

SERVICE BULLETIN **Buell**[®]

B-025A

August 31, 1999

AMERICAN MOTORCYCLES

SAFETY RECALL CODE 0816 - SWINGARM

GENERAL

Buell Motorcycle Company has learned that certain 1995 through 1998 Buell motorcycles were built with a swingarm that could break. If the swingarm should break, vehicle handling could be adversely affected. Accordingly, Buell Motorcycle Company is conducting a voluntary recall campaign to formally recall all potentially affected motorcycles.

This campaign involves all 1995 through 1998 S1 Lightning, S1 White Lightning, M2 Cyclone, S2 Thunderbolt, S2T Thunderbolt, S3 Thunderbolt and S3T Thunderbolt model Buell motorcycles manufactured between February 1, 1994 and June 16, 1998.

This condition will be remedied by replacing the swingarm on all potentially affected vehicles.

NOTE

This bulletin contains updated, simplified service and credit procedures and replaces bulletin B-025.

Since the publication of the original bulletin, there have been a few additions and changes to the procedure:

- For 1996 S1 models, a new aid, the pivot shaft removal aid (Part No. 91499-96Y), has been developed to assist in removal of the swing arm pivot shaft. This aid will be shipped to your dealership, free of charge, on or before September 13, 1999. Additional pivot shaft removal aids can be purchased as required.
- In case of damage to the threaded rod (Part No. 2450Y) upon removal, additional threaded rods will be shipped to your dealership, free of charge. You can order more threaded rods after our initial wave shipments are complete and upon availability.
- A rear belt guard spacer and loop cushion clamp were added to the S2/S2T kit (Part No. 93924YA).
- Stationary Noise Decals which must be installed on Australian market swingarms were shipped to the Australian distributor with installation instructions (-J01767).
- The procedure has been modified to eliminate muffler and swing arm mount block removal. Items in the 93928Y kit that appear with an asterisk are still provided, but are no longer required when doing the modified procedure in this bulletin.
- The warranty procedure has been changed instructing you to destroy and discard the swing arm instead of returning it. See CREDIT PROCEDURES.

DEALER ACTION, AFFECTED VEHICLES

Buell Distribution Corporation had previously sent to you a complete list of all vehicles shipped to your dealership involved in this recall. To ensure the safety of all affected riders, it is your responsibility to perform the required service on all affected vehicles, even if the motorcycle was not purchased from your dealership.

If you are not sure that a safety recall has been completed on a particular Buell motorcycle, contact the recall information line at 1-800-448-1708. Recall information is also available on TALON and hd-net.com.

IMPORTANT NOTE

Because only registered owners, as shown on the attached list, will receive notification from Buell Distribution Corporation, we request that you contact any owners of vehicles still listed as unregistered. Advise them of the safety recall and make arrangements for them to come in for recall service. We also require that you provide us with their names, addresses and V.I.N.s as soon as possible. This will enable us to mail them an owner's letter as required by National Traffic and Motor Vehicle Safety Act, as amended.

There are two swingarm recall kits, one for all models except 1995 and 1996 S2/S2T, and one for 1995 and 1996 S2/S2T.

Initial shipment of S1, S1W, M2, S3 and S3T recall kits began on July 12, 1999. Initial shipment of S2 and S2T recall kits will begin on or before September 6, 1999. All kits will be shipped direct from the Franklin Distribution Center, no charge, transportation paid. To order the remainder of kits that may be needed, please fill out the attached order form and send/fax it to the Warranty Department at (FAX) 414-343-8346.

Buell Distribution Corporation reserves the right to conduct wave shipments in lieu of processing orders and/or adjusting order quantities, depending on the availability of parts.

In addition to the kit contents, you will require the rear isolator replacement aid (Part No. 91430-96Y) to install the swingarm (on all except S2/S2T models) as described in this procedure. The rear isolator replacement aid was shipped to your dealership, free of charge, on or before July 9, 1999. Additional rear isolator aids can be purchased as required and will be shipped based on availability.

ROUTING	SERVICE MANAGER	SALES MANAGER	PARTS MANAGER	LEAD TECHNICIAN	TECHNICIAN NO. 1	TECHNICIAN NO. 2	TECHNICIAN NO. 3	TECHNICIAN NO. 4	RETURN THIS TO:
INITIAL HERE									

The swingarm recall kit for S1, S1W, M2, S3 and S3T models (Part No. 93928Y) consists of:

- Swingarm
- (2) Rear Isolators
- (2) Locknuts (tie bar)
- (2) Washers (pinch bolts)
- (2) Grommets (rear inner fender)
- Locknut (shock mounting)
- Lockwasher (rear tie bar)
- (3) Wellnuts (lower belt guard and rear inner fender)
- Locknut (Swingarm/Drive Support)
- Cable Tie (thin) (for fuel tank vent)
- Clamp (for fuel hose)
- *(2) Muffler grommets
- *Spacer (muffler mount grommet)
- *Bolt (muffler mount grommet)
- *Lockwasher (ground strap)
- *(2) locknuts (swingarm mount block-top)
- *(2) locknuts (swingarm mount block-bottom)
- *Locknut (Battery Clamp)
- *(3) Locknuts (Muffler)
- *Locknut (Front Collector Support)
- *(2) Exhaust Port Gaskets

NOTE

Items that appear with an asterisk are still provided, but are no longer required when doing the modified procedure in this bulletin.

The swingarm recall kit for 1995 and 1996 S2 and S2T (Part No. 93924YA) consists of:

- Swingarm
- (2) Rear Isolators
- (2) Washers (pinch bolts)
- (2) Locknuts (rear brake master cylinder)
- Locknut (shock mounting)
- Rear brake line
- (4) Banjo washers
- Wire Form (for brake line)
- Shoulder bolt (for rear inner fender)
- Bolt (for rear inner fender)
- Washer (for rear inner fender)
- T-washer (for rear inner fender)
- Grommet (for rear inner fender)
- (2) Rubber Washers (for rear inner fender)
- (3) Wellnuts (for belt guard and rear inner fender)
- (2) Cable Ties (thick) (for brake light harness)
- Rear Belt Guard Spacer (for rear belt guard)
- Loop cushion clamp (for rear brake line)

TORQUE VALUES

ITEM	TORQUE		NOTES
Isolator Bolts	100-110 ft-lbs	135.6-149.1 Nm	LOCTITE THREADLOCKER 272 (red) LOCTITE ANTI-SEIZE under bolt head
Mount Block Pinch Bolts	18-20 ft-lbs	24-27 Nm	LOCTITE THREADLOCKER 243 (blue)
Rear Axle Nut	66-73 ft-lbs	89.5-98.9 Nm	metric
Rider Footpeg Bolt	25-30 ft-lbs	34-41 Nm	
Shock Absorber Mounting Bolts (Front and Rear)	40-45 ft-lbs	54.2-61.0 Nm	
Sprocket Cover Screw	48-72 in-lbs	5.4-8.6 Nm	LOCTITE THREADLOCKER 243 (blue)
Sprocket Cover Screws	20-25 ft-lbs	27.1-33.9 Nm	LOCTITE THREADLOCKER 272 (red)
Swingarm/Drive Support Lock-nut	30-35 ft-lbs	40.7-47.4 Nm	
Threaded Rod (1997-98 models)	11-12 ft-lbs	15-16 Nm	LOCTITE THREADLOCKER 222 (purple)
Tie Bar Bolts	30-33 ft-lbs	41-45 Nm	
Banjo Bolt to Master Cylinder	17-22 ft-lbs	23-30 Nm	
Banjo Bolt to Caliper	10-12 ft-lbs	14-16 Nm	
Isolator Mount Bolts	27-30 ft-lbs	37-41 Nm	LOCTITE THREADLOCKER 262 (red)
Rear Brake Line Switch	84-96 in-lbs	9.5-10.8 Nm	LOCTITE PIPE SEALANT WITH TEFLON
Rear Inner Fender Mount Bolts	6-8 ft-lbs	8-11 Nm	LOCTITE THREADLOCKER 243 (blue)
Rear Brake Master Cylinder Mount Bolts	8-10 ft-lbs	11-14 Nm	

CRITICAL MEASUREMENTS

MEASUREMENT	SPECIFICATION
Correct Swingarm Preload	3.5-5.5 lbs (1.6-2.5 kg)
Isolator Roll Pin Protrusion	0.080-0.120 in. (2.032-3.048 mm)
Rear Belt Deflection	1.5-1.75 in. (38.1-44.5 mm) deflection with 10 lbs (4.5 kg) of upward force applied to center of lower span. Measurement must be taken with rear suspension fully unloaded. <i>NOTE: The rear suspension is considered fully unloaded when the motorcycle's weight is not compressing the rear shock. It is not necessary to raise the rear wheel off the ground to reach this point.</i>

REMOVING SWINGARM

S1, S1W, M2, S3, S3T Models

NOTE

- Perform the following procedures according to the guidelines given in the service manual for the model being serviced when indicated.
 - This procedure may be performed in conjunction with the shock replacement bulletin B-024 (recall 0817). See Bulletin B-024 for instructions on shock replacement and preload adjustment when instructed in this bulletin.
 - Mark all hardware as it is removed so that it may be returned to its original location.
1. Position motorcycle on a suitable lift and secure front wheel to lift.

WARNING

To avoid accidental start-up of vehicle and possible personal injury, disconnect the battery cables before proceeding. Always disconnect the negative battery cable first. If the positive cable should contact ground with the negative cable installed, the resulting sparks may cause a battery explosion, which could result in death or serious injury.

2. Disconnect **both** battery cables from battery, negative cable first.
3. Remove seat, fuel tank and tail section (and saddlebags on S3T models). See appropriate service manual, Sections 2 and 4 for procedures.
4. Remove the rear inner fender and lower belt guard. See appropriate service manual, Section 2 for procedures.
5. Remove the left side rider footpeg mounting bolt and footpeg. Allow footpeg and shift linkage to hang being careful not to scratch primary cover.
6. See Figure 1. On the right side of the motorcycle, remove the front sprocket cover (and remove fairing lower hardware on S3T models). See appropriate service manual, Section 2 for procedure.
7. See Figure 10. Strap tail section of frame to overhead beam or hoist and raise motorcycle until rear wheel is off the lift.
8. Remove the rear brake caliper and rear wheel. Cable tie caliper to frame so it does not hang freely. See Section 2 of appropriate service manual for procedure.
9. Remove rear shock absorber rear mounting bolt, and locknut. Discard locknut. See appropriate service manual, Section 2 for procedure.

NOTE

Do Step 10 only if replacing shock absorber as part of recall #0817 (Bulletin B-024).

10. Remove rear shock absorber front mounting bolt, locknut and shock absorber from motorcycle. Discard locknut. See appropriate service manual, Section 2 for procedure.
11. See Figure 11. Place a suitable jack under the swing arm mount block and raise until crankcase is supported by jack.

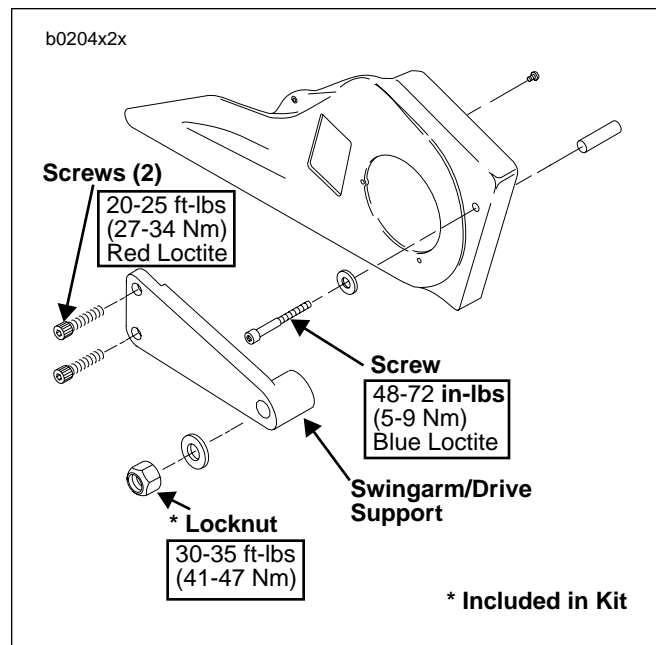


Figure 1. Sprocket Cover

12. See Figure 12. Strap the engine down to the lift with a shipping strap. Position strap so it is located between starter and rear cylinder. Engine and frame assembly are now both supported (by jack/strap and frame strap).

CAUTION

All tie bars must be disconnected before using the isolator replacement aid. Failure to comply may result in frame distortion or damage.

13. Remove frame side tie bar mounting hardware from front and center tie bars. Discard locknuts.
14. See Figure 2 or 3. Remove rear tie bar bolt, lockwasher and washers from mount block. Discard lockwasher.
15. See Figure 2 or 3. Remove right side isolator bolt and washer from swingarm bearing adjustment bolt.
16. See Figure 4. Working on the right side first, insert the rear isolator replacement aid between mount block and frame. NOTE: Ledge on aid should engage top of mount block.

CAUTION

Do not alter tool or shim in an attempt to spread frame further than tool will allow. Failure to comply may result in frame distortion or damage.

17. Turn nut on rear isolator replacement aid clockwise to expand frame from swingarm mount block until isolator can be removed. Nut will stop when limit of travel is reached.

NOTE

The **new** swingarm pivot is wider and does not require shims.

18. Disengage right side rear isolator from roll pin in frame by pulling inboard. Remove isolator by pulling out from 4:00 or 5:00 position. Discard rear isolator (and shim if present).
19. Remove rear isolator replacement aid by turning nut counterclockwise.

20. Remove left side isolator bolt and washer from bearing adjusting bolt.
21. Pull frame to left and remove left side isolator from 6:00 or 7:00 position.
22. See Figure 5. Support swing arm with strap (connect strap at rear frame support tube and rear muffler bracket).

NOTE

The pivot assembly in the swingarm varies from the 1995-96 model years to the 1997-98 model years. See appropriate service manual for complete procedures.

23. Disassemble swingarm.

NOTE

Engine may have to be raised and lowered slightly with jack while performing the following to allow access to left pinch bolt and installation of pivot shaft adjuster tool and pivot shaft removal aid.

For 1996 S1 Models (See Figures 2 and 6):

- a. Remove right side pinch bolt.
- b. Unthread (loosen) right side bearing adjusting bolt using PIVOT SHAFT ADJUSTER TOOL (Part No. B-41175).
- If bearing adjusting bolt unthreads from pivot shaft, remove from vehicle by pulling the frame to the right and sliding the adjuster bolt out between the frame and the mount block.
- If bearing adjusting bolt unthreads *with* the pivot shaft, remove left side pinch bolt and left bearing adjusting bolt by pulling the frame to the left and sliding the adjusting bolt out between the frame and mount block.

NOTE

The side of the swing arm opposite pivot shaft removal aid must have pinch bolt installed for the aid to work properly.

- c. If left side bearing adjusting bolt was removed, reinstall right side pinch bolt.
- d. Apply LOCTITE ANTI-SIEZE to threads of pivot shaft and removal aid.
- e. Install pivot shaft removal aid (Part No. 91499-96Y) to side where bearing adjusting bolt was removed.
- f. Rotate pivot shaft removal aid at least ten turns or until lightly seated. Tighten spacer on aid against pivot shaft with jam nut.
- g. Rotate pivot shaft removal aid counterclockwise to unthread/remove pivot shaft from bearing adjusting bolt. Remove aid and pivot shaft as an assembly.
- h. Remove remaining pinch bolt and bearing adjusting bolt.
- i. Hand support swingarm and remove support strap. Remove swingarm from mount block.
- j. Loosen jam nut and remove aid from pivot shaft.

For 1997-98 All Models (See Figure 3):

- a. **On M2, S3/S3T models only:** Remove rear upper left muffler mount bolt that attaches to mount block (to provide clearance to move frame to remove bearing adjusting bolt).
- b. Remove right side pinch bolt.

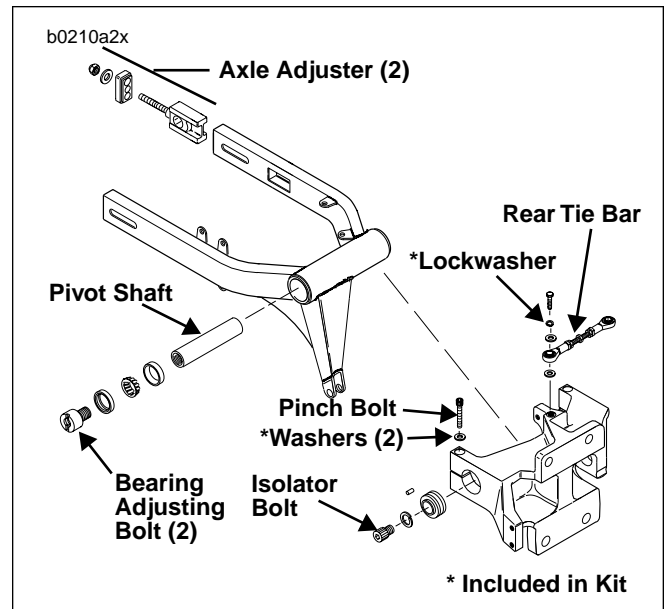


Figure 2. 1996 S1 Swingarm and Mount Block

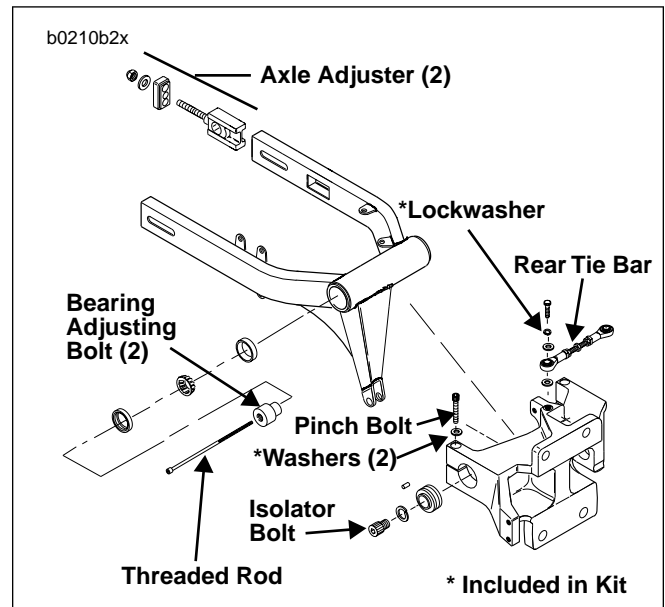


Figure 3. 1997-98 Swingarm and Mount Block

- c. Remove threaded rod. Remove right side bearing adjusting bolt by pulling the frame to the right and sliding the adjuster bolt out between the frame and mount block.

NOTE

Engine may have to be raised and lowered slightly with jack while performing the following to allow access to left pinch bolt.

- d. Remove left side pinch bolt. Remove left side bearing adjusting bolt by pulling the frame to the left and sliding the adjuster bolt out between the frame and mount block.
- e. Hand support swingarm and remove support strap. Remove swingarm from mount block.

24. See Figure 2 or 3. Remove (slide out) axle adjusters from old swingarm.

INSTALLING NEW SWINGARM

S1, S1W, M2, S3, S3T Models

1. Measure isolator roll pin protrusion on both left and right isolator mounts with calipers or metal rule. Roll pin should not protrude more than 0.120 in. (3 mm). If roll pin protrudes more than 0.120 in. (3 mm) file or grind until within specification; 0.080-0.120 in. (2.032-3.048 mm). Use care when filing to avoid creating sharp edges.

NOTE

- The new swingarm comes with the bearings installed and lubricated.
- The pivot assembly in the swingarm varies from the 1995-96 model years to the 1997-98 model years. See appropriate service manual for complete procedures.

2. See Figure 5. Position **new** swingarm to mount block using strap to support swing arm. Make sure swing arm bearings are aligned with mount block.

3. See Figure 2 or 3. Assemble swingarm.

For 1996 S1 Models:

- a. See Figure 2. Clean internal threads on both ends of pivot shaft and apply anti-seize to threads. Insert pivot shaft into swing arm.
- b. Clean threads of bearing adjusting bolt and install through left side of mount block by first pulling the frame to the left and sliding the adjusting bolt in between the frame and mount block. Loosely thread adjusting bolt into the pivot shaft using PIVOT SHAFT ADJUSTER TOOL (B-41175) until bolt head is flush with mount block.

NOTE

Engine may have to be raised and lowered slightly with jack while performing the following to allow access to left pinch bolt and installation of pivot shaft adjuster tool.

- c. Apply LOCTITE THREADLOCKER 243 (blue) to left pinch bolt and install bolt and **new** washer to mount block. Tighten pinch bolt to 18-20 ft-lbs (24-27 Nm).
- d. Clean threads of remaining bearing adjusting bolt and install through right side of mount block by first pulling the frame to the right and sliding the adjuster bolt in between the frame and mount block. Loosely thread adjuster bolt into pivot shaft.
- e. Remove swingarm support strap from swingarm.
- f. See Figure 7. Using a scale and PIVOT SHAFT ADJUSTER TOOL (Part No. B-41175), set swingarm preload. See appropriate service manual, Section 2 for procedure. Correct preload is 3.5-5.5 lbs (1.6-2.5 kg).

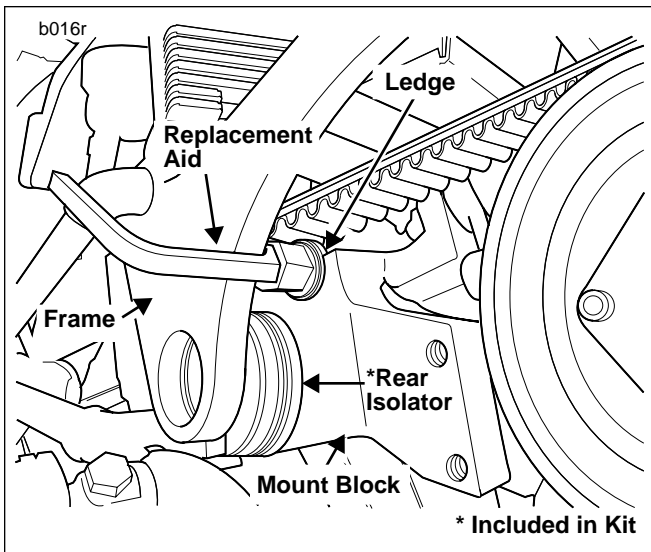


Figure 4. Rear Isolator Replacement Aid In Use

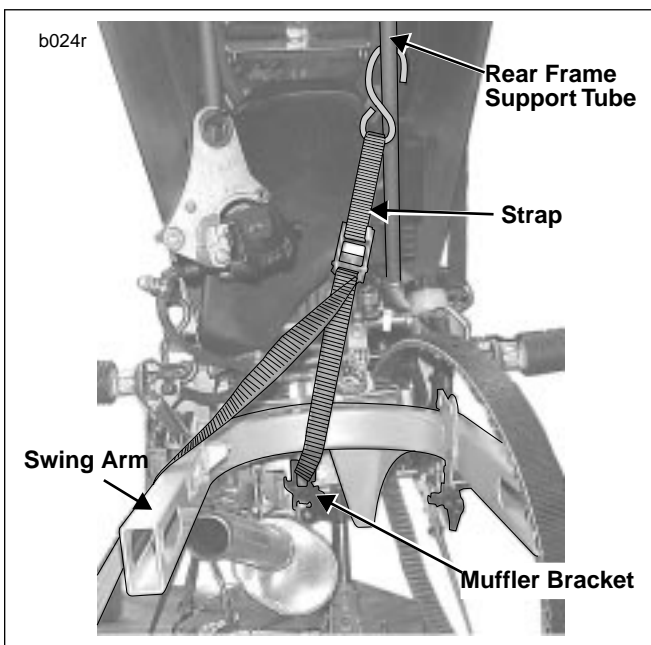


Figure 5. Swing Arm Supported with Strap (Typical)

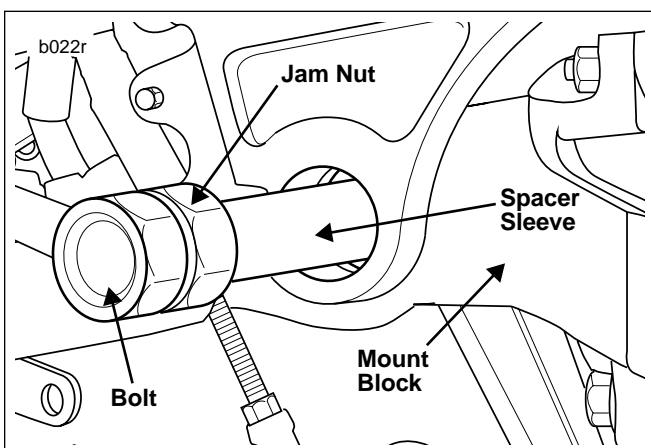


Figure 6. Pivot Shaft Removal Aid for 1996 S1 Models

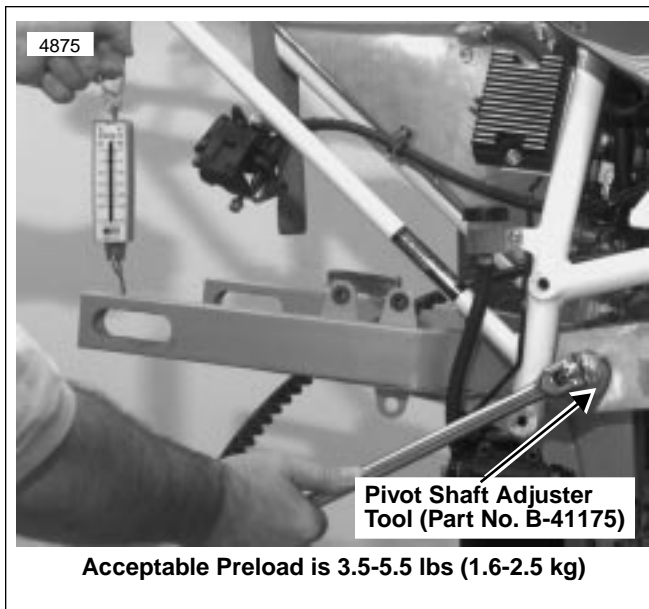


Figure 7. Adjusting Swingarm Preload (Typical)

For 1997-98 All Models:

- a. See Figure 3. Install left side bearing adjusting bolt (which has internal threads for threaded rod) through mount block by first pulling the frame to the left and sliding the adjuster bolt in between the frame and mount block. Make sure adjusting bolt head is flush with mount block.
 - b. Apply LOCTITE THREADLOCKER 243 (blue) to left pinch bolt and install bolt and **new** washer to mount block. Tighten pinch bolt to 18-20 ft-lbs (24-27 Nm).
 - c. Install right side bearing adjusting bolt through mount block by first pulling the frame to the right and sliding the adjuster bolt in between the frame and mount block.
 - d. Remove swingarm support strap.
 - e. Apply LOCTITE THREADLOCKER 222 (purple) to threaded rod. Install threaded rod through right side bearing adjusting bolt to left side adjusting bolt. Tighten threaded rod to 11-12 ft-lbs (15-16 Nm).
 - f. **For M2, S3/S3T:** Install rear upper muffler mount bolt to mount block.
4. Loosen left side pinch bolt and center swingarm within mount block.
 5. Tighten left pinch bolt to 18-20 ft-lbs (24-27 Nm).
 6. Apply LOCTITE THREADLOCKER 243 (blue) to right pinch bolt and install bolt and **new** washer to mount block. Tighten right pinch bolt to 18-20 ft-lbs (24-27 Nm).

NOTE

The **new** swingarm pivot is wider and does not require shims.

7. On left side of motorcycle, align locator hole with roll pin and install **new** rear isolator, provided in kit.
8. Apply anti-seize to underside of isolator bolt head. Apply LOCTITE THREADLOCKER 272 (Red) to threads of isolator bolt.

B-025A

CAUTION

- Use caution when installing isolator bolts. Make sure isolator bolt hole is aligned with threaded hole in bearing adjusting bolt to avoid cross-threading bolt.
 - See Figure 16. Observe seam on rubber isolator after isolator bolt is tightened. If seam twists, apply more LOCTITE ANTI-SEIZE to underside of isolator bolt heads. Failure to comply will result in damage to rubber isolators.
9. See Figure 2 or 3. Install isolator bolt and washer through rubber isolator and into bearing adjustment bolt. Tighten isolator bolt to 100-110 ft-lbs (135.6-149.1 Nm).
 10. See Figure 4. On right side of motorcycle, insert rear isolator replacement aid between mount block and frame.

CAUTION

Do not alter tool or shim in an attempt to spread frame further than tool will allow. Failure to comply may result in frame distortion or damage.

11. Turn nut on tool clockwise to expand frame from mount block. Nut will stop when limit of travel is reached.
12. Align locator hole in rear isolator with roll pin and install **new** rear isolator.
13. Turn nut on tool counterclockwise to allow frame to return to position. Remove tool from between frame and mount block.
14. Apply anti-seize to underside of isolator bolt head. Apply LOCTITE THREADLOCKER 272 (Red) to threads of isolator bolt.

CAUTION

- Use caution when installing isolator bolts. Make sure isolator bolt hole is aligned with threaded hole in bearing adjusting bolt to avoid cross-threading bolt.
 - See Figure 16. Observe seam on rubber isolator after isolator bolt is tightened. If seam twists, apply more LOCTITE ANTI-SEIZE to underside of isolator bolt heads. Failure to comply will result in damage to rubber isolators.
15. See Figure 2 or 3. Install isolator bolt and washer through rubber isolator and into bearing adjustment bolt. Tighten isolator bolt to 100-110 ft-lbs (135.6-149.1 Nm).
 16. Install front and center tie bars to frame with **new** locknuts. Tighten bolts to 30-33 ft-lbs (41-45 Nm). Install rear tie bar to mount block with **new** lockwasher. Tighten bolt to 30-33 ft-lbs. (41-45 Nm).
 17. Remove shipping strap from crankcase. Remove jack from under mount block.
 18. Install shock absorber.
 - If performing shock eye recall, obtain correct shock absorber from #0817 recall kit and install. See installation instructions from #0817 recall bulletin.
 - If shock eye recall is not being performed at this time, install original shock rear mounting bolt to swingarm with **new** locknut provided in kit. See appropriate service manual, Section 2 for procedure.

19. Apply LOCTITE ANTI-SEIZE to inner portion of ends of swingarm where axle adjusters will be. Install original axle adjusters to **new** swingarm.
20. Install rear wheel and rear brake caliper. See appropriate service manual, Section 2 for procedure.

NOTE

When checking belt deflection, have:

- No rider or cargo weight on motorcycle
 - Transmission in neutral
 - Belt and sprockets at room temperature
 - Motorcycle upright (not on side stand)
 - Rear suspension fully unloaded (lift motorcycle frame under tail section until motorcycle's weight is not compressing the rear shock - it is not necessary to raise the rear wheel off the ground to reach this point).
21. Check belt deflection.
 - a. Rotate wheel until belt is at it's tightest point.
 - b. Apply 10 lbs of upward force to belt at midpoint of bottom strand using BELT TENSION GAUGE (Part No. HD-35381).
 - c. Deflection (measured with 10 lbs of force) should be 1.50-1.75 in. (38.1-44.5 mm) at the bottom strand.
 - d. Adjust belt deflection if required. See appropriate service manual, Section 1 for procedure. Check belt deflection using procedure above (a.-c.).
 22. Install belt guard and rear inner fender to swingarm with two **new** grommets and three **new** wellnuts. Check to make sure there is clearance between the belt guard and rear sprocket.
 23. After rear inner fender is installed, check for proper brake line routing and clamp attachment points. Brake line routing and attachment points should be as shown in Figures 8 and 9.
 24. Remove hoist from tail section.
 25. See Figure 1. Install sprocket cover with original hardware and **new** locknut.
 - a. Apply LOCTITE THREADLOCKER 243 (blue) to screw. Install sprocket cover assembly with screw and washer. Tighten to 48-72 **in-lbs** (5.4-8.6 Nm).
 - b. Apply LOCTITE THREADLOCKER 272 (red) to screws and install. Tighten to 20-25 **ft-lbs** (27.1-33.9 Nm).
 - c. Install **new** locknut and washer. Tighten to 30-35 **ft-lbs** (40.7-47.4 Nm).
 26. Install left side rider footpeg. Tighten bolt to 25-30 **ft-lbs** (34-41 Nm).
 27. **S3T models Only:** Attach fairing lower. See appropriate service manual, Section 2 for procedure.

WARNING

After installing seat, pull upward on front of seat to be sure it is locked in position. If seat is loose, it could shift during vehicle operation resulting in loss of control of vehicle and death or serious injury.

28. Install tail section, fuel tank and seat (and saddlebags on S3T models). See appropriate service manual, Sections 2 and 4 for procedures. **NOTE:** Use **new** thin cable tie and hose clamp provided in kit on fuel tank.

NOTE

Australian models only: Install decal to swing arm as described in instruction sheet (-J01767) provided with decals.

WARNING

Always connect the positive battery cable first. If the positive cable should contact ground with the negative cable installed, the resulting sparks may cause a battery explosion, which could result in death or serious injury.

29. Connect battery cables, positive cable first, to battery terminals.

WARNING

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

30. Turn ignition key ON, depress rear brake pedal and check for proper brake light operation.
31. Adjust rear shock absorber preload. See #0817 Recall Bulletin for adjustment instructions for **new** shock absorber. See appropriate service manual, Section 2 for adjustment instructions for original shock absorber.

WARNING

After completing repairs or bleeding the system, always test motorcycle brakes at low speed. If brakes are not operating properly or braking efficiency is poor, testing at high speeds could result in death or serious injury.

32. Test ride motorcycle at low speed and check for proper brake operation.

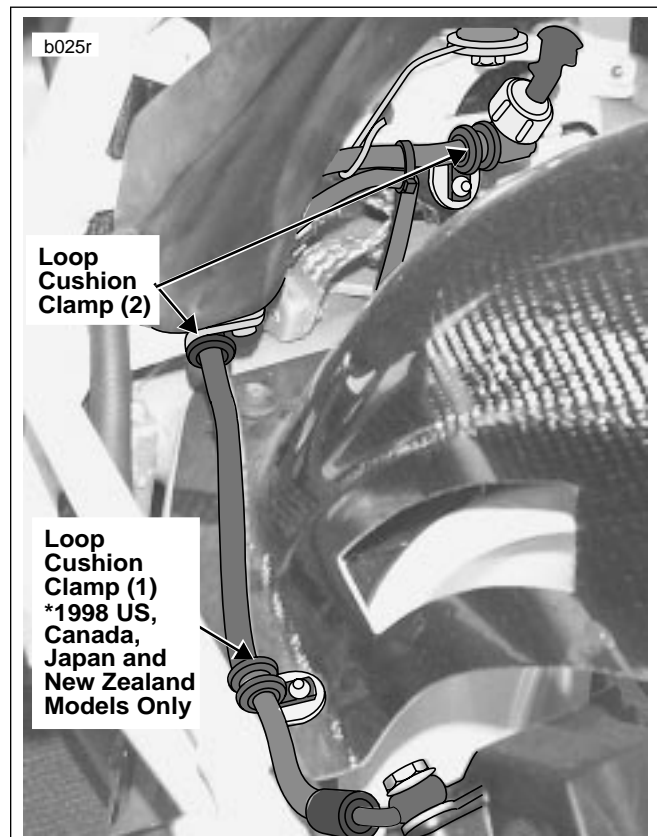


Figure 8. 1996-98 S1/S1W Brake Line Routing

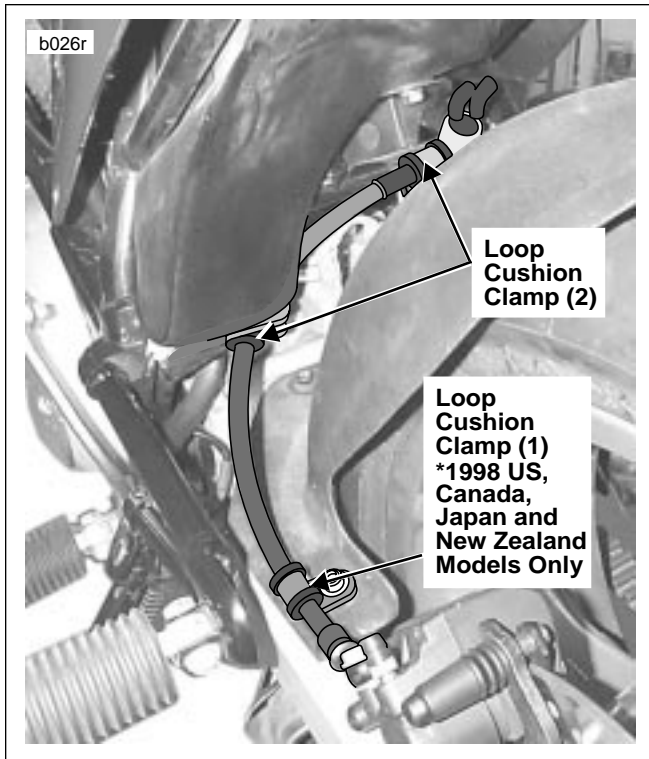


Figure 9. 1997-98 M2, S3/S3T Brake Line Routing

REMOVING SWINGARM

S2 and S2T Models

All 1995 S2 and early production 1996 S2 and S2T models have an earlier version of the swing arm with a raised brake stop (as opposed to the cutout of later models) and welded, angled corners (as shown in Figure 15).

Early model S2 and S2T models (equipped with the earlier version swing arm) require:

- Enlargement (filing) of the *front* left hole on the rear inner fender to allow insertion of the T-washer.
- Enlargement (drilling) of the *rear* left hole on the rear inner fender to allow insertion of the grommet.
- Rear brake line removal and installation of a **new** rear brake line.
- Installation of a wireform to secure the **new** rear brake line.

Late production 1996 S2 and S2T models (equipped with the later version swing arm) require:

- Enlargement (filing) of the *front* left hole on the rear inner fender to allow insertion of the T-washer.
- Drilling an *additional* hole in the rear inner fender to allow installation (the rear left swingarm mount tab does not line up with the existing rear inner fender hole).
- Installation of a wireform to secure the original rear brake line.

NOTE

- Perform the following procedures according to the guidelines given in the service manual for the model being serviced when indicated.
- This procedure may be performed in conjunction with the shock replacement bulletin B-024 (recall 0817). See Bulletin B-024 for instructions on shock replacement and preload adjustment when instructed in this bulletin.
- Mark all hardware as it is removed so that it may be returned to its original location.

1. Position motorcycle on a suitable lift and secure front wheel to lift.

⚠ WARNING

To avoid accidental start-up of vehicle and possible personal injury, disconnect the battery cables before proceeding. Always disconnect the negative battery cable first. If the positive cable should contact ground with the negative cable installed, the resulting sparks may cause a battery explosion, which could result in death or serious injury.

2. Disconnect **both** battery cables from battery, negative cable first.

NOTE

Two cable ties must be cut and the rear wiring harness must be disconnected from the main wiring harness (6-place connector) to remove tail section.

3. Remove seat and tail section (and saddlebags on S2T models). See appropriate service manual, Section 2 for procedures.

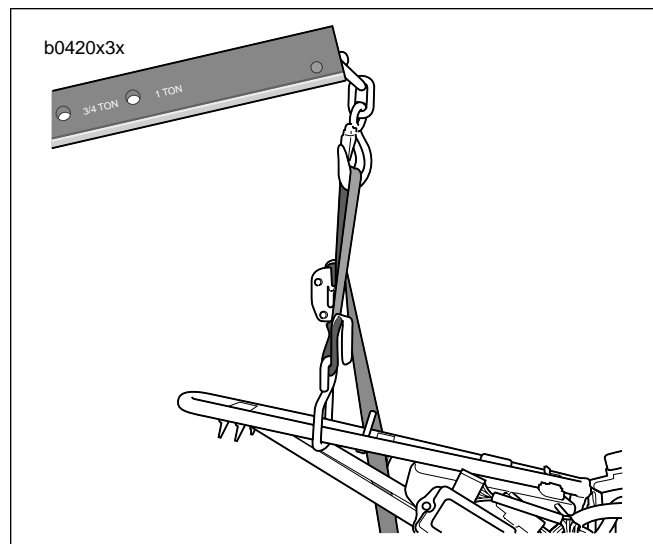


Figure 10. Floor Hoist (Typical)

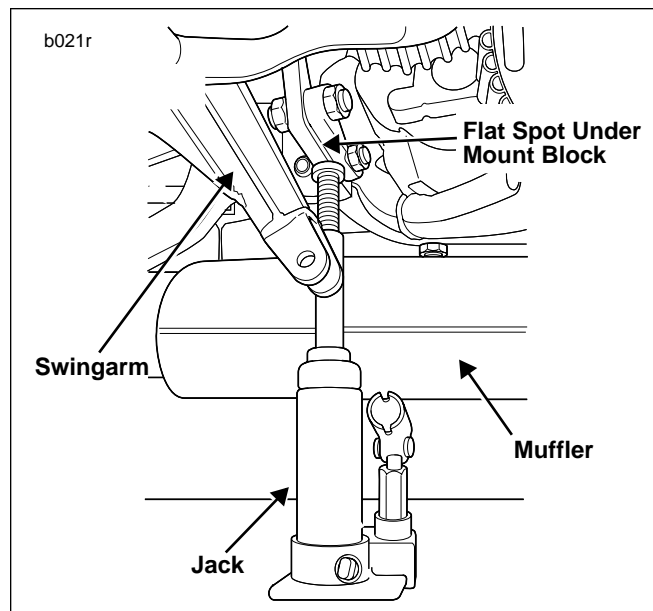


Figure 11. Mount Block Jack Location (Typical)

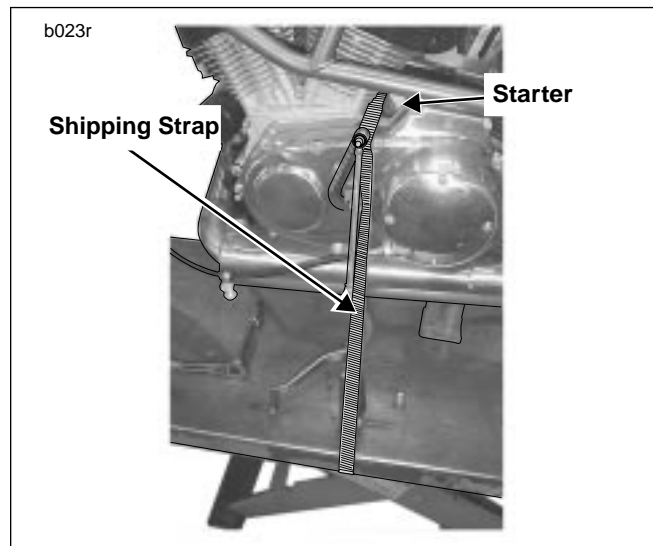


Figure 12. Strapping Engine to Lift (Typical)

- Remove the rear inner fender and lower belt guard. Discard wellnuts and left side hardware, including loop cushion clamp.

NOTE

Perform Step 5 only on early production S2/S2T models (that are equipped with the earlier version swing arm as shown in Figure 15). Otherwise go to step 6.

- Drain rear brake system and remove rear brake line. Discard banjo washers. See appropriate service manual, Section 2 for procedure.
- Remove two allen screws, locknuts and remove the rear brake master cylinder from the right side isolator mount. Discard locknuts.
- Remove actuator rod from rear brake master cylinder.
- Remove the left side rider footpeg mounting bolt and footpeg. Allow footpeg and shift linkage to hang, being careful not to scratch primary cover.
- See Figure 10. Strap tail section of frame to overhead beam or hoist and raise until rear wheel is off the lift.
- Remove the rear brake caliper and rear wheel. Support caliper on frame with cable tie (if brake line was not removed). See Section 2 of appropriate service manual for procedure.
- Remove rear shock absorber rear mounting bolt and locknut. Discard locknut. See appropriate service manual, Section 2 for procedure.

NOTE

Do Step 12 only if replacing shock absorber as part of recall #0817 (Bulletin B-024).

- Remove rear shock absorber front mounting bolt and shock absorber from motorcycle. See appropriate service manual, Section 2 for procedure.
- See Figure 11. Place a suitable jack under the swing arm mount block and raise until crankcase is supported by jack.
- See Figure 12. Strap the engine down to the lift with a shipping strap. Position strap so it is located between starter and rear cylinder. Engine and frame assembly are now both supported (by jack/strap and frame strap).
- See Figure 13. Remove right and left side isolator bolts and washers from swingarm bearing adjustment bolts.
- Remove three socket head screws and right isolator mount.
- Remove and discard right side isolator from isolator mount roll pin.
- Remove three socket head screws and left isolator mount.
- Remove and discard left side isolator from isolator mount roll pin.

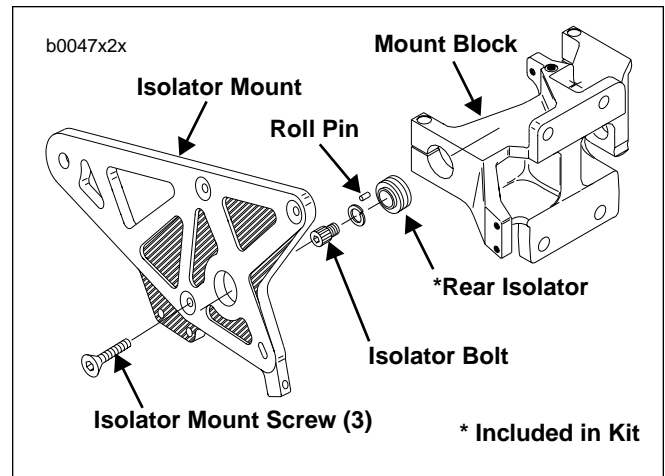


Figure 13. Isolator Mount (Right Side Shown)

- Disassemble swingarm while still installed on motorcycle.
 - See Figure 15. Loosen right side mount block pinch bolt.
 - Unthread (loosen) right side bearing adjusting bolt using PIVOT SHAFT ADJUSTER TOOL (Part No. B-41175).
 - If bearing adjusting bolt unthreads from pivot shaft, remove bearing adjusting bolt from mount block.
 - If bearing adjusting bolt unthreads *with* the pivot shaft, remove pivot shaft and bearing adjusting bolt as an assembly.
 - Loosen left side pinch bolt. While supporting swingarm, remove remaining bearing adjusting bolt or bearing adjusting bolt and pivot shaft as an assembly.
 - Remove swing arm from mount block.
- Remove (slide out) axle adjusters from old swingarm.
- See Figure 14. Using a file slightly enlarge (widen) the front left hole on rear inner fender to allow installation of T-washer.
- Early production S2/S2T models (with earlier swing arm shown in Figure 15):**

Using a 1/2 in. diameter drill bit, enlarge existing left rear mounting hole in rear inner fender to 1/2 in. diameter.

NOTE

Perform Steps 24 through 27 only on late production S2/S2T models that have the later version swing arm. If the swingarm is the later version with the cutout and has rounded corners, the swingarm mount tab does not line up with the hole in the rear inner fender. The rear inner fender will require an additional hole to allow it to be mounted to the new swingarm.

- See Figure 14. Attach rear inner fender to **new** swingarm.
- Note rear left mounting hole on swingarm does not match hole in rear inner fender. Scribe or mark rear inner fender bolt hole at this location.
- Remove rear inner fender from swingarm.
- Using a 1/2 in. diameter drill bit, drill **new** mounting hole in rear inner fender at location marked in Step 25.

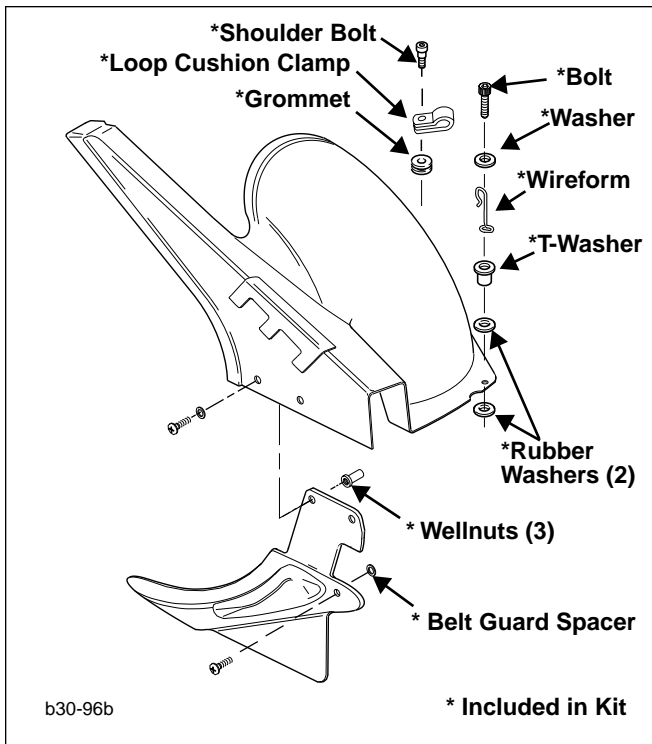


Figure 14. S2/S2T Rear Inner Fender and Belt Guard

INSTALLING NEW SWINGARM

S2 and S2T Models

NOTE

The new swingarm provided in the kit has the bearings installed and lubricated.

1. Position **new** swingarm to mount block.
2. Install bearing adjusting bolt to pivot shaft. Insert bearing adjusting bolt and pivot shaft through left side until adjusting bolt head is flush with mount block.
3. Apply LOCTITE THREADLOCKER 243 (blue) to left pinch bolt and install bolt and **new** washer to mount block. Tighten pinch bolt to 18-20 ft-lbs (24-27 Nm).
4. Insert right side bearing adjusting bolt.
5. See Figure 7. Using a scale and PIVOT SHAFT ADJUSTER TOOL (Part No. B-41175), set swingarm preload. See appropriate service manual for procedure. Correct preload is 3.5-5.5 lbs (1.6-2.5 kg).
6. Loosen left side pinch bolt and center swingarm within mount block.
7. Tighten left pinch bolt to 18-20 ft-lbs (24-27 Nm).
8. Apply LOCTITE THREADLOCKER 243 (blue) to right pinch bolt and install bolt and **new** washer to mount block. Tighten right pinch bolt to 18-20 ft-lbs (24-27 Nm).
9. Measure isolator roll pin protrusion on both left and right isolator mounts with calipers or metal rule. Roll pin should not protrude more than 0.120 in. (3 mm). If roll pin protrudes more than 0.120 in. (3 mm) file or grind until within specification; 0.080-0.120 in. (2.032-3.048 mm). Use care when filing to avoid creating sharp edges.
10. See Figure 13. On left side isolator mount, align locator hole with roll pin and install **new** rear isolator, provided in kit.

11. Apply anti-seize to underside of isolator bolt head. Apply LOCTITE THREADLOCKER 272 (Red) to threads of isolator bolt.
12. See Figure 15. Install isolator bolt and washer through rubber isolator and into bearing adjustment bolt. Do not tighten.
13. Apply LOCTITE THREADLOCKER 262 (red) to threads of three isolator mount screws. Install isolator mount. Tighten isolator mount screws to 27-30 ft-lbs (37-41 Nm).

CAUTION

- Use caution when installing isolator bolts. Make sure isolator bolt hole is aligned with threaded hole in bearing adjusting bolt to avoid cross-threading bolt.
- See Figure 16. Observe seam on rubber isolator after isolator bolt is tightened. If seam twists, apply more LOCTITE ANTI-SEIZE to underside of isolator bolt heads. Failure to comply will result in damage to rubber isolators.

14. Tighten isolator bolt to 100-110 ft-lbs (135.6-149.1 Nm).
15. Install left side rider footpeg. Tighten bolt to 25-30 ft-lbs (34-41 Nm).
16. On right side isolator mount, align locator hole with roll pin and install **new** isolator, provided in kit.
17. Apply anti-seize to underside of isolator bolt head. Apply LOCTITE THREADLOCKER 272 (Red) to threads of isolator bolt.
18. See Figure 15. Install isolator bolt and washer through rubber isolator and into bearing adjustment bolt. Do not tighten.
19. Apply LOCTITE THREADLOCKER 262 (red) to threads of three isolator mount screws. Install isolator mount. Tighten isolator mount screws to 27-30 ft-lbs (37-41 Nm).

CAUTION

- Use caution when installing isolator bolts. Make sure isolator bolt hole is aligned with threaded hole in bearing adjusting bolt to avoid cross-threading bolt.
 - See Figure 16. Observe seam on rubber isolator after isolator bolt is tightened. If seam twists, apply more LOCTITE ANTI-SEIZE to underside of isolator bolt heads. Failure to comply will result in damage to rubber isolators.
20. Tighten isolator bolt to 100-110 ft-lbs (135.6-149.1 Nm).
 21. Insert actuator rod into rear master cylinder.

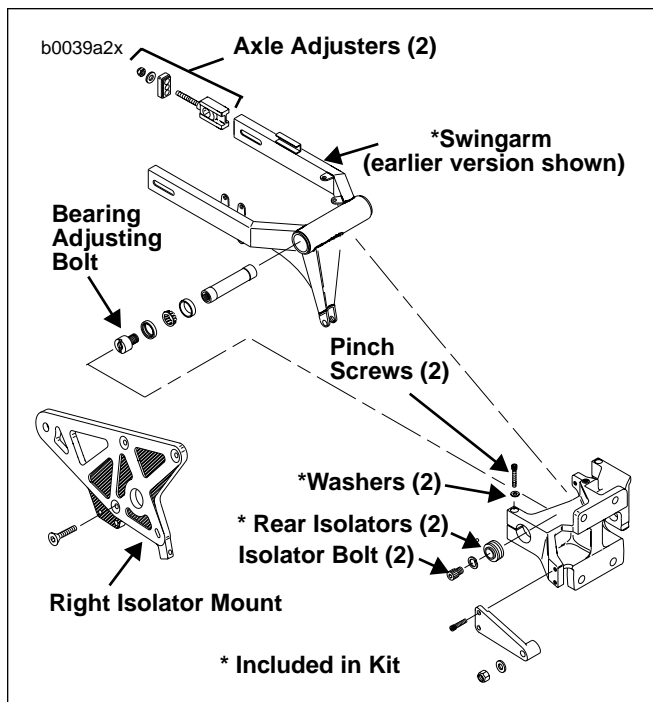


Figure 15. S2/S2T Swingarm Assembly

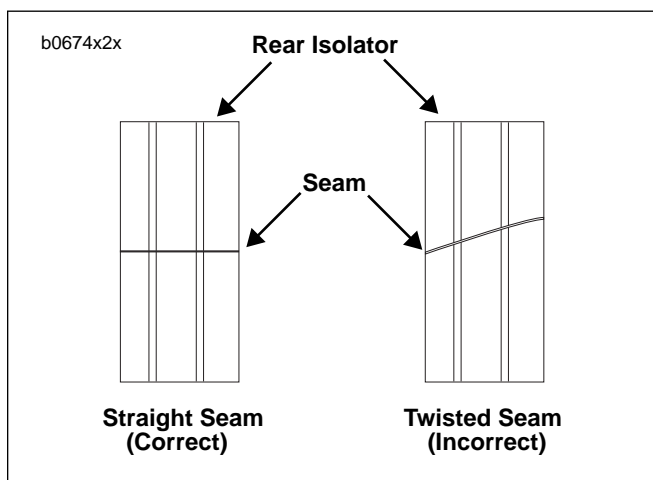


Figure 16. Isolator Alignment

NOTE

Longer master cylinder mount bolt goes to rear of motorcycle.

22. Install rear master cylinder to inboard side of right isolator mount with two bolts and **new** locknuts. Tighten bolts to 8-10 ft-lbs (11-14 Nm).
23. Remove shipping strap from crankcase. Remove jack from under swingarm mount block.
24. Install shock absorber.
 - If performing shock eye recall, obtain correct shock absorber from #0817 recall kit and install. See installation instructions from #0817 recall bulletin.
 - If shock eye recall is not being performed at this time, install original shock rear mounting bolt to swingarm with **new** locknut provided in kit. See appropriate service manual, Section 2 for procedure.
25. See Figure 15. Apply LOCTITE ANTI-SEIZE to inner portion of ends of swingarm where axle adjusters will be. Install original axle adjusters to **new** swingarm.

26. Install rear wheel and rear brake caliper. See appropriate service manual, Section 1 or 2 for procedure.

NOTE

When checking belt deflection, have:

- No rider or cargo weight on motorcycle
- Transmission in neutral
- Belt and sprockets at room temperature
- Motorcycle upright (not on side stand)
- Rear suspension fully unloaded (lift motorcycle frame under tail section until motorcycle's weight is not compressing the rear shock - it is not necessary to raise the rear wheel off the ground to reach this point).

27. Check belt deflection.
 - a. Rotate wheel until belt is at it's tightest point.
 - b. Apply 10 lbs of upward force to belt at midpoint of bottom strand using BELT TENSION GAUGE (Part No. HD-35381).
 - c. Deflection (measured with 10 lbs of force) should be 1.50-1.75 in. (38.1-44.5 mm) at the bottom strand.
 - d. Adjust belt deflection if required. See appropriate service manual, Section 1 for procedure. Check belt deflection using procedure above (a.-c.).

NOTE

Do Steps 28 through 34 for S2 and S2T models on which the rear brake line was removed. Otherwise go to Step 35.

28. Place original brake line brake light switch hex fitting in vise.
29. Remove rear brake light switch from original brake line.

NOTE

Place **new** brake line in vise gently (securing hexagonal rear brake light switch fitting) to prevent bending line while installing rear brake lamp switch.

30. Coat threads of rear brake lamp switch with LOCTITE PIPE SEALANT WITH TEFLON and install to **new** brake line. Tighten switch to 84-96 in-lbs (9.5-10.8 Nm).
31. Install **new** brake line to master cylinder with two **new** banjo washers. Tighten banjo bolt to 17-22 ft-lbs (23-30 Nm).
32. Install **new** brake line to caliper with two **new** banjo washers. Tighten banjo bolt to 10-12 ft-lbs (14-16 Nm).
33. Install **new** brake line to frame mounting point with original loop cushion clamp. NOTE: Do not install rear inner fender at this time.
34. Connect flag terminals to rear brake light switch.
35. Install belt guard to swingarm with **new** wellnuts. See appropriate service manual, Section 2 for procedure.
36. Position rear inner fender in mounting position on swingarm. Install the right side fasteners to wellnuts.
37. If the clearance between the sprocket and the belt guard is less than 1/8 in. (3 mm) install belt guard spacer as listed below.
 - a. See Figures 14 and 17. Install rear belt guard spacer on inboard side of the belt guard. Make sure the rear belt guard spacer is placed so that the thicker side is down, as shown.
 - b. Secure with screw.

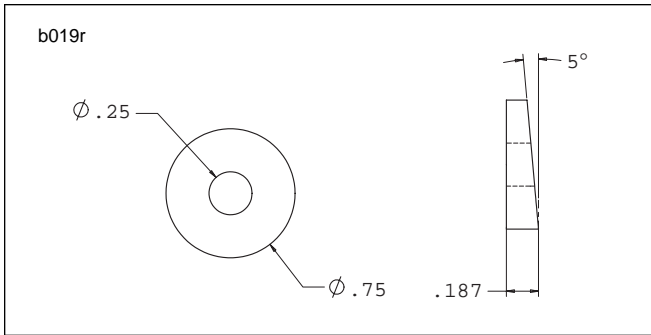


Figure 17. Rear Belt Guard Spacer

NOTE

All S2/S2T models require the installation of the wireform described in Step 38. The wireform should be oriented as shown in Figures 14 and 18.

38. See Figure 14. Apply LOCTITE THREADLOCKER 243 (blue) to threads of bolt. Place rubber washer on either side of rear inner fender and install T-washer, wireform, washer and bolt to front left hole. Make sure wireform captures rear brake line. Tighten bolt to 6-8 ft-lbs (8-11 Nm).
39. See Figure 14. Apply LOCTITE THREADLOCKER 243 (blue) to threads of shoulder bolt.
40. Install **new** grommet to rear left hole of rear inner fender.
41. See Figure 18. Place loop cushion clamp over brake line.
42. See Figure 18. Place loop cushion clamp into mounting position and install **new** shoulder bolt through loop cushion clamp to rear left hole of rear inner fender. Tighten bolt to 6-8 ft-lbs (8-11 Nm).
43. See Figure 18. After rear brake line and rear inner fender are installed, check for proper brake line routing and clamp attachment points. Brake line routing and attachment points should be as in shown in Figure 18.
44. Position tail section on frame and connect rear wiring harness to main wiring harness at 6-place connector. Secure wiring harnesses with two **new** cable ties (thick).
45. Remove hoist from tail section.

WARNING

After installing seat, pull upward on front of seat to be sure it is locked in position. If seat is loose, it could shift during vehicle operation resulting in loss of control of vehicle and death or serious injury.

46. Install tail section and seat. See appropriate service manual, Section 2 for procedures.

WARNING

Always connect the positive battery cable first. If the positive cable should contact ground with the negative cable installed, the resulting sparks may cause a battery explosion, which could result in death or serious injury.

47. Connect battery cables, positive cable first, to battery terminals.
48. If brake line was replaced with **new** brake line, bleed rear brake system. See appropriate service manual, Section 2 for procedure.

WARNING

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

49. Turn ignition key ON, depress rear brake pedal and check for proper brake light operation.
50. Adjust rear shock absorber preload. See #0817 Recall Bulletin for adjustment instructions for **new** shock absorber. See appropriate service manual, Section 2 for adjustment instructions for original shock absorber.

WARNING

After completing repairs or bleeding the system, always test motorcycle brakes at low speed. If brakes are not operating properly or braking efficiency is poor, testing at high speeds could result in death or serious injury.

51. Test ride motorcycle at low speed and check for proper brake operation.

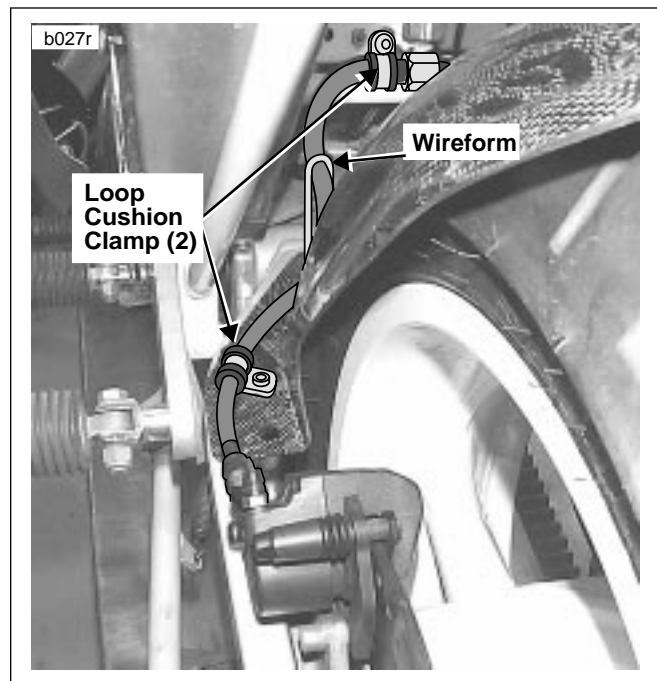


Figure 18. 1995-96 S2/S2T Brake Line Routing

CREDIT PROCEDURES - VEHICLE REPAIR

For each vehicle serviced, place a "C" in the letter box on the Buell Dealer Service Card. Send the properly completed dealer service cards to Buell Distribution Corporation, 3700 W. Juneau Ave., Milwaukee, WI 53208. **Destroy and discard the replaced swing arm.** Upon receipt and processing of your properly completed dealer service cards, you will be credited for 2.8 hours for S1, S1W, M2, S3 and S3T models. For S2/S2T you will be credited for 3.9 hours. All times include 0.1 hour administrative time, your cost for loctite and D.O.T.5 Brake Fluid (if required). No credit will be issued for the kits as they were sent no charge, transportation paid.

CREDIT PROCEDURES - DEALER STOCK PARTS

Remove, destroy and discard all affected swingarms, (Part Nos. 47589-94Y and 47589-96Y) and S2/S2T rear brake lines (Part No. 45139-94Y), from your inventory. To receive credit, complete a Buell warranty claim referencing Service Bulletin B-025A in the "Description of Repair" section. Fill in the rest of the claim as follows.

Table 1. Credit for Parts

Claim Type	BDS
Quantity	See Note Below
Event 1, Problem Part No.	47589-96Y (For S1/S1W/ M2/S3/S3T and late model 1996 S2/S2T) 47589-94Y (For 1995 and Early 1996 S2/S2T)
Part Description	Swingarm
Event 2, Problem Part No.	45139-94Y
Part Description	S2/S2T Rear Brake Line
Customer Concern Code	9205
Condition Code	9111

"Quantity" and part numbers may vary depending upon what you have in stock.

Upon receipt of properly completed claim for parts in dealer stock, you will receive the appropriate credit for parts. Buell Distribution Corporation will advise at a later date how to order updated swingarms and S2/S2T rear brake lines to replenish your stock. **Do not order the recall kits to restock your inventory!**

Buell® BUELL DISTRIBUTION CORPORATION
 P.O. BOX 594, MILWAUKEE, WI U.S.A 53201
AMERICAN MOTORCYCLES PARTS & ACCESSORY ORDER

B-025A

S O NAME _____
 L I P ADDRESS _____
 T O CITY/STATE/ZIP _____

S H NAME _____
 I P ADDRESS _____
 T O CITY/STATE/ZIP _____

QUANTITY	PART NUMBER
	93924YA 1995 and 1996 S2 and S2T
	93928Y S1, S1W, M2, S3 and S3T

Code 0816: SWINGARM

NOTE: All orders subject to approval. You may not receive the total quantity of kits ordered, due to parts availability. If this happens, please submit another order for the balance.

WARRANTY CODE 0816

DEALER ORDER	ORDER
ORDER DATE	DATE
DEALER NO.	DEALER
ORDER TYPE	D-W
WARRANTY CLAIM NO.	WARRANTY CLAIM NO.

TYPE CODE	ORDER TYPE	VEHICLE IDENTIFICATION NUMBER
R	REGULAR	
P	POLICE	
D	DOWN VEHICLE	
W	WARRANTY	

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All goods covered by this order, including goods back-ordered, will be billed at price current at the time of shipment. Goods are purchased for resale and delivery is made to purchaser F.O.B. factory, Milwaukee, Wisconsin or other point of origin. If accepted, this order as accepted shall be subject to availability of goods to seller for delivery to purchaser. Any delay in shipment shall not relieve purchaser of responsibility for his accepted order and seller shall not be liable for any loss or damage due to delay in shipment or failure to deliver. Any request for cancellation of this order or any part thereof must be received by seller prior to the date of shipment, and in case of re-shipment or return of goods to seller, purchaser shall pay the entire cost connected therewith, plus zero, ten or twenty-five percent of selling price, as determined by Company policy from time to time, as liquidated damages for loss of sale. Purchaser will be responsible for collection and payment of all Federal, State and local taxes that apply on the retail sale.

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