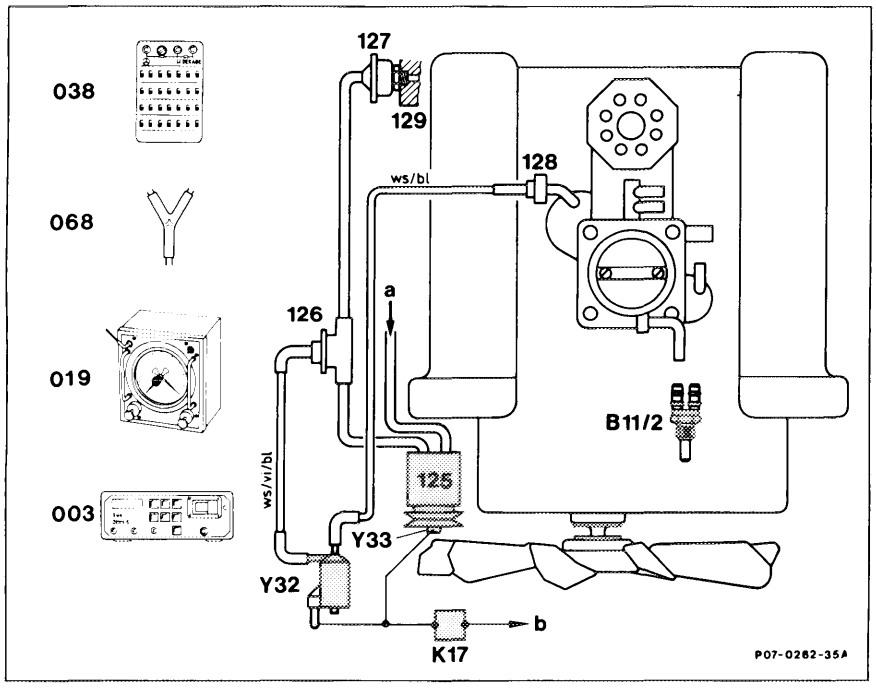
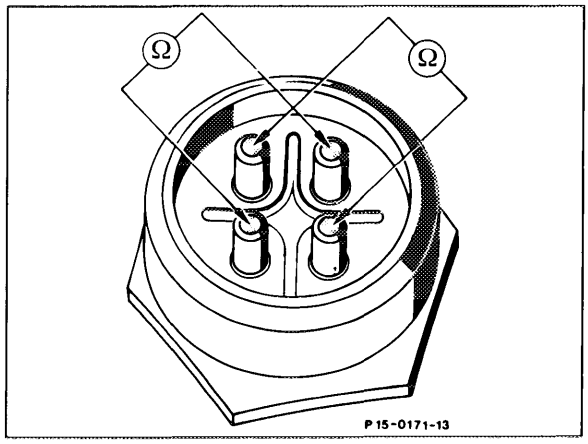


Note

As from 1988 model year California, 1990 model year Federal, the temperature sensor coolant is of the 4-pole type. An NTC for CIS-E and an NTC for EZL.

Both NTC's are independent of each other and are grounded by the EZL ignition control unit and the CIS-E control unit respectively.

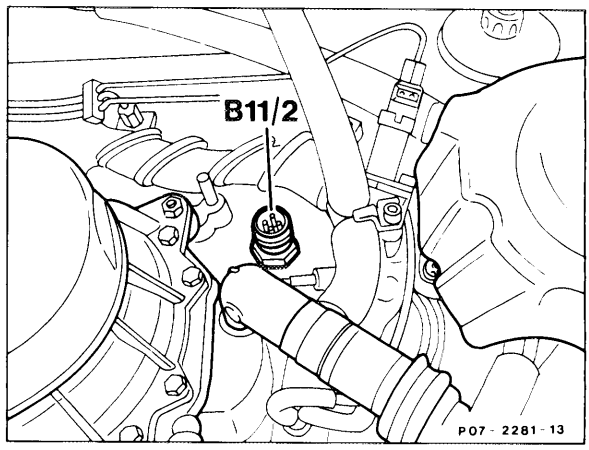
The arrangement of the two NTC's is diagonal.



The CIS-E temperature sensor is identified by the following test:
Connect lambda control tester to diagnostic socket. Pull coupling off coolant temperature sensor.
Switch on ignition, display shows 30%. With Ω-decade (038) simulate 2.5 kΩ (20 °C), connect to two opposite jacks of the coupling (across) (Fig.).
At the connection CIS-E temperature sensor the impulse period jumps to 70%.

The air pump is only activated in the coolant temperature range 17-70 °C.

Test condition:
Coolant temperature < 70 °C.
Pull off coupling coolant temperature sensor (B11/2). With Ω-decade, simulate 2.5 kΩ + 20 °C.
Electrical wiring diagrams (07.3-128).



Test

Explanation of symbols

 Multimeter

 Jack

 Plug

 Ground

 Multimeter measuring mode resistance

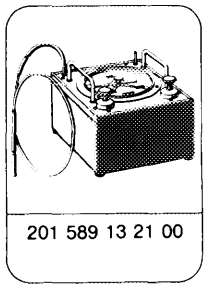
 Multimeter measuring mode DC voltage

 Multimeter measuring mode amperage

Impulse period display	Test step/ Scope of test	Measuring device/ Test connection	Actuation/ Requirement	Set value/ Function	Possible cause/Remedy
–	1.0 Air injection	–	Start engine. Pull shaped hose of air pump off air cleaner and lightly close with finger.	Strong suction on shaped hose.	Check electric change-over valve (Y32), vacuum activation electromagnetic clutch (Y33).
–	2.0 Vacuum activation	Connect vacuum tester with Y-hose (1).	Ignition: **OFF** Pull vacuum line ws/vi bl off change-over valve (Y32).		
		With Ω-decade on temperature sensor coolant (B11/2), simulate +20 °C.	Start engine. Engine speed < 2500 rpm.	Air pump is operational and must switch off after approx. 60 s. Vacuum > 500 mbar.	Vacuum lines electric change-over valve (Y32). Activation air pump (Y33) → test step 9.0.

Impulse period display	Test step/ Scope of test	Measuring device/ Test connection	Actuation/ Requirement	Set value/ Function	Possible cause/Remedy
–	3.0 Voltage supply air injection relay (K17)	K17 4 — V — ⊥	Ignition: **ON**	11–14 V	Wiring overvoltage protection (K1/1).
–	3.1 CIS-E control unit (N3)	K17 5 — V — 4	Ignition: **ON**	11–14 V	Wiring, CIS-E control unit (N3).
–	3.2 Wiring	N3 14 — Ω — K17 5	Ignition: **OFF**	< 1 Ω	Open circuit.
–	3.3 Wiring	K17 4 — Ω — K1/1 2	Ignition: **OFF**	< 1 Ω	Open circuit.
–	4.0 Power consumption electromagnetic clutch (Y33)	K17 4 — A — 1	K17 pulled off. **Start** engine.	2.5-3.5 A (air suction on shaped hose)	Set values are obtained: Air injection relay (K17) CIS-E control unit, wiring. Above 3.5 A: renew Y33 (14-260), no current (0 A): check wiring to Y33.
–	5.0 Voltage supply air pump	K17 3 — V — ⊥	K17 pulled off. Ignition: **ON**	11–14 V	Wiring.
		K17 3 — V — 1	K17 pulled off. Ignition: **ON**	11–14 V	Wiring to Y32 and Y33.

Special tool



201 589 13 21 00

Commercially available tool

Engine tester	e.g. Bosch, MOT 001.03

Shop-made tool

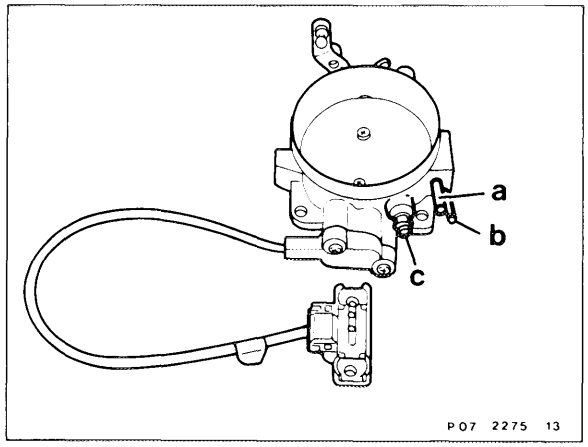
Y-hose	Part No. 117 078 01 45

Line connection on throttle assembly.

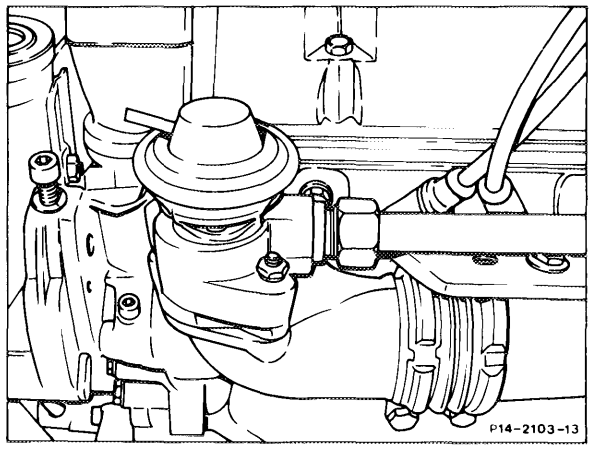
⚠

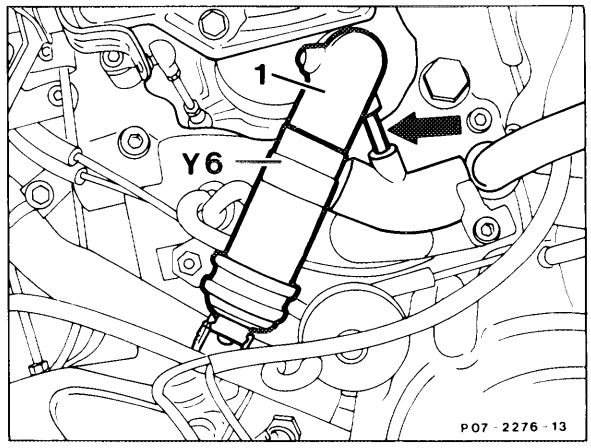
The vacuum line ws/br of the exhaust gas recirculation was temporarily connected to the lower connection of the throttle assembly during production start-up (14-050, section "G").

a to thermovalve exhaust gas recirculation
b to thermovalve fuel evaporation system
c to purge valve
d to vacuum control valve exhaust gas recirculation (only version "A")



Arrangement exhaust gas recirculation valve (EGR).



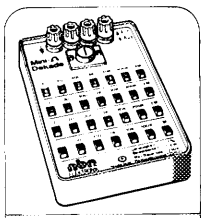


Model 126

Arrangement vacuum control valve (90) and thermovalve (79).

Impulse period display	Test step/ Scope of test	Measuring device/ Test connection	Actuation/ Requirement	Set value/ Function	Possible cause/Remedy
–	5.1 Wiring	K17 — Y32 1 — 2	K17 pulled off: Ignition: **OFF**	< 1 Ω	Open circuit. Change-over valve air pump (Y32).
–	5.2 Wiring	K17 — Y33 1 — 2	K17 pulled off: Ignition: **OFF**	< 1 Ω	Open circuit. Electromagnetic clutch (Y33).
–	5.3 Wiring	Y32 — ⊥ 1 — W10	K17 pulled off: Ignition: **OFF**	< 1 Ω	Open circuit.
–	5.4 Wiring	Y33 — ⊥ 1 — W10	K17 pulled off: Ignition: **OFF**	< 1 Ω	Open circuit.

Special tools



124 589 09 63 00

201 589 00 99 00

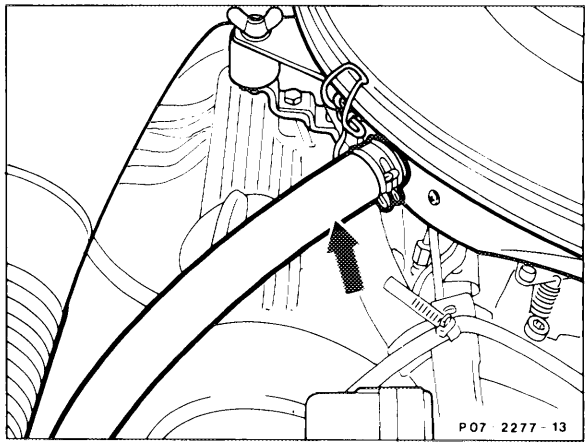
Commercially available testers

Multimeter	e.g. Sun, DMM-5
Lambda control tester	e.g. Hermann, L 115

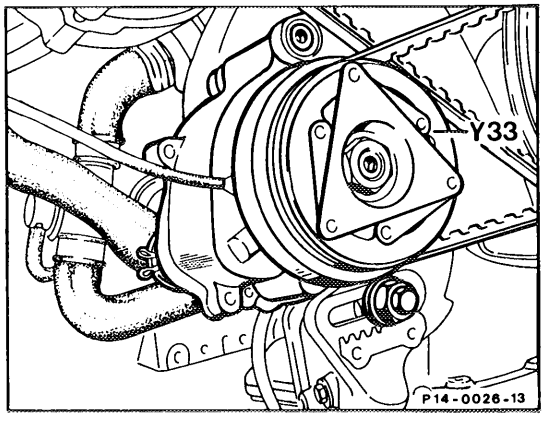
Shop-made tool

Y-hose	Part no. 117 078 01 45

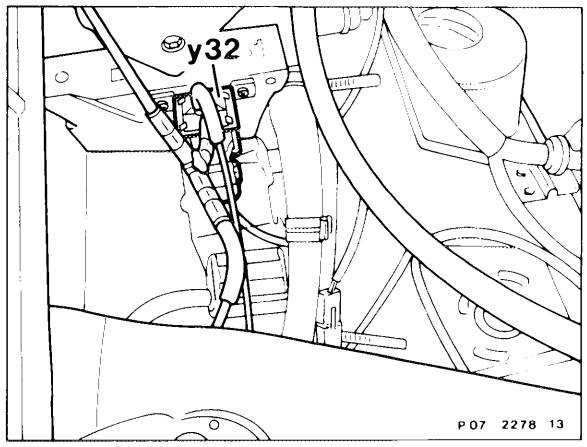
Arrangement of components



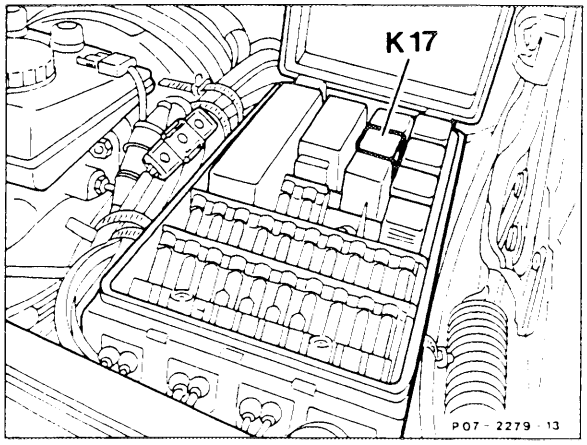
Shaped hose of air pump at side of air cleaner



Y33 Electromagnetic clutch



Y32 Change-over valve air injection



K17 Relay air injection