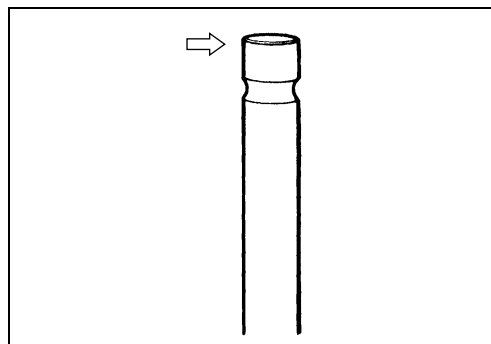


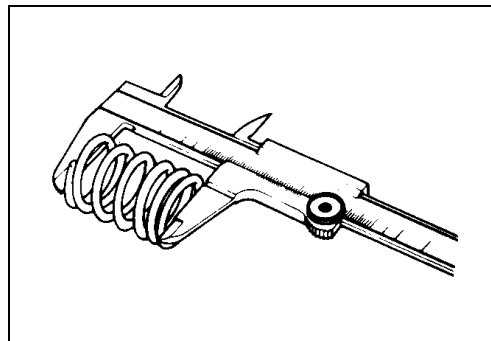
**VALVE STEM END CONDITION**

- Check the valve stem end face for pitting and wear.

**VALVE SPRING**

The force of the coil springs keeps the valve seat tight. Weakened springs result in reduced engine power output, and often account for the chattering noise coming from the valve mechanism.

- Check the valve springs for proper strength by measuring their free length and also by the force required to compress them. If the spring length is less than the service limit, or if the force required to compress the spring does not fall within the range specified, replace both the inner and outer springs as a set.

**DATA Valve spring free length (IN & EX)**

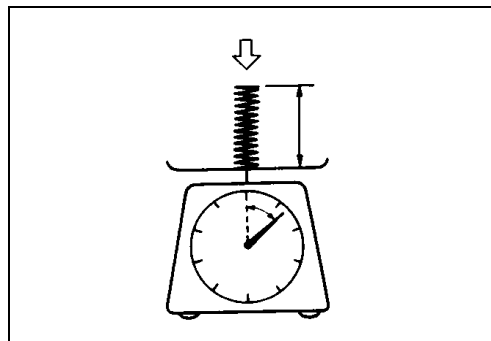
Service limit: INNER : 36.8 mm (1.45 in)

OUTER: 39.8 mm (1.57 in)

**DATA Valve spring tension (IN & EX)**

Standard: INNER : 41 – 47 N, 4.2 – 4.8 kgf/29.9 mm  
(9.26 – 10.58 lbs/1.18 in)

OUTER: 166 – 192 N, 17.0 – 19.6 kgf/33.4 mm  
(37.48 – 43.21 lbs/1.31 in)



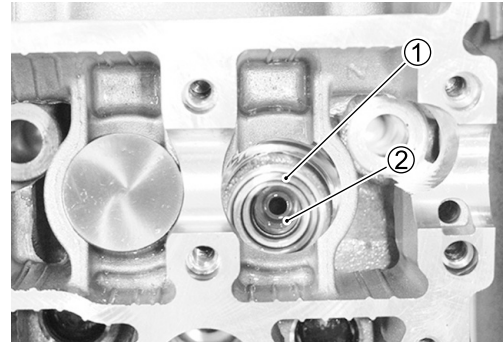
**TOOL** 09900-20102: Vernier calipers

**VALVE AND VALVE SPRING INSTALLATION**

- Install the valve spring seats ①.
- Apply engine oil to each oil seal ②.
- Install the oil seal.

**CAUTION**

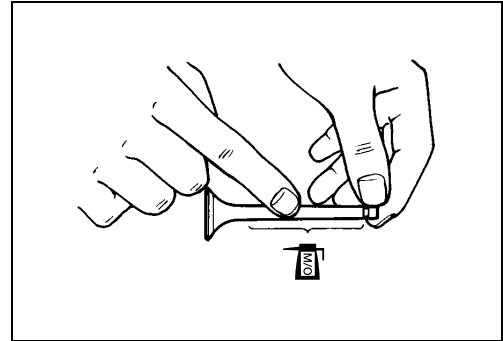
**Do not reuse the removed oil seals.**



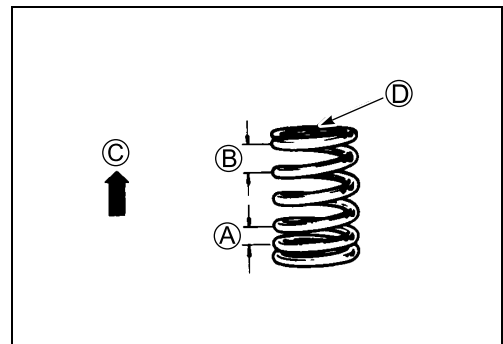
- Insert the valves, with their stems coated with MOLYBDENUM OIL SOLUTION all around and along the full stem length without any break.

**CAUTION**

**When inserting each valve, take care not to damage the lip of the oil seal.**

**MOLYBDENUM OIL SOLUTION**

- Install the valve springs with the small-pitch portion ① facing cylinder head.
- ② Large-pitch portion
- ③ UPWARD
- ④ Paint



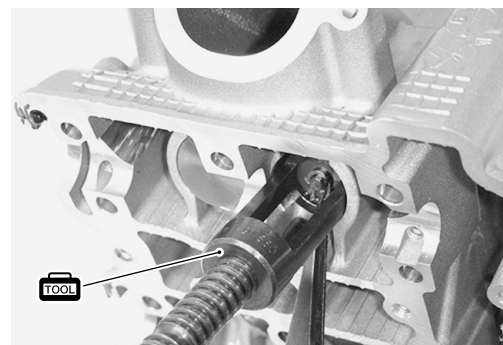
- Put on the valve spring retainer ①, and using the valve lifter, press down the springs, fit the cotter halves to the stem end, and release the lifter to allow the cotter ② to wedge in between retainer and stem. Be sure that the rounded lip ③ of the cotter fits snugly into the groove ④ in the stem end.



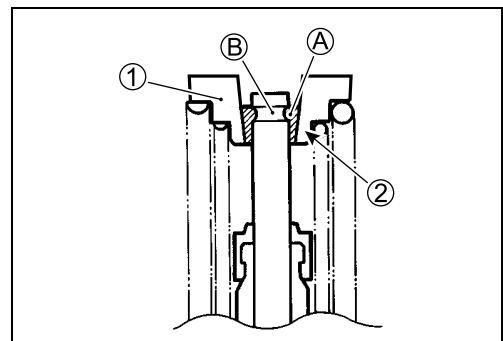
**09916-14510: Valve lifter**

**09916-14521: Valve lifter attachment**

**09916-84511: Tweezers**

**CAUTION**

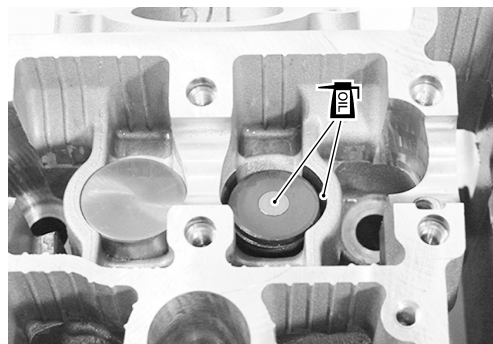
**Be sure to restore each spring and valve to their original positions.**



- Install the tappet shim and the tappet to their original position.

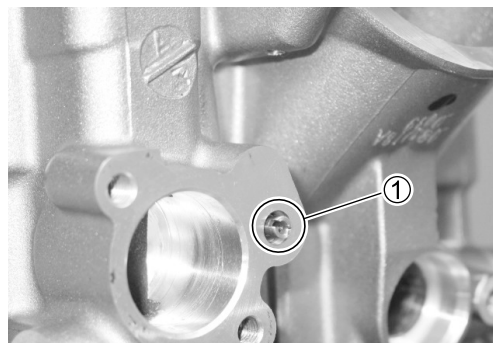
**NOTE:**

- \* Before installing them, apply engine oil to the shims and tappets all over, also to the tappet chambers on the cylinder head.
- \* When seating the tappet shim, be sure the figure printed surface faces the tappet.



## OIL JET REMOVAL

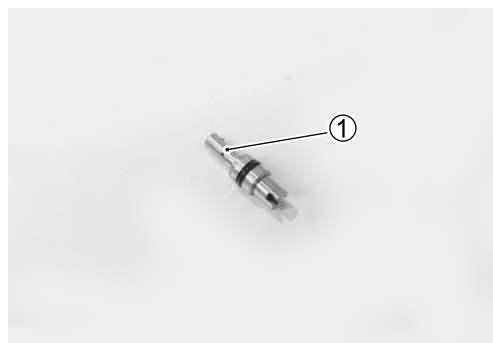
- Remove the oil jets ①.



## OIL JET INSPECTION AND CLEANING

- Check the oil jets for clogging.
- If they are clogged, clean their oil passage with a proper wire and compressed air.

- ① Oil jet (#8) (For cam chain tension adjuster)



## OIL JET INSTALLATION

- Fit the new O-rings to each oil jets.

### CAUTION

**Use the new O-rings to prevent oil leakage.**

**NOTE:**

- \* Apply grease to the O-rings when installing the oil jets.
- \* Apply engine oil to the oil jet hole on the cylinder head.

