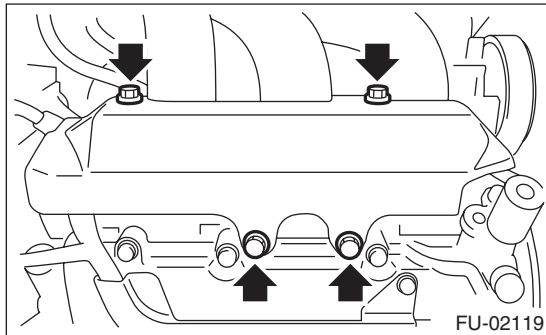


## 8. Valve Clearance

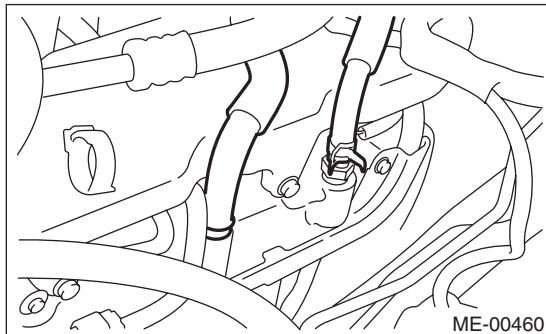
### A: INSPECTION

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

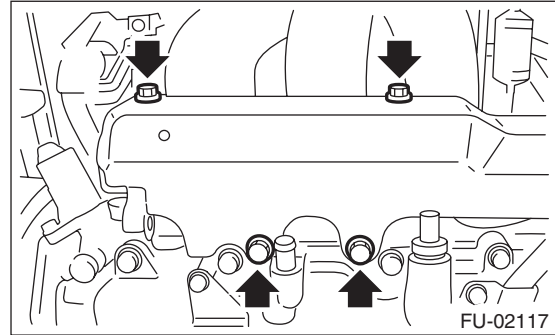
- 1) Set the vehicle on a lift.
- 2) Remove the collector cover.
- 3) Disconnect the ground cable from battery.
- 4) Lift up the vehicle.
- 5) Remove the under cover.
- 6) Lower the vehicle.
- 7) When inspecting RH side cylinders:
  - (1) Remove the air intake duct and air cleaner case. <Ref. to IN(H6DO)-8, REMOVAL, Air Intake Duct.> <Ref. to IN(H6DO)-5, REMOVAL, Air Cleaner Case.>
  - (2) Remove the fuel pipe protector (RH).



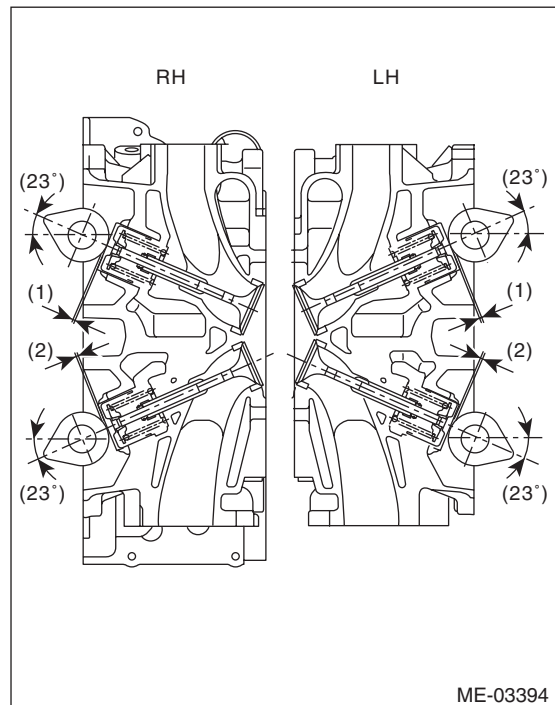
- (3) Disconnect the connector of oil pressure switch.
- (4) Remove the ignition coil. <Ref. to IG(H6DO)-7, REMOVAL, Ignition Coil.>
- (5) Remove the rocker cover (RH). <Ref. to ME(H6DO)-75, REMOVAL, Camshaft.>
- 8) When inspecting LH side cylinders:
  - (1) Disconnect the battery cable, and then remove the battery and battery carrier.
  - (2) Disconnect the PCV hose and blow-by hose from the rocker cover (LH).



- (3) Remove the fuel pipe protector (LH).



- (4) Remove the ignition coil. <Ref. to IG(H6DO)-7, REMOVAL, Ignition Coil.>
- (5) Remove the rocker cover (LH). <Ref. to ME(H6DO)-75, REMOVAL, Camshaft.>
- 9) Turn the crankshaft clockwise until the cam is set to position shown in the figure.



- (1) Valve clearance (Intake side)
- (2) Valve clearance (Exhaust side)

# Valve Clearance

## MECHANICAL

10) 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:

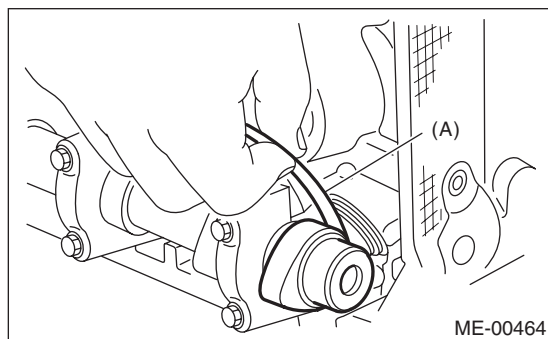
#### Intake:

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

#### Exhaust:

$0.35 \pm 0.05 \text{ mm } (0.0138 \pm 0.0020 \text{ in})$

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



11) If necessary, adjust the valve clearance. <Ref. to ME(H6DO)-32, ADJUSTMENT, Valve Clearance.>

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

13) After inspection, install the related parts in the reverse order of removal. <Ref. to ME(H6DO)-77, INSTALLATION, Camshaft.>

## B: ADJUSTMENT

### 1. INTAKE SIDE

#### NOTE:

- Adjustment of valve clearance should be performed while engine is cold.
- Do not wear gloves during removal and installation of valve lifter.
- Do not use valve lifters that were dropped or otherwise exposed to strong impacts.

1) Measure all valve clearances. <Ref. to ME(H6DO)-31, INSPECTION, Valve Clearance.>

#### NOTE:

Record each valve clearance after measurement.

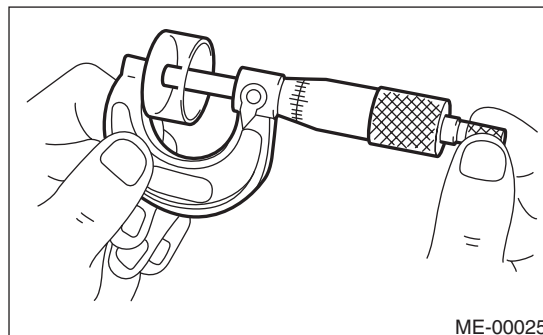
2) Remove the timing chain assembly. <Ref. to ME(H6DO)-54, REMOVAL, Timing Chain Assembly.>

3) Remove the cam sprocket. <Ref. to ME(H6DO)-73, REMOVAL, Cam Sprocket.>

4) Remove the camshaft. <Ref. to ME(H6DO)-75, REMOVAL, Camshaft.>

5) Remove the valve lifter.

6) Measure the thickness of valve lifter using micrometer.



7) Select and install a valve lifter of suitable thickness from the following table using the measured valve clearance and valve lifter thickness.

| Unit: mm (in)                        |
|--------------------------------------|
| $S = (V + T) - 0.20 (0.0079)$        |
| S: Valve lifter thickness required   |
| V: Measured valve clearance          |
| T: Valve lifter thickness to be used |

# Valve Clearance

MECHANICAL

| Part number | Thickness mm (in) |
|-------------|-------------------|
| 13228AD181  | 4.32 (0.1701)     |
| 13228AD191  | 4.34 (0.1709)     |
| 13228AD201  | 4.36 (0.1717)     |
| 13228AD211  | 4.38 (0.1724)     |
| 13228AD221  | 4.40 (0.1732)     |
| 13228AD231  | 4.42 (0.1740)     |
| 13228AD241  | 4.44 (0.1748)     |
| 13228AD251  | 4.46 (0.1756)     |
| 13228AD261  | 4.48 (0.1764)     |
| 13228AD271  | 4.50 (0.1772)     |
| 13228AD281  | 4.52 (0.1780)     |
| 13228AD291  | 4.54 (0.1787)     |
| 13228AD301  | 4.56 (0.1795)     |
| 13228AD311  | 4.58 (0.1803)     |
| 13228AD321  | 4.60 (0.1811)     |
| 13228AC581  | 4.62 (0.1819)     |
| 13228AC591  | 4.63 (0.1823)     |
| 13228AC601  | 4.64 (0.1827)     |
| 13228AC611  | 4.65 (0.1831)     |
| 13228AC621  | 4.66 (0.1835)     |
| 13228AC631  | 4.67 (0.1839)     |
| 13228AC641  | 4.68 (0.1843)     |
| 13228AC651  | 4.69 (0.1846)     |
| 13228AC661  | 4.70 (0.1850)     |
| 13228AC671  | 4.71 (0.1854)     |
| 13228AC681  | 4.72 (0.1858)     |
| 13228AC691  | 4.73 (0.1862)     |
| 13228AC701  | 4.74 (0.1866)     |
| 13228AC711  | 4.75 (0.1870)     |
| 13228AC721  | 4.76 (0.1874)     |
| 13228AC731  | 4.77 (0.1878)     |
| 13228AC741  | 4.78 (0.1882)     |
| 13228AC751  | 4.79 (0.1886)     |
| 13228AC761  | 4.80 (0.1890)     |
| 13228AC771  | 4.81 (0.1894)     |
| 13228AC781  | 4.82 (0.1898)     |
| 13228AC791  | 4.83 (0.1902)     |
| 13228AC801  | 4.84 (0.1906)     |
| 13228AC811  | 4.85 (0.1909)     |
| 13228AC821  | 4.86 (0.1913)     |
| 13228AC831  | 4.87 (0.1917)     |
| 13228AC841  | 4.88 (0.1921)     |
| 13228AC851  | 4.89 (0.1925)     |
| 13228AC861  | 4.90 (0.1929)     |
| 13228AC871  | 4.91 (0.1933)     |
| 13228AC881  | 4.92 (0.1937)     |
| 13228AC891  | 4.93 (0.1941)     |
| 13228AC901  | 4.94 (0.1945)     |
| 13228AC911  | 4.95 (0.1949)     |
| 13228AC921  | 4.96 (0.1953)     |

| Part number | Thickness mm (in) |
|-------------|-------------------|
| 13228AC931  | 4.97 (0.1957)     |
| 13228AC941  | 4.98 (0.1961)     |
| 13228AC951  | 4.99 (0.1965)     |
| 13228AC961  | 5.00 (0.1969)     |
| 13228AC971  | 5.01 (0.1972)     |
| 13228AC981  | 5.02 (0.1976)     |
| 13228AC991  | 5.03 (0.1980)     |
| 13228AD001  | 5.04 (0.1984)     |
| 13228AD011  | 5.05 (0.1988)     |
| 13228AD021  | 5.06 (0.1992)     |
| 13228AD031  | 5.07 (0.1996)     |
| 13228AD041  | 5.08 (0.2000)     |
| 13228AD051  | 5.09 (0.2004)     |
| 13228AD061  | 5.10 (0.2008)     |
| 13228AD071  | 5.11 (0.2012)     |
| 13228AD081  | 5.12 (0.2016)     |
| 13228AD091  | 5.13 (0.2020)     |
| 13228AD101  | 5.14 (0.2024)     |
| 13228AD111  | 5.15 (0.2028)     |
| 13228AD121  | 5.16 (0.2032)     |
| 13228AD131  | 5.17 (0.2035)     |
| 13228AD141  | 5.18 (0.2039)     |
| 13228AD151  | 5.19 (0.2043)     |
| 13228AD161  | 5.20 (0.2047)     |
| 13228AD171  | 5.21 (0.2051)     |
| 13228AD331  | 5.23 (0.2059)     |
| 13228AD341  | 5.25 (0.2067)     |
| 13228AD351  | 5.27 (0.2075)     |
| 13228AD361  | 5.29 (0.2083)     |
| 13228AD371  | 5.31 (0.2091)     |
| 13228AD381  | 5.33 (0.2098)     |
| 13228AD391  | 5.35 (0.2106)     |
| 13228AD401  | 5.37 (0.2114)     |
| 13228AD411  | 5.39 (0.2122)     |
| 13228AD421  | 5.41 (0.2130)     |
| 13228AD431  | 5.43 (0.2138)     |
| 13228AD441  | 5.45 (0.2146)     |
| 13228AD451  | 5.47 (0.2154)     |
| 13228AD461  | 5.49 (0.2161)     |
| 13228AD471  | 5.51 (0.2169)     |
| 13228AD481  | 5.53 (0.2177)     |
| 13228AD491  | 5.55 (0.2185)     |
| 13228AD501  | 5.57 (0.2193)     |
| 13228AD511  | 5.59 (0.2201)     |

# Valve Clearance

## MECHANICAL

8) Install the camshaft. <Ref. to ME(H6DO)-77, INSTALLATION, Camshaft.>

9) Install the cam sprocket. <Ref. to ME(H6DO)-73, INSTALLATION, Cam Sprocket.>

10) Install the timing chain assembly. <Ref. to ME(H6DO)-60, INSTALLATION, Timing Chain Assembly.>

11) Re-measure all valve clearance at this time.

If the valve clearance is not appropriate, repeat from the first step.

12) After measurement, install the related parts in the reverse order of removal.

### NOTE:

Use a new rocker cover gasket.

## 2. EXHAUST SIDE

### NOTE:

- Adjustment of valve clearance should be performed while engine is cold.
- Do not wear gloves during removal and installation of valve lifter.
- Do not use valve lifters that were dropped or otherwise exposed to strong impacts.

1) Measure all valve clearances. <Ref. to ME(H6DO)-31, INSPECTION, Valve Clearance.>

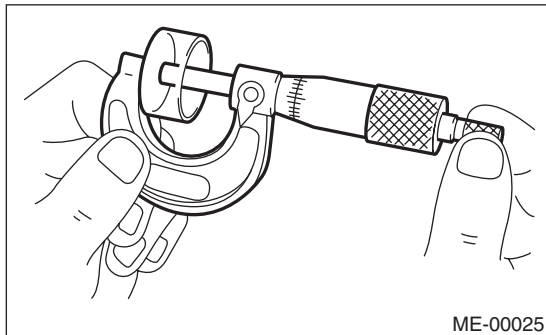
### NOTE:

Record each valve clearance after measurement.

2) Remove the camshaft. <Ref. to ME(H6DO)-75, 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 using the measured valve clearance and valve lifter thickness.

| Unit: mm (in)                        |
|--------------------------------------|
| $S = (V + T) - 0.35 (0.0138)$        |
| S: Valve lifter thickness required   |
| V: Measured valve clearance          |
| T: Valve lifter thickness to be used |

| Part number | Thickness mm (in) |
|-------------|-------------------|
| 13228AD181  | 4.32 (0.1701)     |
| 13228AD191  | 4.34 (0.1709)     |
| 13228AD201  | 4.36 (0.1717)     |
| 13228AD211  | 4.38 (0.1724)     |
| 13228AD221  | 4.40 (0.1732)     |
| 13228AD231  | 4.42 (0.1740)     |
| 13228AD241  | 4.44 (0.1748)     |
| 13228AD251  | 4.46 (0.1756)     |
| 13228AD261  | 4.48 (0.1764)     |
| 13228AD271  | 4.50 (0.1772)     |
| 13228AD281  | 4.52 (0.1780)     |
| 13228AD291  | 4.54 (0.1787)     |
| 13228AD301  | 4.56 (0.1795)     |
| 13228AD311  | 4.58 (0.1803)     |
| 13228AD321  | 4.60 (0.1811)     |
| 13228AC581  | 4.62 (0.1819)     |
| 13228AC591  | 4.63 (0.1823)     |
| 13228AC601  | 4.64 (0.1827)     |
| 13228AC611  | 4.65 (0.1831)     |
| 13228AC621  | 4.66 (0.1835)     |
| 13228AC631  | 4.67 (0.1839)     |
| 13228AC641  | 4.68 (0.1843)     |
| 13228AC651  | 4.69 (0.1846)     |
| 13228AC661  | 4.70 (0.1850)     |
| 13228AC671  | 4.71 (0.1854)     |
| 13228AC681  | 4.72 (0.1858)     |
| 13228AC691  | 4.73 (0.1862)     |
| 13228AC701  | 4.74 (0.1866)     |
| 13228AC711  | 4.75 (0.1870)     |
| 13228AC721  | 4.76 (0.1874)     |
| 13228AC731  | 4.77 (0.1878)     |
| 13228AC741  | 4.78 (0.1882)     |
| 13228AC751  | 4.79 (0.1886)     |
| 13228AC761  | 4.80 (0.1890)     |
| 13228AC771  | 4.81 (0.1894)     |
| 13228AC781  | 4.82 (0.1898)     |
| 13228AC791  | 4.83 (0.1902)     |
| 13228AC801  | 4.84 (0.1906)     |
| 13228AC811  | 4.85 (0.1909)     |
| 13228AC821  | 4.86 (0.1913)     |
| 13228AC831  | 4.87 (0.1917)     |
| 13228AC841  | 4.88 (0.1921)     |
| 13228AC851  | 4.89 (0.1925)     |
| 13228AC861  | 4.90 (0.1929)     |
| 13228AC871  | 4.91 (0.1933)     |
| 13228AC881  | 4.92 (0.1937)     |
| 13228AC891  | 4.93 (0.1941)     |
| 13228AC901  | 4.94 (0.1945)     |
| 13228AC911  | 4.95 (0.1949)     |
| 13228AC921  | 4.96 (0.1953)     |

# Valve Clearance

MECHANICAL

| Part number | Thickness mm (in) |
|-------------|-------------------|
| 13228AC931  | 4.97 (0.1957)     |
| 13228AC941  | 4.98 (0.1961)     |
| 13228AC951  | 4.99 (0.1965)     |
| 13228AC961  | 5.00 (0.1969)     |
| 13228AC971  | 5.01 (0.1972)     |
| 13228AC981  | 5.02 (0.1976)     |
| 13228AC991  | 5.03 (0.1980)     |
| 13228AD001  | 5.04 (0.1984)     |
| 13228AD011  | 5.05 (0.1988)     |
| 13228AD021  | 5.06 (0.1992)     |
| 13228AD031  | 5.07 (0.1996)     |
| 13228AD041  | 5.08 (0.2000)     |
| 13228AD051  | 5.09 (0.2004)     |
| 13228AD061  | 5.10 (0.2008)     |
| 13228AD071  | 5.11 (0.2012)     |
| 13228AD081  | 5.12 (0.2016)     |
| 13228AD091  | 5.13 (0.2020)     |
| 13228AD101  | 5.14 (0.2024)     |
| 13228AD111  | 5.15 (0.2028)     |
| 13228AD121  | 5.16 (0.2032)     |
| 13228AD131  | 5.17 (0.2035)     |
| 13228AD141  | 5.18 (0.2039)     |
| 13228AD151  | 5.19 (0.2043)     |
| 13228AD161  | 5.20 (0.2047)     |
| 13228AD171  | 5.21 (0.2051)     |
| 13228AD331  | 5.23 (0.2059)     |
| 13228AD341  | 5.25 (0.2067)     |
| 13228AD351  | 5.27 (0.2075)     |
| 13228AD361  | 5.29 (0.2083)     |
| 13228AD371  | 5.31 (0.2091)     |
| 13228AD381  | 5.33 (0.2098)     |
| 13228AD391  | 5.35 (0.2106)     |
| 13228AD401  | 5.37 (0.2114)     |
| 13228AD411  | 5.39 (0.2122)     |
| 13228AD421  | 5.41 (0.2130)     |
| 13228AD431  | 5.43 (0.2138)     |
| 13228AD441  | 5.45 (0.2146)     |
| 13228AD451  | 5.47 (0.2154)     |
| 13228AD461  | 5.49 (0.2161)     |
| 13228AD471  | 5.51 (0.2169)     |
| 13228AD481  | 5.53 (0.2177)     |
| 13228AD491  | 5.55 (0.2185)     |
| 13228AD501  | 5.57 (0.2193)     |
| 13228AD511  | 5.59 (0.2201)     |

6) Install the camshaft. <Ref. to ME(H6DO)-77, INSTALLATION, Camshaft.>

7) Install the cam sprocket. <Ref. to ME(H6DO)-73, INSTALLATION, Cam Sprocket.>

8) Install the timing chain assembly. <Ref. to ME(H6DO)-60, INSTALLATION, Timing Chain Assembly.>

9) Re-measure all valve clearance at this time.

If the valve clearance is not appropriate, repeat from the first step.

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

## NOTE:

Use a new rocker cover gasket.