

Montesa 4RT "stock" & Future 300 & 125

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The Montesa and the Future in a group photo. Based upon the 4RT the racing team that has very close ties to the importer Moto Spa has developed the Future 300, bored out to \varnothing 82,5 and the Future 125 which they are currently homologating.

WITH THE 2007 4RT WE HAVE A COUPLE OF THE VERY SPECIAL WORK OF ART CREATED BY THE FUTURE TRIAL RACING TEAM, THE POWERHOUSE THAT WORKS DIRECTLY WITH THE ITALIAN IMPORTER AND THE TOP RIDERS LENZI, BOSIS AS WELL AS OTHERS. THEIR WORKS 300 IS A SUPER-SPECIAL THAT HAS BEEN RE-WORKED IN EVERY DETAIL; FOR THE 125 RIDERS THEY HAVE A SOON TO BE HOMOLOGATED 4T. BOTH BIKES ARE OPTIMUM: THE SUPER POWERFUL 300 AND THE SURPRISINGLY EFFECTIVE 125 CC

The 4-stroke trial era began just over four and a half years ago when Montesa-Honda introduced the new production 250 cc bike which forms the basis for the special works units that are used by both Lampkin and Fujinami. Just after the production launch they introduced a special 260 cc kit for racing along with a dedicated ECU that is programmable by the end user for their specific needs. This kit had limited success as most of the top teams and tuners opted for the limited edition 2005 Repsol Replica model that was introduced shortly afterwards. For 2006 the bike is generally the same as the previously launched version with a few modifications focused on reducing the exhaust noise level, a point of complaint by a number of Montesa riders, as well as a revision of the cam timing that helps the starting when the engine is hot. The rest of the bike remains the same as the traditional 4T that was put into production just a couple of years ago. This jewel is both a visual work of art as well as an effective

trials tool for riders of all levels. For top level tuning you need to contact Future Trial, the same team that helped Lenzi achieve his double victories in the Italian Trials Championship, as they have developed two dedicated racers, the 300 cc and above all the 125 for the junior category. Their commercial approach is very flexible, Future Trial offer various kits that let you get the maximum out of the standard Montesas. The 300 World Race kit is composed of the very same components utilized by Lenzi. The 125 could soon become just as exclusive but is dedicated to aspiring riders that are battling in the junior championship.

2007 MODEL YEAR

LOCATION	Chiuduno (BG)
TERRAIN	rocks and dirt
WEATHER CONDITIONS	rain, 8°C
PRICE	Cota 4RT E. 7.300 in Italy tax included
AVAILABILITY	immediate
IMPORTER	Cota 4RT Moto Spa, via Vittorio Veneto 9 23815 Introbio (LC) - Italy Tel. +39 0341 901533 - www.hmmoto.it
CONSTRUCTOR	Future Trial Racing Team - Via Italia 1/E 24030 Valbrembo (BG) - Italy Tel +39 035 527594 - www.futuretrial.it





DYNAMIC

SILENCED

Two years after it's initial introduction the 4RT is still a very effective

bike whose main advantage is a very well balanced chassis. The frame and suspension are at the head of the trial class as the Showa front forks, in standard trim, are beyond reproach. Progressive, damping and without sticktion... these forks have it all. It's true that the competition, Beta for example, have introduced bikes that are lighter handling than the Cota. But, with regards to the overall package, the 4RT is without reproach. The power curve is very "flat", but it has more than enough power to overcome almost every obstacle. Plus, the smooth power helps the rider in most difficult situations. It's always perfect.

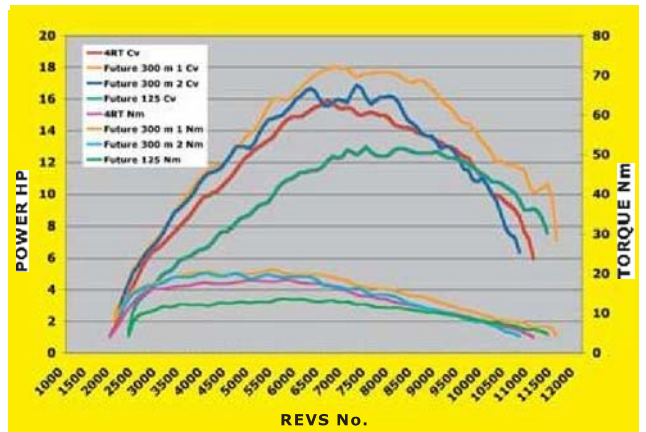
4RT: MORE OF THE SAME...

...excluding a few minor changes that have a minimal impact on the overall package. First and foremost, the new silencer is much more effective at reducing the noise level than the previous unit. The new unit, part number 18310NN4C10 (the price is yet to be defined), can be mounted directly on previous model year bike but the fuel injection mapping must be updated as it appears that they have also reworked the cold start area of the EFI map. Along with the exhaust update they also mention a revised cam with a revised automatic decompression release to help starting. Here's the dilemma:

purchase the new 2007 or the 2006 Repsol Replica with its reprogrammable EFI. If you enjoy playing with the fuel injection, the choice is obvious, but keep in mind that the re-programmable throttle body unit retails for 450 euros. It's also worth noting that the Montesa trials bike retains for 2007 their battery-less fuel injection system that has been present from the initial vehicle launch in 2005. This quality is unique in the off-road world as this exclusive system works directly with the energy produced by the flywheel and is activated by a simple kick on the long kick-start lever.



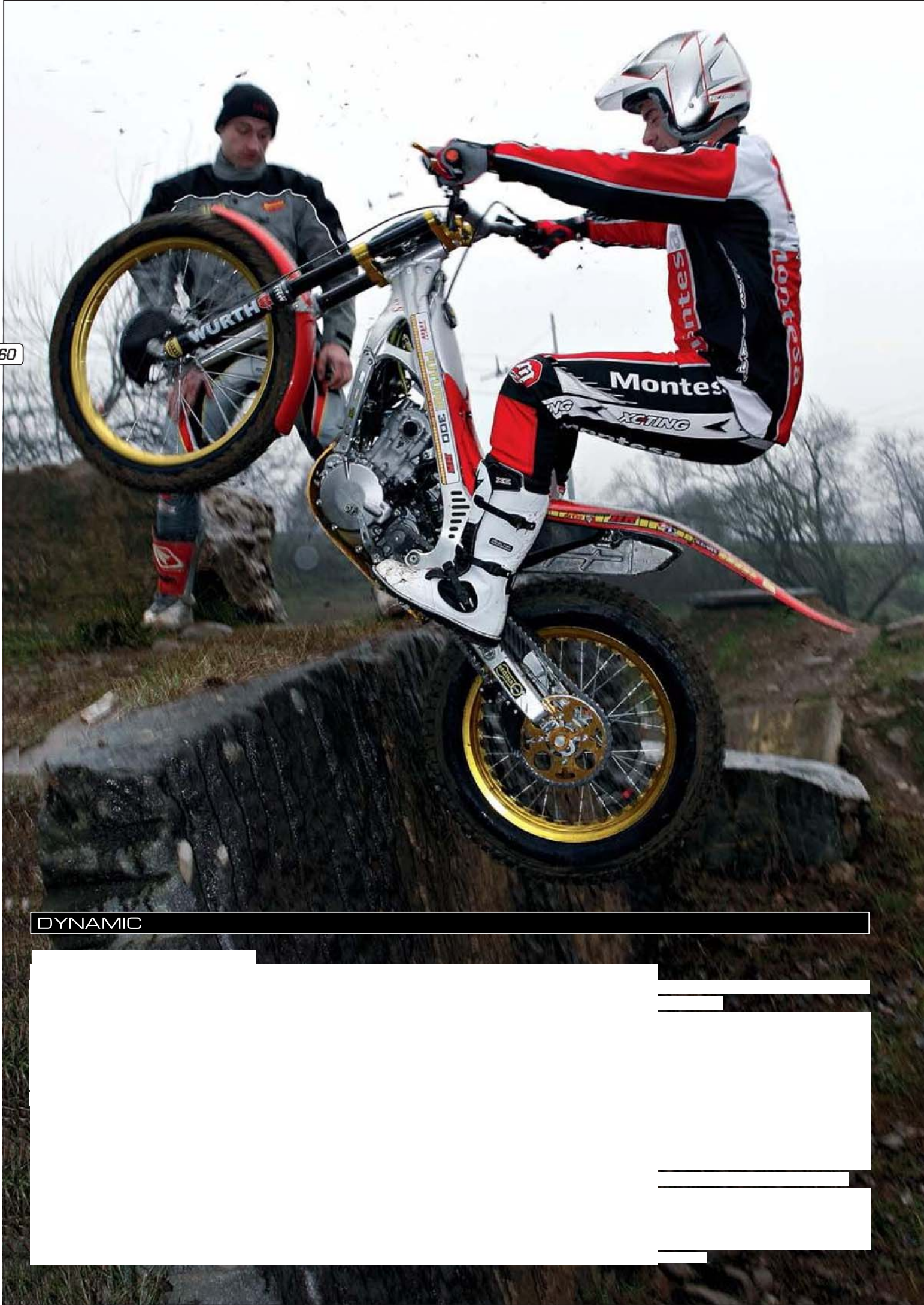
The Future Racing Trial Team's boss is Quirino Tironi. The other partners are, on the left, Giovanni Genini, Gianluigi Gervasoni on the right and Antonella Malnati. The team consists of 50 riders of which 8 compete in international trials events along with 2 mechanics.



The advantage of the Future 300 is easy to see compared to the standard 250 cc. Note that the "soft" map significantly reduces the power output.



Montesa news 2007: the new silencer differs from the previous unit in that the exit has been modified to reduce the sound level. Plus, they have optimized the automatic decompression release along with the headlight and speedometer.



DYNAMIC

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FUTURE TRIAL special materials

Engine tuning 300 base kit (cylinder, piston, gaskets, map)	1300
Engine tuning 300 Professional kit (Base + head work and flywheel)	1850
Engine tuning kit 300 World Race (base + professional + camshaft, throttle body, 2 larger intake valves, crankshaft)	3100
Engine tuning kit 125 (cylinder, piston, connecting rod, gaskets, modifications to the crankshaft, etc.)	4.150
Engine tuning 250 base (head, cylinder, map)	410
Engine tuning 250 Professional (base + cam)	800
ECU programmabile	432
ECU programmabile with twin map	490
Switch ECU for the handlebars	23
Map, special	50
Radiatore, high capacity	900
Silicone water hoses	80
Silicone coated tubes	20
Titanium fasteners	2200
Titanium suspension links	90
Fuel tank 1600 cc.	324
Fuel tank, racing 800 cc.	648
Pump support flange	160
Carbon fuel line	42
Exhaust Termignoni stainless steel \varnothing 30 mm	103
Exhaust Termignoni titanium \varnothing 30 mm	242
Carbon exhaust guard	71
Aluminium triple clamps	432
Aluminium handle bar supports	69
Steel footpeg support	40
Aluminium footpegs	74
Clutch and brake levers (each)	28
Lever adjusters	3
Lightened shift lever	32
Aluminium swing arm spacers	17,5
Aluminium chain tensioner	28
Reinforced aluminium skid plate	89
Light weight aluminium skid plate	89
Lightened frame components	130
Lightened original frame components	54
Aluminium links	105
Aluminium gas cap	10
Machined rear rim	367
Aluminium engine case guard	35



Tecno-gallery Future Racing Trial Team. The cylinder has been fitted with a steel sleeve (press fit) and nickel plated, the piston has a single 1 mm compression ring along with a single piece oil ring, the cam has been specially developed for the 300 (on the right next to the standard cam), the intake valves are \varnothing 26 mm titanium units and replace the 25 mm standard valves. The crankshaft is a modified standard unit with the same stroke.

TECHNICAL

FUTURE 300: WORLD RACE

Let's enter into the world of Future Trial and we find that this team works directly in conjunction with the Montesa importer whom brought us the 4RT. This racing team, which supports the top riders Lenzi and Bosis, has expanded its horizon and offers the special tuning components for the 125 and 300 cc racers. The prototype 300 first saw the light of day with Bosis in the Italian World Championship round last year and has been used in a number of the Italian championship rounds since its introduction. During this time it has been continually developed and fine tuned into the currently available kit.

Putting together the long list of special components you have the World Race 292 cc, including the CPS 82,5 mm piston with its single 1 mm compression ring and single piece steel oil ring. To make room for this piston the cylinder has been bored and a steel sleeve has been inserted which has a special galvanic surface treatment developed by RAM in Galbiate (LC), Italy. The special sleeve allowed them to reduce the wall thickness of the cylinder in the area that protrudes into the engine cases with respect to the standard aluminium unit, but it has retained the same coefficient of friction.

The head has been reworked and now holds 26 mm intake valves (1 mm larger than stock) along with a revised combustion

chamber that raises the compression ratio to 12,5:1. The valve springs have been lightened and the cam has a special timing diagram; the crankshaft has also been modified and has been rebalanced to work in conjunction with the new piston. They have also modified the flywheel to increase inertia and the clutch basket has been reworked to increase the oil passages to help the multiple clutch disks work under the increased torque load.

The "World Race" version has a 30 mm throttle body, up 2 mm from the standard production unit, along with an ECU that has been modified by HRC and includes two maps stored in its internal memory that can be selected by an handlebar mounted switch. The twin maps, "hard" and "soft", can be selected depending on terrain and weather conditions. The final touch on this outstanding package is a titanium and steel Termignoni exhaust system which is currently in the final stages of testing and promises to be increase power while keeping the decibels low.

The frame is the original unit and the suspension is set up according to each individual riders demands. To work with the stiffer the mid-stroke compression damping they choose to utilize the constante rate fork springs offered in the Montesa parts catalogue (there is even a softer rate spring available). The rear shock has personalized internal valving along with a the option of a Showa Shock spring, hard or soft, depending on the riders individual tastes. Finally, they adorn the bikes with a large amount of aluminum, carbon and titanium bits (it's a long list!) with the goal of reducing the overall weight including the triple clamps along with the voltage regulator support located above the transmission. The longer the list, the higher the price which can easily exceed 9.500 euro... at which point it's best to purchase the complete bike which retails for 12.000 euros.

The 125 follows along in the same lines where you can purchase the engine for 4.150 euros or the complete bike for 8.500 which includes the homologation which is currently underway.



FUTURE TRIAL 125 FOR JUNIOR RIDERS

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When constructing a race team, the development of younger talent is fundamental and in the trials world junior riders need to have a 125 cc. Since Montesa doesn't have a bike available, Future Trial decided to rework the 4RT engine by reducing the bore and stroke to 34,4 and 68 mm. With regards to a normal 125 these numbers are exaggerated, but this choice was made in order to reduce the costs and maintain the standard cylinder head. The transformation includes a CPS piston, a reworked cylinder which has a nika-sil plated aluminum sleeve, a revised crankshaft and a longer connecting rod. The valves and cam are the stock items and the compression ratio is raised up to 12,5:1. The flywheel has been lightened along with the primary drive and the transmission gears as the torque generated by the 125 is reduced compared to the standard 250 cc engine.



A GOOD BEGINNING...

The 125 4T is a huge development. It's completely unique in the trials world and has the very same chassis as its big sister. The suspension seems to be a bit less "racing" and a bit softer compared to the Future 300, but these units were set up for a different rider.

The engine builds strong power and reaches power levels almost on par with a standard 250 cc production bike. If you rev the bike hard before attacking an obstacle it's hard to encounter limits. The smooth bottom end power is also an advantage when riding in slippery conditions as the rear tire hooks up better helping the rider get a better drive. This bike is very surprising, especially if you compare it to a standard 125 cc 2-stroke. But, maybe it's not an even match... this 4T is far from a stocker even if we're comparing the same engine displacement.

The little 125 worked well during the test and, surprisingly, it didn't require a lot of clutch work to get the bike over some really demanding obstacles without missing a beat.





The Future 125 has been derived from the production 4RT. On the outside the engine appears to be the same, utilizing a longer connecting rod they have maintained the cylinder deck height.

SPECIAL COMPONENTS in aluminium, carbon fiber and titanium. Chain tensioner, racing number plate, triple clamps, levers, map switch, fork and disk protectors, titanium footpegs and suspension linkage.

of additional accessories for the Montesa available for distribution.



Using a PC you can modify the mapping in the

throttle body has a unique ECU that can maintain two maps in its internal memory. The

is reprogrammable but can hold only a single map in its memory, but, it can also be re-programmed.



MONTESA 4RT

ENGINE Montesa single cylinder four-stroke, liquid cooled bore and stroke 76,5 x 54,2 mm displacement 249,1 cc. Compression ratio 10,5:1 carburetor integrated PGM-FI fuel injection and ignition without a battery throttle body ø 28 mm cylinder head DHC with four valves lubrication wet sump with an oil pump friction multidisk in oil generator 12V 160W primary transmission straight cut gears transmission five speed.

FRAME aluminium perimeter, 23° steering head angle, 63 mm of trail swingarm aluminium forks Showa ø 39 mm, stroke 175 mm shock Showa with progressive linkage, rear wheel travel 170 mm brakes front and rear disks ø 185 and 150 mm wheels Did in aluminum tires front 2.75x21 rear 4.00R-18 fuel tank capacity 2 liters.

FUTURE TRIAL 300

Bore 82,5 mm displacement 289,6 cc. compression ratio 12,5:1 throttle body ø 30 mm.

FUTURE TRIAL 125

Bore and stroke 68 x 34,4 mm displacement 124,5 cc. compression ratio 12,5:1.