



MITO SP525: RECOLLECTIONS OF A RACER

“Cagiva Mito” are words from racing that still deserve to be heard even after all these years. It was in 1991 when the Cagiva Mito logo first appeared on a rider’s leathers. The leathers belonged to Eddie Lawson who rode a Cagiva, albeit the 500, a dream motorbike and the very best in its category. “Cagiva Mito” was emblazoned on his breast. The name was used again in 1989 on the 125 road version that was created as a racer without a fairing but that it acquired one year later.

The 125, apart from delighting the younger riders for whom it was designed, won races in the Italian Sport Production class. Even Valentino Rossi, in 1994, won his first championship aboard a Mito 125. This machine underwent changes for the first time in 1995 with the introduction of the EV model that took looks to a new level. A racing machine, the SP (Sport Production) was, as always, created in parallel with the road-going version and the performance and equipment levels left little between it and a GP bike. Needless to say, these machines won numerous races and championships in the 125 class.

Nowadays the Mito is “conservative” both in principle and design. It offers the sheer pleasure of riding a two-stroke, of hearing it scream through the gears like the glorious Cagiva 500, even if it has three cylinders less. When the racing bike won, Italy celebrated, especially when John Kocinsky came home third in the World Championship.

It is exactly the recollection of those times when motorbikes were almost untamed beasts and more difficult to dominate than any of today’s machines, that made the name of the little Mito resurface. The SP525 with the 1 of “125” replaced by a 5 in memory of the legendary, much loved Cagiva 500.

Time however does not stop and technology now seeks ever more elusive solutions to problems regarding both the environment and new regulations. The satisfaction therefore at achieving Euro 3 homologation was immense, given the power of the new machine. It was perhaps the most difficult task during the 18 months of hard labour on the machine designed to carry the name Mito. For Cagiva however, it represented yet another success story in terms of research.

LOOKS

If the 125 had a racing number carrier instead of a headlight, it would be difficult to tell it apart from the legendary 500 racer. The streamlined profile and compressed nose cone, the twin air scoops and low screen create a very close resemblance to the Cagiva 4-cylinder. In size too there is little difference especially regarding the superb riding position on the 125. The design of the bike has in fact been retouched to a large extent. A new twin light cluster at the rear blends with the mirrors (fixed shell and adjustable mirrors) that, with their differing lines, offset the smaller more compact size of the screen. The tank remains the same shape: generally square but flat along the top and concave along the sides. It is highly efficient from the rider’s points of view in terms of both riding position and comfort and perfectly matches the new lines of the bike. It is the only “aesthetic” component remaining from the previous Cagiva Mito. The black side panels stretch from the tank to a new tail section that is more streamlined, especially on the upper surface, and the paintwork is exactly the same as that used on competition bikes. Both sides of the fairing bear the words Cagiva SP525 and the screen is decorated with an Italian flag. The bike will come in five colour schemes: Cagiva red, black and white or combinations of silver and black or red and silver.



EQUIPMENT

New items relate to both looks and the engine and involve the following components:

- new Euro 3 engine;
- screen, mirror supports and mirrors;
- handlebar switches;
- instrumentation;
- light units and indicators;
- colours and graphics;
- screen and tail section sub-frames;
- tail section, side panels and saddle.

The new instrument cowl is fitted with vibration-proof foam and houses an electronic rev counter that is set well apart from the other dials (speedometer and water temperature gauge) as on all racing machines. The warning light panel has one addition: the MIL ("Malfunction Injection Lamp"). This small emergency light comes on if the electric pump, carburettor or ECU signals a malfunction.

The shape of the indicators has been modified to blend with both the new light units. The front unit has been split whereas the one at the rear is more streamlined than the previous (8 LED) unit.

Other non-visible changes have been incorporated in the Mito SP525 project and the repositioning some of the electrics toward the front of the bike is one of these changes. The ECU that manages the Euro 3 system has been relocated thus making it possible to create a small but handy luggage space under the tail section.

THE FIRST EURO 3 TWO-STROKE

Cagiva are immensely proud to have been able to change what a being "two-stroke engine" means and to have been able to blend the new technology into the Mito 125.

The research and investments made by the Company mean that gone are the days when the words "two-stroke" implied only great performance. They now also mean caring for the environment. The integrated ECS (Electronic Carburetion System) administers exactly the right amount of fuel (both the air/petrol and oil mix) and was developed in collaboration with Dell'Orto. The control unit also governs the ignition system. While keeping costs under control and sales prices competitive, this brings the two-stroke 125 engine to Euro 3 standards yet maintains all the advantages that two-stroke engines can offer: lightness, performance and low running costs.

Electronic control of the air/petrol mixture is managed by a unit that acts on:

- a PWM valve fitted to the carburettor air circuit to regulate the air/petrol mixture so as to optimise performance yet reduce harmful emissions;



- an electronic oil pump that ensures long catalyser life as well as reducing the emission of smoke and contributing to low consumption figures;
- the engine ignition system.

The ECU is fitted with inlet and outlet sensors and actuators that optimise engine running under all conditions.

This applies whether the engine is hot or cold, during starting and under acceleration and deceleration.

The components are as follows:

- an engine rpm sensor;
- a throttle position sensor (TPS) Sensor on the carburettor;
- a cooling liquid temperature sensor;
- an air temperature sensor;
- an exhaust valve command;
- a rev counter and water temperature gauge on the instrument panel;
- a flashing auto-diagnosis system.

Two trivalent catalysers that reduce the amounts of HC, CO and NOX are positioned inside the exhaust system: the first is 70 mm from the block while the second is 70 mm further along. Between the catalysers sits a secondary air unit that performs post-combustion oxidisation and thus helps the catalysers reduce the amount of unburnt hydrocarbons.

The new engine configuration has meant setting the carburetion (needle and jets) in such a way that the power output has been kept at 11Kw yet acceleration and flexibility at low revs have been improved.

YOU DON'T CHANGE A WINNING FRAME

The frame on the Mito 125 is so good that there is no need to change it. When regulations were less severe, racing machines were capable of reaching speeds of over 120 mph and had power outputs of almost 40 HP. During all this time, the Cagiva aluminium double extruded frame never showed any signs of weakness and, in fact, almost seemed as if it would be happier carrying an over 500cc engine. It therefore comes as no surprise that many of the hand-built four-stroke 600 cc bikes currently taking part in the "Supermono" championship use Mito frames. The 125 is now restricted by law to 11Kw (15 HP). This explains why the frame has been left untouched. There is nothing needs done after all those years spent fine-tuning and testing it.



For “mechanical” reasons, i.e. fitting the new screen and tail section, only the sub-frames have been replaced with completely new components. These are no longer square but highly resistant round tube sections. The rest remains as was: You don’t change a winning bike.