

Table 2-1. Dimensions

ITEM	IN.	MM
Wheel Base	63.5	1613
Overall Length	97.01	2464
Overall Width	38.5	977.9
Road Clearance	5.1	129.5
Overall Height	54.1	1374.1
Saddle Height*	27.3	693.4
* With 180 Lb. Rider		

Table 2-2. Weight

ITEM	LBS.	KG
Dry Weight**	845	384
GVWR	1259	571
GAWR – Front	500	227
GAWR – Rear	827	375

** As shipped from the factory

NOTE

Gross Vehicle Weight Rating (GVWR) (maximum allowable loaded vehicle weight) and corresponding Gross Axle Weight Ratings (GAWR) are given on a label located on the inside of the right front frame downtube.

Table 2-3. Capacities

ITEM		U.S.		METRIC	
Fuel Tank	Total	5 Gal.		18.9 Liters	
	Reserve	0.9 Gal.		3.4 Liters	
Oil Tank with filter		4 Quarts		3.78 Liters	
Transmission *		20-24 Ounces		591-710 Milliliters	
Primary Chaincase *		32 Ounces		946 Milliliters	
Front Fork **		VOLUME		HEIGHT	
		OZ	ML	IN	MM
		10.8	319	5.59	142

* Approximate capacity

** Front fork is functionally identical to FLHTCU. See Touring Models Service Manual for appropriate front fork service procedures.

TORQUE VALUES

2.2

ITEM	TORQUE		NOTES
Brake pedal acorn nut	25-29 ft-lbs	33.9-39.4 Nm	page 2-6
Brake pedal cover screws	20-22 in-lbs	2.3-2.5 Nm	page 2-6
Clutch fluid line flare nut	80-115 in-lbs	9.0-13.0 Nm	page 2-30, 2-31
Clutch master cylinder banjo bolt	17-22 ft-lbs	23.1-29.9 Nm	page 2-26, 2-30, 2-31
Clutch reservoir cover screws	6-8 in-lbs	0.7-0.9 Nm	page 2-26, 2-30, 2-31
Clutch secondary actuator bleeder valve	80-100 in-lbs	9.0-11.3 Nm	page 2-26, 2-30, 2-31
Footboard pivot bolt	84-108 in-lbs	9.5-12.2 Nm	page 2-4
Front axle cover set screw	60-84 in-lbs	6.8-9.5 Nm	page 2-8
Front saddlebag support screw	70-100 in-lbs	7.9-11.3 Nm	page 2-41
Handlebar control lever clamp screw	60-80 in-lbs	6.8-9.0 Nm	page 2-17, 2-22, 2-26
Handlebar switch housing screw	35-45 in-lbs	4.0-5.1 Nm	page 2-17, 2-22
Handlebar top clamp fasteners	12-16 ft-lbs	16.3-20.3 Nm	page 2-16
Muffler bracket screw	96-144 in-lbs	10.9-16.3 Nm	page 2-41
Passenger footboard bracket screw	30-35 ft-lbs	40.7-47.5 Nm	page 2-6
Radio chassis mounting screws	35-45 in-lbs	4.0-5.1 Nm	page 2-22
Rear axle cone nut	95-105 ft-lbs	128.9-142.4 Nm	page 2-7
Rear saddlebag support screws	15-20 ft-lbs	20.4-27.1 Nm	page 2-41
Rider footboard bracket screw	30-35 ft-lbs	40.7-47.5 Nm	page 2-4
Saddlebag filler strip screws	15-20 ft-lbs	20.4-27.1 Nm	page 2-41
Shift lever clamp bolts	90-110 in-lbs	10.2-12.4 Nm	page 2-6
Shift lever peg	12-14 ft-lbs	16.3-18.9 Nm	page 2-6
Switch housing screw	34-45 in-lbs	4.0-5.1 Nm	page 2-20
Triple clamp cover backside fasteners	70-110 in-lbs	7.9-12.4 Nm	page 2-9
Triple clamp lower Allen head fastener	120-180 in-lbs	13.6-20.4 Nm	page 2-9
Upper Saddlebag Bracket Screw	15-20 ft-lbs	20.4-27.1 Nm	page 2-41

GENERAL

See Figure 2-2. The full 17 digit serial, or Vehicle Identification Number (V.I.N.) is stamped on the right side of the frame backbone at the rear of the steering head (and under the main harness conduit). A label bearing the VIN code is also affixed to the left side of the steering head.

An abbreviated V.I.N. is stamped on the left side crankcase at the base between the cylinders.

Sample V.I.N. as it appears on the steering head -
1HD1PRE156Y975001

Sample abbreviated V.I.N. as it appears on the left crankcase
- **PRE6975001**

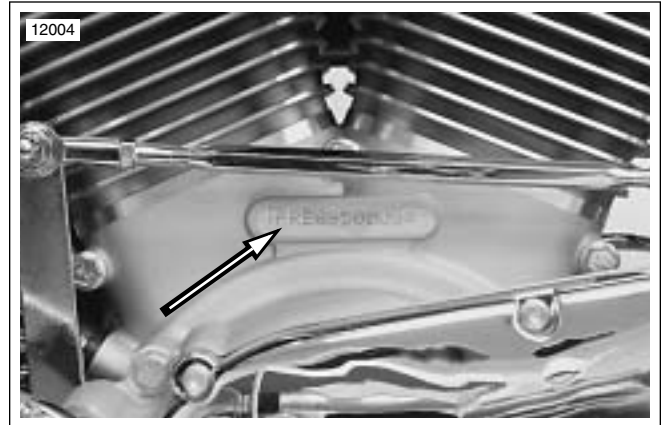


Figure 2-1. Abbreviated V.I.N. Location

NOTE

Always give the full 17 digit Vehicle Identification Number when ordering parts or making any inquiry about your motorcycle.

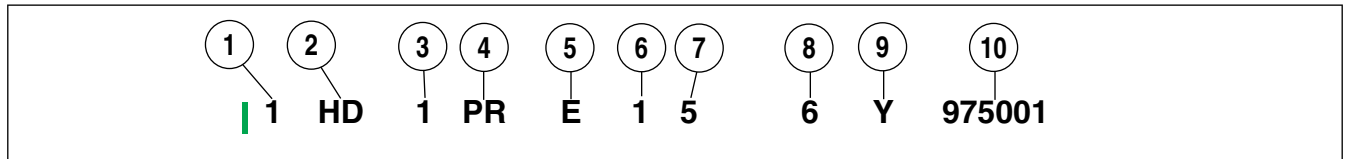


Figure 2-2. Vehicle Identification Number (example)

Table 2-4. Harley-Davidson 2006 FLHTCUSE Model V.I.N. Description

ITEM	DESCRIPTION	POSSIBLE VALUES
1	Market destination	1=Originally manufactured for sale <u>within</u> the United States 5=Originally manufactured for sale <u>outside</u> of the United States
2	Manufacturer and make	HD=Harley-Davidson
3	Motorcycle type	1=Heavyweight motorcycle 901 cc and larger
4	Model	PR=FLHTCUSE
5	Engine type	E= Twin Cam, 1688 c.c. air-cooled, fuel injected
6	Introduction date	1=Regular 2=Mid-year 3=California/regular 4=Cosmetic changes and/or special introductory date 5=California/cosmetic changes and/or special introductory date 6=California/mid-year
7	VIN check digit	Can be 0-9 or X
8	Model year	6=2006
9	Plant of manufacture	Y=York, PA., U.S.A.
10	Sequential number (last 6 digits)	varies

RIDER FOOTBOARDS

NOTES

- Unless the inserts or bottom assemblies are being replaced, they do not have to be removed from footboard brackets.
- See Figure 2-3. The right and left footboard frame mounts allow a small variance in height and angle of footboards. If footboard brackets are to be removed, make note of their position in adjustment holes in frame mounts before removing them. Make sure to reinstall footboard brackets in same positions.

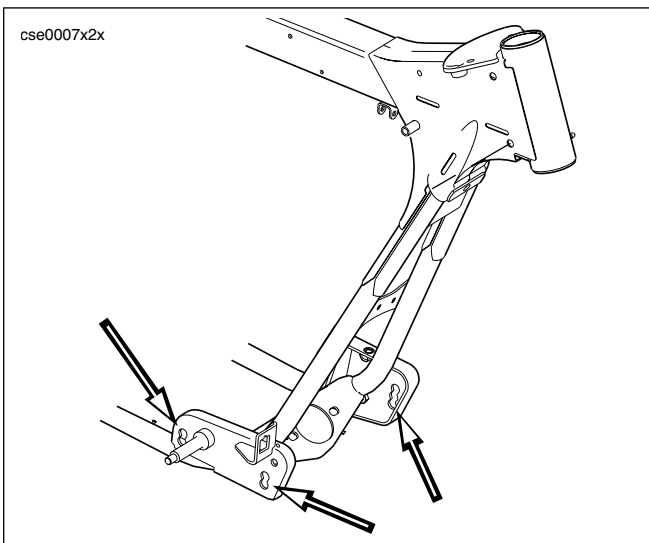


Figure 2-3. Footboard Position Adjustment Holes

Removal

1. Position motorcycle upright on a suitable lift so that weight of vehicle is not resting on jiffy stand.
2. See Figure 2-4. With footboards in up position, use a screwdriver to work cover rubber collars out through footboards. Remove insert assemblies.
3. See Figure 2-5. Remove right footboard pivot bolts (12) and locknuts (11), and remove footboard bottom assembly (17).
4. Remove screws (20), lockwashers (15), washers (14) and right front and rear footboard brackets (16, 19).
5. Remove left footboard pivot bolts, nuts and remove footboard bottom assembly (10).
6. Remove screws (21), lockwasher (23), nut (24) and left rear footboard bracket (22).
7. Remove screw (20), lockwasher (15), washer (14) and left front footboard bracket (13).

Installation

1. See Figure 2-5. Install left front footboard bracket (13) with washer (14), lockwasher (15) and screw (20). Tighten screw only finger-tight at this time.
2. Install left rear footboard bracket (22) with screws (21), lock washer (23) and nut (24). Tighten screws to 30-35 ft-lbs (40.7-47.5 Nm).
3. Install left footboard bottom assembly (10) onto footboard brackets. Install and tighten pivot bolts (12) and locknuts (11) to 84-108 **in-lbs** (9.5-12.2 Nm).
4. Tighten left front footboard bracket screw (20) to 30-35 ft-lbs (40.7-47.5 Nm).
5. Install right footboard brackets (16, 19) with washers (14), lockwashers (15), and screws (20). Tighten screws only finger-tight at this time.
6. Install right footboard bottom assembly (17) onto footboard brackets. Install and tighten pivot bolts and locknuts to 84-108 **in-lbs** (9.5-12.2 Nm).
7. Tighten right footboard bracket screws (20) to 30-35 ft-lbs (40.7-47.5 Nm).
8. Moisten footboard cover rubber collars with soapy water.
9. With left footboard bottom assembly in up position, hold **new** footboard insert assembly (9) in position.
10. From underside of footboard use a pliers to pull each rubber collar through footboard hole.
11. Repeat for right side footboard.

CAUTION

Avoid contacting chrome surfaces with abrasive materials (stones, sand, etc.) as damage will result.

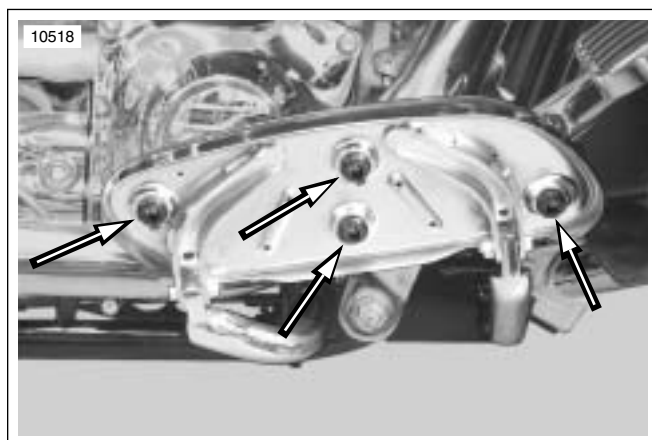
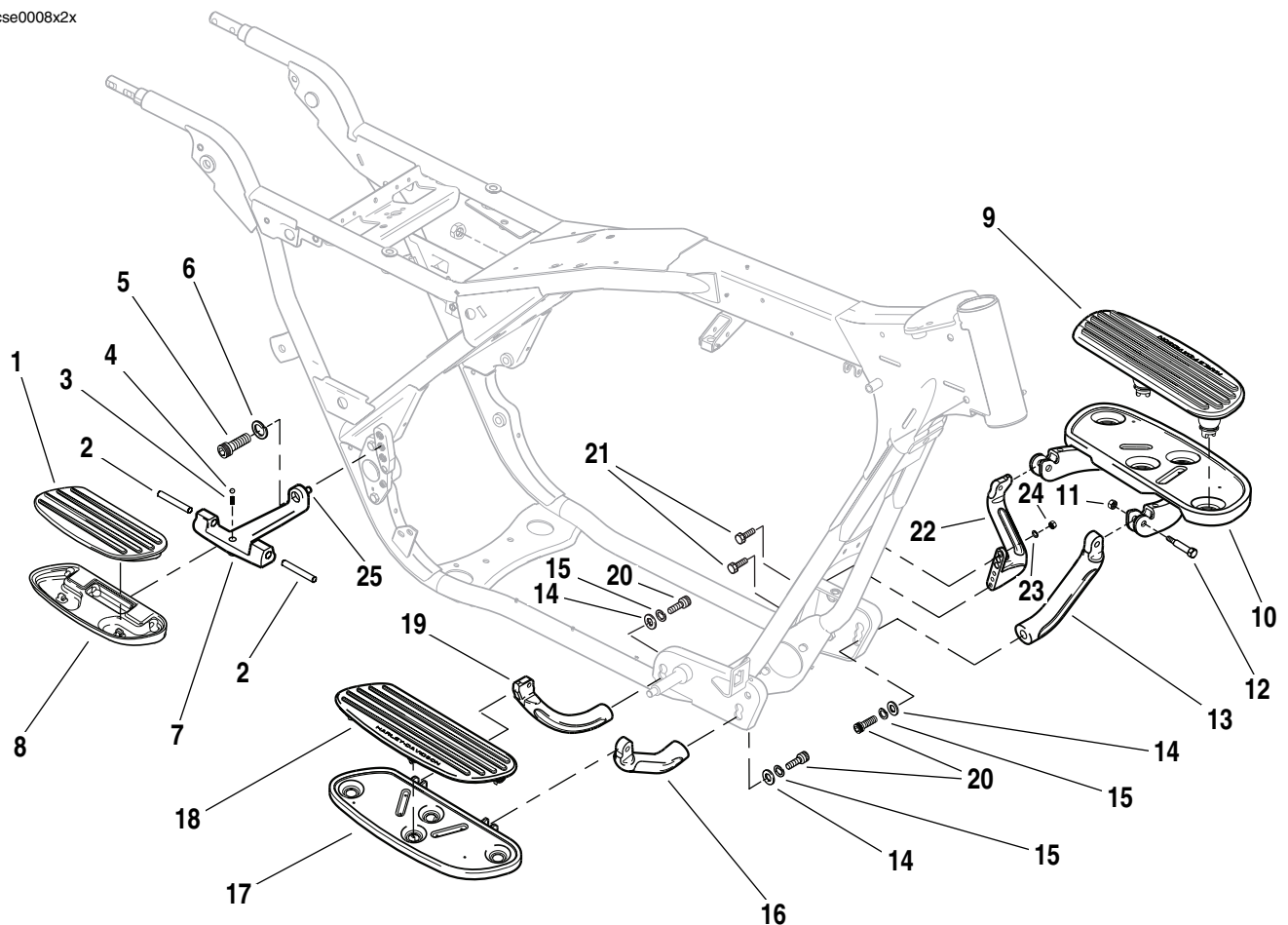


Figure 2-4. Footboard Cover Rubber Collars

cse0008x2x



1. Right passenger footboard insert (left-side not shown)
2. Pivot pin
3. Spring
4. Ball
5. Screw (2)
6. Lockwasher (2)
7. Passenger footboard support bracket
8. Passenger footboard bottom assembly
9. Left rider footboard insert
10. Left rider footboard bottom assembly
11. Locknut (4)
12. Pivot bolt (4)

13. Left front rider footboard support bracket
14. Washer (3)
15. Lockwasher (3)
16. Right front rider footboard support bracket
17. Right rider footboard bottom assembly
18. Right rider footboard insert
19. Right rear rider footboard support bracket
20. Screw (3)
21. Screw (2)
22. Left rear rider footboard support bracket
23. Lockwasher
24. Nut
25. Locating pin

Figure 2-5. Rider and Passenger Footboard Components

PASSENGER FOOTBOARDS

Removal

1. See [Figure 2-5](#). Remove screw (5) and lockwasher (6) to remove footboard bracket (7) from rear fork pivot bracket.
2. Repeat for other passenger footboard assembly.

Disassembly

NOTE

If only replacing the rubber pad, refer to step 1 below and then see step 3. under ASSEMBLY.

1. See [Figure 2-5](#). Tilt footboard bottom assembly (8) upward. From bottom side, use a small blade screwdriver to push rubber beads on pad up through holes in footboard bottom assembly. Remove footboard insert (1).
2. Using a brass drift and rubber mallet, tap two pivot pins (2) toward center of footboard and remove.
3. Remove footboard bottom assembly from footboard bracket (7).
4. Remove ball (4) and spring (3) from hole in footboard bracket.
5. Repeat for other passenger footboard assembly.

Assembly

1. See [Figure 2-5](#). Place spring (3) into hole in footboard bracket (7). Place ball (4) on top of spring.
2. Place footboard bottom assembly (8) into position on bracket and install pivot pins (2) from the outboard side. Using a brass drift and rubber mallet, tap pins until centered in lugs of bracket.
3. Moisten rubber beads on new insert assembly with soapy water. Place footboard insert (1) into position on footboard bottom assembly. Press firmly on footboard insert in areas of rubber beads.
4. Repeat for other passenger footboard assembly.

Installation

1. See [Figure 2-5](#). Insert locating pin (25) on footboard bracket (7) into hole in rear fork pivot 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 fork pivot bracket as necessary.

2. Install screw (5) and lockwasher (6). Tighten screw to 30-35 ft-lbs (40.7-47.5 Nm).

SHIFT LEVER

Replacement

1. Remove and replace shift lever pegs. Tighten fasteners to 12-14 ft-lbs (16.3-18.9 Nm).
2. If necessary, replace shift levers as follows:
 - a. loosen clamp bolts and pull shift levers off splined shaft.
 - b. Position shift levers on splined shaft for comfortable rider position.
 - c. Tighten clamp bolts to 90-110 **in-lbs** (10.2-12.4 Nm).

REAR BRAKE PEDAL

Replacement

1. See [Figure 2-6](#). Remove screws (5), brake pedal cover (8) and pad (7) from metal backing plate (4).
2. Remove acorn nut (1), offset washer (2) and metal backing plate from foot brake lever (3).

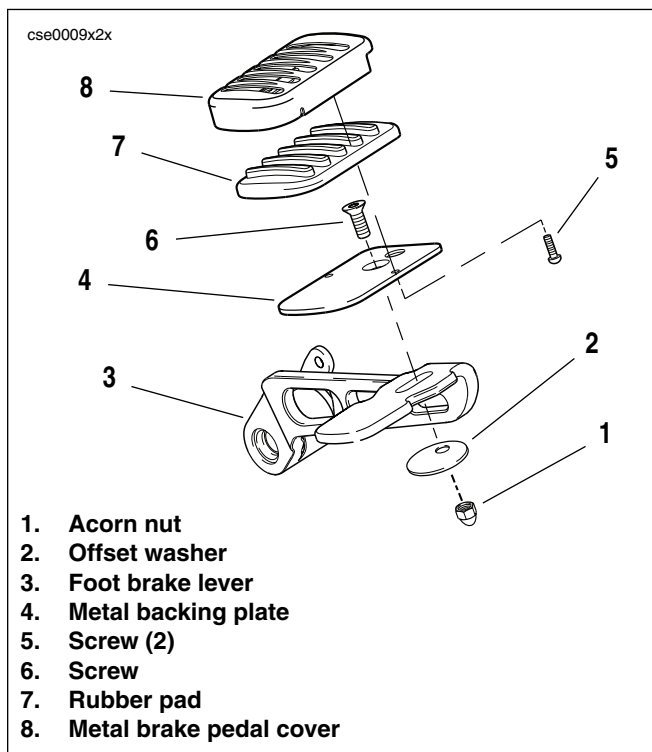


Figure 2-6. Rear Brake Pedal

3. Install metal backing plate (4) to foot brake lever (3). Secure with offset washer (2) and acorn nut (1). Tighten nut to 25-29 ft-lbs (33.9-39.4 Nm).
4. Assemble metal brake pedal cover (8) and rubber pad (7) to metal backing plate. Secure with screws (5). Tighten screws to 20-22 **in-lbs** (2.3-2.5 Nm).

REMOVAL

1. Block motorcycle under frame so rear wheel is off the ground.
2. Remove saddlebags. See SADDLEBAG in Touring Models Service Manual.
3. Remove mufflers. See REAR WHEEL in Touring Models Service Manual.
4. Remove e-clip from groove on right end of rear axle.
5. Remove cone nut and adjuster cam from axle.
6. Using a soft mallet, gently tap end of axle towards left side to loosen.
7. Pull the axle out to saddlebag support.
8. To clear the saddlebag support, rotate the axle to lowest cam position and push the bottom of the tire to the right to angle the assembly in the fender with the left end of axle tilted down.
9. Pull the axle the rest of the way out.
10. 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 scratching the brake disc.

NOTE

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

11. Move wheel forward to slip belt off sprocket and remove wheel from rear fork.

NOTE

Removal of the rear wheel can be also facilitated by removing the lower shock bolts and dropping the rear fork below the saddlebag support brackets. This provides access to the rear axle.

INSTALLATION

1. Place rear wheel in rear swingarm. Slide wheel forward and slip belt over sprocket.

⚠ WARNING

Never bend belt forward into a loop smaller than the drive sprocket diameter. Never bend belt into a reverse loop. Over bending can damage belt resulting in premature failure, which could cause loss of control and death or serious injury. (00339a)

2. Seat caliper on anchor weldment of rear swingarm. Position wheel in rear fork, so that brake disc is centered between brake pads.

3. Coat the axle with LOCTITE ANTI-SEIZE.
4. Tilt the bottom of the tire to the right.
5. Orient the axle to the lowest cam position and angle the axle to match angle of rear wheel.
6. With the larger OD on the outboard side, hold external spacer between the rear fork and belt sprocket. Slide the axle through left side of rear swingarm, external spacer, and sprocket into the wheel hub.
7. When the axle emerges from the hub, straighten the wheel and push axle through short external spacer, caliper bracket and rear fork.
8. Rotate flat on threaded end of axle to the top. With the thumb down and the cam forward, install adjuster cam on end of axle.
9. Apply a thin film of LOCTITE ANTI-SEIZE to inboard side of cone nut. Install cone nut on axle, but finger tighten only.
10. Verify that adjuster cam just contacts weld nub on both sides of rear fork. If necessary push wheel forward slightly to achieve the desired result. Snug the cone nut to 15-20 ft-lbs (20.4-27.1 Nm).
11. Lower motorcycle to ground.
12. Rotate weld nut on left side of axle in a clockwise direction.
13. Check belt deflection. See DRIVE BELT under SCHEDULED MAINTENANCE PROCEDURES.
14. When belt deflection is within specifications, hold weld nut and final tighten cone nut to 95-105 ft-lbs (128.9-142.4 Nm).
15. With the flat side out, install **new** e-clip in axle groove.
16. Install mufflers. See REAR WHEEL in the Touring Models Service Manual.

⚠ WARNING

Whenever a wheel is installed and before moving the motorcycle, pump brakes to build brake system pressure. Insufficient pressure can adversely affect brake performance, which could result in death or serious injury. (00284a)

17. Press rear brake pedal several times to set brake pads.
18. Install saddlebags. See SADDLEBAG in the Touring Models Service Manual.

REPLACEMENT

1. See [Figure 2-7](#). Loosen but do not remove set screw under cover. Remove cover.
2. Remove set screws from cover.
3. Liberally apply LOCTITE THREADLOCKER 262 (red) (Part No. 94759-77) to threads of set screw.
4. Orient cover over axle end so that set screw is on the bottom and will tighten down against a flat on the axle nut.
5. Install and tighten set screw to 60-84 **in-lbs** (6.8-9.5 Nm).
6. Repeat for opposite side.

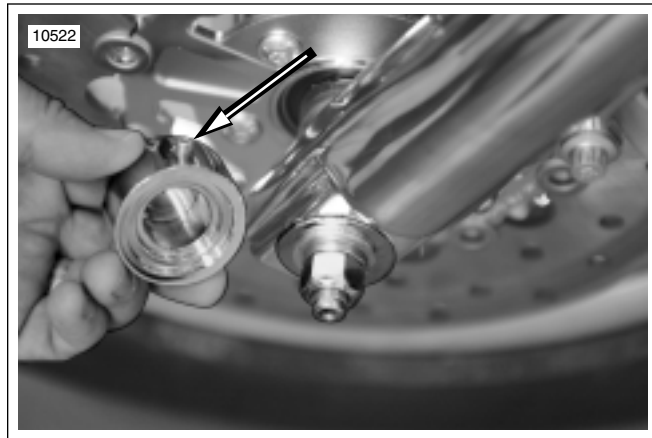


Figure 2-7. Front Axle Cover Set Screw

REPLACEMENT

1. See [Figure 2-8](#). Loosen but do not remove the two screws (1) on the backside of the lower triple clamp cover (3).
2. Remove screw (4) through brake line manifold on bottom of triple clamp cover.
3. Remove two screws loosened in step 1, with washers (2) and remove cover.
4. To replace cover, fit cover inside bottom of nacelle and around lower triple clamp (5). Hold in place.
5. Install screws (1) and washers (2). Tighten finger-tight only. Install screw (4) through brake line manifold and cover. Tighten finger-tight only. Verify that cover is snug against rear surface of lower triple clamp.

NOTE

Plastic plugs in locator holes in rear surface of triple clamp can cause interference with cover. Verify that center plug has been removed.

6. Tighten screws (1) to 70-110 **in-lbs** (7.9-12.4 Nm).
7. Tighten screw (4) to 120-180 **in-lbs** (13.6-20.4Nm).
8. Verify that brake line does not rub on cover. Adjust line or cover as necessary.

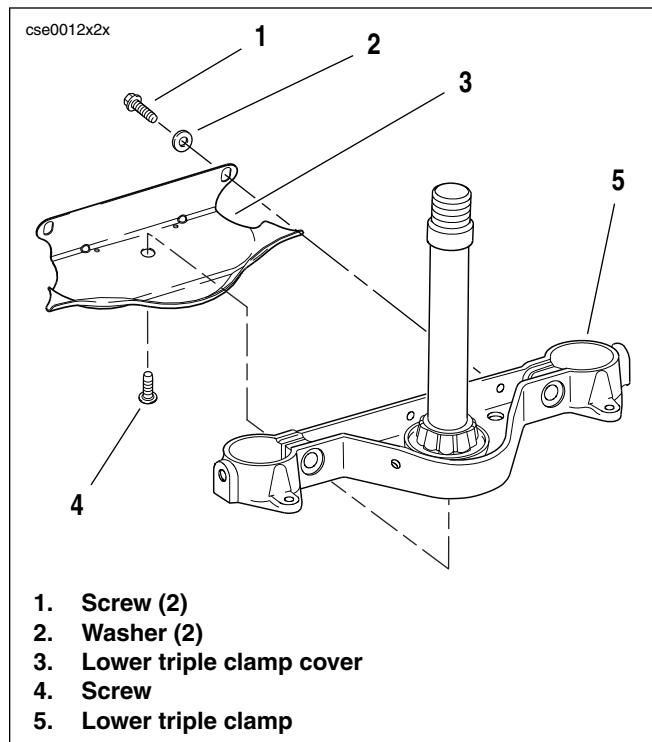


Figure 2-8. Lower Triple Clamp Cover

REMOVAL

⚠ WARNING

To prevent accidental vehicle start-up, which could cause death or serious injury, remove maxi-fuse before proceeding. (00251a)

1. Remove left saddlebag, left side cover and Maxi-Fuse.
2. Remove outer fairing and fairing cap. See FAIRING CAP in Touring Models Service Manual.
3. See [Figure 2-9](#). Separate handlebar switch connectors [22] (1) and [24] (2). Separate heated handgrip power harness connector [189] (3). Disengage connector housings from locating pins.

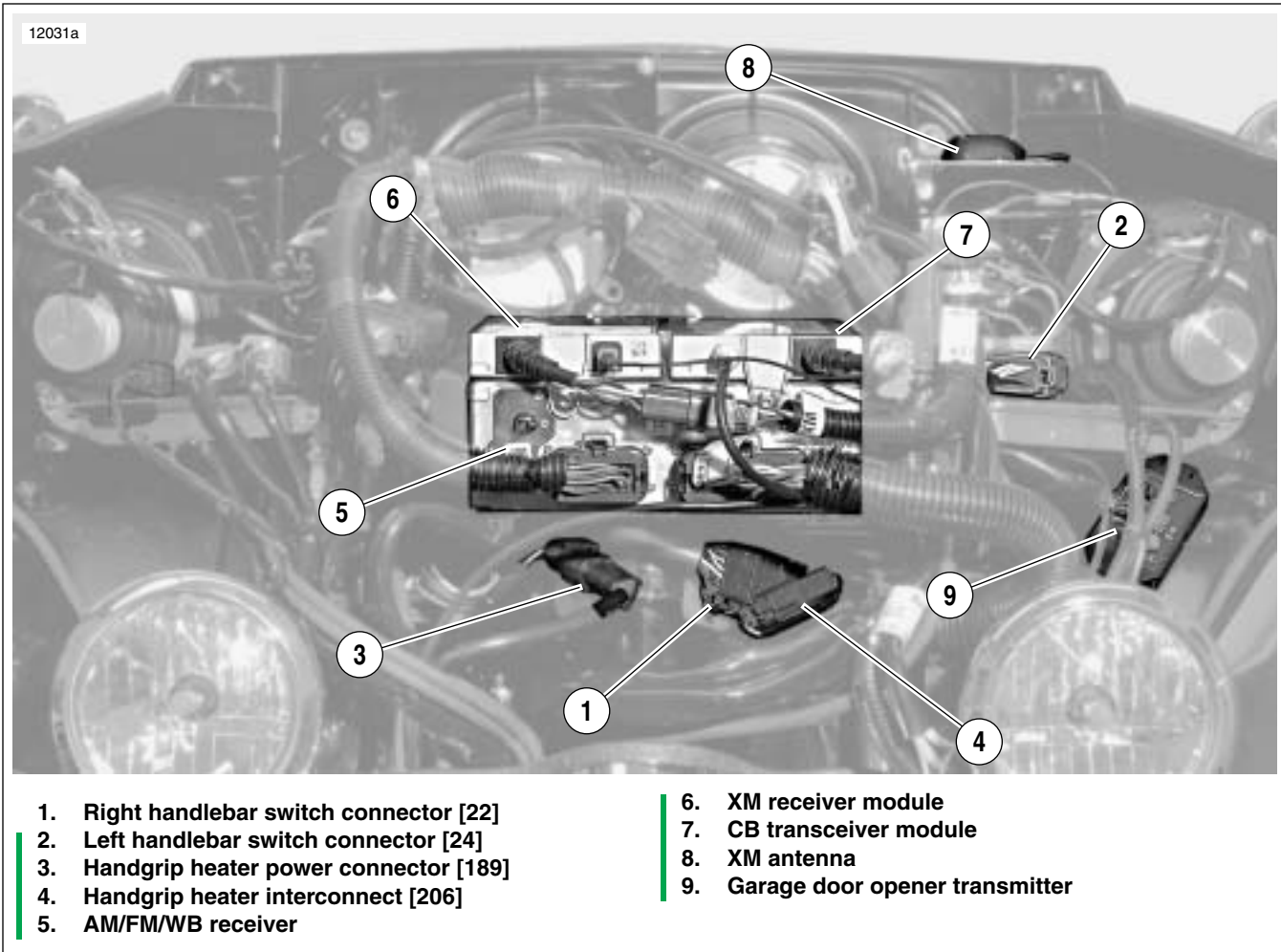


Figure 2-9. Handlebar Control Connectors, Radio and Garage Door Components

4. See [Figure 2-10](#). Squeeze front brake lever and insert a 5/32 in. (4 mm) thick cardboard insert between front brake lever and lever bracket.

CAUTION

Do not remove or install the master cylinder assembly without first positioning a 5/32-inch (4 mm) thick insert between the brake lever and lever bracket. Removing or installing the master cylinder assembly without the insert in place may result in damage to the rubber boot and plunger on the front stoplight switch. (00324a)

5. Remove fasteners securing handlebar clamp to master cylinder and front brake lever.
6. Protect chrome and painted surfaces and tie master cylinder, reservoir and brake line out of the way.

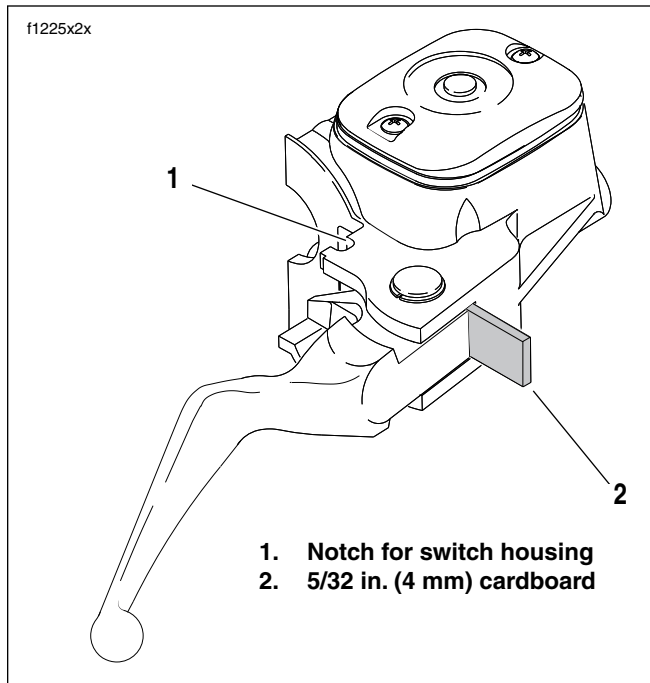


Figure 2-10. Cardboard Insert

7. See [Figure 2-11](#). Remove upper and lower fasteners securing right switch control housing halves to handlebar.
8. See [Figure 2-12](#). Raise upper housing enough to expose Throttle grip/cable assembly. Use a screwdriver to rotate cable ferrules in throttle grip notches. Remove cables from notches on inboard side of throttle grip.

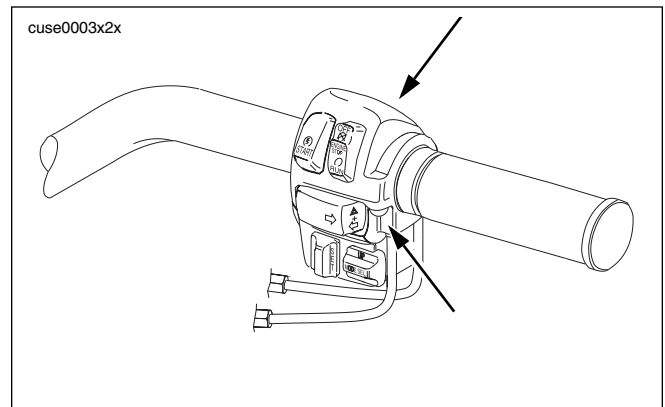


Figure 2-11. Right Handlebar Switch Housing Screws

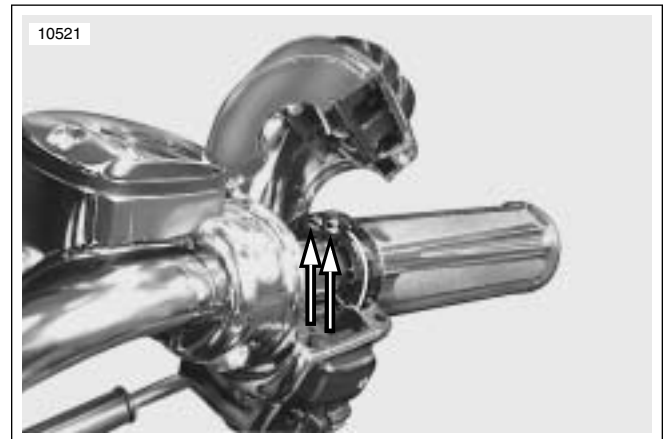


Figure 2-12. Throttle and Idle Cable Ferrules

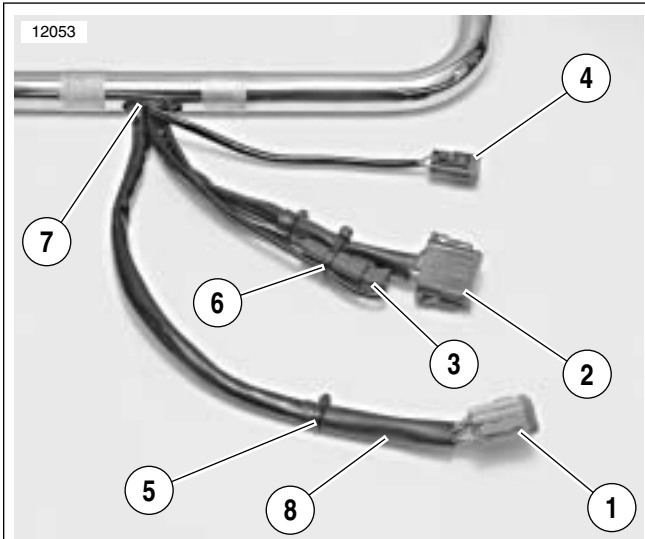
9. Shorten throttle and idle cable adjusters and pull idle and throttle cable inserts and elbows from switch housing. For best results, use a rocking motion while pulling. Place a drop of light oil on the retaining rings, if necessary.
10. Protect chrome and painted surfaces and tie idle and throttle cables out of the way. Maintain proper cable routing.
11. Remove fasteners and washers securing handlebar clamp to clutch lever bracket.
12. Protect chrome and painted surfaces and tie master cylinder, reservoir and clutch fluid line out of the way.
13. Remove upper handlebar clamps and lift handlebar with wire harnesses from motorcycle.

NOTE

*If handlebar rubber mounts require service, see **HANDLEBARS** in the Touring Models Service Manual.*

DISASSEMBLY

1. Place handlebar assembly on work bench.
2. See [Figure 2-13](#). Cut all cable straps (5, 6, 7). Discard cable straps.
3. Separate heated handgrip interconnect harness connector [206] (3).



1. Left hand switch control connector [24] (gray)
2. Right hand switch control connector [22] (black)
3. Heated handgrip interconnect harness connector [206]
4. Heated handgrip power harness connector [189]
5. Switch harness cable strap (2)
6. Interconnect harness cable strap
7. Harness bundle cable strap
8. Boot (2)

Figure 2-13. Handlebar Harness Assembly

4. Remove wires from handlebar switch connector housings:
 - a. See [Figure 2-14](#). Use a screwdriver to pry out the secondary locking wedges. See DEUTSCH ELECTRICAL CONNECTORS in Touring Models Service Manual.
 - b. See [Figure 2-15](#). Depress internal terminal latches and pull socket terminals out of the wire seal.
5. Remove wires and terminals from heated handgrip power and interconnect harness connector housings. See DEUTSCH ELECTRICAL CONNECTORS in Touring Models Service Manual.
6. See [Figure 2-13](#). Slide boots (8) off switch control wiring harnesses. Retain boots; they will be reused.

7. Wrap terminal ends of each wiring harness tightly in electrical tape to protect terminals from damage as harness is removed from handlebar.

NOTE

Forming too large a bulge with electrical tape at end of wiring harness can make it difficult to extract harness from handlebar.

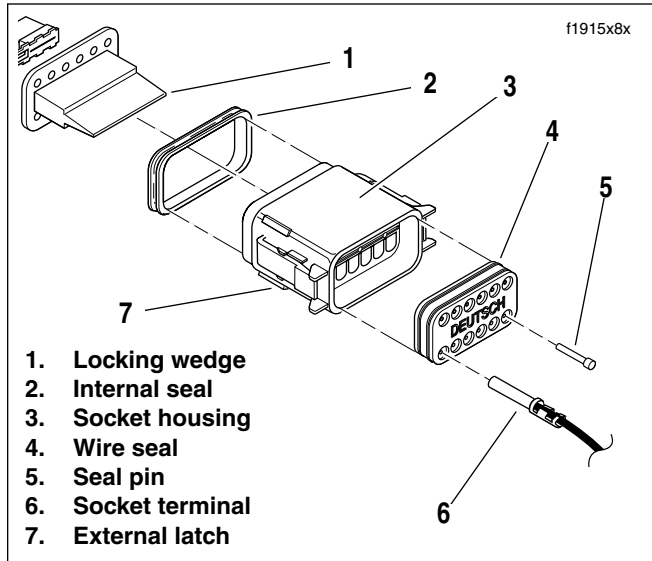


Figure 2-14. 12-place Deutsch Socket Side Connector

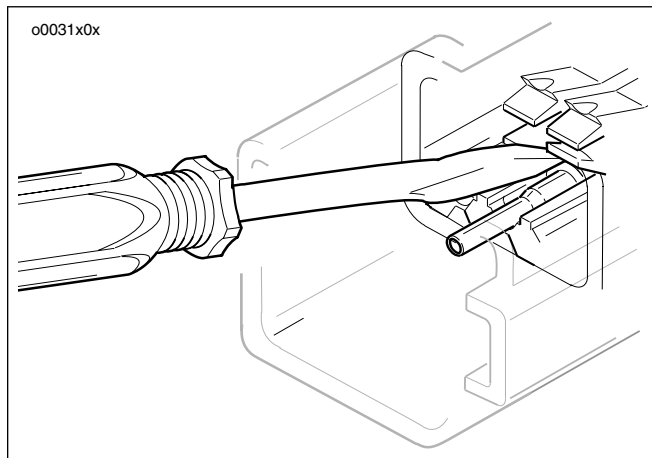


Figure 2-15. Internal Deutsch Terminal Latches

8. Remove upper and lower fasteners securing left switch control housing halves to handlebar.

9. See [Figure 2-16](#). Lightly lubricate conduits and tape with glass cleaner. Then pull left and right side switch control and heated handgrip wiring and conduits from handgrip ends through handlebar and handlebar grommets.
10. Unwrap electrical tape and wire from socket terminals.
11. Repair and replace switches and socket wires as necessary.

NOTE

For handlebar switch repair procedures, see *HANDLEBAR SWITCHES* in *Touring Models Service Manual*.

ASSEMBLY**NOTE**

Make sure grommets are in place in oval holes near each end of handlebar before feeding harnesses into handlebar.

String wire leaders through handlebar as follows:

1. Cut five lengths of mechanic's wire, each approximately three feet (91.4 cm) long. These will be used as harness wire leaders.
2. Feed two wire leaders through grommets hole near left end of handlebar and one wire leader through hole in extreme left end of handlebar.
3. Feed one wire leader through grommets hole near right end of handlebar and one wire leader through hole in extreme right end of handlebar.
4. Extract ends of all wire leaders through center hole. Secure leaders at center hole so they cannot be accidentally pulled back through handlebar.
5. See upper panel of [Figure 2-16](#). Make sure grommets are installed in oval holes near each end of handlebar.
6. Secure each wire leader to its harness at ends of handlebar as follows. Neatly wrap socket terminals and wires of each harness with a few twists of the leader wire:
 - a. Left side: Attach wire leader extending from extreme left end of handlebar to left handgrip interconnect harness. Attach other two wire leaders (extending from grommets hole near left end of handlebar), one to left switch control harness and the other to left handgrip power harness.
 - b. Right side: Attach wire leader extending from extreme right end of handlebar to right handgrip interconnect harness. Attach other wire leader (extending from grommets hole near right end of handlebar) to right switch control harness.

7. Wrap wires and terminals of each harness tightly with electrical tape to protect wires and terminals when installing harnesses in handlebar.

WARNING

Without protective grommets around wire entry openings in handlebar, wires can rub against sharp metal edges of opening. A short or broken connection can cause loss of electrical control which can lead to death or serious injury.

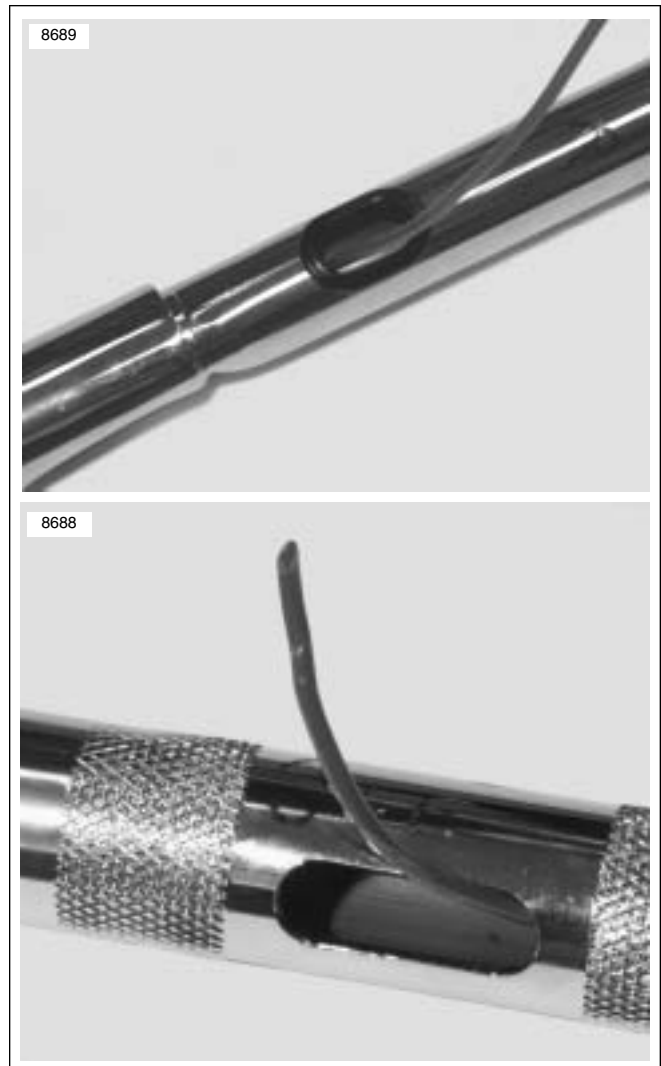


Figure 2-16. Wire Leader in Handlebar

8. Lubricate wire conduits with glass cleaner. Grasp end of wire leader and gently pull wire bundles through grommets and handlebar ends to the handlebar center hole. Pull harnesses until both heated handgrips are fully seated on ends of handlebar and no excess slack exists in switch control harnesses.

NOTES

- *It is best to pull all the harnesses for one end of handlebar at a time. However, if you wish to pull only one harness at a time, pull small heated handgrip harnesses first, then large switch control harnesses.*
 - *As you pull on wire leaders, assist the process by gently feeding harnesses into handlebar at other end.*
 - *If resistance is felt, do not pull too hard on wire leader as this may damage wires and/or terminals, or dislodge leader from harness.*
9. Make sure grommets are still correctly positioned in oval holes near ends of handlebar.
 10. See [Figure 2-17](#). and [Figure 2-18](#). Orient wires in switch-housings:
 - a. Right hand side: the RUN and STOP wires are wrapped over the front of the handlebar, back and into the handlebar through the grommet. Make sure the wires run **outboard** of the clamping post cast into the inside of the lower housing.
 - b. Left hand side: the HORN and HI/LO BEAM wires are also wrapped over the front of the handlebar, back and into the handlebar through the grommet. Make sure the wires run **inboard** of the clamping post cast into the inside of the lower housing.
 11. Loosely install left and right switch housings onto handlebar and over inboard ends of heated handgrips.
 12. Gently pull on wire leaders to remove any excess slack in harnesses. Unwrap tape and mechanic's wire.
 13. See [Figure 2-13](#). Secure wire harnesses at exit from center of handlebar with cable strap (7).
 14. Reinstall boot (8) on each switch control harness. Secure with cable strap (5).
 15. See [Figure 2-14](#). Fit wire seal (4) into back of Deutsch socket housings (3). See DEUTSCH ELECTRICAL CONNECTORS in Touring Models Service Manual.

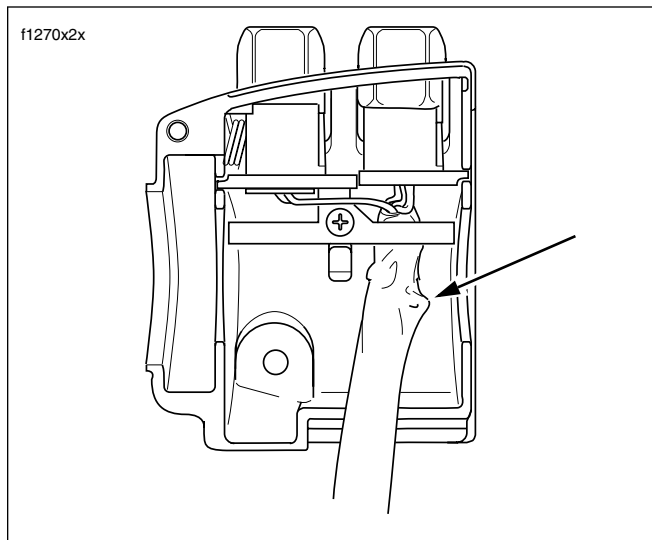


Figure 2-17. Run/Stop Switch Wiring in Upper Right Hand Control Housing

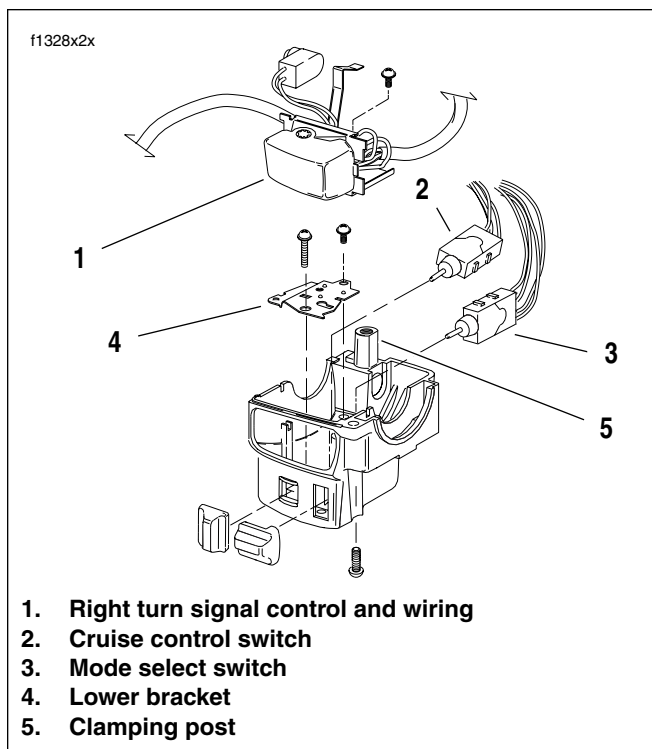


Figure 2-18. Wiring in Lower Right Hand Control Housing

16. Following color codes in [Table 2-5.](#), insert wire color coded socket terminals into numbered chambers in socket housings:
- Hold socket terminal 1 in. (25.4 mm) behind contact barrel.
 - Gently push socket terminal through hole in wire seal into chamber until it “clicks” in place.
 - Verify that socket will not back out of chamber. Gently tug on wire to confirm that it is locked.

NOTE

An ELECTRICAL TERMINAL CRIMP TOOL (Part No. HD-39965) can be used to install Deutsch pin and socket terminals on wires.

17. Install internal seals on lip of socket housings.
18. Snap tapered end of locking wedges into socket housings.

NOTE

If the locking wedge does not snap into position, verify that all terminals are fully seated in the socket housing.

19. Gently tug on wire ends to verify that all terminals are locked.
20. In a similar fashion, install wire terminals on heated handgrip harnesses into their corresponding socket connectors. See DEUTSCH ELECTRICAL CONNECTORS in Touring Models Service Manual.
21. Plug handgrip interconnect harness connectors [206] together. See [Figure 2-13](#). Secure interconnect harness connector assembly (3) to right hand switch control harness (2) [22] (black) with cable strap (6).

Table 2-5. Handlebar Connectors

Wire Color	Cavity No.
RH Connector [22] (12 socket, BLACK)	
Orange/White (O/W)	1
Red/Blue (R/BE)	2
Gray (GY)	3
White/Black (W/BK)	4
White/Brown (W/BN)	5
Black/Red (BK/R)	6
Brown/White (BN/W)	7
Gray/White (GY/W)	8
Pink/White (PK/W)	9
Violet/Black (V/BK)	10
White/Blue (W/BE)	11
Blue/Black (BE/BK)	12
LH Connector [24] (12 socket, GRAY)	
Orange/White (O/W)	1
Yellow (Y)	2
Blue (BE)	3
White (W)	4
White/Violet (W/V)	5
Yellow/Black (Y/BK)	6
Violet/Black (V/BK)	7
Brown/Black (BN/BK)	8
Pink/White (PK/W)	9
Green/Blue (GN/BE)	10
Gray/Green (GY/GN)	11
Orange/Black (O/BK)	12
Heated Handgrip Interconnect [206] (2 socket, BLACK)	
Black (BK)	1
Black/White (BK/W)	2
Heated Handgrip Main Power [189] (3 socket, BLACK)	
Orange/White (O/W)	A
Red (R)	B
Black (BK)	C

INSTALLATION

CAUTION

Improperly aligned handlebars can contact fuel tank when turned lock to lock. Verify turning clearance before maneuvering or riding motorcycle.

1. Carry handlebar with internal wire harnesses and control housings to the motorcycle.
2. Set handlebar on lower clamps and loosely install upper handlebar clamps and fasteners. Position wires so they exit under radio to front of vehicle from between risers.

CAUTION

Never adjust handlebars using excessive force. Doing so may result in damage to handlebar.

NOTE

If handlebars are positioned for a rider of normal size, postpone adjustment until rider has checked their position. If customer requests changing handlebar position, perform the adjustment before delivering the motorcycle.

3. Center handlebar laterally (sideways) in clamps.
4. Snug front fasteners until upper clamp contacts lower clamps.
5. Position handlebar in normal rider posture.
6. Tighten fasteners in the following order:
 - a. Rear fasteners: 12-16 ft-lbs (16.3-20.3 Nm).
 - b. Front fasteners: 12-16 ft-lbs (16.3-20.3 Nm).
7. Plug left and right switch control harness connectors into the pin side housings.
8. Remove loosely installed switch control housing fasteners.
9. Push throttle and idle control cable inserts into lower right switch housing.

NOTE

The smaller idle cable insert is gold while the larger throttle cable insert is silver. The inserts only fit their corresponding holes in switch housing.

10. Press throttle control grip onto handlebar until it bottoms. Pull grip back about 1/8 in. (3.2 mm).
11. Use a screwdriver to rotate barrels and fit cables through notches in throttle control grip. Be sure cables ride in grooves of throttle control grip.

CAUTION

Do not remove or install the master cylinder assembly without first positioning a 5/32-inch (4 mm) thick insert between the brake lever and lever bracket. Removing or installing the master cylinder assembly without the insert in place may result in damage to the rubber boot and plunger on the front stoplight switch. (00324a)

12. Assemble upper and lower right switch control housing halves to handlebar and brake lever bracket:
 - a. Position upper switch housing so wire conduit wraps around outside of handlebar and sets in clearance at bottom of handlebar.
 - b. Verify that wires will not be pinched when fasteners are tightened.
 - c. Verify that throttle and idle control cables work freely.
 - d. Install switch housing fasteners.
13. Loosely assemble handlebar clamp to front brake control lever bracket master cylinder and reservoir:
 - a. Engage tab on switch with notch at top of brake lever bracket.
 - b. Alternately tighten housing and bracket fasteners until all components fit and wires route without interference. Fasteners should only be snug.
 - c. Verify housing and bracket clamp are tight against handgrip shoulder/edge of bar.

14. See [Figure 2-19](#). Range marks are located on bottom of handlebar adjacent to clamp assembly. Rotate right control and brake master cylinder assembly **slightly** for most comfortable riding position. Make sure control assembly is positioned so that clamp mating surface is located in area between range marks.

CAUTION

Because control wiring is routed inside handlebar, it may be pinched or cut if controls are rotated too far.

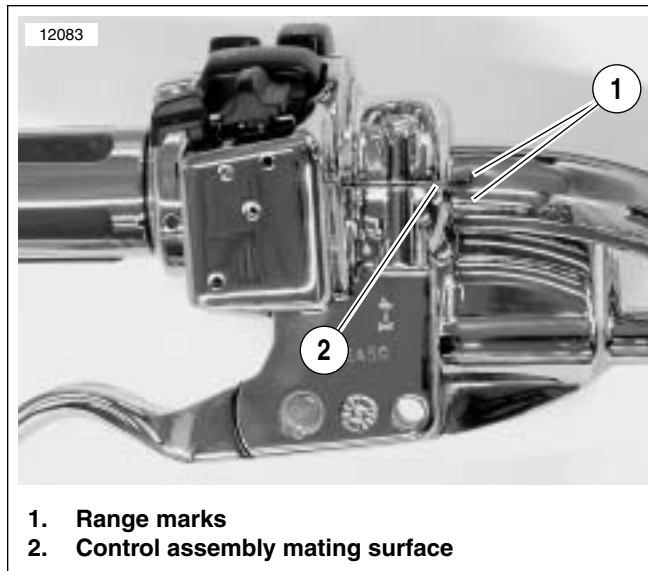


Figure 2-19. Range Marks (Handlebar Control Assembly Bottom View, Left Side Shown)

15. Squeeze front brake lever and remove cardboard insert between brake lever and bracket.
16. Tighten control lever clamps beginning with top fastener to 60-80 **in-lbs** (6.8-9.0 Nm). The gap, if any must be at clearance flat on handlebar.
17. Tighten switch housing halves beginning with bottom fastener to 35-45 **in-lbs** (4.0-5.1 Nm). Rear gap, if any, should be tighter.
18. Loosely assemble clutch master cylinder/reservoir and clamp to handlebar. Alternately tighten fasteners until clamp is snug to bracket.
19. Install left switch housing halves.
 - a. Position upper switch housing so wire conduit wraps around front of handlebar.
 - b. Verify wires will not be pinched when fasteners are tightened.
- c. Position upper switch housing to wire conduit sets in clearance at bottom of handlebar and upper harness will not be pinched when fasteners are tightened.
- d. Engage lower switch housing tab with notch in clutch master cylinder reservoir.
20. Install but do not tighten switch housing fasteners.
21. See [Figure 2-19](#). Range marks are located on bottom of handlebar adjacent to clamp assembly. Rotate left control and brake master cylinder assembly **slightly** for most comfortable riding position. Make sure control assembly is positioned so that clamp mating surface is located in area between range marks.
22. Tighten clutch master cylinder/reservoir clamp beginning with top fastener to 60-80 **in-lbs** (6.8-9.0 Nm). Top gap, if any, must be at handlebar clearance.
23. Tighten turn signal and cruise control housings beginning with bottom fastener to 35-45 **in-lbs** (4.0-5.1 Nm). Rear gap, if any, should be tighter.
24. Verify routing of wire conduits, brake line and clutch fluid line. See [FRONT BRAKE LINE](#) in [Touring Models Service Manual](#) and [2.11 CLUTCH FLUID LINE](#) in this book.
25. With motorcycle upright and with front fork pointed straight ahead, adjust mirrors to clearly reflect area behind motorcycle.

CAUTION

Because control wiring is routed inside handlebar, it may be pinched or cut if controls are rotated too far.

NOTE

Adjust mirrors so a small portion of riders' shoulder is visible in each mirror. This visually establishes the distance of vehicles to rear of motorcycle.

26. Install outer fairing and fairing cap according to procedure in [Touring Models Service Manual](#).
27. Install Maxi-Fuse, left side cover and left saddlebag.
28. Test clutch lever and front brake lever for pressure and operation.
29. Turn throttle and idle adjusters out.
30. Verify throttle and idle cable routing. Test for correct operation Adjust as required. See [CRUISE CONTROL](#) in the [Touring Models Service Manual](#).
31. Verify brake and clutch fluid line routing.
32. Turn ignition/light key switch to **IGNITION** and test switches for proper operation.
33. Apply brake lever to test stop lamp.

HEATED HANDGRIPS

NOTE

It is not necessary to remove the handlebars from the motorcycle to replace the handgrips.

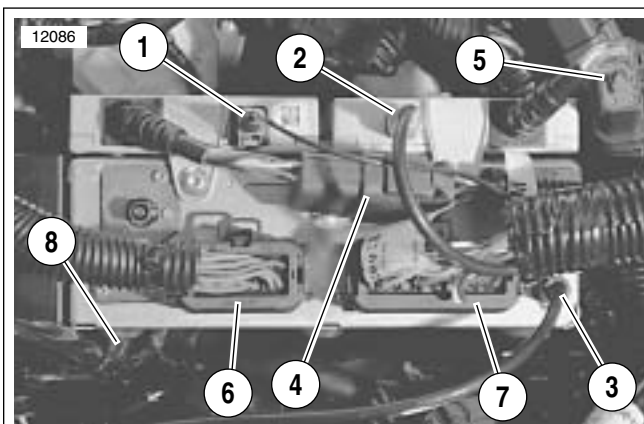
Initial Disassembly

1. Remove left saddlebag, left side cover and Maxi-Fuse.
2. Remove outer fairing and fairing cap. See FAIRING CAP in Touring Models Service Manual.

NOTE

AM/FM/WB radio, CB transceiver and XM radio module may all be removed as a unit.

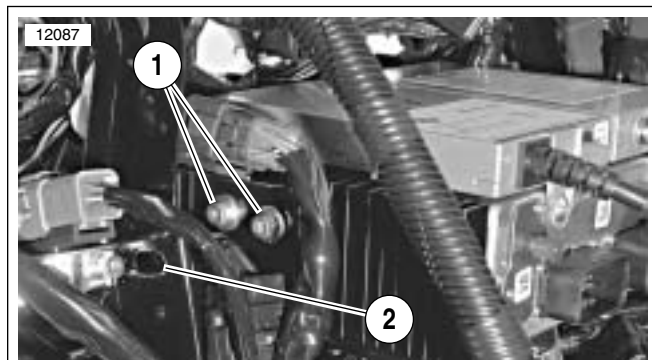
3. See Figure 2-20. Depress latch and unplug XM radio antenna cable connector (1). Unscrew and remove CB radio antenna cable connector (2). Remove AM/FM/WB radio antenna connector (3) by grasping ribbed plug and pulling straight out from radio.
4. Depress latches on either side of XM module 12-pin connector (4) and separate connector halves. Depress latches on either side of CB transceiver 12-pin connector (5) and separate connector halves. Depress latches on either side of AM/FM/WB radio 23-pin connector (6) and 35-pin connector (7) and unplug connectors from radio.
5. Locate cable strap with rosebud mount (8) securing ignition switch harness to bottom of radio chassis. Pull cable strap mount from hole in chassis.



1. XM antenna cable connector
2. CB antenna cable connector
3. AM/FM/WB antenna cable connector
4. XM module 12-pin connector
5. CB transceiver 12-pin connector
6. AM/FM/WB radio 23-pin connector
7. AM/FM/WB radio 35-pin connector
8. Cable strap with rosebud mount

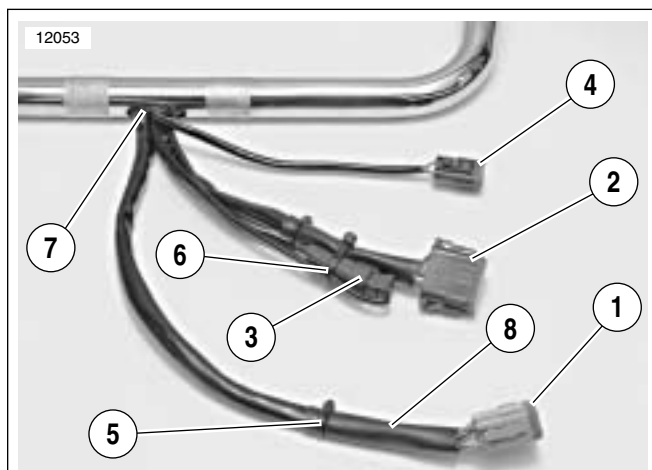
Figure 2-20. Sound System Connections

6. See Figure 2-21. Unscrew and remove four screws with captive washers (1), two on either side of radio chassis. Both screws on each side may be reached through tool access slot (2).
7. Remove entire sound system assembly by pulling straight forward and lifting up slightly after radio bezel clears fairing.
8. See Figure 2-9. Note location of heated handgrip power connector [189] (5) and interconnect harness connector [206] (6). See Figure 2-22. Cut interconnect harness cable strap (6) and harness bundle cable strap (7).
9. Unplug interconnect harness connector [206] (3). If replacing left handgrip, unplug power connector [189] (4).



1. Screw with captive washer (4)
2. Tool access slot

Figure 2-21. Sound System Mounting



1. Left hand switch control connector [24] (gray)
2. Right hand switch control connector [22] (black)
3. Heated handgrip interconnect harness connectors [206]
4. Heated handgrip power harness connector [189]
5. Switch harness cable strap (2)
6. Handgrip interconnect harness cable strap
7. Harness bundle cable strap
8. Boot (2)

Figure 2-22. Handlebar Harness Assembly
(Handlebar Removed from Vehicle for Clarity)

Replacing Left Handgrip

1. See [Figure 2-22](#). Disengage terminals and remove wires from handgrip interconnect harness connector (3) socket housing and power harness connector (4) housing. See DEUTSCH ELECTRICAL CONNECTORS in Touring Models Service Manual.
2. Prepare handgrip wiring harnesses to be removed from handlebar:
 - a. Cut two lengths of mechanic's wire, each approximately three feet (91.4 cm) long. These will be used as harness wire leaders.
 - b. Neatly wrap two or three turns of a wire leader around socket terminals and wires of power wiring harness.
 - c. Wrap junction with electrical tape, covering harness socket terminals and end of wire leader.
 - d. Repeat for handgrip interconnect wiring harness.
 - e. Bend last six inches of free end of each wire leader into an "L" shape.
3. See [Figure 2-23](#). Remove left side upper and lower switch housing screws. Carefully separate housing halves from handlebar.

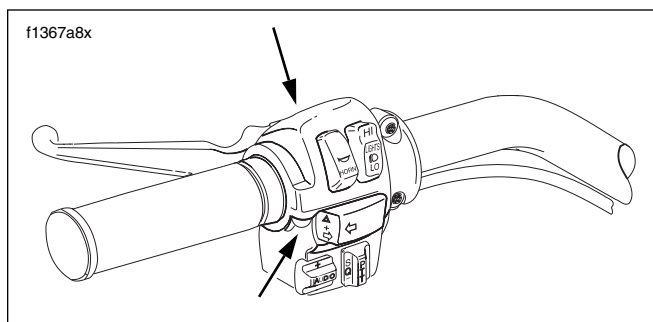


Figure 2-23. Left Handlebar Switch Housing Screws

NOTES

- See [Figure 2-24](#). Note that power harness (3) feeds from same hole in handlebar as switch control harnesses. Handgrip interconnect harness (2) feeds from extreme end of handlebar.
- As you pull on harnesses, assist the process by gently feeding other end of harness and wire leader into center hole of handlebar.

4. See [Figure 2-24](#). Slide handgrip (1) off end of handlebar. Grasp handgrip interconnect (2) and power (3) harnesses and gently pull harnesses from handlebar. Only pull far enough so that harness is completely free of handlebar. Make sure free end of wire leader is still protruding from center hole in handlebar.

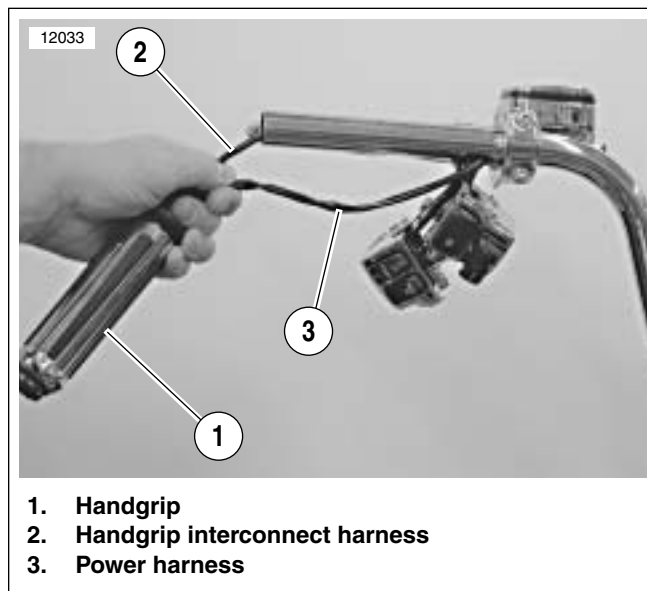
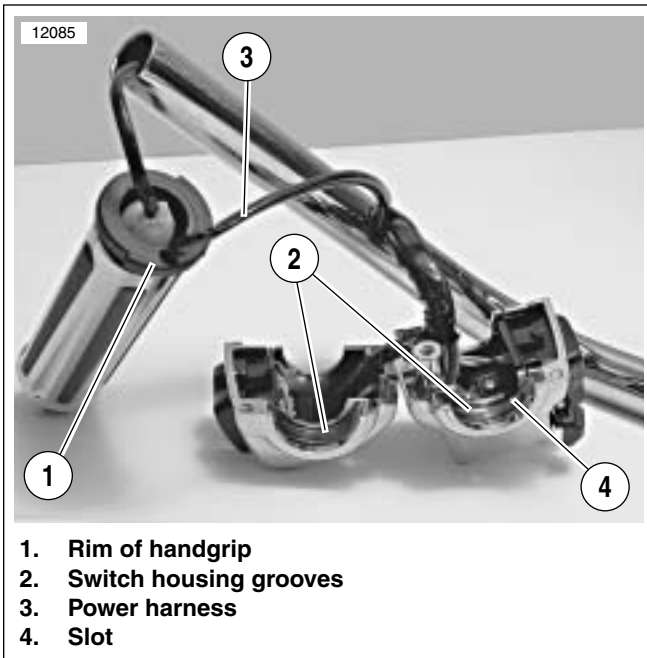


Figure 2-24. Replacing Left Side Heated Handgrip (Handlebar Removed from Vehicle for Clarity)

5. Separate wire leaders from old harnesses, and attach to **new** harnesses as described in Step 2. Make sure electrical tape wrap extends over end of harness conduit.
6. Lubricate wire harness conduits with glass cleaner. Grasp end of each wire leader and carefully pull harnesses through handlebar. It may help to feed harnesses into handlebar with one hand as you pull on the leaders with the other.
7. Slide handgrip onto end of handlebar. Make sure no excess slack exists in wiring harnesses.
8. Unwrap electrical tape and wire leaders from harnesses.

9. Orient wires in switch-housings. The HORN and HI/LO BEAM wires are also wrapped over the front of the handlebar, back and into the handlebar through the grommet. Make sure the wires run **inboard** of the clamping post cast into the inside of the lower housing.
10. Install switch housing halves onto handlebar and over inboard end of handgrip. See [Figure 2-25](#). Make sure rim of handgrip (1) fits into grooves (2) in switch housings. Orient handgrip so that power harness (3) fits in slot (4) in lower housing. Be careful not to pinch harness.



**Figure 2-25. Mounting Left Side Handgrip
(Handlebar Removed from Vehicle for Clarity)**

11. Secure switch housing halves with two screws. Tighten to 35-45 **in-lbs** (4.0-5.1 Nm).
12. Assemble connector housings onto wiring harness socket terminals, observing wiring color code.

NOTES

- For connector assembly procedures, see *DEUTSCH ELECTRICAL CONNECTORS* in *Touring Models Service Manual*.
- For heated handgrip wiring harness color code, see [Table 2-5](#).

Replacing Right Handgrip

1. See [Figure 2-22](#). Disengage terminals and remove wires from handgrip interconnect harness connector (3) pin housing. See *DEUTSCH ELECTRICAL CONNECTORS* in *Touring Models Service Manual*.
2. Prepare handgrip wiring harness to be removed from handlebar:
 - a. Cut one length of mechanic's wire approximately three feet (91.4 cm) long. This will be used as a harness wire leader.
 - b. Neatly wrap two or three turns of wire leader around pin terminals and wires of handgrip interconnect wiring harness.
 - c. Wrap junction with electrical tape, covering harness pin terminals and end of wire leader.
 - d. Bend last six inches of free end of wire leader into an "L" shape.
3. See [Figure 2-26](#). Squeeze front brake lever and insert a 5/32 in. (4 mm) thick cardboard insert between front brake lever and lever bracket.

CAUTION

Do not remove or install the master cylinder assembly without first positioning a 5/32-inch (4 mm) thick insert between the brake lever and lever bracket. Removing or installing the master cylinder assembly without the insert in place may result in damage to the rubber boot and plunger on the front stoplight switch. (00324a)

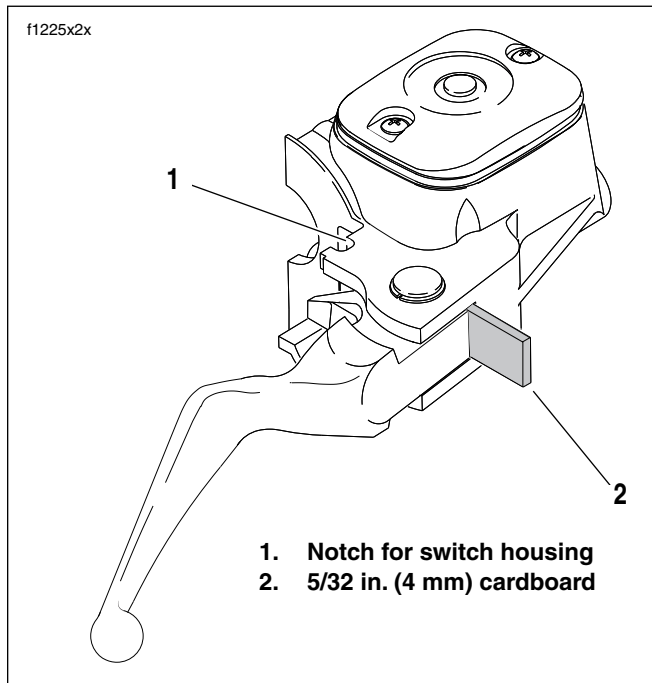


Figure 2-26. Cardboard Insert

4. Remove fasteners securing handlebar clamp to master cylinder and front brake lever.
5. Protect chrome and painted surfaces and tie master cylinder, reservoir and brake line out of the way.
6. See [Figure 2-27](#). Remove upper and lower fasteners securing right switch control housing halves to handlebar.
7. See [Figure 2-28](#). Raise upper housing enough to expose Throttle grip/cable assembly. Use a screwdriver to rotate cable ferrules in throttle grip notches. Remove cables from notches on inboard side of throttle grip.

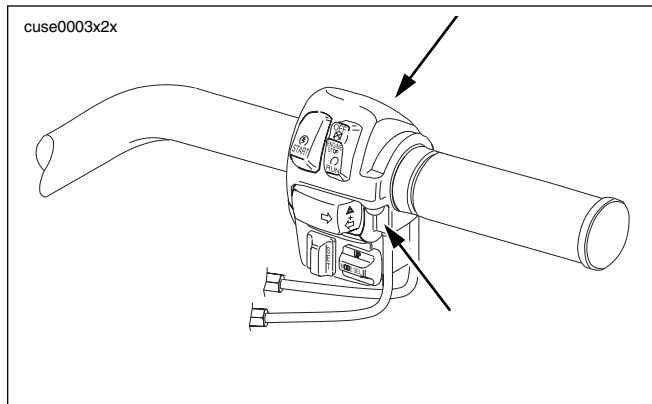


Figure 2-27. Right Handlebar Switch Housing Screws



Figure 2-28. Throttle and Idle Cable Ferrules

NOTES

- See [Figure 2-29](#). Note that handgrip interconnect harness (2) feeds from extreme end of handlebar.
- As you pull on harness, assist the process by gently feeding other end of harness and wire leader into center hole of handlebar.

8. See [Figure 2-29](#). Slide handgrip (1) off end of handlebar. Grasp handgrip interconnect harness (2) and gently pull harness from handlebar. Only pull far enough so that harness is completely free of handlebar. Make sure free end of wire leader is still protruding from center hole in handlebar.

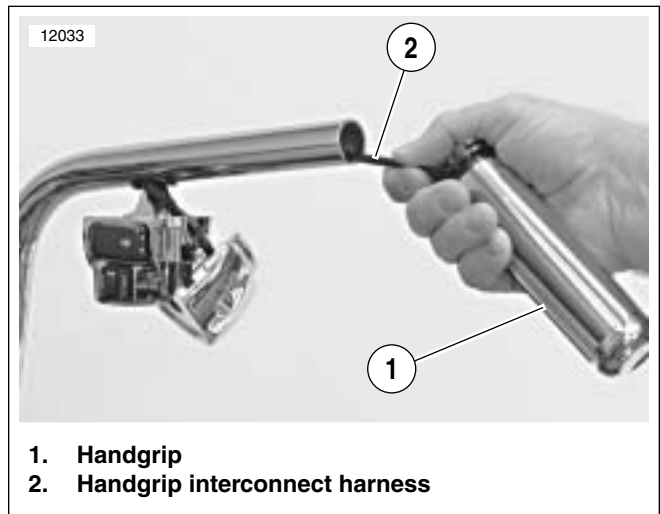


Figure 2-29. Replacing Right Side Heated Handgrip (Handlebar Removed from Vehicle for Clarity)

9. Separate wire leader from old harness. and attach to **new** harness as described in Step 2. Make sure electrical tape wrap extends over end of harness conduit.
10. Lubricate wire harness conduit with glass cleaner. Grasp end of wire leader and carefully pull harness through handlebar. It may help to feed harness into handlebar with one hand as you pull on the leader with the other.
11. Slide handgrip onto end of handlebar. Make sure no excess slack exists in wiring harness.
12. Orient wires in switch-housings. The RUN and STOP wires are wrapped over the front of the handlebar, back and into the handlebar through the grommet. Make sure the wires run **outboard** of the clamping post cast into the inside of the lower housing.
13. Press throttle control grip onto handlebar until it bottoms. Pull grip back about 1/8 in. (3.2 mm).
14. Use a screwdriver to rotate barrels and fit cables through notches in throttle control grip. Be sure cables ride in grooves of throttle control grip.

15. Assemble upper and lower right switch control housing halves to handlebar and brake lever bracket:
 - a. Position upper switch housing so wire conduit wraps around outside of handlebar and sets in clearance at bottom of handlebar.
 - b. Verify that wires will not be pinched when fasteners are tightened.
 - c. Verify that throttle and idle control cables work freely.
 - d. Install switch housing fasteners finger tight.

CAUTION

Do not remove or install the master cylinder assembly without first positioning a 5/32-inch (4 mm) thick insert between the brake lever and lever bracket. Removing or installing the master cylinder assembly without the insert in place may result in damage to the rubber boot and plunger on the front stoplight switch. (00324a)

16. Loosely assemble handlebar clamp to front brake control lever bracket master cylinder and reservoir:
 - a. Engage tab on switch with notch at top of brake lever bracket.
 - b. Alternately tighten housing and bracket fasteners until all components fit and wires route without interference. Fasteners should only be snug.
 - c. Verify housing and bracket clamp are tight against handgrip shoulder/edge of bar.
17. See [Figure 2-19](#). Range marks are located on bottom of handlebar adjacent to clamp assembly. Rotate right control and brake master cylinder assembly **slightly** for most comfortable riding position. Make sure control assembly is positioned so that clamp mating surface is located in area between range marks.

CAUTION

Because control wiring is routed inside handlebar, it may be pinched or cut if controls are rotated too far.

18. Tighten control lever clamps beginning with top fastener to 60-80 **in-lbs** (6.8-9.0 Nm). The gap, if any must be at clearance flat on handlebar.
19. Tighten switch housing halves beginning with bottom fastener to 35-45 **in-lbs** (4.0-5.1 Nm). Rear gap, if any, should be tighter.
20. Squeeze front brake lever and remove cardboard insert between brake lever and bracket.
21. Assemble connector housing onto handgrip interconnect wiring harness pin terminals, observing wiring color code.

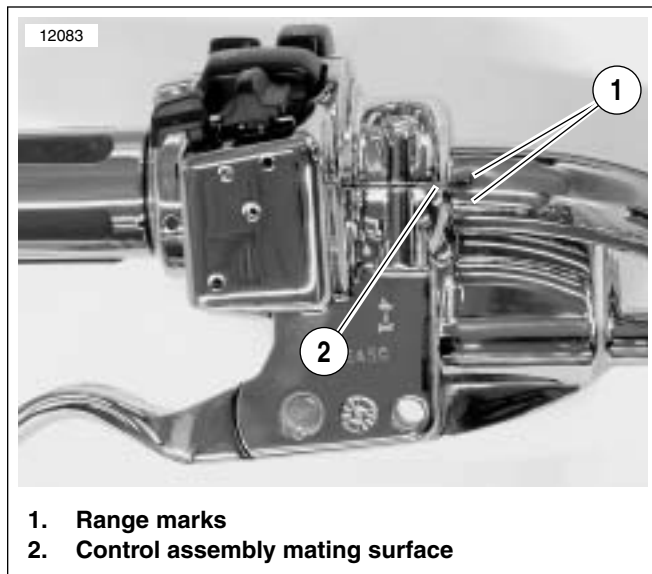


Figure 2-30. Range Marks (Handlebar Control Assembly Bottom View, Left Side Shown)

NOTES

- For connector assembly procedures, see *DEUTSCH ELECTRICAL CONNECTORS in Touring Models Service Manual*.
- For heated handgrip wiring harness color code, see [Table 2-5](#).

Final Assembly

1. Plug in handgrip interconnect and power connectors.
2. See [Figure 2-22](#). Install handgrip interconnect harness cable strap (6) and harness bundle cable strap (7).
3. See [Figure 2-21](#). Slide sound system assembly into place in fairing. Secure with four screws with captive washers (1), two on either side of radio chassis. Tighten to 35-45 **in-lbs** (4.0-5.1 Nm).
4. See [Figure 2-20](#). Locate cable strap with rosebud mount (8) attached to ignition switch harness. Plug cable strap mount into hole in bottom of chassis.
5. Plug in XM module 12-pin connector halves (4). Plug in CB transceiver 12-pin connector halves (5). Plug 23-pin connector (6) and 35-pin connector (7) into radio.
6. Plug in AM/FM/WB antenna cable connector (3). Install and screw in CB antenna cable connector (2). Plug in XM antenna cable connector (1).
7. Replace fairing cap and outer fairing. See *FAIRING CAP in Touring Models Service Manual*.
8. Install Maxi-Fuse, left sidecover and left saddlebag.
9. Test heated handgrips and handlebar switches for proper operation.

GENERAL

The clutch is hydraulically actuated. Squeezing the clutch hand lever causes the clutch master cylinder to apply pressure via the clutch fluid in the clutch line to the secondary clutch actuator mounted in the clutch release cover. The secondary clutch actuator piston extends and contacts the clutch release bearing which disengages the clutch.

A bleeder valve at the secondary clutch actuator is used to bleed air from the clutch line. D.O.T. 4 HYDRAULIC BRAKE FLUID (Part No. 99953-99A) is used in the clutch system and is referred to as clutch fluid in this manual.

Check the clutch fluid level in the clutch fluid reservoir on left handlebar. If the sight glass is dark, the fluid level in the reservoir is above the sight glass prism and the reservoir is full. If the sight glass appears clear, the fluid level is below the sight glass prism and the fluid level should be checked. Clutch fluid should be level with the internal shelf marked FILL LEVEL with the motorcycle upright and the gasket surface level.

CAUTION

D.O.T. 4 hydraulic brake fluid is used in the hydraulic clutch. Do not use other types of fluids as they are not compatible and could cause equipment damage. (00353a)

CAUTION

Clutch fluid volume in reservoir actually increases with clutch wear. Do NOT overfill clutch reservoir.

REMOVAL

1. Remove acorn nut, washer and rear view mirror with tapered spacer. Support turn sign bullet housing and bracket.
2. Remove electrical controls.

CAUTION

To prevent dirt and other contaminants from entering the master cylinder reservoir, thoroughly clean the cover before removal.

3. See Figure 2-31. Loosen, but do not remove, screws with flat washers that detach handlebar clamp from clutch master cylinder/reservoir.
4. Loosen both screws on cover to relieve pressure in master cylinder reservoir.

WARNING

Be sure no clutch fluid gets on tires, wheels or brakes when adding fluid. Traction can be adversely affected, which could result in loss of control and death or serious injury. (00294a)

NOTE

Place a large cup under the banjo fitting. Hydraulic fluid will begin draining from the reservoir as the banjo bolt is removed.

CAUTION

Damaged banjo bolt surfaces will leak when reassembled. Prevent damage to seating surfaces by carefully removing clutch line components.

5. Slowly loosen banjo bolt and allow clutch fluid from reservoir to drain into cup.

NOTE

Dispose of clutch fluid in accordance with local regulations.

6. Remove banjo bolt and two steel/rubber washers to disconnect fitting of hydraulic clutch fluid line from clutch reservoir and master cylinder. Discard steel/rubber washers.

NOTE

To prevent the rest of the clutch fluid from draining from the clutch line and secondary clutch actuator, support the banjo fitting and clutch fluid line upright. Plug the banjo bolt hole with a finger to transfer the assembly to a workbench without spilling clutch fluid.

7. Remove handlebar clamp screws and take clamp and clutch master cylinder/reservoir assembly to a workbench.

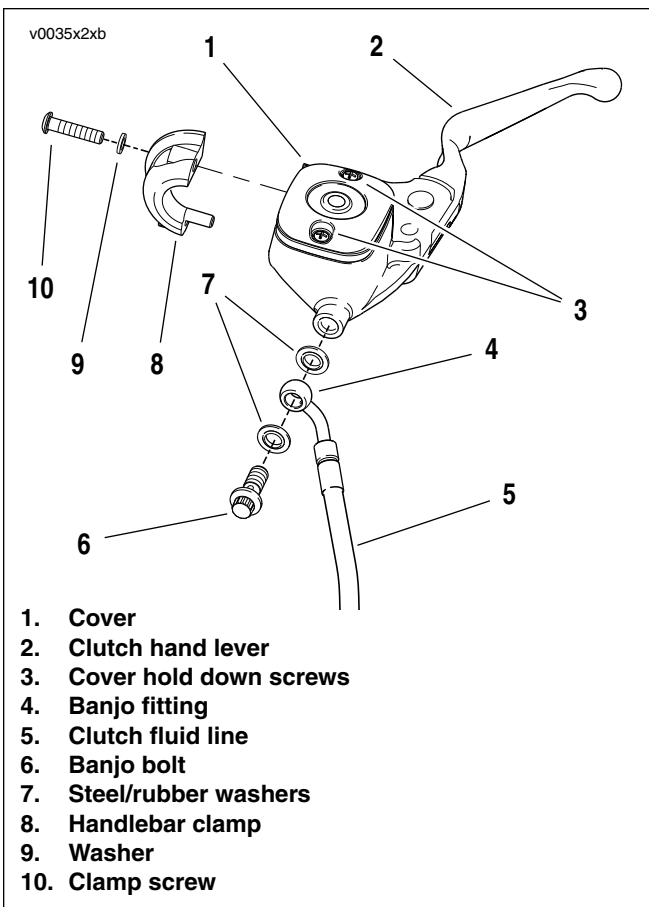


Figure 2-31. Clutch Master Cylinder/Reservoir

DISASSEMBLY

CAUTION

To prevent dirt and other contaminants from entering the master cylinder reservoir, thoroughly clean the cover before removal.

1. Drain additional clutch fluid from master cylinder/reservoir.
2. Remove screws securing master cylinder cover. Remove cover and gasket. Turn housing upside down to remove remaining clutch fluid from reservoir.

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)

3. Remove retaining ring from pivot pin groove.

NOTE

To take the piston spring load off the pin and remove the pivot pin, gently force the clutch lever toward the piston (as if operating the clutch).

4. Remove pivot pin through top of housing. Remove and save pivot pin and clutch lever.
5. See Figure 2-32. Using a toothpick or small screwdriver, gently pry outer edge of piston boot out of piston bore.
6. Remove piston and spring.

WARNING

Use denatured alcohol to clean clutch system components. Do not use mineral-based solvents (such as gasoline or paint thinner), which will deteriorate rubber parts even after assembly. Deterioration of these components can cause clutch failure, which could result in death or serious injury. (00296a)

7. Wipe the housing with a lint free cloth. With a clean air supply, blow out drilled passages and bore in the master cylinder housing.

NOTE

Do not use a wire or sharp instrument to clean drilled oil passages.

8. Inspect cylinder housing bore for scoring, pitting or corrosion. Also check outlet port for damage. Replace housing if necessary.
9. Inspect the cover, sight glass, and gasket for cuts, tears or general deterioration.

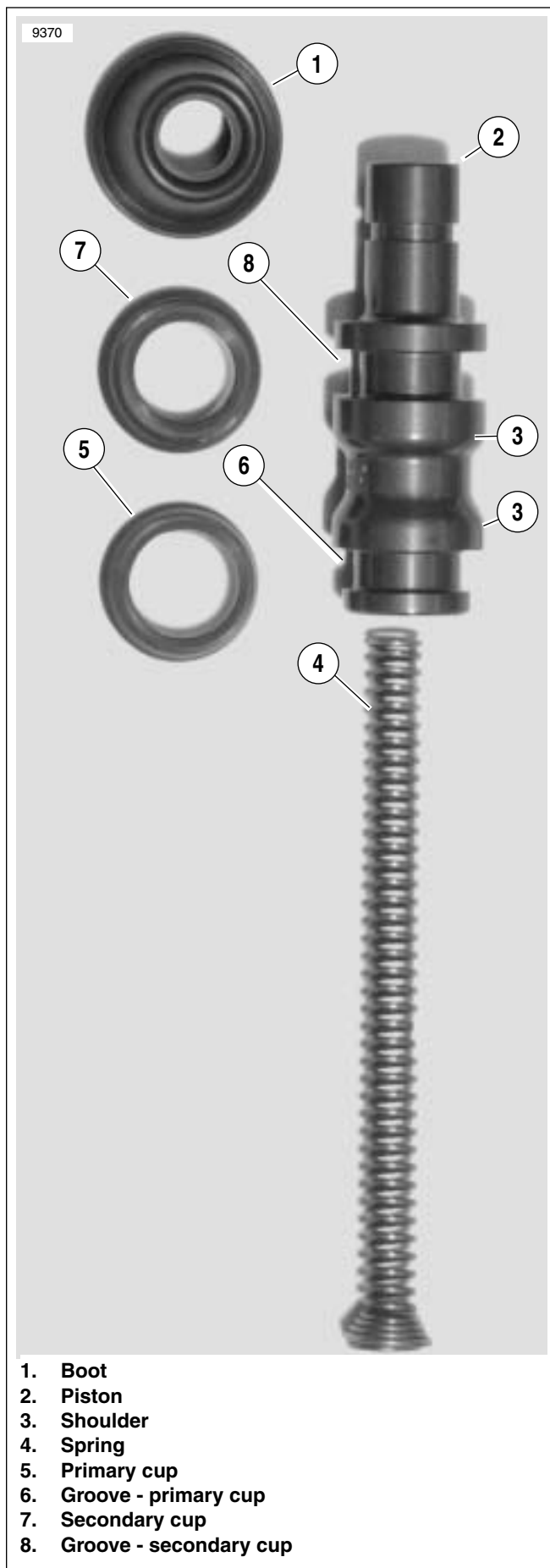


Figure 2-32. Clutch Master Cylinder Components

ASSEMBLY

To rebuild clutch master cylinder, use the components found in the SERVICE PARTS KIT No. 46244-01.

1. See Figure 2-32. Lightly lubricate inside of primary cup and fit over lip on spring end of piston so the closed end (small ID) contacts evenly with the shoulder in primary cup groove.
2. Lightly lubricate inside of secondary cup (steep taper from center to outside diameter) and fit over the lip on outboard end of piston so that flared end is open toward the shoulder of the secondary cup groove.
3. Install boot, large sealing ID first, on piston until seal on smaller ID fits snugly into thin groove in piston.

NOTE

See Figure 2-33. The flared ends of the primary cup and the secondary cup face the spring end of the piston.

4. Using lubricant in SERVICE PARTS KIT (Part No. 46244-01) thoroughly coat outside diameters of primary and secondary cups. Coat master cylinder piston bore.
5. With tapered end out, install spring into opening on inboard side of piston assembly.
6. Align and install piston assembly into bore. Firmly press on flat end of piston, compressing spring, until the entire assembly slides into cylinder bore.

NOTE

When fitting the piston sealing boot, be careful not to tear, perforate or damage the piston sealing boot.

7. Compress piston until it is even with the end of bore. Using a small dull bladed screwdriver or similar tool, gently work around sealing edges of boot until entire circumference of boot is seated in cylinder bore groove.
8. If cover gasket and/or sight glass replacement is necessary. Proceed as follows:
 - a. From inboard side, push sight glass toward top of cover until free.
 - b. Pull rubber gasket from cover.
 - c. Fit nipple of **new** gasket into hole of cover aligning gasket and cover thru holes.
 - d. From bottom of gasket, push flat end of sight glass through nipple until top of glass is flush with top of gasket. Verify that glass is square in bore. If lubrication is necessary, use clean D.O.T. 4 HYDRAULIC BRAKE FLUID (Part No. 99953-99A).

9. Install cover with gasket on master cylinder reservoir. Install two screws to fasten the cover to reservoir, but do not tighten.

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)

10. To install existing clutch hand lever, install clutch hand lever, pivot pin, and a **new** retaining ring.
11. To install a replacement clutch hand lever, use SERVICE PARTS KIT (Part No. 46243-01). See [2.10 CLUTCH HAND LEVER](#).

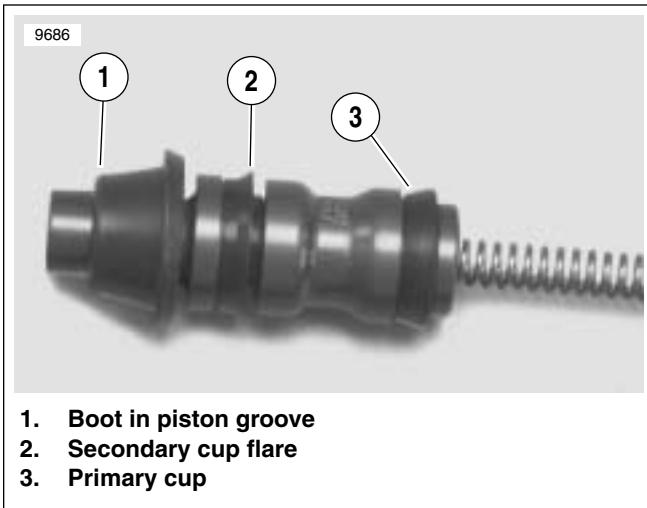


Figure 2-33. Assembled Cups and Piston

INSTALLATION

1. See [Figure 2-31](#). Attach master cylinder/reservoir to handlebar with handlebar clamp. Orient lever to rider position and tighten two clamp screws to 60-80 **in-lbs** (6.8-9.0 Nm).
2. Attach banjo fitting of clutch fluid line to master cylinder with **new** steel/rubber washers. Install electrical controls.
3. Loosen bleeder valve on clutch release cover. See [7.4 CLUTCH RELEASE COVER](#).
4. Fill reservoir with D.O.T. 4 HYDRAULIC BRAKE FLUID (Part No. 99953-99A). Allow fluid to fill clutch line until a steady flow of clutch fluid flows from bleeder valve. Finger tighten bleeder valve.
5. Bleed clutch line. See [BLEEDING CLUTCH FLUID LINE](#).
6. Verify that fluid level in clutch fluid reservoir is at FILL LEVEL with motorcycle upright and gasket surface level.

CAUTION

Clutch fluid volume in reservoir actually increases with clutch wear. Do NOT overfill clutch reservoir.

7. Verify pressure by squeezing clutch hand lever.
8. Tighten fasteners as follows:
 - a. Banjo bolt to 17-22 ft-lbs (23.1-29.9 Nm).
 - b. Bleeder screw to 80-100 **in-lbs** (9.0-11.3 Nm).
 - c. Reservoir cover screws to 6-8 **in-lbs** (0.7-0.9 Nm).
9. Install rear view mirror and turn signals with bracket. See [8.4 FRONT TURN SIGNALS](#).

WARNING

Check for proper turn signal lamp operation before riding motorcycle. Visibility is a major concern for motorcyclists. Failure to have proper lamp operation could result in death or serious injury.

10. Test ride motorcycle.

INSTALLATION

1. See [Figure 2-34](#). Slide bushing cups onto pins of roller with cup flanges against roller.

NOTE

Be careful when handling the bushing cups. The bushing cups are hard plastic and can be easily broken.

2. With connector bow portion of the bushing cups parallel with groove in clutch handle, snap roller pin with the bushing cups installed into clutch lever roller groove. If bushing is positioned correctly, roller/bushing assembly will install with a snap and will be held securely.
3. Lightly grease pivot bushing and install into clutch hand lever pivot hole. Position bushing until it is flush with both sides of lever.

NOTE

If the clutch master cylinder/reservoir is full of clutch fluid under pressure, it may be necessary to apply force to the hydraulic piston (in the clutch hand lever mount) in order to align the clutch hand lever and to allow the pivot pin to be inserted.

4. Orient clutch lever in lever mounting bracket. Insert pivot pin from top and tap into place.
5. Install **new** retaining ring on pivot pin.

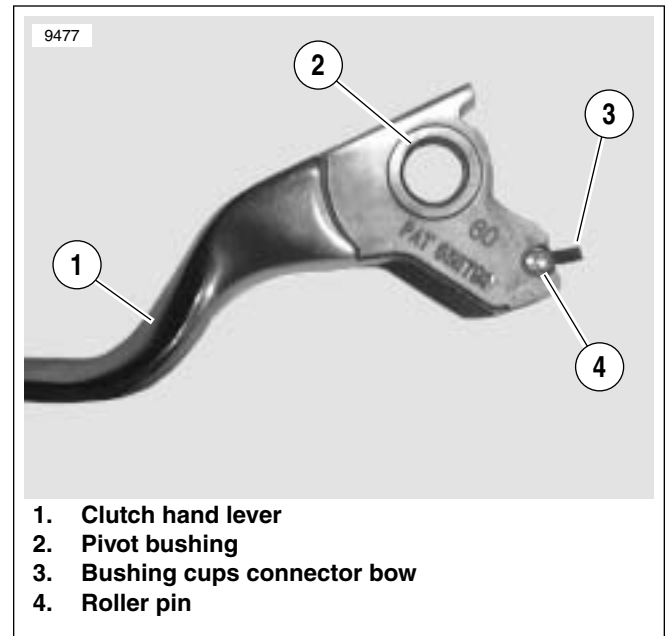


Figure 2-34. Clutch Hand Lever

REPLACEMENT

1. Remove outer fairing. See Touring Models Service Manual for procedure.

WARNING

Be sure no clutch fluid gets on tires, wheels or brakes when adding fluid. Traction can be adversely affected, which could result in loss of control and death or serious injury. (00294a)

2. Loosen the clutch master cylinder/reservoir cover.
3. See Figure 2-35. Place a suitable container under clutch release cover (4).
4. Loosen flare nut (2) and allow clutch fluid to drain.
5. Remove flare nut on outside of the clutch release cover.
6. Drain clutch fluid line (3).

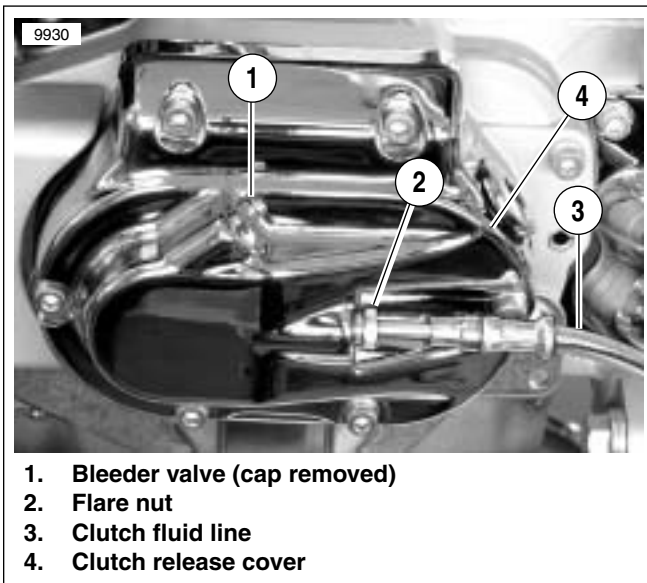


Figure 2-35. Clutch Release Cover
(exhaust system removed)

NOTE

Dispose of clutch fluid in accordance with local regulations.

7. See Figure 2-36. Remove and discard o-ring.

NOTE

Clutch fluid line o-ring may stick to inside of clutch release cover. Use a pick to remove old o-ring and other debris.



Figure 2-36. Clutch Fluid Line O-ring

8. See Figure 2-37. Remove banjo bolt (5) and two washers (4) to disconnect fitting of hydraulic clutch fluid line (3) from clutch master cylinder/reservoir (2). Discard washers.

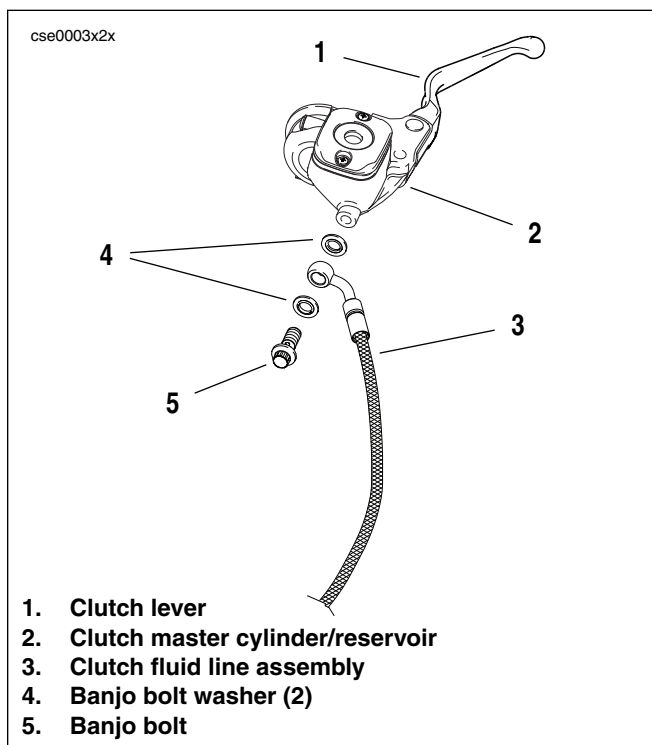


Figure 2-37. Clutch Master Cylinder Assembly
and Fluid Line

9. See [Figure 2-38](#). Carefully pull banjo fitting end of clutch fluid line out through inner fairing grommet.
10. Route new clutch fluid line back through fairing retracing path of old line.

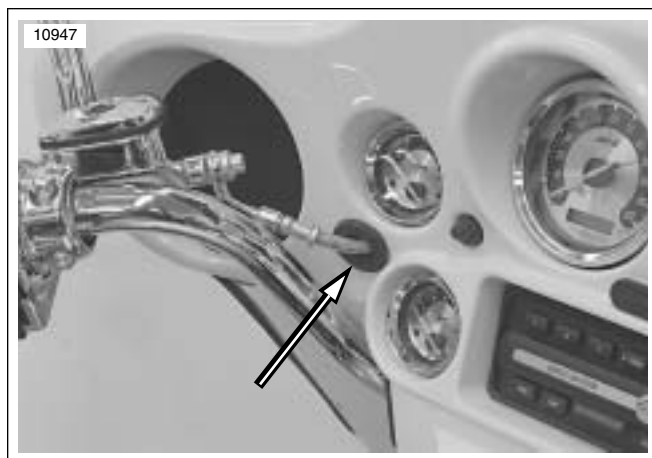


Figure 2-38. Clutch Fluid Line Inner Fairing Grommet

11. Loosely install banjo bolt and tie free end of clutch fluid line away from chrome and painted surfaces.
12. See [Figure 2-39](#). See [Figure 2-40](#). Loosen clamps and cut cable ties around old clutch fluid line along right side frame down tube and behind cam cover around the rear brake line in front of the clamp.
13. Remove old clutch fluid line.
14. Route new clutch fluid line down right side frame tube, under cam cover and up to clutch release cover. See [CLUTCH FLUID LINE ROUTING](#).
15. See [Figure 2-36](#). Install new o-ring on end of clutch fluid line.
16. Thread in and finger tighten flare nut fastening clutch fluid line to clutch release cover.
17. See [Figure 2-37](#). Attach banjo fitting of the clutch fluid line (3) to master cylinder (2) with new washers (4).
18. Cable wrap clutch fluid line in original places on inner fairing bracket and behind cam cover around the rear brake line in front of the clamp.
19. Install outer fairing assembly. See Touring Models Service Manual for procedure.

⚠ WARNING

Be sure no clutch fluid gets on tires, wheels or brakes when adding fluid. Traction can be adversely affected, which could result in loss of control and death or serious injury. (00294a)

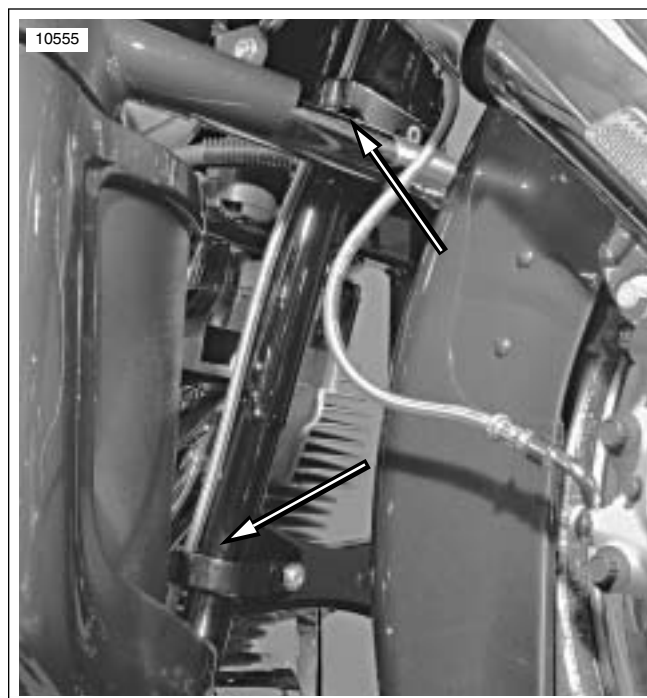


Figure 2-39. Clamp Locations on Frame Down Tube

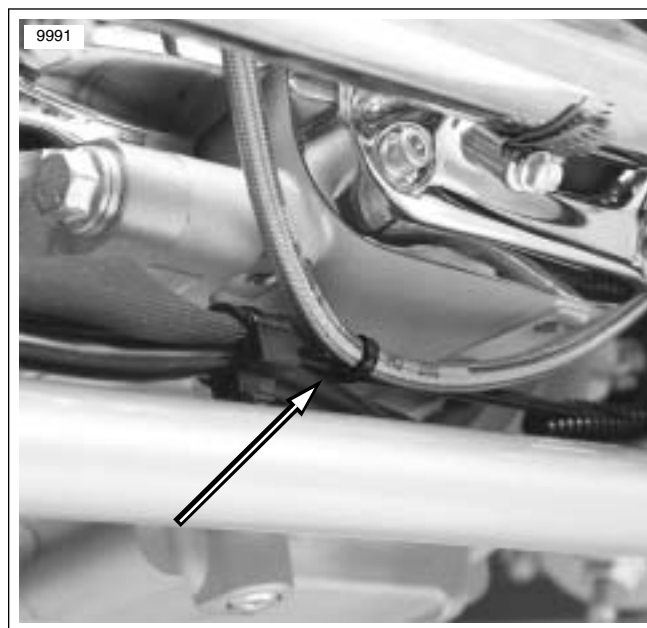


Figure 2-40. Cable Wrap Locations around Clutch Fluid Line

⚠ WARNING

Do not allow dirt or debris to enter the clutch master cylinder reservoir. Dirt or debris in the reservoir can cause improper operation of the clutch and equipment damage. (00205a)

⚠ WARNING

Direct contact of D.O.T. 4 brake fluid with eyes can cause irritation. Avoid eye contact. In case of eye contact flush with large amounts of water and get medical attention. Swallowing large amounts of D.O.T. 4 brake fluid can cause digestive discomfort. If swallowed, obtain medical attention. Use in well ventilated area. KEEP OUT OF REACH OF CHILDREN. (00240a)

20. Loosen bleeder valve.

21. Remove clutch master cylinder/reservoir cover and fill reservoir with D.O.T. 4 HYDRAULIC BRAKE FLUID (Part No. 99953-99A). Allow fluid to fill clutch line until a steady flow of clutch fluid flows from bleeder screw. Finger tighten bleed screw.

NOTE

A Snap-on BASIC VACUUM BRAKE BLEEDER with a fitting that mates to the bleeder valve can be used to draw the fluid down the clutch line.

22. Bleed clutch fluid line. See [BLEEDING CLUTCH FLUID LINE](#).

CAUTION

Clutch fluid volume in reservoir actually increases with clutch wear. Do NOT overfill clutch reservoir.

23. Verify that fluid level in clutch fluid reservoir is at FILL LEVEL with motorcycle upright and gasket surface level.

24. Test pressure by squeezing clutch hand lever.

25. Tighten fasteners as follows:

- a. Clutch master cylinder banjo bolt to 17-22 ft-lbs (23.1-29.9 Nm).
- b. Clutch line flare nut to 80-115 in-lbs (9.0-13.0 Nm).
- c. Actuator bleeder valve to 80-100 in-lbs (9.0-11.3 Nm).
- d. Reservoir cover screws to 6-8 in-lbs (0.7-0.9 Nm).

26. Test ride motorcycle. Incorrect pressure or fluid level can cause:

- a. Dragging clutch.
- b. Hard shifting.

CLUTCH FLUID LINE ROUTING

1. Remove outer fairing. See Touring Models Service Manual for procedure.
2. Route clutch fluid line:
 - a. Route line through inner fairing grommet.
 - b. Route line around top of steering head and back out to P-clamp used for throttle cables.
 - c. Run clutch fluid line behind engine guard and in front of right frame downtube.
 - d. Run line behind foot controls bracket.
 - e. Following inboard side of frame downtube, route cable between bottom of cam cover and top of lower frame tube.
 - f. See [Figure 2-40](#). Line is cable wrapped along rear brake line just in front of main wire harness conduit.
 - g. Route line up to clutch release cover.
3. See [Figure 2-39](#). Install clamps to retain clutch fluid line at two locations on right frame downtube.
4. Install outer fairing. See Touring Models Service Manual for procedure.

BLEEDING CLUTCH FLUID LINE**⚠ WARNING**

Be sure no clutch fluid gets on tires, wheels or brakes when adding fluid. Traction can be adversely affected, which could result in loss of control and death or serious injury. (00294a)

CAUTION

Do not allow dirt or debris to enter the clutch master cylinder reservoir. Dirt or debris in the reservoir can cause improper operation of the clutch and equipment damage. (00205a)

⚠ WARNING

Direct contact of D.O.T. 4 brake fluid with eyes can cause irritation. Avoid eye contact. In case of eye contact flush with large amounts of water and get medical attention. Swallowing large amounts of D.O.T. 4 brake fluid can cause digestive discomfort. If swallowed, obtain medical attention. Use in well ventilated area. KEEP OUT OF REACH OF CHILDREN. (00240a)

NOTE

When filling an empty clutch fluid line, a Snap-on BASIC VACUUM BRAKE BLEEDER with a fitting that mates to the secondary clutch actuator bleeder valve can be used to initially draw the fluid down the clutch line.

1. Stand motorcycle upright and turn handlebar to right as required to place clutch reservoir in a level position. Remove reservoir cover.

CAUTION

Clutch fluid volume in reservoir actually increases with clutch wear. Do NOT overfill clutch reservoir.

2. If necessary, add D.O.T. 4 HYDRAULIC BRAKE FLUID (Part No. 99953-99A) to clutch master cylinder reservoir. Initial fluid level should not exceed FILL LEVEL with reservoir in a level position.

CAUTION

Loosen banjo bolt only enough to allow air bubbles to escape. Clutch fluid under pressure can squirt a steady stream several feet.

3. While holding reservoir cover in place:
 - a. Pump clutch hand lever 5 times.
 - b. Hold clutch hand lever against handlebar.
 - c. Hold shop towel under fitting and loosen banjo bolt.
 - d. Watch banjo fitting for air bubbles.
 - e. Retighten banjo fitting.
 - f. Release hand lever.
4. Fill reservoir to FILL LEVEL and repeat the previous step three times or more until only a steady flow of clutch fluid escapes banjo fitting and fluid level in reservoir is at FILL LEVEL with motorcycle in an upright position.
5. Cover exhaust with towel and place a suitable pan under clutch release cover to catch excess clutch fluid.

NOTE

Dispose of clutch fluid in accordance with local regulations.

6. While holding reservoir cover in place:
 - a. Pump clutch hand lever 5 times.
 - b. Hold clutch hand lever against handlebar.
 - c. Loosen secondary clutch actuator bleed valve.
 - d. Run hose from bleeder valve to suitable container.
 - e. Watch bleeder valve for air bubbles.
 - f. Tighten bleeder valve.
 - g. Release hand lever.
7. With reservoir level, fill reservoir to FILL LEVEL and repeat the previous step three times or more until only a steady flow of clutch fluid escapes bleeder valve and fluid level in reservoir is at FILL LEVEL with motorcycle in an upright position.

CAUTION

Clutch fluid volume in reservoir actually increases with clutch wear. Do NOT overfill clutch reservoir.

8. Test pressure by squeezing clutch hand lever.
9. Tighten fasteners as follows:
 - a. Clutch master cylinder banjo bolt to 17-22 ft-lbs (23.1-29.9 Nm).
 - b. Clutch line flare nut to 80-115 **in-lbs** (9.0-13.0 Nm).
 - c. Actuator bleeder valve to 80-100 **in-lbs** (9.0-11.3 Nm).
 - d. Reservoir cover screws to 6-8 **in-lbs** (0.7-0.9 Nm).
10. Replace cap on actuator bleeder valve.
11. Test ride motorcycle. Incorrect pressure or fluid level can cause:
 - a. Dragging clutch.
 - b. Hard shifting.

GENERAL

The FLHTCUSE is equipped with a heated seat. Individual heater controls, mounted on left side of seat, provide warmth to rider and passenger separately.

NOTE

Heater elements are not serviceable. If heater fails, seat must be replaced.

REMOVAL

1. Remove rider backrest. See [2.13 RIDER BACKREST](#).
2. Remove left saddlebag.
3. See [Figure 2-41](#). Remove fastener with flat washer holding one side of passenger grabstrap.
4. See [Figure 2-42](#). Remove screw (3) securing seat mounting bracket (5) to fender.
5. Slide seat backward to free tongue (4) on bottom front of seat from slot in frame backbone.
6. See [Figure 2-42](#). Unplug seat heater harness connector [191]. Remove seat.

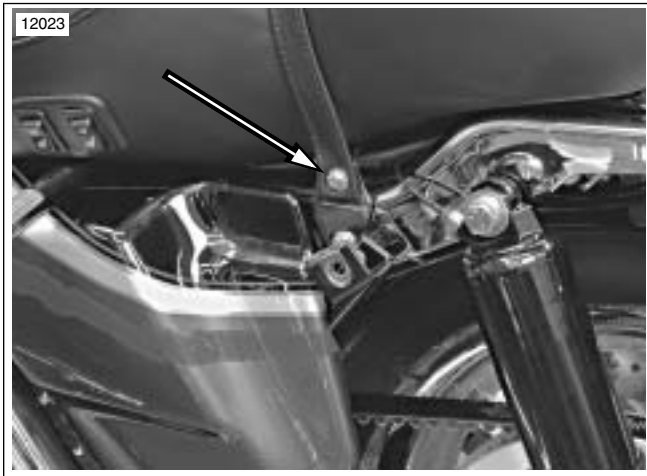


Figure 2-41. Passenger Grabstrap Fastener

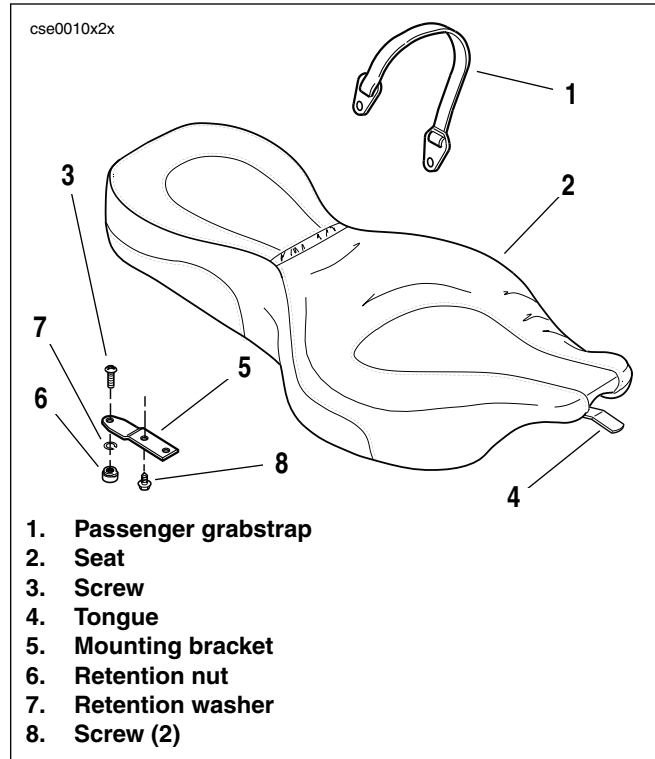


Figure 2-42. Seat Components



Figure 2-43. Seat Heater Connector [191]

CLEANING AND INSPECTION

CAUTION

Do not use bleach or detergents containing bleach on saddlebags, seats, tank panels or painted surfaces. Doing so can result in equipment damage. (00229a)

- Do not use ordinary soap to clean leather. It could dry or remove the oils from the leather.
- Use ONLY a good quality saddle soap to clean leather. Be sure to rinse saddle soap off thoroughly before treating leather.
- Never try to dry leather quickly, using artificial means. Always let leather dry naturally at room temperature.

NOTE

HARLEY-DAVIDSON LEATHER DRESSING (Part No. 98261-91V) has been tested and approved for materials used in FLHTCUSE seats.

1. Inspect seat, wiring harness and connector for wear or damage.
2. Clean underside of pillion and seat. Clean fender and frame mounting surfaces.

INSTALLATION

1. See [Figure 2-43](#). Set seat on frame. Plug in seat heater harness connector [191]. Tuck harness down into frame cavity. Make sure harness will not be pinched between seat pan and vehicle frame.
2. See [Figure 2-42](#). Slide seat forward until tongue (4) engages slot in frame backbone.
3. Push seat forward until retention nut (6) in fender is centered in hole of mounting bracket (5). Install screw (3) and tighten securely.

⚠ 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. Pull up on seat to verify that it is properly secured.
5. See [Figure 2-41](#). Install passenger grabstrap to left saddlebag mounting bracket.
6. Install left saddlebag.
7. Install rider backrest.

GENERAL

See Figure 2-44. The FLHTCUSE is equipped with a removable rider backrest. This backrest has an adjustable tilt angle. See Figure 2-45. It is also adjustable vertically, as well as horizontally (forward/aft).

The backrest is also spring loaded to assist the passenger in mounting and dismounting the vehicle.

NOTE

In the photos accompanying this procedure, the Tour-Pak has been removed for clarity.

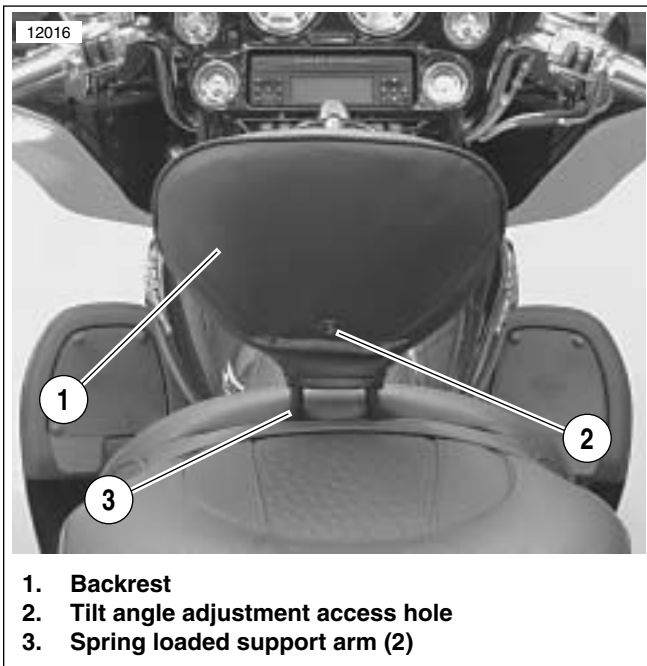


Figure 2-44. Removable Rider Backrest

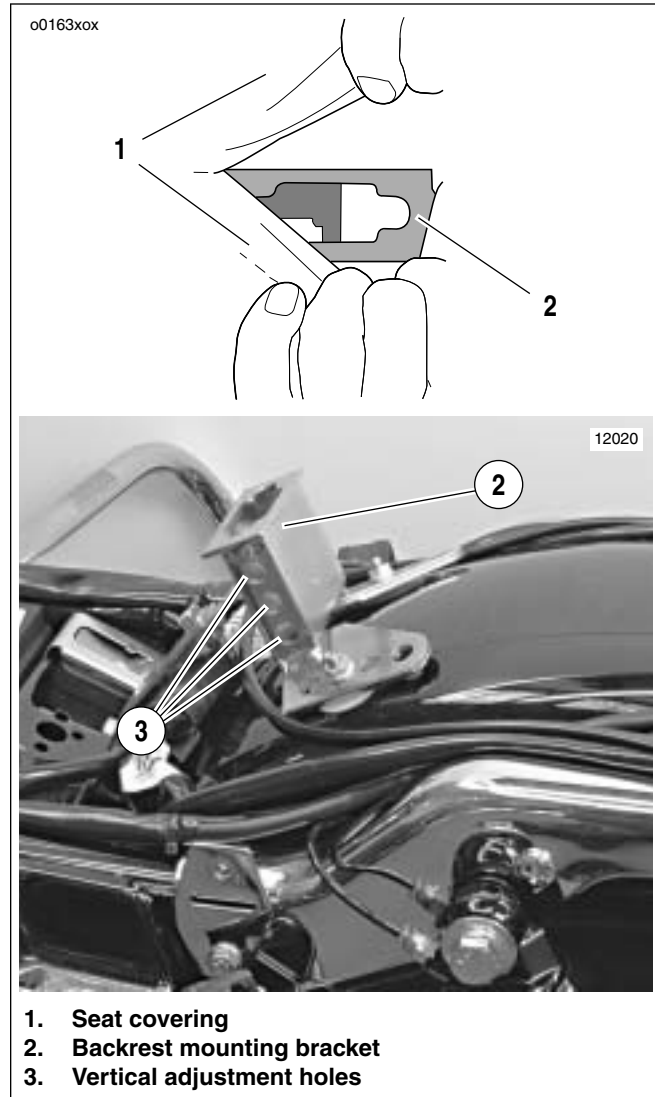


Figure 2-45. Backrest Mounting Bracket

REMOVAL

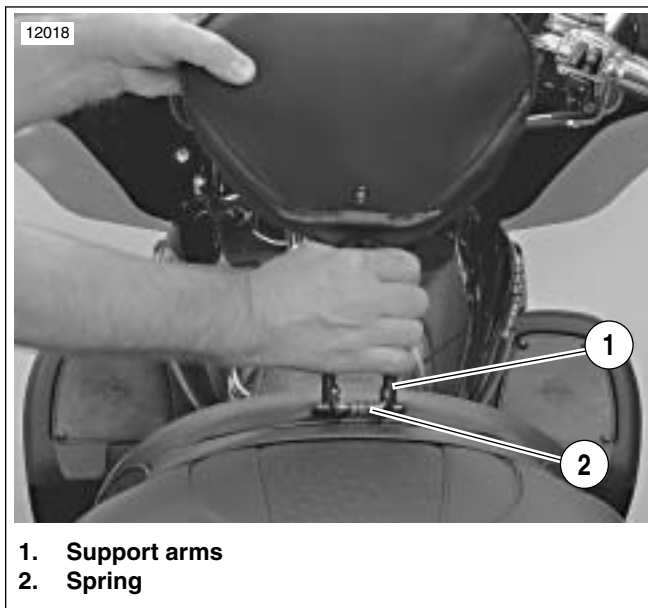
1. See [Figure 2-45](#). Spread the seat covering (1) at the base of the backrest to expose the two spring loaded support arms.
2. See [Figure 2-46](#). Squeeze together the spring loaded support arms.
3. Pull upward to remove the backrest from the mounting bracket.



Figure 2-46. Removing Backrest

INSTALLATION

1. See [Figure 2-45](#). Spread the seat opening to expose the backrest mounting bracket (2).
2. See [Figure 2-47](#). Squeeze together the two spring loaded support arms (1) on the backrest.
3. Insert the support arms into the mounting bracket and release to lock them in place in one of the vertical adjustment hole pairs.
4. Test to assure the backrest is secured into the bracket.



1. Support arms
2. Spring

Figure 2-47. Installing Backrest

ADJUSTMENT

Vertical Adjustment

1. See [Figure 2-45](#). Spread the seat covering (1) at the base of the backrest to expose the two spring loaded support arms.
2. Squeeze together the spring loaded support arms.
3. Move the backrest up or down as necessary to reposition it.
4. Release the support arms to lock the support arms in one of the vertical adjustment hole pairs.
5. Test to assure the backrest is secured into the bracket.

Tilt Angle

1. See [Figure 2-44](#). See [Figure 2-48](#). Insert a 3/16 inch Allen wrench through the tilt angle adjustment access hole.
2. Engage the Allen screw and tighten to tilt the backrest forward, or loosen to tilt the backrest backward.



Figure 2-48. Adjusting Backrest Tilt Angle

Forward/Aft Adjustment

1. Remove rider backrest, if installed. See [REMOVAL](#) on previous page.
2. Remove seat. See [2.12 SEAT](#).
3. See [Figure 2-49](#). Loosen, but do not remove, screw (3).
4. Remove nut (5) and screw (4). Pivot mounting bracket support (2) out of the way.
5. Remove nuts (6). Lift mounting bracket (1) off threaded studs. Reposition bracket in desired pair of horizontal adjustment holes (7) and reinstall nuts. Tighten securely.
6. Pivot mounting bracket support back into position, line up attachment holes, and install screw (4) and nut (5). Tighten securely.
7. Finally, tighten screw (3) securely.
8. Reinstall seat. See [2.12 SEAT](#).
9. Reinstall rider backrest. Make sure backrest fits properly and can be installed correctly in mounting holes in backrest mounting bracket.
10. If necessary, readjust backrest tilt angle. See [Tilt Angle](#) on previous page.

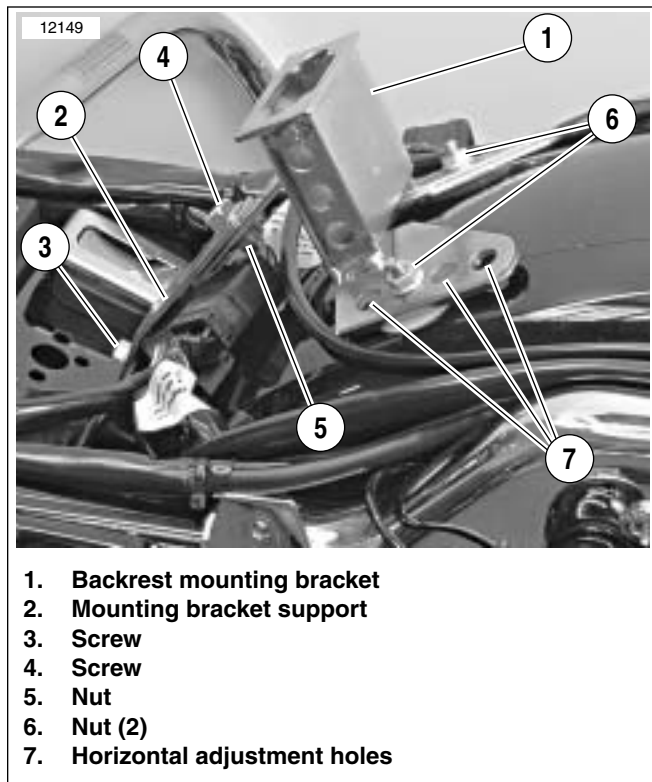


Figure 2-49. Backrest Mounting Bracket

GENERAL

The FLHTCUSE is equipped with a leather-covered Tour-Pak assembly.

REMOVAL

NOTE

The following procedure is best performed with the aid of an assistant.

1. Remove both saddlebags. See SADDLEBAG REMOVAL in Touring Models Service Manual.
2. Remove seat. See SEAT REMOVAL in Touring Models Service Manual.
3. Open Tour-Pak and remove bottom liner.
4. Unscrew AM/FM/WB antenna cable connector from antenna mount on left rear corner of Tour-Pak. Disengage antenna cable from clip on bottom left side of Tour-Pak. Unplug lighting harness connector.
5. Remove split grommet from hole in bottom left front corner of Tour-Pak. Feed AM/FM/WB antenna cable and wiring harness down through hole.
6. Unplug CB antenna cable connector located in bottom right side of Tour-Pak. Disengage cable from mounting clips on bottom right side of Tour-Pak.
7. Remove split grommet from hole in bottom right front corner of Tour-Pak. Feed CB antenna cable down through hole.
8. Carefully pull wiring harness out of hole in left rear speaker enclosure. Unplug connector on harness closest to speaker. Repeat this step for right rear speaker.
9. Unplug wiring harness connector from amplifier, located under right side of Tour-Pak.
10. See Figure 2-50. Grasp passenger headset DIN connector (1) [76] and pull forward as shown in photo. Gently pull connector cable housing straight down to release from split cable clip (2).

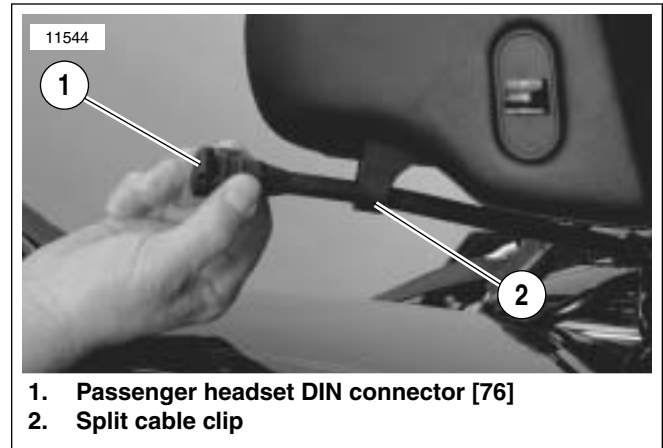


Figure 2-50. Passenger Headset Connector Removal/Installation

11. Slide a clean shop towel underneath amplifier. This will protect rear fender finish when amplifier is removed.
12. See Figure 2-51. Make note of which set of five holes are being used to mount Tour-Pak.
13. Unscrew and remove four locknuts with nylon caps (4) from bolts (1). Remove washers (3), spacers (7), bolts, and large washers (14).
14. Slide amplifier to the right side, out from underneath Tour-Pak. Set amplifier aside.

NOTE

Have assistant hold Tour-Pak for next step.

15. Unscrew and remove locknut (5) from bolt (2). Remove washer, antenna ground lead (9), bolt and spacer (7). Remove Tour-Pak from vehicle.

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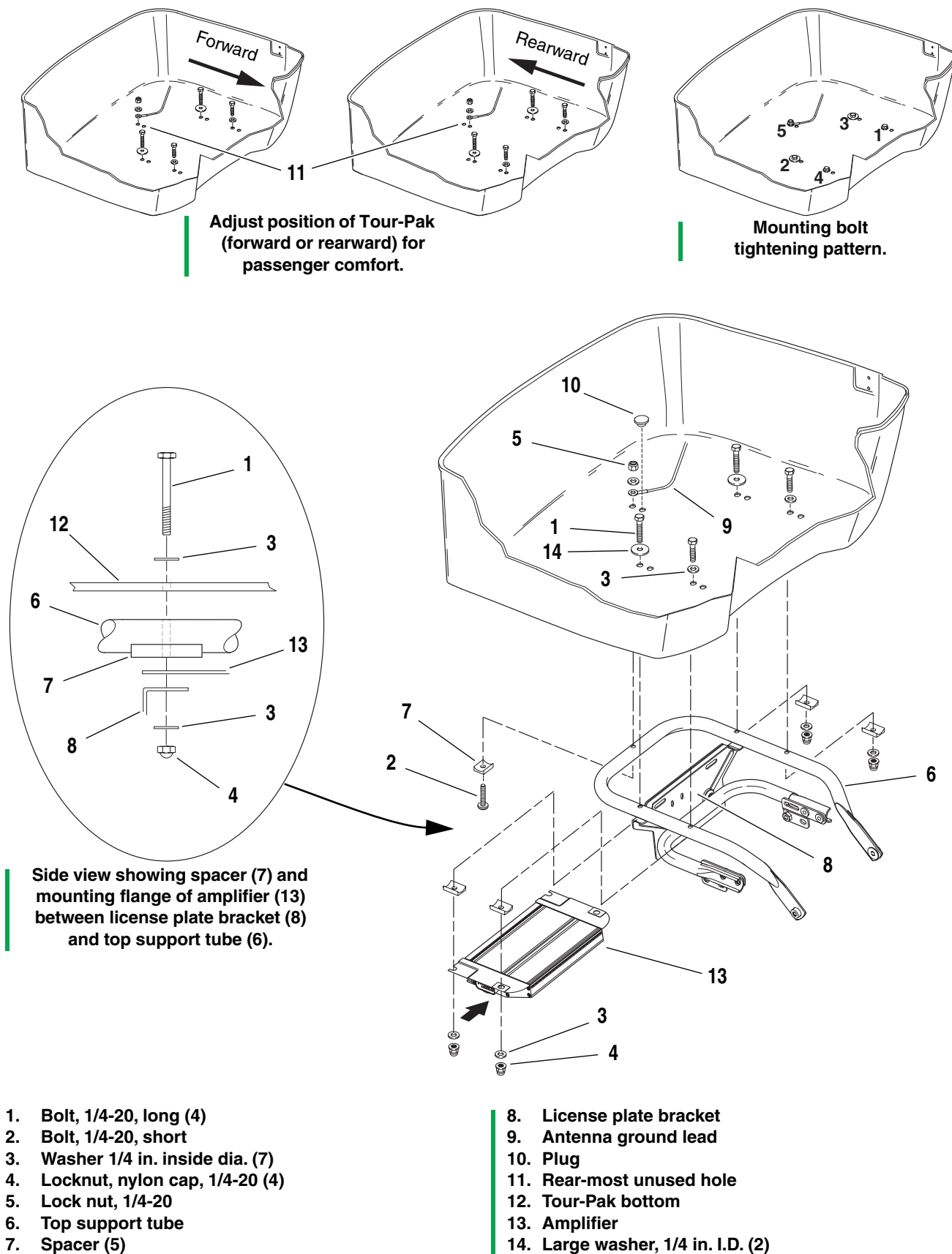


Figure 2-51. Tour-Pak Mounting

INSTALLATION

1. See [Figure 2-51](#). Place two spacers (7), one on each side, between top support tube (6) and license plate bracket (8). Line up holes in spacers with rear Tour-Pak mounting holes in top support tube.
2. Set Tour-Pak in place on top support tube. Have an assistant hold Tour-Pak in position.
3. Place a clean shop towel over rear fender underneath Tour-Pak. Slide amplifier from right side of vehicle, into position underneath Tour-Pak and rest it on shop towel with connector facing right side of vehicle and mounting flanges facing up. Position amplifier so that rear corners of mounting flange are between spacers (7) and license plate bracket (8).
4. From inside Tour-Pak, install right rear bolt (1) and large O.D. flat washer (14) through bottom of Tour-Pak (12), hole in top support tube (6), spacer (7), amplifier (13) flange and hole in license plate bracket (8).
5. Install flat washer (3) and locknut with cap (4) on right rear bolt and tighten "finger-tight". (This fastener will keep Tour-Pak in position while remaining bolts are installed.
6. Install rear bolt (2) from bottom, through spacer, hole in top support tube, bottom of Tour-Pak, antenna ground lead (9) ring terminal and flat washer. Secure with lock nut (5), finger-tight.
7. In the same manner, install remaining bolts, washers, spacers and nuts as shown in [Figure 2-51](#).
8. Tighten five nuts and bolts to 96-108 **in-lbs** (10.9-12.2 Nm) in the pattern shown in [Figure 2-51](#).
9. Feed Tour-Pak lighting harness and AM/FM/WB antenna cable up through hole in bottom left front corner of Tour-Pak and install split grommet in hole. Plug in Tour-Pak lighting connector.
10. Install AM/FM/WB antenna connector into socket on antenna mount and screw in finger-tight. Route antenna cable through clip in bottom of Tour-Pak.
11. Feed CB antenna cable up through hole in bottom right front corner of Tour-Pak and install split grommet in hole. Plug antenna cable connector into cable socket.
12. Install CB antenna cable in its clips on bottom right side of Tour-Pak.
13. Verify that AM/FM/WB antenna ground strap is securely fastened to base plate in Tour-Pak with rear mounting screw.
14. Install molded Tour-Pak liner and close Tour-Pak lid.
15. Plug cable harness into amplifier on right side of vehicle.

AM/FM/WB RADIO ANTENNA

Removal

1. See [Figure 2-52](#). Loosen set screw (2) with allen wrench (4).
2. Unscrew antenna mast (1) from antenna Tour-Pak mount (3).

Installation

1. See [Figure 2-52](#). Screw antenna mast (1) into antenna mount (3) on Tour-Pak.
2. Tighten set screw (2) with allen wrench (4).

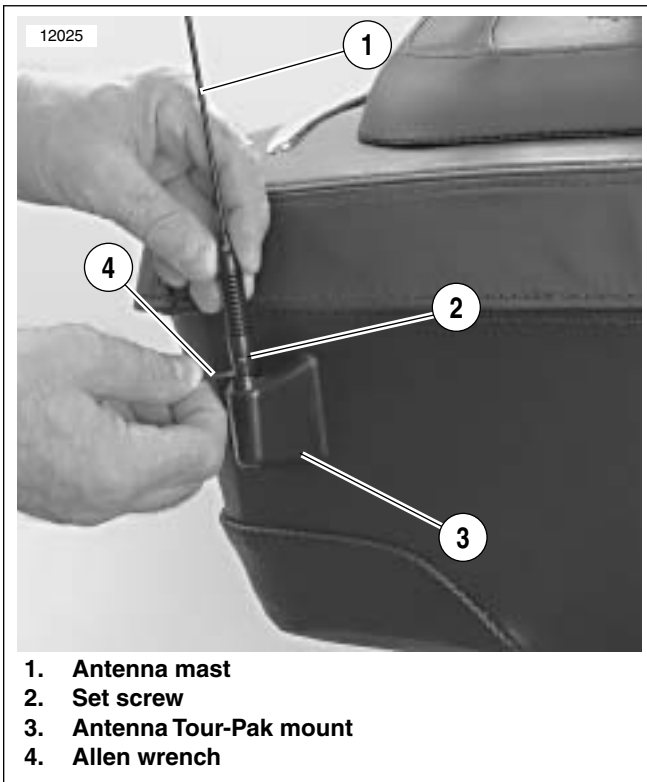


Figure 2-52. Removing/Installing AM/FM/WB Antenna

CB RADIO ANTENNA

Removal

1. See [Figure 2-53](#). Loosen set screw (2) with allen wrench (4).
2. Unscrew antenna mast (1) from antenna Tour-Pak mount (3).

Installation

1. See [Figure 2-53](#). Screw antenna mast (1) into antenna mount (3) on Tour-Pak.
2. Tighten set screw (2) with allen wrench (4).

NOTE

Once the CB antenna has been replaced, you must adjust the SWR. Refer to the *Touring Models Electrical Diagnostic Manual* for the correct procedure.

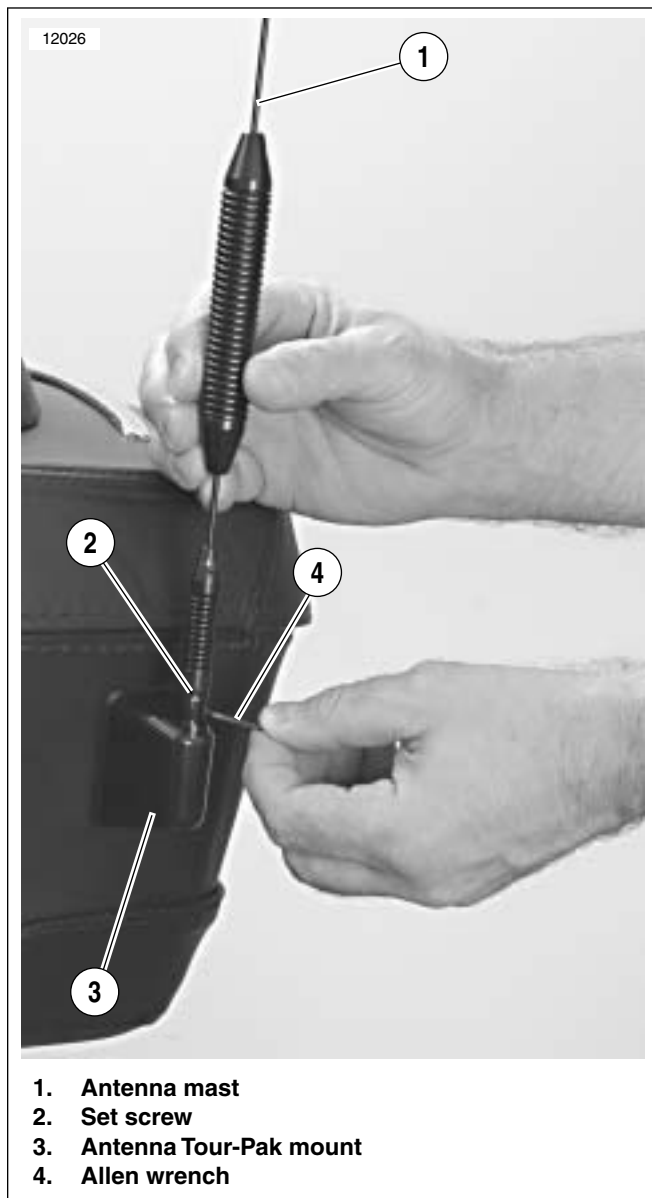


Figure 2-53. Removing/Installing CB Antenna

REMOVAL

⚠ WARNING

To prevent accidental vehicle start-up, which could cause death or serious injury, remove maxi-fuse before proceeding. (00251a).

1. See Touring Models Service Manual and remove the following items:
 - a. Saddlebags.
 - b. Left and right side covers.
 - c. Maxi-Fuse.
2. See [Figure 2-54](#). See [Figure 2-55](#). Remove two screws (14), washers (15) and spacer (4) securing saddlebag filler strip (3) to vehicle. Remove filler strip.

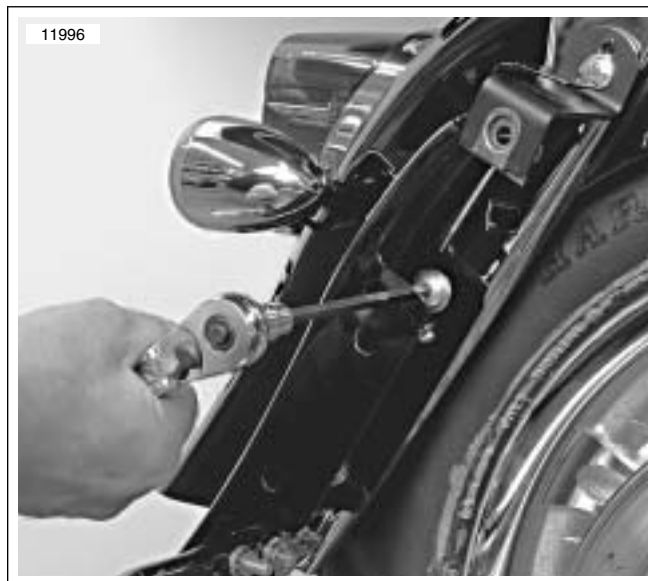


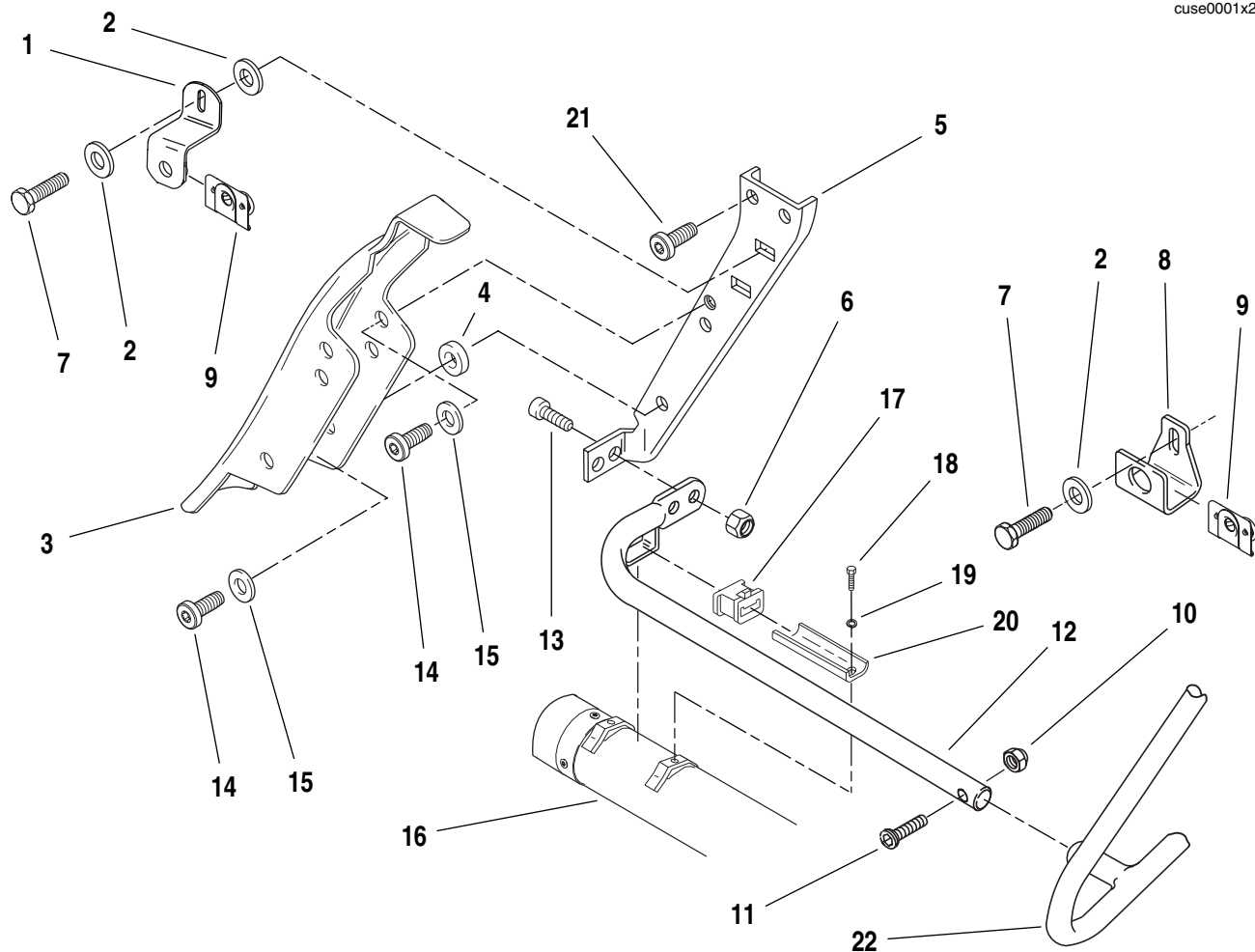
Figure 2-54. Removing Filler Strip

3. Remove two screws (18) and lockwashers (19) securing muffler (16) to saddlebag support (12). Remove muffler mounting bracket (20) and rubber mount (17).
4. Remove screw (11) and locknut (10) securing front of saddlebag support to saddlebag guard (22).
5. Remove two screws (13) and locknuts (6) securing rear of saddlebag support to support bracket (5). Remove saddlebag support from vehicle.

6. Remove upper front saddlebag bracket (8): screw (7), washer (2) and bracket.
7. Remove upper rear saddlebag bracket (1): screw (7), washer (2), bracket, and washer (2).
8. Remove screws (21), support bracket (5) and trim.
9. Repeat above steps on opposite side of vehicle.

INSTALLATION

1. See [Figure 2-55](#). Position support bracket (5) and trim on vehicle. Secure with screws (21). Tighten to 15-20 ft-lbs (20.4-27.1 Nm).
2. Slide front end of saddlebag support (12) into tube in saddlebag guard (22). Loosely attach rear of saddlebag support to support bracket with two screws (13) and locknuts (6).
3. Loosely install screw (11) and locknut (10) through saddlebag guard and saddlebag support.
4. Tighten screws securing rear of saddlebag support to 15-20 ft-lbs (20.4-27.1 Nm). Tighten screw securing front of saddlebag support to 70-100 **in-lbs** (7.9-11.3 Nm).
5. Loosely attach upper front saddlebag bracket (8): screw (7), washer (2) and bracket.
6. Loosely attach upper rear saddlebag bracket (1): screw (7), washer (2), bracket, and washer (2).
7. Temporarily mount saddlebag, position upper saddlebag mounting brackets lined up with mounting holes in saddlebag and tighten screws to 15-20 ft-lbs (20.4-27.1 Nm). Remove saddlebag.
8. Install rubber mount (17) onto saddlebag support. Slide muffler mounting bracket (20) into rubber mount.
9. Attach muffler (16) to muffler mounting bracket with two screws (18) and lockwashers (19). Tighten to 96-144 **in-lbs** (10-9-16.3 Nm).
10. Install saddlebag filler strip (3) with spacer (4), two screws (14) and washers (15). Tighten to 15-20 ft-lbs (20.4-27.1 Nm).
11. Repeat above steps for opposite side of vehicle.
12. See Touring Models Service Manual and install the following items:
 - a. Maxi-Fuse.
 - b. Left and right side covers.
 - c. Saddlebags.



- | | |
|---|--|
| 1. Upper rear saddlebag bracket (2) | 12. Saddlebag support (2) (right side shown) |
| 2. Washer (6) | 13. Screw (4) |
| 3. Saddlebag filler strip (2) | 14. Screw (4) |
| 4. Spacer (2) | 15. Washer (4) |
| 5. Support bracket (2) (right side shown) | 16. Muffler (2) |
| 6. Locknut (4) | 17. Rubber mount (2) |
| 7. Screw (4) | 18. Screw (4) |
| 8. Upper front saddlebag bracket (2) | 19. Lockwasher (4) |
| 9. Receptacle (4) | 20. Muffler mounting bracket (2) |
| 10. Locknut (2) | 21. Screw (4) |
| 11. Screw (2) | 22. Saddlebag guard (2) (right side shown) |

Figure 2-55. Saddlebag Support Components

REPLACEMENT

1. Unscrew muffler heat shield clamp screws and remove heat shield.
2. See [Figure 2-56](#). Loosen and remove three fasteners holding muffler end cap in place. Remove end cap.
3. Install muffler end cap, align holes. Install and tighten fasteners.
4. Install muffler heat shield. Tighten clamp screws.

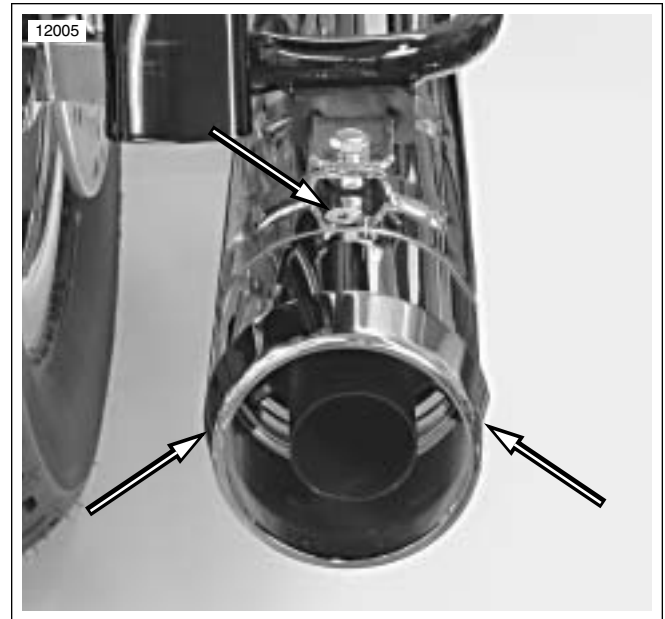


Figure 2-56. Muffler End Cap Fastener Locations

NOTES
