Section G12m

Height control valves

Introduction

The height control valves are mounted on the underside of the car body adjacent to each rear suspension spring. Actuation of the valves is controlled by pivoting links attached to each trailing arm. Both valves are identical.

The height control valves regulate the flow of hydraulic system mineral oil either to or from the rear suspension struts, dependant on the variation in load applied to the rear suspension. Any sustained change in the suspension height of the car operates the valves. Under extra load conditions (i.e. car standing height is low) pressurised hydraulic system mineral oil is allowed to pass from the accumulator, through the height control valves to the rear suspension struts. When the car load is reduced (i.e. car standing height is high), the height control valves allow hydraulic system mineral oil to return from the rear suspension struts to the respective system reservoirs.

The height control valves are non-serviceable units, therefore, in the event of valve malfunction the complete valve assembly must be renewed.

In order to obtain the correct standing height of the car reference should be made to Section H4m. Any error in standing height cannot be corrected by adjustment of the height control valve actuation links.

When work is being carried out on the levelling system of the car it should be noted that the height control valves are designed to give a delay of between 15 and 30 seconds before they respond to movement of the operating lever.

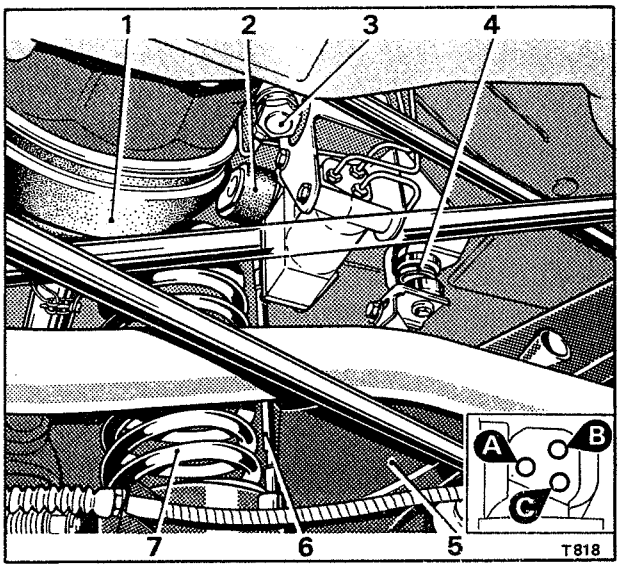

Fig. G23m Height control valve (left-hand shown)

1 Axle half-shaft
2 Height control valve
3 Minimum pressure valve
4 Exhaust mount
5 Trailing arm
6 Height control valve actuation link
7 Rear suspension coil spring
A Return to reservoir
B Inlet from priority valve
C Outlet to minimum pressure valve

Height control valve - To remove (see Fig. G23m)

1. Place the car on a ramp and depressurise the hydraulic system as described in Section G2m.
2. Disconnect the valve actuation link from the trailing arm.
3. Remove the three pipe connections from the valve assembly; fit blanks to the pipe ends and valve ports.
4. Remove the valve mounting bolts and lower the valve from its mounting bracket.
5. Remove the valve actuation link from the operating arm.

Height control valve - To fit

Fit the height control valve by reversing the procedure for removal noting the following points.

1. Before connecting the valve actuation link to the trailing arm, the standing height of the car must be checked as described in Section H4m and the actuation link adjusted as described under Height control valve - To set.

Note

Corrections to the car standing height cannot be made by adjustment of the actuation link.

2. All setscrews and pipe connections should be torque tightened in accordance with the figures quoted in Chapter P.
3. After fitting a height control valve the hydraulic system must be bled as described in Section G4m.

Height control valve - To set

1. Using jacks and sill blocks located under the sills of the car adjust the front and rear car standing height to the dimensions given in Chapter H Part II.

Note

In order to retain the car on the jacks and sill blocks, ballast weights should be applied to the luggage compartment and interior of the car.

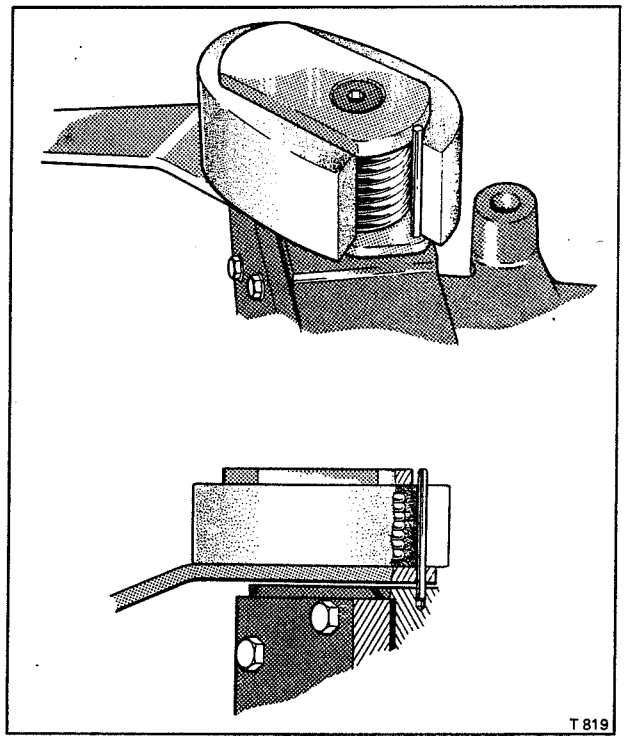

Fig. G24m Height control valve actuation arm location pin

2. Fit the operating arm location pin into position on the height control valve (see Fig. G24m).
3. With the car standing height correct, adjust the operating arm actuation link until the ends can be located onto the ball pins on the operating arm and suspension trailing arm. Lubricate the joints with Rocol MTS 1000 grease or equivalent. Adjust the joints to give complete freedom of movement without free play.
4. Remove the location pin from the height control valve operating arm

Failure to remove the location pin will result in severe damage to the height control valve when suspension movement occurs.

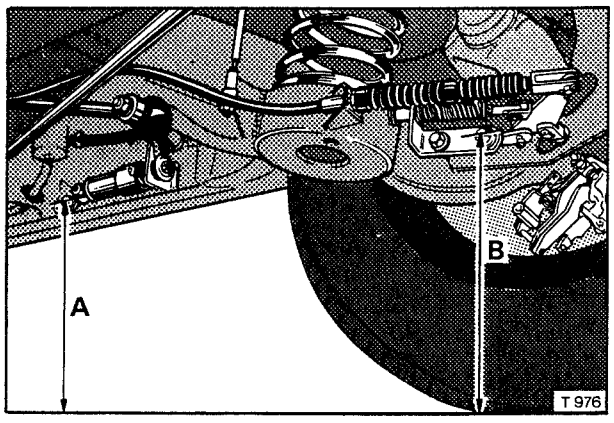

Fig. G25m Levelled height setting measurement positions

5. Remove the ballast weights, jacks and sill blocks.
6. If any hydraulic pipes have been disconnected bleed the hydraulic system as described in Section G4m.

Levelled height - To check

Before any attempt is made to check the levelled height it is important that the car standing height is correct. For details of the setting procedure reference should be made to Chapter H Part II.

1. With the car at the correct standing height, adjust the height control valve actuation arm links as described under Height control valve - To set.
2. Weight the front compartment of the car with two occupants or weights to a total of approximately 140 kg. (300 lb.) equally disposed between the two front seats. The fuel tank should contain 45 litres (10 Imp. gal. 12 U.S. gal.) of fuel. All accessories, spare wheel and tools must be fitted in their respective positions.
3. Add additional weights to the luggage compartment of the car equal to 230 kg. (500 lb.). Unlike the standing height checking operations, the weight must remain in the luggage compartment throughout the levelled height checking operations.
4. Ensure the gear change selector is in the 'P' park position then remove the thermal cut-out from the fuseboard. Start the engine and allow the car to attain its levelled height position.
5. Measure the levelled height. The levelled height measurements are taken at the same points on the car as those for the rear standing height (see Fig. G25m). Calculate the levelled height by measuring the height 'A' from the level surface on which the car stands to the centre of the foremost bolt attaching the rear sub-frame mounting bracket to the body sill. Measure height 'B' from the level surface to the centre of the rearmost bolt attaching the parking brake linkage to the trailing arm. For the levelled height to be correct the dimension 'A' should be within a tolerance of between plus 6,35 mm. and minus 11,43 mm. (plus 0.250in. and minus 0.450in.) of the dimension at point 'B'. If the height of the car is outside of these tolerances the height control valve should be renewed.

On Corniche cars destined for U.S.A. and Canada, the additional spacers fitted to the rear suspension springs must be taken into account when calculating the levelled height. On these cars 15,24 mm. (0.60.) must be added to the dimension taken at 'B' prior to the comparison of 'A' and 'B' being made.

The above limits allow for a tolerance on the height control valve neutral position, therefore the length of the actuatuion arm link of the valve should.not be adjusted.