



Mates build radical Blade

► A group of Spaniards has assembled a stunning ultra-light track day bike from an ageing Honda Fireblade

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This astonishing-looking bike is a 2002 Honda Fireblade designed, developed and built by a group of friends in their spare time. It promises to be lighter, narrower, more comfortable and more adjustable than the original CBR.

Dubbed the Morlaco (Spanish for a kind of bull), the bike is not 100% finished, but its advantages are already clear according to Madrid-based mechanical engineer David Sanchez, who has led the project since it began in 2002.

He said: "A big advantage is that the bike is smaller. It is much narrower around the rider's knees, which combined with the exhaust gives better aerodynamics and makes a more comfortable ride. In fact, the fairing is adapted from a Ducati 999 and the fuel tank cover from

a CBR600RR. Now all superbikes are trying to be this narrow, but in 2003 it was pretty new."

The Morlaco also ditches telescopic forks in favour of a girder front end pivoting on two wishbones.

"That gives us adjustable geometry and adjustable anti-dive," added Sanchez, who cites John Britten and English designer Tony Foale as strong influences. "We chose the 954 Blade because the swingarm is bolted to the engine. That way it was easier to design the chassis because we didn't have to worry about that area."

The 'Bottpower' logo on the bike stems from Sanchez' admiration for the engineering freedom in the Battle of the Twins series.

"Bottpower is a garage project," he said. "It's something I started in 1998 because I love motorbikes, motorbike

and especially engineering and design." Since then Sanchez has built up a team of collaborators, all of whom give their time for free.

German designer Hugo van Waaijen works on concepts, styling and the look of parts; illustrator Pepe Garcia creates images from CAD data; and graphic artist Ernesto Aguirre designed the bike's colour scheme and logos. One of Aguirre's more famous jobs was Rossi's 'Austin Powers' RCV at Valencia in 2003.

"If I want to do a great job I need good people working with me, people with the same excitement about the project and

with high knowledge in their area," explained Sanchez. "Right now Bottpower is not a company; I cannot pay them, so it's a kind of 'open source' project. We all do it just for fun and to learn."

Sanchez himself is an expert in computer assisted design and finite element analysis, which allows him to try out different chassis options before making them.

"I considered steel tube and aluminium sheet for the wishbones, but I chose CNC-milled aluminium because there's no welding or jig to build, and with Hugo's input it looked cool.

"Even so I studied ten options to try to get the best possible design inside my intended safety margin.

"Once we had the final design, we emailed a file to our provider, and in a few hours we got the parts, ready to assemble on the bike."

So far the bike hasn't run, but Sanchez hopes to finish it this winter, in between building a bike for the 2010 Moto2 world championship.



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DAVID SANCHEZ



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Bodywork was adapted from a Ducati 999 and CBR600RR



Widely-spaced headlights create a new look for the 999 fairing



Sanchez' frame, left, next to the Honda Fireblade's original



Computer rendering of a possible road bike version of the Morlaco

TRELLIS FRAME

► Narrower and lighter than the Honda original. "I like steel because it's easy to weld, and to achieve a good relationship between weight and stiffness," says Sanchez. "It fatigues less than aluminium too."

CARBON FUEL TANK

► Sanchez sculpted the shape from wooden ribs and builder's foam, followed by filler. With cutouts for wiring, the result was easier to make from carbon fibre than aluminium.

RADICAL SPECS

► "I think it will weigh about 175kg, but I don't know for sure yet," says Sanchez. Wheelbase is a longish 1410 mm, trail 97mm and steering angle an ultra-steep 18°. All three dimensions are adjustable.

EXHAUST

► Curls forward with the tailpipe/silencer in front of the engine. "I got the idea from a McLaren Mercedes SLR. It's more aerodynamic, better protected in a crash and closer to the engine, so mass is more centralised," says Sanchez.



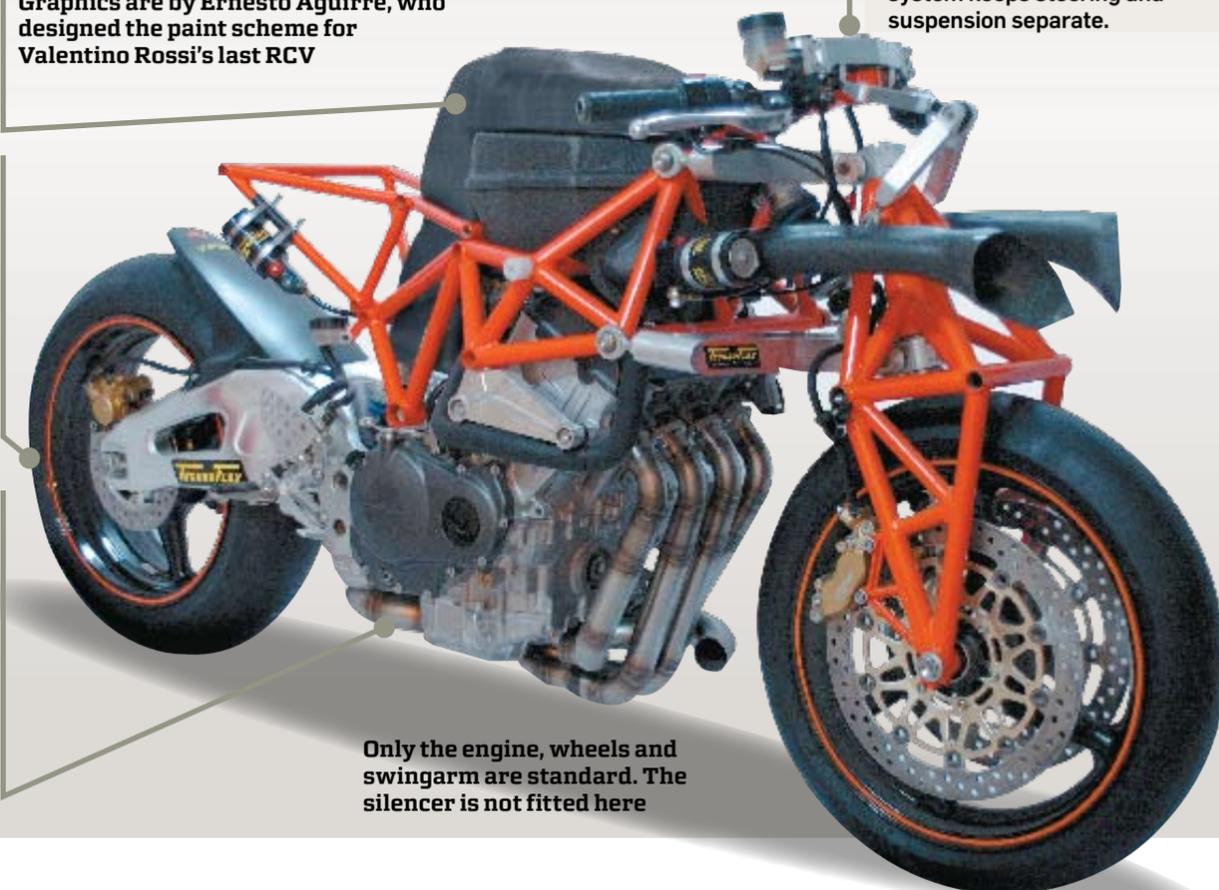
Graphics are by Ernesto Aguirre, who designed the paint scheme for Valentino Rossi's last RCV

WISHBONES

► Their up-and-down movement is controlled by a single shock, while a light steering linkage turns the front wheel. Wheelbase and trail stay fairly constant.

STEERING

► A 'headstock' welded to the frame transmits steering to the girder fork through a scissor linkage. Unlike tele forks, the system keeps steering and suspension separate.



Only the engine, wheels and swingarm are standard. The silencer is not fitted here

BICYCLE TUBE TECHNOLOGY FOR MOTO2

At least one of the 600cc Moto2 bikes in next year's replacement for 250GPs will feature a steel trellis frame—built by David Sanchez.

For four years Sanchez has worked part-time as a data technician for BL Racing who run Spain's official 600 Kawasaki team. Now he's been tasked with developing a chassis for a Moto2 bike, he's quitting his day job developing medical X-ray systems to go racing full-time. "The team wants to race Moto2 in 2010 and they will use a Bottpower bike," he confirmed.

Not only will the chassis use a trellis, the tubes will be made by Reynolds, more famous for their high-grade bicycle frame tubes. "They are interested in getting into bikes, and they have many different wall thicknesses and alloys," added Sanchez, who plans to continue his 'garage project' spirit of collaboration, but with more collaborators at a higher level.

"We can count on my team's 20-plus years of experience. They raced in 500cc for several years with a ROC Yamaha, and they've been in World Superbikes."