

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:

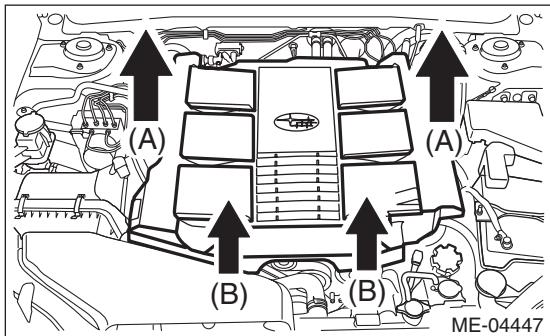
Inspection of valve clearance should be performed while engine is cold.

1) Remove the collector cover.

NOTE:

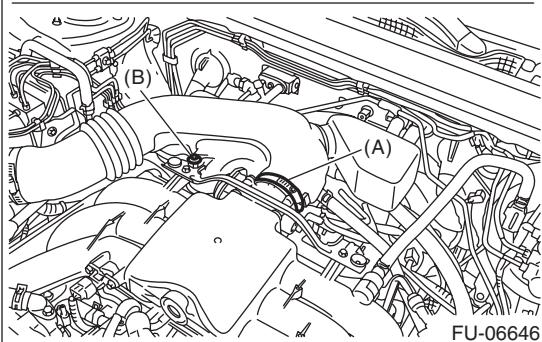
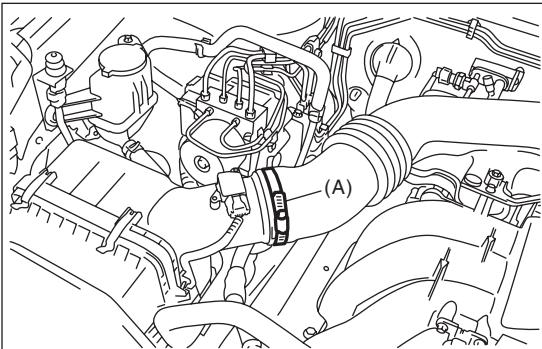
Follow the steps below when removing the collector cover.

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

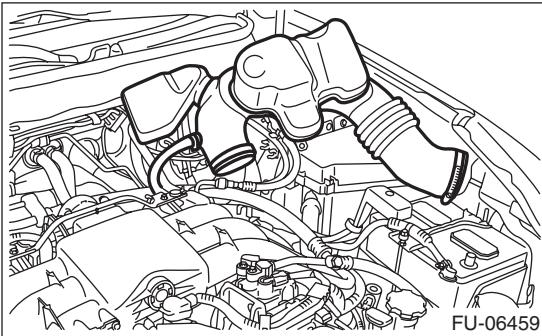


- 2) Disconnect the ground cable from battery.
- 3) Lift up the vehicle.
- 4) Remove the under cover. <Ref. to EI-32, REMOVAL, Front Under Cover.>
- 5) Lower the vehicle.
- 6) When inspecting valve clearances for #1, #3 and #5
- 7) Loosen the clamp (A) which connects the air intake boot assembly.

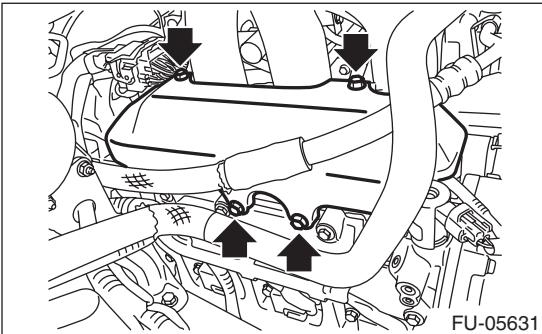
- 8) Loosen the bolt (B) which secures the air intake boot assembly to the collector cover bracket.



- (1) Remove the air intake boot assembly, and move it to the left side wheel apron.



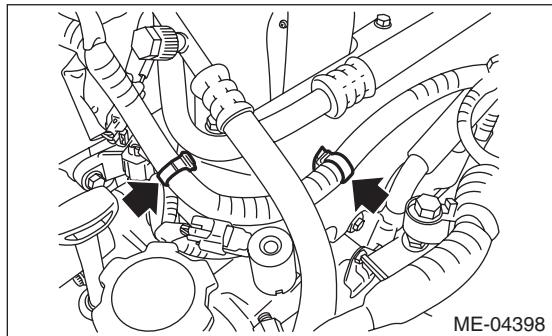
- (2) Remove the air intake duct and air cleaner case. <Ref. to IN(H6DO)-8, REMOVAL, Air Intake Duct.> <Ref. to IN(H6DO)-5, REMOVAL, Air Cleaner Case.>
- (3) Remove the fuel pipe protector (RH).



- (4) Disconnect the connector of oil pressure switch.

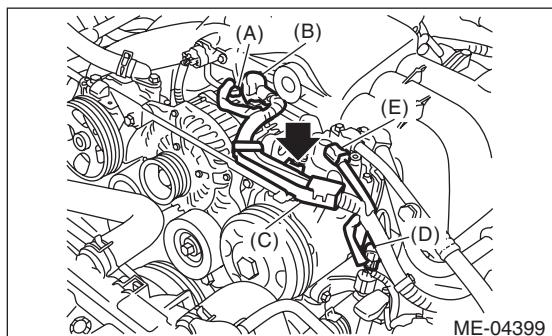
(5) Remove the ignition coil. <Ref. to IG(H6DO)-7, REMOVAL, Ignition Coil.>
 (6) Remove the rocker cover (RH). <Ref. to ME(H6DO)-83, REMOVAL, Camshaft.>
 9) When inspecting valve clearances for #2, #4 and #6

(1) Remove the battery and battery carrier. <Ref. to SC(H6DO)-20, REMOVAL, Battery.>
 (2) Remove two fixing clips on the fuel pipe protector (LH).



ME-04398

(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

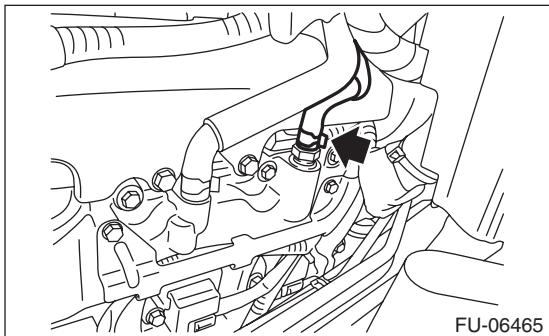


ME-04399

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

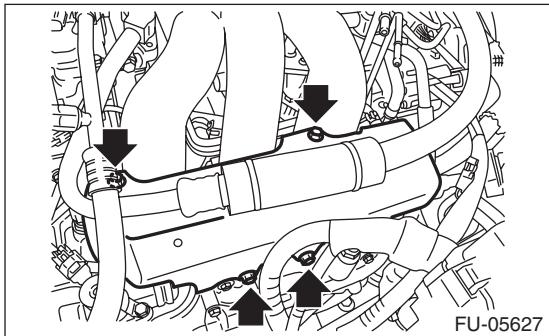
(8) Slide the harness and connector to the battery side.

(9) Disconnect the PCV hose from rocker cover (LH).



FU-06465

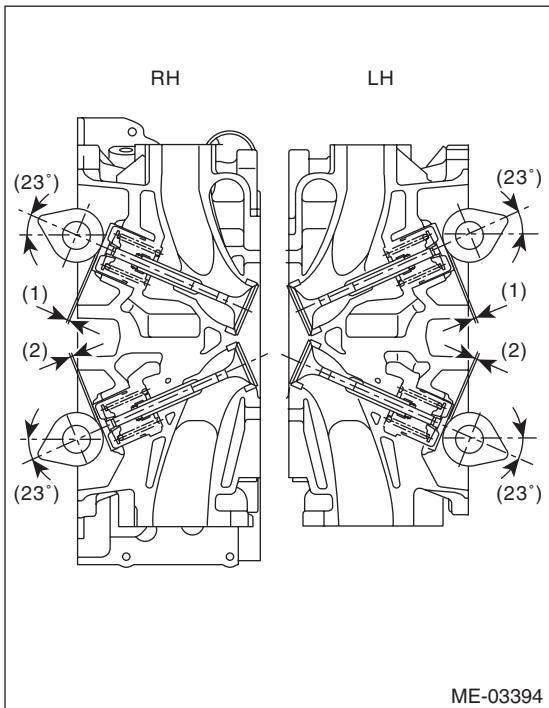
(10) Remove the fuel pipe protector (LH).



FU-05627

(11) Remove the ignition coil. <Ref. to IG(H6DO)-7, REMOVAL, Ignition Coil.>
 (12) Remove the rocker cover (LH). <Ref. to ME(H6DO)-83, REMOVAL, Camshaft.>

10) Turn the crankshaft clockwise until the cam-shaft is set to position shown in the figure.



ME-03394

(1) Valve clearance (intake side)
 (2) Valve clearance (exhaust side)

Valve Clearance

MECHANICAL

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

NOTE:

- Measure it within the range of $\pm 30^\circ$ 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):

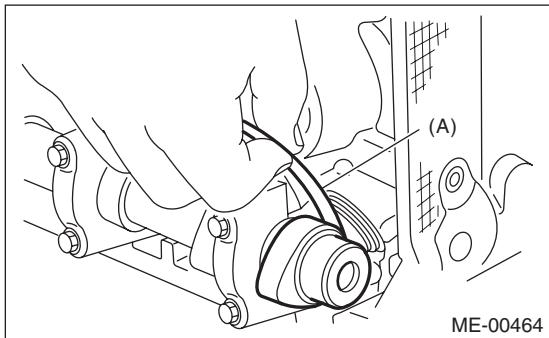
Intake

$0.20^{+0.04}_{-0.06}$ 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.



12) If necessary, adjust the valve clearance. <Ref. to ME(H6DO)-34, ADJUSTMENT, Valve Clearance.>

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

14) After inspection, install the related parts in the reverse order of removal. <Ref. to ME(H6DO)-85, INSTALLATION, Camshaft.>

B: ADJUSTMENT

1. INTAKE SIDE

1) Remove the engine from vehicle. <Ref. to ME(H6DO)-36, REMOVAL, Engine Assembly.>

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

NOTE:

Record each valve clearance after measurement.

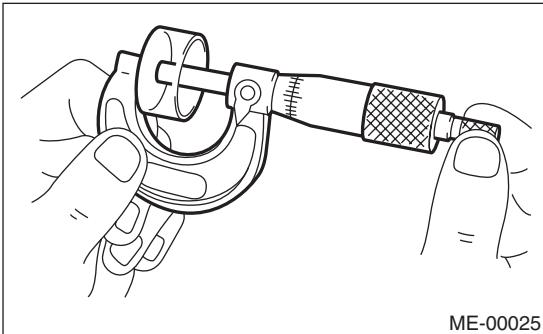
3) Remove the timing chain assembly. <Ref. to ME(H6DO)-63, REMOVAL, Timing Chain Assembly.>

4) Remove the cam sprocket. <Ref. to ME(H6DO)-81, REMOVAL, Cam Sprocket.>

5) Remove the camshaft. <Ref. to ME(H6DO)-83, 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: Current valve lifter thickness

9) Install the camshaft. <Ref. to ME(H6DO)-85, INSTALLATION, Camshaft.>

10) Install the cam sprocket. <Ref. to ME(H6DO)-81, INSTALLATION, Cam Sprocket.>

11) Install the timing chain assembly. <Ref. to ME(H6DO)-69, INSTALLATION, Timing Chain Assembly.>

12) Measure all valve clearance again at this time. If the valve clearance is not within the adjustment value, repeat the procedure from step 3).

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:

Refer to "Camshaft" when installing the rocker cover. <Ref. to ME(H6DO)-85, INSTALLATION, Camshaft.>

2. EXHAUST SIDE

1) Remove the engine from vehicle. <Ref. to ME(H6DO)-36, REMOVAL, Engine Assembly.>

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

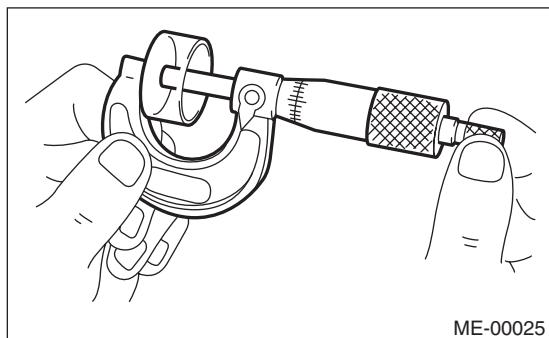
NOTE:

Record each valve clearance after measurement.

3) Remove the camshaft. <Ref. to ME(H6DO)-83, 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: Current valve lifter thickness	

7) Install the camshaft. <Ref. to ME(H6DO)-85, INSTALLATION, Camshaft.>

8) Install the cam sprocket. <Ref. to ME(H6DO)-81, INSTALLATION, Cam Sprocket.>

9) Install the timing chain assembly. <Ref. to ME(H6DO)-69, INSTALLATION, Timing Chain Assembly.>

10) Measure all valve clearance again at this time. If the valve clearance is not within the adjustment value, repeat the procedure from step 3).

Valve clearance (adjustment value):

0.35 ± 0.05 mm (0.0138 \pm 0.0020 in)

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

NOTE:

Refer to "Camshaft" when installing the rocker cover. <Ref. to ME(H6DO)-85, INSTALLATION, Camshaft.>