

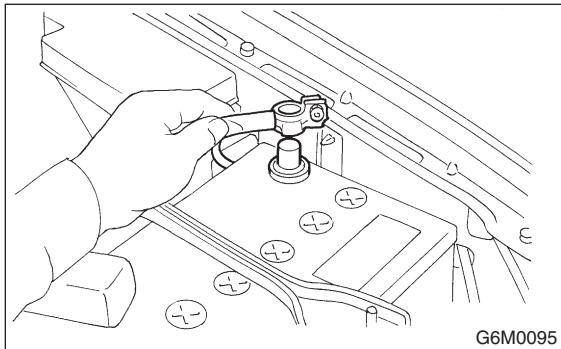
## 5. Valve Clearance S103083

### A: INSPECTION S103083A10

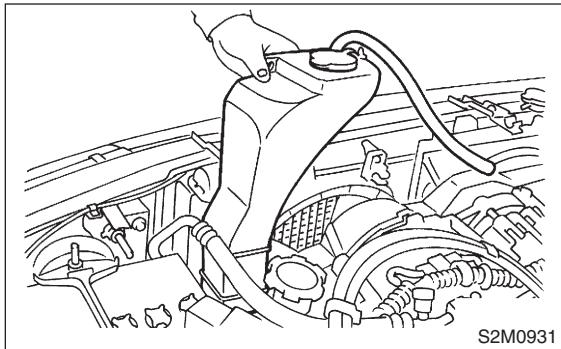
**CAUTION:**

Inspection and adjustment of valve clearance should be performed while engine is cold.

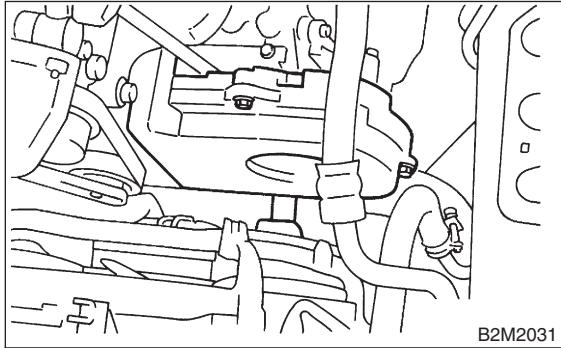
- 1) Set the vehicle onto the lift.
- 2) Disconnect battery ground cable.



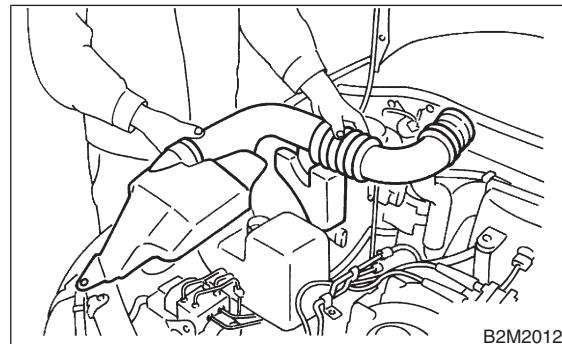
- 3) Remove engine coolant reservoir tank.  
<Ref. to CO-25 REMOVAL, Reservoir Tank.>



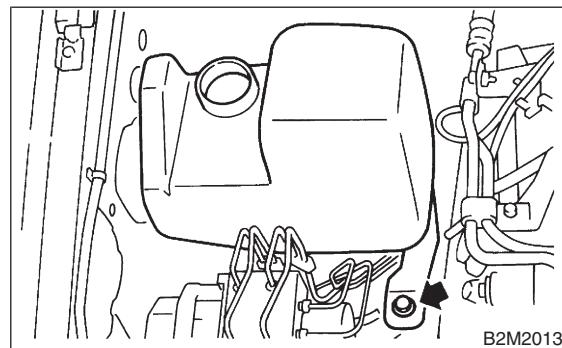
- 4) Remove timing belt cover (LH).



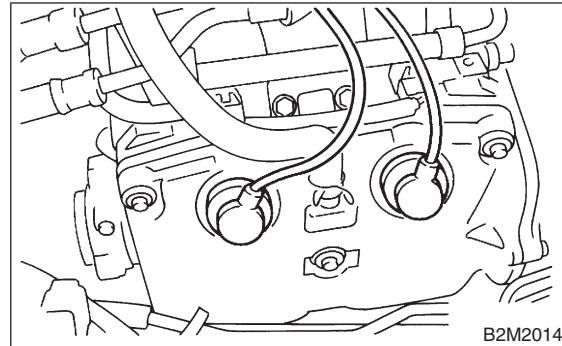
- 5) Remove rocker cover.
- 6) When inspecting #1 and #3 cylinders:
  - (1) Remove air intake duct as a unit.



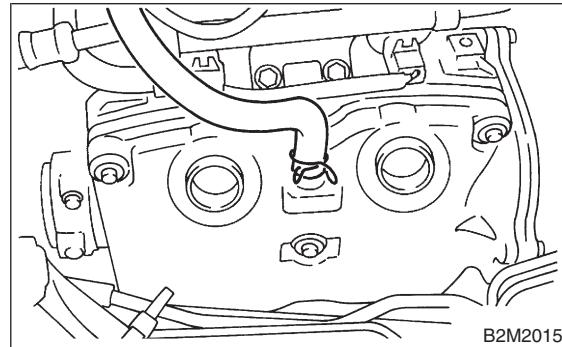
- (2) Remove resonator chamber.



- (3) Disconnect spark plug cords from spark plugs (#1 and #3 cylinders).



- (4) Disconnect blow-by hose from rocker cover (RH).

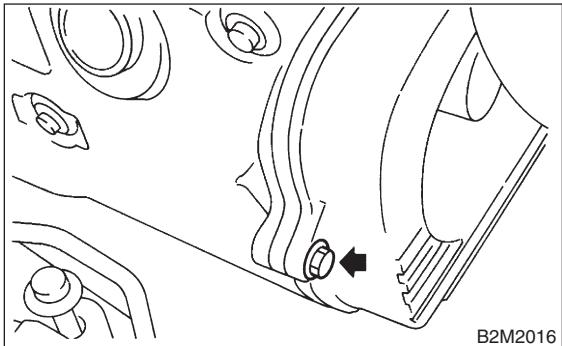


- (5) Lift-up the vehicle.
- (6) Remove under cover.

# VALVE CLEARANCE

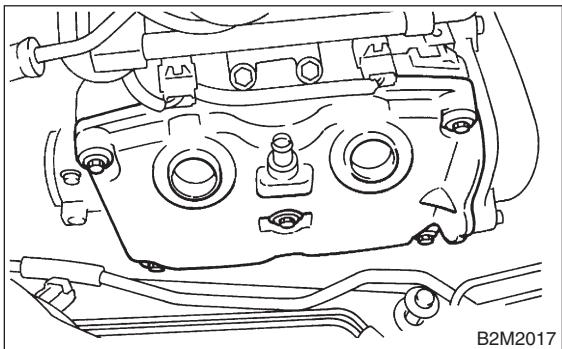
## Mechanical

- (7) Place suitable container under the vehicle.
- (8) Lower the vehicle.
- (9) Remove the timing belt cover (RH) bolt.



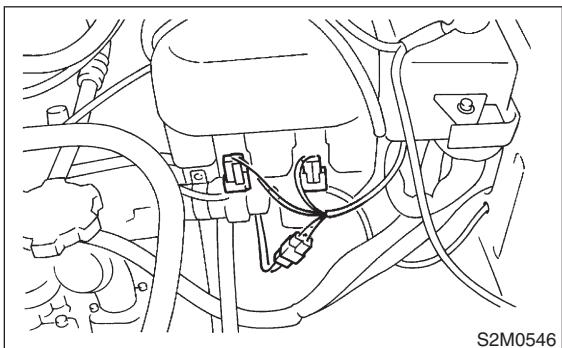
B2M2016

- (10) Remove rocker cover bolts, then remove rocker cover (RH).



B2M2017

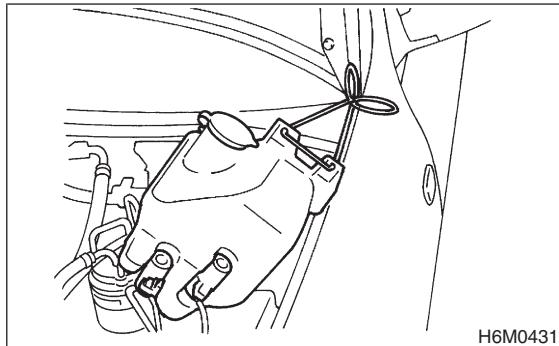
- 7) When inspecting #2 and #4 cylinders:
  - (1) Disconnect battery cables, and then remove battery and battery carrier.
  - (2) Disconnect front window washer motor connector.
  - (3) Disconnect rear gate glass washer motor connector. (Wagon only)



S2M0546

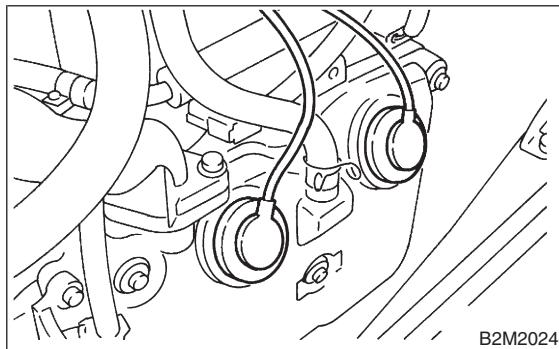
- (4) Disconnect rear gate glass washer hose from washer motor, then plug connection with a suitable cap. (Wagon only)

- (5) Remove the two bolts which hold washer tank, then secure the tank away from working area.



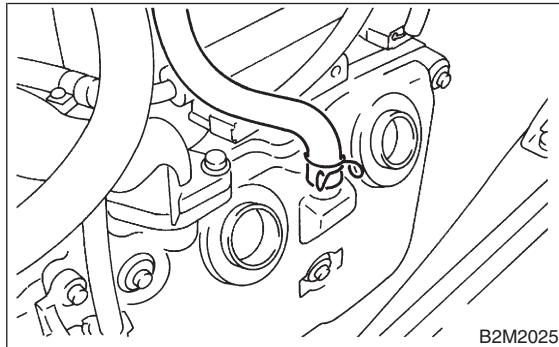
H6M0431

- (6) Disconnect spark plug cords from spark plugs (#2 and #4 cylinders).



B2M2024

- (7) Disconnect blow-by hose from rocker cover (LH).



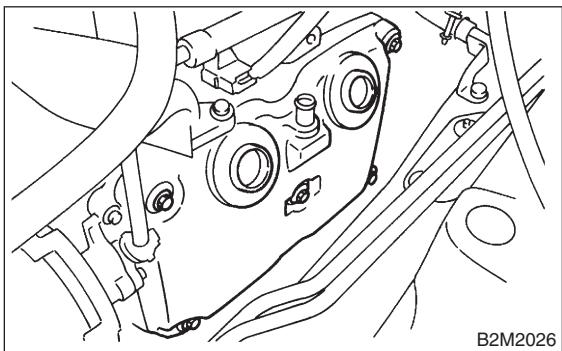
B2M2025

- (8) Lift-up the vehicle.
- (9) Remove under cover.
- (10) Place suitable container under the vehicle.

# VALVE CLEARANCE

Mechanical

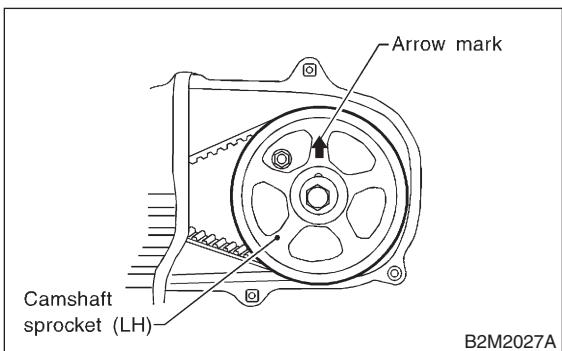
(11) Remove rocker cover bolts, then remove rocker cover (LH).



8) Set #1 cylinder piston to top dead center of compression stroke by rotating crankshaft pulley clockwise.

**NOTE:**

When arrow mark on camshaft sprocket (LH) comes exactly to the top, #1 cylinder piston is brought to the top dead center of the compression stroke.



9) Measure #1 cylinder valve clearance by using thickness gauge.

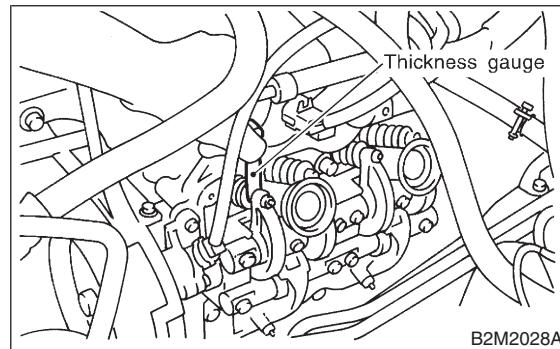
**CAUTION:**

- Insert the thickness gauge in at as horizontal a direction as a possible with respect to the valve stem end face.
- Measure exhaust valve clearances while lifting-up the vehicle.

**Valve clearance:**

**Intake:  $0.20 \pm 0.02$  mm ( $0.0079 \pm 0.0008$  in)**

**Exhaust:  $0.25 \pm 0.02$  mm ( $0.0098 \pm 0.0008$  in)**

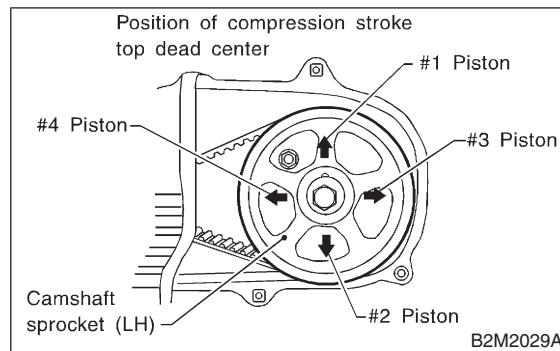


10) If necessary, adjust the valve clearance. <Ref. to ME-32 ADJUSTMENT, Valve Clearance.>

11) Similar to measurement procedures used for #1 cylinder, measure #2, #3 and #4 cylinder valve clearances.

**NOTE:**

- Be sure to set cylinder pistons to their respective top dead centers on the compression stroke before measuring valve clearances.
- To set #3, #2 and #4 cylinder pistons to their top dead centers on the compression stroke, turn crankshaft pulley clockwise  $90^\circ$  at a time starting with arrow mark on left-hand camshaft sprocket facing up.



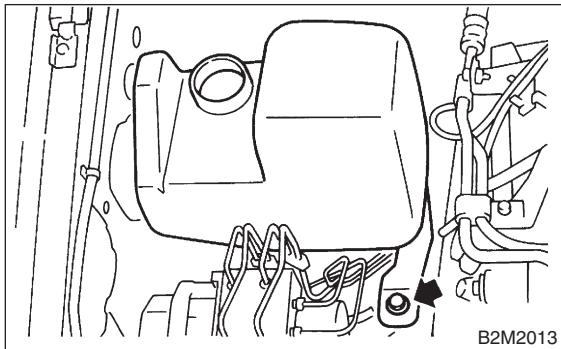
# VALVE CLEARANCE

## Mechanical

12) After inspection, install the related parts in the reverse order of removal.

### Tightening torque:

32 N·m (3.3 kgf·m, 24 ft-lb)



## B: ADJUSTMENT S103083A01

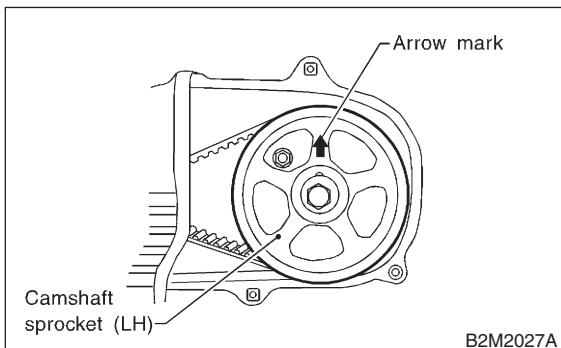
### CAUTION:

Adjustment of valve clearance should be performed while engine is cold.

1) Set #1 cylinder piston to top dead center of compression stroke by rotating crankshaft pulley clockwise.

### NOTE:

When arrow mark on camshaft sprocket (LH) comes exactly to the top, #1 cylinder piston is brought to the top dead center of the compression stroke.



2) Adjust the #1 cylinder valve clearance.

- (1) Loosen the valve rocker nut and screw.
- (2) Place suitable thickness gauge.
- (3) While noting valve clearance, tighten valve rocker adjust screw.
- (4) When specified valve clearance is obtained, tighten valve rocker nut.

### Tightening torque:

10 N·m (1.0 kgf·m, 7.2 ft-lb)

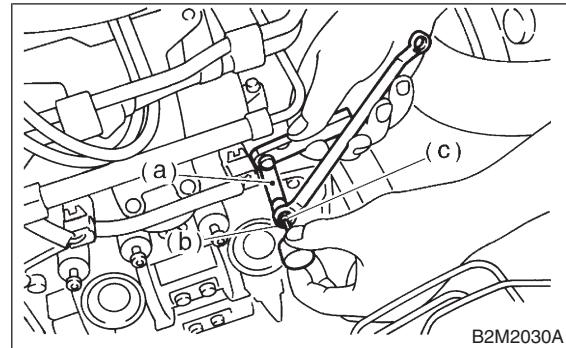
### CAUTION:

- Insert the thickness gauge in at as horizontal a direction as possible with respect to the valve stem end face.
- Adjust exhaust valve clearances while lifting-up the vehicle.

### Valve clearance:

Intake:  $0.20 \pm 0.02$  mm ( $0.0079 \pm 0.0008$  in)

Exhaust:  $0.25 \pm 0.02$  mm ( $0.0098 \pm 0.0008$  in)



(a) Thickness gauge

(b) Valve rocker nut

(c) Valve rocker screw

3) Ensure that valve clearances are within specifications.

4) Turn crankshaft two complete rotations until #1 cylinder piston is again set to top dead center on compression stroke.

5) Ensure that valve clearances are within specifications. If necessary, re-adjust valve clearances.

6) Similar to adjustment procedures used for #1 cylinder, adjust #2, #3 and #4 cylinder valve clearances.

NOTE:

- Be sure to set cylinder pistons to their respective top dead centers on the compression stroke before adjusting valve clearances.
- To set #3, #2 and #4 cylinder pistons to their top dead centers on the compression stroke, turn crankshaft pulley clockwise  $90^\circ$  at a time starting with arrow mark on left-hand camshaft sprocket facing up.

