

Quick Spins – December 3, 2007

Edited by James Huang

Got Tech? Send press releases, news, and tech questions to the [Cyclingnews tech-heads](#).

Welcome to Quick Spins, an all new section within *Cyclingnews*' tech coverage where we put some of the smaller items that land on the tech desk to the test.

O.Symetric Harmonic chainrings - too good to be true?

The promise of increased power output for the same perceived effort (or the same power for less effort) sounds like the ideal of every competitive cyclist, but it's precisely what O.Symetric claims to offer with its somewhat strange looking chainrings.

The theory behind O.Symetric's rings is a relatively simple one: the ring's varying diameter alters the effective gear ratio throughout the pedal stroke, producing a higher gear on the downstroke where the rider typically has more power, and reducing it thereafter to accelerate transition between the dead spots. The concept isn't new (and is now actually growing in popularity), but the O.Symetric version is decidedly more radical than some other options currently on the market. The rather large 1.2:1 ovalization factor (the ratio of largest to smallest diameters) of our 52T tester equates to pushing a 57T ring through the downstroke and spinning a 47T at the dead spots. Similarly, our 42T inner ring yields a maximum effective size of 46T and a minimum of 38T.

Not surprisingly, O.Symetric claims its particular design offers a significant increase in efficiency over conventional round rings - specifically, a 5-15 percent increase in power output, which supposedly corresponds to a three percent increase in speed. Additional benefits, according to O.Symetric, include reduced knee stress, faster recovery time and better traction on a mountain bike thanks to a more stable power output.

The company presents various tests comparing its rings versus conventional round rings that were conducted both in a laboratory and on the road. Test subjects included former Festina riders Christophe Moreau and Laurent Brochard riding the climb from Bourg Saint Maurice to the Val d'Isere ski station in May 1996. According to the study, both Moreau and Brochard rode more than a minute faster with the O.Symetric rings than round rings on the 30.5km course, which features a 10km undulating section followed by 20km of continuous climbing.

Interestingly, though, neither Brochard nor Moreau were using O.Symetric chainrings in races the last time we checked. One may think that in the hyper-competitive world of professional bike racing, a three percent increase in speed would be cherished like a place in Dr Fuentes' waiting room. However, according to Jean-Louis Talo of O.Symetric, this lack of endorsement in the pro peloton is not due to the any lack of effectiveness, but rather the financial benefits riders receive from major component manufacturers to use their standard round rings. "Shimano is a very big company and it is hard for a very small company to pay riders to use



O.Symetric's Harmonic chainrings
Photo ©: Greg Johnson



Want to buy a set?
Photo ©: Greg Johnson



Installation is mostly straightforward...
Photo ©: Ben Abrahams



...but front derailleur clearance and adjustment can be an issue
Photo ©: Ben Abrahams



and it is hard for a very small company to pay riders to use [its equipment]," he said. "There is also lots of pressure from Shimano and Campagnolo, and sometimes they won't allow sponsored riders to use other rings."



The O.Symetric rings may not be the most stylish
Photo ©: Ben Abrahams

Fortunately, none of this really matters since most of us aren't constrained by sponsorship obligations and are free to choose the equipment we like. O.Symetric offers its rings in various combinations of double and triple ring sets for road and mountain bikes, all of which are made from 7075 anodized aluminium. At 100g and 58g, respectively, our 42/52T Shimano-compatible set were virtually identical in weight to their Dura-Ace equivalent, although it should be noted that the O.Symetric rings were also roughly half as thick and markedly more flexible. Campagnolo users have the luxury of an additional 44/55T option while off-road users get a 24/34/42T combination in both four and five-bolt configurations.

Now, we usually dedicate a couple of paragraphs in our reviews to a product's aesthetic appeal, but let's face it, style isn't really relevant in this case. Not that the rings look particularly bad, but apart from the company's name and phone number (yes, phone number! Maybe later versions will include a web address) there isn't much there to catch the eye.

Fitting the O.Symetric rings is relatively straightforward but front derailleur adjustment can be rather tricky due to the rings' varying diameter. Also, some braze-on fittings might not allow for enough vertical adjustment. After much tweaking, we eventually managed reasonable results, but shifting at low cadences still required gentle handling.

Visions of blasting along effortlessly at 55 km/h a la Bobby Julich (O.Symetric's most high-profile rider) were quickly dispelled after the first ride, as the different pedaling action certainly takes some getting used to. Not that it feels bad (or even particularly good) but watching your foot catapulted through the bottom of each pedal stroke is a strange sensation. After several rides, however, the body's natural adjustments make cruising along flat roads feel normal again, although any increase in speed wasn't immediately noticeable.

As per the manufacturer's recommendations, we performed our own testing on the local climb (Dyers Pass, Christchurch, New Zealand if you're interested) which, while not quite on the scale of Val d'Isere, would be long enough to reveal any noticeable increases in efficiency. Alas, several ascents later, and with the climb's record still many minutes out of reach, we couldn't determine any appreciable difference in our times for round or O.Symetric's rings.

O.Symetric's concept makes sense, but unfortunately, without proper scientific testing and evaluation, we can't really make a blanket recommendation for or against them. Our advice would be to beg, borrow or steal (maybe not the last one) a set for as long as it takes to discover whether they suit you, bearing in mind that it may take several weeks to become accustomed to the different pedal stroke. /BA

Weight: 58g (42T Shimano compatible), 100g (52T Shimano compatible)

Pros: Can make you ride like Bobby J?

Cons: Limited chainring sizes, questionable performance benefits, relatively flimsy chainring width isn't nearly as rigid as stock offerings, tricky setup

Cyclingnews rating: N/A

More info: www.online-cycling.net

Photography

For a thumbnail gallery of these images, [click here](#)

Images by Greg Johnson/Cyclingnews.com

[O.Symetric's Harmonic chainrings](#) claim to deliver higher output with lower effort - our test pair was a Shimano-compatible 42/52T combination.

[Want to buy a set?](#) Just phone up and place your order.

Images by Ben Abrahams/Cyclingnews.com