

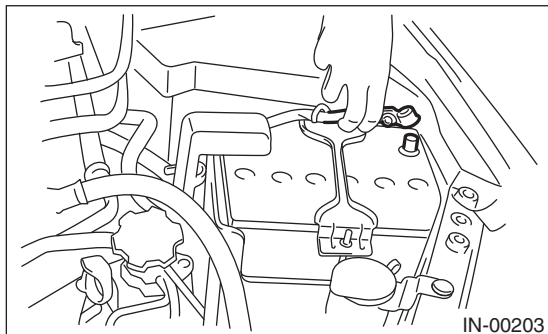
8. Valve Clearance

A: INSPECTION

NOTE:

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

- 1) Set the vehicle on a lift.
- 2) Remove the collector cover.
- 3) Disconnect the ground cable from the battery.



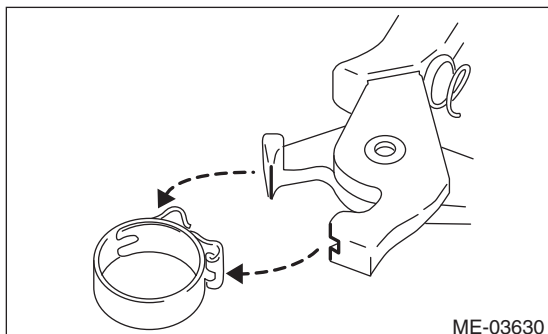
- 4) Remove the air intake duct (rear). <Ref. to IN(H4DOTC)-9, REMOVAL, Air Intake Duct.>
- 5) Remove the bolt which secures timing belt cover RH.
- 6) Lift up the vehicle.
- 7) Remove the under cover.
- 8) Loosen the remaining bolts which secure timing belt cover RH, then remove the timing belt cover.
- 9) Lower the vehicle.
- 10) When inspecting #1 and #3 cylinders

- (1) Remove the air cleaner case. <Ref. to IN(H4DOTC)-8, REMOVAL, Air Cleaner Case.>
- (2) Remove the ignition coil. <Ref. to IG(H4DOTC)-7, REMOVAL, Ignition Coil.>
- (3) Place a suitable container under the vehicle.
- (4) Disconnect the PCV hose from the rocker cover RH.

NOTE:

For the PCV hose affixed with the clamp, fit the depression in the ST with the protrusion of the clamp as shown in the figure below, unlock the clamp and disconnect.

ST 18353AA000 CLAMP PLIERS



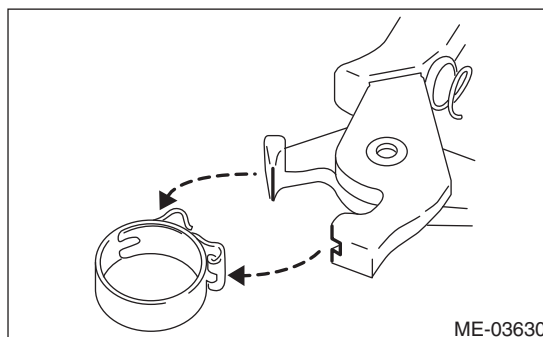
- (5) Remove the bolts, then remove the rocker cover RH.

- 11) When inspecting #2 and #4 cylinders
 - (1) Disconnect the battery cable, and remove the battery from the vehicle.
 - (2) Remove the secondary air pump. <Ref. to EC(H4DOTC)-23, REMOVAL, Secondary Air Pump.>
 - (3) Remove the ignition coil. <Ref. to IG(H4DOTC)-7, REMOVAL, Ignition Coil.>
 - (4) Place a suitable container under the vehicle.
 - (5) Disconnect the PCV hose from the rocker cover LH.

NOTE:

For the PCV hose affixed with the clamp, fit the depression in the ST with the protrusion of the clamp as shown in the figure below, unlock the clamp and disconnect.

ST 18353AA000 CLAMP PLIERS

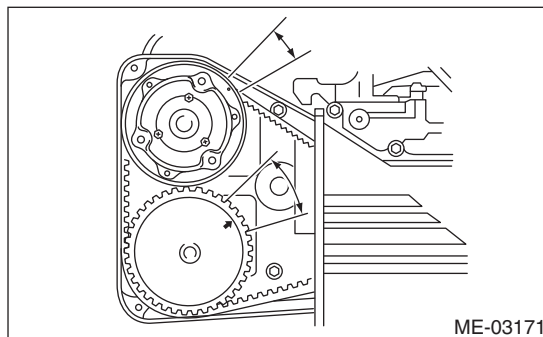


- (6) Remove the bolts, then remove the rocker cover LH.

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

NOTE:

Turn the crank pulley using a socket wrench.



13) Measure the #1 cylinder intake valve and #3 cylinder exhaust valve clearance by 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 measure the exhaust valve clearances.
- If the measured value is not within specification, take notes of the value in order to adjust the valve clearance later on.

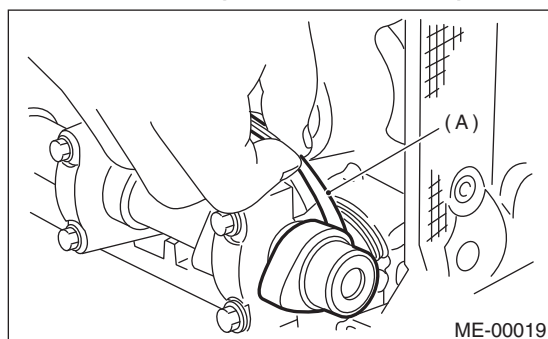
Valve clearance (inspection value):

Intake

$0.20^{+0.04}_{-0.06}$ mm ($0.0079^{+0.0016}_{-0.0024}$ in)

Exhaust

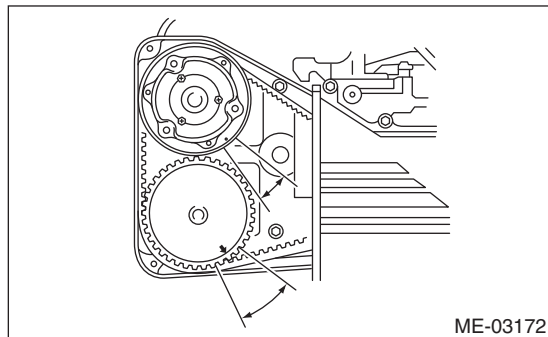
0.35 ± 0.05 mm (0.0138 ± 0.0020 in)



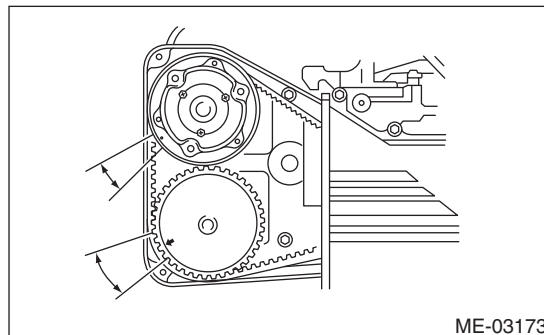
14) If necessary, adjust the valve clearance. <Ref. to ME(H4DOTC)-28, ADJUSTMENT, Valve Clearance.>

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

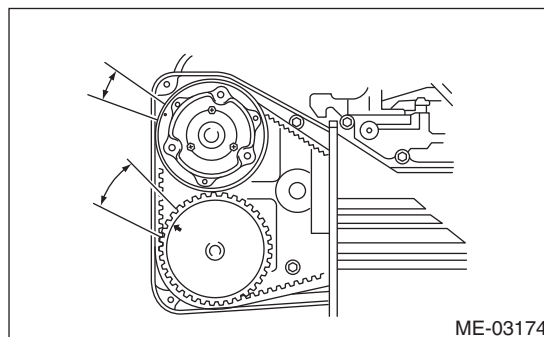
(1) Set the round mark and arrow mark on cam sprocket to the position shown in the figure, and measure the #2 cylinder exhaust valve and #3 cylinder intake valve clearances.



(2) Set the round mark and arrow mark on cam sprocket to the position shown in the figure, and measure the #2 cylinder intake valve and #4 cylinder exhaust valve clearances.



(3) Set the round mark and arrow mark on cam sprocket to the position shown in the figure, and measure the #1 cylinder exhaust valve and #4 cylinder intake valve clearances.

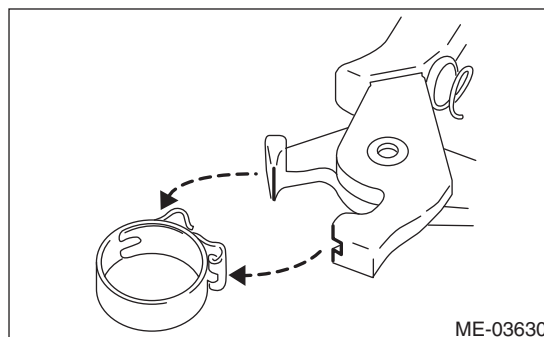


16) After inspection, install the related parts in the reverse order of removal.

NOTE:

- Use a new rocker cover gasket.
- For the PVC hose clamp, use a new clamp. Sandwich the protruding part of the clamp with the ST and lock the clamp.

ST 18353AA000 CLAMP PLIERS



Valve Clearance

MECHANICAL

B: ADJUSTMENT

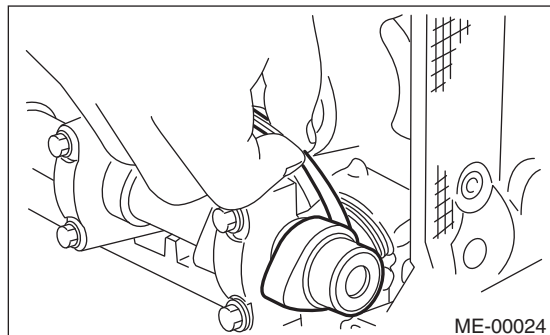
NOTE:

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

1) Measure all the valve clearances. <Ref. to ME(H4DOTC)-26, INSPECTION, Valve Clearance.>

NOTE:

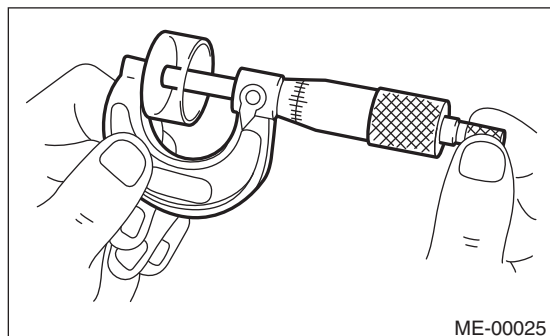
Record each valve clearance after measurement.



2) Remove the camshaft. <Ref. to ME(H4DOTC)-60, REMOVAL, Camshaft.>

3) Remove the valve lifter.

4) Measure the thickness of valve lifter using micrometer.



5) Select and install a valve lifter of suitable thickness from the following table, based on the measured valve clearance and valve lifter thickness.

NOTE:

Use new valve lifters.

Unit: (mm)
Intake valve: $S = (V + T) - 0.19$
Exhaust valve: $S = (V + T) - 0.35$
S: Valve lifter thickness required
V: Measured valve clearance
T: Valve lifter thickness to be used

Part No.	Thickness mm (in)
13228 AB102	4.68 (0.1843)
13228 AB112	4.69 (0.1846)
13228 AB122	4.70 (0.1850)
13228 AB132	4.71 (0.1854)
13228 AB142	4.72 (0.1858)
13228 AB152	4.73 (0.1862)
13228 AB162	4.74 (0.1866)
13228 AB172	4.75 (0.1870)
13228 AB182	4.76 (0.1874)
13228 AB192	4.77 (0.1878)
13228 AB202	4.78 (0.1882)
13228 AB212	4.79 (0.1886)
13228 AB222	4.80 (0.1890)
13228 AB232	4.81 (0.1894)
13228 AB242	4.82 (0.1898)
13228 AB252	4.83 (0.1902)
13228 AB262	4.84 (0.1906)
13228 AB272	4.85 (0.1909)
13228 AB282	4.86 (0.1913)
13228 AB292	4.87 (0.1917)
13228 AB302	4.88 (0.1921)
13228 AB312	4.89 (0.1925)
13228 AB322	4.90 (0.1929)
13228 AB332	4.91 (0.1933)
13228 AB342	4.92 (0.1937)
13228 AB352	4.93 (0.1941)
13228 AB362	4.94 (0.1945)
13228 AB372	4.95 (0.1949)
13228 AB382	4.96 (0.1953)
13228 AB392	4.97 (0.1957)
13228 AB402	4.98 (0.1961)
13228 AB412	4.99 (0.1965)
13228 AB422	5.00 (0.1969)
13228 AB432	5.01 (0.1972)
13228 AB442	5.02 (0.1976)
13228 AB452	5.03 (0.1980)
13228 AB462	5.04 (0.1984)
13228 AB472	5.05 (0.1988)
13228 AB482	5.06 (0.1992)
13228 AB492	5.07 (0.1996)
13228 AB502	5.08 (0.2000)
13228 AB512	5.09 (0.2004)
13228 AB522	5.10 (0.2008)
13228 AB532	5.11 (0.2012)
13228 AB542	5.12 (0.2016)
13228 AB552	5.13 (0.2020)
13228 AB562	5.14 (0.2024)
13228 AB572	5.15 (0.2028)
13228 AB582	5.16 (0.2031)
13228 AB592	5.17 (0.2035)

Part No.	Thickness mm (in)
13228 AB602	5.18 (0.2039)
13228 AB612	5.19 (0.2043)
13228 AB622	5.20 (0.2047)
13228 AB632	5.21 (0.2051)
13228 AB642	5.22 (0.2055)
13228 AB652	5.23 (0.2059)
13228 AB662	5.24 (0.2063)
13228 AB672	5.25 (0.2067)
13228 AB682	5.26 (0.2071)
13228 AB692	5.27 (0.2075)
13228 AB702	4.38 (0.1724)
13228 AB712	4.40 (0.1732)
13228 AB722	4.42 (0.1740)
13228 AB732	4.44 (0.1748)
13228 AB742	4.46 (0.1756)
13228 AB752	4.48 (0.1764)
13228 AB762	4.50 (0.1771)
13228 AB772	4.52 (0.1780)
13228 AB782	4.54 (0.1787)
13228 AB792	4.56 (0.1795)
13228 AB802	4.58 (0.1803)
13228 AB812	4.60 (0.1811)
13228 AB822	4.62 (0.1819)
13228 AB832	4.64 (0.1827)
13228 AB842	4.66 (0.1835)
13228 AB852	5.29 (0.2083)
13228 AB862	5.31 (0.2091)
13228 AB872	5.33 (0.2098)
13228 AB882	5.35 (0.2106)
13228 AB892	5.37 (0.2114)
13228 AB902	5.39 (0.2122)
13228 AB912	5.41 (0.2123)
13228 AB922	5.43 (0.2138)
13228 AB932	5.45 (0.2146)
13228 AB942	5.47 (0.2154)
13228 AB952	5.49 (0.2161)
13228 AB962	5.51 (0.2169)
13228 AB972	5.53 (0.2177)
13228 AB982	5.55 (0.2185)
13228 AB992	5.57 (0.2193)
13228 AC002	5.59 (0.2201)
13228 AC012	5.61 (0.2209)
13228 AC022	5.63 (0.2217)
13228 AC032	5.65 (0.2224)

6) Install the camshaft. <Ref. to ME(H4DOTC)-61, INSTALLATION, Camshaft.>

7) Install the cam sprocket. <Ref. to ME(H4DOTC)-57, INSTALLATION, Cam Sprocket.>

8) Install the timing belt. <Ref. to ME(H4DOTC)-52, 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 the first step.

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 measuring, install the related parts in the reverse order of removal.

NOTE:

Use a new rocker cover gasket.