

SAFETY RECALL CODE 0809 - SWINGARM

GENERAL

Buell Motorcycle Company has decided that certain 1999 model motorcycles were built with swingarms that were manufactured out of specification. This condition could cause the rear suspension to fail without warning, leading to loss of control of the motorcycle which could result in vehicle crash and personal injury.

As a precautionary measure, Buell Motorcycle Company elected to initiate a voluntary recall in the interest of motor vehicle safety. This condition can be determined by measuring the suspect area of the swingarm with the gauge sent with this bulletin. If it is determined the swingarm is out of specification, a **new** swingarm must be installed. Complete vehicle inspection procedures are contained under INSPECTION.

DEALER ACTION, VEHICLES

Buell Distribution Corporation has attached a complete list of all vehicles 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 your SPOC representative or the recall hotline at 1-800-448-1708.

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.

INSPECTION

All 1999 motorcycles on the attached V.I.N. list must be inspected using the following procedure.

NOTE

This service bulletin includes a small envelope containing the SWINGARM CHECKING TOOL. If this tool is lost, please contact Buell Distribution Corporation at 1-414-343-4358.

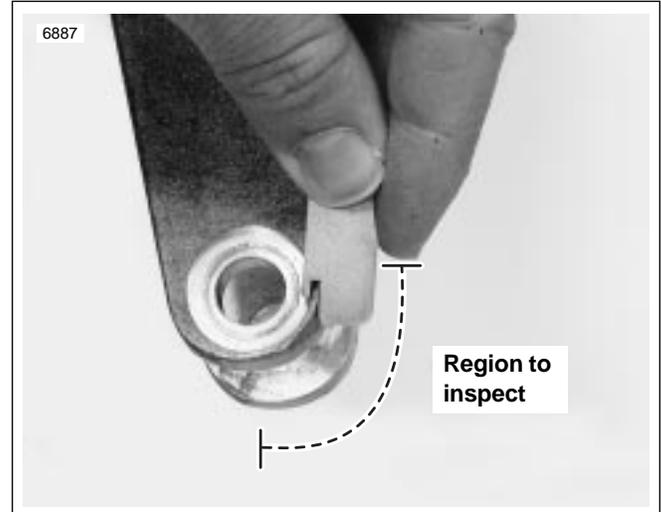


Figure 1. Leading Edge of Rear Shock Mount (Swingarm Shown Requires Replacement)

1. With a flashlight, illuminate the rear shock mount on the swingarm. If necessary, have a second individual lean the motorcycle over for increased access.

NOTE

There is a washer behind the rear shock mounting bolt. If this washer interferes with checking the leading edge, loosen the shock bolt (metric) and slide the washer aside.

CAUTION

Do not completely remove rear shock bolt. If bolt is completely removed without supporting suspension and frame, motorcycle damage will occur.

2. See Figure 1. Insert the SWINGARM CHECKING TOOL along the leading edge of the swingarm shock mount on one side of the motorcycle.
 - a. If the tool overlaps the leading edge at any spot, swingarm must be replaced.
 - b. If the tool **does not** overlap the leading edge at any spot, swingarm is within tolerance.
3. Repeat Step 2 on the other side of the rear shock mount.
4. Tighten the rear shock bolt (metric) to 30-33 ft-lbs (40.7-44.7 Nm) if loosened during inspection.

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									

5. Based on inspection results, follow the appropriate step.
 - a. If the swingarm passed inspection, follow the instructions under CREDIT PROCEDURES, INSPECTION ONLY.
 - b. If the swingarm needs replacement, contact Buell Customer Service (East Troy, WI) at 1-800-854-2059. They will arrange for a replacement swingarm to be shipped, next day delivery. Once you receive and install the swingarm (see REPAIR PROCEDURE), follow instructions under CREDIT PROCEDURES, REPLACEMENT.

REPAIR PROCEDURE

Swingarm Removal, All Models

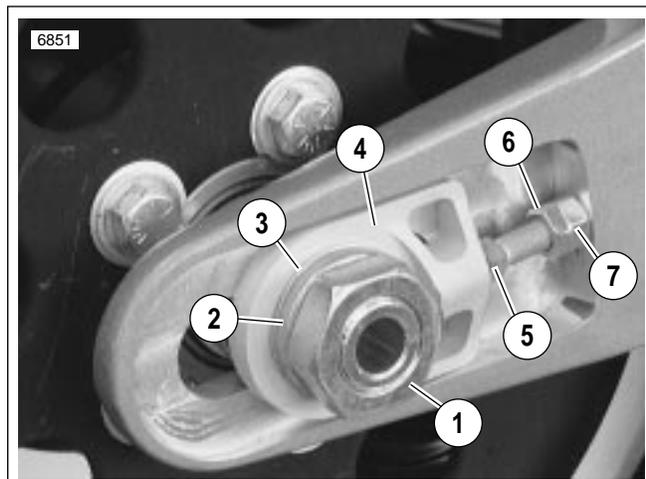
1. Compress suspension to access rear fender fasteners. Remove rear fender and lower belt guard.
2. Place vehicle on a lift and anchor front wheel in place.



WARNING

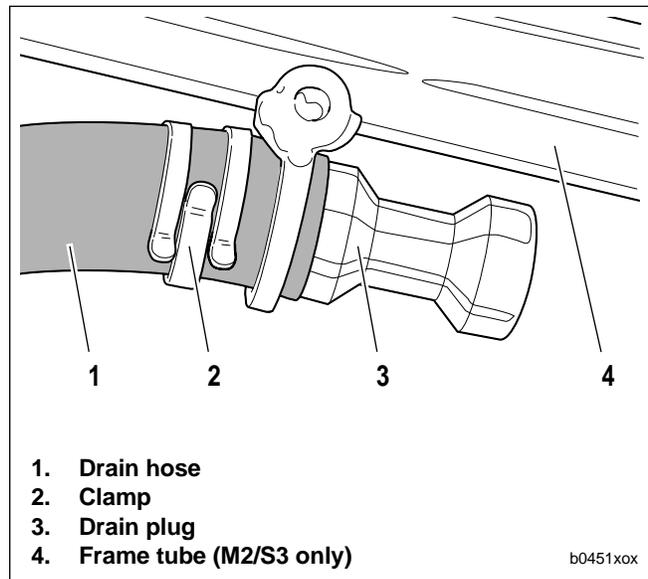
To avoid accidental start-up of vehicle and possible personal injury, disconnect the battery cables before proceeding. Always disconnect the negative cable first. If the positive cable should contact ground with the negative cable installed, the resulting sparks may cause a battery explosion producing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

3. Disconnect **both** battery cables, negative cable first.
4. Remove seat and attach lifting straps to motorcycle.
 - a. On X1 models, insert lifting straps through opening on tail section near tail section mounting bolts.
 - b. On M2/S3 models, insert lifting straps under frame tubes. It is not necessary to remove tail section.
5. Attach lifting straps to a floor hoist placed behind the lift. Raise motorcycle off lift until rear suspension is unloaded.
6. Remove mounting bolt attaching swingarm to rear shock.
7. See Figure 2. Remove rear wheel.
 - a. Remove rear axle nut (1) (metric), lockwasher (2), washer (3) and right side axle carrier (4).
 - b. Hold axle adjuster bolt (5) with a 5/16 in. wrench. Loosen locknut (6) and axle adjuster screws (7). Repeat on left side.
 - c. From left side, slowly pull rear axle from swingarm. As axle is removed, remove right side spacer, rear brake caliper mount, left side axle carrier and washer. Suspend rear brake caliper mount from frame with a piece of rope. Push rear wheel forward and slip off belt.



1. Axle nut (metric)
2. Lockwasher
3. Washer
4. Axle carrier
5. Axle adjuster bolt
6. Locknut
7. Adjusting nut

Figure 2. Rear Axle, Right Side



1. Drain hose
2. Clamp
3. Drain plug
4. Frame tube (M2/S3 only)

b0451xox

Figure 3. Oil Tank Drain, Typical

8. Remove cap from oil tank. See Figure 3. Drain oil tank by removing clamp (2) from drain hose (1). Pull hose from drain plug (3).
9. Detach feed line from bottom of oil tank.
10. Detach rear brake pedal from master cylinder pushrod.
11. On S3/X1 models, remove left side rider footrest and shifter lever.

12. See Figure 4. Place a jack under the crankcase.
13. Detach rear tie bar from swingarm.
14. See Figure 5. Remove left and right isolator bolts and washers (7).

CAUTION

Remove oil filter before raising frame. Without removal, oil filter will be damaged during procedure. Oil filter replacement cost is not covered under this service bulletin.

15. Place a drip pan under the oil filter. Remove oil filter.
16. Using floor hoist, raise frame enough to remove both rubber isolators (6) from frame mounted pins.
17. Loosen swingarm pinch screw (4) on right side.
18. Remove threaded rod (1) from between bearing adjustment bolts (2, 3).
19. Loosen remaining swingarm pinch screw.
20. See Figure 6. Using floor hoist, raise frame while pushing down on swingarm. Frame must be raised until bearing adjustment bolts (2) clear pin on frame and can be removed.

NOTE

If swingarm mount block doesn't drop from frame as lift is raised, apply leverage between frame and mount block using a plastic hammer wrapped in clean shop towels.

21. After removing both bearing adjustment bolts, remove swingarm.

Swingarm Installation, All Models

1. See Figure 5. Align **new** swingarm between posts on swingarm mount block (5).
2. Insert left (threaded) and right bearing adjustment bolts (2, 3) into swingarm until flush with mount block surface.
3. Tighten left side swingarm pinch screw (4) to 18-20 ft-lbs (24.4-27.1 Nm).
4. Install threaded rod (1).
 - a. Apply LOCTITE THREADLOCKER 222 (purple) to threaded rod.
 - b. Insert threaded rod through right side bearing adjustment bolt (2) into threads on left side bolt (3).
 - c. Tighten rod to an initial torque of 11-12 ft-lbs (14.9-16.3 Nm).
5. Check swingarm preload using a scale as shown in Figure 7. Preload should be 3.0-3.75 lbs (1.36-1.70 kg). If preload does not meet specifications, tighten or loosen threaded rod and recheck.



Figure 4. Scissors Jack

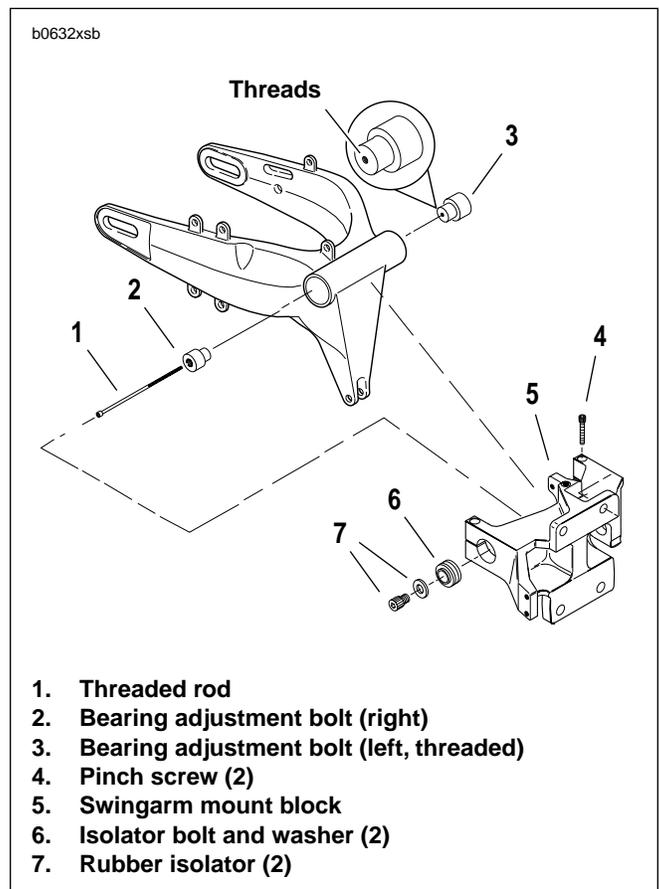


Figure 5. Swingarm Assembly

6. See Figure 5. Secure swingarm in place.
 - a. Remove both pinch screws (1).
 - b. Apply LOCTITE THREADLOCKER 243 (blue) to threads of pinch screws.
 - c. Verify that swingarm is centered between mounts.
 - d. Install both pinch screws. Tighten to 18-20 ft-lbs (24.4-27.1 Nm).
7. Apply pressure between frame and swingarm using a plastic hammer wrapped in clean shop towels. Insert rubber isolators between mount block and frame mounted pin.
8. Slowly lower frame to place rubber isolators in front of bearing adjustment bolts.
9. Install isolator bolts.
 - a. Apply LOCTITE THREADLOCKER 272 (red) to threads of both isolator bolts.
 - b. Install isolator bolts and washers (7) through rubber isolators and into bearing adjustment bolts (2, 3).
 - c. Tighten to 100-110 ft-lbs (135.6-149.1 Nm).
10. Attach rear tie bar to swingarm mount block. Tighten to 30-33 ft-lbs (40.7-44.7 Nm).
11. Remove scissors jack from under crankcase.
12. Install rear shock bolt (metric). Tighten to 30-33 ft-lbs (40.7-44.7 Nm).
13. Attach feed and drain lines to oil tank and frame. Install filter and fill motorcycle with oil. See 1999 Owner's Manual for oil types.
 - a. For X1 models, use 2.5 quarts (2.37 liters).
 - b. For M2/S3 models, use 2.0 quarts (1.89 liters).
14. Attach rear brake pedal to master cylinder pushrod.
15. On S3/X1 models, attach left side rider footrest and shifter lever. Apply LOCTITE THREADLOCKER 272 (red) to bolt. Tighten to 23-25 ft-lbs (31.2-33.9 Nm).
16. Install rear wheel.
 - a. Wipe any grease or dust from rear axle. Apply LOCTITE ANTI-SEIZE LUBRICANT to axle.
 - b. See Figure 8. Insert axle (1) through washer (2) so that rounded side of washer will face swingarm. Continue through left side of swingarm, rear brake caliper mount (3) and wheel assembly.
 - c. See Figure 2. Place spacer between wheel hub and right side of swingarm. Slide axle through spacer and swingarm.
 - d. Place washer (3) on axle with rounded side facing swingarm. Install lockwasher (2) and axle nut (1) (metric). Do not fully tighten rear axle nut at this time.

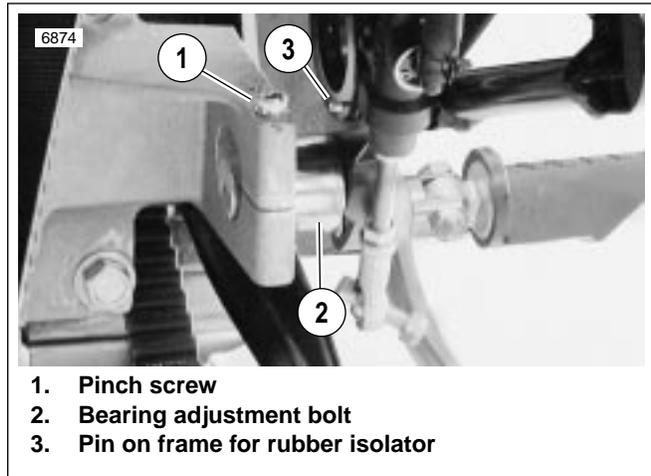


Figure 6. Swingarm Mount Block, Right Side



Figure 7. Checking Preload

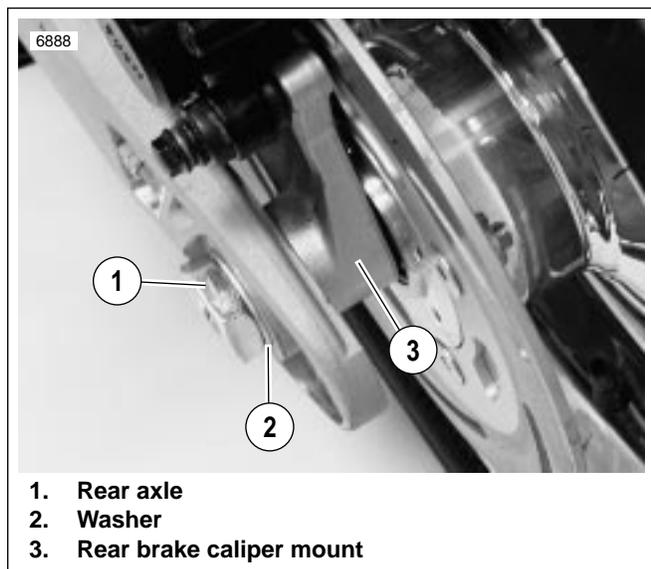


Figure 8. Rear Axle, Left Side

17. Check rear axle alignment. See Figure 9. Measure each side from the flat of the axle carrier to the flat of the swingarm.
 - a. If the measurements are equal ± 0.015 in. (.381 mm) the rear axle is correctly aligned. See Step 18.
 - b. If the two measurements are not equal, adjustment is required. See Step 19.
18. Check belt deflection. See Figure 10. Apply 10 lbs of force using BELT TENSION GAUGE (Part No. HD-35381) at the midpoint of the belt's bottom strand. The deflection should be upward as shown and the motorcycle's rear suspension should still be unloaded.
 - a. Deflection (measured with 10 lbs of force) should be 1.50-1.75 in. (38.1-44.5 mm) at the bottom strand. If deflection is within limits, see Step 20.
 - b. If belt does require adjustment, see Step 19. After adjusting deflection, check axle alignment.
19. See Figure 11. If it is necessary to adjust belt deflection/rear wheel alignment, loosen locknut (2), hold axle adjuster bolt (1) and turn adjusting nut (3).
 - a. If belt is too loose, tighten adjusting nut (3) to decrease deflection and therefore increase drive belt tension.
 - b. If belt is too tight, loosen adjusting nut (3) to increase belt deflection and therefore decrease drive belt tension.
 - c. See Figure 9. Repeat this step until the distance between the flat on the axle carrier and the flat of the swingarm is the same on both sides of the rear wheel and belt deflection is correct.
20. See Figure 11. Tighten locknut (2) flush against adjusting nut (3). Tighten axle nut (metric) to 66-73 ft-lbs (89.5-98.9 Nm). Verify that belt deflection is correct. Lower motorcycle onto lift.

⚠ 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 and startle the rider, causing loss of control and personal injury.

21. Remove lifting straps and install seat.

⚠ WARNING

Always connect positive battery cable first. If the positive cable should contact ground with the negative cable installed, the resulting sparks may cause a battery explosion resulting in personal injury.

22. Attach both battery cables.

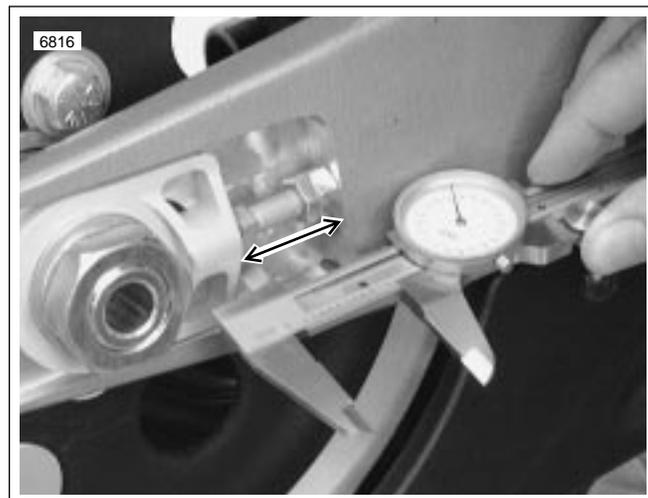


Figure 9. Checking Rear Wheel Alignment, Right Side Shown

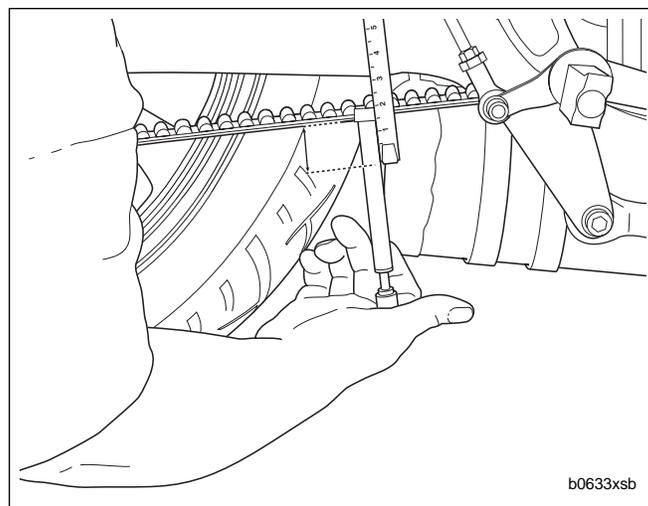
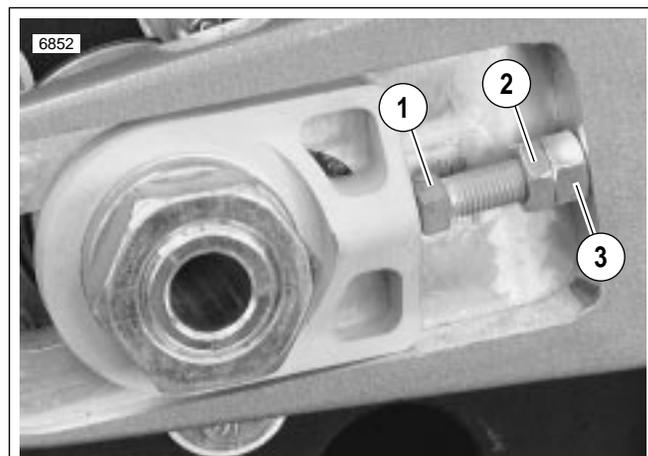


Figure 10. Belt Deflection



1. Axle adjuster bolt
2. Locknut
3. Adjusting nut

Figure 11. Axle Adjuster Bolt, Right Side Shown

23. Remove motorcycle from lift.
24. Compress suspension to install rear fender and lower belt guard.
25. Check oil level after starting vehicle and allowing motorcycle to reach operating temperature. See owner's manual.

⚠ 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 may result in personal injury.

26. Check rear brake operation.

CREDIT PROCEDURES

Inspection Only

For each vehicle inspected that does not require a swingarm replacement, place an "I" in the letter box on the Buell Dealer Service Card. When Buell Distribution Corporation (P.O. Box 653, Milwaukee, WI 53201) receives your properly completed Dealer Service Card, you will be credited for 0.2 hours for performing the inspection. This includes 0.1 hour administrative time.

Replacement

For each vehicle inspected that required a **new** swingarm to be installed, place a "C" in the letter box on the Buell Dealer Service Card. Package the original swingarm and properly completed Dealer Service Card. Send the package to Buell Motorcycle Company using the pre-addressed, return authorization label sent to you with the replacement swingarm. When Buell Motorcycle Company receives your properly completed Dealer Service Card and the original swingarm, you will be credited for 3.2 hours for replacing the swingarm. This includes 0.1 hour administrative time and your cost for oil. You will also be credited for postage. No credit will be issued for the swingarm as they were shipped no charge, transportation paid.