

'VICTREX' RACES WITH FERRARI

ITALIAN automotive electronics specialist Magneti Marelli was so impressed with the performance of 'Victrex' PEEK in a distributor rotor arm (story page 2) that it decided to use the material for a detachable cover on a newly designed alternator which is fitted to the 1986 Ferrari Formula One racing cars. "What was needed

was a material that was light yet could maintain its mechanical strength and electrical resistance at high temperatures and whilst enduring heavy vibration", said a company spokesman.

Three metal inserts in the moulding provide for the cover to be held by screws to the magnesium alloy casing. This allows rapid removal for



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Ferrari Formula One car driven by Stefan Johansson.

maintenance and repair.

The same 30 per cent glass-filled grade of 'Victrex' PEEK was chosen for the moulding of two connector supports used inside the alternator.

And four components in, or mounted near, the Ferrari Formula One engine are being injection-moulded from high-performance composites designed by LNP Plastics Nederland BV, part of ICI Advanced Materials. The injection mouldings replace steel and special alloys, and improve engine performance as well as reducing weight.

The change to reinforced thermoplastics follows discussions and close liaison between Ferrari, LNP, and Cattini, precision moulders of San Martini, Rio, Italy.

The oil pump, turbo inlet and turbo

impeller (pictured left) are moulded from 'Thermocomp' LC composite, based on 'Victrex' PEEK, and reinforced with carbon fibre. For the water pump impeller, a grade of 'Thermocomp' GF, based on polysulphone and reinforced with glass fibres, was devised.

Both grades were 'fine-tuned' by LNP to meet the exacting demands of the applications. These included very high temperature resistance, high

mechanical strength, and low wear-characteristics. Resistance to oils, greases and corrosion is inherent in the composites.

Greater freedom in design has followed the change from metals, together with ability to achieve high rates of production of complex component parts.

Investigation of possible further metal replacement in the Formula One engine continues.



The new design of alternator fitted to the Ferrari Formula One racing cars has a detachable cover made from 'Victrex' PEEK.