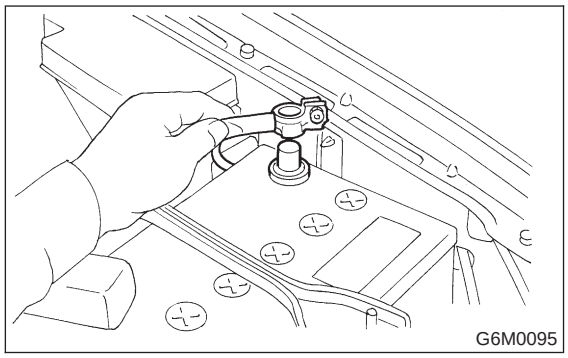
7. Valve Clearance

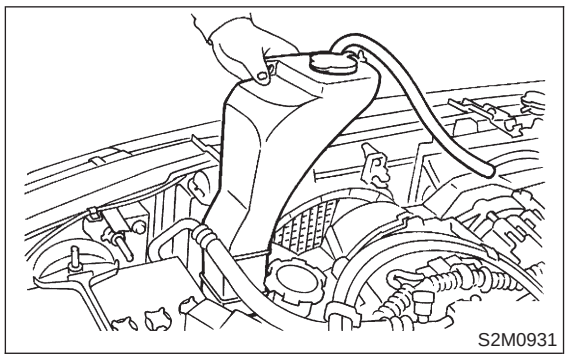
A: INSPECTION

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

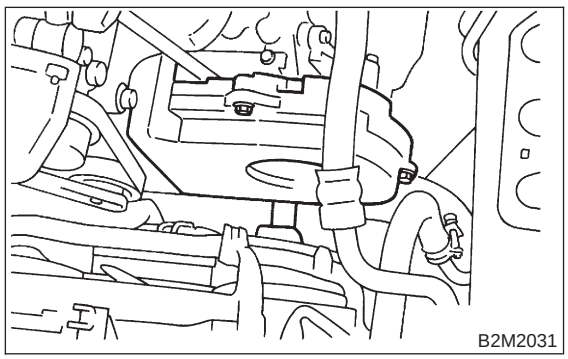
1) Set the vehicle onto the lift.
2) Disconnect battery ground cable.


G6M0095

3) Remove engine coolant reservoir tank.
<Ref. to 2-5 [W9A0].>

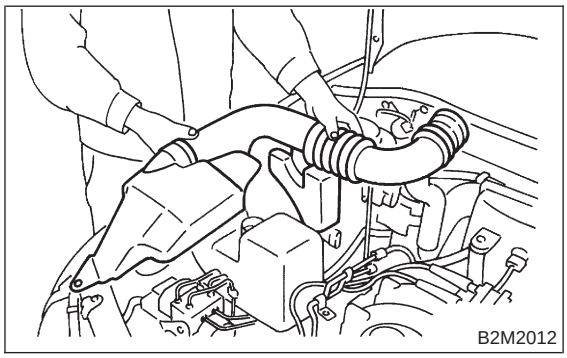

S2M0931

4) Remove timing belt cover (LH).

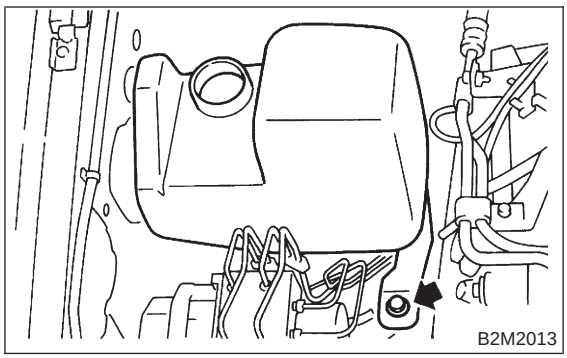

B2M2031

5) Remove rocker cover.
6) When inspecting #1 and #3 cylinders:

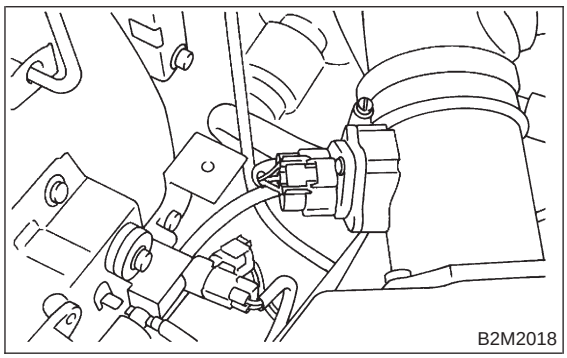
(1) Remove air intake duct as a unit (2200 cc California spec. vehicles).


B2M2012

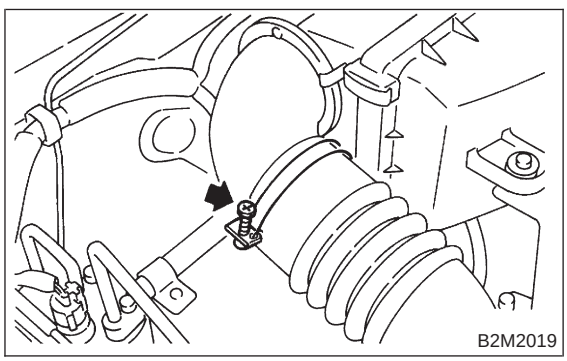
(2) Remove resonator chamber (2200 cc California spec. vehicles).


B2M2013

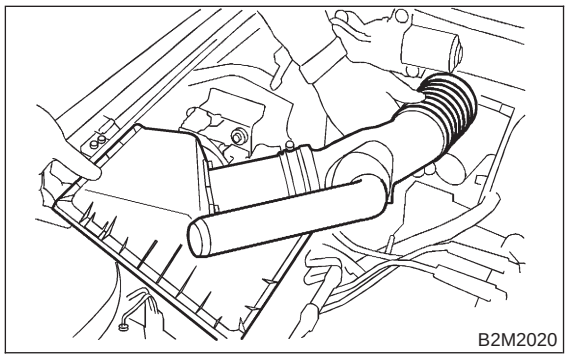
(3) Disconnect connector from mass air flow sensor (Except 2200 cc California spec. vehicles).


B2M2018

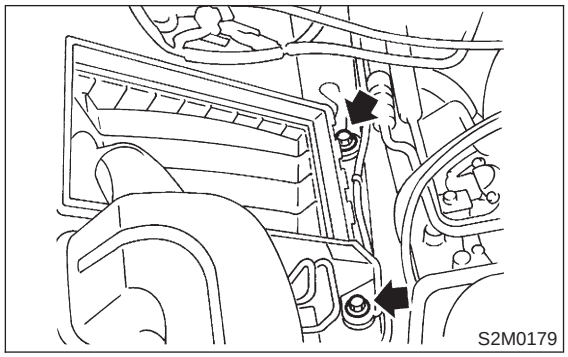
(4) Loosen clamp which connects air intake duct and air intake chamber (Except 2200 cc California spec. vehicles).


B2M2019

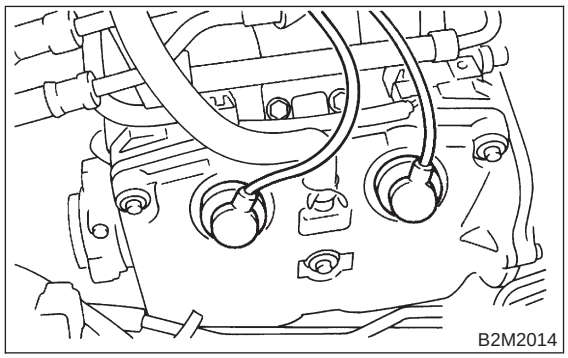
(5) Remove clips of air cleaner upper cover (Except 2200 cc California spec. vehicles).
(6) Remove air intake duct and air cleaner upper cover as a unit (Except 2200 cc California spec. vehicles).


B2M2020

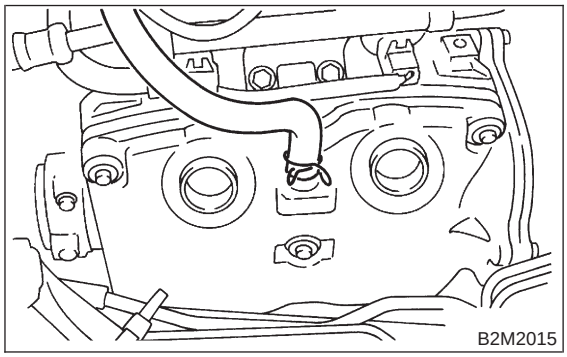
(7) Remove air cleaner element (Except 2200 cc California spec. vehicles).
(8) Remive air cleaner lower case (Except 2200 cc California spec. vehicles).


S2M0179

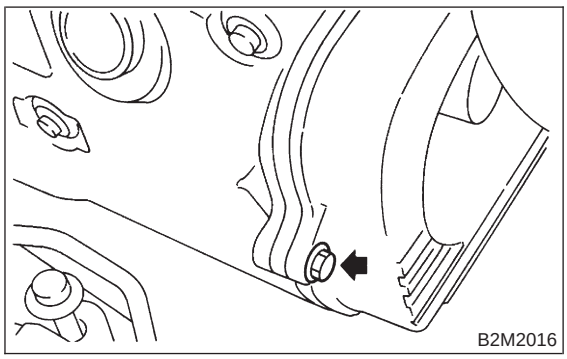
(9) Disconnect spark plug cords from spark plugs (#1 and #3 cylinders).


B2M2014

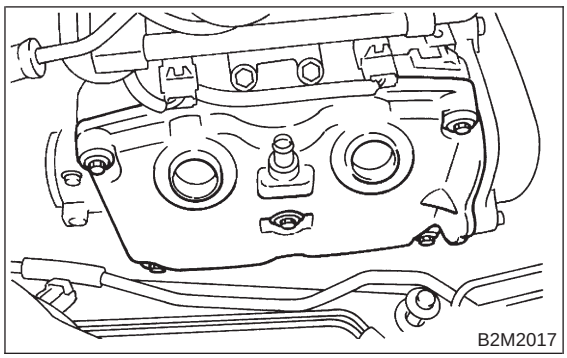
(10) Disconnect blow-by hose from rocker cover (RH).


B2M2015

(11) Lift-up the vehicle.
(12) Remove under cover (RH).
(13) Place suitable container under the vehicle.
(14) Lower the vehicle.
(15) Remove the timing belt cover (RH) bolt.

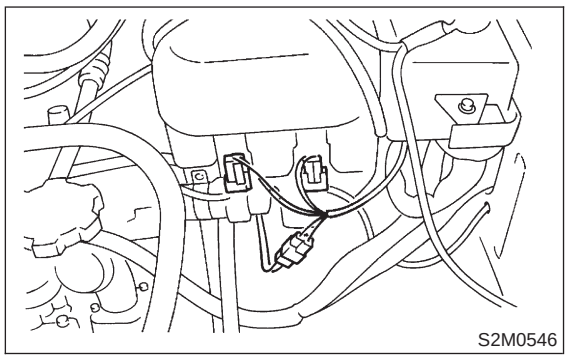

B2M2016

(16) Remove rocker cover bolts, then remove rocker cover (RH).

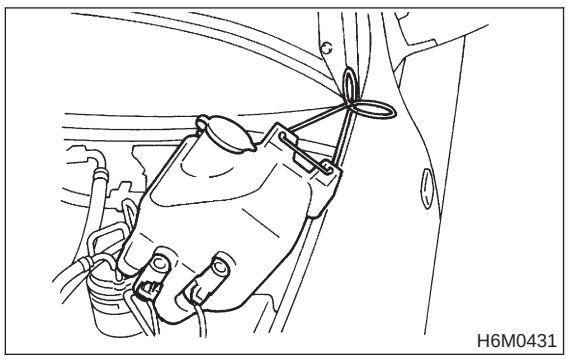

B2M2017

7) When inspecting #2 and #4 cylinders:
(1) Disconnect battery cables, and then remove battery and battery carrier.

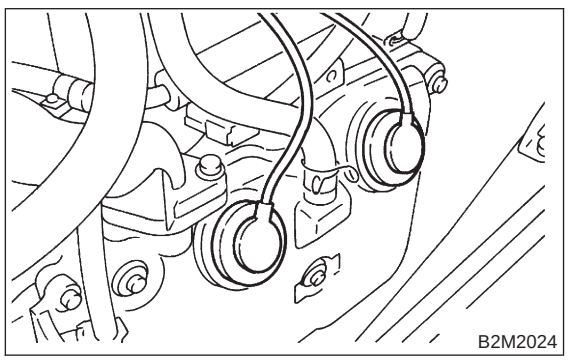
(2) Disconnect front window washer motor connector.
(3) Disconnect rear gate glass washer motor connector. (Wagon only)


S2M0546

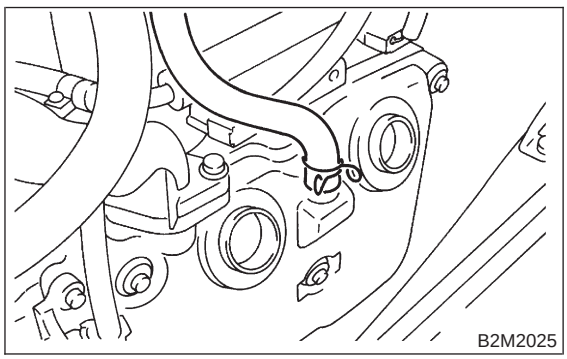
(4) Disconnect rear gate glass washer hose from washer motor, then plug connection with a suitable cap. (Wagon only)
(5) Remove the two bolts which hold washer tank, then secure the tank away from working area.


H6M0431

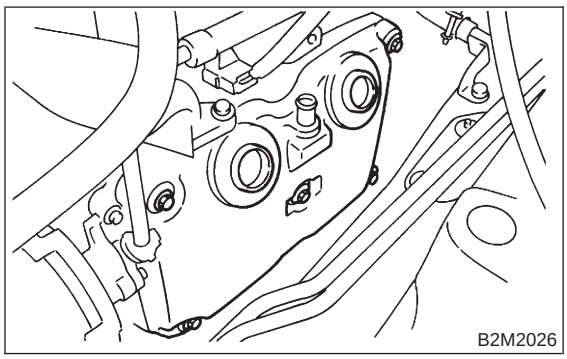
(6) Disconnect spark plug cords from spark plugs (#2 and #4 cylinders).


B2M2024

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

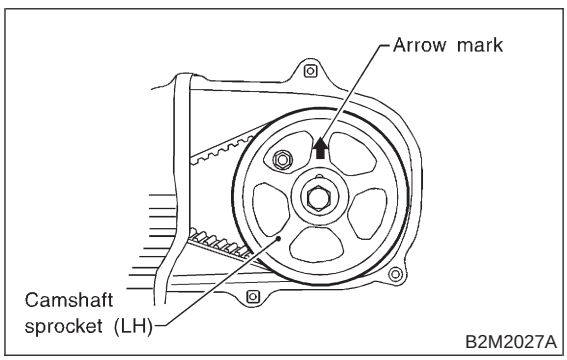

B2M2025

(8) Lift-up the vehicle.
(9) Remove under cover (LH).
(10) Place suitable container under the vehicle.
(11) Remove rocker cover bolts, then remove rocker cover (LH).


B2M2026

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.

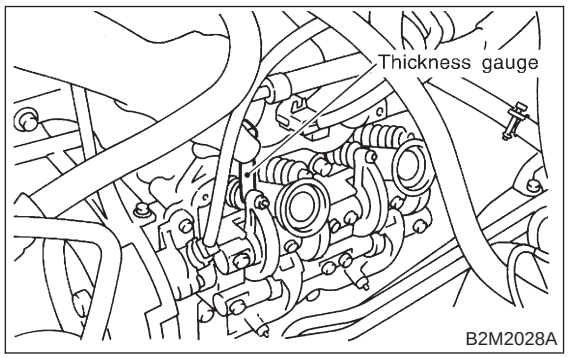


B2M2027A

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

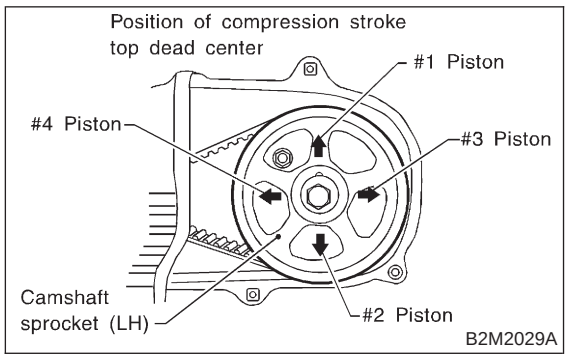
CAUTION:
● Insert the thickness gauge in at as horizontal a direction as a possible with respect to the valve stem end face.
● Measure exhaust valve clearances while lifting-up the vehicle.

Valve clearance:
Intake: 0.20±0.02 mm (0.0079±0.0008 in)
Exhaust: 0.25±0.02 mm (0.0098±0.0008 in)



10) If necessary, adjust the valve clearance. <Ref. to 2-2 [W7B0].>
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° at a time starting with arrow mark on left-hand camshaft sprocket facing up.



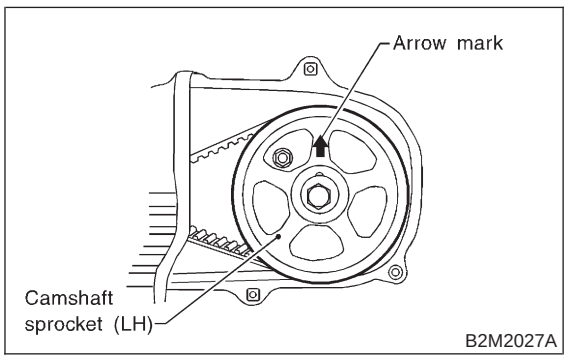
12) After inspection, install the related parts in the reverse order of removal.

B: ADJUSTMENT

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.

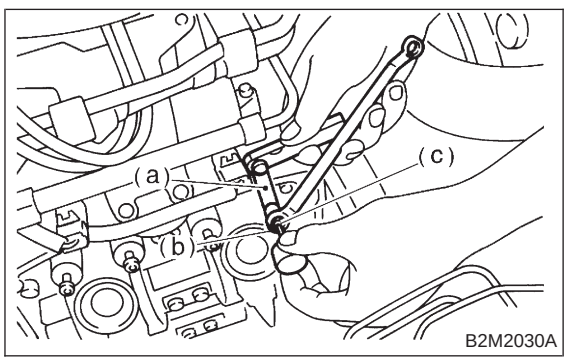


2) Adjust the #1 cylinder valve clearance.
(1) Loosen the valve rocker nut and screw.
(2) Place suitable thickness gauge.
(3) While noting valve clearance, tighten valve rocker adjust screw.
(4) When specified valve clearance is obtained, tighten valve rocker nut.

Tightening torque:
10±1 N·m (1.0±0.1 kg-m, 7.2±0.7 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±0.02 mm (0.0079±0.0008 in)
Exhaust: 0.25±0.02 mm (0.0098±0.0008 in)



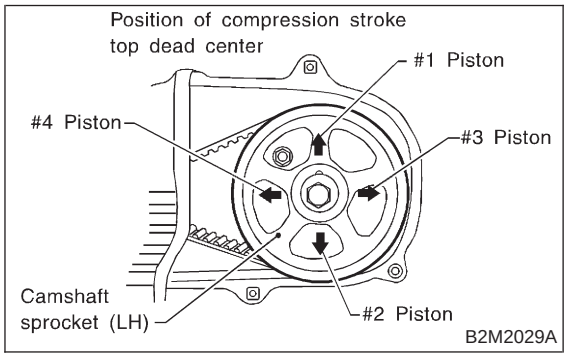
(a) Thickness gauge
(b) Valve rocker nut
(c) Valve rocker screw

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° at a time starting with arrow mark on left-hand camshaft sprocket facing up.



MEMO: