

## ENGINE

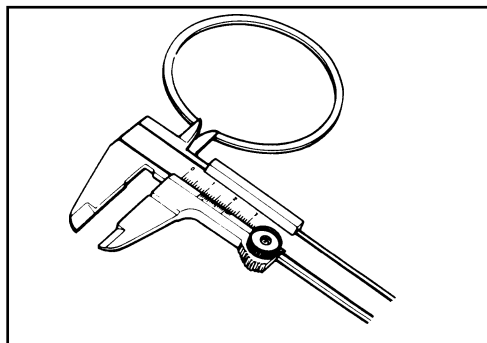
### PISTON RING FREE END GAP AND PISTON RING END GAP

Before fitting the piston rings, measure the free end gap of each ring using a vernier caliper. Then fit the ring in the cylinder and measure the end gap of the ring using a thickness gauge. If the end gap is excessive, replace the ring.

#### Service Limit

**Piston ring free end gap** (1st): 5,4 mm (0.2125 in)  
(2nd): 7,9 mm (0.3110 in)

**Specific tool: Caliper**



#### Service Limit

**Piston ring end gap** (1st): 0,5 mm (0.0197 in)  
(2nd) 0,5 mm (0.0197 in)

**Specific tool: Thickness gauge**



### PISTON PIN AND PISTON PIN BORE

Using a bore gauge, measure the inside diameter of the piston pin bore and then, using a micrometer, measure the outside diameter of the piston pin at three different points. If the difference between the two measurements exceeds the specified limit, replace the piston and the piston pin.

#### Service Limit

**Piston pin bore I.D.:** 22,030 mm (0.8672 in)

**Specific tools: Comparator** (1/1000 mm, 1 mm, 0.00004-0.03937 in)

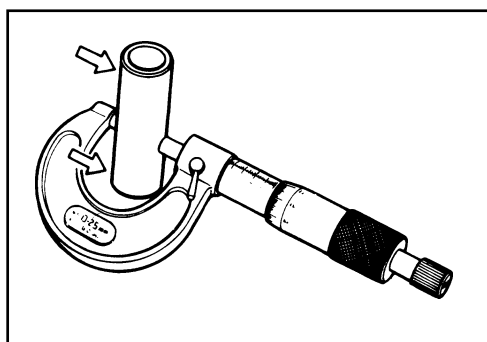
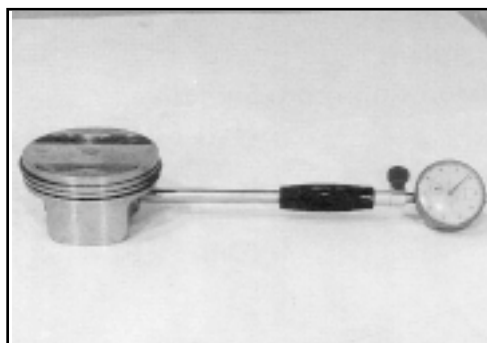
**Bore gauge** (18-35 mm, 0.708-1.378 in)

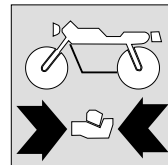
Using a micrometer, measure the outside diameter of the piston pin at three positions.

#### Service Limit

**Piston pin O.D.:** 21,980 mm (0.8665 in)

**Specific tool: Micrometer** (0-25 mm, 0-0.984 in)





## INSTALLING THE PISTON AND THE CYLINDER

Install the piston rings in the following order: scraper, 2nd ring, 1st ring.



*The sections of the 1st and 2nd rings differ in shape.*

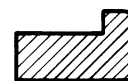
- Be sure to fit the 1st ring so that its convex side faces upwards.
- The 2nd ring is marked "RN" on one side. When fitting the ring on the piston, ensure that the marked side of the ring faces upwards.

- The first element to be inserted into the scraper ring groove is spacer **1**. After positioning the spacer, fit the two side rings **2**. The spacer and the side rings do not have an upper or lower side and can be fitted either way.

- Position the end gaps of the three piston rings as shown in the figure. Before inserting the pistons into the cylinders, ensure that the ring end gaps are positioned as indicated.



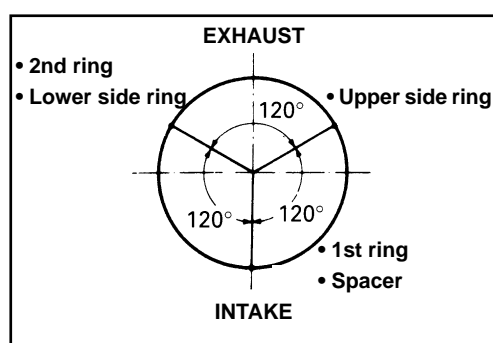
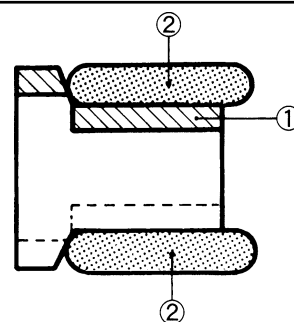
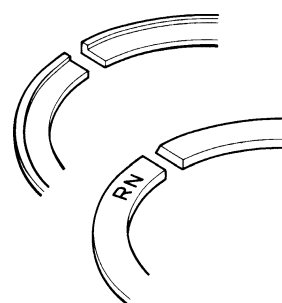
*When installing the pistons, ensure that triangle marks **A** on the piston heads face the exhaust side.*

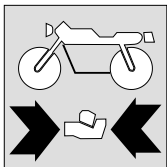


1st ring



2nd ring





## ENGINE

### NO. 1 (FRONT) PISTON AND CYLINDER

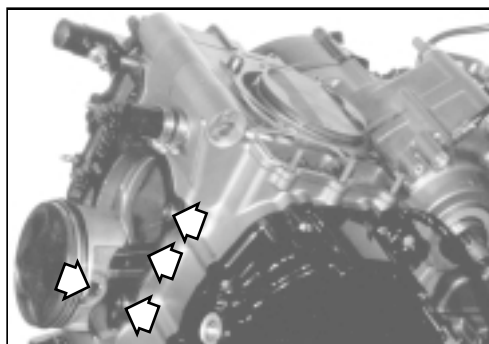
Installation is obtained by following the removing procedure in reverse order.



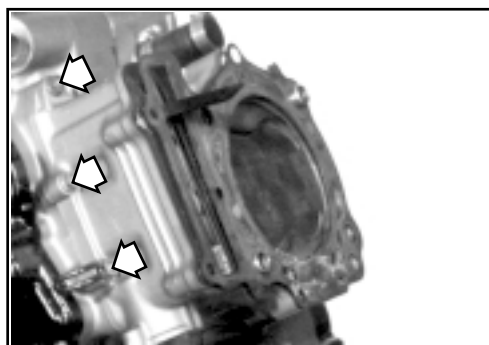
*Refer to the pages indicated for details on how to perform each step.*

#### Fit:

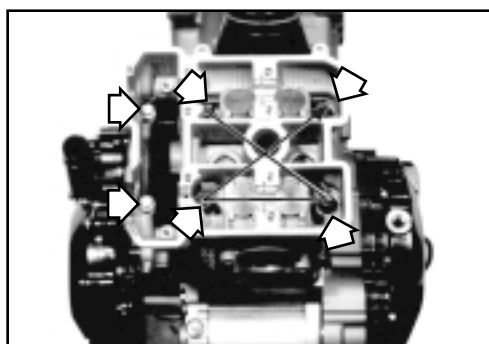
- The piston pin.
- The piston.
- The oil jet.
- The dowel pins.
- The gasket (see pages D-61, D-62 and D-63).

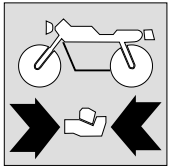


- The cylinder (see page D-62).



- The cylinder head (see page D-64).



**NO. 2 (REAR) PISTON AND CYLINDER**

Installation is obtained by following the removing procedure in reverse order.



*Refer to the pages indicated for details on how to perform each step.*

**Fit:**

- The piston pin.
  - The piston.
  - The oil jet.
  - The dowel pins.
  - The gasket (see page D-59).
- 
- The cylinder (see page D-62 and D-63).
- 
- The cylinder head (see page D-63).

