



New RR ENDURO 350 4T

High usable power output, combined with excellent handling and high reliability.

One year after the launch of the **RR Enduro 4T** equipped with the first 4-stroke enduro engine manufactured by Betamotor, the range is now enriched with a brand new piece. The **new 350cc 4-stroke project** required a longer period of development as his ambitions went far beyond the simple range extension. The R&D intention was to create a **modern 350 4-stroke engine, which combines the qualities of a 250 4-stroke to the reliability of the upper displacement**. Over a year of designing and extensive testing has produced a mix of great potential, characterized by **easy handling, excellent power and torque** at low revs and a **high level of reliability**, impossible to get on a traditional racing 250 4-stroke engine.

Main features:

- **Wide usable powerband with amazing peak power**
- **Easy handling and quick turning in tight stuff similar to a 250 four stroke**
- **Less exhausting power delivery compared to the bigger bikes, but providing the extra bottom punch which is missing on the smaller bikes**
- **Accurate and sharp cornering**
- **Easy to modulate power and maintain traction under tough conditions**

- **Crankcase / Covers:**
 - engine case with high wall thicknesses at the essential points for highest rigidity

- lightweight covers in magnesium with high wall thickness at exposed points for best protection under rough and extreme conditions

- **Crankshaft / Piston:**
 - 88mm bore / 57.4mm stroke
 - compact crankshaft design along with minimized moving masses for excellent handling
 - lightweight forged piston
 - bowl shaped piston dome for compact combustion chamber

- **Balancer shaft:**
 - new needle bearing for improved reliability (3x longer lifetime)

- **Cylinderhead / timing chain:**
 - reinforced camshaft bearing bridge: higher stiffness for less deformation of camshaft slide bearing under load. Results in more precise valve train function and improved working conditions for slide bearing
 - 4 titanium valve DOHC
 - reinforced valve spring retainer
 - DLC coated finger followers provide high stiffness and lowest oscillating mass (technology used in MotoGP and F1 race engines)
 - lightweight valve train design guarantees stable valve operation up to 13.000 rpm
 - extremely narrow valve angle (9° / 11°) which results in an optimal compact combustion chamber.
 - timing chain tensioner: new designed tensioner using a ratchet mechanism to avoid backlash in the chain drive system, in combination with the new chain guide: low noise at idling speed, more accurate cam timing at high rpm
 - new timing chain guide with metal insert: less deformation under load and high temperature, for more accurate cam timing

- additional oil jet for timing chain: lubricates timing chain and chain guides, reduces friction losses

- **Gearbox:**
 - close ratio 6-speed gearbox
 - high strength steel with highest metallurgic cleanness

- **Clutch:**
 - hydraulically operated multi disc clutch
 - reinforced clutch gear: higher stiffness reduces axial motion of clutch basket. Improved reliability and clutch function.
 - new clutch springs: high quality material to resist to highest temperatures, minimized production tolerances for consistent spring force

- **CDI:**
 - improved software strategy for higher spark energy and lower stator temperature
 - double map function: CDI comes already programmed with a second mapping. With the optional map selecting switch (factory part), the “soft” mapping can be activated.

- **Lubrication:**
 - 2 separate oil circuits for engine and gearbox
 - total oil capacity: 1.6l