

## CHANGING FORK OIL

Change the front fork oil at every 20,000 mile (32,000 km) service interval. Two methods of changing the fork oil are presented below.

**Table 2-1. Fork Oil Requirements**

TYPE	AMOUNT
Harley-Davidson Type E, Part No. 99884-80 (16 oz.)	9.7 oz. (287 ml) Each Fork

### METHOD 1

1. On FLHTC/U models, remove outer fairing and radio. See Section 8.29 PREMIUM SOUND SYSTEM, RADIO, REMOVAL. On FLHT models, remove storage box following steps 3 and 6.

On FLHR/C models, remove headlamp nacelle. See Section 2.28 WINDSHIELD/HEADLAMP NACELLE (FLHR/C), NACELLE REMOVAL.

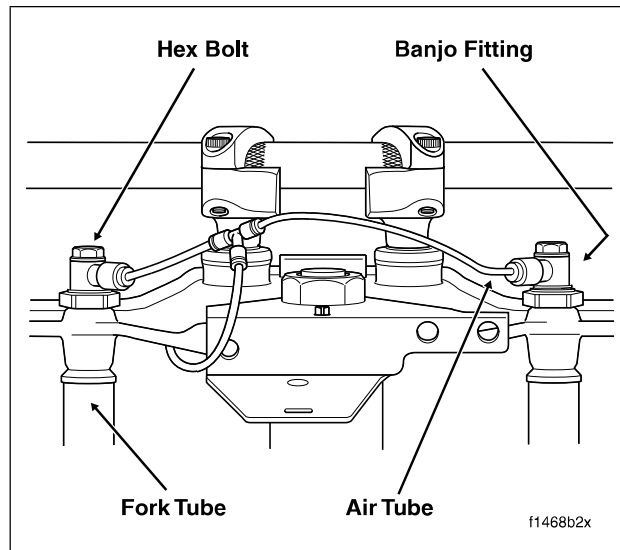
On FLTR models, remove instrument nacelle. See Section 2.27 UPPER FAIRING/WINDSHIELD (FLTR), INSTRUMENT NACELLE, REMOVAL.

2. Place suitable blocking under frame to raise front wheel several inches off the floor. Use an hydraulic center stand on a level surface.

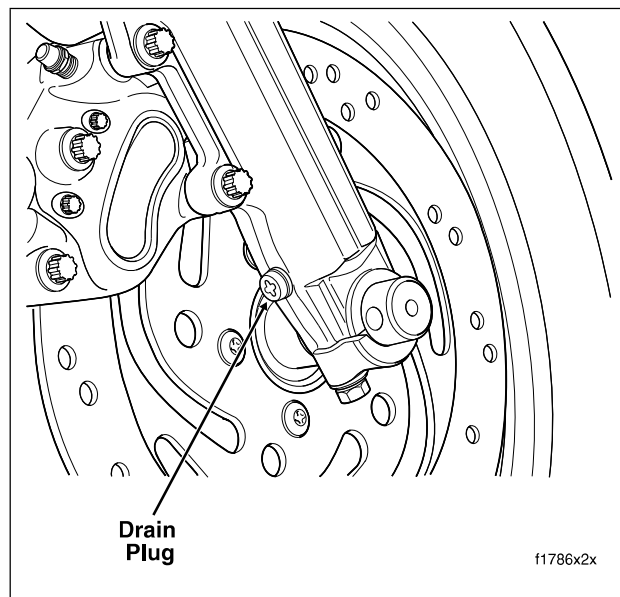
#### NOTE

All air pressure must be bled from front forks before fluid can be drained.

3. Locate the front air valve just below the frame cover at the rear right side of the vehicle. Remove core from air valve to bleed air from the front air suspension system. For best results, use Snap-ON tool #GA143A.
4. Depress collar and remove air tube from each banjo fitting. See Figure 2-71.
5. Rotate hex bolts to remove banjo fittings from fork cap bolts. Remove O-rings from hex bolts.
6. Remove the drain plug from the bottom of each fork leg. See Figure 2-72.
7. When the fork oil is fully drained, install the plugs back into the fork legs. Tighten each plug to 72-96 **in-lbs** (8-11 Nm).
8. Using a clear plastic tube and funnel, pour the specified amount of Harley-Davidson Type E Fork Oil into each fork tube.
9. Apply light film of clean engine oil on **new** O-rings. Install O-rings in grooves of hex bolts.



**Figure 2-71. Banjo Bolt Cap Locations**



**Figure 2-72. Fork Oil Drain Plug (Right Side)**

10. With air connection facing inboard, rotate hex bolts to install banjo fittings to fork cap bolts. Tighten hex bolts to 8-12 ft-lbs (11-16 Nm).
11. Insert air tubes into banjo air inlet fittings.
12. Pressurize front air suspension system and check for leaks. For recommended air suspension pressures, see Table 2-2. Install protective cap on air valve.

## HOME

- On FLHTC/U models, install radio and outer fairing. See Section 8.29 PREMIUM SOUND SYSTEM, RADIO, INSTALLATION. On FLHT models, install storage box following steps 3 and 6.

On FLHR/C models, install headlamp nacelle. See Section 2.28 WINDSHIELD/HEADLAMP NACELLE (FLHR/C), NACELLE INSTALLATION.

On FLTR models, install instrument nacelle. See Section 2.27 UPPER FAIRING/WINDSHIELD (FLTR), INSTRUMENT NACELLE, INSTALLATION.

## METHOD 2

### NOTE

All air pressure must be bled from front forks before fluid can be drained.

- Locate the front air valve just below the frame cover at the rear right side of the vehicle. Remove core from air valve to bleed air from the front air suspension system. For best results, use Snap-ON tool #GA143A.
- Remove the drain plug from the bottom of each fork leg. See Figure 2-72. Drain the oil and then reinstall just one drain plug.
- With second drain plug still removed, attach air suspension pump (part #HD-34633) to front air valve. Gently pump to assist the draining process.
- Attach vacuum tool (air operated) to front air valve.
- Pour the specified amount of Harley-Davidson Type E fork oil into clean container. Obtain a battery vent tube (Part No. 65995-88A) and cut the vent from each end. Insert one end of the tube into the fork oil and the other end against the open drain hole.

### WARNING

**Do not leave the vacuum tool on for too long or the fork oil will be drawn into the air lines. An insufficient quantity of fork oil can adversely affect handling and may lead to loss of vehicle control, which could result in death or serious injury.**

- Turn the vacuum tool on just long enough to allow the fork oil to be drawn into the front fork. When the fluid container is empty, reinstall the drain plug and turn the vacuum tool off. Tighten the drain plug to 72-96 **in-lbs** (8-11 Nm).
- Repeat the process on the opposite fork.

## REMOVAL/DISASSEMBLY

- Remove the front wheel and fender. See Section 2.29 FRONT FENDER, REMOVAL.

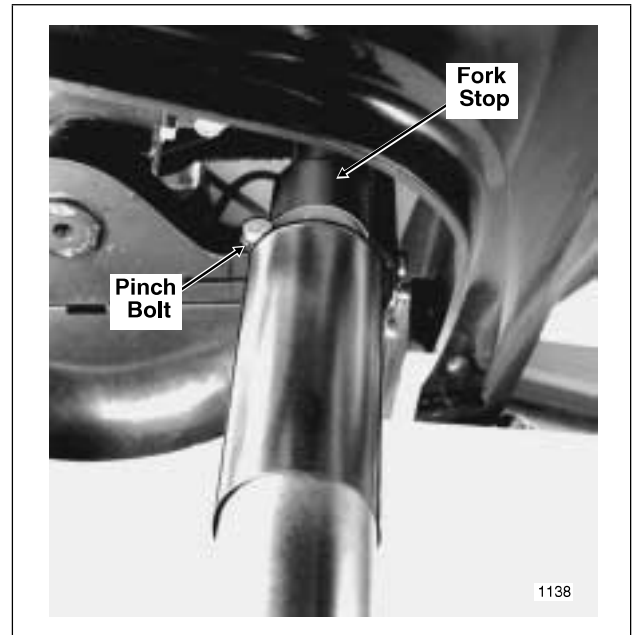


Figure 2-73. Fork Side Mounting

- On FLHTC/U models, remove outer fairing and radio. See Section 8.29 PREMIUM SOUND SYSTEM, RADIO, REMOVAL. On FLHT models, remove storage box following steps 3 and 6.

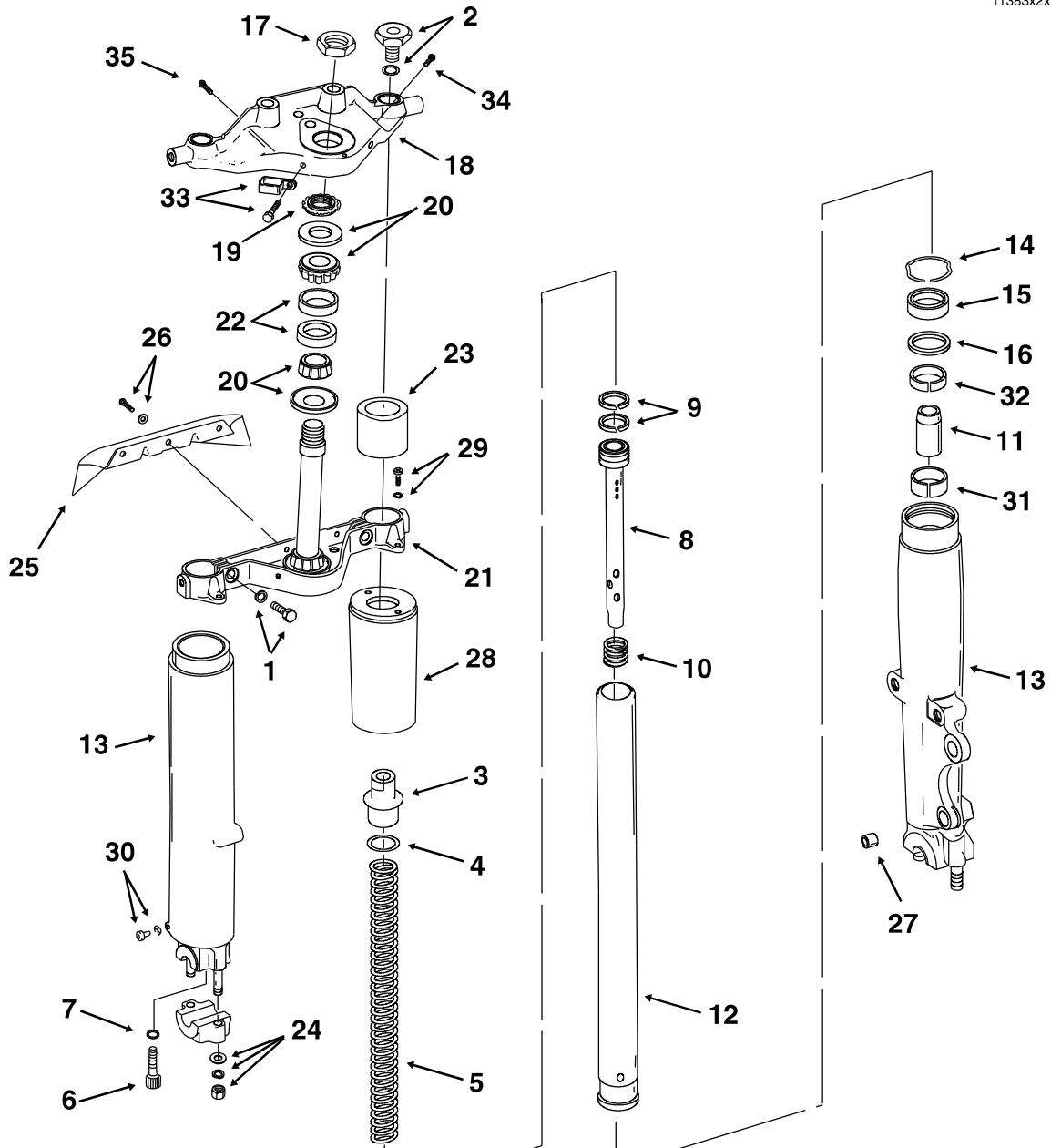
On FLHR/C models, remove headlamp nacelle. See Section 2.28 WINDSHIELD/HEADLAMP NACELLE (FLHR/C), NACELLE REMOVAL.

On FLTR models, remove instrument nacelle. See Section 2.27 UPPER FAIRING/WINDSHIELD (FLTR), INSTRUMENT NACELLE, REMOVAL.

- Locate the front air valve just below the frame cover at the rear right side of the vehicle. Remove core from air valve to bleed air from the front air suspension system. For best results, use Snap-ON tool #GA143A.
- Rotate hex bolts to remove banjo fittings from fork cap bolts. See Figure 2-71. Remove O-rings from hex bolts.
- Remove the fork cap bolt and seal from each fork. See Figure 2-73.
- Loosen the pinch bolts. Using a suitable drift and tapping from the top, drive the fork sides from the brackets and remove the rubber fork stop (2) from each fork.
- Drain the oil from the fork side.
- Remove screw (6) and washer (7).

### NOTE

Since there is little resistance to rotation when removing socket screw (6), use an air impact wrench for best results.



- |                                  |                                 |                                |
|----------------------------------|---------------------------------|--------------------------------|
| 1. Pinch bolt and lockwasher (2) | 12. Fork tube                   | 23. Fork stop (2)              |
| 2. Fork cap bolt and seal (2)    | 13. Fork slider                 | 24. Slider cap hardware        |
| 3. Fork cap                      | 14. Retaining ring              | 25. Shield                     |
| 4. O-ring                        | 15. Oil seal                    | 26. Bolt and lockwasher        |
| 5. Spring                        | 16. Washer                      | 27. Bushings (2)               |
| 6. Screw                         | 17. Fork stem nut               | 28. Slide cover                |
| 7. Washer                        | 18. Upper bracket               | 29. Screw and lockwasher       |
| 8. Damper tube                   | 19. Bearing adjuster (star) nut | 30. Drain screw and lockwasher |
| 9. Wear ring (2)                 | 20. Dust shield and bearing     | 31. Bushing                    |
| 10. Spring                       | 21. Lower bracket and stem      | 32. Bushing                    |
| 11. Sleeve                       | 22. Bearing race                | 33. Clamp and Screw            |
|                                  |                                 | 34. Handlebar Ground Screw     |
|                                  |                                 | 35. Screw                      |

Figure 2-74. Front Fork Assembly

## HOME

- Remove the fork cap (3), O-ring (4) and spring (5). Remove retaining ring (14). Separate the fork tube (12) from the fork slider (13) by using the fork tube as a slide hammer. That is, first push fork tube into fork slider and then pull it outward.
- Continue slide hammer action until fork tube separates from fork slider. Bushing (32), washer (16) and oil seal (15) are all removed with the fork tube.
- With air connection facing inboard, rotate hex bolts to install banjo fittings to fork cap bolts. Tighten hex bolts to 8-12 ft-lbs (11-16 Nm).
- On FLHTC/U models, install radio and outer fairing. See Section 8.29 PREMIUM SOUND SYSTEM, RADIO, INSTALLATION. On FLHT models, install storage box following steps 3 and 6.

### NOTE

*Bushing (31) is slightly larger than bushing (32) and will drive out bushing (32), washer (16) and oil seal (15).*

- Remove damper tube (8) from fork tube (12). If necessary the damper tube can be pushed out with a small rod inserted through bottom hole of fork tube. Remove the wear rings (9) from the damper tube (8).
- On FLHR/C models, install headlamp nacelle. See Section 2.28 WINDSHIELD/HEADLAMP NACELLE (FLHR/C), NACELLE INSTALLATION.
- On FLTR models, install instrument nacelle. See Section 2.27 UPPER FAIRING/WINDSHIELD (FLTR), INSTRUMENT NACELLE, INSTALLATION.
- Install the front fender and wheel. See Section 2.29 FRONT FENDER, INSTALLATION.

## CLEANING AND INSPECTION

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- Replace the springs if they are broken or distorted. Replace any broken or bent parts. Replace all seals and O-rings.
- Lower bushing on fork tubes should not be removed, unless they are to be replaced. During replacement, expand the new split bushing just enough to fit over fork tube and slide the bushing into the bushing groove.

## ASSEMBLY/INSTALLATION

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- Install the wear rings (9) onto the damper tube (8). Install the spring (10), tube (8) and spring (5) in the fork tube (12).
- Place the fork tube into the slider (13) and secure it with the washer (7) and bolt (6).
- Place upper bushing (32), washer (16) and oil seal (15) over the fork tube (12). Be sure that the concave surface of the spacer is down and lettered side of the seal is facing upward. Place FORK SEAL AND BUSHING TOOL, Part No. HD-34634, over fork tube (12). Bushing (32), washer (16) and seal (15) are then seated into the slider bore by lightly tapping the components into place with the installation tool.
- Install retaining ring (14). See Figure 2-74. Place fork side assemblies into the upper and lower bracket with the rubber sleeves positioned as shown.
- Pour the specified amount of Harley-Davidson Type E Fork Oil into each fork side. Install the fork cap bolts and seals. Tighten the pinch bolts to 40 ft-lbs.
- Apply light film of clean engine oil on new O-rings. Install O-rings in grooves of hex bolts.

## LUBRICATION

At every 5,000 mile (8,000 km) service interval, grease the steering head bearings using *Special Purpose Grease, Part No. 99857-97*. Turn handlebar full right to access the grease fitting at the left side of the steering head. Connect grease gun to fitting and inject grease until it exudes from top and bottom of steering head. See [Figure 2-75](#).

At the 1,000 mile (1,600 km) service interval, and every 10,000 miles (16,000 km) thereafter, check the swing-by following the CHECKING procedure below.

Disassemble the front fork every 50,000 miles (80,000 km), and inspect the steering head bearings for burnelling, scoring, or other damage. Replace and/or repack the bearings as required.

## CHECKING

- Using an hydraulic center stand on a level surface, raise the vehicle so that the front and rear tires are the same distance from the floor.
- Verify that motorcycle is in stock configuration. Remove all non-factory accessories, since they can influence front end swing momentum (and lead to improper adjustment).
- Turn the front wheel until contact is made with the left fork stop and then let go. The wheel should swing right, left, then right and stop. The wheel need not stop near the center or straight-forward position, but it must move to the right making a partial third swing. See frame C of [Figure 2-76](#).
- To correct a swing pattern that is too short or too long, see ADJUSTMENT below.

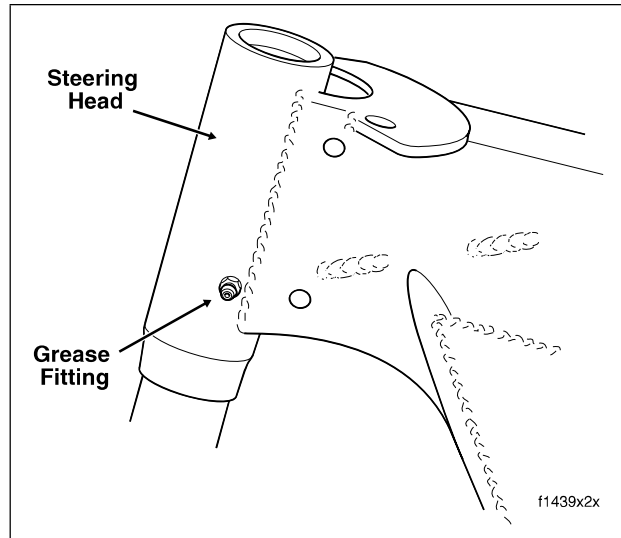


Figure 2-75. Steering Head Bearing Grease Fitting

## ADJUSTMENT

- Loosen the pinch bolts on the lower fork bracket and slide the rubber fork stops up slightly on the fork tubes. This will prevent any binding of the front end when the adjustment is made. See [Figure 2-73](#).
- On FLHT/C/U models, remove outer fairing and radio (storage box on FLHT). On FLHR/C, remove headlamp nacelle. On FLTR models, remove the instrument bezel.
- Bend tab on lock plate away from flat of fork stem nut. Loosen the fork stem nut. See [Figure 2-77](#).
- Fashion a bearing adjuster tool using a drill rod 16 inches long. See lower frame of [Figure 2-78](#).

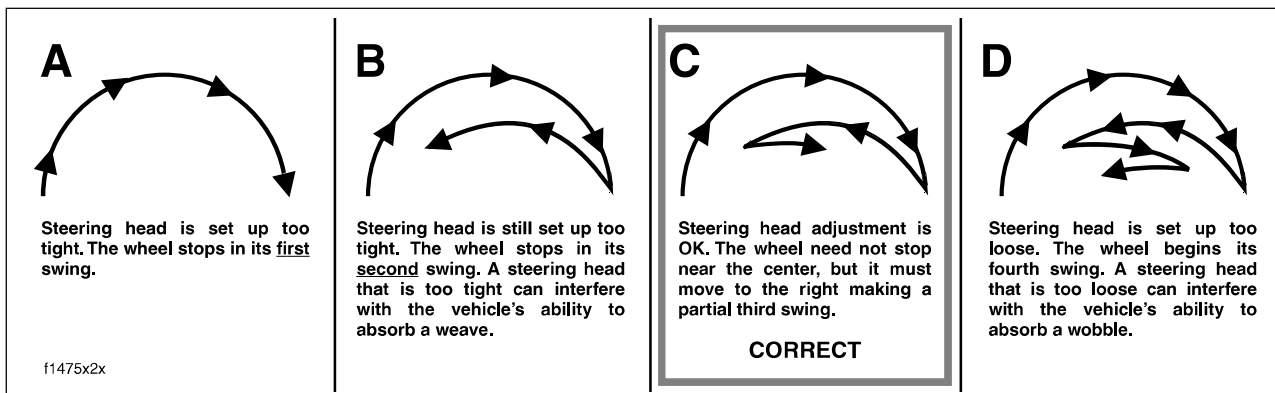
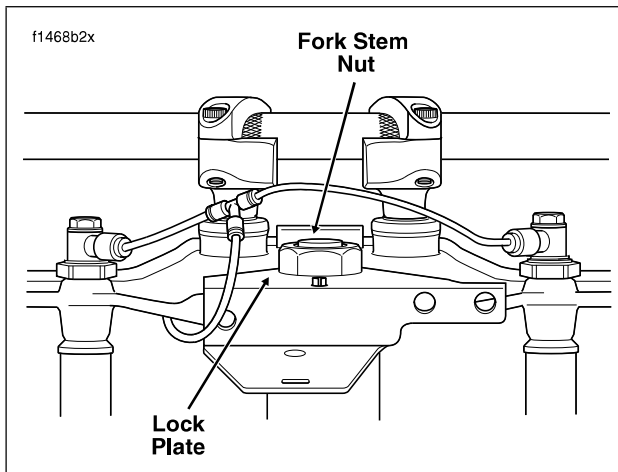


Figure 2-76. Check Steering Head Bearing Swing-By



**Figure 2-77. Fork Stem Nut**

To decrease the number of swings, stand on the **left** side of the vehicle and insert the rod to engage the notches of the bearing adjuster (star) nut under the fork bracket. Push forward to rotate the nut **clockwise**.

**NOTE**

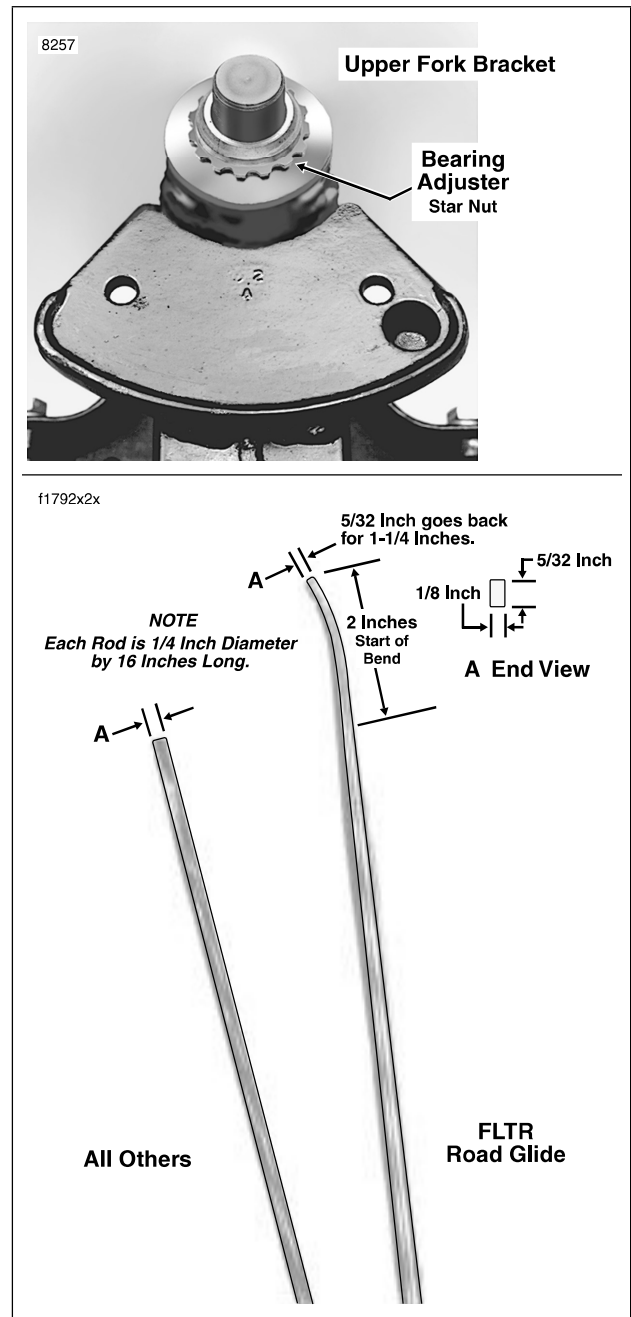
*Turning the bearing adjuster nut as little as one notch will make a noticeable difference in the swing pattern.*

To increase the number of swings, stand on the **right** side of the vehicle and insert the rod to engage the notches of the bearing adjuster nut. Push forward to rotate the nut **counterclockwise**.

5. Tighten the fork stem nut to 50-65 ft-lbs (68-88 Nm). The tightness of the nut will affect the swing pattern.
6. Recheck the swing pattern. See step 3 under **CHECKING**. Repeat steps 4-6 above until swing pattern is correct.
7. Tighten pinch bolts to 40 ft-lbs (54 Nm) and properly position the rubber fork stops.
8. Verify that the fork stem nut is tightened to 50-65 ft-lbs (68-88 Nm). Bend tab on lockplate against flat of fork stem nut.
9. On FLHT/C/U models, install radio (storage box on FLHT) and outer fairing. On FLHR/C, install headlamp nacelle. On FLTR models, install the instrument bezel.
10. Recheck the swing pattern. See step 3 under **CHECKING**. Repeat **ADJUSTMENT** procedure if swing pattern is not correct.

## REMOVAL

1. On FLHT/C/U models, remove the passing lamp bracket, outer fairing and radio (storage box on FLHT). On FLHR/ C, remove headlamp nacelle. On FLTR models, remove the instrument nacelle.



**Figure 2-78. Fashion Steering Head Bearing Adjustment Tool From Drill Rod**

2. Remove the front wheel, fork sides and air suspension components. Remove brake line from lower fork bracket.
3. Bend tab away from flat of fork stem nut. Remove nut.
4. Remove the bearing adjuster and fork stem assembly. See upper frame of **Figure 2-78**. Remove dust shield and bearing (20) from top of steering head. See **Figure 2-74**.



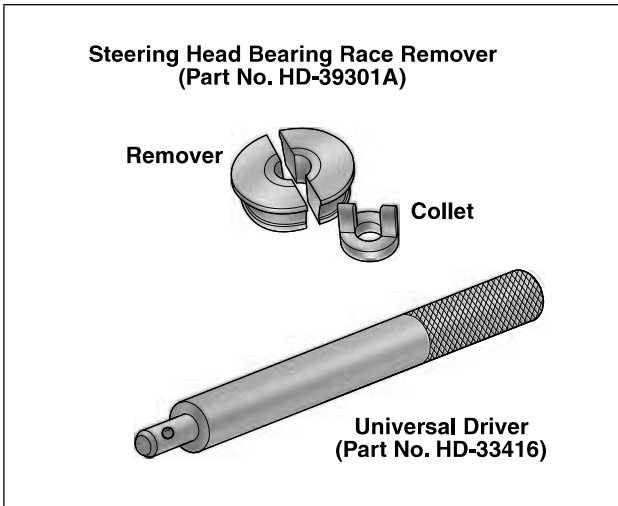


Figure 2-79. Steering Head Bearing Race Removal Tools

## INSPECTION

1. Check the bearing races (22) in the steering head. If pitted or grooved, replace both the bearings and races. See [Figure 2-74](#).
2. Turn bearings in races. Replace the bearings if they do not move freely and smoothly. Always replace both races and bearings even if one race and bearing appears good.

## STEERING HEAD BEARING RACE REMOVAL

### NOTE

To remove the upper and lower steering head bearing races, use the Steering Head Bearing Race Remover (Part No. HD-39301A) with the Universal Driver (Part No. HD-33416). See [Figure 2-79](#).

Proceed as follows:

1. With the tapered side down, seat the two-piece remover tool on the upper bearing race leaving a gap in the middle. See [Figure 2-80](#).
2. Install the collet on the driver.
3. Insert the driver at the bottom of the steering head tube, and while holding the remover tool on the race, center the collet in the gap. Tap the driver to remove the upper race.
4. Reverse the tool and repeat the procedure to remove the lower bearing race.

## REMOVING BEARING FROM FORK STEM

1. Chisel cage retaining rollers off bearing on fork stem.
2. Turn the stem (21) upside down while heating the inner race. Race will expand and fall free. See [Figure 2-74](#).

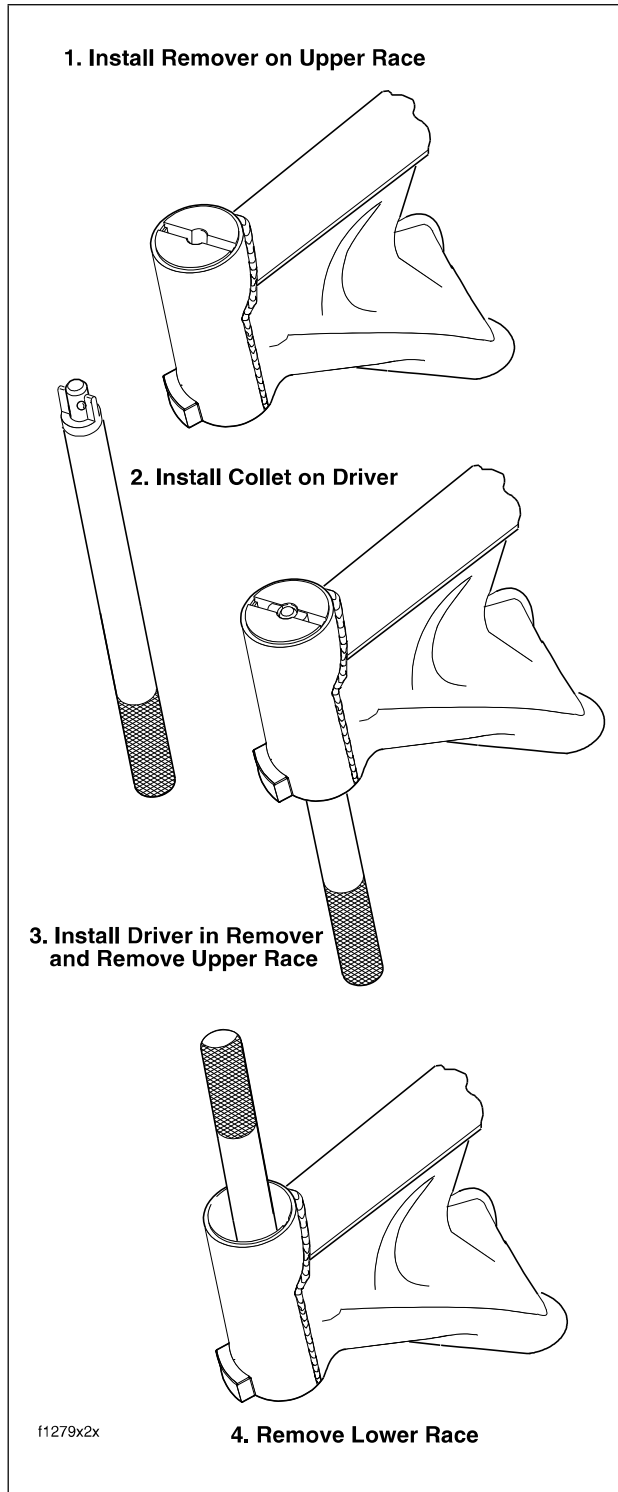


Figure 2-80. Remove Upper and Lower Steering Head Bearing Races

## ASSEMBLY

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1. Pack **new** bearings with Harley-Davidson SPECIAL PURPOSE GREASE, Part No. 99857-97.
2. See [Figure 2-74](#). Install dust shield (20) on fork stem (21). Use a sleeve that will contact only the inner race of the new bearing, then press the bearing into place on fork stem (21).
3. Install new bearing races (22) in steering head using STEERING HEAD BEARING RACE INSTALLATION TOOL, Part No. HD-39302.

## INSTALLATION

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1. See [Figure 2-74](#). Install the fork stem assembly into the steering head. Install the bearings and dust shield. Install the bearing adjuster nut. Snug the adjuster nut down until bearing play is taken up and the fork stem turns freely. Overtightening the nut will cause excessive bearing wear.

### WARNING

**An improperly adjusted fork stem nut can adversely affect handling and may lead to loss of vehicle control, which could result in death or serious injury.**

2. Install upper fork bracket and fork stem nut. Tighten nut to 50-65 ft-lbs (68-88 Nm). Bend the lockplate tab against the nut flat. See [Figure 2-77](#).
3. Install fork sides, air suspension components, radio (storage box on FLHT), outer fairing and passing lamp bracket. On FLHR/C, install headlamp nacelle. On FLTR models, install the instrument bezel.
4. Install the front wheel and bleed the front brake. Check swing-by under [CHECKING](#) in this section.



## GENERAL

All models feature air-adjustable suspension. Air pressure may be varied to suit personal comfort. Lower pressures give a softer ride while higher pressures give a firmer ride. See the table below for the recommended air suspension pressures or refer to the decal inside the right saddlebag.

**Table 2-2. Air Suspension Adjustments**

Loading	Recommended Pressures (PSI)	
	Front Fork (0-15)	Rear Shocks (0-10)
Rider Weight - up to 150 lbs. add:	-	-
For each extra 25 lbs. add:	1.0	1.0
Passenger weight - for each 50 lbs. add:	-	1.5
Luggage Weight - for each 10 lbs. add:	1.0	3.0
Maximum Pressures	25	35

### NOTE

Using pressures outside the recommended loading range will result in a reduction of available suspension travel and reduced rider comfort. Always adjust pressures with the vehicle on the jiffy stand.

### CAUTION

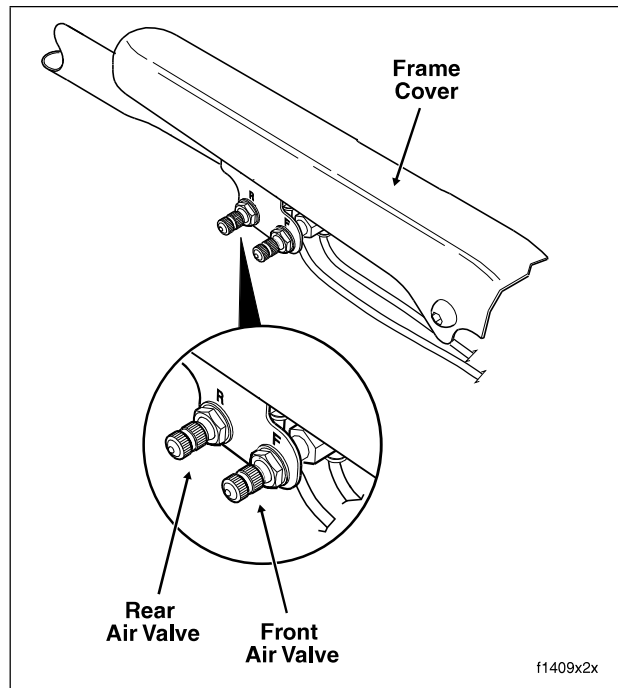
All air components fill rapidly. Use low air line pressure to avoid possible damage. A small hand or foot operated air pump is the best way to add air to suspension components.

### CAUTION

Use a no-loss air gauge to check air pressure. Check pressure in both front forks and air shocks weekly if in daily use or before each trip if only used occasionally.

### NOTE

An AIR SUSPENSION PUMP AND GAUGE (Part No. HD-34633) is available at your Harley-Davidson dealer.



**Figure 2-81. Front/Rear Air Suspension Air Valves (Under Protective Caps)**

### WARNING

Exercise caution when bleeding air from the air valves. 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.

## FRONT AIR SUSPENSION

Adjust the front fork air suspension pressure by adding or removing air from the air valve located just below the frame cover on the right side of the vehicle. See [Figure 2-81](#).

### CAUTION

Front air suspension pressure over 25 psi is not recommended. Damage to air control components can result.

## REAR AIR SUSPENSION

Adjust the rear shock air suspension pressure by adding or removing air from the air valve located just below the frame cover on the right side of the vehicle. See [Figure 2-81](#).

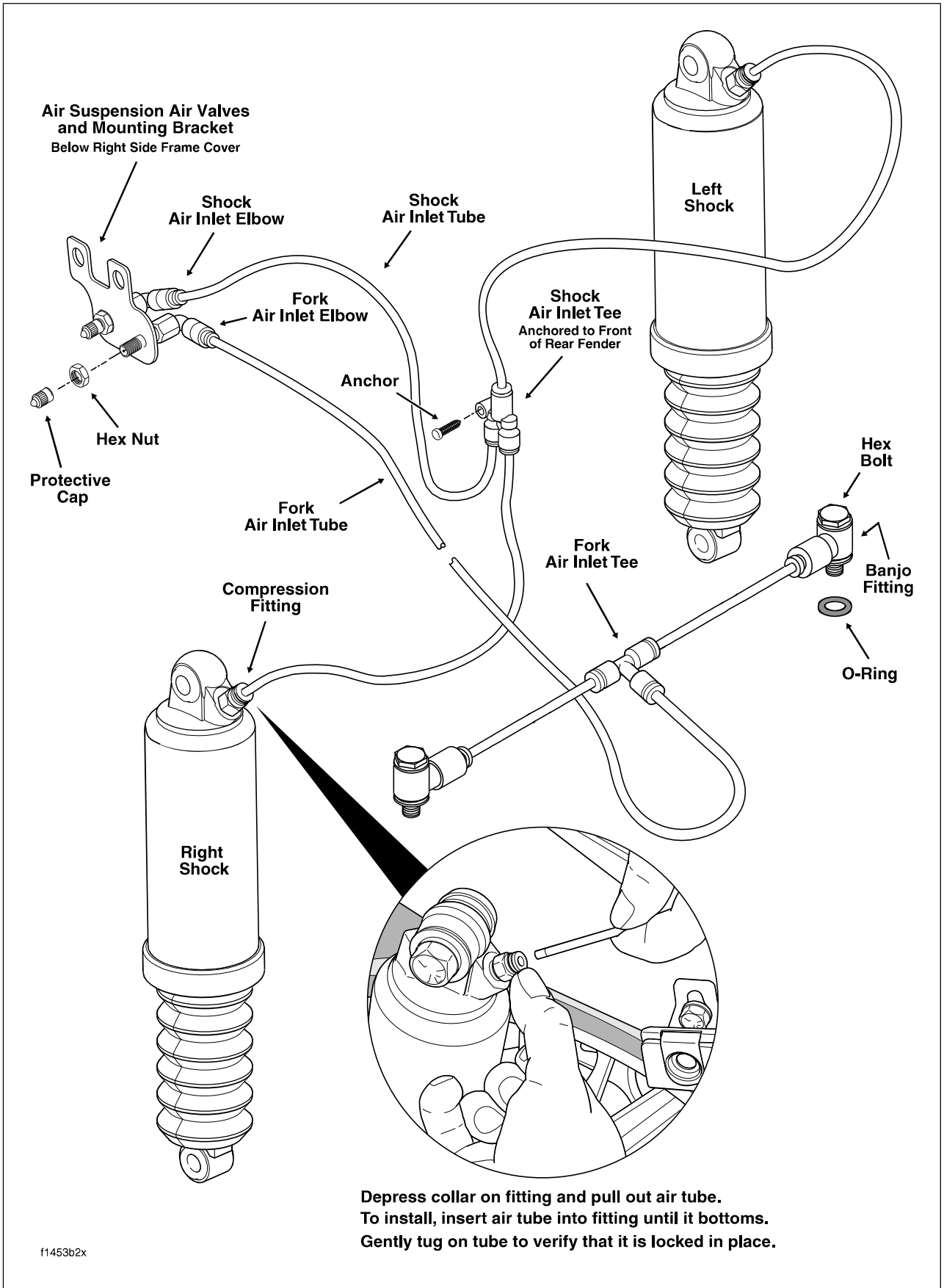


Figure 2-82. Front/Rear Air Suspension Systems

**CAUTION**

Maximum air pressure for rear suspension is 35 psi. Over inflation can damage shock absorbers.

## FRONT/REAR AIR SUSPENSION REMOVAL/INSTALLATION

Remove and replace components as necessary. Check for air leaks as follows:

### FRONT FORK AIR CONTROL

1. Remove right side saddlebag. See Section 2.22 [SADDLEBAG, REMOVAL](#).
2. Install the no-loss air gauge and set to correct pressure. Remove the gauge and wait overnight.
3. Recheck air pressure, and if a loss of 5-10 pounds is noted, then proceed to step 4.
4. Proceed as follows:

**FLHR/C:** Remove headlamp nacelle. See Section 2.28 [WINDSHIELD/HEADLAMP NACELLE \(FLHR/C\), NACELLE REMOVAL](#).

**FLHT/C/U:** On FLHTC/U models, remove outer fairing and radio. See Section 8.29 [PREMIUM SOUND SYSTEM, RADIO, REMOVAL](#). On FLHT models, remove storage box following steps 3 and 6.

**FLTR:** Remove instrument nacelle. See Section 2.27 [UPPER FAIRING/WINDSHIELD \(FLTR\), INSTRUMENT NACELLE, REMOVAL](#).

5. To check for air leaks in the banjo fittings, alternately spray or brush a light film of soapy water around the air inlet fitting, hex bolt head and O-ring. If no leakage is observed in either banjo fitting, move to step 6. If leakage is noted, proceed as follows:

#### Banjo fitting:

- a. If leakage is observed at the banjo air inlet fitting, proceed to step 5b. If leakage is noted around the hex bolt head or O-ring, proceed to step 5c.
- b. Remove air tube. Inspect tube end for burrs or damage. If either condition is observed, snip off the end of the tube and insert it back into the banjo air inlet fitting. If air leakage continues, proceed to step 5c.
- c. Remove air tube.
- d. Rotate hex bolt to remove banjo fitting from fork cap bolt. Remove O-ring from hex bolt if leakage was noted at this location. If leakage was noted around hex bolt head or air inlet, obtain **new** banjo fitting.
- e. Apply light film of clean engine oil on **new** O-ring. Install O-ring in groove of hex bolt.

- f. With air connection facing inboard, rotate hex bolt to install banjo fitting to fork cap bolt. Tighten hex bolt to 8-12 ft-lbs (11-16 Nm).
- g. Insert air tube into banjo air inlet fitting.
- h. Pressurize front air suspension system and check for leaks. For recommended air suspension pressures, see [Table 2-2](#). Install protective cap on air valve.

6. Spray or brush a light film of soapy water on the fork air inlet tee. If no leakage is observed, move to step 7. If leakage is noted, proceed as follows:

#### Air inlet tee:

- a. Remove air tubes. Inspect the tube ends for burrs or damage. If either condition is observed, snip off the end of the tube and insert it back into the tee. If air leakage continues, proceed to step 6b.
- b. Remove air tubes.
- c. Install air tubes in **new** air inlet tee.
- d. Pressurize front air suspension system and check for leaks. For recommended air suspension pressures, see [Table 2-2](#). Install protective cap on air valve.

7. Remove protective cap from air valve. Spray or brush a light film of soapy water into the valve head and where the air tube enters the air inlet elbow. If leakage is not observed at either location, move to step 8. If leakage is noted, proceed as follows:

#### Air valve assembly:

- a. If leakage is at air inlet elbow, proceed to step 7b. If leakage is at valve head, proceed to step 7c.
- b. Remove air tube from air inlet elbow. Inspect the tube ends for burrs or damage. If either condition is observed, snip off the end of the tube and insert it back into the fitting. If air leakage continues, proceed to step 7c.
- c. Remove air tube.
- d. Remove hex nut from valve head. See [Figure 2-82](#).
- e. Push on valve head to free air valve assembly from mounting bracket. See [Figure 2-83](#).
- f. Insert air tube into air inlet elbow of **new** air valve assembly.
- g. From inboard side, insert valve head through hole in mounting bracket. Install hex nut on valve head (flat side facing inboard). Tighten nut.
- h. Pressurize rear air suspension system and check for leaks. For recommended air suspension pressures, see [Table 2-2](#). Install protective cap on air valve.

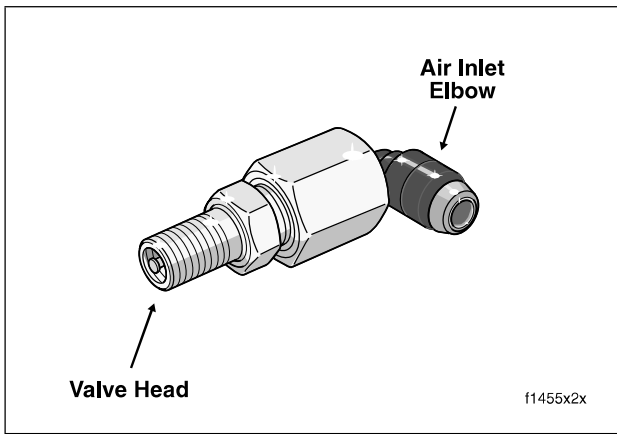


Figure 2-83. Air Valve Assembly

8. Partially remove fuel tank. For carbureted models, see Section 4.7 FUEL TANK, PARTIAL REMOVAL, [FLHT/C](#), [FLTR](#), or [FLHR](#). For fuel injected models, see Section 9.3 FUEL TANK, PARTIAL REMOVAL, [FLHTC/U-I](#), [FLTR-I](#), or [FLHR/C-I](#).
9. Inspect air tubes for kinks, cuts, chafing or any damage that may result in air leaks. If no leakage is observed, move to step 10. If tube replacement is necessary, proceed as follows:

#### Air tubes:

- a. Remove air tube from air inlet tee. Remove opposite end of tube from banjo air inlet fitting or air inlet elbow.

#### NOTE

If replacing length to air valves, do not cut cable straps or remove P-clamp along right side of steering head. Draw air tube out and then feed **new** air tube in leaving cable straps and clamp in place. See [Figure 2-84](#).

- b. Cut bulk tube to proper length.
  - c. Insert **new** tube into air inlet tee. Install opposite end of tube in banjo air inlet fitting or air inlet elbow.
  - d. Pressurize front air suspension system and check for air leaks. For recommended air suspension pressures, see [Table 2-2](#). Install protective cap on air valve.
10. Install fuel tank. For carbureted models, see Section 4.7 FUEL TANK, INSTALLATION (AFTER PARTIAL REMOVAL), [FLHT/C](#), [FLTR](#), or [FLHR](#). For fuel injected models, see Section 9.3 FUEL TANK, INSTALLATION (AFTER PARTIAL REMOVAL), [FLHTC/U-I](#), [FLTR-I](#), or [FLHR/C-I](#).
  11. Proceed as follows:

**FLHR/C:** Install headlamp nacelle. See Section 2.28 WINDSHIELD/HEADLAMP NACELLE (FLHR/C), [NACELLE INSTALLATION](#).

**FLHT/C/U:** On FLHTC/U models, install radio and outer fairing. See Section 8.29 PREMIUM SOUND SYSTEM, RADIO, [INSTALLATION](#). On FLHT models, install storage box following steps 3 and 6.

**FLTR:** Install instrument nacelle. See Section 2.27 UPPER FAIRING/WINDSHIELD (FLTR), [INSTRUMENT NACELLE, INSTALLATION](#).

12. Install right side saddlebag. See Section 2.22 [SADDLE-BAG, INSTALLATION](#).

## REAR SHOCK AIR CONTROL

1. Remove right side saddlebag. See Section 2.22 [SADDLE-BAG, REMOVAL](#).
2. Install the no-loss air gauge and set to correct pressure. Remove the gauge and wait overnight.
3. Recheck air pressure, and if a loss of 5-10 pounds is noted, then proceed to step 4.
4. Remove seat. See Section 2.21 [SEAT, REMOVAL](#).
5. Locate the shock air inlet tee anchored to the front of the rear fender. See [Figure 2-82](#). Spray or brush the tee with a light film of soapy water. If no leakage is observed, move to step 6. If leakage is noted, proceed as follows:

#### Air inlet tee:

- a. Remove air tubes. Inspect the tube ends for burrs or damage. If either condition is observed, snip off the end of the tube and insert it back into the tee. If air leakage continues, proceed to step 5b.
  - b. Pull anchor from rear fender hole to release air inlet tee.
  - c. Remove air tubes.
  - d. Install air tubes in **new** air inlet tee.
  - e. Anchor air inlet tee to rear fender.
  - f. Pressurize rear air suspension system and check for leaks. For recommended air suspension pressures, see [Table 2-2](#). Install protective cap on air valve.
6. Spray or brush a light film of soapy water on the compression fittings at the top of each shock absorber. If no leakage is observed, move to step 7. If leakage is noted, proceed as follows:

#### Compression fitting:

- a. Remove air tube from compression fitting. Inspect the tube ends for burrs or damage. If either condition is observed, snip off the end of the tube and insert it back into the fitting. If air leakage continues, proceed to step 6b.

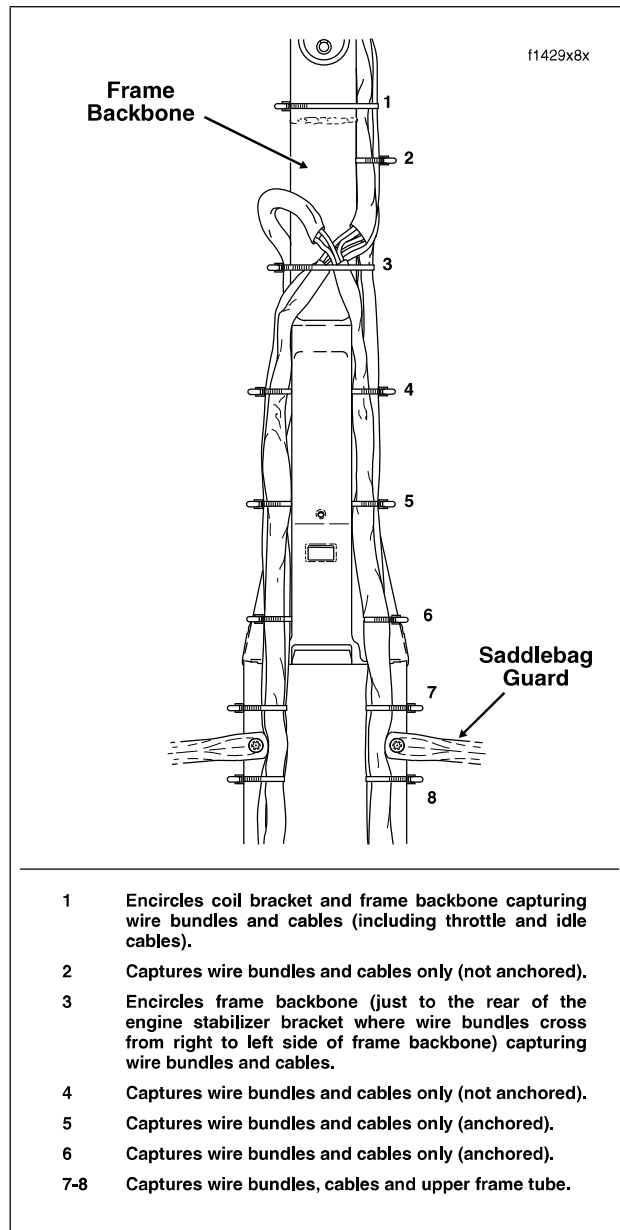
- b. Remove air tube from compression fitting.
  - c. Remove compression fitting from shock absorber.
  - d. Apply PIPE SEALANT WITH TEFLON to the threads of a **new** compression fitting and install in shock absorber.
  - e. Install air tube in compression fitting.
  - f. Pressurize rear air suspension system and check for leaks. For recommended air suspension pressures, see [Table 2-2](#). Install protective cap on air valve.
7. Remove protective cap from air valve. Spray or brush a light film of soapy water into the valve head and where the air tube enters the air inlet elbow. If leakage is not observed at either location, move to step 8. If leakage is noted, proceed as follows:

**Air valve assembly:**

- a. If leakage is at air inlet elbow, proceed to step 7b. If leakage is at valve head, proceed to step 7c.
  - b. Remove air tube from air inlet elbow. Inspect the tube end for burrs or damage. If either condition is observed, snip off the end of the tube and insert it back into the fitting. If air leakage continues, proceed to step 7c.
  - c. Remove hex nut from valve head. See [Figure 2-82](#).
  - d. Push on valve head to free air valve assembly from mounting bracket. See [Figure 2-83](#).
  - e. Remove air tube from air inlet elbow.
  - f. Insert air tube into air inlet elbow of **new** air valve assembly.
  - g. From inboard side, insert valve head through hole in mounting bracket. Install hex nut on valve head (flat side facing inboard). Tighten nut.
  - h. Pressurize rear air suspension system and check for leaks. For recommended air suspension pressures, see [Table 2-2](#). Install protective cap on air valve.
8. Inspect air tubes for kinks, cuts, chafing or any damage that may result in air leaks. If tube replacement is necessary, proceed as follows:

**Air tubes:**

- a. Remove air tube from air inlet tee. Remove opposite end of tube from shock or air inlet elbow. See [Figure 2-82](#).
- b. Cut bulk tube to proper length.
- c. Insert **new** tube into air inlet tee. Install opposite end of tube in shock or air inlet elbow.



**Figure 2-84. Feed Air Tube Thru Cable Straps**

- d. Pressurize rear air suspension system. For recommended air suspension pressures, see [Table 2-2](#). Install protective cap on air valve.
9. Install seat. See Section [2.21 SEAT, INSTALLATION](#).
10. Install right side saddlebag. See Section [2.22 SADDLEBAG, INSTALLATION](#).