

# DUCATI'S NEW V-TWINS



The following was taken from the Motor-Cycle bike weekly from England. The article by Dennis Noyes appeared in the November 19th, 1977 issue of this fine and highly informative newspaper. The article was entitled:

## RIDING DUCATI'S DESMO BABIES

The Ducati Meccanica works in Borgo Panigale, just outside Bologna, is a bit like the Alhambra, that old Moorish fortress in Granada, Spain. It is austere, unadorned and stark on the outside, but sparkling within.

My first reaction when I rode up to that old iron gates was to ask myself how such beautiful motor cycles could come from behind such dingy walls. But when the gates swung open I saw that the actual Ducati factory is a gleaming, modern complex of buildings, hidden by a drab stone facade which is all that remains of the old factory.

Ducati are currently building 15,000 bikes a year, from small capacity two-strokes for the Italian market and some off-road models, to the present line of 350 and 500 vertical twins and 846cc vee-twins. Some 600 men and women are employed in the motor cycle branch of a factory complex.

"You have obviously got wind of the middle-weight vee-twins," said Ducati's commercial director Dr. Calcagnile. "We are holding them for the Milan show and so far no one outside the 'family' has ridden them except one German journalist.

President Sabastiano Leonardi outlined Ducati's current strategy: "We are totally committed to the 90 degree vee-twin with desmodromic valve gear. The multicylinder transverse engine is well-suited to automotive use, but motor cycles require narrow cases, reduced frontal area and low centre of gravity. Form must follow function.

"The Ducati line of the future will feature 250 and 350 desmo singles with toothed-belt driven cams, the 350 and 500 vee-twins with the Darmah as our basic high performance roadster and the Super Sport as our real roadburner."

"If we ever decide to go beyond the 1,000cc it will be with a 90-degree desmo vee-four, but for the present our lighter and better handling vee-twins can match the performance of the larger capacity multis. The 350 and 500 vee-twins will not replace our 350 and 500 vertical twins, at least for the present."

Dr. Calcagnile continued: "Many motor cyclists who have ridden only multi-cylinder Japanese machines are now beginning to realize that weight and width are serious detriments. The Darmah is a motor cycle that puts our big desmo engine in a package that can be ridden more easily on the roads. It is fitted with electric starter, the best instrumentation avail-

able, good exhaust and induction silencing and it has touring bars and a dualseat. The road-testers are telling us that we have finally put together the correct combination and we think so ourselves. It's not by accident that our SS and Darmah models handle so well and are so effortless to ride. The bikes that Paul Smart and Bruno Spaggiari rode to victory at Imola in 1971 were the prototypes of the present models. That is why we have decided to build the 350 and 500 vee-twins...we want smooth, narrow powerplants that can ride low in the frame and which produce power from very low revs right through 10,000 rpms."

After internal differences in the factory regarding the shape, of things to come, the 90-degree vee-twin with desmodromic valve gear has again been accepted by the factory chiefs.

They have accepted that weight and width must be kept to a minimum. Expensive and heavy final drive by shaft can be avoided if motor cycle manufacturers concentrate on improving the power-to-weight ration rather than simply increasing displacement and bulk simultaneously.

Dr. Taglioni, who has pressed for the continued development of the Vees greeted me with a warm handshake and a smile. He showed me the only 500 vee engine.

"There, laying on it's primary side on that bench is our 500 prototype vee-twin desmo with distribution by toothed belt. It has done 27,000 miles on test bed and test track and has given no trouble whatsoever. We are down to choosing between belts from Pirelli and Goodyear. We are finding that these new belts do not stretch and we have spot-on cam timing even after a high test mileage.

Obviously these motors with 58mm stroke owe something to the old short-stroke 500 Grand Prix engines with shaft driven overhead cams--the ones raced by Bruno Spaggiari and Phil Read in 1971. We are soon to fit some improved big end roller bearings and cages that will let these 500s rev quite safely beyond 10,000 rpms. We got 48 bhp the first time we put the engine on the test bed and after a bit of work with the carbs we are now quite happy with 50 honest horse power at the rear wheel at 8,000 rpm on the 500 and 37 at 8,500 on the 350. When we go to our production alloy crankcases we will have this bike ready for the road with electric starter and wipers and full instrumentation with dry weight of about 370 pounds."

"Why the change to toothed belts instead of the bevels and shafts?"

"Well, it is no more precise but it lowers mechanical noise greatly and it will cut our assembly costs. Our big Vee-twins are expensive engines to build because of the materials, because they have to be built with great care because of shimming and setting up of clearances. With the belt drive we get the same accuracy without the complexity."