

TECHNICAL

Conservation for engine power

RS125R / RS250R

▶ Measurement of secondary volume

The HRC products are manufactured under severe quality control. Because of product tolerance, however, certain combination may cause secondary compression to be slightly out of the standard settings.

Pistons, rings and cylinders should be smeared with grease to avoid compression leaks. Cylinder heads should be assembled by removing grease around the top with the piston raised at the top dead center. Top gages should be used to check the top dead center. With the cylinder head laid horizontally, measurement solution (gasoline to engine oil: 5 to 1) is poured into the plug seating surface using a 50cc burette (injectors with accurate scales are acceptable) to measure the volume.

(Difference of 0.1mm in gasket thickness causes a change of 0.2cc in volume)

RS125R	Standard 11.6cc	Volume as assembled
RS250R	Standard 12.1cc	

*Note that changes to secondary volume will result in altered settings.

*Cylinder gaskets should be replaced every time. If they are reused repeatedly, gaskets will become thin by heat or compression, causing changed secondary volume.

The 2001 year model RS125R should be controlled in cylinder head alone with regard to secondary volume since the volume cannot be measured when installed in vehicle.

(2001 year head volume of 10.9cc)

▶ Ignition timing measurement (from 2002 year model RS250R)

For the RS250R, top gauge and timing light will be used to check ignition timing. This is not applicable to the RS125.

	'99-'01	'-98
Ignition timing	25° ± 1° / 6000rpm	24° ± 1° / 6000rpm
	20° ± 1° / 10000rpm	19° ± 1° / 10000rpm

For 1998 year and earlier model with power jet carburetors fitted, 1999 to 2001 year ignition timing should be used.

*Checking at 10000 rpm will be rather difficult, so measurement at 6000 rpm only is acceptable.

▶ Drive chain

Extended period of use of chains would cause significantly degraded traction transmission efficiency, resulting in output power drop of 2 to 3 PS. Earlier change of chains is recommended. New chains with initial elongation removed are the best for race use.

Chamber

Chambers play an important role in determining the 2-stroke engine power characteristics. Dented chambers, and carbon or pitch present inside chambers (which is considered to be equal to changes in chamber shapes) will disturb exhaust pulsating flow, resulting in significant power loss.

Coolant temperature control

Coolant temperature control by covering radiators with gum tapes, etc. should be done so as to give coolant temperatures of 55°C although such control cannot be done in summer where the radiator is fully uncovered.

- 1) Constant coolant temperature should always be kept during carburetor setting. (Changes of five (5) degrees or more in coolant temperature will cause wrong setting)
- 2) Note that lower engine speeds during running in would tend to lower coolant temperatures. Coolant temperatures may drop drastically at cold ambient temperatures in winter, causing a risk of cold piston seizures.
- 3) For races, coolant temperatures should be set to 2 to 3 degrees lower than the standard taking into consideration congested traffic on circuit courses.

Notes on machine with RAM-pressure system

Fuel hoses, when bent on some occasions, may cause fuel supply loss. In particular, RAM-pressure equipped vehicles contain extended fuel hoses, causing fuel hoses to be bent when exposed to running gravity which will result in signs of fuel supply loss. (RS125R equipped with RAM-pressure)

Tubes in the RAM-pressure system should not contain accumulation of fuel, which may impede air flow, resulting in degraded performance.

Each tube should have an inner diameter of at least 5mm or more. Too thin tubes will not supply required amount of air to the tank when the throttle is fully opened, causing fuel supply loss at 5th and 6th speeds. Of course, bent hoses should be avoided.

In some occasions, clogged one-way section of the strainer may obstruct fuel flow in fuel lines. Periodic checking or cleaning should be done.

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