Performance Profile

KING OF DUKES

(The following is from the July 1982 issue of 'THE BIKER' magazine. We wish to estend our thanks to them for its use.)

BY KEITH REUME

KEITH REUME LOOKS AT THE MIGHTY DUCATI VEE-TWIN FROM THE 860 AND 900 MODELS - AND FINDS OUT HOW TO MAKE THEM EVEN MIGHTIER.

You'd think that a machine like Ducati's road-burning 900SS would be quick enough for just about everyone, wouldn't you? I mean, a top end of a smidgen under a ton-forty, sub-thirteen second quarter times and looks that say Kill! Kill! ought to please even the most speed-crazed loony around, but no - give a man a 200 mph machine and he wants a 300 mph one; give a 300 mph machine and...well you get the idea. What all this is leading to is that yes, you can make the street-racer quicker than Taglioni first intended and here's how!

MYTHICAL

When's a 900 not a nine-hundred? Answer: when it's an 864! A common misconception is that the later 900 Dukes are of a larger capacity than the earlier 860s. Not so, the two models share identical bores and strokes at 86mm X 74.4mm respectively giving a swept volume of 864cc for the 90° Vee-twin. The second misconception is that all big Dukes are of desmodromic design - again not so. While Ducati have made famous this technically superb method of opening and closing valves - of which more anon - the original 860s used hair-grip springs to shut the inlet and exhaust valves. For purposes of this article we will concentrate on the more desireable desmos, however.

The third misconception is that any Ducati Vee-twin is an unburstable piece of over-engineering. Er, well - let's just say that if you're serious, you'd best go for a '78-on-wards models according to informed sources...

Basically, the 860/900 models are OHC, two-valves per cylinder, ninety degree Vee twins with offset cylinders. Camshaft drive is taken off the end of the crankshaft on the right-hand side with a shaft going off up to the head driving the camshaft via bevel gearing. Rocker arms are then used to open and shut the valves.

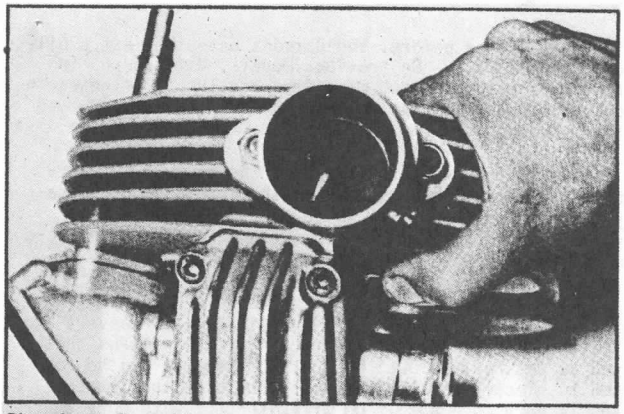
OIL SYSTEM

Lubrication is by way of a crankshaft-driven oil-pump which draws oil up from the wet sump through a gauze filter and then pumps it along a cast-in copper pipe to the base of the barrel. At this point an oil feed takes and across before feeding into the camshaft end-capt and thence to the lobes. A by-pass oil filter is situated just down-stream of the pump to act as a (very) secondary means of getting rid of crud. A cross-drilling takes some oil also directly from the pump across to the end of the crankshaft where it passes through a sludge trap before getting to grips with the mains and big-ends. A plethora of ball and roller bearings allow for any deficiencies in the lubrication system. Incidentally in the electric start (Darmah) models, oil is allowed to pump out of a drilling in the crank to lubricate the starter motor gear, but in kick-start models, this drilling is blanked off by an undrilled bearing.

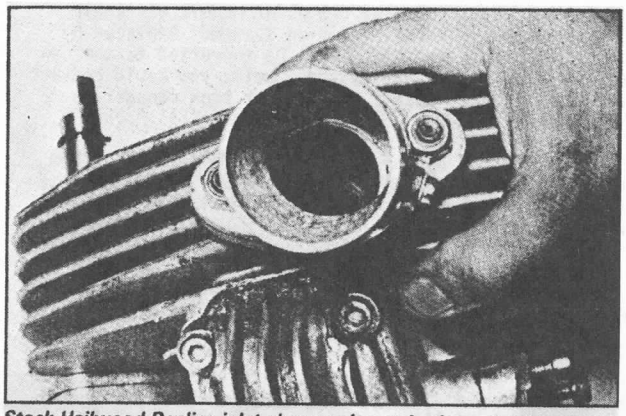
Primary drive is by gear but the starter motor turns the engine over with chain drive using a sprag clutch - which can give problems on a poorly-maintained bike, not because of bad design but purely because many DIY owners simply don't have the right tools, or access to get them, to set the timing accurately. Hang on - what's timing got to do with the starter motor clutch? Well, if the timing is too far advanced, the starter motor hasn't got much of a chance to turn the engine over properly without straining itself. Result? One knackered sprag clutch.

STANDARDIZED

About two years ago - no one seems to be able to put their finger exactly on when! - the big Dukes began sharing identical cylinder heads, and they now also all share the same rods (900SS type with I-beam section) and crankshafts-



Pietro's gas-flowed heads make a better job of matching ports



Stock Hailwood Replica inlet shows mismatch of manifolding