8. Valve Clearance

A: INSPECTION

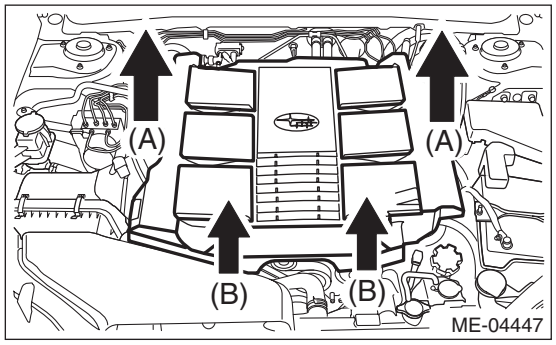
CAUTION:
If engine oil is spilt onto the exhaust pipe, wipe it off with cloth to avoid emission of smoke or causing a fire.

NOTE:
Inspection of valve clearance should be performed while engine is cold.

1) Remove the collector cover.

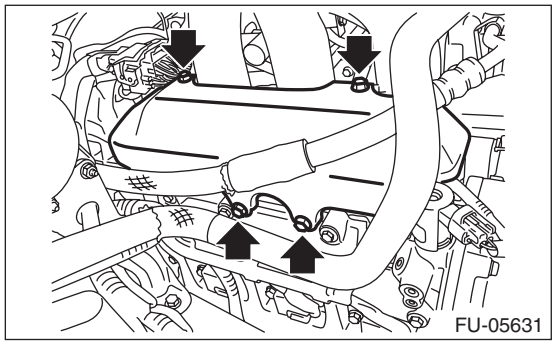
NOTE:
Follow the steps below when removing the collector cover.

(1) Pull up the two points at the rear (A).
(2) Pull up the two points at the front (B) while moving them forward.



2) Disconnect the ground cable from battery.
3) Lift up the vehicle.
4) Remove the under cover. <Ref. to EI-35, REMOVAL, Front Under Cover.>
5) Lower the vehicle.
6) When inspecting #1, #3 and #5 cylinders

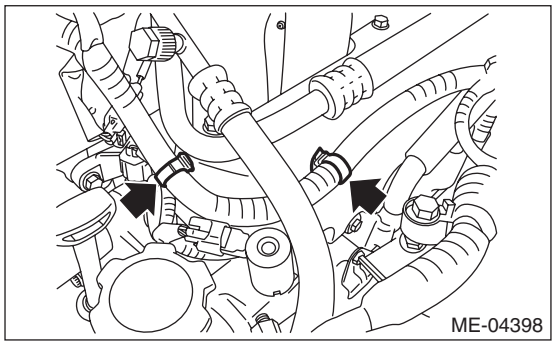
(1) Remove the air intake duct, air cleaner case and air intake boot assembly. <Ref. to IN(H6DO)-8, REMOVAL, Air Intake Duct.> <Ref. to IN(H6DO)-5, REMOVAL, Air Cleaner Case.> <Ref. to IN(H6DO)-7, REMOVAL, Air Intake Boot.>
(2) Remove the fuel pipe protector (RH).



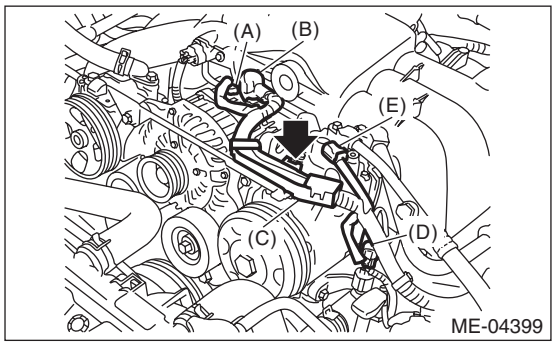
(3) Disconnect the connector of oil pressure switch.
(4) Remove the ignition coil. <Ref. to IG(H6DO)-7, REMOVAL, Ignition Coil.>
(5) Remove the rocker cover (RH). <Ref. to ME(H6DO)-80, REMOVAL, Camshaft.>

7) When inspecting #2, #4 and #6 cylinders

(1) Remove the battery and battery carrier. <Ref. to SC(H4SO)-25, REMOVAL, Battery.>
(2) Remove two fixing clips on the fuel pipe protector (LH).



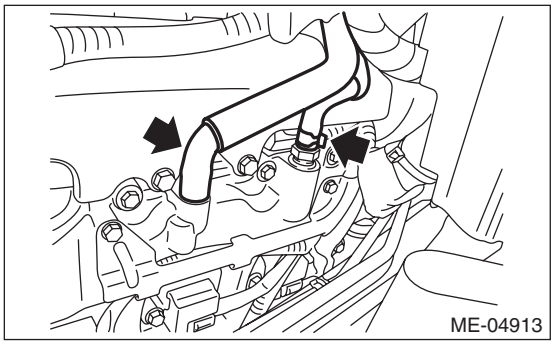
(3) Generator connector
(4) Generator terminal B
(5) Remove the harness cover from collector cover bracket.
(6) A/C compressor solenoid connector
(7) Flow sensor connector



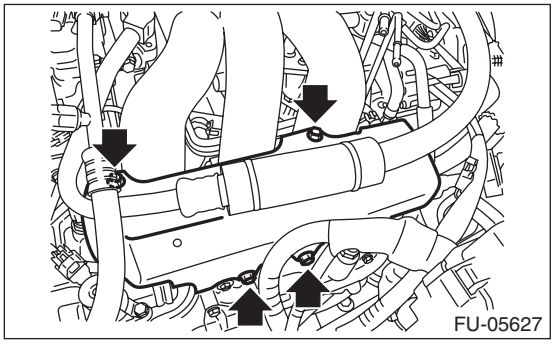
(A) Generator connector
(B) Terminal B
(C) Harness cover
(D) A/C compressor solenoid connector
(E) Flow sensor connector

(8) Slide the harness and connector to the battery side.

(9) Disconnect the PCV hose and blow-by hose from the rocker cover (LH).



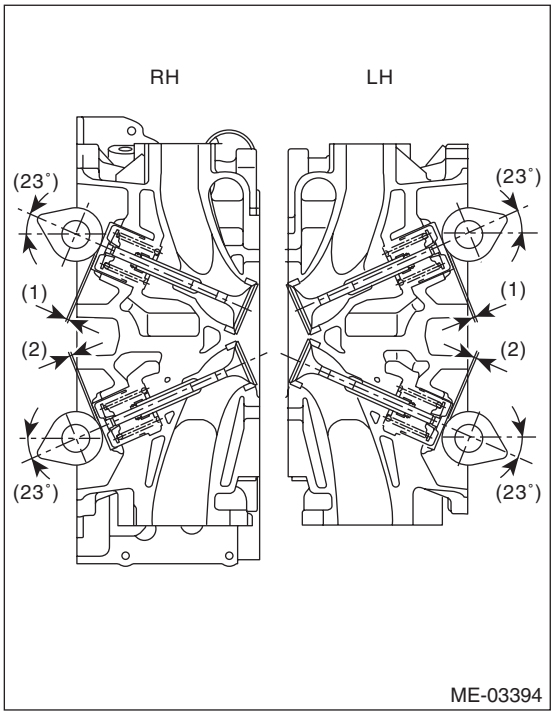
(10) Remove the fuel pipe protector (LH).



(11) Remove the ignition coil. <Ref. to IG(H6DO)-7, REMOVAL, Ignition Coil.>

(12) Remove the rocker cover (LH). <Ref. to ME(H6DO)-80, REMOVAL, Camshaft.>

8) Turn the crankshaft clockwise until the camshaft is set to position shown in the figure.



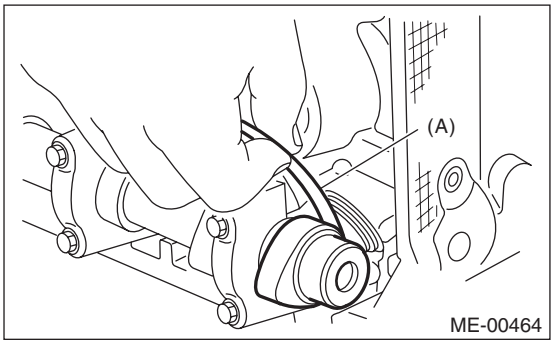
(1) Valve clearance (Intake side)
(2) Valve clearance (Exhaust side)

9) Measure the clearance of intake valve and exhaust valve using thickness gauge (A).

NOTE:
• Measure it within the range of ±30° from specified position shown in the figure.
• Insert a thickness gauge in a direction as horizontal as possible with respect to the valve lifter.

Valve clearance (inspection value):
Intake
$0.20^{+0.04}_{-0.06}$ mm ($0.0079^{+0.0016}_{-0.0024}$ in)
Exhaust
0.35±0.05 mm (0.0138±0.0020 in)

• If the measured value is not within specification, take notes of the value in order to adjust the valve clearance later on.



10) If necessary, adjust the valve clearance. <Ref. to ME(H6DO)-33, ADJUSTMENT, Valve Clearance.>

11) Further turn the crank pulley clockwise and then measure the valve clearances again.

12) After inspection, install the related parts in the reverse order of removal. <Ref. to ME(H6DO)-81, INSTALLATION, Camshaft.>

B: ADJUSTMENT

1. INTAKE SIDE

1) Remove the engine from vehicle. <Ref. to ME(H6DO)-35, REMOVAL, Engine Assembly.>

2) Measure all the valve clearances. <Ref. to ME(H6DO)-32, INSPECTION, Valve Clearance.>

NOTE:
Record each valve clearance after measurement.

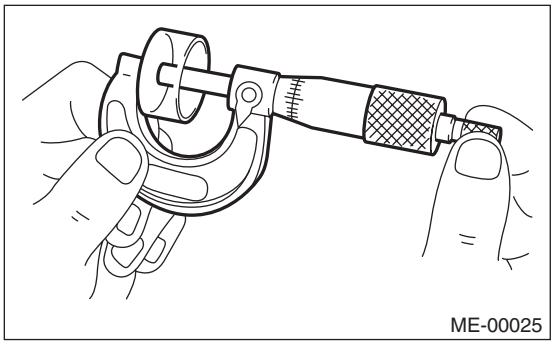
3) Remove the timing chain assembly. <Ref. to ME(H6DO)-60, REMOVAL, Timing Chain Assembly.>

4) Remove the cam sprocket. <Ref. to ME(H6DO)-78, REMOVAL, Cam Sprocket.>

5) Remove the camshaft. <Ref. to ME(H6DO)-80, REMOVAL, Camshaft.>

6) Remove the valve lifter.

7) Measure the thickness of valve lifter using micrometer.



8) Select a valve lifter of suitable thickness using the measured valve clearance and valve lifter thickness, and install it.

NOTE:
Use a new valve lifter.

Unit: mm (in)
S = (V + T) – 0.20 (0.0079)
S: Valve lifter thickness required V: Measured valve clearance T: Valve lifter thickness to be used

9) Install the camshaft. <Ref. to ME(H6DO)-81, INSTALLATION, Camshaft.>
10) Install the cam sprocket. <Ref. to ME(H6DO)-78, INSTALLATION, Cam Sprocket.>
11) Install the timing chain assembly. <Ref. to ME(H6DO)-66, INSTALLATION, Timing Chain Assembly.>
12) Measure all valve clearance again at this time. If the valve clearance is not correct, repeat the procedure over again from the first step.

Valve clearance (adjustment value):
$0.20^{+0.04}_{-0.06}$ mm ($0.0079^{+0.0016}_{-0.0024}$ in)

13) After adjustment, install the related parts in the reverse order of removal.

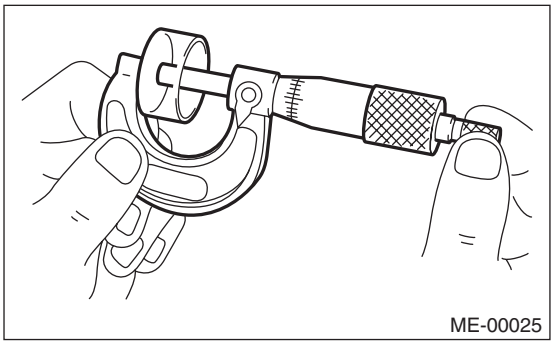
NOTE:
Use a new rocker cover gasket.

2. EXHAUST SIDE

1) Remove the engine from vehicle. <Ref. to ME(H6DO)-35, REMOVAL, Engine Assembly.>
2) Measure all the valve clearances. <Ref. to ME(H6DO)-32, INSPECTION, Valve Clearance.>

NOTE:
Record each valve clearance after measurement.
3) Remove the camshaft. <Ref. to ME(H6DO)-80, REMOVAL, Camshaft.>
4) Remove the valve lifter.

5) Measure the thickness of valve lifter using micrometer.



6) Select a valve lifter of suitable thickness using the measured valve clearance and valve lifter thickness, and install it.

NOTE:
Use a new valve lifter.

Unit: mm (in)
S = (V + T) – 0.35 (0.0138)
S: Valve lifter thickness required V: Measured valve clearance T: Valve lifter thickness to be used

7) Install the camshaft. <Ref. to ME(H6DO)-81, INSTALLATION, Camshaft.>
8) Install the cam sprocket. <Ref. to ME(H6DO)-78, INSTALLATION, Cam Sprocket.>
9) Install the timing chain assembly. <Ref. to ME(H6DO)-66, INSTALLATION, Timing Chain Assembly.>
10) Measure all valve clearance again at this time. If the valve clearance is not correct, repeat the procedure over again from the first step.

Valve clearance (adjustment value):
0.35 ± 0.05 mm (0.0138 ± 0.0020 in)

11) After adjustment, install the related parts in the reverse order of removal.

NOTE:
Use a new rocker cover gasket.