



# Valve Guides

## Valve Movement

Measure the guide-to-stem clearance with a dial indicator while rocking the stem in the direction of normal thrust (wobble method).

### Intake Valve Stem-to-Guide Clearance:

**Standard (New):** 0.05 — 0.11 mm  
(0.002 — 0.004 in)

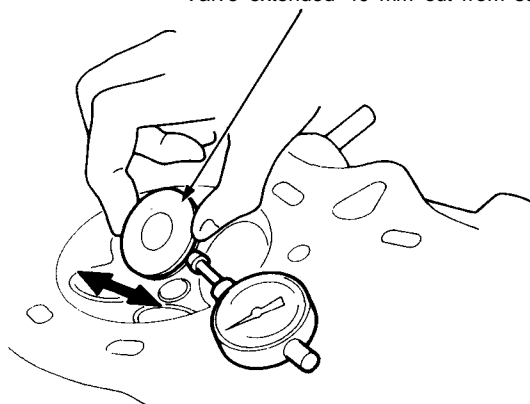
**Service Limit:** 0.16 mm (0.006 in)

### Exhaust Valve Stem-to-Guide Clearance:

**Standard (New):** 0.10 — 0.16 mm  
(0.004 — 0.006 in)

**Service Limit:** 0.22 mm (0.009 in)

Valve extended 10 mm out from seat.



- If measurement exceeds the service limit, recheck using a new valve.
- If measurement is now within the service limit, reassemble using a new valve.
- If measurement still exceeds limit, recheck using alternate method below, then replace valve and guide, if necessary.

**NOTE:** An alternate method of checking guide to stem clearance is to subtract the O.D. of the valve stem, measured with a micrometer, from the I.D. of the valve guide, measured with an inside micrometer or ball gauge.

Take the measurements in three places along the valve stem and three places inside the valve guide. The difference between the largest guide measurement and the smallest stem measurement should not exceed the service limit.

### Intake Valve Stem-to-Guide Clearance:

**Standard (New):** 0.025 — 0.055 mm  
(0.001 — 0.002 in)

**Service Limit:** 0.08 mm (0.003 in)

### Exhaust Valve Stem-to-Guide Clearance:

**Standard (New):** 0.05 — 0.08 mm  
(0.002 — 0.003 in)

**Service Limit:** 0.11 mm (0.004 in)