



Service Department:

THE ROVER COMPANY LIMITED

SOLIHULL
WARWICKSHIRE
ENGLAND

LAND-ROVER SERVICE NEWS LETTER
No. 8

March 1961

Item 46 SUBJECT:
MODELS:
REMARKS:

RECOMMENDED LUBRICANTS (Policy item)

Land-Rover.

In addition to the Rover recommended lubricants detailed in News Letter No. 112, Item 584 and in the current Instruction Manuals we now recommend Regent Oils. See chart below:

These recommendations apply to temperate climates where operational temperatures may vary between approximately 10°F (-12°C) and 90°F (32°C). Information on recommended lubricants for use under extreme winter or tropical conditions can be obtained from The Rover Co. Ltd., Technical Service Department.

LAND-ROVER

COMPONENTS	S.A.E.	REGENT
PETROL ENGINE, AIR CLEANER AND GOVERNOR	20W	Havoline 20/20W
DIESEL ENGINE AND AIR CLEANER	20W	RPM Delo Special 20
GEARBOX, DIFFERENTIALS, SWIVEL PIN HOUSINGS, STEERING BOX, STEERING RELAY, REAR POWER TAKE-OFF, PULLEY UNIT AND CAPSTAN WINCH	90EP	Universal Thuban 90
LUBRICATION NIPPLES	—	Marfak Multi-Purpose 2

The following multigrade oil is approved for use under the S.A.E. numbers it covers:
Havoline Special 10W/30

Item 47 SUBJECT:
MODELS:
MODIFICATION:
PART NUMBERS:

CARBURETTER STARTER UNIT, ANTI-ICING

Land-Rover Series II 2¼ litre Petrol

Introduction of a heater element conversion kit for the carburetter starter box to eliminate 'icing up'.

Carburetter starter unit, anti-icing, complete assembly	....	....	1	527281
Carburetter starter unit assembly	....	....	1	527280
Sealing washer, elbow to starter	....	....	1	503922
Cable, green	....	....	1 ft.	357072
Cable, white/brown	....	....	3 ft.	357081
Cable, white/blue	....	....	6 ft.	527328
4 B.A. eyelet	} For cables	....	1	527270
2 B.A. eyelet		....	1	527271
Snap-in connector		....	3	3632
Snap connector		....	1	3549
Lucar connector		....	1	510697
Lucar sleeve		....	1	260345
Cleat fixing cable	....	....	4	240429

REMARKS: The conversion kit under Part No. 527281, which is complete with fitting instructions, can be fitted to any earlier Land-Rover 2½ litre Petrol model.

The heater element is wired in parallel with the manual and thermostatic switches operating the cold start warning light, and therefore the heater element functions immediately the cold start control is pulled out beyond the fast idle position. The warning light operates as previously, that is, it glows when the engine is at running temperature and indicates that cold start and heater element are no longer necessary. The cold start control should then be pushed in until the warning light is extinguished, and thereafter progressively until the engine is sufficiently warm to idle normally, when the control must be pushed fully home. The heater in operation warms the ducted air as it enters the starter box, therefore preventing an 'icing-up' condition in that region. The fast idle position on the cold start control allows the engine to run at higher r.p.m., necessary to prevent stalling until the engine is fully warm.

Item 48 SUBJECT: STEERING KICK OR WHEEL WOBBLE

MODELS: All Land-Rover.

PART NUMBER: Spring for swivel cone bearing 2 242742

REMARKS: Judging from our usage figures on the above part, swivel cone bearing springs are being fitted in an attempt to cure steering wheel kick, but replacement is actually seldom required and will by itself not normally cure such a complaint.

A certain amount of kick is experienced over rough surfaces, but where this is excessive or if actual wheel wobble should be reported the following checks must be carried out.

Only after these checks have failed to reveal the cause, should the cone bearing springs be examined.

Checks:

- (i) Ensure that the bolts securing the steering box to its mounting bracket, and the bolts securing the bracket to the frame, are tight. Also ensure that the stiffener bracket Part No. 504276 R.H.D. or 504272 L.H.D. is fitted.
- (ii) Check the steering box adjustment—Workshop Manual, Operation G/6.
- (iii) Check for tightness the nuts securing drop arm to rocker shaft and nuts securing ball joints to track rods and steering arms.
- (iv) Check the ball joints for excessive wear and renew as necessary.
- (v) Check the relay top and bottom lever clamp bolt for tightness and check for wear on lever and shaft splines. Rectify any play in the relay unit.
- (vi) The through bolts securing relay to chassis must be checked for tightness, also the four bolts at the bottom plate of the relay. Check the bolt flanges for cracking and check the fit of the bottom of the relay in the spigot.
- (vii) The nuts and studs securing the steering arms must be checked, and ensure that the one special "fitting" stud on each side is a tight fit and that it positively locates the arm.
- (viii) Check shock absorber action—replace if weak. Examine the rubber bushes and replace as necessary. Check shackle pins and bushes for wear and tighten the spring 'U' bolts. Ensure that the spring location bolt has not sheared and that its seating hole is not elongated.
- (ix) Check all the spring leaves, either side of the centre bolt, for breakage.
- (x) Check the front wheel alignment—Section G, Workshop Manual.
- (xi) Check the road wheels for out-of-balance and rectify as necessary.
- (xii) Check the swivel pin poundage figure (Item 50 in this News Letter). Check for cone and spline wear.
- (xiii) Check for badly or unevenly worn tyres. Similar tread pattern tyres should be fitted. Check the pressures. (Normal road condition—25 lb/sq.in. (1,7 kg/cm²) all round.)
- (xiv) While the vehicle is on ramp or pit, it is a good plan to examine the chassis members and axle casing for accident damage.

Item 49 SUBJECT: FRONT AXLE SWIVEL PIN AND OIL SEAL SETTING

MODELS: All Land-Rover.

REMARKS: An improved method of fitting the shims and oil seals to the axle swivel pin assemblies is detailed below. It supersedes Operation F/34 in Section F of the current Land-Rover Workshop Manual.

To assemble

1. Examine the bottom taper roller race and swivel pin for wear and renew as necessary. The bearing should be a light press fit in the housing and a light push fit on the swivel pin. If a new bearing race is slack in the housing, the housing must be renewed; if it is slack on the swivel pin, the swivel pin assembly must be renewed.
2. Examine the upper cone seat and swivel pin for wear and roughness and rectify as necessary. The cone seat should be a light press fit in the housing; if a new cone seat is slack in the housing, the housing must be renewed.
3. Examine the cone bearing for wear or roughness and rectify or renew as necessary.
4. Examine the surface of the swivel pin bearing housing for signs of corrosion or damage, and renew if necessary.

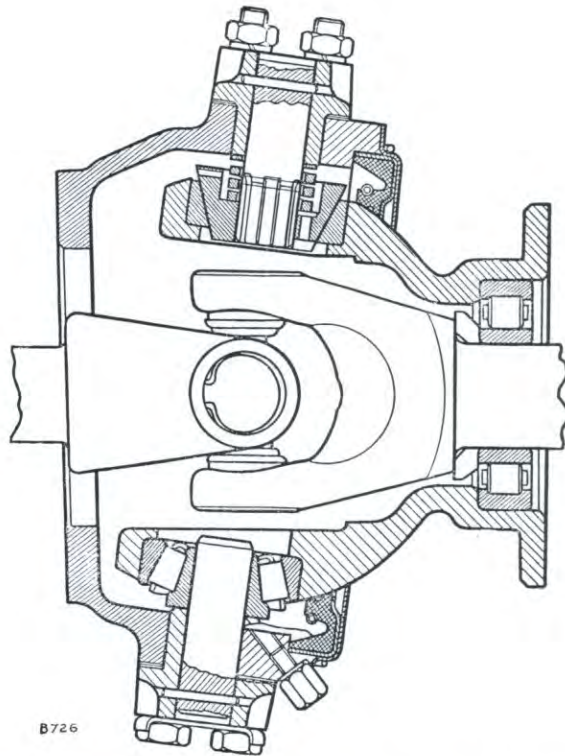


Fig. 1. Cross-section of universal joint housing assembly.
(Fig. F-19 in Land-Rover Workshop Manual)

5. Press the roller race outer member and cone seat squarely into the swivel pin housing as far as possible.
6. If necessary, renew the axle casing oil seal, by prising out the seal from the end of the axle casing. The new seal must be fitted with the knife edge inwards.
7. Place the swivel pin housing oil seal and retainer over the axle casing flange, and fit the joint washer in position on the joint face of the flange.
8. Fit the half-shaft roller race outer member and race in the swivel pin bearing housing and fit the housing to the axle casing flange.

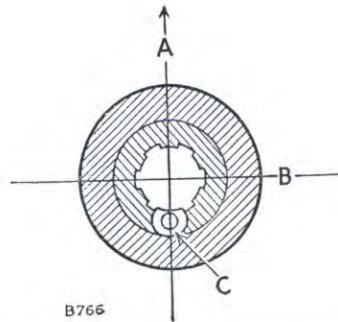


Fig. 2. Setting the cone bearing.

(Fig. F-20 in Land-Rover Workshop Manual)

A—Front of vehicle. B—Centre line of front axle. C—Vertical oil hole.

9. Insert the cone bearing after smearing with oil, with the vertical oil hole in the bearing towards the rear of the vehicle. See Fig. 2.
 10. Insert the race inner member and, holding it in position, offer the swivel pin housing to the bearing housing.
 11. Replace the swivel pin and bracket assembly at the bottom of the swivel pin housing, together with the shims removed on stripping, to the value of .040 in. (1,0 mm), and tighten down. Sharply tap the assembly to ensure positive seating and again check the tightness of the securing nuts.
 12. Insert the cone spring in the top bearing.
 13. Fit the swivel pin and steering lever assembly at the top of the swivel pin housing, fitting the shims, removed on stripping, to the value of .040 in (1,0 mm). Note that the double steering lever is fitted to the L.H. assembly on R.H.D. models and to the R.H. assembly on L.H.D. vehicles.
 14. Pull down the top swivel pin securing nuts evenly in rotation until tight, then check the resistance to rotation of the steering lever. Using a suitable spring balance as shown in Fig. 3, add or subtract shims at the top until a figure of 14-16 lb. (6,25-7,25 kg) is obtained.
 15. Pack the swivel pin housing oil seal with heavy grease, and fit the seal and its retainer to the swivel pin housing.
- Check that the oil seal wipes the full surface of the bearing housing; adjust the position of the oil seal by slackening off the retainer bolts and re-setting the seal as necessary.

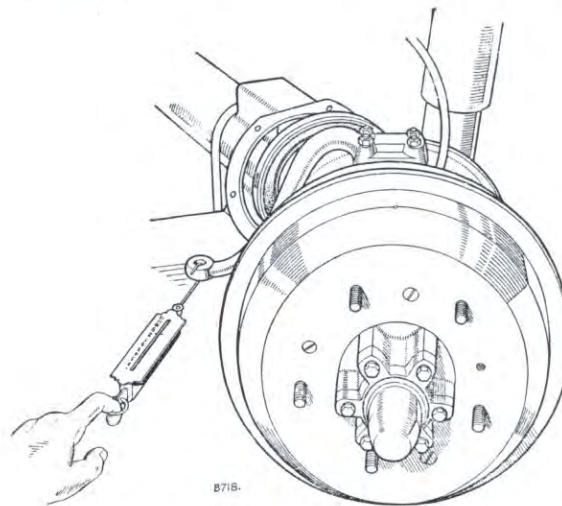


Fig. 3. Checking resistance figure.

(Fig. F-21 in Land-Rover Workshop Manual)

16. Check that there is a .050 in. (1,2 mm) clearance between the stub and half-shaft yoke lugs and the swivel pin end faces. If the clearance is insufficient, increase the chamfer on the radius of the yokes.
17. Set the lock stop bolts, so that the head of the bolt protrudes $\frac{1}{2}$ in. (12,5 mm) from face of oil seal retainer. See Fig. F-26 in Land-Rover Workshop Manual.
18. Replace the half-shaft, universal joint and stub shaft assembly, taking care not to damage the oil seal in the end of the casing.
19. Replace the stub axle and brake anchor plate.

Item 50 SUBJECT:
 MODELS:
 REMARKS:

HYDRAULIC FRONT WINCH

Land-Rover Series II.

An Instructional Leaflet, Part No. 4376, has been prepared, and gives workshop removal and overhaul procedure covering the hydraulic front winch fitted to the Land-Rover Series II models.

Copies of the leaflet, which is intended for those Distributors, Dealers and Fleet Owners who are actually dealing with this item of equipment, can be obtained free of charge from The Rover Company Ltd., Technical Service Department. English version only obtainable.

Please note that the following items are not part of the hydraulic front winch conversion kits, Part No. 524135 and 524136. They must be ordered separately as required:

Heavy duty front road spring, driver's side	1	265627	} 88
Heavy duty front road spring, passenger's side	1	264563	
Heavy duty front road spring, driver's side	1	276034	} 109
Heavy duty front road spring, passenger's side	1	265627	
Exhaust silencer	1	523655	109 Station Wagon