Could the RV8 have had PAS originally?

With the increasing interest in PAS retrofits, Victor Smith looks back at a PAS installation carried out for MG Rover in 1994.

MG Rover recognised power steering might be a welcome option for RV8 buyers, so in 1994 approached a specialist company, Steering Developments at Hemel Hempstead, to undertake a PAS conversion. A dealer demonstration RV8 - Oxford Blue 900025 registered as K 17 MGR – was made available for the exercise and by early October 1994 the installation was completed. The vehicle was returned to Maelin Evans at the Cowley MGR sales office with a report highlighting the major problem posed by the RV8 was a lack of space available to accommodate the more bulky power steering rack and the additional pump and mounting bracketry. The report added that it was “not possible to offer power steering on an RV8 already equipped with air conditioning as the lack of space was greater”. That difficulty was particularly pronounced in the routing of the lower steering column which passes through the offside engine mounting. Also because the position of the column is fixed where it passes through the bulkhead, it was necessary to find a power steering rack which had an identical pinion angle to the manual one fitted to production RV8s.

A great deal of effort was made to find a steering rack which would reproduce the original steering geometry as near to the original specification as possible. A comprehensive search of available steering racks was made from which four units were shortlisted from a BMW 325, Volvo 360, Ford Escort and a Ford Fiesta. The racks were obtained and then many hours of development work were undertaken and the Fiesta unit was eventually chosen, primarily for simplicity of mounting and optimum orientation of the hydraulic porting. It was necessary to use a lefthand drive unit which was turned over to achieve the correct relationship of pinion to rack. It was found that it was possible to position the rack such that its centre line was within 10mm of the manual steering rack. Proximity to the crankshaft pulley prevented a closer match. Steering Developments noted the manual rack had a travel of 160mm which was higher than most power steering units where travel is not greater than 140mm as with the Fiesta. Consequently there was an increase in the turning circle of the RV8 fitted with PAS to 12.6m but the resulting inconvenience was felt offset by the power assistance resulting in easy low speed manoeuvring.

A Saginaw TC type power steering pump was mounted to the nearside of the engine. It was driven from the crankshaft using the same pulley and spacer ring arrangement used on the air conditioning installation. Oil temperature was controlled by the incorporation of a “trombone” type cooler located in the return (low pressure) line and in front of the radiator. The maximum temperature recorded during 1,200 miles of testing was noted as 82°C at an ambient of 25°C. The oil reservoir was located at bonnet height and secured to the inner wing on the front offside of the engine bay.

Four key modifications were noted – the removal of the rack mounting feet on the subframe to permit the fixing of the PAS rack mounting bracket, re-routing of the lower radiator hose via a new steel tube to clear the PAS rack pinion housing plus shortening and re-flaring the lower inlet tube, the removal of the lower steering column and pinion extension from the manual rack for use in the new column assembly and finally the removal of part of the plastic cowling on top of the radiator to...
provide clearance with the reservoir and low pressure pipe. MG Rover provided a subframe assembly to assist with PAS rack installation development work.

The result was the production of a satisfactory power steering system which was available for demonstration on an RV8. The hope was that the PAS option could be offered as a retrofit through MG Rover distributors with a supporting advertising campaign to encourage take up of the PAS installation. The plan was the vehicles would be fitted with the PAS system at the Power Steering factory in Hemel Hempstead which would obviate the need for crash testing and Power Steering would also provide cover for the product liability of the modified steering system. It was hoped the dealer demonstration RV8 fitted with PAS would be made available to MG Rover dealers so they could promote sales of the retrofit. But as some 80% of RV8 production went to Japan fitted with air conditioning, the potential market for this PAS option was relatively small with only 399 RV8s supplied to the UK and European non air conditioned specification.

Over recent years the demand for PAS for the RV8 has grown, no doubt because so many drivers have become progressively conditioned to the low steering effort and convenience of PAS fitted to other more modern cars they drive on a regular basis. In Japan an electro power assisted steering option using the MGF EPAS unit was developed and fitted to a significant number of RV8s there, many of which have found their way as exports to Australia, New Zealand and Europe and as reimports to the UK. A decade later an electro hydraulic PAS system was developed and marketed by a commercial workshops company in Cambridgeshire and reports indicate enthusiasts having their RV8s or MGBGT8s modified with that installation have been pleased with the result.

If you do have an RV8 with a retrofit PAS, one issue you will have to deal with is the need to notify your motor insurer as you have a duty to disclose any modification to a vehicle, particularly one to the steering which is usually considered a “safety critical” component. The insurer may require details of the type of installation and who carried out the work, but we have had no reports where this has given rise to a difficulty.