

Ultimate force?

Suzuki is launching an all-out assault on the world motocross championship with this, the most power four-stroke dirt bike it has ever built

THIS is the brand new RM-Z450 and it is set to take the off-road world by storm. Suzuki say it is the most powerful four-stroke dirt bike it has ever built. The 449cc single-cylinder bike features some of the manufacturer's cutting-edge technology and it claims to have an exceptional power-to-weight ratio, as well as power-to-displacement.

The most shocking thing is that it only has a four-speed gearbox. A Suzuki source said: "The gearbox

was developed with extensive testing and produced faster lap times and a conventional five-speed. It works with the engine's powerband to reduce time-wasting gearshifts, plus it is lighter, and more compact as the transmission cases are 30mm narrower."

This means the clutch can be positioned closer to the bike's centreline, therefore further centralising mass and overall weight.

Suzuki's weapon of choice for 2005



Engine

The 499cc motor is over square (95.5 degrees x 62.8mm), liquid-cooled with four-valves and dohc. An over square engine means larger titanium valves can be set at a narrower angle in the combustion chamber, a technique used in the GSX-R range.

The cylinder head, cylinder and crankcases are thin-wall aluminium alloy castings and combine with magnesium-alloy cam, clutch and magneto covers for further weight loss. Pistons are made from forged aluminium alloy and the bore itself is electro-plated to reduce wear. The advanced sump system allows the spinning mass of the crankshaft to be as close to the ground as possible.



Be afraid, be very afraid...

Chassis

The RM-Z has a lightweight, twin-spar frame which combines aluminium forgings, extrusion and stampings welded into a single unit. The forks are adjustable inverted Showa jobs while the shock is also a fully adjustable Showa.

Gearbox

It is an unconventional four-speed gearbox which has been designed to eliminate a shift fork and shift fork shaft. The input shaft gears are splined in place and don't move from side to side, engaging gears that spin freely.

SUZUKI is badging its all-new RM-Z450 (see main story) and revised RM-Z250 bikes as the Ultimate Four-Stroke Weapons. The firm believes it can launch an all-out assault on various motocross world championships with these two models and may well be right. Especially if they can persuade big-name riders to join them for the 2005 season.

RM125

THE baby 'crosser also features the new crankshaft technology. It also gets a new exhaust port governor to produce a smoother powerband. The pegs

have been put back by 10mm which should help the handling and a bridge tube has been added to the swingarm.



RM-Z250

SUZUKI boast the 250's engine is so compact you can adjust the valves and remove the cylinder head without taking the engine out of the frame. Good news if you're into a bit of home maintenance. The 249cc motor uses a

smaller and lighter piston which means no balance shaft is needed. The engine sits in a dual-tube chrome molybdenum frame, while the shock and forks are Kayaba units.



RM250

SUZUKI has taken road-race grand prix technology and used it in its 250 two-stroke motocrosser. The new engine basically has a big-bang firing order with asymmetrical crankshaft balancing which is slightly off-

set on each side. This means there is a slight imbalance in the firing order, producing a tiny variation in power pulses reaching the rear tyre.

