

# TECHNICAL

## Settings according to seasonal conditions

RS125R / RS250R

### Countermeasures against rising ambient temperatures (summer)

#### Engine

In summer, with the increase in ambient temperatures, oxygen density in a constant volume becomes lean, resulting in reduced density of oxygen supplied to the engine as compared with in winter with lower ambient temperatures. For this reason, the fuel system including main jet should need to reduce the amount of gasoline to meet the reduced oxygen supply.

However, in the case of extremely high ambient temperatures with high relative humidity and low atmospheric pressure, extremely reduced amount of fuel necessarily result in, leading to insufficient output power with lower torque.

To solve these problems, modifications to secondary volume and ignition timing are required to bring the engine into compliance with particular weather conditions. Note that these modifications may slightly vary with model years.

Shown below are countermeasures against rising ambient temperatures leading to MAIN JET of early 160's.

Item	Year	Criteria
RS125R	'97	1)Increase secondary compression. Reduce by 0.2cc against standard of 11.6cc 2)Advance ignition timing by 1 degree against standard
	'98- '99	1)Reduce Pwj number from standard of #40 to #38. 2)Increase secondary compression. Reduce by 0.2cc against standard of 11.6cc. 3)Advance ignition timing by 1 degree against standard
	'00	1)Reduce Pwj number from standard of #48 to #45. 2)Increase secondary compression. Reduce by 0.2cc against standard of 11.6cc. 3)Advance ignition timing by 1 degree against standard
RS250R	'98	1)Increase secondary compression. Reduce by 0.2cc against standard of 11.6cc 2)Advance ignition timing by 1 degree against standard
	'99.	1)Reduce Pwj number from standard of #48 to #45. 2)Increase secondary compression. Reduce by 0.2cc against standard of 12.1cc.

\*Setting should be made one by one for each item.

Notes on increasing secondary compression (Difference of 0.1mm in base gasket thickness creates a change of 0.2cc in volume)

- Before making settings per the criteria above, make sure that your settings are not largely different from others. If you find that your settings only are largely different from others, some problems may be present (such as secondary air breathing).
- When increasing secondary compression, beware of the

clearance between the piston and the cylinder head. If there is not a clearance of 0.55mm or more at the squish, the contact of the piston with the head may result in.

- The '99 and '00 year RS250R have already had ignition timing adjusted for advancement in comparison with other model. For this, further advancement should not be made since it would not give positive effects.
- Too rich SLOW JET and JET NEEDLE straight shows a propensity toward reduced MAIN JET.  
Ambient temperatures of 30°C or more  
SLOW JET#45 to #42  
JET NEEDLE#1267 to #1268 or #1269

Settings described above should be made if rising ambient temperatures have resulted in reduced engine power. If they are done at the good weather conditions, detonation may occur frequently.

After changing settings, settings with sufficient margins should be made and be made from rich.

### **Coolant temperature control (radiator)**

- During increased ambient temperatures, coolant temperatures should be properly controlled. If coolant temperatures go up above 70°C, heat problems will degrade the inherent machine potential (best temperatures are 55 to 60°C).

\* Points in cooling radiators

The items below should be followed to enhance radiator efficiency and reduce coolant temperatures.

#### **Radiator body**

- Remove dirt inside and outside the body
- Fix folded cores from time to time

#### **Air flow**

- Provisions should be made for as much air flow as possible to the radiator
- Provisions should be made to prevent air through the radiator from flowing to other sections (sealing or steering under)
- Provisions should be made to ensure smooth air flow behind the radiator. (changes to catch tank position)

Changes of 5°C in coolant temperatures would alter the best settings made previously.

Settings to be made before the final round should reflect possible coolant temperature increases.

### **Suspensions**

Temperature increases would change viscosity of the oil inside the suspension, leading to changes to damping properties. This should be taken into account when making settings.

- Increased temperatures harder damping than normal
- Decreased temperatures softer damping than normal

Alternatively, it is recommended that in summer harder viscosity oil be used for the suspension.

## Countermeasures against decreased temperatures

### ▶ Carburetor settings

For both the RS125R and the RS250R, modifications including advanced ignition timing and increased secondary volume have been made to the engine in order to accommodate weather conditions in summer. But, when temperatures decrease, settings should be returned to the standard.

Settings intended for summer will cause frequent detonation, resulting in damaged pistons or cylinder heads.

Summer settings Increase secondary volume Advance ignition timing	>	Winter settings Return secondary volume and ignition timing to the standard settings
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### ▶ Suspension settings

You don't need change the suspension settings throughout the year, including summer and winter. With ambient temperatures decreasing, however, oil viscosity will change causing you to feel hard at the beginning of operation. It is recommended that suspension dampers be made softer as compared with summer to give more comfort and easier setting.

Driving feel will vary with the elapse of operation. So, you need take into account the number of final race laps in setting the suspension.

### ▶ Notes on warming up

Extreme care should be exercised in warming up at cold ambient temperatures. Under these conditions, engines, once warmed up, soon become chilly when stopped and left to stand for other work including tire warming, etc.

Check the coolant temperature for proper level before entering the course. (If you would run by fully wide-open throttle at lower coolant temperature levels, piston seizure may occur because of the difference in expansion rate of the piston and the cylinder.)

In winter, rich settings are required, causing propensity towards hesitation. Especially, the machine fitted with power jet carburetors may exhibit repetitive hesitation since fuel mixture becomes very rich when the engine runs at below 4000 rpm for prolonged period during warming up or moving within the pit causing fuel to be injected from power jets despite throttle opening.