



F4-1000

MV AGUSTA F4 1000S: the legend to the nth power.



The F4 is a legend dedicated to motorcycle style and technique. It is the symbol of the beauty on two wheels and reflects the inspiration and understanding that has enlivened its designers in defining this motorcycle cult object. A design and technology specimen in constant evolution reaching, with the new F4 1000S, its synthesis in performance and emotional limits.

The star of this new race is the new propeller able to express the domineering 165 horse power strength. A strength that permits the F4 1000S to cleave the air reaching a speed that opens doors to a new legend: that of the most beautiful and fastest motorcycle in the world.

THE DESIGN:

The F4 1000S is distinguished from its less cylinder capacity sister by the introduction of new racing colours that enhance the elegance of the F4 1000S's volumes. These are on a silver base in contrast with the new yellows or blues also extended to the saddle. For traditionalists, the classic red-silver racing colours are still available.



The F4 1000S is also different from the 750cc version for the following aesthetic details:

- New logo 37 MV Agusta world champion on the airbox back.
- Tank guard with F4 1000 logo
- Instruments with tachometer on a white background and F4 1000 logo
- Saddle in the shade of the yellow or blue racing colours
- F4 1000 plate on the steering head



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EQUIPMENT:

There are many innovations in terms of equipment that differentiate the F4 1000S from the 750cc version and particularly:

1. New semi-handlebars.
2. Plexiglas raised dome.
3. Adjustable foot rests.
4. Rear quick-release rim.
5. Catalyser.
6. New rear Sachs Racing shock absorber equipped with hydraulic control of the pre-load spring.

CHASSIS

The chassis of the new F4 1000 S traces the existent lines of the 750cc version and is still the only one in the manufactured four-cylinders to be made with a chromium molybdenum steel pipe girder structure. An advantageous solution in terms of cross compactness, mechanical accessibility and torsion rigidity entirely built in the MV Agusta factory in Morazzone.

The pipe structure is joined to the fork hub plates where both the rear suspension rocker arm and saddle chassis are connected. A great style sensation, the single-arm fork sculpture has become a demonstration of the creativity and skill of CRC technicians for conceptual rationality and beauty.

THE SUSPENSIONS

The chassis section communes with high level suspensions. The rear Sachs Racing shock absorber equipped with both dual compression calibration (high low-speed) and hydraulic control of the pre-load spring is new. The forecarrige is distinguished from the 750S version by the Marzocchi fork with 50 mm shafts, a record value in standard production. The F4 1000S and 1+1, like the less cylinder capacity sister, is equipped with an Ohlins steering shock absorber positioned crosswise to the driving direction. This unit is anchored to the chassis on both ends in order to be able to work symmetrically. Especially seductive are the steering plates; the upper one has a diamond prismatic form while the lower one has a frontal bridge appearance that improves the air flow to the radiator.



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BRAKING SYSTEM

The front braking system is made up of two exclusive “Nissin F4” 6 contrasting piston collets (with differentiated diameters) that work on 310mm diameter disks. On the F4 1000S and 1+1, these units are made with aluminium instead of steel flanges The rear brake is the same equipped with a 4 contrasting piston collets that works on a 2100mm diameter disk. The front Nissin clutch and brake controls boast patented liquid tank lowered positioning in order to obtain a complete view of the instrument panel, the latter also equipped with a watch function. The splendid star design that characterises the 17 inch wheels of the F4 1000S e 1+1 rubberised with the new Michelin Pilot Power or Dunlop D208 and Metzeller Sportec M1 are the same. The front tyre size is 120/65 and rear 190/50 or 180/55.

THE ENGINE

The new 998cc engine, initially baptised with the name F5, was born in 2001. While still tracing what was



conceptually proposed in the 750 EV configuration, the new propeller was subject to a series of important innovations also maturing thanks to the experience acquired in Endurance races with Steven Casaer’s Maxim team. In two years of work the Belgian driver grinded tens of thousands of kilometres obtaining encouraging results in racing terms but especially providing precious data for the evolution of the new propeller.

MECHANICAL PARTS	WEIGHT SAVINGS IN GRAMS
Driving shaft	1050
Ignition unit	750
Camshafts	400
Piston rods	40 (all on the reciprocating motion part)
D76 Pistons	62
Primary transmission and clutch	250
Gears and bearings	85

The Belgian driver’s indications were then compared with Andrea Mazzali’s, Italian driver who is currently racing in the SBK national championships with a F4 equipped with a 1000cc propeller. Technically the propeller owes its cylinder capacity growth to bore increase, taken from 73,8 mm to 76mm and



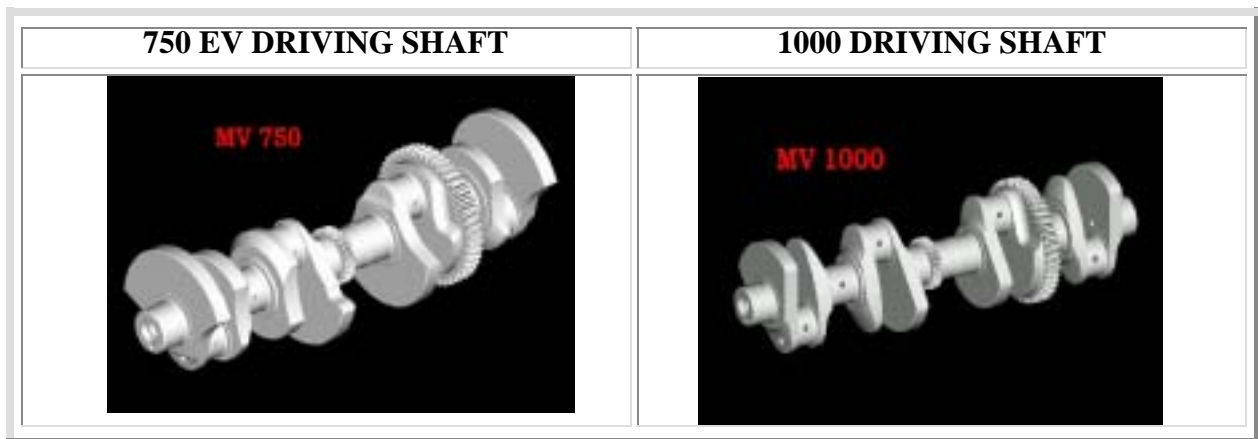
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to the increase in stroke, moving from 43,8 mm to 55 mm. Despite the increase in cylinder capacity the 1000 engine is lighter than the 750EV propeller by 2637 grams.

The weight savings was obtained by integrally redesigning the main mechanical parts, with special attention to the reciprocating motion masses, as can be seen in the enclosed table.

From the pure performance standpoint, the new MV Agusta propeller is destined to become a new reference point for power and torque. The new Schiranna aligned four cylinders is able to maximum power to the 122 Kw (165CV), 11700 rpm driving shaft able to extend up to 12700rpm regime where the limiter takes over while torque reaches 109 Nw (11,1 Kgm), 10200 rpm.

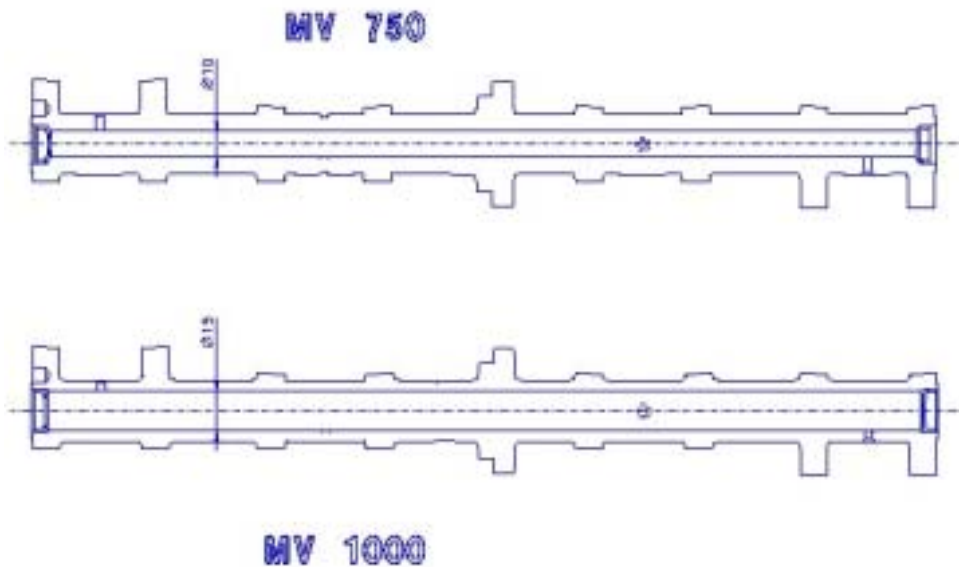




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CAMSHAFTS

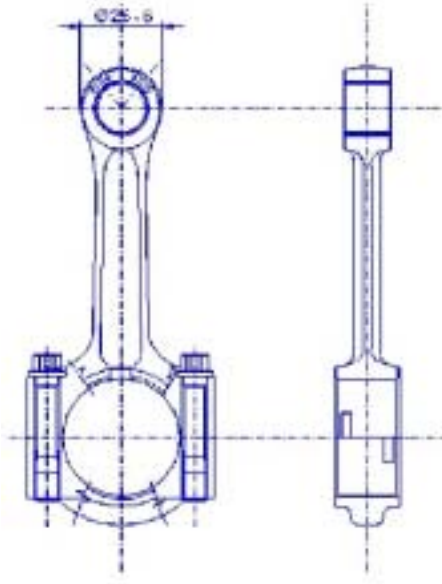




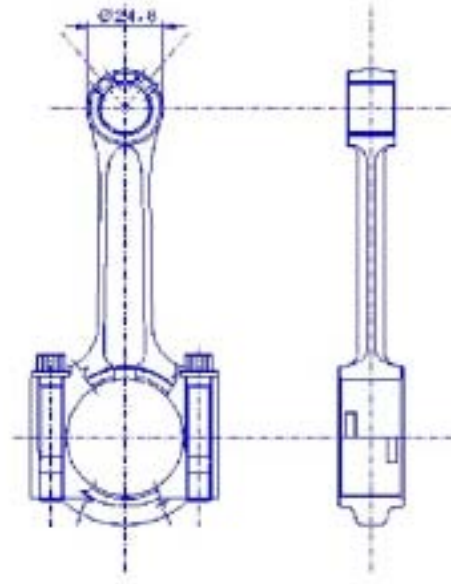
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PISTON ROD

MV 750

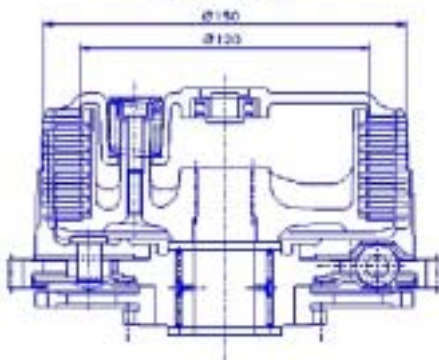


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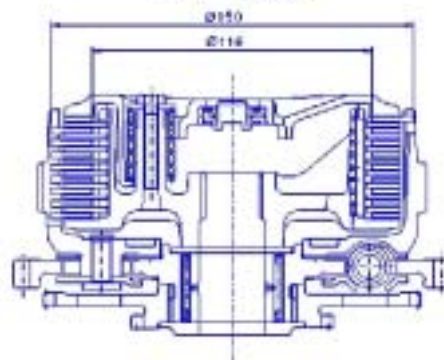


CLUTCH

MV 750



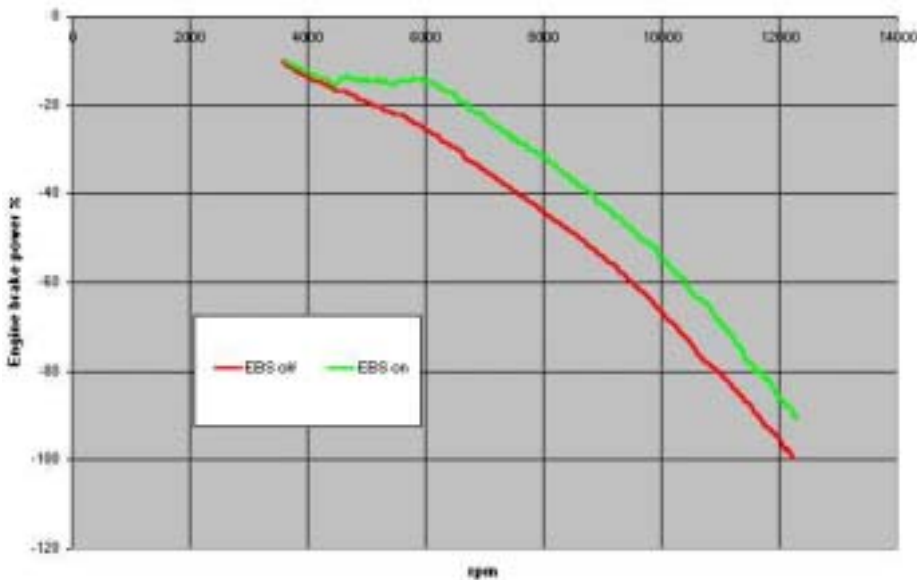
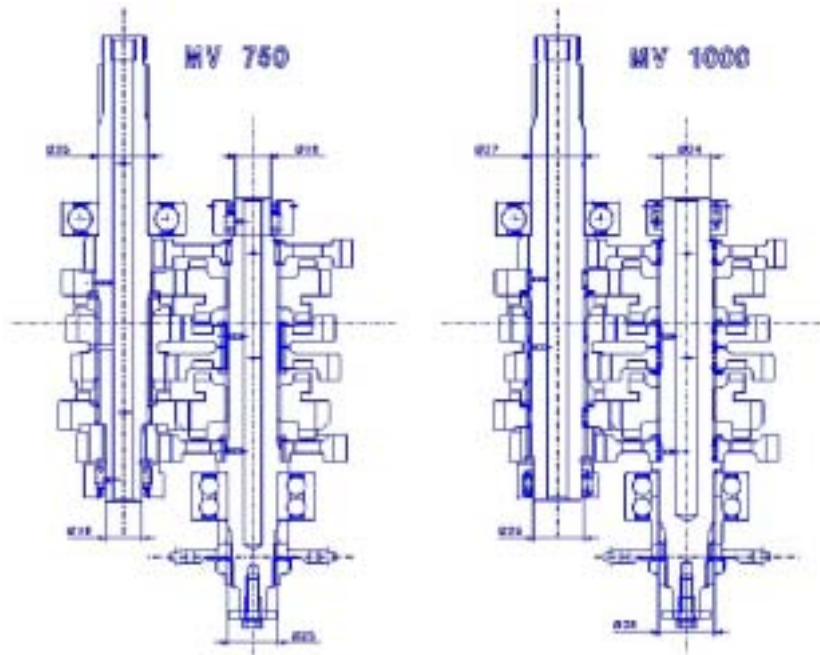
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GEARS



The increase in cylinder capacity enhanced the efficiency of the exclusive distribution system with radial positioned valves, or non-parallel but effective for a 4 degree overall angle (2° per valve) The 1000 engine is also equipped with refined removable gears derived by the unit installed on the propeller that was installed on the glorious GP Cagivas. The new propeller differs from the

750EV unit by the introduction of an innovative vibration system that does not work on the clutch but directly on the feeding in order to reduce the engine brake in release. The system takes advantage of a valve positioned on the cylinder 2 exhaust pipe found downstream of the feeder throttle.



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This device permits the 2 cylinder to distribute torque in the detached phase (or when the feeder throttles are closed) through a totally electronic control system. Observing the enclosed graph, the advantage in terms of high and medium regime engine brake reduction appear evident.

The F4 1000 propeller, in addition to being high-performance, is also in line with the most recent pollution standards thanks to a catalyser housed in a new exhaust commutator that flows in the celebrated “organ pipe” mufflers.



F4 1000 S - S 1+1	
ENGINE	
Type	Four cylinder, 4 stroke, 16 valve
Timing system	"D.O.H.C", radial valve
Total displacement	60.8 cu. in.
Compression ratio	13:1
Starting	Electric
Bore x stroke	3.0 in. x 2.2 in.
Max. horse power - r.p.m. (at the crankshaft)	122 Kw (166 HP) at 11750 - Lim. 12700 r.p.m.
Max. torque - r.p.m.	109 Nm (11.1 Kgm) at 10200 r.p.m.
Cooling system	Liquid cooled, water-oil heat exchanger
Engine management system	"Weber Marelli" 1,6 M ignition - injection integrated system; induction discharge electronic ignition, "Multipoint" electronic injection
Clutch	Wet, multi - disc
Gear Box	Cassette gearbox; six speed, constant mesh
Primary drive	50/79
Gear ratio	
First gear: Speed*	13/38 77.5 mph at 12700 r.p.m.
Second gear: Speed*	16/34 106.7 mph at 12700 r.p.m.
Third gear: Speed*	18/32 127.5 mph at 12700 r.p.m.
Fourth gear: Speed*	20/30 151.2 mph at 12700 r.p.m.
Fifth gear: Speed*	22/29 172.0 mph at 12700 r.p.m.
Sixth gear: Speed*	21/25 186.9 mph at 12700 r.p.m.
Final velocity ratio	16x41
ELECTRICAL EQUIPMENT	
Voltage	12V
Alternator	650 W at 5000 r.p.m.
Battery	12V - 9 Ah
DIMENSIONS AND WEIGHT	
Wheelbase	55.40 in.
Overall length	79.01 in.
Overall width	26.97 in.
Saddle height	31.87 in.
Min. ground clearance	5.12 in.
Trail	3.87 in.
Dry weight	423.3 lb (F4 1000 S) - 425.5 lb (F4 1000 S 1+1)
Fuel tank capacity	4.6 Brit. gal. (reserve fuel: 0.88 Brit. gal.)
PERFORMANCE	
Maximum speed*	186.9 mph
FRAME	
Type	CrMo Steel tubular trellis (TIG welded)
Rear swing arm pivot plates: material	Aluminium alloy
FRONT SUSPENSION	
Type	"UPSIDE - DOWN" telescopic hydraulic fork with rebound-compression damping and spring preload adjustment
Rod dia.	1.97 in.
Travel on leg axis	4.65 in.
REAR SUSPENSION	
Type	Progressive, single shock absorber with rebound and compression (High speed / Low speed) damping and spring preload (hydraulic control)
Single sided swing arm: materiale	Aluminium alloy
Wheel travel	4.72 in.
BRAKE	
Front brake	Double steel floating disc
Flange: material	Aluminium
disc dia.; caliper piston number and dia.	12.2 in.; 6 with 0.89 in. dia.; 1.00 in. dia.; 1.19 in. dia.
Rear brake	Single steel disc
disc dia.; caliper piston number and dia.	8.27 in.; 4 with 1.00 in. dia.
RIM	
Front: Material / size	Aluminium alloy 3.50 " x 17 "
Rear: Material / size	Aluminium alloy 6.00 " x 17 "
TYRES	
Front	120/65 - ZR 17 (56 W)
Rear	180/55 - ZR 17 (73 W) or 190/50 - ZR 17 (73 W)
FAIRING	
Material	Thermoplastic

* = Top speed attained on closed course.

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