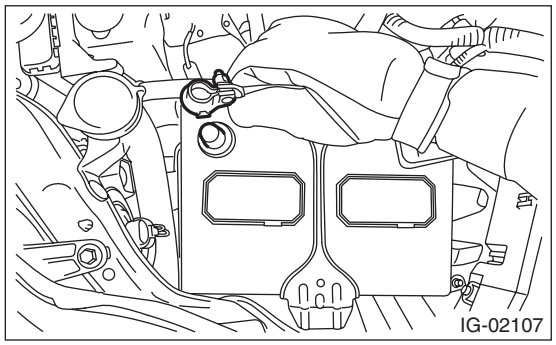
# 8. Valve Clearance

## A: INSPECTION

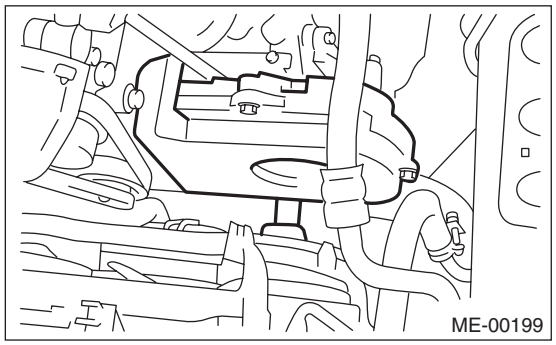
**CAUTION:**
**If engine oil is spilt onto the exhaust pipe, wipe it off with cloth to avoid emission of smoke or causing a fire.**

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

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

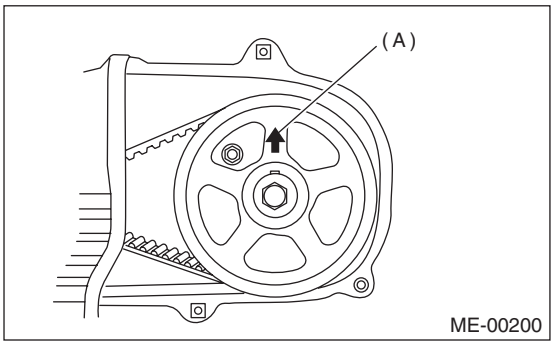



5) Remove the timing belt cover LH.




6) Remove the fuel injector. <Ref. to FU(H4SO)-34, REMOVAL, Fuel Injector.>
7) When inspecting #1 and #3 cylinders
   (1) Disconnect the ignition coil from spark plug on RH side. <Ref. to IG(H4SO)-3, RH SIDE, REMOVAL, Spark Plug.>
   (2) Place a suitable container under the vehicle.
   (3) Disconnect the PCV hose from the rocker cover RH.
   (4) Remove the bolts, then remove the rocker cover RH.
8) When inspecting #2 and #4 cylinders
   (1) Disconnect the ignition coil from spark plug on LH side. <Ref. to IG(H4SO)-3, LH SIDE, REMOVAL, Spark Plug.>
   (2) Place a suitable container under the vehicle.
   (3) Disconnect the PCV hose from the rocker cover LH.
   (4) Remove the bolts, then remove the rocker cover LH.
9) Set #1 cylinder piston to top dead center of compression stroke by rotating the crank pulley clockwise using the socket wrench.

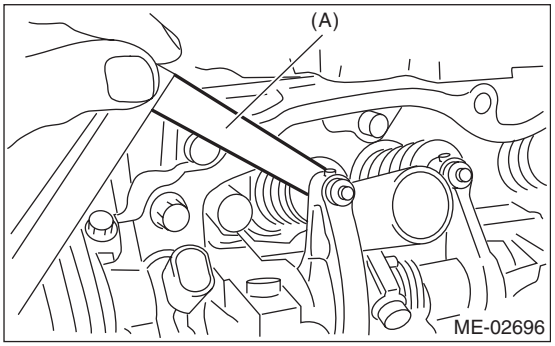
NOTE:
When the arrow mark (A) on cam sprocket LH is at the top position, the #1 cylinder piston is at top dead center of the compression stroke.




10) Measure #1 cylinder valve clearance by using thickness gauge (A).

NOTE:
• Insert the thickness gauge (A) in as horizontally as possible with respect to the valve stem end face.
• 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 mm (0.0079±0.0016 in)***
***Exhaust***
***0.25±0.04 mm (0.0098±0.0016 in)***



11) Measure the valve clearance in #3, #2 and #4 cylinder in the same measurement procedure as #1 cylinder in this order.

NOTE:
• Be sure to set the cylinder pistons to their respective top dead centers on compression stroke before measuring valve clearances.
• By rotating the crank pulley clockwise and turning the cam sprocket LH at every 90° from the state that #1 cylinder piston is on the top dead center of compression stroke, #3, #2 and #4 cylinder pistons come to the top dead center of compression stroke in this order.

12) If necessary, adjust the valve clearance. <Ref. to ME(H4SO)-30, ADJUSTMENT, Valve Clearance.>
13) After inspection, install the related parts in the reverse order of removal.

NOTE:
Use a new rocker cover gasket.

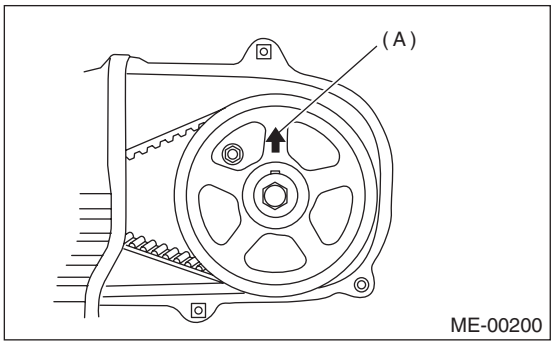
## B: ADJUSTMENT

**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:
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 the crank pulley clockwise using the socket wrench.

NOTE:
When the arrow mark (A) on cam sprocket LH is at the top position, the #1 cylinder piston is at top dead center of the compression stroke.

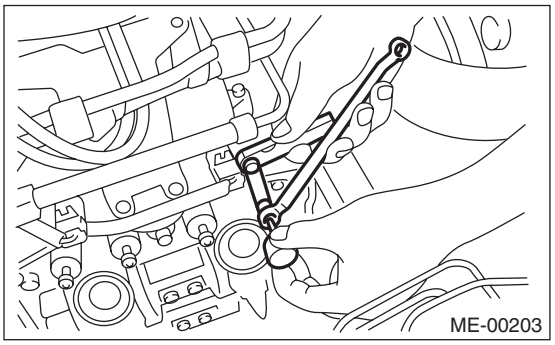



2) Adjust the #1 cylinder valve clearance.
(1) Loosen the valve rocker nut and screw.
(2) Set a suitable thickness gauge.
(3) While noting the valve clearance, tighten the valve rocker adjusting screw.
(4) When the specified valve clearance is obtained, tighten the valve rocker nut.

NOTE:
• Insert a thickness gauge in a direction as horizontal as possible with respect to the valve stem end face.
• Lift up the vehicle and adjust the exhaust valve clearances.

***Valve clearance (adjustment value):***
***Intake***
***0.20±0.04 mm (0.0079±0.0016 in)***
***Exhaust***
***0.25±0.04 mm (0.0098±0.0016 in)***

***Tightening torque:***
***9.75 N·m (1.0 kgf-m, 7.2 ft-lb)***




3) Adjust the valve clearance in #3, #2 and #4 cylinder in the same adjustment procedure as #1 cylinder in this order.

NOTE:
• Be sure to set the cylinder pistons to their respective top dead centers on compression stroke before adjusting valve clearances.
• By rotating the crank pulley clockwise and turning the cam sprocket LH at every 90° from the state that #1 cylinder piston is on the top dead center of compression stroke, #3, #2 and #4 cylinder pistons come to the top dead center of compression stroke in this order.

4) Ensure the valve clearances of each cylinder are within specifications. If necessary, readjust the valve clearances.
5) After adjustment, install the related parts in the reverse order of removal.

NOTE:
Use a new rocker cover gasket.