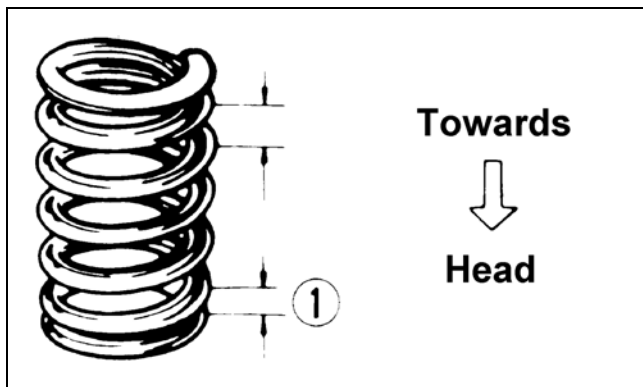
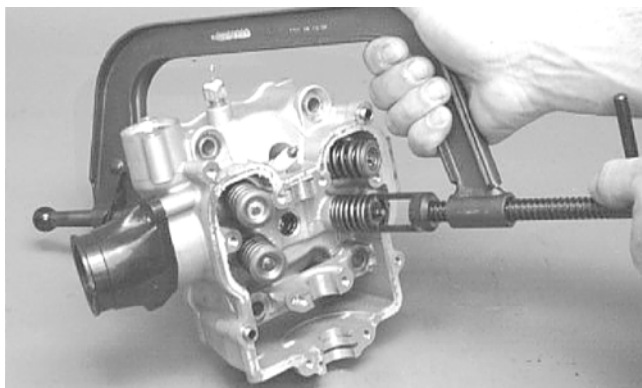




ATV-1011A

4. Place a spring retainer over the valve springs; then using the valve spring compressor, compress the valve springs and install the valve keepers.



CC132D

PISTON ASSEMBLY

■NOTE: Whenever a piston, rings, or pin are out of tolerance, they must be replaced.

Cleaning/Inspecting Piston

1. Using a non-metallic carbon removal tool, remove any carbon buildup from the top of the piston.
2. Inspect the piston for cracks in the piston pin, boss, top, and skirt areas.
3. Inspect the piston for seizure marks or scuffing. If piston is scored or galled, replace it with a new one.
4. Inspect the perimeter of each piston for signs of "blowby" indicated by dark discoloration. "Blowby" is caused by worn piston rings, excessive carbon in ring grooves, or an out-of-round cylinder.

Removing Piston Rings

1. Starting with the top ring, slide one end of the ring out of the ring-groove.



CC400D

2. Remove each ring by working it toward the top of the piston while rotating it out of the groove.

■NOTE: When installing new rings, install as a complete set only.

Cleaning/Inspecting Piston Ring Grooves

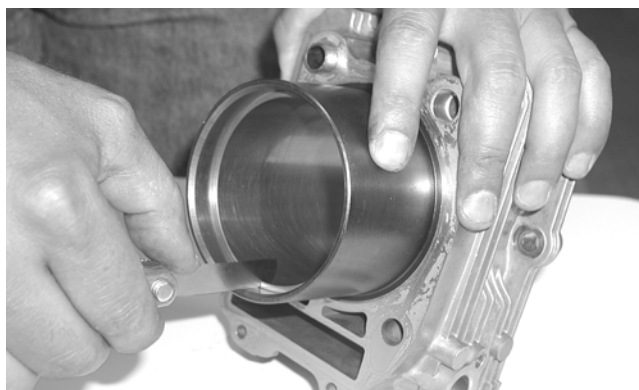
1. Take an old piston ring and snap it into two pieces; then grind the end of the old ring to a 45° angle and to a sharp edge.
2. Using the sharpened ring as a tool, clean carbon from the ring grooves. Be sure to position the ring with its tapered side up.

CAUTION

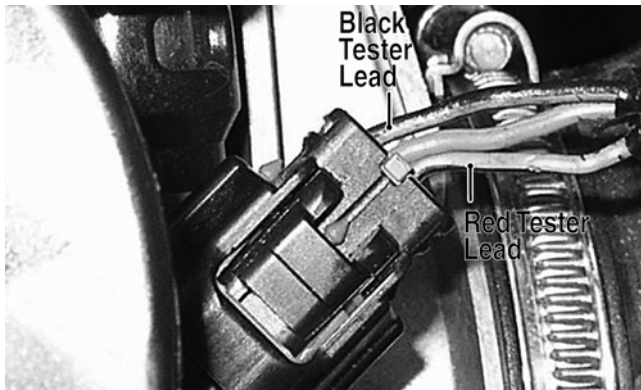
Improper cleaning of the ring grooves by the use of the wrong type of ring groove cleaner will result in severe damage to the piston.

Measuring Piston-Ring End Gap (Installed)

1. Place each piston ring in the wear portion of the cylinder. Use the piston to position each ring squarely in the cylinder.
2. Using a feeler gauge, measure each piston-ring end gap. Acceptable ring end gap must be within specifications.



CC995



PR546A

8. Select the DC Voltage position on the meter and turn the ignition switch to the ON position. The meter should read approximately 4.5 DC volt with the throttle closed and approximately 1.5 DC volts with the throttle in the full-open position.

■NOTE: If the meter readings are as specified, check the main harness connector at the ECU main harness wiring. If the meter readings are not as specified, replace the TPS and adjust to specifications (see INSTALLING/ADJUSTING in this sub-section).

CAUTION

Always make sure the ignition switch is in the OFF position before disconnecting the ECU.

9. Verify all malfunction codes are closed after servicing is complete (see ECU Malfunction Codes in this section).

REMOVING

1. Remove the left-side engine cover; then disconnect the three-wire TPS connector plug.



PR544

2. Remove the screw securing the TPS to the throttle body and remove the TPS.

INSTALLING/ADJUSTING

1. Place the TPS into position on the throttle body and secure with the screw. Do not tighten at this time.
2. Connect the TPS Multi-Analyzer Harness connector to the



FI672

3. Using a multimeter, connect the black tester lead to the black socket (GND) on the analyzer and the red tester lead to the white socket (VAR); then select the Voltage position.



FI673A

4. Adjust the TPS until a reading of 0.68 DC volts is obtained; then tighten the screw securely. Open and close the throttle and determine the reading returns to 0.68 DC volts. Readjust as necessary.



FI674

5. Disconnect the harness from the analyzer; then disconnect the harness from the TPS and reconnect the TPS main harness connector.
6. Tighten the mounting screw securely.