

# VALVE CLEARANCE

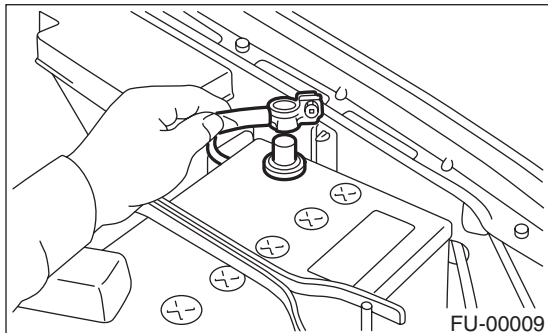
MECHANICAL

## 8. Valve Clearance

### A: INSPECTION

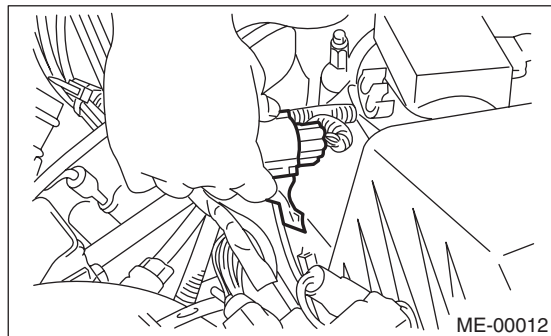
Inspection and adjustment of the valve clearance should be performed while engine is cold.

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



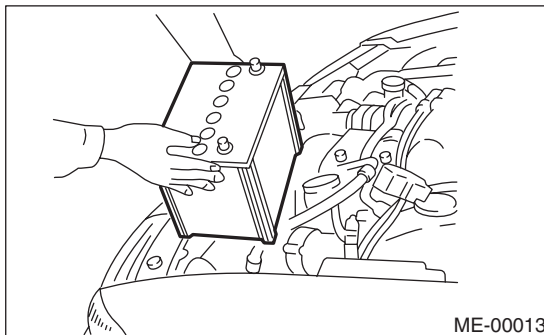
- 3) Remove the air intake duct. <Ref. to IN(H4DOTC)-8, REMOVAL, Air Intake Duct.>
- 4) Remove the bolts which secure the timing belt cover (RH).
- 5) Lift-up the vehicle.
- 6) Remove the under cover.
- 7) Loosen the remaining bolts which secure the timing belt cover (RH), and then remove the timing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

- (1) Pull out the engine harness connector with bracket from air cleaner upper cover.

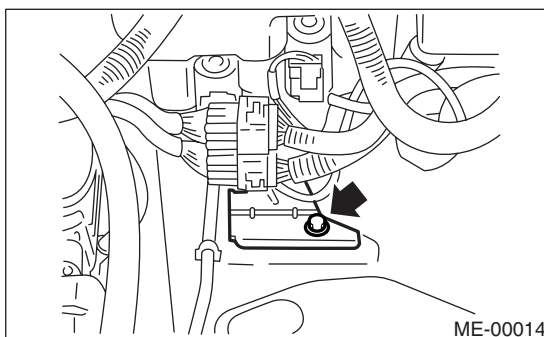


- (2) Remove the air cleaner case. <Ref. to IN(H4DOTC)-7, REMOVAL, Air Cleaner.>
- (3) Disconnect the ignition coil connector.
- (4) Remove the ignition coil.
- (5) Place a suitable container under the vehicle.
- (6) Disconnect the PCV hose from rocker cover (RH).
- (7) Remove the bolts, and then remove the rocker cover (RH).

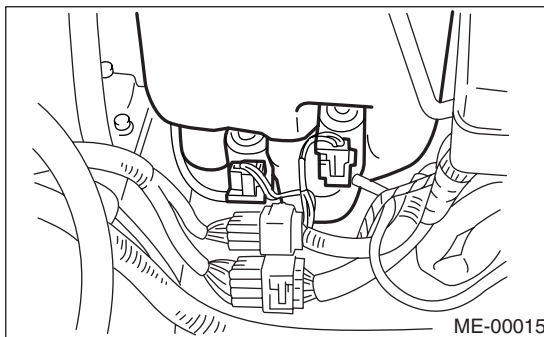
- 10) When inspecting the #2 and #4 cylinders:
  - (1) Disconnect the battery cable, and then remove the battery and battery carrier.



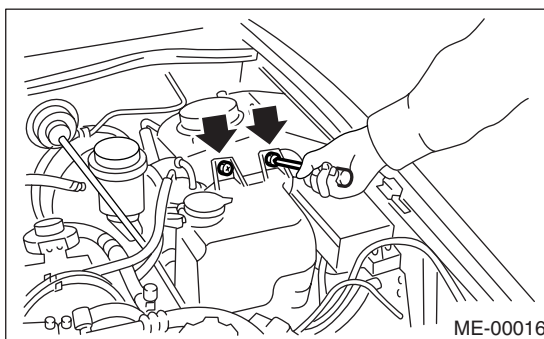
- (2) Remove the bolt which secures the engine harness bracket onto body.



- (3) Disconnect the washer motor connectors.



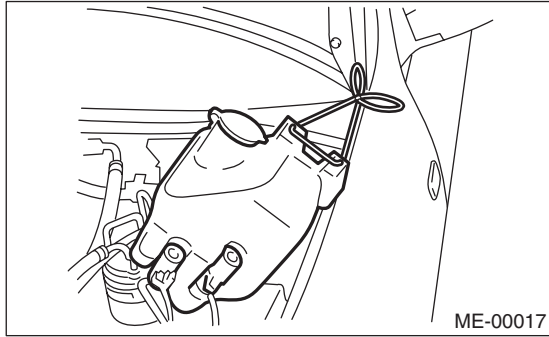
- (4) Remove the washer tank mounting bolts.



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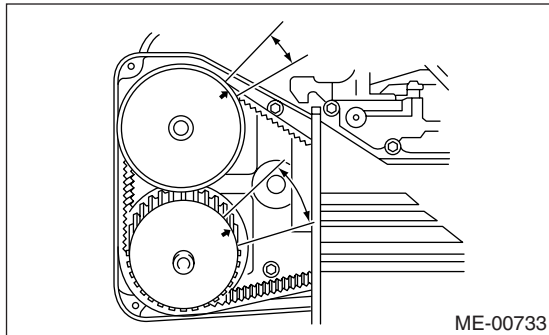
- (5) Move the washer tank upward.



- (6) Disconnect the ignition coil connector.  
(7) Remove the ignition coil.  
(8) Place a suitable container under the vehicle.  
(9) Disconnect the PCV hose from rocker cover (LH).  
(10) Remove the bolts, and then remove the rocker cover (LH).  
11) Turn the crank pulley clockwise until arrow mark on the cam sprocket is set to position shown in the figure.

**NOTE:**

Turn the crankshaft using socket wrench.



- 12) Measure the #1 cylinder intake valve and #3 cylinder exhaust valve clearance by using thickness gauge (A).

**NOTE:**

- Insert the thickness gauge in as horizontal a direction as possible with respect to the shim.
- Measure the exhaust valve clearances while lifting-up the vehicle.

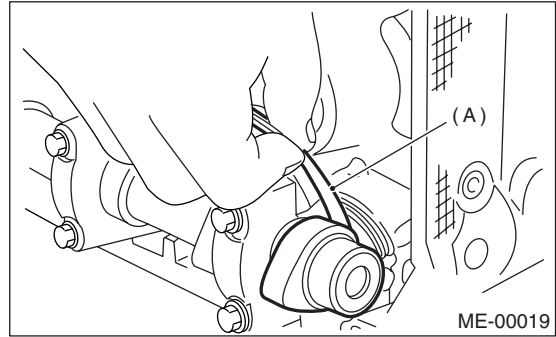
**Valve clearance:**

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

**Exhaust:**  $0.35 \pm 0.05$  mm ( $0.0138 \pm 0.0020$  in)

**NOTE:**

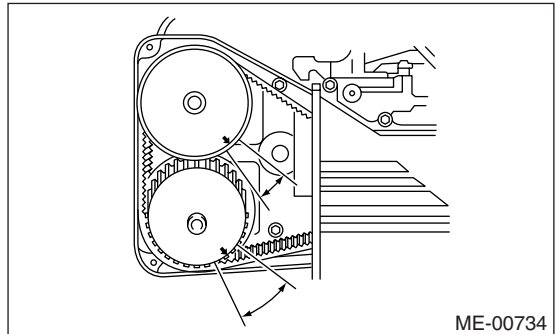
If the measured value is not within specification, take notes of the value in order to adjust the valve clearance later on.



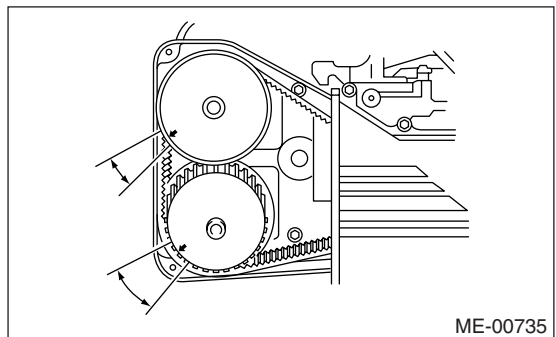
- 13) If necessary, adjust the valve clearance. <Ref. to ME(H4DOTC)-32, ADJUSTMENT, Valve Clearance.>

- 14) Further turn the crank pulley clockwise. Using the same procedures described previously, and then measure the valve clearances again.

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



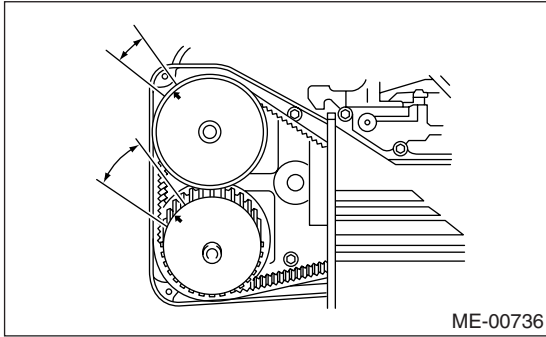
- (2) Set the arrow mark on cam sprocket to position shown in the figure, and then measure the #2 cylinder intake valve and #4 cylinder exhaust valve clearances.



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## MECHANICAL

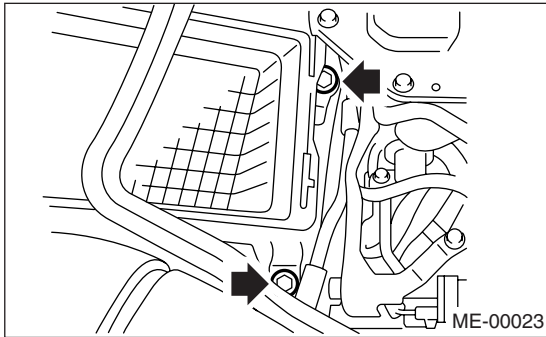
- (3) Set the arrow mark on cam sprocket to position shown in the figure, and then measure the #1 cylinder exhaust valve and #4 cylinder intake valve clearances.



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

### Tightening torque:

**33 N·m (3.4 kgf·m, 25 ft·lb)**



## B: ADJUSTMENT

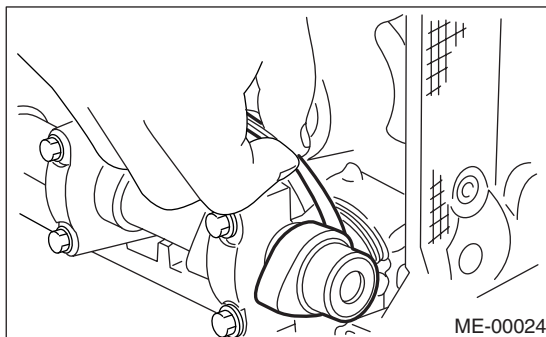
### CAUTION:

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

- 1) Measure all valve clearances. <Ref. to ME(H4DOTC)-30, INSPECTION, Valve Clearance.>

### NOTE:

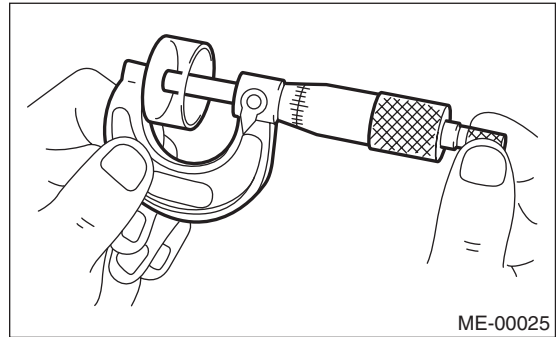
Record each valve clearance after it has been measured.



- 2) Remove the camshaft. <Ref. to ME(H4DOTC)-61, REMOVAL, Camshaft.>

- 3) Remove the valve lifter.

- 4) Measure the thickness of valve lifter with a micrometer.



- 5) Select a valve lifter of suitable thickness using measured valve clearance and valve lifter thickness, by referring to the following table.

Unit: mm
Intake valve: $S = (V + T) - 0.20$
Exhaust valve: $S = (V + T) - 0.35$
S: Required thickness of valve lifter
V: Measured valve clearance
T: Used valve lifter thickness

Part No.	Thickness mm (in)
13228 AB101	4.68 (0.1843)
13228 AB111	4.69 (0.1846)
13228 AB121	4.70 (0.1850)
13228 AB131	4.71 (0.1854)
13228 AB141	4.72 (0.1858)
13228 AB151	4.73 (0.1862)
13228 AB161	4.74 (0.1866)
13228 AB171	4.75 (0.1870)
13228 AB181	4.76 (0.1874)
13228 AB191	4.77 (0.1878)
13228 AB201	4.78 (0.1882)
13228 AB211	4.79 (0.1886)
13228 AB221	4.80 (0.1890)
13228 AB231	4.81 (0.1894)
13228 AB241	4.82 (0.1898)
13228 AB251	4.83 (0.1902)
13228 AB261	4.84 (0.1906)
13228 AB271	4.85 (0.1909)
13228 AB281	4.86 (0.1913)
13228 AB291	4.87 (0.1917)
13228 AB301	4.88 (0.1921)
13228 AB311	4.89 (0.1925)
13228 AB321	4.90 (0.1929)
13228 AB331	4.91 (0.1933)
13228 AB341	4.92 (0.1937)
13228 AB351	4.93 (0.1941)
13228 AB361	4.94 (0.1945)
13228 AB371	4.95 (0.1949)

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Part No.	Thickness mm (in)
13228 AB381	4.96 (0.1953)
13228 AB391	4.97 (0.1957)
13228 AB401	4.98 (0.1961)
13228 AB411	4.99 (0.1965)
13228 AB421	5.00 (0.1969)
13228 AB431	5.01 (0.1972)
13228 AB441	5.02 (0.1976)
13228 AB451	5.03 (0.1980)
13228 AB461	5.04 (0.1984)
13228 AB471	5.05 (0.1988)
13228 AB481	5.06 (0.1992)
13228 AB491	5.07 (0.1996)
13228 AB501	5.08 (0.2000)
13228 AB511	5.09 (0.2004)
13228 AB521	5.10 (0.2008)
13228 AB531	5.11 (0.2012)
13228 AB541	5.12 (0.2016)
13228 AB551	5.13 (0.2020)
13228 AB561	5.14 (0.2024)
13228 AB571	5.15 (0.2028)
13228 AB581	5.16 (0.2031)
13228 AB591	5.17 (0.2035)
13228 AB601	5.18 (0.2039)
13228 AB611	5.19 (0.2043)
13228 AB621	5.20 (0.2047)
13228 AB631	5.21 (0.2051)
13228 AB641	5.22 (0.2055)
13228 AB651	5.23 (0.2059)
13228 AB661	5.24 (0.2063)
13228 AB671	5.25 (0.2067)
13228 AB681	5.26 (0.2071)
13228 AB691	5.27 (0.2075)
13228 AB701	4.38 (0.1724)
13228 AB711	4.40 (0.1732)
13228 AB721	4.42 (0.1740)
13228 AB731	4.44 (0.1748)
13228 AB741	4.46 (0.1756)
13228 AB751	4.48 (0.1764)
13228 AB761	4.50 (0.1771)
13228 AB771	4.52 (0.1780)
13228 AB781	4.54 (0.1787)
13228 AB791	4.56 (0.1795)
13228 AB801	4.58 (0.1803)
13228 AB811	4.60 (0.1811)
13228 AB821	4.62 (0.1819)
13228 AB831	4.64 (0.1827)
13228 AB841	4.66 (0.1835)
13228 AB851	5.29 (0.2083)
13228 AB861	5.31 (0.2091)
13228 AB871	5.33 (0.2098)
13228 AB881	5.35 (0.2106)

Part No.	Thickness mm (in)
13228 AB891	5.37 (0.2114)
13228 AB901	5.39 (0.2122)
13228 AB911	5.41 (0.2123)
13228 AB921	5.43 (0.2138)
13228 AB931	5.45 (0.2146)
13228 AB941	5.47 (0.2154)
13228 AB951	5.49 (0.2161)
13228 AB961	5.51 (0.2169)
13228 AB971	5.53 (0.2177)
13228 AB981	5.55 (0.2185)
13228 AB991	5.57 (0.2193)
13228 AC001	5.59 (0.2201)
13228 AC011	5.61 (0.2209)
13228 AC021	5.63 (0.2217)
13228 AC031	5.65 (0.2224)

6) Inspect all valves for clearance again at this stage. If the valve clearance is not correct, repeat the procedure over again from the first step.

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