

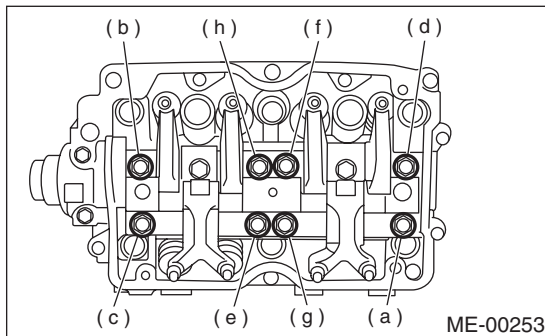
## 18. Valve Rocker Assembly

### A: REMOVAL

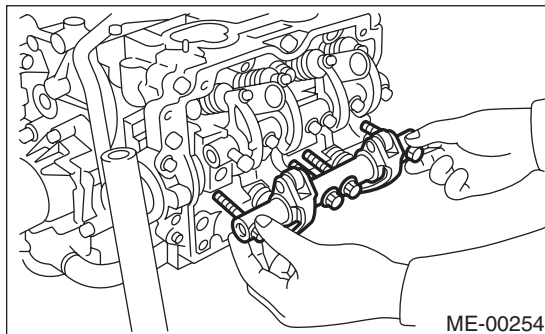
- 1) Remove the V-belt. <Ref. to ME(H4SO)-42, REMOVAL, V-belt.>
- 2) Remove the crankshaft pulley. <Ref. to ME(H4SO)-44, REMOVAL, Crankshaft Pulley.>
- 3) Remove the timing belt cover. <Ref. to ME(H4SO)-45, REMOVAL, Timing Belt Cover.>
- 4) Remove the timing belt. <Ref. to ME(H4SO)-46, REMOVAL, Timing Belt.>
- 5) Remove the camshaft sprocket. <Ref. to ME(H4SO)-51, REMOVAL, Camshaft Sprocket.>
- 6) Disconnect the PCV hose and remove rocker cover.
- 7) Removal of valve rocker assembly
  - (1) Remove bolts (a) through (h) in alphabetical sequence.

#### NOTE:

Leave two or three threads of bolts (g and h) engaged to retain the valve rocker assembly.



- (2) Remove the valve rocker assembly.



### B: INSTALLATION

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

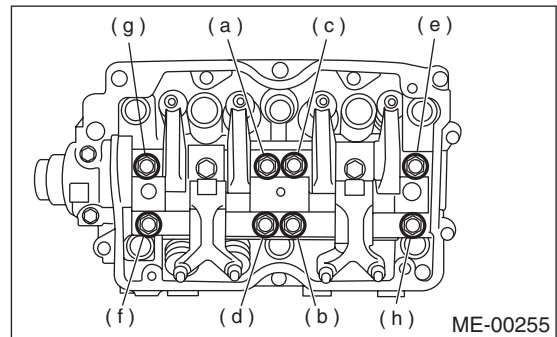
#### NOTE:

Do not allow the 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 N·m (2.5 kgf-m, 18.1 ft-lb)**



- 2) Adjust the valve clearance. <Ref. to ME(H4SO)-31, ADJUSTMENT, Valve Clearance.>
- 3) Install the rocker cover and connect PCV hose.
- 4) Install the camshaft sprocket. <Ref. to ME(H4SO)-51, INSTALLATION, Camshaft Sprocket.>
- 5) Install the timing belt. <Ref. to ME(H4SO)-47, INSTALLATION, Timing Belt.>
- 6) Install the timing belt cover. <Ref. to ME(H4SO)-45, INSTALLATION, Timing Belt Cover.>
- 7) Install the crankshaft pulley. <Ref. to ME(H4SO)-44, INSTALLATION, Crankshaft Pulley.>
- 8) Install the V-belt. <Ref. to ME(H4SO)-42, INSTALLATION, V-belt.>

## C: DISASSEMBLY

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

### NOTE:

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

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

## D: ASSEMBLY

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

### **Tightening torque (shaft supports installing bolts):**

**5 N·m (0.5 kgf-m, 3.6 ft-lb)**

### NOTE:

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

- 3) Install the valve rocker shaft securing bolts.

## E: INSPECTION

### 1. VALVE ROCKER ARM

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

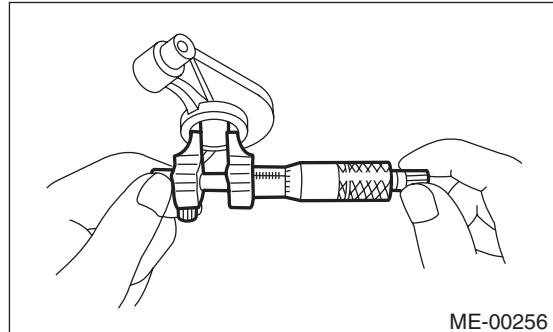
### **Clearance between arm and shaft:**

#### **Standard**

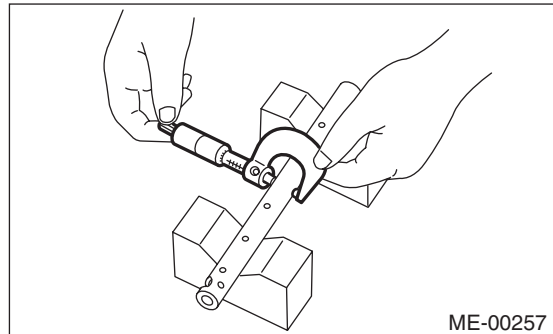
**0.020 — 0.054 mm (0.0008 — 0.0021 in)**

#### **Limit**

**0.10 mm (0.0039 in)**



ME-00256



ME-00257

- 2) If oil clearance exceeds the limit, replace the 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) If cam or valve contact surface of valve rocker arm is excessively worn or dented, replace the valve rocker arm.
- 4) Check that the valve rocker arm roller rotates smoothly. If not, replace the valve rocker arm.