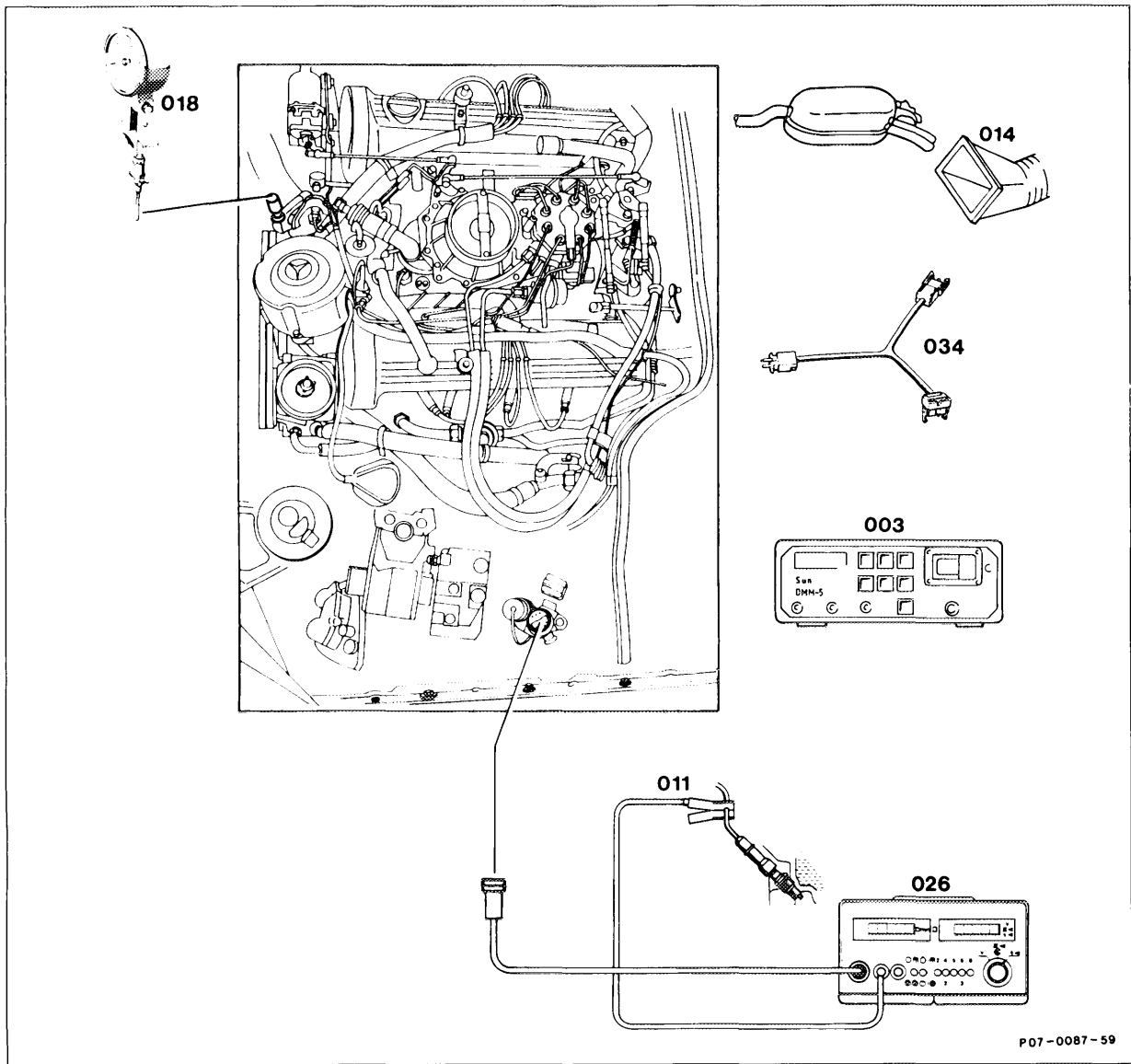


07.3-112 Testing electronic idle speed control

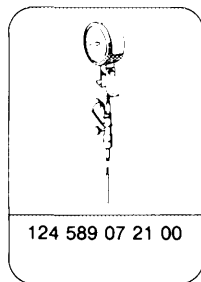
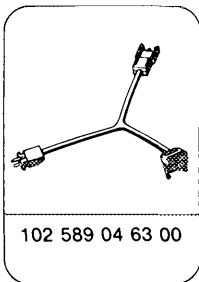


Testers	connect: Telethermometer (018) 124 589 07 21 00, Trigger clamp (011), Engine tester (026), Multimeter (003), Test cable (034) 102 589 04 63 00.
Extraction device (014)	position at exhaust tail pipe.
Engine oil temperature	approx. 80 °C.
Electronic idle speed control	test (refer to table).
Operation of idle speed air valve	test by briefly applying battery voltage. Must be heard to operate.
Power supply	test according to wiring diagram.
Engine running	test by switching on all ancillaries.

Idle speed, current at idle speed air valve

Engine	Model Year	Idle speed w/o Drive position in rpm Control range mA	Idle speed with Drive position in rpm	A/C compressor on, w/o Drive position in rpm
116.965	1986/87	650 \pm $\frac{100}{50}$ 700-1000 mA	500 \pm 50	650 \pm 50
	1988-91		550 \pm 50	
117.967	1986/87		500 \pm 50	
	1988-91		550 \pm 50	
117.968	1986/87		500 \pm 50	
	1988-91		550 \pm 50	

Special tools



Commercial testers

Multimeter

e. g. Sun, DMM-5

Engine tester (engine speed, dwell angle, ignition angle)

e. g. Bosch, MOT 001.03

Note

Wiring diagrams 07.3-128.

Idle speed control is independent of air flow sensor potentiometer. Engine oil temperature approx. 80 °C, selector lever in position "P" or "N", A/C compressor switched off and no leaks in intake system. Idle contact, coolant temperature sensor and exhaust gas recirculation operating properly.

At high altitudes (> 2000 m) current consumption may drop below 700 mA as the actuator requires to open a significantly greater cross section at such altitudes to stabilize the engine.

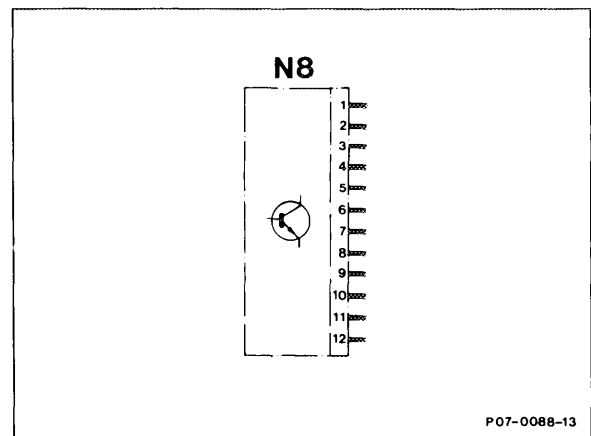
Road speed signal

The test should only be performed if the following complaint is received: "Bucking when car running with closed throttle valve" (07.3-121, Section o).

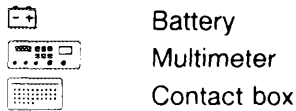
Pin assignment of electronic idle speed control (ELR) unit (N8)

Connector

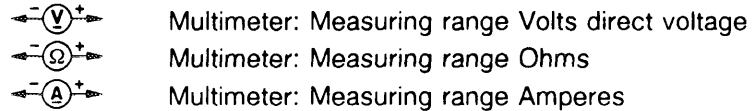
- 1 Electronic speedometer (A1p8), road speed signal
- 2 CIS-E injection system control unit (N3), contact 9, temperature signal (TF)
- 3 A/C compressor control unit (N6), contact 4
- 4 Throttle valve switch, full load/idle speed detection, contact 1
- 5 not assigned
- 6 Idle speed air valve (Y6)
- 7 Idle speed air valve (Y6)
- 8 not assigned
- 9 Overvoltage protection relay (K1, K1/1), contact 2, power supply terminal 15
- 10 Electronic ignition EZL control unit (N1/2, N1/3), TP/TN signal
- 11 Model 107: Engine ground (W11)
Model 126: Battery ground (W10)
- 12 Starter lockout and backup light switch (S16/1), gear detection



Symbols for testers:



Symbols for quantities measured with multimeter:

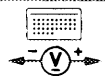
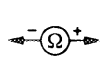
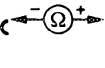
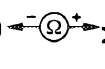
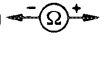
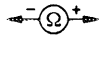
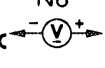



Test step/ Test scope	Test connection	Operation Requirement	Spec.	Possible cause/Remedy
1.0 Ground points	N8 11 +	N8 disconnected	11 – 14 V	Model 107: Ground (W11) loose, open circuit Model 126: Ground (W10) loose, open circuit
2.0 Power supply of N8	N8 11 9	N8 disconnected Ignition: ON	11 – 14 V	Fuse in overvoltage protection K1/1 faulty or not inserted, wiring to contact 1 (terminal 30) interrupted. ¹⁾
3.0 Test current at idle speed air valve (Y6)	Connect test cable (034) to idle speed air valve (Y6) 	Engine idling, without Drive position	700 – 1000 mA	Open circuit to idle speed air valve (Y6), idle speed control unit (N8), test TD/TN signal (07.3-121), idle contact (test step 4), TF signal (test step 5)
3.1. Resistance at idle speed air valve (Y6)	Y6 1 2	Ignition: OFF	3.5 – 5.5 Ω	Idle speed air valve (Y6)
3.2 Wiring	Y6 1 N8 6	Ignition: OFF N8 disconnected	< 1 Ω	Open circuit
3.3 Wiring	Y6 2 N8 6	Ignition: OFF N8 disconnected	< 1 Ω	Open circuit

¹⁾ **Model 107:** Control to overvoltage protection (K1) contact 6 (terminal 15) interrupted, wiring from overvoltage protection (K1) contact 2 (terminal 87) to terminal block (X51/1) interrupted, wiring from terminal block (X51/1) to idle speed control unit (N8) interrupted.

Model 126: Control to overvoltage protection (K1/1) contact 3 (terminal 15) interrupted, wiring from overvoltage protection (K1/1) contact 2 (terminal 87E) to idle speed control unit (N8) contact 9 interrupted.

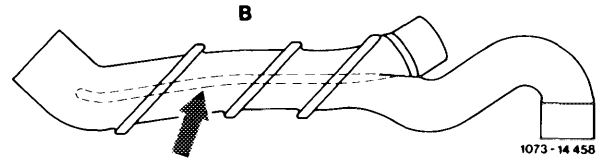
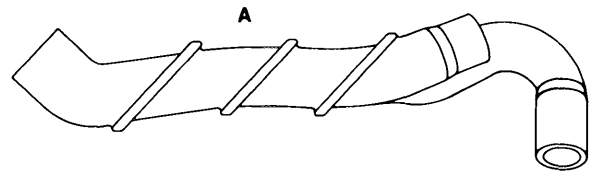
Test step/ Test scope	Test connection	Operation Requirement	Spec.	Possible cause/Remedy
4.0 Idle contact		Ignition: OFF N8 disconnected Connector at CIS-E control unit (N3) and connector at electronic ignition control unit code No. (1 - 4) detached.	< 1 Ω	-
		Depress accelerator pedal	∞	Pins of connector (S29/2x) wrongly assigned, idle contact, wiring
4.1 Wiring			< 1 Ω	Open circuit
4.2 Wiring			< 1 Ω	Open circuit
5.0 TF signal	 	N16/4 disconnected Engine idling	3.5 - 5.0 V	CIS-E control unit (N3), idle speed control unit (N8), wiring
5.1 Wiring		N8 disconnected	< 1 Ω	Open circuit
5.2 Wiring		N8 and N16/4 disconnected	< 1 Ω	Open circuit

Test step/ Test scope	Test connection	Operation Requirement	Spec.	Possible cause/Remedy
6.0 Selector lever position	1  16	Engine idling, selector lever position "P"	11 – 14 V	Starter lockout and backup light switch (S16/1), refer to Job No. 27 – 130. Contacts (X26), (X49/2), wiring
6.1 Wiring	N8 2  16	Ignition: OFF N8 disconnected	< 1 Ω	Open circuit
6.2 Wiring	N8 12  X26 10	Ignition: OFF N8 disconnected X26 separated	< 1 Ω	Open circuit
6.3 Wiring	S2/1 Kl. 50  X26 10	X26 separated	< 1 Ω	Open circuit
6.4 Wiring	S2/1 Kl. 50  X49/2 5	X49/2 separated	< 1 Ω	Open circuit
6.5 Wiring	16/1 8  X49/2 5	X49/2 separated Connector at (S16/1) detached	< 1 Ω	Open circuit
7.0 A/C compressor control unit	N8 11  3	N8 disconnected Ignition: ON A/C compressor switched on	11 – 14 V	A/C compressor control unit (N6), wiring
7.1 Wiring	N6 4  N8 3	Ignition: OFF (N6), (N8) disconnected	< 1 Ω	Open circuit

Note

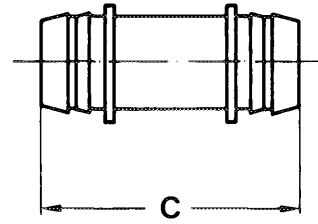
Distributor line for idle air

Modified shape of distributor line with additional longitudinal rib on inside (arrow) for distributing idle air.



- A 1st version
- B 2nd version

Hose connections on left and right lengthened
Size C 53 mm (previously 42 mm).



1074 - 14 459

Series implementation: August 1986

Model	Engine	Engine End No.
107.048	117.967	012830
126.03	116.965	025114
126.039 045	117.968	016902