

TYPE OF CAR

1300 / 1600
from model year '69
1750 from 1st s/no.

UNIT

Hydraulic controls

Alfa Romeo

DIREZIONE ASSISTENZA

DATE

19/10/970

SEQUENT NUMBER

45.70.4.1

SHEET

1/3

*Technical bulletin*BRAKE PRESSURE REGULATOR

This device, named "brake pressure regulator", mounted on the above mentioned models, comprises two sections: one mechanical and the other hydraulic.

The hydraulic section consists of:

- one grooved plunger "7"
- one poppet valve "4"
- two sealing rings on plunger. See figure.

The mechanical section consists of:

- one spring "8"
- one spring seat
- one guide
- one adjusting screw
- one locknut. See figure.

Warning

The setting of the plunger spring "8" must never be altered.

Operating principle

The braking sequence can be considered as occurring in two main stages.

In the first stage, the hydraulic pressure in the master cylinder is equally transmitted to the front and rear brakes.

In the second stage, as the increase in hydraulic pressure reaches the preset value on the spring-loaded plunger, the pressure regulator cuts in.

How braking power is developed and regulatedFirst stage

Hydraulic pressure from master cylinder is transferred via the inlet port "1" to the chamber "2" and, through the passage "3", to the poppet valve "4" and to the chamber "5"; then, via the outlet port "6", to the rear brakes. See figure.

Second stage

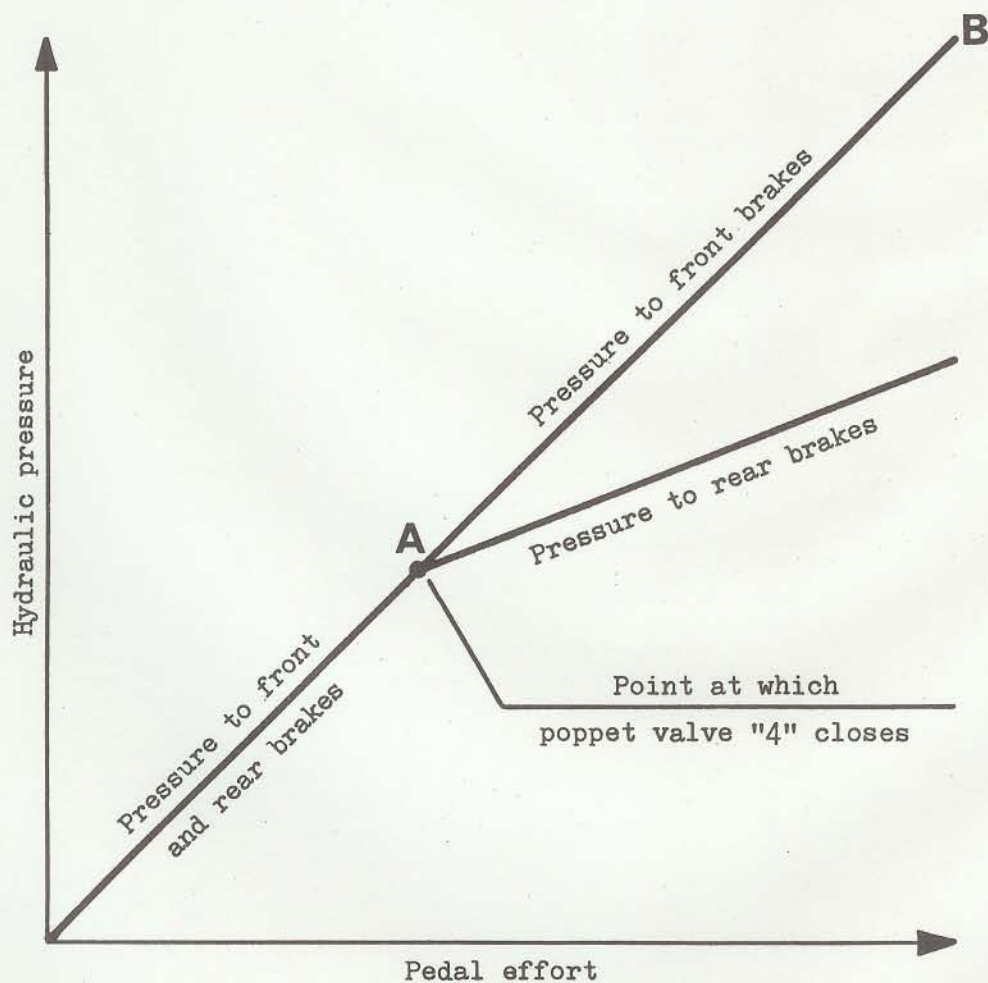
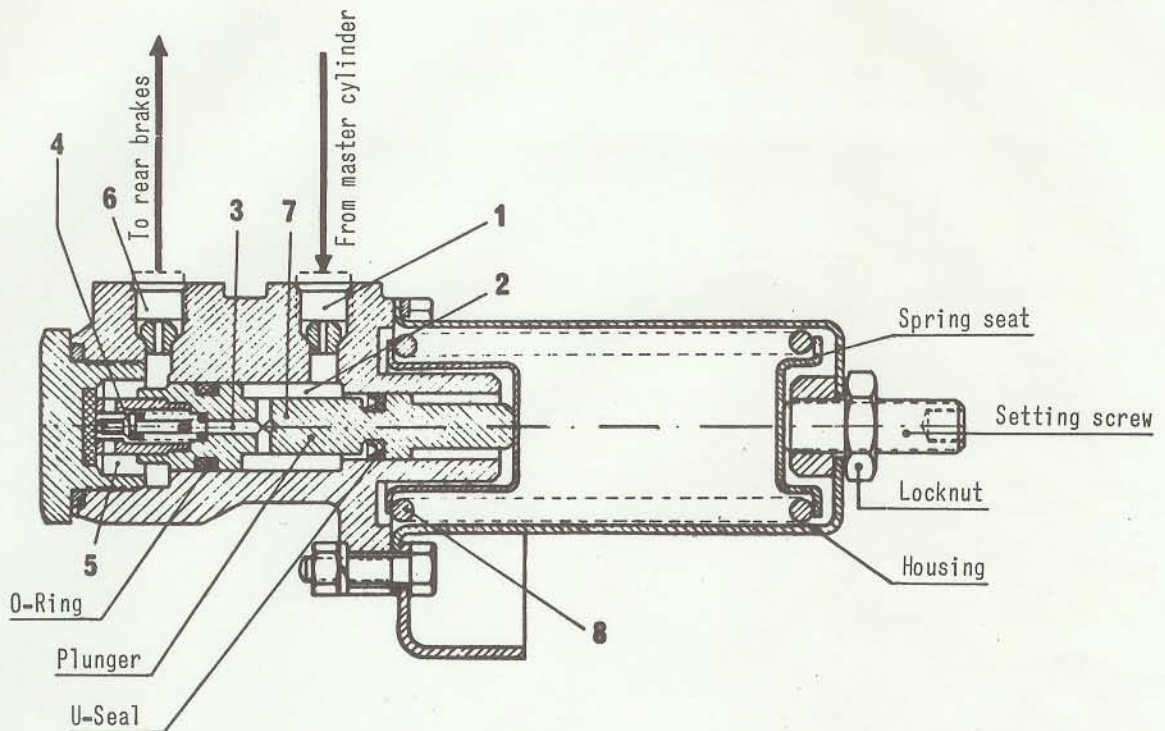
When the hydraulic pressure increases in the chamber "5", the pressure load on the end surface of the spring-loaded plunger tends to counteract the load of the spring "8" (preset by means of the setting screw shown in the figure). When spring setting is overcome, the plunger is forced to move to the right, see figure, until the poppet valve "4" closes.

At this point the plunger takes up a rather unstable, floating condition.

If the input pressure increases further the output pressure to rear brakes increases at a lower rate because of the pressure differential acting on the plunger "7" due to the difference in area between the affected surfaces of plunger "7" (the ring in chamber "2" as opposed to the full circle of plunger end surface in chamber "5").

Braking action release

On releasing the brake pedal, the pressure in master cylinder and in chamber "2" drops, the plunger "7" moves to the right until the pressures in the chambers "2" and "5" are equalized; then, the poppet valve "4" opens and the spring "8" pushes the plunger "7" to the left back to its starting position. See figure.



BRAKE PRESSURE GRAPH

The position of point "A" on the line "B" is determined by the setting of spring "8".
See figure