

## VALVE ROCKER ASSEMBLY

MECHANICAL

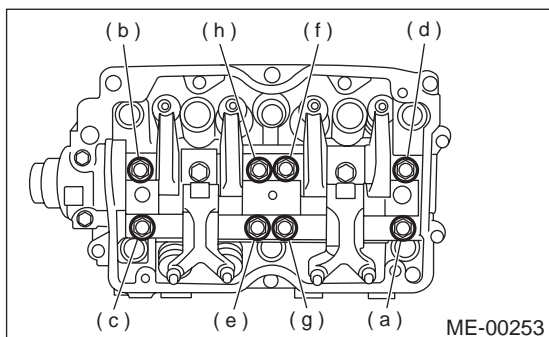
### 18. Valve Rocker Assembly

#### A: REMOVAL

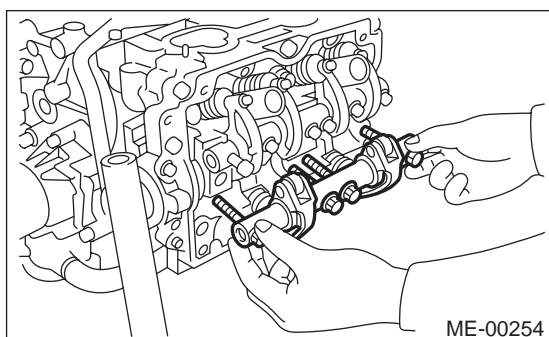
- 1) Remove V-belt. <Ref. to ME(H4SO)-42, REMOVAL, V-belt.>
- 2) Remove crankshaft pulley. <Ref. to ME(H4SO)-44, REMOVAL, Crankshaft Pulley.>
- 3) Remove belt cover. <Ref. to ME(H4SO)-45, REMOVAL, Belt Cover.>
- 4) Remove timing belt assembly. <Ref. to ME(H4SO)-46, REMOVAL, Timing Belt Assembly.>
- 5) Remove camshaft sprocket. <Ref. to ME(H4SO)-51, REMOVAL, Camshaft Sprocket.>
- 6) Disconnect 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 valve rocker assembly.



- (2) Remove valve rocker assembly.



#### B: INSTALLATION

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

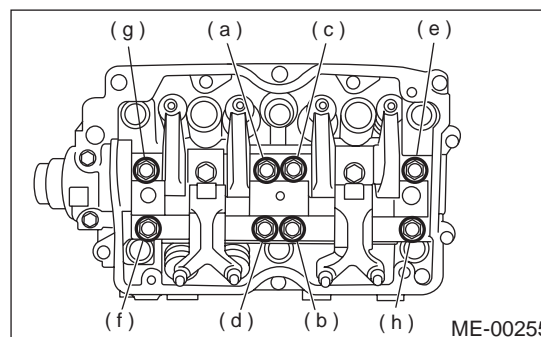
#### NOTE:

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 N·m (2.5 kgf-m, 18.1 ft-lb)**



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

#### C: DISASSEMBLY

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

## VALVE ROCKER ASSEMBLY

### MECHANICAL

#### D: ASSEMBLY

- 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 N·m (0.5 kgf-m, 3.6 ft-lb)**

**NOTE:**

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: INSPECTION

##### 1. VALVE ROCKER ARM AND ROCKER SHAFT

- 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)**

- 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) If cam or valve contact surface of valve rocker arm is worn or dented excessively, replace valve rocker arm.

- 4) Check that valve rocker arm roller rotates smoothly. If not, replace valve rocker arm.

