

Bulletin
Number 5037

Issue 1

Date 17.1.49

Sheet 1 of 2 Sheets

MODELS AFFECTED

1948-49 "60" AND "75"
LAND-ROVER

UNIT AFFECTED

CARBURETTOR

COMPLAINT

1. WEAK MIXTURE FLAT SPOT (LAND-ROVER ONLY)
2. ACCELERATION FLAT SPOT
3. THROTTLE SPINDLE NUTS LOOSE OR MISSING.

SUBJECT

1. WEAK MIXTURE FLAT SPOT (LAND-ROVER)

The carburettor accelerator pump on early Land-Rover engines, illustrated at Fig. 1., is so arranged that the pump operates over most of the throttle range.

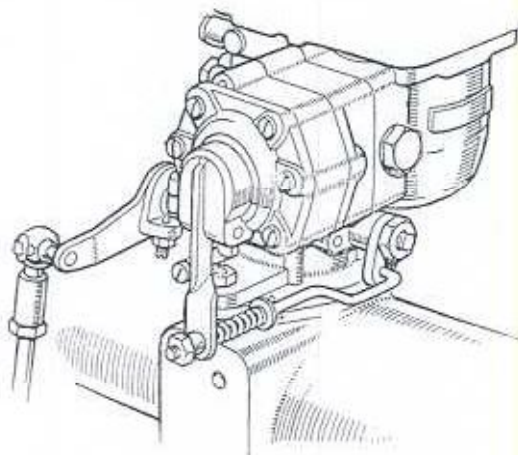


Fig. 1

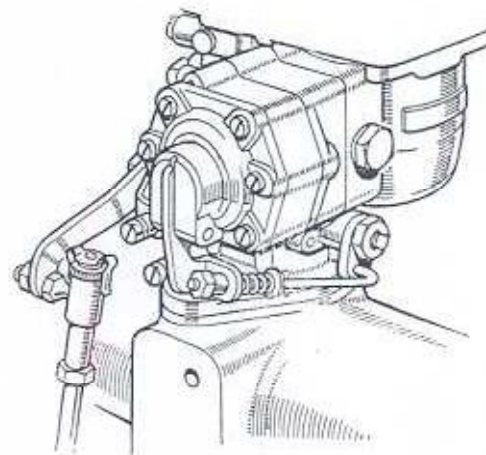


Fig. 2

On such engines, cases have been reported of a weak mixture flat spot occurring during acceleration; this can be eliminated by converting the pump linkage to the latest pattern (Fig. 2), so that the pump operates only during the first stages of throttle opening.

In addition, a main jet size 107.5 should be fitted in place of the original size 102.5 (139 c.c.).

The parts required to carry out this modification are as follows:—

Throttle lever T706, accelerator pump T1562, main jet (107.5) T1563, lever for pump rod T1564 and pump control rod T1565.

These parts must only be fitted in complete sets.

2. ACCELERATION FLAT SPOT ("60", "75" AND LAND-ROVER)

A flat spot can occur during acceleration as a result of a fuel leakage inside the carburettor, between the accelerator pump injector nozzle block and the carburettor body.

To check this possible defect, remove the air cleaner and the float chamber cover, when the injector will be found in the carburettor body at the top of the choke tube(s). With the engine stationary, open the throttle, when a discharge of fuel from the accelerator pump should occur only through the injector nozzle(s).

If a fuel leak is detected between the injector block and the carburettor body, withdraw the securing screw and remove the injector complete. Replace the existing paper washer under the block with a Neoprene washer (Part No. T1570 for "60" and Land-Rover; Part No. T1571 for "75" models) and refit the injector and securing screw.

Check that the leak has been eliminated and replace the float chamber cover and air cleaner.

This sheet replaces that already in your file which bears the SAME bulletin and sheet numbers, but of a LOWER issue number. The old copy should be removed and destroyed.

Bulletin
Number 5037

Issue 1

Date 17.1.49

Sheet 2 of 2 Sheets

MODELS AFFECTED

1948-49 "60" AND "75"
LAND-ROVER

UNIT AFFECTED

CARBURETTOR

COMPLAINT

1. WEAK MIXTURE FLAT SPOT (LAND-ROVER ONLY)
2. ACCELERATION FLAT SPOT
3. THROTTLE SPINDLE NUTS LOOSE OR MISSING.

SUBJECT

**3. CARBURETTOR THROTTLE SPINDLE NUTS LOOSE OR MISSING ("60", "75"
AND LAND-ROVER)**

Cases have been reported of the carburettor throttle spindle nuts becoming loose or unscrewing completely from the spindle. It has been established that such complaints occur only on carburettors having a die-cast zinc-base throttle abutment plate, which is liable to contract, so leaving the nuts loose.

To rectify the defect, the zinc alloy throttle abutment plate should be replaced by one made from steel (Part No. T139) and a tab washer (Part No. T1594) should be fitted for the nut. These parts are available from our Spares Department on a free of charge basis.

To fit the new parts :—

Remove the air cleaner (for convenience in working); remove the nut from the throttle spindle; detach the throttle lever and lift off the abutment plate. Transfer the slow-running and throttle stop screws to the new steel plate and replace the parts in the reverse order, fitting the new tab washer under the nut. Bend over the tab washer to lock the nut securely. Adjust the slow-running and throttle screws to give an even "tick-over" as described in Service Bulletin 5036.

In future, only steel plates will be stocked by our Spares Department.

This modification should be carried out at the earliest opportunity on all vehicles in your area having a zinc alloy abutment plate.

Bulletin
Number 5013

Issue 3

Date 11.2.49

Sheet 1 of 1 Sheet

MODELS AFFECTED

LAND-ROVER

UNIT AFFECTED

LUBRICATION

COMPLAINT

SUBJECT

RECOMMENDED LUBRICANTS

RECOMMENDED LUBRICANTS

| COMPONENT | WAKEFIELD | | ESSOLUBE | | PRICE'S | | SHELL | | VACUUM | | S.A.E. EQUIV. ALENT |
|---|-----------------------------|-------------------|------------------------|------------------------|-----------------|------------------------|------------------------------|-----------------|----------------------|--------------------|---------------------|
| | Agricultural | Car | Agricultural | Car | Agricultural | Car | Agricultural | Car | Agricultural | Car | |
| ENGINE (32° F. and upwards) | Agricontrol Medium | Castrol XL | Essolube 30 | Essolube 30 | Olympia M | Essexol S.A.E. 30 | Tractor Oil Medium S.A.E. 30 | Double Shell | Tractor Oil 630 | Mobiloil A | S.A.E. 30 |
| ENGINE (32° F. and downwards) | Agricontrol Light | Castrolite | Essolube 20 | Essolube 20 | Olympia F | Essexol S.A.E. 20 | Tractor Oil Light S.A.E. 20 | Single Shell | Tractor Oil 620 | Mobiloil Arctic | S.A.E. 20 |
| GEARBOX and TRANSFER BOX | Agricontrol Heavy | Castrol XXL | Essolube 50 | Essolube 50 | Olympia O | Essexol S.A.E. 60 | Tractor Oil Heavy S.A.E. 50 | Triple Shell | Tractor Oil 650 | Mobiloil D | S.A.E. 50 |
| DIFFERENTIALS—FRONT AND REAR | Agricontrol Gear Oil E.P. | Castrol Hiorex | Eso Expec Compound 90 | Eso Expec Compound 90 | Olympia E.P. | Essexol E.P. S.A.E. 90 | Tractor Gear Oil 90 E.P. | Spirax E.P. 90 | Tractor Gear Oil | Mobilube E.P.W. | S.A.E. 90 E.P. |
| STEERING BOX | Agricontrol Gear Oil Medium | Castrol D | Eso Gear Oil 90 Medium | Eso Gear Oil 90 Medium | Olympia Gear DK | Essexol S.A.E. 90 | Tractor Gear Oil S.A.E. 140 | Spirax C | Tractor Gear Oil 140 | Mobilube C | S.A.E. 140 |
| TRACTA UNIVERSAL JOINTS | Agricontrol Gear Oil E.P. | Castrol Hiorex | Eso Expec Compound 140 | Eso Expec Compound 140 | Olympia E.P. | Essexol E.P. S.A.E. 90 | Tractor Gear Oil 140 E.P. | Spirax E.P. 140 | Tractor Gear Oil | Mobilube E.P.W. | S.A.E. 90 E.P. |
| STEERING BALL JOINTS AND GREASE NIPPLES | Agricontrol Grease Heavy | Castrol-ene Heavy | Eso Grease | Eso Grease | Balmoline C | Balmoline C | Tractor Grease | Retrax R.B. | Tractor Grease Self | Mobil grease No. 4 | — |
| STEERING RELAY LEVER (PRE-PACKED) | Agricontrol Gear Oil Medium | Castrol D | Eso Gear Oil 90 Medium | Eso Gear Oil 90 Medium | Olympia Gear DK | Essexol S.A.E. 90 | Tractor Gear Oil S.A.E. 140 | Spirax C | Tractor Gear Oil 140 | Mobilube C | S.A.E. 140 |
| AIR CLEANER | — | — | — | — | — | — | — | — | — | — | — |
| ENGINE GOVERNOR | — | — | — | — | — | — | — | — | — | — | — |
| UPPER CYLINDER LUBRICANT | Castrol | Castrol | — | — | Matorine U.C.L. | Matorine U.C.L. | Donax U | Donax U | Mobil Upperlube | Mobil Upperlube | — |
| REAR POWER TAKE-OFF | Agricontrol Light | Castrolite | Essolube 20 | Essolube 20 | Olympia | Essexol S.A.E. 20 | Tractor Oil Light S.A.E. 20 | Single Shell | Tractor Oil 620 | Mobiloil Arctic | S.A.E. 20 |

Same grade as used in the Engine

Same grade as used in the Engine

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 are available, good quality oils corresponding to the S.A.E. numbers may be used.

This bulletin is re-issued to incorporate the change in nomenclature of Price's Lubricants, effective from March 1st, 1949.

This sheet replaces that already in your file which bears the SAME bulletin and sheet numbers, but of a LOWER issue number. The old copy should be removed and destroyed.

Bulletin
Number 5013

Issue 2

Date 1/9/48

Sheet 1 of 1 Sheet

MODELS AFFECTED

1948 LAND-ROVER

UNIT AFFECTED

LUBRICATION

COMPLAINT

SUBJECT

RECOMMENDED LUBRICANTS

RECOMMENDED LUBRICANTS

| COMPONENT | WAKEFIELD | | ESSOLUBE | | PRICES | | SHELL | | VACUUM | | S.A.E. EQUIVALENT |
|---|-----------------------------|--------------------|------------------------|------------------------|-----------------|---------------------|------------------------------|-----------------|-----------------------|--------------------|-------------------|
| | Agricultural | Car | Agricultural | Car | Agricultural | Car | Agricultural | Car | Agricultural | Car | |
| ENGINE (32° F. and upwards) | Agricontrol Medium | Castrol XL | Essolube 30 | Esolube 30 | Olympia M | Motoline M | Tractor Oil Medium 30 S.A.E. | Double Shell | Tractor Oil 630 | Mobilil A | S.A.E. 30 |
| ENGINE (32° F. and downwards) | Agricontrol Light | Castrolite | Essolube 20 | Esolube 20 | Olympia F | Motoline F | Tractor Oil Light 20 S.A.E. | Single Shell | Tractor Oil 620 | Mobilil Arctic | S.A.E. 20 |
| GEARBOX and TRANSFER BOX | Agricontrol Heavy | Castrol XXL | Essolube 50 | Esolube 50 | Olympia O | Motoline B de Lave | Tractor Oil Heavy 30 S.A.E. | Triple Shell | Tractor Oil 650 | Mobilil D | S.A.E. 30 |
| DIFFERENTIALS—FRONT AND REAR | Agricontrol Gear Oil E.P. | Castrol Hypress | Eso Expec Compound 90 | Eso Expec Compound 90 | Olympia E.P. | Motoline E.P. Light | Tractor Gear Oil 90 E.P. | Starax E.P. 90 | Tractor E.P. Gear Oil | Mobilil E.P.W. | S.A.E. 90 E.P. |
| STEERING BOX | Agricontrol Gear Oil Medium | Castrol D | Eso Gear Oil 90 Medium | Eso Gear Oil 90 Medium | Olympia Gear DK | Motoline Amber | Tractor Gear Oil S.A.E. 140 | Starax C | Tractor Gear Oil 140 | Mobilil C | S.A.E. 140 |
| TRACTA UNIVERSAL JOINTS | Agricontrol Gear Oil E.P. | Castrol Hypress | Eso Expec Compound 140 | Eso Expec Compound 140 | Olympia E.P. | Motoline E.P. Light | Tractor Gear Oil 140 E.P. | Starax E.P. 140 | Tractor E.P. Gear Oil | Mobilil E.P.W. | S.A.E. 90 E.P. |
| STEERING BALL JOINTS AND GREASE NIPPLES | Agricontrol Grease Heavy | Castrol-ease Heavy | Eso Grease | Eso Grease | Belinoline C | Belinoline C | Tractor Grease | Retinax R.B. | Tractor Grease Soft | Mobil-Grease No. 4 | — |
| STEERING RELAY LEVER (PRE-PACKED) | Agricontrol Gear Oil Medium | Castrol D | Eso Gear Oil 90 Medium | Eso Gear Oil 90 Medium | Olympia Gear DK | Motoline Amber A | Tractor Gear Oil S.A.E. 140 | Starax C | Tractor Gear Oil 140 | Mobilil C | S.A.E. 140 |
| AIR CLEANER | — | — | — | — | — | — | — | — | — | — | — |
| ENGINE GOVERNOR | — | — | — | — | — | — | — | — | — | — | — |
| UPPER CYLINDER LUBRICANT | Castrol | Castrol | — | — | Motoline U.C.L. | Motoline U.C.L. | Donax U | Donax U | Mobil Upperlube | Mobilil Arctic | S.A.E. 20 |
| REAR POWER TAKE-OFF | Agricontrol Light | Castrolite | Esolube 20 | Esolube 20 | Olympia F | Motoline F | Tractor Oil Light 20 S.A.E. | Single Shell | Tractor Oil 620 | Mobilil Arctic | S.A.E. 20 |

Some grades as used in the Engine
Same grade as used in the Engine

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 are available, good quality oils corresponding to the S.A.E. numbers may be used.

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Bulletin
 Number 5014

Issue 2

Date 2.11.49

Sheet 1 of 3 Sheets

MODELS AFFECTED

1948-49 " 60 " and " 75 "
 1948-50 LAND-ROVER

UNIT AFFECTED

WATER PUMP

COMPLAINT

SUBJECT

RE-CONDITIONING OF WATER PUMPS

1. TO REMOVE WATER PUMP

- (a) Drain off the water (drain taps at the bottom of the radiator block and on the right-hand side of the cylinder block).
- (b) Slacken the dynamo adjusting link; push the dynamo inwards.
- (c) Remove the thermostat housing :
 - (i) Slacken the lower hose-clip on the top water hose.
 - (ii) Slacken one hose-clip on the hose from the manifold water outlet pipe.
 - (iii) Disconnect one heater pipe union ($\frac{1}{2}$ in.) at the tap.
 - (iv) Remove the thermostat bulb ($\frac{7}{16}$ in. spanner).
 - (v) Remove the thermostat housing, together with joint washer (four $\frac{5}{16}$ in. set-bolts and spring washers).
 - (vi) Remove the rubber seal between the water pump and thermostat housing.
- (d) Remove the fan blades and pulley (four $\frac{1}{4}$ in. set bolts and spring washers).
- (e) Disconnect the bottom water hose at the pump end (one hose-clip) and the second heater pipe union ($\frac{1}{2}$ in.).
- (f) Remove the eight $\frac{1}{4}$ in. set bolts and spring washers securing the water pump to the cylinder block. Withdraw the water pump, together with inlet pipe and joint washer ; as the pump is spigoted into the cylinder block, it will be necessary to oscillate it slightly as it is removed.

2. TO STRIP WATER PUMP

- (a) Remove the impellor. A suitable extractor comprises a plate with two holes, attached to the impellor with two 2 B.A. bolts in the tapped holes provided. A tapped hole in the centre of the plate enables extraction to be made by means of a $\frac{1}{4}$ in. bolt pressing on the water pump spindle.

Should the impellor be of the original type, having two $\frac{3}{4}$ in. (19 mm.) slots for location of the carbon ring, it must be discarded and a new impellor and seal Part No. 233472 incorporated on assembly.

- (b) Remove the water seal parts :

Original pattern pump

- (i) Spring
 - (ii) Brass cup washer
 - (iii) Rubber seal
 - (iv) Carbon thrust ring
- Discard and fit new impellor and seal Part No. 233472 on assembly.

Latest pattern pump

Remove carbon ring and seal from bore of impellor.

- (c) Remove the $\frac{1}{4}$ in. set screw and spring washer locating the spindle bearing.
- (d) Drive out the spindle and bearing complete with fan pulley hub, towards the front of the body.
 The pulley hub should not normally be withdrawn from the spindle as it is pressed on to a set dimension ; if this operation is necessary, a claw type extractor should be used.
 The bearing **MUST NOT** be removed from the spindle ; this unit **MUST ALWAYS** be supplied and fitted complete.

This sheet replaces that already in your file which bears the **SAME** bulletin and sheet numbers, but of a **LOWER** issue number. The old copy should be removed and destroyed.

Bulletin
Number 5014

Issue 3

Date 2.11.49

Sheet 2 of 3 Sheets

MODELS AFFECTED
1948-49 "60" and "75"
1948-50 LAND-ROVER

UNIT AFFECTED
WATER PUMP

COMPLAINT

SUBJECT

RE-CONDITIONING OF WATER PUMPS

The 1950 pattern impellor and seal (supplied together under Part No. 233472) should be incorporated in all earlier water pumps undergoing repair, to provide a more efficient water seal.

The original type impellor and water seal components will not be supplied when present stocks are exhausted.

The improved impellor and seal are obtainable separately for replacement purposes under Part No. 233440 for the impellor and Part No. 231143 for the carbon ring and seal unit.

3. TO ASSEMBLE WATER PUMP

- (a) Examine the spindle and bearing assembly; it need not be renewed if the bearing is satisfactory and the spindle is free from excessive corrosion.

Clean any corroded portion of the spindle and paint with chlorinated rubber primer to prevent further action. This rubber primer is available from our Spares Department in half-pint tins under Part No. T1843.

As an alternative, good quality aluminium paint or other anti-corrosive paint can be used in place of rubber primer.

Insert a few drops of thick oil in the location hole in the bearing.

Press the spindle and bearing assembly into the front of the pump body with the longer end of the spindle leading. Locate with $\frac{1}{4}$ in. set-screw and spring washer.

- (b) If the fan pulley hub has been removed, this must be pressed on to the spindle to a set dimension between the front face of the pulley hub and the mounting face of the water pump body. For car engines this dimension should be 4.215 in. (107 mm.) when a pressed steel pulley is fitted, or 4.090 in. (104 mm.) where the cast-iron pulley is used (see Section 4 for further details). For Land-Rover engines the dimension should be 4.215 in. (107 mm.). Be careful to support the spindle during this operation to prevent pressure falling on the location set-screw.

- (c) Fit the carbon ring and seal Part No. 231143 into the bore of the impellor Part No. 233440 with the carbon ring to the front.

- (d) Press the impellor on to the spindle until there is .020 in. (0.5 mm.) clearance between the vanes and the pump body face (check with feeler gauge).

4. PRESSED STEEL AND CAST-IRON PULLEYS (CAR ENGINES ONLY)

Two types of fan pulley are in circulation:

Cast-iron, fitted to engines 8210001—8210010 and 8410001—8410030.

Pressed steel, fitted to engines 8210011 and 8410031 onwards.

It will be seen that only 40 engines were fitted with cast-iron pulleys and for this reason only the later type spindle and pulley hub assembly will be supplied. When replacement pumps or spindles are required for these 40 engines, one of two alternatives may be adopted.

- (a) A pressed steel pulley may be fitted in place of the cast-iron one, or

- (b) The pulley hub may be pressed on a further .125 in. (3 mm.); the cast-iron pulley may then be used. (See para. 3 (b) for dimensions.)

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Bulletin
Number 5014

Issue 3

Date 2.11.49

Sheet 3 of 3 Sheets

MODELS AFFECTED
1948-49 " 60 " and " 75 "
1948-50 LAND-ROVER

UNIT AFFECTED
WATER PUMP

COMPLAINT

SUBJECT

RE-CONDITIONING OF WATER PUMPS

5. TO REFIT WATER PUMP TO ENGINE

(a) Reverse operations 1 (a) to 1 (f) ; when re-fitting the pulley, first engage the fan belt in the groove.

6. SERVICE MODIFICATION FOR LEAKING WATER PUMP

(a) Remove and strip the water pump.

(b) Re-assemble the pump in accordance with the instructions given in Para 3 (Sheet 2).

7. THE SERVICE WATER PUMP ASSEMBLY

for these models comprises the following parts :

Pump casing.

Spindle, fan hub and bearing complete.

Carbon ring and seal.

Impellor.

Spring washer } locating bearing.
Set bolt }

When returning water pumps for re-conditioning, only the above components should be returned.

Bulletin
Number 5038

Issue 1

Date 11.2.49

Sheet 1 of 1 Sheet

MODELS AFFECTED

LAND-ROVER

UNIT AFFECTED

NUMBERING

COMPLAINT

SUBJECT

LAND-ROVER AND UNIT NUMBERS

**INFORMATION ADDITIONAL TO THAT CONTAINED IN SERVICE
BULLETINS 5011 and 5031**

After vehicle number 863000, the system of serial numbering for STANDARD Land-Rovers is altered to conform with that used for the Station Wagon version.

A third identification digit (6) is added, so that the 3001st standard vehicle bears the serial number 8663001 and so on, i.e.

Standard Land-Rover serial numbers are 860001 to 863000 and
8663001 onwards.

Station Wagon Land-Rover serial numbers continue as 8670001 onwards.

This alteration applies only to the standard vehicle and chassis numbers.

Serial numbers of units (engine, gearbox, axles, etc.) continue in the series 860001 onwards for both standard and station wagon versions of the vehicle.

LAND-ROVER WITH WELDING OUTFIT

Land-Rovers produced with welding outfits will bear chassis and vehicle numbers in the series 8680001 onwards, with the prefix "R" for a right-hand drive model or "L" for left-hand drive. The serial numbers of units such as the engine, gearbox, etc., will be in the same series (i.e. 860001 onwards) as those for the standard version of the vehicle as described in Service Bulletin 5011.

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|----------------------|---------|--------------|---------------------|
| Bulletin Number 5041 | Issue 1 | Date 16.2.49 | Sheet 1 of 2 Sheets |
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| | |
|--|--------------------------------|
| MODELS AFFECTED 1948-49 "60" AND "75" LAND-ROVER | UNIT AFFECTED ENGINE |
|--|--------------------------------|

COMPLAINT

SUBJECT
PARTS REQUIRED FOR DECARBONISING

As a result of several requests from agents, this Bulletin details parts which we recommend for renewal when the engine is decarbonised.

Model "60" (Engines numbered 8210001 onwards).

| Description | Quantity | Part No. |
|--|----------|------------------|
| Cylinder head gasket | 1 | 212322 or 217511 |
| Joint washer for exhaust manifold | 2 | 09184 |
| Joint washer for inlet manifold | 2 | 09179 |
| Joint washer for water branch | 1 | 210447 |
| Joint washer for top rocker cover | 1 | 212283 |
| Joint washer for side rocker cover | 1 | 213235 |
| Sealing washer (inner) for top breather pipe | 1 | 212173 |
| Sealing washer (outer) for top breather pipe | 1 | 216709 |
| Joint washer for oil pipe | 2 | 210640 |
| Sealing ring for inlet valve | 4 | 210517 |
| Joint ring between water pump and thermostat housing | 1 | 09170 |
| Joint washer for exhaust pipe (RHD) | 1 | 213358 |
| or Joint washer for exhaust pipe (LHD) | 1 | 216138 |
| Joint washer for carburettor | 2 | 212233 |
| Packing for carburettor | 1 | 212232 |
| Sealing ring for sparking plug cover | 4 | 213172 |

Model "75" (Engines numbered 8410001 onwards)

| Description | Quantity | Part No. |
|--|----------|----------|
| Cylinder head gasket | 1 | 212324 |
| Joint washer (outer) for exhaust manifold | 2 | 09184 |
| Joint washer (centre) for exhaust manifold | 1 | 210508 |
| Joint washer for top rocker cover | 1 | 212284 |
| Joint washer for side rocker cover | 1 | 213236 |
| Sealing washer (inner) for top breather pipe | 1 | 212173 |
| Sealing washer (outer) for top breather pipe | 1 | 216709 |
| Joint washer for oil pipe | 2 | 210640 |
| Sealing ring for inlet valve | 6 | 210517 |
| Joint ring between water pump and thermostat housing | 1 | 09170 |
| Joint washer for exhaust pipe (RHD) | 1 | 213358 |
| or Joint washer for exhaust pipe (LHD) | 1 | 216138 |
| Joint washer for inlet manifold | 3 | 09179 |
| Joint washer for water branch | 2 | 210598 |
| Joint washer for carburettor | 2 | 213939 |
| Packing for carburettor | 1 | 212620 |
| Sealing ring for sparking plug cover | 6 | 213172 |

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THE ROVER CO. LTD.,
SOLIHULL, BIRMINGHAM, ENGLAND.

SERVICE BULLETIN

Bulletin
 Number 5041

Issue 1

Date 16.2.49

Sheet 2 of 2 Sheets

MODELS AFFECTED

1948-49 "60" AND "75"
 LAND-ROVER

UNIT AFFECTED

ENGINE

COMPLAINT

SUBJECT

PARTS REQUIRED FOR DECARBONISING

LAND-ROVER (Engines numbered 860001 onwards)

| Description | Quantity | Part No. |
|--|----------|----------|
| Cylinder head gasket | 1 | 212322 |
| Joint washer for exhaust manifold | 2 | 09184 |
| Joint washer for inlet manifold | 2 | 09179 |
| Joint washer for water branch | 1 | 210447 |
| Joint washer for top rocker cover | 1 | 212283 |
| Joint washer for side rocker cover | 1 | 213235 |
| Sealing washer (inner) for top breather pipe | 1 | 212173 |
| Sealing washer (outer) for top breather pipe | 1 | 216709 |
| Joint washer for oil pipe | 2 | 210640 |
| Sealing ring for inlet valve | 4 | 210517 |
| Joint washer between water pump and thermostat housing | 1 | 09170 |
| Joint washer for exhaust pipe (RHD) | 1 | 213358 |
| or Joint washer for exhaust pipe (LHD) | 1 | 216138 |
| Joint washer for carburettor | 2 | 212233 |
| Packing for carburettor | 1 | 212232 |
| Sealing ring for sparking plug cover | 4 | 213172 |

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Bulletin
Number 5043

Issue 1

Date 23.2.49

Sheet 1 of 2 Sheets

MODELS AFFECTED

LAND-ROVER

UNIT AFFECTED

BRAKES

COMPLAINT

FRACTURE OF REAR BRAKE PIPE

SUBJECT

This complaint may be reported as:—

1. Brake failure
- or 2. Fracture of a rear brake pipe at the point where it passes between the shock absorber and rear axle check strap.

CAUSE.

Under normal conditions the flexible check strap is slack ; movement of the rear axle may allow the strap to chafe on the brake pipe, ultimately causing a fracture and consequent brake failure.

REMEDY.

Renew the brake pipe and fit a suitable shield between the check strap and brake pipe on each side of the vehicle (see below for details).

ACTION TO BE TAKEN.

Examine all vehicles in your territory immediately and rectify them as found necessary.

Suitable shields (illustrated in position at Fig. 1) are obtainable free of charge from our Spares Department, the part numbers being L.H. 232089 and R.H. 232088.

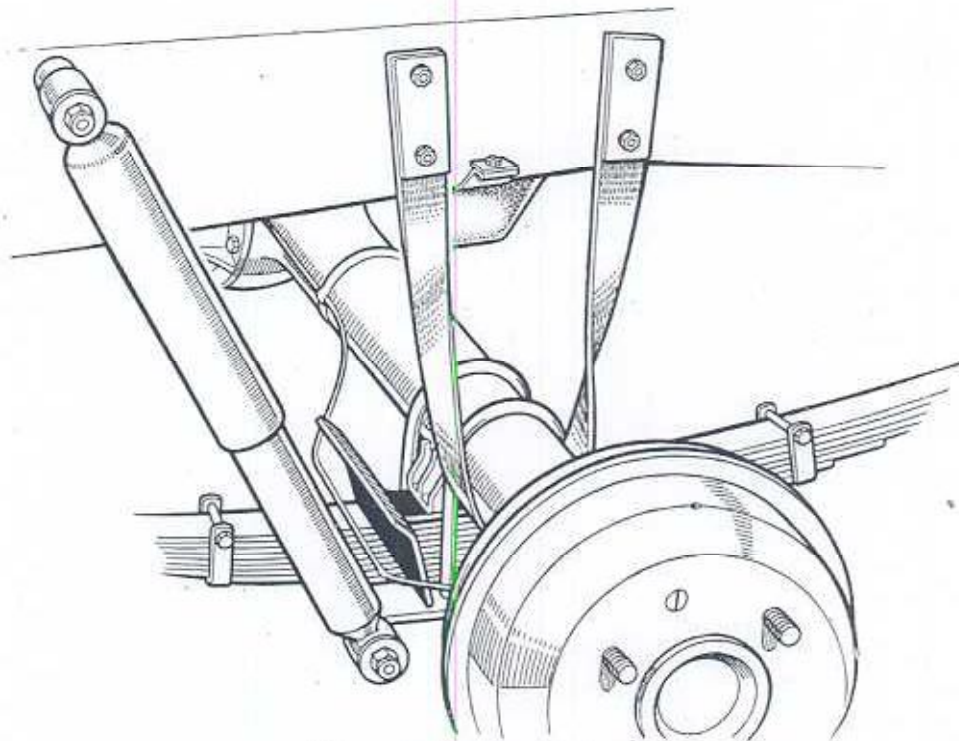


Fig. 1. Shield for rear brake pipe.

This sheet replaces that already in your file which bears the SAME bulletin and sheet numbers, but of a LOWER issue number. The old copy should be removed and destroyed.

Bulletin
Number 5043

Issue 1

Date 23.2.49

Sheet 2 of 2 Sheets

MODELS AFFECTED
LAND-ROVER

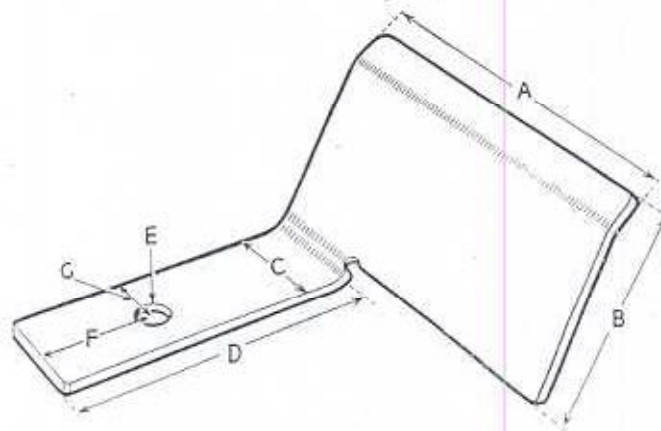
UNIT AFFECTED
BRAKES

COMPLAINT

FRACTURE OF REAR BRAKE PIPE

SUBJECT

Alternatively the shields may be made locally from the dimensions given at Fig. 2.



- A — 5 in. (127 mm.)
- B — 3 in. (76 mm.)
- C — 1 $\frac{7}{8}$ in. (44,5 mm.)
- D — 4 $\frac{1}{2}$ in. (104 mm.)
- E — $\frac{1}{2}$ in. (13 mm.) hole.
- F — 2 in. (51 mm.)
- G — $\frac{3}{8}$ in. (22,25 mm.)

Fig. 2. Details of R.H. brake pipe shield.

Each shield should be fitted between the rear axle casing and the road spring, with the hole located on the spring dowel; the protecting flange should be to the front between the check strap and the pipe. Ensure that there is ample clearance between the shield and pipe or preferably secure the pipe as described below.

Vehicles produced in future will be equipped with shields on assembly. In addition, each brake pipe will be secured to the shield by means of a clip Part No. 56666, rubber bush Part No. 06860 and drive screw Part No. 72626.

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 Number 5017

Issue 2

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Sheet 1 of 2 Sheets

MODELS AFFECTED
 1948-49 "60" AND "75"
 LAND-ROVER

UNIT AFFECTED
BRAKES

COMPLAINT

SUBJECT

BRAKE LININGS

A variety of brake linings have been used on 1948-49 cars and Land-Rover ; the service and spare parts procedure to be followed is detailed below :—

"60" and "75"

Brake linings have been manufactured from three different materials as shown in the table :—

| Type of lining | Part Number | Lining identification | Brake unit assembly identification |
|----------------|---|---|------------------------------------|
| Ferodo MR19 | --- | Three blue marks along one edge towards one end | None |
| Ferodo MR41 | --- | Five blue marks equally spaced along one edge | None |
| DON BS5 | Lining 231445 Shoe assembly— 231441/2/3/4 | One red mark in the centre of one edge | Red spot on rear of anchor plate. |

Our Spares Department will supply only DON BS5 linings against all orders for 1948-49 "60" and "75" models. Any stocks of MR19 or MR41 linings in your possession should be used up on 1947 and earlier models under Part No. 07230.

Whenever it becomes necessary to equip a car with linings of different material from those originally fitted (which point can be ascertained from the identification markings on the brake anchor plates), it is essential that a complete vehicle set of eight linings, or if this is not possible, at least a complete axle set of four linings, be fitted. Poor and uneven braking is liable to result if a mixed set of linings is employed.

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 Number 5017

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Sheet 2 of 2 Sheets

MODELS AFFECTED
 1948-49 "60" AND "75"
 LAND-ROVER

UNIT AFFECTED
BRAKES

COMPLAINT

SUBJECT

BRAKE LININGS

"Land-Rover" wheel brakes.

Brake linings have been manufactured from two different materials as shown in the table :—

| Type of lining | Part number | Lining identification | Brake unit assembly identification |
|----------------|---|---|------------------------------------|
| Ferodo MR41 | — | Five blue marks equally spaced along one edge | None |
| DON BS5 | Lining 231438 Shoe assembly— 231436/7 | One red mark in the centre of one edge | Red spot on rear of anchor plate |

Only DON BS5 linings will be supplied as replacements for all vehicles, when stocks of Ferodo MR41 linings are exhausted.

Whenever it becomes necessary to equip a Land-Rover with linings of different material from those originally fitted (which point can be ascertained from the identification markings on the brake anchor plates), it is essential that a complete vehicle set of eight linings, or if this is not possible, at least a complete axle set of four linings, be fitted. Poor and uneven braking is liable to result if a mixed set of linings is employed.

Land-Rover transmission brake.

Brake linings for this brake are made only from Ferodo MR19 material and supplied under Part No. 219007 for the lining only and 219005 for the brake shoe assembly.

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Sheet 1 of 7 Sheets

MODELS AFFECTED

LAND-ROVER

UNIT AFFECTED

ENGINE

COMPLAINT

SUBJECT

FITTING ENGINE GOVERNOR

DESCRIPTION

An engine governor can be supplied as extra equipment for the Land-Rover and its use is essential when either the centre pulley or rear power take-off pulley is utilised ; it would also be found most convenient for many jobs necessitating use of the rear splined output shaft.

It is mounted on a bracket affixed to the front of the thermostat housing and is belt-driven from the front groove of the water pump and fan pulley.

The two lower fixing holes in the mounting bracket are slotted to allow for belt adjustment. Connection to the throttle linkage is by a collapsible rod and a second link connects the governor to the operating lever and quadrant mounted on the scuttle panel below the instrument board.

The quadrant has notches giving twelve positions for the operating lever. The notch to the extreme right is for use when the governor is not required and with the lever in this position, the throttle opening is not influenced by the governor mechanism. In order to bring the governor into operation, the control lever must be moved to the left into one of the remaining eleven notches ; with the lever in the first operating notch, the throttle is opened until the engine is running at 1,500 R.P.M. and the governor will then allow for variations in load applied at the power take-off, so controlling the engine speed at that figure. Each succeeding notch represents an increase in engine speed of approximately 150 R.P.M., so that the eleventh and last notch on the extreme left of the quadrant will provide an engine speed of 3,000 R.P.M.

PARTS REQUIRED

The parts required for governor installation are as follows :—

ENGINE NOS. 861872 ONWARDS.

ENGINE GOVERNOR COMPLETE ASSEMBLY 231558 comprising :—

| Description | Part No. | Quantity |
|-------------------------------------|----------|----------|
| Engine governor | 218827 | 1 |
| Set bolt (5/16" B.S.F.) | 215161 | 3 |
| Spring washer | 3075 | 3 |
| Bracket for governor | 219511 | 1 |
| Special nut | 219508 | 3 |
| Shakeproof washer | 73353 | 3 |
| Support for bracket | 217724 | 1 |
| Bolt (5/16" B.S.F.) | 215161 | 1 |
| Spring washer | 3075 | 1 |
| Nut | 2828 | 1 |
| Control rod, governor to bell crank | 218602 | 1 |
| Distance piece | 231356 | 1 |
| Spring washer | 3074 | 1 |
| Nut (1/4" B.S.F.) | 2823 | 1 |
| Joint pin | 231451 | 1 |
| Split pin | 2392 | 1 |
| Belt for governor drive | 219560 | 1 |
| Control quadrant assembly | 219138 | 1 |
| Bolt (2 B.A.) | 215000 | 2 |
| Plain washer | 3485 | 2 |
| Spring washer | 3073 | 2 |
| Nut | 2247 | 2 |
| Operating rod, quadrant to governor | 219503 | 1 |

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| | | | |
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| | |
|-------------------------------|--------------------------------|
| MODELS AFFECTED LAND-ROVER | UNIT AFFECTED ENGINE |
|-------------------------------|--------------------------------|

COMPLAINT

SUBJECT
FITTING ENGINE GOVERNOR

| Description | Part No. | Quantity |
|---|---|----------|
| Ball joint for rod | 219065 | 2 |
| Lock nut ($\frac{1}{4}$ " B.S.F.) for ball joint | 2823 | 2 |
| Spring washer | } Fixing rod to quadrant and governor loading lever | 2 |
| Nut ($\frac{1}{4}$ " B.S.F.) | | 3074 |
| Cable clip | 2823 | 2 |
| Plug ($\frac{1}{4}$ " B.S.P.) for inlet manifold | 3551 | 1 |
| | 3289 | 1 |

ENGINE NOS. 860001 to 861871

ENGINE GOVERNOR COMPLETE ASSEMBLY 231200 comprising all parts listed above under Part No. 231558 and the following:—

| Description | Part No. | Quantity |
|---|---|----------|
| Carburettor complete | 231275 | 1 |
| Joint washer for carburettor | 212233 | 2 |
| Bell crank | 231289 | 1 |
| Relay lever | 231291 | 1 |
| Hand throttle lever | 231292 | 1 |
| Rod assembly, bell crank to carburettor | 231267 | 1 |
| Spring washer | } Fixing rod to bell crank and carburettor throttle lever | 3074 |
| Nut ($\frac{1}{4}$ " B.S.F.) | | 2823 |
| | | 2 |
| | | 2 |

The original carburettor removed when fitting the governor should be returned to our Spares Dept., when a credit allowance will be made.

NOTE.—In some instances, modified carburettor components will be supplied in place of the complete carburettor (231275). These are throttle lever (T1579), accelerator pump (T1562), main jet (T1563), lever (T1564) and control rod (T1565).

FITTING INSTRUCTIONS

When fitting an engine governor in accordance with the following instructions, constant reference should be made to Fig. 1. (Sheet 3), which shows the general arrangement of the complete installation.

A. Fitting the governor to the engine.

1. Fit the governor bracket support (217724) on top of the dynamo front support bracket using the bolt already securing the dynamo bracket; turn the support to the rear and leave the bolt slack.
2. Fit the governor (218827) to the mounting bracket (219511), securing it with three bolts (215161— $\frac{5}{16}$ " B.S.F. x $\frac{11}{16}$ ") and spring washers (3075).
3. Place the governor driving belt (219560) over the fan pulley and round the governor pulley; fit the mounting bracket and governor to the extension studs on the front of the thermostat housing. Secure the bracket with three special nuts (219508) and shakeproof washers (73353), leaving the nuts slack.
4. Secure the mounting bracket to the support with one bolt (215161— $\frac{5}{16}$ " B.S.F. x $\frac{11}{16}$ "), spring washer (3075) and nut (2828), leaving the nut slack. Bend the distributor vacuum pipe to clear the bracket and governor.
5. Hold the governor out to tension the belt (it should be possible to depress the belt $\frac{1}{2}$ " (12.5 mm.) by thumb pressure at a point midway between the pulleys); tighten the nuts and bolts securing the governor mounting bracket and support.
6. Check the oil level in the governor. Remove the filler plug from the top front of the governor casing and the level plug at the R.H. bottom front of the casing; pour in engine oil (See Service Bulletin 5013 for the correct grade) through the top hole until it runs out of the bottom hole. Ensure that the joint washers are in good condition and replace both plugs securely.

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LAND-ROVER

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FITTING ENGINE GOVERNOR

NOTE.—On early vehicles the nut securing the governor pulley will foul the fan cowl. It will be necessary in such cases to cut a suitable slot ($7/8"$ (22 mm.) wide) in the fan cowl to provide clearance for the nut and allow for belt adjustment.

B. Removing the manifold drain and throttle return spring.

1. Remove the drain pipe and union (if fitted) from the underside of the inlet manifold, immediately beneath the carburettor.
2. Blank off the hole in the manifold with a $1/8"$ B.S.P. plug (3289).
3. Remove and discard the throttle return spring between the bell crank lever and the anchor on the dash. Re-position the upper end of the other throttle return spring on to the neck of the ball joint on the cross shaft lever.

C. Fitting the bell crank lever assembly (Engine Nos. 860001 to 861871)

1. Remove the retaining washer and split pin from the bell crank spindle in the inlet manifold. Remove the rod complete connecting the bell crank to the carburettor throttle lever; detach the rod from the accelerator cross shaft at the bell crank and detach the hand throttle cable from the hand throttle lever. Withdraw the relay lever, bell crank and hand throttle lever from the spindle and discard them.
2. Fit the new hand throttle lever (231292) to the spindle in an upright position, fit the bell crank lever (231285) with the longer arm forward, and the relay lever (231291) with the longer arm forward. Secure them with the retaining washer and split pin.
3. The outer levers work on the elongated bush in the bell crank lever and it is important to ensure that each moves freely without sticking or play and without dragging the adjacent lever.

D. Fitting the carburettor (Engine Nos. 860001 to 861871).

1. Remove the air cleaner complete and detach the petrol and distributor vacuum pipes from the carburettor. Remove the original carburettor and replace with the new one (231275), using two new joint washers (212233). Re-connect the petrol and distributor vacuum pipes and replace the air cleaner.

NOTE.—In cases where carburettor components are supplied, these should be fitted in place of the original parts.

E. Fitting the governor control quadrant.

1. Fit the cable clip (3551) to the bolt securing the quadrant lever to the quadrant housing.
2. Remove the cover plate on the dash panel immediately below the instrument panel.
3. Insert the governor control quadrant (219138) in the rectangular hole uncovered and bolt it to the dash, using the fixings originally securing the cover plate and with the rubber draught excluder between the quadrant housing and the dash. Leave the nuts slack at this stage.
4. Remove the instrument panel complete, without disconnecting the instruments.
5. Secure the quadrant bracket to the underside of the instrument box using two bolts (215000—2 B.A. x $7/16"$), plain washers (3485), spring washers (3073) and nuts (2247). Tighten the nuts securing the quadrant to the dash and then the nuts fixing the bracket to the instrument box.

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MODELS AFFECTED

LAND-ROVER

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6. Replace the instrument panel.
7. Secure the L.H. main harness in the cable clip to be clear of the quadrant lever.

NOTE.—On early vehicles, it will be found on removal of the cover plate that the mounting holes for the quadrant in the dash are incorrectly positioned and that there are no holes provided in the underside of the instrument box. In such cases proceed as follows:—

- (a) Mark off and drill a $17/64$ " (7 mm.) hole in the dash 5" (127 mm.) to the left of the centre line of the hand throttle control and level with the hole already drilled; mark off and drill a second similar hole $5\ 3/16$ " (132 mm.) to the left of the first hole.
- (b) Insert the control quadrant in the rectangular hole and secure it with the fixings originally securing the cover plate.
- (c) Remove the instrument panel.
- (d) Mark off and drill the two $3/16$ " (5 mm.) fixing holes in the underside of the instrument box and secure the quadrant bracket with two bolts (215000), plain washers (3485), spring washers (3073) and nuts (2247).
- (e) Replace the instrument panel.

R. Fitting the governor control linkage.

1. Fit a ball joint (219065) and lock nut (2823— $\frac{1}{4}$ " B.S.F.) to each end of the governor operating rod (219503) and attach the rod to the control quadrant lever, using a spring washer (3074) and nut (2823). Loosen the governor throttle control (R.H.) lever on its shaft and place the quadrant lever in the inoperative (extreme R.H.) notch. Push the governor loading (L.H.) lever forward until a marked resistance is felt, indicating that the internal mechanism is against the stop in the rear end cover. With the loading lever in this position, adjust the length of rod (219503) and connect it to the loading lever, using a spring washer (3074) and nut (2823). Tighten the ball-joint locknuts.
2. Fit the new rod assembly (231267) between the longer arm of the bell crank (231285) and the carburettor throttle lever, securing it at each end with a spring washer (3074) and nut (2823— $\frac{1}{4}$ " B.S.F.).
3. Connect the accelerator linkage to the relay lever (231291).
4. Fit the collapsible control rod (218602) between the bell crank lever (231285) and the governor throttle control (R.H.) lever; secure it at the governor end with the joint pin (231451) and split pin (2392) and at the bell crank end with one spring washer (3074), nut (2823— $\frac{1}{4}$ " B.S.F.) and distance piece (231356).

NOTE.—Before fitting, ensure that there is no free play in the collapsible control rod.

5. Check that the carburettor throttle is fully open when the accelerator pedal is fully depressed. If this is not so, the throttle lever on the dash cross shaft should be adjusted as necessary.
6. Connect the hand throttle cable to the hand throttle lever (231292). Ascertain that the throttle returns to its fully closed position when the hand throttle is pushed home.

NOTE.—The Amal adjustable ball joints on the linkage should be adjusted as follows:—

- (a) Tighten the ratchet screw at the head of the joint until the ball is held solidly in its cup.
- (b) Unscrew the ratchet one or two clicks until the ball is free.

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Issue 3

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FITTING ENGINE GOVERNOR

G. Setting the governor control linkage.

1. Place the quadrant control lever in its highest speed position, *i.e.* in the extreme L.H. notch.
2. Hold the carburettor throttle fully open and tighten the governor throttle control (R.H.) lever on its shaft.
3. With the engine running, move the quadrant control lever to the first operating notch, *i.e.* the 1,500 R.P.M. position; with the lever in this position, check the anti-surge stop clearance. The stop clearance should be .020 in. to .025 in. (0,50 mm. to 0,65 mm.) measured between the spring leaf attached to the throttle control lever and the cam on the loading lever shaft. (D at Fig. 1.) Adjust the clearance as necessary by means of the set screw and locknut in the bracket attached to the throttle control lever.
4. Return the quadrant lever to the inoperative position.

With the linkage set in this way, the governor should control the speed of the engine between 1,500 R.P.M. with the quadrant lever in the first operating notch and 3,000 R.P.M. in the extreme L.H. notch.

Whenever any part of the governor linkage is disturbed for any reason, the complete linkage must be re-set in accordance with paras. 1—4.

H. Checking the engine speed with the governor in position.

1. It is possible to check the governed speed of the engine with the governor in operation, by measuring the rear power take-off speed with a revolution counter. The relationship between the engine speed and the rear power take-off speed is shown in the following tables :—

(a) Rear power take-off pulley :—

| Engine speed | Pulley speed | |
|--------------|--------------------------|--------------------------|
| | 5:6 Power take-off ratio | 6:5 Power take-off ratio |
| 1500 | 1070 | 1545 |
| 2000 | 1420 | 2060 |
| 2500 | 1775 | 2575 |
| 3000 | 2145 | 3090 |

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MODELS AFFECTED
 LAND-ROVER

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FITTING ENGINE GOVERNOR

(b) Rear power take-off drive shaft:—

| Engine speed | Drive shaft speed | |
|--------------|--------------------------|--------------------------|
| | 5:6 Power take-off ratio | 6:5 Power take-off ratio |
| 1500 | 1250 | 1800 |
| 2000 | 1665 | 2400 |
| 2500 | 2085 | 3000 |
| 3000 | 2500 | 3600 |

J. Points to be checked if the governor surges.

1. Ensure that there is negligible backlash in the linkage between the governor and carburettor. Such backlash must not exceed .010" (0,25 mm.).
2. Ensure that there is no drag at any point in the linkage and that the throttle moves freely.
3. Ensure that all the carburettor jets are clean.
4. Check and correct as necessary, the tension in the fan and governor belts. If it is necessary to re-tension the governor belt, it may also be necessary to re-set the linkage in the manner described on Sheet 6.
5. If the governor still surges after attentions 1—4, it can be rectified by inserting 2 B.A. washers behind the spring on the accelerator pump actuating rod. Washers to the thickness of 1/8" (3 mm.) should be inserted initially and additions of one washer at a time then made until the surge is eliminated:—

- (a) Remove the nut securing the pump lever to the carburettor throttle spindle.
- (b) Slide the lever off the spindle and unscrew it from the pump actuating rod, counting the number of turns of the lever to unscrew.
- (c) Remove the split pin holding the spring abutment washer.
- (d) Thread the new washers up the pump rod, giving the same number of turns as when removed and re-assemble on the carburettor.

NOTE.—On no account must the nut be removed from the end of the pump rod, as this is set to give the correct pump action.

Only just enough washers to rectify the surge should be incorporated, as their addition pre-loads the governor linkage.

In any case no further washers should be inserted after the point when the spring is compressed to 1/2 in. (12,5 mm.) length with the throttle fully open.

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Number 5046

Issue 2

Date 5.5.49

Sheet 1 of 2 Sheets

MODELS AFFECTED

LAND-ROVER

UNIT AFFECTED

SUSPENSION

COMPLAINT

SUBJECT

ROAD SPRINGS

Several changes have been made in the design of Land-Rover road springs; details of these alterations are set out below to assist in the correct maintenance and replacement ordering for the vehicles concerned.

The **FREE CAMBER** of the spring, when removed from the vehicle, is used as an identification feature. It is indicated by the measurement "B" at Fig. 1, i.e. the distance from the top of the main leaf to the line joining the spring eye centres.

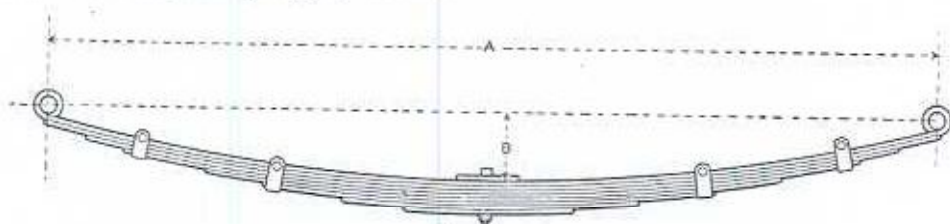


Fig. 1

FRONT SPRINGS

L.H. and R.H. front springs are identical in all cases

| Type | Part Number | Fitted to Vehicles Numbered | Free Camber | Identification |
|------|-------------|-----------------------------|-------------------|---|
| 1. | — | 860001 to 860525 | 2½ in. (63,5 mm.) | 8 leaves. Distance of end of 3rd leaf from spring eye centre: 3 in. (76 mm.). |
| 2. | — | 860526 to 862114 | 3½ in. (89 mm.) | 8 leaves. Distance of end of 3rd leaf from spring eye centre: 1½ in. (32 mm.). |
| 3. | 231196 | 862115 onwards | 4 in. (102 mm.) | 9 leaves. Two centre clips turned over main leaf. |

Type 3 springs are supplied as spares for all vehicles numbered 862115 onwards.

Types 1 and 2 springs are NOT supplied as spares; in their place a special service spring is used, the characteristics of which are as follows:—

| Type | Part Number | Supplied for Vehicles Numbered | Free Camber | Identification |
|---------|-------------|--------------------------------|-----------------|--|
| Service | 217222 | 860001 to 862114 | 3½ in. (89 mm.) | 9 leaves. All clips turned over the main leaf. |

The two types of spring supplied are not interchangeable and must only be fitted within their respective series.

Should operating conditions warrant the modification, the original 8 leaf springs (Types 1 and 2) can be converted to the Service 9 leaf pattern by the addition of

1 extra leaf Part No. 1620 and 1 new centre dowel Part No. T1432 per spring.

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MODELS AFFECTED

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SUSPENSION

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ROAD SPRINGS

To effect the conversion, proceed as follows:—

1. Remove each road spring from the vehicle.
2. Should the spring have settled, re-set it to 3½ ins. (89 mm.) free camber and re-temper.
3. Remove and discard the bolts and nuts from the leaf clips.
4. Remove and discard the centre dowel.
5. Insert the new leaf (T1620) between the original second and third leaves.
6. Fit the new centre dowel (T1432).
7. Bend the four leaf clips over the main leaf.
8. Replace the road spring.

The parts required for this conversion will be supplied, free of charge, upon application to our Spares Department, or, if facilities permit, they can be made locally as detailed below. Where this procedure is followed, a saving in freight, customs dues and time will result.

Extra leaf T1620. Length (flat): 35 in. (890 mm.). Width: 1½ in. (44,5 mm.).
Thickness: .218 in. (5,5 mm.). Brinell hardness: 388-444.

Centre dowel T1432: As original dowel, but with plain shank 1.750 in. (44,5 mm.) long instead of 1.555 in. (39,5 mm.).

REAR SPRINGS

L.H. and R.H. rear springs are NOT interchangeable, except in the case described below. All types have either nine or ten leaves.

| Type | Fitted to Vehicles Numbered | L.H. | | | R.H. | | |
|------|--------------------------------|----------------|---------------------|---------------------|----------------|---------------------|---------------------|
| | | Part Number | Free Camber | Identifi- cation | Part Number | Free Camber | Identifi- cation |
| 1. | 860001 to 862297 | — | 4½ in. (111 mm.) | — | — | 4½ in. (111 mm.) | — |
| 2. | 862298 to 8664115 | — | 4½ in. (111 mm.) | Stamped L.H. | — | 5 in. (127 mm.) | Stamped R.H. |
| 3. | 8664116 onwards | 217224 | 4 in. (102 mm.) | Stamped L.H. | 231224 | 4½ in. (114 mm.) | Stamped R.H. |

The R.H. spring with increased camber was introduced at vehicle number 862298, to compensate for the extra weight (fuel tank, etc.) carried on the right-hand side of the vehicle.

The camber of both L.H. and R.H. springs was reduced at vehicle number 8664116, to reduce the normal angularity of the rear axle propeller shaft.

Only springs to the latest specification (Type 3) are supplied as replacement for all vehicles.

Should a new R.H. spring be required for a vehicle within the Type 2 range of serial numbers, it would be advisable to transfer the existing L.H. spring to the right-hand side and fit a new L.H. spring on the left. This action would preserve the correct difference in camber between the two springs, and so ensure that the vehicle "sits" squarely at the rear.

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Number 5049

Issue 1

Date 21.6.49

Sheet 1 of 3 Sheets

MODELS AFFECTED

LAND-ROVER

UNIT AFFECTED

BODY

COMPLAINT

SUBJECT

REPAIR OF BODY PANELS BY GAS WELDING

Although it is preferable to repair damage to Land-Rover body panels by rivetting or spot-welding, lack of the specialised equipment to carry out these operations will make it necessary, on occasions, to resort to gas welding when undertaking panel repairs.

The light alloy material used in the manufacture of the Land-Rover body unit demands a special welding technique, but the information contained in this bulletin should enable an experienced operator, provided with the correct welding rods and fluxes, to produce sound welds with little difficulty.

Material.

The material used for all Land-Rover panels is known as Birmabright 2.

Annealing.

Birmabright 2 can be readily softened for general working by heating for a very short time (one to five minutes) to a temperature of 360°C—380°C. In circumstances where proper temperature control is not available, one side of the panel should be marked by rubbing with ordinary soap. If the panel is then heated from the other side, the soap mark will begin to clear at this temperature.

Equipment required for welding.

Assuming oxygen and dissolved acetylene to be the means of obtaining the welding heat, the following equipment, supplied by the British Oxygen Company, is considered to be the most reliable.

- Type OR 12. Two stage oxygen regulator.
- Type AR 9. Two stage acetylene regulator.
- Type D.H. Oxy-acetylene high pressure blow pipe complete with nozzles and spanners.
- Type TR 3. Outdoor trolley.
- Type TR 3a. Tool box.
- Type EC 3. Dual gas economiser with set of keys.
- Type FG 2. Goggles.

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MODELS AFFECTED
LAND-ROVER

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BODY

COMPLAINT

SUBJECT

REPAIR OF BODY PANELS BY GAS WELDING

Welding Rod.

The recommended welding rod for use on Birmabright 2 is a 1/8 in. (3 or 4 mm.) diameter rod made from the parent material and supplied by Birmabright Ltd., Woodgate Works, Quinton, Birmingham 32, England.

The best alternative is to shear a narrow strip of parent material from a discarded sheet or damaged panel.

For emergency use only, two further alternatives are available from the British Oxygen Company; they are pure aluminium or Alda 5% silicon aluminium welding rods. The pure aluminium rod would give a weak weld but one reasonably free from corrosion, while the 5% silicon material would give a stronger weld but with more likelihood of corrosion unless the weld is coated with primer after cleaning.

Welding flux.

A suitable flux is most important and it must be sufficiently acidic to dissolve away the oxides on the surface of the panel prior to welding.

The flux recommended is "Hari-Kari" Aluminium Welding Flux, Red Label, obtainable from the Midland Welding Supply Co., Lakey Lane, Hall Green, Birmingham 28, England, though a suitable alternative should be available from local sources.

Preparation of material for welding.

The area to be welded should first be scratch-brushed with a fine wire steel brush or emery cloth, to remove as much surface oxide as possible and the remaining oxide dissolved by applying a suitable flux.

Welding technique.

The acetylene used should be completely free from impurities; dissolved acetylene must be used wherever possible.

A neutral flame is necessary for aluminium welding, and the cone must be directed towards the bottom of the seam.

The actual weld should be made by using the "Leftward" technique as illustrated at Fig. 1.

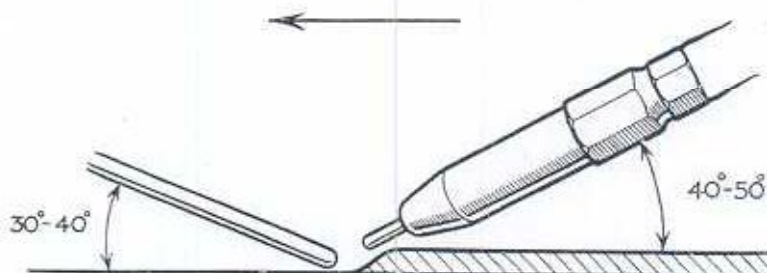


Fig. 1. Leftward method of welding.

This sheet replaces that already in your file which bears the SAME bulletin and sheet numbers, but of a LOWER issue number. The old copy should be removed and destroyed.

Bulletin
Number 5049

Issue 1

Date 21.6.49

Sheet 3 of 3 Sheets

MODELS AFFECTED

LAND-ROVER

UNIT AFFECTED

BODY

COMPLAINT

SUBJECT

REPAIR OF BODY PANELS BY GAS WELDING

The blowpipe must be held in the right hand, at an angle of 40° — 50° and moved steadily to the left without any lateral motion; the welding rod is held in the left hand at an angle of 30° — 40° and must be given a progressive circular movement.

Cleaning and cold working the completed weld.

To avoid subsequent corrosion, all traces of flux must be removed from the finished weld. The panel should be washed in warm water and thoroughly scrubbed, using a fine steel wire brush. Wherever possible, the weld should then be dipped in a warm 5% nitric acid solution and immediately rinsed in cold water.

As the welding temperature is far in excess of the annealing temperature, it is most important that the original properties of the weld and adjacent metal are now regained by cold working, i.e., hammering. The deposited metal has a coarse-grained cast structure and thorough cold working tends to restore the mechanical properties and refine the grain size, apart from relieving contractional stresses, removing surface porosity and consolidating the surface of the weld.

This sheet replaces that already in your file which bears the SAME bulletin and sheet numbers, but of a LOWER issue number. The old copy should be removed and destroyed.

Bulletin
Number 5050

Issue 1

Date 21.6.49

Sheet 1 of 1 Sheet

MODELS AFFECTED

LAND-ROVER

UNIT AFFECTED

GEARBOX

6-61519-9

COMPLAINT

TRANSFER GEAR CHANGE LEVER JUMPING OUT OF LOW RANGE

SUBJECT

Upon receipt of the above complaint first check the transfer gear change lever in the following manner :

Place the lever in the low range position, i.e., to the rear.

It should now be possible to pull the lever back sufficiently to just clear the selector ball notch in the low ratio position ; when released the lever will move forward slightly to engage low gear correctly.

In cases where this condition does not exist, the gear lever may jump out of the low ratio position, due to one of the following causes :—

- (a) Transfer selector fork assembled incorrectly on the selector shaft.
- (b) Transfer selector link fouling the freewheel control lever.
- (c) Incorrect relationship between the selector fork and the low ratio selector notch in the shaft.

REMEDY.—

- (a) Remove the transfer gear change cover plate and ascertain that the selector fork is cranked to the rear of its boss. If necessary, reverse the fork on the shaft.
- (b) File the link or lever boss to give suitable clearance.
- (c) Slacken the pinch bolt securing the fork to the selector shaft. The fork can then be moved sufficiently to regain its correct position.

This sheet replaces that already in your file which bears the SAME bulletin and sheet numbers, but of a LOWER issue number. The old copy should be removed and destroyed.

Bulletin Number 5051 Issue 1 Date 30.6.49 Sheet 1 of 1 Sheet

MODELS AFFECTED
LAND-ROVER

UNIT AFFECTED
WINDSCREEN

COMPLAINT

SUBJECT

FITTING WINDSCREEN VENTILATOR

A full-width ventilator panel has been designed for fitting across the bottom of the Land-Rover windscreen in place of the standard plain panel. It will be offered as an item of extra equipment for all vehicles despatched in the future and is also available from our Spares Department for fitting to vehicles already in service. This ventilator serves two main purposes:—

- (i) The air stream so created greatly reduces the amount of dust carried into the rear of the vehicle by eddy currents.
- (ii) In hot weather it provides a cooling stream of air for driver and passengers.

The panel is therefore a desirable fitment when the vehicle is largely operated under hot and/or dusty conditions.

The complete kit for fitting this ventilator is supplied under Part No. 232974.

3-0-0

Proceed as follows:—

1. Remove the plain panel from the windscreen by shearing off the retaining rivets and removing the drive screws securing it to the mid screen rail. Also remove the two lower drive screws securing the vertical screen glass frames to this rail.
2. Remove the split pins and joint pins securing the windscreen fasteners to the windscreen lower rail.
3. Fit the new panel complete to the windscreen with its upper edge under the screen glass frame and secure it with the drive screws removed with the original panel. Replace the two drive screws securing the vertical frame to the mid rail.
4. Secure the ventilator hinge arms to the windscreen fasteners, using the new joint pins and split pins supplied.
5. The panel can now be secured in the closed position, by fitting the three clamps over the lower and mid screen rails and tightening the wing nuts.

This sheet replaces that already in your file which bears the SAME bulletin and sheet numbers, but of a LOWER issue number. The old copy should be removed and destroyed.

Issue 1

Date 20/9/49

Sheet 1 of 2 Sheets

MODELS AFFECTED
1950 LAND-ROVER

UNIT AFFECTED
NUMBERING

1950 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 1950 Land-Rovers and units is similar to that used for the cars, and is explained in the tables on Sheet 2 of this bulletin.

All vehicles use the same series of numbers, but bear the prefix letter "R" or "L" on the vehicle and chassis numbers, "R" indicating a right-hand drive model and "L", left-hand drive. Unit numbers (except for rear axle) carry the prefix "L" on left-hand drive vehicles as they differ in design from the right-hand drive pattern.

It is most essential that the prefix letter be quoted in addition to the vehicle number on spare parts orders for all models, as it is the only indication to our Spares 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 ENGINE SIDE OF THE SCUTTLE ON THE LEFT-HAND SIDE, exposed when the bonnet panel is raised.

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 Spares Department to determine at what point mid-season alterations have taken place, if any. They should not be quoted when ordering spare parts unless specially asked for, as we can identify them from Vehicle Records, providing the VEHICLE NUMBER IS GIVEN.

Issue 1

Date 20/9/49

Sheet 2 of 2 Sheets

MODELS AFFECTED
1950 LAND-ROVER

UNIT AFFECTED
NUMBERING

1950 LAND-ROVER AND UNIT NUMBERS

EXPLANATION OF VEHICLE NUMBERING SYSTEM

EXAMPLE.

| | | | | | | | | | |
|----------------|--------------------|------------------------------------|------------|--------------------------------|------------|---|---|---|---|
| LAND-ROVER No. | L | 0 | 6 | 1 | 0 | 1 | 0 | 2 | 5 |
| | | | | | | | | | |
| | Left-hand drive | Season of manufacture (1950) | Land-Rover | Model (Standard vehicle) | Serial No. | | | | |

It will be seen from the example that in the vehicle number the prefix "R" or "L" denotes a right- or left-hand drive model; the first figure is constant (0) and indicates season; the second figure is constant and denotes "Land-Rover"; the third figure denotes the model and the last five figures indicate the serial number of the vehicle.

ALWAYS GIVE THE COMPLETE VEHICLE NUMBER WHEN ORDERING
SPARE PARTS.

| Model | Vehicle No. | Engine No. | Gearbox No. | Rear Axle No. | Front Axle No. |
|--------------------------|----------------------|----------------------|----------------------|---------------------|----------------------|
| Basic Vehicle R.H.D. | R06100001 onwards | 06100001 onwards | 06100001 onwards | 06100001 onwards | 06100001 onwards |
| Basic vehicle L.H.D. | L06100001 onwards | L06100001 onwards | L06100001 onwards | | L06100001 onwards |
| Station Wagon R.H.D. | R06200001 onwards | 06100001 onwards | 06100001 onwards | | 06100001 onwards |
| Station Wagon L.H.D. | L06200001 onwards | L06100001 onwards | L06100001 onwards | | L06100001 onwards |
| Welding Outfit R.H.D. | R06300001 onwards | 06100001 onwards | 06100001 onwards | | 06100001 onwards |
| Welding Outfit L.H.D. | L06300001 onwards | L06100001 onwards | L06100001 onwards | | L06100001 onwards |

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.

| | | | |
|----------------------|---------|--------------|--------------------|
| Bulletin Number 5052 | Issue 1 | Date 5.10.49 | Sheet 1 of 1 Sheet |
|----------------------|---------|--------------|--------------------|

| | |
|---------------------------------------|--------------------------------|
| MODELS AFFECTED 1948-49 LAND-ROVER | UNIT AFFECTED WHEELS |
|---------------------------------------|--------------------------------|

| |
|-----------|
| COMPLAINT |
|-----------|

| |
|----------------------------------|
| SUBJECT TYRE PRESSURES |
|----------------------------------|

THE FOLLOWING INFORMATION SUPERSEDES THAT GIVEN IN SERVICE BULLETIN 5012, THE LAND-ROVER OPERATION MANUAL (EDITIONS A. AND B.) AND THE LAND-ROVER WORKSHOP MANUAL.

The tyre pressures to be maintained on all Land-Rover vehicles (fitted with Avon or Dunlop tyres) are as follows:—

6.00 — 16 tyres

| Conditions | 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 | 15 | 1,05 | 20 | 1,40 |

7.00 — 16 tyres.

| Conditions | 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 |

ACTION TO BE TAKEN.

In the interests of tyre life, these revised inflation pressures should be brought to the attention of all owners immediately.

This sheet replaces that already in your file which bears the SAME bulletin and sheet numbers, but of a LOWER issue number. The old copy should be removed and destroyed.

Issue 1

Date 9.11.49

Sheet 1 of 1 Sheet

MODELS AFFECTED

1948-49 LAND-ROVER

UNIT AFFECTED

SUSPENSION

SHOCK ABSORBER MOUNTING

The plain length of all Land-Rover shock absorber mounting pins should be 1-5/16 in. (33,34 mm.) i.e., when the securing nut is fully tightened, the compressed overall length of the two rubber bushes in the absorber lug must be 1-5/16 in. (33,34 mm.).

Certain vehicles numbered prior to 8665000 may be found with pins oversize on the plain dimension, so that the correct nip is not obtained on the rubber bushes, when the securing nut is tightened.

It is most important that this point be checked when fitting a new shock absorber or replacing the rubber bushes. If the pin is too long, suitable washers must be fitted over the plain portion of the pin, to reduce the compressed length of the bushes to the correct dimension.

Issue 2

Date 10.5.50

Sheet 1 of 1 Sheet

MODELS AFFECTED

LAND-ROVER

UNIT AFFECTED

SUSPENSION

SHOCK ABSORBER MOUNTING

The plain length of all Land-Rover shock absorber mounting pins (or tubes) should be 1-5/16 in. (33,34 mm.) i.e., when the securing nut is fully tightened, the compressed overall length of the two rubber bushes in the absorber lug must be 1-5/16 in. (33,34 mm.).

IF THE RUBBER BUSHES ARE NOT CORRECTLY NIPPED, PREMATURE FAILURE OF THE BUSHES WILL OCCUR.

It is most important that this point be checked when fitting a new shock absorber or replacing the rubber bushes. If the pin is too long, suitable washers must be fitted over the plain portion of the pin (or tube), to reduce the compressed length of the bushes to the correct dimension.

Reissued 10.5.50 to cover all vehicles.

This sheet replaces that already in your file dated 9.11.49, which should be removed and destroyed.

Issue 1

Date 9.11.49

Sheet 1 of 1 Sheet

MODELS AFFECTED
1948-50 LAND-ROVER

UNIT AFFECTED
ELECTRICAL SYSTEM

**COMPLAINT A. DETERIORATION OF HEADLAMP AND
HORN CABLE HARNESS.
R.H.D. MODELS ONLY.**

CAUSE. Battery acid spilled on unprotected wiring.

REMEDY. If necessary, renew the wiring affected.

Fit a length of plastic (polyvinyl chloride) insulating tubing over the headlamp cable harness (similar to that fitted on the tail lamp harness). The tubing should be 16 mm. diam., $\frac{1}{2}$ mm. thick and 36 in. (400 mm.) long; it may be bought locally or obtained from our Spares Department under Part No. 233528.

Vehicles numbered 06104001 onwards will be so modified on assembly.

**COMPLAINT B. TAIL LAMP HARNESS DEFECTIVE OR
BURNED OUT.**

CAUSE. Harness trapped between rear chassis cross-member and angle stiffeners under body floor.

REMEDY. Renew the affected wiring as necessary.

Snip off the rear corners of the floor stiffeners at 45° to provide clearance for the wiring.

Cut clearance for the wiring at the top of the centre reinforcement gusset at the front of the rear chassis cross-member.

When replacing the harness, turn the three securing clips on the rear cross-member upside down, to secure the harness below the level of the top of the cross-member.

Vehicles numbered approximately 06102501 onwards are so modified on assembly.

ACTION TO BE TAKEN. Modifications A & B should be incorporated at the first opportunity on all vehicles undergoing service.

Issue 1

Date 17.11.49.

Sheet 1 of 1 Sheet

MODELS AFFECTED
ALL

UNIT AFFECTED
CLUTCH

COMPLAINT.

CLUTCH SPIN OR DRAG AFTER A NEW OR RECONDITIONED ENGINE OR GEARBOX HAS BEEN FITTED.

CAUSE. Clutch driven plate tight on primary pinion splines.

REMEDY Before fitting a new or reconditioned engine or gearbox, it is most important that the clutch driven plate be removed and offered up to the splines of the primary pinion. Ensure that the plate slides freely on the pinion; rectify as necessary. Failure to take this precaution may result in clutch trouble after the unit is fitted.

MODELS AFFECTED
1948-50 LAND-ROVER

UNIT AFFECTED
EXHAUST SYSTEM.

COMPLAINT.

EXHAUST TAIL PIPE BRACKET FRACTURED.

- REMEDY. 1. Repair bracket by welding and strengthen by welding in a vertical tapered stiffening web parallel with the tail pipe.

The web should be made from mild steel .080 in. (2 mm.) thick, 3 in. (76 mm.) high, $1\frac{1}{4}$ in. (32 mm.) wide at the base, tapering to $\frac{1}{8}$ in. (3 mm.) wide at the top.

2. As an alternative remedy, a specially-strengthened bracket has been designed for service replacement and is available under Part No. 233662 from our Spares Department. It should be fitted as follows:—

Remove the self-locking nut and plain washers securing the upper half of the broken bracket to the chassis frame. Retain the rubber bush and discard the bracket. Cut as much as possible of the lower half of the broken bracket from the tail pipe.

Fit the new bracket round the tail pipe adjacent to the old bracket by means of the split stirrup. Fit the rubber bush in the bracket eye and secure it to the chassis frame with the washers and self-locking nut.

It should be noted that the top eye on the new bracket is offset, to obviate complete trimming of the remains of the old bracket from the tail pipe.

Issue 2

Date 14.6.50

Sheet 1 of 1 Sheet

MODELS AFFECTED
1948-50 LAND-ROVER
(Numbered prior to 06111383)

UNIT AFFECTED
EXHAUST SYSTEM

COMPLAINT

EXHAUST TAIL PIPE BRACKET FRACTURED

- REMEDY. 1. Repair bracket by welding and strengthen by welding in a vertical tapered stiffening web parallel with the tail pipe.

The web should be made from mild steel .080 in. (2 mm.) thick, 3 in. (76 mm.) high, 1½ in. (32 mm.) wide at the base, tapering to ½ in. (3 mm.) wide at the top.

2. As an alternative remedy, a specially-strengthened bracket has been designed for service replacement and is available under Part No. 233662 from our Spares Department. It should be fitted as follows :—

Remove the self-locking nut and plain washers securing the upper half of the broken bracket to the chassis frame. Retain the rubber bush and discard the bracket. Cut as much as possible of the lower half of the broken bracket from the tail pipe.

Fit the new bracket round the tail pipe adjacent to the old bracket by means of the split stirrup. Fit the rubber bush in the bracket eye and secure it to the chassis frame with the washers and self-locking nut.

It should be noted that the top eye on the new bracket is offset, to obviate complete trimming of the remains of the old bracket from the tail pipe.

The strengthened bracket is fitted to all vehicles numbered 06111383 onwards; it may be recognised from the fact that it is secured to the tail pipe by means of a clamp and pinch bolts, whereas the original bracket is welded directly to the pipe.

Re-issued 14/6/50 to advise commencing serial number for re-designed bracket on new vehicles. This sheet replaces that already in your file dated 22/11/49 which should be removed and destroyed.