

# SERVICE BULLETIN **Buell**<sup>®</sup>

B-024B

November 20, 2000

**AMERICAN MOTORCYCLES**

## SAFETY RECALL CODE 0817 - REVISED SHOCK EYE

### GENERAL

Buell Motorcycle Company has learned that certain 1995 through 1998 Buell motorcycles were built with a rear shock absorber eye that could break. If the shock eye should break, the underside of the vehicle will drag on the ground, which may adversely affect handling. Accordingly, Buell Motorcycle Company is voluntarily conducting a 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 shock absorber on all potentially affected vehicles.

Since the release of the original bulletin (B-024), Buell Motorcycle Company has released a **new** shock absorber. This revised recall procedure applies to affected motorcycles that did not have the initial 0817 recall service performed. For motorcycles that have had the original 0817 recall service performed, refer to Bulletin B-035 for installation instructions.

Since the release of the last bulletin (B-024A), the spring preload locknut tightening procedure has been modified (as covered in Bulletin B-037). This bulletin includes the new torque specification and tightening procedure.

### DEALER ACTION, AFFECTED VEHICLES

Recently, Buell Distribution Corporation sent you a complete list of all vehicles shipped to your dealership involved in this recall that have not yet been serviced (reference BML-019). 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 received notification from Buell Distribution Corporation, we request that you contact any owners of vehicles previously 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.**

Kits must be ordered as required. Use inventory of original recall kits until exhausted. Once exhausted, the original kits will supersede to the revised kits listed in this bulletin. To order kits please fill out the attached order form and send/fax it to the Warranty Department at (FAX) 414-343-8346. All kits will be shipped, no charge, transportation paid.

The revised shock eye recall kit (See below for correct part number) consists of:

- Customer Instructions for Shock Replacement and Adjustment
- Shock Absorber
- Clamp (for shock reservoir to bracket)
- Clamp (for shock reservoir to oil return line)
- Washer, 1/4 in (for reservoir clamp)
- (2) Locknuts, Nylon (shock mounting)
- Reservoir Mount Block
- Front Shock Mount
- (2) Front Shock Mount Bolts
- (2) Locknuts, Metal (for front shock mount)
- (3) Washers (for front shock mount)
- **New** X1 Chin Fairing Bracket (not used)
- Wellnut (not used)
- Star Washer, 3/8 in. (1997 M2, S3/S3T only - front shock mount)
- Star Washer 1/4 in. (1997 M2, S3/S3T only - voltage regulator bracket)
- (2) Exhaust Port Gaskets
- Screw (for voltage regulator bracket)
- **New** Header Tiebar Spacer

The revised shock eye recall kit is different depending on the motorcycle model. See below for the correct recall kit part numbers:

**S1/S1W/M2:** Part No. 93925YA

**S2/S2T:** Part No. 93929YA

**S3/S3T:** Part No. 93930YA

### REMOVAL

#### NOTE

*Perform the following procedures according to the guidelines given in the service manual for the model being serviced.*

*This procedure is best performed in conjunction with the swing arm replacement recall #0816 (see Bulletin B-025). If replacing swing arm, see Bulletin B-025 for instructions on swing arm replacement before beginning this procedure. If new swing arm installation is in progress, go to INSTALLATION in this bulletin. While it is possible for the shock to be installed with the old swing arm, it is not recommended.*

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									

## All Models

1. Lift rear wheel off ground using REAR WHEEL SUPPORT STAND (Part No. B-41174). Secure front wheel of motorcycle.

### WARNING

To protect against shock and accidental start-up of vehicle, always disconnect the negative battery cable before proceeding. Inadequate safety precautions could result in death or serious injury.

2. Disconnect negative battery cable.
3. See Figure 1. Place a suitable jack under the swing arm mount block and raise until crankcase is supported by jack.

### NOTE

Steps 4-5 do not apply to M2 Cyclone models with original equipment shocks that were not equipped with a remote reservoir.

4. See Figure 2. Use a flex socket and extension to remove locknut and washer on front reservoir clamp. Discard clamp, locknut and washer.
5. See Figure 2. Loosen rear reservoir clamp. Slide reservoir and mount block out of clamp. Remove and discard clamp and mount block.
6. Remove allen screw and locknut (metric) from front of shock and front shock mount. Discard locknut.
7. Remove allen screw and locknut (metric) and washers (if present) from rear of shock and swingarm while supporting shock absorber. Discard locknut. On aluminum swingarms only: retain washers for re-use.
8. Remove shock absorber assembly.
9. **All Models Except S1/S1W/S2/S2T:** Remove two screws, washers, star washer (present on 1997 M2, S3/S3T) and voltage regulator from bracket. Discard star washer.
10. **All Models Except S1/S1W/S2/S2T:** Remove small button head screw and metal locknut (if present) that secures voltage regulator bracket to front shock mount. Leave bracket in place. Discard screw and metal locknut.
11. Remove top and bottom front shock mount bolts, washers, star washer (present on 1997 M2,S3/S3T) and locknuts. Remove and discard front shock mount. Discard bolts, locknuts, washers and star washer. NOTE: If interference is encountered removing bolt from shock mount, it may be necessary to loosen the header/muffler to remove bolt. See appropriate Service Manual, Section 2 for instructions.

## INSTALLATION

### IMPORTANT NOTE

The new front shock mount **MUST** be used with the new shock absorber. The new shock is 1.77 in. (45 mm) shorter than the previous shocks and requires the new front mount to align and install properly.

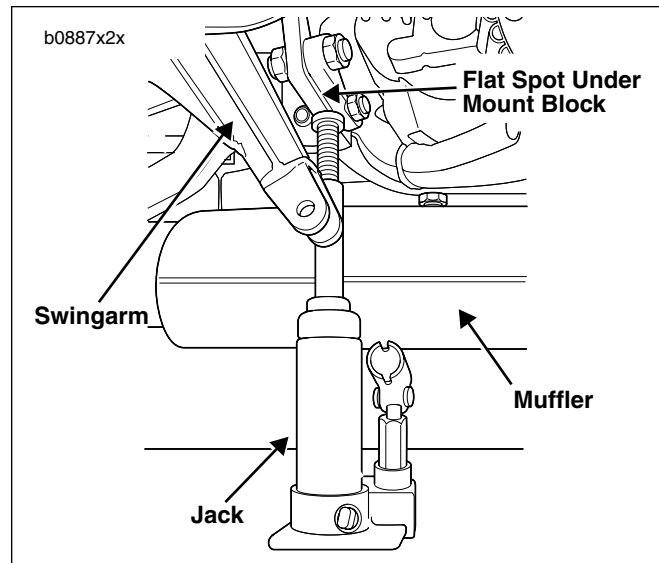


Figure 1. Jack Location on Mount Block (Shock Removed for Clarity)

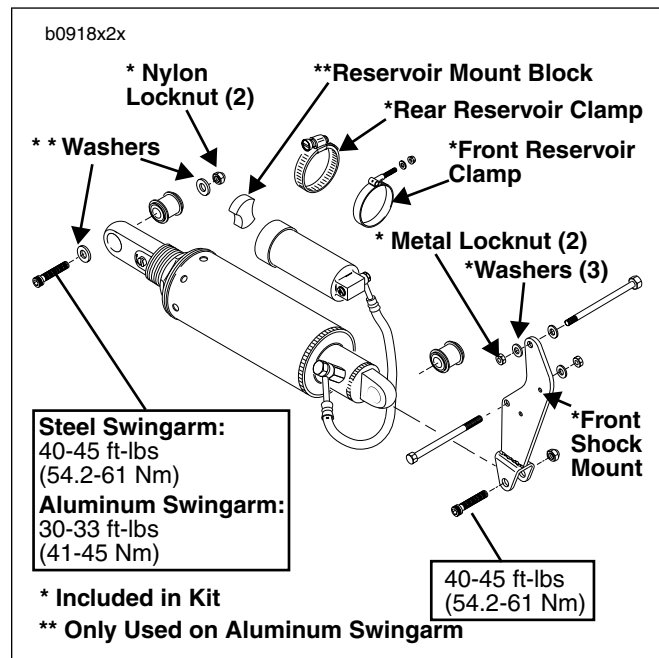


Figure 2. New Shock Absorber Assembly

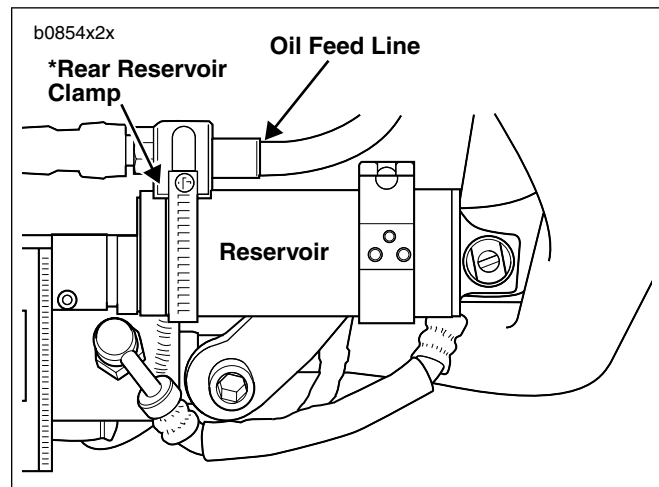


Figure 3. Rear Reservoir Clamp

**NOTE**

It is recommended that the **new** swing arm be installed before installing the **new** shock absorber. See recall #0816 (Bulletin B-025) for procedure to replace swing arm.

1. See Figure 2. Install **new** front shock mount to crankcase with two **new** front shock mount bolts, washers, star washer (on 1997 M2, S3/S3T models only) and metal locknuts. Tighten bolts to 30-33 ft-lbs (41-45 Nm). **NOTE:** Top bolt goes in from the left side, bottom bolt goes in from right side. Bottom bolt does not use washer under bolt head. Star washer (only used on 1997 M2, S3/S3T models) goes on bottom bolt under the washer on the nut side. If exhaust was loosened during front shock mount removal, replace exhaust gaskets and reinstall exhaust. See appropriate Service Manual, Section 2 for instructions.
2. **All Models Except S1/ S1W/S2/S2T:** Apply LOCITITE THREADLOCKER 243 (Blue) to threads of **new** button head fastener. Attach voltage regulator bracket to front shock mount with small button head fastener. Tighten fastener to 5-6 ft-lbs (7-8 Nm).
3. **All Models Except S1/ S1W/S2/S2T:** Apply LOCTITE THREADLOCKER 243 (Blue) to threads of voltage regulator screws. Install voltage regulator (**new** star washer underneath regulator on 1997 M2, S3/S3T models) to bracket with two screws and washers. Tighten screws to 9-11 ft-lbs (12-15 Nm).

**NOTE**

All **new** shock absorbers, including those on M2 Models have remote reservoirs that enable rebound damping adjustment.

4. See Figure 2. Position **new** shock absorber from kit in mounting position.
5. Loosely install bolt, washers (aluminum swingarms only) and **new** locknut through rear shock eye and swing arm.
6. Loosely install bolt and **new** locknut through front shock eye and front shock mount.
7. **On 1996-1998 vehicles only:** Loosen header tie bar from collector.
8. Position front clamp over reservoir. Loosely install **new** front reservoir clamp to front shock mount (and install **new** header tie bar spacer between front shock mount and header tie bar on 1996-98 vehicles only) with **new** washer and **new** nylon locknut.
9. See Figure 3. Loosely install **new** rear clamp around reservoir and oil feed line.
10. **All Models:** Install **new** reservoir mount block between oil pump fitting and remote reservoir.

**NOTE**

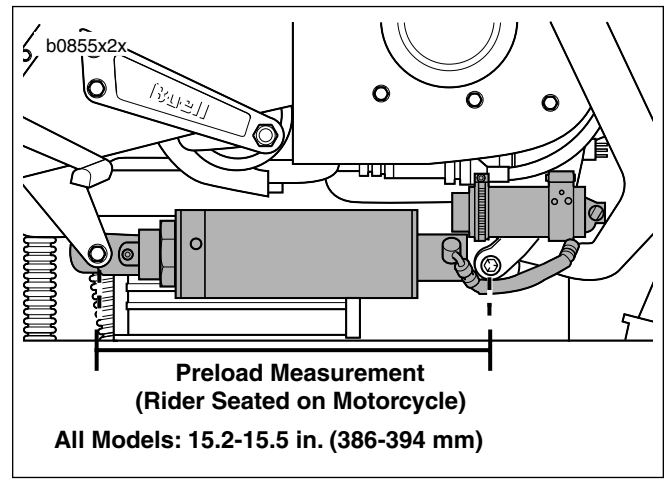
If vehicle is equipped with later model aluminum swingarm, torque rear hardware to 30-33 ft-lbs (41-45 Nm).

11. Tighten front and rear shock mounting hardware to 40-45 ft-lbs (54.2-61.0 Nm).
12. Tighten clamps around reservoir. Tighten tie bar to collector (if applicable).

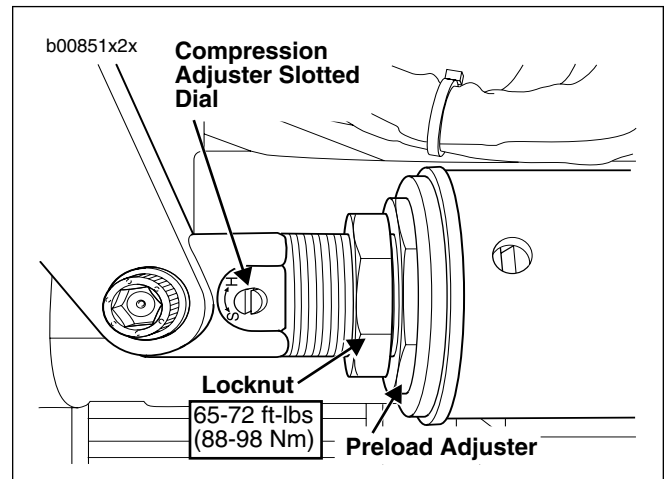
**NOTE:**

If installing **new** swing arm from #0816 recall, stop procedure here and see **ADJUSTMENT** on following page when swing arm installation is complete. If not installing new swing arm, continue with Step 11 below.

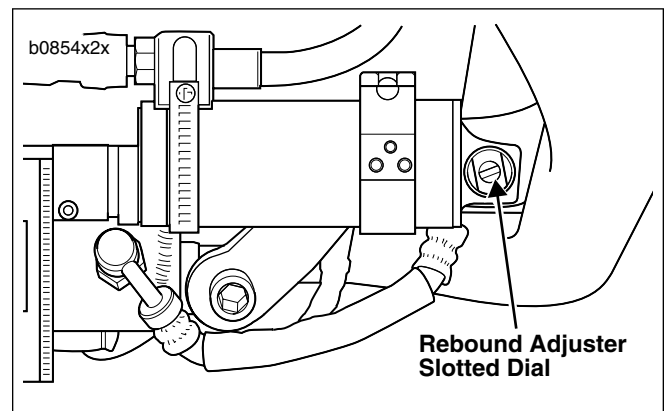
13. Lower and remove jack from under swing arm mount block.



**Figure 4. Measuring Preload**



**Figure 5. Preload and Compression Adjustments**



**Figure 6. Rebound Adjustment**

14. Connect negative battery cable. Tighten to 40 in-lbs (4.5 Nm).
15. Set preload. See **ADJUSTMENT**.
16. Test ride.

## ADJUSTMENT

- See Figure 4. Check and adjust rear shock preload.
  - With rider seated on motorcycle, the preload is determined by measuring the distance between the centers of the front and rear shock eye and adjusting until the measurement is within specification.
  - See below for optimum preload measurements:
    - All Models:** 15.2-15.5 in. (386-394 mm)

### NOTE:

- All measurements must be taken with rider seated on motorcycle.
  - Riders with passenger at or near GVWR may exceed optimum shock length measurement (preload adjustment).
- See Figure 5. To adjust shock preload, loosen the locknut and turn the preload adjuster at the end of the shock to move can towards front or rear of motorcycle.
    - Tighten adjuster (move can towards rear of motorcycle) to **increase** preload.
    - Loosen adjuster (move can towards front of motorcycle) to **decrease** preload.
  - See Figure 7. When finished, apply wheel bearing grease halfway around the shock (180 degrees) to the mating faces of the locknut and adjuster nut and the first few threads on the aluminum body leading to the adjuster nut.
  - Thread locknut back into place.

### NOTE

Torque wrench and crow's foot must be set at 90 degrees to prevent torque multiplication by wrench.

- Using SHOCK PRELOAD ADJUSTING TOOLS (Part No. B-45110), hold adjusting nut in place with 60 mm ADJUSTING NUT WRENCH and tighten locknut to 65-72 ft-lbs (88-98 Nm) with 52 mm LOCKNUT CROW'S FOOT set at 90 degrees to the torque wrench.
- Wipe excess grease off of shock absorber.

### NOTE

- See Figures 5 and 6. To adjust rear shock to maximum damping setting, use screwdriver to turn slotted dial on appropriate adjuster clockwise until it stops. This is the maximum damping setting.
  - See Figures 5 and 6. To adjust rear shock to factory recommended settings, turn dial counterclockwise from maximum damping the amounts shown in Steps 7 and 8 to align the reference marks.
- See Figure 5. Set compression damping using the slotted dial on the shaft at the end of the shock. New factory setting is as listed below:
    - S1/S1W/M2 Models:** full damping minus 2.25 turns.
    - S2/S2T Models:** full damping minus 2.5 turns.
    - S3/S3T Models:** full damping minus 2.5 turns.
  - See Figure 6. Set rebound damping using the slotted dial on the remote reservoir at the front of the shock. New factory setting is as listed below:
    - S1/S1W/M2 Models:** full damping minus 1.5 turn.
    - S2/S2T Models:** full damping minus 1 turn.
    - S3/S3T Models:** full damping minus 1 turn.

## NOTE

When preload is increased, both compression and rebound damping should be increased. If preload is decreased, both compression and rebound damping should be decreased.

- Test ride motorcycle.
- Provide customer with Customer Instructions for Shock Replacement and Adjustment (Instruction Sheet Number -J01561) provided in kit.

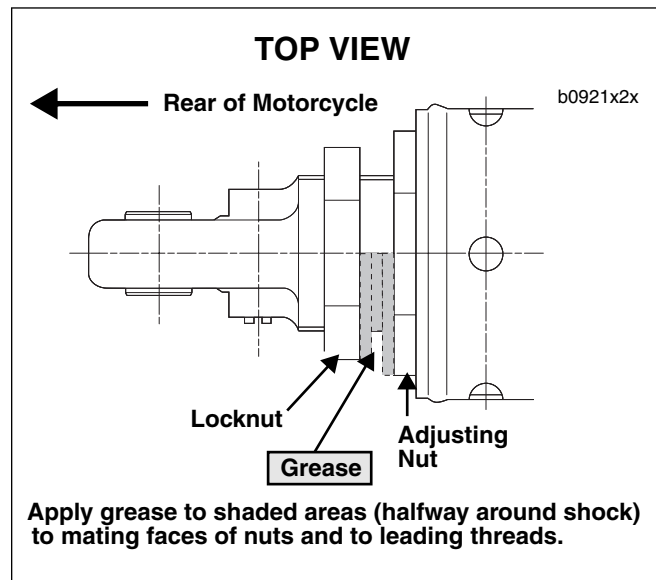


Figure 7. Locknut Tightening Procedure

## CREDIT PROCEDURES - VEHICLE REPAIR

Use up your existing inventory of the original recall kits. No credit will be given for original recall kits.

For each vehicle serviced, place a "C" in the letter box on the Buell Dealer Service Card. Send the properly completed dealer service cards and the replaced shock to Buell Distribution Corporation, 3801 W. Juneau Ave., Milwaukee, WI 53208. Upon receipt and processing of your properly completed dealer service cards and part, you will be credited for 0.6 hours for M2, S1, S1W, S2, S2T, S3 and S3T models. Time includes 0.1 hour administrative time and return postage. No credit will be issued for the kits as they were sent no charge, transportation paid.

### IMPORTANT NOTE

**It is very important that you return the replaced part and recall card TOGETHER to receive appropriate credit so we can update our records.**

## CREDIT PROCEDURES - DEALER STOCK PARTS

Remove all affected shock absorbers (Part Nos. listed below) from your inventory. To receive credit, complete a regular warranty claim referencing Service Bulletin B-024B in the "Description of Repair" section. Fill in the rest of the claim as follows.

**Table 1. Credit for Parts**

<b>Claim Type</b>	BDS
<b>Quantity</b>	See Note Below
<b>Event 1, Problem Part No.</b>	54541-96Y
<b>Part Description</b>	S1 Shock Absorber (1996-1997)
<b>Event 2, Problem Part No.</b>	54621-98Y
<b>Part Description</b>	S1/S1W Shock Absorber (1998)
<b>Event 3, Problem Part No.</b>	54541-94Y
<b>Part Description</b>	S2/S2T Shock Absorber
<b>Event 4, Problem Part No.</b>	54620-97Y
<b>Part Description</b>	M2 Shock Absorber
<b>Event 5, Problem Part No.</b>	54622-97Y
<b>Part Description</b>	S3/S3T Shock Absorber
<b>Customer Concern Code</b>	9205
<b>Condition Code</b>	9111

*NOTE*

*"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 a bar coded label to return the recalled shock absorbers. To receive the appropriate credit for parts and return postage, you must return the shocks by the due date on the bar coded label. Buell Distribution Corporation will advise at a later date how to order updated shock absorbers to replenish your stock. **Do not order the recall kits to restock your inventory!**