

REMOVAL

1. Place a scissor jack under jacking point and raise front wheel off ground. For location of jacking point see [2.28 EXHAUST SYSTEM](#).
2. Remove handlebars. See [2.27 HANDLEBARS](#).
3. Remove cable straps securing wiring harnesses to the upper fork clamp.
4. Remove front fork assemblies. See [2.16 FRONT FORK](#).
5. See [Figure 2-76](#). Remove steering stem pinch fastener (2).
6. Under right side of front fairing, cut cable strap holding ignition switch, fuse block and right handlebar switch wires. See [7.3 IGNITION/HEADLIGHT KEY SWITCH](#).
7. Unplug the ignition switch. See [7.3 IGNITION/HEADLIGHT KEY SWITCH](#).
8. See [Figure 2-76](#). Hold or brace the lower fork clamp and remove steering stem capnut(1).
9. Remove the upper fork clamp (4).
10. Remove the lower fork clamp (8).
11. Remove ignition switch. See [7.3 IGNITION/HEADLIGHT KEY SWITCH](#).
12. If steering head bearings need replacing, see [2.18 STEERING HEAD BEARINGS](#).

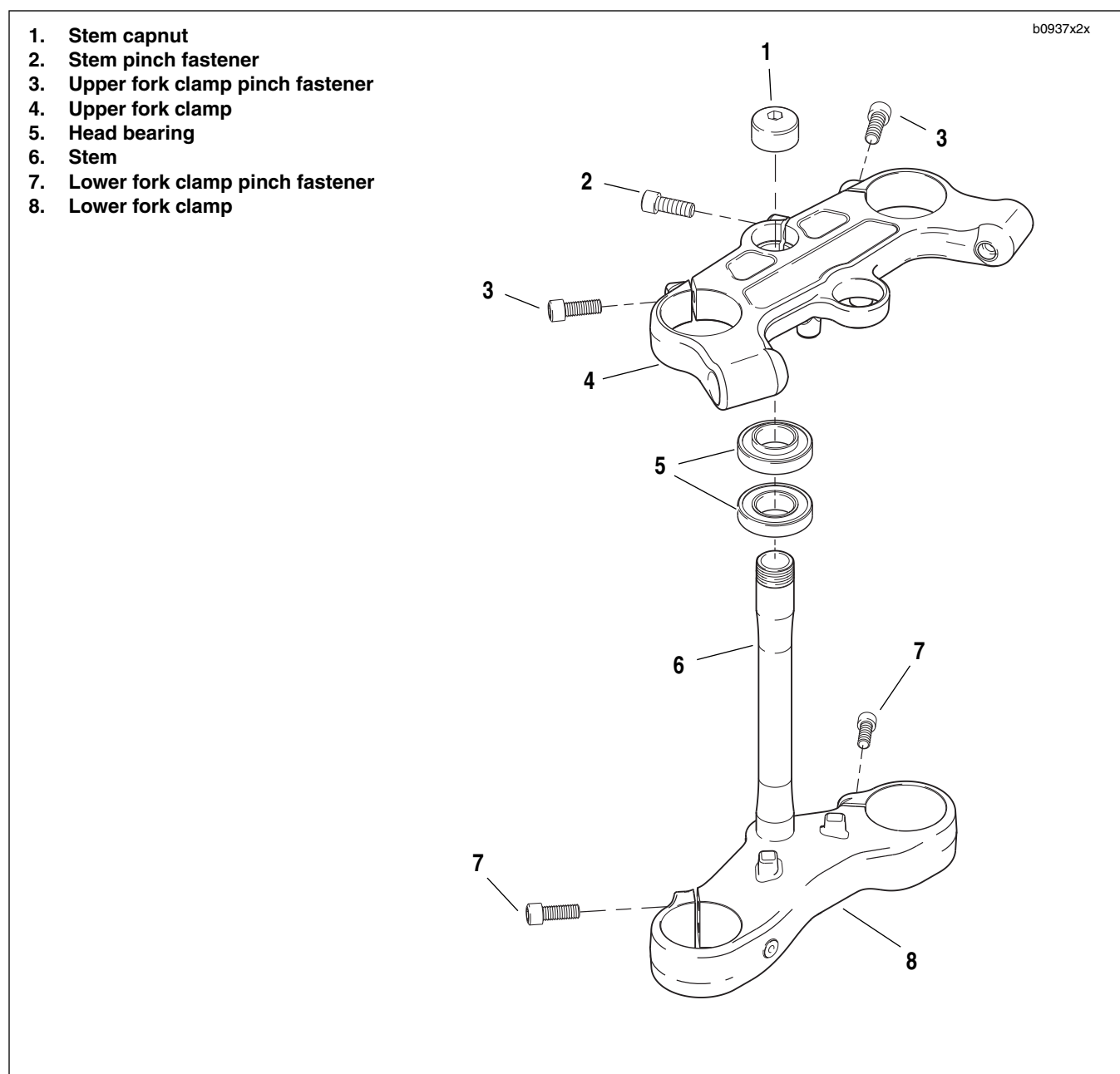


Figure 2-76. Steering Stem Assembly

INSTALLATION

1. Install ignition switch. See [7.3 IGNITION/HEADLIGHT KEY SWITCH](#).
2. See [Figure 2-76](#). Install the lower fork clamp (8) into the steering stem bore and install the upper fork clamp (4).
3. Install steering stem cap (1). Thread on by hand but do not torque.

WARNING

Carefully install the fork into the upper fork clamp. Forcing the fork into the upper fork clamp could move the stopper ring out of the groove which will not allow the correct clamp load causing a possible loss of control of the motorcycle which could result in death or serious injury.

4. Install one front fork assembly into lower fork clamp (8).
5. See [Figure 2-70](#). Slide the stopper ring (19) over top of fork assembly and into groove.
6. Install upper clamp on fork assembly. Tighten but do not torque lower fork clamp pinch fasteners.
7. Repeat previous two steps on second fork assembly.
8. Tighten steering stem cap to 38-42 ft-lbs (52-57 Nm).
9. Install steering stem pinch bolt applying LOCTITE 272 and tightening to 20-22 ft-lbs (27-30 Nm).

WARNING

Both forks should display the same number of alignment lines. Forks that are not properly aligned can lead to loss of control, which could result in death or serious injury. (00124a)

10. See [Figure 2-75](#). Position both forks with same number alignment lines (4) visible and reflectors facing to the sides. Do not tighten.
11. Use LOCTITE 272 on upper fork clamp fasteners and tighten to 23-25 ft-lbs (31-34 Nm).
12. Use LOCTITE 272 on lower fork clamp fasteners and tighten to 20-22 ft-lbs (27-30 Nm).
13. Install handlebars. See [2.27 HANDLEBARS](#).
14. See [Figure 2-96](#). Install cable straps.
 - a. Install cable strap to the right of ignition switch securing right hand switch and brake line wires to upper fork clamp.
 - b. Install cable strap to the left of ignition switch securing left hand switch and clutch cable wires to upper fork clamp.
 - c. Connect ignition switch and install cable strap.

REMOVAL

1. Place a scissor jack under jacking point and raise front wheel off ground. For location of jacking point see [2.28 EXHAUST SYSTEM](#).
2. Remove brake lever housing. See [2.10 FRONT BRAKE MASTER CYLINDER AND HAND LEVER](#).
3. Remove front forks, lower fork clamp, brake and wheel as front-end assembly.
 - a. See [Figure 2-76](#). Loosen steering stem pinch fastener (2) and upper and lower fork clamp pinch fasteners (3, 7).
 - b. Brace wheel while removing steering stem capnut fastener (1).
 - c. Remove upper fork clamp (4) and front-end assembly which includes front wheel, steering stem/lower fork clamp.
4. Remove upper and lower steering head bearings (5).
 - a. See [Figure 2-77](#). Locate notches inside steering head stem bore (upper bearing removed for clarity).
 - b. Place a suitable tool in the notches of the steering stem bore and remove upper and lower steering head bearings.

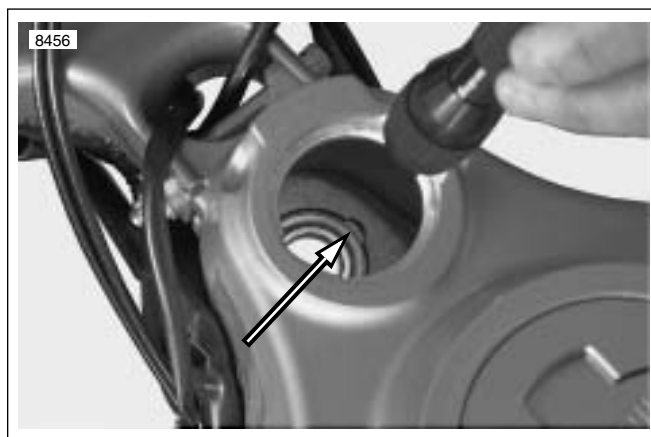


Figure 2-77. Lower Steering Head Bearing Notches
(upper bearing removed for clarity)

NOTE

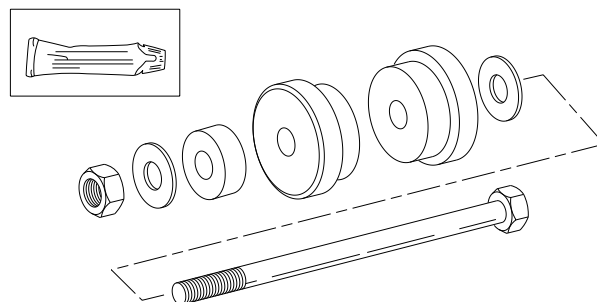
Discard steering head bearings and replace with new. Steering head bearings are not reusable.

INSTALLATION

NOTES

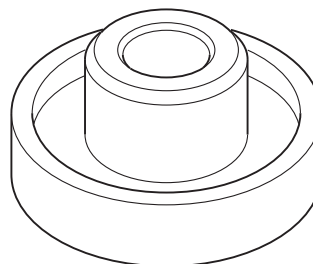
- Steering head bearings should be installed one at a time in order to ensure proper alignment of bearing in bore.
- Use the new backing plate for wheel bearing installation (B-43993-12) on the opposite side of the frame neck. By placing the large diameter of the backing plate against the frame neck it will prevent damage to the frame
- For easier installation of bearing, lubricate the outer bearing with engine oil prior to installing into steering stem bore.

h39302



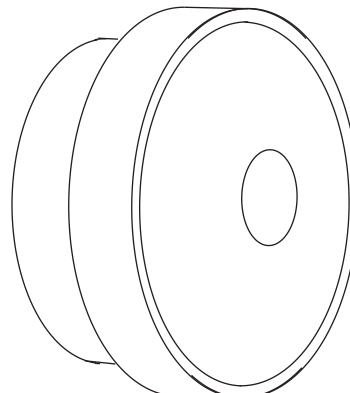
Steering Head Bearing Race Installer
(Part No. HD-39302)

i04256



Steering Head Bearing Installer
(Part No. B-45521)

b1172x2x



Wheel Bearing Backing Plate
(Part No. B-43993-12)

Figure 2-78. Steering Head Bearings Installation Tools

1. See [Figure 2-78](#). Install **new** upper steering head bearing into the frame neck using STEERING HEAD BEARING RACE INSTALLER (Part No. HD-39302), the STEERING HEAD BEARING INSTALLER (Part No. B-45521) and backing plate (B-43993-12) from the wheel bearing installation kit.
 - a. See [Figure 2-79](#). Place the upper bearing squarely in the steering stem bore with the inner race lip pointing away from the steering head.
 - b. See [Figure 2-78](#). Insert the steering head bearing installation tool into the upper bearing, with the shoulder into the bearing bore.
 - c. Insert the forcing screw from the steering head bearing race installer through the steering head bearing installation tool.

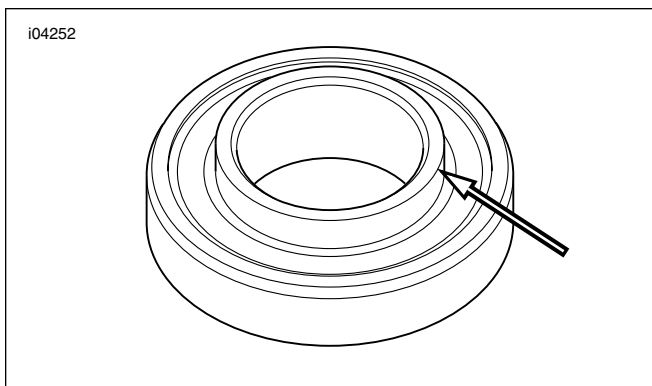
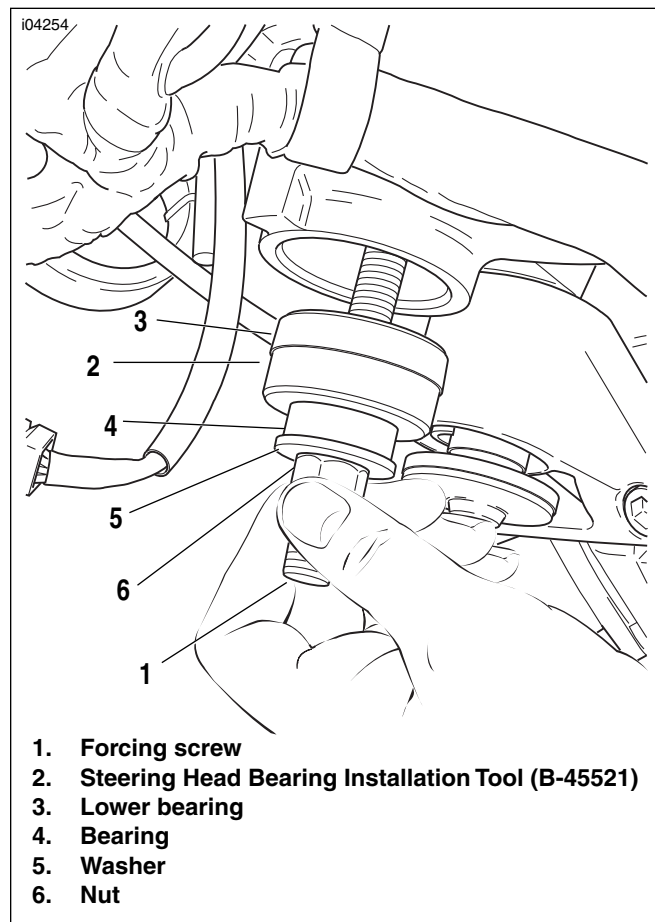


Figure 2-79. Steering Head Bearing Lip

NOTE

For ease of steering head bearing installation, lubricate the outside of the steering head bearings.

2. See [Figure 2-80](#). Sparingly apply EXTREME PRESSURE LUBRICANT (Part No. J-23444-A) to the threads of the forcing screw (1) from the STEERING HEAD BEARING RACE INSTALLER (Part No. HD-39302), to prolong service life and ensure smooth operation. Insert the forcing screw (1) through the STEERING HEAD BEARING INSTALLATION TOOL (Part No. B-45521) (2).
3. Place the WHEEL BEARING BACKING PLATE with the large diameter facing the frame over the forcing screw.
4. Install the bearing (4), washer (5) and nut (6) from the STEERING HEAD BEARING RACE INSTALLER (Part No. HD-39302) onto the forcing screw (1).
5. Tighten the nut (6) by hand, until the bearing is started into the bore in the steering head.



1. Forcing screw
2. Steering Head Bearing Installation Tool (B-45521)
3. Lower bearing
4. Bearing
5. Washer
6. Nut

Figure 2-80. Lower Bearing

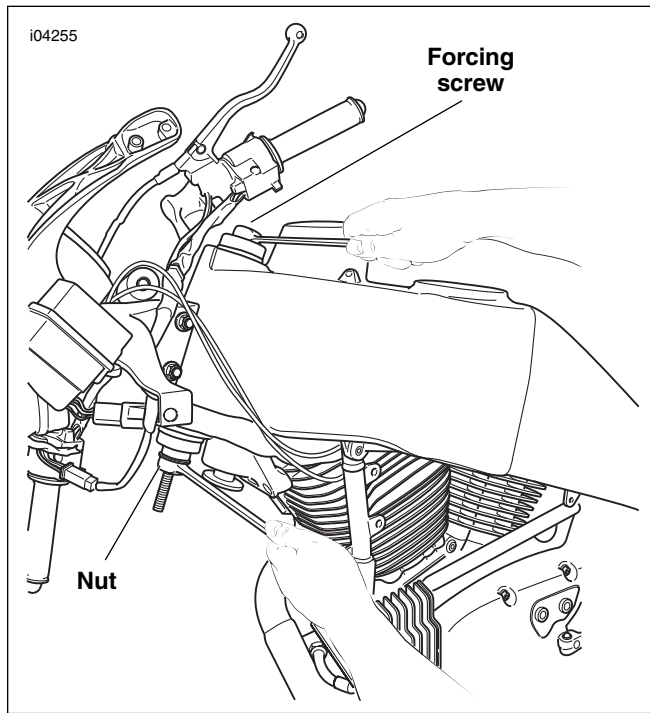


Figure 2-81. Install Bearings

6. See [Figure 2-81](#). Hold the forcing screw while tightening the nut to draw the bearing into the steering head. Continue tightening until the bearing is fully seated.
7. Visually check to make sure the bearing is completely seated against the shoulder in the steering head.
8. Repeat this process for the lower bearing.
9. Install forks, front wheel, and lower fork clamp/steering stem as an assembly.
10. Install upper fork clamp.
11. Tighten steering stem capnut to 38-42 ft-lbs (52-57 Nm).
12. Use LOCTITE 272 on steering stem pinch fastener and tighten to 20-22 ft-lbs (27-30 Nm).
13. Apply LOCTITE 272 to the upper clamp fasteners and tighten to 23-25 ft-lbs (31-34 Nm).
14. Install brake lever housing. See [2.10 FRONT BRAKE MASTER CYLINDER AND HAND LEVER](#).

GENERAL

The swingarm also serves as the oil tank. For information on the swingarm function as the oil tank, see [3.9 OIL HOSE ROUTING AND OIL RESERVOIR](#).

The swingarm features a removable brace on the right side to allow drive belt replacement. Sealed bearings eliminate the need for preload adjustment.

REMOVAL

Brace

NOTE

Before removing swingarm brace, always relieve belt tension first. Removing swingarm brace without releasing tension will cause swingarm brace damage.

1. See [Figure 2-82](#). Loosen rear axle pinch fastener (2).
2. Loosen rear axle (1) approximately 15 rotations to allow partial tension to be removed from rear drive system.
3. Remove right side footpeg mount. See [2.29 FOOTPEG, HEEL GUARD AND MOUNT](#).

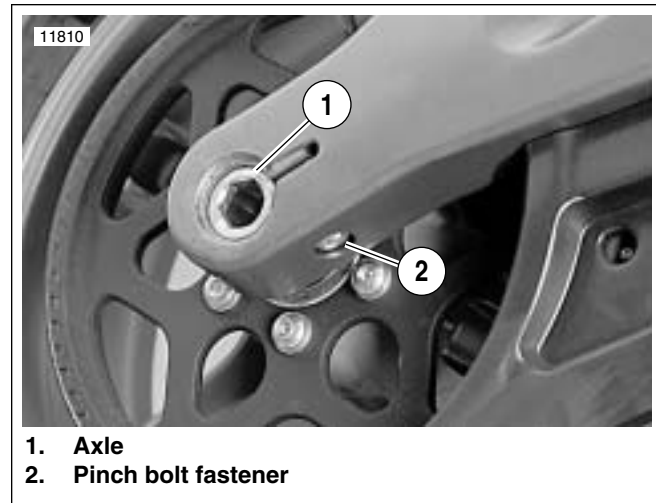


Figure 2-82. Rear Wheel Mounting, Right Side

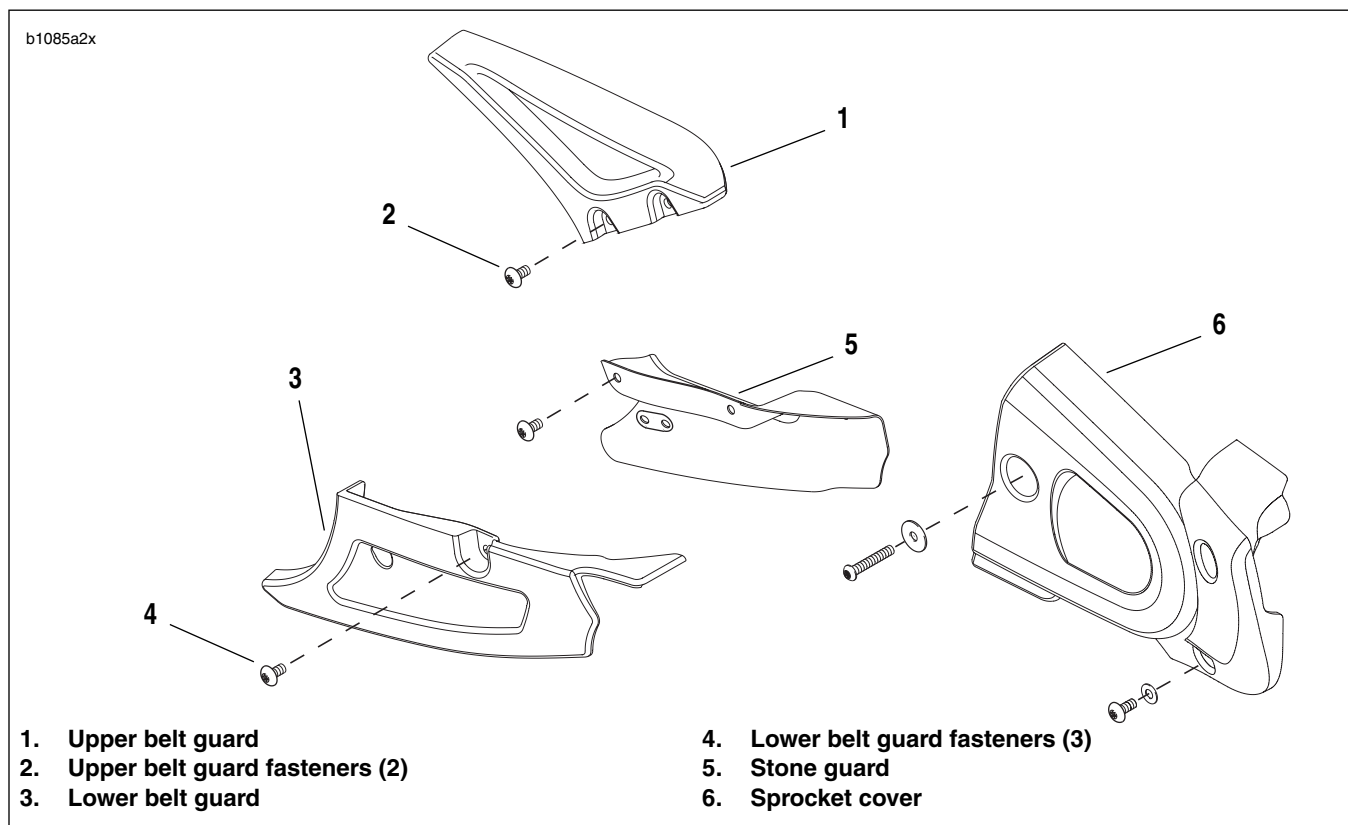
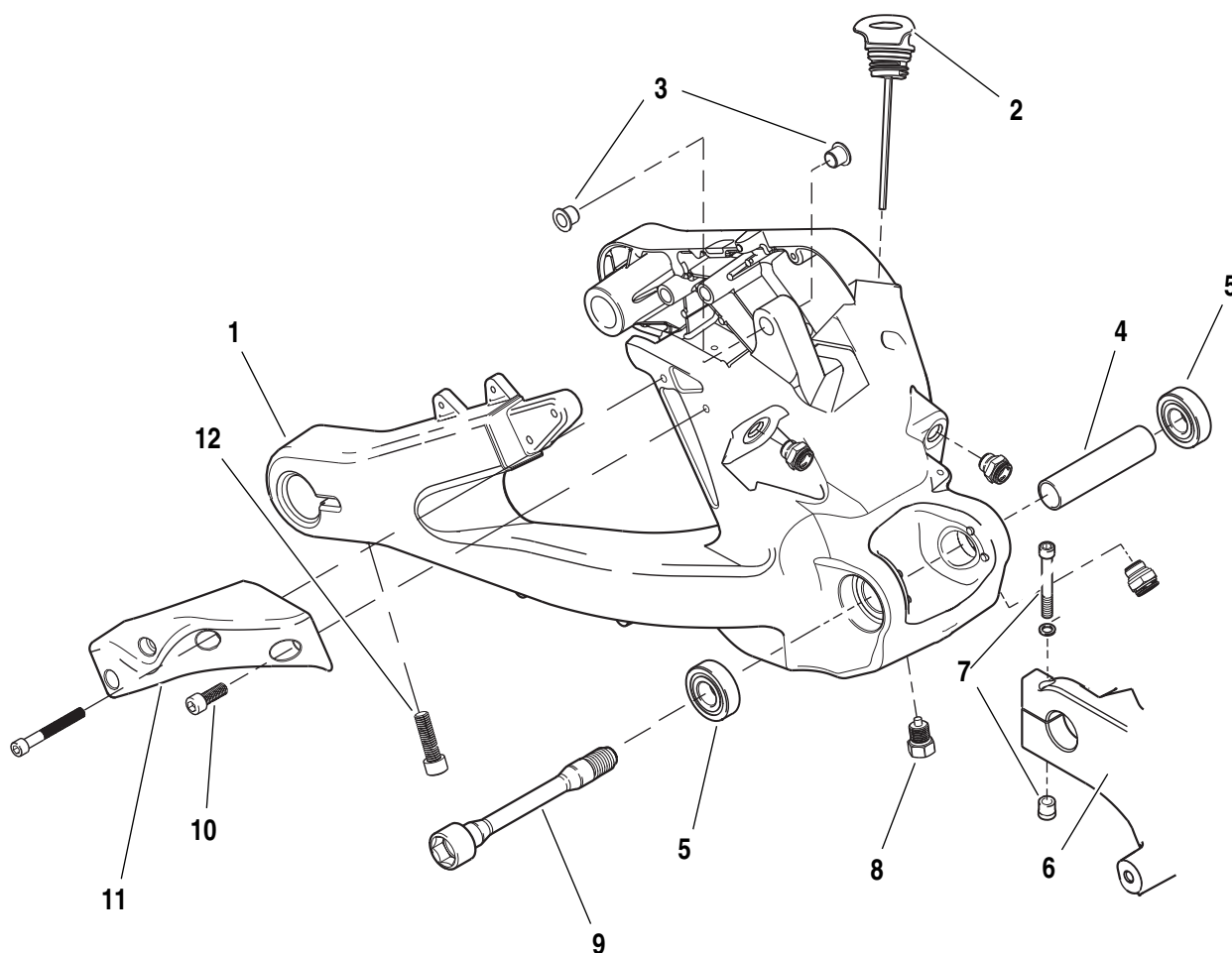


Figure 2-83. Belt Guard Assembly

b1221x2x



1. Swingarm
2. Dipstick
3. Swingarm bushings
4. Swingarm spacer
5. Swingarm bearing (5)
6. Engine crankcase

7. Pivot shaft pinch fastener w/nut
8. Oil drain plug
9. Pivot shaft
10. Brace fastener (4)
11. Swingarm brace
12. Rear axle pinch fastener

Figure 2-84. Swingarm Assembly

4. See [Figure 2-84](#). Remove swingarm brace mounting fasteners (10).
5. Remove swingarm brace (11).
5. Remove p-clamp connecting rear brake line to swingarm.
6. Remove drive belt. See [6.6 DRIVE BELT SYSTEM](#).
7. Remove p-clamps and washers that secure oil lines to swingarm.
8. Remove rear inner fender. See [2.31 FENDERS](#).
9. Disconnect the three oil lines from swingarm fittings. See [3.10 OIL LINE FITTINGS](#).
10. See [Figure 2-89](#). With vehicle supported remove lower shock absorber mounting fastener and spacer from shock absorber and swingarm.
11. See [Figure 2-84](#). Loosen pivot shaft pinch fastener (7).
12. Remove pivot shaft (9) with a special 7/8 in. hex tool located in tool kit.
13. Remove swingarm from vehicle.

Swingarm

1. Remove seat. See [2.38 SEAT](#).

WARNING

To prevent accidental vehicle start-up, which could cause death or serious injury, disconnect negative (-) battery cable before proceeding. (00048a)

2. Disconnect battery by unthreading fasteners removing negative cable (black) from battery first. See [1.5 BATTERY MAINTENANCE](#).
3. See [Figure 2-84](#). Remove oil drain plug (8) and drain oil from swingarm. See [1.6 ENGINE LUBRICATION SYSTEM](#).
4. Remove rear wheel. See [2.6 REAR WHEEL](#).

DISASSEMBLY

NOTE

Carefully mark all bearing components as they are removed so that they may be returned to their original locations. Do not intermix bearing components.

Swingarm

1. See Figure 2-85. Remove oil line fittings from swingarm.
2. See Figure 2-84. Remove swingarm bearings (5) using slide hammer (SNAP-ON Part No. CJ1275 or equivalent) and 3/4 in. bearing remover and spacer.
3. Remove shock mount bushings (3) and sleeve.
4. Remove stone guard. See 2.32 BELT GUARDS.

NOTE

See Figure 2-84. Remove swingarm bearings (5) only if replacement is required. The complete bearing assembly must be replaced as a unit when replacement is necessary. Do not intermix bearing components.

CLEANING AND INSPECTION

WARNING

Compressed air can pierce the skin and flying debris from compressed air could cause serious eye injury. Wear safety glasses when working with compressed air. Never use your hand to check for air leaks or to determine air flow rates. (00061a)

1. Thoroughly clean all components in solvent. Blow dry with compressed air.
2. Carefully inspect all bearing components for wear and/or corrosion. Replace complete bearing assembly if any component is damaged.
3. Check that swingarm is not bent or twisted. Replace if damaged.

ASSEMBLY

Swingarm

1. See Figure 2-84. Install **new** shock mount bushings (3).
2. Install **new** bearings (5, 9) and spacer (4) with BEARING INSTALLER (Part No. HD-44060) by lightly seating spacer.

NOTE

- The left side bearing must be installed first and fully seated.
 - Swingarm bearings should be replaced as a unit. Do not intermix components. Mark all components so they may be correctly installed.
3. See Figure 2-85. Install oil line fittings on swingarm. Tighten to 108-156 in-lbs (12-17.6 Nm). See 3.10 OIL LINE FITTINGS.
 4. See Figure 2-84. Install drain plug (8). Tighten to 29-34 ft-lbs (39-46 Nm).

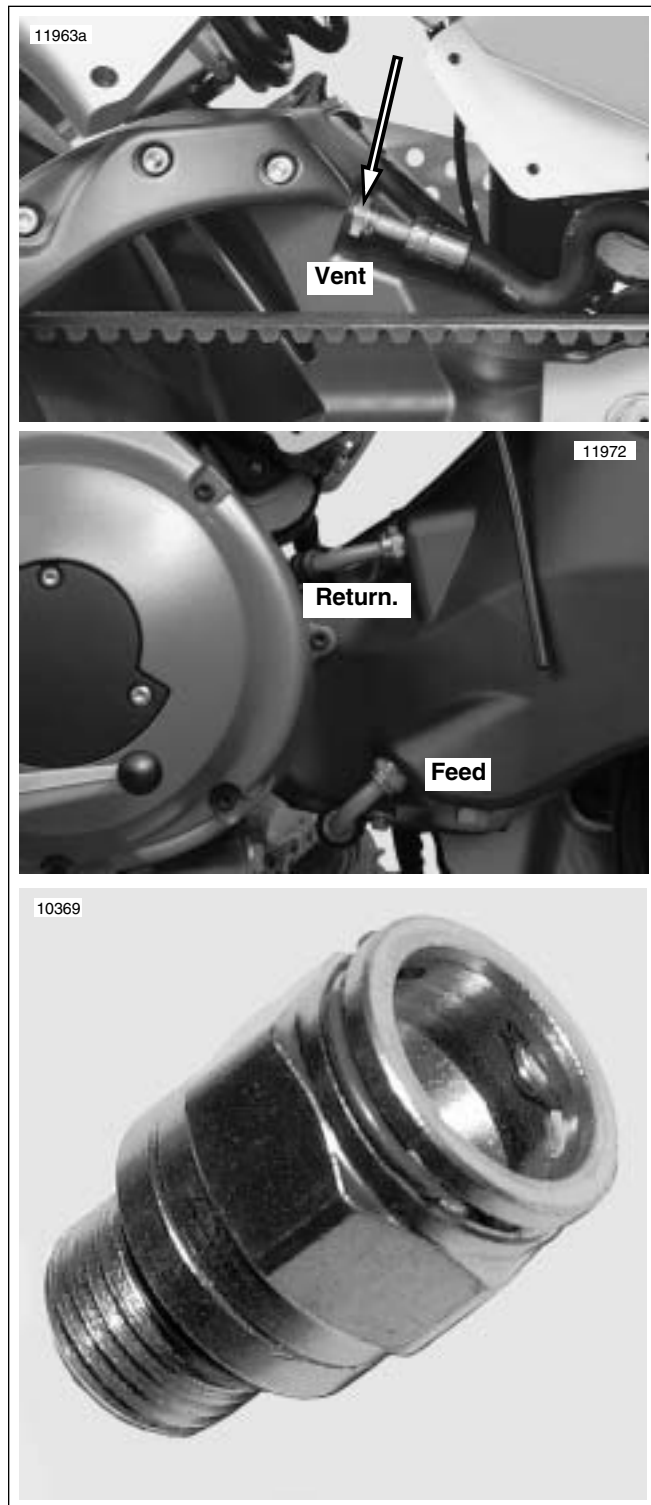


Figure 2-85. Jiffy Tite, Quick Disconnect Oil Lines and Fittings (Typical)

INSTALLATION

Swingarm

1. See [Figure 2-84](#). Align swingarm (1) in pivot of engine crankcase (6).
2. Install pivot shaft (9) with a special 7/8 in. hex tool located in tool kit, ANTI-SEIZE and tighten to 24-26 ft-lbs (32-35 Nm).
3. Apply LOCKTITE 272 and tighten pivot shaft pinch fastener (7) to 17-19 ft-lbs (23-26 Nm).
4. See [Figure 2-89](#). Install lower shock absorber mounting fastener (7) and spacer from shock absorber and swingarm and tighten to 15-17 ft-lbs (20.3-23 Nm).
5. Install p-clamp and washer that secures rear brake line to swingarm and tighten to 36-60 **in-lbs** (4-7 Nm).

NOTE

Be careful to align the rear brake line with the rear inner fender. The rear inner fender captures the rear brake line to help maintain proper location.

6. Install rear inner fender. See [2.31 FENDERS](#).
7. Install rear inner fender and tighten fasteners to 12-36 **in-lbs** (1.4-4Nm).
8. Connect three oil lines to swingarm fittings and install and tighten p clamps to 48-72 **in-lbs** (5.4-8 Nm). See [3.10 OIL LINE FITTINGS](#).
9. Install rear wheel. See [2.6 REAR WHEEL](#).
10. Install stone guard. See [2.32 BELT GUARDS](#).

NOTE

Installing the rear wheel will include installation of the belt drive system. See [6.6 DRIVE BELT SYSTEM](#).

11. Fill motorcycle with recommended oil. See [1.6 ENGINE LUBRICATION SYSTEM](#).

Brace

1. Install the belt drive. See [6.6 DRIVE BELT SYSTEM](#).
2. See [Figure 2-84](#). Install swingarm brace (12) with swingarm brace mounting fasteners (11) loosely. Do not tighten.
3. Tighten swingarm brace fasteners (11) to 25-27 ft-lbs (34-37 Nm).
4. Tighten rear axle. See [DRIVE BELT INSTALLATION](#).
5. Tighten rear axle pinch fastener (13) to 40-45 ft-lbs (54-61 Nm).
6. Install right side rider footpeg mount. Tighten fasteners to 108-132 **in-lbs** (12-15 Nm). See [2.29 FOOTPEG, HEEL GUARD AND MOUNT](#).
7. Remove rear wheel support stand.

WARNING

Connect positive (+) battery cable first. If positive (+) cable should contact ground with negative (-) cable connected, the resulting sparks can cause a battery explosion, which could result in death or serious injury. (00068a)

8. Install battery by threading positive cable (red) into threaded hole first tightening to 72-96 **in-lbs** (8-11 Nm). See [1.5 BATTERY MAINTENANCE](#).

WARNING

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

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)

9. Install seat. See [2.38 SEAT](#).

Final Swingarm Inspection

1. Check oil level after starting motorcycle and allowing it to reach operating temperature.
2. Check rear brake operation.

FRONT ISOLATOR

Removal

NOTE

Avoid cross-threading front isolator bolt or insert. Keep weight of motorcycle off front isolator by alternately loosening front isolator bolt and raising scissor jack to support engine.

1. Place a scissor jack under jacking point for supporting engine only. For location of jacking point see [Figure 2-109](#).
2. See [Figure 2-86](#). Remove clutch cable wire form.

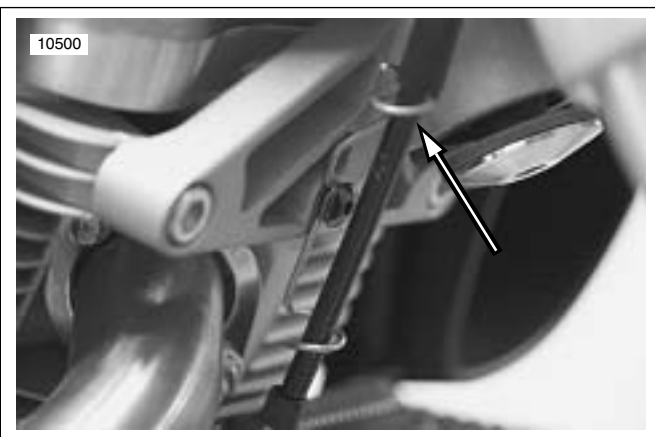


Figure 2-86. Clutch Cable Wire Form

3. See [Figure 2-87](#). Remove front isolator bolt (6).
4. Remove front isolator mount fasteners (5).
5. Remove front isolator bracket (4).
6. Remove upper snubber fastener (2) and remove upper snubber (1).

Installation

1. See [Figure 2-87](#). Install upper snubber (1) tightening snubber fastener (2) to 12-36 **in-lbs** (1-4 Nm).
2. Loosely install front isolator bolt.
3. See [Figure 2-87](#). Mount front isolator bracket (4) and install and tighten fasteners (5) to 49-51 ft-lbs (66-69 Nm).

CAUTION

Avoid cross-threading front isolator bolt or insert. Keep weight of motorcycle off front isolator by alternately tightening front isolator bolt and raising scissor jack to support engine.

4. Tighten front isolator bolt (6) to 49-51 ft-lbs (66-69 Nm).
5. See [Figure 2-86](#). Install clutch cable wire form. Tighten fastener to 84-92 **in-lbs** (9.4-10.4 Nm).

NOTE

See [Figure 2-87](#). If the threaded insert (3) is damaged and needs to be replaced, install new insert with LOCTITE 272 and tighten to 59-61 ft-Lbs (80-82.7 Nm).

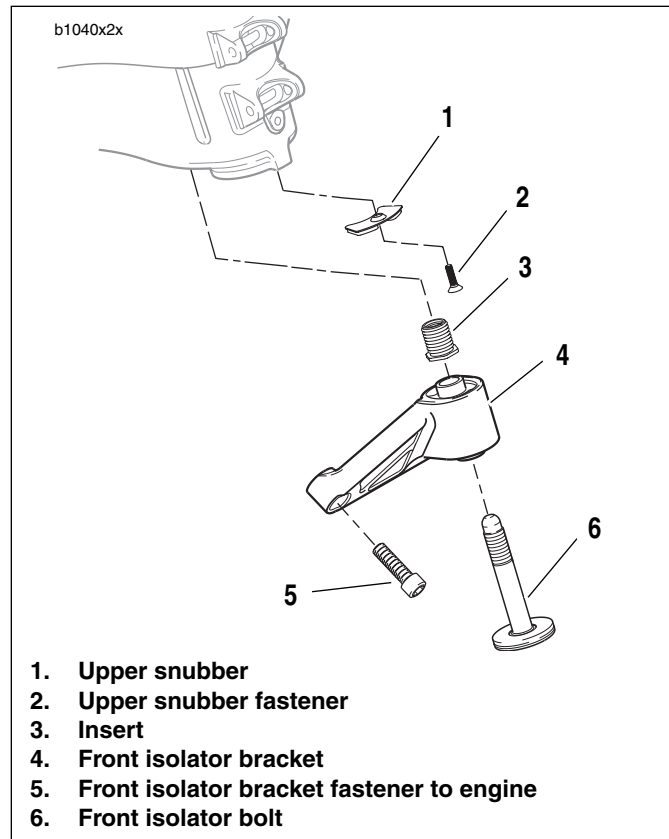


Figure 2-87. Front Isolator

REAR ISOLATOR

NOTE

It is necessary to remove engine to access rear isolator.

See [3.4 STRIPPING MOTORCYCLE FOR ENGINE SERVICE](#) to access the rear isolator.

REMOVAL

1. Remove fuel from frame. See [DRAINING FUEL TANK](#) in [4.39 FUEL PUMP](#).
2. Rotate engine. See [3.3 ENGINE ROTATION FOR SERVICE](#).
3. Remove exhaust header. See [2.28 EXHAUST SYSTEM](#).
4. Remove subframe tail assembly. See [2.36 SUBFRAME TAIL ASSEMBLY AND BODY WORK](#).
5. Remove rear shock. See [2.22 REAR SHOCK ABSORBER](#).
6. Remove upper and lower fork clamps. See [2.17 FORK CLAMPS, UPPER AND LOWER](#).
7. Remove main wire harness. See [7.23 MAIN WIRE HARNESS](#).
8. Remove rear isolator fastener. See [3.4 STRIPPING MOTORCYCLE FOR ENGINE SERVICE](#).
9. Lift and remove frame from the motorcycle.

INSTALLATION

1. Place frame over the motorcycle.
2. Install rear isolator fastener. See [3.5 ENGINE INSTALLATION](#).
3. Install main wire harness. See [7.23 MAIN WIRE HARNESS](#).
4. Install upper and lower fork clamps. See [2.17 FORK CLAMPS, UPPER AND LOWER](#).
5. Install rear shock. See [2.22 REAR SHOCK ABSORBER](#).
6. Install subframe tail assembly. See [2.36 SUBFRAME TAIL ASSEMBLY AND BODY WORK](#).
7. Install exhaust header. See [2.28 EXHAUST SYSTEM](#).
8. Rotate engine. See [3.3 ENGINE ROTATION FOR SERVICE](#).

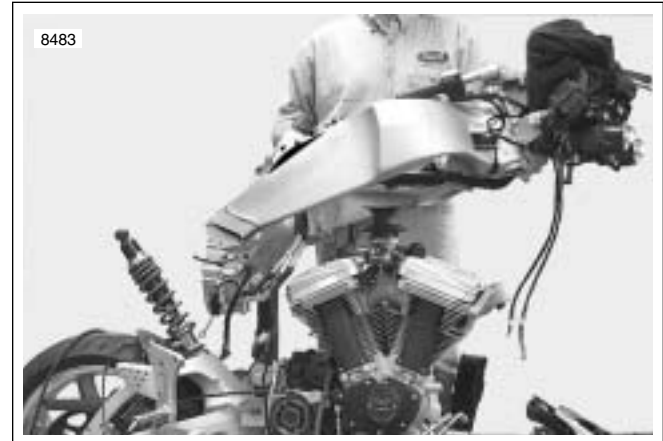


Figure 2-88. Lift Frame Off Motorcycle

REAR SHOCK ABSORBER

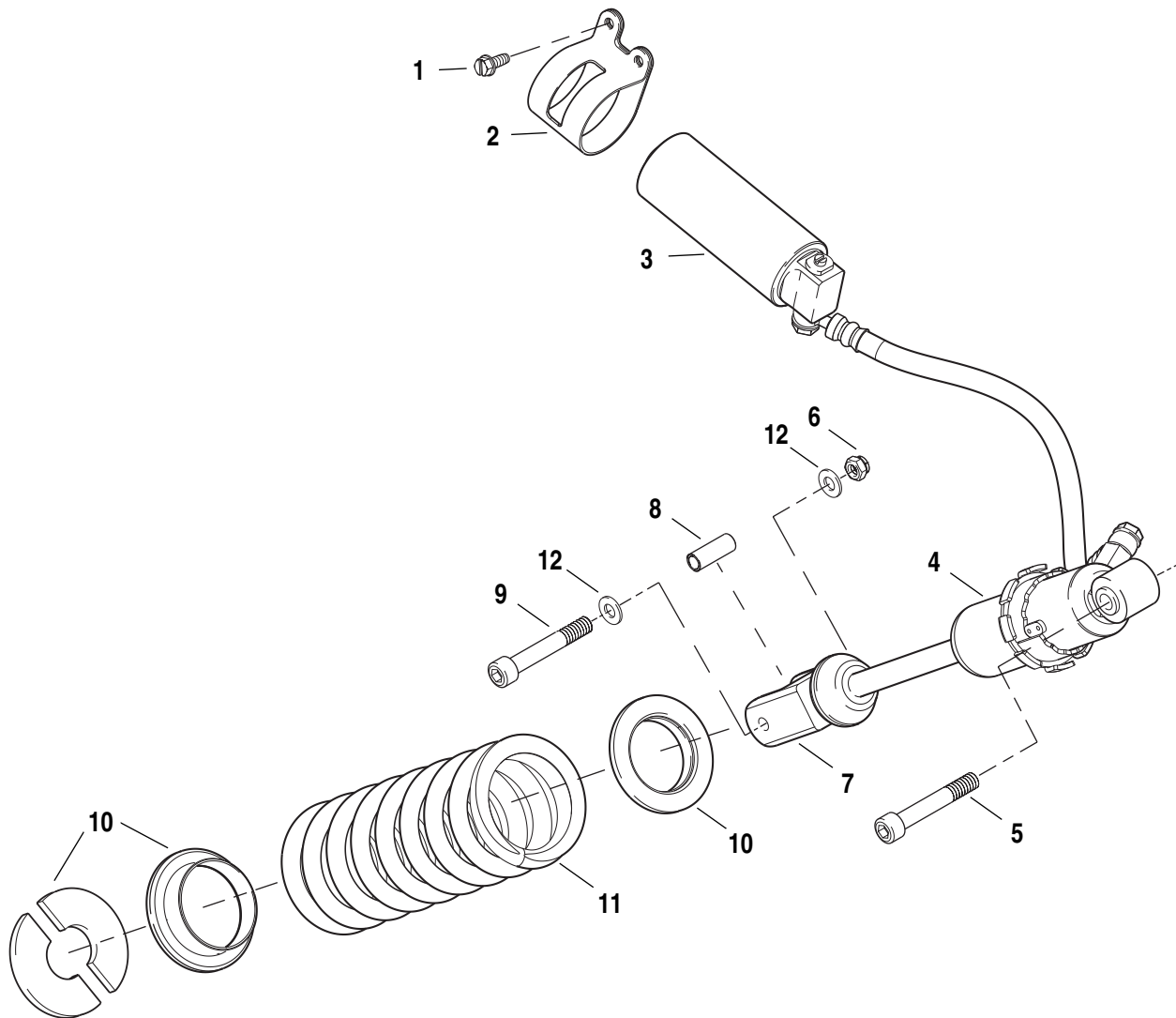
2.22

GENERAL

The rear suspension is controlled by the shock absorber. The shock allows adjustment of rear compression and rebound damping and spring preload.

The most important rear shock adjustment is the preload setting. Before making any damping adjustments, set the proper preload. See [1.12 SUSPENSION DAMPING ADJUSTMENTS](#).

b0940x2x



- | | |
|--|--|
| 1. Shock remote reservoir clamp fastener | 7. Lower shock mount |
| 2. Shock remote reservoir clamp | 8. Lower shock mount sleeve |
| 3. Shock remote reservoir | 9. Lower shock mount fastener and washer |
| 4. Shock reservoir body | 10. Shock spring retainer kit |
| 5. Upper shock mount fastener | 11. Rear shock spring |
| 6. Lower shock mount nut and washer | 12. Washers |

Figure 2-89. Rear Shock Absorber Assembly

REMOVAL

1. Remove seat. See [2.38 SEAT](#).

⚠ WARNING

Disconnect negative (-) battery cable first. If positive (+) cable should contact ground with negative (-) cable connected, the resulting sparks can cause a battery explosion, which could result in death or serious injury. (00049a)

2. Disconnect and remove battery. See [1.5 BATTERY MAINTENANCE](#).
3. Remove tail body work. See [2.36 SUBFRAME TAIL ASSEMBLY AND BODY WORK](#).
4. Place a scissor jack under jacking point and raise rear wheel off ground. For location of jacking point see [Figure 2-109](#).
5. See [Figure 2-89](#). Remove upper shock (5) and lower shock mount fasteners (6 and 9) and lower shock mount sleeve (8).
6. Remove rear shock reservoir clamp (2).
7. See [Figure 2-90](#). Cut cable strap.
8. Feed rear shock reservoir through tail section.
9. Remove rear shock.
 - a. Raise motorcycle up approximately 2 more inches (51 mm).
 - b. Remove shock through the top of the tail section (opening underneath rider seat).

INSTALLATION

1. See [Figure 2-89](#). Install upper shock mount and tighten fastener (5) to 48-52 ft-lbs (65-70.5 Nm).
2. Install lower shock mount with fasteners, washers (6, 9, 12) and lower shock mount sleeve (8) and tighten to 15-17 ft-lbs (20.3-23 Nm).
3. Feed rear shock reservoir through tail section. [D.1 HOSE AND WIRE ROUTING](#) for correct routing.
 - a. Loosely install reservoir in clamp.
 - b. See [Figure 2-91](#). Temporarily place upper body work onto tail section and adjust reservoir placement so the adjuster screw aligns with bodywork.
 - c. Tighten clamp on reservoir to 120-144 in-lbs (13.5-16.2 Nm).
4. See [Figure 2-90](#). Install cable strap.

NOTE

See [Figure 2-89](#). Verify compression adjuster screw is facing up.

5. Install upper body work. See [2.36 SUBFRAME TAIL ASSEMBLY AND BODY WORK](#).

⚠ WARNING

Connect positive (+) battery cable first. If positive (+) cable should contact ground with negative (-) cable connected, the resulting sparks can cause a battery explosion, which could result in death or serious injury. (00068a)

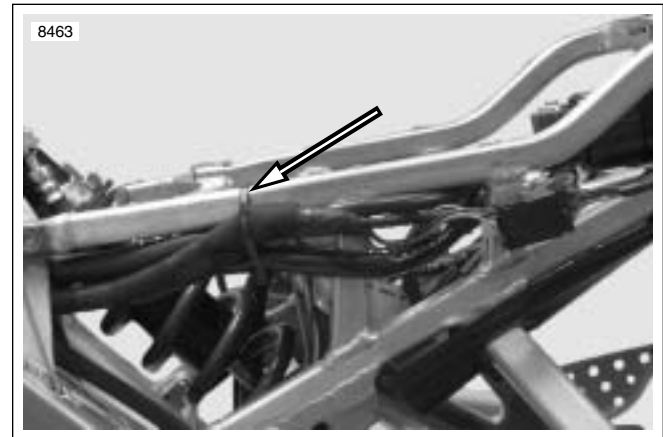
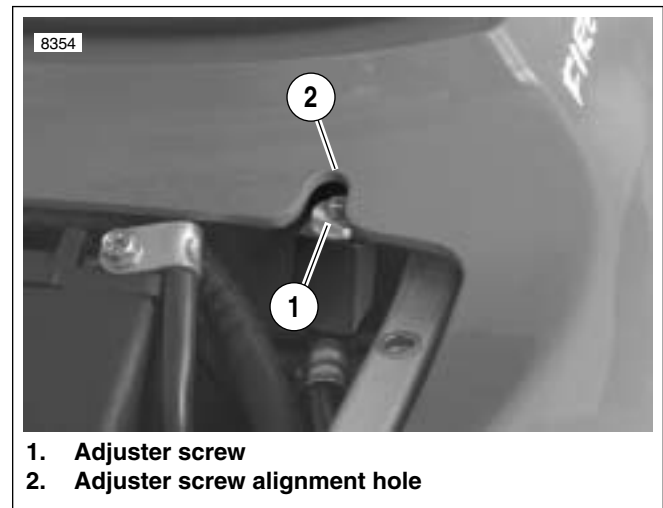


Figure 2-90. Cable Strap, Left Side Subframe Tail Assembly



1. Adjuster screw
2. Adjuster screw alignment hole

Figure 2-91. Adjuster Screw Alignment

6. Install battery by threading positive cable (red) into threaded hole first tightening to 72-96 in-lbs (8-11 Nm). See [1.5 BATTERY MAINTENANCE](#).

⚠ 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)

7. Install seat. See [2.38 SEAT](#).

REMOVAL/DISASSEMBLY

1. See [Figure 2-92](#). Loosen cable adjuster lock (thick disc) (3) on each cable.
2. Turn adjusters (thin disc) (3) in direction which will shorten cable housings to minimum length.
3. Remove fasteners (1) on right switch housing and separate housing from handlebar.
4. See [Figure 2-93](#). Remove cables (2, 3) from notches in front housing (4).
5. Remove ferrules (6) from throttle (7).
6. Remove air cleaner cover and base plate. See [4.44 AIR CLEANER ASSEMBLY](#).
7. Disconnect cables from throttle body manifold to remove.
8. Cut cable straps and remove cables.

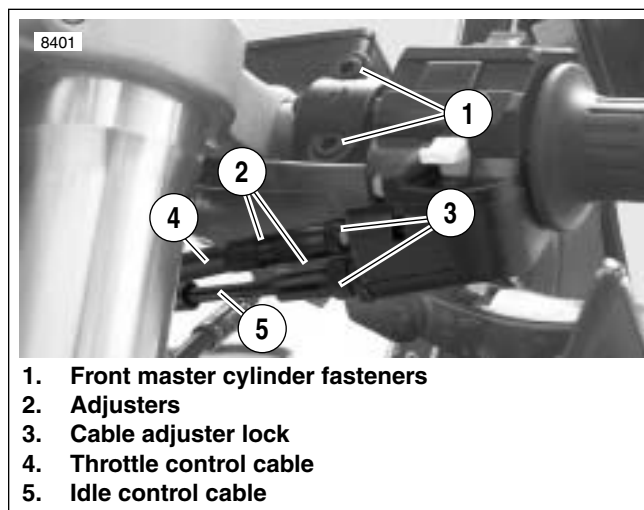


Figure 2-92. Throttle Control Cables

CLEANING AND INSPECTION

⚠ WARNING

Compressed air can pierce the skin and flying debris from compressed air could cause serious eye injury. Wear safety glasses when working with compressed air. Never use your hand to check for air leaks or to determine air flow rates. (00061a)

Clean all parts except cables in a non-flammable cleaning solvent. Blow dry with compressed air. Replace cables if frayed, kinked or bent.

ASSEMBLY/INSTALLATION

1. Route cable as shown in [D.1 HOSE AND WIRE ROUTING](#).
2. Add cable straps as shown in the throttle cable routing in [D.1 HOSE AND WIRE ROUTING](#).
3. Install throttle grip and position ferrules (6) into cable wheel (7).
4. Insert idle control into front switch housing.
5. Slide switch housing over throttle.
6. Insert throttle cable into front switch housing.
7. See [Figure 2-92](#). Attach rear switch housing and position housings on right handlebar by engaging locating pin on front housing with hole in handlebar. Attach housings with two fasteners, installing longer fastener on bottom. Tighten to 25-33 **in-lbs** (3-4 Nm).
8. Adjust cables. See [1.16 THROTTLE CABLE AND IDLE SPEED ADJUSTMENT](#).
9. Install air cleaner assembly. See [4.44 AIR CLEANER ASSEMBLY](#).

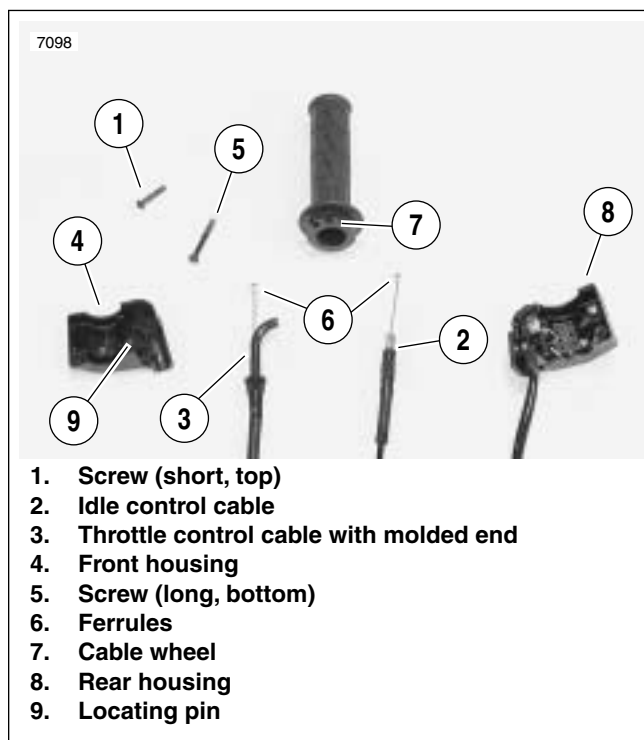


Figure 2-93. Cable Connections

GENERAL

For clutch adjustment, see [1.9 CLUTCH](#).

For clutch replacement, see [6.4 CLUTCH](#).

REMOVAL/DISASSEMBLY

Clutch Cable

⚠ WARNING

To prevent accidental vehicle start-up, which could cause death or serious injury, disconnect negative (-) battery cable before proceeding. (00048a)

1. Remove seat. See [2.38 SEAT](#).
2. Disconnect negative battery cable. See [1.5 BATTERY MAINTENANCE](#).
3. Remove chin fairing. See [2.33 CHIN FAIRING](#).

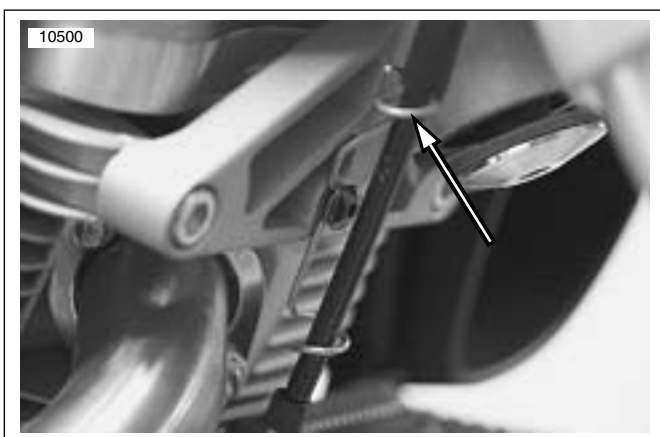


Figure 2-94. Clutch Cable Wire Form

4. See [Figure 2-94](#). Remove wire form from front isolator.

NOTE

Always disconnect front tie bar from the "V" bracket first.

5. Remove front tie bar from "V" bracket only.
6. Remove front tie bar, P clamp and clutch cable from engine.
7. Remove cable strap securing clutch cable to voltage regulator wire.

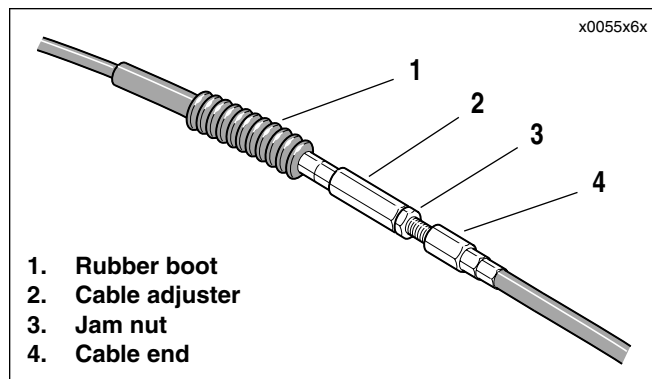


Figure 2-95. Clutch Cable Adjuster Mechanism

8. See [Figure 2-95](#). Slide clutch cable adjuster boot (1) up to access clutch adjuster (2).
9. Loosen clutch adjuster (2) to release tension from hand lever and clutch release mechanism.
10. See [Figure 2-96](#). Remove clutch cable ferrule (7) from hand lever (4).

NOTE

See [D.1 HOSE AND WIRE ROUTING](#) in Appendix D.

11. Pull clutch cable down and out of upper triple clamp.
12. Remove three TORX screws with washers securing clutch inspection cover.
13. See [Figure 2-97](#). Remove clutch inspection cover (2).

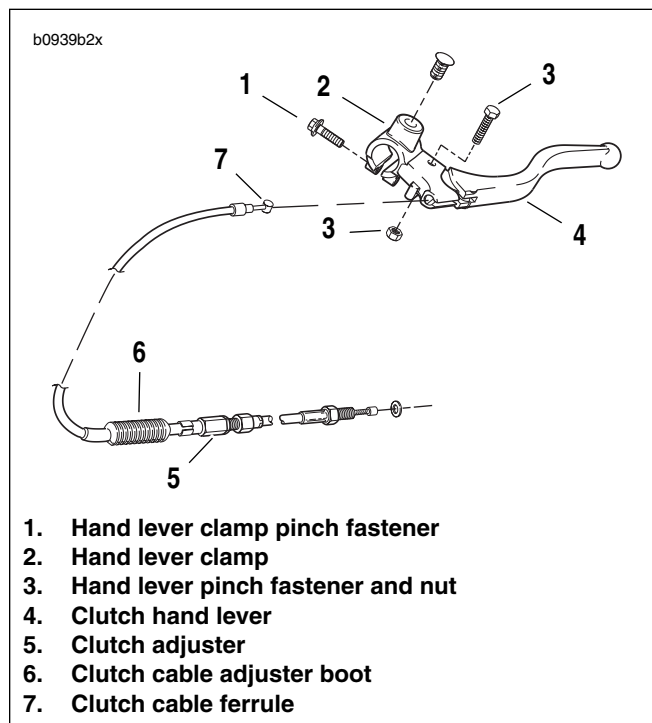


Figure 2-96. Clutch Hand Control Assembly

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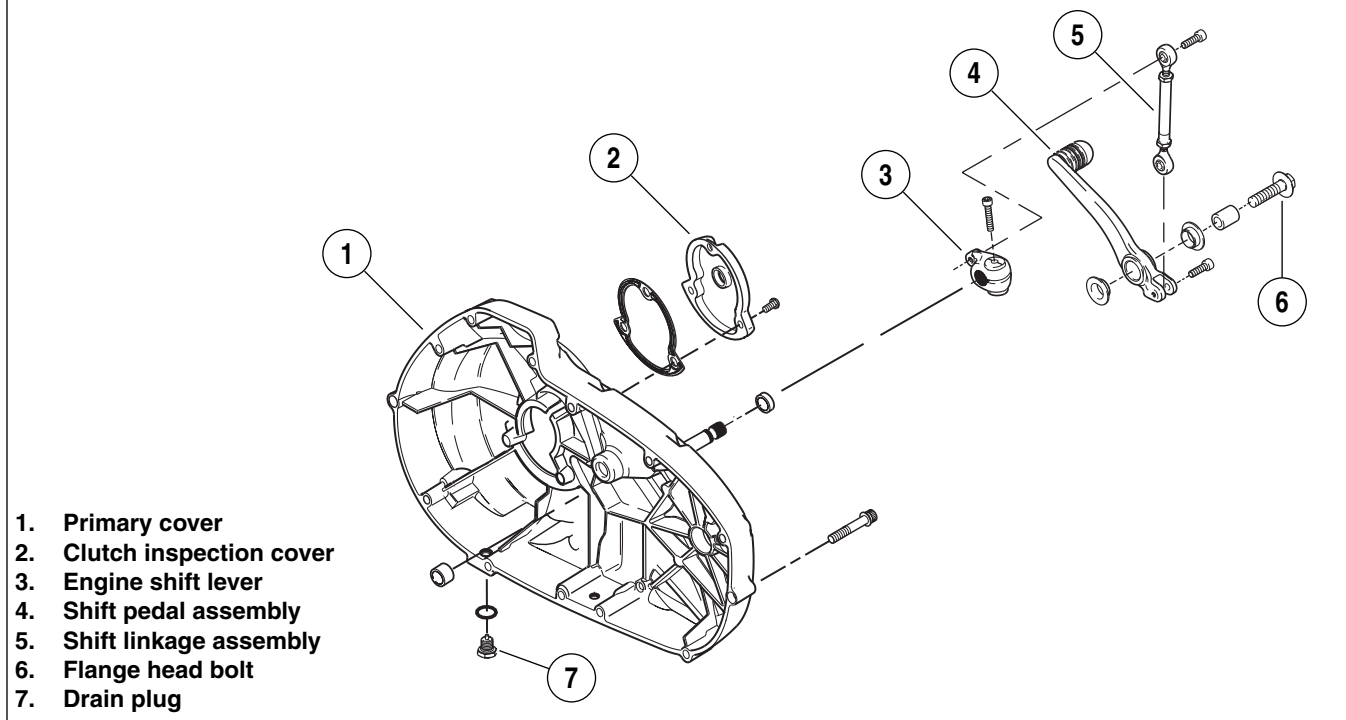


Figure 2-97. Primary Cover and Shifter Assembly

14. Remove complete shift assembly.
 - a. Remove flange bolt (6) from primary cover.
 - b. Remove engine shift lever assembly (3). Do not scratch primary cover.

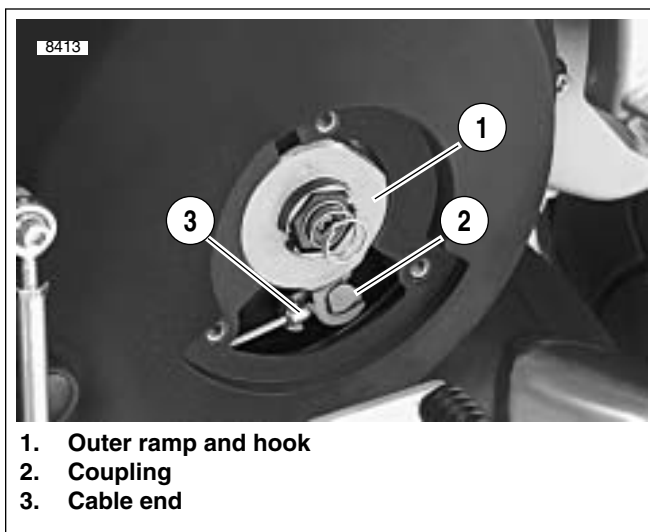


Figure 2-98. Clutch Release Mechanism

15. See [Figure 2-98](#). Remove the outer ramp and hook (1) from the cable end (3) and coupling (2). Remove cable end from slot in coupling. See [6.3 CLUTCH RELEASE MECHANISM](#).

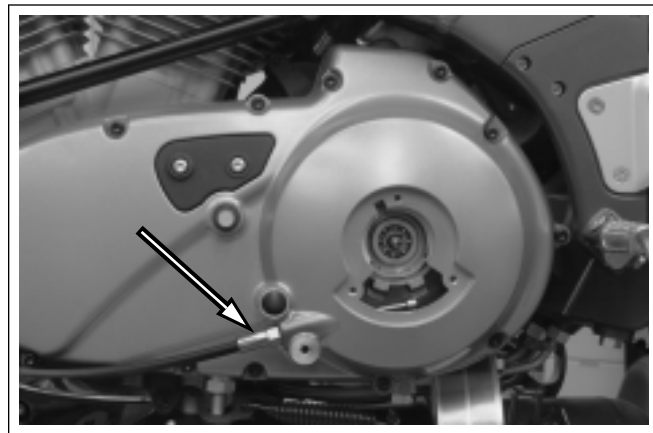


Figure 2-99. Clutch Cable and Fitting

16. See [Figure 2-99](#). Unscrew the cable fitting from the primary cover. Remove clutch cable and fitting.
17. Remove and discard oring on the clutch cable fitting.

ASSEMBLY/INSTALLATION

Clutch Cable

1. Install **new** oring on the clutch cable fitting before installing.
2. Apply 565 thread sealer to fitting on clutch cable and screw the clutch cable fitting into the primary cover and tighten to 36-108 **in-lbs** (4-12 Nm).
3. See [Figure 2-98](#). Install cable end into slot in coupling. Install the outer ramp and hook (1) onto the cable end (3) and coupling (2) and place assembly back into the clutch inspection area in the primary cover. See [6.3 CLUTCH RELEASE MECHANISM](#).
4. See [Figure 2-100](#). Install rubber washer and engine shift lever assembly (1).
5. After applying LOCTITE 272, install flange bolt (5) and shift pedal to primary cover, and tighten to 22-24 ft-lbs (30-32.5Nm).
6. After applying LOCTITE 272 (red), tighten engine shift lever pinch screw to 48-60 **in-lbs** (5.4-6.8 Nm).

NOTE

See [D.1 HOSE AND WIRE ROUTING](#) in Appendix D.

7. Route clutch cable through upper triple clamp.

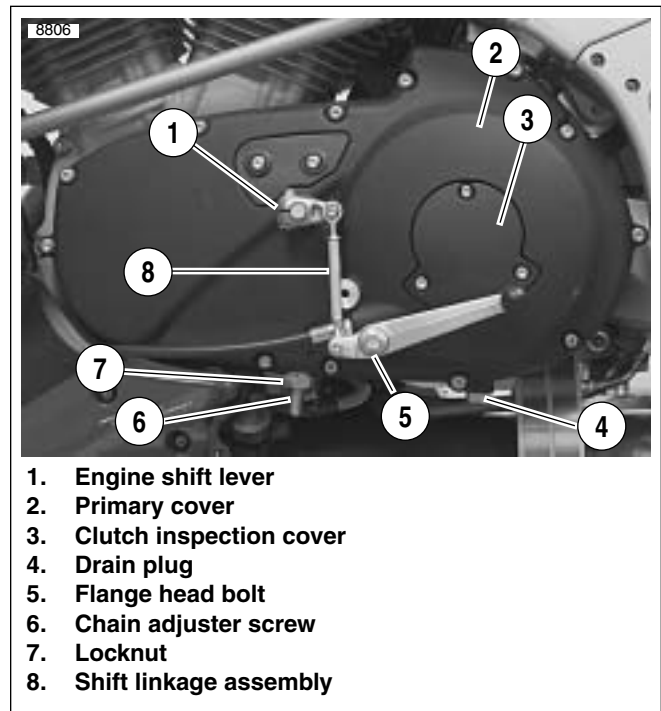


Figure 2-100. Installing Shift Linkage

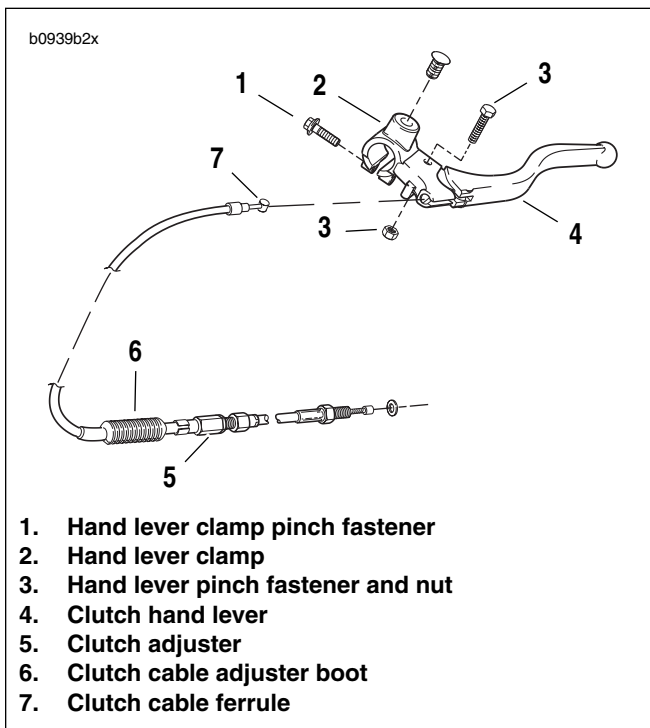


Figure 2-101. Clutch Hand Control Assembly

8. See [Figure 2-101](#). Connect clutch cable ferrule (7) to hand lever (4).
9. Adjust clutch adjusting screw. See [1.9 CLUTCH](#).
10. Add FORMULA+ Primary/Transmission Lubricant (Part No. 99851-05 quart size) if needed as required until fluid level is even with bottom of clutch diaphragm spring. See TRANSMISSION FLUID under [1.9 CLUTCH](#).

NOTE

Each time the clutch inspection cover is removed the gasket must be replaced.

11. Install **new** clutch cover gasket.
12. See [Figure 2-97](#). Install clutch inspection cover (4) with three TORX screws with washers. Tighten screws in a crosswise pattern to 84-108 **in-lbs** (9.5-12.2 Nm).

NOTE

Always connect front tie bar to engine mount first.

13. Install front tie bar, P clamp and clutch cable to front engine mount and tighten fastener to 25-27 ft-lbs (33.9-36.6 Nm).
14. Connect front tie bar to "V" bracket and tighten fastener to 25-27 ft-lbs (33.9-36.6 Nm).
15. Adjust clutch cable. See [1.9 CLUTCH](#).
16. Install wire form and clutch cable to front isolator and tighten fastener to 84-92 **in-lbs** (9.5-10.3 Nm).
17. Install cable strap to voltage regulator wire.

⚠ WARNING

Connect positive (+) battery cable first. If positive (+) cable should contact ground with negative (-) cable connected, the resulting sparks can cause a battery explosion, which could result in death or serious injury. (00068a)

18. Install chin fairing. See [2.33 CHIN FAIRING](#).
19. Connect negative battery cable to battery terminal. Tighten fastener to 72-96 **in-lbs** (8-11 Nm).

⚠ 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)

20. Install seat. See [2.38 SEAT](#).

REMOVAL

1. Remove seat. See [2.38 SEAT](#).

WARNING

To prevent accidental vehicle start-up, which could cause death or serious injury, disconnect negative (-) battery cable before proceeding. (00048a)

2. Disconnect battery by unthreading fastener removing negative cable (black) from battery first. See [1.5 BATTERY MAINTENANCE](#).
3. Remove front fairing. See [2.37 FRONT FAIRING, WINDSHIELD, AND MIRRORS](#).
4. See [Figure 2-102](#). Disconnect flasher (1) and bank angle sensor (2). Remove electronic control module fasteners (3).
5. See [Figure 2-104](#). Rotate headlamp support bracket.
 - a. Loosen headlamp pivot fasteners (1).
 - b. Rotate headlight bracket (2) down.
6. See [Figure 2-103](#). Disconnect headlight connection.
7. Disconnect and remove electronic control module. See [4.30 ELECTRONIC CONTROL MODULE](#).
8. See [Figure 2-104](#). Remove headlight support bracket (2).

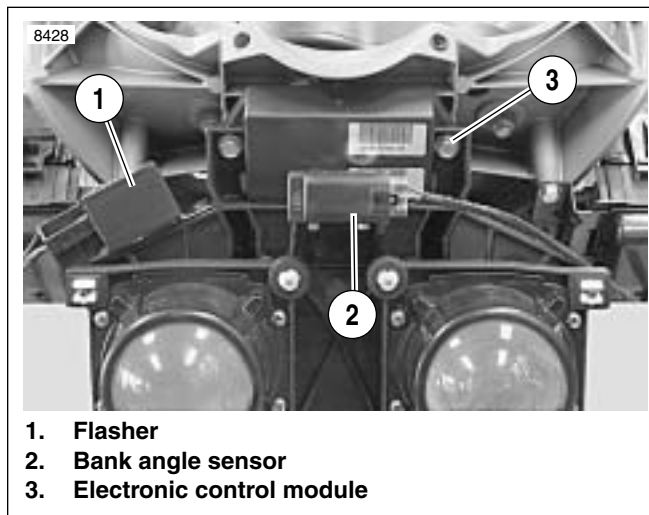


Figure 2-102. Headlight Support Bracket

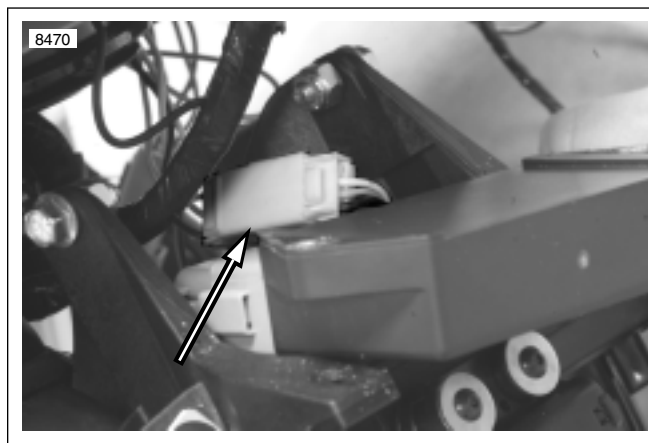


Figure 2-103. Headlight Connector

DISASSEMBLY

1. See [Figure 2-102](#). Remove bank angle sensor (2).
2. Remove flasher.
3. See [Figure 2-104](#). Remove black rubber cover (4) from rear of headlights.
4. Disconnect black connector from headlights.
5. Disconnect headlight bulb (8) connector (white) from wire harness.
6. Remove headlights (5, 7) from headlight support bracket (2) by removing headlight fasteners (6).
7. Remove headlights (5, 7).

ASSEMBLY

1. See [Figure 2-104](#). Align headlights (5, 7) into headlight support bracket (2). Tighten headlight fasteners (6) to 20-25 **in lbs** (2.3-2.8 Nm).
2. Connect headlight bulb (8) connector (white) into wire-harness.
3. Connect black headlight connector.
4. Install black rubber cover (4).
5. See [Figure 2-102](#). Install bank angle sensor connector case (2). Tighten to 12-36 **in-lbs** (1-4 Nm).
6. Install flasher (1) and tighten to 30-40 **in-lbs** (3-5 Nm).

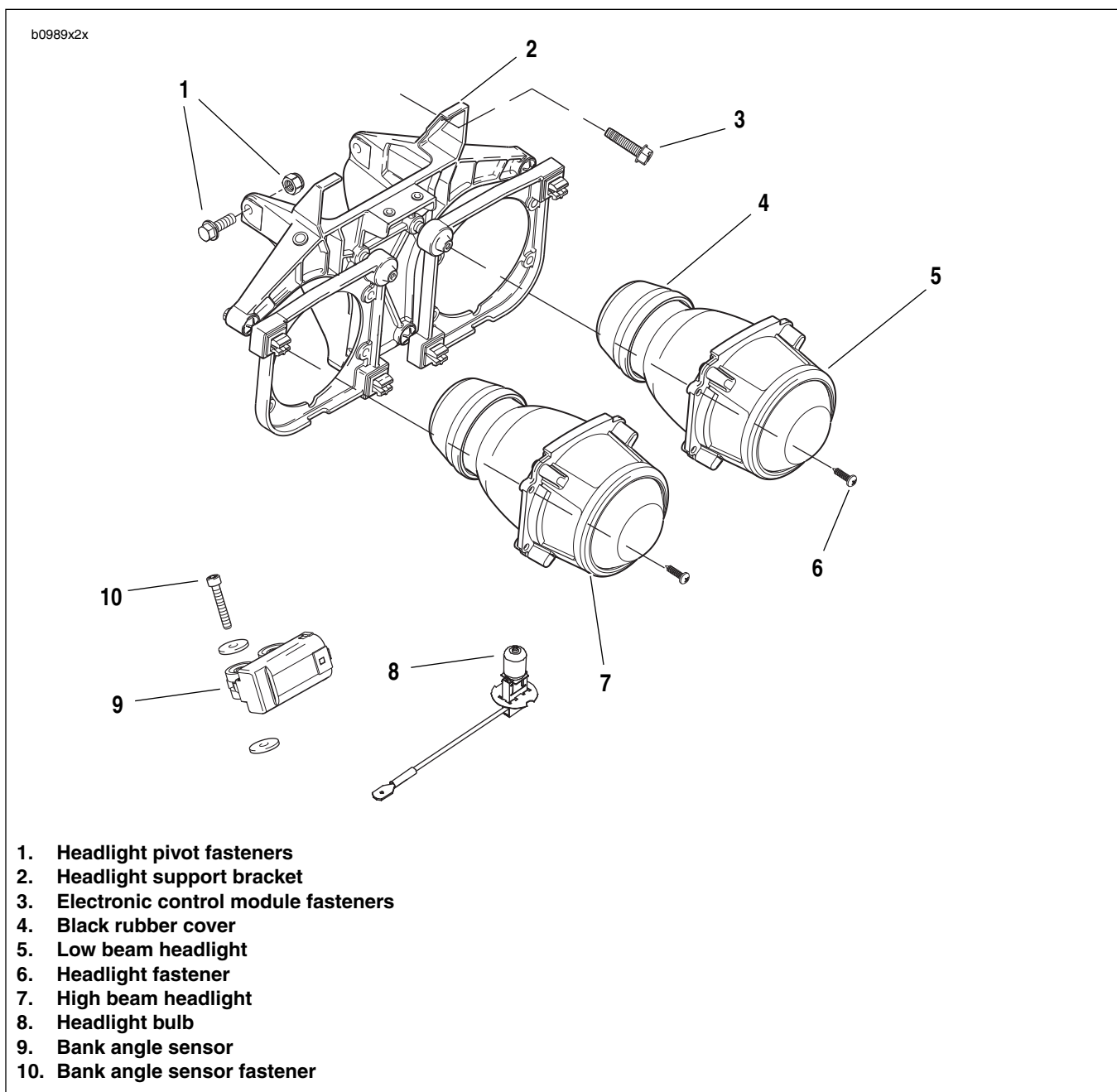


Figure 2-104. Headlight Support Bracket Assembly

INSTALLATION

1. See [Figure 2-105](#). Position headlight pivot fasteners into groove of the headlight support bracket, flat side of nut lined up with groove.

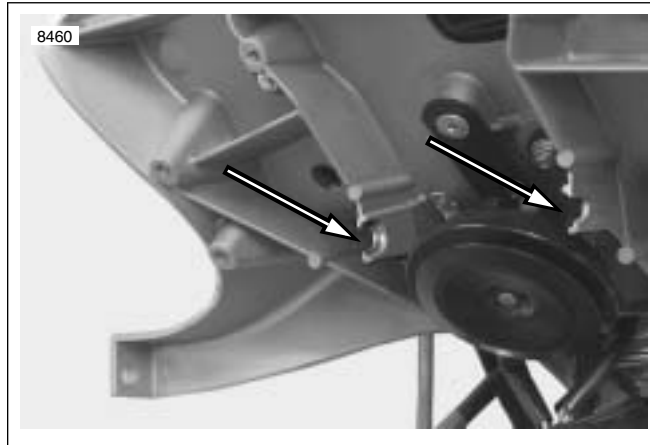


Figure 2-105. Headlamp Pivot Groove

2. See [Figure 2-104](#). Install headlight pivot fasteners (1) but do not tighten.
3. Connect electronic control module. See [4.30 ELECTRONIC CONTROL MODULE](#).
4. See [Figure 2-103](#). Attach headlight connector to headlight support bracket.
5. Connect headlight connections. See [7.12 HEADLIGHT](#).
6. See [Figure 2-104](#). Rotate headlight support bracket up (2) and tighten pivot fasteners (1) to 72-96 **in-lbs** (8-11 Nm).
7. See [Figure 2-102](#). Install electric control module.
 - a. [Figure 2-104](#). Align electronic control module and headlight support bracket with fairing support bracket.
 - b. Tighten electronic control module fasteners (3) to 72-96 **in-lbs** (8-11 Nm).

8. See [Figure 2-102](#). Connect flasher (1) and bank angle sensor (2).
9. Install front fairing. See [2.37 FRONT FAIRING, WINDSHIELD, AND MIRRORS](#).

WARNING

Connect positive (+) battery cable first. If positive (+) cable should contact ground with negative (-) cable connected, the resulting sparks can cause a battery explosion, which could result in death or serious injury. (00068a)

10. Install battery by threading positive cable (red) into threaded hole first tightening to 72-96 **in-lbs** (8-11 Nm). See [1.5 BATTERY MAINTENANCE](#).

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)

11. Install seat. See [2.38 SEAT](#).

REMOVAL

1. Remove seat. See [2.38 SEAT](#).

WARNING

To prevent accidental vehicle start-up, which could cause death or serious injury, disconnect negative (-) battery cable before proceeding. (00048a)

2. Disconnect battery by unthreading fastener removing negative cable (black) from battery first. See [1.5 BATTERY MAINTENANCE](#).
3. Remove front fairing. See [2.37 FRONT FAIRING, WINDSHIELD, AND MIRRORS](#).
4. Remove headlight support bracket. See [2.25 HEADLIGHT ASSEMBLY AND SUPPORT BRACKET](#).
5. Remove fuse block and relay block and p-clamp. See [7.22 MAIN FUSE AND FUSES](#).
6. Disconnect and remove horn (5). See [7.20 HORN](#).
7. Disconnect and remove instrument cluster (2, 3). See [7.18 INSTRUMENT MODULE](#).
8. See [Figure 2-106](#). Remove fairing support bracket fasteners and washers (4), p-clamp (7) to remove fairing support bracket (5).

INSTALLATION

1. Route the wire harness. See [D.1 HOSE AND WIRE ROUTING](#) for wire harness routing.
2. See [Figure 2-106](#). Install fairing support bracket with fasteners, p-clamp (7) and washers (4). Tightening to 16-18 ft-lbs (22-26 Nm).
3. Connect instrument cluster connector and install instrument cluster. Tightening to 12-36 **in-lbs** (1.3-4 Nm). See [7.18 INSTRUMENT MODULE](#).
4. Install horn and tighten fasteners to 72-96 **in-lbs** (8-10 Nm). See [7.20 HORN](#).
5. Install fuse block, relay and p-clamp tightening fasteners to 72-96 **in-lbs** (8-11 Nm). See [7.22 MAIN FUSE AND FUSES](#).
6. Install lower headlight support bracket. See [2.25 HEADLIGHT ASSEMBLY AND SUPPORT BRACKET](#).
7. Install front fairing. See [2.37 FRONT FAIRING, WINDSHIELD, AND MIRRORS](#).

WARNING

Connect positive (+) battery cable first. If positive (+) cable should contact ground with negative (-) cable connected, the resulting sparks can cause a battery explosion, which could result in death or serious injury. (00068a)

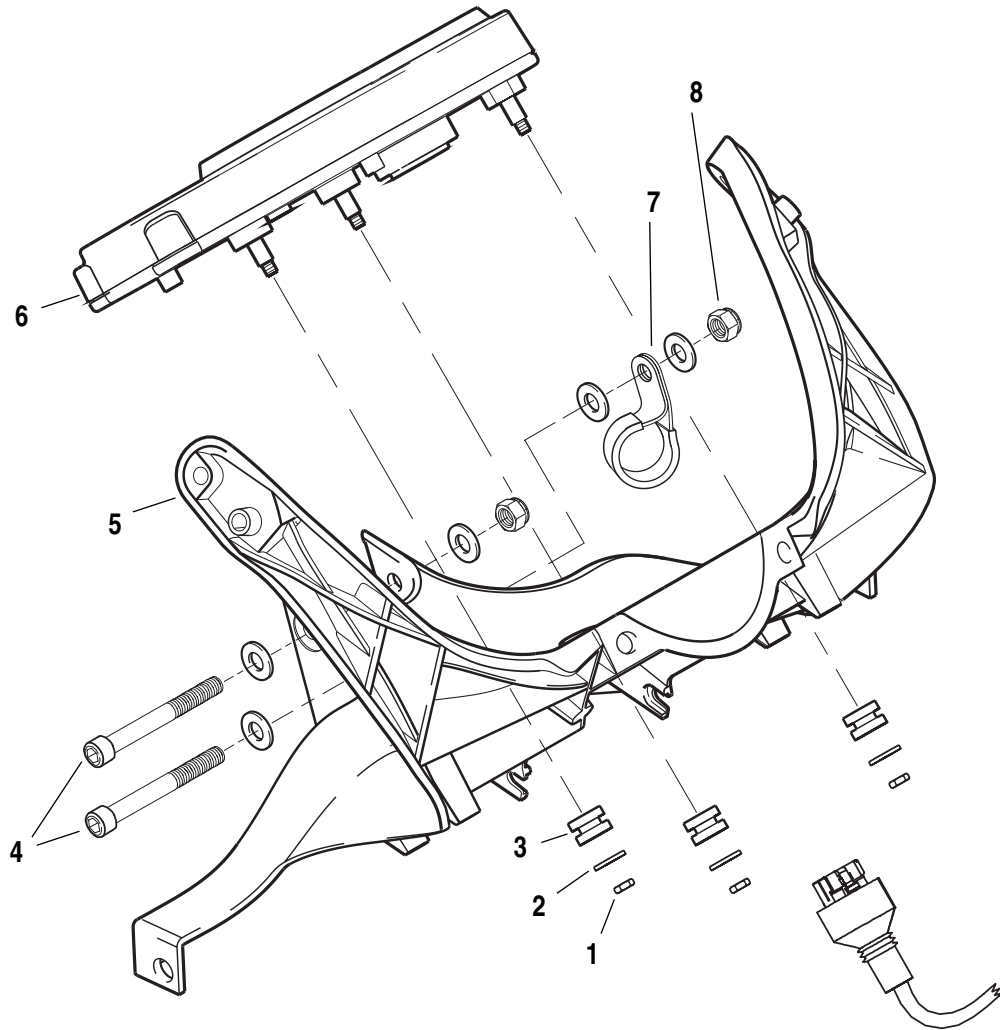
8. Install battery by threading positive cable (red) into threaded hole first tightening to 72-96 **in-lbs** (8-11 Nm). See [1.5 BATTERY MAINTENANCE](#).

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)

9. Install seat. See [2.38 SEAT](#).

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1. Jam nut
2. Washer
3. Rubber grommet
4. Fairing support bracket fasteners and washers
5. Fairing support bracket
6. Instrument cluster
7. P-clamp
8. P-clamp fastener and washers

Figure 2-106. Fairing Support Bracket Assembly

GENERAL

Firebolt handlebars are a clip-on assembly and are not adjustable.

REMOVAL

Right Clip-on

1. Remove right switch gear housing. See [7.16 HANDLEBAR SWITCHES](#).
2. Remove front brake master cylinder and grip. See [2.10 FRONT BRAKE MASTER CYLINDER AND HAND LEVER](#).
3. See [Figure 2-108](#). Remove right clip-on assembly.
 - a. Partially loosen clip-on mounting fastener (4).
 - b. Using a rubber mallet, tap the partially loosened fastener to push the clip-on (2) from the upper right fork clamp (3). Repeat this procedure until fastener and clip-on has been removed from fork clamp.
4. Remove clip-on endcap (1).

Left Clip-on

1. Remove left switch gear housing. See [7.16 HANDLEBAR SWITCHES](#).
2. See [Figure 2-107](#). Remove clip-on assembly.
 - a. See [Figure 2-108](#). Partially loosen clip-on mounting fastener.
 - b. Using a rubber mallet, tap the partially loosened fastener to push the clip-on (2) from the upper left fork clamp (3). Repeat this procedure until fastener (4) and clip-on (2) has been removed from fork clamp.
3. Remove clutch lever assembly. See [2.24 CLUTCH CONTROL](#).
4. Remove clip-on endcap (1).

INSTALLATION

Right Clip-on

1. Install right switch gear housing.
2. Install right clip-on into right fork clamp and tighten fastener to 24-26 ft-lbs (33-35 Nm).
3. Install front brake master cylinder. Tighten but do not torque.
4. Install throttle and grip onto right clip-on. See [2.23 THROTTLE CONTROL](#).
5. Install endcap onto right clip-on.
6. Position brake hand lever to rider preferences and tighten fastener to 80-90 **in-lbs** (9-10 Nm). See [2.10 FRONT BRAKE MASTER CYLINDER AND HAND LEVER](#).

Left Clip-on

1. Install clutch hand lever assembly onto clip-on. Tighten but do not torque.
2. Install left switch gear housing. See [7.16 HANDLEBAR SWITCHES](#).
3. See [Figure 2-108](#). Install grip and endcap (1).
4. Install left clip-on into upper fork clamp (3) and tighten fastener (4) to 24-26 ft-lbs (33-35 Nm).
5. See [Figure 2-95](#). Position clutch hand lever to rider preferences and tighten fastener (1) to 60-84 **in-lbs** (6.8-9.5 Nm). See [2.24 CLUTCH CONTROL](#).

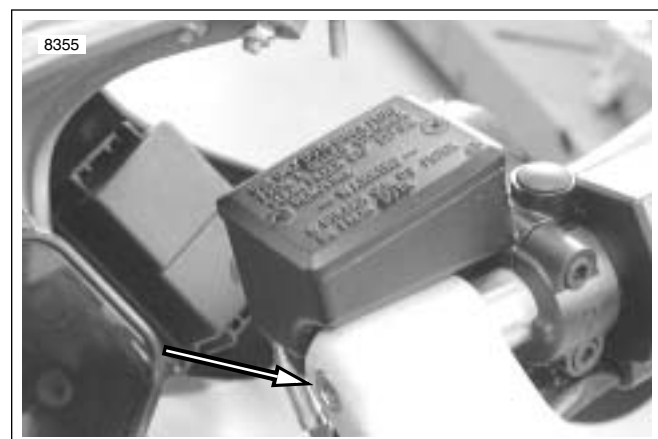
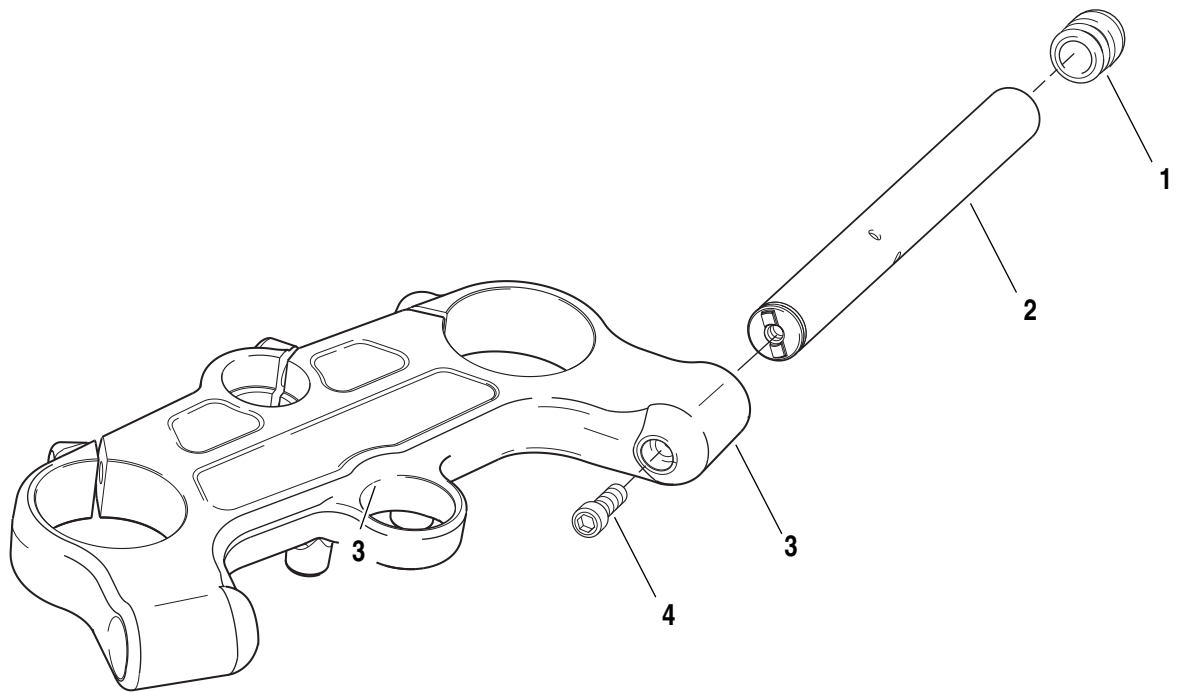


Figure 2-107. Handlebar Clip-on Mounting Fasteners (right clip-on shown)

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1. Endcap
2. Clip-on
3. Upper fork clamp
4. Clip-on fastener

Figure 2-108. Handlebar Clip-on Assembly (left clip-on shown)

REMOVAL/DISASSEMBLY

NOTE

For details on removal of components on XB12 models with interactive exhaust systems, see [REMOVAL](#) under [7.6 INTERACTIVE EXHAUST SYSTEM \(XB12 MODEL\)](#).

Muffler

1. Remove chin fairing. See [2.33 CHIN FAIRING](#).
2. Remove front sprocket cover. See [2.30 SPROCKET COVER](#).
3. Remove idler pulley. See [DRIVE BELT REMOVAL](#) under [6.6 DRIVE BELT SYSTEM](#).
4. See [Figure 2-109](#). Loosen front muffler mount fastener (7) but do not remove.
5. Remove front and rear muffler straps.

Front: Remove front muffler strap fastener (5). Front strap will not be removed.

NOTE

Always replace the front muffler strap.

Rear: Alternately loosen rear strap fasteners (1) and remove straps (2).

6. See [Figure 2-110](#). Loosen Torca clamp (1) and lower muffler.
7. On XB12 models remove interactive exhaust cable from muffler.
8. Remove muffler.

NOTE

The muffler may be removed for replacement without removing the exhaust header.

Front Muffler Mount

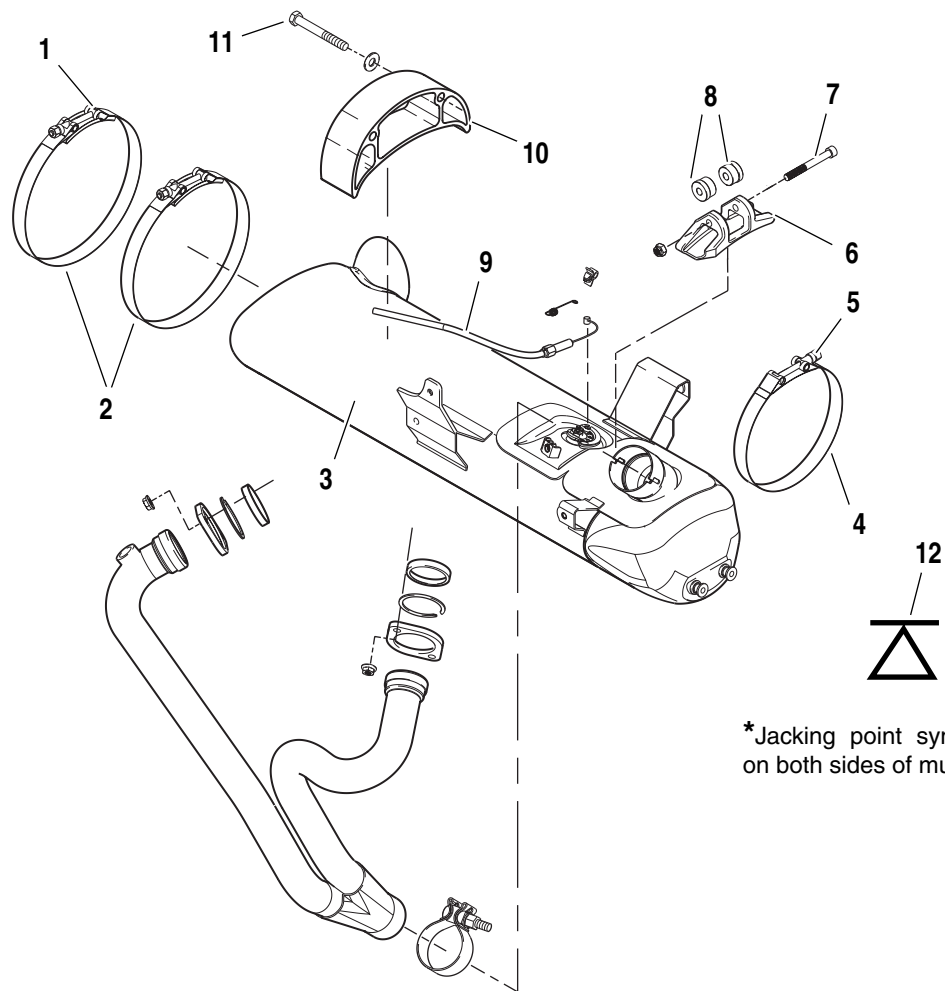
1. Remove muffler.
2. See [Figure 2-109](#). Remove front muffler mount fastener (7).
3. Remove strap (4) from front muffler mount (6).
4. Remove front muffler mount bushings (8) by punching out with suitable tool.

Rear Muffler Bracket

1. Remove muffler.
2. Drain oil. See [1.6 ENGINE LUBRICATION SYSTEM](#).
3. Remove feed oil line p-clamp and remove feed oil line from swingarm. See [3.9 OIL HOSE ROUTING AND OIL RESERVOIR](#) and [3.10 OIL LINE FITTINGS](#).
4. See [Figure 2-109](#). Remove rear muffler bracket fasteners (10).
5. Slide oil line from rear muffler bracket and remove rear muffler bracket (10).

Exhaust Header

1. Rotate engine down. See [3.3 ENGINE ROTATION FOR SERVICE](#).
2. Remove oxygen sensor. See [4.33 OXYGEN SENSOR](#).
3. See [Figure 2-110](#). Remove exhaust header (2) by removing mounting fasteners (3).
4. Remove exhaust ring (4), retaining ring (5) and port gas-ket (6).



- 1. Rear muffler strap fastener (2)
- 2. Rear muffler strap (2)
- 3. Interactive muffler
- 4. Front muffler strap
- 5. Front muffler strap fastener
- 6. Front muffler mount

- 7. Front muffler mount fastener
- 8. Front muffler mount bushings
- 9. Interactive exhaust cable
- 10. Rear muffler bracket
- 11. Rear muffler bracket fasteners (2)
- 12. Jacking point on muffler

Figure 2-109. Muffler Assembly

ASSEMBLY/INSTALLATION

Exhaust Header

1. See [Figure 2-110](#). Install exhaust ring (4), retaining ring (5) and **new** port gasket (6).
2. Install exhaust header (2). Tighten mounting fasteners (3) to 72-96 **in-lbs** (8-11 Nm).

NOTE

Tighten header nuts gradually, alternating between studs to insure that exhaust rings are flush with engine.

3. Install oxygen sensor. See [4.33 OXYGEN SENSOR](#).
4. Rotate engine up. See [3.3 ENGINE ROTATION FOR SERVICE](#).

Rear Muffler Bracket

1. See [Figure 2-109](#). Slide rear muffler bracket (10) over oil line.
2. Apply LOCTITE 272 and install rear muffler bracket fasteners (11) and tighten to 32-36 ft-lbs (43-49 Nm).
3. Install oil line to swingarm. See [3.9 OIL HOSE ROUTING AND OIL RESERVOIR/3.10 OIL LINE FITTINGS](#).
4. Fill swingarm/oil tank with 2.5 quarts (3.3 liters) oil. See [1.6 ENGINE LUBRICATION SYSTEM](#).
5. Install muffler.

NOTE

For details on removal of components on XB12R with interactive exhaust systems, see [REMOVAL](#) under [7.6 INTERACTIVE EXHAUST SYSTEM \(XB12 MODEL\)](#).

Front Muffler Mount

1. See [Figure 2-109](#). Install front muffler mount bushings (8).
2. Install **new** strap on front muffler mount (6).
3. Install front muffler mount fastener (7) loosely. **Do not tighten.**
4. Install muffler.

Muffler and Straps

NOTE

Torca muffler clamps have eliminated the need for silicone or graphite tape during assembly. To ensure sealing integrity of muffler clamps and prevent the possibility of leakage, Buell recommends that muffler clamp assemblies be discarded and replaced each time they are removed.

1. Install muffler and **new** Torca clamp onto header.

NOTE

If necessary, use a fiber hammer to fit muffler on header.

2. See [Figure 2-109](#). Loosely install **new** front and rear muffler straps (2, 4).

NOTES

- *It is important that the front muffler mount is tightened last in order to ensure proper alignment of the exhaust system.*
- *Never re-use front muffler strap. Always replace front muffler strap with a new strap when removed from system.*

- *When rear muffler straps have been installed, it is important that strap fasteners do not contact idler pulley bracket.*

NOTE

On the front muffler mount fastener, torque is applied to the head and not to the nut.

3. Tighten front strap fastener and alternately tighten rear muffler strap fasteners evenly till fasteners are tightened to:
 - a. Front: Tighten around the muffler until snug.
 - b. Rear: 48-60 **in-lbs** (5-7 Nm).
 - c. Front: 108-120 **in-lbs** (12-14 Nm). Back off fastener two full turns and then retighten to 108-120 **in-lbs** (12-14 Nm).
4. See [Figure 2-110](#). Tighten the Torca clamp (1) to 28-30 ft-lbs (38-40.6Nm).
5. Front muffler mount: 16-18 ft-lbs (21.7-24.4 Nm).
6. Install idler pulley. See [6.6 DRIVE BELT SYSTEM](#).
7. Install front sprocket cover. See [2.30 SPROCKET COVER](#).
8. Install chin fairing. See [2.33 CHIN FAIRING](#).

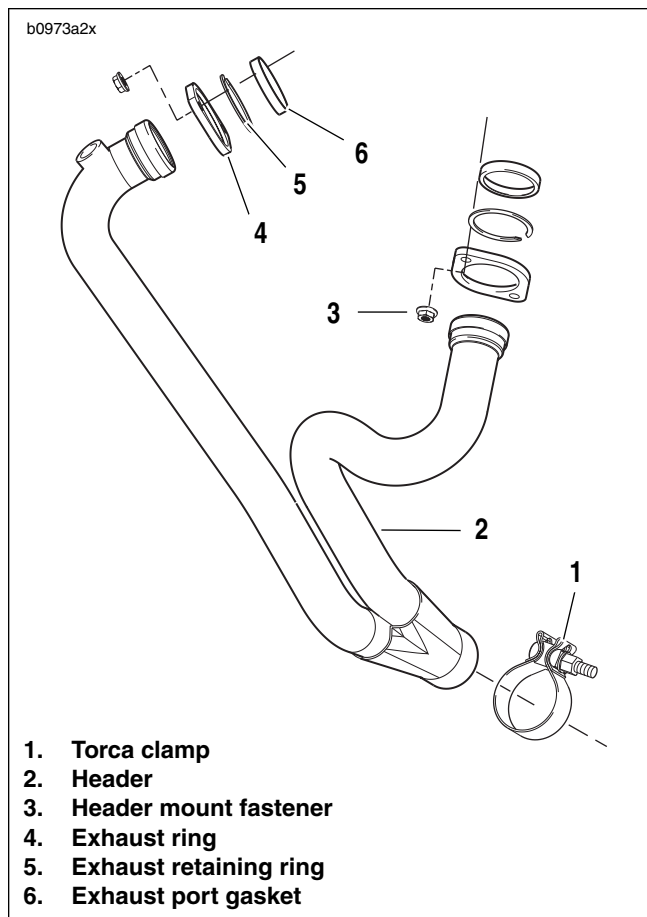


Figure 2-110. Exhaust Header

RIDER

Remove Wear Peg

1. See [Figure 2-111](#). Remove wear peg from end of footpeg assembly.

Remove Footpeg

1. See [Figure 2-111](#). Remove clip (5).
2. Remove footpeg pin (9).
3. Remove footpeg (8).

Remove Heel Guard

1. See [Figure 2-111](#). Remove heel guard fasteners (4).
2. Remove heel guard (3).

Remove Mount

1. See [Figure 2-111](#). Remove footpeg mount fasteners (2).
2. Remove footpeg mount (1).

Install Mount

1. See [Figure 2-111](#). Position footpeg mount (1).

2. Install footpeg mount with fasteners (2). Tighten to 108-132 **in-lbs** (12.2-14.9 Nm).

Install Heel Guard

1. See [Figure 2-111](#). Position heel guard (3) onto footpeg mount (1).

NOTE

There is one long fastener which installs on the lower left side in order to secure the non-California vent clamp.

2. Install heel guard (3) with fasteners (4). Tighten to 72-96 **in-lbs** (8-11 Nm).

Install Footpeg

1. See [Figure 2-111](#). Position spring (6) in footpeg (8).
2. Position footpeg (8) and spring in footpeg mount (1).
3. Install footpeg pin (9).
4. Install clip (5).

Install Wear Peg

1. See [Figure 2-111](#). Apply LOCTITE 272 (red) and tighten to 36-48 **in-lbs** (4-5 Nm).

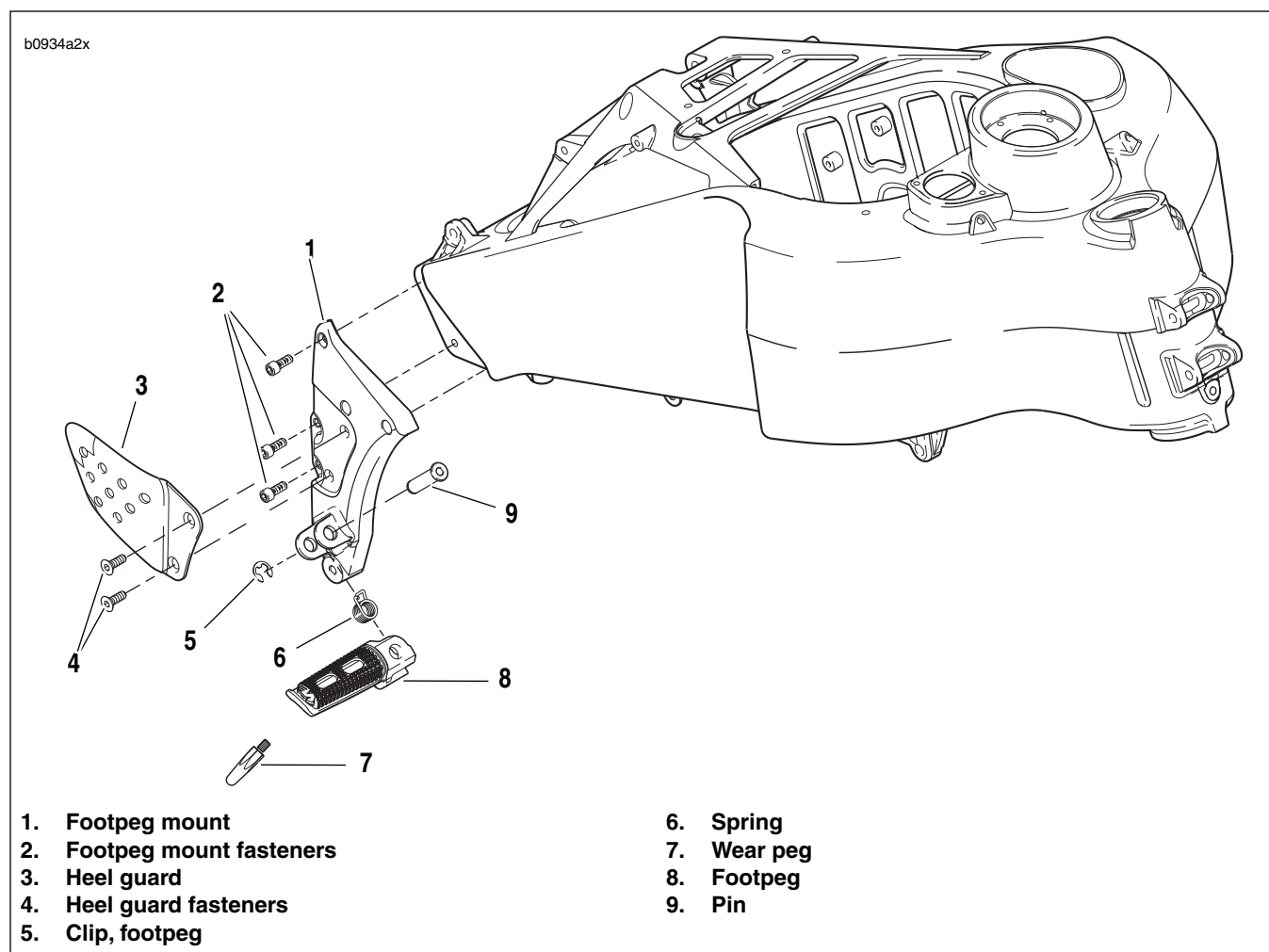


Figure 2-111. Rider Footpeg, Mount and Heel Guard Assembly

PASSENGER

Remove Footpeg

1. See [Figure 2-112](#). Remove clip (7).
2. Remove footpeg pin (9).
3. Remove footpeg (8), detent plate (6), ball (5) and spring (4).

Remove Heel Guard

1. See [Figure 2-112](#). Remove heel guard fasteners (1).
2. Remove heel guard (2).

Remove Mount

1. See [Figure 2-112](#). Remove footpeg mount fasteners (10).
2. Remove footpeg mount (3).

Install Mount

1. See [Figure 2-112](#). Position footpeg mount (3) onto sub-frame tail assembly.
2. Install footpeg mount (3). Using LOCTITE 272 tighten, fasteners (10) to 25-28 ft-lbs (34-38 Nm).

Install Heel Guard

1. See [Figure 2-112](#). Position heel guard (2) onto footpeg mounts (3).
2. Install heel guard (2).
3. Tighten heel guard fasteners to 48-72 in-lbs (5-8 Nm).

Install Footpeg

1. See [Figure 2-112](#). Position footpeg (8), detent plate (6), ball (5), and spring (4) on to footpeg mount (3).
2. Install footpeg pin (9).
3. Install clip (7).
4. Check that footpeg clicks in the up and down position.

1. Heel guard fasteners
2. Heel guard
3. Footpeg mount
4. Spring
5. Ball
6. Detent plate
7. Clip
8. Footpeg
9. Pin
10. Footpeg mount fastener

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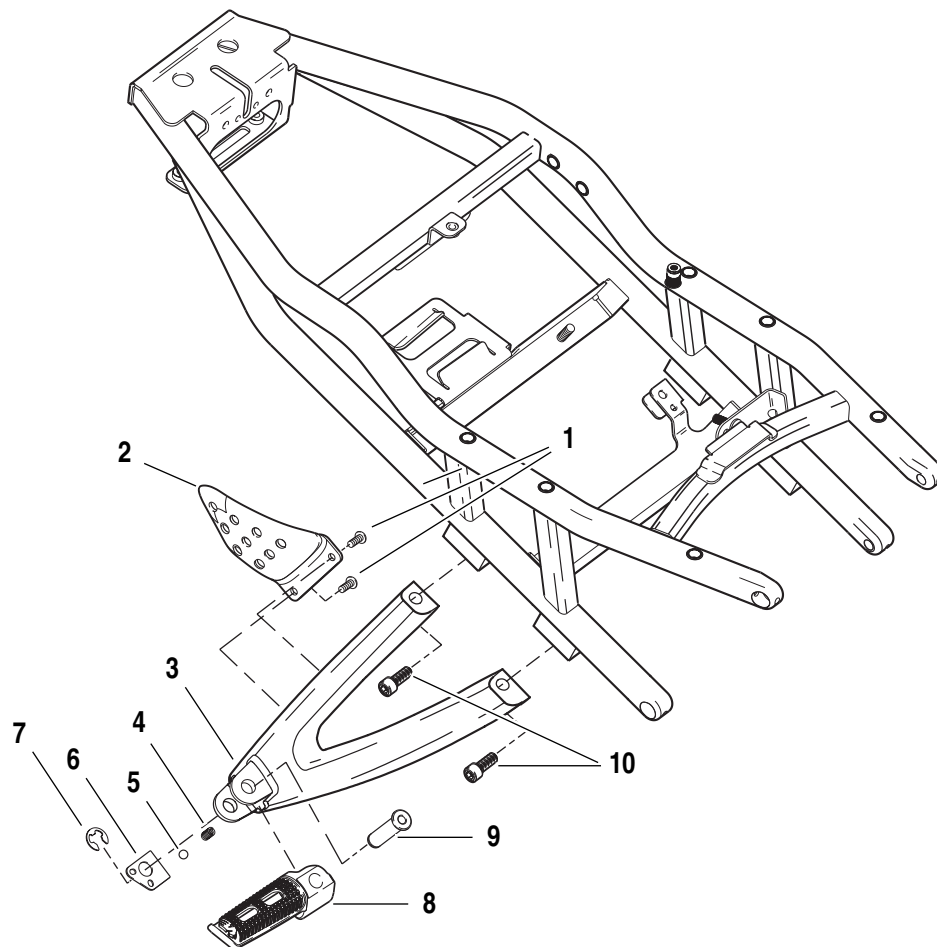


Figure 2-112. Passenger Footpeg, Mount and Heel Guard Assembly

REMOVAL

1. See [Figure 2-113](#). Remove back right chin fairing fasteners.

NOTE

Must remove two chin fairing fasteners for sprocket cover access.

2. See [Figure 2-114](#). Remove sprocket cover fasteners and washers (1).

INSTALLATION

1. See [Figure 2-114](#). Position sprocket cover (2) over front sprocket.

NOTE

Apply LOCTITE 222 (purple) to long fastener (1) only.

2. Install sprocket cover (2) using sprocket cover fasteners (1, 3) and tighten all fasteners and washers (1) to 12-36 **in-lbs** (1-4 Nm).
3. Install chin fairing. See [2.33 CHIN FAIRING](#).

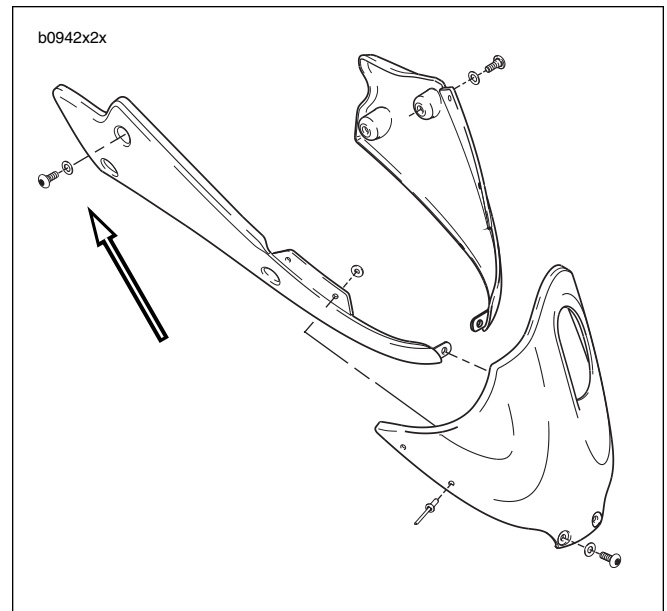


Figure 2-113. Chin Fairing Assembly, Right Rear Fasteners

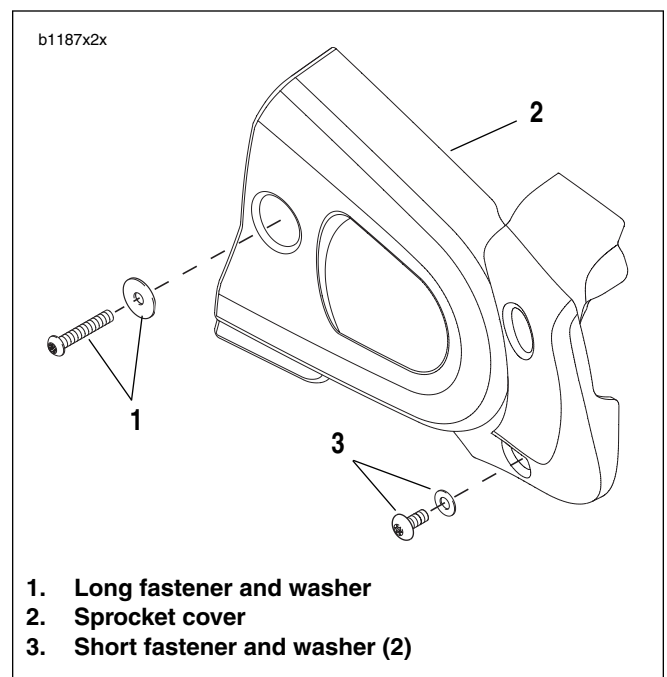


Figure 2-114. Sprocket Cover

FRONT FENDER

Removal

1. See [Figure 2-115](#). Remove fasteners and washers (2) securing the front fender (1) to front forks.
2. Carefully remove front fender (1).

Installation

1. See [Figure 2-115](#). Align front fender (1) to fender mounts on front forks.
2. Use LOCTITE 272 on all fasteners and install front fender (1) with fasteners and washers (2) and tighten to 36-48 **in-lbs** (4-5.4 Nm).

REAR FENDER

Removal

1. See [Figure 2-115](#). Remove fasteners and washers (4) securing the rear fender (3) to swingarm.
2. Remove rear fender (3).

Installation

1. See [Figure 2-115](#). Align rear brake line in rear fender.
2. Install rear fender (3) with fasteners and washers (4), Tighten to 12-36 **in-lbs** (1-4 Nm).

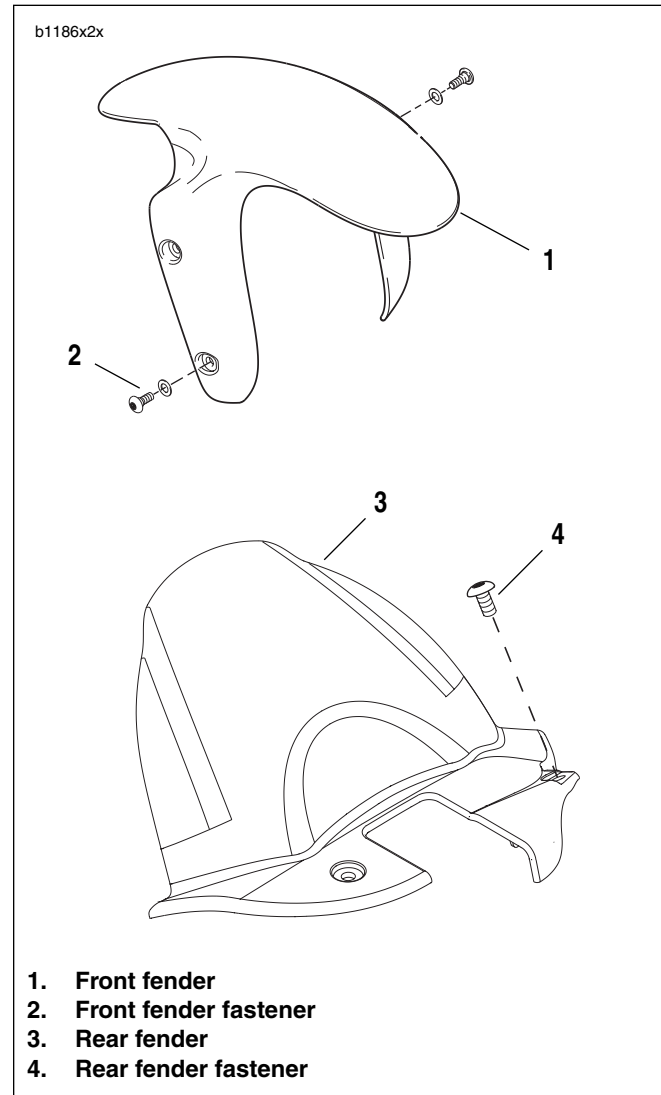


Figure 2-115. Front and Rear Fender

REMOVAL

1. Place a scissor jack under jacking point and raise rear wheel off ground. For location of jacking point see [2.28 EXHAUST SYSTEM](#).
2. Remove right side rider footrest support bracket.
3. Loosen rear axle pinch fastener.
4. Loosen rear axle approximately 15 rotations to allow partial tension to be removed from rear drive system.
5. Remove lower belt guard by removing the two fasteners located on the outside of the lower belt guard.
6. Once the lower belt guard has been removed, remove the metal stone guard.
7. Remove upper belt guard (1) by removing fasteners from swingarm.

INSTALLATION

1. Install upper belt guard (1) tightening fasteners to 12-36 **in-lbs** (1-4 Nm).
2. Install stone guard and tighten fasteners to 12-36 **in-lbs** (1-4 Nm).
3. Install lower belt guard (3) and tighten fasteners (4) to 12-36 **in-lbs** (1-4 Nm).
4. Tighten rear axle to 48-52 ft-lbs (65-70 Nm).
5. Tighten rear axle pinch fastener to 40-45 ft-lbs (54-61 Nm).
6. Install right side rider footrest mount and tighten fasteners to 108-132 **in-lbs** (12.2-14.9 Nm).
7. Remove scissor jack from motorcycle.

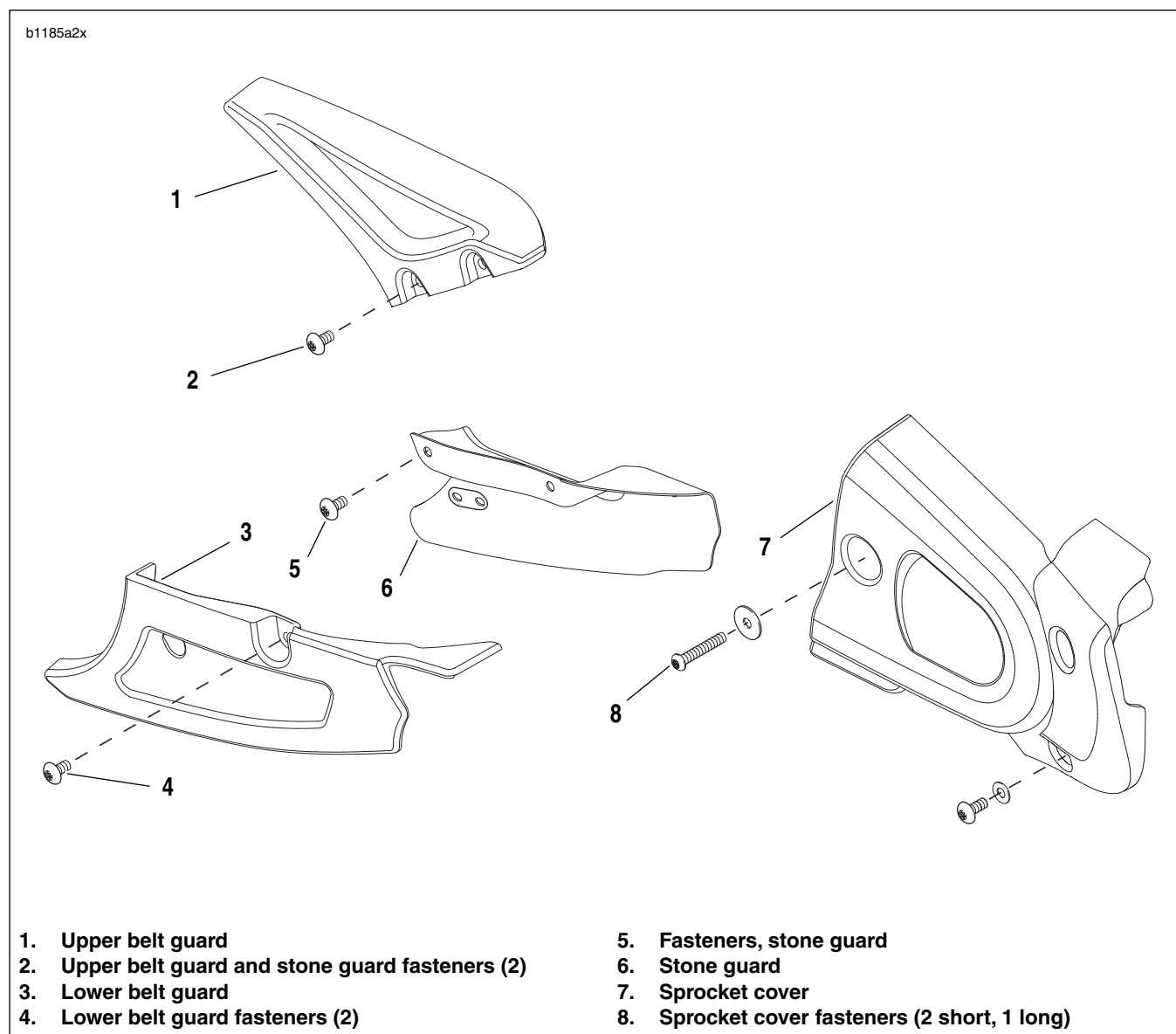


Figure 2-116. Belt Guard Assembly

REMOVAL

1. Secure back tire down.
2. Turn wheel full right or left for easier access to center fasteners.
3. See [Figure 2-117](#). Remove center section fasteners and washers (2).
4. Remove left section fasteners and washers (4).
5. Remove right section fasteners and washers (6).
6. Remove chin fairing.

NOTE

To separate the left, right and center sections, drill out the rivets.

INSTALLATION

NOTE

To join the left, right and center sections, use the rivet gun from a Marson Thread-Setter™ Tool Kit MODEL NO. MAR39200HD.

1. See [Figure 2-117](#). Position right section (5) and install with right side fasteners and washers (6).
2. Align left section (3) and install with left side fasteners and washers (4).
3. Turn wheel full right or left for easier access to center fasteners.
4. Align center section (1) and install with center section fasteners and washers (2). Use LOCTITE 272 on all fasteners tightening to 36-48 **in-lbs** (4-5 Nm).

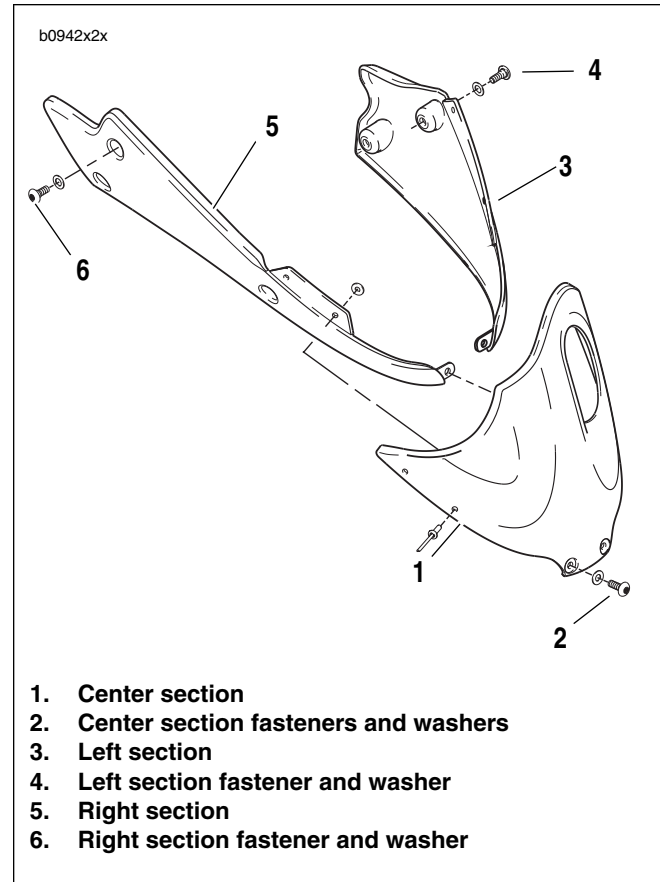


Figure 2-117. Chin Fairing Assembly

REMOVAL

1. Remove seat. See [2.38 SEAT](#).
2. See [Figure 2-118](#). Remove fasteners and nylon washers (2).
3. Remove intake cover assembly (1).

INSTALLATION

1. Position intake cover assembly over top of air cleaner cover.
2. See [Figure 2-118](#). Start the front two fasteners (2) with nylon washers.

3. See [Figure 2-118](#). Secure intake cover assembly (1) with fasteners and nylon washers (2). Tighten to 12-36 **in-lbs** (1-4 Nm).

NOTE

Front screws go in at a slight angle.

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. Install seat. See [2.38 SEAT](#).

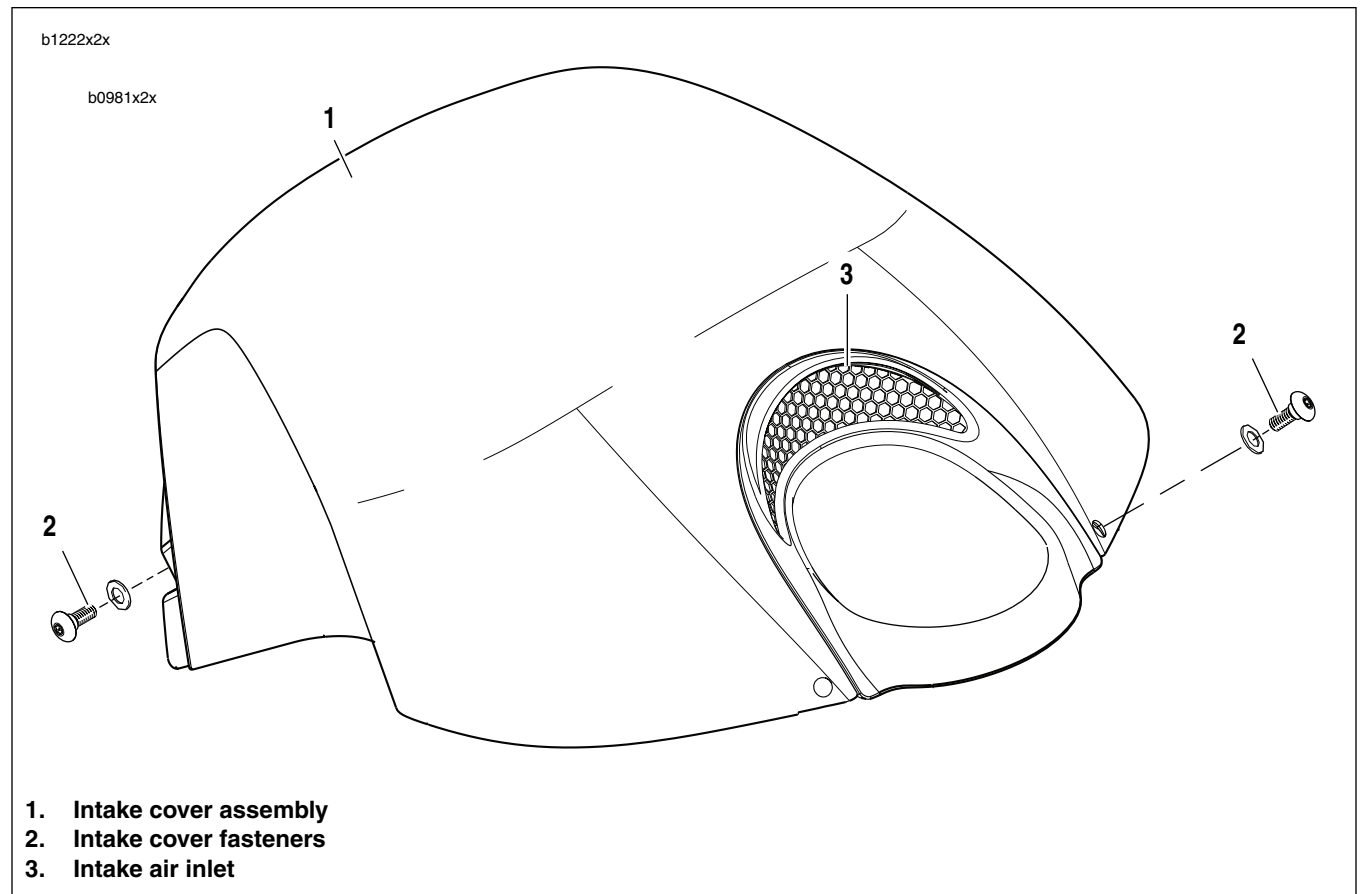


Figure 2-118. Intake Cover Assembly

RAM AIR SCOOP

Removal

1. See [Figure 2-119](#). On left side of bike, locate ram air scoop (4).
2. Remove three ram air scoop fasteners (3).
3. Remove ram air scoop (4).

Installation

1. See [Figure 2-119](#). Position ram air scoop (4).
2. Install ram air scoop (4) with three fasteners (3). Tighten to 12-36 **in-lbs** (1-4 Nm).

ENGINE SHROUD AIR SCOOP

Removal

1. See [Figure 2-119](#). On right side of bike, locate engine shroud air scoop (6).
2. Remove three engine shroud air scoop fasteners (5).

3. Remove engine shroud air scoop (6).

Installation

1. See [Figure 2-119](#). Position engine shroud air scoop (6).
2. Install engine shroud air scoop (6) with three fasteners (5). Tighten to 12-36 **in-lbs** (1-4 Nm).

OIL COOLER AIR SCOOP

Removal

1. See [Figure 2-119](#). On left side of bike, locate oil cooler air scoop (2).
2. Remove two oil cooler air scoop fasteners (1).
3. Remove oil cooler air scoop (2).

Installation

1. See [Figure 2-119](#). Position oil cooler air scoop (2).
2. Apply LOCTITE 272 (red) to oil cooler air scoop fasteners (1) and tighten to 48-72 **in-lbs** (5.4-8 Nm).

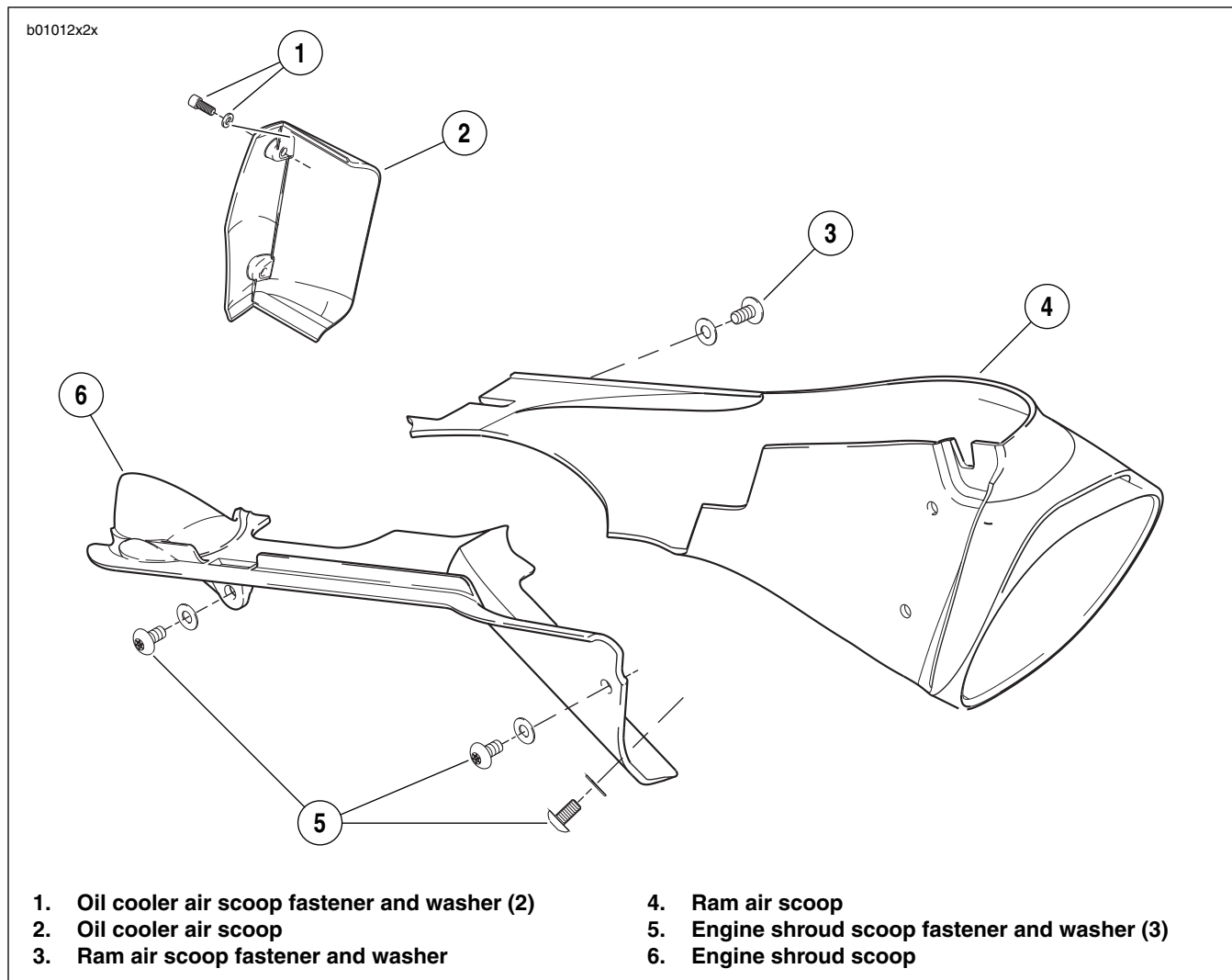


Figure 2-119. Ram Air Scoop, Engine Shroud, Oil Cooler

DISASSEMBLY

1. Remove seat and pillion. See 2.38 SEAT.

⚠ WARNING

Disconnect negative (-) battery cable first. If positive (+) cable should contact ground with negative (-) cable connected, the resulting sparks can cause a battery explosion, which could result in death or serious injury. (00049a).

2. Disconnect battery by unthreading fastener removing negative cable (black) from battery first. See 1.5 BATTERY MAINTENANCE.

3. See Figure 2-120. Remove upper body work (1) from subframe tail assembly (7).
 - a. Remove body work fasteners (2).
 - b. Disconnect passenger lock cable (6) by removing cable from seat lock plate (4) and ferrule from keylock (3).
 - c. Lift upper tail body work (1) off subframe tail assembly (8).
4. Remove passenger seat latch (14) from rear of subframe tail assembly.

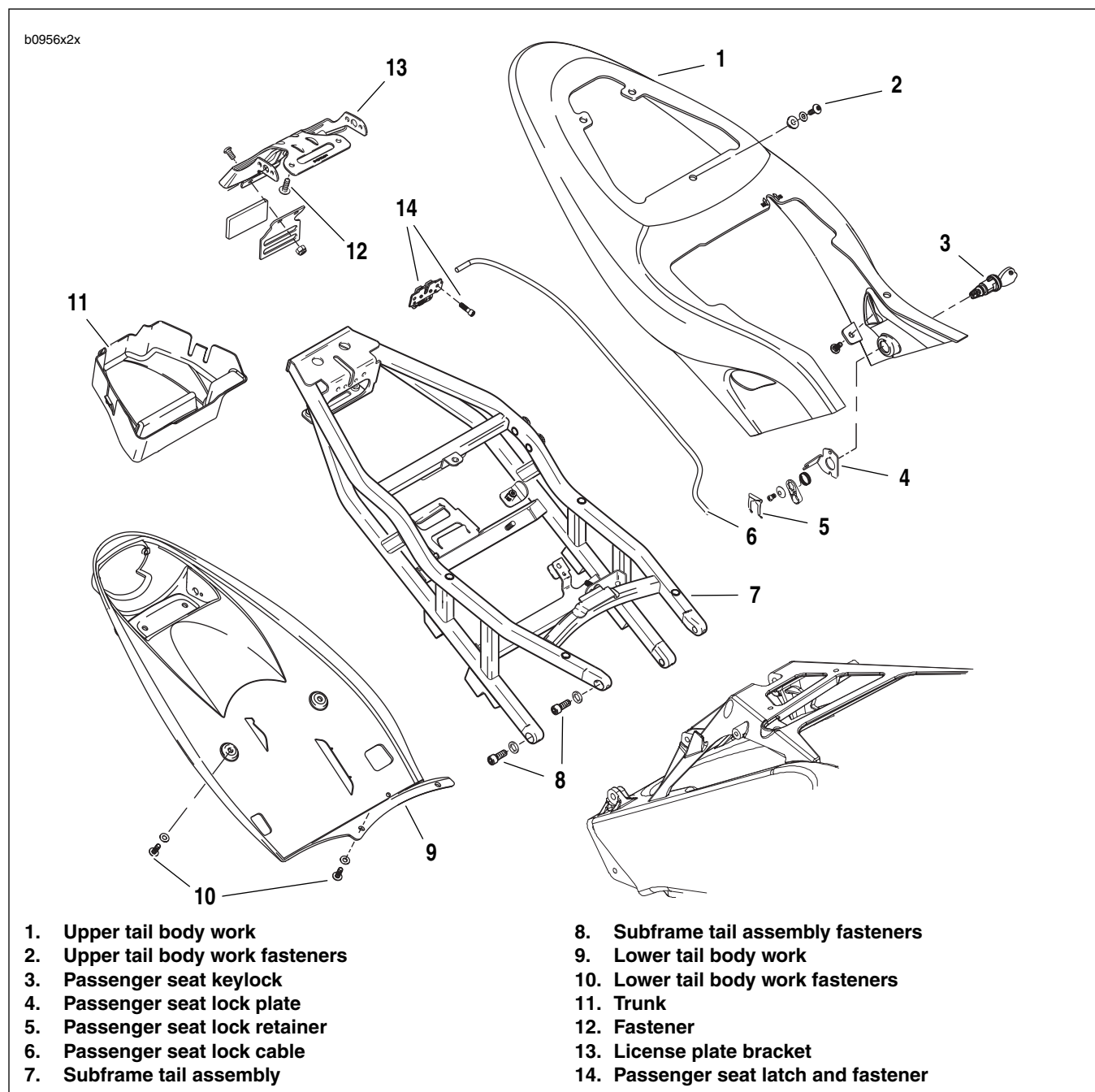


Figure 2-120. Subframe Tail Assembly and Body Work Assembly

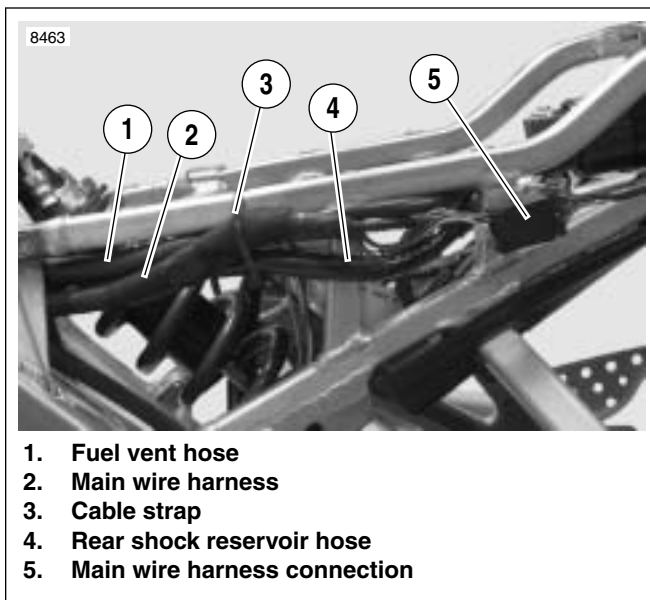


Figure 2-121. Left Side Subframe Tail Assembly Hose and Wire Routing

5. See [Figure 2-121](#). Cut cable strap (3) from subframe tail assembly holding vent hose (1), main wire harness (2) and shock reservoir hose (4).
6. Disconnect main wire harness connection (5).
7. Disconnect turn signal bullet connections and tail light connections. See [7.14 TURN SIGNALS](#) and [7.13 TAIL LAMP](#).
8. Remove christmas tree tie that holds the turn signals and tail light wire harness to subframe tail assembly.
9. Remove turn signals and reflectors from lower body work. See [7.14 TURN SIGNALS](#).
10. See [Figure 2-120](#). Remove license plate fasteners (12) from lower tail body work (9) and remove license plate bracket (13).
11. Remove passenger footpeg mounts. See [2.29 FOOT-PEG, HEEL GUARD AND MOUNT](#).
12. Remove lower body work (9) and trunk (11) from subframe tail assembly (7).
 - a. Remove lower body work (9) underneath subframe tail assembly by removing fasteners (10).
 - b. Remove trunk (11).

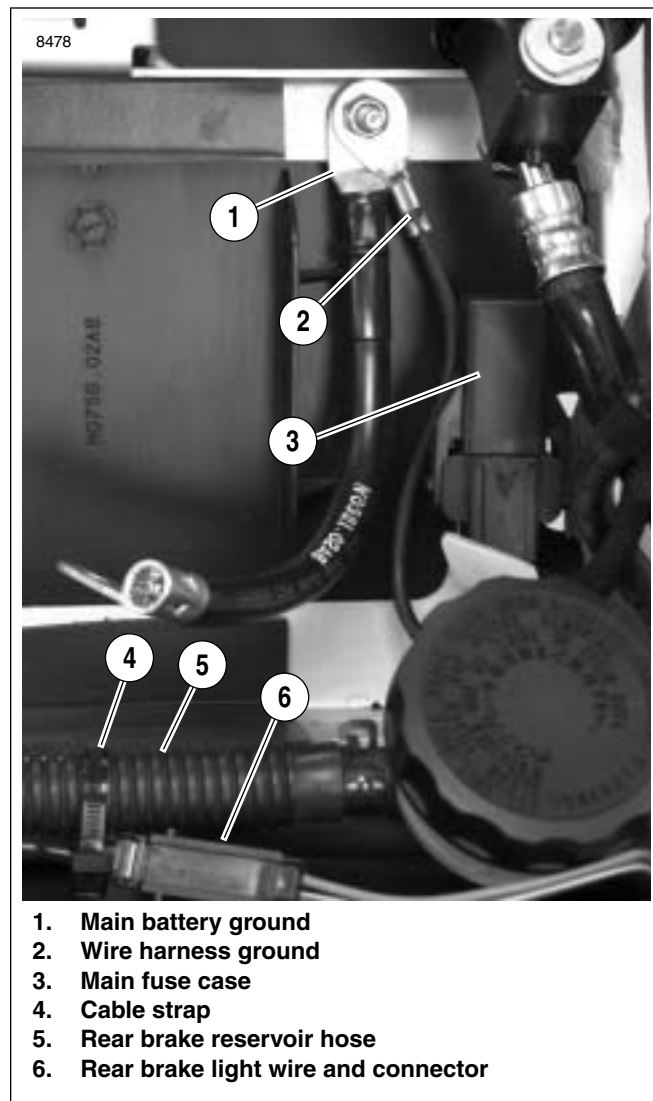


Figure 2-122. Inside Subframe Tail Assembly Hose and Wire Routing

13. See [Figure 2-122](#). Disconnect main battery ground (1) and ground to wire harness (2).
14. Remove main fuse case (3) from subframe tail assembly.

NOTE

When removing the main fuse case from subframe tail assembly, be very careful not to bend the subframe.

15. See [Figure 2-122](#). Cut cable strap (4) holding rear brake reservoir hose (5) and rear brake light wire (6).
16. Disconnect rear brake light connection (6).

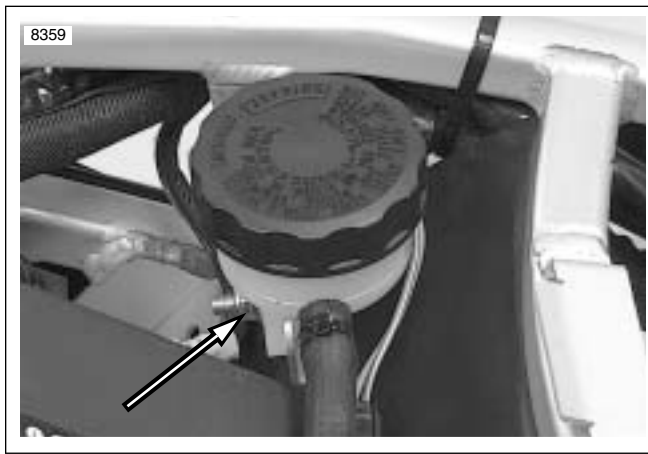


Figure 2-123. Remote Reservoir Clamp Nut

17. See [Figure 2-123](#). Remove rear brake reservoir clamp nut.
18. Disconnect fuel pump connection and remove connector from subframe tail assembly. See [4.39 FUEL PUMP](#).
19. Remove shock reservoir fasteners and feed the reservoir out of subframe tail assembly. See [2.22 REAR SHOCK ABSORBER](#).
20. See [Figure 2-120](#). Remove subframe tail assembly fasteners (8) and remove subframe tail assembly (7) from frame.

CLEANING

NOTE

Do not use wheel care products or other compounds developed specifically for cleaning and polishing powdercoat. These cleaners could potentially damage the tail section finish.

The cast aluminum tail section has a black powdercoat. The powdercoat must be cleaned using only mild soap and warm water. After washing, always dry the surface using a clean, soft cloth.

ASSEMBLY

1. Install subframe tail assembly (7) to frame and tighten fasteners (8) to 21-23 ft-lbs (28-31 Nm) using LOCTITE 272.
2. Connect fuel pump connection and install connector onto subframe tail assembly. See [4.39 FUEL PUMP](#).
3. See [Figure 2-122](#). Feed rear brake light connector (6) into subframe tail assembly and connect.
4. Install main fuse case (3) onto subframe tail assembly.
5. Install main battery ground (1) and ground to wire harness (2) to subframe tail assembly. Tightening fastener to 48-72 **in-lbs** (5.4-8 Nm).
6. See [Figure 2-121](#). Feed the rear shock reservoir (4) through second subframe tail assembly support.
7. Install rear shock reservoir into shock reservoir clamp and install clamp on to subframe tail assembly. Do not tighten. See [2.22 REAR SHOCK ABSORBER](#).
8. Check rear shock reservoir suspension screw alignment with upper body work.
 - a. Install upper body work without tightening any fasteners.
 - b. Move the rear shock canister in position to see the suspension screw through the upper body work.
 - c. Remove upper body work and tighten rear shock reservoir clamp to 120-144 **in-lbs** (14-16 Nm).
9. See [Figure 2-121](#). Feed fuel vent hose (1) through tail section, keeping the hose on top of rear shock reservoir hose. See [D.1 HOSE AND WIRE ROUTING](#) for hose and wire routing.
10. Install cable strap (3) holding shock reservoir hose, wire harness and fuel vent hose to subframe tail assembly.
11. See [Figure 2-123](#). Feed rear brake reservoir hose underneath subframe tail assembly and install rear brake reservoir tightening fastener to 48-72 **in-lbs** (5.4-8.1 Nm).
12. See [Figure 2-122](#). Install cable strap holding brake light connector and rear reservoir hose.

13. See [Figure 2-120](#). Install lower body work (9) and trunk (11) onto subframe tail assembly (7).
 - a. Install trunk (11).
 - b. Install lower body work (9) underneath subframe tail assembly by tightening fasteners (10) to 12-36 **in-lbs** (1.3-4 Nm).
14. Install passenger footpeg mounts. Tightening footpeg mount fasteners to 25-28 ft-lbs (34-38 Nm). See [2.29 FOOTPEG, HEEL GUARD AND MOUNT](#).
15. See [Figure 2-121](#). Connect rear power harness to tail light harness (5).
16. Install christmas tree tie down that holds the turn signals and tail light wire harness to subframe tail assembly. See [7.14 TURN SIGNALS](#).

WARNING

Be sure that all lights and switches operate properly before operating motorcycle. Low visibility of rider can result in death or serious injury. (00316a)

17. See [Figure 2-120](#). Install license plate bracket (13) to lower tail body work (9) and tighten fasteners (12) to 36-48 **in-lbs** (4-5 Nm).
18. Install turn signals and reflectors onto lower body work and tighten to 25-28 **in-lbs** (2-3 Nm). See [7.14 TURN SIGNALS](#).
19. Connect turn signal bullet connections and tail light connections. See [7.14 TURN SIGNALS](#) and [7.13 TAIL LAMP](#).
20. Install passenger seat latch (14) from rear of subframe tail assembly and tighten to 60-96 **in-lbs** (7-11 Nm).

21. See [Figure 2-120](#). Install upper body work onto subframe tail assembly.
 - a. Connect passenger lock cable (6) by installing ferule into lock lever.
 - b. Starting on the left side of the subframe tail assembly cover the lock cable and wire harness and align upper body work (1) on subframe tail assembly (7).
 - c. Install tail body work starting with the fastener in the center of upper body work and between the passenger and rider seat. Tighten all fasteners to 12-36 **in-lbs** (1-4 Nm).

WARNING

Connect positive (+) battery cable first. If positive (+) cable should contact ground with negative (-) cable connected, the resulting sparks can cause a battery explosion, which could result in death or serious injury. (00068a)

22. Install battery by threading positive cable (red) into threaded hole first tightening to 72-96 **in-lbs** (8-11 Nm). See [1.5 BATTERY MAINTENANCE](#).

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)

23. Install seat and pillion. See [2.38 SEAT](#).

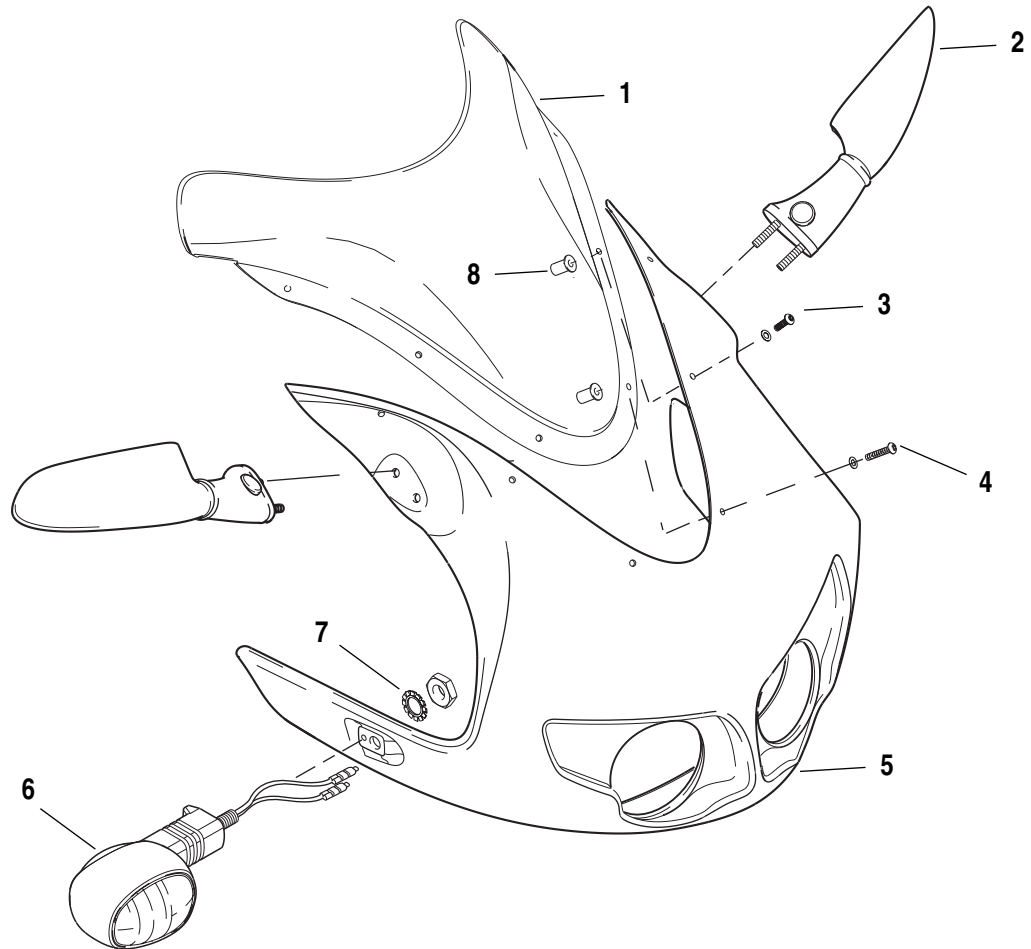
REMOVAL

1. See [Figure 2-124](#). Remove two center (4) and four side windscreen fasteners (3) to remove windshield (1).
2. Remove mirrors (2).
3. Remove turn signals (6, 7). See [7.14 TURN SIGNALS](#) and remove front fairing (5).

INSTALLATION

1. See [Figure 2-124](#). Position fairing (5) onto fairing support bracket and install turn signals (6, 7). See [7.14 TURN SIGNALS](#).
2. Install mirrors (2) with fasteners and tighten to 72-96 **in-lbs** (8-11 Nm).
3. Install two center (4) and four side windscreen fasteners (3) and tighten to 10-12 **in-lbs** (1-1.4 Nm).

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1. Windshield
2. Mirrors
3. Side windshield fastener
4. Center windshield fastener
5. Front fairing
6. Turn signal
7. Turn signal fastener
8. Well nut

Figure 2-124. Front Fairing and Windscreen

REMOVAL

Rider Seat

1. See Figure 2-125. Peel up rear corners of seat and remove two fasteners.
2. Pull seat back over tail section and remove.

Pillion Seat

NOTE

The trunk is located under the pillion seat.

1. See Figure 2-126. Insert ignition key into pillion seat lock located on left side of motorcycle. Turn key clockwise to disengage rear seat latch.

NOTE

Do not place keys in under seat storage area. If seat is installed, keys will not be accessible.

2. Lift and remove pillion seat.

INSTALLATION

Rider Seat

1. Position seat in mounting position with center tab aligned with slot on frame crossmember.
2. Slide seat forward to engage center tab in slot. Pull up on front of seat to verify tab/slot engagement.

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)

3. Pull up rear corners of seat and tighten two fasteners to 12-36 in-lbs (1-4 Nm).

Pillion Seat

1. Install seat by sliding metal locating tab on front underside of seat into opening on motorcycle.
2. Align rear tab with latch slot at rear of motorcycle.
3. Press down firmly on rear of pillion seat to engage seat latch. Pull up on rear of pillion seat to make sure latch is engaged.
4. Turn ignition key counterclockwise and remove from seat lock.

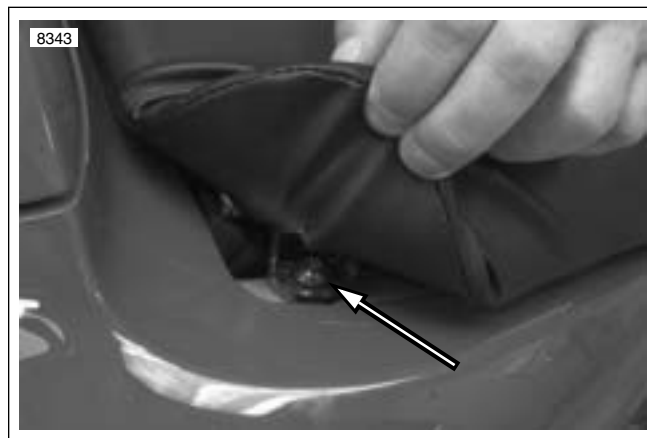


Figure 2-125. Accessing Rider Seat Screws

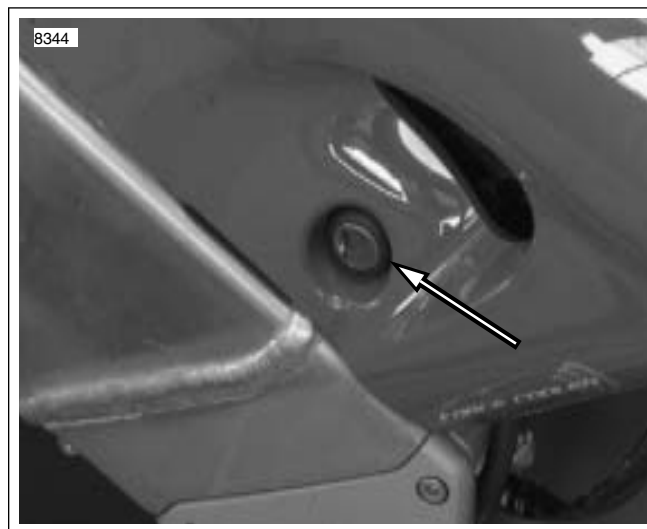


Figure 2-126. Pillion Seat Lock

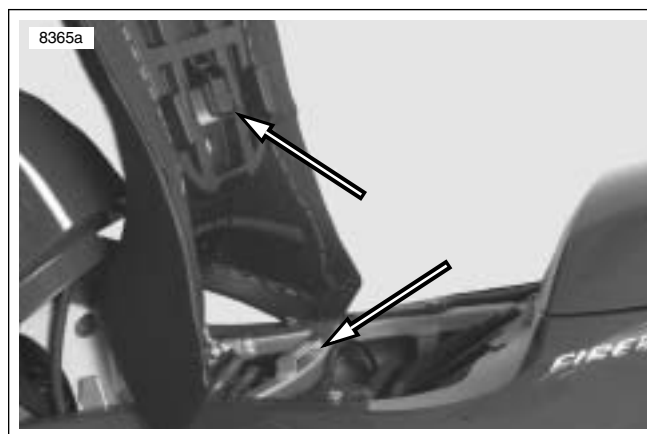


Figure 2-127. Center Tab and Frame Slot

REMOVAL

1. Remove rider and pillion seat. See [2.38 SEAT](#).
2. Remove upper body work on tail section. See [2.36 SUB-FRAME TAIL ASSEMBLY AND BODY WORK](#).
3. See [Figure 2-128](#). Disconnect passenger lock cable (9) by removing cable from seat lock plate (6) and ferrule from seat lock lever (4).
4. Remove seat lock lever (4) by removing fastener (2) and washer (3) from seat lock (7).
5. Remove spring (5).
6. Remove seat lock clip (1) by sliding from seat lock plate (6).
7. Remove seat lock plate (6) and seat lock (7).

INSTALLATION

1. See [Figure 2-128](#). Install the seat lock (7) on to upper tail body work.
2. Install seat lock plate (6) by aligning plate tab onto seat lock (7).
3. Install seat lock clip (1) by sliding clip aligning clip groove onto seat lock plate (6) tab.
4. Position short tab of spring (5) into seat lock notch.
5. Position long end of spring into the seat lock lever (4).
6. Load the spring (5) by turning the seat lock lever (4) counterclockwise 1/4 turn.
7. Once the spring is loaded, install the seat lock lever (4) onto the lock aligning the lever to the square groove that is cast into the seat lock (7).
8. Fasten the lock lever (4) to the seat lock (7) with the washer (3) and fastener (2).
9. Install the ferrule (8) of the seat lock cable (9) into the seat lock lever (4).
10. Open and close the seat lock with ignition key to verify that cable is working properly.
11. Install the seat lock cable (9) into the seat lock plate (6).
12. Install upper body work on tail section. See [2.36 SUB-FRAME TAIL ASSEMBLY AND BODY WORK](#).
13. Install rider and pillion seat. See [2.38 SEAT](#).

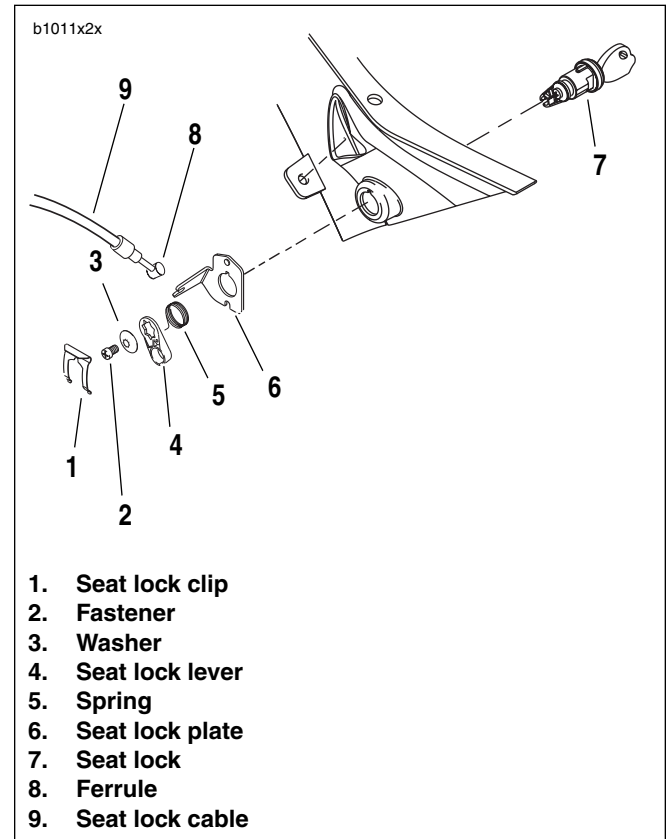


Figure 2-128. Seat Lock and Cable Assembly

GENERAL

⚠ CAUTION

This motorcycle does NOT have a locking sidestand. Park the motorcycle on a level, firm surface. An unbalanced motorcycle can fall, which could result in death or serious injury. (00122a)

The sidestand is located on the left side of the motorcycle. The sidestand swings outward to support the motorcycle for parking.

REMOVAL

1. Remove muffler. See [Muffler and Straps](#) in [2.28 EXHAUST SYSTEM](#).
2. See [Figure 2-130](#). Remove fasteners (4) securing side-stand bracket (3) to frame.
3. Remove sidestand.

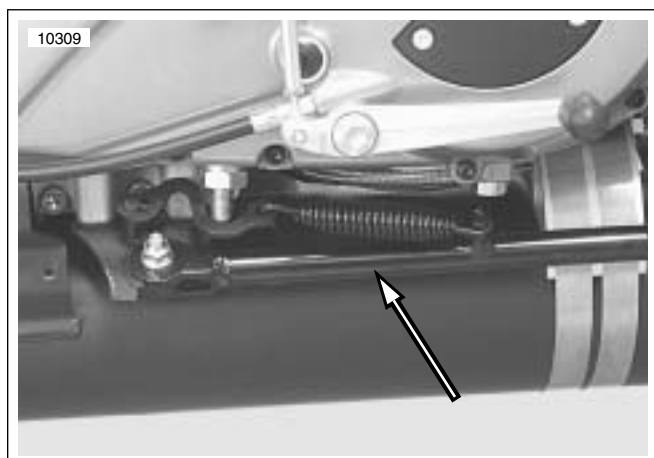


Figure 2-129. Sidestand, Retracted

DISASSEMBLY

NOTE

Sidestand assembly does not have to be removed from motorcycle in order to remove sidestand leg.

1. Remove two fasteners from the left side of chin fairing.
2. See [Figure 2-131](#). Remove sidestand leg.
 - a. Retract sidestand leg (1).
 - b. Remove sidestand spring (2) and spring extension plate (5) using SNAP-ON SPRING TOOL (Part No. HE-52B).
 - c. Remove sidestand pivot bolt (3).
3. Extend sidestand leg and remove.

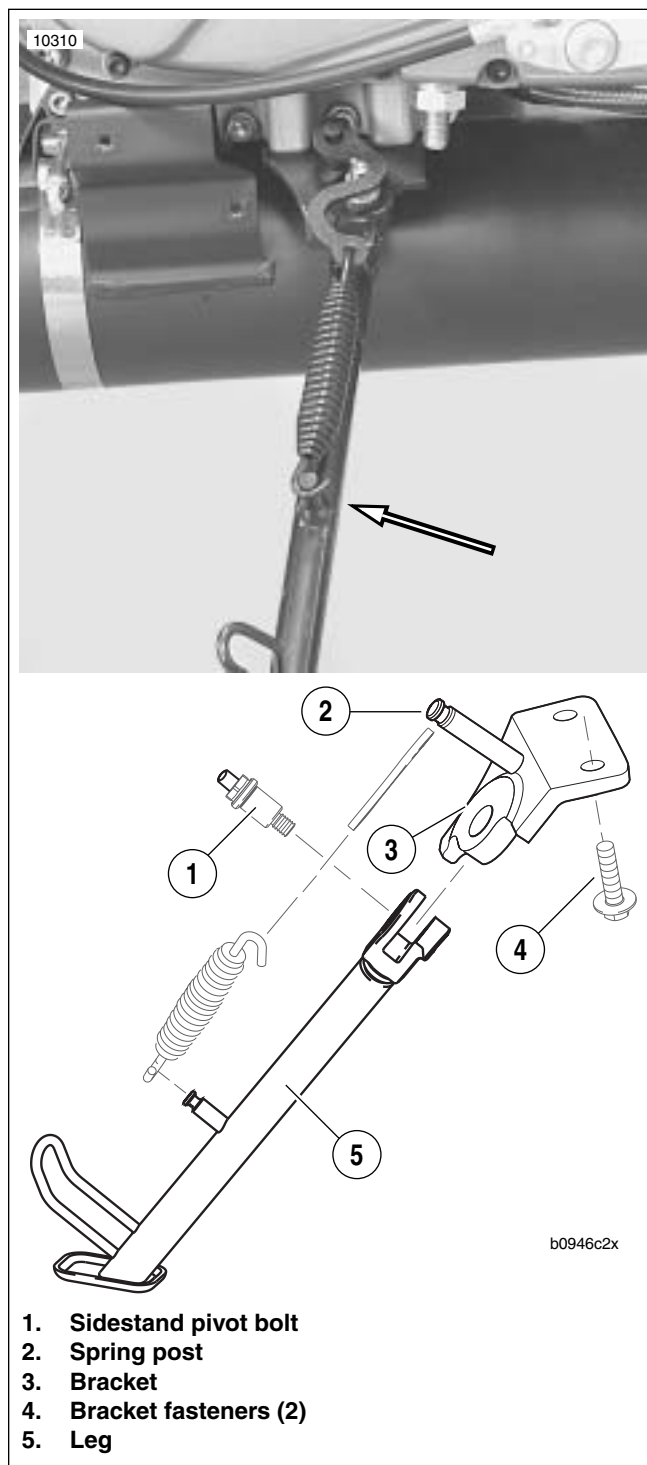


Figure 2-130. Sidestand Assembly (Extended)

ASSEMBLY

1. See [Figure 2-131](#). Install sidestand leg (1).
 - a. See [Figure 2-132](#). Lubricate sidestand pivot bolt (3) and mating portions on sidestand bracket (5) with WHEEL BEARING GREASE (Part No. 99855-89) as shown in [Figure 2-132](#).
 - b. See [Figure 2-133](#). Apply LOCTITE 272 (red) to threaded area (clevis) of sidestand leg.

NOTE

Applying LOCTITE to threaded area of clevis on sidestand leg, instead of threads on the pivot bolt, will eliminate build-up between clevis and sidestand bracket which can interfere with the applied lubricant.

- c. See [Figure 2-131](#). Install sidestand leg (1) and apply LOCTITE 272 (red) to sidestand pivot bolt (3) tightening to 18-20 ft-lbs (24-27 Nm).
- d. Retract sidestand leg.
- e. Install spring extension plate (4) and sidestand spring (2) using SNAP-ON SPRING TOOL (Part No. HE-52B).

NOTE

Extension plate should curve away from primary chain adjustment screw to allow for clearance around adjustment screw.

INSTALLATION

1. Apply LOCTITE 272 to fasteners and install sidestand to frame tightening the sidestand bracket fasteners to 25-27 ft-lbs (34-37 Nm).
2. Install muffler. See [Muffler and Straps](#) in [2.28 EXHAUST SYSTEM](#).
3. Inspect sidestand.

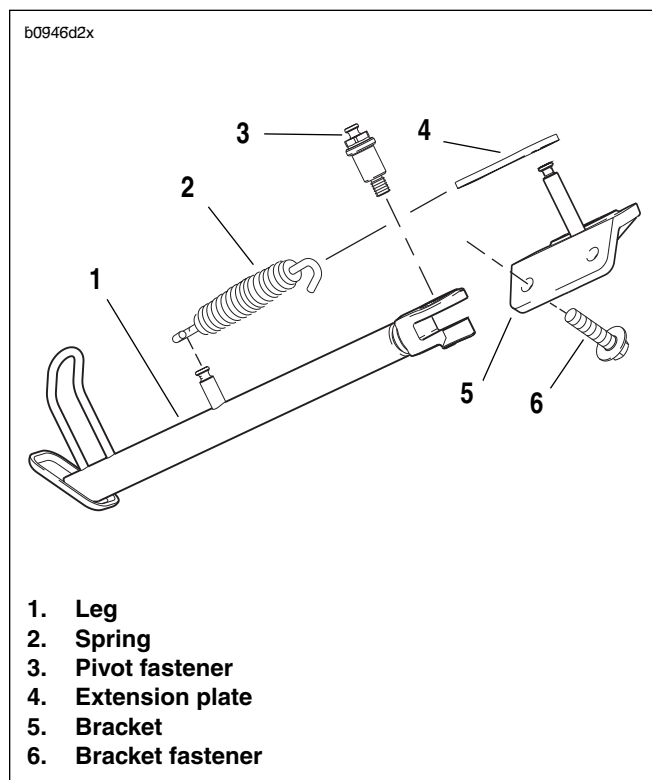


Figure 2-131. Sidestand Assembly

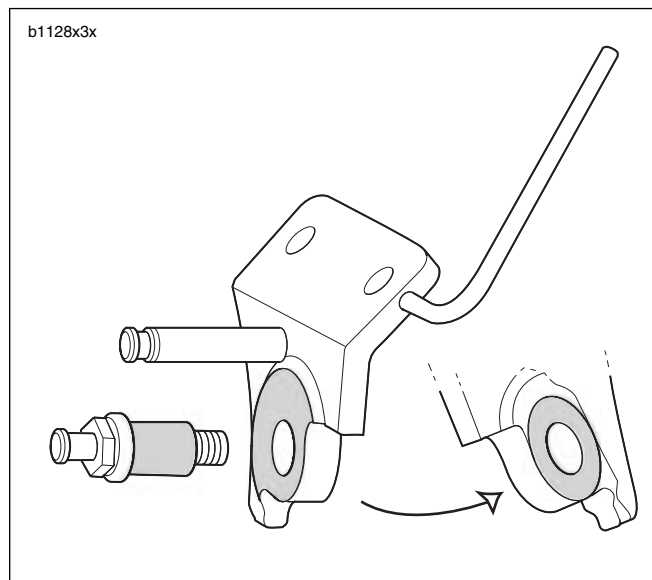


Figure 2-132. Lubricating Points (Shaded Areas)

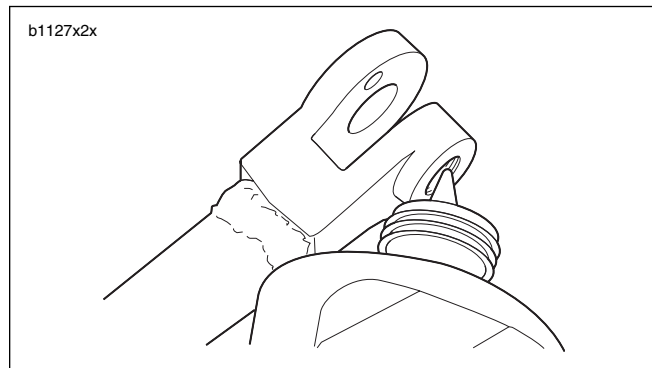


Figure 2-133. Threaded Area for Loctite Application

NOTES
