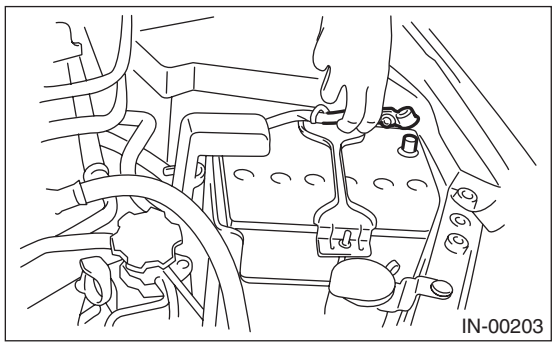
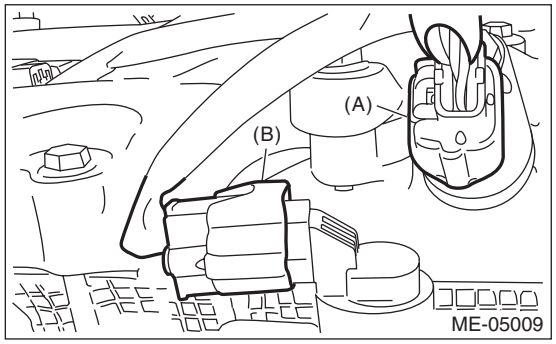
8. Valve Clearance

A: INSPECTION

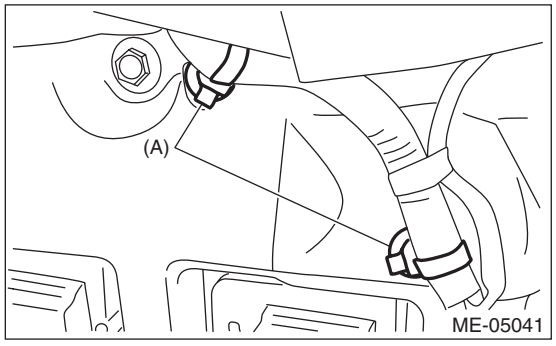
1) Disconnect the ground cable from battery.



2) Remove the engine from vehicle. <Ref. to ME(STI)-30, REMOVAL, Engine Assembly.>
3) Remove the timing belt cover RH. <Ref. to ME(STI)-49, REMOVAL, Timing Belt Cover.>
4) When inspecting #1 and #3 cylinders
(1) Disconnect the connector (A) from the exhaust camshaft position sensor RH and the connector (B) form the exhaust oil flow control solenoid valve RH.

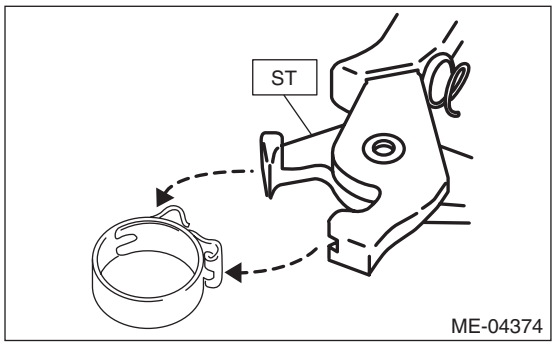


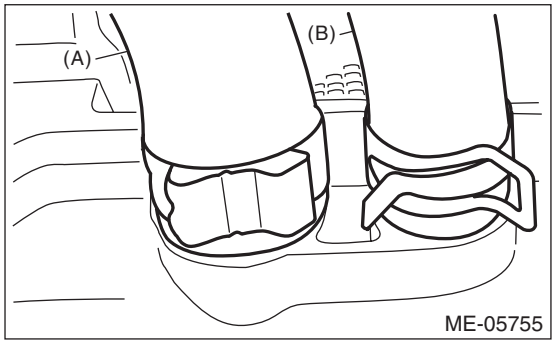
(2) Remove the clip (A) which hold the engine harness to the rocker cover RH.



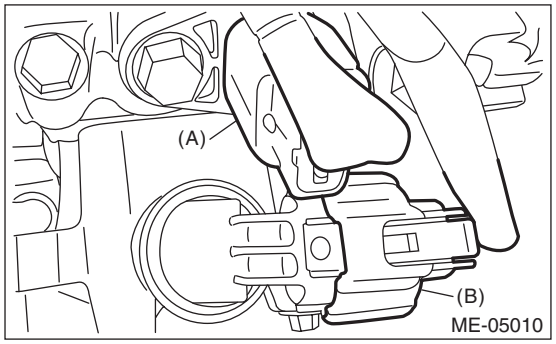
(3) Remove the ignition coil. <Ref. to IG(STI)-7, REMOVAL, Ignition Coil.>
(4) Disconnect PCV hose (A) and vacuum hose (B) from the rocker cover RH.

NOTE:
Pinch the clamp of the PCV hose (A) by fitting the cut out in the ST with the protrusion on the clamp as shown in the figure, and unlock the clamp.
ST 18353AA000 CLAMP PLIERS

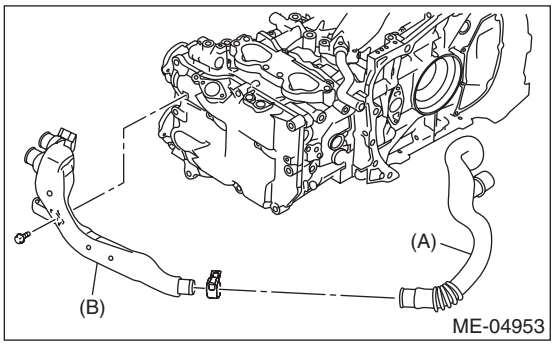




(5) Remove the rocker cover RH.
5) When inspecting #2 and #4 cylinders
(1) Remove the secondary air pump. <Ref. to EC(STI)-27, REMOVAL, Secondary Air Pump.>
(2) Disconnect the connector (A) from the exhaust camshaft position sensor LH and the connector (B) form the exhaust oil flow control solenoid valve LH.

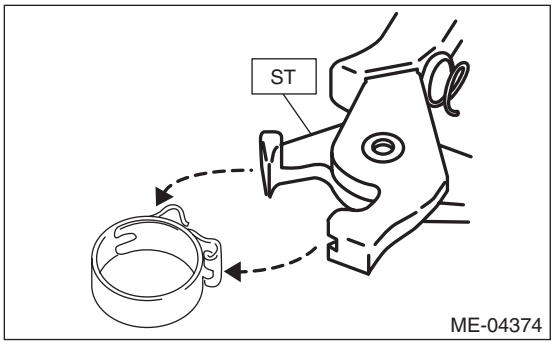


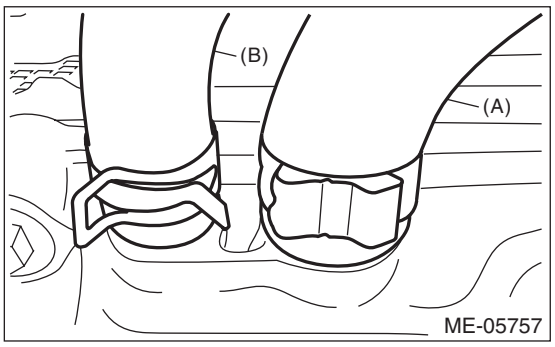
(3) Remove the air duct B (B) from the rocker cover LH and the air duct A (A).



(4) Remove the ignition coil. <Ref. to IG(STI)-7, REMOVAL, Ignition Coil.>
(5) Disconnect PCV hose (A) and vacuum hose (B) from the rocker cover LH.

NOTE:
Pinch the clamp of the PCV hose (A) by fitting the cut out in the ST with the protrusion on the clamp as shown in the figure, and unlock the clamp.
ST 18353AA000 CLAMP PLIERS



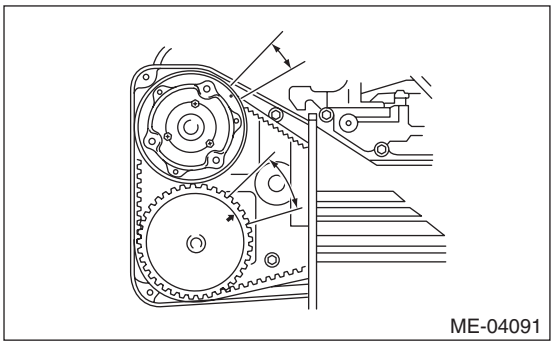


(6) Remove the rocker cover LH.

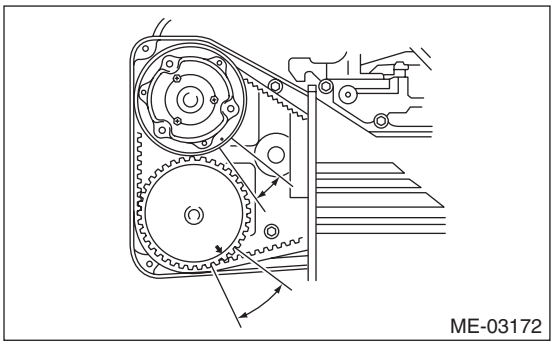
6) Turn the crank pulley clockwise until the round mark and arrow mark on the cam sprocket are set to position shown in the figure.

NOTE:
Turn the crank pulley using a socket wrench.

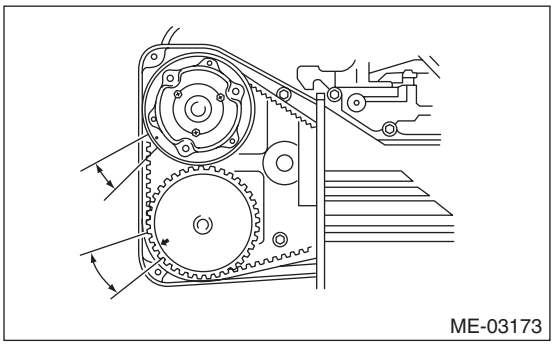
• Measurement of clearance of #1 cylinder intake valve and #3 cylinder exhaust valve



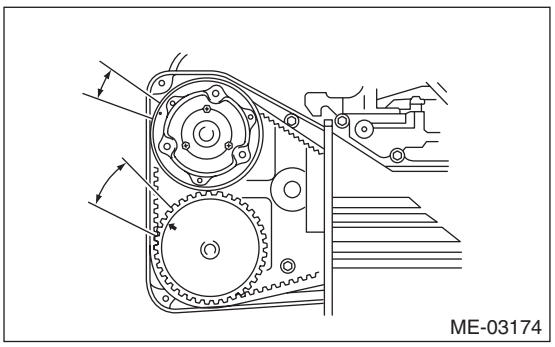
• Measurement of clearance of #2 cylinder exhaust valve and #3 cylinder intake valve



• Measurement of clearance of #2 cylinder intake valve and #4 cylinder exhaust valve



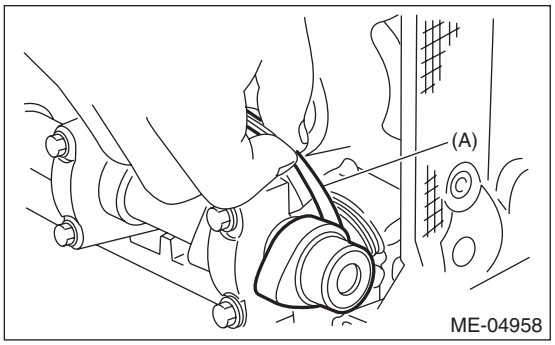
• Measurement of clearance of #1 cylinder exhaust valve and #4 cylinder intake valve



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

NOTE:
• Insert a thickness gauge in a direction as horizontal as possible with respect to the valve lifter.
• Lift up the vehicle, and then measure the exhaust valve clearances.
• If the measured value is not within the inspection value, take notes of the value in order to adjust the valve clearance later on.

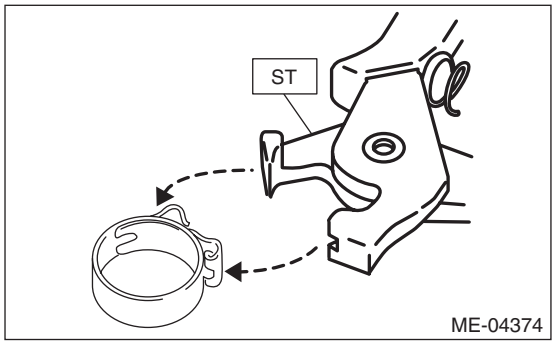
Valve clearance (inspection value):
Intake
$0.20^{+0.04}_{-0.06}$ mm ($0.0079^{+0.0016}_{-0.0024}$ in)
Exhaust
0.35±0.05 mm (0.0138±0.0020 in)

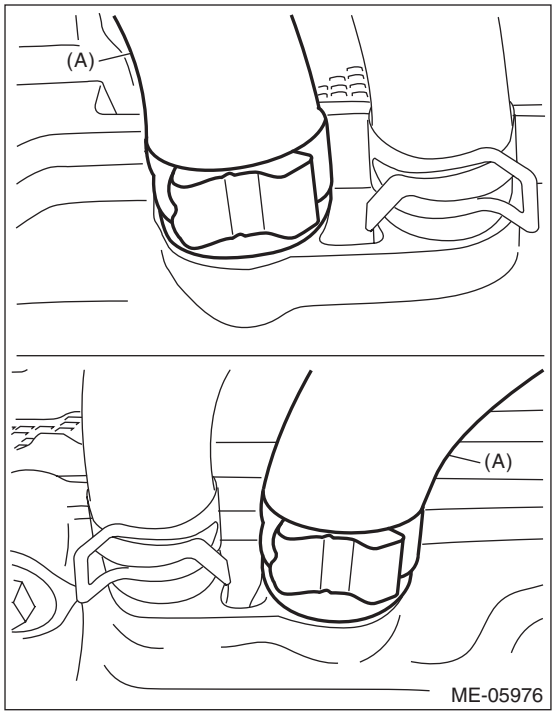


8) If necessary, adjust the valve clearance. <Ref. to ME(STI)-29, ADJUSTMENT, Valve Clearance.>

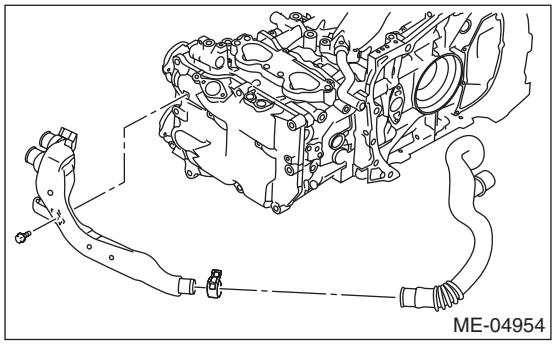
9) After inspection, install the related parts in the reverse order of removal.

NOTE:
• Refer to “Camshaft” when installing the rocker cover. <Ref. to ME(STI)-64, INSTALLATION, Camshaft.>
• Use a new clamp for the PCV hose (A), fit the cut out in the ST with the protrusion on the clamp as shown in the figure, and lock the clamp.
ST 18353AA000 CLAMP PLIERS





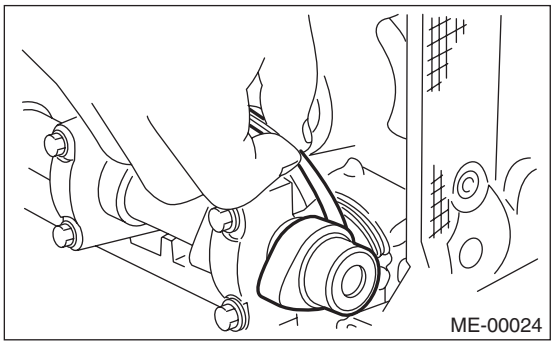
Tightening torque:
6.4 N·m (0.7 kgf-m, 4.7 ft-lb)



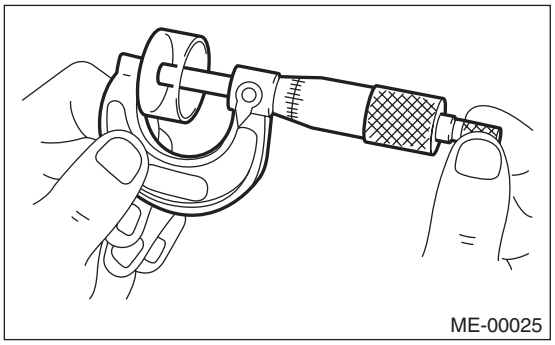
B: ADJUSTMENT

1) Measure all the valve clearances. <Ref. to ME(STI)-26, INSPECTION, Valve Clearance.>

NOTE:
Record the measured value of each valve clearance.



2) Remove the camshaft. <Ref. to ME(STI)-61, REMOVAL, Camshaft.>
3) Remove the valve lifter.
4) Measure the thickness of valve lifter using micrometer.



5) 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)
Intake valve: S = (V + T) – 0.19 (0.0075) Exhaust valve: S = (V + T) – 0.35 (0.0138)
S: Valve lifter thickness required V: Measured valve clearance T: Valve lifter thickness to be used

6) Install the camshaft. <Ref. to ME(STI)-64, INSTALLATION, Camshaft.>
7) Install the cam sprocket. <Ref. to ME(STI)-59, INSTALLATION, Cam Sprocket.>
8) Install the timing belt. <Ref. to ME(STI)-53, TIMING BELT, INSTALLATION, Timing Belt.>
9) Measure all valves for valve clearance again at this time. If the valve clearance is not within the adjustment value, repeat the procedure over again from step 2).

Valve clearance (adjustment value):
Intake
$0.20^{+0.01}_{-0.03}$ ***mm*** $(0.0079^{+0.0004}_{-0.0012}$ ***in)***
Exhaust
0.35±0.02 mm (0.0138±0.0008 in)

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