

Section G1m

Introduction

Chapter G Part II covers the components for the two independently power operated braking systems, the height control system and the mechanically operated parking brake fitted to Rolls-Royce and Bentley Corniche and Rolls-Royce Camargue cars, serial numbers 50 001 onwards.

These cars use hydraulic system mineral oil in the hydraulic systems.

The braking systems consist of two independent circuits. 'System 1' operates the front road wheels, front brake calipers and the upper cylinders of the rear road wheel brake calipers. 'System 2' operates the front road wheel rear brake calipers and the lower cylinders of the rear road wheel brake calipers. All wheels are fitted with disc brakes.

Pressure for the system is supplied by two hydraulic accumulators, mounted on the 'A' bank side of the engine. The accumulators are charged by engine operated hydraulic pumps. The hydraulic pump situated in front of the engine air inlet manifold supplies hydraulic mineral oil to the front (vertically mounted) accumulator (System 1). The hydraulic pump situated at the rear of the engine supplies hydraulic mineral oil to the rear (horizontally mounted) accumulator (System 2). Both accumulators also supply pressurised hydraulic mineral oil to the height control system.

Each accumulator sphere is divided into two chambers by a diaphragm, a charge of nitrogen gas being applied and retained in one chamber by the diaphragm.

As an accumulator commences to be charged with hydraulic system mineral oil from its hydraulic pump, only a small amount of hydraulic system mineral oil is required to be pumped into the other chamber to raise its pressure to that of the initial charge of nitrogen. Hydraulic system mineral oil will continue to be pumped into this chamber against steadily increasing pressure as the diaphragm is lifted, compressing the gas above it, until the pressure regulator in the accumulator valve housing operates and unloads the hydraulic pump by allowing the hydraulic system mineral oil to bypass back to the reservoirs. The pressure of hydraulic system mineral oil stored in the sphere is maintained by the gas pressing against the diaphragm, the pressure reducing as hydraulic system mineral oil is used, until the regulator allows the pump to re-charge the sphere.

Spheres similar to those used on the accumulator but with lower nitrogen gas pressure are incorporated into the rear suspension struts, the gas under pressure acting as a spring. Hydraulic

system mineral oil fed from the two accumulators flows into or out of the suspension strut spheres as varying loads are applied to the car. The quantity is controlled by the two height control valves with hydraulic system mineral oil exhausted from the suspension spheres being returned to its respective reservoir.

A pressure priority valve is incorporated into each system to ensure that the braking systems have priority over the rear suspension. If the pressure in a system(s) falls unduly the priority valve(s) will close and isolate the suspension system, allowing the pressure available to be utilised for braking purposes.

Also incorporated into each system is a minimum pressure valve. The purpose of this valve is to retain a pre-determined pressure in the rear suspension strut spheres when the engine is switched off and the car unloaded. This retention of pressure reduces the time and amount of pressurised hydraulic system mineral oil required to fully charge the hydraulic systems upon the initial starting of the engine.

The mechanical parking brake arrangement is hand operated on right-hand drive cars. On left-hand drive cars the parking brake is applied by a foot operated pedal and released by a hand lever.

Both types of brake operate two additional brake pads onto each rear brake disc.