

Exclusive!

Moulton Twin Pylon

New Moulton designs don't come around very often. **Paul Smith** gets aboard the new range-topping Twin Pylon to see if it's been worth the wait...



Moulton Twin Pylon

£5,800

www.alexmoulton.co.uk

Reviewing a bicycle that strays so far away from what most people view as the accepted layout and design isn't easy. While it is true that comparisons have to be made with a traditional bicycle, you have to consider why the Moulton bicycle exists in the first place. If we look at what a bicycle is in its simplest form – a land vehicle with two wheels, human powered, that in order to travel any kind of distance has to be efficient and comfortable – we can begin to see a glimpse of the genius behind the Twin Pylon's existence.

Frame 10 Lighter, stronger and stiffer

Hand crafted from custom stainless steel tubing, the Twin Pylon is the logical progression of the New Series Speed Stainless frame which features a single pylon design. The pylon refers to the design of the seatpost mounting area, and on this new Moulton also the design of the headset mounting area. The idea of the pylon design (think electricity pylon) is to produce a structure, or a section of a structure, which is lighter and significantly stronger and stiffer than an equivalent design made using more traditional

methods – such as a single tube with or without added reinforcements. The trade-off to making things in a pylon way is the added complexity and the added man-hours required to manufacture it.

The addition of a pylon design at the headset area is not the only thing to change on this frame though. Almost every aspect of it has been altered, from the more obvious things, like the main tubes running along the length of the frame – which now run outside of the pylons – to the spacing and join spacing of the rear swing arm. The forks are all new too, as are the Flexitor units that provide the suspension spring and damping action at the front. Those familiar with Moulton New Series bikes will be able to spot a myriad of other changes, but they are far too numerous to list here.

Suspension 9 Honed to a high level

The use of front and rear suspension to isolate the wheels from the main chassis of the bicycle is a viable idea if the system can be made light and relatively maintenance free, yet still offer an advantage over a non-suspension bicycle. Moultons have the fundamental principle of a light and efficient short wheel-travel suspension system honed to a level of performance that no other manufacturer can begin to come close to (ignoring the world of

In detail



Craftsmanship shines through against a backdrop of exquisite design. Every inch of the new Moulton reveals an attention to detail you won't find anywhere else.

Moulton Twin Pylon

Replacement value **£6,950 this spec**
(**£5,950 painted steel**)

www.alexmoulton.co.uk ☎ 01225 865895

Frame and forks

Size tested: Custom
Sizes available: Custom
Weight: 10kg/22lb
Frame: Hand crafted custom stainless steel
Frame weight: 2,084g/ 4.59 lb
Fork: Proprietary Moulton twin leading link

Bike dimensions

Top tube: Not applicable
Seat tube: Not applicable
Chainstays: 26cm/10.2in
Wheelbase: 105cm/41in
Head tube angle: 70°
Seat tube angle: 71.5°
B/B height: 29cm/11.4in unladen (depending on suspension set-up)
Standover height: 53cm/21.3in unladen (depending on suspension set-up)

Frame alignment

Head tube: Perfect
Rear triangle: Perfect
Fork: Perfect

Transmission

Crank: Shimano Dura-Ace
Bottom bracket: Shimano Dura-Ace
Freewheel: Shimano Capreo
Chain: Shimano Dura-Ace
Gear levers: Shimano Dura-Ace
Pedals: Not included

Gear ratio (in)

Chainring	Sprocket									
	9	11	13	14	15	16	17	19	20	21
38	70	57	48	45	42	39	37	33	31	30
54	99	81	69	64	60	56	53	47	45	43

Wheels

Front and rear: Moulton
Wheel weight: 624g front, 850g rear

Other components

Stem: Moulton Stainless
Handlebar: Nitto Drop
Headset: Shimano Dura-Ace
Saddle: Fizik Gobi
Seatpost: Shimano Dura-Ace
Brakeset: Shimano Dura-Ace

mountain biking where more complex systems with more travel do perform to very high levels).

The idea behind suspension on any vehicle is to increase the efficiency with which it can travel over the road, and increase safety and comfort. The principle is relatively simple; the wheels move vertically independent of the main chassis of the bike. They support the main chassis and the rider by having a spring of some kind (in this case rubber) and damping to control the movement of the spring (fluid, and/or the natural hysteresis of the spring – hysteresis being a material's own ability to damp/control its movement).

A quick run-through of the working principle is as follows: the bicycle's road wheels encounter a bump, and the wheels must travel upwards to rise over that bump. With a conventional bicycle without suspension this involves the whole of the chassis (and the rider on it) being displaced vertically as the wheels encounter the bump. This means that the

force from the bump has to lift the whole mass of the bicycle and rider, thus slowing it by a certain calculable amount depending on the shape of the bump, the mass of bike and rider, and the speed (plus some other factors). In doing so, it passes the vast majority of the bump force on to the rider through the bars, pedals and saddle.

With a bicycle equipped with suspension, only the wheels have to move upwards to climb the height of the bump. The springs are used to store the bump force instead of it being passed on to the rest of the frame and then the rider. This stored energy in the spring can be used to return the wheel to the ground after the bump has passed, and some can be changed into heat energy and dissipated. This all results in the bicycle being slowed less by the bump, the rider feeling less of the force created by the bump, and the wheels spending more time in stable contact with the road. Done well, a bicycle with suspension will be more efficient than a bicycle without suspension on anything other than a very smooth road.

Handling 9 Comfortable, fast and responsive

The initial experience on board the Twin Pylon compared to other Moultons leaves an impression of a more refined machine. Both the front and rear suspension feel softer as you sit on the bike, but once settled under your weight they stiffen up a little (rising wheel rate). The ride quality once moving is something special, with the frame offering very good stiffness in all the directions that matter, yet the suspension dramatically reduces the transfer of road imperfections to the main frame, aiding in traction and comfort.

The most obvious area where this bike outperforms a traditional bike with large wheels and no suspension is in its ability to grip over uneven surfaces. Down a regular test section of rough road descent, the Twin Pylon was simply stunning. The level of grip and confidence it gives is amazing, and the ability to brake hard and change direction rapidly at the same time over rough terrain has to be experienced to be believed – it's a lot like riding a top dual suspension mountain bike with slicks, only faster.

The flip-side to this suspension coin is that you get movement in the suspension from the act of pedalling. This is perfectly normal, because the rider is essentially a very long stroke two cylinder engine, with two heavy legs for

pistons. Any good quality suspension vehicle will move no matter if the force is coming from the wheel hitting a bump, or from the person on the chassis moving up and down (sit on a motorbike or in a car and make a pedalling action and it bobs up and down). This bobbing motion is not robbing you of energy, though, the 'unified' rear triangle design of the Moulton means the bottom bracket is part of the swingarm, so isolating the chain forces from acting on the suspension. The only force that can act on suspension from pedalling is the drive thrust from the rear wheel that moves the bike forwards, and the mass of the rider's legs moving up and down. Overall, the result is an exceedingly comfortable bicycle, that's safe, very fast and responsive.

CYCLING Verdict

There are a lot of things in your mind when you first ride a pylon style Moulton bicycle, and the main problem is overcoming all of the preconceptions you make just from its visual appearance. If it was possible to ride a bike without seeing it, then you'd probably get off the new Twin Pylon and think you've just ridden one of the best all-round do-anything bicycles in the world. But there is no denying that the visual impact of seeing a multi-tube frame with small wheels and suspension is going to fill your head with all kinds of ideas and expectations. If you can overcome those mental barriers and see it for what it is, you'll begin to see a wonderful bike that's damn fast and very comfortable.

Sitting behind a moving car and overtaking a bewildered man on one of those annoying buzzing scooters aren't things that usually take place in such comfort, or with such ease. But moments like these are much more common and acceptable onboard the Twin Pylon. It fills you with an almost child-like giddiness for covering rougher roads at ever increasing speeds, and there are not a lot of bikes in the world you could say that about.

The attention to detail is amazing, the craftsmanship is exquisite, and the performance is wonderful. In a world where mass-produced frames and ill-conceived and realised carbon composite frames are held as being the best thing since sliced bread, there has to be an alternative. It turns out that true British craftsmanship and 'outside of the box' design can make a performance machine and a real head-turner all in one go. What a refreshing and most welcome change this new Moulton is; it's only the cost that stops it scoring a 10. Buy one (if I had the funds I would order one right now), or at the very least try one and empty your mind of all those preconceptions for good.

9 Amazing design that produces a wonderful ride

'Down a regular test section of rough road descent, the Twin Pylon was simply a stunning bicycle to ride'



A frame like this demands a top-of-the-line groupset like Shimano Dura-Ace