

AUTOS ABROAD: MINIMATIC & MINOROLLS

AT BOTH ends of Europe's immensely broad spectrum of car sizes there is news galore, with the greatest technical interest at the ultra-compact end. Automotive Products Group, which builds Lockheed brakes and Borg & Beck clutches, offers an automatic transmission option for transverse-engined, front-driven 51.7-cu. in. Mini-Minors and rather larger MG-1100 sedans. The unit is a new rival for epicyclic gearing.

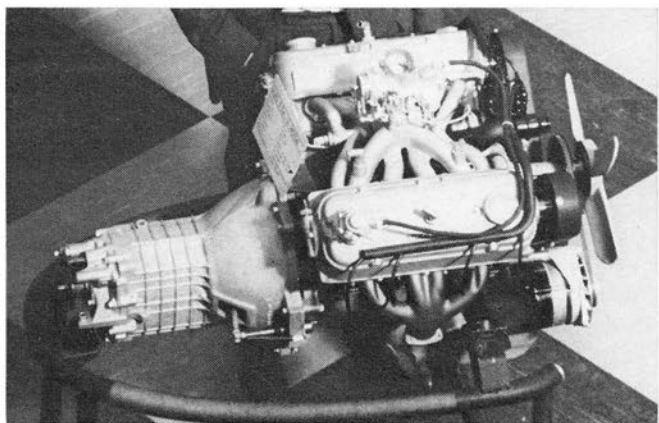
Bevel speed reduction gearing, as used on radial aircraft engines, is the

heart of this system. One set of four bevel gear wheels, located inside a larger similar set, is compounded to provide four forward ratios. Shifting under power is accomplished through a friction clutch engagement. With this notably simple cog-box goes a hydraulic converter of 2:1 torque multiplication, which solidifies at a low engine speed to permit 4-speed gearing to take over. Gears transmit torque from this converter to the remainder of the transmission, which is in the engine base chamber. Thus the entire

system operates in an engine oil bath.

Most buyers probably will use the floor selector's D setting to enjoy full automation, but 4-3-2-1 notches on the quadrant allow the driver to take complete charge should he desire to play at racing without needing to pump a clutch pedal, or to crawl quietly through town in direct drive with the converter working overtime.

ON THE snob-car front, Rolls-Royce has unveiled a *smaller* new model, a V-8 Silver Shadow of 380 cu. in. ▶



JOSEPH LOWREY PHOTO

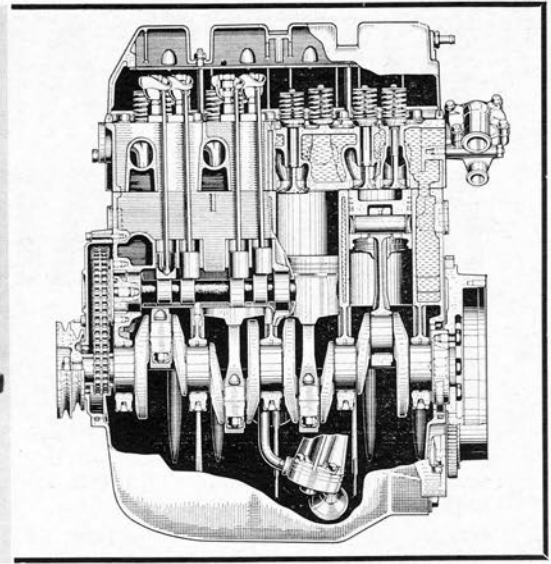
HANS GLAS' brand-new 157-cu. in. V-8, with cog-belt-driven overhead camshafts, was a show-stopper at Frankfurt. The engine, an expansion of the Glas Four, powers the Frua-bodied notch-back GT coupe, below.



ROLLS-ROYCE introduces an answer to the compact car market in the new V-8 Silver Shadow. Features are disc brakes all-round, coil springs and tilt-telescope steering from Saginaw, Hydra-Matic on GM license.



SEIFERT PHOTO



AUTO UNION'S new Audi features four doors and a 4-cycle engine, a new departure from long-time production of the 2-door, 2-stroke/3-cyl. DKW. The new engine has five main bearings, a chain-driven camshaft and pushrods.

AUTOS ABROAD

which at last offers Girling disc brakes instead of drums, and independent coil rear springs with hydraulic height control instead of the usual leaf springs with a beam axle.

Some people wonder whether the designers have yet copied enough features off the 1956 Citroen, and whether they have been too busy evolving "toys" such as electric motor actuation from the selector quadrant to an automatic transmission which, alas, still is the rugged old 4-speed Hydra-Matic built under GM license. More up-to-date American contributions to the Rolls-Royce include Saginaw constant-ratio power steering with torsion bar controlled valves, and Vibrashock cushions of crimped stainless steel wire

mesh which replace rubber as the suspension sub-frame mountings.

OF THE American-owned companies in Europe, Opel teased Frankfurt Auto Show visitors with an experimental coupe built around its new overhead-cam 115.7-cu. in. engine. Underneath it is interesting for such details as brackets for alternative-height rear track bar mountings, showing that serious experiments were in hand. The British end of General Motors has a very nice new Chevrolet-inspired 1966 look for the 201-cu. in. Vauxhall Cresta Six, which has quite stolen the performance image once held by much less refined British Ford Sixes.

Three years after the Cardinal

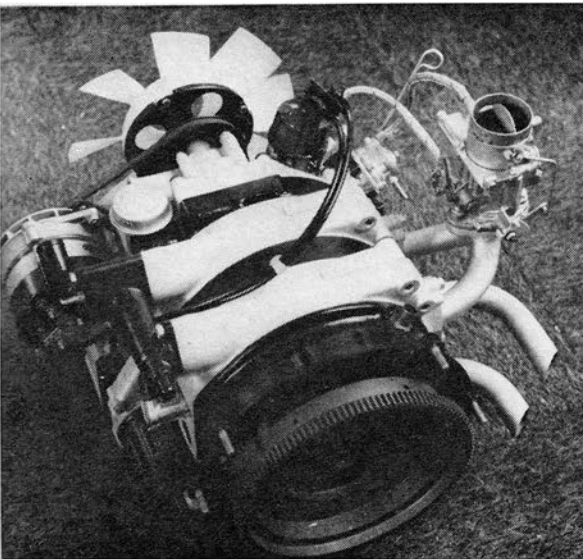
should have appeared, the German Ford Taunus was introduced. Ford of Britain now has followed that American 60° V-4 design with a re-thought engine on similar lines. Apart from slightly greater dimensions (alternative stroke lengths give 101.5 or 121.8-cu. in. displacement) this newer V-4 has a Y-block stretched below the crankshaft, top faces to its cylinder blocks instead of open-deck castings and bowl-in-piston combustion chambers below flat-face cylinder heads. Shortness of this V-4 engine is put to good use in a new range of light trucks, though the first car application is merely a successor to an in-line Four of 91.4 cu. in. under the ample hood of an existing Corsair sedan. A year ago Ford of Cologne introduced a V-6 based on V-4 tooling and Ford of Dagenham (nowadays with Harley Copp imported to follow Victor Raviolo as Chief Engineer) is expected to produce a 1966½ model on these lines. Interestingly, a once-familiar

PRINZ CHASSIS, an unusual body style, 106 mph on 55 DIN bhp, add up to NSU's Autonova.

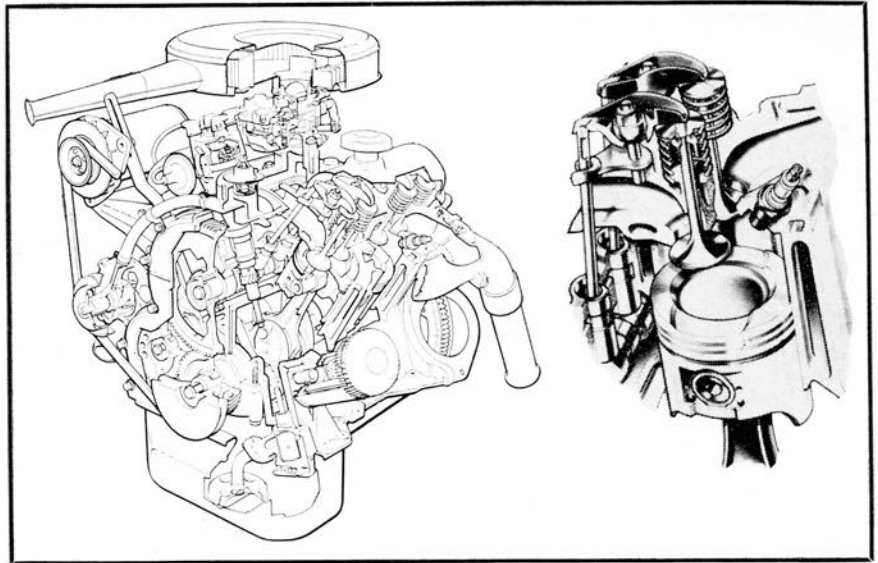


FERRARI'S 2-LITER V-6 Dino is molded into the shape of go as the Berlinetta Speciale by Pininfarina.





VERY COMPACT, double-rotored NSU Wankel develops 110 bhp.



FORD OF Britain now produces a Y-block V-4 of either 101.5 or 121.8 cu. in., with bowl-in-piston combustion chambers, flat-face cylinder heads.

chant that independent rear suspension is bad value for money is no longer heard from Ford engineers!

SIMCA OF Paris, nowadays under Chrysler control, has put a semi-automatic transmission onto a 57.6 cu. in. rear-engined sedan. This option, with a torque converter, but requiring manual selection from three synchromesh gears, seems rather badly behind the times. Rootes of Coventry, now in effect controlled by Chrysler, has extra displacement from a 4-cyl. engine as the season's main news. Added displacement is obtained from a longer throw cast-iron crankshaft supported in five mains instead of in three.

AS YET, the promised 4-seat version of Jaguar's GT coupe, the fast but very silky E-type, is held back by

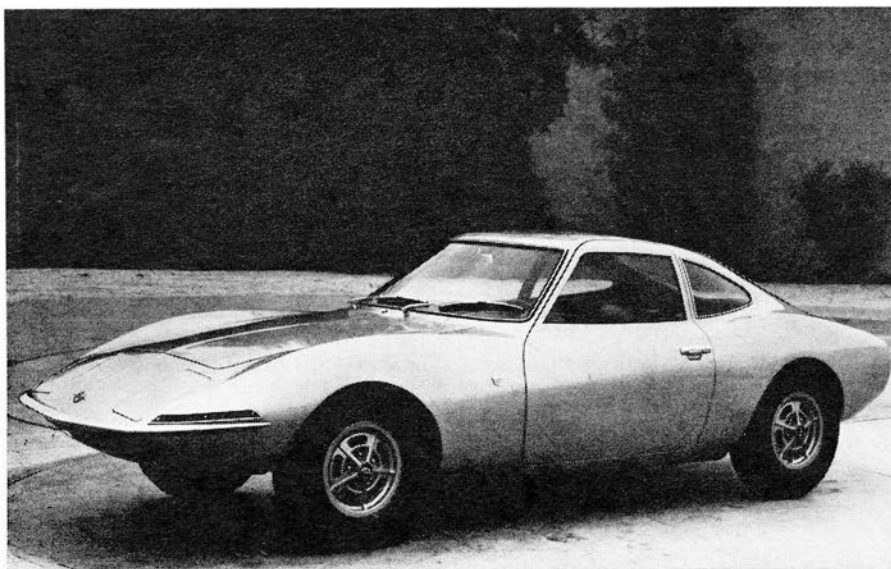
the factory's order book being already full. This is intriguing at a time when a socialist government's policies have put factories such as Austin and Ford onto short work weeks!

At other factories, there is an improved Bristol sports sedan with faster gearing to suit a slightly larger Chrysler V-8 engine. Extra wheelbase length turns the Aston Martin (sales of which were skyrocketed by James Bond publicity far more effectively than they ever were by racing successes) into a DB-6 model with four real seats. Jensen of West Bromwich is paralleling 4-wheel-drive projects with a Chrysler-powered short wheelbase 2-seater incorporating de Dion rear suspension. Only the rear wheels are driven.

Hans Glass, from his modest factory in Bavaria, suprised everyone with a home-made V-8 engine of 157 cu. in.,

using two separate cog-belt overhead camshaft drives of the kind which he has been using on 4-cyl. engines for two years. A twin-rotor version of the NSU-Wankel rotary engine also has been shown in advance of the sports cars which will incorporate it. This double rotary emphasizes how little extra bulk is involved in doubling the power output of the engine now in small-scale production.

NO SPORTS car, British Morris' Diesel-engined Oxford, a 5-seater of 100-in. wheelbase, in testing showed a 20% drop in top speed compared with the gasoline powered model. The Diesel offers 33-34 mpg (U.S.), but extra engine weight induces understeer. Where taxation makes gasoline twice as expensive as Diesel fuel, the car is in demand. —Joseph Lowrey



OPELESCENT GT

REMINISCENT of the Monza GT created by General Motors Styling Staff as an "idea" car for the future Corvairs, this Opel *Grand Tourisme Coupé* could serve as a model for future issue from GM's German-based subsidiary. Announced for "high-speed driving to develop and test body designs, engines, brakes, steering and suspension on the high-speed tracks of the Dudenhofen Proving Ground," this GT-styled coupe has seats for four passengers and full road equipment. Headlights pop up from front panels for night driving, turn signals wink from lenses just over the functional bumper. Power for this little gem is Opel's new 1.9-liter (116 cu. in.) overhead cam 4-cyl. engine, which reportedly pushes it to 124 mph. Opel, for the nonce, says there are no plans for a production version.