

Number F.1.
Section Gearbox and
Overdrive
Sheet 1 (of 1)
Date October, 1961

GEARBOX CONSTANT PINION OIL SEAL

Models affected

2.4 litre Mark 2)
3.4 litre Mark 2)
3.8 litre Mark 2)

Commencing Gearbox Numbers

GBN.55050

"E" Type

EB.868

On cars with the above gearbox numbers and onwards, a flanged-type constant pinion oil seal (Part Number C.18739) is fitted to the recess in the clutch housing. The interchangeability is not affected but it should be noted that a chamfer of approximately 1/16" (1.6 mm) should be made on the edge of the recess to provide a "lead-in" for the seal. The oil seal should also be well lubricated before pressing into the recess.

Spares Bulletin Number D.5 refers.

Amendment to Service Bulletin Numbers FF.3 and FF.4.

Under commencing chassis numbers in the above bulletins insert the following:-

	R.H. Drive	L.H. Drive
2.4 litre Mark 2	109308	126499

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WARRANTY - LAYCOCK OVERDRIVE UNIT

(Home Trade only)

If trouble is experienced with an overdrive unit during the period of warranty (12 months) the unit should on no account be dismantled as the manufacturers are consequently unable to test and examine the parts in their original condition.

Only external checks, such as valve setting and hydraulic pressure testing should, therefore, be undertaken.

If, on dismantling a low mileage unit which is just outside the warranty period, it is found subsequent to examination that an out-of-warranty claim may be justified, the unit must be completely re-assembled and returned to these works in accordance with the normal warranty procedure. No claim will be considered if the unit is incomplete.

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BENCH TESTING THE OVERDRIVE SOLENOID.

(All Models)

It should be noted that on no account must a solenoid be energised before fitting to the car.

As the solenoid plunger has no load to carry, the impact of it opening the contact points will be sufficient to bend the contact arm, preventing the points from opening.



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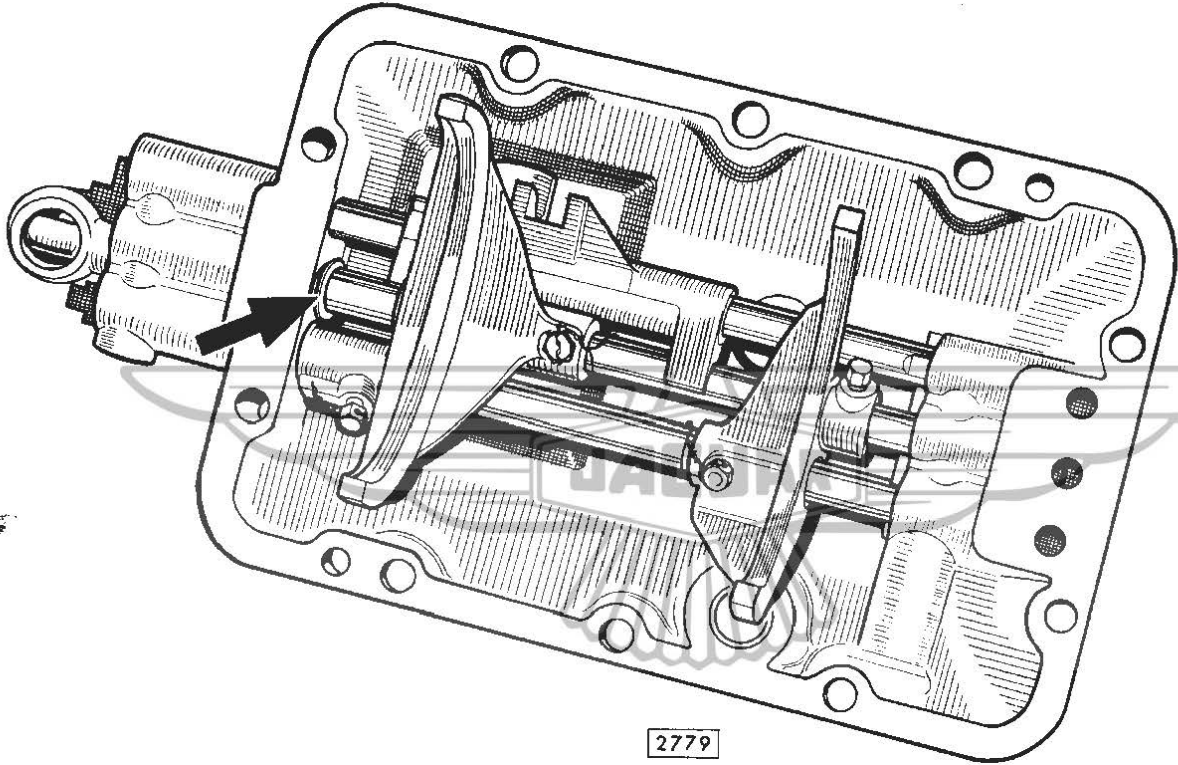
STICKING IN 1ST GEAR.~~(All synchromesh gearbox models)~~

If difficulty is experienced with sticking in first gear the following procedure should be adopted.

Remove the console trim and gearbox tunnel cover, then the top cover of the gearbox. It may then be necessary to use two levers to ease the 1st speed gear forward on the 2nd speed synchro-sleeve. Ignore the slight damage which may have occurred to the stop pin on the 2nd speed synchro-sleeve.

With the gearbox top cover on the bench, remove the selector housing by taking off the four retaining nuts. This will expose the three plunger springs which should be removed together with the plunger and balls (and shims if any). Withdraw the centre welch washer at each end of the top cover by piercing and prising as necessary. Then remove the wired dowel pins retaining the stop and the change speed fork on the centre striking rod so that this may be driven forward a sufficient amount to fit a washer $\frac{3}{4}$ " (19 mm) outside diameter and $\frac{1}{2}$ " (12.7 mm) inner diameter, thickness $\frac{1}{16}$ " (1.6 mm) onto the rod behind the change speed fork. Ensure that the washer clears the selectors on the other striking rods. (See illustration overleaf).

Replace the striking rod, change speed fork and stop and refit the two dowel pins wiring them up as before. Fit new welch washers either end of the top cover then replace the three balls, plungers, springs and shims (if fitted) in the respective holes. Use a new gasket when replacing the selector housing and fit a new gasket on the gearbox case top face. Place the gearbox in neutral offer up the top cover noting that it is located by two dowels and secure in position with the ten setscrews and spring washers (two long screws at rear and two short screws at front). Replace the tunnel cover and trim.



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Date March, 1964.

GEARBOX NEEDLE ROLLERS.

(All models)

The needle rollers on which the countershaft and 2nd and 3rd speed gears rotate are now graded according to their diameter and rollers of one grade only must be used in individual gear assemblies.

The part numbers of the individual grades are as follows:-

<u>Part No.</u>	<u>Description.</u>	<u>No. off.</u>
C.918/1	Needle Roller, on Countershaft (3 mm $\begin{matrix} +.0001'' \\ -.0000'' \end{matrix}$)	58
C.918/2	Needle Roller, on Countershaft (3 mm $\begin{matrix} +.0000'' \\ -.0001'' \end{matrix}$)	58
C.918/3	Needle Roller, on Countershaft (3 mm $\begin{matrix} -.0001'' \\ -.0002'' \end{matrix}$)	58
C.1850/1	Needle Roller, in 2nd and 3rd Speed Gears (3.5mm $\begin{matrix} +.0001'' \\ -.0000'' \end{matrix}$)	82
C.1850/2	Needle Roller, in 2nd and 3rd Speed Gears (3.5mm $\begin{matrix} +.0000'' \\ -.0001'' \end{matrix}$)	82
C.1850/3	Needle Roller, in 2nd and 3rd Speed Gears (3.5mm $\begin{matrix} -.0001'' \\ -.0002'' \end{matrix}$)	82

Spares Bulletin No. D.15 refers.

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4 SPEED ALL SYNCHROMESH GEARBOX.

Service Bulletin F.9 refers to the 4 speed all synchromesh gearbox as being optional extra on the 3.4/3.8 'S' Models. This gearbox has now become standard equipment on all 'S' models and also on the 2.4, 3.4 and 3.8 Mark 2 models.

The chassis introduction numbers of the Mark 2 models are given below:

<u>Model affected.</u>	<u>Commencing chassis numbers.</u>	
	<u>R.H.Drive.</u>	<u>L.H.Drive.</u>
2.4 litre Mark 2	119200 plus 119149 to 119151	127822
3.4 litre Mark 2	169341 and 169285	180188
3.8 litre Mark 2	234125 plus 234079 to 234089	224150

The engine idling speeds and recommended lubricants are as stated on Service Bulletin F.9.

DISMANTLING (Mark 2 Models)

Removal of Clutch Housing.

Detach the springs and remove the carbon thrust bearing.

Unscrew the two nuts and remove the clutch slave cylinder.

Remove the allen screw, push out the fulcrum pin and detach the clutch fork.

Tap back the locking tabs and break the locking wire and remove the eight setscrews.

Detach the clutch housing.

Removal of Top Cover.

Remove the ten setscrews and lift off the lid.

Removal of Overdrive. (Overdrive Models)

Remove the six nuts securing the overdrive to the extension, that is two nuts at each side and the two lowermost nuts of the four on the long studs. Withdraw the overdrive.

Unscrew the seven setscrews securing the extension to the rear of the gearbox.

Withdraw the cam, tap back the tab washer and unscrew the large nut.

Removal of Countershaft.

Remove the fibre plug from the front end of the countershaft.

Drive out the countershaft from the front of the casing.

Important: Ensure that the rear washer (pegged to casing) drops down in a clockwise direction looking from the rear to avoid trapping the washer with the reverse gear when driving the mainshaft forward (see illustration). This is effected by rocking the gearbox casing and moving the reverse lever backwards and forwards.

Removal of Constant Pinion Shaft.

With the aid of two tyre levers ease the constant pinion shaft forward until it can be withdrawn.

Removal of Mainshaft.

Tap the mainshaft through the rear bearing ensuring that the reverse gear is kept tight against the first gear.

After removal of the rear bearing from the casing fit a hose clip to the mainshaft to prevent the reverse gear from sliding off.

Slacken the reverse lever bolt until the lever can be moved to the rear.

Lift out the mainshaft forward and upward.

Lift out the countershaft gear unit and collect the needle bearings.

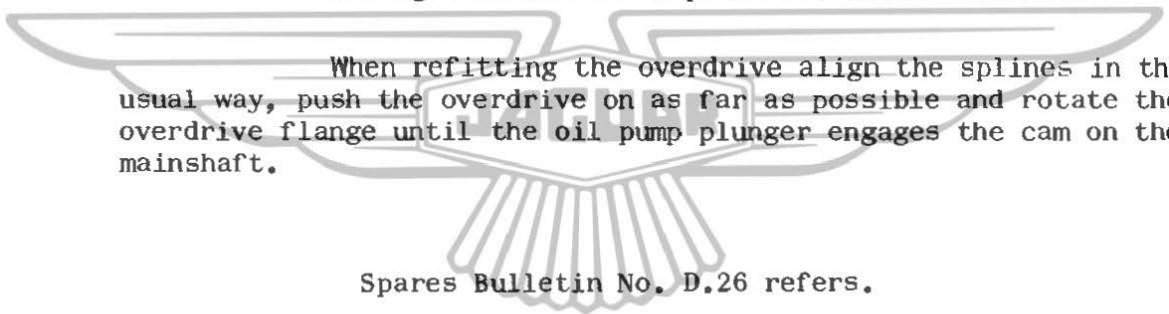
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Withdraw the reverse idler shaft and lift out the gear.

Reassembly.

Reassembly is the reverse of the dismantling procedure but the following points should be noted.

1. Attach the rear thrust washer to the casing with grease and retain in position with the countershaft.
2. Fit the needle rollers to the countershaft gear unit with grease.
3. To mesh the countershaft gear unit with the mainshaft turn the gearbox upside down and enter the countershaft taking care not to displace the needle rollers.



When refitting the overdrive align the splines in the usual way, push the overdrive on as far as possible and rotate the overdrive flange until the oil pump plunger engages the cam on the mainshaft.

Spares Bulletin No. D.26 refers.

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COMPACT OVERDRIVE UNIT

<u>Models affected</u>	<u>Overdrive Unit number</u>
4.2 Mark 10	28/60552
3.4/3.8 "S" Models	28/60572
3.4/3.8 Mark 2	28/61740
3.4 Mark 2	28/61743

In isolated instances "slipping in reverse" and "sticking in overdrive" conditions have occurred in the above units.

To overcome these faults a modification kit, Jaguar Part No. 11301 (Laycock Part No. 65980) is now available and consists of the following items:-

<u>Jaguar Part No.</u>	<u>Item</u>	<u>Laycock Part No.</u>
11303	Clutch return spring (Set of 6)	65966
11304	Packing washer for accumulator spring (1)	62023
10968	Operating valve (1)	60686
C.5965	Tab Washer (4)	65300

Fitting Instructions

Remove the engine and gearbox as a unit from the car as detailed in Section "B" of the appropriate Service Manual.

Remove six nuts and lockwashers and detach the overdrive unit from the adaptor plate attached to the rear end of the gearbox.

Release the tab washers and remove four nuts, tab washers and the two operating piston bridge pieces.

Release the solenoid securing screws to allow the front casing of the unit to be removed.

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Remove the four nuts and washers and separate the front and rear casings.

Lift out the clutch sliding member complete with thrust ring, bearing and sunwheel.

Examine the clutch linings on the sliding member for signs of excessive wear or charring.

If wear is apparent, renew the clutch sliding member, Jaguar Part No. 10848 (Laycock Part No. 65920) and the thrust bearing, Jaguar Part No. C.5968 (Laycock Part No. 65024).

The unit can now be re-assembled by reversing the dismantling procedure. Fit the new clutch return springs, contained in the modification kit and painted red on the end coil.

Unscrew the main operating valve plug, located on the bottom of the unit on the same side as the solenoid.

Remove the spring, plunger and ball.

Remove the operating valve by inserting a piece of stiff wire in the central bore and withdrawing downwards.

Insert the new valve contained in the kit, ensuring that the hemispherical end engages on the flat of the small operating lever on the operating shaft.

Refit the ball, plunger and spring.

Refit the plug and tighten fully, ensure when fitting that the copper washer is correctly located.

Check the solenoid setting as detailed on Page F.25 of the 3.4/3.8 "S" model Service Manual, Page F.28 of the 4.2 Mark 10 Service Manual and Page F.31 of the Mark 2 Service Manual.

Invert the unit and withdraw the accumulator spring plug. Care must be taken not to lose any packing washers which may be fitted between the spring and the plug.

Place the packing washer 11304 (62023) contained in the modification kit in the base of the plug. This is additional to any which may already be fitted.

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Refit the plug and sealing washer.

Note: The addition of packing washer 11304 (62023) will raise the hydraulic pressure to -

Unit 28/60552 - 540/560 P.S.I.

Unit 28/60572 - 490/510 P.S.I.

Unit 28/61740 - 490/510 P.S.I.

Unit 28/61743 - 480/500 P.S.I.

Reassemble the unit to the engine and refit to the car.

The modifications referred to in this Bulletin have been introduced in production build by Laycock Engineering Ltd., commencing with -

Unit 28/60552/1342 - 4.2 Mark 10

Unit 28/60572/8407 - 3.4-3.8 "S" type

Unit 28/61740/2647 - 3.4-3.8 Mark 2

Unit 28/61743/1116 - 2.4 Mark 2

Spares Bulletin D.30 refers.

Number F.15

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Date December, 1966

GEAR LEVER RETAINING WASHER
(Standard and Overdrive Transmission)

<u>Models affected</u>	<u>Commencing Gearbox Numbers</u>
2.4 Litre Mark 2)	
3.4 Litre Mark 2)	JCN.3467
3.8 Litre Mark 2)	
3.4 Litre 'S' Type)	
3.8 Litre 'S' Type)	JBN.8121
4.2 Mark 10	JZN.923
4.2 'E' Type F.H.C.	EJ.7920
4.2 'E' Type Open	EJ.7920
4.2 'E' Type 2+2	EJS.7920

Isolated instances have occurred where the bonded rubber bush at the bottom of the gear lever has allowed the lever to become detached.

To prevent this, a dished retaining washer has now been fitted between the bush and lever securing nut, and the above serial numbers record the commencement of the modification.

The retaining washer may, if desired, be fitted to gearboxes prior to the above numbers as follows:-

Remove the console and gear lever grommet as detailed in the appropriate Service Manual.

On 4.2 'E' Type cars it will also be necessary to remove the tunnel cover.

Remove the retaining nut at the base of the lever.

Fit the washer with the hollow face to the bonded rubber bush and refit the retaining nut.

Refit the gear lever grommet and console.

Rescal the tunnel cover on 4.2 'E' Type cars with a good quality sealing compound to prevent the entry of water.

Spares Bulletin D.31 refers.

Number F.16
Section Gearbox and Overdrive

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Date March, 1967

COMPACT OVERDRIVE UNITS

(ALL MODELS)

A recent modification has been introduced to the Adaptor Plate fitted to Compact Overdrive units.

Whilst this modification in no way affects interchangeability (in consequence, the Part Numbers remain unchanged) it is ESSENTIAL that in the future only the new item is used with replacement units fitted to a car.

It is IMPORTANT that all Compact Overdrive Units which are to be returned under guarantee claim should be removed from the gearbox COMPLETE WITH THE ADAPTOR PLATE and returned to the Works as an assembly.

IT IS EMPHASISED THAT FAILURE TO ADHERE TO THESE INSTRUCTIONS WILL RESULT IN THE GUARANTEE CLAIM BEING NULLIFIED.