



INSTRUCTIONS

J01992

2005-07-29



S-1 BATTERY REPLACEMENT KIT

GENERAL

Kit Number

Z0022.9

Models

The battery used on stock Buell S1 Lightning® model motorcycles has been discontinued. In order for a replacement battery to fit the existing tray, a kit has been created to retrofit to the existing battery tray.

The following instructions describe how to install the S1 Battery Replacement Kit on 1996-1998 Lightning S1® models.

NOTE

A Service Manual is available from your Buell Dealer.

Kit Contents

Table 1. Kit Contents

Description (Quantity)	Part Number
Battery tray insert	L2120.9
Battery strap	Y0123.9
Battery	65948-00
Battery pad, side (short)	L0001.9
Battery pad insert (long)	L0002.9
Regulator screw (2)	AA0406.2CXBL
Regulator washer (2)	B0613.1Z
Battery tray screw	AA0404.1CZ
Star washer (4)	BA0408.4Z
Cable ties (2)	Y0303.2B
Nut, battery strap	DA0400.1FZ
Locknut, battery strap	DA0400.2FZ
Locknut, ground strap	DA0400.10CZ

⚠ WARNING

Engine exhaust from this product contains chemicals known to the State of California to cause cancer, and birth defects or other reproductive harm. (00004f)

⚠ WARNING

Do not run motorcycle in a closed garage or confined area. Inhaling motorcycle exhaust, which contains poisonous carbon monoxide gas, could result in death or serious injury. (00005a)

PRELIMINARY INSTRUCTIONS

Removing Existing Battery

⚠ WARNING

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

⚠ 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)

NOTE

The S1W and S1 negative battery cables were recalled under safety recall #0811. If this recall service was not performed, see your Buell dealer and have the recall procedure performed.

INSTALLATION

Obtain the appropriate year S1 Lightning Service Manual and proceed as follows:

1. Remove seat and tail section. (See Section 2 of Service Manual.)
2. Pull transmission vent hose out from between battery and frame to allow access to battery.
3. See Figure 1. Remove voltage regulator (2).
 - a. Remove long screw, star washer, nut and ground strap from inboard side of voltage regulator.
 - b. Remove screw and washer from outboard side of voltage regulator.
 - c. Cut cable tie (3) that secures voltage regulator wire harness to frame tube.
 - d. Discard screws and washers.



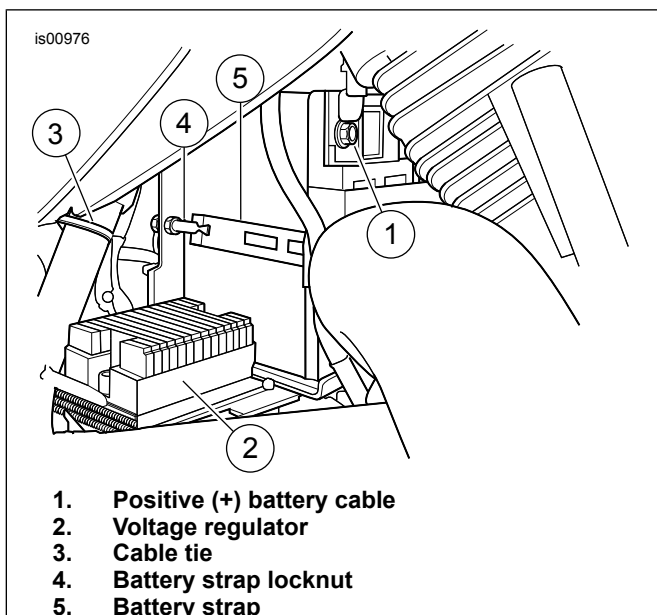


Figure 1. Stock Battery Removal

4. Using 7/16 inch offset ratcheting box end wrench, remove locknut (4) from battery strap (5). Discard locknut.

5. Remove battery strap from battery. Discard battery strap.

NOTE

Rotate battery 90°, tilt forward and to side to remove.

6. Remove battery from left side of motorcycle. Remove bottom battery pad. Leave rear battery pad in place for installation.

NOTE

The heat shield on early-production motorcycles will require an additional rear mounting hole to clear the battery.

7. Inspect heat shield on right side of motorcycle. If heat shield is plastic and has 2 holes on rear portion, go to step 10. If heat shield is fiberglass and has only 1 hole on rear portion, see steps 8-10.

NOTE

Item 4 on template page should measure exactly 1.0 inch in each direction. Measure to verify that template is correct size.

8. See Template page. Remove heat shield. Position template on heat shield with existing hole in heat shield and template hole (1) in proper alignment. Tape area to be drilled with masking tape. Mark new hole position (2) on fender. Do not drill hole closer than 5/16 inch (8 mm) (3) to edge of heat shield.

9. Drill hole where marked with 5/16 inch drill bit.

NOTE

Spare fuse holder may have to be temporarily removed to reposition clamp.

10. See Figures 3 and 4. Reposition loop clamp (1) and hardware to new/other hole.

KIT INSTALLATION

1. See Figure 2. Position new battery tray over existing battery tray. Vertical side of tray goes on right side of motorcycle.

NOTE

Star washer should be located between tray and ground strap.

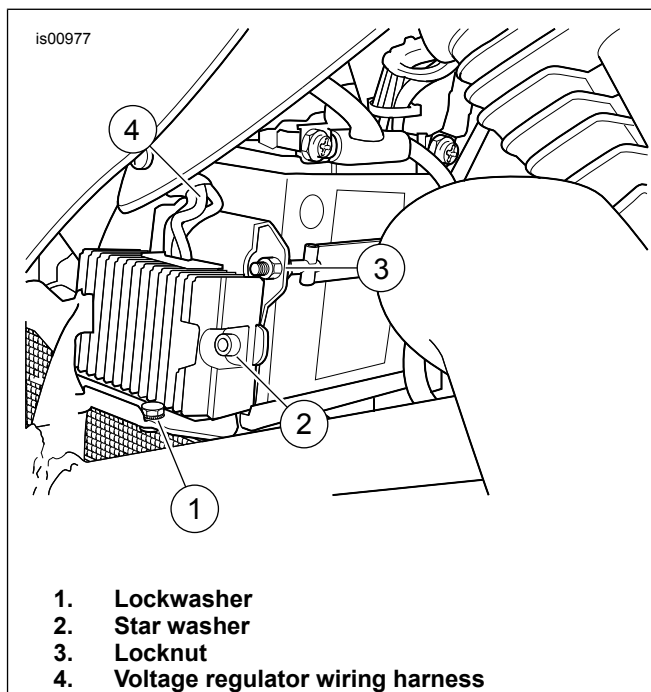


Figure 2. New Battery Tray (Right Side)

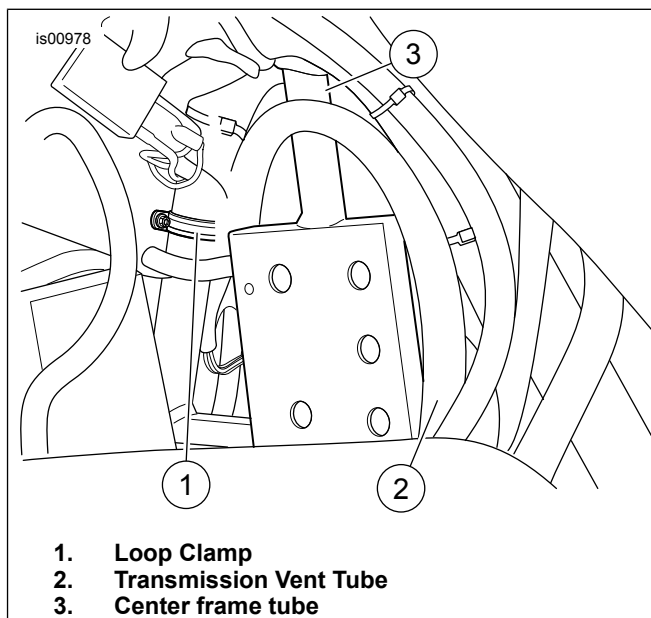


Figure 3. Transmission Vent Line Routing

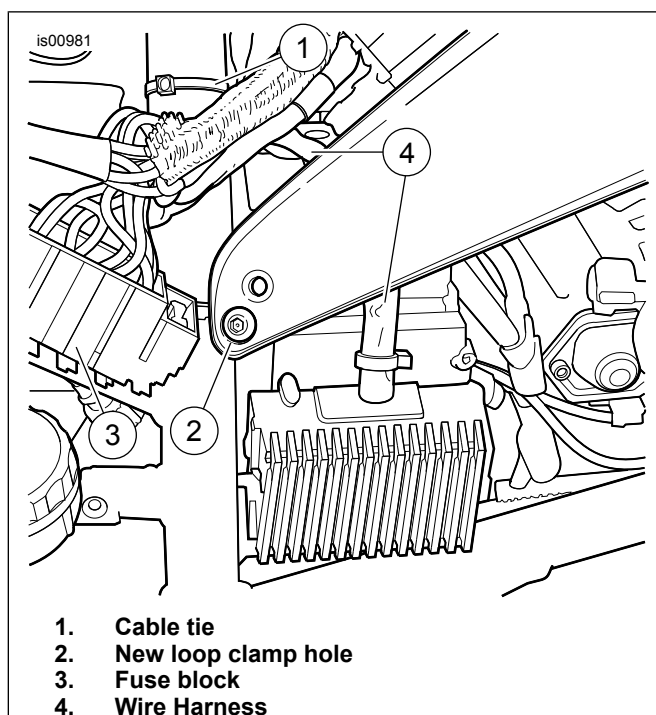


Figure 4. Voltage Regulator Wire Harness Routing

2. Lift **new** battery tray from right side of motorcycle and attach ground strap to stud on bottom of **new** tray with **new** star washer and **new** locknut (1). Tighten locknut to 8-10 ft-lbs (11-14 Nm).

NOTE

Stack-up from top is screw, new tray, star washer and old tray.

3. See Figure 2. Apply LOCTITE® THREADLOCKER 262 (Red) (Harley-Davidson part number 94759-99) to mounting screw. Route voltage regulator wire harness over top edge of new tray (not to side). Install new tray to existing tray with mounting screw and new star washer provided in kit. Tighten screw to 10-12 ft-lbs (14-16 Nm).

NOTE

The star washers must be placed between the voltage regulator and tray to properly ground the voltage regulator.

4. See Figure 2. Position two new star washers (2) between voltage regulator and new tray under both mounting holes. Insert **new** screws and washers far enough to capture star washers and install voltage regulator to vertical surface of new tray. Tighten screws to 9-11 ft-lbs (12-15 Nm).
5. Position larger battery pad, provided in kit, in bottom of new battery tray.
6. Position smaller battery pad, provided in kit, on right side of battery tray. Position original rear battery pad behind where battery will be located. Position new battery in tray from left side of motorcycle.

7. See Figure 4. Route voltage regulator wire harness (4) over top rear of battery and cable tie (1) to right side frame tube with new cable tie provided in kit.
8. See Figure 2. Install battery strap by hooking left side to battery tray and securing right side with new locknut (3) provided in kit. Tighten locknut to 40-50 in-lbs (5-6 Nm).
9. See Figure 3. Route transmission vent tube (2) over battery to the right of center frame tube (3) and behind battery tray.

⚠ 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. See Figure 5. Connect battery cables, positive cable (1) first. Note new routing of positive battery cable. Tighten battery terminal screws (2) to 60-96 in-lbs (7-11 Nm).

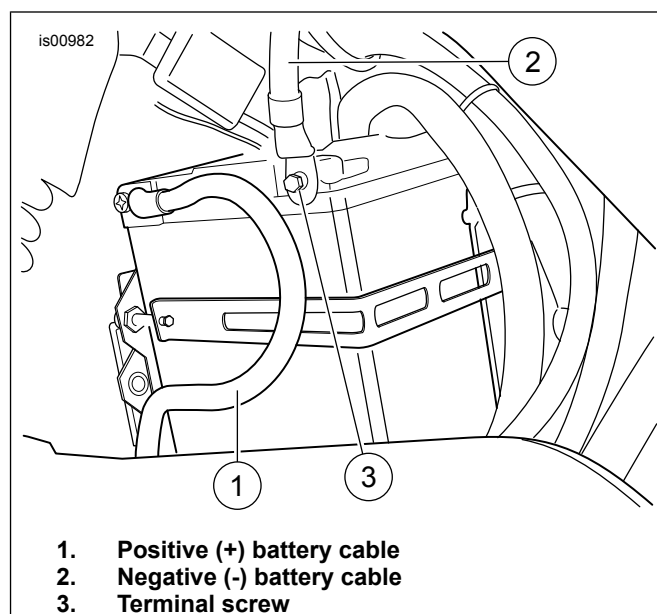


Figure 5. Battery Cable Routing (Left Side)

11. Turn ignition key to ON to verify proper ignition system operation.

⚠ WARNING

After installing seat, pull upward on seat to be sure it is locked in position. While riding, a loose seat can shift causing loss of control, which could result in death or serious injury. (00070b)

12. Install tail section and seat. (See Section 2 of Service Manual.)

NOTE

See Heat Shield Drilling Template on the following Page. Refer to steps 8 and 9 for instructions on template use.

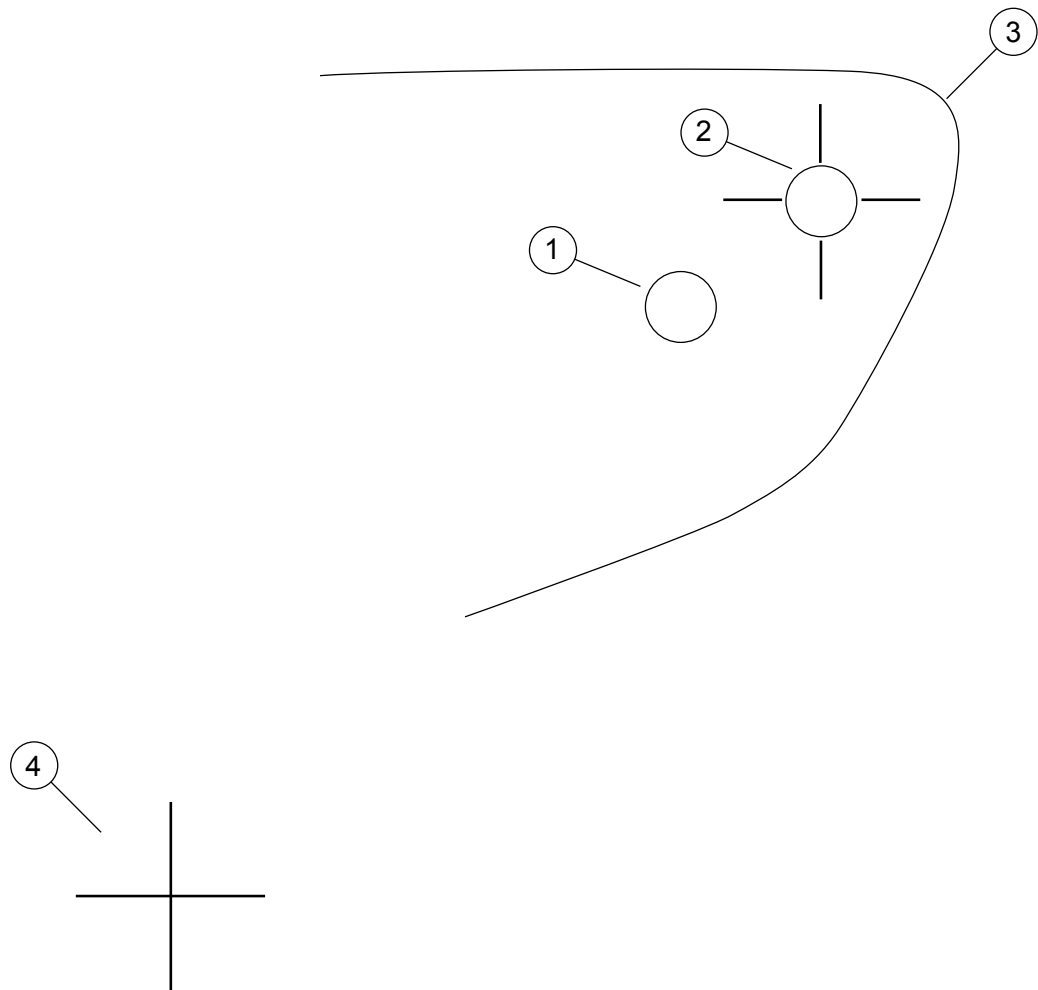


Figure 6. Heat Shield Drilling Template