

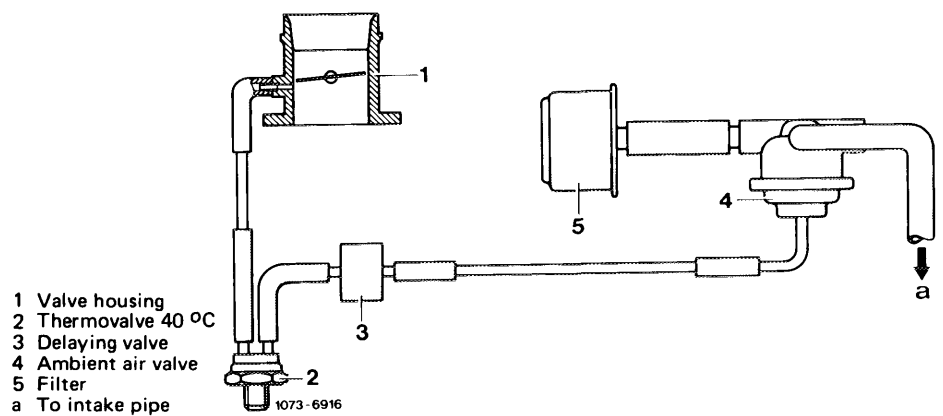
## A. Function

### 1st version

---

For speed stabilization at idle, additional air will be taken into intake pipe at coolant temperatures above 40° C while bypassing throttle valve and air distributor.

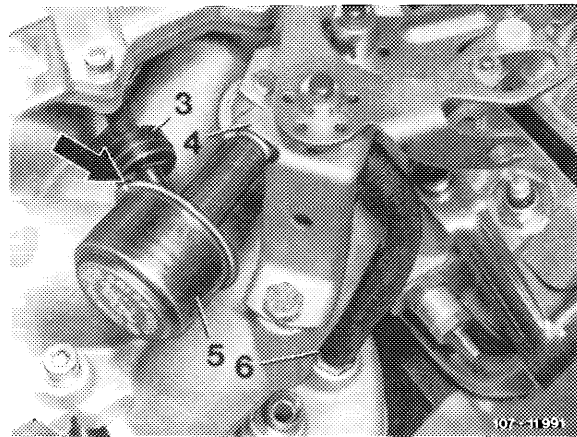
Above approx. 40° C coolant temperature and an intake pipe vacuum above approx. 470 mbar the vacuum moves via delaying valve (3) to ambient air valve (4). The ambient air valve opens, so that the engine can suck up air via filter (5).



When intake pipe vacuum drops below 470 mbar the vacuum will act on ambient air valve after approx. 4 seconds due to the delaying valve connected inbetween, so that the engine will continue to draw in unmeasured air.

By adding air, the fuel – air mixture will become leaner at idle for a short period and the engine speed will be stabilized.

The delaying valve (3) is installed in 2 different versions. In the event of repairs, make sure that on the version shown in the illustration, the green dot (arrow) and on the second version the black side are pointing toward ambient air valve (4).



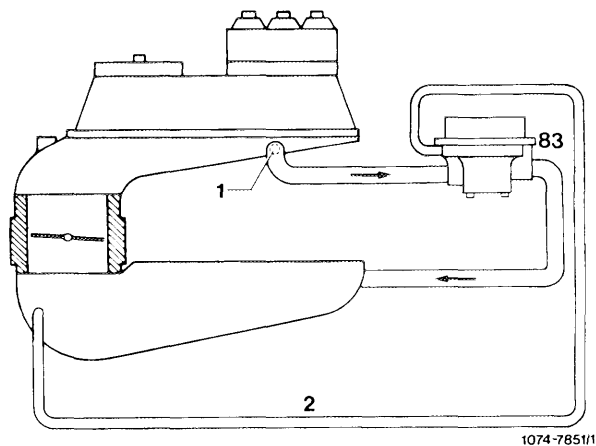
- 3 Delaying valve
- 4 Ambient air valve
- 5 Filter
- 6 Intake pipe connection

### 2nd version

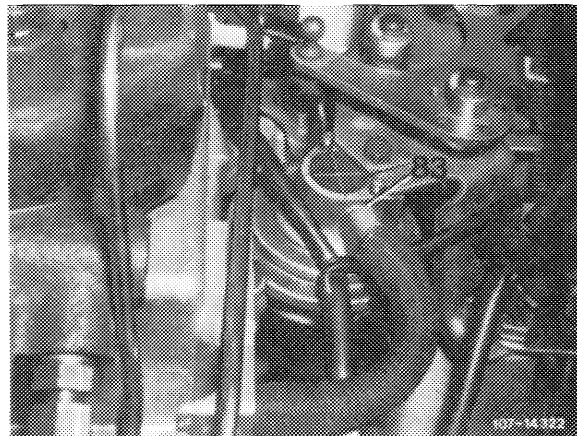
---

Air measured by CIS injection system is added into intake pipe by way of ambient coasting air valve (83) via connection (1) on air guide housing. The ambient coasting air valve (83) is actuated by vacuum line (2). The ambient coasting air valve serves to increase speed after starting and to improve combustion under coasting (deceleration) conditions.

- 1 Connection air guide housing
- 2 Vacuum line
- 83 Ambient coasting air valve



The ambient coasting air valve is mounted behind mixture regulator on holder of regulating linkage.



### Increasing speed following start

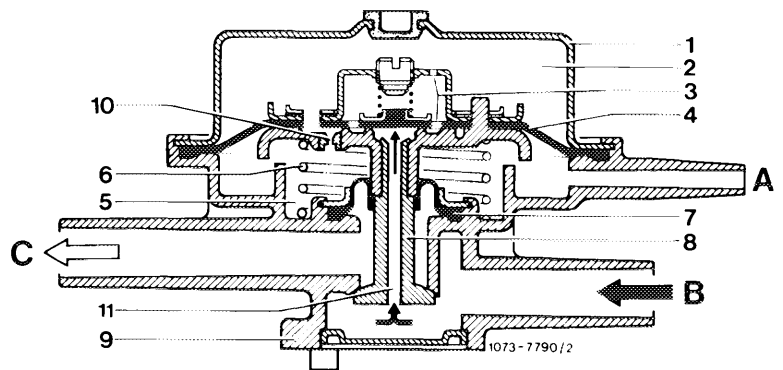
---

With the engine stopped a uniform atmospheric pressure prevails in upper and lower diaphragm chamber. After starting the engine, a high vacuum will be established for a short period in lower diaphragm chamber (5), which overcomes the pressure of compression spring (6). The valve (8) is pushed down and the path for the bypass air from air guide housing to intake pipe is clean.

The addition of bypass air will increase the idling speed for a short period, which in turn will serve to stabilize operation at idle.

As soon as the vacuum in the two diaphragm chambers has been balanced under the influence of the throttle bore (10), compression spring (6) will push valve (8) in upward direction and thereby close valve.

- 1 Housing top
- 2 Upper diaphragm chamber
- 3 Compensating bores
- 4 Diaphragm
- 5 Lower diaphragm chamber
- 6 Compression spring
- 7 Sealing diaphragm
- 8 Valve
- 9 Housing bottom
- 10 Throttle bore
- 11 Compensating bore
- A Vacuum connection intake pipe
- B Connection air guide housing
- C Connection intake pipe

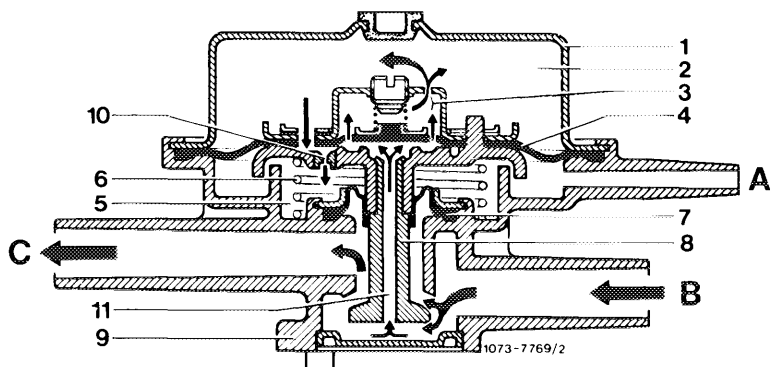


### Air feed under coasting (decelerating) conditions

Through the balanced pressure ratio in upper and lower diaphragm chamber during constant driving, the compression spring will close valve (8).

Under coasting (decelerating) conditions the vacuum in lower diaphragm chamber (5) will increase faster than any balancing in relation to upper diaphragm chamber attempted by means of throttle bore (10). The adjusting force of the high vacuum will overcome the pressure of compression spring (6). Valve (8) is pushed down and the bypass air can flow from air guide housing into intake pipe.

- 1 Housing top
- 2 Upper diaphragm chamber
- 3 Bypass bores
- 4 Diaphragm
- 5 Lower diaphragm chamber
- 6 Compression spring
- 7 Sealing diaphragm
- 8 Valve
- 9 Housing bottom
- 10 Throttle bore
- 11 Compensating bore
- A Vacuum connection intake pipe
- B Connection air guide housing
- C Connection intake pipe



Introduction into series: approx. December 1977

Model	starting chassis en No.
107.023	012024
107.043	013199
116.028/029	044654

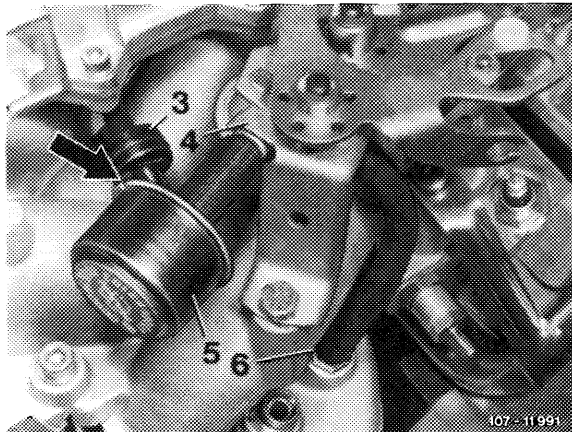
## B. Checking

### 1st version

---

#### a) Testing ambient air valve

Run engine at idle and operating temperature. Pull off filter (5), with no vacuum present at ambient air valve (4). If vacuum is in evidence, replace ambient air valve.



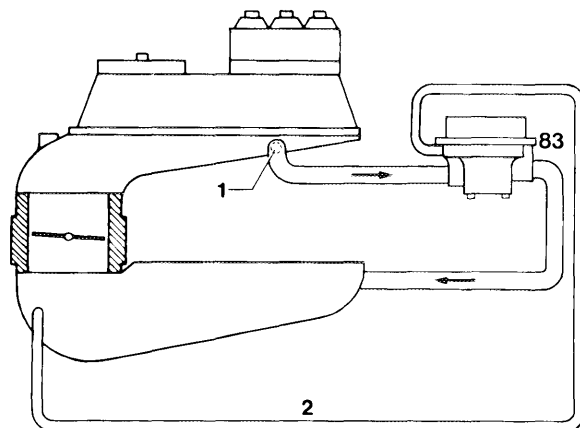
#### b) Checking thermovalve

Run engine under + 40 °C coolant temperature with engine cold. Pull off filter (5), increase engine speed to approx. 3000/min and permit to drop to idling speed. There should be no vacuum at ambient air valve (4). Replace thermovalve, if required.

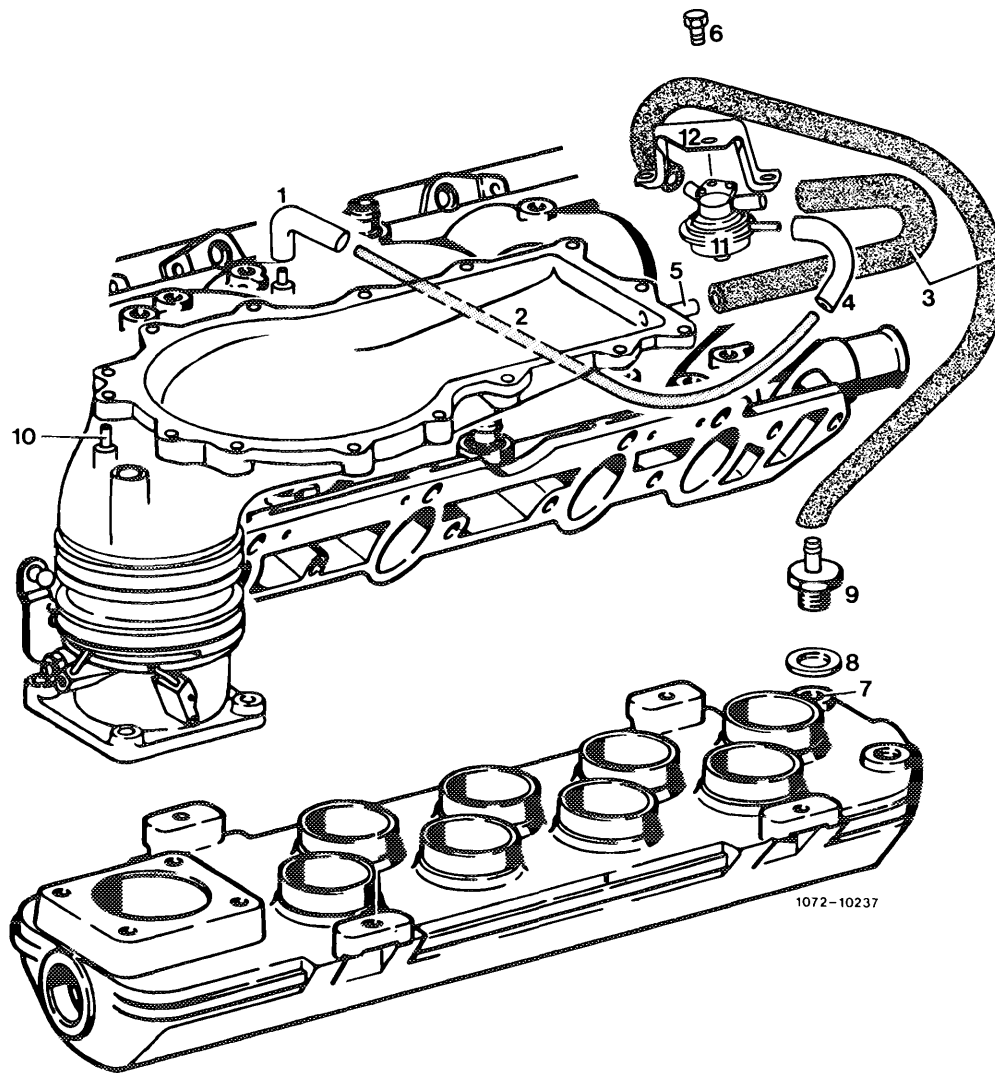
### 2nd version

---

With the engine running, pull vacuum line (2) from decel air valve (83). Return line after a short moment, which should result in a short speed increase for 2–3 seconds. If no speed increase shows up, replace decel air valve.



# Installation survey decel air valve



- |   |                          |    |                   |
|---|--------------------------|----|-------------------|
| 1 | Contour hose             | 7  | Bore              |
| 2 | Vacuum line              | 8  | Sealing ring      |
| 3 | Hose                     | 9  | Connection        |
| 4 | Contour hose             | 10 | Vacuum connection |
| 5 | Connection               | 11 | Decel air valve   |
| 6 | Hex. head screw M 5 x 10 | 12 | Bearing bracket   |