



MUC-OFF PREVIEWS NEW L.O.P.S PULLEY WHEEL SYSTEM AT TOUR DE FRANCE

POOLE 18.09.2020, FOR IMMEDIATE RELEASE: Muc-Off's Lightweight Oversized Precision Shifting (L.O.P.S) is an oversized pulley wheel system proved in scientific tests to be lighter and stiffer than its leading competitors. It will make its world premiere in the pivotal individual time-trial stage on the penultimate day of the 2020 Tour de France.

The system, which unites a highly advanced titanium body with supremely efficient coated pulley wheels and bearings, will be used by Team Bahrain McLaren leader Mikel Landa on Saturday September 19 2020 as he makes his final push for a place on the podium in Paris a day later.

As with all Muc-Off products, a combination of real-world testing and cutting-edge lab work was a significant part of the development process for L.O.P.S; thousands of miles have been clocked up on various iterations of the pulley system using a

selection of custom made scientific equipment and riders from a variety of backgrounds and abilities, from former Olympic athletes to pro tour riders.

Managing Director Alex Trimnell said L.O.P.S, which acknowledges Muc-Off's heritage as a hardware manufacturer under the X-Lite brand, was the result of innovation, investment and instinct.

"I'm immensely proud of our efforts in creating a class-leading oversized pulley wheel system in the most challenging conditions. Anyone who's visited our new, leading-edge laboratory and met our PhD-qualified staff will understand the value that Muc-Off places on science, but sometimes you have to trust your instinct, too. Nothing was going to disrupt 'Project Landa' – not even COVID-19."

"Our people dug deep to meet a non-negotiable deadline, and Mikel will now start what might be the most important time-trial of his career with a significant technical advantage."

"When you're competing at the sharp end of events like the Tour de France, it's essential to work with partners who share your commitment to success. Muc-Off's unstinting efforts in the face of a pandemic to provide Mikel with the most efficient drivetrain imaginable proves that they have a work ethic to match our own."

"Our partnership with Team Bahrain McLaren presents us with opportunities to work with world-class athletes and world-class engineers. Together, in the earliest days of the partnership, we identified an opportunity to develop an oversized pulley wheel system. To lead on its development and delivery during a pandemic is a testament to the people I'm proud to call colleagues." Trimnell said.

Despite the pandemic, 2020 has been a year of expansion and investment for Muc-Off, marked by the opening of a new laboratory, recruitment of new and qualified staff, and large-scale deliveries of anti-bacterial products to NHS staff and keyworkers. Continuing partnerships with high-performance organisations, including INEOS Grenadiers, CANYON//SRAM as well as Team Bahrain McLaren, provide evidence of the brand's unwavering commitment to excellence.

Project Landa

Muc-Off's work to develop an oversized pulley wheel system, alongside its fastest ever lubricant for Team Bahrain McLaren's Tour de France leader, was known internally as 'Project Landa'. Mikel Landa is a Grand Tour stage winner and widely regarded as one of the world's best climbers.

L.O.P.S

L.O.P.S is an oversized pulley wheel system developed by Muc-Off's scientists and engineers in partnership with McLaren. Comparative tests conducted using the

sophisticated equipment in the new, leading-edge laboratory at the brand's headquarters in Poole, Dorset, confirmed it as the lightest and stiffest of any of those selected from leading competitors.

The titanium body is created using a sophisticated additive manufacturing process. The pulley wheels (13t upper, 19t lower) are made from aerospace grade aluminium and finished with a supremely efficient coating that delivers friction coefficients over three times lower than hard anodised equivalents.

The bearings were manufactured to aerospace level specification. The size of the bearing used was optimised for the number of rolling elements and application speed to help reduce frictional losses. Ceramic rolling elements are lubricated with a special synthetic hydrocarbon to further reduce the coefficient of friction and tighter radial and axial tolerances improve shift accuracy.

Optimised specifically for the individual time-trial, the final piece of the puzzle to help maximise performance, was the lower sealing requirements, which led to further bearing drag reductions and to incorporate highly compatible material expansion rates.

Lubricant

Following years of development throughout previous Grand Tours and hundreds of hours of screening, formulating, testing and reformulating at our R&D laboratory, we created our fastest ever lubricant and chain combination for Mikel Landa's Tour de France time-trial. Our development work included more than 40 hours screening base oils and additives to create the lowest friction blend on Muc-Off's tribology equipment, before embarking on two full weeks of testing, up to 12 hours a day, with Muc-Off's bespoke chain-link dynamometer.

Drivetrain optimisation

Coupled with the newly enhanced chain optimisation process, the combination resulted in the fastest ever chain and lubricant Muc-Off has ever created, tested and proven in data.

Laboratory

Muc-Off re-opened their upgraded laboratory at its headquarters in Poole, Dorset in summer 2020 as lockdown eased. Designed to be the world's leading drivetrain optimisation centre of excellence, its equipment includes tribometers capable of replicating the friction-inducing movements of a bicycle drivetrain with incredible accuracy and repeatability, bespoke dynamometers for application testing of chain lubricant and bearing grease, a white light interferometer and additive manufacture.

Equipping the laboratory formed part of a seven-figure investment in research and development, which includes a fully resourced team of experts.

ASSETS

More information on Project Landa and L.O.P.S can be found here:

<https://muc-off.com/pages/l-o-p-s>

CONTACT

Hollie Weatherstone, Muc-Off Global Head of Bicycle Marketing

T [+447497 121 606](tel:+447497121606) E hw@muc-off.com

ABOUT MUC-OFF:

Back in 1991 Rex and Marilyn Trimnell got things started with X-Lite UK. After designing and manufacturing the world's first twin crown bicycle fork, Rex created a perfectly pink spray to clean his kit. To make a long story short, Rex's cleaner was the best thing since sliced bread, and it wasn't long before word got out and Muc-Off was born.

Fast-forward to now and Muc-Off is now the go-to brand for top riders. And, in case you haven't noticed, we do a bit more than our original pink cleaner these days.

See the full range at: muc-off.com