

## VALVE, VALVE GUIDE INSPECTION

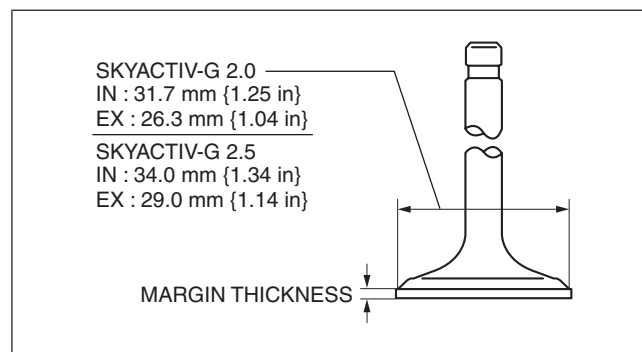
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1. Measure the valve head margin thickness using a vernier caliper.
  - If it is less than the standard specification, replace the valve.

### Standard valve head margin thickness

**IN: 1.75—1.95 mm {0.0689—0.0767 in}**

**EX: 1.95—2.15 mm {0.0768—0.0846 in}**



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2. Measure the length of the each valve using a vernier caliper.
  - If it is less than the minimum specification, replace the valve.

### Standard valve length [SKYACTIV-G 2.0]

**IN: 106.55—107.15 mm {4.1949—4.2185 in}**

**EX: 116.55—117.15 mm {4.5886—4.6122 in}**

### Standard valve length [SKYACTIV-G 2.5]

**IN: 107.00—107.60 mm {4.2127—4.2362 in}**

**EX: 117.09—117.69 mm {4.6099—4.6334 in}**

### Minimum valve length [SKYACTIV-G 2.0]

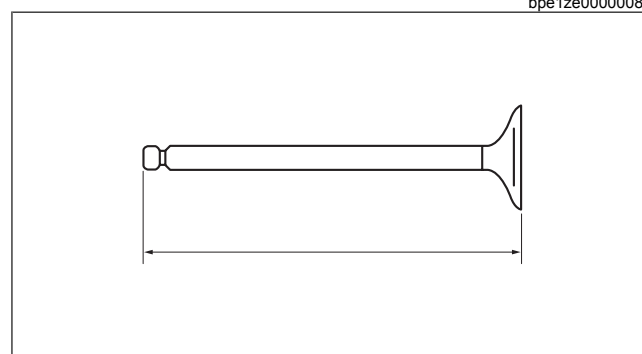
**IN: 106.33 mm {4.1862 in}**

**EX: 116.33 mm {4.5799 in}**

### Minimum valve length [SKYACTIV-G 2.5]

**IN: 106.78 mm {4.2039 in}**

**EX: 116.87 mm {4.6012 in}.**



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3. Measure the valve stem diameter of each valve using the micrometer. Measurement positions total six and are in the X and Y directions, at three points (A, B, and C) as shown in the figure.
  - If it is less than the minimum specification, replace the valve.

### Standard valve stem diameter

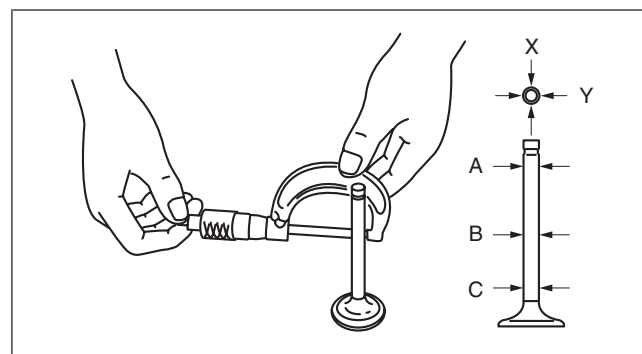
**IN: 5.470—5.485 mm {0.2154—0.2159 in}**

**EX: 5.465—5.480 mm {0.2152—0.2157 in}**

### Minimum valve stem diameter

**IN: 5.424 mm {0.2135 in}**

**EX: 5.419 mm {0.2133 in}**



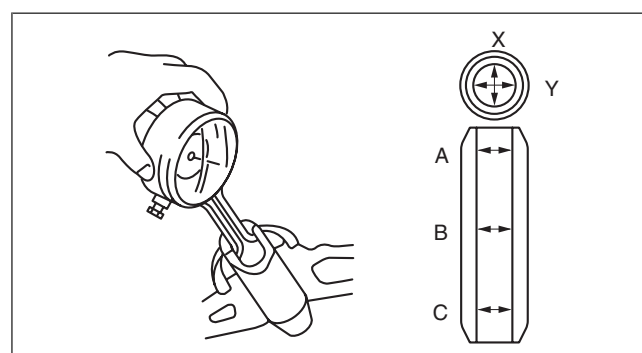
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4. Measure the inner diameter of each valve guide using the caliper gauge. Measurement positions total six and are in the X and Y directions, at three points (A, B, and C) as shown in the figure.
  - If it is not within the specification, replace the valve guide.

### Standard valve guide inner diameter

**IN: 5.510—5.530 mm {0.2170—0.2177 in}**

**EX: 5.510—5.530 mm {0.2170—0.2177 in}**



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5. Calculate the clearance between the valve stem and the valve guide by subtracting the inner diameter of the valve guide from the outer diameter of the corresponding valve stem.
- If it exceeds the maximum specification, replace the valve or valve guide.

**Standard clearance between valve stem and guide**

**IN: 0.025—0.060 mm {0.0010—0.0023 in}**

**EX: 0.030—0.065 mm {0.0012—0.0025 in}**

**Maximum clearance between valve stem and guide**

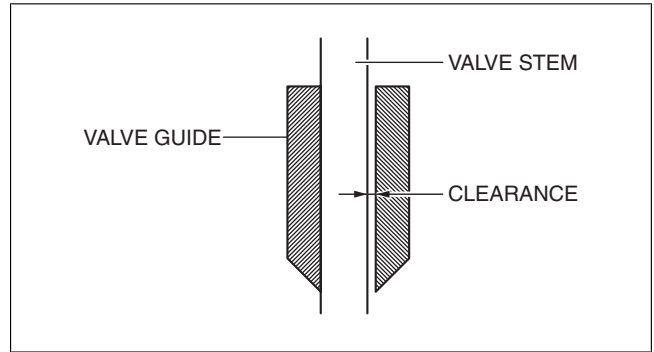
**0.10 mm {0.0039 in}**

6. Measure the projection height (dimension A) of each valve guide using the vernier caliper.
- If it is not within the specification, replace the valve guide.

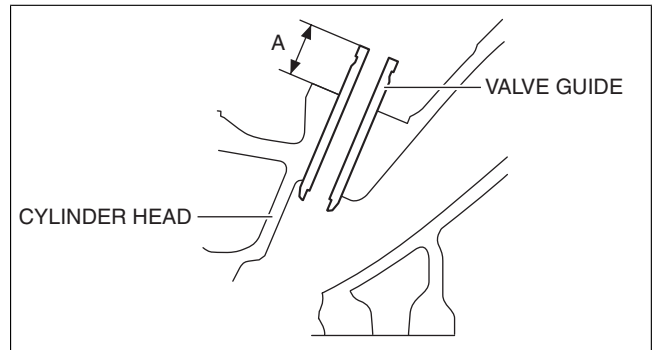
**Standard valve guide projection height**

**IN: 16.4—17.0 mm {0.646—0.669 in}**

**EX: 16.4—17.0 mm {0.646—0.669 in}**



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