

## 4. Valve Rocker Assembly

- (1) Replace the crankshaft pulley bolts and clean them.

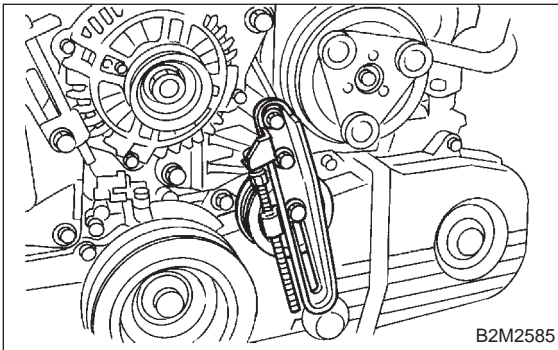
**Crankshaft pulley bolt:**  
12369AA011

- (2) Clean the crankshaft thread using an air gun.
- (3) Tighten the bolts temporarily with tightening torque of 44 N·m (4.5 kg-m, 33 ft-lb).
- (4) Tighten the crankshaft pulley bolts keeping them in an angle between 65 degrees and 75 degrees.

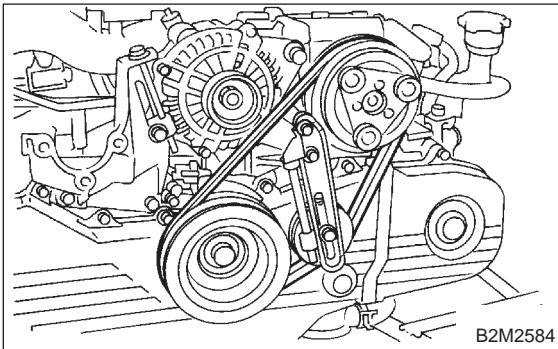
**CAUTION:**

Conduct the tightening procedures by confirming the turning angle of the crankshaft pulley bolt referring to the gauge indicated on the belt cover.

- (6) Install A/C belt tensioner. (With A/C model)



- (7) Install A/C belt. (With A/C model)



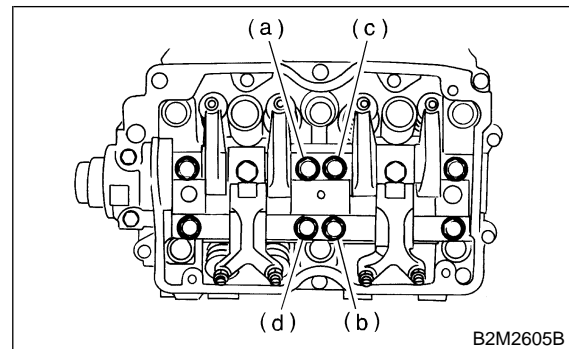
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**A: REMOVAL**

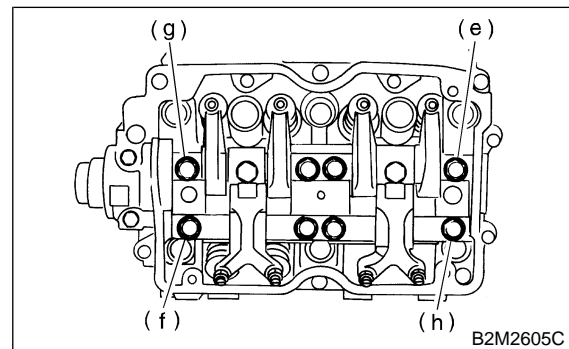
- 1) Disconnect PCV hose and remove rocker cover.
- 2) Loosen bolt which secures rocker shaft support.
- 3) Removal of valve rocker assembly
  - (1) Remove bolts (a) through (d) in alphabetical sequence.

**CAUTION:**

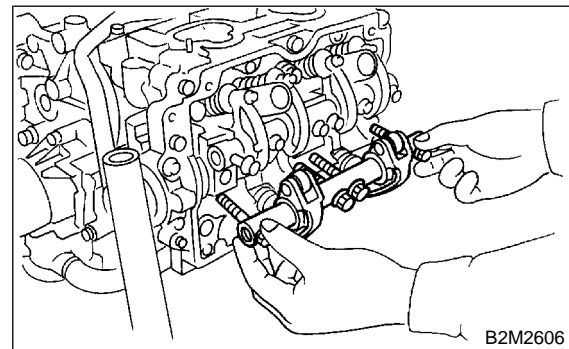
Leave two or three threads of bolt (a) engaged to retain valve rocker assembly.



- (2) Equally loosen bolts (e) through (h) all the way, being careful that knock pin is not gouged.



- (3) Remove valve rocker assembly.



**B: DISASSEMBLY**

- 1) Remove bolts which secure rocker shaft.
- 2) Extract rocker shaft. Remove valve rocker arms, springs, plates and shaft supports from rocker shaft.

**CAUTION:**

Arrange all removed parts in order so that they can be installed in their original positions.

- 3) Remove nut and adjuster screw from valve rocker.

**C: INSPECTION**

**1. VALVE ROCKER ARM**

- 1) Measure inside diameter of valve rocker arm and outside diameter of valve rocker shaft, and determine the difference between the two (= oil clearance).

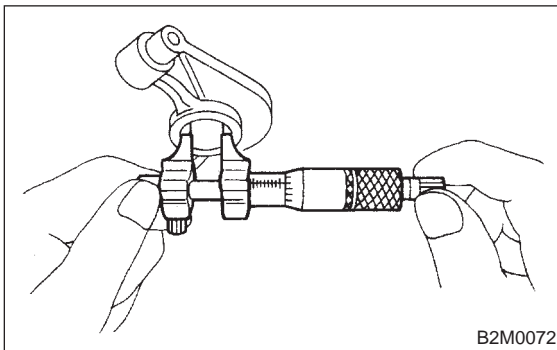
**Clearance between arm and shaft:**

**Standard**

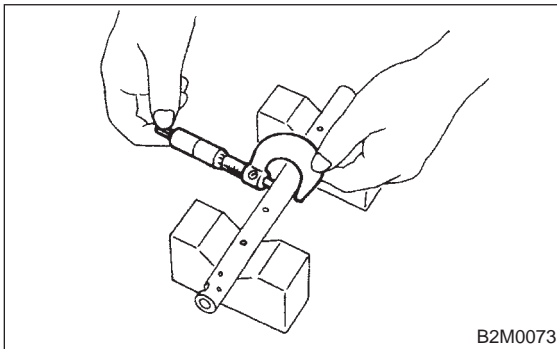
0.020 — 0.054 mm (0.0008 — 0.0021 in)

**Limit**

0.10 mm (0.0039 in)



B2M0072



B2M0073

- 2) If oil clearance exceeds the limit, replace valve rocker arm or shaft, whichever shows greater amount of wear.

**Rocker arm inside diameter:**

22.020 — 22.041 mm (0.8669 — 0.8678 in)

**Rocker shaft diameter:**

21.987 — 22.000 mm (0.8656 — 0.8661 in)

- 3) Measure inside diameter of rocker shaft support and outside diameter of valve rocker shaft, and determine the difference between the two (= oil clearance).

**Clearance between support and shaft:**

**Standard**

0.005 — 0.039 mm (0.0002 — 0.0015 in)

**Limit**

0.05 mm (0.0020 in)

- 4) If oil clearance exceeds the limit, replace rocker shaft support or shaft, whichever shows greater amount of wear.

**Rocker shaft support inside diameter:**

22.005 — 22.026 mm (0.8663 — 0.8672 in)

**Rocker shaft diameter:**

21.987 — 22.000 mm (0.8656 — 0.8661 in)

- 5) If cam or valve contact surface of valve rocker arm is worn or dented excessively, replace valve rocker arm.
- 6) Check that valve rocker arm roller rotates smoothly. If not, replace valve rocker arm.

**2. INTAKE AND EXHAUST VALVE ROCKER SHAFT**

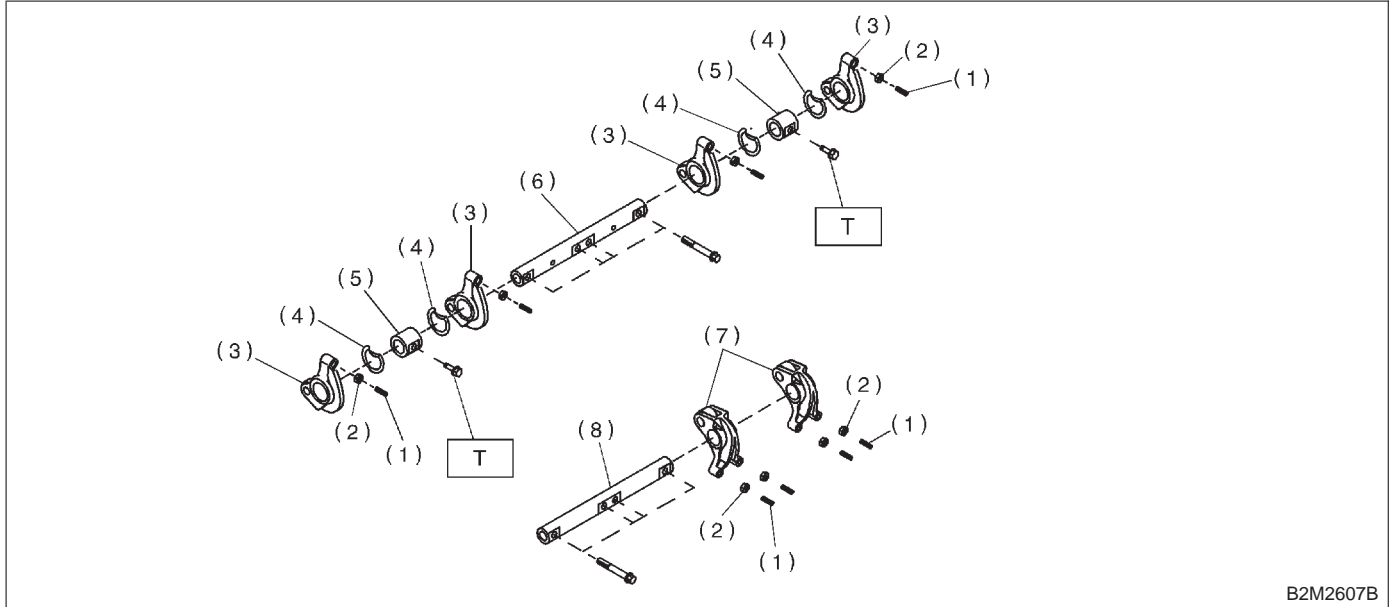
Visually check oil relief valve of shaft end for any of the following abnormalities.

- Breaks in check ball body
- Foreign particles caught in valve spring
- Oil leakage at check ball

**CAUTION:**

Repair or replace valve rocker shaft as necessary.

## D: ASSEMBLY



- |                               |                                |
|-------------------------------|--------------------------------|
| (1) Valve rocker adjust screw | (5) Rocker shaft support       |
| (2) Valve rocker nut          | (6) Intake valve rocker shaft  |
| (3) Intake valve rocker arm   | (7) Exhaust valve rocker arm   |
| (4) Spring                    | (8) Exhaust valve rocker shaft |

**Tightening torque: N·m (kg·m, ft·lb)**  
**T: 5±1 (0.5±0.1, 3.6±0.7)**

- 1) Install adjuster screw and nut to valve rocker.
- 2) Arrange valve rocker arms, springs and shaft supports in assembly order and insert valve rocker shaft.

**Tightening torque (Shaft supports installing bolts):**

**5±1 N·m (0.5±0.1 kg·m, 3.6±0.7 ft·lb)**

**CAUTION:**

**Valve rocker arms, rocker shaft and shaft supports have identification marks. Ensure parts with same markings are properly assembled.**

- 3) Install valve rocker shaft securing bolts.

## E: INSTALLATION

- 1) Installation of valve rocker assembly
  - (1) Temporarily tighten bolts (a) through (d) equally as shown in figure.

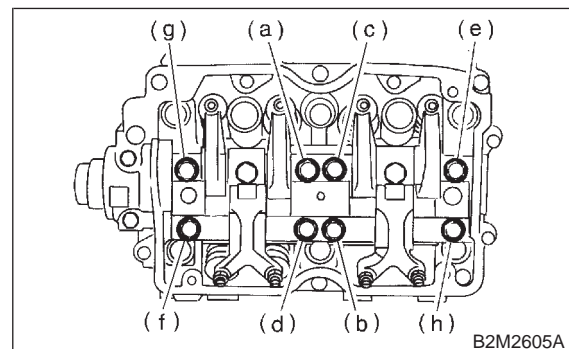
**CAUTION:**

**Do not allow valve rocker assembly to gouge knock pins.**

- (2) Tighten bolts (e) through (h) to specified torque.
- (3) Tighten bolts (a) through (d) to specified torque.

**Tightening torque:**

**25±2 N·m (2.5±0.2 kg·m, 18.1±1.4 ft·lb)**



- 2) Adjust the valve clearances. <Ref. to 2-2 [W8B1].>
- 3) Install rocker cover and connect PCV hose.