CATEGORY 2.

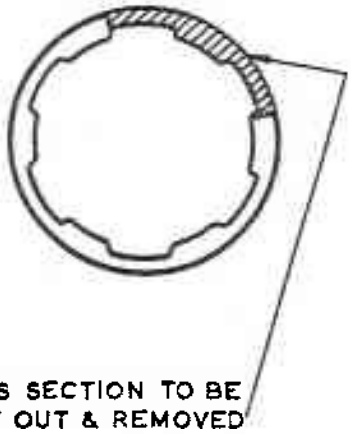
AUTOMATIC GEARBOX LEAKS.

After prolonged running at high speed it may be possible for air pressure inside the gearbox to rise sufficiently to force oil through the normally satisfactory front pump oil seal.

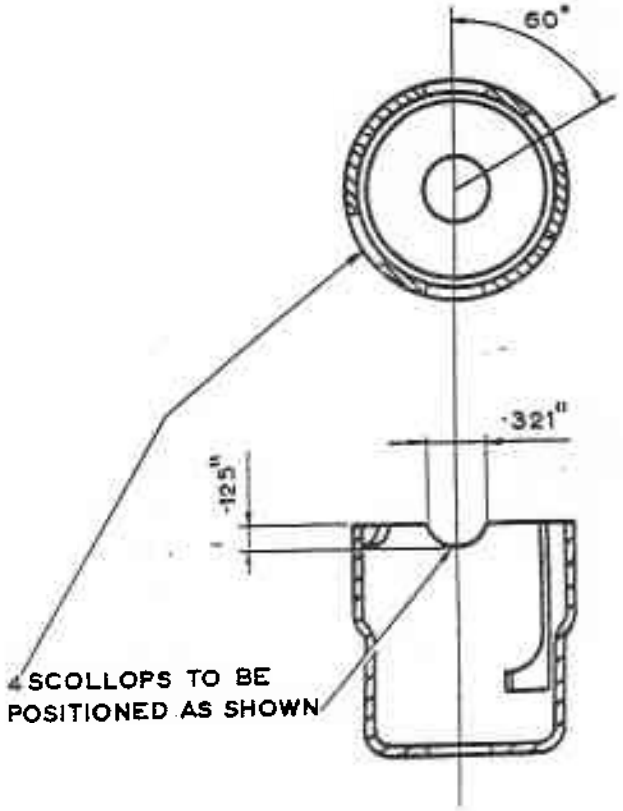
This possibility is overcome by modifying the automatic gearbox oil breather and level indicator so that the pressure is relieved sufficiently to prevent oil leakage.

PROCEDURE.

Take the oil breather and level indicator from the gearbox and carefully remove the retaining device securing the retaining cap to the indicator rod. The retaining device may be either a cee clip, spring clip, or split pin. This will allow the retaining cap, the copper mesh crimp and the serrated washer to be removed from the indicator rod. Cut the serrated washer and file the retaining cap as illustrated. Thoroughly clean and remove all metal particles, re-assemble the components and replace the assembly in the gearbox.



Serrated Washer.



Retaining Cap.

The time permitted for this work is one hour. The modified breather is evidence that these modifications have been incorporated.

CANCELS SERVICE BULLETIN NO. AG.12.
Issued 1.4.57. Ref. SE/VK/TRY.1/RS.

FOR INFORMATION

There are two methods of air breathing incorporated in the automatic gearbox; either through the four scollops machined in the dipstick guide sleeve or through the filter cap past the segment removed from the serrated washer.

It is of the utmost importance that the correct dipstick is fitted into its appropriate guide sleeve to permit adequate breathing. Incorrect matching may result in oil leakage or the ingress of water.

The method of gearbox breathing introduced on production entails the machining of four hemispherical scollops in the top of the dipstick guide sleeve. This machining is carried out prior to assembly to eliminate the possibility of swarf etc. entering the gearbox, only unmodified dipsticks are fitted into this type of scolloped guide sleeve.

Service Bulletin AG 11 details the air breather modification that should be carried out on dipsticks fitted into unscolloped guide sleeves. As can be seen, this entails the removal of a large segment of the serrated washer and the filing of four hemispherical scollops in the retaining cap. All dipsticks modified in this manner must only be fitted into unscolloped guide sleeves.

All unmodified dipstick caps fitted into unscolloped guide sleeves must be modified to conform to the above mentioned specifications.

When automatic gearbox dipsticks are removed ensure that the correct dipstick is returned to its appropriate guide sleeve:

i.e. All <u>modified</u> dipsticks are fitted to unscolloped guide sleeves.

All <u>unmodified</u> dipsticks are fitted to machine scolloped guide sleeves.

Cancels Bulletin No.AG.13 dated 20.5.57.

FOR INFORMATION.

LOOSENING OF TORUS COVER SETSCREWS AND CONSEQUENT OIL LEAKAGE FROM AUTOMATIC GEARBOXES.

Complaints of oil leakage from the torus cover have been found due to incorrect tightening of the cover setscrews. Tightening of the setscrews once or twice in sequence, is insufficient to provide even tensioning of all the setscrews.

Tensioning of the 30 setscrews must be carried out in sequence THREE times, to allow for the necessary compression of the cover gasket, and so obtain the correct final torque value (26 lbs.ft.)

As a further precaution these must again be checked for correct tensioning after road test.

APPLICABLE TO:

Rolls-Royce Silver Cloud.
Bentley 'S' Type.
Bentley 'S' Type Continental.
Rolls-Royce Silver Wraith.
Rolls-Royce Phantom IV.
Rolls-Royce Silver Dawn.
Bentley 'R' Type.

This Bulletin cancels Service Bulletin No. AG. 14 dated 13.8.57.

FOR INFORMATION

DISCONTINUATION OF 1000 MILES SERVICE

A comprehensive review of the servicing requirements of the automatic gearbox has confirmed that the 1000 miles schedule may now be discontinued. This decision has been made possible by the high manufacturing standards attained and by careful attention to the final adjustment of bands and controls prior to the car leaving the factory.

Servicing is now unnecessary before the 2,500 Miles Schedule, but it is considered advisable to check the gearbox for leaks whenever the opportunity occurs.

FOR INFORMATION

TORUS COVER GASKET - UG.134

Torus cover gaskets have been found unserviceable or difficult to fit when required after storage, due to shrinkage. Shrinkage is caused by the loss of moisture content and is accelerated when the gaskets are exposed to adverse atmospheric conditions.

Gaskets are now available from Hythe Road, London; packed in air exhausted, hermetically sealed Polythene bags, which should not be opened until immediately before the gasket is required.

All gaskets should be stored in a cool position away from any source of heat. This applies even to gaskets sealed in protective bags if the maximum protection against shrinkage is to be obtained.

FOR INFORMATION.

AUTOMATIC GEARBOX.

The following modification should be carried out to prevent water entering the gearbox by way of the dipstick aperture, only when the gearbox has already been removed for some other reason and is to be refitted into the chassis. All replacement gearboxes will incorporate this modification.

A small excluder in the form of a semi-circular shield is to be fitted around the dipstick guide, secured by a hammer drive hardened screw and sealed with Bostik to prevent ingress of water.

File a horizontal flat approx. 0.4" deep on the outside of the dipstick housing sufficiently deep to receive the right angled drilled location lip of the water excluder (see Fig. 1).

Locally clean surfaces free from dirt and oil, and remove the dipstick. Liberally coat the bottom of the water excluder and the matching surface of the dipstick housing with Bostik adhesive. Position the excluder over the dipstick sleeve and using the location lip as a guide, drill a 0.062" diam. hole through the dipstick housing and guide sleeve for the hardened hammer drive screw (see Fig.1). Ensure that no swarf enters the gearbox while drilling. Ascertain that the excluder is firmly stuck in place and hammer the hardened screw into position to securely retain the excluder.

Machine the face of the dipstick as shown in figure 2 to allow 0.062" clearance for gearbox breathing. Clearly mark the top of the dipstick with RED paint to indicate that this has been carried out.

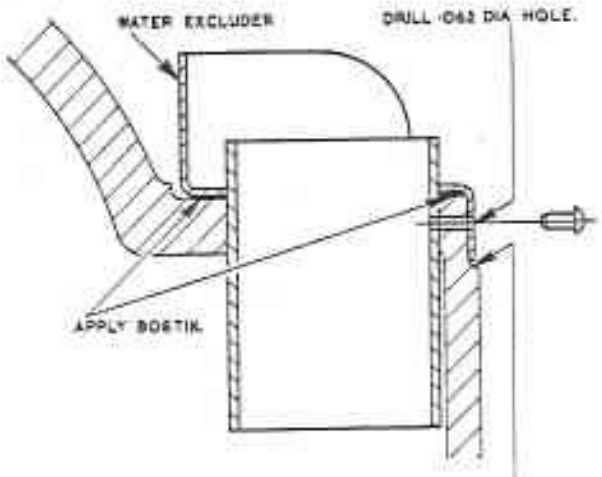


Fig.1.

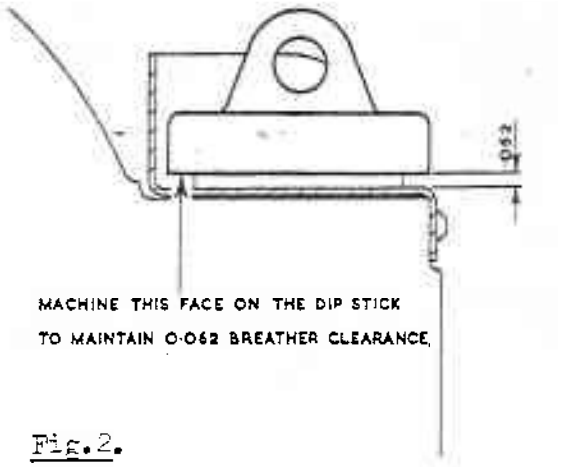


Fig.2.

Material:

1 Nettlefolds Parker-Kalon 'U' Type hardened hammer drive screw.	Part No. RE14441
1 Water excluder.	Part No. UG3106
Bostik adhesive No. 252.	

NOTE: applicable to all Hydramatic transmissions from R-Type / Silver Dawn to S2 / Silver Cloud II.
This is also a remedy for a grooved torus neck.

This Bulletin cancels all previous Service Bulletins No. AG.17.

OIL SEALS - FRONT PUMP

Difficulties have arisen concerning the fitting of the oil seal between the front pump cover and the torus cover. The following is a brief outline of the stages of modification in order of their introduction :

1. The seal fitted to S1 cars was pressed fully home into the annular locating recess. Early S2 cars had an identical seal (UG.3670), but this was not pressed fully into the recess. A modification was then introduced, interposing a washer between the seal and the recess end face in order to more effectively control the seal position.

2. A further modification incorporated the re-positioning of the seal recess on production pump covers so as to obviate the necessity for a packing washer.

3. Current S2 cars are being fitted with a new type of seal (UG.4107) requiring a recess position similar to that of stage 1 pumps. No packing washer is required and the seal is pressed fully into the recess so as to contact the end face.

Seal UG.4107 is to be supplied as a replacement for fitting to S1 and S2 cars. Existing stocks of seal UG.3670 are to be used up.

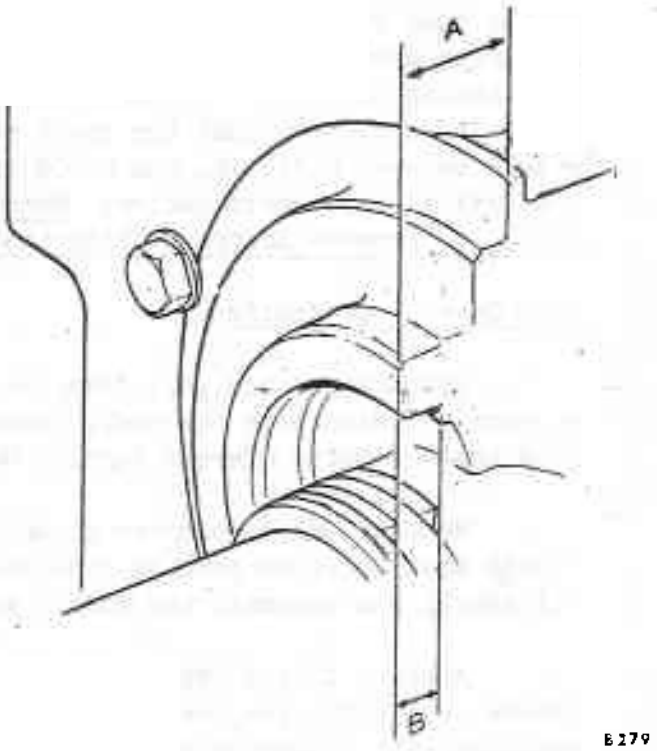


Fig.1. Pump Cover Checking Dimensions.

UG.3670 - PROCEDURE FOR FITTING

Remove the old seal by tapping it outwards, taking care not to damage the adjacent machined faces.

Using a depth gauge or vernier callipers, measure dimensions 'A' and 'B' given in Figure 1. Subtract dimension 'B' from dimension 'A'. A result which lies between 0.355 in. and 0.400 in. indicates that the cover is not of the modified type and that a washer must be fitted; a result between 0.415 in. and 0.450 in. indicates a modified pump, requiring no action.

Insert the washer UG.3941 into the recess with chamfered face leading, apply a little 'Wellseal' jointing compound to the outer wall of the recess, lubricate the new seal with transmission fluid and tap the seal into position with a hide mallet.

New Parts Required

UG.3941	Washer	1 off
UG.3670	Oil Seal	1 off

UG.4107 - PROCEDURE FOR FITTING

It will be necessary in some cases to carry out a machining operation on the pump cover in order to accommodate the seal. Identification of covers requiring machining is by the dimensional check outlined in the instructions for fitting UG.3670. A check dimension which lies between 0.415 in. and 0.450 in. indicates that the cover must be machined to accept the seal. A result between 0.355 in. and 0.400 in. indicates that the cover will accept the seal without modification. Where a packing washer has been fitted, this should be removed before fitting the new seal.

Pump Cover - to Modify

Extract the old seal from the cover, then remove the pump from the gearbox and dismantle the pump, using the procedure given in Overhaul Section 9 of the Automatic Gearbox Service Manual.

Machine the pump cover to increase the depth (Dimension B., Fig.1) of the seal location bore by .050 in. Thoroughly clean the cover to remove all swarf, and assemble the pump. Refit the unit to the gearbox.

Apply a little 'Wellseal' jointing compound to the outer wall of the recess, lubricate the new seal with transmission fluid and tap the seal into position with a hide mallet.

New Part Required

UG.4107	Oil Seal	1 off