BELOW The powertrain for the WRC Yaris's R5 sibling is not yet fixed, and could end up shunning the common I4 layout

Toyota considers three-cylinder Yaris R5

TOYOTA'S planned R5 specification rally car could use a three-cylinder turbocharged engine when it is expected to enter competition in 2021.

The final technical specification of the new Yaris R5 is yet to be confirmed, as to-date Toyota hasn't had a suitable engine in its road car range on which to base the 1,600 cc R5 rally engine.

"We have prepared ourselves very carefully and are ready to start the project. We had a request sent to the FIA, that Toyota had to equip the vehicle with a three-cylinder engine that is available in all new series models," said Toyota WRC team boss Tommi Makinen. If a three-cylinder engine is allowed in the class, Makinen says "It opens up more opportunities and could attract new brands."

Toyota is currently the only manufacturer in the WRC without a presence in WRC2, with Citroen (C3), Hyundai (i20) and M-Sport (Fiesta) having introduced new cars in the last two years. Volkswagen (Polo) and Skoda (Fabia) are also key players in the ultra-successful second-tier rally division. RT

Volkswagen takes I.D. R to China for next electric record attempt

VOLKSWAGEN Motorsport hopes to set a new benchmark with its record-breaking I.D. R at Tianmen Mountain in China.

The 500 kW, four-wheel drive prototype has already claimed overall and electric records at Pikes Peak, the Goodwood Festival of Speed and Nürburgring-Nordschleife. It has since been dressed in a new red livery for the German marque's latest challenge on the 10-kilometre course climbing the Tianmen Shan Big Gate Road, which features 99 tight hairpins.

"The pioneering I.D. R is the ambassador for our fully-electric I.D. family, which will be launched in China from 2020," said Dr. Stephan Wollenstein, CEO Volkswagen China.

First opened in 2006 after a decade of construction, the winding, narrow Big Gate Road climbs approximately 11 kilometres, from 200 meters above sea level to 1,300 meters, ending at a natural, 130-metre arch in the cliffs, called Heaven's Gate.

As there have been no previous record attempts up the climb, an official start and finish point have been defined for the I.D. R's run, where regular driver Romain Dumas will be at the wheel.

In line with its bid to have as little impact as possible on the environment, the I.D. R and equipment has been transported to China in four containers by freight train.

Volkswagen says that by undertaking the 11,000-kilometre journey by land it is "saving about 85 percent of carbon dioxide emissions and 93 percent of sulphur dioxide emissions compared to travelling by air, which is the more conventional mode of transport for long distances." RT

ABOVE VW is looking to add a Chinese record to the tally racked up by its all-electric I.D. R

Oerlikon Balzers launches new coating

OERLIKON Balzers has developed a process which allows a diamond-like coating (DLC) to be applied to high-friction components using Scalable Pulsed Power Plasma (S3p); a technique which combines the advantages of the arc evaporation and spluttering methods. This means that treated surfaces can now offer high hardness, low friction and a smooth surface.

This S3p technology generates a high level of tetrahedral bonds, with hardness up to 40 GPa, far higher than the 20-30 GPa offered by a typical DLC coating. As such, the new BALIQ CARBOS coating exhibits three times lower wear in a calo test than a 20 GPa hard DLC coating.

In addition, Oerlikon Balzers' new coating delivers both the low friction of carbon coatings, with the smoothness usually associated with the splutter process, giving a roughness of Ra= 0.03 µm. Moreover, this smoothness is achieved without the requirement for any additional polishing treatments. RT