

Owner's Handbook/Maintenance Manual



# RENAULT 12

Routine Maintenance □ MOT Preparation □ Fault Finding □ Repairs

by P. Ward



# Renault 12

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Covers Renault 12 models (except auto) from 1970 onwards

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Owners Handbook Maintenance Manual

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HAYNES

## Acknowledgements

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## Contents

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Acknowledgements	2
Introduction	6
Model history and identification	7
Specifications, dimensions, weights, capacities	8
Road test data	12
Tools	13
Spares and touring pack	14
Lubrication	15
General information	18
Routine maintenance	26
Other maintenance	49
Bodywork - maintenance, cleaning, minor repairs	51
Preparing your car for the MOT test	62
Buying and selling a used Renault	12
Wiring diagrams	69
Fault finding	77
Metric conversion tables	92





Renault 12 TL Saloon



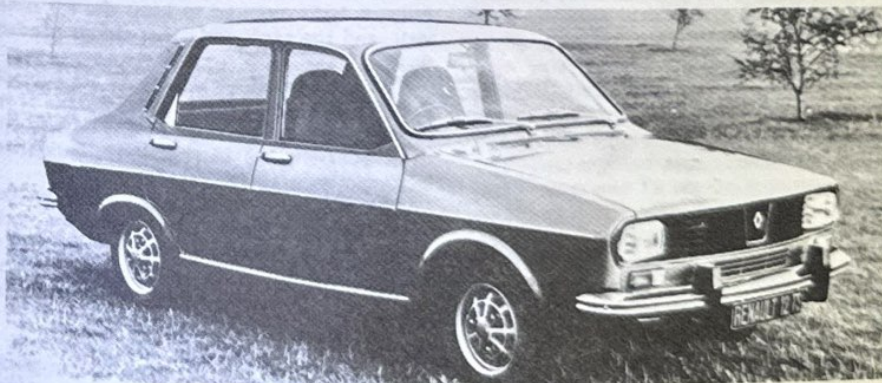
Renault 12 Estate



Renault 12 Estate profile



Renault 12 Estate three-quarter view



Renault 12 TS Saloon



## Introduction

This handbook covers the Renault 12 range of cars supplied to the United Kingdom market. It is written for the owner who wishes to find out more about his car and wants to keep it serviced fully, but with minimum effort, so that it gives economical, reliable performance.

In this handbook are all the routine maintenance tasks required to keep the car running well, and the tools and other things needed to do it.

All cars over three years old are subject to the official roadworthiness test. Details of what the tester will be looking for, and how to check them yourself, are in this book. Guidance in looking at secondhand cars is given.

Cars are not perfect, and diagnosing faults can be a great problem; therefore a methodical guide to fault finding is given. Much time and trouble can be saved if reference is made straight to this book instead of hopping from one thing to another.

If success in tackling jobs on your car encourages you to take on more complicated work, a very useful Owner's Workshop Manual is available from the publishers, or through all good accessory shops or booksellers.

## Model History and Identification

Few people would guess that the Renault 12 is the 'odd-man-out' of the Renault range, past and present. The answer lies in the fact that just about every conceivable arrangement of engine/transmission layout has been used with great success but this was the first front-wheel-drive Renault car with the engine ahead of the transmission.

The engine itself is a 1289 cc pushrod operated, overhead valve unit, previously used in the Renault 10 series. This drives the front wheels, via a cable operated clutch, four forward speed all synchromesh gearbox/final drive unit and twin drive shafts. The bodyshell is a rust-proofed, welded steel, monocoque construction; with detachable front wings, on a re-enforced box section integral chassis.

Interior appointments are more than adequate and the uprated TS version is particularly well equipped both with instruments and more comfortable seating arrangements.

The Renault 12 first appeared in May 1970 as a Saloon car in L and TL forms. The Estate car was soon to follow in January 1971 and apart from its new rear end bodywork was mechanically similar to its forerunner. In October of the following year, the higher performance TS version was introduced. This had a higher compression ratio and modified carburation together with its improved interior appointments.





**Braking system**

Type	Front disc brakes, rear drum brakes with servo on R1171, 1330 and 1177 models. Rear brake pressure limiter on all models
Front disc brakes, diameter	9 in (228 mm)
Handbrake	Cable operated to rear wheels
Rear drum brakes, diameter:	
Saloons	7.086 in (180 mm)
Estate	9 in (228 mm)

**Wheels**

Type	13 in, 4½ in. B rim width (Goodine type wheels fitted on R1177)
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**Tyres**

Size:	
R1170, 1171, 1330	145 x 13, radial
R1177	155 x 13, radial
Tyre pressures:	
Front	23 psi
Rear	26 psi

\*These pressures are approximate values only. In all cases the individual tyre manufacturers' recommendations should be followed

**Electrical system**

Type	12 volt, negative earth
Battery	40 amp hour
Flasher unit	Klaxon 30 860 or Cartier 161
Generator:	
Early models	Dynamo, Ducellier 7351 or Paris Rhone G10C56
Later models	Alternator, SEV A1430 or Ducellier
Regulator:	
Early models	Ducellier 8311 or Paris Rhone 57416
Later models	SEV 033546 or Ducellier 8364
Starter motor	Ducellier 6187 or Paris Rhone D8 E81, pre-engaged
Windscreen wiper motor	SEV116006 or Bosch WS 4901 REZA, two speed

**Headlamps and bulbs**

Headlights (late TS models)	Special 'kangaroo' lamps, incorporating dipped, main and long range beams
Long range lamps (early TS models)	Quartz iodine 55 watt, type H2
Headlights (main and dipped beam)	12v 45/40W headlight bulb socket 45 t 41
Front sidelights	12v 5W socket R19, BA 15S/19
Front and rear direction indicators	12v 21W type P26-1, BAY 15S/19
Rear sidelights and stop lights	12v 21/5W type P25-2, BAY 15S/19
Wing lights	12v 4W bulb, type T8, socket BA9/S
Interior light	12v 7W festoon 10 x 39
Warning lights and instrument panel lights	12v 2W type T8, BA9/S socket
Glove box, rear luggage compartment lights	12v 5W type CU, festoon 11 x 35

**Fuses**

One fuse (15 amp) protecting	Interior light and wiper motor
One fuse (15 amp) protecting	Instrument panel, indicators, stop lights, heater fan
One fuse (5 amp) protecting	Flasher unit

## One fuse (8 amp) protecting

## Heated rear window

<b>Dimensions</b>	R1170	R1177	R1171/1330
Overall length	14 ft 27/8 in (4.34 m)	14 ft 27/8 in (4.34 m)	14 ft 5¼ in (4.40 m)
Overall width	5 ft 313/16 in (1.62 m)	5 ft 313/16 in (1.62 m)	5 ft 313/16 in (1.62 m)
Overall height - empty	4 ft 8¼ in (1.43 m)	4 ft 8¼ in (1.43 m)	4 ft 95/16 in (1.45 m)
- laden	4 ft 413/16 in (1.34 m)	4 ft 413/16 in (1.34 m)	4 ft 6¾ in (1.39 m)
Wheelbase	8 ft (2.44 m)	8 ft (2.44 m)	8 ft (2.44 m)
Track - front and rear	4 ft 39/16 in (1.31 m)	4 ft 315/16 in (1.32 m)	4 ft 65/16 in (1.38 m)
Ground clearance	43/8 in (0.11 m)	43/8 in (0.11 m)	51/8 in (0.13 m)
<b>Weights</b>	R1170	R1177	R1171/1330
Kerb weight	1983 lb (900 kg)	2006 lb (910 kg)	2095 lb (950 kg)
Max permissible all-up weight			
with 145 SR 13 tyres	2866 lb (1300 kg)	2866 lb (1300 kg)	
with 155 SR 13 tyres	2975 lb (1350 kg)	2975 lb (1350 kg)	3030 lb (1375 kg)
Max permissible rear axle loading			
with 135 SR 13 tyres	1467 lb (670 kg)	1467 lb (670 kg)	
with 155 SR 13 tyres	1542 lb (700 kg)	1542 lb (700 kg)	
with 165 SR 13 tyres			1675 lb (760 kg)
Max permissible total train weight, starting off on an incline of 12%	4629 lb (1200 kg)	4629 lb (2100 kg)	4794 lb (2175 kg)
Towing weight			
without trailer braking	992 lb (450 kg)	992 lb (450 kg)	1047 lb (475 kg)
with trailer braking	1874 lb (850 kg)	1874 lb (850 kg)	1874 lb (850 kg)

*Note: With 110 lb (50 kg) downweight on the trailer bar the max. permissible rear axle loading must not be exceeded*

## Road test data

	Renault 12 TL (1970)	Renault 12 TS (1973)	Renault 12 Estate (1971)
Maximum speed (mph)	90	92	85
Acceleration through gears (seconds):			
0 to 30	4.7	4.2	4.7
0 to 40	7.0	6.3	7.8
0 to 50	11.1	9.2	12.2
0 to 60	15.4	13.5	17.2
0 to 70	23.8	19.8	25.8
Time for standing quarter-mile (seconds)	20.2	19.5	20.7
Overall fuel consumption (mpg)	28.2	27.5	32.1
Touring fuel consumption (mpg)	32.8	31	35.7

*The figures quoted are approximate and may vary from car-to-car, driver-to-driver.*

## Tools

In order to carry out the maintenance tasks listed in this handbook, a reasonable set of tools will be required. You will probably find that to purchase all the tools listed, at one time, will be too expensive, so build up a kit over a period of time.

Go to a good tool agent and buy good value-for-money tools. You should not have to buy the very best in the shops, but do remember that very cheap tools are more often than not a liability rather than an asset.

When you have got the items listed, keep them clean and together, preferably in the car.

### Basic tool kit

- Set of combination spanners (ring one end, open ended the other) 8 mm to 18 mm AF
- Set of BA spanners, 2 BA to 6 BA
- Adjustable spanner, 10 in parrot jaw
- Spark plug spanner
- Pair of 6 in pliers
- Screwdriver - medium 8 in
- Screwdriver - crosshead 8 in
- Screwdriver - small electrical
- Brake adjusting spanner
- Brake bleed nipple spanner
- Set of feeler gauges
- File, medium crosscut, with handle
- Hand cleanser
- Overalls
- Clean, non-fluffy rag

It is also important to keep an adequate supply of the oils, greases and brake fluid listed in the lubricants section of this handbook.



## Spares and Touring Pack

Before undertaking any long journey, whether in this country or abroad, it is advisable to thoroughly check your car and its contents. It is better to service the car early, before the exact required time if necessary, rather than put it off until your return. Breakdown services, accredited dealers and spare parts are not always there when you need them, particularly abroad and in outlying districts of Great Britain.

There are two lists, one giving spares which should always be carried in the car and the other suggesting those which it is advisable to carry if undertaking a journey abroad. Some dealers are able to supply manufacturers' recommended touring packs on a hire/buy-if-you-use basis.

### Always carry:

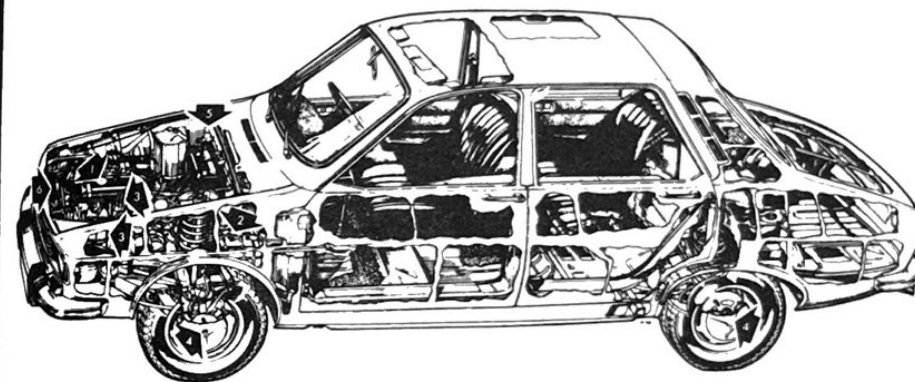
- This handbook
- First aid kit and manual
- Spare set of keys (not in the car)
- Gallon can of fuel
- List of car main agents
- Breakdown triangle (compulsory on the Continent)
- Torch with red flashing dome
- Fan belt
- Finilec puncture sealer
- Roll or PVC insulating tape
- Temporary plastic windscreen
- Length of heavy duty lighting cable

- Spark plug
- Tyre pressure gauge
- Tyre pump
- Jack and handle
- Wheel brace
- Distributor rotor, condenser and contact set
- The tools listed in the previous page

In addition, always make sure that the spare wheel is carried and inflated to the maximum pressure likely to be required.

### When travelling abroad carry:

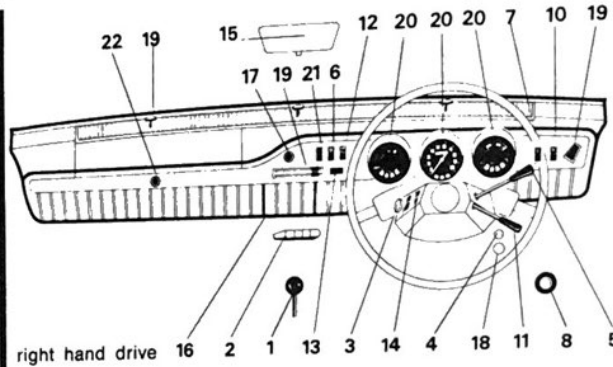
- Tow rope
- Set of light bulbs
- Set of spark plugs
- Set of Schrader valves
- Set of radiator hoses
- Radiator sealer (eg Radweld)
- Set of fuses
- Length of ignition HT cable
- Fire extinguisher
- Tube of gasket cement
- Tin of Castrol Girling Universal Brake and Clutch Fluid
- 1 quart of Castrol GTX
- Cylinder head gasket set
- Any other tools that you think you may need
- Adequate set of maps
- List of car main agents abroad
- The items in the 'Always carry' list



- 1 Engine
- 2 Transmission
- 3 Distributor and generator bushes
- 4 Front and rear hub bearings
- 5 Hydraulic brake system
- 6 Radiator

### Recommended lubricants and fluids

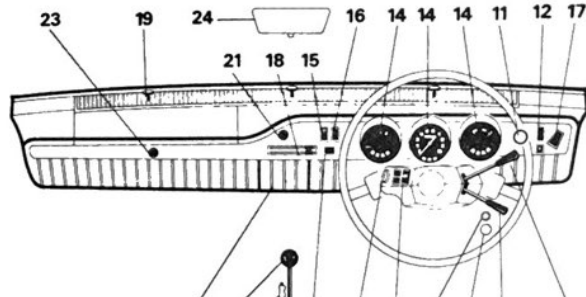
COMPONENT	TYPE OF LUBRICANT OR FLUID	CASTROL PRODUCT
ENGINE SUMP	Multigrade engine oil 20W/50	GTX
TRANSMISSION	SAE 80 EP	Hypoy Light
DISTRIBUTOR AND GENERATOR BUSHES	Light oil/Engine oil	GTX/Everyman
FRONT AND REAR HUB BEARINGS	Lithium based grease High melting point	LM GREASE
HYDRAULIC SYSTEM	SAE J1703C	Castrol Girling Universal Brake and Clutch Fluid
BRAKE MECHANISMS (ADJUSTER CAM AND SHOES TO BACKPLATES)	High melting point white grease	PH Grease
COOLANT	Glycol based antifreeze and distilled water	Anti-Freeze
Additionally Castrol 'Everyman' oil can be used to lubricate door, boot and bonnet hinges, and locks, pivots, etc.		
DISTRIBUTOR CONTACT BREAKER CAM AND BATTERY TERMINALS	Petroleum jelly	
HYDRAULIC PISTONS	Rubber grease	
INNER DRIVE SHAFT JOINTS	Specific Renault lubricant	



Facia and controls on early Renault 12 models

- 1 Gear shift lever
  - 2 Handbrake
  - 3 Ignition-starter switch
  - 4 Choke control
  - 5 Lighting switch handle - horns
  - 6 Horn change-over switch\* or heating-ventilating fan switch\* headlight flasher
  - 7 Headlight beam adjuster\* (empty-laden)
  - 8 Pedal-operated windscreen washer switch
  - 9 Windscreen wiper - windscreen washer lever\* or instrument panel lighting rheostat
  - 10 Windscreen wiper switch
  - 11 Direction indicator switch handle
  - 12 'Hazard' warning lights system switch\*
  - 13 'Brake' checking switch\*
  - 14 Instrument panel lighting rheostat
  - 15 Rear view mirrors
  - 16 Ashtrays
  - 17 Cigar lighter
  - 18 Bonnet catch release
  - 19 Heating and ventilation
  - 20 Instruments
  - 21 Rear screen demister switch\*
  - 22 Glove compartment
- \*Special to some versions

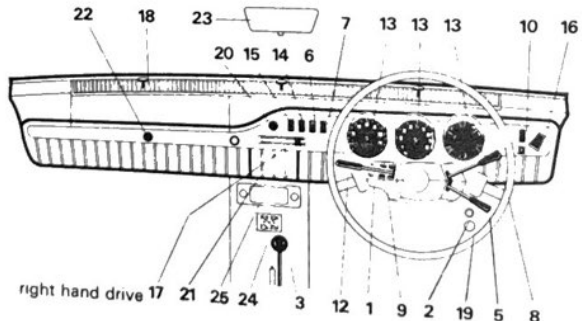
right hand drive



Facia and controls on later L, TL and Estate models

- 1 Ignition-starter switch
  - 2 Choke knob
  - 3 Gearshift lever
  - 4 Handbrake
  - 5 Direction indicator switch
  - 6 'Hazard' warning lights system switch\*
  - 7 'Brake' checking switch\*
  - 8 Lighting-horn switch
  - 9 Instrument lighting rheostat\*
  - 10 Instrument lighting rheostat or windscreen wiper windscreen washer switch\*
  - 11 Headlight beam adjuster (empty-laden)\* or windscreen washer pump\*
  - 12 Windscreen wiper switch (illuminated)
  - 13 Pedal-operated windscreen washer
  - 14 Instruments
  - 15 Rear screen demister switch\*
  - 16 Heating-ventilating fan switch\*
  - 17 Hot water valve
  - 18 Heating-ventilating controls
  - 19 Demister flap controls
  - 20 Bonnet opening knob
  - 21 Cigar lighter\*
  - 22 Ashtray
  - 23 Glove compartment opening catch
  - 24 Interior mirror
- \*Special to some versions or equipment

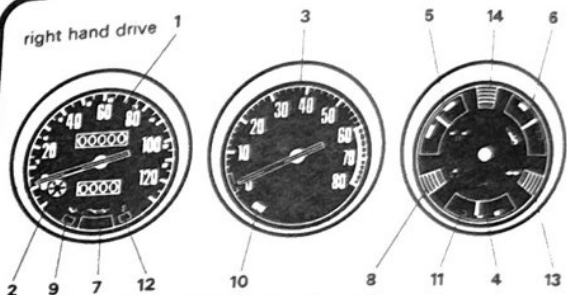
right hand drive



Facia and controls on TS models

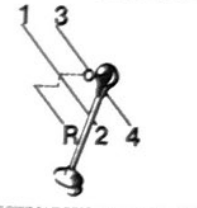
- 1 Ignition-starter switch
  - 2 Choke knob
  - 3 Gearshift lever
  - 4 Handbrake
  - 5 Direction indicator switch
  - 6 'Hazard' warning lights system switch\*
  - 7 'Brake' checking switch\*
  - 8 Lighting-horn switch
  - 9 Instrument panel lighting rheostat
  - 10 C.L.I. long range driving lights switch
  - 11 Headlight beam adjuster (empty-laden)\*
  - 12 Windscreen wiper-windscreen washer switch
  - 13 Instruments
  - 14 Rear screen demister switch
  - 15 Heating-ventilating fan switch\*
  - 16 Hot water valve
  - 17 Heating-ventilating controls
  - 18 Demister flap controls
  - 19 Bonnet opening knob
  - 20 Cigar lighter
  - 21 Ashtray
  - 22 Glove compartment opening catch
  - 23 Interior mirror
  - 24 Clock
  - 25 Radio location
- \*Special to some versions or equipment

right hand drive

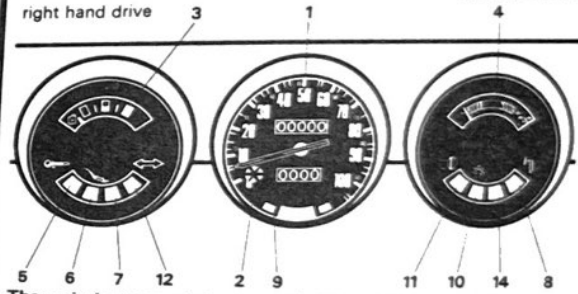


The main instrument cluster on TS models

- |                              |   |
|------------------------------|---|
| 1 Speedometer-mileometer     | 8 Choke 'on' warning light                    |
| 2 Trip recorder zeroing knob | 9 Handbrake 'on' warning light                |
| 3 Revolution counter         | 10 Brake circuit pressure drop warning light* |
| 4 Fuel gauge                 | 11 Sidelights 'on' warning light              |
| 5 Battery charge indicator   | 12 Headlight 'main beams on' warning light    |
| 6 Water temperature gauge    | 13 Direction indicator tell-tale              |
| 7 Oil pressure warning light | 14 'Hazard' warning lights tell-tale          |
- \*Special to some versions and equipment

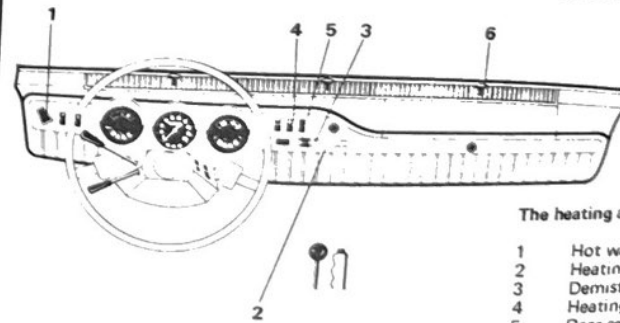


The gearshift pattern  
Depress the lever when selecting reverse



The main instrument cluster on L, TL and Estate models

- |  |  |
|--|--|
| 1 Speedometer/mileometer                           | 7 'Choke on' warning light                   |
| 2 Trip recorder zeroing knob (not on early models) | 8 'Handbrake on' warning light               |
| 3 Fuel gauge                                       | 9 Brake circuit pressure drop warning light* |
| 4 Battery charge indicator                         | 10 'Sidelight on' warning light              |
| 5 Water temperature warning light                  | 11 Headlight main beam warning light         |
| 6 Oil pressure warning light                       | 12 Direction indicator tell-tale             |
|  | 14 Rear screen demister warning light*       |
- \*Special to some versions and equipment



The heating and demisting controls layout

- |                                   |
|-----------------------------------|
| 1 Hot water valve                 |
| 2 Heating control                 |
| 3 Demisting control               |
| 4 Heating-ventilating fan switch* |
| 5 Rear screen demister switch*    |
| 6 Upper air stream flaps          |
- \*Special to some versions or equipment



## General Information

The purpose of this section of the handbook is to familiarize the owner with the function and operation of the controls and instruments of his car, and to provide other useful information relevant to the Renault 12.

### Instruments and warning lights

**1 Speedometer:** On cars supplied for the UK market this instrument is calibrated in miles-per-hour (mph) and incorporates a mileage recorder. Late models also have a mileage 'trip' recorder with a zeroing knob which is pressed in and turned to operate.

**2 Tachometer:** On TS models a tachometer (revolution counter) calibrated in engine revs/min  $\times 100$ , is fitted. For normal driving, the instrument pointer should not be allowed to enter the hatched zone (where marked) on the scale except where a reserve of power or speed is required. **Under no circumstances should the pointer be allowed to enter the red zone.**

**3 Brake circuit low pressure warning light:** This light is to warn the driver of a fluid leak. It may be dangerous to continue driving if the lamp illuminates during normal driving and expert advice should be sought immediately.

### Heating and demisting controls

A control knob, operating over a scale marked 1 to 10, regulates the hot water valve. Up to graduation 4; warm air is distributed downward with the possibility of some cool air flowing upward. Between 4 and 6; hot air is distributed downward with slightly warmed air distributed upward. Between graduations 6 and 10; hot air is distributed downward and upward.

For air flow control, the lower knob on the grille should be pushed fully to the right in order to direct the airflow downward. For demisting; the upper knob is moved to the right and air is then directed toward the windscreen when the ventilation flap is pushed fully forward. With both knobs fully to the right (or, depending on the model, when the dashboard switch is operated) the blower fan operates to increase the airflow.

Flow of air to the passenger compartment is controlled by pulling the control knobs away from the windscreen as required.

### Ignition/starter switch

The switch is marked 'St', 'A', 'G', 'M', 'D'. To engage the lock, turn the key to the 'St' position and withdraw it. Note that it may be necessary to rotate the steering wheel a little from side-to-side when engaging or disengaging the lock. The 'A' position enables accessories such as a radio (where fitted) to be used without energising the ignition circuit. At 'G' the key can be withdrawn without locking the steering. 'D' is the position selected for starting the engine, after which the key can be released and allowed to return to the normal running position 'M'. If the engine does not fire, the key must be turned off before attempting to start the engine again.

### Handbrake lever

On later models the handbrake lever has a button on the end of the lever handle which is depressed to release the ratchet. On earlier models the horizontal handle is pulled outward from beneath the facia, then released by turning it through 90° to the downward position. It automatically returns to the horizontal position when at the end of its travel.

### Choke (strangler)

The choke control should be used as required with a cold or warm engine when starting. Once the engine has started, the knob should be pushed in as quickly as possible to minimise engine wear and provide greater economy. If a cold engine will not start, the starting procedure should be repeated with the choke control pushed in approximately 1/3 of its full travel. With a hot engine which is difficult to start, it is preferable to depress the accelerator (with the choke control fully 'home') when starting, but do not pump the accelerator as this will pump fuel into the inlet manifold and aggravate the problem.

### Steering column mounted lighting switch

To switch on the headlights, rotate the handle knob until the headlight symbol faces you; then move the lever to the appropriate position for the headlamp beam setting. By pressing the knob-end inwards, the horns are sounded. Note: in addition to the main and dipped beam

settings, the headlamp position should be adjusted for an empty or laden vehicle.

### Windscreen wipers and washers (L, TL and Estate)

The two-speed windscreen wipers are operated by a three-position rocker switch on the facia. Light switch pressure is required for normal wiping speed, full switch pressure is required for fast wiping, and the lower part of the switch is depressed to switch the wipers off. The windscreen washer is operated by a facia mounted button.

### Windscreen wipers and washers (TS and special equipment versions)

The wipers are operated by a three-position stalk switch; up is off, partly depressed is normal speed, fully depressed is fast speed. To operate the washers, the lever should be lifted towards the steering wheel.

### Jacking up and changing a wheel

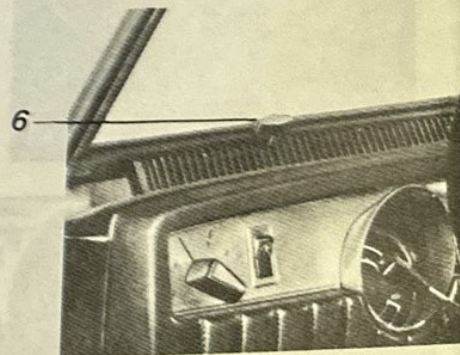
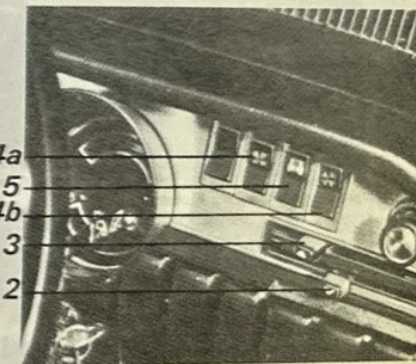
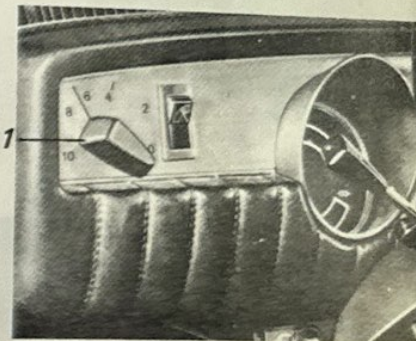
Whenever it is necessary to remove a wheel, it should be done with the car on flat and level ground (unless completely impractical). Apply the handbrake and if possible chock the wheels which are to remain on the ground. Clip the jack into the appropriate jacking point nearest to the wheel (there are two jacking points on each side member), then unscrew the jack to lower it to the ground below the jacking point. Before raising the car, remove the rim embellisher (except TS models) using the wheelbrace, and slacken the wheel nuts slightly. Now raise the car and remove the wheel. When refitting the wheel, pinch the nuts up tight with the car raised then finally tighten them when the car is on the ground. On TS models the rim embellisher needs to be fitted before the wheel is fitted to the car.

### Bonnet release catch

The bonnet can be released by pulling the knob below the facia, and then raised by hand. Once fully opened it can be supported on its stay.

### Doors

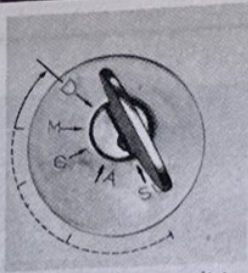
On some versions a small internal locking lever is provided on front doors to prevent opening on impact; however, in general, external locks are fitted. With the former type, the lever should be moved to the horizontal position after the door is shut, otherwise the lock will



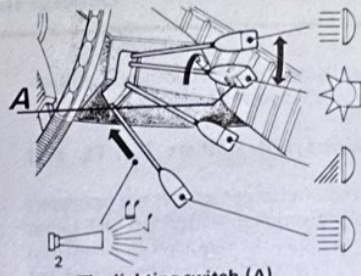
The individual heating and demisting controls

- 1 Hot water valve
- 2 Heating control
- 3 Demisting control
- 4a,4b Alternative positions of fan switch
- 5 Rear screen demister switch
- 6 Upper air stream flaps

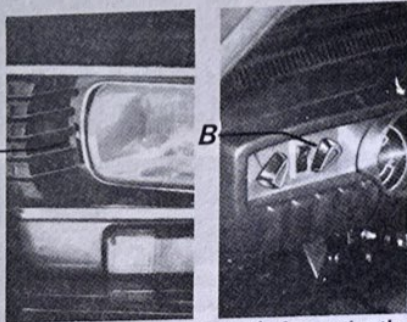




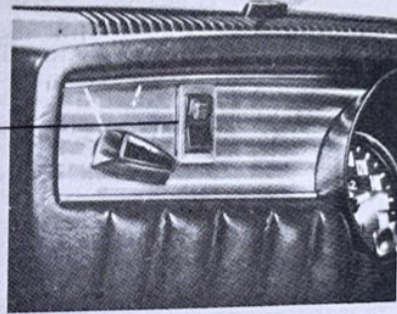
The ignition/starter switch



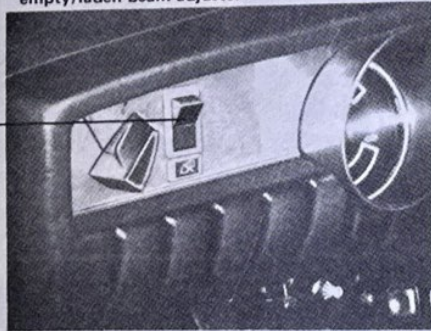
The lighting switch (A)



Alternative positions (A and B) of mounting the empty/laden beam adjuster

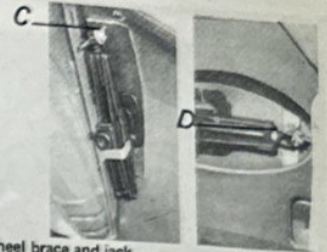
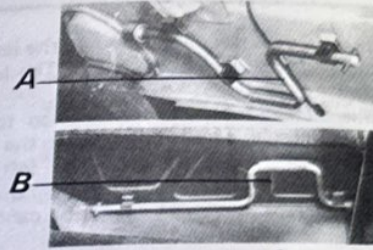
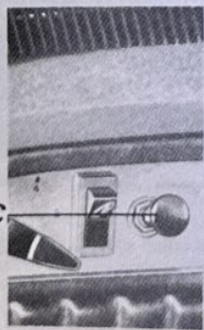


Switch for long range quartz iodine lamps where fitted



Windscreen wiper and washer controls

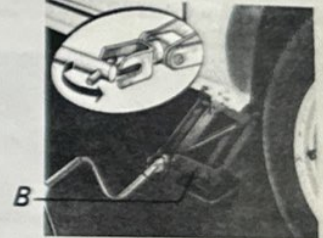
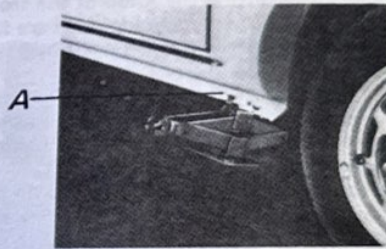
- A Wiper switch, L, TL and Estate models
- B Reservoir bottle
- C Washer button, L, TL and Estate models
- D Combined wiper and washer control on TS models



Stowage points of the wheel brace and jack

- A Saloon
- B Estate

- C Saloon
- D Estate



Fitting the jack

- A The jack clipped to the jacking point
- B The jack lowered to the ground with the handle fitted

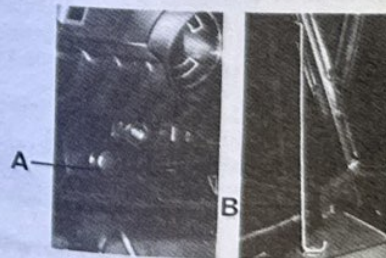


Door interior locking lever

- A Release
- B Lock engaged



The childproof lock

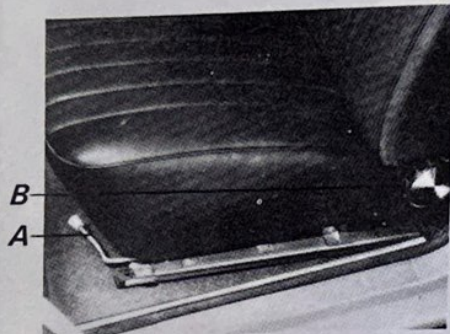


The bonnet release (A) and stay (B)



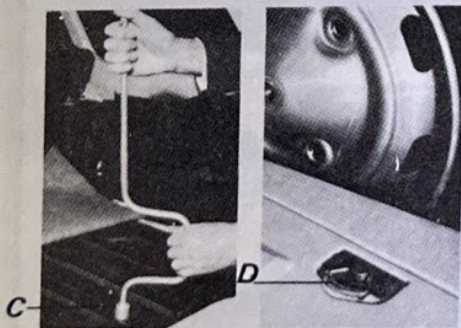
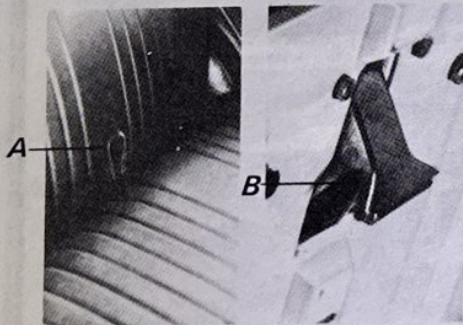
The spare wheel location





Seat adjustment

- A Fore and aft adjuster
- B Seat back adjuster



Interior appointments on Estate cars

- A Seat lifting loop
- B Backrest release lever
- C & D Alternative methods of locking the removable floor panel

disengage. On the rear doors, moving the lever to position 'A' will release the catch. The lock is engaged at position 'B'.

Where childproof locks are fitted to rear doors, the lock is engaged by turning the knob, using the door key, clockwise for left hand doors and anticlockwise for right hand doors. When the lock is in use the door cannot be opened from inside.

**Seats**

Fore-and-aft adjustment of the front seats is possible after lifting the knob at the front of the seat cushion. Where reclining seats are fitted, the angle of the seat back is adjusted by rotating the knob at its base.

On Estate cars the rear seat cushion can be lifted forward by means of the loop, and the backrest released from the upright position by lifting the centrally mounted lever.

A removable floor panel is fitted on Estate cars to provide a small amount of extra storage space. This is released either by unscrewing the bolt with a wheel brace or rotating the two turn knuckles through 90°.

**Rear view mirror**

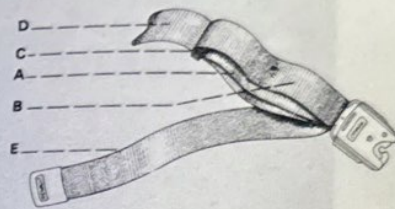
The mirror position can be adjusted for direction, and for height, by turning it through 180°. For night driving, it can be 'dipped' to prevent dazzle by pressing the small lever.

**Safety belts**

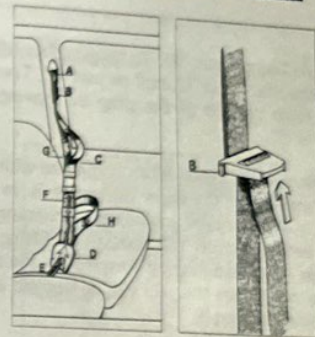
Different types of safety belt have been fitted. The operation of the various types is summarized below:

**'Association' belts:** To use the belt, grasp the buckle 'D' and clip it into the fixed clip 'E' by pressing, whilst holding the buckle by its sides. On some versions the buckle is replaced by one or two rings, or a curved bar. When the belt is fitted, it should be tightened by pulling on the loop 'C' or slackened by lifting the buckle 'B', and then easing forward with the body to pull the section 'G' downward. The lap strap 'H' should fit firmly round the hips. To release the belt, pull on the sides of the belt buckle with one hand. On some models a release tab 'F' is fitted. The belts can be stowed at point 'A' on the centre pillar when not in use.

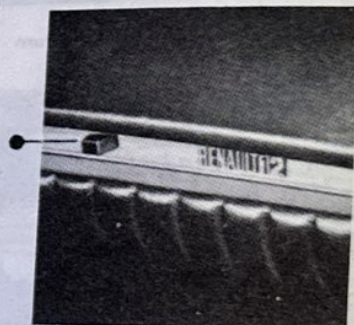
**'Europa' belts:** When compared with the 'Association' belts, the main difference is in the method of adjustment. Slackness of the lap strap is taken up at point 'D' by holding the buckle



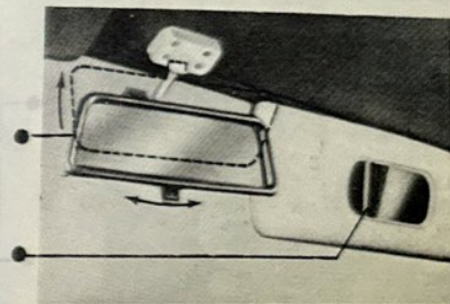
'Europa' seat belts



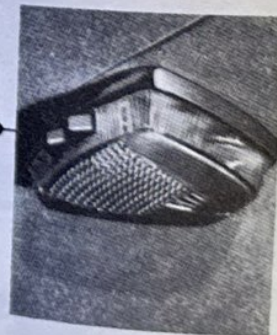
'Association' seat belts



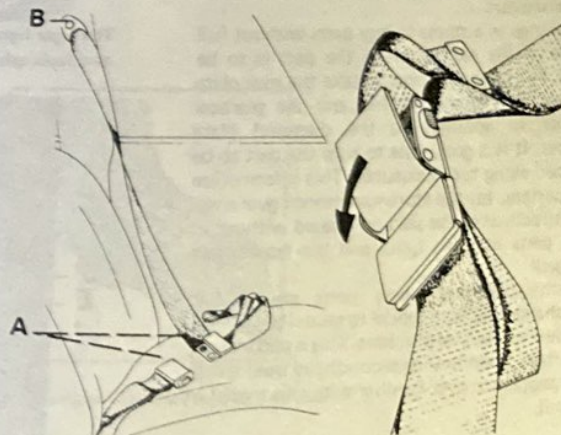
The glove compartment catch



The rear view mirror and vanity mirror



The interior light



'Manomatic' seat belts



and pulling on part 'A'. To take up slackness in the shoulder strap 'E', pull on part 'B'. Take up any loose portion of the strap by moving the runner 'C'.

**'Manomatic' belts:** When compared with the 'Europa' belts, the main difference is in the buckle 'A'. The belts are locked by clipping the two halves together and released by lifting the buckle cover and leaning forward on the belt. When not in use the clip can be hooked onto the pillar at point 'B'.

#### Carburettor air pre-heater

On some models an air preheater is fitted for cold weather conditions, and should be set according to the season.

#### 'Running-in'

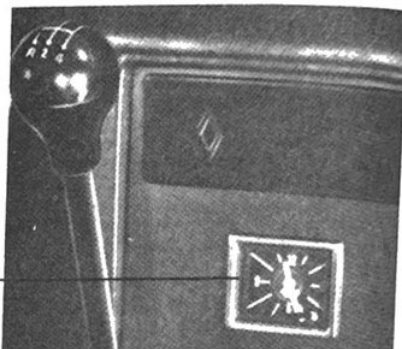
When 'running-in', an engine speed of 3500 rpm or a road speed of 56 mph (90 kph) in top gear should not be exceeded during the first 600 miles (1000 km). Engine speed can progressively be increased during the next 600 miles.

#### Buying spare parts

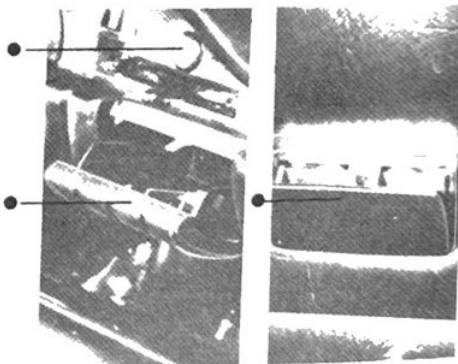
It obviously makes good sense to order spare parts from a Renault franchise garage. Genuine parts (Pieces D' origine) are more likely to be available off the shelf there. Certainly they will have a better knowledge of what they are selling than elsewhere.

Never go to a stores to buy parts without full details of the car to which the part is to be fitted. This means you should take the oval plate number, the engine number and the gearbox number in addition to the diamond plate number. It is a good idea to take the part to be replaced along too if possible. This information is important, for the storeman cannot guarantee the correctness of the part purchased without it. Even parts like fan belts and top hoses have changed!

Remember that many parts are in fact interchangeable from model to model but always double check before purchase. This is particularly important when buying secondhand used spares from people not over-familiar with this model of Renault.

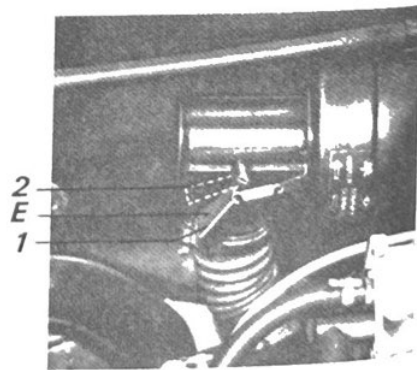


The clock (where fitted)  
To set the hands, depress the button and turn



The cigar lighter  
and fascia ashtray

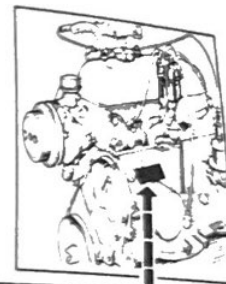
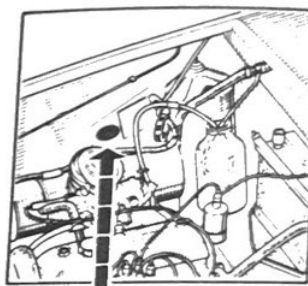
Door mounted ashtray  
(where fitted)



Carburettor air pre-heater

E Flap lever  
1 Summer position 2 Winter position

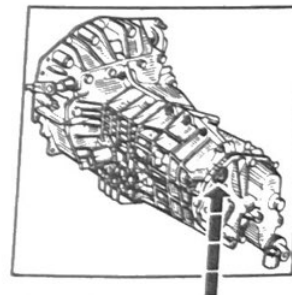
## Vehicle Identification Plates



Oval plate and losenge plate



Engine number - includes engine type number



Gearbox number - includes type and number

# Routine Maintenance

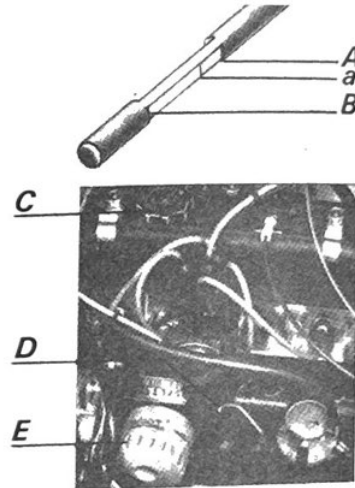
## Introduction

No matter how well you look after your Renault 12, various components, inevitably, are going to wear out and need replacement; but by carrying out the regular maintenance tasks listed you will be able to get above average mileage from your car before replacement becomes a necessity. A great many of the maintenance tasks are purely a visual examination of components, many are vital to the roadworthiness of the car and safety of its occupants. The whole business of routine maintenance may become a bit tedious at times but do not neglect anything; your life or some innocent party's life may depend on it and your car will appreciate the care you bestow on it by giving you as trouble free transport as possible.

## Safety

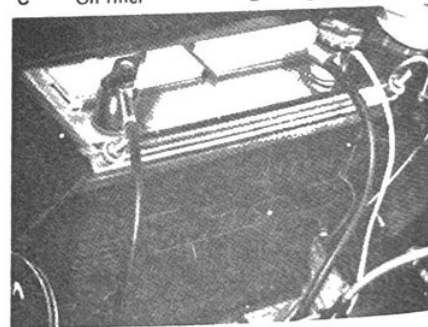
Accidents will happen but they can often be prevented. A little thought can save a considerable amount of heartbreak as well as inconvenience. Read through the following points and always put them into practice:

- 1 Do not run the engine of the car in the garage with the garage doors closed.
- 2 Do not work in a garage pit with the engine running.
- 3 Do not wear a tie or have long sleeves when working on the engine with it running. They can easily get caught in moving components.
- 4 When jacking up the front or rear of the car always chock the remaining two wheels. Where possible also apply the handbrake.
- 5 After jacking up, but before working underneath, rock the car slightly to ensure that it does not move.
- 6 Immediately wipe up any grease or oil spilled on the floor.
- 7 If you are working under the car for any length of time, ask someone to check every half an hour to make sure all is well. Time passes slowly if you are trapped underneath.
- 8 Always use the correct size of spanner, otherwise it might fly off causing injury to yourself or damage to the car.
- 9 Do not allow battery acid to come into contact with the skin or clothes. Should this occur immediately wash off with a copious supply of cold water.
- 10 Do not rush a job. Before starting work make sure you have ample time to finish.

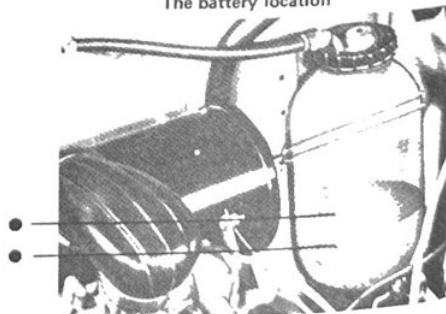


Engine lubrication

- |   |                           |   |                   |
|---|---------------------------|---|-------------------|
| A | Max oil level on dipstick | D | Dipstick location |
| a | Running-in oil level      | E | Oil filter        |
| B | Min oil level             |   |                   |
| C | Oil filler                |   |                   |



The battery location



The cooling system expansion bottle  
Max and min levels (cold engine) are indicated

## General

- 1 Whenever it is necessary to remove a filler plug, drain plug or dipstick; first wipe around the area to remove any dirt which is present. This prevents ingress of dirt to the system being worked when the plug is removed.
- 2 When draining oil from the engine or transmission, always give the car a warming-up run first to allow the oil to thin down a little - this will assist in complete draining.
- 3 Remember that when draining the engine or transmission oil, due consideration must be given to the size of the container used with regard to the total amount of oil to be drained.

## Plan ahead

Before starting work, always read through what work is involved and make sure you have all the parts and lubricants that will be required. Most do-it-yourself motorists do their work during the evenings or weekends when the parts department of garages are closed. Nothing is more annoying than starting a job and being unable to complete it due to lack of spares.

## Routine maintenance summary

### 1 Weekly or before a long journey:

- 1.1 Check the engine oil level
- 1.2 Check the battery electrolyte level
- 1.3 Check the radiator expansion bottle coolant level
- 1.4 Check the windscreen washer liquid level
- 1.5 Check the tyre pressures

### 2 Every 3000 miles (5000 km), in addition to the items previously listed:

- 2.1 Check the fan belt tension
- 2.2 Check the transmission unit oil level
- 2.3 Check the brake master cylinder reservoir fluid level
- 2.4 Check the front brake pads for wear
- 2.5 Adjust the rear brakes (where applicable)
- 2.6 Check the shock absorbers for leakage and malfunction
- 2.7 Check the tyres for irregular wear
- 2.8 Check the wheel nuts for tightness
- 2.9 Check the end float of the rear hub bearings
- 2.10 Check the end float of the front hub bearings
- 2.11 Check the drive shaft joints for wear
- 2.12 Check the front suspension arm ball joints for wear

- 2.13 Check the steering tie rod ball joints and the steering rack for wear
- 2.14 Give the car a 'once-over' to check for oil and water leaks, and the operation of instruments, controls, warning lights, etc
- 2.15 Road test the car

### 3 Every 6000 miles (10,000 km), in addition to the items previously listed (except where parts have previously been adjusted, checked or topped up and are now going to be renewed):

- 3.1 Change the engine oil and renew the filter
- 3.2 Change the transmission unit oil
- 3.3 Check the valve/rocker gaps
- 3.4 Renew the air cleaner element
- 3.5 Clean the carburettor jets and fuel filters
- 3.6 Clean the spark plugs and ignition HT leads
- 3.7 Clean the distributor controls. Clean and lubricate the distributor
- 3.8 Check the ignition timing
- 3.9 Check and clean the battery terminals
- 3.10 Check the engine idling speed
- 3.11 Check for free travel of the clutch pedal
- 3.12 Check the condition of the rear brake linings
- 3.13 Check the operation of the handbrake
- 3.14 Check the condition of the pipes and hoses in the braking system
- 3.15 Check the condition of the pipes and hoses in the fuel system
- 3.16 Check the condition of the cooling system hoses
- 3.17 Check the front and rear suspension arm pivot bushes for wear
- 3.18 Check the tightness of the suspension and steering securing nuts and bolts
- 3.19 Check the condition of the exhaust system
- 3.20 Check the condition of the seat belts and their attachment points
- 3.21 Lubricate the pedal pivots, carburettor controls, door, boot and bonnet hinges and catches, the jack, etc
- 3.22 Check the headlamp alignment
- 3.23 Road test the car

### 4 Every 12,000 miles (20,000 km), in addition to the items previously listed (except where parts have previously been adjusted or cleaned, and are now going to be renewed):

- 4.1 Renew the distributor contacts
- 4.2 Renew the spark plugs
- 4.3 Clean the crankcase fume breather filter
- 4.4 Road test the car



5 Every 18,000 miles (30,000 km), in addition to the items previously listed, where appropriate:

5.1 Renew the brake servo air filter

6 Every 27,000 miles (45,000 km) or three years, in addition to the items previously listed:

6.1 Drain and refill the cooling system  
6.2 Renew all the rubber seals, rubber hoses and brake fluid in the braking system

**Routine maintenance procedure**

**1 Weekly or before a long journey**

1.1 With the car standing on level ground, and after the engine has been stationary for at least two minutes, check the oil level on the dipstick. First remove the dipstick, wipe it clean on a dry, lint-free cloth, replace it ensuring that it is pressed fully down then withdraw it again. Always maintain the level at or near the 'full' mark; never overfill or allow the level to fall below the 'Min' level. Top up as necessary using Castrol GTX. The dipstick is on the left hand (spark plug) side of the engine between the fuel pump and oil filter; the oil filler is on the rocker housing.

1.2 Check the electrolyte level in the battery. If this is found to be below the tops of the plates, distilled water only should be added until the level is 3/8 inch (1 cm) above the tops of the plates.

1.3 When the engine is cold, check that the coolant level is between the two marks on the wall of the glass expansion bottle. Occasional topping up may be necessary but, if this is required frequently, inspect the system for leaks either from the hoses, radiator, heater or expansion bottle itself. If a leak cannot be traced, consult your Renault dealer without delay. Any topping up that is required should be carried out with a mixture of equal parts of anti-freeze and water. A glycol based anti-freeze such as Castrol Anti-freeze is suitable for this mixture.

1.4 Check the level of fluid in the windscreen washer reservoir (see Fig 41) and top up if necessary. A proprietary windscreen washing detergent may be added to the water if considered necessary.

1.5 Check the tyre pressures and adjust as necessary, to the values given in the Specifications section. This should be done when the

tyres are cold and not after a long run when they may be quite hot. Always keep the spare tyre inflated to the highest recommended pressure, then adjust when it is to be used. If possible use your own tyre gauge when checking and from time to time check its accuracy with one belonging to somebody else. Garage tyre pressure gauges are often dropped and are generally treated roughly; they cannot, therefore, be relied upon for accuracy.

2 Every 3000 miles (5000 km), in addition to the items listed previously:

2.1 Apply moderate finger pressure to the longest run of the fan belt and check for a deflection of approximately 1/2 inch (12 mm). If the deflection is too great, slacken the generator pivot bolts and the bolt on the adjustment link then move the generator as required. If this brings the fan belt to the limit of its adjustment, a new belt should be fitted. When adjustment has been made, tighten the bolts and run the engine, then recheck the tension after stopping.

2.2 Remove the filler/level plug from the transmission unit, then, if necessary, top up until the level is up to the filler/level plug hole. Any topping up should be done with Castrol Hypo Light (SAE 80 EP), preferably from an oil gun or plastic dispenser.

2.3 Check the level of fluid in the brake master cylinder reservoir and top up if necessary using Castrol Girling Universal Brake and Clutch Fluid. Do not fill the reservoir beyond the 'maximum' mark and check that the breather hole in the cap is unobstructed. If frequent topping up is required, or if the level has fallen drastically since the last check, a leak in the system is indicated. If this cannot be readily traced it is essential that the fault is rectified by a Renault dealer without delay, since brake failure could easily occur. The most likely source of brake fluid leakage is at the wheel cylinders.

2.4 Remove each front wheel in turn and inspect the thickness of brake pad material which remains. Since the pads abut the disc surface it is possible to put the end of a steel rule (the measure must start at the end of the rule) into the recess above the caliper and the tops of the pads. It should then be evident where the outer edge of the pad comes to, or the rule, from the surface of the disc outward. The total thickness of the pad, and its backing must not be less than 15/64 inch (6 mm). If less

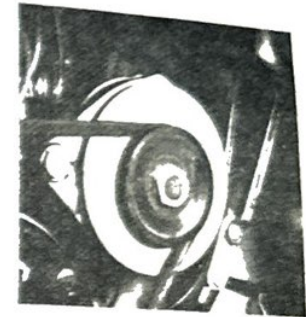
than this figure the pads must be renewed, either by a Renault garage or by reference to the Haynes Owner's Workshop Manual for the Renault 12, where the procedure is given.

2.5 Except where self-adjusting rear brakes are fitted, raise each rear road wheel in turn. Spin the wheel and if no rubbing of the brake drum against the shoe can be heard when the hand-brake is off it is probable that some adjustment is necessary. To do this, first slacken each adjuster to ensure that the thread is free, then tighten up until the shoe contacts the drum. Now slacken the adjuster until only the slightest trace of drum/shoe friction is present. Repeat the procedure for the remaining wheel. Note: If the adjusters are seized, as quite often happens due to road dirt and water, a little penetrating oil may be used but use it sparingly as oils of this type usually 'creep' and the last thing you want is oil inside the drum.

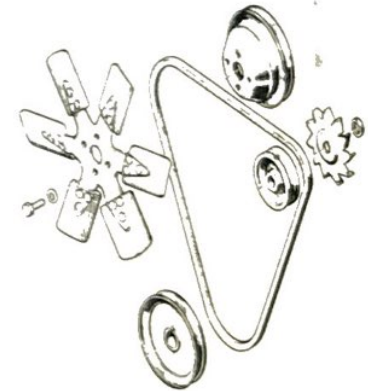
2.6 Check the body of each shock absorber for any signs of fluid leakage. This will normally occur from the top of the body where the piston enters, and on the front shock absorber is not easily seen. It is a good idea to arrange for another driver to follow you whilst you are driving and report any undue wheel bounce from your car which you may not be particularly aware of whilst driving. Bouncing the car at each corner can often help in judging the condition of the shock absorbers. Good shock absorbers will stop the car bouncing almost immediately but several rebounds can be expected if they are in need of replacement. If fluid leakage or wheel 'bounce' is experienced arrange for replacement either by a Renault dealer or by reference to the Haynes Owner's Workshop Manual for the Renault 12.

2.7 Raise each road wheel in turn and check the condition of the tyre treads. A tread depth which is less than 1 mm is contravening the law so any tyres which are like this must be renewed. Also examine for cuts and bulges on both tyre walls and in the tread. Remove any sharp stones embedded in the tread before they get a chance to work through the cover and cause a puncture. If irregular tyre wear is being experienced at any particular position, it could be due to a suspension, wheel balance or bodyframe alignment problem. Consult your Renault dealer in a case like this.

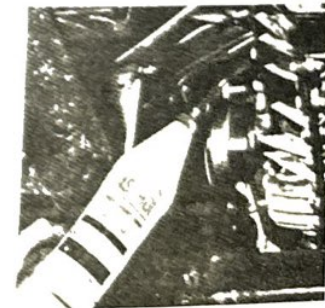
2.8 Check that the wheel nuts are tight, using the correct wheel brace. They must be firmly tightened but there is no need to stand on the wheel brace.



The fan belt adjustment link where an alternator is fitted



The fan, pulleys and belt



Adding oil to the transmission unit



2.9 Raise the rear road wheels in turn and check for hub bearing endfloat. Without special equipment, this check is not easily carried out, or adjustment made, but if you can detect any real movement when attempting to rock the wheels it is safest to consult your Renault dealer for a proper check. The correct amount of endfloat is 0.001 to 0.004 inch (0.01 to 0.08 mm).

2.10 As with the rear hub bearings, accurate checking and adjustment of the front hub bearings is not readily carried out. If endplay is detected when the wheel is raised and rocked, it is safest to consult your Renault dealer.

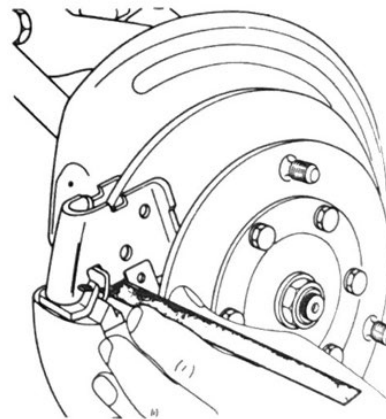
2.11 Raise each front road wheel in turn with top gear selected and then rotate the wheel back and forth a little to check for wear in the driveshaft joints. This is not a very easy check to carry out since the differential will turn fairly readily when the wheel is turned. Also attempt to rotate the shaft whilst the wheel is stationary. If wear is suspected it is safest to consult your Renault dealer for a proper check as this type of fault can impair driving safety. If the rubber boots are damaged, these will also need renewing to prevent dirt from entering.

2.12 With the front road wheels raised as for the previous tests, grasp the wheel at the top and bottom and check for wear in the top and bottom suspension ball joints. Serious wear here can result in excessive tyre wear as well as being extremely dangerous. Also check the condition of the rubber boots beneath the ball joint. Consult your Renault dealer or refer to the Haynes Owner's Workshop Manual for the Renault 12 if corrective action is required or any doubt exists.

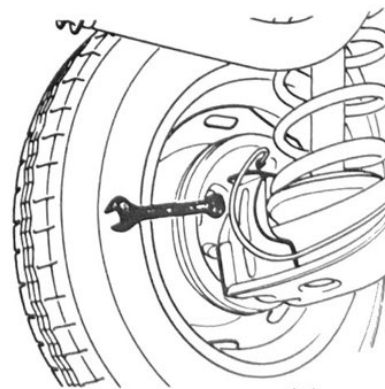
2.13 With the road wheels initially raised, swivel each one from lock-to-lock and check for wear in the joints at each end of the track rods. Lower the car to the ground and attempt to turn the steering wheel, noting how much the steering wheel can be rotated before the road wheels begin to turn. With the rack and pinion steering system fitted to the Renault 12 this should be negligible and if the track rod joints are satisfactory, the wear is most likely to be in the steering rack assembly. Any corrective action should either be entrusted to your Renault dealer or carried out by reference to the Haynes Owner's Workshop Manual for the Renault 12. Whilst checking the ball joints and steering rack, examine the rubber boots on the joints, and the large ones on the ends of the steering rack. If these are damaged they must be



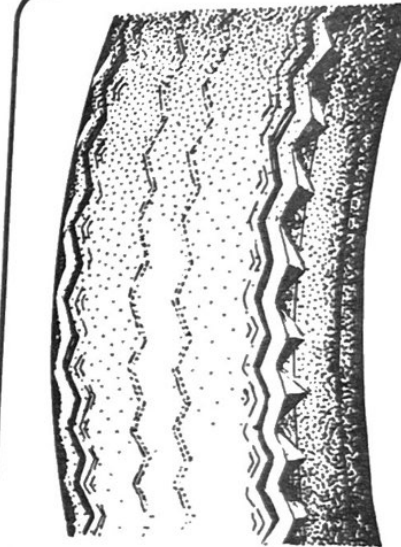
Topping up the brake fluid reservoir



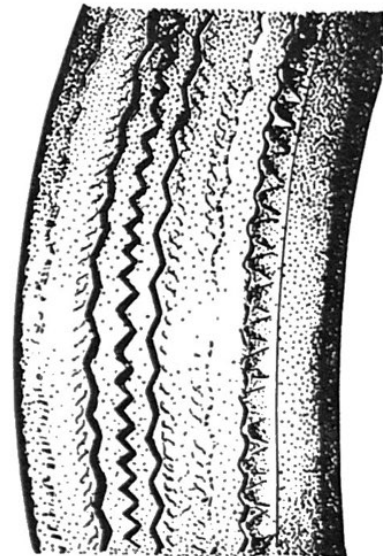
Measuring the thickness of the brake pad



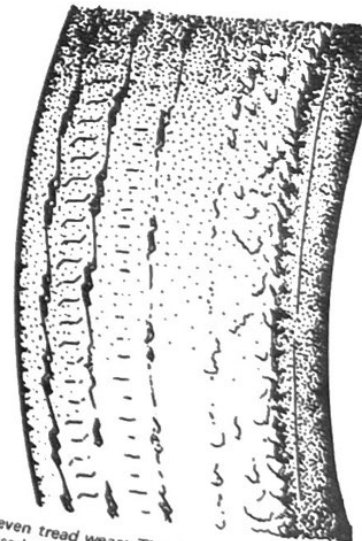
Adjusting the rear brakes



Heavy tread wear in centre of tyre: Caused by over inflation



Heavy tread wear on outer edge of tyre: Caused by under inflation

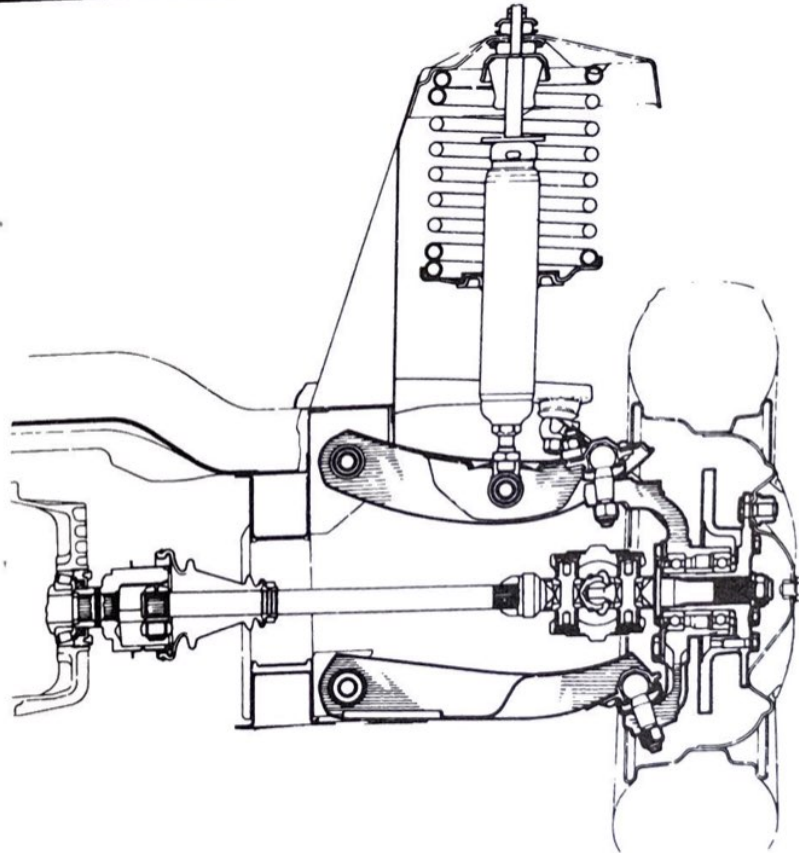


Uneven tread wear: The drawing above illustrates wear caused by excessive wheel toe-in/toe-out (usually accompanied by 'feathering' of tread edges), or by excessive wheel camber

Patches of tread wear (not illustrated) in seemingly random positions around the tyre circumference are caused by one, or more, of the following - Wheel imbalance; Worn shock-absorbers; Faulty brake drums

Each of the drawings in this page illustrates wear which is symptomatic of incorrect tyre pressures or mechanical steering/suspension faults. All three are dangerously worn beyond the legal limit. It is unnecessary and uneconomical for this type of wear to take place. The causes of this type of wear can be rectified before damage takes place if the tyres are checked regularly.

If in doubt about the condition of your tyres consult a garage or tyre specialist.



Vertical section of the front suspension

renewed.

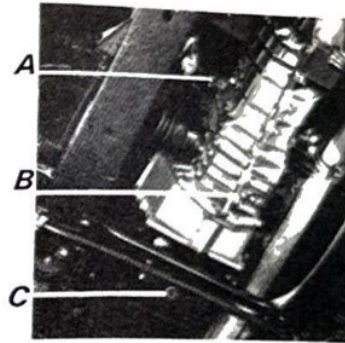
2.14 Having carried out the aforementioned checks, give the car a 'once-over' check, looking for such things as oil and water leaks, the correct operation of all the instruments and controls, paying particular attention to those points which may affect safety, eg windscreen wipers and washers, the direction indicators, all the external lights and the dashboard instruments. Some of these items may need to be checked in conjunction with the following road test.

2.15 When the above tasks are completed, road test the car to ensure everything is working to your satisfaction. The source of any little squeaks and rattles should be traced since they may be an indication of impending troubles.

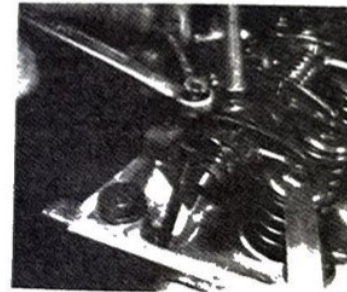
Check that the brakes pull the car to a standstill evenly without dragging to one side and that the handbrake will bring the car to rest without difficulty. After completing the test, leave the car standing in one position for a while to check underneath for any oil and water leaks which may have developed.

3 Every 6000 miles (10,000 km), in addition to the items previously listed (except where parts have previously been adjusted, checked or topped up and are now going to be renewed).

3.1 Drain the engine oil into a suitable container. Whilst it is draining, unscrew the oil filter but beware of a little oil spillage as it is removed. When fitting a new filter, smear the



The transmission filler/level plug (A) and drain plug (B); the engine sump drain plug (C)



Tappet adjustment

oil seal with a little engine oil and tighten it firmly by hand. When the oil has finished draining, clean the drain plug and the sealing face on the sump. Refit the sump plug, using a new sealing washer if its condition warrants it. Replenish the system with Castrol GTX, run the engine at idling speed only until the oil light extinguishes; then check for leaks. The oil filter must be retightened after the engine has reached normal running temperature but you can leave this until the road test (Item 3.23) if you wish. Once the oil has circulated, switch the engine off and recheck the oil level.

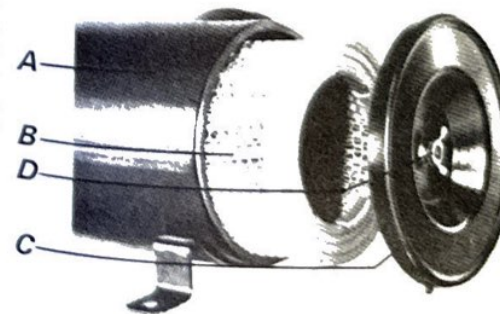
3.2 Drain the oil from the transmission unit. This is speeded up if the filler/level plug is removed also, but it will still take about 15 minutes for the last drops to drain out. When the draining has finished, clean both plugs and refit the drain plug only. Replenish the oil level using Castrol Hypoy Light, preferably from an oil gun or plastic dispenser.

3.3 Pull off the breather pipe from the rocker cover and remove any linkage, pipes, brackets, etc (these items vary according to the particular model). Take off the nuts securing the rocker housing and carefully lift the housing off. If the cork gasket is undamaged it can be re-used. By following the sequence in the table, measure the gap between the end of the valve and the rocker. If adjustment is required, first slacken the locknut on the adjusting stud, then rotate the stud as necessary. The gap is correctly set when the feeler gauge is a firm sliding fit. Recheck the gap after any adjustment has been made when the locknut is tight.

Open valve	Adjust clearance (cold)
No 8 (ex)	No 1 (ex) 0.008 in (0.20 mm)
No 6 (in)	No 3 (in) 0.006 in (0.15 mm)
No 4 (ex)	No 5 (ex) 0.008 in (0.20 mm)
No 7 (in)	No 2 (in) 0.006 in (0.15 mm)
No 1 (ex)	No 8 (ex) 0.008 in (0.20 mm)
No 3 (in)	No 6 (in) 0.006 in (0.15 mm)
No 5 (ex)	No 4 (ex) 0.008 in (0.20 mm)
No 2 (in)	No 7 (in) 0.006 in (0.15 mm)

On completion, refit the rocker gasket and cover and the ancillaries which were also removed. Run the engine to check for any oil leaks from the gasket.

3.4 Remove the wing nut on the end cover of the air filter, take off the end cover, then withdraw the filter element. Discard the old element and carefully wipe out any dirt from the interior of the cleaner body and cover, taking care that



The air cleaner

A Body  
B Filter element  
C Cover  
D Wing nut

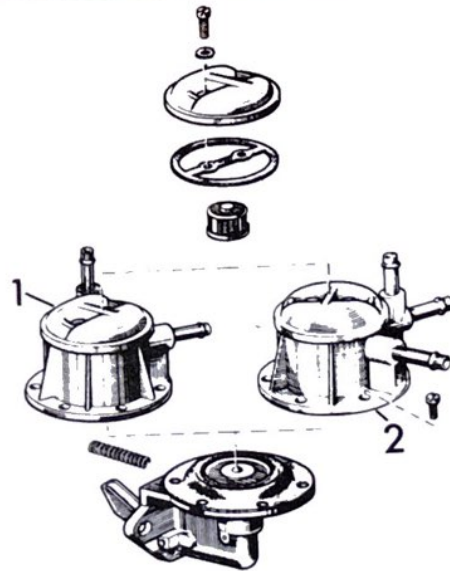


dirt does not enter the carburettor. Fit the new filter, and replace the end cover and wing nut. Where applicable, check that the winter/summer air intake flap is correctly positioned.

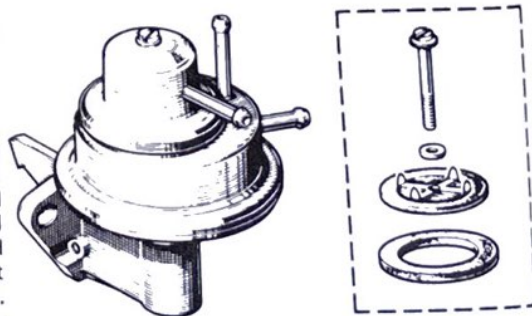
3.5 It is recommended that you consult your Renault dealer and arrange for the carburettor jets and filters to be cleaned. Although the procedure is covered in part in the Owner's Workshop Manual, certain parts should not be interfered with. Remove the top cover of the fuel pump (one screw then the cover can be lifted off) and take out the filter. It can be washed in a little petrol using an old toothbrush to remove any stubborn deposits. When refitting the filter, ensure that the seals are undamaged and that the cover seats down properly. Run the engine immediately afterwards and check for fuel leaks.

3.6 Remove the spark plugs and take them to a garage to be cleaned. This is best done on a sand blasting machine which is not only more efficient than a wire brush, but also checks the plug condition and performance under pressure. Before refitting to the engine, make sure that the gaps are set to 0.024 - 0.028 inch (0.6 - 0.7 mm) and that the sealing washers are undamaged. Also check that the insulators are not cracked; if they are dirty a wipe with a petrol moistened cloth is sufficient. Also wipe over all the ignition HT leads and the outer surface of the distributor cap and the end of the coil.

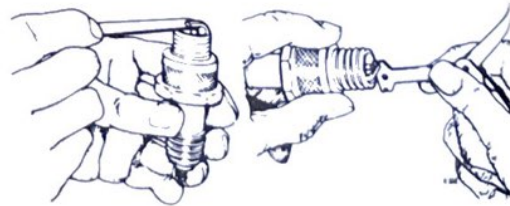
3.7 Remove the distributor cap by releasing the two spring clips; pull off the distributor rotor. Remove the fixed contact plate locking screw and the small circlip on the terminal post which also secures the end of the spring and lift off the washer. Undo until loose the small nut which secures the lead to the condenser and the spring of the contact breaker arm. Lift upward the spring contact from the pivot post. Now remove the fixed contact locking screw and lift out this contact. It is wise even for changing contact points to have a set of metric distributor spanners to avoid the use of pliers. If the contacts appear to be in reasonable condition they can be cleaned using a very fine emery cloth or coarse wet or dry paper. However, they will almost certainly require more drastic treatment and for this purpose an oil stone should be used. When you are refacing the contacts, remember that the faces must be just about parallel when fitted, although it is quite in order for them to be very slightly domed. Do not wear one side away or the points will not work at optimum efficiency. When you are satisfied with their



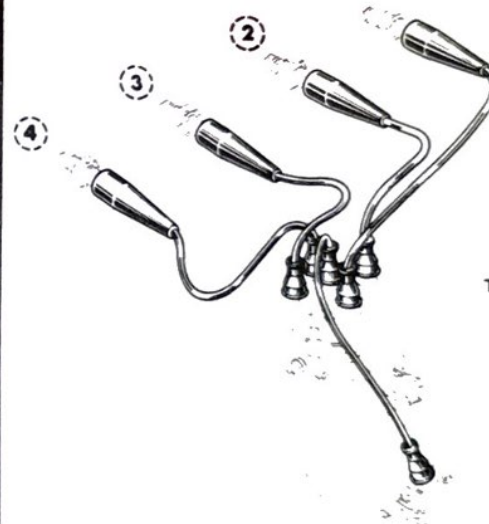
The early type fuel pumps (1 or 2)



The later type fuel pump



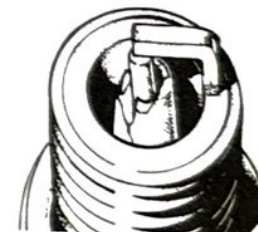
Spark plug maintenance



The correct orientation of the plug leads



White deposits and damaged porcelain insulation indicating overheating



Broken porcelain insulation due to bent central electrode



Electrodes burnt away due to wrong heat value or chronic pre-ignition (pink)



Excessive black deposits caused by over-rich mixture or wrong heat value



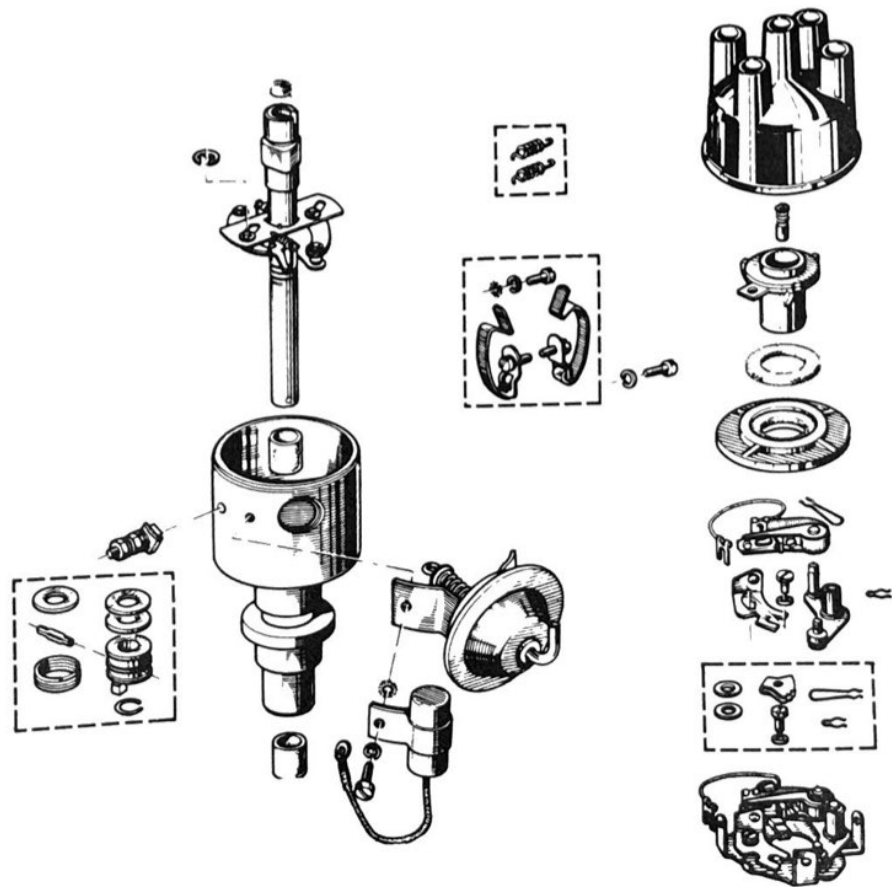
Mild white deposits and electrode burnt indicating too weak a fuel mixture



Plug in sound condition with light greyish brown deposits

Spark plug electrode conditions



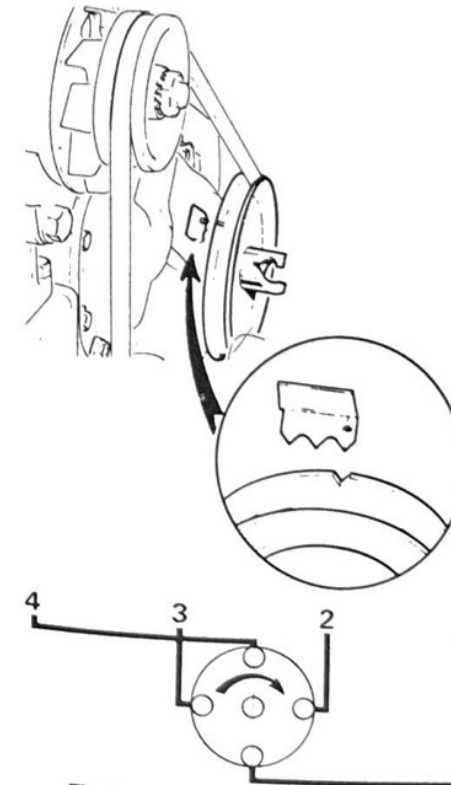


Distributor components



Distributor maintenance

- |   |                |   |                             |
|---|----------------|---|-----------------------------|
| A | Contact points | C | Contact plate locking screw |
| B | Adjusting tab  | D | Advance curve number        |



Timing marks on the pulley and pointer

surfaces, the contacts can be refitted in the reverse order to removal but first apply a drop of engine oil to the pivot. Before tightening the contact locking plate, it is necessary to set the gap correctly. Turn the engine so that the moving arm of the breaker rests with the follower on one of the four high points on the cam. The engine can be turned by engaging a gear and moving the car, or using the starting handle.

Select a feeler blade (0.015 - 0.020 inch/ 0.4 mm or 0.5 mm) and place it between the points. If the gap is too great, slacken the fixed point locking screw and move the plate to alter the gap. If the gap is too small the feeler blade may still fit between the points as the spring loaded arm can simply move back. When setting them, therefore, the feeler gauge blade should only be a very light touch on each contact face.

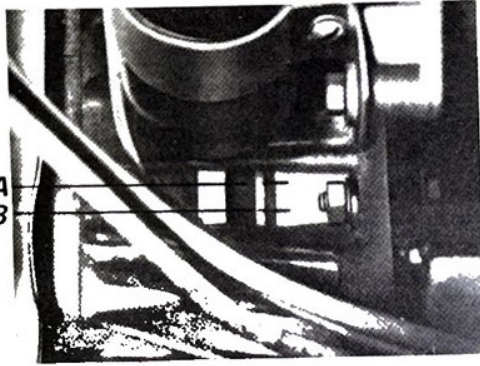
Lock the fixed plate screw and recheck the gap. Apply two or three drops of engine oil to the felt pad on the top of the cam spindle and a light smear of Castrol LM Grease or petroleum jelly to the cam profile. Replace the rotor arm, making sure that the lug in the rotor recess is fully engaged in the slot on the cam spindle.

Check the inside of the distributor cap before replacing it and verify that the four contacts are clean and the centre carbon brush is intact and moves freely.

3.8 Refer to the advance curve number on the body of the distributor and the Specifications section of this handbook for the correct setting for your car. The timing marks are either on the crankshaft pulley where there is a notch which aligns with a plate on the timing cover, or on the flywheel which aligns with a mark on the clutch housing. Rotate the crankshaft and check that with the distributor cap removed, the contacts just begin to open when the timing marks are correctly aligned. The correct setting is  $0 \pm 10^\circ$  for distributors marked 'R248' or 'R257' and  $6 \pm 10^\circ$  for distributors marked 'R268'. If difficulty is experienced in checking the exact moment of the contacts opening, a 12 volt lamp of up to 6 watts rating connected across the contacts, with the ignition switched on, will help. The bulb will illuminate when the contacts open. If the timing requires adjustment, align the timing marks, slacken the distributor body clamp screw and rotate the distributor a little as required. Tighten the bolt and recheck the timing afterwards as previously described.

3.9 Check the battery terminals for tightness and any signs of corrosion. If everything is in





Timing marks on the flywheel and clutch housing

- A Mark on clutch housing
- B Timing mark 6° before top dead centre (BTDC)

Fig 62  
Solex 32 EISA carburettor

- A Idle speed screw
- B Idle mixture screw
- C Fuel inlet

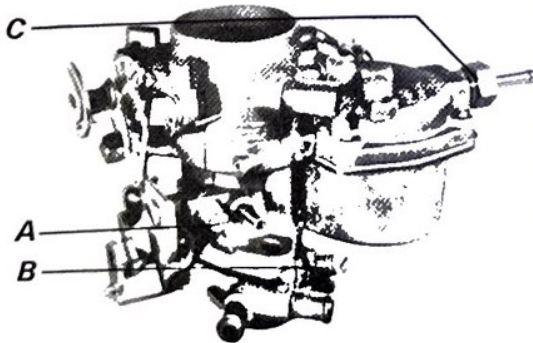
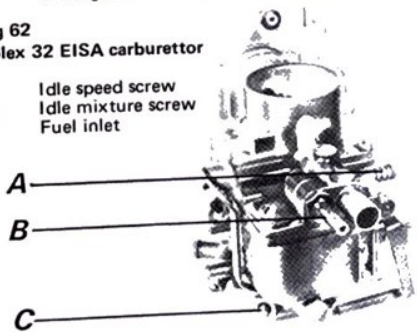


Fig 63 Carter RBS carburettor

- A Idle speed screw
- B Idle mixture screw
- C Fuel inlet

order smear the terminals with a little petrolum jelly, but if there is corrosion the battery should be removed from the car. Scrape all the corrosive products from the terminals on the battery and the leads, then dissolve some bicarbonate of soda in hot water. Pour a little of the mixture into a separate container and use a clean paintbrush to brush it on to the battery terminals. The lead ends can be dipped straight in. Repeat the process two or three times using fresh solution until all the bubbling and fizzing has stopped, but take care that the solution does not get inside the battery. When you have finished, wipe the terminals dry and smear them all over with a little petroleum jelly. Refit the battery to the car and tighten the connections firmly.

3.10 Having carried out the previous checks and adjustments, it is possible that the idling speed requires minor adjustment. Referring to Figs 62, 63 and 64, screw the idle speed screw (A) in, or out, to obtain a tickover a little faster than normally required, then use the idle mixture screw (B) to obtain the highest possible even running speed. When you have obtained the most satisfactory setting, reduce the speed to the desired level which should be 750 to 800 rpm. If several adjustments have to be made, it is preferable to rev the engine a little between each adjustment to clear the manifold of any possible excess of petrol.

3.11 There should be 3/32 to 9/64 inch (2.5 to 3.5 mm) of free travel at the end of the clutch lever. To effect this adjustment, unscrew the locknut on the cable at the lever and then screw or unscrew the second holding nut until this clearance is achieved between the holding nut and the release lever. Relock the locknut on the cable.

3.12 Checking the condition of the rear brakes is considered best left to your local Renault dealer since it may require the use of a special puller to remove the drum, and, when refitting, the hub bearing endfloat will need to be reset. It is good practice to arrange for the dealer to check the operation of the brake pressure limiter at the same time since you cannot do this job yourself.

3.13 Except where self-adjusting rear brakes are fitted (in which case the handbrake should not require adjustment) following adjustment of the rear brakes it may be necessary to adjust the handbrake travel slightly. The exact amount of movement of the lever is not laid down but about four or five clicks on the lever type, and

perhaps a little more for the umbrella handle type, is normal. Adjustment is made at the 'U' shaped compensator; first loosen the locknut then move the adjuster nut as required. When the setting is satisfactory, ensure that the locknut is tightened.

3.14 Carefully check all the rigid pipes for corrosion and for dents. Also check the flexible rubber pipes for bulges, splits and chafing. If any faults are found they must be renewed without delay.

3.15 In a similar manner to that used for the braking system, check the hoses in the fuel system.

3.16 Carefully check the cooling system hoses for cracks and for hardening of the rubber. It is safer to renew hoses before they fail; the hose layout is fairly straightforward and replacements are not unduly expensive. At the same time as checking the hoses, ensure that all the hose clips are tight.

3.17 Check the pivot bushes of the front and rear suspension arms for wear. This is not a very easy job to do and ideally the weight of the car needs to be taken off the suspension. On some of the joints a tyre lever may assist in applying some leverage but in general you would be well advised to entrust the job to your local Renault dealer. At the same time arrange for the anti-roll bar mountings and bushes to be checked.

3.18 If you have suitable spanners and facilities at hand, check the tightness of all the mounting bolts and nuts in the suspension and steering systems, not forgetting the steering rack mounting points, the steering column and the universal joints in the column. These points are seldom found to require attention but it is better to be safe than sorry. If you do not have the tools and facilities for all of the checks, arrange for your Renault dealer to do the job for you.

3.19 Check the exhaust system both for leaks and security of the clips and mountings. Provided that the car is in an open space, lying alongside whilst the engine is running will usually detect a leak. If you use your hand to detect blowing exhaust gases, beware of burning yourself, particularly at the manifold end of the system. When the engine is cold, particularly on a cold day when there is considerable condensation in the exhaust, a leak can usually be detected by running the engine and blocking the exhaust outlet for a few seconds and checking where any vapour is escaping.

3.20 Inspect the seat belt anchorage points for security and the seat belts for signs of fraying

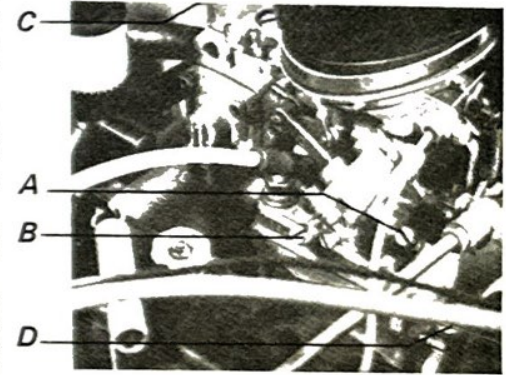
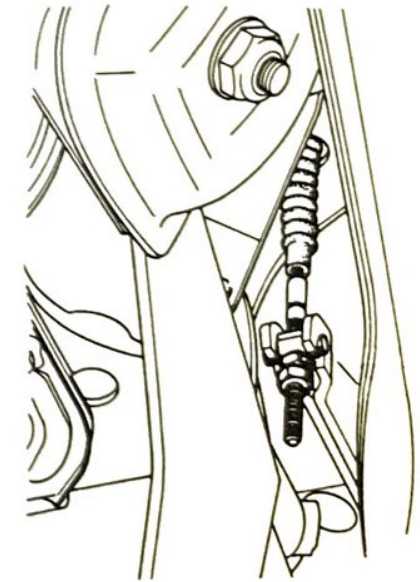


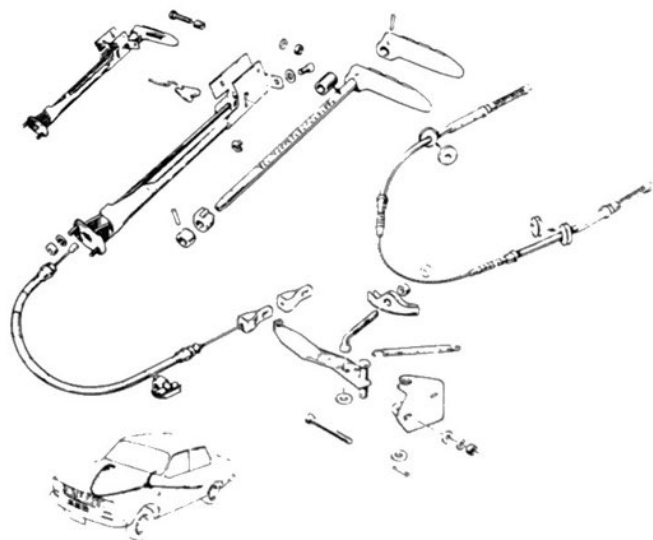
Fig 64 Weber 32DIR carburettor

- A Idle speed screw
- B Idle mixture screw
- C Fuel inlet
- D Access to main jets

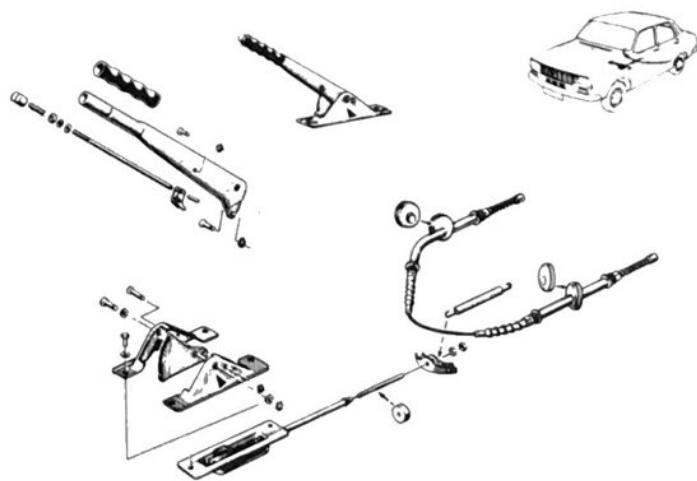


Clutch cable adjustment point





The handbrake linkage, early type



The handbrake linkage, later type

and chafing. Any frayed or chafed seat belts should be renewed for safety's sake. If any corrosion is detected around the anchorage points consult your Renault dealer without delay.

3.21 Apply a few drops of Castrol Everyman Oil, or alternatively, engine oil, to the door catches and hinges, boot and bonnet catches and hinges, seat adjusters, pedal pivots, carburettor linkage and the jack. A smear of Castrol LM Grease should also be applied to the lock striker plates.

3.22 Headlamp beam alignment can only be accurately checked using proper optical equipment and it is unwise to try random adjustments if the beam alignment is suspect. Provided that you are satisfied with the illumination from your headlights, and other drivers do not flash their headlights at you during night driving, it is reasonably safe to assume that everything is in order. For cars which are three years old or more, a headlamp alignment check is part of the MOT test procedure and if any adjustment is required it will normally be done for a very modest cost.

3.23 Repeat the road test as described in paragraph 2.15.

**4 Every 12,000 miles (20,000 km),** in addition to the items previously listed (except where parts have previously been adjusted or cleaned and are now going to be renewed):

4.1 Renew the distributor contacts. The procedure for contact removal and adjustment is given in Section 3, paragraph 7. Before fitting the new contacts, wipe their faces with a petrol moistened cloth to remove the protective film which is applied to prevent tarnishing. After (not before) the contacts have been fitted, carry out the ignition timing check detailed in Section 3, paragraph 8.

4.2 Renew the spark plugs using the recommended type with correctly set gaps. Refer to Section 3, paragraph 6 if necessary.

4.3 Pull off the crankcase fume breather filter (adjacent to the carburettor) if fitted on your particular model, and wash it thoroughly in petrol. An old toothbrush can be used to remove deposits if necessary. When clean, shake off the surplus petrol, then allow the filter to dry properly before refitting it.

**5 Every 18,000 miles (30,000 km),** in addition to the items previously listed, where appropriate:

5.1 Remove the union on the brake servo unit and take out the filter from beneath the cap. Unless the filter is in perfect condition, in which case it can be cleaned thoroughly in petrol, it should be discarded and a new item fitted. After replacing the filter, ensure that the hose is in good condition and the hose clips are tight.

**6 Every 27,000 miles (45,000 km)** or three years, in addition to the items previously listed:

6.1 At this time or mileage interval it is necessary to drain and refill the cooling system. Although this is a little involved, it is an essential part of the maintenance programme. The procedure is given below:

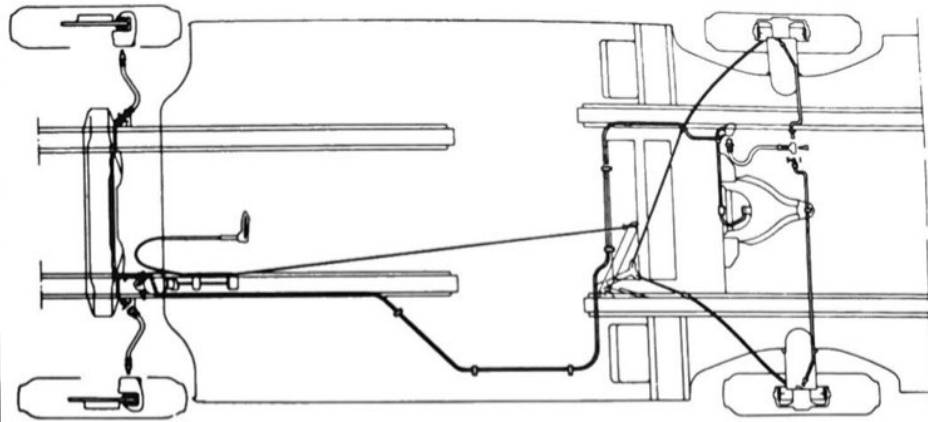
#### Draining

Stand the car on level ground and if hot allow to cool for 15 minutes, it helps to open the bonnet. Remove the expansion chamber safety valve cap (use a piece of cloth wrapped round the cap and a pair of grips). Make sure that the heater control is in the 'HOT' position. Undo the radiator drain plug which is situated at the bottom right hand side, with a spanner, not grips. To save the coolant is pointless because most of it drains under the car at many points and collecting it is a hit and miss affair. Nevertheless, lay newspaper under the car to soak as much as possible and leave one receptacle underneath which may collect some. Wait until the coolant begins to gush from this draining point before removing the cap from the radiator. This will make sure that the expansion chamber is empty. Now open the two heater bleed screws but do not remove (see Fig 78). Using this method you will have drained out most of the coolant except for a little still left in the cylinder block. The block drain plug is located deep inside the engine compartment, at the end of the block. After another five minutes, having allowed the rest of the coolant to drain out, poke the drain holes with a piece of wire to unblock any sediment which may have restricted draining.

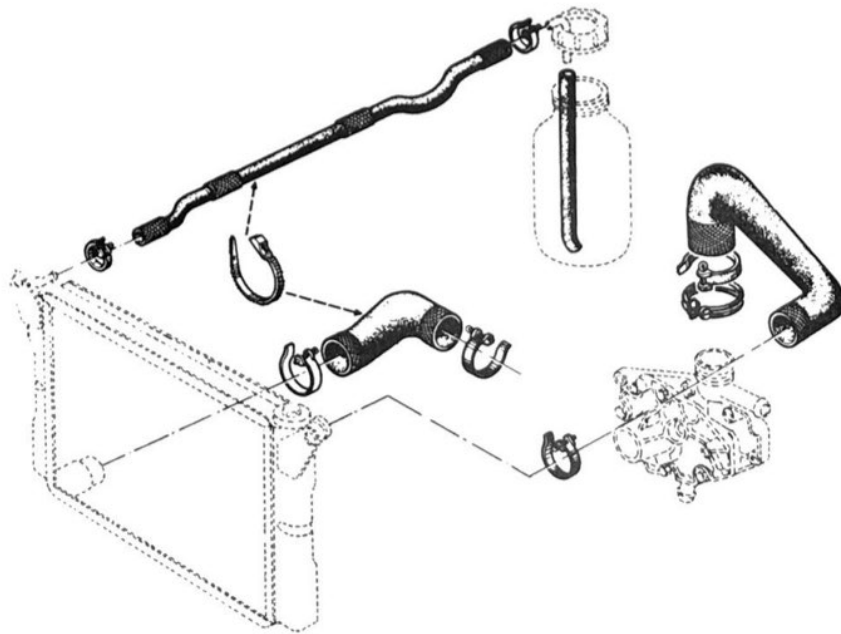
#### Flushing

In theory the cooling system should never need flushing for if the correct solution of coolant has always been used no sediment will have any opportunity to build up nor any corrosion have taken place. The correct solution, that of equal measures of distilled water and glycol anti-freeze is as chemically inert as

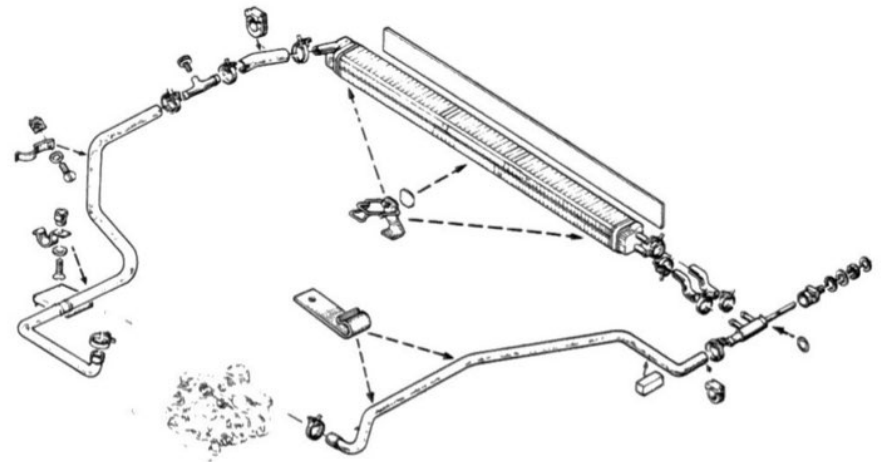




The brake pipes layout



Cooling system hoses



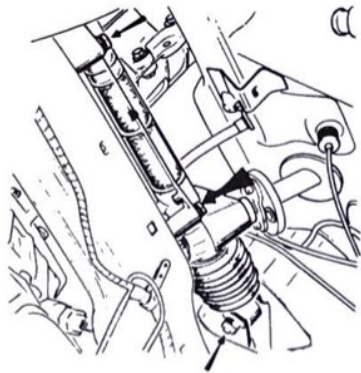
The heater matrix and pipes

possible. However, most systems will have been subjected to an amount of abuse, possibly being topped up with non-distilled water or being run with a slight leak, allowing oxidation to take place. This does not affect coolant efficiency but can lead to clogging eventually. If any clogging has taken place or the coolant is very dirty in colour it makes good sense to flush the system out. To check the need for flushing, open the radiator drain tap and if the liquid coming out is obviously very dirty, although it can be a deep colour, and full of solid particles, let it run out. If it clears as more runs out and the outflow is in no way restricted then there is no great problem. If, however, constant poking with a piece of wire is needed and the liquid continues very dirty then obviously a flush is needed. To flush out, simply leave the radiator and block drain taps open and after removing the radiator cap, run a hose through the system for about 15 minutes (ordinary water is quite safe). If the taps show signs of blockage keep poking them out. If the blocking

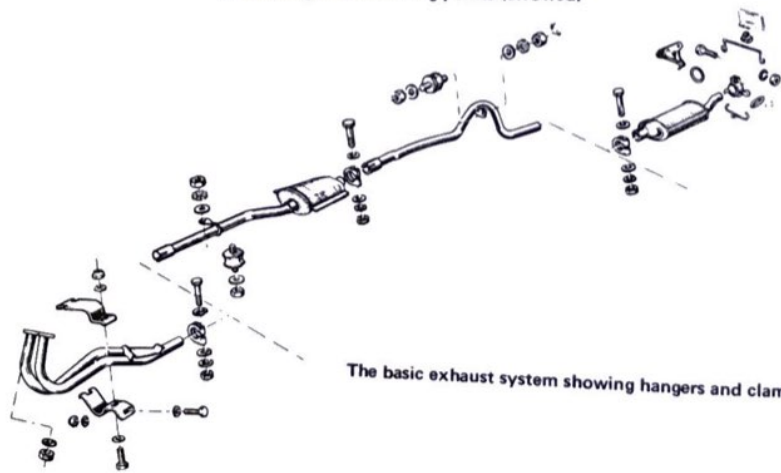
is persistent, remove the tap completely so that a larger orifice may permit the obstruction to clear itself. In some bad cases a reverse flush may help and this is easily done by removing the radiator and running the hose into the bottom tank so that it flows out of the filler neck. If the radiator flow is restricted by something other than loose sediment, then no amount of flushing will shift it and it is then that a proprietary chemical cleaner, suitable for aluminium heads, is needed. Use this according to the directions and make sure that the residue is fully flushed out afterwards. If leaks develop after using a chemical cleaner, a proprietary radiator sealer may cure them but the signs are that the radiator has suffered considerable chemical corrosion and that the metal is obviously getting very thin in places.

#### Filling and bleeding of air

Always flush out before refilling if the old coolant was particularly dirty. (Clean out the glass expansion chamber too.) Screw up both



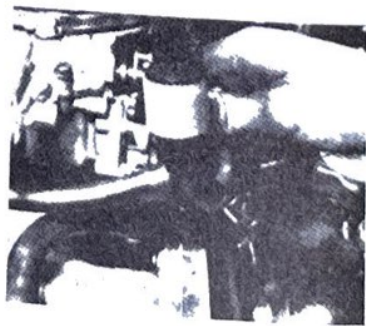
The steering rack mounting points (arrowed)



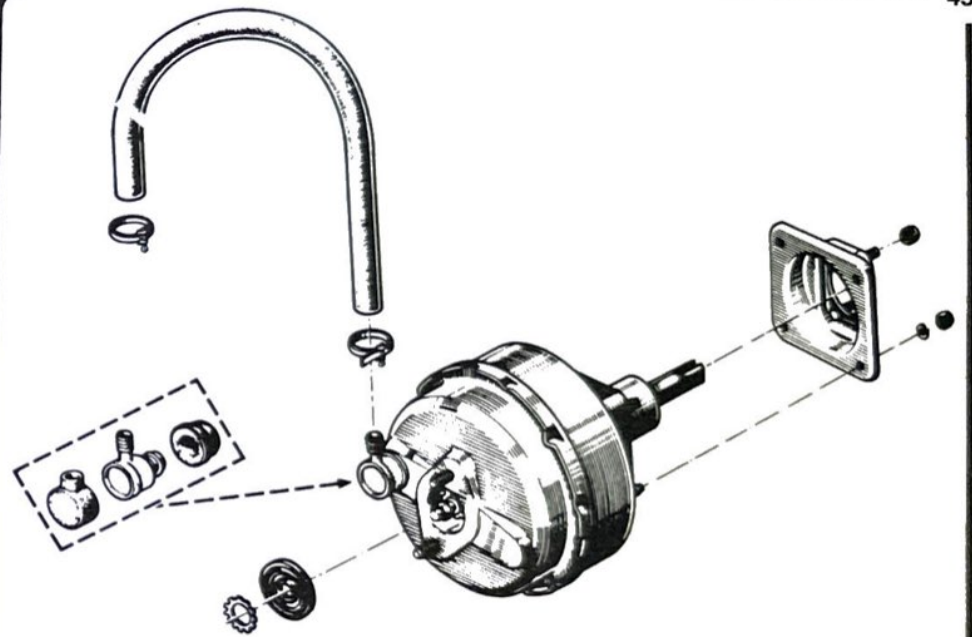
The basic exhaust system showing hangers and clamps



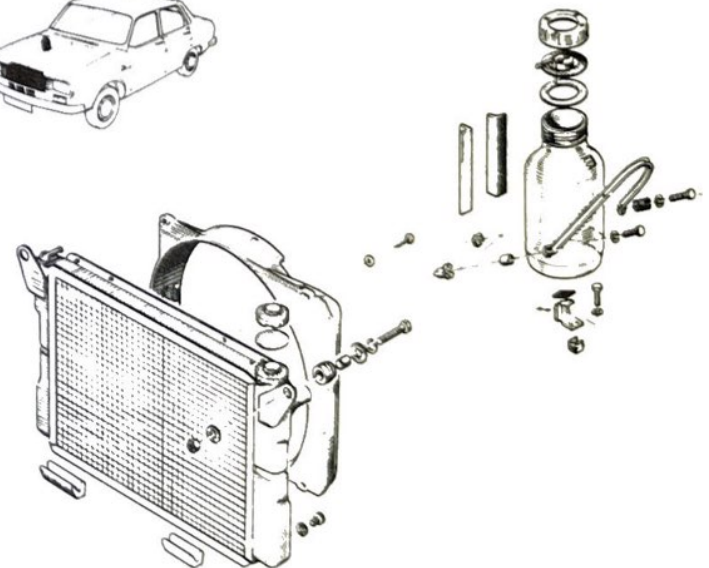
Lubricate the catches and hinges, etc.



The crankcase fume breather filter



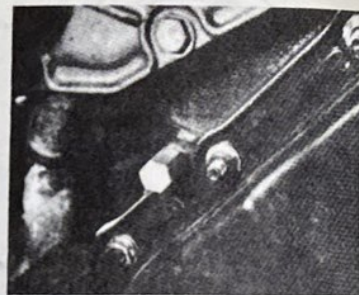
The brake servo and its mounting bracket



Radiator and expansion bottle



block and radiator drain plugs. Make sure that a copper washer is fitted to the radiator plug. Make sure all the hose clips are tight and that the hoses are in good condition. Mix 50 per cent distilled water and 50 per cent anti-freeze in two clean gallon cans. Mix a further pint of the coolant in addition to the specified capacity. It is essential to use a glycol based anti-freeze, such as Castrol Anti-freeze, so that it cannot damage the cylinder head. Ideally distilled water should be used to ensure long life of the system as it is by definition very pure, however, it is possible to use clean soft water, if distilled water is not available. Fill the glass bottle with coolant 1 3/16 inches above the 'maximum' mark. Refit the valve and sealing ring. Open the two heating/cooling bleed screws. Fill the radiator with coolant. When it is full clamp the two hoses (3 and 4 in Fig 78) as close to the water pump as possible. Start the engine and run at a very fast idle (1500 rpm) and continue to fill the radiator. When the coolant runs continuously out of the two bleed screws (no air spurts must be seen) screw them up tight. Remove the clamps and leave the bleed screws alone. Top up the radiator, fit its cap and stop the engine. When all is cool again, check the level in the expansion chamber on the side of the glass. Recheck the system for leaks on completion.



The cylinder block drain plug

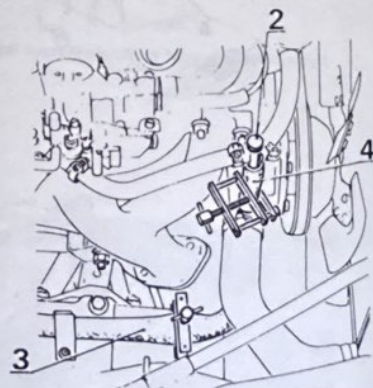
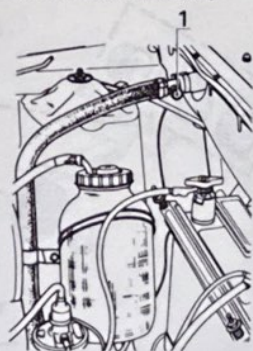
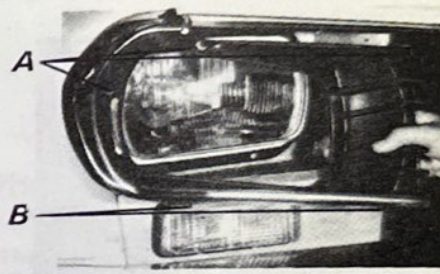


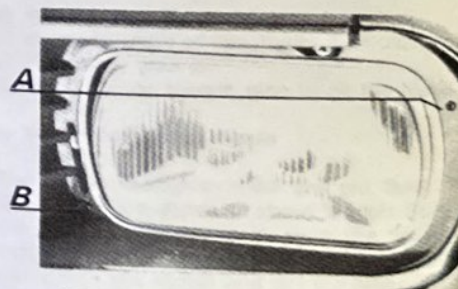
Fig 78 Bleeding the cooling system

6.2 Contact your Renault dealer and arrange for renewal of the brake fluid, and all the rubber seals and hoses of the braking system. Alternatively refer to the Haynes Owner's Workshop Manual for the Renault 12, but the job is a fairly lengthy one and you may well consider it worthwhile to have the job done for you.

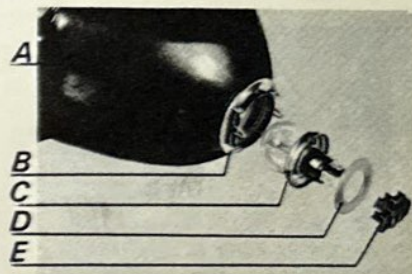


Removal of a headlamp

- A Embelisher retaining screws
- B Retaining lugs
- C Clip
- D Lower fixing lug



The front direction indicator/sidelight



The headlamp assembly

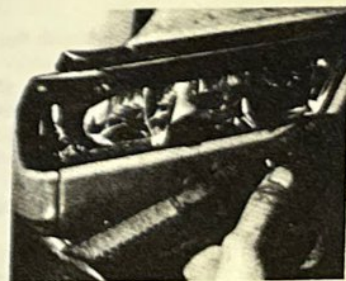
- |   |                |   |                |
|---|----------------|---|----------------|
| A | Lamp unit      | D | Clip Connector |
| B | Bulb           |   |                |
| C | Sealing washer |   |                |



The quartz iodine driving light

Headlamp adjustment

- A Horizontal adjuster screw
- B Vertical adjuster screw



The rear light cluster





Removing a wiper blade



The wiper arm can be pulled off if necessary

## Other Maintenance

The items listed in this section are not part of the regular maintenance programme, but it is quite conceivable that most of them will have to be carried out during the life of the car.

### Brake system bleeding

If the hydraulic system has air in it, operation will be spongy and imprecise. Air will get in whenever the system is dismantled, or if it runs low. The latter is likely to happen as the brakes wear, and the pistons move further out in the wheel cylinders. Air can leak into the system, sometimes through a fault too slight to let fluid out. In this latter case it indicates a general overhaul of the system is needed. Bleeding is also used at the 27,000 miles task, to change the brake fluid. You will need:

- a) An assistant to pump the pedal
- b) A good supply of new hydraulic fluid
- c) An empty glass jar
- d) A plastic or rubber pipe to fit the bleed nipple
- e) A spanner for the nipple

Top up the master cylinder and put fluid in the bleed jar to a depth of about  $\frac{1}{2}$  inch. Start at the nipple furthest away from the master cylinder, ie rear brake, passenger side, and work nearer. Clean the nipple and put the pipe on it. Tell your assistant to give a few quick strokes to pump up pressure, and then hold the pedal on. Slacken the nipple, about  $\frac{1}{2}$  or 1 turn, till the fluid or air begins to come out. This is usually quite apparent either as bubbles or dirt in the clean fluid in the jar. As soon as the flow starts, tell the assistant to keep pumping the pedal every time it gets to the end of its travel, and tell you all the time where the pedal is: down, up, etc. As soon as air has stopped coming out shut the bleed nipple; do so as the assistant is pushing the pedal down. Do not go on too long, lest the reservoir is emptied, and more air pumped in. About 15 pedal pumps is safe. Refill the reservoir and repeat at the other wheels. Also keep going on the original wheel

after refilling the reservoir if dirty fluid is still coming out, to get rid of all the old. Bleeding is greatly speeded and can be done by one person if spring loaded valves are fitted to the nipples. These are available from accessory shops. Keep hydraulic fluid clear of the car's paint. It ruins it. Throw old fluid away. It attracts damp, so deteriorates in use. If there is difficulty in getting air out of the system, then each time the assistant releases the pedal, close the nipple so no back flow can take place.

### Headlamp bulb renewal

The headlamp assemblies must be removed to change the bulbs. To remove the headlamp unit first remove the headlamp surround by unscrewing the two top locating screws and pulling it away from the bottom lugs.

The basic headlight is of the pre-focus type fitted with a replaceable bulb held by spring clips. With the thumb of the left hand push upwards the metal clip on the top left hand side of the lamp unit retainer and with the right hand pull the lamp away from this retainer, hinging it at the opposite edge. Lift out the lamp by releasing the hook from the wire bracket at this hinging point. Pull off the electrical connector(s) from the bulb. The bulb may be released from the lamp by pressing down the two retaining springs and extracting it.

### Front direction indicator/side light bulb renewal

Access to the front direction indicator/side light bulbs is gained after removing the lens assembly (two screws). The direction indicator bulb is pear-shaped; the side light bulb is spherical.

### Quartz-iodine driving light bulb renewal

Remove the two screws which retain the cover, unhook the connector spring clip and lift away the connector from the lamp. Using a clean tissue or cloth, withdraw the bulb from the connector - under no circumstances must the bulb be touched by hand or permanent staining may result. Replacement is the reverse



of removal. If lamp adjustment is necessary, unlock the fixing nut on the bracket to free the hinge and adjust the lamp at this point.

#### Rear light bulb renewal

The direction indicator bulb and the stop tail light bulb are housed in a common cluster. Remove the single lens fixed with three screws. The bulbs can then be removed. The stop/tail lamp bulb is a double filament one with offset bayonet pins.

The registration plate light is conventional. On the saloon models it is a screw in fixing in the rear bumper accessible from above. On the Estate there are two black plastic lamps on the tailgate either side of the number plate. See the appropriate illustrations.

Most models are equipped with reversing lights attached to the rear bodywork below the rear lights (integral with the rear lights on R1177 and on the tailgate R1171 and R1330). In all cases they are a conventional fitting and are removed/replaced as for the rear lights.

#### Instrument panel bulb renewal

In the event of bulb failure it is necessary to

withdraw the instrument panel. First disconnect the battery earth lead, then remove the speedometer cable from the instrument. Pull off the two electrical connectors and any other connections which may be present. Lift the two top panel locating clips and pull out the panel, freeing the bottom mounting lugs. The bulbs can now be pulled out of their sockets. Refitting is the reverse of removal.

#### Interior light bulb renewal

Access to the interior light bulb is gained after pulling down the rear part of the lens from the base.

#### Windscreen wiper blade renewal

To remove the wiper blades simply flick them round and pull them off in the conventional manner. They must be renewed when they leave a clear screen streaky. Always purchase the genuine fitment - there are few substitutes that work.

If it is necessary to remove the wiper arm for repositioning, it is simply pulled off the splines.

## Bodywork - Maintenance, Cleaning, Minor Repair

### Introduction

Most owners like their cars to look clean and well polished with a freedom from rust. Not only does regular cleaning show up stone chips and rust marks which can be easily attended to before getting worse, but also ensures the appearance is maintained which results in a good resale value for the car.

Should the car have been recently acquired and be in a dirty state then take it along to a suitably equipped garage and have the whole of the underside and engine compartment steam cleaned. This will save a tremendous amount of time - it is a very dirty job without proper equipment. It will not take long and is well worth it.

### Car cleaning - interior

By regularly cleaning the interior the upholstery will remain looking nearly new, the mats or carpets fresh and clean, and the general appearance smart and well cared for. When the carpeting is removed any water leaks will be evident and corrective action can be taken before rust sets in.

First empty the car completely - from shelves and trays to under the seats - of all the paraphernalia of travel.

Lift out the rubber mats, carpeting and underfelt. The rubber mats should be washed. The carpets may be brushed, shaken or beaten to remove the dust or dirt. If badly marked they can be cleaned using a carpet shampoo. Remember that they must be dried thoroughly so choose your time for doing this. They may need drying overnight. Underfelt should be carefully shaken but not washed and beaten otherwise it will be difficult to dry and start to break up. If the carpeting around the pedals is worn it is recommended that it be renewed as it can be a danger especially for lady drivers wearing high heeled shoes.

With a stiff handbrush, or a vacuum cleaner with a flexible hose, remove all traces of dust and grit left inside. For cleaning the upholstery materials and panels on the doors, use a detergent liquid in a water solution. Do not overwet the areas being cleaned as you do not want interior padding to get soaked. It will smell or rot if it does. Stubborn marks or ingrained dirt should be shifted with a soft bristled brush. An old nailbrush is ideal.

When finished, wipe the surfaces as dry as possible and leave the windows open to air the car out.

When cleaning windows and screens, use plain water and a chamois leather. A little household ammonia in the water prevents smears.

Turning to the boot, remove the complete contents including spare wheel and vacuum out all the dust and dirt. Wipe the paintwork down with a damp cloth. If carpeting is fitted, clean this as well in a similar manner to the interior carpeting. Again look for water leaks, especially in the corners.

Inspect the pedal rubbers for signs of excessive wear and fit new ones if necessary. It is dangerous to drive with worn pedal rubbers - on a wet day it is easy for the foot to accidentally slip off.

Should you have a slight tear on one of the seats or trim panel, cut a piece of spare trim from the underside of one of the seats and apply a coat of impact adhesive such as clear Bostik. Insert the patch into the hole with the glue uppermost and then apply adhesive to the flap of the torn section. Allow the recommended drying time to pass and then press down the torn edges, trying to get the edges as close together as possible which will make the repair less pronounced. Any large tears will have to be repaired using a piece of matching material.

### Car cleaning - exterior (underside)

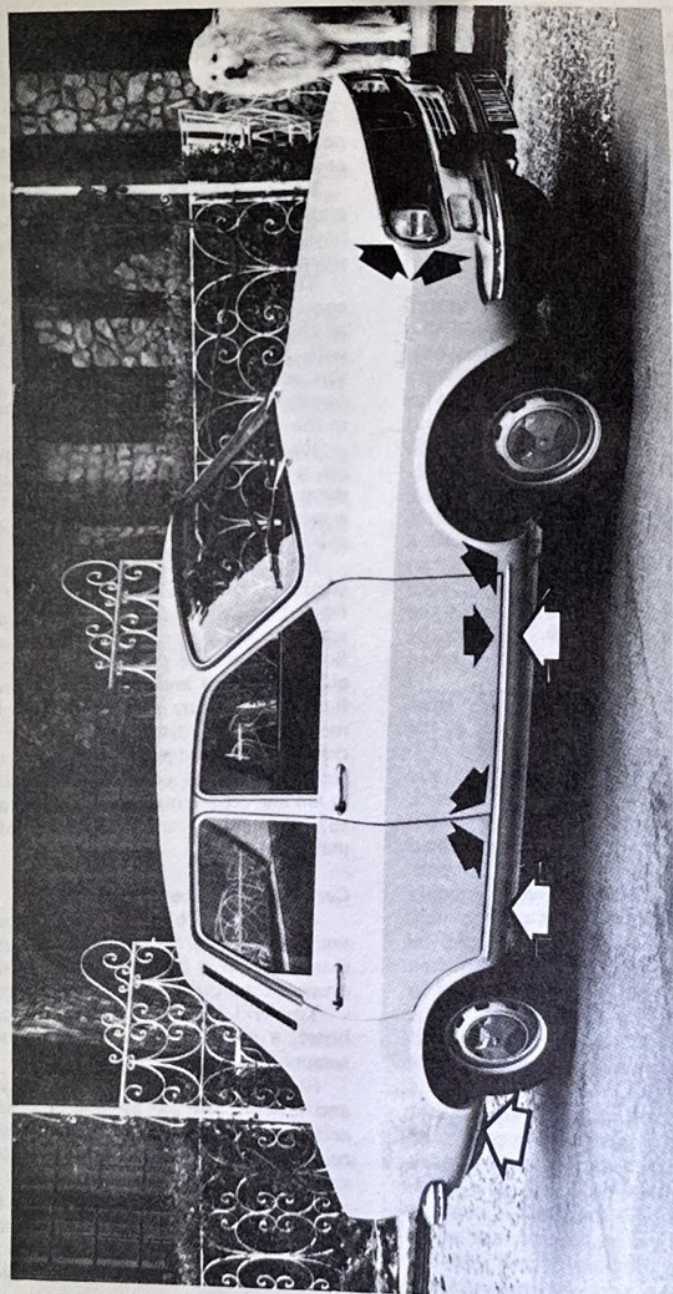
If at all possible, take the car to a suitably equipped garage and have the underside steam cleaned. If this is not possible then you must prepare for a quite long and very dirty job.

You will need paraffin, water (preferably a hose), a wire brush, stiff bristle brush and a scraper.

Remove the carpets from the car and boot and jack up the car as high as possible at one end or one side and take off the wheels that are raised. If you can jack up the whole car that will be best. Whatever you do, put double the quantity of blocks apparently necessary so that the car will not fall on you. Now cover the brake discs with polythene bags or similar items to prevent them being covered in water, dirt and paraffin.

The first job is to scrape off that which can be





Potential rusting points indicated by arrows

scraped - this before sloshing any liquid about. Start from one end or one side and proceed methodically and particularly with the scraper and wire brush as appropriate. Coagulations of oily mud will clog the brush so try and scrape this and use the brush only for dry and awkward bits. Sweep up the scrapings and dispose of them before going to the next stage. Having scraped off all that can be scraped off, the body floor should be washed off next with water - scrubbing as necessary with a bristle brush.

Do not use paraffin except in areas which are oil covered as this will make touching up of the undersealing difficult. All mechanical parts which are not subject to rust can be flushed clean with paraffin using a brush and rag. Finally hose off then examine the car interior to see what leaks there may be. This was the reason for removing the floor coverings. When dry, plug the leaks from inside the car with a household sealant such as Sealastic. Check that all outside fittings, pipe clips, etc are secure before the underneath is painted. Explore the underneath for all hollow sections which might rust from the inside. If necessary, drill a hole into these and plug it later with the sealer. Spray into these hollow sections and into such places as the door interior an aerosol rust inhibitor, such as Supertrol 001, or D-Nitrol 33B. These are thick and produce a protective jelly coating. Also spray this into awkward corners into which the underneath paint is going to be put in case penetration is not complete. The Supertrol 001 is also available in liquid form cheaper than aerosol, and this will be cheaper for open patches of metalwork that have been badly rusted. Now paint all parts of the underneath where there is either bare metal or unprotected ordinary paint, with an underseal paint. A thick, non-hard-setting material is needed. ADUP bronze superseal is recommended as it is compatible with the aerosols and so they 'wet' the metal and inhibit rust very thoroughly. Put thick layers of the paint where the wheels throw up stones.

#### Car cleaning - exterior

Once a week the exterior of the car should be washed and wiped dry. For this job a flexi-brush on the end of the garden hose is ideal, a sponge to assist wiping down and a leather to finish the operation off.

First make sure that all windows and doors are closed. Thoroughly soak the paintwork with

water using a gentle spray. Once the dirt has been loosened by the water, wipe down the panels using the brush with water still running through it - this way the paintwork should not be scratched by dirt.

Next apply wax car shampoo or a little washing up liquid, working from the top downwards. Any dead flies, marks or tar may be removed using a drop of paraffin on a cloth. Do not forget to clean the wing mirrors, front grille, the wiper arms and, of course, the wheels.

Finally rinse off with plenty of clean water and wipe dry using a leather. Bright work is cleaned in the same way. Occasionally one of the special polishes which can be obtained for chromium plating may be used but on no account use an ordinary metal polish.

Every six months it is recommended that the exterior be wax polished. There are however several important points to be noted before polish is used on a car.

- 1 If the paint is new do not polish for at least two months to allow the paint to dry fully and harden.
- 2 Do not use a 'cutting' paste to remove the dull film from cars which have been sprayed with metallic paint.
- 3 When purchasing a wax polish, always make sure that it is suitable for the type of paintwork on the car.
- 4 Do not attempt to wax polish a car in the sun or when the body is still warm, having been in the sun. It will look awful and possibly damage the paint surface.
- 5 After washing the car, make sure the surface is thoroughly dry before applying polish. If it is a damp day wait for a dry one.

Finally, a few don'ts so as to avoid deterioration of the paintwork:

Don't dust or polish a dirty car. Always wash.

Don't get polish or wax on any of the glass. Don't park under trees especially in the hot sun or when raining.

Don't use a cutting compound or haze remover on cars finished with an acrylic paint.

#### Repair of minor scratches in the car's bodywork

If the scratch is very superficial, and does not penetrate to the metal of the bodywork - repair is very simple. Lightly rub the area of the scratch with a paintwork renovator (eg. 'Top-Cut'), or a very fine cutting paste, to remove loose paint from the scratch and to clear the surrounding bodywork of wax polish.



Rinse the area with clean water.

Apply touch-up paint to the scratch using a thin paint brush; continue to apply thin layers of paint until the surface of the paint in the scratch is level with the surrounding paintwork. Allow the new paint at least two weeks to harden; then, blend it into the surrounding paintwork by rubbing the paintwork in the scratch area with a paintwork renovator (eg. "Top-Cut"), or a very fine cutting paste. Finally apply wax polish.

An alternative to painting over the scratch is to use Holts "Scratch-Patch". Use the same preparation for the affected area; then simply, pick a patch of a suitable size to cover the scratch completely. Hold the patch against the scratch and burnish its backing paper; the patch will adhere to the paintwork, freeing itself from the backing paper at the same time. Polish the affected area to blend the patch into the surrounding paintwork.

Where a scratch has penetrated right through to the metal of the bodywork, causing the metal to rust, a different repair technique is required. Remove any loose rust from the bottom of the scratch with a penknife; then apply rust inhibiting paint (eg. "Kurst") to prevent the formation of rust in the future. Using a rubber or nylon applicator fill the scratch with body-stopper paste. If required, this paste can be mixed with cellulose thinners to provide a very thin paste which is ideal for filling narrow scratches. Before the stopper-paste in the scratch hardens, wrap a piece of smooth cotton rag around the tip of a finger. Dip the finger in cellulose thinners and then quickly sweep it across the surface of the stopper-paste in the scratch; this will ensure that the surface of the stopper-paste is slightly hollowed. The scratch can now be painted over as described earlier in this Section.

#### Repair of dents in the car's bodywork

When deep denting of the car's bodywork has taken place, the first task is to pull the dent out, until the affected bodywork almost attains its original shape. There is little point in trying to restore the original shape completely, as the metal in the damaged area will have stretched on impact and cannot be reshaped fully to its original contour. It is better to bring the level of the dent up to a point which is about 1/8 inch (3 mm) below the level of the surrounding bodywork. In cases where the dent is very shallow anyway, it is not worth trying to pull it

out at all.

If the underside of the dent is accessible, it can be hammered out gently from behind, using a mallet with a wooden or plastic head. Whilst doing this, hold a suitable block of wood firmly against the outside of the dent. This block will absorb the impact from the hammer blows and thus prevent a large area of bodywork from being 'belled-out'.

Should the dent be in a section of the bodywork which has a double skin or some other factor making it inaccessible from behind, a different technique is called for. Drill several small holes through the metal inside the dent area - particularly in the deeper sections. Then screw long self-tapping screws into the holes just sufficiently for them to gain a good purchase in the metal. Now the dent can be pulled out by pulling on the protruding heads of the screws with a pair of pliers.

The next stage of the repair is the removal of the paint from the damaged area, and from an inch or so of the surrounding 'sound' bodywork. This is accomplished most easily by using a wire brush or abrasive pad on a power drill, although it can be done just as effectively by hand using sheets of abrasive paper. To complete the preparations for filling, score the surface of the bare metal with a screwdriver or the tang of a file, or alternatively, drill small holes in the affected area. This will provide a really good 'key' for the filler paste.

To complete the repair see the Section on filling and re-spraying.

#### Repair of rust holes or gashes in the car's bodywork

Remove all paint from the affected area and from an inch or so of the surrounding 'sound' bodywork, using an abrasive pad or a wire brush on a power drill. If these are not available a few sheets of abrasive paper will do the job just as effectively. With the paint removed you will be able to gauge the severity of the corrosion and therefore decide whether to replace the whole panel (if this is possible) or to repair the affected area. Replacement body panels are not as expensive as most people think and it is often quicker and more satisfactory to fit a new panel than to attempt to repair large areas of corrosion.

Remove all fittings from the affected area, except those which will act as a guide to the original shape of the damaged bodywork (eg. headlamp shells etc.). Then, using tin snips or a hacksaw blade, remove all loose metal and any

other metal badly affected by corrosion. Hammer the edges of the hole inwards in order to create a slight depression for the filler paste.

Wire brush the affected area to remove the powdery rust from the surface of the remaining metal. Paint the affected area with rust inhibiting paint (eg. "Kurst"); if the back of the rusted area is accessible treat this also.

Before filling can take place it will be necessary to block the hole in some way. This can be achieved by the use of one of the following materials: Zinc gauze, Aluminium tape or Polyurethane foam.

Zinc gauze is probably the best material to use for a large hole. Cut a piece to the approximate size and shape of the hole to be filled, then position it in the hole so that its edges are below the level of the surrounding bodywork. It can be retained in position by several blobs of filler paste around its periphery.

Aluminium tape should be used for small or very narrow holes. Pull a piece off the roll and trim it to the approximate size and shape required, then pull off the backing paper (if used) and stick the tape over the hole; it can be overlapped if the thickness of one piece is insufficient. Burnish down the edges of the tape with the handle of a screwdriver or similar, to ensure that the tape is securely attached to the metal underneath.

Polyurethane foam is best used where the hole is situated in a section of bodywork of complex shape, backed by a small box section (eg. where the sill panel meets the rear wheel arch - most cars). The usual mixing procedure for this foam is as follows: Put equal amounts of fluid from each of the two cans provided in the kit, into one container. Stir until the mixture begins to thicken, then quickly pour this mixture into the hole, and hold a piece of cardboard over the larger apertures. Almost immediately the polyurethane will begin to expand, gushing frantically out of any small holes left unblocked. When the foam hardens it can be cut back to just below the level of the surrounding bodywork with a hacksaw blade.

Having blocked off the hole the affected area must now be filled and sprayed - see Section on bodywork filling and re-spraying.

#### Bodywork repairs - filling and re-spraying

Before using this Section, see the Sections on dent, deep scratch, rust hole, and gash repairs.

Many types of bodyfiller are available, but

generally speaking those proprietary kits which contain a tin of filler paste and a tube of resin hardener (eg. "Holts Cataloy") are best for this type of repair. A wide, flexible plastic or nylon applicator will be found invaluable for imparting a smooth and well contoured finish to the surface of the filler.

Mix up a little filler on a clean piece of card or board - use the hardener sparingly (follow the maker's instructions on the packet), otherwise the filler will set very rapidly.

Using the applicator, apply the filler paste to the prepared area; draw the applicator across the surface of the filler to achieve the correct contour and to level the filler surface. As soon as a contour that approximates the correct one is achieved, stop working the paste - if you carry on too long the paste will become sticky and begin to 'pick-up' on the applicator. Continue to add thin layers of filler paste at twenty-minute intervals until the level of the filler is just 'proud' of the surrounding bodywork.

Once the filler has hardened, excess can be removed using a Surfing plane or Dreadnought file. From then on, progressively finer grades of abrasive paper should be used, starting with a 40 grade production paper and finishing with 400 grade 'wet-and-dry' paper. Always wrap the abrasive paper around a flat rubber, cork, or wooden block - otherwise the surface of the filler will not be completely flat. During the smoothing of the filler surface the 'wet-and-dry' paper should be periodically rinsed in water - this will ensure that a very smooth finish is imparted to the filler at the final stage.

At this stage the 'dent' should be surrounded by a ring of bare metal, which in turn should be encircled by the finely 'feathered' edge of the good paintwork. Rinse the repair area with clean water, until all of the dust produced by the rubbing-down operation is gone.

Spray the whole repair area with a light coat of grey primer - this will show up any imperfections in the surface of the filler. Repair these imperfections with fresh filler paste or body-stopper, and once more smooth the surface with abrasive paper. If bodystopper is used, it can be mixed with cellulose thinners to form a really thin paste which is ideal for filling small holes. Repeat this spray and repair procedure until you are satisfied that the surface of the filler, and the feathered edge of the paintwork are perfect. Clean the repair area with clean water and allow to dry fully.



The repair area is now ready for spraying. Paint spraying must be carried out in a warm, dry, windless and dust free atmosphere. This condition can be created artificially if you have access to a large indoor working area, but if you are forced to work in the open, you will have to pick your day very carefully. If you are working indoors, dousing the floor in the work area with water will 'lay' the dust which would otherwise be in the atmosphere. If the repair area is confined to one body panel, mask off the surrounding panels; this will help to minimise the effects of a slight mis-match in paint colours. Bodywork fittings (eg., chrome strips, door handles etc.) will also need to be masked off. Use genuine masking tape and several thicknesses of newspaper for the masking operation.

Before commencing to spray, agitate the aerosol can thoroughly, then spray a test area (an old tin, or similar) until the technique is mastered. Cover the repair area with a thick coat of primer; the thickness should be built up using several thin layers of paint rather than one thick one. Using 400 grade 'wet-and-dry' paper, rub down the surface of the primer until it is really smooth. While doing this, the work area should be thoroughly doused with water, and the wet-and-dry paper periodically rinsed in

water. Allow to dry before spraying on more paint.

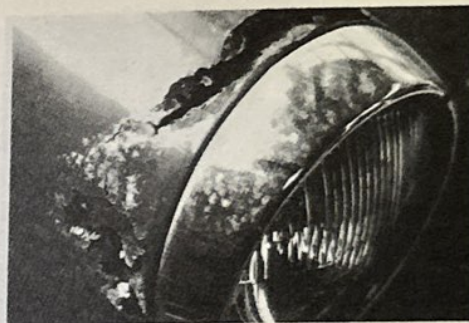
Spray on the top coat, again building up the thickness by using several thin layers of paint. Start spraying in the centre of the repair area and then, using a circular motion, work outwards until the whole repair area and about 2 inches of the surrounding original paintwork is covered. Remove all masking material 10 to 15 minutes after spraying on the final coat of paint.

Allow the new paint at least 2 weeks to harden fully; then, using a paintwork renovator (eg., 'Top-Cut') or a very fine cutting paste, blend the edges of the new paint into the existing paintwork. Finally, apply wax polish.

#### Hood repairs (convertibles)

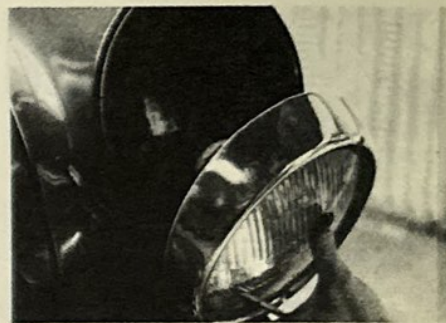
There is no simple way of disguising tears in hood material. If a piece of the original type of material is available, it may be stitched in position but it will not go un-noticed. It may be possible to use an impact adhesive to put on a patch to the interior surface. This will be less noticeable from the outside, but is unlikely to give a permanent repair since adhesives of this type are affected by the weather.

If the hood is badly torn, or the lights need replacing, the only real answer is to have the job done properly by a hood specialist.



#### Preparation for filling

Typical example of rust damage to a body panel. Before starting ensure that you have all of the materials required to hand. The first task is to . . . .



. . . . remove body fittings from the affected area, except those which can act as a guide to the original shape of the damaged bodywork — the headlamp shell in this case.



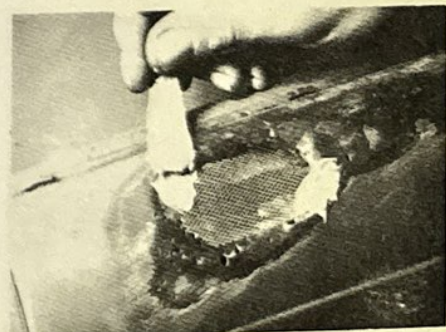
Remove all paint from the rusted area and from an inch or so of the adjoining 'sound' bodywork — use coarse abrasive paper or a power drill fitted with a wire brush or abrasive pad. Gently hammer in the edges of the hole to provide a hollow for the filler.



Before filling, the larger holes must be blocked off. Adhesive aluminium tape is one method; cut the tape to the required shape and size, peel off the backing strip (where used), position the tape over the hole and burnish to ensure adhesion.



Alternatively, zinc gauze can be used. Cut a piece of the gauze to the required shape and size; position it in the hole below the level of the surrounding bodywork; then . . . .



. . . . secure in position by placing a few blobs of filler paste around its periphery. Alternatively, pop rivets or self-tapping screws can be used. Preparation for filling is now complete.





#### Filling and shaping

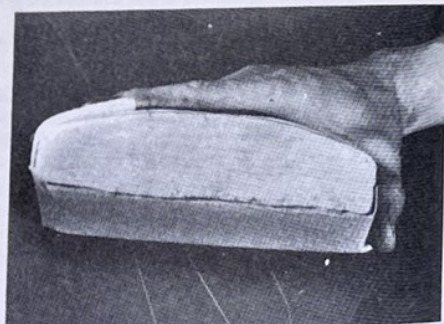
Mix filler and hardener according to manufacturer's instructions — avoid using too much hardener otherwise the filler will harden before you have a chance to work it.



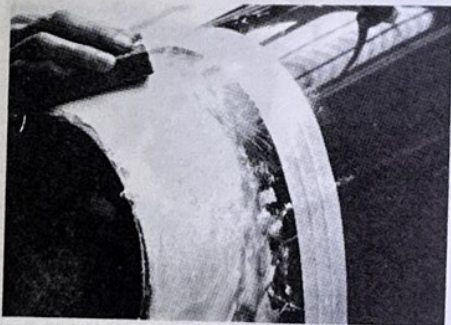
Apply the filler to the affected area with a flexible applicator — this will ensure a smooth finish. Apply thin layers of filler at 20 minute intervals, until the surface of the filler is just 'proud' of the surrounding bodywork. Then . . . .



. . . . remove excess filler and start shaping with a Surform plane or a dreadnought file. Once an approximate contour has been obtained and the surface is relatively smooth, start using . . . .



. . . . abrasive paper. The paper should be wrapped around a flat wood, cork or rubber block — this will ensure that it imparts a smooth surface to the filler.



40 grit production paper is best to start with; then, use progressively finer abrasive paper, finishing with 400 grade 'wet-and-dry'. When using 'wet-and-dry' paper, periodically rinse it in water ensuring also, that the work area is kept wet continuously.

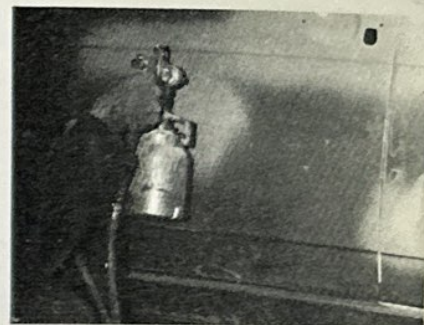


Rubbing-down is complete when the surface of the filler is really smooth and flat, and the edges of the surrounding paintwork are finely 'feathered'. Wash the area thoroughly with clean water and allow to dry before commencing re-spray.



#### Masking and spraying

Firstly, mask off all adjoining panels and the fittings in the spray area. Ensure that the area to be sprayed is completely free of dust. Practice using an aerosol on a piece of waste metal sheet until the technique is mastered.



Spray the affected area with primer — apply several thin coats rather than one thick one. Start spraying in the centre of the repair area and then work outwards using a circular motion — in this way the paint will be evenly distributed.



When the primer has dried inspect its surface for imperfections. Holes can be filled with filler paste or body-stopper, and lumps can be sanded smooth. Apply a further coat of primer, then 'flat' its surface with 400 grade 'wet-and-dry' paper.



Spray on the top coat, again building up the thickness with several thin coats of paint. Overspray onto the surrounding original paintwork to a depth of about five inches, applying a very thin coat at the outer edges.

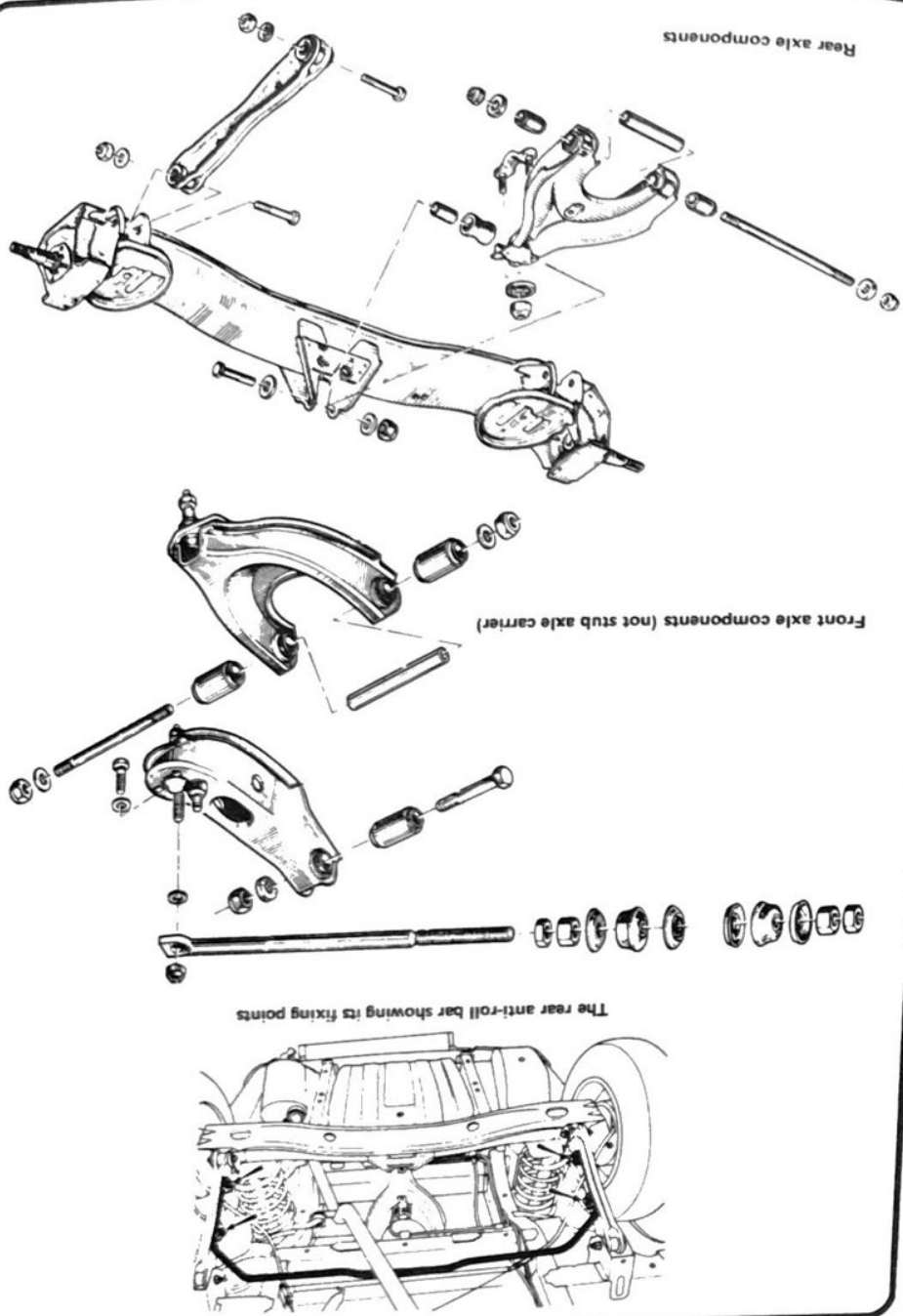


Allow the new paint two weeks, at least, to harden fully, then blend it into the surrounding original paintwork with a paint restorative compound or very fine cutting paste. Use wax polish to finish off.

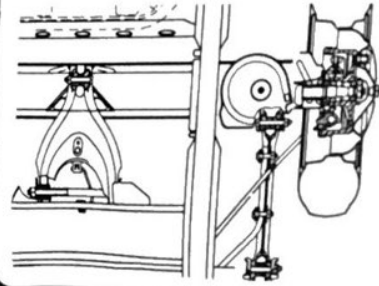
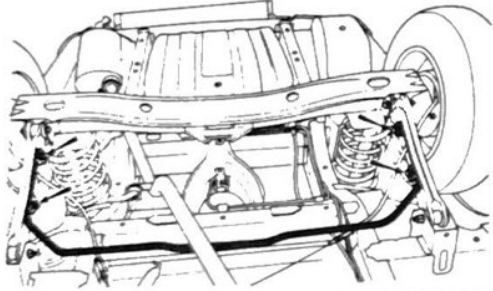


The finished job should look like this. Remember, the quality of the completed work is directly proportional to the amount of time and effort expended at each stage of the preparation

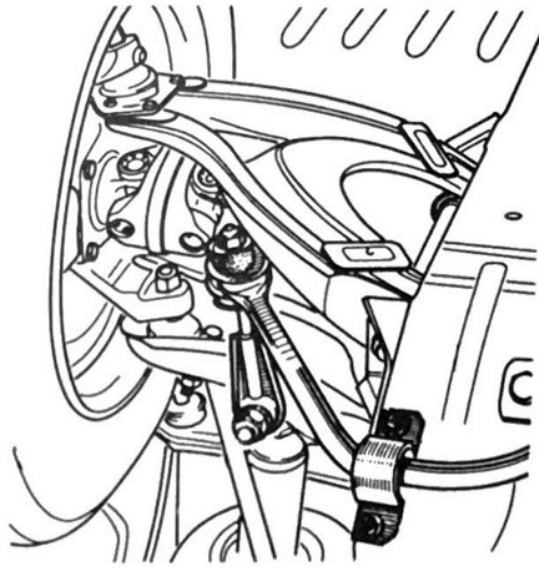




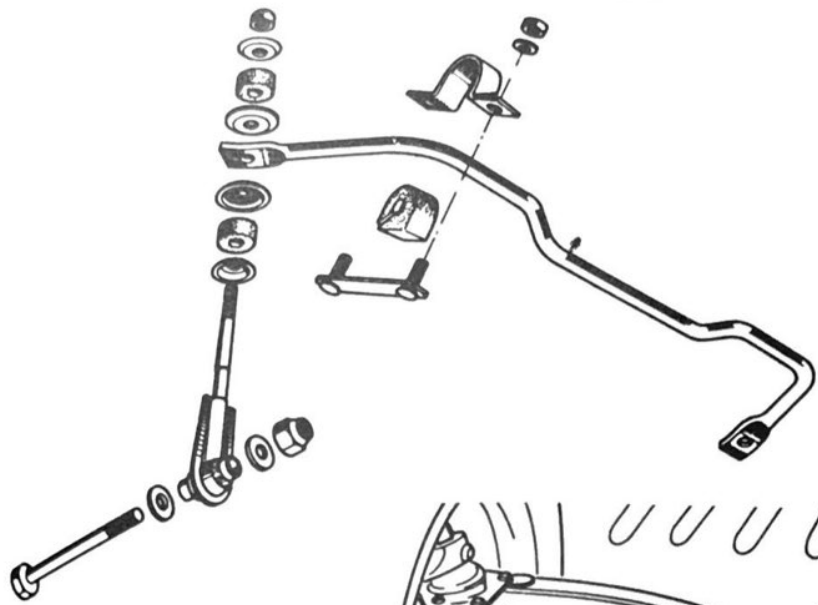
The rear anti-roll bar showing its fixing points



Vertical part section of the rear suspension showing the 'A'-bracket and tie rods



The front anti-roll bar installed and in component form





## Preparing your Car for the MOT Test

The MoT test concentrates mainly on safety aspects of the vehicle although other points are checked and could result in failure. It is difficult to set precise standards for the test and a lot depends on the examiner himself in borderline cases.

If you have carried out the routine maintenance on your Renault correctly and at regular intervals as shown earlier in this book, you will have a far better chance of passing the test than if it has been neglected. The points the tester will be looking for are listed below.

If you find that some servicing is required, refer to the relevant section of Routine maintenance.

### Steering

With the vehicle standing on level ground, check the play on the steering wheel. With the rack and pinion type of steering fitted to the Renault 12 there should be negligible movement before the road wheels begin to move. If more than about half an inch of free movement is present further investigation is necessary since something is almost certainly at fault.

Jack up the front end and, if possible rest it on an axle stand. Rock the wheels in both the horizontal and vertical planes to check if there is excessive wear or free play in the wheel bearings or suspension swivels. For any further information refer to the relevant section of Routine maintenance. Check for excess play in the steering tie-rods and ball joints, and that all the suspension and steering attachment bolts are tight. Where split pins are fitted, check that they are intact and secure.

Turn the steering to full lock in both directions and check that the tyres do not foul the bodywork. If they do, arrange for your Renault garage to investigate and repair or reset the steering linkage as soon as possible. Not only might your car fail the test, it may also be a danger to yourself and others.

Finally lower the vehicle to the ground to check the suspension dampers. This is best done by driving over a roughish road with someone following to check for excessive wheel bounce

or 'patter'. If this cannot be arranged, bouncing the vehicle up and down, with the help of an assistant, at each corner and checking that the vehicle comes to rest as soon as the bouncing is stopped, will give a good idea whether all is in order.

### Brakes

Carefully examine all the metal and flexible hydraulic pipes and hoses for signs of leaking, corrosion and chafing. Clean off the mud, dirt, etc from the flexible rubber hoses and examine them for any signs of perishing, bulging or wear caused by rubbing or stones.

Check round the brake drums and discs for any sign of hydraulic fluid leakage from the wheel cylinders. This form of leakage will severely affect braking efficiency when the vehicle is road tested.

Get inside, release the handbrake and depress the brake pedal. If there is excessive travel on the pedal before the brakes come on, the brakes will need adjusting. If there is evidence of sponginess in the pedal it will mean that air has entered the hydraulic system and the brakes will need bleeding. Both these tasks are covered in this book.

Check that the handbrake linkage is in good condition and operating correctly. It should not be possible to move the lever or handle to the full extent of its travel, if this occurs, something is in need of adjustment. Before adjusting the cable, check that the rear brakes are correctly adjusted.

### Lights

Switch on the lights and check that they are all functioning correctly. Check the operation of the headlamps in the full beam and dipped positions and that the main beam warning light operates when the lights are on full beam.

Back the vehicle up against a wall and check that the brake stop lights work with and without the side lights on.

Check the operation of the indicator lights both front and rear. They should flash at

between 50 and 120 times per minute.

Check that the lenses of the stop and brake lights are not broken or faded; they must show a clear red light.

Check also that the reflectors are intact.

### Bodywork

The tester will examine the car thoroughly for signs of rust or corrosion, particularly where the corrosion points may affect the safety of the car. The Renault 12 is however well under-sealed and it is not envisaged that there will be any serious corrosion problems especially during its early years.

The tester will also examine the state of the exhaust system and if this is badly rusted, is loose or has obvious holes in it, the car may fail its test.

### Miscellaneous

There are two other items which the examiner will inspect, namely, safety belts and windscreen washers. Considering the former, check that the anchorages are securely fitted and that there is no rust present. Carefully examine the webbing for any signs of chafing or fraying; if any is found, the only answer is to have the belts renewed. Make sure that they lock and release satisfactorily, not just sometimes, but every time. Now check that the windscreen washer reservoir is full and that both jets give a satisfactory spray. Check also that the wipers are functioning satisfactorily and that the wiper blades are in good condition.

### Road test

The purpose of the tester driving the car on the road is to satisfy himself that it handles properly. If there is anything major wrong with

the steering you will probably already have spotted this fault and had it rectified before the test.

The tester will check the efficiency of the brakes by using a decelerometer, a piece of equipment which is not readily available to the public. However, you can do a rough test on the brakes by using an ordinary brick. Get the car onto a reasonably long, deserted, straight and smooth piece of road, place the brick on the passenger side floor on one of its narrow longer sides and gently accelerate up to 30 mph. Checking that it is safe to do so, apply the brakes hard without actually locking the wheels. The brick should fall over at this point quite quickly. Repeat the test and stop the car using the handbrake only; this time the brick should just topple over quite gently. If the car pulls violently to one side of the other on heavy braking, this may well cause failure of the test.

### Conclusion

If all appears to be well the car can now be submitted for its test. Before taking it in make sure you have the log book and the old test certificate to hand for the tester. Have some petrol in the tank to enable the road test to be carried out.

It is advisable to leave instructions with the garage that any minor faults found should be put right on the spot to prevent a further waste of time and money. Any major faults should be told to you before the repair work is begun.

If your Renault 12 does fail the test, do not be too upset. Remember that your life could depend on your car and if there is something wrong which you did not know about you should be thankful that no accident had occurred.



## Buying and Selling a Used Renault 12

### Buying

When you are thinking of buying a used Renault 12, it is worth considering the merits of the various places where they may be on sale.

**1 Auctions:** Almost invariably you can obtain a Renault 12 at a lower price at an auction than anywhere else. However, you must be very wary because auctions do not normally have the facilities available for carrying out the basic checks necessary to get some idea of the condition of the car. If you are prepared to take a risk, and it could be a big one, this is the place to go but do remember that you may have to spend a certain amount of time in the near future in getting the car up to scratch.

**2 Private transactions:** The main problem with private transactions is that you get no guarantee. You must remember that if a person is selling a car privately there may be a hidden reason for it. For example, there is the possibility that he could not trade it in for a new one because of its poor condition and therefore the trade-in price was too low. But on the other hand, the car may be in superb condition and the trade-in price somewhat lower than what the owner expected. A lot can be learnt by talking at length to the owner, not just about the car but about anything else topical or of general interest. An owner who genuinely thinks a lot of his car will soon get back to discussing its good points. An owner who is trying to sell a well disguised heap of trouble will soon lose interest in the conversation. Another point about buying from a private individual is that you can normally make a sensible offer for the car if you are genuinely wanting it.

**3 A used car dealer:** Most used car dealers will give a guarantee with a purchase but before signing anything find out just what the guarantee is worth. It is little comfort to know that a dealer will willingly pay for £5 worth of parts when you are expected to pay £15 labour charges. And make no mistake, labour charges

could well be two or three times this figure. In general, the days of the 'bomb-site' car dealer have gone and most of them have a reputation to keep and a living to make. They usually rely on a quick turnover of trade and consequently their prices tend to be reasonable.

**4 A garage:** Generally speaking, you are likely to get a better car from a garage, particularly if it specialises in Renault cars, than any other source. The disadvantage which might be considered though is that you have got to pay a little more for it. A garage will almost certainly have an inspection pit or hydraulic ramp available and it is always necessary to find out what the underneath of the car is like before any purchase is made. Here again, if you do purchase, find out what the guarantee is worth if anything does go wrong.

**5 A fleet owner or business concern:** It is rather unlikely that a Renault will be purchased by a fleet owner or business concern since they normally use British cars. If one is available though, you must beware of a very high mileage even if the general condition appears good.

Whatever the purchase source, arm yourself with a copy of the *Motorist's Guide to New and Used Car Prices*. This will give you a good idea of the price to be paid but even so there will be some variation in price even between various similar sources.

Now for the car itself. Here you must decide on one of two approaches. Will you inspect it (alone or with perhaps a knowledgeable friend) or pay a few pounds to a motoring organisation to inspect it for you first? If the seller agrees to an independent inspection that is a good sign, but you must appreciate that if he sells it to someone else before you can get the inspection carried out (or even before the inspection is completed) you have no come-back unless you pay a deposit. If the dealer will not agree to an independent inspection from a motoring organisation it usually means that the seller has not thoroughly examined the vehicle and does not know what may be wrong or is trying to hide

something. If you intend to have an independent inspection carried out, then it is assumed that the general visible state of the car is good.

A buyer's guide is given below which details some of the points to look for.

**Preliminaries:** Walk round the car a few yards from it and see if it sits evenly on the ground.

Does the paintwork on the body panels match up perfectly? If not the car has probably been in an accident.

If you suspect respraying check closely round the chrome strips and windscreen rubbers to see if there is any evidence of paint on them.

If you suspect signs of filler a good way of checking this is to run along the suspect area with a magnet. The magnet will not grip on areas which have been filled.

Check the operation and tight fitting of the doors, boot lid and bonnet. Open the doors a little and try to lift them; this will help to detect any play in the hinges. Any door which is difficult to shut may be suffering from worn or maladjusted hinges and catches. Adjustment is fairly straightforward but if it has not been done by a seller it may be that all the adjustment has been taken up already.

Look for signs of rust round the wings and sills, and for any signs of paintwork bubbling. This will indicate rust coming through from underneath which may have been covered up by a quick spray but which will eat its way through again very quickly. The underbody sealing and paint pre-treatment is good on the Renault 12 and only after a very high mileage will this start to give trouble. However, the chromework on some models sometimes leaves a little to be desired, so look for this particularly. There is one annoying point which can be seen on many Renault 12's, and that is rusting of the four screw heads on the scuttle panel just forward of the windscreen. Look for this, you will probably find it!

Look at the condition of the upholstery in the car, even when the seats have been covered. This will give a fair idea as to the way the car was treated by its previous owner. Also look at the wear on the carpets and, if not replaced, the pedal rubbers. Replacement too indicates age. Many people tend to neglect cleaning the door panels and interior generally. If there is no damage done, cleaning is not a major problem but if the interior is tatty it probably goes without saying that the rest of the car is not much better.

Whilst in the car try the handbrake to see if it is correctly adjusted, the footbrake and clutch to check the pedal travel and free movement. Move the gear stick into all positions to see if it is positive and precise.

**Test drive:** Before going to great lengths to examine the underside and mechanics, it is best to drive the car. This may show up something so very wrong that further checking is pointless.

It is normal for the seller to drive at first with you as passenger. If otherwise, he should accompany you. An unscrupulous person could accuse you of damaging the vehicle in some way if you go off alone.

As a passenger, note how the engine starts and the general operational smoothness of the controls. Make allowance for the fact that the seller may be a salesman who is not over-familiar with that particular type. A vehicle driven by a private owner will usually seem to perform very smoothly as he will be familiar with any of its idiosyncrasies.

Make every effort to get out of a limited speed zone and ask the driver to get up to a speed of at least 50 mph. Keep an ear open for howling transmission or excessive body drumming. The transmission on Renault 12 models tends to whine a little (even new cars), so do not be put off by this point. With the extensive use of soundproofing materials, body drumming is normally very minimal. TS models, when driven really hard, tend to create a bit of engine noise but otherwise you should get a quiet and smooth ride.

When driving yourself, first check that the engine starts without fuss. Gear engagement should be achieved without noise.

Before moving off, leave the handbrake on and let the clutch in slowly. If the vehicle moves, the handbrake needs adjustment. If the clutch comes on a long way (or all the way) without the car moving it needs adjustment also.

When moving off, power-take-up should be smooth and noise-free. Gear changing should be smooth and quiet. As soon as possible, drive the car on full steering lock in alternate directions and listen for any strange clonking noise from the constant velocity joints in the driveshafts. If anything is heard, be suspicious because you could easily land yourself with a fairly heavy repair bill.

Try the brakes gently to feel their power and note the distance the pedal has to move before the brakes start to work. A lot of movement



may simply mean the need for adjustment but the brake linings may be getting close to needing renewal. If the brakes feel spongy, uneven or inefficient, stop the car and ask the seller to drive back.

When you are satisfied that the brakes respond correctly, increase speed and assure yourself that the steering feels right. If it is not light and precise, but judders and wanders, stop and let the seller drive back.

Brakes and steering being satisfactory, ask whether you may increase speed to at least 60 mph (road conditions permitting). Any wander in the steering or vibrations which now occur may mean that wear has occurred in certain areas which cannot be detected at lower speeds. When braking from the higher speeds dab the brakes and decide whether there is any fore and aft pitching. Such a condition may also occur on uneven road surfaces and indicates that the suspension dampers may be faulty.

If the seller should talk excessively about the vehicle other than in direct answer to any questions you ask, it may indicate that he wants to fend-off any questions. If therefore you have some questions you want to ask, cut in firmly and ask them.

**Detailed check:** If you have not become too disillusioned with what you have seen, it is time to delve a little deeper. Get out of the car and open the bonnet. Have a thorough check round all the engine compartment for signs of either oil or water leaks. Remove the dipstick and check the colour and level of the oil. If it is very black it will need changing. If there is evidence, by feeling grittiness and faint traces of white metal in the oil, the engine is probably badly worn. You cannot readily remove the radiator cap unless a spanner is available but look at the glass reservoir jar on the left hand wing valance. If this looks badly discoloured (not just with anti-freeze) it is a sure sign that the coolant in the rest of the system is in a much worse state.

Check the condition of all ignition HT leads. If they are cracked they will need renewing at an early date. Check that the distributor and its cap are firm and not damaged in any way.

Ask someone to start the engine and have a look at the colour of the exhaust gases. If it is very smoky or blue this indicates considerable wear in the engine. The colour of the interior exhaust pipe outlet only may be indicative if the car has been run for at least 10 miles before looking at it. Basically it should be light grey in

colour - black and sooty may indicate a tired engine.

Listen to the engine while it is running. There should be no prominent taps or rattles of any kind. When the engine is revved up suddenly there should be no evidence of any excessive noise other than normal engine noise; any heavy thumping at this stage may indicate worn big end bearings. Whilst the engine is still running, just depress the clutch pedal and listen for any grating or whirring noises that could be coming from the clutch release bearing. This is an example of replacement parts which are comparatively cheap to buy but fairly expensive to fit. However, unlike many front wheel drive cars, it is possible to remove the Renault 12 transmission, for access to the clutch, without taking the engine out also.

Whilst looking under the bonnet, make a mental note of the general cleanliness, or lack of it.

Turning to the electrical system, check that all the lights, including the indicators, work correctly and are consistently bright and do not fluctuate in intensity with engine speed. Check that the ignition warning light goes out immediately the engine speed is increased from idling.

Have a good look round the battery for signs of seepage, cracking, etc and check the condition of the battery terminals.

Walk round the car again and examine the state of the tyres. Check that, if worn, they have done so evenly. If they have worn unevenly or show signs of scuffing there possibly may be something wrong with the suspension geometry or the steering. Generally speaking, the steering is pretty reliable and the most that is likely to require replacement is the tie-rod balljoints. If the steering rack is at fault you may have a fairly heavy bill to pay since it cannot be repaired; a factory exchange unit will have to be obtained. If the steering geometry requires resetting or any suspension parts need renewing, again you could be faced with a heavy bill so at the first opportunity a more detailed examination must be made.

By now, you will have checked most of the important points from above the car and it is time to start probing underneath.

If a ramp or inspection pit are available, all well and good; if not you will have to jack the car up as high as possible and crawl underneath. If this latter method has to be resorted to, make sure that the wheels are chocked and the car is

well supported.

On the underfloor of the car you will see, or should see, two springs. These are the handbrake pull off spring and gear lever bias spring. Make sure that they are there, and not damaged or rusted. Whilst concentrating on the centre of the car, check the exhaust for security and general condition, and the linkage points of the gearchange mechanism. These items are relatively simple to renew provided that you have the access.

Moving toward the rear of the car, look at the condition of the handbrake linkage. The earlier umbrella handle systems have more points to wear out than the later types. Renewal of the cable will be a fairly lengthy job.

Check for damage to the rear brake pressure regulator linkage. Even if undamaged, and you do purchase the car, it is a wise precaution to have it checked by a dealer with proper equipment as soon as possible.

Look for signs of fluid leakage from the rear shock absorbers. Check the shock absorber mountings, the suspension pivots at the central 'A' bracket on the axle and the bushes of the tie-rods. A large tyre lever can be very useful for checking wear of this type. Do not be too alarmed at a little cracking and crazing of the rubber bushes where they 'mushroom' out at the ends but beware of missing pieces of rubber. Look for any signs of corrosion where the central 'A' bracket is mounted on the underframe and the axle as this type of repair is generally so expensive as to render it uneconomical. Check the antiroll bar fixings also.

The only other remaining point on the rear suspension which requires meticulous checking, and this will need to be done from inside the boot, is the upper spring mounts. Any signs of corrosion here could result in an expensive repair since the weight of the rear of the car is taken on them. These mounts are at the forward end of the boot fairly high up behind the rear seat squab, or on the rear wheel arches (inside the car) on Estates.

Moving toward the front of the car, you will need to check the wishbone mountings and steering swivels for wear. The upper wishbone is not very accessible and again some sort of leverage will be necessary. If the front wheels are raised, or can be raised, rock them to and fro to check for any slackness. Whilst ensuring that the jacking is adequate, a fairly vigorous check is required. Try to turn the front road

wheel to check for play in the constant velocity joints. Also apply leverage here wherever you can; the joints are above the lower wishbones but they can be reached with a bit of stretching. Do not forget to check the condition of the rubber boots on the balljoint, steering rack and driveshaft joints.

Look for leakage at the shock absorbers. You may need a torch because the piston end cannot be seen very easily.

Finally check for any rust around the wishbone mountings and, after finishing the inspection underneath, around the upper mountings of the spring on the wing valances in the engine compartment.

One last point, before finishing beneath the car, make a general note of any oil leaking from the engine or transmission.

**The final decision:** If you are assessing a vehicle from a large reputable garage, the main problem will be the price they are asking. Consider the guarantees you should have before condemning them too much. They are not likely to get involved in bargaining but you could ask if they will accept an offer (this is not likely if you seek HP terms). If they say they may consider it, offer 10% less than their asking price. You may end up with 5% off.

If you hope to buy from a less secure source, signs of imminent mechanical repair needs or poor bodywork may call for a drastic price reduction. You can often get a vehicle for 20% less if you wave money under the man's nose.

If you are a keen do-it-yourself man, you may get a bargain because you can assess what it will cost additionally to put the vehicle in good order. For those who seek only reliability and cannot afford time for other than simple maintenance and repair tasks, the best guarantee conditions are the most important thing.

## Selling

Much of what has been said with regard to buying a used Renault 12 is relevant in selling one, except, of course, that the boot is on the other foot.

Whatever the reasons are for selling, be they that you want a bigger, better or different vehicle, you simply need the money, or your circumstances have changed, there is the relatively simple, standard approach - you want the best price for it. With this end in view, whilst we hope that you will be giving value for money,

at the same time there is a basic method of preparation for selling. Cleanliness is all. The cleaner the vehicle, the higher the price. The bodywork's condition, both inside and out, should be the main selling point. Mechanical repair work is usually cheaper and faster to undertake than extensive bodywork repairs or renovation. The condition of the bodywork is usually indicative of the total condition because it will show signs of age and disrepair sooner than the engine or transmission.

Attend to the paintwork, chrome and all exterior trim, clean the outside thoroughly and polish it. Clean out the interior and engine compartment also.

Because of the short time usually taken to actually complete a sale there can only be something less than a complete detailed check by a potential purchaser and rather more, a quick visual one.

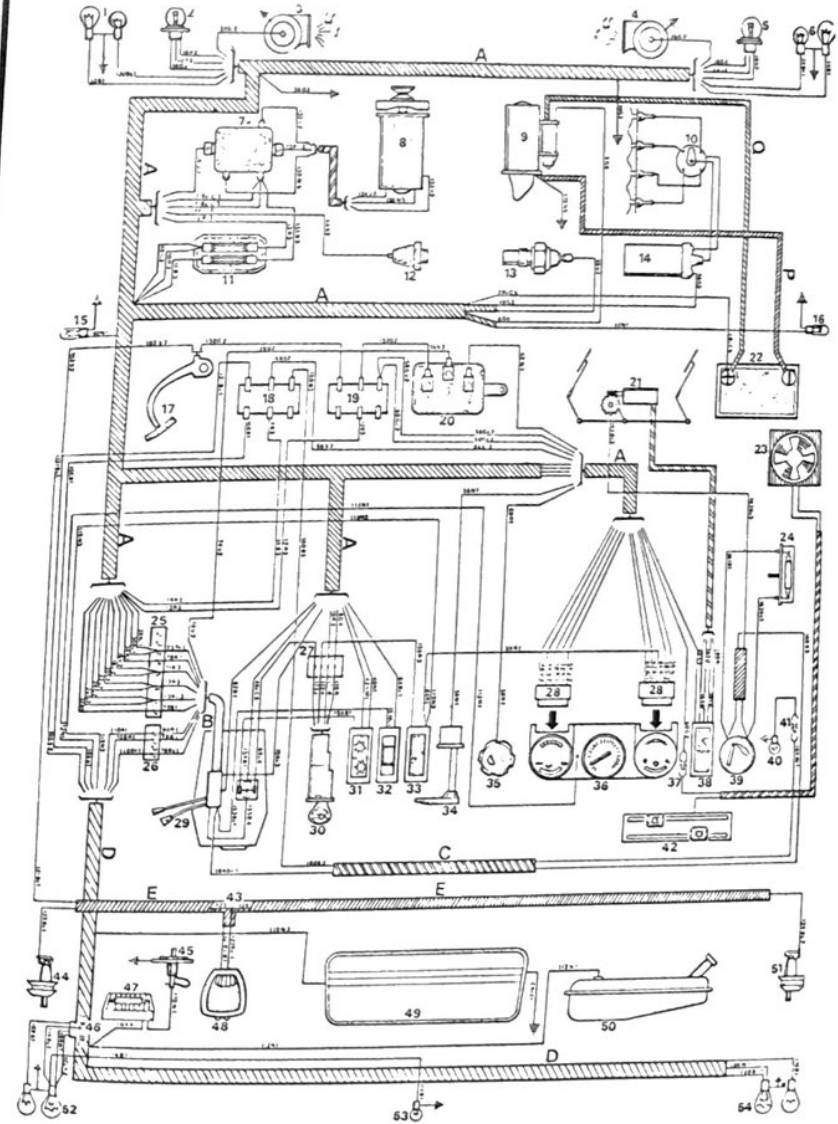
As there are various ways of buying a used Renault 12, so there are similar methods of selling but they are considered on their merits from completely different standpoints. The way in which you sell will depend on why you are selling and these reasons were stated previously. The best prices are often obtained when part exchanging for a new vehicle from an accredited dealer. However, shop around from dealer to dealer; their buying-in prices will vary according to how eager they are to sell the vehicle you want and how eager they are to actually have your present one to re-sell. Nevertheless, with many dealers not wanting used models of more than three years old it may be better to sell privately whatever your circumstances. Here, local papers, notice boards etc are the best media for selling.

It is unlikely that you will receive a good

price from a dealer at least as a cash transaction, unless he requires a good example for a particular customer, because he will have to put his mark-up onto it to re-sell. Auctions do not often provide the best recompense. You can, of course, put on a reserve price. They usually do provide a sale though if you are finding it difficult to sell your particular car.

The same premise applies when you are selling as when you are buying with regard to the actual selling price. The same guide is valid. However, there are other indications. Go around to various dealers and ask them for the prices of used cars of a similar age and condition to yours and look at the prices in the local papers, and then fix a reasonable price and be prepared to bargain. There are obviously price trends with regard to time and place to sell. Prices usually creep upwards in the spring and you may be fortunate to live in a high demand area such as London or eastern England where prices will again be marginally higher than elsewhere.

In conclusion, remember when selling that the law exists both to protect you and the buyer. The Trades Description Act does affect you as the seller. If the vehicle you are selling is under a hire purchase agreement, the permission of the finance company must be obtained first. Irrespective of its age it must have a current road fund licence, MoT certificate (when applicable) and insurance before it can even be tested on the road. Always give a receipt and do not part with the vehicle and log book until you are sure you have the money if you are paid by cheque. Do not forget to make sure your name is removed from the log book and the buyer's inserted and that the local Taxation Office is informed of a change of ownership.

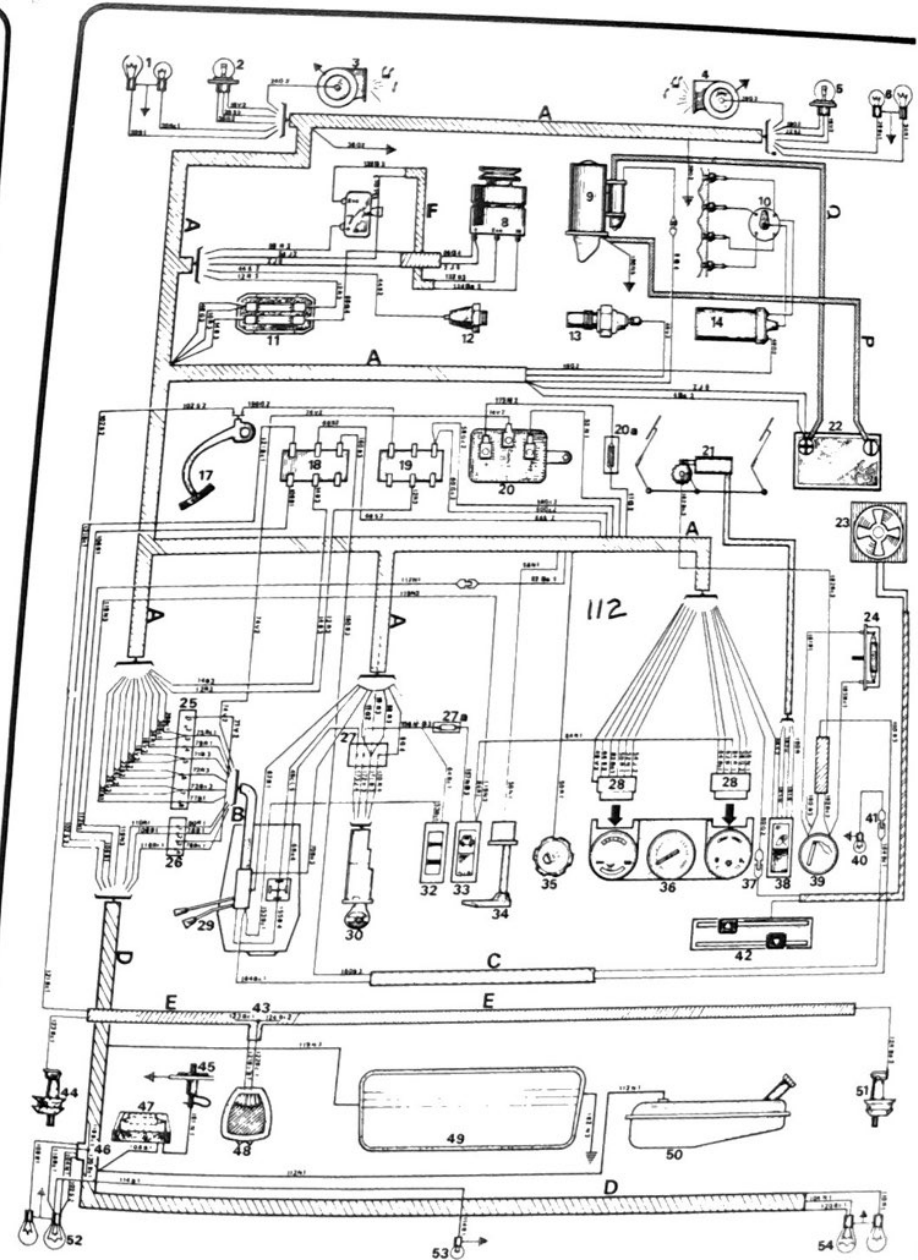


Wiring diagram for early models fitted with a dynamo



## Key to wiring diagram for early models fitted with a dynamo

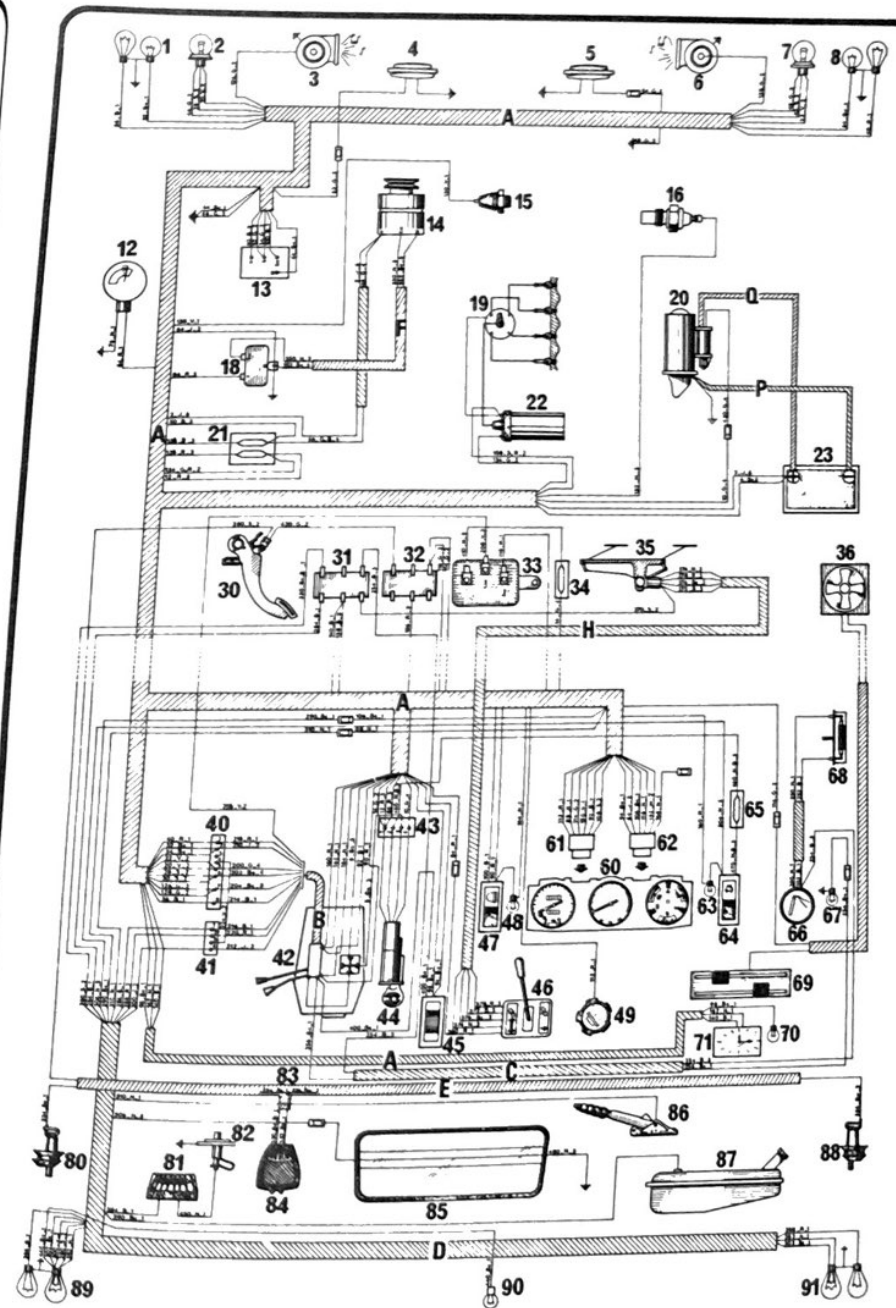
- 1 LH front side and direction indicator light
- 2 LH headlight
- 3 LH horn
- 4 RH horn
- 5 RH headlight
- 6 RH front side and direction indicator light
- 7 Regulator
- 8 Alternator or dynamo
- 9 Starter motor
- 10 Distributor
- 11 Fuses
- 12 Oil pressure sender
- 13 Water temperature sender
- 14 Ignition coil
- 15 LH parking light
- 16 RH parking light
- 17 Stop light switch
- 18 Junction plate before ignition switch
- 19 Junction plate after ignition switch
- 20 Flasher unit
- 21 Windscreen wiper
- 22 Battery
- 23 Heater fan motor
- 24 Glove compartment light
- 25 Junction block (front harness and combination lighting switch)
- 26 Junction block (rear harness and combination lighting switch)
- 27 Junction block (front harness and Neiman)
- 28 Junction block (front harness and instrument panel)
- 29 Combination lighting and direction indicator switch
- 30 Neiman
- 31 Parking light switch
- 32 Instrument panel lighting rheostat
- 33 Heated rear screen switch
- 34 Handbrake switch
- 35 Choke control switch
- 36 Instrument panel
- 37 Push-on plug and socket (front harness to heater)
- 38 Windscreen wiper switch
- 39 Cigar lighter
- 40 Cigar lighter illumination
- 41 Push-in plug and socket
- 42 Heater fan motor switch
- 43 Junction for interior light
- 44 LH front door pillar switch
- 45 Boot light switch
- 46 Junction for rear light
- 47 Boot light
- 48 Interior light
- 49 Heated rear screen
- 50 Fuel tank
- 51 RH front door pillar switch
- 52 LH rear light
- 53 Plate light
- 54 RH rear light



Wiring diagram for L, TL and Estate cars fitted with an alternator

Key to wiring diagram for L, TL and Estate cars fitted with an alternator

- 1 LH front side and direction indicator light
- 2 LH headlight
- 3 LH horn
- 4 RH horn
- 5 RH headlight
- 6 RH front side and direction indicator light
- 7 Regulator
- 8 Alternator or dynamo
- 9 Starter motor
- 10 Distributor
- 11 Fuses
- 12 Oil pressure sender
- 13 Water temperature sender
- 14 Ignition coil
- 15 LH parking light
- 16 RH parking light
- 17 Stop light switch
- 18 Junction plate before ignition switch
- 19 Junction plate after ignition switch
- 20 Flasher unit
- 21 Windscreen wiper
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- 35 Choke control switch
- 36 Instrument panel
- 37 Push-on plug and socket (front harness to heater)
- 38 Windscreen wiper switch
- 39 Cigar lighter
- 40 Cigar lighter illumination
- 41 Push-in plug and socket
- 42 Heater fan motor switch
- 43 Junction for interior light
- 44 LH front door pillar switch
- 45 Boot light switch
- 46 Junction for rear light
- 47 Boot light
- 48 Interior light
- 49 Heated rear screen
- 50 Fuel tank
- 51 RH front door pillar switch
- 52 LH rear light
- 53 Plate light
- 54 RH rear light



Wiring diagram for TS models



## Key to wiring diagrams for TS models

1	LH front sidelight and direction indicator
2	LH headlight
3	LH horn
4	LH Q.I. driving light
5	RH Q.I. driving light
6	RH horn
7	RH headlight
8	RH front sidelight and direction indicator
12	Electric windscreen washer pump
13	Q.I. driving lights relay
14	Alternator
15	Oil pressure switch
16	Water temperature switch
18	Regulator
19	Distributor
20	Starter
21	Fuses
22	Ignition coil
23	Battery
30	Stoplight switch
31	Junction plate before ignition switch
32	Junction plate after ignition switch
33	Flasher unit
34	Flasher unit fuse
35	Windscreen wiper
36	Heating-ventilating fan motor
37	Push-in plug and socket
40	Junction block (front harness and combination lighting switch)
41	Junction block (rear harness and combination lighting switch)
42	Combination lighting switch
43	Junction block (front harness and ignition switch)
44	Ignition/starter switch
45	Instrument panel lighting rheostat
46	Windscreen wiper, windscreen washer switch
47	Q.I. driving lights switch
48	Q.I. driving lights 'on' tell-tale
49	Choke 'on' warning light switch
60	Instrument panel
61	Junction block (LH front harness and instrument panel)
62	Junction block (RH front harness and instrument panel)
63	Rear screen demister 'on' warning light
64	Rear screen demister switch
65	Rear screen demister fuse
66	Cigar lighter
67	Cigar lighter illumination
68	Glove compartment light
69	Heating-ventilating fan switch
70	Clock light
71	Clock
80	LH door pillar switch
81	Luggage compartment light
82	Luggage compartment light switch
83	Interior light wire junction
84	Interior light
85	Heated rear screen
86	Handbrake 'on' warning light switch
87	Fuel tank
88	RH door pillar switch
89	LH rear light
90	Licence plate light
91	RH rear light

# Castrol GRADES

## Castrol Engine Oils

## Castrol GTX

An ultra high performance SAE 20W-50 motor oil which exceeds the latest API MS requirements and manufacturers' specifications. Castrol GTX with liquid tungsten generously protects engines at the extreme limits of performance, and combines both good cold starting with oil consumption control. Approved by leading car makers.

## Castrol XL 20/50

Contains liquid tungsten, well suited to the majority of conditions giving good oil consumption control in both new and old cars.

## Castrolite (Multi-grade)

This is the lightest multi-grade oil of the Castrol motor oil family containing liquid tungsten. It is best suited to ensure easy winter starting and for those car models whose manufacturers specify lighter weight oils.

## Castrol Grand Prix

An SAE 50 engine oil for use where a heavy, full-bodied lubricant is required.

## Castrol Two-Stroke-Four

A premium SAE 30 motor oil possessing good detergency characteristics and corrosion inhibitors, coupled with low ash forming tendency and excellent anti-squiff properties. It is suitable for all two-stroke motor-cycles, and for two-stroke and small four-stroke horticultural machines.

## Castrol CR (Multi-grade)

A high quality engine oil of the SAE 20W/30 multi-grade type, suited to mixed fleet operations.

## Castrol CRI 10, 20, 30

Primarily for diesel engines, a range of heavily fortified, fully detergent oils, covering the requirements of DEF 2101-D and Supplement 1 specifications.

## Castrol CRB 20, 30

Primarily for diesel engines, heavily fortified, fully detergent oils, covering the requirements of MIL-L-2104B.

## Castrol R 40

Primarily designed and developed for highly stressed racing engines. Castrol 'R' should not be mixed with any other oil nor with any grade of Castrol.

*Liquid Tungsten is an oil soluble long chain tertiary alkyl primary amine tungstate covered by British Patent No 882,295*

## Castrol Gear Oils

## Castrol Hypoy (90 EP)

A light-bodied powerful extreme pressure gear oil for use in hypoid rear axles and in some gearboxes.

## Castrol Gear Oils (continued)

## Castrol Hypoy Light (80 EP)

A very light-bodied powerful extreme pressure gear oil for use in hypoid rear axles in cold climates and in some gearboxes.

## Castrol Hypoy B (90 EP)

A light-bodied powerful extreme pressure gear oil that complies with the requirements of the MIL-L-2105B specification, for use in certain gearboxes and rear axles.

## Castrol Hi-Press (140 EP)

A heavy-bodied extreme pressure gear oil for use in spiral bevel rear axles and some gearboxes.

## Castrol ST (90)

A light-bodied gear oil with fortifying additives.

## Castrol D (140)

A heavy full-bodied gear oil with fortifying additives.

## Castrol Thio-Hypoy FD (90 EP)

A light-bodied powerful extreme pressure gear oil. This is a special oil for running-in certain hypoid gears.

## Automatic Transmission Fluids

## Castrol TQF

(Automatic Transmission Fluid)

Approved for use in all Borg-Warner Automatic Transmission Units. Castrol TQF also meets Ford specification M2C 33F.

## Castrol TQ Dexron®

(Automatic Transmission Fluid)

Complies with the requirements of Dexron® Automatic Transmission Fluids as laid down by General Motors Corporation.

## Castrol Greases

## Castrol LM

A multi-purpose high melting point lithium based grease approved for most automotive applications including chassis and wheel bearing lubrication.

## Castrol MS3

A high melting point lithium based grease containing molybdenum disulphide.

## Castrol BNS

A high melting point grease for use where recommended by certain manufacturers in front wheel bearings when disc brakes are fitted.

## Castrol Greases (continued)

## Castrol CL

A semi-fluid calcium based grease, which is both waterproof and adhesive, intended for chassis lubrication.

## Castrol Medium

A medium consistency calcium based grease.

## Castrol Heavy

A heavy consistency calcium based grease.

## Castrol PH

A white grease for plunger housings and other moving parts on brake mechanisms. It must NOT be allowed to come into contact with brake fluid when applied to the moving parts of hydraulic brakes.

## Castrol Graphited Grease

A graphited grease for the lubrication of transmission chains.

## Castrol Under-Water Grease

A grease for the under-water gears of outboard motors.

## Anti-Freeze

## Castrol Anti-Freeze

Contains anti-corrosion additives with ethylene glycol. Recommended for the cooling systems of all petrol and diesel engines.

## Speciality Products

## Castrol Girling Damper Oil Thin

The oil for Girling piston type hydraulic dampers.

## Castrol Shockol

A light viscosity oil for use in some piston type shock absorbers and in some hydraulic systems employing synthetic rubber seals. It must not be used in braking systems.

## Castrol Penetrating Oil

A leaf spring lubricant possessing a high degree of penetration and providing protection against rust.

## Castrol Solvent Flushing Oil

A light-bodied solvent oil, designed for flushing engines, rear axles, gearboxes and gearcasings.

## Castrollo

An upper cylinder lubricant for use in the proportion of 1 fluid ounce to two gallons of fuel.

## Everyman Oil

A light-bodied machine oil containing anti-corrosion additives for both general use and cycle lubrication.

## Fault Finding Charts

### How to use the fault finding section

The fault finding section has been compiled to help the owner deal with two very different sets of circumstances. The most annoying and frustrating type of fault is when the car will not start or when it breaks down on a journey. For this there is an elimination chart that goes methodically through various tests. The other type of fault is the worrying kind: odd noises, or the car not going properly. These have been tabulated under the heading of the symptom. Even if you cannot rectify one of these latter faults, you must at least be able to find whether it is safe to continue. The following main groups have been used to separate the information:

### The Chart

Engine stoppages

### The Tables

General engine faults  
Electrical failures  
Clutch defects  
Brake defects  
Running problems

### Engine stoppage: It will not start, or stops on the road

### Engine stoppages: Tests for use in conjunction with the chart

#### Test I.1

#### Check ignition HT at a plug

- Switch on ignition
- Take an HT lead off a plug
- Hold metal contact of the fitting on the end of the lead 1/8 inch from a bright metal earth such as the cylinder head. If the plug lead fitting has a shroud to cover the plug, stick a 1/4 inch bolt into the contact as a probe
- Operate the starter
- There should be an easily noticeable spark

#### Test I.2

#### Ignition HT at source

- If possible take the central, 'King', lead from the distributor cap and hold it 1/8 inch from the earth and repeat as for test 1
- If the 'King' lead is not readily detachable from the distributor cap, remove it from the coil and rig up a temporary lead

There are many possible defects, so finding the cause will be difficult, and nigh impossible unless a logical course is followed.

From statistical surveys of causes of a large number of breakdowns, it is apparent that the ignition system is more often to blame than the petrol system. The fault finding sequence therefore aims to eliminate the fuel system at an early stage.

Failure to start from cold is usually a combination of damp and dirt on the ignition system, and that system anyway giving a weak spark because of overdue maintenance, all aggravated by a weak battery.

Therefore, it may be misleading to treat a car's failure to start as a definite defect. On a cold, damp day it is often best to try a push start before going into the fault finding sequence. The slightest lack of verve in the way the starter spins the engine should be interpreted in the chart as 'starter cranks sluggishly'.

In the stoppage chart reference is made to various tests. These are listed after the chart.



**Test I.3**

**Check ignition LT at contact breaker**

- a) Remove distributor cap
- b) Switch on ignition
- c) Open contact breaker points with a thin screwdriver or if the engine has stopped so that they are already open, short them with the screwdriver
- d) There should be a small but definite spark

**Test I.4**

**Check the rotor arm**

- a) This test is to see if there is a short through the body of the rotor arm to the spindle beneath
- b) Rig up the 'King' lead as for the test I.2, or a substitute lead
- c) Hold the lead, not to the block, but near the centre of the metal contact on the top of the rotor arm
- d) Operate the starter
- e) There should be only one small spark as the metallic mass of the rotor arm contact is

electrically charged and then no further sparks  
 f) Continuous sparks mean there is current flow to somewhere, thus a faulty rotor arm

**Tests of the petrol system**

**Test P.1**

**Fuel flow into carburettor**

- a) Remove the fuel pipe where it enters the carburettor
- b) Operate the starter to work the mechanical petrol pump. Take care the pipe is not pointed at ignition leads or a hot exhaust pipe
- c) Fuel should gush out of the pipe

**Test P.2**

- a) Remove the pipe into the pump from the tank
- b) Blow through the pipe to ensure there is no blockage. If in doubt get an assistant to listen for bubbling in the fuel tank
- c) Also whilst the pipe is off the pump inlet work the starter with a finger over the inlet union. The suction of the pump should be felt.

**General Engine Faults**

Symptom	Possible Fault	Check and Remedy
Engine stalls when idling or has very rough idle	Idling speed set too low	Adjust the idling speed by screwing in the throttle adjustment screw until the engine idles a little faster, referring to Section 3, paragraph 10 of Routine Maintenance.
	Dirty or blocked air cleaner	Check the air cleaner. If the element is blocked, fit a new one.
	Choke stuck in operation	Check that the choke butterfly opens fully when the choke control is fully home.
	Air leak causing weak mixture	Check that the carburettor is tight on its mounting and that there are no signs of cracks round the inlet manifold. If a crack is found it can temporarily be sealed with PVC tape or similar material but a professional repair will have to be carried out very soon.
	Dirty plugs or incorrect gap	Remove the plugs, clean them and check the gaps (see Section 3, paragraph 6 of Routine Maintenance).
	Contact breaker points dirty, incorrectly set or worn	Thoroughly clean and reset the points as described in Section 3, paragraph 7 of Routine Maintenance.

Symptom	Possible Fault	Check and Remedy
Engine suffers from lack of power and acceleration	Air cleaner dirty or blocked	If blocked fit a new element.
	Incorrect setting of ignition timing	Check the ignition timing (see Section 3, paragraph 8 of Routine Maintenance).
	Accelerator linkage out of adjustment	Check that full travel of the pedal gives full travel of the accelerator linkage at the carburettor.
	Insufficient fuel reaching engine	Clean the carburettor jets and filters, and the fuel pump filter.
	Automatic advance in distributor faulty	This is not a fault that is easily diagnosed. Take your car to your Renault dealer for a proper check.
	Engine compression low due to burnt valves or incorrect clearances	Check the valve clearances (Section 3, paragraph 3 of Routine Maintenance). If the valves are burnt, the cylinder head will have to be removed and the valves reground.



Symptom Engine misfires at higher revs	
Possible Fault	Check and Remedy
Loose or corroded electrical contacts in ignition system	Check, clean and tighten down all connections on the battery, coil and distributor. Check the condition of all leads. If they are cracked or damaged renew them as they may well be shorting under certain conditions.
Spark plugs dirty, gaps incorrect or plugs need replacement	Remove the plugs, clean them thoroughly, check they are the right type, and examine them for signs of damage.
Points dirty, burnt or gap incorrectly set	Thoroughly clean the points as described previously.
Dirt or water in carburettor	Clean the carburettor to remove all sediment and dirt.

Symptom Engine overheats when running under normal conditions	
Possible Fault	Check and Remedy
Lack or loss of coolant	If coolant is boiling, switch off the engine and wait for some ten minutes until it has stopped. Then carefully remove the radiator cap with a large rag. As the system is under pressure the hot coolant may shoot out and if care is not taken a nasty burn could result. Whilst waiting for things to cool down a bit have a good look round all hoses, hose connections, drain taps, the radiator and the heater for signs of a leak. A leak is very often apparent by signs of rust, water or anti-freeze but this can be misleading if the leaking coolant has been blown around by the fan. If it is apparent that one or more of the hoses are defective these will have to be replaced eventually but a short distance can be covered by wrapping the defective spot with tape and running with the radiator cap off to prevent the coolant being forced out of the leak under pressure. Do not top up the cooling system until it has cooled down for at least 30 minutes, or cold water going in may cause the metal in the block and head to contract too fast and crack. Should it be established that the radiator has a leak this is a slightly more difficult problem if far from home. If a can of Radweld is kept in the car, top up the coolant to within about an inch of the top of the radiator (re-warm the engine to ensure the thermostat is open), pour in the Radweld, refit the radiator cap and rev the engine a few times to let the Radweld circulate and be drawn into the leakage area and effect a seal. If any temporary measure is used, the radiator should be removed and repaired by an expert as soon as it is practical. A bad leak can be temporarily patched with the "plastic padding" if the coolant is drained below the level of the leak till the plastic sets. Refer to Section 6, paragraph 1 of Routine Maintenance for further information if necessary.

General Engine Faults

Loose or broken fan belt	Check that the fan belt is in position and the tension is correct (Section 2, paragraph 1 of Routine Maintenance). Adjust the tension if necessary. If it is broken and you have a replacement in the car, put it on. If not, a temporary belt can be rigged up with a nylon stocking. This will not last long but will probably enable you to get to a garage without too much overheating.
Thermostat stuck in closed position	Remove the thermostat. If the engine is very hot and the thermostat is closed, remove it and at a later date replace it with a new one. (The thermostat is fitted inside the lower end of the radiator top hose.)
Blocked radiator either internally or externally	If the radiator fins are blocked with foreign matter this should be washed out with a pressure hose to allow the air to flow freely round the fins and do an effective cooling job. If a lot of oil is mixed in with the foreign matter the best way to move this is to take the car to your local garage and have the radiator steam cleaned. With time the cooling system may lose its efficiency as rust scales, hard water deposits and other sediment build up in the radiator and engine cooling passages. Drain the system and flush it as described in the maintenance section. If the dirt is bad, fill with one of the radiator flushing agents available from garages or accessory shops. Then flush out again and fill with soft water and anti-freeze.

Symptom Radiator continually requires topping up but no signs of external leakage	
Possible Fault	Check and Remedy
Cracked cylinder block or head due probably to freezing coolant or blown cylinder head gasket	Remove the dipstick and check to see if the oil level has risen or if there is any sign of water drops in the oil on the stick. If the level has risen then it is obvious that water has entered the sump and the oil is floating on the top of it. After the engine has been running for some time in this condition the oil on the dipstick may appear to be milky in colour. Oil will probably also have found its way into the cooling system and this can be seen by a film of oil floating on top of the coolant in the radiator. A leaking head or block may also be accompanied by the discharge of excessive amounts of steam from the exhaust pipe, even when the engine is thoroughly warmed up.

Symptom Engine fails to warm up properly with little or no heat from heater	
Possible Fault	Check and Remedy
Thermostat stuck in open position	Renew thermostat.



**Symptom** Engine 'pinks' under acceleration

Possible Fault	Check and Remedy
Too low octane fuel being used	On next fill up use one star higher grade of fuel and check to see if this eliminates 'pinking'.
Ignition timing too far advanced	Check the ignition timing (Section 3, paragraph 8 of Routine Maintenance).
Faulty automatic advance mechanism in distributor	This fault will only become apparent when the ignition timing has been correctly set. The remedy of it is best left to your Renault garage as it will need electronic diagnosis equipment to check.
Pre-ignition due to engine overheating	Check cooling system for signs of overheating.
Pre-ignition due to excessive carbon deposits in combustion chamber	Take your car to your Renault garage and discuss the advisability of decarbonising.

**Symptom** Engine suffers from excessive oil consumption

Possible Fault	Check and Remedy
Oil leaks from the clutch housing, timing cover gasket and oil seal, rocker cover gasket, oil filter seal, sump gasket, sump drain plug washer	An engine leaking enough to show high oil consumption will be very messy. Clean the engine. If oil is sprayed about try to identify where the oil is coming from. If it is identified as coming from the oil filter seal, the rocker cover gasket or sump drain plug, these are easily rectifiable; simply renew the suspect gaskets. If the leaks are from any of the other sources it would be advisable to consult your Renault garage, or refer to the Owner's Workshop Manual.
Worn or broken piston rings or worn cylinder bores resulting in oil being burnt by the engine	This fault is nearly always indicated by blue smoke from the exhaust system and a black, sooty exhaust pipe. You must consult your local garage as soon as this becomes apparent or further damage may result. You will have to fit new rings and pistons, or depending on the degree of wear found on dismantling the engine, a reconditioned unit. This operation is covered in the Haynes Owner's Workshop Manual for the Renault 12.
Worn valve guides and/or defective valve stem seals	This is shown by blue smoke from the exhaust after a period of idling. Again, consult your garage or the Haynes Owner's Workshop Manual for the Renault 12.

General Engine Faults

**Symptom** Excessive mechanical noise from engine

Possible Fault	Check and Remedy
Incorrect valve to rocker arm clearances (tappets)	The noise associated with this fault is normally a tapping noise, whether on or off load, coming from the area of the rocker cover and is caused by one or more of the clearances being too great. To eliminate this noisiness, adjust the valve to rocker arm clearances.
Worn big end or main bearings	If the big end bearings are badly worn this will be noticeable by a heavy clonking from the engine once it has warmed up and will be particularly noticeable at speed or at idle. It may also be accompanied by lack of oil pressure, causing the oil warning light to stay on when idling. A worn main bearing will also cause loss of oil pressure in the same way, but rather than a clonking noise you will feel a heavy thumping from the engine at speed. Check warning light, pressure gauge, dipstick. See next Section.

**Symptom** Low oil pressure

Possible Fault	Check and Remedy
Low oil level	This is indicated by a metallic rattle and tinkling from the front of the engine and means that either the timing chain is worn badly or the tensioner is not functioning correctly.
No oil. Failure of the system	This will show as flashing of the warning light or surging of the gauge on corners, or during hard acceleration or braking. Top up at once.
False warning	This would bring the warning light on permanently, and on cars with gauges these will show no pressure. Stop the engine at once, freewheeling to park off the road. If the dipstick shows no oil in the sump search for the reason for the loss. If the sump is full, contact a garage for assistance.
Worn engine	Warning lights do sometimes cry 'wolf' when all is in order. If no gauge is fitted get a garage to bring a new warning light sender to the car. Do not drive the car till the defect is located. On cars with gauges a complete failure of the instrument is most unlikely. Rather will its behaviour become erratic, or its complete failure will be accompanied by an oil leak. Genuine complete loss of oil pressure will usually be accompanied by bearing clatter from the engine.
	When hot the gauge may read low, or the warning light flash, particularly at idle. Drive gently and consult your garage.

**Symptom** One or some lights or ancillaries do not come on when switch is operated

Possible Fault	Check and Remedy
Defective bulb(s)	Replace the bulb in question. To make sure that it really is the bulb that is at fault check it in another location known to be functioning correctly.
Blown fuse	Replace the fuse. If it blows again, consult a car electrical specialist.
Dirty or corroded connections at bulb holder	If the suspect bulb works in another holder then its own holder must be at fault. Thoroughly clean up the connector and bulb holder itself.

**Symptom** No lights come on at all when switch is operated but other electrical components work

Possible Fault	Check and Remedy
Faulty light switch or broken wire	Electrical faults of this type are very difficult to trace, particularly at night. Check that all visible leads to the head and tail lights and switch are intact. Be especially careful not to knock contacts when feeling for loose or hot wiring. Use the wiring diagram to help you identify the relevant wires but if you are in any doubt, do not touch them as you may make final diagnosis and remedy more difficult. Contact a garage which should be able to fix at least a temporary repair. It is dangerous to proceed at night, even if very slowly, without lights.

**Symptom** When engine is running ignition warning light fails to go out

Possible Fault	Check and Remedy
Loose or broken fan belt	Tighten or renew the fan belt as necessary.
Dynamo/alternator not functioning correctly	Check that the leads from the control box to the dynamo/alternator are firmly attached and that one has not come loose from its terminal.
Control box not functioning correctly	The operation of the control box or dynamo/alternator will have to be checked and this should be entrusted to your local garage or car electrical specialist.

Electrical Failures

**Symptom** Battery goes flat very quickly yet ignition warning light goes out normally

Possible Fault	Check and Remedy
Battery defective	Check the specific gravity of the electrolyte in the battery. If one cell appears to be lower than the others then the battery may be defective and not holding its charge. It is advisable to consult a battery specialist in cases such as this.
Fan belt loose and slipping	Tighten fan belt (Section 2, paragraph 1 of Routine Maintenance).
Dynamo/alternator output not enough to charge	Arrange for the dynamo/alternator to be checked by a car electrical specialist.
Control box not operating correctly	Have an expert check the operation of the control box in conjunction with the dynamo/alternator
Constant electric drain	Try taking off a battery terminal when the car is left idle. If this gives a cure get a car electrical specialist to trace the fault.



**Symptom** Clutch slips: Engine speeds up but vehicle does not

Possible Fault	Check and Remedy
Clutch withdrawal mechanism not releasing	Check the clutch pedal has a little free play. Check the clutch withdrawal lever can be pulled further away from the clutch.
Oil or grease on the clutch linings or clutch worn out	If after checking as above the clutch continues to slip the chances are that the friction plate will have to be removed. This will mean the removal of the gearbox and should be entrusted to your Renault garage.

**Symptom** Clutch fails to disengage when pedal fully depressed

Possible Fault	Check and Remedy
Broken clutch operating cable	With the help of an assistant, check that the clutch withdrawal lever operates when the clutch pedal is depressed. If the withdrawal lever fails to operate, renew the cable.
Clutch disc sticking to pressure plate or release bearing very badly worn	These faults will almost invariably be associated with squeals and noises when the clutch pedal is operated. Check by stopping the engine, engaging a gear, depressing the clutch and putting on the handbrake. Then try to start the engine. If it refuses to turn, the clutch is stuck solid and must be removed and examined. If the engine is started without difficulty try using the clutch in the normal manner. If the drive continues to 'creep' a little when the pedal is fully depressed, carry on slipping the clutch for a few moments to try and rub off whatever may have been on the friction surfaces as a temporary measure. If no improvement of any kind results there must be a serious defect which will require transmission unit removal and examination of the clutch. This again is not an instant repair for obvious reasons.

**Symptom** Clutch squeal

Possible Fault	Check and Remedy
Clutch release bearing worn	Squealing noises from the clutch (and make sure they are from the clutch and not the fan belt or water pump) are most likely to come from a worn out clutch release bearing. The actual efficiency of the clutch bearing may not be affected immediately but if the bearing is not repaired in good time the water will increase and result in the clutch being operated unevenly. This will lead to excessive and uneven wear of the friction plate. To replace the clutch release bearing the transmission unit will have to be removed.

Brake Defects

**Symptom** Pedal feels spongy when the brakes are applied

Possible Fault	Check and Remedy
Air present in the hydraulic system	Bleed the hydraulic system as described earlier and check for leaks where air could have entered the system.

**Symptom** Stopping ability poor though pedal pressure is hard

Possible Fault	Check and Remedy
Brake pads or linings excessively worn	Examine and renew as necessary.
Brake pads or linings contaminated with oil or hydraulic fluid	Examine the brake pads and linings and if found to be contaminated, renew them. Also look for the source of contamination and eliminate it if possible, otherwise consult your local garage for advice.
One or more of the wheel cylinders seized	Check the surfaces of the brake discs. If any surface is not bright and shiny a seized wheel cylinder is indicated. To check the rear brakes, withdraw the drum just sufficiently to see the edge of the linings then arrange for an assistant to gently depress the brake pedal. If any brake lining does not move, a seized wheel cylinder is indicated. Rectification of seized wheel cylinders is best left to your local garage.

**Symptom** Car pulls to one side when brakes are applied

Possible Fault	Check and Remedy
Brake pads or linings on one side (opposite side from pull) are contaminated with oil or hydraulic fluid	Examine the pads and linings. Renew them as necessary.
Unequal wear on brake pads or linings	Check the wheel cylinders as described above and have them replaced as necessary.
Wheel cylinder seized (on opposite side from pull)	Check the wheel cylinders as described above and have them replaced as necessary.

## Brake Defects

**Symptom** Brake pedal travels right to the floor with little or no resistance and brakes are virtually useless

Possible Fault	Check and Remedy
Bad leak in hydraulic system resulting in considerable loss of fluid and no pressure being applied to wheel cylinders, or master cylinder internal seals have failed	This fault is usually rather sudden and if you are lucky enough not to have hit anything, do not under any circumstances, attempt to drive the car any further. Apart from it being very dangerous, you will be contravening the law. Check the wheel cylinder hydraulic pipes and rubbers immediately for a hydraulic leak; if no leak is apparent then the master cylinder seals have failed. Call a breakdown vehicle and get the job done professionally, making sure that the braking system is thoroughly tested after repair. Do not drive the car, there is no roadside remedy.

**Symptom** Brake juddering

Possible Fault	Check and Remedy
Brake discs badly scored or warped. Brake drums badly scored	Remove the front wheels and examine the discs for signs of deep scoring. Also remove the rear wheels and examine the drums for the same signs. Scoring can only have been caused by pads or linings worn down to base metal, or by some foreign body such as a small stone finding its way between the pads and disc. If there is no sign of scoring, the discs may have become warped due to overheating. This is not easy to see with the naked eye and should be checked by an expert with proper equipment. Always renew drums or discs which are scored or warped.

## Running Problems

**Symptom** Car vibrates on smooth road, at certain speeds, and perhaps steering wheel shakes

Possible Fault	Check and Remedy
Wheels out of balance	Arrange for them to be balanced by a garage or tyre factor.
Driveshaft defect	Arrange for a garage to investigate items such as the constant velocity joints.
Loose engine/transmission mountings, worn crownwheel or pinion, clutch snatch-	This fault is very often associated with the clutch but not necessarily caused by any clutch defect. The fault is normally particularly noticeable when moving away from rest. Check first

## Running Problems

that the engine/transmission mountings are secure. An indication of a worn crownwheel and pinion is a very noticeable 'clunk' on taking up the drive. If diagnosis indicates that the judder is due to a clutch fault it will be caused by 'snatching' between the friction surfaces and may be associated with other clutch faults already covered.

**Symptom** Car tends to wander when driven in a straight line

Possible Fault	Check and Remedy
Tyre pressures incorrect or uneven	Check the tyre pressures and adjust them as necessary.
Broken or weak spring	Have a good look round the springs. If a spring is badly weakened this will very often be noticeable by the fact that the car will appear to be lopsided when standing on level ground.
Excessive wear in the steering linkage	To check if there is any excessive wear in the linkage, jack up the front of the car and examine the joints in the mechanism by pulling and pushing them. If there is excessive movement, it is probable that replacement parts will be necessary. A lot of free play on the steering wheel when the car is at rest indicates considerable wear in the linkage, very often in the steering rack itself.
Car incorrectly loaded	If you are carrying any reasonable weight of passengers or luggage, make sure that the load is evenly distributed round the car and not all on one side as this can affect the handling and steering quite considerably.
Front wheel bearings worn or need adjustment	Check the front wheel bearings for end float. When jacked up there should be negligible end float in the bearings.

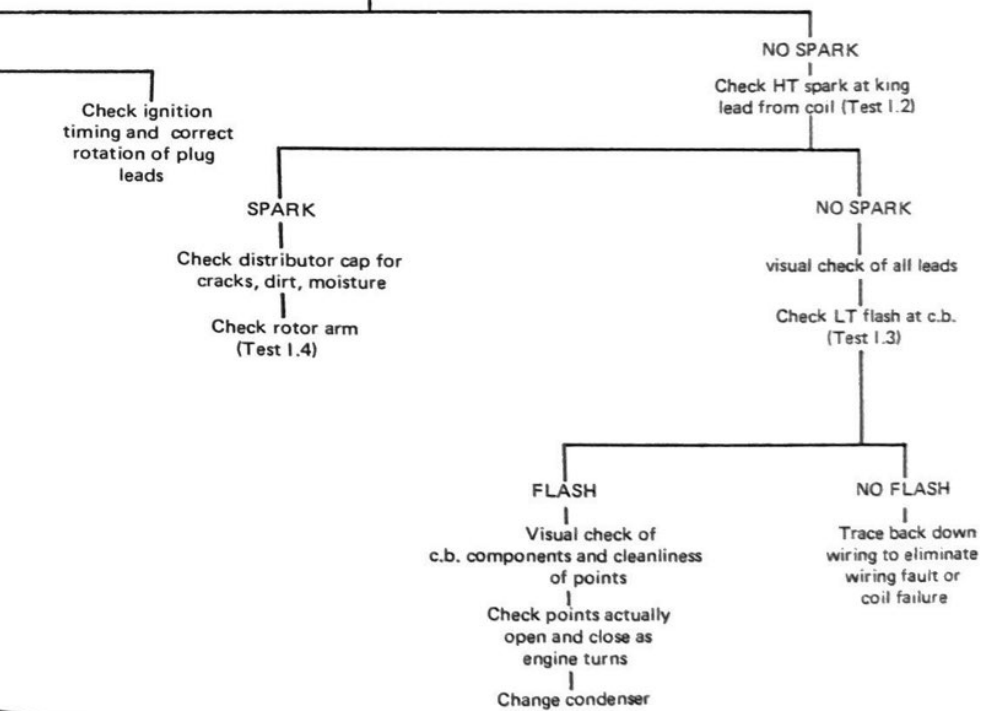
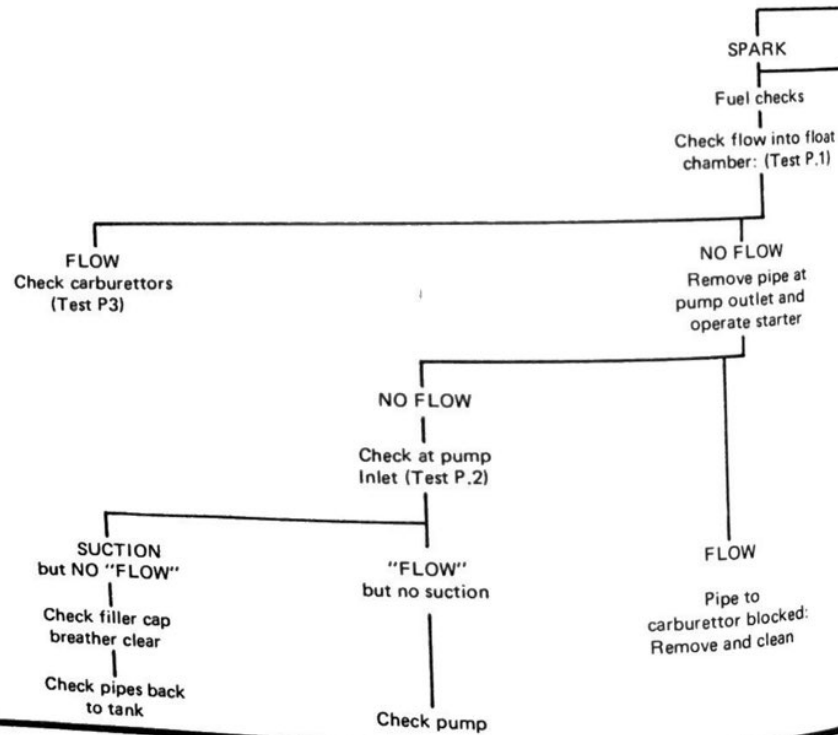
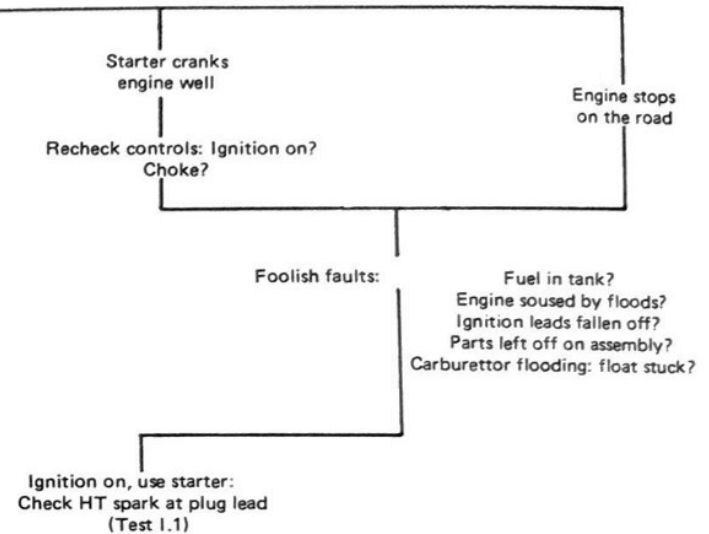
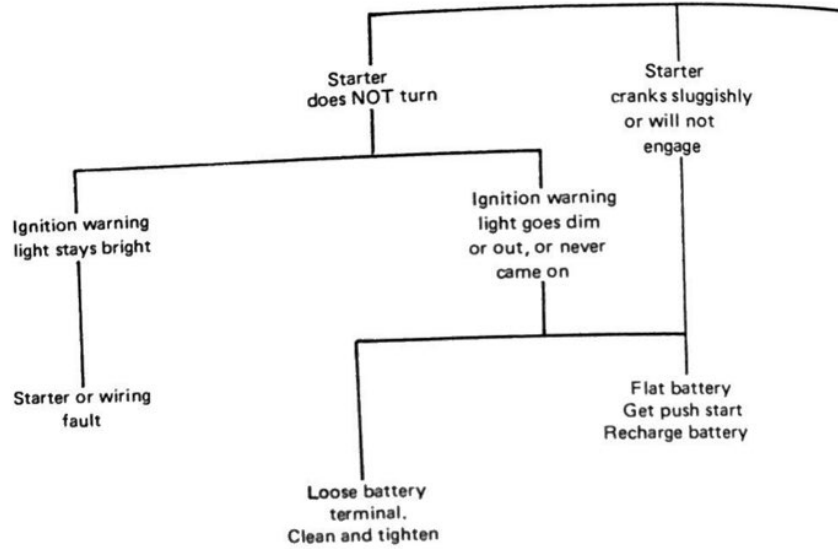
**Symptom** Steering becomes stiff after running normally

Possible Fault	Check and Remedy
Front tyre pressures too low	Inflate the tyres to the correct pressure as shown in the Specifications.
Front wheels badly out of alignment	Get your local garage to check and adjust the front wheel alignment.
Front suspension pivots seized	Dismantle and examine the joints.



Engine will

not run



# Metric conversion tables

## Metric Conversion Tables

Inches	Millimetres	Inches	Millimetres
0.001	0.0254	0.1	2.54
0.002	0.0508	0.2	5.08
0.003	0.0762	0.3	7.62
0.004	0.1016	0.4	10.16
0.005	0.1270	0.5	12.70
0.006	0.1524	0.6	15.24
0.007	0.1778	0.7	17.78
0.008	0.2032	0.8	20.32
0.009	0.2286	0.9	22.96
0.01	0.254	1.0	25.4
0.02	0.508	2.0	50.8
0.03	0.762	3.0	76.2
0.04	1.016	4.0	101.6
0.05	1.270	5.0	127.0
0.06	1.524	6.0	152.4
0.07	1.778	7.0	177.8
0.08	2.032	8.0	203.2
0.09	2.286	9.0	228.6
		10.0	254.0

### Torque Wrench Settings

lb ft	Kg m	Kg m	lb ft
1	0.138	1	7.233
2	0.276	2	14.466
3	0.414	3	21.699
4	0.553	4	28.932
5	0.691	5	36.165
6	0.829	6	43.398
7	0.967	7	50.631
8	1.106	8	57.864
9	1.244	9	65.097
10	1.382	10	72.330
20	2.765	20	144.660
30	4.147	30	216.990

### Distance

Miles	Kilometres	Kilometres	Miles
1	1.61	1	0.62
2	3.22	2	1.24
3	4.83	3	1.86
4	6.44	4	2.49
5	8.05	5	3.11
6	9.66	6	3.73
7	11.27	7	4.35
8	12.88	8	4.97
9	14.48	9	5.59
10	16.09	10	6.21
20	32.19	20	12.43
30	48.28	30	18.64
40	64.37	40	24.85
50	80.47	50	31.07
60	96.56	60	37.28
70	112.65	70	43.50
80	128.75	80	49.71
90	144.84	90	55.92
100	160.93	100	62.14

### Capacities

Pints	Litres	Litres	Pints	Gallons	Litres	Litres	Gallons
1	0.57	1	1.76	1	4.55	1	0.22
2	1.14	2	3.52	2	0.09	2	0.44
3	1.70	3	5.28	3	13.64	3	0.66
4	2.27	4	7.04	4	18.18	4	0.88
5	2.84	5	8.80	5	22.73	5	1.10
6	3.41	6	10.56	6	27.28	6	1.32
7	3.98	7	12.32	7	31.82	7	1.54
8	4.55	8	14.08	8	36.37	8	1.76
9	5.11	9	15.84	9	40.91	9	1.98
10	5.58	10	17.60	10	45.46	10	2.20
11	6.25	11	19.36	11	50.01	20	4.40
12	6.82	12	21.12	12	54.56	30	6.60



## Tyre Pressures

lb/sq in	Kg/sq cm	Kg/sq cm	lb/sq in
1	0.07	1	14.22
2	0.14	2	28.50
3	0.21	3	42.67
4	0.28	4	56.89
5	0.35	5	71.12
6	0.42	6	85.34
7	0.49	7	99.56
8	0.56	8	113.79
9	0.63	9	128.00
10	0.70	10	142.23
20	1.41	20	284.47
30	2.11	30	426.70

Inches	Decimals	Millimetres
1/64	0.0156	0.3969
1/32	0.0313	0.7937
1/16	0.0625	1.5875
1/8	0.125	3.1750
3/16	0.1875	4.7625
1/4	0.25	6.3500
5/16	0.3125	7.9375
3/8	0.375	9.5250
7/16	0.4375	11.1125
1/2	0.5	12.7000
9/16	0.5625	14.2875
5/8	0.625	15.8750
11/16	0.6875	17.4625
3/4	0.75	19.0500
13/16	0.8125	20.6375
7/8	0.875	22.2250
15/16	0.9375	23.8125

## Index

- A**
- Air filter - 8 and 33
  - Alternator - 10 and 83
  - Anti-theft switch - 20
  - Antifreeze - 28
  - Ashtrays - 24
- B**
- Battery - 10 and 28, 38
  - Battery charge indicator - 17
  - Boot - 51
  - Bodywork - 59
  - Bonnet release - 19
  - Brakes - 10, 59
  - Brakes (warning lights) - 10, 18
  - Bulbs (replacing) - 47, 49
  - Buying and selling - 61
- C**
- Carburettor - 8, 38 and 79
  - Changing a wheel - 19
  - Choke - 18
  - Cigar lighter - 16, 17
  - Cleaning seats, trim and safety belts - 51, 54 et seq
  - Clock - 24
  - Clutch - 39
  - Cold weather - 28
  - Cooling system (capacity) - 15
  - Cooling system - 29 maintenance - 41, 42, 46
- D**
- Demisting - 18
  - Dipstick - 26
  - Direction indicators - 16
  - Distributor (adjusting) - 34
  - Distributor - 36, 37 specifications - 8
  - Doors - 19
  - Driving - 26
- E**
- Engine oil - 15
  - Engine specifications - 8
  - Expansion bottle - 26, 45
- F**
- Fault finding - 74 et seq
  - Flasher unit - 10
  - Fluid capacities - 8 and 9
  - Fuel (pump) - 34
  - Fuel (tank capacity) - 8
- G**
- Fuel level gauge - 16, 17
  - Fuses - 10
- H**
- Gear shift lever - 17
  - General specifications - 8 - 11
  - Glove box - 10
  - Handbrake - 10, 18 and 40
  - Hazard warning lights system - 20
  - Headlamp bulb renewal - 49
  - Headlight flasher - 10
  - Headlights (adjusting) - 47
  - Heating and ventilating - 18 and 43
  - Heater fan - 16
  - Horns - 16
- I**
- Ice identification - 25
  - Ignition-starter switch - 18
  - Instrument panel - 16, 17, 18 and 50
  - Instrument panel lighting - 10
  - Interior appointments - 31
  - Interior light - 10, 50
- J**
- Jack - 19
- L**
- Lighting - 49, 59
  - Lighting switch handle - 18
  - Lubrication - 8 et seq
- M**
- Maintenance - 26 et seq
  - Motorway driving -
  - Model identification - 25
- O**
- Oil filter - 27
  - Oil draining etc. - 27
  - Oil pressure warning light - 8
  - Operating defects - 87
- P**
- Pre-heat (carburettor) - 24
- Q**
- Q.I. driving lights - 20, 47
- R**
- Radiator - 45

Radiator screen - 45  
 Rear view mirror - 23  
 Right hand drive - 16 and 17  
 Rocker arm clearances - 33  
 Road test - 60  
 Running-in - 24

**S**

Safety belts - 22 and 23  
 Seats - 22 and 51  
 Spares and touring pack - 14  
 Spare wheel - 21  
 Spark plugs - 8, 27 and 34  
 Speedometer and mileage recorder - 18  
 Starter switch - 20  
 Starting the engine - 20

**T**

Tools - 13  
 Towing (breakdown recovery) - 11  
 Towing (caravan or trailer) - 11  
 Tyre inflation pressure - 10 and 28  
 Tyres-Wheels - 10, 28 and 31

**W**

Warning lights - 16 and 17  
 Washing - 51 et seq  
 Water (temperature) - 16  
 Wheelbrace - 19, 21  
 Windscreen washer - 17  
 Windscreen wiper - 19, 50  
 Wiring diagrams - 66, 67, 68, 69, 70 and 71

**Titles in the Haynes Owners Handbook/Maintenance  
 Manuals Series**

Austin A35 and A40 (101)	MGB (146)
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