



# SERVICE BULLETIN

SERVICE PUBLICATION & TRAINING  
INTERNATIONAL AFTER-SALES DEPARTMENT. MITSUBISHI MOTORS CORPORATION

|                                                                                              |                                            |                                                                                                                                                |                     |
|----------------------------------------------------------------------------------------------|--------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
| <b>SERVICE BULLETIN</b>                                                                      |                                            | No.: MSB-02E11-003                                                                                                                             |                     |
|                                                                                              |                                            | Date: 2002-09-18                                                                                                                               | <Model><br>(EC) ALL |
| <b>Subject:</b> LASH ADJUSTER REPLACEMENT USING<br>NEWLY INTRODUCED SPECIAL TOOL<br>MB991946 |                                            | <M/Y><br>98-08                                                                                                                                 |                     |
| <b>Group:</b> ENGINE                                                                         | <b>Draft No.:</b> 02AL506                  |                                                                                                                                                |                     |
| <b>INFORMATION</b>                                                                           | INTERNATIONAL<br>AFTER-SALES<br>DEPARTMENT | <br>T. Kobayashi – Manager<br>SERVICE PUBLICATION & TRAINING |                     |

## 1. Description:

This Service Bulletin informs you of the lash adjuster replacement procedure in which a newly established special tool (pry bar, MB991946) is used to improve efficiency of lash adjuster replacement operation.

## 2. Applicable Engines:

- 4G15-GDI
- 4G63-GDI, 4G64-GDI
- 4G93-GDI, 4G94-GDI
- 6G72-GDI, 6G73-GDI, 6G74-GDI

### 3. Installation and Removal Procedure:

#### Lash adjuster replacement

1. Remove the intake manifold, rocker cover, and timing belt front upper cover.
2. Remove the rocker arm whose lash adjuster requires replacement after moving the No. 1 or No. 4 cylinder piston to its top dead center and then turning the crankshaft until the camshaft sprocket turns by six teeth from the top dead center position.

#### NOTE

The valve will be pushed down when removing the lash adjuster. To prevent the valve from interfering with the top surface of the piston, the piston of the No. 1 or No. 4 cylinder must not be at the top dead center.

A: Rocker arms which can be removed and installed after moving No. 1 cylinder piston from top dead center by a distance equivalent to six camshaft sprocket teeth

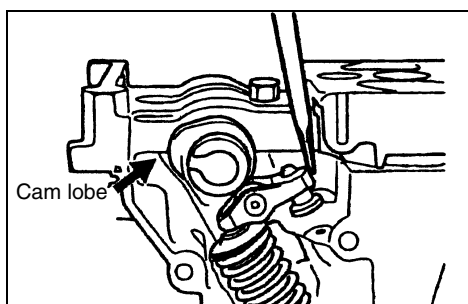
B: Rocker arms which can be removed and installed after moving No. 4 cylinder piston from top dead center by a distance equivalent to six camshaft sprocket teeth

#### <In-line, 4-cylinder engine>

|         | No.1 Cylinder | No.2 Cylinder | No.3 Cylinder | No.4 Cylinder |
|---------|---------------|---------------|---------------|---------------|
| Intake  | A             | A             | B             | B             |
| Exhaust | A             | B             | A             | B             |

#### <V6 engine>

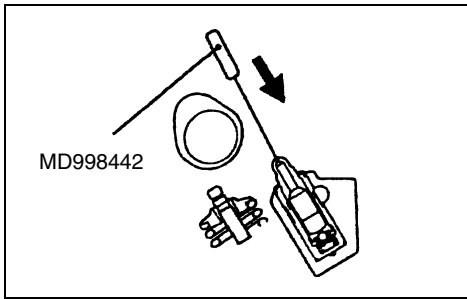
|         | No.1 Cylinder | No.2 Cylinder | No.3 Cylinder | No.4 Cylinder | No.5 Cylinder | No.6 Cylinder |
|---------|---------------|---------------|---------------|---------------|---------------|---------------|
| Intake  | A             | A             | B             | B             | B             | A             |
| Exhaust | A             | A             | A             | B             | B             | B             |



3. Apply a flat tip screwdriver (with a thick shank) to the rocker arms as shown in the drawing. Lever up and remove the rocker arm with the screwdriver using the cylinder head as a fulcrum.

#### Caution

- a. Check that the valve is not lifted before removing the rocker arm. If the valve is lifted, turn the crankshaft until the valve becomes in a non-lifted state and then remove the rocker arm.
- b. A large force is required for this operation since the rocker arm needs to be removed while pushing the valve down.
- c. Warn yourself that the rocker arm can spring out when it comes out of position.



4. Pull the lash adjuster out of the cylinder head.

**NOTE**

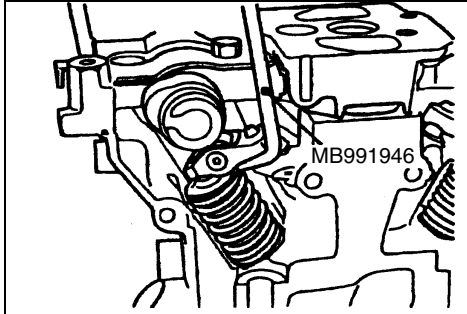
With the 4G9 engine, the lash adjusters of the No. 2 cylinder front exhaust valve and the No. 3 cylinder rear exhaust valve will interfere with the beam camshaft cap before they can be removed. Use the following procedure to remove them:

- a. Using the special tool air bleed wire (MD998442), push down the steel ball to drain engine oil out of the lash adjuster.
- b. Using a magnet, lift the lash adjuster to a point where it interferes with the beam camshaft cap.
- c. Using angle nose pliers or a similar tool, hold firm the body of the lash adjuster and remove the lash adjuster while pushing down the plunger.

5. Install an air-bleed lash adjuster in the cylinder head.

**NOTE**

With the 4G9 engine, the lash adjusters of the No. 2 cylinder front exhaust valve and the No. 3 cylinder rear exhaust valve will interfere with the beam camshaft cap before they can be installed. First set the lash adjuster in the cylinder head, then place it into position while pushing down the plunger.



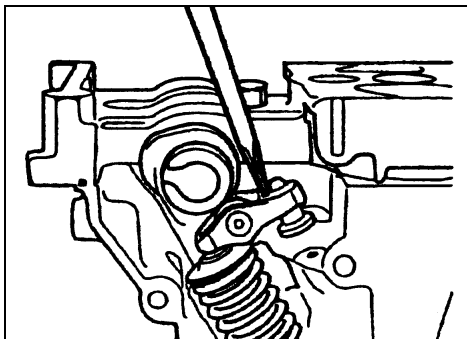
6. Set the roller end of the rocker arm against the valve stem end.
7. Using the end of the special tool (pry bar MB991946) inserted between rocker arm and valve spring retainer, lever up the rocker arm while pressing down the valve spring retainer with the tip of special tool.

**Caution**

**Do not damage the lash adjuster with the special tool.**

**NOTE**

The valve is pushed down when installing the lash adjuster. To prevent the valve from interfering with the top surface of the piston, make sure that the No. 1 or No. 4 cylinder piston is not at its top dead center. (Refer to the table in step 2.)



8. If the rocker arm jams in the position shown to the left, move the rocker arm to the normal position using a flat tip screwdriver.

**Caution**

**Do not damage the camshaft with the screwdriver.**

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9. Rotate the camshaft once to check that the rocker arm is installed properly.
  10. Install the intake manifold, the rocker cover, and the timing belt front upper cover.
  11. Start the engine and check that the lash adjuster makes no chattering noise. If noise is heard, bleed air out of the lash adjuster. (Refer to the Workshop Manual.)

**Caution**

**With the 4G9 engine, air bleeding is always necessary since the lash adjuster is installed after being contracted.**