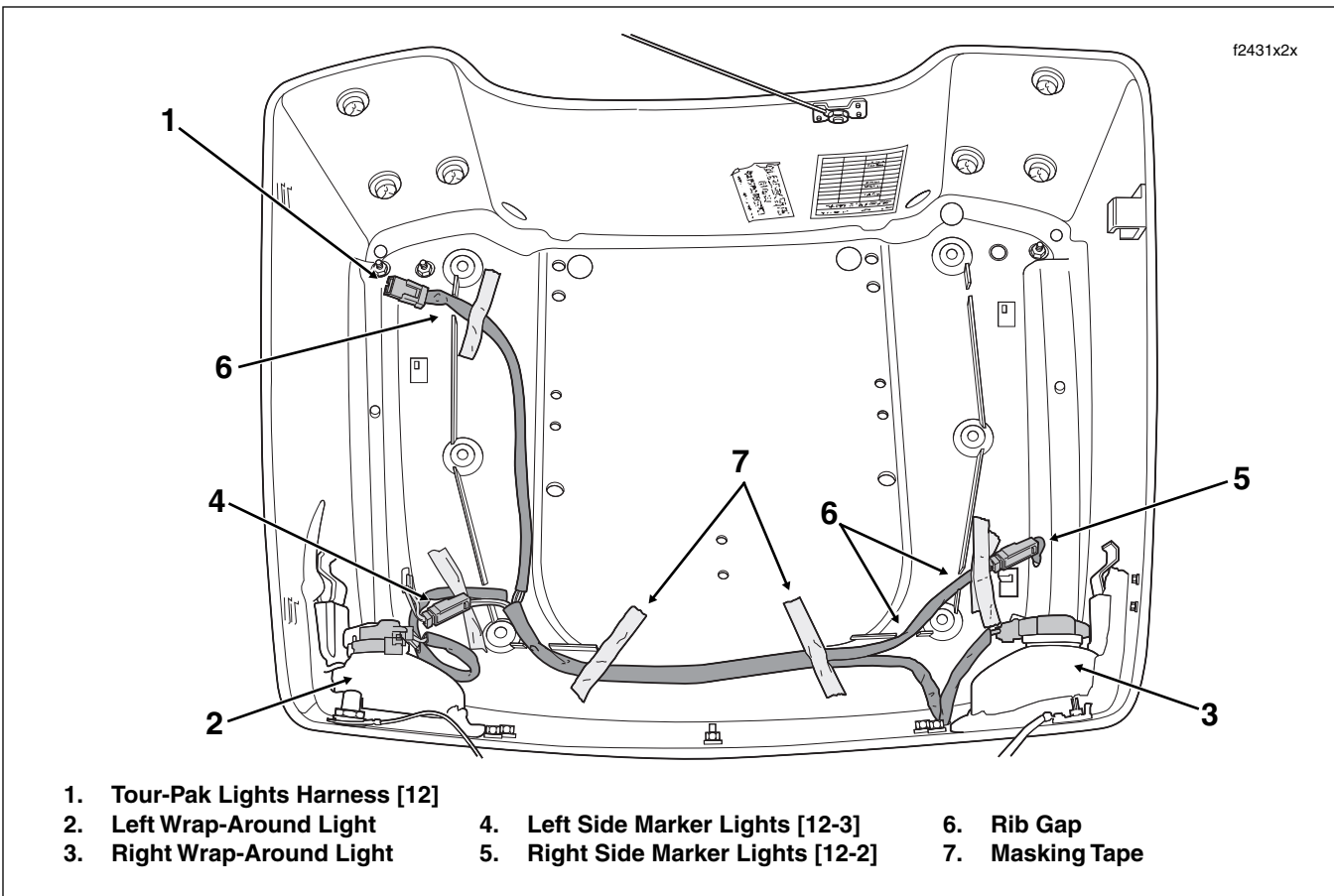


Figure 2-156. Tour-Pak Lights Harness (FLHTCU)

6. Close lid and turn Tour-Pak over. Install five remaining flange nuts on threaded studs of metal plate. Alternately tighten six flange nuts to 65-70 **in-lbs** (7.3-7.9 Nm).
7. Install Tour-Pak on motorcycle. See Section [2.27 TOUR-PAK, FLHTCU, INSTALLATION](#).

WRAP-AROUND LIGHTS (FLHTCU)

BULB REPLACEMENT

1. Open Tour-Pak. Open map pocket and remove acorn nuts (with flat washers). Remove map pocket and molded liner from Tour-Pak.
2. Depress external latch and remove bulb socket of left or right side wrap-around light. See [Figure 2-156](#).
3. Remove bulb from socket. Install **new** bulb.
4. Install bulb socket of left or right side wrap-around light.
5. Install molded liner in Tour-Pak. Install map pocket and secure using acorn nuts (with flat washers). Close Tour-Pak.

REMOVAL

1. Open Tour-Pak. Open map pocket and remove acorn nuts (with flat washers). Remove map pocket and molded liner from Tour-Pak.
2. Depress external latch and remove bulb socket of both left and right side wrap-around lights. See [Figure 2-156](#).
3. Disconnect CB antenna cable connector [50] on right side of Tour-Pak. Release cable from rear adhesive clip at bottom of Tour-Pak.
4. Remove Keps nut, ring terminal and flat washer from loading coil stud.
5. Holding hex head screw, remove flange nut at bottom of Tour-Pak to release loading coil bracket. Remove hex head screw (with external tooth lockwasher) and loading coil from motorcycle.
6. Using a 2.5 mm allen head wrench, remove loading coil stud. Remove CB antenna mast from lamp housing.
7. On left side of Tour-Pak, rotate knurled lock ring in a counter-clockwise direction to disconnect radio antenna cable connector [51]. Release cable from rear clip at bottom of Tour-Pak.

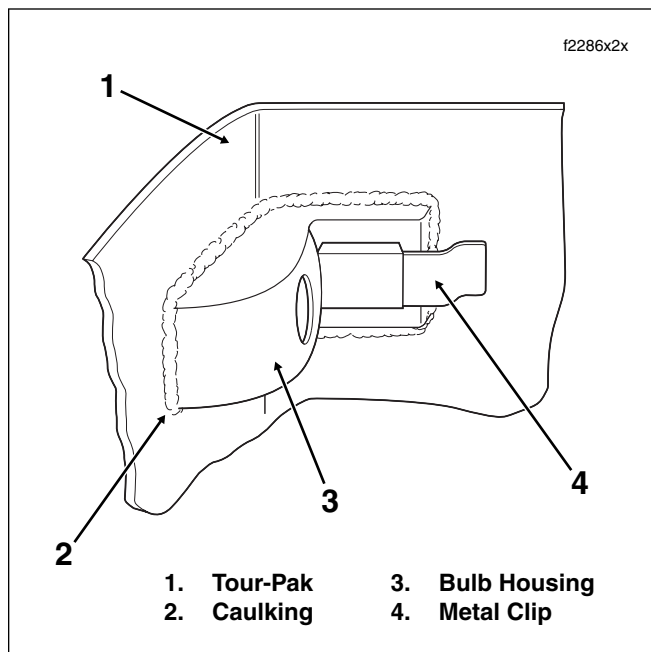


Figure 2-157. Wrap-Around Light Assembly

8. Remove jam nut from radio antenna cable connector at back of Tour-Pak. Remove internal tooth lockwasher, ring terminal and large flat washer from connector.
9. Install jam nut back onto connector. Thread a 1/2 in.-20 UNF nut onto connector until contact is made with jam nut. Turn jam nut to in a counter-clockwise direction to remove connector stud from radio antenna mast. Remove mast from lamp housing.
10. Remove caulking from around light bar. Remove four flange nuts and metal clips to free light bar from Tour-Pak. See [Figure 2-157](#).

INSTALLATION

1. Install light bar, metal clips and flange nuts to secure light bar to Tour-Pak. Inside Tour-Pak, use RTV silicone sealer (Part No. 99710-88) to seal perimeter of light bar. See [Figure 2-157](#).
2. Install radio antenna mast into lamp housing. Thread connector stud into mast. Turn 1/2 in.-20 UNF nut (installed on connector during removal) in a clockwise direction to tighten.
3. Remove 1/2 in.-20 UNF nut and jam nut. Install large flat washer, ring terminal and internal tooth lockwasher onto connector. Reinstall jam nut and tighten.
4. Rotate knurled lock ring in a clockwise direction to mate pin and socket halves of radio antenna cable connector [51]. Capture cable in rear clip at bottom of Tour-Pak.

5. On right side of Tour-Pak, install CB antenna mast into lamp housing. Install stud into mast and tighten with 2.5 mm allen head wrench.
6. Place loading coil into position aligning hole in bracket with hole in rear right corner of Tour-Pak. Slide hex head screw (with external tooth lockwasher) through holes. At bottom of Tour-Pak, install flange nut on hex head screw.
7. Install flat washer, ring terminal and Keps nut onto loading coil stud. Tighten Keps nut.
8. Connect CB antenna cable connector [50]. Capture antenna cable in rear adhesive clip at bottom of Tour-Pak.
9. Install bulb socket of both left and right side wrap-around lights.
10. Install molded liner in Tour-Pak. Install map pocket and secure using acorn nuts. Close Tour-Pak.
11. Check SWR and adjust if necessary. Follow the SWR Adjustment procedure in Section 6 of the 2006 ELECTRICAL DIAGNOSTIC MANUAL (Part No. 99497-06). Remove SWR meter, install antenna connector and tighten antenna connector stud.

PASSENGER BACKREST/RUBBER ISOLATORS (FLHTCU)

PASSENGER BACKREST

REMOVAL

1. Open Tour-Pak.
2. Remove two flange nuts and backplate to release center backrest from Tour-Pak lid. See [Figure 2-158](#).
3. Remove two flange nuts to release left side backrest.

CAUTION

Be sure that black nylon rivets are in place before removing flange nuts to release right side backrest or tether bracket will come free. Unexpected release of the tether bracket can allow the Tour-Pak lid to swing fully open, which may result in damage to hinges and painted surfaces. If black nylon rivets are missing, be sure to hold Tour-Pak lid as the second flange nut is removed.

4. Remove two flange nuts to release right side backrest.
5. Carefully pull studs on backrest brackets from holes in Tour-Pak lid.

INSTALLATION

1. Slide studs on center backrest cushion plate through holes in Tour-Pak lid. With the nylon side facing the Tour-Pak, install backplate on studs and start flange nuts.

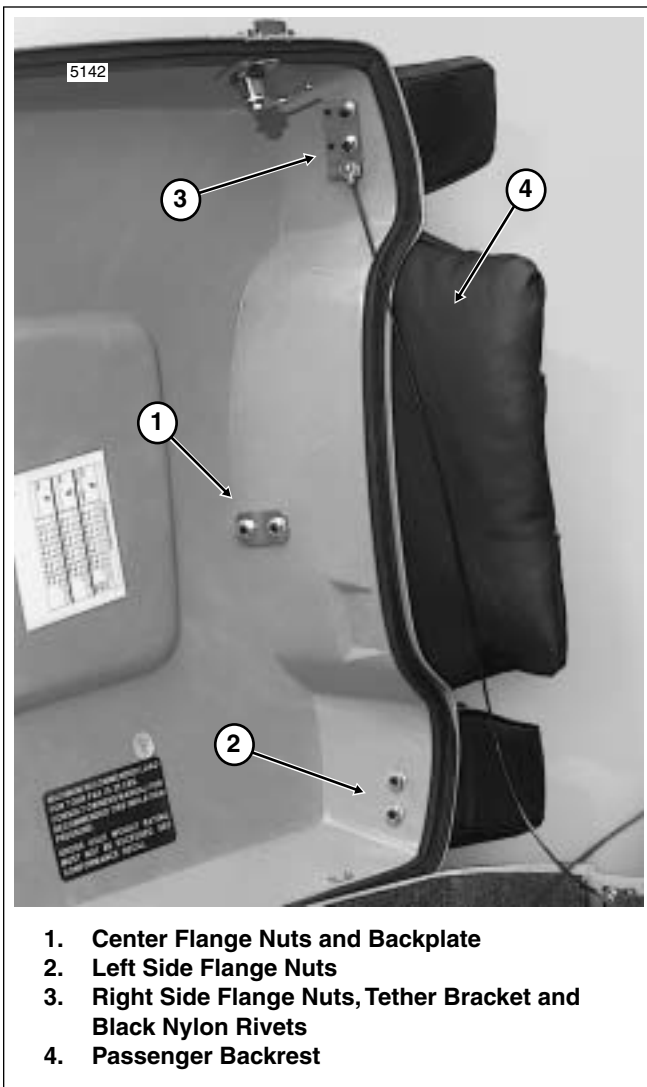


Figure 2-158. Tour-Pak Lid (Underside)

2. Slide studs on left side backrest "L" bracket through holes in Tour-Pak lid and start flange nuts.
3. Slide studs on right side backrest "L" bracket through holes in Tour-Pak lid and tether bracket and start flange nuts.
4. Alternately tighten six flange nuts to 40-60 in-lbs (4.5-6.8 Nm).
5. Close Tour-Pak.

RUBBER ISOLATORS

Removal

1. Remove passenger backrest. See [PASSENGER BACKREST, REMOVAL](#).

2. Proceed as follows:

Center isolator: Remove flange nut with lockwasher to release cushion plate from rubber isolator stud. Remove flange nut with lockwasher to release other stud from backrest support bracket. See [Figure 2-159](#).

Outside isolator: Remove flange nut with lockwasher to release "L" bracket from rubber isolator stud. Rotate rubber isolator to remove other stud from threaded hole in backrest. See [Figure 2-160](#).

Installation

1. Proceed as follows:

Center isolator: Insert stud of **new** rubber isolator into hole of backrest support bracket and install lockwasher and flange nut. Tighten flange nut until snug. Install cushion plate, lockwasher and flange nut on other stud. Orient cushion plate so that it is parallel to backrest and then finger tighten flange nut only. See [Figure 2-159](#).

CAUTION

Always hold rubber isolator on end to be installed. Do not grasp middle of rubber isolator or opposite end as excessive twisting can result in separation of molded parts or other damage.

Outside isolator: Install stud of **new** rubber isolator into threaded hole in backrest until snug. Install "L" bracket, lockwasher and flange nut on other stud. Finger tighten flange nut only. See [Figure 2-160](#).

2. Install passenger backrest. See [PASSENGER BACKREST, INSTALLATION](#).
3. Gently pull back cover material of backrest to expose underside and final tighten flange nuts only finger tightened in step 1.
4. Verify that each side of rubber isolator is not twisted or under any torsional load. Loosen flange nuts and adjust rubber isolator if necessary.

PASSENGER BACKREST FLAP (FLHTCU)

BACKREST FLAP

REMOVAL

1. Open Tour-Pak. Open map pocket and remove two acorn nuts (with flat washers). Remove map pocket and molded liner from Tour-Pak.
2. Holding acorn nuts inside Tour-Pak, remove two T25 TORX screws (with flat washers) at front.

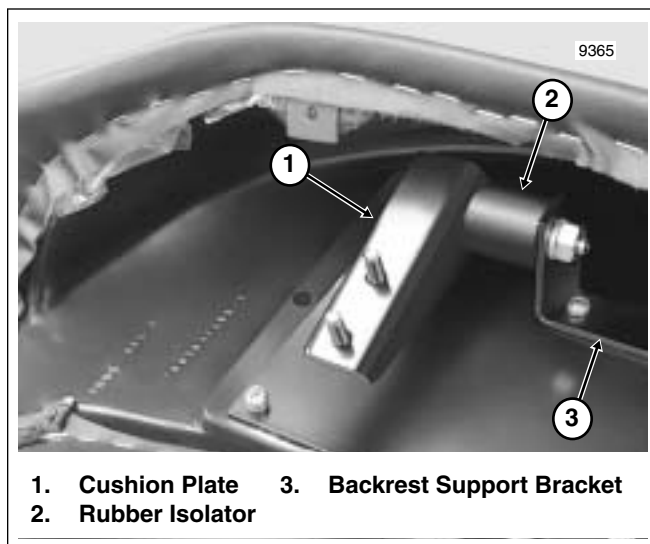


Figure 2-159. Center Isolator

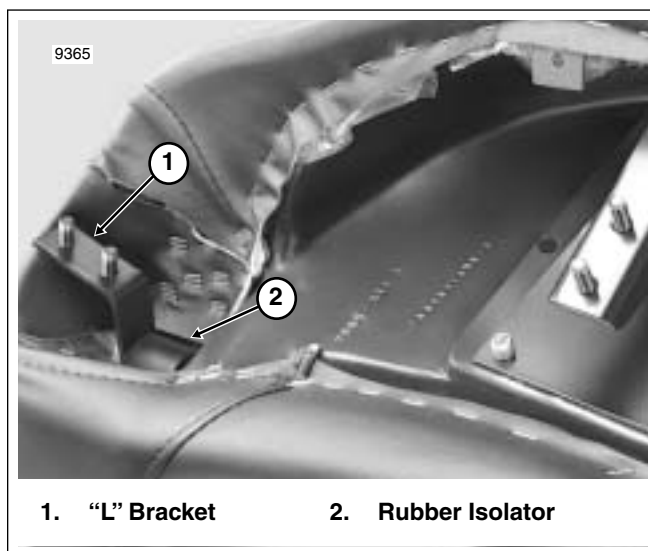


Figure 2-160. Outside Isolator

SPEAKER BOX (FLHTCU)

REMOVAL

1. Remove trim ring and gently pull on wire harness to draw rear speaker/passenger controls connector [41/42], 6-place Deutsch, out of speaker box. Depress external latch and use a rocking motion to separate pin and socket halves.
2. Open Tour-Pak. Open map pocket and remove acorn nuts (with flat washers). Remove map pocket and molded liner from Tour-Pak.
3. Remove three bolts with flat washers to free speaker box from Tour-Pak.

INSTALLATION

1. Install three bolts with flat washers to secure speaker box to Tour-Pak. Alternately tighten bolts to 25-35 **in-lbs** (2.8-4.0 Nm).
2. Install molded liner in Tour-Pak. Install map pocket and secure using acorn nuts (with flat washers). Close Tour-Pak.
3. Connect rear speaker/passenger controls connector [41/42], 6-place Deutsch. Feed connector back up into speaker box pressing trim ring into hole.

3. Remove backrest flap.

INSTALLATION

1. Align holes in backrest flap with those at front of Tour-Pak.
2. Slide two T25 TORX screws (with flat washers) through holes in backrest flap and Tour-Pak. Inside Tour-Pak, install acorn nuts.
3. Holding acorn nuts, alternately tighten screws to 21-24 **in-lbs** (2.4-2.7 Nm).
4. Install molded liner in Tour-Pak. Install map pocket and secure using acorn nuts (with flat washers). Close Tour-Pak.

LOWER FAIRING (FLHTCU)

REMOVAL

1. Unfasten snaps to release glove box door flap. Release anchor on draw string from hole in glove box door. Set door flap aside.
2. Reaching into glove box, remove two flange nuts from clip studs and remove fairing cap. If necessary, push ends of studs through holes in glove box tray and fairing lower to release fairing cap. Do not twist or rotate fairing cap or damage may result. See [Figure 2-161](#).
3. Hold locknut at bottom of fairing lower and turn inside T40 TORX screw to free assembly from engine guard clamp. Discard rubber washer.
4. Repeat steps 1-3 on other side of motorcycle.

INSTALLATION

1. Place fairing lower into position at front of engine guard.

2. Holding screw inside fairing lower, install **new** rubber washer, clamp and locknut to attach bottom of fairing lower to engine guard. Do not tighten locknut.
3. Verify that two clip studs are fully installed on fairing cap.
4. Position fairing cap at front of engine guard and against fairing lower so that clip studs engage holes in fairing lower and glove box tray. Reaching into glove box, start two flange nuts on clip studs.
5. Verify that fairing lower is square, and then alternately tighten flange nuts on clip studs to 35-40 **in-lbs** (4.0-4.5 Nm).
6. Hold locknut at bottom of fairing lower and turn inside T40 TORX screw to fasten assembly to engine guard clamp. Tighten screw to 90-100 **in-lbs** (10.2-11.3 Nm).
7. Repeat steps 1-6 on other side of motorcycle.

DISASSEMBLY

1. See [REMOVAL](#), steps 1-3.
2. Remove three T20 TORX screws to release glove box door and glove box tray from fairing lower.

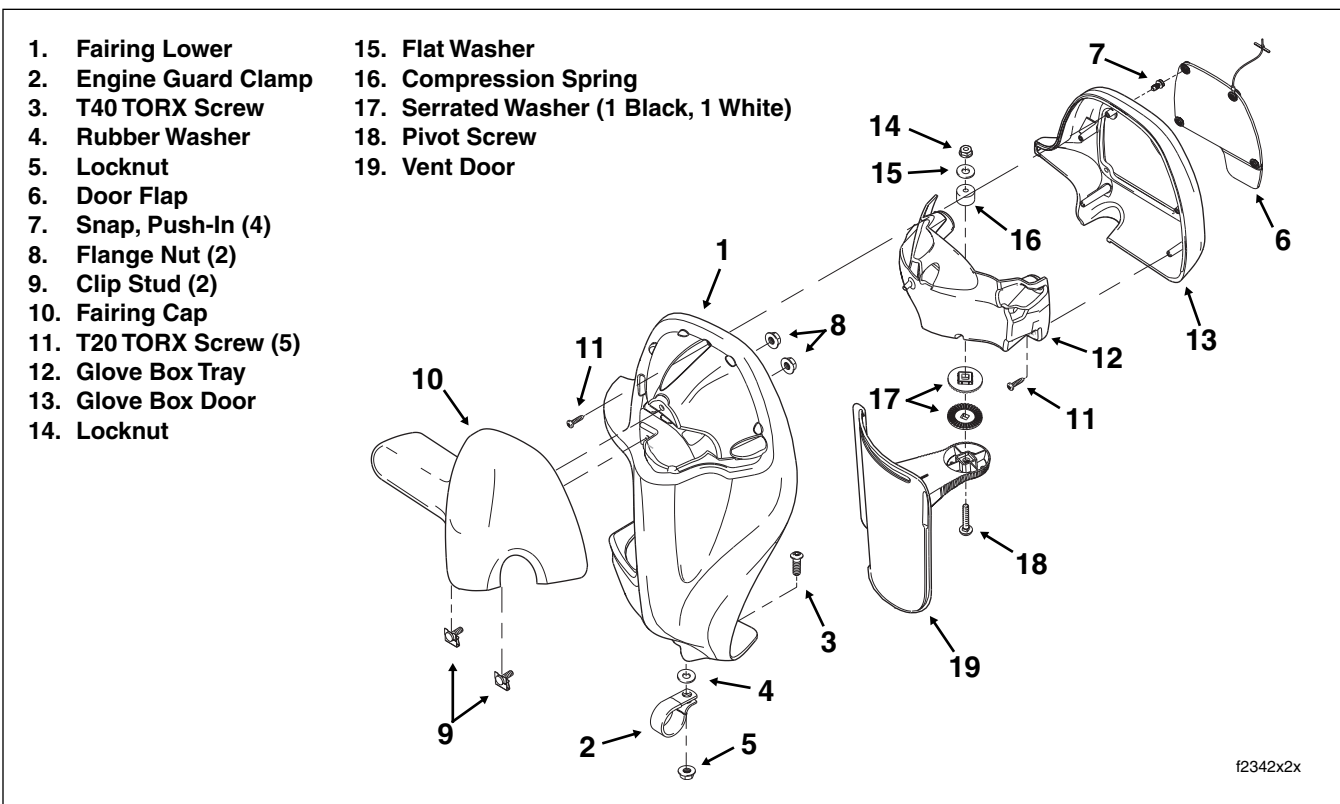


Figure 2-161. Lower Fairing Assembly

3. Remove two T20 TORX screws to release glove box door from glove box tray.
4. Remove locknut, flat washer, compression spring (rubber sleeve), glove box tray and two serrated washers from pivot screw in vent door arm.
5. Remove pivot screw from vent door arm.

ASSEMBLY

1. Slide threaded end of pivot screw up through hole in center of vent door arm.
2. With the teeth facing upward, slide serrated washer over end of pivot screw. Square shaped boss at bottom of serrated washer should engage square recess in vent door arm.
3. Slide second serrated washer over pivot screw so that teeth engage those on first serrated washer.

NOTE

Use one black and one white serrated washer. Using two washers of the same color may result in a chirping noise when the fairing lowers are adjusted.

4. Slide square hole on glove box tray over end of pivot screw until it engages square shaped boss at top of second serrated washer.
5. Install compression spring (rubber sleeve), flat washer and locknut on pivot screw. Verify that pin at front of glove box tray engages slot at top of vent door.
6. Tighten locknut only until flat washer is snug (does not rotate) and then tighten an additional 1-1/2 turns. Verify proper vent door operation.

NOTE

For best results, the 0.50 inch compression spring must be compressed to a height of 0.420 to 0.460 inches (10.7-11.7 mm).

7. Align bottom two holes in glove box tray with bosses on glove box door and start two T20 TORX screws. Alternately tighten screws to 20-25 **in-lbs** (2.3-2.8 Nm).
8. Fit glove box tray into top of fairing lower and align three holes in fairing lower with holes in glove box tray and bosses in glove box door. Install three T20 TORX screws. Alternately tighten screws to 20-25 **in-lbs** (2.3-2.8 Nm).
9. See [INSTALLATION](#), steps 1-6.
10. Install anchor on draw string of glove box door flap into hole in glove box door. Fasten snaps to install glove box door flap.

SERRATED WASHER REPLACEMENT

Removal

1. Unfasten snaps to release glove box door flap.

2. Reaching into glove box, remove locknut, flat washer and compression spring (rubber sleeve) from pivot screw in vent door arm. Remove pivot screw.
3. Carefully extract first serrated washer at top of vent door arm. Remove second washer at bottom of glove box tray. Discard washers.

Installation

1. Obtain two **new** serrated washers.

NOTE

Use one black and one white serrated washer. Using two washers of the same color may result in a chirping noise when the fairing lowers are adjusted.

2. With the teeth up, carefully install first serrated washer at top of vent door arm. Be sure that square shaped boss on washer engages square recess in arm.
3. With the teeth down, carefully install second serrated washer at bottom of glove box tray. Be sure that square shaped boss on washer engages square hole in tray.
4. Slide threaded end of pivot screw up through hole in center of vent door arm.
5. Reaching into glove box, install compression spring (rubber sleeve), flat washer and locknut on pivot screw.
6. Tighten locknut only until flat washer is snug (does not rotate) and then tighten an additional 1-1/2 turns. Verify proper vent door operation.

NOTE

For best results, the 0.50 inch compression spring must be compressed to a height of 0.420 to 0.460 inches (10.7-11.7 mm).

ENGINE GUARD

REMOVAL

1. Remove fairing lowers, if present. See [LOWER FAIRING \(FLHTCU\)](#), [REMOVAL](#), in this section. Remove fairing lower clamps from engine guard.
2. Remove T40 TORX screws (with flanged locknuts) to release ends of engine guard from frame weldments.
3. Remove hex socket screw (with flat washer) to release tab at top of engine guard from slot at base of steering head.

INSTALLATION

1. Insert tab at top of engine guard into slot at base of steering head. Start hex socket screw (with flat washer) to hang engine guard.

2. Position ends of engine guard outboard of frame weldments on each side of motorcycle. Install T40 TORX screws positioning flanged locknuts on inboard side of frame weldments.
3. Alternately tighten three screws to 15-20 ft-lbs (20.3-27.1 Nm).
4. Install fairing lowers, if present, but first install fairing lower clamps on each side of engine guard. See [LOWER FAIRING \(FLHTCU\)](#), [INSTALLATION](#), in this section.

OUTER FAIRING/WINDSHIELD

REMOVAL

1. Remove maxi-fuse. See Section 8.3 SYSTEM FUSES, MAXI-FUSE, REMOVAL.
2. Remove the outer fairing and windshield as follows:
 - a. Standing at the front of the motorcycle, loosen the three T27 TORX screws (with flat washers) just below the windshield. See Figure 2-162.
 - b. Raise and remove the windshield from between the inner and outer fairings.
 - c. Moving to the inner fairing side, remove the two screws outboard of the speakers on the left and right side.
 - d. Turn the handlebar to the right and remove screw by reaching in below the left side of the fairing cap. Turn the handlebar to the left and remove screw below right side of the fairing cap.

CAUTION

On FLHX models, be sure to hold the outer fairing in position as the last screw is removed. Without auxiliary lamps to hold it in position, the outer fairing will drop, possibly resulting in fairing or fender damage.

- e. Returning to the front of the motorcycle, remove the three screws below the windshield.
- f. Tilting the outer fairing forward, remove headlamp connector [38] at the back of the headlamp assembly.
- g. Lift the outer fairing off the motorcycle.

INSTALLATION

1. Install the outer fairing and windshield as follows:
 - a. Place the outer fairing on the motorcycle and install headlamp connector [38] at the back of the headlamp assembly.
 - b. Start the three T27 TORX screws (with flat washers) just below the windshield. See Figure 2-162.
 - c. Moving to the inner fairing side, start the two screws outboard of the speakers on the left and right side.

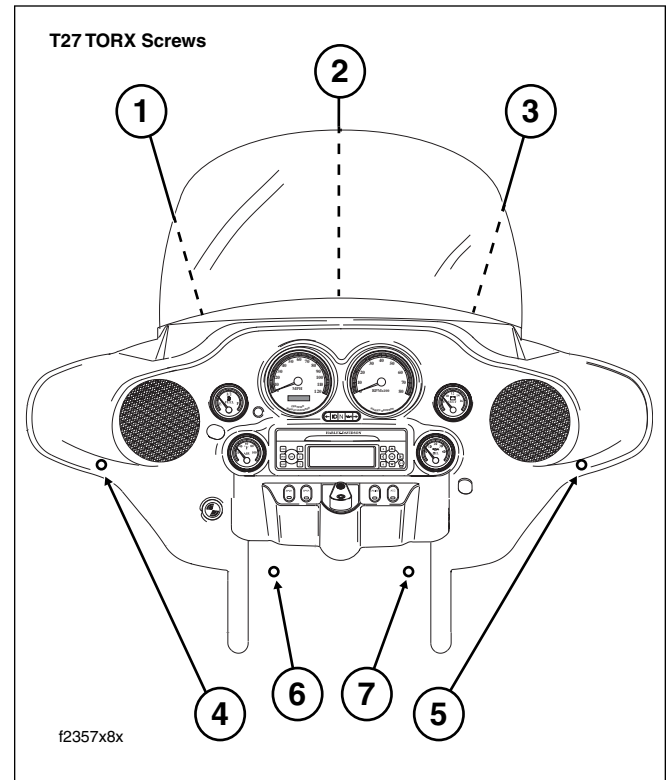


Figure 2-162. Outer Fairing TORX Screw Locations

- d. Turn the handlebar to the left and start screw by reaching in below the right side of the fairing cap. Turn the handlebar to the right and start screw below left side of the fairing cap.
- e. Alternately tighten the four screws on the inner fairing side to 20-30 **in-lbs** (2.3-3.4 Nm).
- f. Returning to the front of the motorcycle, place the windshield into position between the inner and outer fairings engaging the slotted holes in the windshield with the threaded bosses on the inner fairing.
- g. Alternately tighten the three screws below the windshield to 25-30 **in-lbs** (2.8-3.4 Nm).
2. Install maxi-fuse. See Section 8.3 SYSTEM FUSES, MAXI-FUSE, INSTALLATION.

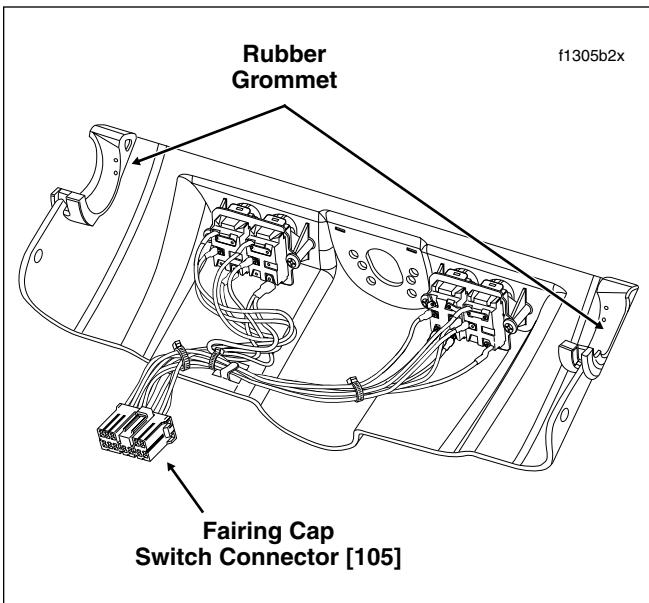


Figure 2-163. Fairing Cap Assembly (FLHX, FLHT/C/U)

FAIRING CAP

REMOVAL

1. Partially disassemble ignition switch. See Section 8.19 [IGNITION/LIGHT KEY SWITCH AND FORK LOCK, FLHX, FLHT/C/U, FLTR, REMOVAL](#), steps 1-5.
2. Remove two T27 TORX screws (with flat washers) to release fairing cap from left and right sides of inner fairing.
3. With the front forks turned to the left fork stop, reach behind right side of fairing cap and disconnect the fairing cap switch connector [105], 12-place Multilock (black).
4. Remove the fairing cap from the motorcycle. See [Figure 2-163](#).

INSTALLATION

1. Verify that the rubber grommets are installed on each side of the fairing cap. Barbs on cap fit into holes in grommets. See [Figure 2-163](#).
2. Connect the fairing cap switch connector [105], 12-place Multilock (black), on right side of the fairing cap.
3. With the front forks turned to the left fork stop, install fairing cap over ignition switch housing. Verify that grommets in fairing cap fully capture handlebar along with throttle and clutch cables.
4. Start two T27 TORX screws (with flat washers) to fasten fairing cap to left and right sides of inner fairing. Alternately tighten screws to 25-30 **in-lbs** (2.8-3.4 Nm).

5. Assemble ignition switch. See Section 8.19 [IGNITION/LIGHT KEY SWITCH AND FORK LOCK, FLHX, FLHT/C/U, FLTR, INSTALLATION](#), steps 6-15.

INNER FAIRING

REMOVAL

CAUTION

To avoid scratches or other damage, place protective material over front fender, fuel tank and fairing lowers, if present.

1. Remove the outer fairing. See [OUTER FAIRING/WINDSHIELD, REMOVAL](#), in this section.
2. Disconnect left and right front turn signal/auxiliary lamp connectors [31L/R], 4-place Multilocks, on T-studs at top of left and right fairing support braces (outboard side). See [Figure 2-164](#).
3. Remove four T40 TORX screws to release auxiliary lamp bracket from upper and lower fork brackets. Remove auxiliary lamp assembly from the motorcycle.

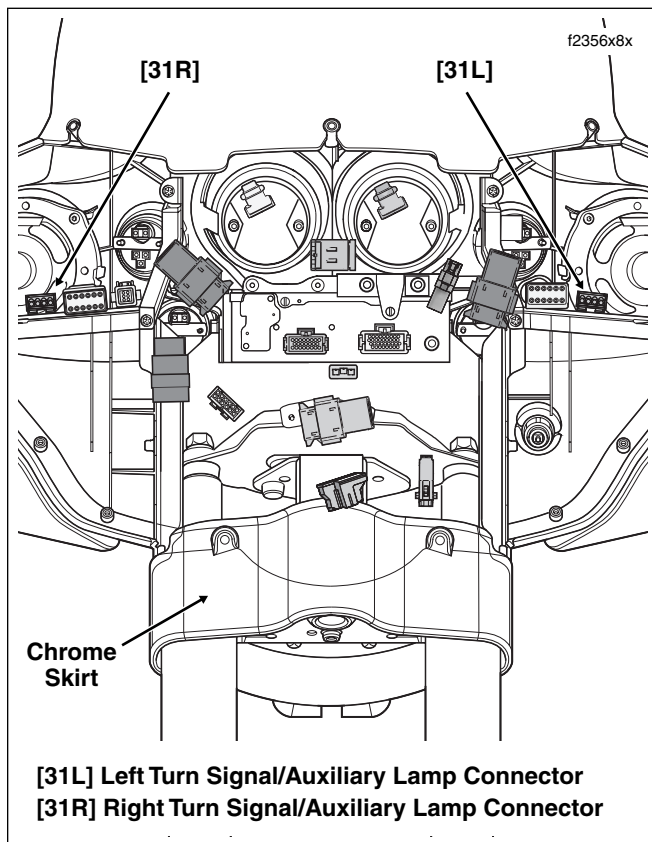


Figure 2-164. Inner Fairing (Front View)

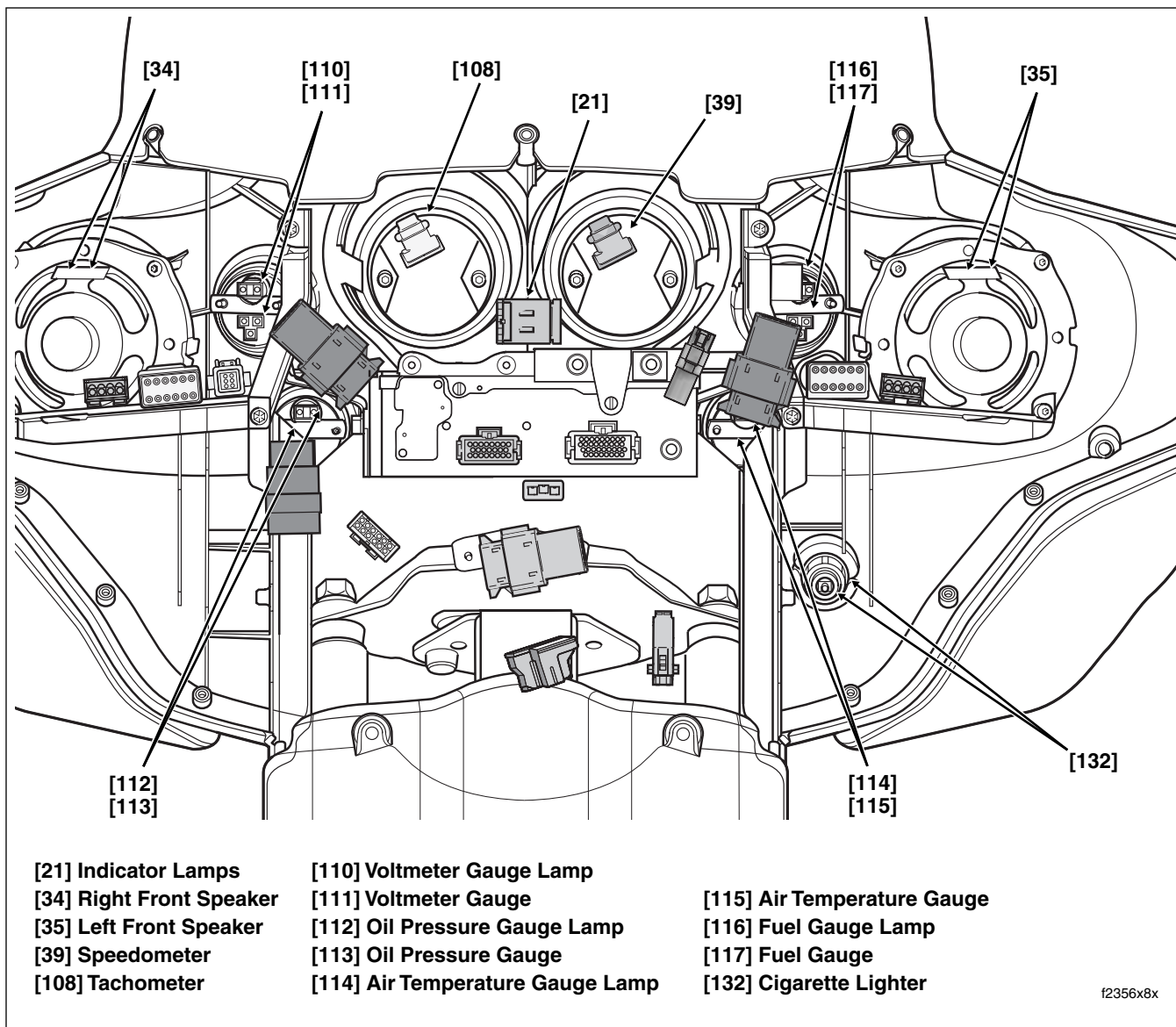


Figure 2-165. Inner Fairing Connectors (FLHX, FLHTC/U)

4. Remove the fairing cap. See [FAIRING CAP, REMOVAL](#), in this section.
5. Pull chrome skirt from inner fairing. See [Figure 2-164](#).
6. Slide rubber boot off clutch cable adjuster. Holding cable adjuster with 1/2 inch wrench, loosen jam nut using 9/16 inch wrench. Back jam nut away from cable adjuster. Move adjuster toward jam nut to introduce free play at hand lever.
7. Remove retaining ring from pivot pin groove at bottom of clutch lever bracket. Remove pivot pin.
8. Remove two T27 TORX screws (with flat washers) to release handlebar clamp from clutch lever bracket. Remove clutch hand lever from clutch lever bracket.
9. Remove anchor pin and clutch cable eyelet from clutch hand lever. See [Figure 2-114](#).
10. Feed clutch cable and cable eyelet through inner fairing grommet to front of motorcycle.

CAUTION

Do not remove the switch housing assembly without first placing a 5/32 inch (4.0 mm) cardboard insert between the brake lever and lever bracket. Removal without the insert may result in damage to the rubber boot and plunger of the front stoplight switch.

NOTE

Use the eyelet of a small cable strap if the cardboard insert is not available.

11. Place the cardboard insert between the brake lever and lever bracket.

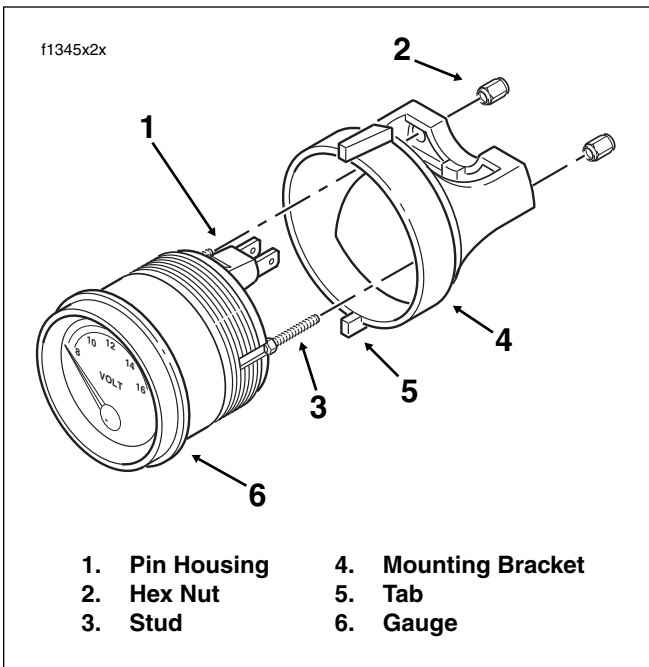


Figure 2-166. Voltmeter Gauge Assembly

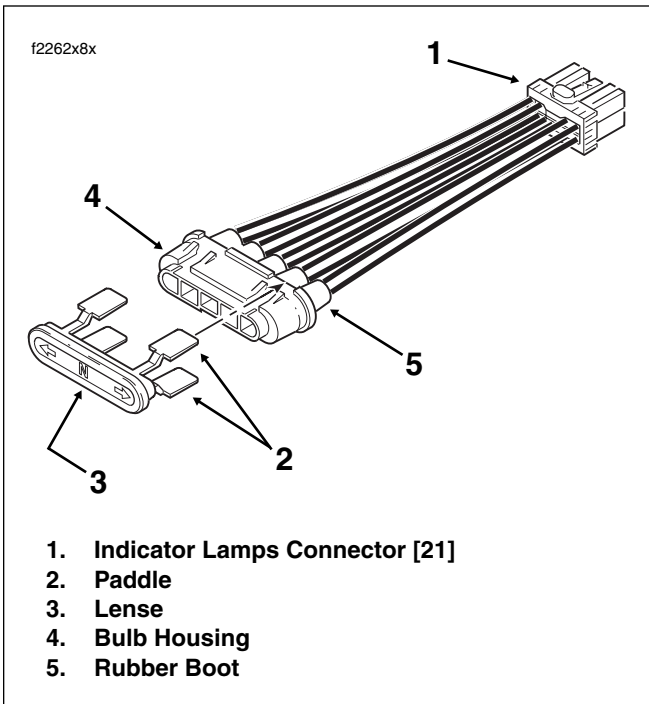


Figure 2-167. Indicator Lamp Assembly

12. Using a T25 TORX drive head, remove the upper and lower switch housing screws.
13. Using a T27 TORX drive head, loosen the upper screw securing the handlebar clamp to the master cylinder housing. Remove the lower clamp screw with flat washer.

14. Remove the brass ferrules from the notches on the inboard side of the throttle control grip. For best results, place flat tip screwdriver in slot on outboard side and rotate ferrule in notch. Remove the ferrules from the cable end fittings.

NOTE

On non cruise equipped models, remove the friction shoe from the end of the tension adjuster screw. The friction shoe is a loose fit and may fall out or become dislodged if the lower switch housing is turned upside down or shaken.

15. Remove the throttle control grip from the end of the handlebar.
16. Remove two-sided plastic clip inboard of cable adjuster boots to separate throttle and idle control cable housings. Pull the crimped inserts at the end of the cable housings from the lower handlebar switch housing. For best results, place a drop of light oil on the retaining rings and use a rocking motion while pulling.
17. Feed the throttle and idle control cables through the inner fairing grommet to front of motorcycle.
18. See [Figure 2-165](#). Pull socket terminals [132] from spade contacts on cigarette lighter. Remove cigarette lighter from socket. Holding socket to prevent rotation, unscrew outer shell. Remove socket from inner fairing.
19. Pull socket terminals [35] from left side speaker spade contacts. Remove three T25 TORX screws to release the speaker adapter from the inner fairing. Repeat step on right side of motorcycle.
20. Unthread rubber boot from odometer reset switch. Pull switch from hole in inner fairing.
21. Disconnect speedometer gauge connector [39] and tachometer gauge connector [108]. See [Figure 2-165](#). Leaving anchors on interconnect harness installed in outboard ears of brackets, remove allen head socket screws to remove brackets from gauges. Push gauges toward rear of motorcycle to remove from inner fairing.
22. Disconnect indicator lamps connector [21], 10-place Multilock. See [Figure 2-165](#). Release four paddles to free indicator bulb housing from lense assembly. See [Figure 2-167](#). Remove lense assembly from inner fairing.
23. Disconnect the voltmeter gauge lamp connector [110] and voltmeter gauge connector [111]. Disconnect the fuel gauge lamp connector [116] and fuel gauge connector [117].
24. Remove four socket head screws to free inner fairing from fairing bracket. See [Figure 2-168](#).
25. Spread bottom of inner fairing to free from dowels in lower fork bracket. Spread bottom of fairing bracket to release from same dowels.

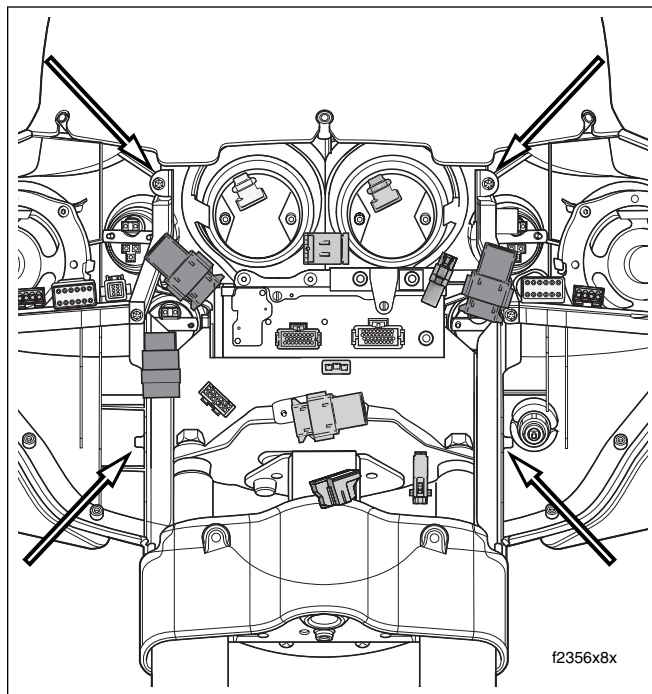


Figure 2-168. Remove Fairing Bracket Screws

26. Raise inner fairing and fairing bracket slightly to prevent reengagement with dowels. On Classic and Ultra models, disconnect the oil pressure gauge lamp connector [112], oil pressure gauge connector [113], air temperature gauge lamp connector [114], and air temperature gauge connector [115].
27. Raise inner fairing and fairing bracket together and then separate by pulling fairing bracket toward the front and inner fairing toward the rear.
28. When inner fairing becomes free of the radio, remove from motorcycle and move to bench area.
29. Install fairing bracket (with radio and interconnect harness) back onto motorcycle aligning holes with dowels in lower fork bracket. Loosely install T40 TORX screws.
30. At bench area, remove hex nuts from studs at back of voltmeter and fuel gauges. Remove mounting brackets from gauges and remove gauges from inner fairing. See [Figure 2-166](#). On Classic and Ultra models, repeat step to remove oil pressure and air temperature gauges.
31. Remove clutch and throttle cable grommets from the inner fairing.

INSTALLATION

1. At bench area, install clutch and throttle cable grommets in inner fairing.

2. Install voltmeter and fuel gauges in inner fairing. Slide mounting brackets over studs. Verify that tabs on top and bottom of brackets engage slots in inner fairing. Loosely install hex nuts on studs. Verify that gauge is properly aligned and tighten nuts to 10-20 **in-lbs** (1.1-2.3 Nm). See [Figure 2-166](#). On Classic and Ultra models, repeat step to install air temperature and oil pressure gauges.

CAUTION

To avoid scratches or other damage, place protective material over front fender, fuel tank and fairing lowers, if present.

3. Remove T40 TORX screws to free fairing bracket (with radio and interconnect harness) from lower fork bracket. Raise fairing bracket and then tilt forward at about a 45 degree angle.
4. Position inner fairing at rear of fairing bracket. Tilting inner fairing rearward at about a 45 degree angle, align upper and lower fork bracket thru holes with those in fairing bracket. Draw fairing bracket and inner fairing together fitting radio into slot in inner fairing.
5. Align upper thru holes in fairing bracket and inner fairing with threaded holes in upper fork bracket and start T40 TORX screws. Align lower thru holes in fairing bracket and inner fairing with dowels in lower fork bracket and start screws. Alternately tighten four T40 TORX screws until snug.
6. Install four socket head screws to attach inner fairing to fairing brackets. See [Figure 2-168](#).
7. Connect the voltmeter gauge lamp connector [110], voltmeter gauge connector [111], fuel gauge lamp connector [116], and fuel gauge connector [117]. On Classic and Ultra models, connect the oil pressure gauge lamp connector [112], oil pressure gauge connector [113], air temperature gauge lamp connector [114], and air temperature gauge connector [115].
8. Place indicator lamp lense assembly into inner fairing. Slot at bottom of lense engages tab in inner fairing to prevent improper orientation. Engage all four paddles on lense assembly with slots on indicator bulb housing. Connect indicator lamps connector [21], 10-place Multilock. See [Figure 2-167](#).
9. Install speedometer and tachometer gauges in inner fairing. Align holes in brackets with those at back of gauges and start two allen head socket screws. Rotate gauges until tabs at top and bottom of brackets engage slots in inner fairing. Verify that gauge is properly aligned and tighten allen head socket screws to 10-20 **in-lbs** (1.1-2.3 Nm). Connect speedometer gauge connector [39] and tachometer gauge connector [108].
10. Slide odometer reset switch through hole in inner fairing. Install rubber boot to secure.

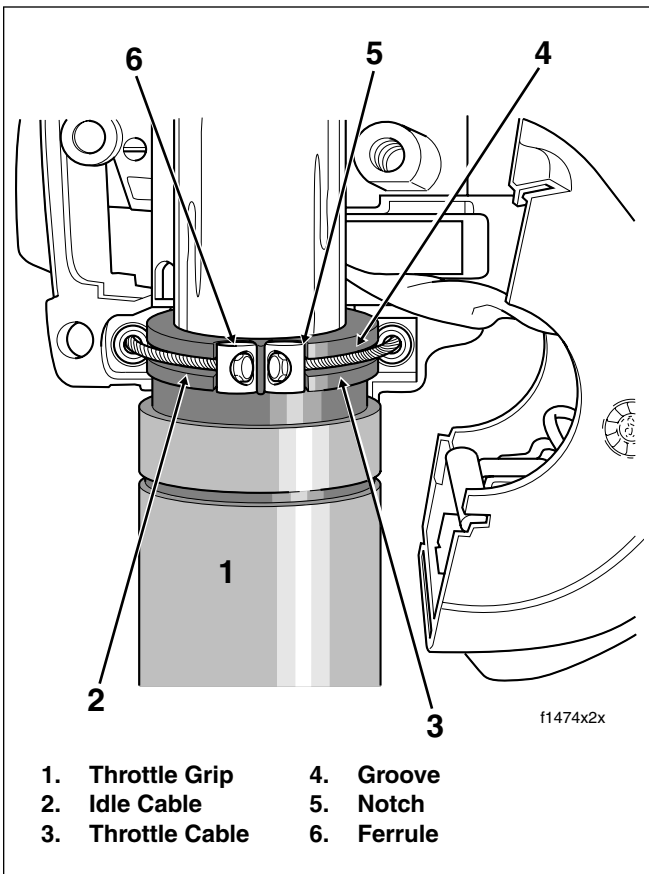


Figure 2-169. Install Throttle/Idle Cables

11. With the widest edge at the top, align holes in speaker adapter with those in inner fairing. Install two long screws to fasten top of speaker adapter. Capturing fairing support brace, install short screw in lower outboard hole (positioning flat washer between adapter and support brace). Using a T25 TORX drive head, tighten the lower screw to **22-28 in-lbs (2.5-3.2 Nm)**. Tighten the two upper screws to **35-50 in-lbs (4.0-5.7 Nm)**.

NOTE

The screw hole on the lower inboard side of the speaker adapter is not used.

12. Push the socket terminals onto the speaker spade contacts. Different size spade contacts prevent improper assembly.
13. Repeat steps 11-12 on opposite side of motorcycle.
14. From rear of inner fairing, slide socket of cigarette lighter through bore in fairing. Thread outer shell onto socket until tight. Install cigarette lighter in socket. Connect the orange/white wire terminal to the socket spade contact, the black wire terminal to the outer shell contact.
15. Feed the throttle and idle control cables through the right side inner fairing grommet.

NOTE

On non cruise equipped models, install the friction shoe with the concave side up so that the pin hole is over the point of the adjuster screw. The friction shoe is a loose fit and may fall out or become dislodged if the lower switch housing is turned upside down or shaken.

16. Push the throttle and idle control cables into the lower handlebar switch housing until they snap in place. Proceed as follows:

- a. Note the different diameter inserts crimped into the end of the throttle and idle control cable housings.
- b. Push the larger diameter insert (silver) on the throttle cable housing into the larger hole (front).
- c. Push the smaller diameter insert (gold) on the idle cable housing into the smaller hole (rear).

NOTE

To aid assembly, place a drop of light oil on the retaining rings of the crimped inserts. Always replace the retaining rings if damaged or distorted.

17. Slide the throttle control grip over the end of the right handlebar until it bottoms against the closed end. Rotate the grip so that the ferrule notches are at the top. To prevent binding, pull the grip back about 1/8 inch (3.2 mm).
18. Position the lower switch housing beneath the throttle control grip. Install the brass ferrule onto the throttle cable so that the end fitting seats in the ferrule recess. Be sure that ferrule is oriented so that when installed in notch of throttle control grip, slotted end is on the outboard side. Install ferrule in notch of throttle control grip.

Verify that cable is captured in groove molded into the grip. Repeat step to install idle control cable. See [Figure 2-169](#).

19. Position the upper switch housing over the handlebar and lower switch housing.
20. Verify that the wire harness conduit runs in the depression at the bottom of the handlebar. Also be sure that the upper switch housing harness will not be pinched against the handlebar when the switch housing screws are tightened.
21. Start the upper and lower switch housing screws, but do not tighten.

CAUTION

Do not remove the 5/32 inch (4.0 mm) cardboard insert (or cable strap eyelet) wedged between the brake lever and lever bracket. Removal will result in damage to the rubber boot and plunger of the Front Stoplight Switch during installation of the master cylinder assembly.

22. Position the brake lever/master cylinder assembly inboard of the switch housing assembly engaging the tab on the lower switch housing in the groove at the top of the brake lever bracket.

23. Align the holes in the handlebar clamp with those in the master cylinder housing and start the two screws (with flat washers). Position for rider comfort. Beginning with the top screw, tighten the screws to 60-80 **in-lbs** (6.8-9.0 Nm) using a T27 TORX drive head.
24. Using a T25 TORX drive head, tighten the lower and upper switch housing screws to 35-45 **in-lbs** (4-5 Nm).

NOTE

Always tighten the lower switch housing screw first so that any gap between the upper and lower housings is at the front of the switch.

25. Remove the cardboard insert between the brake lever and lever bracket.
26. Install two-sided plastic clip inboard of cable adjuster boots to hold throttle and idle control cable housings together.
27. Moving to other side of motorcycle, feed clutch cable through left side inner fairing grommet.
28. Insert clutch cable eyelet into groove of clutch hand lever aligning eyelet with hole without bushing. Insert anchor pin through lever and eyelet.
29. Insert lever into groove of clutch lever bracket fitting sleeve at end of cable housing into bore on inboard side of bracket.
30. Align hole in hand lever with hole in bracket and install pivot pin. Install retaining ring in pivot pin groove.
31. Install two T27 TORX screws (with flat washers) to secure handlebar clamp to clutch lever bracket. Starting with the top screw, tighten screws to 60-80 **in-lbs** (6.8-9.0 Nm).
32. Adjust the clutch. See [Section 6.3 CLUTCH, ADJUSTMENT](#).
33. Install the fairing cap. See [FAIRING CAP, INSTALLATION](#), in this section.
34. Remove two T40 TORX screws from lower fork bracket. Install chrome skirt aligning thru holes with screws just removed. Start T40 TORX screws back into lower fork bracket. See [Figure 2-164](#).
35. Loosen two T40 TORX screws from upper fork bracket.
36. Slide slots of auxiliary lamp bracket onto upper and lower fork bracket screws. Alternately tighten four T40 TORX screws to 15-20 ft-lbs (20-27 Nm) in a crosswise pattern.
37. Mate left and right front turn signal/auxiliary lamp connectors [31L/R], 4-place Multilocks. Install on T-studs at top of left and right fairing support braces (outboard side). Verify that conduit is routed inboard using relief in upper outboard corner of chrome skirt.
38. Install the outer fairing. See [OUTER FAIRING/WINDSHIELD, INSTALLATION](#), in this section.

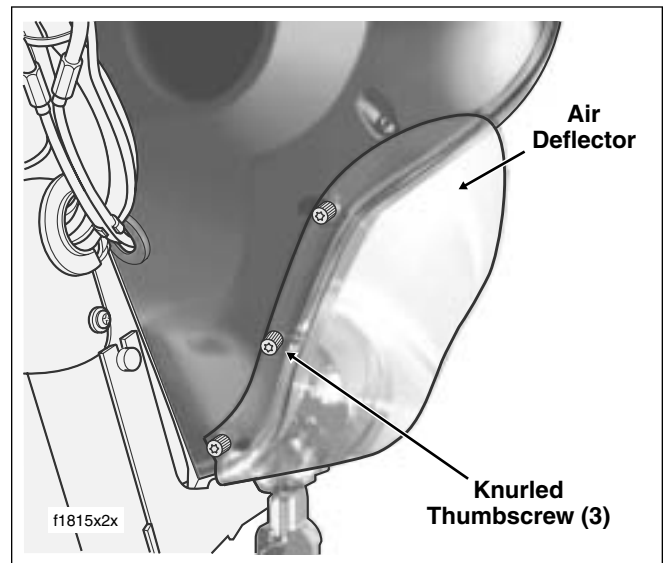


Figure 2-170. Remove/Install Air Deflectors

AIR DEFLECTORS (FLHTCU)

NOTE

By increasing the flow of air behind the fairing, removing the air deflectors evacuates heated air and provides some relief to the rider in warmer temperatures (70° F. or above).

REMOVAL

1. Remove three knurled thumbscrews to release air deflector at side of inner fairing. See [Figure 2-170](#).
2. Repeat step to remove air deflector on opposite side of motorcycle.

NOTE

If additional cooling is desired, either vent or remove the fairing lowers, if installed. See [Section 2.29 LOWER FAIRING/ENGINE GUARD, LOWER FAIRING \(FLHTCU\)](#).

INSTALLATION

NOTE

Reinstall air deflectors in colder weather.

1. Install three knurled thumbscrews to fasten air deflector at side of inner fairing.
2. Repeat step to install air deflector on opposite side of motorcycle. See [Figure 2-170](#).

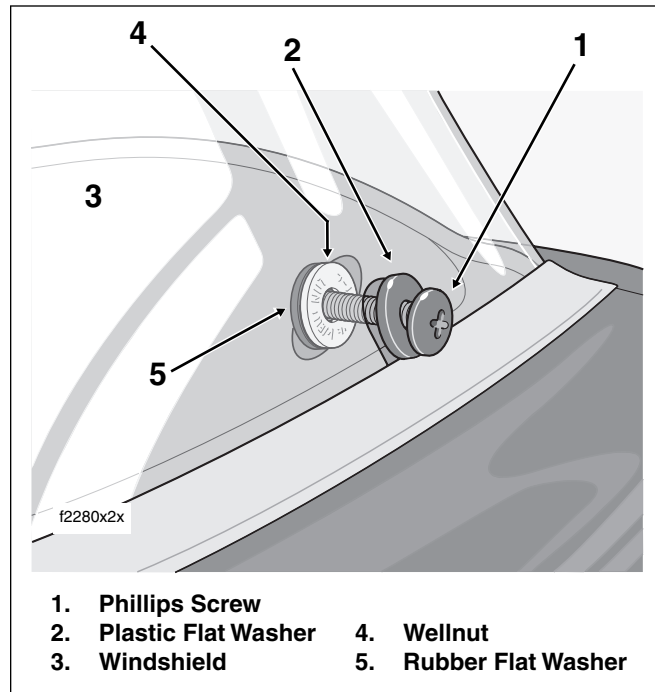
WINDSHIELD ONLY

REMOVAL

1. Standing at front of motorcycle, alternately loosen and then remove five Phillips screws (with plastic flat washers) at base of windshield.
2. Remove windshield from outer fairing.
3. Carefully remove wellnuts (with rubber flat washers) from holes in outer fairing. See [Figure 2-171](#). Exercise caution to avoid pushing wellnuts into fairing during removal. Inspect wellnuts and rubber flat washers for cuts, tears or signs of deterioration. Replace as necessary.

INSTALLATION

1. Preinstall hardware on windshield as follows:
 - a. Slide plastic flat washers onto Phillips screws.
 - b. Slide Phillips screws through slots in windshield.
 - c. Slide rubber flat washers onto wellnuts.
 - d. Start wellnuts onto Phillips screws.
2. Moving to front of motorcycle, push wellnuts into holes in outer fairing. See [Figure 2-172](#).



**Figure 2-172. Install Windshield
(Decal Removed for Illustration Purposes)**

3. Starting with center screw, alternately tighten the five Phillips screws to 6-13 **in-lbs** (0.7-1.5 Nm).

OUTER FAIRING

REMOVAL

NOTE

Windshield may be left in place during outer fairing removal.

1. Place protective material on top of front fender to protect paint from scratches or other damage.
2. Obtain ratchet and T25 TORX head bit. Standing on left side of motorcycle, remove screw at edge of fairing outboard of the left speaker. See [Figure 2-173](#). Remove screw outboard of the right speaker.
3. Loosen top left and right screws just outboard of the fuel and volt gauges, respectively.
4. Remove screw just below left side glove compartment. Remove screw below right side glove compartment.
5. On inboard side of right fairing support, remove rear acorn nut (with flat washer) from stud of front turn signal lamp bracket. Remove front acorn nut with flat washer.

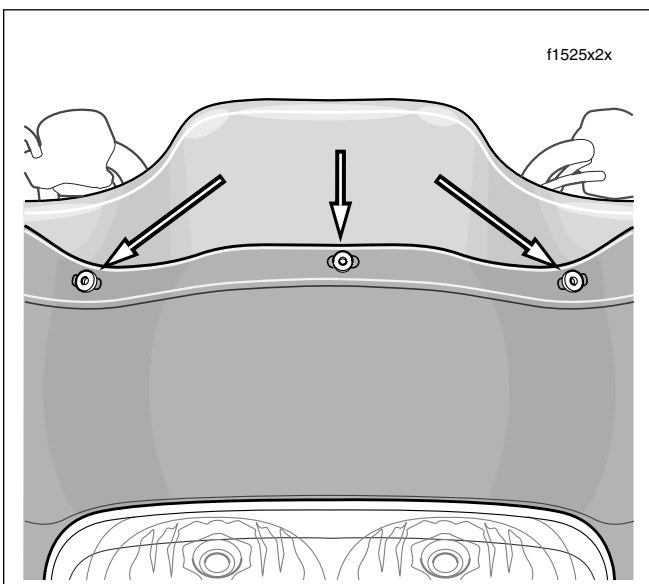


Figure 2-171. Remove Wellnuts From Outer Fairing

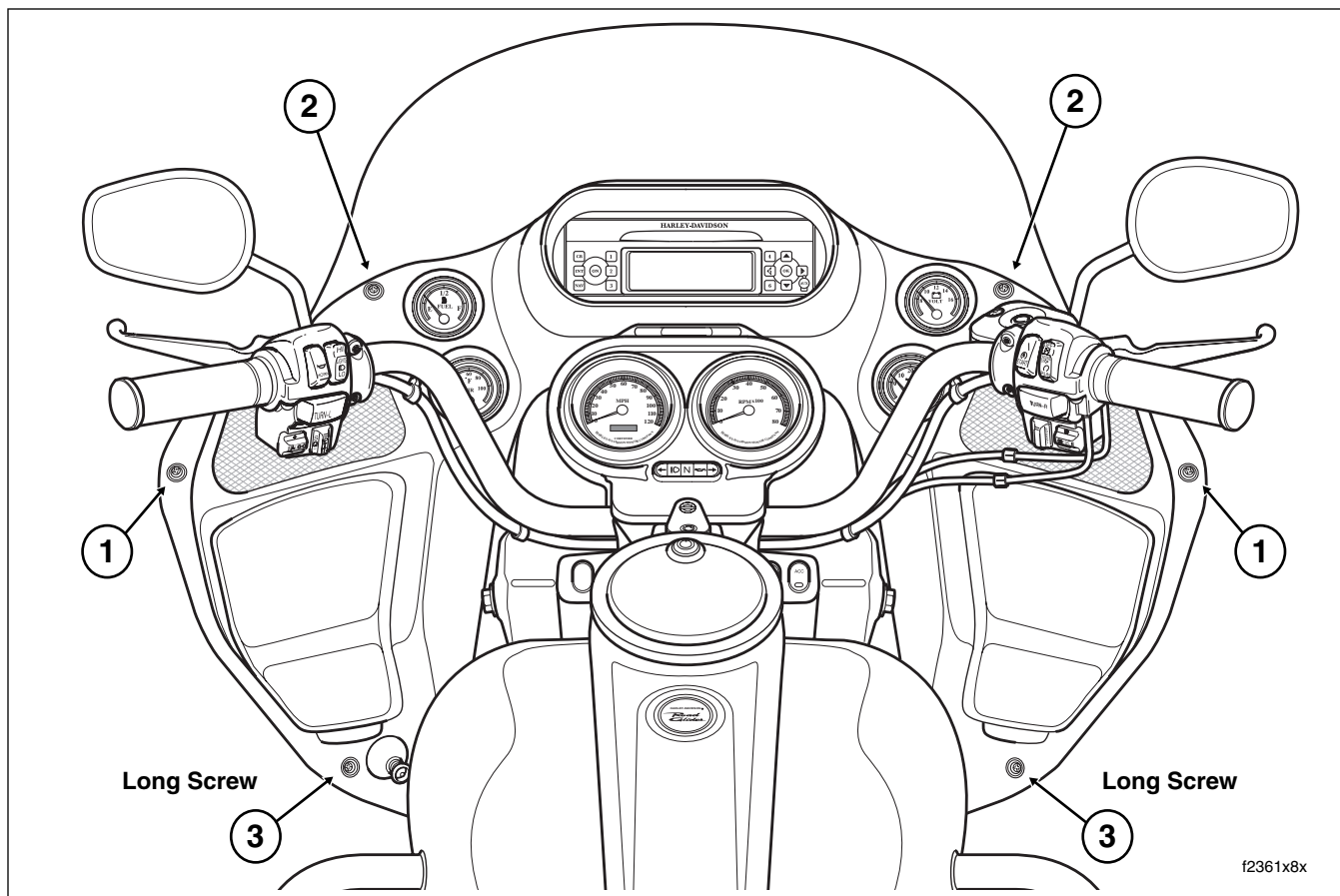


Figure 2-173. Remove/Install Six Outer Fairing Screws

Pull front turn signal lamp assembly from motorcycle and allow to hang at front of engine guard. Repeat step to remove front turn signal lamp assembly on left side. See [Figure 2-174](#).

6. Remove top left and right screws just outboard of the fuel and volt gauges, respectively (previously loosened).
7. Raise outer fairing slightly and then rest on protective fender pad.
8. Squeeze two external tabs to disconnect headlamp jumper harness connector.
9. To avoid possible wire damage, disconnect front turn signal lamp connectors [31L] and [31R], 3-place Multilocks, and move to bench area. See [Figure 2-175](#).

INSTALLATION

1. Place protective material on top of front fender to protect paint from scratches or other damage.
2. Connect front turn signal lamp connectors [31L] and [31R], 3-place Multilocks. Capture conduit in adhesive clips on inner fairing. Allow front turn signal lamp assemblies to hang at front of engine guard until outer fairing installation is complete.

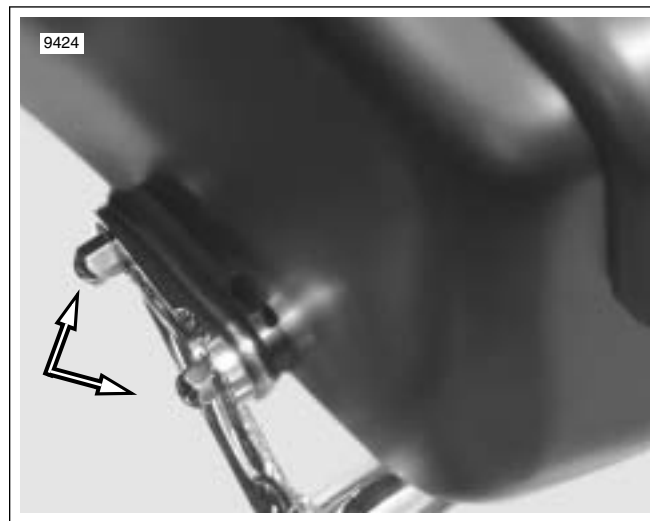


Figure 2-174. Remove Acorn Nuts to Release Turn Signal Lamp and Bracket

NOTE

The front turn signal lamp assemblies are not interchangeable. Note that the letters R(ight) or L(ef)t are stamped on the inboard side of the turn signal lamp bracket to help ensure proper assembly.



Figure 2-175. Front Turn Signal Lamp

3. To avoid chafing wires of interconnect harness, verify that trim strips are installed inboard of hooks on radio bracket.
4. Rest outer fairing on front fender pad and connect headlamp jumper harness connector.

CAUTION

If windshield is attached during outer fairing installation, exercise caution to avoid scratching or damaging inner fairing with windshield screws and wellnuts.

5. Place outer fairing against inner fairing. Two slots in outer fairing must engage hooks on radio bracket. Move harness conduit and wiring as necessary to ensure full engagement between outer and inner fairings.
6. Move to side of outer fairing to verify that alignment tabs are properly engaged. Alignment tabs on inner fairing must be positioned outboard of those on the outer fairing. Repeat step on opposite side of motorcycle.

NOTE

Although the tightening sequence described below begins on the left side of the motorcycle, if the left side of the outer fairing fits the inner fairing better than the right, then start the first screw on the right side. In other words, install the first screw on the side that does not have the best fit.

7. Obtain ratchet and T25 TORX head bit. Install screw at edge of fairing outboard of the left speaker. Install screw outboard of the right speaker. Mounting bosses on inner fairing are painted white for easier alignment of holes.
8. Install the top left and right screws just outboard of the fuel and volt gauges, respectively.
9. Moving to left side of motorcycle, install the first of two long screws just below the glove compartment. Install the second long screw below the right side glove compartment.

10. Alternately tighten four short fairing screws to 6-12 **in-lbs** (0.7-1.4 Nm). Alternately tighten two long fairing screws to 10-15 **in-lbs** (1.1-1.7 Nm). Use the torque pattern shown in Figure 2-173.
11. Slide studs on front turn signal lamp bracket through holes in fairings and fairing support. Loosely install acorn nuts with flat washers. Alternately tighten acorn nuts to 40-50 **in-lbs** (4.5-5.7 Nm).
12. Repeat step 11 to install front turn signal lamp assembly on opposite side of motorcycle.

BEZEL

REMOVAL

1. Remove T25 TORX screw on left and right side of instrument bezel. See Figure 2-176.
2. Use thumbs to push tab at rear of bezel from slot in front of ignition switch. Gently raise free side of bezel until tabs at front of instrument nacelle become disengaged from slot at front of bezel (concealed behind decorative adhesive strip).
3. Raising bezel slightly, remove anchor on ambient temperature sensor from hole in bottom inboard ear of speedometer bracket.

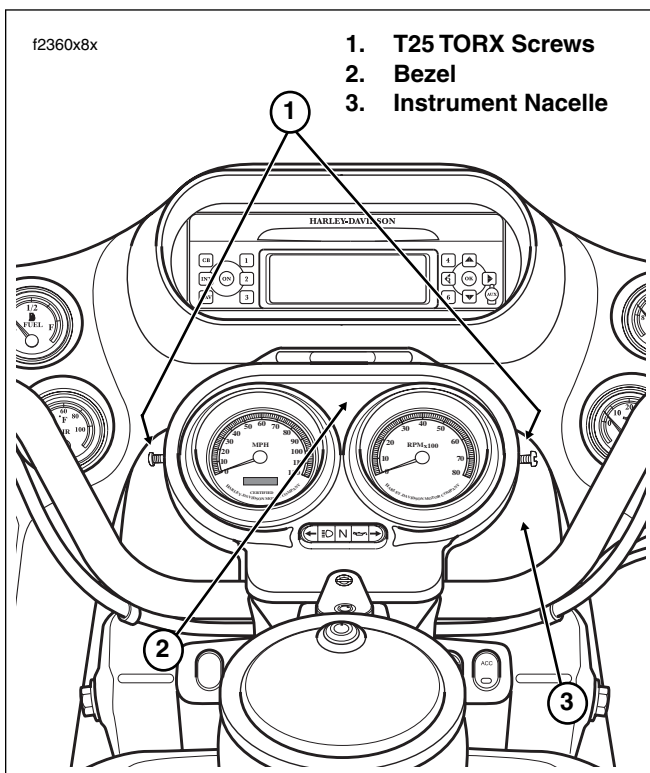


Figure 2-176. Remove Instrument Bezel Screws

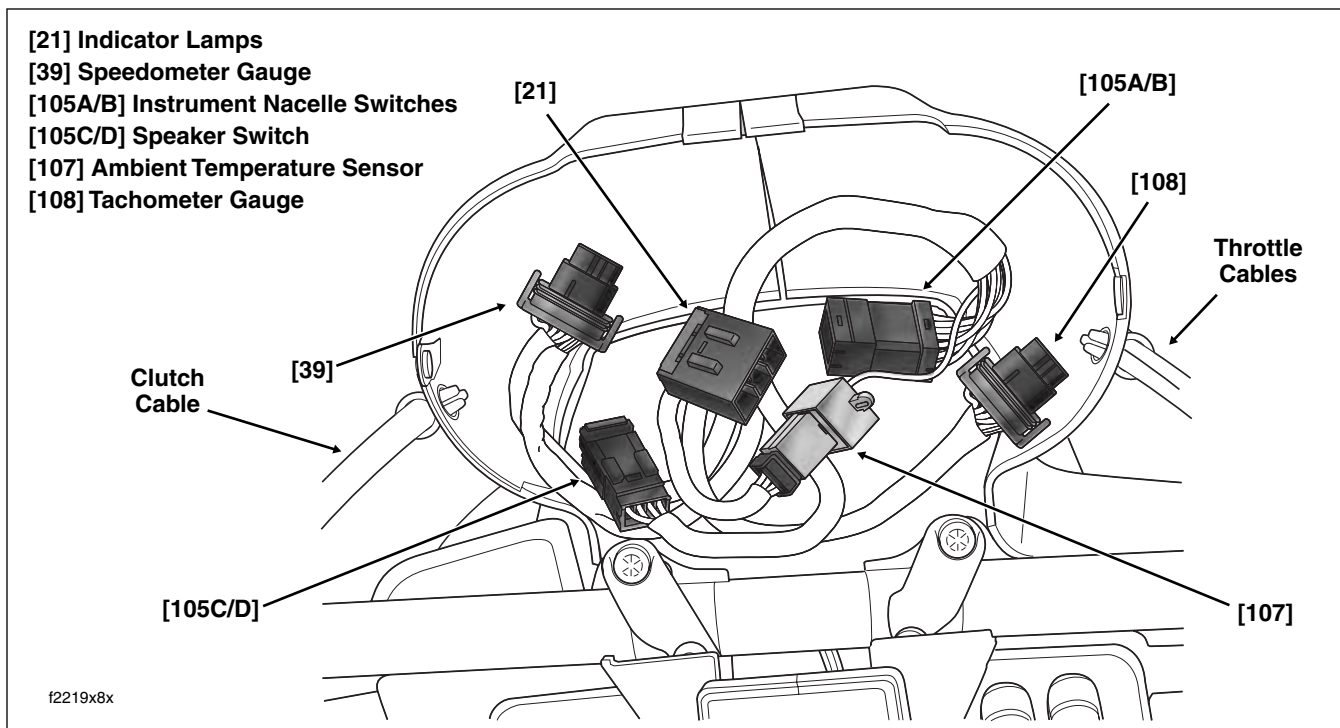


Figure 2-177. Instrument Nacelle (Bezel Removed)

4. See [Figure 2-177](#). Disconnect instruments and indicator lamps from interconnect harness as follows:
 - Speedometer connector [39], 12-place Packard.
 - Tachometer connector [108], 12-place Packard.
 - Indicator lamps connector [21], 10-place Multilock.
5. Remove bezel from motorcycle.

NOTE

*If tabs do not properly engage slot at front of bezel, then a loose fit will result. Remove decorative adhesive strip by gently prying up outer edges, and using a flat bladed screwdriver, carefully raise tabs so that they engage lip in slot. If damaged, install **new** decorative adhesive strip.*

5. Install T25 TORX screw on each side of bezel. Alternately tighten screws to 25-35 **in-lbs** (2.8-4.0 Nm). See [Figure 2-176](#).

INSTALLATION

1. See [Figure 2-177](#). Looking into the instrument nacelle, connect instruments and indicator lamps to interconnect harness as follows:
 - Speedometer connector [39], 12-place Packard.
 - Tachometer connector [108], 12-place Packard.
 - Indicator lamps connector [21], 10-place Multilock.
2. Install anchor on ambient temperature sensor into hole in bottom inboard ear of speedometer bracket.
3. Verify that left and right sides of instrument nacelle are properly mated. Pins on left side of nacelle must fully engage holes on right.
4. Insert tab at rear of bezel into slot of instrument nacelle (just in front of ignition switch). Holding left and right sides of nacelle together, place bezel over instrument nacelle flange. When properly mated, tabs at front of instrument nacelle engage lip in slot at front of bezel (behind decorative adhesive strip).

INSTRUMENT NACELLE

REMOVAL

1. Partially disassemble ignition switch. See [Section 8.19 IGNITION/LIGHT KEY SWITCH AND FORK LOCK, FLHX, FLHT/C/U, FLTR, REMOVAL](#), steps 1-5.
2. Remove bezel. See [BEZEL, REMOVAL](#), in this section.
3. See [Figure 2-177](#). Disconnect left side switch from instrument nacelle switch harness as follows:
 - Speaker Switch connector [105], 4-place Multilock.
4. Pull clutch cable clip from hole on left side of instrument nacelle.

- 5. Remove two T40 TORX bolts (with flat washers) to release left side of instrument nacelle from upper and lower fork brackets.
- 6. Unthread rubber boot from odometer reset switch, and while carefully removing left side instrument nacelle from motorcycle, pull odometer reset switch from hole. See [Figure 2-178](#).
- 7. See [Figure 2-179](#). Disconnect instrument nacelle switches from interconnect harness as follows:
 - Instrument nacelle switch connector [105], 12-place Multilock.
- 8. Pull throttle cable clip from hole on right side of instrument nacelle.

- 9. Remove two T40 TORX bolts (with flat washers) to release right side of instrument nacelle from upper and lower fork brackets.

INSTALLATION

- 1. Install right side of instrument nacelle on motorcycle.
- 2. See [Figure 2-179](#). Connect instrument nacelle switches to interconnect harness as follows:
 - Instrument nacelle switch connector [105], 12-place Multilock.
- 3. While carefully placing left side of instrument nacelle on motorcycle, slide odometer reset switch through hole and install rubber boot.

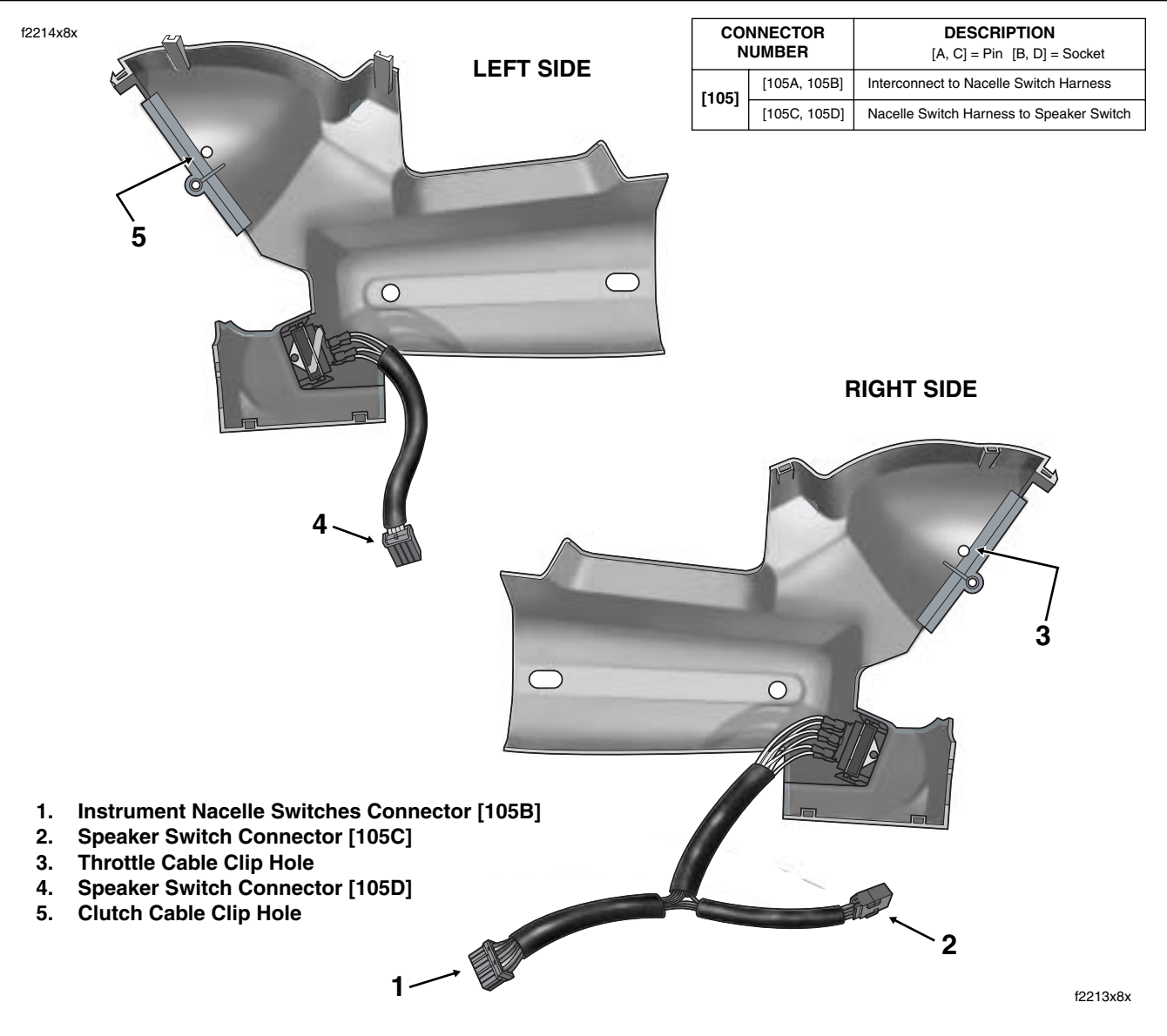


Figure 2-178. Instrument Nacelle Halves

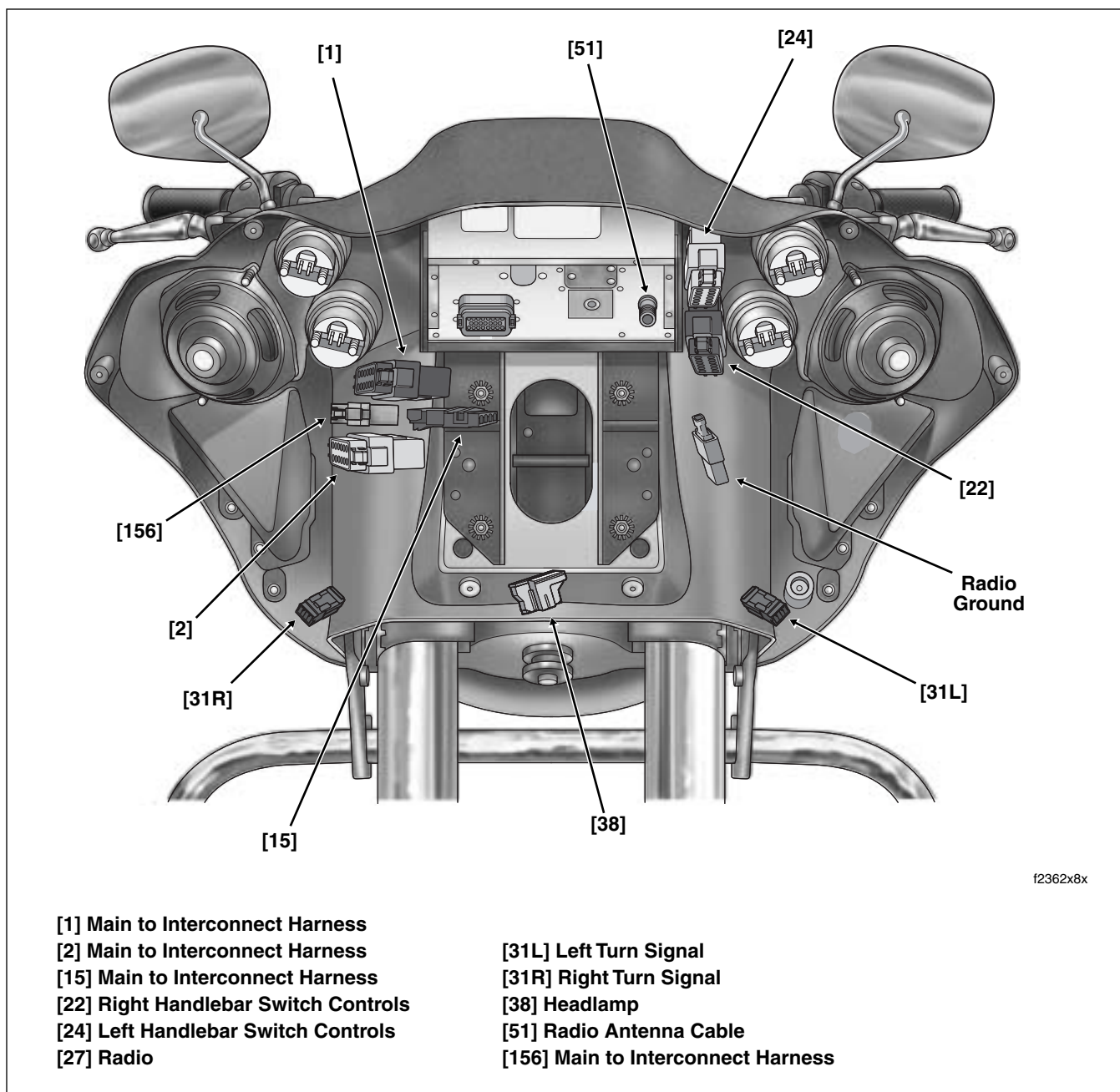


Figure 2-179. Inner Fairing Connectors (FLTR)

4. See [Figure 2-179](#). Connect left side switch to instrument nacelle switch harness as follows:
 - Speaker Switch connector [105], 4-place Multilock.
5. Verify that left and right sides of nacelle are properly mated. Four pins on left side of nacelle must fully engage holes on right.
6. Install two T40 TORX bolts (with flat washers) to fasten left side instrument nacelle to upper and lower fork brackets. Alternately tighten bolts to 15-20 ft-lbs (20-27 Nm).
7. Capture clutch cable in cable clip. Insert cable clip into hole in left side of instrument nacelle.
8. Install two T40 TORX bolts (with flat washers) to fasten right side instrument nacelle to upper and lower fork brackets. Tighten bolts to 15-20 ft-lbs (20-27 Nm).
9. Capture throttle cables in cable clip. Insert cable clip into hole in right side of instrument nacelle.
10. Install bezel. See [BEZEL, INSTALLATION](#), in this section.
11. Assemble ignition switch. See [Section 8.19 IGNITION/LIGHT KEY SWITCH AND FORK LOCK, FLHX, FLHT/C/U, FLTR, INSTALLATION](#), steps 6-15.

INNER FAIRING

REMOVAL

1. Place protective material on top of front fender to protect paint from scratches or other damage.
2. Remove the outer fairing. See [OUTER FAIRING, REMOVAL](#), in this section.
3. Carefully cut two cable straps to free wire bundles and conduit from convoluted tubing of interconnect harness and allow to hang naturally.
4. See [Figure 2-179](#). Disconnect main harness from interconnect harness as follows:
 - Main to interconnect harness connector [1], 12-place Deutsch (black); below radio (right side).
 - Main to interconnect harness connector [2], 12-place Deutsch (gray); below radio (right side).
 - Main to interconnect harness connector [15], 4-place Packard (black); below radio (right side).
 - Main to interconnect harness connector [156], 6-place Deutsch (gray); below radio (right side).
5. See [Figure 2-179](#). Disconnect radio antenna cable and radio ground wire. Proceed as follows:
 - Radio antenna cable connector [51]; back of radio (left side).
 - Radio ground; single spade and socket terminal; below radio (left side).
6. See [Figure 2-179](#). Disconnect handlebar switch controls from interconnect harness. Proceed as follows:
 - Left handlebar switch controls connector [24], 12-place Deutsch (gray); T-stud on left side of radio bracket.
 - Right handlebar switch controls connector [22], 12-place Deutsch (black); T-stud on left side of radio bracket.
7. Draw the main harness conduit, handlebar switch control conduit, radio ground wire and radio antenna cable as far forward as possible. Rest the connectors of the longer harnesses on the front fender.
8. Remove left side of instrument nacelle. See [INSTRUMENT NACELLE, REMOVAL](#), in this section, steps 1-6.
9. See [Figure 2-177](#). Disconnect instrument nacelle switches and ambient temperature sensor from interconnect harness as follows:
 - Instrument nacelle switch connector [105], 12-place Multilock.
 - Ambient temperature sensor connector [107], 3-place Multilock.

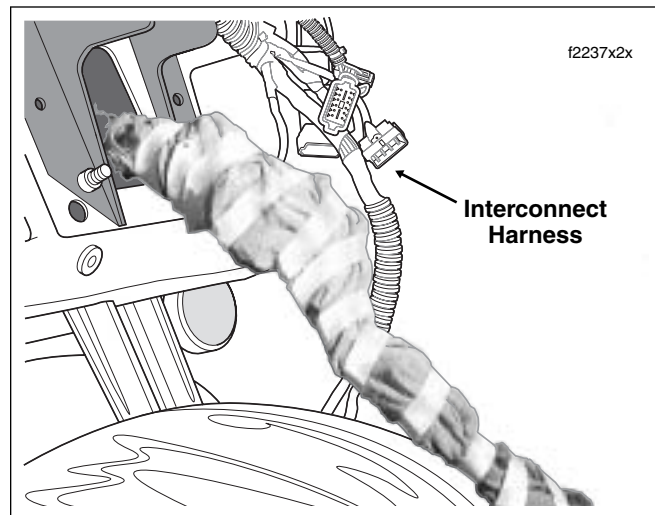


Figure 2-180. Wrap Main Harness in Shop Towels

10. See [Figure 2-177](#). Draw branches of interconnect harness (terminating in odometer reset switch and speedometer, tachometer, indicator lamps, instrument nacelle switch and ambient temperature sensor connectors) from instrument nacelle through tunnel of fairing bracket to front of inner fairing.
11. Disconnect ignition switch connector [33], 3-place Packard, at front of ignition switch housing. Proceed as follows:
 - a. Obtain the IGNITION SWITCH CONNECTOR REMOVER (HD-45961).
 - b. Gently insert end of tool into slot in ignition switch housing until it stops.
 - c. Grasping main harness conduit and tool, pull both at the same time to release socket housing from ignition switch housing.
12. Draw branch of main harness terminating in ignition switch connector from instrument nacelle through tunnel of fairing bracket to front of inner fairing.
13. Separate any branches of the interconnect harness that may be intermingled with the main harness conduit. Allow the interconnect harness to hang along the left side of the front fender.
14. Capturing all connectors, tightly wrap clean shop towels around the main harness conduit, handlebar switch control conduit, radio ground wire and radio antenna cable, and secure with masking tape. See [Figure 2-180](#).
15. Remove four locknuts to release radio bracket and inner fairing from studs of fairing bracket. See [Figure 2-181](#).
16. Lift inner fairing (with attached radio bracket and interconnect harness) from fairing bracket studs and move to bench area.

NOTE

To remove the fairing bracket, proceed with steps 17-22.

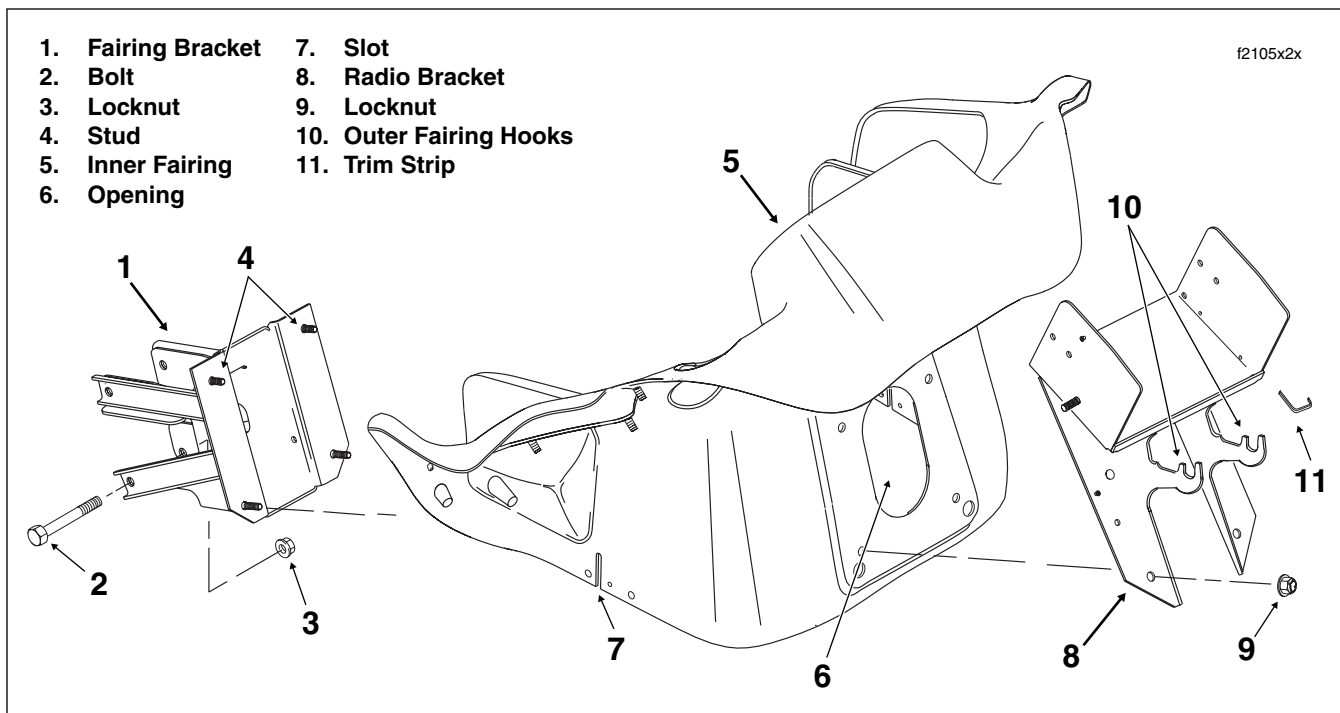


Figure 2-181. Inner Fairing Assembly

17. Remove right side instrument nacelle. See [INSTRUMENT NACELLE, REMOVAL](#), in this section, steps 8-9.
18. Remove shop towels and masking tape from around the harness bundle. Separate main harness conduit, handlebar switch control conduit, radio ground wire and radio antenna cable.
19. Remove screw to release main harness ground ring terminal and brake line P-clamp from front of upper fork bracket.
20. Pull main harness and both radio ground and harness ground ring terminals through opening on right side of fairing bracket allowing conduit and connectors to hang over top of engine guard.
21. Pull handlebar switch control conduit out through opening at top of fairing bracket.
22. Remove locknuts and bolts to release fairing bracket from holes at rear of steering head.
2. Route handlebar switch control conduit through opening at top of fairing bracket. See [Figure 2-182](#).
3. Route main harness and both radio ground and harness ground ring terminals through opening on right side of fairing bracket. See [Figure 2-182](#).
4. Install screw to fasten harness ground ring terminal and brake line P-clamp to front of upper fork bracket.
5. Draw wire harnesses and conduit out tunnel of fairing bracket and pull as far forward as possible. Tightly wrap clean shop towels around radio ground, main harness and handlebar switch control conduit and connectors and secure with masking tape. See [Figure 2-180](#).
6. Install right side instrument nacelle. See [INSTRUMENT NACELLE, INSTALLATION](#), in this section, steps 8-9.
7. Place protective material on top of front fender to protect paint from scratches or other damage. Rest inner fairing (with attached radio bracket and interconnect harness) on front fender.

INSTALLATION

NOTE

To install the fairing bracket, begin at step 1. If only the inner fairing was removed, start at step 7.

1. Align holes in fairing bracket with those at rear of steering head. Standing on right side, insert bolts until they exit fairing bracket on left side of motorcycle. Install locknuts and tighten to 20-30 ft-lbs (27.1-40.7 Nm).
8. Place inner fairing over four fairing bracket studs while feeding end of harness bundle through opening beneath radio. See [Figure 2-181](#). Verify that sides of inner fairing are positioned outboard of both fairing supports (on engine guards).
9. Install four locknuts to secure radio bracket and inner fairing to fairing bracket studs. Tighten locknuts to 96-144 **in-lbs** (10.9-16.3 Nm).

10. Draw the harness bundle as far forward as possible, resting the end of the bundle on the front fender. See [Figure 2-180](#).
11. Find branch of interconnect harness terminating in odometer reset switch and speedometer, tachometer, indicator lamps, instrument nacelle switch and ambient temperature sensor connectors. Feed connectors and conduit from front of inner fairing through tunnel of fairing bracket and then out through opening at top of fairing bracket to instrument nacelle.
12. See [Figure 2-177](#). Connect instrument nacelle switches and ambient temperature sensor to interconnect harness as follows:
 - Instrument nacelle switch connector [105], 12-place Multilock.
 - Ambient temperature sensor connector [107], 3-place Multilock.
13. Returning to front of inner fairing, remove shop towels and masking tape from around the harness bundle. Separate radio ground, main harness and handlebar switch control conduit.
14. Find branch of main harness terminating in ignition switch connector. Feed connector and conduit from front

of inner fairing through tunnel of fairing bracket and then out through opening at top of fairing bracket to instrument nacelle.

15. Connect main harness to ignition switch. Proceed as follows:
 - Ignition switch connector [33], 3-place Packard; front of ignition switch housing.
16. See [Figure 2-179](#). Connect handlebar switch controls to interconnect harness. Proceed as follows:
 - Left handlebar switch controls connector [24], 12-place Deutsch (gray); T-stud on left side of radio bracket.
 - Right handlebar switch controls connector [22], 12-place Deutsch (black); T-stud on left side of radio bracket.
17. See [Figure 2-179](#). Connect main harness to interconnect harness as follows:
 - Main to interconnect harness connector [1], 12-place Deutsch (black); below radio (right side).
 - Main to interconnect harness connector [2], 12-place Deutsch (gray); below radio (right side).
 - Main to interconnect harness connector [15], 4-place Packard (black); below radio (right side).
 - Main to interconnect harness connector [156], 6-place Deutsch (gray); below radio (right side).
18. See [Figure 2-179](#). Connect radio antenna cable and radio ground wire. Proceed as follows:
 - Radio antenna cable connector [51]; back of radio (left side).
 - Radio ground; single spade and socket terminal; below radio (left side).
19. Orient connectors as shown in [Figure 2-179](#). Install two **new** cable straps outboard of radio bracket hooks to secure wire bundles and conduit to convoluted tubing of interconnect harness. Cut any excess cable strap material.

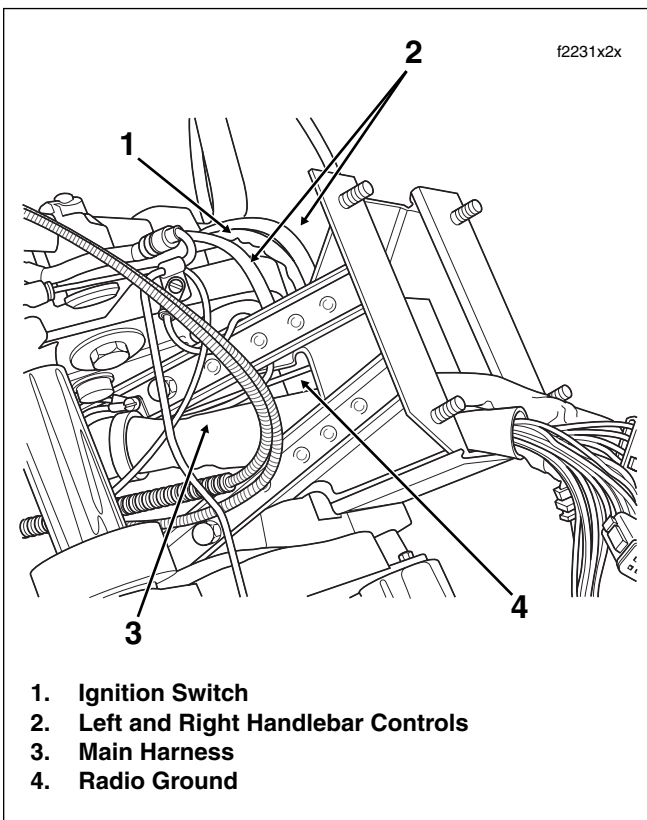


Figure 2-182. Route Main Harness and Conduit Thru Fairing Bracket

CAUTION

To avoid chafing wires of interconnect harness, verify that trim strips are installed inboard of hooks on radio bracket.

20. Install the outer fairing. See [OUTER FAIRING, INSTALLATION](#), in this section.
21. Install left side of instrument nacelle. See [INSTRUMENT NACELLE, INSTALLATION](#), in this section, steps 5-7 and 9-10.
22. Install bezel. See [BEZEL, INSTALLATION](#), in this section.

GLOVE BOX DOOR/HINGE

REMOVAL

1. Remove the outer fairing. See [OUTER FAIRING, REMOVAL](#), in this section.
2. To access glove box door fasteners, pull out screw cap cover below hinge.
3. Holding locknuts at front of inner fairing, loosen hinge screws (T25 TORX).
4. Hold glove box door closed as hinge screws are completely removed. If not held closed, door will pop open as spring loaded hinge is released and door may be dropped to the floor.
5. If hinge replacement is necessary, remove plastic barrels to release hinge from door.

INSTALLATION

1. Place spring inside hinge inserting spring pin into closest hole. With coil and one spring pin positioned inside hinge, second spring pin is outside.
2. Place hinge into position capturing free end of external spring pin between ribs molded into glove box door.
3. Install plastic barrels to hold hinge in door. Slot in barrel prevents interference with spring pin installed between ribs of door. Push barrels in until tight.

NOTE

*Install **new** glove box door bumpers in inner fairing if damaged or missing. Insert tail of rubber bumper into hole, and moving to front of inner fairing, pull anchor through hole.*

4. Place glove box door into position against inner fairing. Holding locknuts (with flat washers) at front of inner fairing, tighten hinge screws (T25 TORX).
5. To conceal glove door fasteners, snap screw cap cover into place below hinge.
6. Install the outer fairing. See [OUTER FAIRING, INSTALLATION](#), in this section.

WINDSHIELD REMOVAL

1. See [Figure 2-183](#). Standing at the front of the motorcycle, use a finger to raise the wireform latch springs on both sides of the windshield.
2. Gently pull on the top of the windshield until the upper notches on the windshield brackets are free of the upper grommets.
3. Carefully raise the windshield until the lower notches are free of the lower grommets.
4. Remove windshield from motorcycle.

1. Standing at the front of the motorcycle, carefully insert the windshield brackets between the headlamp nacelle and the auxiliary lamp bracket. Lower the windshield into position until the lower notches on the windshield brackets are seated on the lower grommets.
2. Gently push the top of the windshield toward the rear until the upper notches fully engage the upper grommets. See [Figure 2-183](#).
3. Push down on the wireform latch springs, so that they overhang the rubber grommets. If some adjustment is necessary, loosen the retaining screws and rotate the latch springs into the proper position.

WINDSHIELD INSTALLATION

CAUTION

To avoid scratching headlamp nacelle or auxiliary lamp bracket, be sure that all four notches on the windshield brackets are firmly seated on a rubber grommet.

NACELLE REMOVAL (FLHR/C)

1. Remove the windshield. See [WINDSHIELD REMOVAL](#) on this page.
2. Remove the Phillips screw at the bottom of the headlamp door (chrome ring). Remove the headlamp door.
3. Remove the seven Phillips screws to free the headlamp housing from the headlamp nacelle.

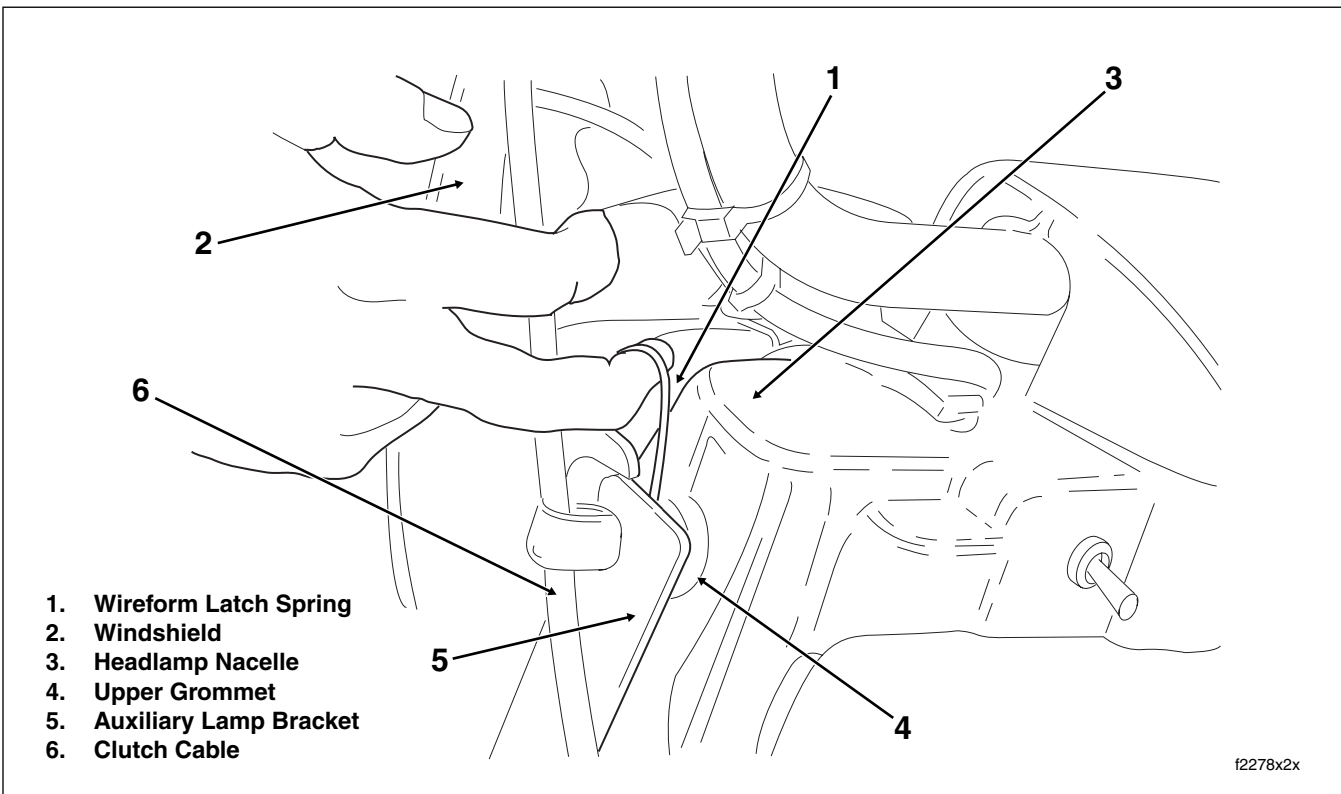


Figure 2-183. Windshield (FLHR/C)

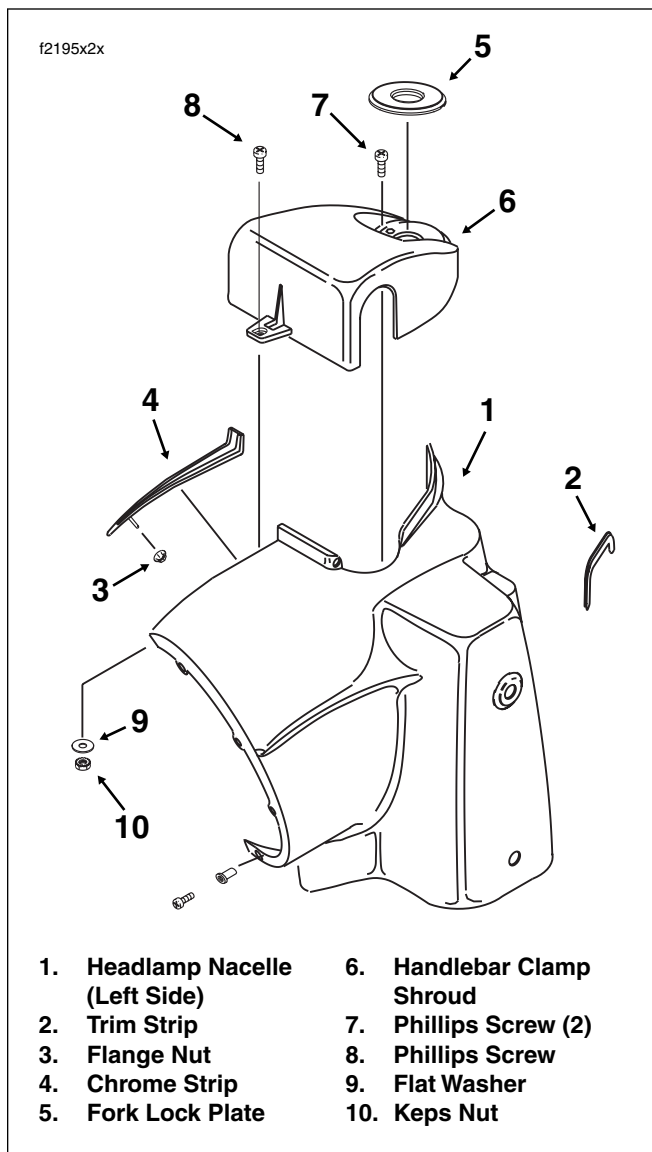


Figure 2-184. Headlamp Nacelle Assembly

- Remove headlamp connector [38] at back of headlamp bulb. Remove the headlamp housing assembly from the motorcycle.
- Reaching inside the headlamp nacelle, remove the flange nut to release the chrome strip at the top of the nacelle. See [Figure 2-184](#).
- Carefully pry off the fork lock plate at the rear of the handlebar clamp shroud. Remove two Phillips screws beneath the lock plate.
- Loosen the Phillips screw from tab at the front of the handlebar clamp shroud (but do not remove Keps nut and flat washer).
- Remove the two acorn nuts from the left side fork bracket studs. Remove acorn nuts from the right side fork bracket studs.

- Cover the front fender with suitable material to protect the fender paint. Remove the auxiliary lamp bracket from the left and right side fork bracket studs and carefully set on front fender.
- Remove the grommets (and clutch cable clamp) from the left and right side fork bracket studs.
- Raise the handlebar clamp shroud, and after separating the halves of the headlamp nacelle slightly, slide the shroud forward running the shaft of the Phillips screw down the gap. See [Figure 2-185](#).
- Reaching inside the headlamp nacelle, disconnect accessory switch connector [67] and auxiliary lamp switch connector [109].
- Carefully separate the halves of the headlamp nacelle and remove from motorcycle.

NACELLE INSTALLATION (FLHR/C)

- Fit halves of the headlamp nacelle together engaging the holes in the nacelle with the left and right side fork bracket studs.
- Reaching inside the headlamp nacelle, connect accessory switch connector [67] and auxiliary lamp switch connector [109].
- If disassembled, install Phillips screw, flat washer and Keps nut on the handlebar clamp shroud as shown in [Figure 2-185](#).
- Part the halves of the headlamp nacelle slightly. With the flat washer on the inboard side of the nacelle, slide the shroud rearward running the shaft of the Phillips screw down the gap. Position the shroud over the flange at the top of the nacelle.

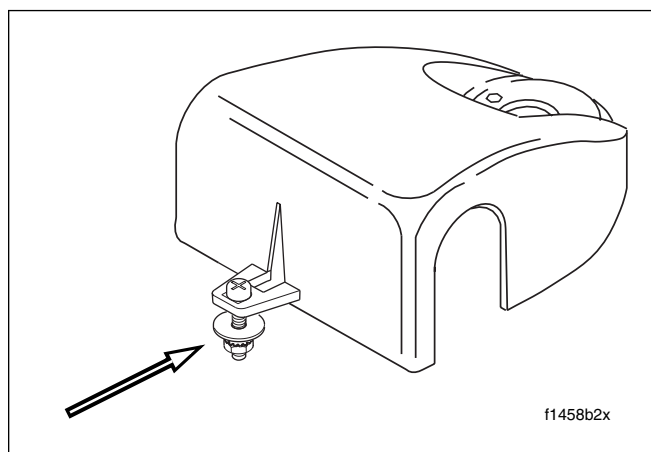


Figure 2-185. Handlebar Clamp Shroud and Screw Assembly

5. Mate the halves of the headlamp nacelle and tighten the Phillips screw to 10-20 **in-lbs** (1.1-2.3 Nm).
6. Install two Phillips screws to secure the handlebar clamp shroud to the fork lock mechanism. Install the fork lock plate.

WARNING

To avoid possible damage to the brake hose, throttle cables and/or handlebar switch wires, verify that trim strips are installed on inside edges of the headlamp nacelle. Cutting or severe chafing of the brake hose, throttle cables and/or handlebar switch wires could cause loss of function while riding, possibly resulting in death or serious injury.

7. Verify that trim strips are installed on inside edges of headlamp nacelle. Install new trim strips if cracked, broken or missing.
8. Inserting the weld stud on the chrome strip into the hole at the top of the headlamp nacelle, reach inside the nacelle to install flange nut. Tighten flange nut to 15-20 **in-lbs** (1.7-2.3 Nm).
9. Install the grommets on the left and right side fork studs.
10. Slide the auxiliary lamp bracket onto the left and right side fork bracket studs. Verify that the four grommets are in place on the inboard side of the auxiliary lamp brackets.
11. Install the acorn nuts on the fork bracket studs and tighten to 72-108 **in-lbs** (8.1-12.2 Nm). Be sure to capture the clutch cable clamp on the upper left stud before installing the acorn nut.
12. Install headlamp connector [38] at back of headlamp bulb.
13. Align holes in headlamp housing with wellnuts in headlamp nacelle (headlamp door bracket at bottom). Install the seven Phillips screws and alternately tighten to 9-18 **in-lbs** (1.0-2.0 Nm).
14. Fit the square-shaped portion of the headlamp door spring into the slot at the top of the headlamp housing and then snap the headlamp door (chrome ring) into place. Install Phillips screw at the bottom of the headlamp door and tighten to 9-18 **in-lbs** (1.0-2.0 Nm).
15. Install the windshield. See [WINDSHIELD INSTALLATION](#) in this section.

NACELLE REMOVAL (FLHRS)

1. Remove the Phillips screw at the bottom of the headlamp door (chrome ring). Remove the headlamp door.
2. Remove the seven Phillips screws to free the headlamp housing from the headlamp nacelle.

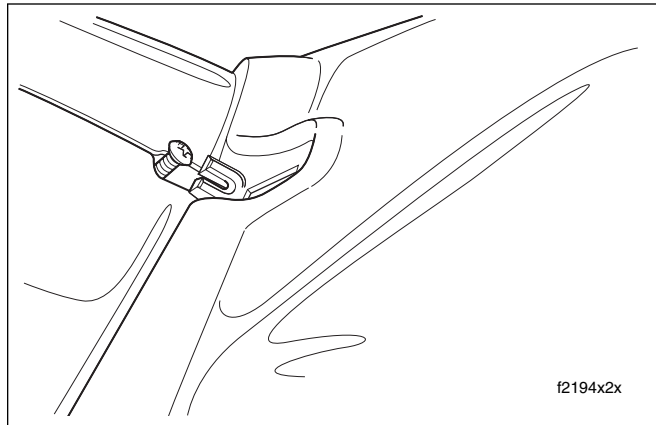


Figure 2-186. Remove Screw From Slot in Wind Deflector

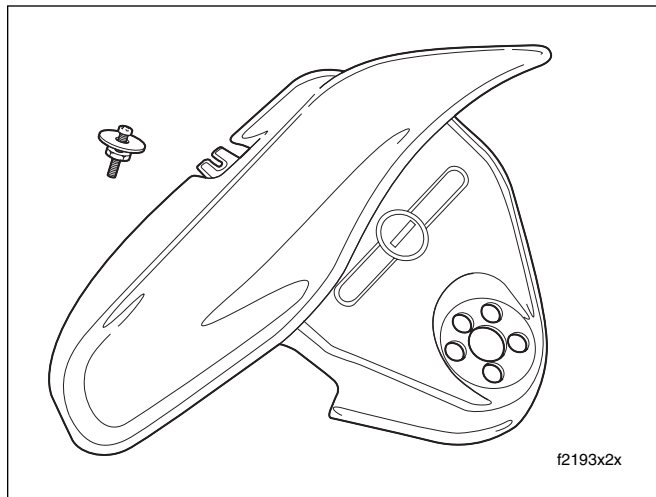


Figure 2-187. Handlebar Clamp Shroud/Wind Deflector and Screw Assembly

3. Remove headlamp connector [38] at back of headlamp bulb. Remove the headlamp housing assembly from the motorcycle.
4. Reaching inside the headlamp nacelle, remove the flange nut to release the chrome strip at the top of the nacelle.
5. Carefully pry off the fork lock plate at the rear of the handlebar clamp shroud. Remove two Phillips screws beneath the lock plate.
6. Loosen Phillips screw at front of wind deflector (but do not remove). Reaching inside the headlamp nacelle, release screw head from slot in tab and then draw screw assembly down and out through headlamp nacelle. See [Figure 2-186](#).
7. Raise handlebar clamp shroud/wind deflector and remove from motorcycle. See [Figure 2-187](#).

NOTE

If necessary, remove three flange bolts to remove handlebar clamp shroud from wind deflector.

8. Reaching inside the headlamp nacelle, disconnect accessory switch connector [67].
9. Using a T40 TORX drive head, remove the two left side fork bracket bolts (with flat washers). Remove the two right side fork bracket bolts (with flat washers).
10. Carefully separate the halves of the headlamp nacelle and remove from motorcycle.

NACELLE INSTALLATION (FLHRS)

1. Fit halves of the headlamp nacelle together aligning the holes in the nacelle with those in the upper and lower fork brackets.
2. Start the two right side fork bracket bolts (with flat washers). Start the two left side fork bracket bolts (with flat washers). Be sure to capture clutch cable clamp when installing upper fork bracket bolt on left side of motorcycle (open side of clamp faces forward).
3. Using a T40 TORX drive head, alternately tighten the fork bracket bolts to 15-20 ft-lbs (20-27 Nm) in a cross-wise pattern.
4. Reaching inside the headlamp nacelle, connect accessory switch connector [67].
5. Position the handlebar clamp shroud/wind deflector on flange at top of headlamp nacelle.

NOTE

If separated, install three flange bolts to fasten handlebar clamp shroud to wind deflector. Alternately tighten bolts to 12-18 ft-lbs (16.3-24.4 Nm).

6. If disassembled, assemble screw assembly as shown in [Figure 2-187](#).
7. Holding screw assembly, reach inside headlamp nacelle and insert head of Phillips screw up through opening to engage slot in tab at front of wind deflector. See [Figure 2-186](#). Tighten screw to 10-20 **in-lbs** (1.1-2.3 Nm).
8. Install two Phillips screws to secure the handlebar clamp shroud to the fork lock mechanism. Install the fork lock plate.

WARNING

To avoid possible damage to the brake hose, throttle cables and/or handlebar switch wires, verify that trim strips are installed on inside edges of the headlamp nacelle. Cutting or severe chafing of the brake hose, throttle cables and/or handlebar switch wires could cause loss of function while riding, possibly resulting in death or serious injury.

9. Verify that trim strips are installed on inside edges of headlamp nacelle. Install new trim strips if cracked, broken or missing.
10. Inserting the weld stud on the chrome strip into the hole at the top of the headlamp nacelle, reach inside the nacelle to install flange nut. Tighten flange nut to 15-20 **in-lbs** (1.7-2.3 Nm).
11. Install headlamp connector [38] at back of headlamp bulb.
12. Align holes in headlamp housing with wellnuts in headlamp nacelle (headlamp door bracket at bottom). Install the seven Phillips screws and alternately tighten to 9-18 **in-lbs** (1.0-2.0 Nm).
13. Fit the square-shaped portion of the headlamp door spring into the slot at the top of the headlamp housing and then snap the headlamp door (chrome ring) into place. Install Phillips screw at the bottom of the headlamp door and tighten to 9-18 **in-lbs** (1.0-2.0 Nm).

REMOVAL

NOTE

If fender tip lamp is absent, start procedure at step 4.

1. **FLHT/C/U:** Reaching in below the fairing cap on the left side of the steering head, disconnect front fender tip lamp jumper harness connector [32], 2-place Multilock. See Figure 2-188. Remove the outer fairing only if necessary. See Section 2.30 UPPER FAIRING/WINDSHIELD (FLHX, FLHT/C/U), OUTER FAIRING/WINDSHIELD, REMOVAL.

FLHR: Remove the Phillips screw at the bottom of the headlamp door (chrome ring). Remove the headlamp door. Remove the seven Phillips screws to free the headlamp housing from the headlamp nacelle. Remove headlamp connector [38] at back of headlamp bulb. Remove the headlamp housing assembly from the motorcycle. Disconnect front fender tip lamp jumper harness connector [32], 2-place Multilock. See Figure 2-189.

2. Draw socket housing down to fender area.
3. Carefully cut cable strap to release front fender tip lamp wires from brake line hose.
4. Place the motorcycle on a hydraulic center stand with the front wheel raised off the ground.
5. Use shop rag or tape to protect fender area adjacent to caliper, as incidental contact can occur during caliper removal.
6. Remove both the upper and lower mounting bolts from lugs of front fork leg to release brake caliper assembly. Lift caliper upward to remove from brake disc. Using thru hole, cable strap caliper to rail of engine guard. Repeat step to release caliper on opposite side of wheel.

NOTE

Do not operate the front brake hand lever with the front wheel removed or the caliper pistons may be forced out. Reseating pistons requires disassembly of the caliper.

7. Insert screwdriver or steel rod through hole in axle on right side of motorcycle. While holding axle stationary, remove the axle nut, lockwasher and flat washer on the left side.
8. Loosen the two axle holder nuts at bottom of right side fork leg.

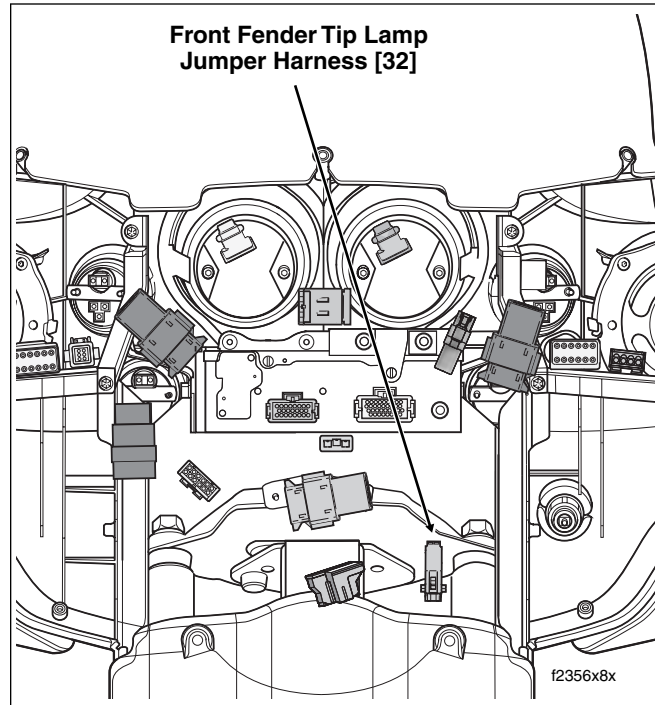


Figure 2-188. Inner Fairing (FLHT/C/U)

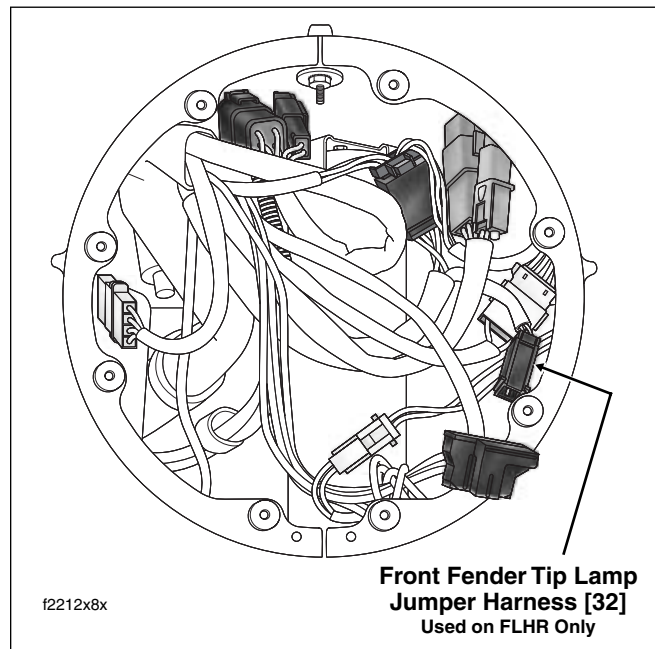


Figure 2-189. Headlamp Nacelle (FLHR)

9. With soft mallet, tap axle toward right side of motorcycle until loose. Pull axle from hub while supporting wheel. Remove wheel.

10. Bend tabs on lockplates away from flats of four fender mounting bolts. Remove fender mounting bolts and lockplates. Remove fender from motorcycle.

INSTALLATION

NOTE

If fender tip lamp is absent, perform steps 1 and 3-12.

1. Align mounting holes in fender and lockplates with those in fork tubes. Install four fender mounting bolts and tighten to 16-20 ft-lbs (22-27 Nm). Bend tabs on lockplates against flats of fender mounting bolts.
2. Route socket housing upward behind chrome skirt (FLHT/C/U) or through bottom of headlamp nacelle (FLHR) to area beneath upper fork bracket. Connect front fender tip lamp jumper harness connector [32].

NOTE

To connect front fender tip lamp with the outer fairing installed (FLHT/C/U models), reach in below the fairing cap on the left side of the steering head.

3. Place wheel into position between forks with the valve stem on the right side of the motorcycle.
4. Coat the axle with ANTI-SEIZE LUBRICANT.
5. Supporting wheel, insert threaded end of axle through right fork leg. Push axle through fork, **short** external spacer and wheel hub until it begins to emerge from left side.
6. With the three notches on the bearing side, push axle through **long** external spacer and left fork leg until axle shoulder contacts external spacer on right fork side.
7. Install flat washer, lockwasher and axle nut.
8. Insert screwdriver or steel rod through hole in axle on right side of motorcycle. While holding axle stationary, tighten axle nut to 50-55 ft-lbs (68-75 Nm).
9. Insert 7/16 inch drill bit into hole in axle.
10. Pull fork leg so that it just contacts drill bit, and then tighten axle holder nuts to 132-180 **in-lbs** (14.9-20.3 Nm).

11. Remove drill bit from axle hole.

12. Install brake caliper as follows:

- a. Use shop rag or tape to protect fender area adjacent to caliper, as incidental contact can occur during caliper installation.
- b. With the bleeder valve topside, position caliper so that brake disc is situated between friction pads. Now align upper mounting hole in caliper with upper mounting lug on fork leg.
- c. Loosely install long caliper mounting bolt into upper lug of front fork leg.
- d. Install short caliper mounting bolt into lower lug of front fork leg. Tighten lower mounting bolt to 28-38 ft-lbs (37.9-51.5 Nm).
- e. Tighten upper caliper mounting bolt to 28-38 ft-lbs (37.9-51.5 Nm).
- f. Repeat step 12 to install caliper on opposite side of wheel.

13. Install **new** cable strap to secure front fender tip lamp wires to brake line hose. Cut any excess cable strap material.

14. **FLHT/C/U:** Install the outer fairing, if removed. See Section 2.30 UPPER FAIRING/WINDSHIELD (FLHX, FLHT/C/U), OUTER FAIRING/WINDSHIELD, INSTALLATION.

FLHR: Install headlamp connector [38] at back of headlamp bulb. Align holes in headlamp housing with well-nuts in headlamp nacelle (headlamp door bracket at bottom). Install the seven Phillips screws and alternately tighten to 9-18 **in-lbs** (1.0-2.0 Nm). Install the headlamp door (chrome ring) and door screw. Tighten screw to 9-18 **in-lbs** (1.0-2.0 Nm).

REMOVAL

NOTE

For all models except FLHX, begin procedure at step 2.

1. On FLHX models, proceed as follows:
 - a. Remove rear facia. See Section 2.35 REAR FACIA (FLHX), REMOVAL.
 - b. Remove rear facia lamp. See Section 2.35 REAR FACIA (FLHX), REAR FACIA LAMP, REMOVAL.
2. Place the motorcycle on a hydraulic center stand with the rear wheel raised off the ground.
3. Remove seat. See Section 2.25 SEAT, REMOVAL.
4. Remove rear wheel. See Section 2.4 REAR WHEEL, REMOVAL.
5. Disconnect rear fender lights connector [7] anchored at front of rear fender. Release anchor from fender hole. See Figure 2-190.
6. Gently pull side cover from frame downtube (no tools required). Repeat step on opposite side of motorcycle.
7. Remove four hex screws with lockwashers (two each on FLHR/C/S and FLTR) to release license plate bracket from luggage rack.
8. Obtain ratchet and T40 TORX head bit. Standing on left side of motorcycle, remove screw to release front of rear fender from battery box. See Figure 2-191.

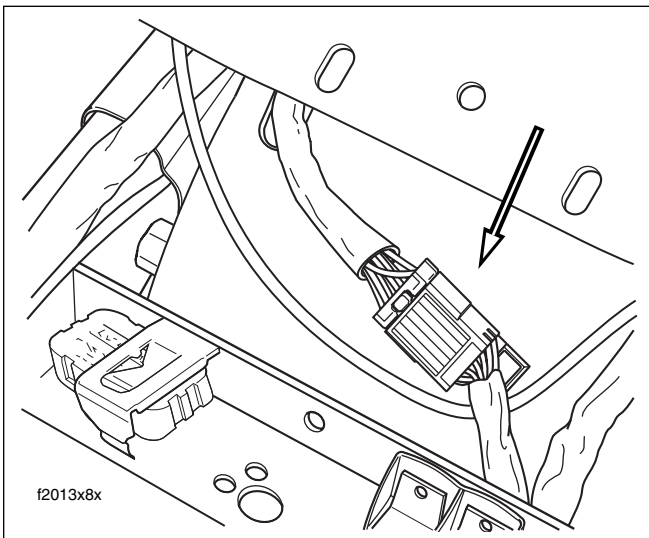


Figure 2-190. Rear Fender Lights Connector [7]

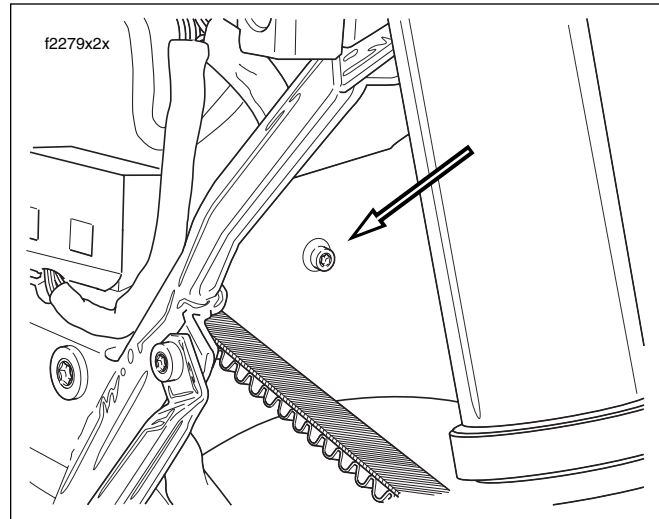


Figure 2-191. Rear Fender Front Screw (T40 TORX)

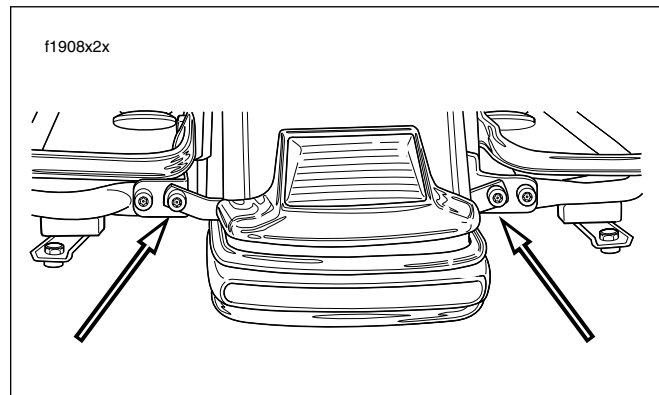


Figure 2-192. Rear Bumper Screws (T40 TORX)

9. At rear of motorcycle, remove inside screw (and flange nut) to release rear bumper bracket from saddlebag support bracket and saddlebag support rail. Repeat step on opposite side of motorcycle. See Figure 2-192.
10. Reaching under rear bumper, remove flange nut (with flat washer) to free rear bumper bracket from weld stud on fender. Remove bumper from motorcycle.
11. Remove fender side mounting screw located just below side cover grommet. Repeat step on opposite side of motorcycle. See Figure 2-193.
12. Remove upper rear screw from saddlebag support bracket. Repeat step on opposite side of motorcycle. See Figure 2-194.
13. Remove upper front screw from saddlebag support bracket. Be aware that rear fender will drop when both forward screws are removed. Repeat step on opposite side of motorcycle.

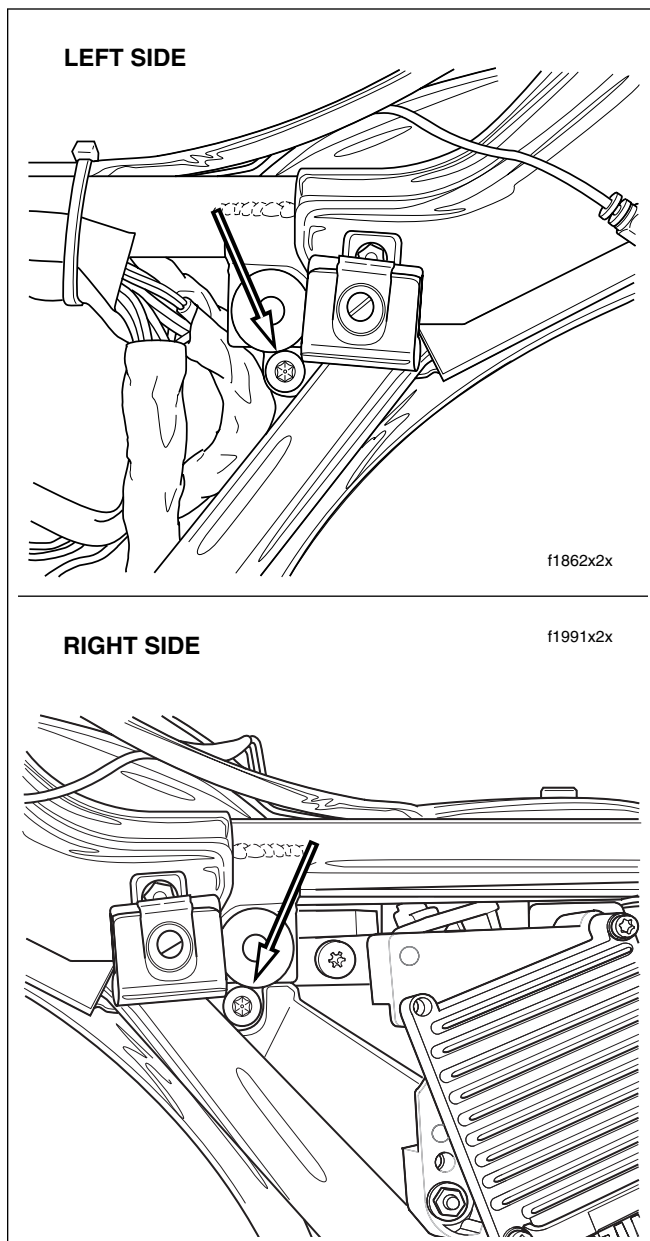


Figure 2-193. Fender Side Mounting Screws (T40 TORX)

14. Exercising caution to avoid scratching fender paint on luggage rack or other bracketry, carefully roll the fender out. See [Figure 2-195](#). If necessary, have one person spread the saddlebag support brackets while the fender is rolled out.

INSTALLATION

1. Exercising caution to avoid scratching fender paint on luggage rack or other bracketry, carefully roll the fender in. See [Figure 2-195](#). If necessary, have one person spread the saddlebag support brackets while the other rolls the fender in.

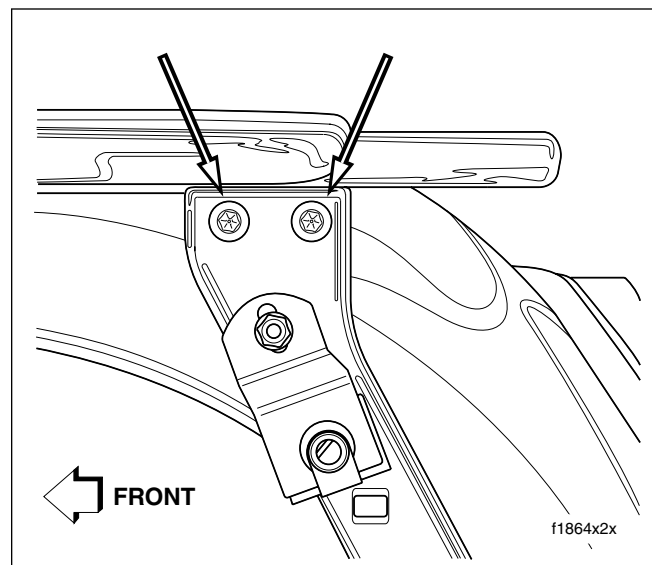


Figure 2-194. Saddlebag Support Bracket Screws (T40 TORX) - Left Side View

2. Obtain ratchet and T40 TORX head bit. Engaging hole of fender rear spacer nut, start upper front screw in saddlebag support bracket. Repeat step on opposite side of motorcycle. See [Figure 2-194](#).
3. Start upper rear screw in saddlebag support bracket. Repeat step on opposite side of motorcycle.
4. Standing on left side of motorcycle, start screw securing front of rear fender to battery box. See [Figure 2-191](#).
5. Engaging hole in frame and fender front spacer nut, start fender side mounting screw located just below side cover grommet. Repeat step on opposite side of motorcycle. See [Figure 2-193](#).

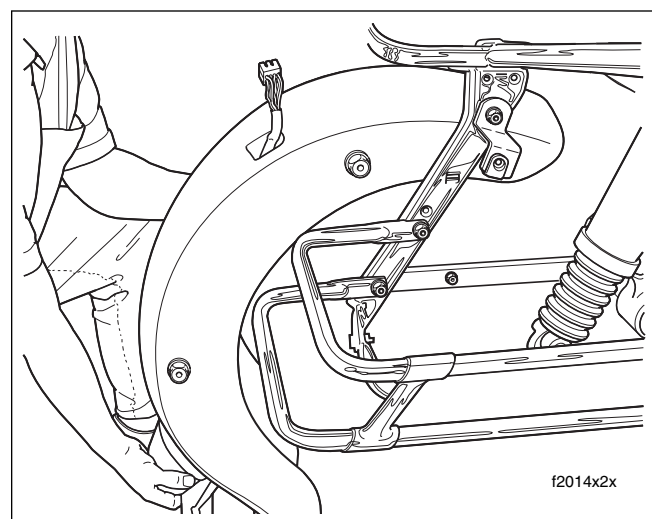


Figure 2-195. Carefully Roll Out Rear Fender

- 6. Reaching under rear fender, hang rear bumper bracket on weld stud. Install flat washer and start flange nut on weld stud.
- 7. Start inside screw (with flange nut) to fasten rear bumper bracket to saddlebag support bracket and saddlebag support rail. Repeat step on opposite side of motorcycle. See [Figure 2-192](#).
- 8. Alternately tighten all rear fender T40 TORX screws to 15-20 ft-lbs (20-27 Nm).
- 11. Reaching under rear fender, tighten flange nut on weld stud to 45-85 **in-lbs** (5.1-9.6 Nm).
- 9. Install four hex screws with lockwashers (two each on FLHR/C/S and FLTR) to secure license plate bracket to luggage rack. Alternately tighten screws to 15-20 ft-lbs (20-27 Nm).
- 10. Connect rear fender lights connector [7] and snap anchor in rear fender hole. See [Figure 2-190](#).
- 11. Align barbed studs in side cover with grommets in frame downtubes and push firmly into place (no tools required). Repeat step on opposite side of motorcycle.
- 12. Install rear wheel. See [Section 2.4 REAR WHEEL, INSTALLATION](#).
- 13. Install seat. See [Section 2.25 SEAT, INSTALLATION](#).
- 14. On FLHX models, proceed as follows:
 - a. Install rear facia lamp. See [Section 2.35 REAR FACIA \(FLHX\), REAR FACIA LAMP, INSTALLATION](#).
 - b. Install rear facia. See [Section 2.35 REAR FACIA \(FLHX\), INSTALLATION](#).

REAR FENDER LIGHTS CONDUIT

REMOVAL

- 1. Remove rear fender. See [REMOVAL](#) in this section.
- 2. Remove rear fender lights harness. See [Section 8.14 TAIL LAMP ASSEMBLY, REAR FENDER LIGHTS HARNESS, REMOVAL](#)
- 3. Carefully cut adhesive conduit and remove wire harness.
- 4. Remove terminals from socket housing of rear fender lights connector [94], 6-place Multilock.

NOTE

For instructions on properly removing wire terminals, see [APPENDIX B.2 MULTILOCK ELECTRICAL CONNECTORS, REMOVING SOCKET/PIN TERMINALS](#).

INSTALLATION

- 1. Draw rear fender lights harness through **new** adhesive conduit until progress is halted by installed cable strap. If

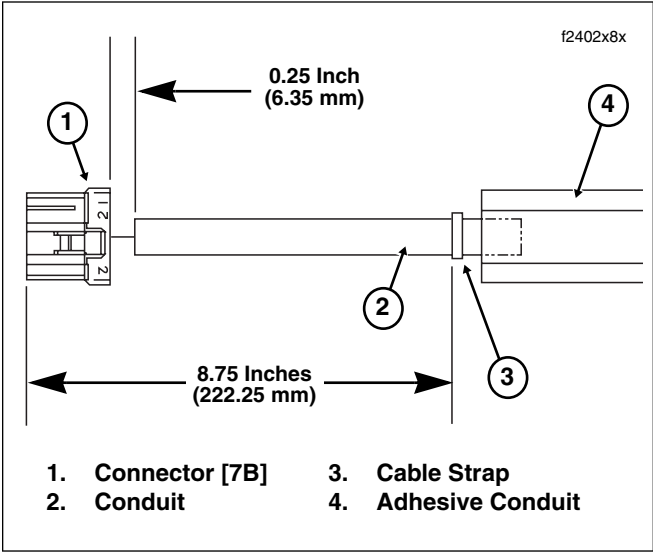


Figure 2-196. Install Cable Strap on Conduit

- absent, install **new** cable strap as follows:
- a. Adjust conduit so that end is 1/4 inch (6.35 mm) or less from wire end of connector [7B].
 - b. Install cable strap 8.75 inches (222.25 mm) from mating end of connector as shown in [Figure 2-196](#). Cut any excess cable strap material.

CAUTION

Proper placement of the cable strap prevents rearward movement of the rear fender lights harness. Gradual accumulation or bunching of the harness rear of the adhesive conduit can result in damage through contact with rear tire.

- 2. Install terminals into socket housing of rear fender lights connector [94], 6-place Multilock.

Table 8-8. Rear Fender Lights [94]

Wire Color	Chamber Number	Wire Color	Chamber Number
Orange/White	1	Red/Yellow	4
Brown	2	Violet	5
Blue	3	Black	6

NOTE

For instructions on properly installing wire terminals, see [APPENDIX B.2 MULTILOCK ELECTRICAL CONNECTORS, INSTALLING SOCKET/PIN TERMINALS](#).

- 3. Install rear fender lights harness. See [Section 8.14 TAIL LAMP ASSEMBLY, REAR FENDER LIGHTS HARNESS, INSTALLATION](#)
- 4. Install rear fender. See [INSTALLATION](#) in this section.

REAR FENDER CLOISSONNE

REMOVAL

1. Apply 3M GENERAL PURPOSE ADHESIVE REMOVER (Part No. 051135) to edge of adhesive backing visible behind cloisonne. Allow to soak.

CAUTION

Avoid excess heat which will damage the painted surface.

2. Carefully apply heat directly onto cloisonne with ROBIN-AIR HEAT GUN (HD-25070).
3. Lift the cloisonne from fender.

NOTE

Dental floss can be used to gently saw the heated cloisonne free of the rear fender.

4. Remove remaining adhesive with 3M GENERAL PURPOSE ADHESIVE REMOVER (Part No. 051135).

INSTALLATION

1. Peel paper backing off cloisonne.



Figure 2-197. Rear Fender Cloisonne

2. Place cloisonne into position over recess in rear fender.

NOTE

The cloisonne is centered left to right over the dimpled recess in the rear fender with the bottom edge of the cloisonne 1.75 inches (44.45 mm) above the bottom edge of the fender.

3. Press firmly to affix cloisonne.

REMOVAL

1. Remove saddlebags. See Section 2.26 SADDLEBAG, REMOVAL.
2. Remove six flange nuts from studs at sides of rear fender. See Figure 2-198.
3. On left side of motorcycle, loosen set screw and unthread radio antenna mast.
4. Gently open adhesive conduit at split line to release rear facia lamp wires.
5. At rear of motorcycle, spread top of facia to release from top studs at sides of fender and then pull bottom in a downward direction to release facia from fender. If necessary, gently wiggle facia while pulling.
6. Remove two T20 TORX screws to release lamp assembly from facia.

INSTALLATION

1. Install two T20 TORX screws to fasten lamp assembly to facia. Alternately tighten screws to 18-22 **in-lbs** (2.0-2.5 Nm).
2. At rear of motorcycle, insert flange at top of facia between flap and fender. Notch in flange engages locator bump on flap when facia is fully installed. Spread top of facia to engage top studs at sides of fender.
3. See Figure 2-198. Start six flange nuts on studs at sides of fender. Apply a small dab of Loctite Medium Strength Threadlocker 243 (blue) to threads of studs. Alternately tighten flange nuts to 20-30 **in-lbs** (2.3-3.4 Nm).

NOTE

As it is necessary to overcome the resistance of the lock patch on the stud threads, note that the flange nut torque specification is higher when using a **new** stud plate.

4. On left side of motorcycle, gently open adhesive conduit at split line and insert rear facia lamp wires.
5. Install radio antenna mast and tighten set screw.
6. Install saddlebags. See Section 2.26 SADDLEBAG, INSTALLATION.

STUD PLATE

REMOVAL

1. Lower rear wheel. See Section 2.4 REAR WHEEL, REMOVAL, steps 1-6.



Figure 2-198. Remove Flange Nuts

2. Remove flange nuts from studs at sides of rear fender. See Figure 2-198.
3. Reaching into fender well, carefully pry stud plate away from rear fender.

NOTE

Stud plates installed in production use adhesive strips as an assembly aid. Beginning at the edges, carefully work stud plate free using a small putty knife or gasket scraper.

INSTALLATION

1. Install **new** stud plate.
2. Install flange nuts on studs and alternately tighten to 80 **in-lbs** (9.0 Nm). See Figure 2-198.

NOTE

As it is necessary to overcome the resistance of the lock patch on the stud threads, note that the flange nut torque specification is higher when using a **new** stud plate.

3. Install rear wheel. See Section 2.4 REAR WHEEL, INSTALLATION, steps 3-18.

REAR FACIA LAMP

REMOVAL

1. Remove rear fascia. See [REMOVAL](#) in this section.
2. On left side of motorcycle, remove bolt (with flat washer) to remove passenger seat strap and saddlebag front mounting bracket from chrome frame tube cover.
3. Remove Phillips screw and chrome frame tube cover.
4. Release rear facia lamp wires from cable clip at top of radio antenna bracket. See [Figure 2-199](#).
5. Cut cable strap to release rear facia lamp wires and radio antenna cable from slotted hole in rear fender support.
6. Cut cable strap to release rear facia lamp wires and radio antenna cable from shoulder of upper frame tube (just in front of air valve mounting bracket).
7. Disconnect rear facia lamp connector [12], 3-place Multilock, inboard of upper frame tube.

NOTE

Connector [12] serves as the Tour-Pak lights connector on FLHTC/U models.

INSTALLATION

1. Route rear facia lamp wires forward through cable clip at top of radio antenna bracket and then upward in front of saddlebag rear mounting bracket to inboard side of upper frame tube.
2. On inboard side of upper frame tube, mate pin and socket housings of rear facia lamp connector [12], 3-place Multilock.
3. Using slotted hole, install **new** cable strap to secure rear facia lamp wires and radio antenna cable to rear fender support. See [Figure 2-199](#).
4. Install **new** cable strap to secure rear facia lamp wires and radio antenna cable to shoulder of upper frame tube (just in front of air valve mounting bracket).

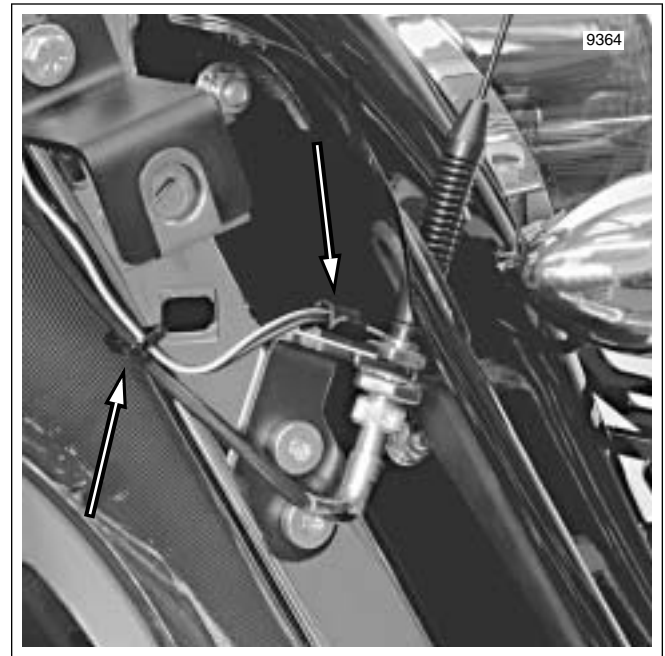


Figure 2-199. Capture Rear Facia Lamp Wires

5. Install chrome frame tube cover on frame tube. Install Phillips screw and tighten to 25-40 **in-lbs** (2.8-4.5 Nm).
6. Insert bolt (with flat washer) through passenger seat strap and slotted hole of saddlebag front mounting bracket. Insert bolt into forward hole in chrome frame tube cover. Snug saddlebag front mounting bracket bolt, but do not tighten.
7. Install rear fascia. See [INSTALLATION](#) in this section.
8. Using an open end/box wrench, tighten saddlebag front mounting bracket bolt to 60-96 **in-lbs** (6.8-10.8 Nm).

GENERAL

The jiffy stand (or side stand) locks when placed in the full forward position (down) with the full weight of the motorcycle resting on it.

⚠ WARNING

The jiffy stand locks when placed in the full forward (down) position with vehicle weight on it. If the jiffy stand is not in the full forward (down) position with vehicle weight on it, the vehicle can fall over which could result in death or serious injury. (00006a)

⚠ WARNING

Always park motorcycle on a level, firm surface. An unbalanced motorcycle can fall over, which could result in death or serious injury. (00039a)

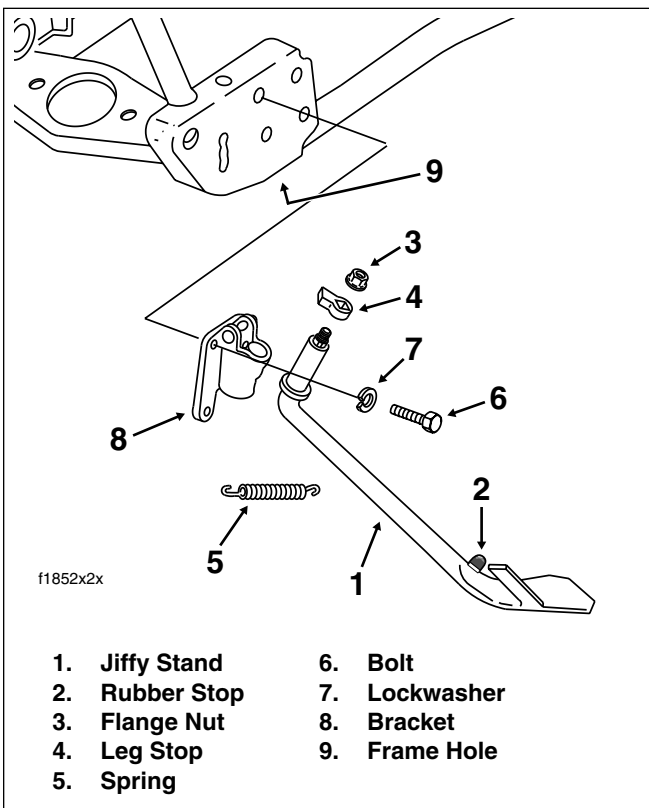


Figure 2-200. Jiffy Stand Assembly

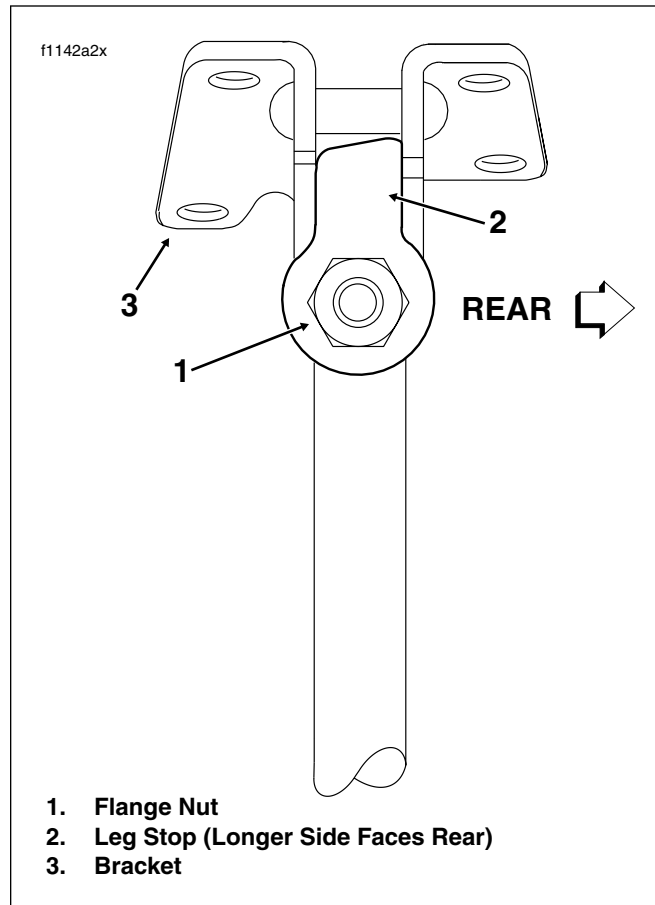


Figure 2-201. Leg Stop Orientation (Full Forward Position)

⚠ WARNING

Be sure jiffy stand is fully retracted before riding. If jiffy stand is not fully retracted, it can contact the road surface causing a loss of vehicle control, which could result in death or serious injury. (00007a)

REMOVAL

⚠ WARNING

Securely block motorcycle under frame to be sure that it will not fall when jiffy stand is removed. Inadequate safety precautions could result in death or serious injury.

1. Block motorcycle under frame, so that motorcycle is securely upright and level. Jiffy stand should be able to move through its full range of travel without the weight of the motorcycle resting on it.

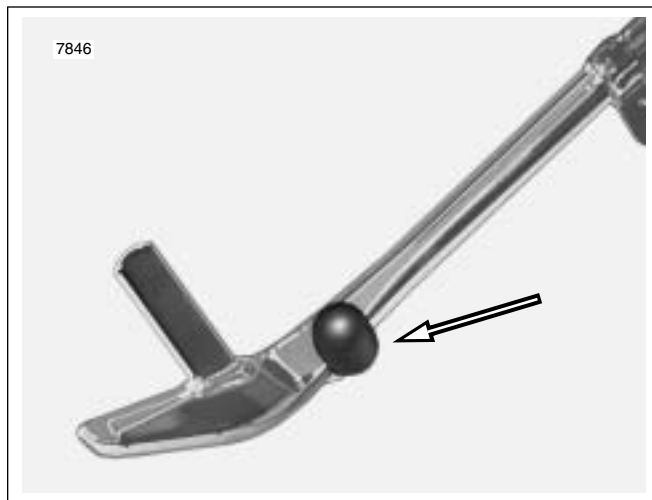


Figure 2-202. Jiffy Stand Rubber Stop

4. Verify that the longer side of the leg stop faces the rear of the motorcycle. See [Figure 2-201](#).
5. Extend and retract jiffy stand leg several times to verify proper operation. Jiffy stand should swing freely to the fully extended and fully retracted positions.
6. Move jiffy stand to the full forward position. Carefully remove support blocking from beneath motorcycle frame and rest motorcycle on jiffy stand.

CAUTION

Verify that rubber stop is in place on prong of jiffy stand. Without the rubber stop, the stand will make hard contact with the lower frame tube when retracted, possibly resulting in chipping or nicking of the powder coat. Replace rubber stop if torn or deteriorated. See [Figure 2-202](#).

2. See [Figure 2-200](#). Move jiffy stand to the retracted position (up). Remove flange nut and leg stop from threaded end of jiffy stand leg.
3. Move jiffy stand to the full forward position (down). Grasping end of spring as close to frame tube as possible, twist and turn end with needle nose pliers to unhook from frame hole. Remove jiffy stand leg from bracket.
4. Inspect jiffy stand assembly for worn or damaged parts. Replace parts as necessary.

INSTALLATION

1. Lubricate the jiffy stand leg with Loctite Aerosol Anti-Seize Lubricant. Restrict the application to the area of the jiffy stand leg that rotates within the bracket.
2. Insert threaded end of jiffy stand up through bottom of bracket. With jiffy stand in the full forward position, partially place spring end into frame hole. Rap spring with a rubber mallet to fully seat in hole.

NOTE

Verify that opposite end of spring enters hole at front of leg weldment. If end enters hole from rear, spring coil will rub on leg when jiffy stand is exercised.

3. Holding jiffy stand at the full forward position, install leg stop over threaded end with the stamped "side down." Install flange nut and tighten to 43-53 ft-lbs (58-72 Nm).

WARNING

If leg stop is installed incorrectly, excess wear may cause the motorcycle to fall over when rested on the jiffy stand, which could result in death or serious injury.

RIDER FOOTBOARD

REMOVAL

1. Remove right side footboard and bracket assembly as follows:
 - a. Remove two allen head socket screws (with lock washers and flat washers) to release footboard brackets from frame weldment. See [Figure 2-203](#). For best results, approach from left side of motorcycle using a 3/8 inch ball allen with extension.
2. Remove left side footboard and bracket assembly as follows:
 - a. Raise the motorcycle on a hydraulic center stand so that the weight of the motorcycle is not resting on the jiffy stand.
 - b. Remove socket screw (with lockwasher and flat washer) to release footboard forward bracket from frame weldment. See [Figure 2-203](#). For best results, approach from opposite side of motorcycle using a 3/8 inch ball allen with extension.
 - c. To free footboard rear bracket from frame weldment and jiffy stand bracket, remove lower hex bolt (with lockwasher) and upper hex bolt (with lockwasher and locknut).

INSTALLATION

1. Install right side footboard and bracket assembly as follows:
 - a. Insert two allen head socket screws (with lockwashers and flat washers) through frame weldment into footboard brackets. See [Figure 2-203](#). For best results, approach from left side of motorcycle using a 3/8 inch ball allen with extension.
 - b. Alternately tighten socket screws to 30-35 ft-lbs (41-48 Nm).
2. Install left side footboard and bracket assembly as follows:
 - a. Insert allen head socket screw (with lockwasher and flat washer) through frame weldment into footboard forward bracket. See [Figure 2-203](#). For best results, approach from opposite side of motorcycle using a 3/8 inch ball allen with extension.
 - b. At footboard rear bracket, slide upper hex bolt through frame weldment, jiffy stand bracket and footboard bracket thru hole. Install lockwasher and locknut. Slide lower hex bolt through frame weldment and jiffy stand bracket into threaded hole of footboard bracket.

- c. Tighten front bracket socket screw to 30-35 ft-lbs (41-48 Nm).
- d. Alternately tighten rear bracket hex bolts to 15-20 ft-lbs (20-27 Nm).

DISASSEMBLY

NOTE

If only replacing the rubber pad, refer to step 1 below and then see steps 4-5 under [ASSEMBLY](#).

1. Tilt footboard upward. From bottom of footboard, use a large flat blade screwdriver to push four rubber anchors on pad up through holes in footboard.
2. Remove nuts from pivot bolts at underside of footboard.
3. Remove pivot bolts to release footboard from brackets.
4. Remove footboard brackets. See [REMOVAL](#).

ASSEMBLY

1. Install footboard brackets. See [INSTALLATION](#).
2. Place footboard into position between brackets and install pivot bolts so that the nuts will be on the inboard side.

NOTE

The bottom of FLHRS footboards are stamped L(left) or R(right) to ensure proper installation.

3. Install nuts onto pivot bolts and alternately tighten to 84-108 in-lbs (9.5-12.2 Nm).
4. Moisten four rubber anchors on **new** pad with soapy water.
5. Place pad into position on footboard. From bottom of footboard, use pliers to pull rubber anchors down through holes in footboard.

PASSENGER FOOTBOARD

REMOVAL

1. Remove socket screw with lockwasher to remove footboard bracket from rear swingarm bracket.

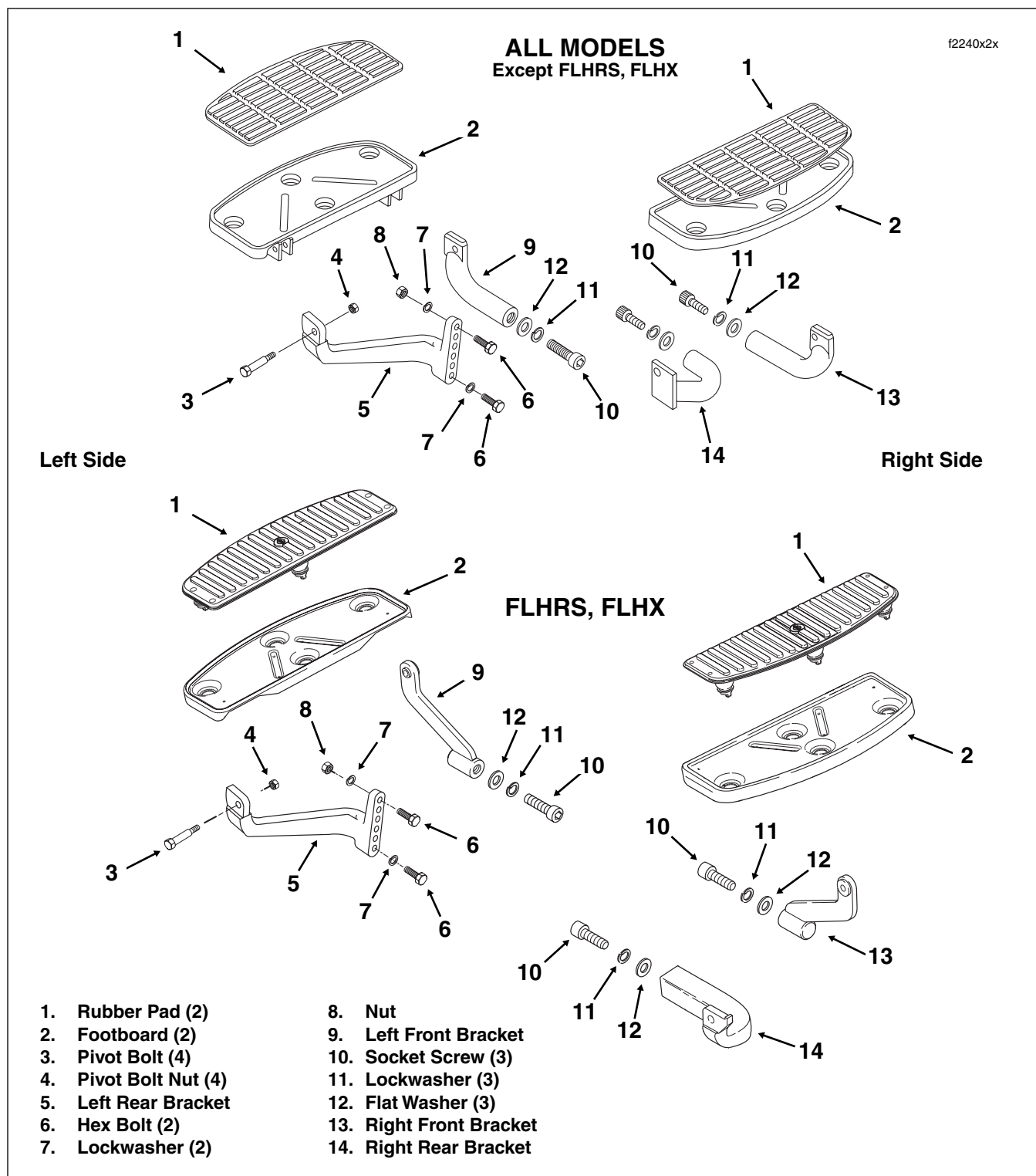


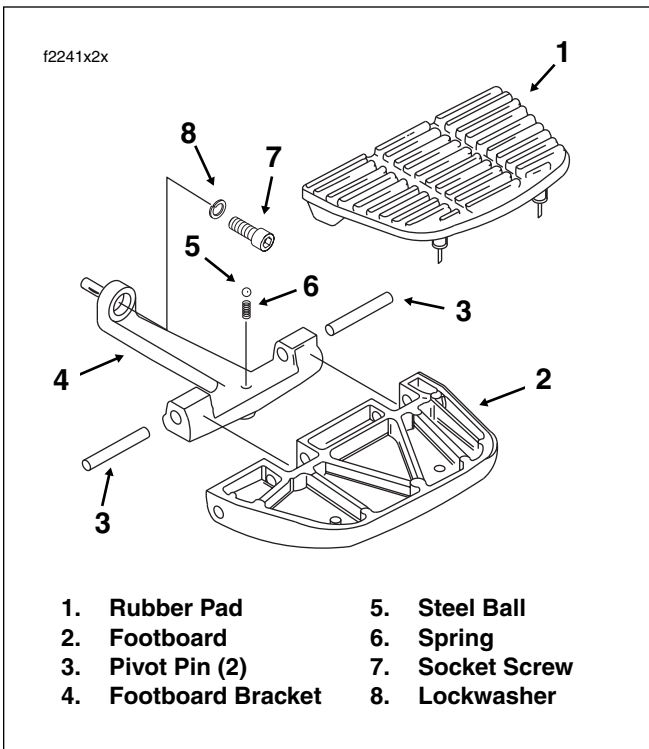
Figure 2-203. Rider Footboards

INSTALLATION

1. Insert pin on footboard bracket into hole in rear swingarm bracket.

NOTE

Passenger footboards can be adjusted to one of three positions. To move footboards to a new position, remove plastic plugs from holes in rear swingarm bracket as necessary.



**Figure 2-204. Passenger Footboard
(All Models Except FLHRS, FLHX)**

2. Install socket screw with lockwasher. Tighten socket screw to 30-35 ft-lbs (40.7-47.5 Nm).

DISASSEMBLY

NOTE

If only replacing the rubber pad, refer to step 1 below and then see steps 4-5 under [ASSEMBLY](#).

1. Tilt footboard upward. From bottom of footboard, use a small flat blade screwdriver to push rubber beads on pad up through holes in footboard. Remove pad. See [Figure 2-204](#).
2. Using a brass drift and rubber mallet, tap two pivot pins toward center of footboard and remove.
3. Remove footboard from footboard bracket.
4. Remove steel ball and spring from hole in footboard bracket.
5. Remove footboard bracket from rear swingarm bracket. See [REMOVAL](#).

ASSEMBLY

1. Install footboard bracket. See [INSTALLATION](#).
2. Place spring into hole in footboard bracket. Place ball on top of spring. See [Figure 2-204](#).

3. Place footboard into position on bracket and install pivot pins from the outboard side. Using a brass drift and rubber mallet, tap pins until centered in lugs of bracket.
4. Moisten rubber beads on **new** pad with soapy water. Place pad into position on footboard. From bottom of footboard, use needle nose pliers to pull rubber beads down through holes in footboard.
5. Engage nubs on inboard corners of pad with holes in footboard.

PASSENGER FOOTREST (FLHRS, FLHX)

REMOVAL

1. Remove socket screw with lockwasher to remove footrest bracket from rear swingarm bracket.

INSTALLATION

1. Insert pin on footrest bracket into hole in rear swingarm bracket.

NOTE

Passenger footrests can be adjusted to one of three positions. To move footrests to a new position, remove plastic plugs from holes in rear swingarm bracket as necessary.

2. Install socket screw with lockwasher. Tighten socket screw to 30-35 ft-lbs (40.7-47.5 Nm).

DISASSEMBLY

NOTE

If only replacing the rubber pad, refer to step 1 below and then see steps 7-9 under [ASSEMBLY](#).

1. Remove socket screw from end of footrest. Remove rubber pad from footrest. See [Figure 2-205](#).
2. Remove footrest from footrest mount.
3. Remove retaining ring from groove at end of pivot pin. Remove pivot pin.
4. Remove footrest mount and wave spring from footrest bracket.
5. Remove footrest bracket from rear swingarm bracket. See [REMOVAL](#).

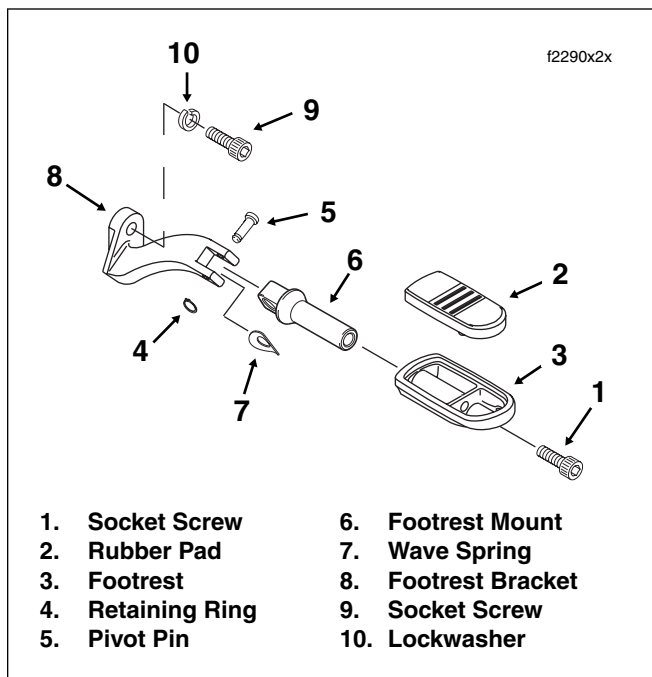


Figure 2-205. Passenger Footrest (FLHRS, FLHX)

4. Install pivot pin into top hole in footrest bracket. Top hole is countersunk so that head of pivot pin is flush after installation.

NOTE

Verify operation of footrest mount before installing retaining ring. The ease with which the footrest mount pivots is based on the curvature of the wave spring. Flattening the wave spring allows the footrest mount to move more easily, while increasing the curvature makes movement more difficult.

5. Install **new** retaining ring in groove at end of pivot pin.
6. Slide footrest onto footrest mount.
7. Place rubber pad into footrest.
8. Apply a small dab of Loctite Medium Strength Threadlocker 243 (blue) to threads of socket screw.
9. Start socket screw into end of footrest. Rotate footrest so that the rubber pad is topside and tighten socket screw to 15-20 ft-lbs (20-27 Nm).

ASSEMBLY

1. Install footrest bracket. See [INSTALLATION](#).
2. Align hole in wave spring with bottom hole in footrest bracket. See [Figure 2-205](#). Be sure that the concave side is down and the flat edge is against the inboard side of the footrest bracket.
3. Holding wave spring in place, install footrest mount between arms of bracket with the rounded side of the pivot pin end up.

REMOVAL

NOTE

To access engine and/or transmission components, use the following procedure to remove the exhaust with minimal disassembly. To completely disassemble the exhaust system, see [DISASSEMBLY](#) in this section.

1. Remove saddlebags. See Section [2.26 SADDLEBAG, REMOVAL](#).
2. On Ultra models, remove fairing lowers. See Section [2.29 LOWER FAIRING/ENGINE GUARD, LOWER FAIRING \(FLHTCU\), REMOVAL](#).
3. Remove two allen head socket screws (with lockwashers and flat washers) to release right side front footboard brackets from frame weldment. For best results, approach from left side of motorcycle using a 3/8 inch ball allen with extension.
4. Remove exhaust system in two sections as follows:
 - a. Open worm drive clamps to release heat shield over rear header pipe to crossover pipe connection (above starter). See [Figure 2-206](#).
 - b. Loosen TORCA clamp (special) between rear header pipe and crossover pipe. Remove Keps nut and pull bracket tab and stud from slots in TORCA clamp and exhaust support bracket.
 - c. Spray PB Blaster or other suitable penetrating oil in and around joint between rear header pipe and crossover pipe.
 - d. Moving to left side of motorcycle, remove two screws (with lockwashers) to detach left side muffler from the lower saddlebag support rail.
 - e. Pull and twist on crossover pipe to remove left side exhaust from motorcycle. For best results, be sure to allow sufficient time for the penetrating oil to work.
 - f. Remove TORCA clamp from crossover pipe. Discard TORCA clamp.
 - g. Moving to right side of motorcycle, open worm drive clamps and release heat shield from front header pipe. Using an impact wrench with long 1/2 inch swivel socket, remove two exhaust flange nuts to release front header pipe from studs of front cylinder head. Slide exhaust flange down header pipe to improve clearance around exhaust port.
 - h. Open worm drive clamps and release heat shield from rear header pipe. Remove two exhaust flange nuts to release rear header pipe from studs of rear cylinder head.
 - i. Open worm drive clamps to release heat shield over front header pipe to rear header pipe connection (outboard of transmission side door).
 - j. Remove bolt (with flat washer and locknut) from exhaust bracket clamp on front header pipe. Use a channel lock to open clamp and then remove from header pipe and transmission exhaust bracket.
 - k. Remove two screws (with lockwashers) to detach right side muffler from the lower saddlebag support rail.
 - l. Depressing rear brake pedal, remove right side exhaust from motorcycle.
 - m. Remove and discard gaskets from front and rear exhaust ports.

INSTALLATION

1. See [Figure 2-206](#). Install exhaust system as follows:
 - a. Install **new** gaskets in both the front and rear cylinder head exhaust ports (with the tapered side out).
 - b. Place right side exhaust into position on motorcycle and start two exhaust flange nuts to secure front header pipe to studs of front cylinder head.
 - c. Start two screws (with lockwashers) to secure right side muffler to the lower saddlebag support rail.
 - d. Start two exhaust flange nuts to secure rear header pipe to studs of rear cylinder head.
 - e. Engaging transmission exhaust bracket, capture front header pipe in exhaust bracket clamp. Use a channel lock to close clamp, if necessary. Finger tighten clamp bolt (with flat washer and locknut).
 - f. Moving to left side of motorcycle, slide **new** TORCA clamp (special) onto crossover pipe.
 - g. Twist and push crossover pipe onto right side exhaust.
 - h. Start two screws (with lockwashers) to secure left side muffler to the lower saddlebag support rail.
 - i. Position TORCA clamp (special) between rear header pipe and crossover pipe. Fit bracket tab into slot of TORCA clamp engaging stud in slot of exhaust support bracket. Start Keps nut on stud.

NOTE

Verify that the exhaust pipes do not contact the motorcycle frame or any mounted components. Contact will cancel the effect of the rubber isolation mounts and transmit vibration to the rider.

- j. Tighten the exhaust system as follows:

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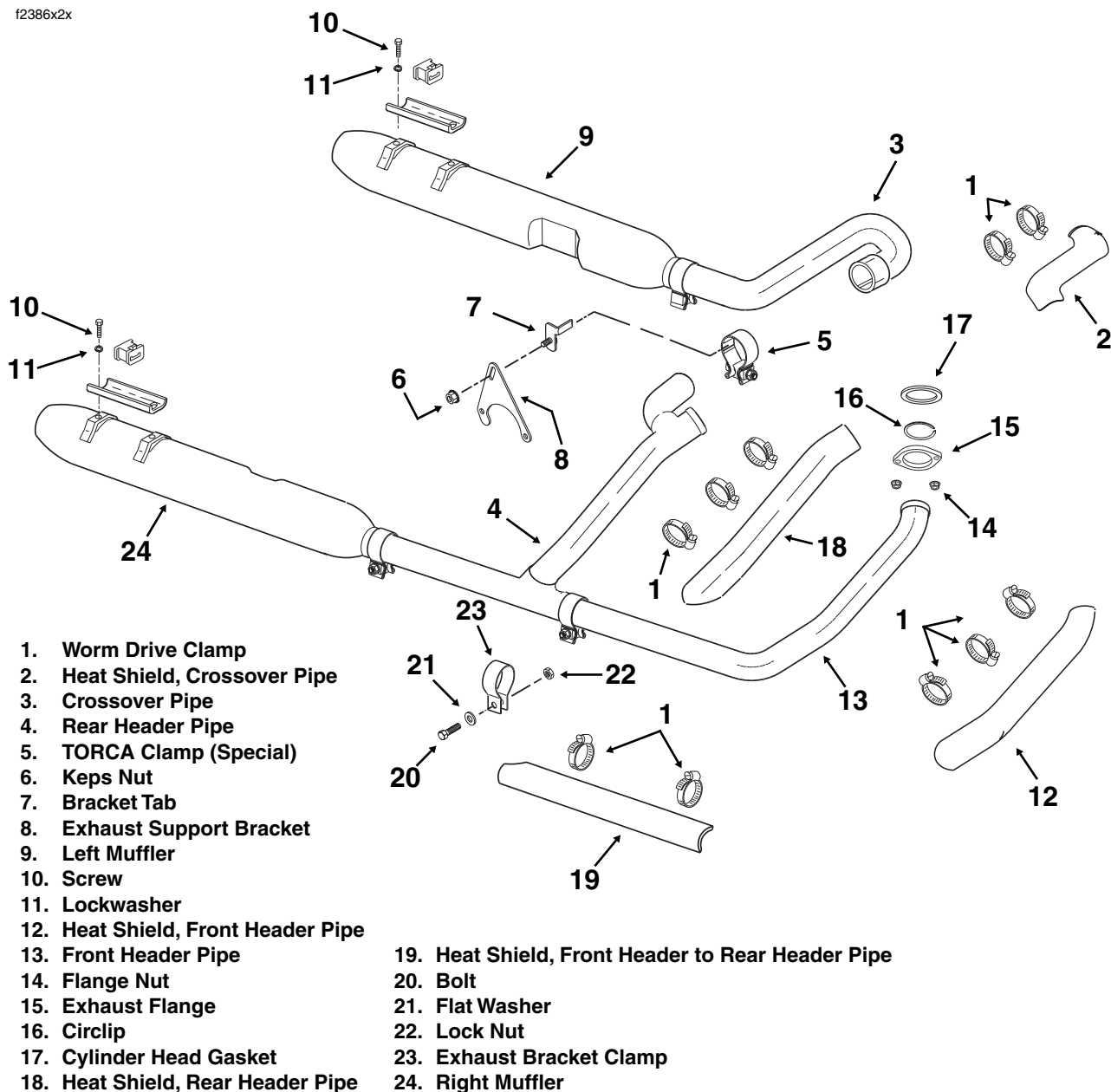


Figure 2-206. Remove/Install Exhaust System

- Using a long 1/2 inch swivel socket, tighten the top nut of the front cylinder head exhaust flange to 9-18 **in-lbs** (1-2 Nm). Tighten the bottom nut to 100-120 **in-lbs** (11.3-13.6 Nm). Final tighten the top nut to 100-120 **in-lbs** (11.3-13.6 Nm).
- Tighten the bottom nut of the rear cylinder head exhaust flange to 9-18 **in-lbs** (1-2 Nm). Tighten the top nut to 100-120 **in-lbs** (11.3-13.6 Nm). Final tighten the bottom nut to 100-120 **in-lbs** (11.3-13.6 Nm).
- Tighten the exhaust bracket clamp bolt to 60-96 **in-lbs** (6.8-10.8 Nm).
- Snug two screws (with lockwashers) holding the right side muffler to the lower saddlebag support rail. Alternately tighten screws to 96-144 **in-lbs** (10.8-16.3 Nm).
- Snug two screws (with lockwashers) holding the left side muffler to the lower saddlebag support rail. Alternately tighten screws to 96-144 **in-lbs** (10.8-16.3 Nm).

- Verify that all exhaust pipes are in alignment and do not contact the motorcycle frame or mounted components.
- Tighten the TORCA clamp (special) between the rear header pipe and crossover pipe to 45-60 ft-lbs (61-81 Nm).
- Tighten Keps nut securing bracket tab to exhaust support bracket.

NOTE

Verify that the heat shields do not contact the motorcycle frame or any mounted components. Contact will cancel the effect of the rubber isolation mounts and transmit vibration to the rider.

- k. Open worm drive clamps and install heat shields as follows:
 - Over front header pipe (below exhaust port).
 - Over rear header pipe (below exhaust port).
 - Over front header pipe to rear header pipe connection (outboard of transmission side door).
 - Over rear header pipe to crossover pipe connection (above starter).
 - l. Position each worm drive clamp so that screw is on the outboard side in the most accessible position and then tighten to 20-40 **in-lbs** (2.3-4.5 Nm).
2. Insert two allen head socket screws (with lockwashers and flat washers) through frame weldment into right side front footboard brackets. For best results, approach from left side of motorcycle using a 3/8 inch ball allen with extension. Alternately tighten screws to 30-35 ft-lbs (41-48 Nm).
 3. On Ultra models, install fairing lowers. See Section [2.29 LOWER FAIRING/ENGINE GUARD, LOWER FAIRING \(FLHTCU\), INSTALLATION](#).
 4. Install saddlebags. See Section [2.26 SADDLEBAG, INSTALLATION](#).

DISASSEMBLY

NOTE

Use the following procedure to completely disassemble the exhaust system. If just removing the exhaust to access engine and/or transmission components, see [REMOVAL](#) in this section.

1. Remove saddlebags. See Section [2.26 SADDLEBAG, REMOVAL](#).
2. On Ultra models, remove fairing lowers. See Section [2.29 LOWER FAIRING/ENGINE GUARD, LOWER FAIRING \(FLHTCU\), REMOVAL](#).

3. Remove two allen head socket screws (with lockwashers and flat washers) to release right side front footboard brackets from frame weldment. For best results, approach from left side of motorcycle using a 3/8 inch ball allen with extension.
4. Open worm drive clamps and remove six heat shields from exhaust pipes. Mark the location of the heat shields to ensure proper assembly. See [Figure 2-207](#).
5. Using a bungee cord, tie the muffler on the left side of the motorcycle to the lower saddlebag support rail.
6. Remove the exhaust flange nuts to release the front and rear header pipes from the cylinder head studs. For best results, use impact wrench with long 1/2 inch swivel socket.
7. Loosen the four TORCA clamps as follows:

Right side of motorcycle

- front header pipe to rear header pipe
- rear header pipe to right side muffler

Left side of motorcycle

- rear header pipe to crossover pipe
- crossover pipe to left side muffler

NOTE

To facilitate removal, spray PB Blaster or other suitable penetrating oil in and around joints of exhaust pipes. For best results, be sure to allow sufficient time for the penetrating oil to work.

8. Remove four screws (with lockwashers) to detach left and right side mufflers from the lower saddlebag support rails.
9. Standing on right side of motorcycle, remove muffler from rear header pipe.
10. Remove Keps nut and pull bracket tab and stud from slots in TORCA clamp (special) and exhaust support bracket.
11. Remove rear header pipe from front header pipe, crossover pipe and rear cylinder head. Remove bracket tab from slot in TORCA clamp (special).
12. Remove bolt (with flat washer and locknut) from exhaust bracket clamp on front header pipe. Use a channel lock to open clamp and then remove from front header pipe and transmission exhaust bracket. Remove front header pipe exhaust flange from front cylinder head.
13. Moving to left side of motorcycle, remove crossover pipe from left side muffler.

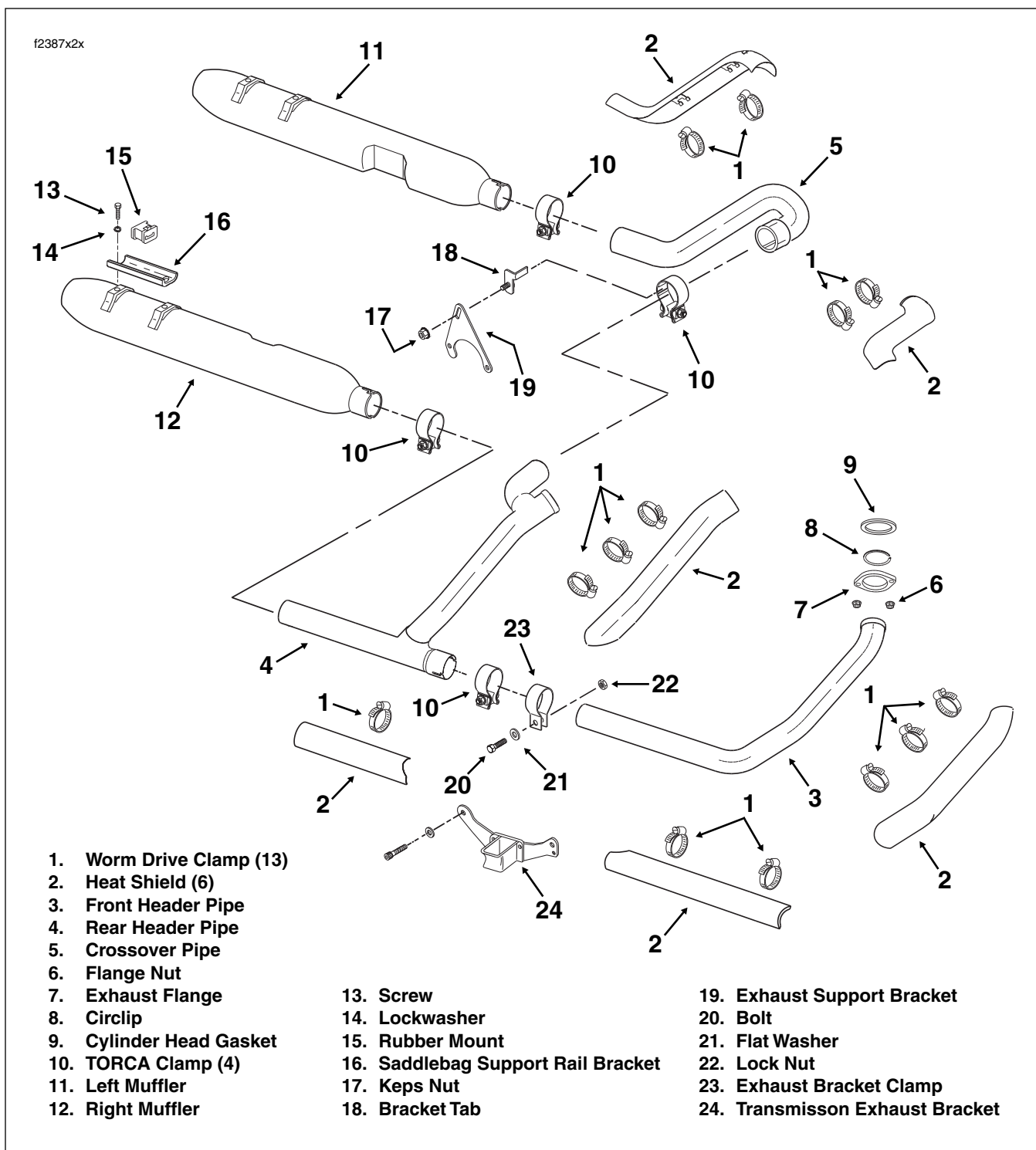


Figure 2-207. Disassemble/Assemble Exhaust System

14. Remove bungee cord to release left side muffler from lower saddlebag support rail.
15. Remove and discard gaskets from front and rear exhaust ports. Discard TORCA clamps.

NOTE

TORCA clamps have eliminated the need for silicone or graphite tape during assembly. To ensure sealing integrity and prevent the possibility of leakage, always discard TORCA clamps whenever they are removed.

ASSEMBLY

NOTE

Always loosely assemble exhaust system on motorcycle before following tightening procedure. Assemble as follows:

1. Install **new** gaskets in both the front and rear cylinder head exhaust ports (with the tapered side out).
2. Install front header pipe exhaust flange onto front cylinder head. Start flange nuts on cylinder head studs.
3. Engaging transmission exhaust bracket, capture front header pipe in exhaust bracket clamp. Use a channel lock to close clamp, if necessary. Finger tighten clamp bolt (with flat washer and locknut).
4. Slide a **new** TORCA clamp onto free end of front header pipe.
5. Install rear header pipe onto rear cylinder head and front header pipe. Start flange nuts on cylinder head studs. Move TORCA clamp into position between front and rear header pipes.
6. Slide **new** TORCA clamps onto free ends of rear header pipe. TORCA clamp to crossover pipe is special in that it has slot for bracket tab to exhaust support bracket.
7. Slide right side muffler onto rear header pipe. Finger tighten two screws (with lockwashers) to attach muffler to lower saddlebag support rail. Place TORCA clamp into position between rear header pipe and right side muffler.
8. Moving to left side of motorcycle, install crossover pipe onto remaining end of rear header pipe (above starter). Place TORCA clamp into position between rear header pipe and crossover pipe.
9. Fit bracket tab into slot of TORCA clamp engaging stud in slot of exhaust support bracket. Start Keps nut on stud.
10. Slide **new** TORCA clamp onto free end of crossover pipe.
11. Using a bungee cord, tie left side muffler to lower saddlebag support rail. Install left side muffler on crossover pipe. Place TORCA clamp into position between crossover pipe and left side muffler. Finger tighten two screws (with lockwashers) to attach muffler to saddlebag support rail.

NOTE

Verify that the exhaust pipes do not contact the motorcycle frame or any mounted components. Contact will cancel the effect of the rubber isolation mounts and transmit vibration to the rider.

12. Tighten the exhaust system as follows:

- a. Tighten the top nut of the front cylinder head exhaust flange to 9-18 **in-lbs** (1-2 Nm). Tighten the bottom nut to 100-120 **in-lbs** (11.3-13.6 Nm). Final tighten the top nut to 100-120 **in-lbs** (11.3-13.6 Nm).
- b. Tighten the bottom nut of the rear cylinder head exhaust flange to 9-18 **in-lbs** (1-2 Nm). Tighten the top nut to 100-120 **in-lbs** (11.3-13.6 Nm). Final tighten the bottom nut to 100-120 **in-lbs** (11.3-13.6 Nm).
- c. Tighten the exhaust bracket clamp bolt to 60-96 **in-lbs** (6.8-10.8 Nm).
- d. Snug two screws (with lockwashers) holding the right side muffler to the lower saddlebag support rail. Alternately tighten screws to 96-144 **in-lbs** (10.8-16.3 Nm).
- e. Snug two screws (with lockwashers) holding the left side muffler to the lower saddlebag support rail. Alternately tighten screws to 96-144 **in-lbs** (10.8-16.3 Nm).
- f. Verify that all exhaust pipes are in alignment and do not contact the motorcycle frame or mounted components.
- g. Tighten the four TORCA clamps to 45-60 ft-lbs (61-81 Nm) in the following order:
 - crossover pipe to left side muffler
 - rear header pipe to right side muffler
 - front header pipe to rear header pipe
 - rear header pipe to crossover pipe
13. Tighten Keps nut securing bracket tab to exhaust support bracket.
14. Open worm drive clamps and install six heat shields on exhaust pipes as marked during removal. See [Figure 2-207](#). Position each clamp so that screw is on the outboard side in the most accessible position and then tighten to 20-40 **in-lbs** (2.3-4.5 Nm).
15. Remove bungee cord from left side muffler.
16. Insert two allen head socket screws (with lockwashers and flat washers) through frame weldment into right side front footboard brackets. For best results, approach from left side of motorcycle using a 3/8 inch ball allen with extension. Alternately tighten screws to 30-35 ft-lbs (41-48 Nm).
17. On Ultra models, install fairing lowers. See Section [2.29 LOWER FAIRING/ENGINE GUARD, LOWER FAIRING \(FLHTCU\), INSTALLATION](#).
18. Install saddlebags. See Section [2.26 SADDLEBAG, INSTALLATION](#).