

HANDBOOK
FOR
25-30 H.P.
ROLLS-ROYCE CAR

CHASSIS SERIES
(In order of Issue)

GUL GRM GAN GRO GRP GAR
GYL GXM GWN GHO GMP GGR
GHL GGM GUN GMO GLP GZR

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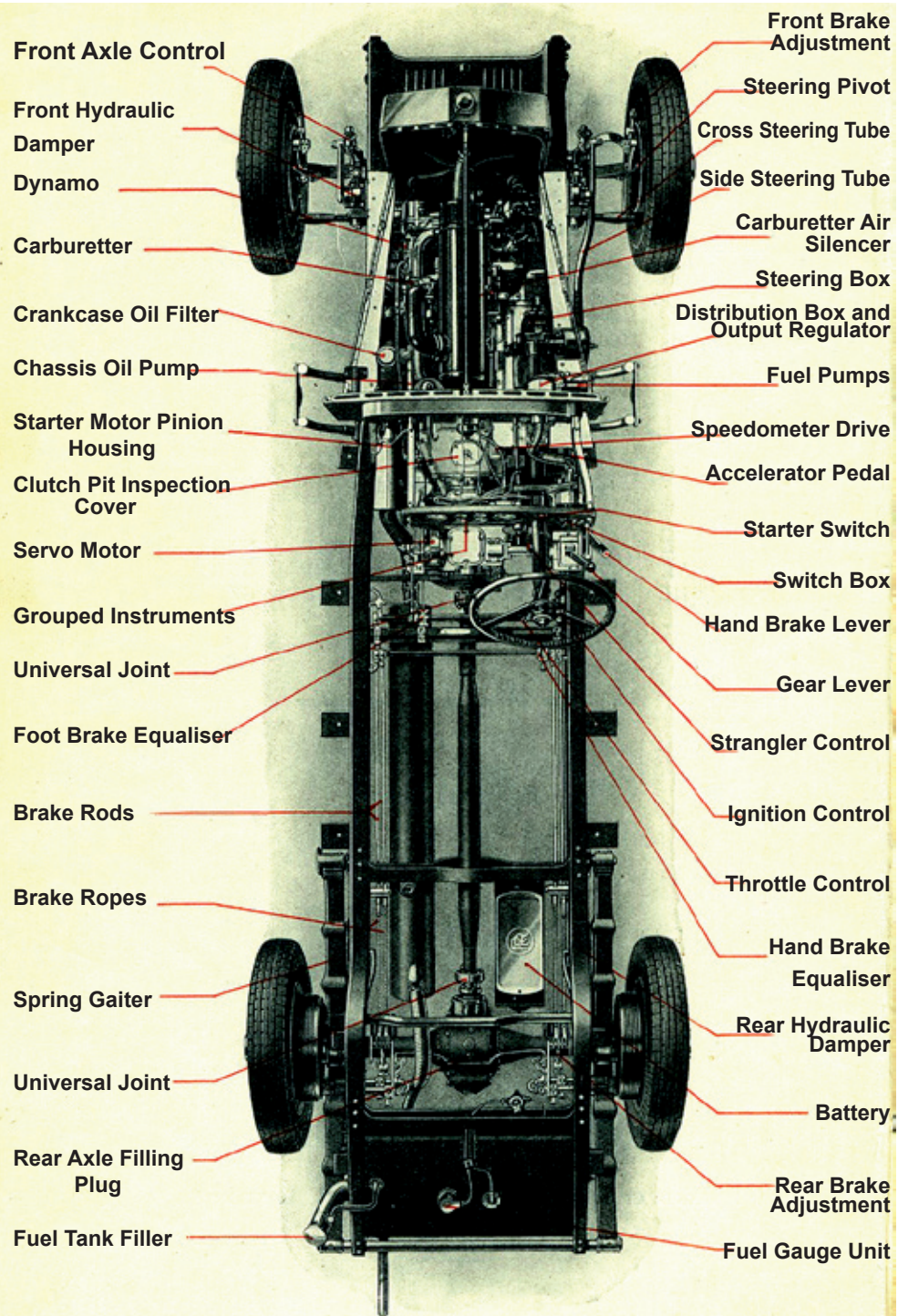


Fig.1. - Plan View of Chassis.

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THE SECRET OF SUCCESSFUL RUNNING.

Before a Rolls-Royce chassis is sold it is very carefully tested and adjusted by experts. It will run best if no attempt be made to unnecessarily interfere with adjustments.

An owner would do well to instruct his driver as follows:-

Lubricate effectively, in strict accordance with the advice given in this Handbook, and do not neglect *any* part.

Inspect all parts regularly, but take care not to alter any adjustments unless really necessary.

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SERVICE FACILITIES FOR ROLLS-ROYCE CARS

Our interest in your Rolls-Royce car does not cease when you take delivery of the car. It is our ambition that every purchaser of a Rolls-Royce car shall continue to be more than satisfied.

With this end in view, we have appointed Special Retailers throughout the world, who have established properly equipped Service Stations, staffed by men who have been specially trained in servicing Rolls-Royce cars.

In addition, on the staff of Rolls-Royce Limited, there are experts whose sole duty it is to maintain contact with the Special Retailers, and they are available at all times to be called in for consultation on any matters affecting your car.

If, therefore, you should require any assistance, we ask that you should immediately contact our nearest Special Retailer, who will only be too pleased to place his facilities at your disposal. If necessary he will call in for consultation our expert in that area. It is earnestly hoped that this arrangement will prove of mutual benefit, as we will thus be kept in constant touch with our Customers, who may be spared the trouble of a long journey to one of our Company's Service Stations.

In the event of it being more convenient to call on us direct for assistance, our Main Service Station at Hythe Road, Willesden, London N.W.10, and the one at our factory at Crewe, will be ready at all times to help. (See maps at end of Handbook.)

LEADING PARTICULARS OF CHASSIS.

Engine.

Six cylinders, 3½" (89m/m.) bore, 4½" (114 m/m.) stroke, 4.257 c.c., 29.4 H.P. on R.A.C. rating. Unit construction with gearbox, monobloc with detachable head, overhead valves operated by pushrods, Rolls-Royce battery ignition with automatic advance, forced lubrication, cooling by pump circulation, down-draught carburetter.

Electrical Equipment.

Twelve-volt Rolls-Royce dynamo, starter motor, and other units. Approximately 60 ampere-hour battery.

Clutch.

Single dry plate.

Gearbox.

Four-speed and reverse, side control; speedometer and brake servomotor drives incorporated.

Rear Axle.

Hyphoid gears, full floating, rod wheels entirely carried on axle tubes.

Brakes.

Internal expanding, servo operated, on all four wheels. Independent hand brake operating on rear wheels.

Road Springs.

Semi-elliptic, front and rear.

Wheels.

Wheels with 19" well-base rims and Dunlop C type tyres, size 6.00-19 are fitted.

Wheelbase.

132"

Track.

56 5/16"

Turning Circles.

Centre of outside front tyre:-

R.H., 47' 5" diameter;

L.H., 42' 0" diameter

Over wings above centre line of front axle:-

R.H., 48' 6" diameter;

L.H., 43' 1" diameter

Fuel Tank.

Eighteen gallons capacity, at rear of chassis. Supply by electric pumps.

Chassis Lubrication.

Centralised system, pedal-operated pump.

Weight.

Chassis complete with tyres, battery, fuel, oil and water, but excluding spare wheel, lamps and other accessories - approximately 2,930 lbs.

CHAPTER I

Starting the Engine and Driving the Car

Starting the Engine - Ignition Control - Throttle Control - Change-over Switch for Fuel Pump - Fuel Gauge - Gear Changing - Controllable Shock Dampers - Lighting Control and Switch - Radiator Shutters - Overheating - Fitting of Snow Chains.

Starting the Engine.

To start the engine, first check that the change gear lever is in neutral, set thumb lever on instrument board to **Start**, switch on the ignition by turning the right-hand thumb lever on the switchbox to **I. & C.** - on later models to **On**- retard the ignition about one-quarter from top of quadrant, and set hand throttle lever at bottom of the quadrant. Now depress the starter button firmly and to its full extent.

As soon as possible after the engine starts, set the hand throttle lever a little over half-way up its quadrant and move thumb lever to **Run**. At the same time, advance ignition hand lever to the top of its quadrant.

When making a start with a warm engine, leave thumb lever at **Run** and set hand throttle lever a few notches up its quadrant and ignition lever fully advanced.

The action of switching on the ignition also switches on the electric fuel pumps, and a few pulsations of the latter may then be heard. *An appreciable pause must be made between the operations of switching on the ignition and depressing the starter button, especially when making a start from cold.* This is necessary in order to give time for the pumps to fill the float chamber of the carburetter.

A small red warning lamp on the instrument board will be illuminated when the ignition is switched on, but will be extinguished when the engine speed is sufficient to cause the cut-out contacts to close.

On no account should the accelerator pedal be "jiggled" when using the starter motor-or indeed at any time. Such movement brings into action the accelerator pump provided on the carburetter and causes liquid fuel to be injected into the carburetter.

The thumb lever control on the instrument board is arranged to provide a suitably rich mixture for starting from cold, and it should only be turned to **Start** under these conditions. Normally, it should stand at **Run**. It is not intended for varying the mixture strength under running conditions.

It will be observed that when starting from cold the hand throttle lever is set in the closed position, i.e., at the bottom of its quadrant. The reason for this is that there is an interconnection between the throttle lever on the carburetter and the instrument board thumb lever which causes movement of the latter to **Start**, to open the throttle simultaneously the required amount.

As soon as the engine starts, the hand ignition control may be fully advanced.

When starting the engine for the first time in the day it is a good plan to form the habit of depressing the chassis oil pump pedal *once* at this stage. Subsequently it should be depressed once every 100 miles. If the car is to be driven only a few miles, however, half a pumpful will be sufficient at the first starting.

When the engine is cold a high oil pressure will be shown on the gauge, due to the greater viscosity of the oil at low temperatures. The pressure will fall, however, as soon as the oil becomes warmer.

A starting handle is carried in the tool kit. In the event of it being used, it should be removed afterwards from the bracket and returned to the tool kit. *The ignition must be fully retarded when starting by hand.*

Ignition Control.

When driving the car, the ignition lever should normally be fully advanced. The actual amount of advance is controlled partly by hand, as previously indicated, and partly automatically by means of a centrifugal governor operating on the distributor drive. This is capable of meeting 90 per cent. of the conditions due to varying road speeds, leaving only extreme conditions to be met by moving the hand control on the steering wheel.

Throttle Control.

Under normal running conditions, the hand throttle control should be carried right back in the closed position. An adjustable stop is provided on the carburetter for the throttle lever, which is so adjusted that the engine will idle reliably in these circumstances when the accelerator pedal is released.

Change-over Switch for Fuel Pump.

In addition to the ordinary ignition switch, which also switches on the pumps, a change-over switch is arranged on the instrument board in order to provide a ready means of checking that each half of the double fuel pump is operating correctly.

Normally, the switch would stand at **Both** when both halves of the pump should be working.

Occasionally a few miles' running should be done with the switch moved to **"A"** position, which cuts out one half of the pump. At moderate throttle openings, no difference in running should be noticeable. The test should then be repeated with the switch in the **"B"** position, which cuts out the other half and switches on the half first cut out.

In the circumstances described, failure or defective running of the engine only evident when the switch is on one side, indicates that one half of the pump is faulty, and Messrs Rolls-Royce Ltd., or one of their Special Retailers, should be consulted at the earliest opportunity.

The connections of the change-over switch are shown in the Electrical Wiring Diagram, Fig. 23.

Fuel Gauge

The electrical fuel gauge on the instrument board is graduated to register the total amount of fuel in the main tank. The gauge is inoperative when the ignition is switched off.

Special contacts carried by the tank unit cause the green warning lamp to light when only about two-and-a-half gallons of fuel remain in the tank.

Gear Changing

The position of the gear lever for each of the four speeds and the reverse is shown in Fig.*2. When reverse is required, the top of the lever must be depressed. This releases a catch and enables the lever to be moved into the gate marked **R**.

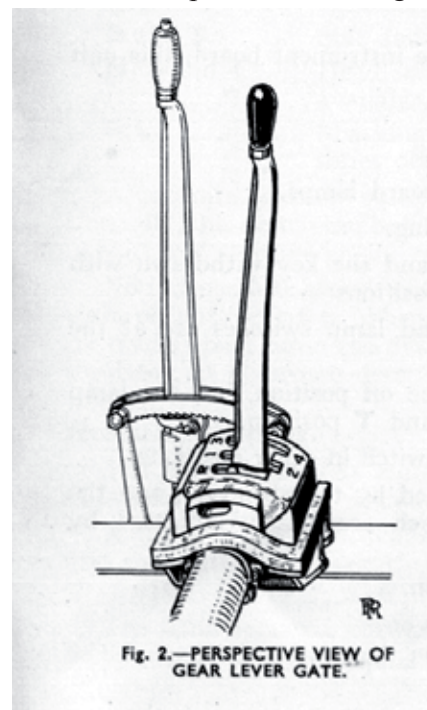


Fig. 2.—PERSPECTIVE VIEW OF GEAR LEVER GATE.

A special synchronising device is provided in the gearbox to facilitate the changes between top and third gears and from second to third. All that it is possible to ensure by such a synchronising mechanism, however, is that the gear members to be engaged cannot be brought together until they are both rotating at the same speed. It does not synchronise the engine and clutch shaft speeds. This must be done by the driver before re-engaging the clutch, otherwise there will be an unpleasant jerk, causing unnecessary wear and tear of the clutch and strain on the transmission.

It is necessary to depress the clutch pedal *fully* when changing gear. The gear lever should then be moved gently into the required gear position and, before re-engaging the clutch, the engine should be speeded up when changing down, or allowed to slow down when changing up, so that its speed shall suit the car speed on the required gear.

Other changes, namely, those both up and down between second and first and that down from third to second, must be made in the usual manner, double clutching when changing down.

Controllable Shock Dampers.

In order to provide comfortable riding at all speeds, a centrifugally-controlled pump is fitted which causes the damper loadings to increase with the road speed. In addition, there is a lever above the steering wheel, marked **Riding Control**, the effect of which is superimposed on that of the governor.

For ordinary town work or touring with moderate speeds, it will be found that the damper loadings as set by the governor are adequate when the hand lever is either at **Soft** or mid-way. On the other hand, at high speeds or with heavy loads, improved riding comfort will be obtained by moving the lever to **Hard**.

Lighting Control and Switch

Two types of switchbox are fitted, those on the earlier models are as under:-

Carried on the right-hand end of the instrument board, this unit includes:-

- (a) Lamp switch.
- (b) Ignition and charging switch.
- (c) Push-button for instrument board lamps.
- (d) Socket for inspection lamp plug.
- (e) A lock which can be locked and the key withdrawn with the switches in only two positions:-
 - (1) When both ignition and lamp switches are at the off position.
 - (2) When ignition is at the off position, but the lamp switch is at the **S** and **T** position.

Do not try to lock the switch in other positions.

The switches (a) and (b) are operated by thumb levers, and the various combinations controlled by each are clearly indicated by the letters as follows:-

- OFF** No circuits in action.
S and **T** Side and tail lamps on.
H, S and **T** Head, side and tail lamps on.

- I** and **C** ... Ignition on, fuel gauge and fuel pumps on, and connections closed to enable the dynamo to charge the battery.

On the later models a modified form of switchbox is provided incorporating a master switch.

The unit is carried on the right-hand end of the instrument board and includes:-

- (a) Master switch and lamp switch combined.
- (b) Ignition switch.
- (c) Push-button switch for starter motor.
- (d) Socket for inspection lamp plug.
- (e) A lock which can be locked and the key withdrawn either:-
 - (i.) When the master switch is in the "Off" position;
 - (ii.) When the master switch is in the P.L. ("parking lights") position;

No attempt must be made to lock the switch in other positions.

With the master switch in the "off" position, most circuits and accessories such as horns, starter motor, ignition, windscreen wiper, instrument lamps etc., are rendered inoperative. Movement of this master switch to the "on" position renders these accessories available.

The various combinations controlled are clearly indicated as follows:-

- OFF** All circuits off, except for clock.
ON Accessories available
S and **T** Side and tail lamps on and accessories available.
H, S and **T** Head, side and tail lamps on and accessories available.
P.L. "Parking lights", side and tail lamps on, accessories off.

A separate ignition switch is provided, marked **ON** and **OFF**. Normally, this switch can be left in the "on" position, and the switching to start and stop the engine can be carried out on the master switch.

No independent charge position is provided owing to the presence of the output regulator. Whenever the master switch is on, connections are made which cause the dynamo to charge the battery through the regulator, as elsewhere described.

Radiator Shutters.

The radiator shutters are controlled automatically by means of a thermostat in the upper radiator tank.

A thermometer is provided on the instrument board to indicate that the shutters are operating properly and that there is no shortage of coolant.

The hand-operated ventilators on the sides of the bonnet should be left open in hot weather.

Overheating.

If on long ascents which call for full throttle, “boiling” should occur due to abnormal conditions of atmospheric temperature, and, or, following winds, etc., it is preferable to change into a lower gear and reduce the throttle opening.

Adjustment of the fan belt may be necessary, and this should receive attention.

Fitting of Snow Chains.

In the event of snow chains being necessary, they should be fitted to the rear wheels only.

A Parsons’ chain, known as the “Special Rolls-Royce Type”, is available. It is recommended that these be obtained through Messrs. Rolls-Royce Ltd., or one of their Special Retailers, in order to ensure the supply of the correct type.

When fitting these special chains, it is *essential* to commence by fastening the one hook on the inside of the wheel and always to take up the adjustment on the outside, where two fastening clips are provided. The tensioning springs which are supplied to go on the outside of the wheel must always be fitted.