

# INSTRUCTION SHEET

**Buell**  
AMERICAN MOTORCYCLES

-J01560

Kit Numbers 91424-99YA

REV. 2-28-01

## RACE MUFFLER KIT

### General

This Race Muffler Kit fits all 1999 and later Buell Lightning X1, Cyclone M2 and Thunderbolt S3 models.

#### NOTE

A Service Manual for your vehicle is available at your local Buell Dealer.

### MUFFLER AND HEADERS

#### Description

#### CAUTION

This Muffler and Header Kit is intended for high-performance racing (OFF ROAD USE) applications only. Use of this kit may reduce or void the Limited Warranty coverage. Motorcycles modified with some performance engine parts must not be used on public roads and in some cases may be restricted to closed-course competition. Not legal for sale or use in California on any pollution-controlled motor vehicles. Alterations of emission related components constitutes tampering under USEPA guidelines and can lead to substantial fines and penalties.

Engine related performance parts are intended for the Experienced Rider only.

#### NOTE

The muffler and header kits are considered separate kits. However, the muffler kit must be installed with a header kit.

### MUFFLER RACE KIT NUMBER 91424-99YA 1999 and later Lightning X1, Cyclone M2 and Thunderbolt S3

QTY	PART NO.	DESCRIPTION
2	DA0500.10CZ	Flexlock, 5/16-18
2	AA0508.1CZ	Bolt, 5/16-18 X 1 in.
2	S 0123.2C	Muffler Mount
1	S1120.G	Clamp (200-71)
1	Not sold separately	Muffler, Race

### HEADER RACE KIT NUMBER. 65400-99Y 1999 and later Lightning X1 and Thunderbolt S3

QTY	PART NO.	DESCRIPTION
1	Not sold separately	Header X1 Racing
1	S1120.G	Clamp (200-71)
1	S1121.G	Header Support
1	Y0305.8B	Wire Tie

### HEADER RACE KIT NUMBER. 91423-99Y 1999 and later Cyclone M2

QTY	PART NO.	DESCRIPTION
1	Not sold separately	Header M2 Racing
1	S1120.G	Clamp (200-71)
1	S1121.G	Header Support

### Stock Muffler Removal

#### WARNING

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

#### WARNING

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

1. Disconnect battery cables, negative cable first.
2. On the X1 vehicles, remove chin fairing according to applicable Service Manual procedures.
3. On S3 Models with fairing lowers, remove right side fairing lower according to applicable Service Manual procedures.
4. On M2 Models, remove heat shield according to applicable Service Manual procedures.
5. See Figure 2. Loosen nut securing muffler clamp (9).
6. See Figure 1. Remove bolts, lockwashers and washers securing muffler to Z-bracket 4. Discard bolts.

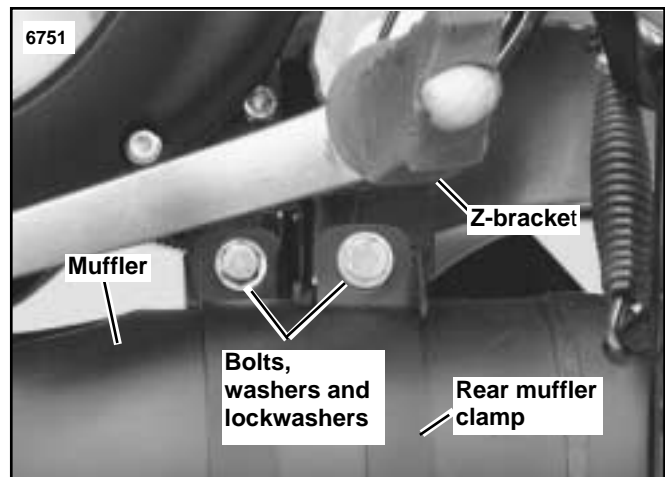
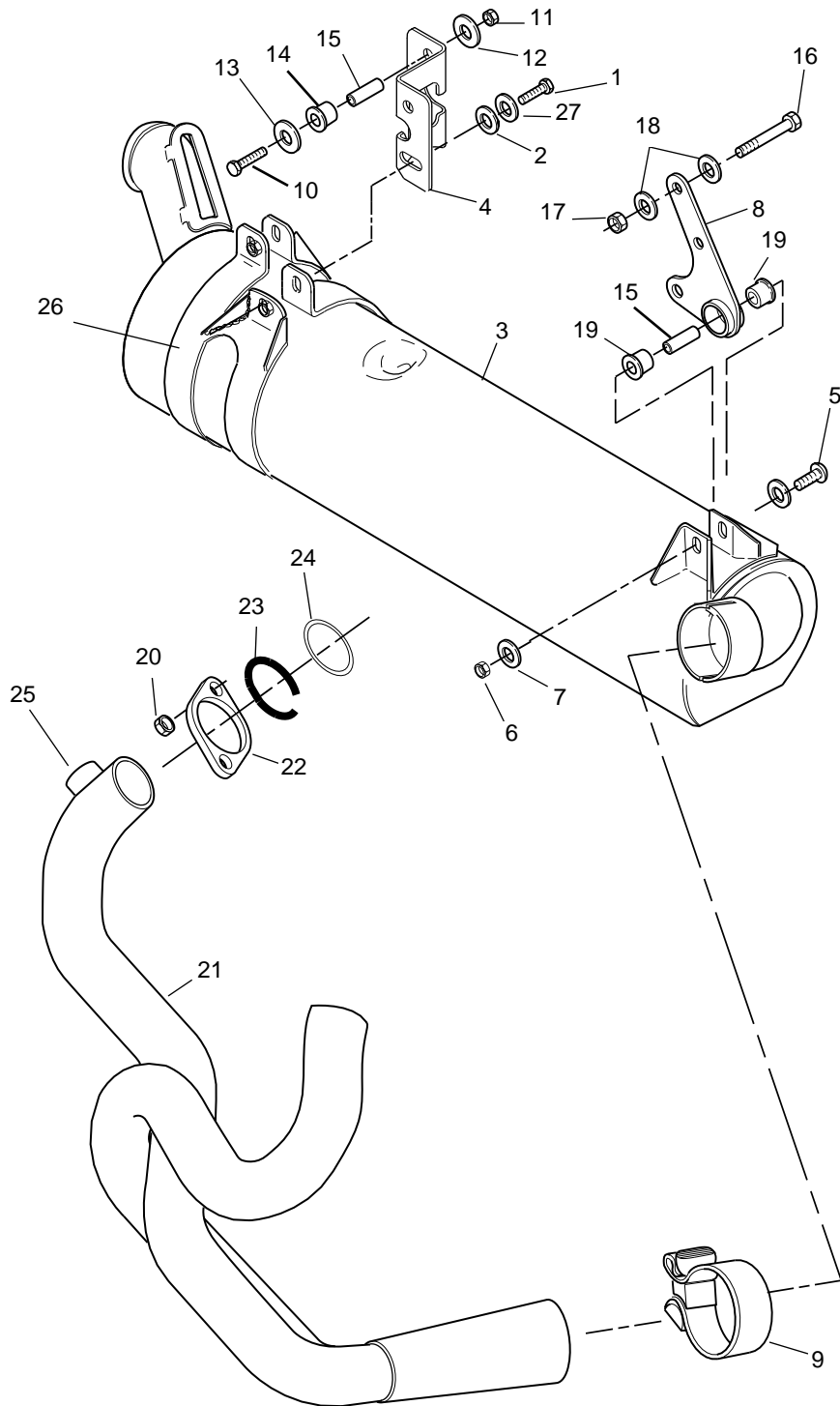
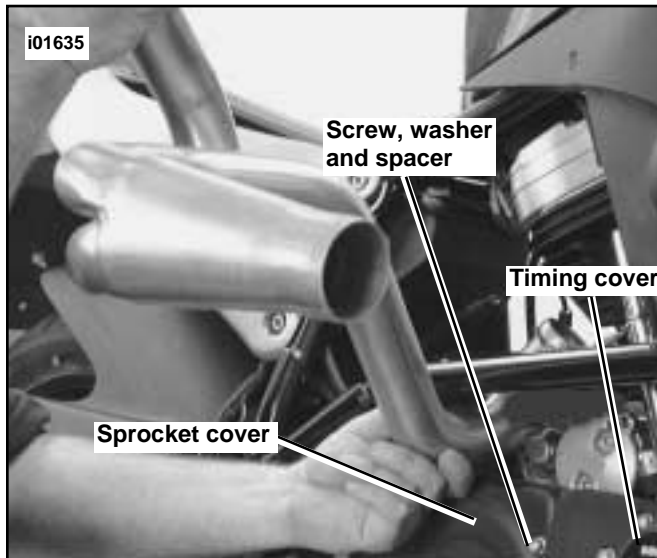


Figure 1. Rear Muffler Mounts



- |                   |                        |  |
|-------------------|------------------------|--|
| 1. Bolt           | 11. Locknut            | 21. Exhaust header                                 |
| 2. Washer         | 12. Washer             | 22. Exhaust header clamp                           |
| 3. Muffer         | 13. Washer             | 23. Exhaust clamp retaining ring                   |
| 4. Z-bracket      | 14. Rear muffer mount  | 24. Exhaust port gasket                            |
| 5. Bolt           | 15. Mount spacer       | 25. Oxygen sensor mount (On X1 and S3 models only) |
| 6. Locknut        | 16. Bolt               | 26. Muffer clamp                                   |
| 7. Washer         | 17. Locknut            | 27. Lockwasher                                     |
| 8. Muffer support | 18. Washer             |  |
| 9. Muffer clamp   | 19. Front muffer mount |  |
| 10. Bolt          | 20. Exhaust header nut |  |

**Figure 2. Stock Exhaust System**



**Figure 3. Exhaust Header Positioning**

7. See Figure 2. Loosen the four exhaust header nuts (20) using SNAP-ON SWIVEL SOCKET, Part No. PFSX916. Do not remove nuts.
8. Remove bolt (5) and locknut (6) with washers (7) from front muffler support (8).
9. Remove muffler (3) and muffler clamp (26). Discard clamp.
10. Remove locknuts (11), washers (12 and 13) and bolts (10). Remove the complete Z-bracket (4).

### Stock Exhaust Header Removal

1. For X1 and S3 Models only:
  - a. Remove any restrictive cable straps on oxygen sensor wiring and detach connector [137] from main wiring harness.
  - b. Remove oxygen sensor from exhaust header.
2. See Figure 2. Remove the four exhaust header nuts (20) using SNAP-ON SWIVEL SOCKET, Part No. PFSX916.
3. See Figure 3. Remove exhaust header by swiveling and lifting exhaust header. Slide exhaust header from under frame.
4. See Figure 2. Remove exhaust header clamp (22) and exhaust clamp retaining ring (23) from exhaust header (21). Retain for use with the new system.
5. Check exhaust port gasket (24) for wear. If necessary, replace gasket.

### Race Exhaust Header Installation

1. See Figure 2. Ensure that gasket (24) is in position and undamaged. Slide exhaust header clamps and clamp retaining rings over ends of race exhaust header.

#### NOTE

See Figure 3. For ease of installation, remove screw, washer and spacer from sprocket cover. Be sure to replace after header is installed.

2. See Figure 3. Cover timing cover with a cloth and slide exhaust header under frame by positioning as shown. Position rear end of exhaust header in rear exhaust port. Do not install exhaust header clamp over port.
3. Rotate exhaust header so that front end of exhaust header is in position at front port to cylinder head.
4. See Figure 2. Loosely fasten exhaust header to cylinder heads with nuts (20). Use SNAP-ON SWIVEL SOCKET, Part No. PFSX916.
5. See Figure 5. Install header support to muffler support with bolts, washers and locknuts. Loosely tighten.
6. For X1 and S3 Models only: using a non-silicone sealant, install oxygen sensor on header, threading oxygen sensor wire under frame. Tighten to 44 ft-lbs (59.7 Nm.) Attach oxygen sensor connector [137]. Secure wiring and sensor with new cable straps.
7. See Figure 5. Install front clamp over header and header support. Loosely tighten.

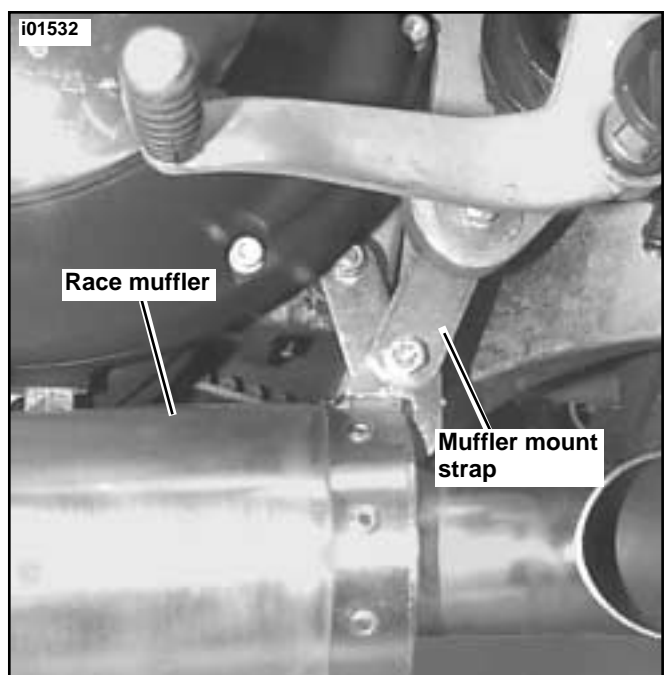
### Race Muffler Installation

1. Coat inside of muffler inlet with PERMATEX ULTRA-COPPER HIGH TEMP RTV SILICON GASKET material.
2. Place rear clamp onto header. Slide muffler inlet onto header and loosely tighten clamp.

#### **WARNING**

**Before tightening muffler hardware, position muffler to provide adequate clearance from shock absorber, side stand spring post and rear tire to prevent contact. Failure to provide adequate clearance may cause loss of control during motorcycle operation which could result in death or serious injury.**

3. See Figure 4. Position muffler and install rear mounting support in rear muffler straps lockwashers, washers and



**Figure 4. Race Muffler**

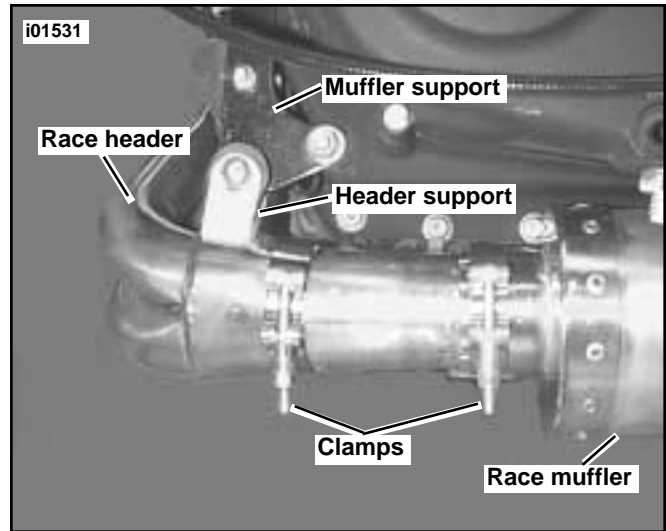
the bolts from the kit Tighten to 17-19 ft-lbs (23-25.8 Nm.)

4. Tighten header support to 17-19 ft-lbs (23-25.8 Nm.)
5. See Figure 5. Tighten front and rear clamp to 20-25 ft. lbs (33.9-40.7 Nm.)
6. Tighten exhaust header nuts (20) to 6-8 ft. lbs. (8.1-10.8 Nm) using SNAP-ON SWIVEL SOCKET.

**⚠ 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.**

7. Connect battery cables to battery, positive cable first.
8. On X1 Models, reinstall chin fairing according to applicable Service Manual procedures.
9. On S3 Models with fairing lowers, reinstall lowers according to applicable Service Manual procedures.
10. On M2 Models, reinstall heat shield according to applicable Service Manual procedures.



**Figure 5. Race Exhaust System**