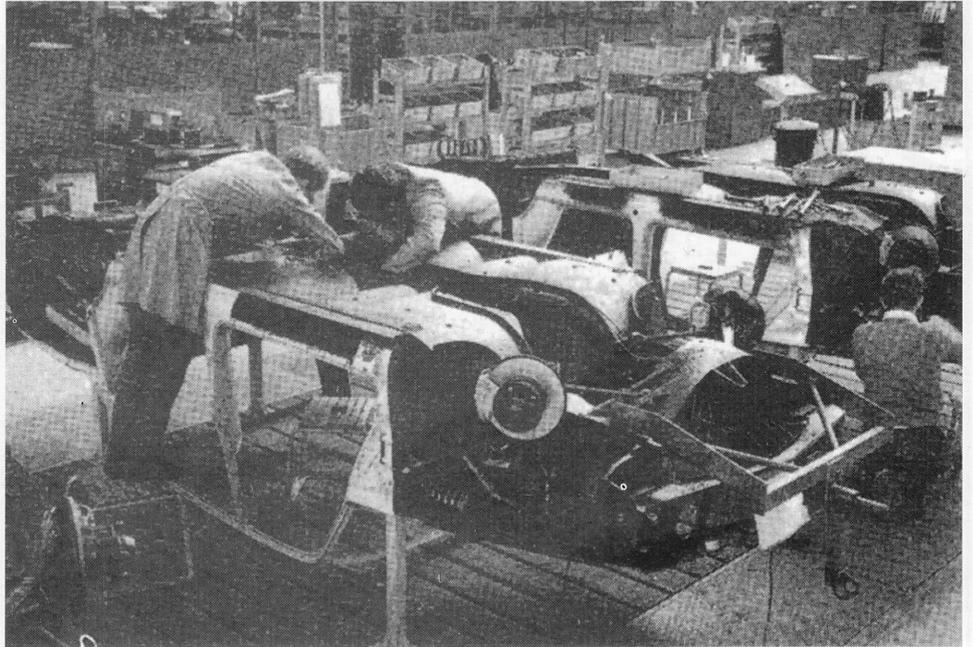


HOW THE ROVER 2000 IS MADE

A look at the Solihull Assembly Plant



When in 1963, the Rover Company decided to put the advanced 2000 into production a special new factory costing over £10-million was built for the purpose at Lode Lane, Solihull, just outside Birmingham. Here the Rover 2000 is assembled on virtually a single continuous line, in a vast hall, to which mechanical components are brought from other Rover factories in the area. This impressive factory is devoted solely to the assembly of the 2-litre cars, the 3-litre P5 Rovers being built across the road on a circular assembly line. To reduce fire hazards the new paint shop serving the 2000 assembly hall has been separated from it, although it is really a continuation of this building. So painted body parts are carried on an overhead

conveyor-line through an enclosed bridge, to the main assembly plant.

Looking first at the paint shop, it is here that the body panels are passed through the two electro-static spray-booths, in which paint particles leave gravity-fed centrifugal bells and are magnetically adhered onto the earthed panels under the influence of a 120,000-volt electrical system. This method is very economical, because about 98% of the paint arrives where it is wanted instead of some 60% spattering all over the paint booth, and no hand-spraying is involved, except for door apertures, etc., on the base units. Also, a very even surface is ensured. Before the final coats of paint go on, primer is smoothed down by the wet-and-dry hand-flattening process, and rubbed with chalk blocks to reveal any rough patches, which are then dealt with. The base units of the car are dipped in paint vats, then dried in the usual ovens. After the dip, two surface and two final coats of paint are applied.

In the assembly hall the base unit moves upside down along the single assembly line at floor-level while the suspension units and brakes, etc., are fitted to it. It is then turned right way up and proceeds along the line for additional components to be fitted. The parts required are brought up to the sides of the assembly line in bins. The engines, each of which has been run for five hours on coal gas at the Acocks Green factory, arrive in Rover's own lorries at Solihull. Pirelli Cinturato tyres predominate, but some cars go out on Dunlop SP41s. After the mechanical components have been fitted to the base unit it moves up from floor-level for more easy attachment of the seats and trim, etc.

Prior to this, each base unit has had all the necessary holes (62 of them) for door and panel attachment, etc., drilled in it by transfer machinery, which does all this drilling as one operation, entirely independently of human intervention. This impressive operation is carried out by a couple of Viltool multi-drillers, made in Wolverhampton.

It is interesting that before the body panels and doors are attached, each Rover 2000 is started up on petrol and driven to one of three short lines, where the wheels are checked for alignment, the lamps are adjusted and the engine and transmission run-up on rollers.

Only when the car has been passed as mechanically 100% does it

ASSEMBLY – Rover 2000 base units move inverted along the assembly line while suspension components, brakes, etc., are fitted. Note the extent of the undersealing.

resume the single assembly line, for the body panels to be fitted. All these body parts arrive on overhead gantries in "prams," or big wire-mesh baskets, each "pram" containing all the parts for completing one body. These "prams" are loaded by hand in the paint shop, for dispatch to the appropriate vehicle awaiting final assembly in the assembly hall. As it is essential that the paint containers are absolutely clean before a different colour paint is sprayed from them,

panels are sprayed one colour one week and a different colour the following week, parts being stacked up as required. Incidentally, six different colours are available in this country and a more vivid range of finishes is provided for Rovers exported to the U.S.A. and elsewhere. All these variants, including l.h.d. and r.h.d. cars, etc., are provided for on the single assembly line.

Various test rigs are at work in the engineering and quality control shops, destruction testing various components such as road wheels, and Rover have a M.I.R.A. crash programme to test body strength in accidents.

Rover make their own seats, carpeting, etc., with upholstery in Connolly hide, these parts being made, and kept in the main stores, at Cardiff, to provide more room for the assembly processes at Birmingham, so that lorries are continually passing up and down M50 with parts for cars on the Solihull assembly line.

The aforesaid "prams" are attached to the cars and move with them along the continually-moving assembly line, operative taking out the parts as they are required. After this each car is washed in one of two washers and then goes on one of two lines through the wind-and-rain test, the car being rocked on rollers and having jets of water blown over it at the equivalent of 30 m.p.h. while an observer sits inside noting whether any moisture intrudes.

The cars, as finished vehicles, leave the assembly hall for testing on Rover's own 2¼-mile test track. This test track, adjacent to which there is also a jungle-course for giving Land-Rovers an ordeal, is invaluable, not only for trying out secret prototype vehicles, which are also taken to M.I.R.A. for more specialised running, but because every car made at Solihull can be driven there without the need for insurance, trade plates and other complications.

When I inquired how far each Rover 2000 was driven in this manner I was told that time is of no account. The cars are brought back for rectification of any faults, in a bay that includes pits for examining the underparts of the vehicle, and tested again, until the drivers are quite satisfied with them. This normally takes from three to 30 miles, but can, as with a Rolls-Royce, occupy a day, a week or a month, if this is necessary.

After this the completed cars are dried and travel along the waxing

lines, when they are wax polished and those for export are protected with anti-corrosive.

Even now the testing isn't finished. A team of four or five girl drivers take the newly-polished cars for a final check run on the test track. If all is well, the cars are finally sent along a line for further washing and to have their tool-kits, carpets and wheel trims, etc., fitted. These finishing processes are undertaken in the leg of the main hall, which is L-shaped. A car park for 2,000 vehicles beside the factory accommodates cars and Land-Rovers until they are needed for dispatch to places the World over.

When the Rover 2000 was conceived the capacity for making it was 550 cars a week. Last August a night shift was introduced and today some 800 of this model are being built every week. Of these, about 60% are TCs and 10% automatic-transmission 2000S. Incidentally, the TC model not only has twin carburettors but a different oil-cooler, more sound-damping, and different exhaust manifolding from the 2000SC and, rather surprisingly, weighs 34 lb. more than the 2000 Automatic, although this is perhaps a compliment to the comparatively low weight of the Rover-modified Borg-Warner type 35 gearbox.

While I was at "The Rover" I had a chat with the Technical Director, Peter Wilks. He feels that the Leyland take-over should enable Rover to increase output without in any way reducing the quality of their cars. He does not envisage a resumption of competition work in the immediate future, although it was useful for getting rid of the "grannie" image of the P4 models when the 2000 was being

promoted. He is very much in favour of the de Dion back axle as introduced for the 2000 as a means of keeping the back wheels upright and reducing unsprung weight; light-alloy sections have been tried for this component but it is likely to continue in its existing form, with inboard disc brakes and the ingenious split tube to accommodate track changes permitted by the fixed-length universally-jointed drive shafts, a joint composed of bronze sliding bushes lubricated with oil being contained within the de Dion tube itself. This layout was introduced for the Formula Two Rover Special built by Peter Wilks and Spencer King some 16 years ago (reference to which will not, I hope, make Mr. Wilks feel unduly senile!) and which was used for the Rover T3 gas-turbine coupé of 1953.

The Rover Company might be thought to be having a difficult time at the moment, on three separate counts – the recent take-over, the American safety-requirements, and the need to develop new models. Sir Donald Stokes is, I gather, making the first quite painless, the last are, I can murmur through sealed lips, well in hand, while so far as the American market is concerned, it has been found possible to get two brake boosters and the pump for a refrigerated air-conditioner under the compact bonnet of the 2000. Rover already has a crash-safe base unit and crash tests at M.I.R.A. showed that U.S. requirements could be met by making minor frontal changes, while a system similar to Chrysler's has been developed to combat air pollution from the exhaust. Rovers have never been in greater demand, the Company is run by keen and experienced practical engineers, so the future of a make which has its roots in Solihull looks completely secure. – W.B.

Reproduced article taken from Motor Sport magazine in June 1967