

Athena - extreme performance off-road big bore kits

ATHENA

50 YEARS



Honda displacement is increased to 288 cc

Celebrating its 50th anniversary in 2023, Italian based high-performance motorcycle, scooter and moped spare parts specialist Athena has introduced new 85 mm diameter extreme big bore cylinder kits for Honda and Yamaha 250 cc off-road models.

"The Athena R&D Department succeeded in designing and developing a solution that filled a market gap: a cylinder kit with extreme increased bore that allows an unprecedented increase in power, bringing the displacements of Yamaha and Honda bikes up to 304 cc and 288 cc, respectively," says Product Manager Marco Meneguzzo.

The kit can be installed without making any modifications to the motorcycle crankcase. "In fact, the entire kit guarantees maximum performance, better delivery, more torque at low and medium revs, better response and reliability that is at least equal to the original parts it replaces".

Fully designed, developed, prototyped, tested and validated in-house by the Athena R&D team, then tested on the road and track by their riders, "the result is a combination of engine components that ensure maximum synergy between them.

"The winning feature of this revolutionary kit is the cylinder resulting from the union of two different materials - aluminium alloy with a high silicon content, mated to a steel cylinder liner. The cylinder liner is placed directly into the mould through an innovative co-fusion production process. This internally designed and tested method allows efficient mechanical gripping, ensuring perfect union and reliability over time.

"The cylinder liner is finished with a galvanic treatment and a nickel-silicon coating, developed by the Athena R&D department, to obtain maximum smoothness and optimal resistance to wear even under high performance conditions". The forged aluminium alloy piston in the kit is a highly engineered, highly resistant, lightweight, precision CNC-machined performance design with "guaranteed perfect geometries and reduced tolerances".

"The lower structure has a fully open boxed, bridged design to combine greater resistance to fatigue, lightness and a better cooling of the piston crown. The geometry of the piston crown also optimises the compression ratio to guarantee greater driving elasticity and reliability over time".

The piston pin has been specifically designed for this type of extreme application. It is biconical and made in aeronautical steel alloy, with included rings that were made in Japan for these kits.

The gaskets included in the kit have been developed by Athena technicians and include cylinder head and base gaskets specifically designed for the new bi-metal aluminium cylinder and steel liner combination to guarantee maximum seal even under the most extreme stresses.

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Yamaha displacement is increased to 304 cc