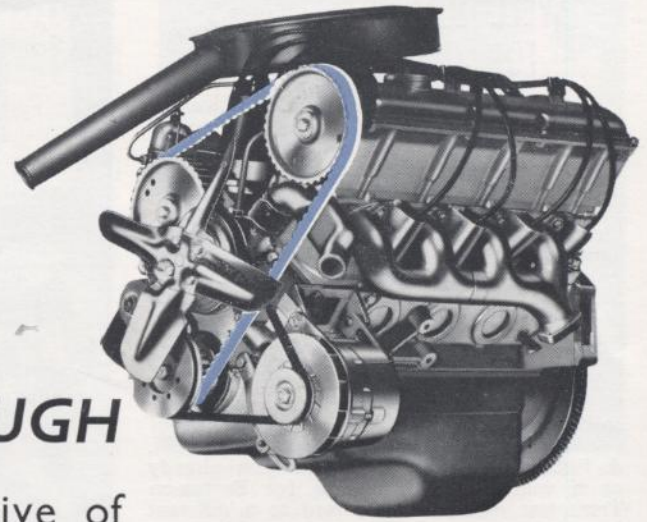


# NEWS

magazine of  
UNIROYAL LTD.



To emphasise the PowerGrip drive we have reproduced this in Uniroyal blue.

## POWERGRIP'S BREAKTHROUGH

Our timing belt chosen for camshaft drive of Vauxhall's 1600 and 2000 models

To Vauxhall goes the honour of being the first automotive company in Britain to introduce OHC engines incorporating the toothed belt drive in a mass-produced range of cars. These are the Victor 1600 and 2000 engines, using a PowerGrip timing-belt manufactured in Edinburgh by Uniroyal.

### FIVE YEARS OF DEVELOPMENT

In 1962 Vauxhall started to evaluate timing belts by replacing the timing chain on a then current push rod engine. From the results obtained, coupled with Uniroyal's extensive knowledge of similar automotive achievements in America, Vauxhall engineers were satisfied that a timing belt was a highly satisfactory driving medium.

When the new OHC 1600 and 2000 engines were designed the Vauxhall engineers looked at the camshaft drive from various aspects—quietness, durability and production cost.

From previous tests they knew that the timing belt was the quietest drive available, and would give an acceptable life. They also found that the belt did not elongate during service, it did not need lubrication, and no oil tight covers were needed to enclose the drive. A timing belt was therefore chosen to drive the camshaft and ancillaries. Uniroyal collaborated with Vauxhall's engineers to develop a drive with an 18 groove  $\frac{1}{2}$  in. pulley for the crankshaft and a 36 grooved pulley on the cam and ancillary drives. After a rigorous test programme it was found that a  $\frac{3}{4}$  in. wide belt was ideally suited to this drive.

In January of this year Uniroyal engineers

*This is the slick line of the new Vauxhall Victors, following the highly successful body-line of the Viva.*

accompanied Vauxhall engineers to Sweden where new engines were tested to evaluate cold starting and cold running conditions. In very low temperatures the load on the belt to turn over the camshaft is far higher than under normal conditions, due to contraction of the metal parts of the engine and the thickening up of the oil under cold conditions. Nevertheless although the cars were left overnight exposed to very low temperatures of 30°F. and in heavy driving snow, the belts performed perfectly at all times.

### BELT IS VIRTUALLY INDESTRUCTIBLE

In the camshaft drive application the belt is virtually indestructible. In an effort to determine the life of the belt Vauxhall engineers wore out three test rigs, at the end of which time the belt was still satisfactory. In the thousands of miles of bench and road-testing carried out not one belt was broken. Tests were also carried out on the Vauxhall 2000 engine with deliberately damaged teeth to see the effects of accidental breakage and it was found that the engine would suffer no damage whatsoever; all that needed to be done was to fit a new belt and re-time the engine. Tests have also been carried out in

### FIRST FIAT, NOW VAUXHALL

Jim Bowman, "The Scotsman" motor-ing correspondent, writing about the International Motor Show, "Fiat show their 1.6 litre Fiat 125 with right hand drive. This car like the new Vauxhall Victor models has an overhead camshaft engine using the PowerGrip belt drive made in Scotland by Uniroyal Ltd. This drive opens up new possibilities in engine manufacture and further developments can be expected."

Germany and in U.S.A. where high temperatures were encountered in the Arizona desert.

Uniroyal is proud to have been selected to work with Vauxhall on this new project and particularly gratified that the timing belt, invented by Uniroyal and the subject of very extensive research and development since its inception, has been selected by Vauxhall to perform this critical function on these new engines.

The results of this development will immediately appeal to owners of the new 1600 and 2000 Vauxhall models, in the absence of noise from the camshaft drive and the consequent considerable reduction in overall engine noise. This will be a new experience in quiet, smooth motoring, achieved in a large measure by the inclusion of the PowerGrip timing belt.

Overleaf we record the highlights of PowerGrip's progress within the automotive industry—an outstanding achievement.

### DANCE SELL-OUT

This year's Edinburgh Dance has had overwhelming support, but there is a waiting list for any tickets that may become available through Committee members. The date is Friday, 1st December—Caledonian Hotel.

### YEAR-END FACTORY HOLIDAYS IN THE U.K.

Edinburgh and Newbridge  
Christmas Day, 25th December  
January 1, 2, 3, 1968

Dumfries  
Christmas Day, 25th December  
January 1, 2, 3, 1968

Bromsgrove  
Christmas Day, 25th December  
Boxing Day, 26th December

