

**F**AMILY ties form important bonds in many commercial activities. Mugen is a firm which was formed in March 1973 with Hirotochi Honda, son of Dr Soichiro Honda, as the president. With senior staff positions filled by specialists with extensive experience of Honda products gained while working in the Honda Formula One car race team and later for HRC, it's hardly surprising the products they turn out are "factory approved."

The stock CR250 is, to be fair, no slug, and the used model we ran alongside the Leask Mugen performed very well. But our riding impressions of both bikes still left the stock machine second to the Mugen. However, with £500-plus of Mugen conversion we'd expect Perry's bike to be different!

The main differences between the stock engine and the Mugen conversion can be seen in the cylinder barrel and piston. Where the stock cylinder has an iron liner and runs a twin ring piston the Mugen has a plated bore and a single ring piston.

The stock bike is reasonably reliable, but instances of piston failure caused by cracking through the ring locations are not unheard of. By halving the number of ring grooves the cracking potential has to be reduced. Furthermore, the elimination of an iron sleeve in the cylinder slightly reduces the weight of the engine and, more importantly, reduces the tendencies for distortion between the dissimilar metals of the cylinder and its liner.

The size of the ports and their timing are very similar in both barrels. And there is thus little benefit to be accrued from using a different exhaust system. Although it might be possible to raise the ultimate power level by altering the shape and length of the exhaust system, the power band width would be adversely affected.

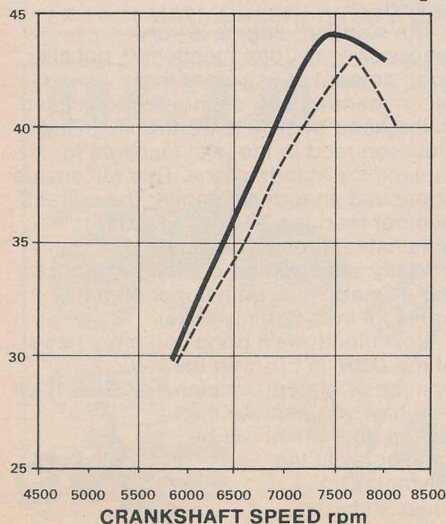
As can be seen from the power curve the total power band width is a tad on the narrow side. So with the 250cc conversion Mugen has plumped for a minor boost in power and improved reliability, rather than a large power hike at the expense of driveability.

Indeed it could be that when Mugen

**MUGEN - MAX POWER 44.2 bhp @ 7450**

**STOCK --- MAX POWER 43 bhp @ 7748**

rev  
min  
rev  
min



# MUGEN MUSCLE

**A 250cc two-stroke single which kicks-out more than 44bhp at its rear wheel has got to be impressive. Team DBR tried Perry Leask's Mugen CR250 against the stock CR. Worth the extra money? Read on and make your own decision . . .**

dynoed the CR250 it was as impressed with its power as we were! The ports are reputed to be "hand finished."

(But we have heard of people claiming to build engines in "near clinical" conditions because the local hospital is only a few miles from their workshop!) Mark you, the finish and general workmanship evident in the Mugen kit would be hard to better.

An alternative reed assembly and reeds are supplied with the kit. In much the same way other aftermarket reeds affect an engine's power the Mugen ones have their effect on the CR250.

When it came to the showdown at the track the Mugen felt much stronger in the power department than the dyno curve would have you believe. The rate at which the engine responded to a dab on

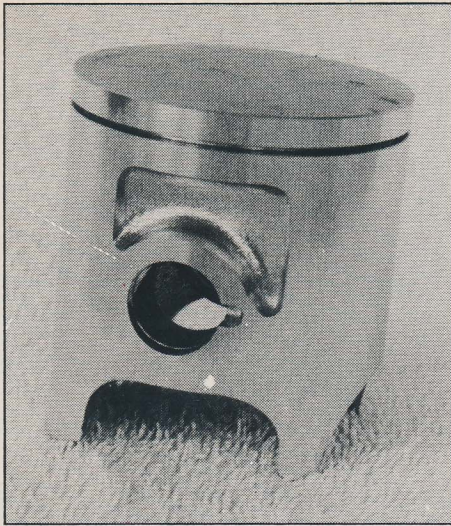
the clutch when exiting from a berm was, to say the least, lively.

Leask, a contender for the 125cc Championship - on a Mugen 125 incidentally - reckons "the power feels strong throughout the range". We were at first rather guarded about our feelings for the Leask bike, but having tried both the stocker and the Mugen at the track and in the test house we can definitely say the converted machine is better.

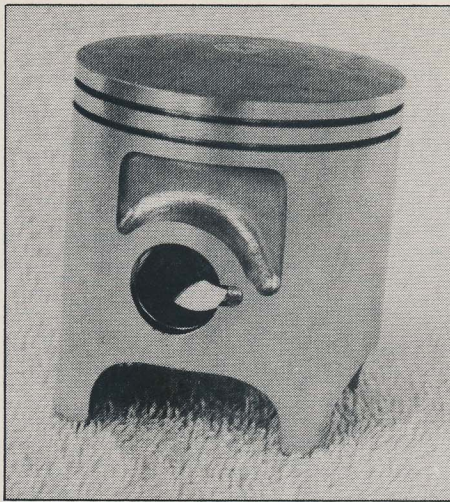
On the dyno we held both bikes on full power and neither showed any sign of fade after one and a half minutes. That may not sound very long but consider for a second just how long anyone can ride a 'crosser against the stop at peak revs.

The slightest deviation from the against-the-stop condition allows cooling to occur which, in turn, reduces the

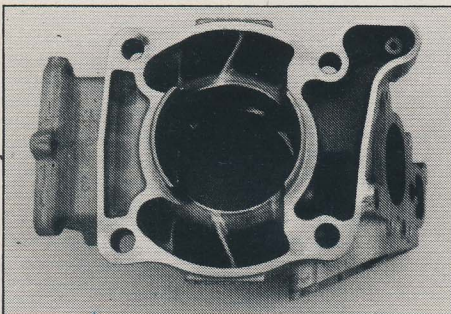




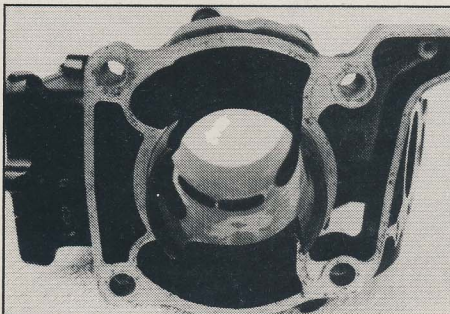
The Mugen uses a single ring piston.



The stock CR runs a twin ring piston; later models use the single ring item.



The Mugen barrel has hand finished ports and features a plated bore.



The standard barrel has an iron liner and "as cast" ports.

likelihood of distortion of either the piston or the barrel. With the specific exception of beach enduro races, against-the-stop full power riding tends to be the exception rather than the norm with bikes over 125cc.

In the case of the Mugen the metal/alloy content of the component parts results in an engine which will continue to run strongly even after 30 or 40 minutes of hard racing.

Although Mugen is a name mainly associated with hot engine components, the firm also effects conversions to Showa front forks and to the rear suspension units fitted to Pro-link Hondas. The Mugen we tried did not have these items fitted, Brian Leask does after all, import Ohlins shocks and fitting anything else would be akin to owning Wooies and shopping at Marks and Sparks!

The bike did feature so called "Full Length" White Power front fork springs which are reputed to make the front more responsive. To be fair we could not detect any great difference between the stock Showas and the WPs. However, on a different, more demanding track there could possibly be some advantages.

The adage goes: "Power and speed cost money, how fast can you afford to go?" For a top line rider a Mugen kit represents money well spent. But for others the financial outlay must be equated in terms of reliability and rebuild costs rather than ultimate power gain.

