

THE ROVER COMPANY LTD.

SERVICE DEPARTMENT

Telegrams :
" ROVREPAIR "
SOLIHULL

SOLIHULL
BIRMINGHAM
ENGLAND

Telephone No.
SHELDON 2461

ROVER SERVICE BULLETINS, Commencing AUGUST, 1951

Dear Sirs,

We are enclosing with this letter the first of our series of Service Bulletins for the period August, 1951, onwards. As in the past, they will not be issued at regular intervals, but rather as and when the necessity arises.

The system of numbering these bulletins is similar to that initiated at August, 1949. Each bulletin will bear a serial number (commencing at 1) prefixed by a letter in accordance with the list of sections set out below. Thus Bulletin A1 is the first dealing with the engine, Bulletin X2 is the second one on the subject of lubrication and so on. In addition, each serial number will bear a prefix "2," to prevent confusion with the previous series.

Future bulletins should be filed in numerical order under the appropriate section letter, so facilitating speedy location of information concerning a specific aspect of the car or Land-Rover.

INDEX TO SECTIONS.

A — Engine	M — Fuel system
B — Clutch, pedal and linkage	N — Exhaust system
C — Gearbox, transfer box and freewheel	P — Electrical system
D — Propeller shaft	Q — Instruments and controls
E — Rear axle	R — Body
F — Front axle	S — Wheels and tyres
G — Steering column and linkage	T — Extra equipment
H — Brake system	U — General instructions
J — Suspension	V — Reclamation schemes
K — Chassis details	W — Specification
L — Cooling system	X — Lubrication
Y — Tools	

It will be noticed that each bulletin sheet bears an issue number ; a re-issued page will bear a higher issue number and should be filed to replace the copy originally circulated, which can then be removed from your file and destroyed.

It is our desire that the fullest technical information shall be imparted to our agents and we shall welcome any comments or suggestions from them.

Yours faithfully,



Technical Service Manager,

THE ROVER CO. LTD.

Re-issued 23/1/52, to incorporate new section index letter "V" for reclamation schemes.

Issue 2

Date 12/3/51

Sheet 1 of 1 Sheet

MODELS AFFECTED
1950-51 LAND-ROVER

UNIT AFFECTED
LUBRICATION

RECOMMENDED LUBRICANTS

COMPONENTS	VACUUM		WAKEFIELD		ESSO		PRICE'S		SHELL		Classification
	Agricultural	Car	Agricultural	Car	Agricultural	Car	Agricultural	Car	Agricultural	Car	
ENGINE, AIR CLEANER AND GOVERNOR	—	Mobiloil Arctic Special	Agriacastrol Z	Castrol Z	Esolube 10	Esolube 10	Energol Tractor Oil 10	Energol S.A.E.10	—	X 100-S.A.E.10 or Silver Shell	S.A.E.10W
	Mobiland 620 Tractor Oil	Mobiloil Arctic	Agriacastrol LT	Castrolite	Esolube 20	Esolube 20	Energol Tractor Oil 20	Energol S.A.E.20	Tractor Oil 20	X 100-S.A.E.20 or Single Shell	S.A.E.20W
	Mobiland 630 Tractor Oil	Mobiloil A	Agriacastrol Medium	Castrol XL	Esolube 30	Esolube 30	Energol Tractor Oil 30	Energol S.A.E.30	Tractor Oil 30	X 100-S.A.E.30 or Double Shell	S.A.E.30
	Mobiland 640 Tractor Oil	Mobiloil AF	Agriacastrol Heavy	Castrol XXL	Esolube 40	Esolube 40	Energol Tractor Oil 40	Energol S.A.E.40	Tractor Oil 40	X 100-S.A.E.40 or Double Extra Shell	S.A.E.40
UPPER CYLINDER LUBRICANT	Mobil Upperlube	Mobil Upperlube	Castrollo	Castrollo	—	—	Energol U.C.L.	Energol U.C.L.	Donax U	Donax U	—
GEARBOX AND TRANSFER BOX	Mobiland 650 Tractor Oil	Mobiloil D	Agriacastrol Heavy	Castrol XXL	Esolube 50	Esolube 50	Energol Tractor Oil 50	Energol S.A.E.60	Tractor Oil 50	X 100-S.A.E.50 or Triple Shell	S.A.E.50
	—	Mobilube CW Special	Agriacastrol Medium	Castrol XL	Gear Oil 80	Gear Oil 80	Energol Tractor Oil 40	Energol S.A.E.40	Tractor Oil 30	X 100-S.A.E.30 or Double Shell	S.A.E.80 Gear Oil or S.A.E.30 Engine Oil
DIFFERENTIALS AND TRACTA JOINTS	Mobiland EP Gear Tractor Oil	Mobilube GX90 or Mobilube EPW Mobilube GX80	Agriacastrol Gear Oil EP	Castrol Hi-press	Expec Com-pound 90	Expec Com-pound 90	Energol Tractor Oil 90	Energol S.A.E.90	EP Tractor Gear Oil S.A.E.90	Spirax 90 EP	S.A.E.90EP (Wakefield S.A.E.140) S.A.E.80EP
	—	Mobilube CW Special	Agriacastrol Gear Oil EP	Castrol Hypoy 80	Expec Com-pound 80	Expec Com-pound 80	Energol Tractor Oil 80	Energol S.A.E.80	—	Spirax 80 EP	—
STEERING BOX AND LUBRICATION NIPPLES	Mobiland Gear 140 Tractor Oil	Mobilube C	Agriacastrol Gear Oil Medium	Castrol D	Gear Oil 140 Heavy	Gear Oil 140 Heavy	Energol Tractor Oil 140 Gear	Energol S.A.E.140	Tractor Gear Oil S.A.E.140	Spirax C-S.A.E.140 or Dentax 140	S.A.E.140
	—	Mobilube CW Special	Agriacastrol Gear Oil Medium	Castrol ST	Gear Oil 80	Gear Oil 80	Energol Tractor Oil 50	Energol S.A.E.90	Tractor Oil 30	X 100-S.A.E.30 or Double Shell	S.A.E.80 Gear Oil or S.A.E.30 Engine Oil
STEERING RELAY LEVER (SEALED)	Mobiland Gear 140 Tractor Oil	Mobilube C	Agriacastrol Gear Oil Medium	Castrol D	Gear Oil 140 Heavy	Gear Oil 140 Heavy	Energol Tractor Oil 140 Gear	Energol S.A.E.140	Tractor Gear Oil S.A.E.140	Spirax C-S.A.E.140 or Dentax 140	S.A.E.140
REAR POWER TAKE-OFF AND PULLEY UNIT	Mobiland 620 Tractor Oil	Mobiloil Arctic	Agriacastrol Light	Castrolite	Esolube 20	Esolube 20	Energol Tractor Oil 20	Energol S.A.E.20	Tractor Oil 20	X 100-S.A.E.20 or Single Shell	S.A.E.20W
	Mobiland 640 Tractor Oil	Mobiloil AF	Agriacastrol Heavy	Castrol XXL	Esolube 40	Esolube 40	Energol Tractor Oil 40	Energol S.A.E.40	Tractor Oil 40	X 100-S.A.E.40 or Double Extra Shell	S.A.E.40

NOTE: 10°F. = -12°C.; 32°F. = 0°C.; 90°F. = 32°C.
Whenever possible, the "Agricultural" grades of lubricant should be used; the corresponding "Car" grades are shown as alternatives when they are not obtainable. If neither of these grades is available, good quality oils corresponding to the S.A.E. numbers may be used.

Re-issued 12.3.51 to introduce "Mobiland" range of Vacuum agricultural grade oils and "Energol Tractor" range of Price's Agricultural grade oils. This sheet replaces that already in your file dated 20.9.49, which should be removed and destroyed.

Issue 2

Date 12.3.51

Sheet 1 of 1 Sheet

MODELS AFFECTED

1950-51 "75"
1948-51 LAND-ROVER

UNIT AFFECTED

ENGINE

COMPLAINT

DETONATION

On receipt of a complaint of detonation (or "pinking"), attention should be paid to the following points :—

- (a). Clean the distributor contact breaker and adjust to the correct clearance—.014 to .016 in. (0,35 to 0,40 mm.).
- (b). Check the carburetter tuning and, if necessary, adjust as described in the Instruction Manual or Workshop Manual.
- (c). In cases where low grade petrol (having an octane value of 72 or less) is used, it will be found advantageous to retard the ignition timing by means of the octane selector on the distributor. The firing-point should be re-set as follows :—
 1. "75" : 2-3° ($\frac{3}{4}$ flywheel tooth) before T.D.C. instead of the standard 8°.
 2. Land-Rover : 10° ($2\frac{1}{2}$ -3 flywheel teeth) before T.D.C. instead of the standard 15°.

Re-issued 12.3.51 to alter distributor contact breaker clearance.

This sheet replaces that already in your file dated 25.9.50, which should be removed and destroyed.

Issue 1

Date 12.3.51

Sheet 1 of 1 Sheet

MODELS AFFECTED
1948-51 LAND-ROVER

UNIT AFFECTED
CARBURETTOR

COMPLAINT. LOSS OF ENGINE POWER, WITH BLACK SMOKE ISSUING FROM THE EXHAUST PIPE. SOMETIMES THE ENGINE STOPS COMPLETELY; ENGINE CAN BE RE-STARTED IF IT IS LEFT STATIONARY FOR FIVE MINUTES.

CAUSE. Ice formation in the carburettor choke.

REMEDY.

1. Raise the under bonnet temperature by blanking-off part of the radiator grille panel, especially below the R.H. headlamp. By experimenting with baffles of varying size a cure can usually be effected. If trouble is still experienced:—
2. Disconnect the top rocker cover and crankcase breather pipes at the carburettor intake elbow and allow them to breathe to atmosphere; blank off the two holes in the elbow by means of short lengths of rubber tubing blanked at one end with suitable plugs (e.g. bolts) and secured to the elbow with hose clips.

NOTE 1. It is most important to re-connect the breather pipes to the carburettor elbow when warmer conditions return.

NOTE 2. Remedy 2 must *not* be used where a vehicle is operated under dusty conditions; a cure must be effected by blanking-off the radiator.

Issue 2

Date 12/3/51

Sheet 1 of 3 Sheets

MODELS AFFECTED
1950 LAND-ROVER

UNIT AFFECTED
SPECIFICATION

TECHNICAL SPECIFICATION

Vehicle numbers	...	...	...	...	R06100001, L06100001, R06200001, L06200001, R06300001 and L06300001 onwards.
Number of cylinders	...	...	...	...	4
Bore	...	...	...	...	69.5 mm. (2.736 in.)
Stroke	...	...	...	...	105 mm. (4.134 in.)
Cylinder capacity	...	...	...	...	1595 c.c. (97.34 cu. in.)
R.A.C. rating	...	...	...	...	11.98 H.P.
Compression ratio	...	...	...	...	6.8—1
Compression pressure (at cranking speed)	...	...	...	...	140 lbs./sq. in. (9.8 Kgs/cm ² .)
Brake horse-power...	...	...	...	...	50-55 at 4,000 R.P.M.
Maximum torque	...	...	...	...	80 lbs./ft. (11 mKg.) at 2000 R.P.M.
Firing order	...	...	...	...	1, 3, 4, 2
Crankshaft, number of bearing	...	...	...	...	3
Main bearings, type	...	...	...	...	Detachable steel shell, white metal lined
Minimum diameter for regrinding main journals	...	...	...	...	.040 in. undersize
Connecting rod bearings, type	...	...	...	...	Detachable steel shell, white metal lined
Minimum diameter for regrinding crankpin journals	...	...	...	...	.040 in. undersize
Pistons, number of compression rings	...	...	...	...	2
Pistons, number of scraper rings	...	...	...	...	2
Maximum diameter for boring	...	...	...	...	.040 in. oversize
Camshaft, number of bearings	...	...	...	...	4
Camshaft drive	...	...	...	...	Pre-stretched endless duplex chain with hydraulic tensioner
Valve seat angle	...	...	...	...	Inlet 30°; exhaust 45°
Tappet clearance (cold or at running temperature)	...	...	...	...	Inlet: .010 in. (0.25 mm.); exhaust: .012 in. (0.30 mm.)
Inlet valve opens	...	...	...	...	9° before T.D.C.
Valve timing	...	...	...	...	Exhaust peak (No. 1 cylinder) 114° before T.D.C.
Contact breaker gap	...	...	...	...	.014 to .016 in. (0.35 to 0.40 mm.)
Ignition control	...	...	...	...	Octane selector, mechanical governor and vacuum control
Ignition timing	...	...	...	...	15° before T.D.C.
Sparking plugs	...	...	...	...	Lodge HLNR
Sparking plug gap...	...	...	...	...	.023—.026 in. (0.60—0.65 mm.)
Carburettor	...	...	...	...	Solex 32 PBI2
Air cleaner	...	...	...	...	AC oil-bath
Oil pressure	...	...	...	...	35-40 lbs./sq. in at 30 m.p.h. (2.5—2.8 kgs/cm ² at 50 k.p.h.)
Sump capacity	...	...	...	...	10 pints (5.5 litres)
Cooling system capacity	...	...	...	...	17 pints (9.75 litres)
Clutch	...	...	...	...	Borg & Beck single plate 9 in. (230 mm.) diameter

Re-issued 12.3.51 to alter distributor contact breaker clearance.

This sheet replaces that already in your file dated 20.9.49, which should be removed and destroyed.

Issue 1

Date 20/9/49

Sheet 2 of 3 Sheets

MODELS AFFECTED
1950 LAND-ROVER

UNIT AFFECTED
SPECIFICATION

TECHNICAL SPECIFICATION

Main gearbox	...	...	...	...	Single helical constant mesh with synchro-mesh on third and top speeds
Main gearbox ratio, top	...	...	...	...	Direct
" " " third	...	...	...	...	1.377—1
" " " second	...	...	...	...	2.043—1
" " " first	...	...	...	...	2.996—1
" " " reverse	...	...	...	...	2.547—1
Main gearbox oil capacity	...	...	...	...	4 pints (2,25 litres)
Transfer box	...	...	...	...	2-speed gear in main gearbox output
Transfer box ratio, high	...	...	...	...	1.148—1
Transfer box ratio, low	...	...	...	...	2.888—1
Transfer box oil capacity	...	...	...	...	6 pints (3,5 litres)
					High transfer
Overall gear ratio, top	...	...	...	...	5.396—1
" " " third	...	...	...	...	7.430—1
" " " second	...	...	...	...	11.023—1
" " " first	...	...	...	...	16.165—1
" " " reverse	...	...	...	...	13.743—1
					Low transfer
					13.578—1
					18.697—1
					27.738—1
					40.676—1
					34.581—1
Propeller shafts	...	...	...	...	Hardy-Spicer, open
Rear axle	...	...	...	...	Semi-floating
Front axle	...	...	...	...	Drive transmitted through Tracta joints
Final drives	...	...	...	...	Spiral bevel, 4.70—1
Differential oil capacities	...	...	...	...	3 pints (1,75 litre)
Tracta joint oil capacity	...	...	...	...	1 pint (0,5 litre)
Wheel brakes	...	...	...	...	Girling hydraulic
Transmission (hand) brake	...	...	...	...	Girling mechanical
Brake drum diameter	...	...	...	...	10 in. (254 mm.)
Suspension	...	...	...	...	Semi-elliptic leaf springs controlled by Woodhead-Monroe telescopic dampers
Steering	...	...	...	...	Burman worm and nut
Camber angle	...	...	...	...	1½°
Caster angle	...	...	...	...	3°
Swivel pin inclination	...	...	...	...	7°
Toe-in	...	...	...	...	3/64—3/32 in. (1,2—2,4 mm.)
Track	...	...	...	...	50 in. (1,27 m.)
Turning circle	...	...	...	...	35 ft. (10,5 m.) with 6.00—16 tyres 40 ft. (12,2 m.) with 7.00—16 tyres.
Tyre size	...	...	...	...	Dunlop 6.00—16 or 7.00—16

Issue 1

Date 20/9/49

Sheet 3 of 3 Sheets

MODELS AFFECTED
1950 LAND-ROVER

UNIT AFFECTED
SPECIFICATION

TECHNICAL SPECIFICATION

Tyre pressure, 6.00—16	Front		Rear	
	Lb./sq. in.	Kgs./cm ² .	Lb./sq. in.	Kgs./cm ² .
Normal road use (with load under 550 lbs. (250 Kg.))	20	1,40	26	1,80
Normal road use (with load over 550 lb. (250 Kg.) in rear)	20	1,40	30	2,10
Cross-country	15	1,05	20	1,40

Tyre pressure, 7.00—16	Front		Rear	
	Lb./sq. in.	Kgs./cm ² .	Lb./sq. in.	Kgs./cm ² .
Normal road use (with load under 550 lb. (250 Kg.))	20	1,40	26	1,80
Normal road use (with load over 550 lb. (250 Kg.) in rear)	20	1,40	30	2,10
Cross-country	13	0,90	18	1,25

Ignition	12 volt battery and coil
Distributor rotation	Clockwise at drive end
Battery	Lucas G.T.W.9A 51 A.H.
Charging circuit	C.V.C.
Petrol pump	S.U. electric
Petrol capacity	10 Imperial gallons (45 litres)
Wheelbase	80 in. (2,03 m.)
Overall length	132 in. (3,35 m.)
Overall height—hood up	70½ in. (1,79 m.)
Overall height—hood down, screen up	65½ in. (1,66 m.)
Overall height—hood down, screen down	53 in. (1,35 m.)
Overall width	61 in. (1,55 m.)
Ground clearance	8½ in. (216 mm.)
Weight—running (with water, oil and fuel)	2,594 lb. (1,170 Kg.)
Weight—maximum approved gross loaded	3,714 lb. (1,675 Kg.)
Maximum approved pay load	1,000 lb. (450 Kg.)
Maximum draw-bar pull (according to surface conditions)	1,200—2,000 lb. (550—900 Kg.)

Issue 1

Date 13.3.51

Sheet 1 of 2 Sheets

MODELS AFFECTED

1934-51 All
1948-51 LAND-ROVER

UNIT AFFECTED

CLUTCH

CLUTCH PLATES

Some confusion appears to exist regarding the correct clutch plate to be fitted to the models listed above, particularly in the case of 1948-49 "60", "75" and Land-Rover. The list below, which shows the correct plate for each model, should help to clarify the position; it supersedes all previous advice on this matter.

The note on fitting instructions for 1948-49 models should be read in conjunction with Service Bulletins 5026, 5053 and the Land-Rover Workshop Manual.

CLUTCH PLATE PART No.	FITTED TO MODELS	TYPE OF CLUTCH	OPERATING LEVER SETTING (USING $\frac{3}{8}$ in. (9,5 mm.) ROLLERS)	COMPRESSED THICKNESS OF CLUTCH PLATE	REMARKS
50231	1934-47 10 & 12 H.P. 1934-37 14 H.P.	Rover	1.945 in. (49,4 mm.)	.375 in. (9,5 mm.)	} Superseding all 1934-40 clutch plates when stocks are exhausted.
50230	1938-47 14 H.P. 1937-47 16 & 20 H.P.	Rover	1.945 in. (49,4 mm.)	.375 in. (9,5 mm.)	
217179	1948-49 "60" 1948-50 L-R (engines numbered 860001 to 06100200)	Rover	1.729 in. (43,9 mm.)	.330 in. (8,3 mm.)	} Some 50230 and 50231 clutch plates were originally fitted on 1948-49 models. Use only 217179 and 217180 as replacements. See note below.
217180	1948-49 "75"	Rover	1.729 in. (43,9 mm.)	.330 in. (8,3 mm.)	
231889	1950-51 L-R (engines numbered 06100201 onwards)	Borg & Beck	1.655 in. (42 mm.)	.330 in. (8,3 mm.)	
234644	1950-51 "75"	Borg & Beck	1.655 in. (42 mm.)	.330 in. (8,3 mm.)	

Issue 1

Date 13.3.51

Sheet 2 of 2 Sheets

MODELS AFFECTED

1934-51 All
1948-51 LAND-ROVER

UNIT AFFECTED

CLUTCH

IMPORTANT NOTE REGARDING 1948-49 MODELS

Some 1948-49 "60" and "75" models and 1948-49 Land-Rovers were originally fitted with clutch plates Part Nos. 50230/1, which should be discarded at the repair stage.

When fitting a new clutch plate to these models, three important rules must be followed :—

1. Fit a clutch plate .330 in. (8,3 mm.) thick (Part No. 217179/80).
2. Use driving bolts Part No. 219629. This bolt may be identified by the "pip" on the head; its groove diameter is .281 in. (7,15 mm.).
3. Set the clutch operating levers 1.729 in. (43,9 mm.) from the flywheel face, using $\frac{3}{8}$ in. (9,5 mm.) distance pieces.

Failure to assemble the clutch in this manner may result in a complaint of "CLUTCH SPIN" or "SHORT CLUTCH PLATE LIFE".

MODELS AFFECTED

1948-51 "60" and "75"
1948-51 LAND-ROVER

UNIT AFFECTED

SHOCK ABSORBERS

IDENTIFICATION OF TELESCOPIC SHOCK ABSORBERS

Similarity in appearance between the different types of telescopic shock absorber fitted to these models can cause confusion; the data set out below should enable shock absorbers to be readily identified and ensure that the correct type is always used.

PART No.	MODEL	POSITION	VEHICLES NUMBERED	OVERALL LENGTH		FIXING		CODE MARKING	PAINT IDENTIFICATION
				EXTENDED	COMPRESSED	CHASSIS	SPRING		
217265	1948 L-R.	Front	860001 to 862114	17½ in. (454 mm.)	11½ in. (302 mm.)	Eye	Eye	1T8-C4	—
217266	1948-50 L-R.	Front	862115 to 06113529 8670001 to 06200409 8680001 to 06300030	20 ⅞ in. (519 mm.)	13 ⅞ in. (335 mm.)	Eye	Eye	1T8-C4	—
	1948-50 L-R.	Rear	860001 to 06113529 8670001 to 06200409 8680001 to 06300030						
234201	1950-51 L-R.	Front	06113530, 06200410 and 06300031 onwards	20 ⅞ in. (519 mm.)	13 ⅞ in. (335 mm.)	Eye	Eye	3T8-B1	Yellow
234202	1950-51 L-R.	Rear	—	20 ⅞ in. (519 mm.)	13 ⅞ in. (335 mm.)	Eye	Eye	4T8-A6	Green
231829	1948-49 "60/75"	Front	—	17½ in. (454 mm.)	11½ in. (302 mm.)	Eye	Eye	4N8-D2	Blue
217345	1948-49 "60/75"	Rear	—	20 ⅞ in. (529 mm.)	14 ⅞ in. (377 mm.)	Stud	Eye	4F8-A4	—
230092	1950-51 "75"	Front	—	19½ in. (495 mm.)	13½ in. (343 mm.)	Stud	Stud	3H8-C2	—
230669	1950-51 "75"	Rear	—	22 ⅞ in. (577 mm.)	14 ⅞ in. (374 mm.)	Stud	Eye	4F8-A4	—

Issue 2

Date 12/3/51

Sheet 1 of 1 Sheet

MODELS AFFECTED
1950-51 LAND-ROVER

UNIT AFFECTED
LUBRICATION

RECOMMENDED LUBRICANTS

COMPONENTS	VACUUM		WAKEFIELD		ESSO		PRICE'S		SHELL		Classification
	Agricultural	Car	Agricultural	Car	Agricultural	Car	Agricultural	Car	Agricultural	Car	
ENGINE, AIR CLEANER AND GOVERNOR	—	Mobiloil Arctic Special	Agricastrol Z	Castrol Z	Essolube 10	Essolube 10	Energol Tractor Oil 10	Energol S.A.E.10	X.100-S.A.E.10 or Silver Shell	S.A.E.10W	
	Mobiland 620 Tractor Oil	Mobiloil Arctic	Agricastrol L.T	Castrolite	Essolube 20	Essolube 20	Energol Tractor Oil 20	Energol S.A.E.20	X.100-S.A.E.20 or Single Shell	S.A.E.20W	
	Mobiland 630 Tractor Oil	Mobiloil A	Agricastrol Medium	Castrol XL	Essolube 30	Essolube 30	Energol Tractor Oil 30	Energol S.A.E.30	X.100-S.A.E.30 or Double Shell	S.A.E.30	
	Mobiland 640 Tractor Oil	Mobiloil AF	Agricastrol Heavy	Castrol XXL	Essolube 40	Essolube 40	Energol Tractor Oil 40	Energol S.A.E.40	X.100-S.A.E.40 or Double Extra Shell	S.A.E.40	
UPPER CYLINDER LUBRICANT	Mobil Upperlube	Mobil Upperlube	Castrolite	Castrolite	—	—	Energol U.C.L.	Energol U.C.L.	Donax U	—	
GEARBOX AND TRANSFER BOX	Mobiland 650 Tractor Oil	Mobiloil D	Agricastrol Heavy	Castrol XXL	Essolube 50	Essolube 50	Energol Tractor Oil 50	Energol S.A.E.60	X.100-S.A.E.50 or Triple Shell	S.A.E.50	
	—	Mobilube CW Special	Agricastrol Medium	Castrol XL	Gear Oil 80	Gear Oil 80	Energol Tractor Oil 40	Energol S.A.E.40	X.100-S.A.E.30 or Double Shell	S.A.E.80	
DIFFERENTIALS AND TRACTA JOINTS	Mobiland EP Gear Tractor Oil	Mobilube GX90 or Mobilube EPW Mobilube GX80	Agricastrol Gear Oil EP	Castrol Hi-press	Expec Com-pound 90	Expec Com-pound 90	Energol Tractor Oil 90 E.P. Gear	Energol EP S.A.E.90	Spirax 90 EP	S.A.E.90EP (Wakefield)	
	—	—	Agricastrol Gear Oil EP	Castrol Hypooy 80	Expec Com-pound 80	Expec Com-pound 80	—	Energol EP S.A.E.80	Spirax 80 EP	S.A.E.140	
STEERING BOX AND LUBRICATION NIPPLES	Mobiland Gear 140 Tractor Oil	Mobilube C	Agricastrol Gear Oil Medium	Castrol D	Gear Oil 140 Heavy	Gear Oil 140 Heavy	Energol Tractor Oil 140 Gear	Energol S.A.E.140	Spirax C-S.A.E.140	S.A.E.140	
	—	Mobilube CW Special	Agricastrol Gear Oil Medium	Castrol ST	Gear Oil 80	Gear Oil 80	Energol Tractor Oil 50	Energol S.A.E.90	or Dentax 140 or Double Shell	S.A.E.80 Gear Oil or S.A.E.30 Engine Oil	
STEERING RELAY LEVER (SEALED)	Mobiland Gear 140 Tractor Oil	Mobilube C	Agricastrol Gear Oil Medium	Castrol D	Gear Oil 140 Heavy	Gear Oil 140 Heavy	Energol Tractor Oil 140 Gear	Energol S.A.E.140	Spirax C-S.A.E.140	S.A.E.140	
	—	—	Agricastrol Gear Oil Medium	Castrolite	Essolube 20	Essolube 20	Energol Tractor Oil 20	Energol S.A.E.20	or Dentax 140 or Double Shell	S.A.E.20W	
REAR POWER TAKE-OFF AND PULLEY UNIT	Mobiland 620 Tractor Oil	Mobiloil Arctic	Agricastrol Light	Castrolite	Essolube 40	Essolube 40	Energol Tractor Oil 40	Energol S.A.E.40	X.100-S.A.E.20 or Single Shell	S.A.E.40	
CAPSTAN WINCHES	Mobiland 640 Tractor Oil	Mobiloil AF	Agricastrol Heavy	Castrol XXL	Essolube 40	Essolube 40	Energol Tractor Oil 40	Energol S.A.E.40	X.100-S.A.E.40 or Double Extra Shell	S.A.E.40	

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Issue 2

Date 14.3.51

Sheet 1 of 3 Sheets

MODELS AFFECTED
1948-51 LAND-ROVER

UNIT AFFECTED
GEARBOX

This bulletin supersedes Service Bulletin 5047, which should be removed from your file and destroyed.

COMPLAINT. A. CLUTCH SLIP
B. OIL LEAK FROM CLUTCH HOUSING
C. INCREASED OIL LEVEL IN MAIN GEARBOX
D. LOSS OF OIL FROM TRANSFER BOX

CAUSE. Oil passing from transfer box to main gearbox along mainshaft; oil from main gearbox leaking along primary pinion to clutch unit.

REMEDY. Check and rectify the complaint as follows:—

1. Ensure that an oil thrower ring is fitted at the rear end of the main gearbox. If not, fit the ring as detailed at Operation A below.
 2. Drain off the oil from the main gearbox and transfer box.
 3. If not already done, modify the main gearbox dipstick as detailed at Operation B below.
 4. Re-fill the main gearbox to the "H" mark on the dipstick (capacity 2½ pints (1,5 litres)).
 5. Re-fill the transfer box with 4½ pints (2,5 litres) of oil.
 6. Run the vehicle for 200 to 300 miles (300 to 500 Km.) under its normal working conditions.
 7. Inspect the oil levels in the main gearbox and transfer box.
- Either
8. If the oil levels have not altered and if not already done, fit a new level plug in the transfer box at the 4½ pints (2,5 litres) level as detailed at Operation C below.
- Or
9. If oil has transferred from the transfer box to the main gearbox:—
 - (a) Fit a new oil seal (synthetic rubber with garter spring Part No. 236305) and distance piece at the rear end of the gearbox mainshaft. See Operation D below.
 - (b) Fit a new level plug in the transfer box at the 4½ pints (2,5 litres) level as detailed at Operation C below.

Operation A. To fit an oil thrower ring to the rear end of the gearbox mainshaft (Gearboxes numbered prior to 864671 only).

1. Remove the centre inspection panel from the seat box.
2. Disconnect the rear power take-off propellor shaft at the gearbox end (if fitted).
3. Remove the top cover plate or power take-off selector assembly from the transfer casing.
4. Remove the mainshaft rear bearing housing assembly or power take-off drive unit and dog clutch from the rear of the transfer casing.

Re-issued 14.3.51 to include further information.

This sheet replaces that already in your file dated 13.10.50, which should be removed and destroyed.

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MODELS AFFECTED

1948-51 LAND-ROVER

UNIT AFFECTED

GEARBOX

5. Prise up the tab washer at the rear end of the mainshaft and remove the nut and tab washer retaining the transfer drive gear; withdraw the gear from the mainshaft.
6. Feed an oil thrower ring (Part No. 232415) in front of the intermediate cluster gear, and enter it squarely on the mainshaft distance piece. The thrower ring must be fitted with its convex side to the rear.
7. Replace the transfer drive gear and pull it on to the mainshaft with the retaining tab washer and nut, so pressing the thrower ring on to the distance piece. Turn up the locking tab.
8. Complete the assembly by reversing the sequence of Operations 1-4.
Time required to fit the oil thrower ring: 1 hour.

Operation B. To modify the main gearbox dipstick (Gearboxes numbered prior to 16102100 and 16131500 only).

1. Withdraw the dipstick.
2. Make a new "H" mark $\frac{1}{2}$ in. (12,7 mm.) BELOW the existing mark, i.e., $5\frac{3}{8}$ in. (148,5 mm.) below the handle flange; the original mark should be obliterated.
Alternatively, a new dipstick (Part No. 235242) can be used.
3. Inform the owner that the oil level has been lowered.

NOTE. All 1950-51 Land-Rovers (fitted with gearboxes numbered prior to 16102100 and 16131500) should be modified at the first opportunity when receiving attention in your Repair Shop.

Operation C. To reduce the oil capacity of the transfer box from 6 pints (3,5 litres) to $4\frac{1}{2}$ pints (2,5 litres). (1948 to mid-1950 models only).

1. The oil level must be lowered by $\frac{7}{8}$ in. (22 mm.). This can be managed by careful measurement when re-filling or topping-up the transfer box. Topping-up would be facilitated by fitting a new level plug; the most convenient time at which to fit such a plug would be at a routine oil change. Proceed as follows:—
2. Remove the bottom cover plate from the transfer box.
3. Mark off the position for the new plug on the rear face of the transfer box by scribing a line vertically downwards from the centre of the lower right-hand stud securing the centre power take-off cover plate to the rear face of the box (i.e., the stud nearest the transmission brake). Mark off a point $2\frac{1}{4}$ in. (57 mm.) below the centre of the stud.

Re-issued 14.3.51 to include further information.

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1948-51 LAND-ROVER

UNIT AFFECTED
GEARBOX

4. Drill a $\frac{3}{16}$ in. (4,8 mm.) hole at this point and tap $\frac{1}{4}$ in. Whit.
5. Fit a suitable $\frac{1}{4}$ in. Whit. set bolt ($\frac{1}{2}$ in. (13 mm.) long) and fibre washer to act as a plug.
6. Clean out all swarf from the transfer box and replace the cover plate.

Operation D. To fit a new oil seal to the rear end of the gearbox mainshaft.

1. Remove the transfer box from the main gearbox.
2. Withdraw the distance piece and oil thrower ring unit from the rear end of the gearbox mainshaft.
3. Remove and discard the mainshaft oil seal from the rear face of the gearbox.
4. Fit the new oil seal (Part No. 236305).
5. Remove the oil thrower ring from the original distance piece and fit it to a new distance piece (Part No. 217474), pressing it on with its convex side to the rear, until the rear face is flush with the rear end of the distance piece.

NOTE. The reason for renewing the distance piece is to provide a perfect track for the oil seal element, as the original surface may have been scored by the defective seal.

6. Assemble the unit by reversing the stripping procedure.

Re-issued 14.3.51 to include further information.

This sheet replaces that already in your file dated 13.10.50, which should be removed and destroyed.

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Issue 1

UNIT AFFECTED
DIFFERENTIAL

MODELS AFFECTED

1934-51 All
1948-51 LAND-ROVER

IDENTIFICATION OF CROWNWHEEL AND PINION ASSEMBLIES

The table below gives sufficient details of crownwheels and pinions to facilitate identification ; these parts are only supplied, and must always be retained, as mated pairs.

Crownwheel and pinion Part No.	Number of teeth		Number of holes in crownwheel		Driving flange fixing on pinion	Crownwheel Maximum thickness over teeth	Crownwheel Thickness of flange at fixing holes	Year	Models	Remarks	Differential assembly Part No.
	Crownwheel	Pinion	Plain	Tapped							
N7	44	9	8	-	Taper	0.826 in. (21 mm.)	$\frac{5}{8}$ in. (9.5 mm.)	1934-35	10 H.P., 12 H.P. and 'Speed' 14		41170 40382
N249	47	10	8	-	Taper	1.104 in. (28 mm.)	$\frac{1}{2}$ in. (12.7 mm.)	1937-38	16 H.P.		41842
N250	47	9	8	-	Taper	1.174 in. (29.8 mm.)	$\frac{1}{2}$ in. (12.7 mm.)	1937 1938	14 H.P. Car No. 721801 onwards 14 H.P.	Two tapers on pinion	41771
N253	44	9	8	-	Taper	1.138 in. (28.9 mm.)	$\frac{1}{2}$ in. (12.7 mm.)	1937 1938	10 H.P. and 12 H.P. Car No. 701500 and 711550 onwards 10 H.P. and 12 H.P.	Two tapers on pinion	41778
N254	41	9	8	-	Taper	0.899 in. (22.8 mm.)	$\frac{1}{2}$ in. (12.7 mm.)	1937-38	20 H.P.		41934
N268	41	9	2	8	10 splines	1.162 in. (29.5 mm.)	$\frac{5}{8}$ in. (14.3 mm.)	1939-40	20 H.P.		42555 42878
N273	44	9	2	8	10 splines	1.159 in. (29.4 mm.)	$\frac{5}{8}$ in. (14.3 mm.)	1939-47	10 H.P. and 12 H.P. Axle No. 903536 onwards, 14 H.P. Car No. 922712 onwards.*		214982 42736 42876
N274	47	10	2	8	10 splines	1.134 in. (28.8 mm.)	$\frac{5}{8}$ in. (14.3 mm.)	1939-47 1948-49	16 H.P. Cars Nos. 951265 and 961125 onwards,† '60' and '75' except axles No. 8219023-8219100	Length of parallel behind pinion teeth 2.997 in. (76 mm.)	214803 42877 42737
N276	44	9	2	10	10 splines	1.200 in. (30.5 mm.)	$\frac{5}{8}$ in. (14.3 mm.)	1939	10 H.P. and 12 H.P. up to axle No. 903535. 14 H.P. up to Car No. 922711		42394 42515
N284	47	10	2	10	10 splines	1.173 in. (29.8 mm.)	$\frac{5}{8}$ in. (14.3 mm.)	1939	16 H.P. up to Car No. 951264 and 961124		42510
N330	47	9	8	-	Taper	1.174 in. (29.8 mm.)	$\frac{1}{2}$ in. (12.7 mm.)	1936 1937	14 H.P. except 'Speed' 14 14 H.P. up to car No. 721800		40479 41924
N331	44	9	8	-	Taper	1.138 in. (28.9 mm.)	$\frac{1}{2}$ in. (12.7 mm.)	1936	10 H.P. and 12 H.P. and 'Speed' 14 10 H.P. and 12 H.P. up to car Nos. 701499 and 711549		40493 41923
N332	47	9	8	-	Taper	0.862 in. (21 mm.)	$\frac{3}{8}$ in. (9.5 mm.)	1934-35	14 H.P. except 'Speed' 14		41149 40383
T1437	47	10	2	8	10 splines	1.134 in. (28.8 mm.)	$\frac{5}{8}$ in. (14.3 mm.)	1948-49	'60' and '75' axles No. 8219023 to 8219100	Length of parallel behind pinion teeth 2.937 in. (74.5 mm.)	214803 See Spare Parts List
232876	43	10	-	10	4 splines	1.076 in. (27.3 mm.)	$\frac{5}{8}$ in. (14.3 mm.)	1950-51	'75'		230720
233199	47	10	-	10	4 splines	1.134 in. (28.8 mm.)	$\frac{5}{8}$ in. (14.3 mm.)	1950-51	Land-Rover No. 06106001 onwards		231435

† Land-Rover axles No. 861320 to 06106000.

* Land-Rover axles No. 860001 to 861319.

MODELS AFFECTED
1952 LAND-ROVER

UNIT AFFECTED
NUMBERING

1952 LAND-ROVER AND UNIT NUMBERS

INFORMATION IN THIS BULLETIN SHOULD BE MADE AVAILABLE TO EVERYONE CONCERNED, SO THAT OUR SERVICE ORGANISATION MAY WORK TO THE GREATEST DEGREE OF EFFICIENCY.

The system of serial numbering 1952 Land-Rovers and units is similar to that used in 1951; it is fully explained in the tables on Sheet 2 of this bulletin.

It is most essential that the full vehicle serial number be quoted in all correspondence and on spare parts orders for all models, as it is the only indication to our Service Department that the vehicle is to the right or left-hand specification, as the case may be.

THE VEHICLE NUMBER should be quoted in all correspondence. It will be found stamped on a PLATE ON THE DASH PANEL, TO THE RIGHT OF THE INSTRUMENT PANEL.

THE CHASSIS NUMBER is stamped on the top of the left-hand front engine bearer bracket. It is the same as the vehicle number.

THE ENGINE NUMBER is stamped at the top front of the cylinder block on the left-hand side, adjacent to the water pump.

THE GEARBOX NUMBER is stamped on the right-hand side of the gearbox casing.

THE REAR AXLE NUMBER is stamped on top of the axle casing on the left-hand side.

THE FRONT AXLE NUMBER is stamped on top of the axle casing on the left-hand side.

The purpose of the engine, gearbox and axle serial numbers is to enable our Service Department to determine at what point mid-season alterations have taken place, if any. They should not be quoted unless specially asked for, as we can identify them from Vehicle Records, providing the FULL VEHICLE NUMBER IS GIVEN.

EXTRA EQUIPMENT

Extra units supplied either with the vehicle or at a later date, such as rear power take-off, capstan winch, etc., will each be numbered in the series 860001 onwards as in previous seasons.

MODELS AFFECTED
1952 LAND-ROVER

UNIT AFFECTED
NUMBERING

EXPLANATION OF VEHICLE NUMBERING SYSTEM

EXAMPLE.

LAND-ROVER No.	2	6	1	6	1 0 2 5
	Season of manufacture (1952)	Land-Rover	Model (Basic vehicle)	R.H.D. Export	Serial No.

It will be seen from the example that in the full vehicle number, the digits have the following meanings :

The first figure is constant (2) and indicates the season (1952).

The second figure is constant (6) and denotes "Land-Rover."

The third figure denotes the type of vehicle :—

Third figure (1) indicates basic vehicle

Third figure (6) indicates a C.K.D. vehicle.

The fourth figure denotes either a home vehicle or a right-hand or left-hand drive export model :—

Fourth figure (0) indicates a home model

Fourth figure (3) indicates a L.H.D. export model

Fourth figure (6) indicates a R.H.D. export model.

Model	Vehicle No.	Engine No.	Gearbox No.	Rear Axle No.	Front Axle No.
Basic Vehicle Home	2610001 onwards	2610001 onwards	2610001 onwards	2610001 onwards	2610001 onwards
Basic Vehicle L.H.D. Export	2613001 onwards	2613001 onwards	2613001 onwards		2613001 onwards
Basic Vehicle R.H.D. Export	2616001 onwards	2610001 onwards	2610001 onwards		2610001 onwards
C.K.D. L.H.D. Export	2663001 onwards	2613001 onwards	2613001 onwards		2613001 onwards
C.K.D. R.H.D. Export	2666001 onwards	2610001 onwards	2610001 onwards		2610001 onwards

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MODELS AFFECTED
1952 LAND-ROVER

UNIT AFFECTED
SPECIFICATION

TECHNICAL SPECIFICATION

Vehicle numbers	26100001, 26130001, 26160001, 26630001, and 26660001 onwards.
Number of cylinders	4
Bore	77,8 mm. (3.063 in.)
Stroke	105 mm. (4.134 in.)
Cylinder capacity	1997 c.c. (121.9 cu. in.)
R.A.C. rating	15 H.P.
Compression ratio	6.8—1
Compression pressure (at cranking speed) ...	140 lb./sq. in. (9,8 Kg./cm. ² .)
Brake horse-power... ..	58 at 4,000 R.P.M.
Maximum torque	101 lb./ft. (14 mKg.) at 1500 R.P.M.
Firing order	1, 3, 4, 2
Crankshaft, number of bearings... ..	3
Main bearings, type	Detachable steel shell, white metal lined
Minimum diameter for regrinding main journals	.040 in. undersize
Connecting rod bearings, type	Detachable steel shell, white metal lined
Minimum diameter for regrinding crankpin journals ... ..	.040 in. undersize
Pistons, number of compression rings	2
Pistons, number of scraper rings	2
Maximum diameter for boring ... ..	.040 in. oversize
Camshaft, number of bearings	4
Camshaft drive	Pre-stretched endless duplex chain with hydraulic tensioner
Valve seat angle	Inlet 30°; exhaust 45°
Tappet clearance (cold or at running temperature)	Inlet: .010 in. (0,25 mm.); exhaust: .012 in. (0,30 mm.)
Inlet valve opens	9° before T.D.C.
Valve timing	Exhaust peak (No. 1 cylinder) 114° before T.D.C.
Contact breaker gap ... ..	.014 to .016 in. (0,35 to 0,40 mm.)
Ignition control	Octane selector, mechanical governor and vacuum control
Ignition timing	15° before T.D.C.
Sparking plugs	Lodge HLNR
Sparking plug gap... ..	.023—.026 in. (0,60—0,65 mm.)
Carburetter	Solex 32 PBI2
Air cleaner	AC oil-bath
Oil pressure	35-40 lb./sq. in at 30 m.p.h. (2,5—2,8 kg./cm. ² at 50 k.p.h.)
Sump capacity	10 pints (5,5 litres)
Cooling system capacity	17 pints (9,75 litres)
Clutch	Borg & Beck single plate 9 in. (230 mm.) diameter

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MODELS AFFECTED
1952 LAND-ROVER

UNIT AFFECTED
SPECIFICATION

TECHNICAL SPECIFICATION

Main gearbox	...	...	...	...	Single helical constant mesh with synchro-mesh on third and top speeds
Main gearbox ratio, top	...	...	...	...	Direct
"	"	"	third	...	1.377—1
"	"	"	second	...	2.043—1
"	"	"	first	...	2.996—1
"	"	"	reverse	...	2.547—1
Main gearbox oil capacity	...	...	...	...	2½ pints (1,5 litres)
Transfer box	...	...	...	...	2-speed gear in main gearbox output
Transfer box ratio, high	...	...	...	...	1.148—1
Transfer box ratio, low	...	...	...	...	2.888—1
Transfer box oil capacity	...	...	...	...	4½ pints (2,5 litres)
Overall gear ratio, top	...	...	...	...	High transfer 5.396—1
"	"	"	third	...	Low transfer 13.578—1
"	"	"	second	...	7.430—1
"	"	"	first	...	11.023—1
"	"	"	reverse	...	16.165—1
Propeller shafts	...	...	...	...	13.743—1
Rear axle	...	...	...	...	Hardy-Spicer, open
Front axle	...	...	...	...	Semi-floating
Final drives	...	...	...	...	Drive transmitted through Tracta joints
Differential oil capacities	...	...	...	...	Spiral bevel, 4.70—1
Tracta joint oil capacity	...	...	...	...	3 pints (1,75 litre)
Wheel brakes	...	...	...	...	1 pint (0,5 litre) each
Transmission (hand) brake	...	...	...	...	Girling hydraulic
Brake drum diameter	...	...	...	...	Girling mechanical
Suspension	...	...	...	...	10 in. (254 mm.)
Steering	...	...	...	...	Semi-elliptic leaf springs controlled by Woodhead-Monroe telescopic dampers
Camber angle	...	...	...	...	Burman worm and nut
Caster angle	...	...	...	...	1½°
Swivel pin inclination	...	...	...	...	3°
Toe-in	...	...	...	...	7°
Track	...	...	...	...	3/64—3/32 in. (1,2—2,4 mm.)
Turning circle	...	...	...	...	50 in. (1,27 m.)
Tyre size	35 ft. (10,5 m.) with 6.00—16 tyres 40 ft. (12,2 m.) with 7.00—16 tyres.
					Dunlop 6.00—16 or 7.00—16

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MODELS AFFECTED
1952 LAND-ROVER

UNIT AFFECTED
SPECIFICATION

TECHNICAL SPECIFICATION

Tyre pressure, 6.00—16	Front		Rear	
	Lb./sq. in.	Kg./cm. ² .	Lb./sq. in.	Kg./cm. ² .
Normal road use (with load under 550 lb. (250 Kg.))	20	1,40	26	1,80
Normal road use (with load over 550 lb. (250 Kg.) in rear)	20	1,40	30	2,10
Cross-country	15	1,05	20	1,40

Tyre pressure, 7.00—16	Front		Rear	
	Lb./sq. in.	Kg./cm. ² .	Lb./sq. in.	Kg./cm. ² .
Normal road use (with load under 550 lb. (250 Kg.))	20	1,40	26	1,80
Normal road use (with load over 550 lb. (250 Kg.) in rear)	20	1,40	30	2,10
Cross-country	13	0,90	18	1,25

Ignition	12 volt battery and coil
Distributor rotation	Clockwise at drive end
Battery	Lucas G.T.W.9A 51 A.H.
Charging circuit	C.V.C.
Petrol pump	S.U. electric
Petrol capacity	10 Imperial gallons (45 litres)
Wheelbase	80 in. (2,03 m.)
Overall length	132 in. (3,35 m.)
Overall height—hood up	73½ in. (1,87 m.)
Overall height—hood down, screen up	67 in. (1,70 m.)
Overall height—hood down, screen down	56 in. (1,42 m.)
Overall width	61 in. (1,55 m.)
Ground clearance	8½ in. (216 mm.)
Weight—running (with water, oil and fuel)	2,604 lb. (1.182 Kg.)
Weight—maximum approved gross loaded	4,032 lb. (1.829 Kg.)
Maximum approved pay load	1,000 lb. (450 Kg.)
Maximum draw-bar pull (according to surface conditions)	1,200—2,000 lb. (550—900 Kg.)