Section G14

Pressure switches

Introduction

The accumulator pressure switches are situated in the engine compartment on the right-hand longeron (No. 1 system accumulator) and the left-hand longeron (No. 2 system accumulator).

The pressure switches are operated by the pressurised fluid in the hydraulic systems and will illuminate the warning panel(s) situated on the interior facia if the pressure in the hydraulic system(s) falls below a safe working pressure. It is important therefore that the warning panel lamps are not operated due to a faulty switch.

In the event of a pressure switch failure the pressure switch should be renewed.

Pressure switch - To test

1. The hydraulic pressure switches are designed to 'fail safe' i.e. if a pressure switch fails it will operate the facia panel warning lamps.
2. The warning lamp bulbs can be checked for correct operation by moving the gear range selector lever to the 'D' drive position and turning the ignition key against the spring pressure to the 'start' position. This operation should result in all of the panels in the warning cluster situated on the facia being illuminated.

Important

Ensure that both the parking brake and foot brake are firmly applied when carrying out this operation.

3. The easiest method of testing a hydraulic pressure switch is by substitution. If this is not possible the following procedure should be carried out.
4. Depressurise the hydraulic systems as described in Section G2.
5. Remove the bleed screw from the three-way adapter on the left-hand pressure switch and connect a zero kg/sq.cm. to 210 kg/sq.cm. (zero lb/sq.in. to 3 000 lb/sq.in.) pressure gauge fitted with a connecting pipe and bleed screw into the adapter.
6. Connect a battery and test lamp in series to the pressure switch as shown in Figure G34. The test lamp should illuminate, confirming that the switch contacts are made, denoting no brake fluid pressure.
7. Start and run the engine at approximately 800 r.p.m. and observe the pressure gauge. The test lamp should extinguish at a pressure not exceeding 45,70 kg/sq.cm. (650 lb/sq.in.). Switch off the ignition and using a bleed tube attached to the gauge feed pipe bleed screw slowly bleed off the fluid into a clean container thus allowing the hydraulic pressure to fall. Observe the pressure at which the test lamp illuminates, this pressure should not be less than 17,58 kg/sq.cm. (250 lb/sq.in.).

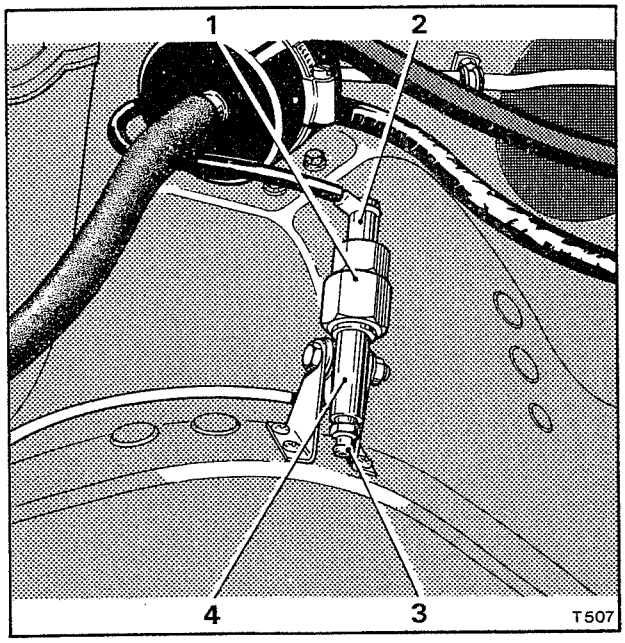

Fig. G33 Pressure switch (left-hand longeron)
1 Pressure switch
2 Electrical connection
3 Bleed screw
4 Three-way adapter

Note

On cars destined for use in Australia, Canada and the U.S.A. higher rated pressure switches are fitted. The operating pressures for these switches are as follows:

84,39 kg/sq.cm. (1 200 lb/sq.in.) test lamp extinguished.

63,28 kg/sq.cm. (900 lb/sq.in.) test lamp illuminated.

8. In order to test the pressure switch fitted to the right-hand longeron (No. 1 system) the pressure switch should be exchanged with the left-hand (No. 2 system) pressure switch and Operations 5 to 7 inclusive repeated.
9. When tests and rectifications have been completed the systems must be bled as described in Section G4.

Pressure switch - To renew

1. Depressurise the hydraulic systems as described in Section G2.

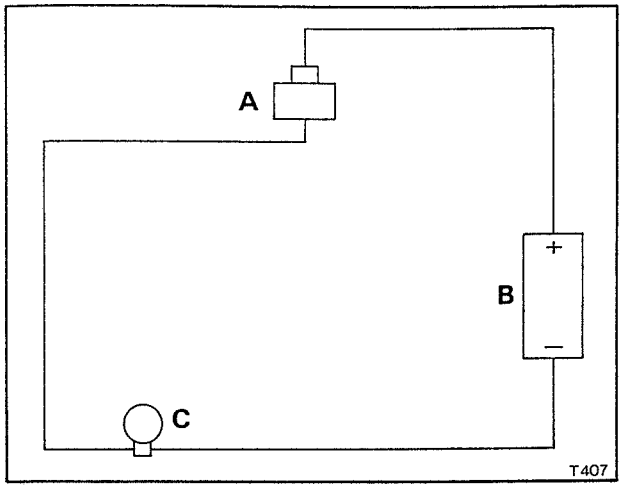

Fig. G34 Pressure switch test circuit
A Pressure switch
B Battery
C Test lamp

2. Disconnect the electrical connection from the top of the pressure switch. Unscrew the pressure switch from the three-way adapter; discard the two aluminium sealing washers.
3. Screw a new pressure switch into the three-way adapter, fitting a new sealing washer to each side of the distance washer on the switch connection. Torque tighten the switch to the figure quoted in Chapter P.
4. Fit the electrical connection to the pressure switch contact pin.
5. When fitting is completed bleed the hydraulic system as described in Section G4.