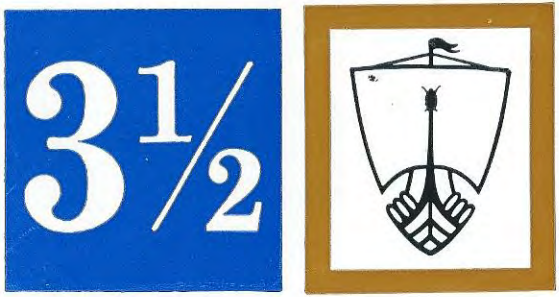
Rover 3½ Litre
Owner's Maintenance Manual



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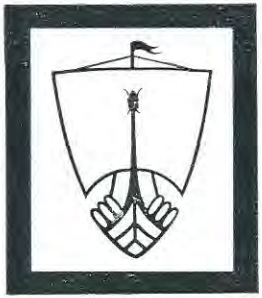

Incorporating: Saloon and Coupé models

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Specification details set out in this handbook apply to a range of vehicles and not to any particular vehicle. For the specification of any particular vehicle owners should consult their Distributor or Dealer.

The Manufacturers reserve the right to vary their specifications with or without notice, and at such times and in such manner as they think fit. Major as well as minor changes may be involved in accordance with the Manufacturer's policy of constant product improvement.

Whilst every effort is made to ensure the accuracy of the particulars contained in this Handbook, neither the Manufacturer nor the Distributor or Dealer by whom this Handbook is supplied, shall in any circumstances be held liable for any inaccuracy or the consequences thereof.

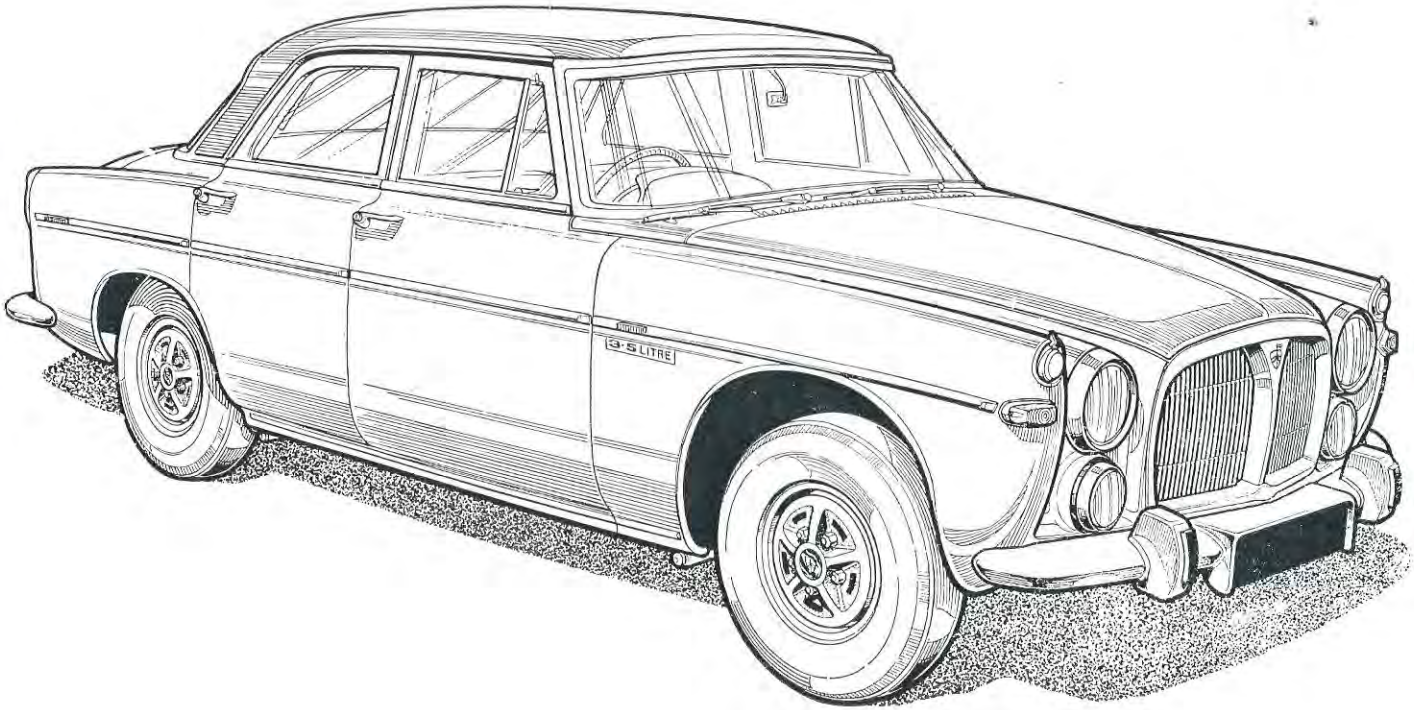
By Appointment to Her Majesty Queen Elizabeth II

Manufacturers of Motor Cars and Land-Rovers

By Appointment to Her Majesty Queen Elizabeth the Queen Mother

Suppliers of Motor Cars and Land-Rovers

English Version Part No. 605215



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Rover 3½ Litre

Introduction . . . .

This book has been prepared to provide supplementary information to that contained in the Owner's Instruction book. Its intention is to give clear and simple information necessary for the efficient care and maintenance of your car.

The book is divided into three sections:

Part 1 Routine maintenance and adjustments.
Part 2 Electrical equipment, body work, etc.
Part 3 General data and index to Parts 1 and 2.

The new car pre-delivery check will have been carried out by the Distributor or Dealer responsible for the sale of the car, with certification in the Passport to Service that the work has been done.

The routine maintenance of this car has been kept down to a minimum and can, if desired, be carried out by owners without special tools. Any work beyond that detailed in this book should be entrusted to Rover Distributors or Dealers who are equipped and prepared also to carry out the routine maintenance.

The Rover Company is always prepared to give advice on maintenance or other matters to individual owners, but any correspondence with the Company *must bear the chassis or car number* which will be found on a plate affixed to the left-hand front door pillar.

PART ONE

ROUTINE MAINTENANCE AND ADJUSTMENTS

Notes on general maintenance

Lubrication and maintenance are necessary to keep any car in good mechanical condition. All the items which require regular maintenance as detailed in the Maintenance Section are shown in Part One of this book in terms of mileage which would apply in a temperate climate. Climatic and operating conditions affect maintenance intervals to a large extent; in many cases, therefore, the determination of such intervals must be left to the good judgment of the owner or to advice from a Rover Distributor or Dealer, but the recommendations will serve as a firm basis for maintenance work.

Of particular importance in this connection are the undermentioned items:

IMPORTANT

1 Every 1.000 km (750 miles) check engine oil level, power steering oil level and water level in radiator and windscreen washer reservoir.

2 Drain and refill engine sump and change the oil filter every 10.000 km (6,000 miles) or six months, whichever comes first.

3 Every month and at every maintenance inspection check tyre pressures and inspect tyre treads; when high-speed touring the tyre pressures should be checked much more frequently, even to the extent of a daily check. If front wheel tread wear is uneven, check wheel alignment.

4 Every month and at every maintenance inspection check brake fluid level and battery acid level.

5 Owners are under a legal obligation to maintain all exterior lights in good working order, this also applies to headlamp beam setting, which should be checked at regular intervals by a Rover Distributor or Dealer.

Fuel recommendations The Rover 3½ litre V8 engine is designed to run on 100 octane fuel, five star grade in the United Kingdom. See Owner's Instruction Manual for special advice when touring.

Lubricants The recommended lubricants have been found suitable for Rover cars and should be used whenever possible in the grades specified. When ordering oil, the correct grade, as well as the make, should be clearly stated.

The Rover Company attaches very great importance to the nature of the lubricants used in its products and therefore gives specific recommendations as detailed on the next page.

The oils recommended by The Rover Company are complete in themselves and additives should not be used.

Should any of the recommended lubricants not be available in certain overseas territories, the Rover Distributor or Dealer for that territory will obtain specific guidance from The Rover Company, or owners may communicate with the Company where they so wish.

Engine Under adverse conditions, such as driving over dusty roads or where short stop-start runs are made, oil changes, attention to the engine flame traps and breather filter replacement must be more frequent.

Air Cleaner When the car is driven in dense city traffic or over dusty roads the elements should be changed more frequently.

Propeller shaft Under tropical or sandy and dusty conditions, the sliding joint must be lubricated frequently to prevent ingress of abrasive materials.

Rover parts

It is important that you should recognise the necessity of using only genuine Rover Parts or Rover Approved Parts when repair or maintenance work is being carried out on your car.

Rover parts are produced to the same high standard as those parts built into the car in its original production and it is in your best interests that you should insist that only genuine Rover Parts or Rover Approved Parts are fitted to your car.

Recommended lubricants and fluids

These recommendations apply to temperate climates where operational temperatures may vary between approximately —10°C (14°F) and 32°C (90°F).

Lubricants marked with an asterisk (*) are multigrade oils suitable for all temperature ranges.

Information on recommended lubricants for use under extreme winter or tropical conditions can be obtained from The Rover Co. Ltd, Technical Service Department, or your local Distributor or Dealer.

COMPONENTS	BP	CASTROL	DUCKHAM'S	ESSO	MOBIL	REGENT TEXACO/ CALTEX	SHELL
Engine	*BP Super Visco-Static 10W-40 or 20W-50	*Castrol GTX	Duckham's Q20-50 Motor Oil	Uniflo or Esso Motor Oil 20W/50	Mobiloil Super or Mobiloil Special 20W-50	Havoline 20/20W or 20W-50	*Shell Super Oil
Automatic transmission and power steering	BP Autran B	Castrol TQF	Duckham's Q-Matic	Esso Glide	Mobil ATF 210	Texamatic Type F	Shell Donax T.7
Rear axle	BP Gear Oil SAE 90 EP	Castrol Hypoy	Duckham's Hypoid 90	Esso Gear Oil GX 90/140	Mobilube GX 90	Multigear Lubricant EP 90	Spirax 90 EP
Propeller shaft sliding spline, front hubs, rear spring and front torsion bar sleeves	BP Energrease L2	Castrol LM Grease	Duckham's LB10 Grease	Esso Multi-purpose Grease H	Mobilgrease MP or Mobilgrease Super	Marfak All-purpose	Retinax A or Darina AX
Brakes	Castrol Girling Brake and Clutch Fluid, Crimson, Specification J. 1703						
Anti-freeze solution for cooling system	Bluecol AA, coloured green, or any other anti-freeze solution conforming to British Standard No. 3150 or anti-freeze to MIL-E-5559 formulation. For summer and winter use						
Inhibitor solution for cooling system	Marston Lubricants SQ36—Coolant inhibitor concentrate. For summer use only if for any reason frost precautions are not required						

PART THREE

GENERAL DATA, Saloon and Coupé models

Engine

Type	V8
Bore	88,90 mm (3.500 in.)
Stroke	71,12 mm (2.800 in.)
Number of cylinders	Eight
Cylinder capacity	3,528 cc (215 cu in.)
Compression ratio	10.5:1
BHP	184 (137 kw) at 5,200 revs/min
Maximum torque	31 mkg (226 lb ft) at 3,000 revs min
Firing order	1, 8, 4, 3, 6, 5, 7, 2
Sparking plugs	Champion L87Y. 14 mm with suppressed leads
Sparking plug point gap	0,60 mm (0.025 in.)
Distributor contact breaker gap	Dwell angle 26° – 28°. See also Distributor contact points—page 9
Ignition timing, dynamic setting at 600 revs/min	6° BTDC mark on crankshaft pulley
Oil pressure	3,8 to 4,6 kg/cm² (30 to 40 lb/sq in.) at 80 kph (50 mph) in top gear with engine warm (2,400 revs/min).
Lubrication	Full pressure
Oil filter—internal	Gauze pump intake filter in sump
Oil filter—external	Full-flow

Gearbox, automatic transmission

The automatic transmission consists of two main components:

1 A three-element hydrokinetic torque converter coupling capable of torque multiplication at an infinitely variable rate between 2.1:1 and 1:1.

2 A torque-speed responsive and hydraulically-operated gearbox comprising a planetary gear set providing three forward ratios and reverse.

Gear ratios

High (top)	1.0:1
Intermediate (2nd)	1.45:1
Low (1st)	2.39:1
Reverse	2.09:1

Propeller shafts

Type	Open type with centre bearing and support

Rear axle

Type	Spiral bevel with semi-floating shafts
Ratio	3.54:1

Fuel system

Fuel pump	A.C. mechanical, mounted on front left hand side of engine
Carburetter	Twin SU type HS6
Air cleaner	Twin paper element type

Cooling system

Type	Pump, fan and thermostat, pressurised to 1,0 kg/cm² (15 lb/sq in.)
Fan belt adjustment	11 to 14 mm (0.437 to 0.562 in.) free movement
Power steering pump belt adjustment	6 to 9 mm (0.25 to 0.375 in.) free movement

Suspension

Front	Laminated torsion bar
Rear	Progressive rate semi-elliptic leaf

Hydraulic dampers .. .. Telescopic, anti-aeration, non-adjustable

Brakes

Foot brake	Hydraulic servo assisted, disc brakes at front, drum brakes at rear
Hand brake	Mechanical linkage to rear wheels

Steering

Type	Power assisted	
Ratio: straight ahead	15.6:1	
full lock	10.2:1	
Front wheel alignment	1,5 mm (0.062 in.) toe-in to 1,5 mm (0.062 in.) toe-out	Static unladen position
Camber angle	1.75°	Cars with Standard suspension
Castor angle	0.25° negative	Cars with Standard suspension
Swivel pin inclination	4.25°	Cars with Standard suspension
Camber angle	2°	Cars with High suspension marked H on serial number plate
Castor angle	1° negative	Cars with High suspension marked H on serial number plate
Swivel pin inclination	4°	Cars with High suspension marked H on serial number plate

Tyres

Size: Avon Turbospeed or Dunlop Roadspeed 6.70 in. x 15 in.

Pressures:

	Normal loads		Fully laden		
	Front	Rear	Front	Rear	
Speeds up to 168 kph (105 mph)					
kg/cm²	1,8	1,8	1,8	2,2	Check with tyres cold
lb/sq in.	26	26	26	32	Check with tyres cold
Bars	1.79	1.79	1.79	2.21	Check with tyres cold
	Front	Rear	Front	Rear	
Speeds over 168 kph (105 mph)					
kg/cm²	2,1	2,1	2,1	2,4	Check with tyres cold
lb/sq in.	30	30	30	34	Check with tyres cold
Bars	2.07	2.07	2.07	2.34	Check with tyres cold

When high speed touring, the tyre pressures should be checked much more frequently, even to the extent of a daily check.

Electrical system

Type	Negative earth
Voltage	12 volt) Battery located in luggage boot under metal cover
Battery capacity	57 AH) at right-hand rear
Ignition system	Coil
Charging circuit	Alternator with current-voltage regulator

Replacement headlamp units and bulbs

Headlamp units:	
RHD	Lucas No. 59679 Sealed Beam 12v 75/50w
LHD except France	Lucas No. 410 12v 45/40w Duplo
LHD France	Lucas No. 411 12v 45/40w Duplo (yellow)
Side lamps and rear number plate lamp	Lucas No. 989 12v 6w
Stop/tail lamps	Lucas No. 380 12v 21/6w
Direction indicator lamps and reverse lamp	Lucas No. 382 12v 21w
Fog lamp	Lucas No. 54522163 Sealed Beam 12v 50w
Cigar lighter illumination	Tex No. GBP-V-2.2 12v 2.2w
Speedometer and grouped instruments, tachometer on Coupé	Lucas No. 984 12v 3.6w
Warning lights, instrument panel lights and nacelle illumination	Lucas No. 987 12v 2.2w
Instrument panel switches	Lucas No. 981 12v 2w
Interior lights, festoon bulb	Lucas No. 254 12v 6w
Automatic transmission selector indicator lamp	Lucas No. 256 12v 3w
Panel plate	Carr Fastener No. 82/036 12v 1.2w
Clock and hand brake warning light	Lucas No. 281 12v 2w
Rear luggage boot lamp	Lucas No. 222 12v 4w
Bonnet lights, Coupé models	Tex SP No. 209 12v 6w

Capacities

Component	Litres	Imperial unit	US unit
Engine sump oil	4,5	8 pints	9.6 pints
Extra when refilling after fitting new filter	0,5	1 pint	1.2 pints
Automatic transmission, with oil cooler	8,0	14 pints	17 pints
Rear axle oil	1,75	3 pints	3.5 pints
Power steering unit	1,75 to 1,8	3 to 3.5 pints	3.5 to 4 pints
Fuel tank	63,5	14 gallons	17 gallons
Including a reserve of	7	1.5 gallons	2 gallons
Cooling system	9,0	16 pints	19 pints

Dimensions—all models

Overall length	4,75 m (15 ft 7 in.)
Overall width	1,78 m (5 ft 10.5 in.)
Overall height, Saloon models	Standard suspension 1,55 m (5 ft 1 in.) High suspension* 1,56 m (5 ft 1.5 in.)
Overall height, Coupé models	Standard suspension 1,46 m (4 ft 10 in.) High suspension* 1,47 m (4 ft 10.5 in.)
Wheelbase	2,80 m (9 ft 2.5 in.)
Track, front	1,39 m (4 ft 7.312 in.)
Track, rear	1,41 m (4 ft 8 in.)
Ground clearance (under silencer)	180 mm (7.125 in.). 194 mm (7.625 in.) for high suspension
Turning circle between kerbs	12,2 m (40 ft), lock to lock 2.5 turns

*Identified by letter 'H' on car number plate affixed to left-hand front door pillar.

Weight, with water, oil and 22,5 litres (5 gallons) of fuel Saloon and Coupé 1.587 kg (3,500 lb)

ROVER 3½ LITRE NEW CAR PRE-DELIVERY CHECK

The Pre-delivery Check *must* be carried out in a thorough manner before the car is delivered to the owner.

The following sequence of operations under the headings of Engine Compartment, Passenger and Boot Compartment, Underbody, Road Test and Final Preparation will enable this work to be carried out in the most efficient manner.

ENGINE COMPARTMENT—vehicle on a level floor

1 Check engine automatic transmission and power steering reservoir oil levels

2 Check coolant level in radiator (anti-freeze specific gravity in winter), and drain taps for leakage

3 Fill windscreen washer reservoir, using the additive supplied (add Isopropyl alcohol in winter)

4 Check brake reservoir fluid level—test fluid level warning light by switching on ignition, unscrewing and raising reservoir cap approximately 25 mm. (one inch) and ensuring warning light is illuminated with the hand brake in the 'off' position

5 Check all joints, pipes, flanges and hoses for oil, fluid or coolant leakage

6 Check tension of both auxiliary drive belts; refer to Owner's Manual for adjustment details, if required

7 Check for security of attachment all electrical connections (alternator, starter, voltage regulator, fuse box, solenoid and coil, distributor low tension lead, high tension leads and spark plug connections, oil pressure and engine temperature transmitters, etc.)

8 Check the distributor vacuum pipe for leaks

9 Close bonnet and check lock and safety catch

PASSENGER AND BOOT COMPARTMENT—vehicle on the floor

10 Check the operation of all door locks and courtesy lighting

11 Check operation of all window regulators and vent window locking mechanisms

12 Check operation of glove box fasteners and locks

13 Check operation of time clock and reset as necessary

14 Check for correct operation adjustment mechanisms and security of front seats. Check adjustable armrests

15 Ensure that tool tray carries the full tool kit

16 With ignition switched on, check operation of the following instruments and controls:

(a) Hand brake operation and warning light, stop lamp and reverse lamp

(b) Fuel gauge, ignition and oil warning lights

(c) Side, parking and headlamp switches, instrument lighting and rheostat control. Check gear selector quadrant illumination

(d) Operate dip switch, and check functioning of main beam warning light

(e) Switch off head and side lamps. Check operation of direction flashers and headlamp flasher switch and corresponding warning lights

(f) Check operation of horn ring and horns

(g) Windscreen wipers and rheostat control

(h) Windscreen washers, ensuring that both jets are correctly positioned

(j) Interior lighting switches, cigar lighters, clock and rear window demister, when fitted. Switch off ignition

17 Check the operation of boot catch, lock and illumination lamp

18 Check the battery acid level and specific gravity of the electrolyte. Also battery post terminals for security.

19 Check tools for correct stowage and deficiencies

CONTINUED OVERLEAF

20 Check spare wheel is correctly inflated and stowed

21 Close boot lid

22 Check all tyre pressures and wheel nuts, ensuring that valve caps and wheel trims are carefully replaced

	Normal loads		*Fully laden*	
	Front	Rear	Front	Rear
kg/cm²	1,8	1,8	1,8	2,2
lb/sq in.	26	26	26	32
Bars	1,79	1,79	1,79	2,21

UNDERBODY—vehicle on ramp

23 Place car on ramp or over pit

24 Check drain taps for leakage

25 Check exhaust pipe and silencer mountings for security

26 Check engine sump, automatic transmission and rear axle for oil leakage

27 Check rear axle differential oil level

28 Carry out an underbody inspection, checking for any irregularities, including hydraulic leaks

ROAD TEST

29 Carry out a short but careful road test after checking for correct operation of ignition and oil pressure warning lights, and on Coupé models the tachometer, oil pressure gauge and ammeter

30 During test pay particular attention to behaviour of engine, torque converter, automatic transmission control linkage, brakes (foot and hand) and the steering mechanism. Check for body noises

31 Check operation of speedometer, mileage and trip recorder, correct positioning of steering wheel. Check operation of engine temperature gauge

32 With engine at normal running temperature, carry out the following checks:

(a) The choke warning light (momentarily) and fast-idle control

(b) The operation of fuel reserve control, allowing the engine to run for a short time with the control in both positions

(c) Check for correct functioning of the heater controls; that is, temperature control, distribution control and two-speed fan control, front and rear

FINAL PREPARATION

33 Wash car and ensure interior cleanliness, checking for damaged trim or carpets

34 Carefully examine the car exterior for damage and security and finish of chrome and stainless steel parts

35 Check all glass sections for scratches or other blemishes

36 Make sure the owner is conversant with all controls and, if necessary, accompany him on a short instructional run.

37 Check that all literature is complete