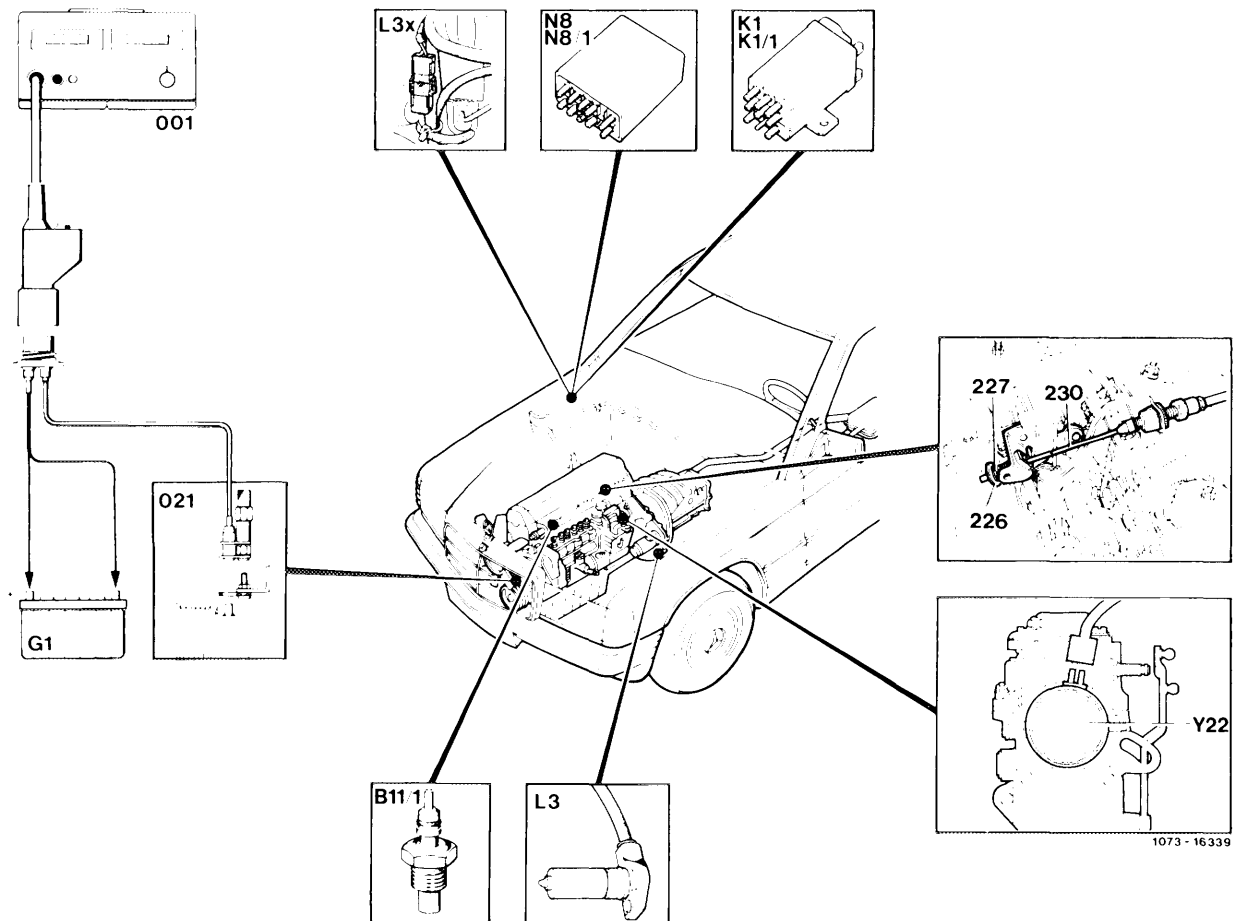


07.1-103 Checking electronic idle speed control

Engines without test coupling (X92)

(Engines with test coupling (X92) see 07.1-105 Checking ELR).



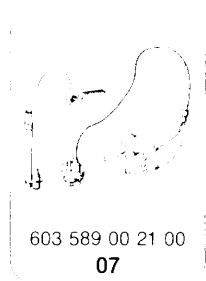
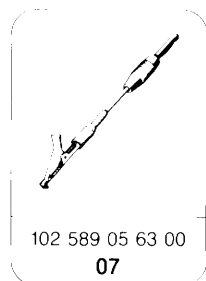
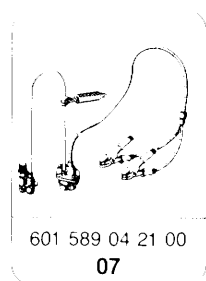
Digital tester (001) and pulse generator (021)	...	connect, disconnect.
Control	.....	check for easy operation.
Idle speed stop on Bowden cable (230)	.....	check, the spring retainer (226) must contact the compression spring (227) without preload.
Overvoltage protection (K1 or K1/1) and fuse	....	check, measure voltage between jacks 9 and 11 of the control unit coupling, set value approx. 12 V.
Engine	.....	run to 60-80 °C coolant temperature.
Pull double coupling off electromagnetic actuator (Y22) and refit (at least for 3 s)	.....	engine speed increases briefly.

Adjusting basic idle speed on injection pump pull plug of electromagnetic actuator (Y22).
 Speed sensor (L3) on coupling (L3x) check, resistance 0.4-2.5 kΩ,
 engine at idle speed voltage > 4 V AC.
 Coolant temperature sensor (B11/1) check,
 set value +20 °C 2.2 - 2.8 kΩ.
 Electrical activation of the electromagnetic actuator
 (Y22) check, engine idling, set value approx. 12 V.

Test and adjusting values

Engine	Idle speed 1/min Electronic idle speed control (ELR)	
	with control	without control Plug pulled off electrom. actuator
602.911	680 ± 20	620 ± 40

Special tools



Commercially available tools

Multimeter	e.g. Sun, DMM-5
Digital tester	e.g. Bosch, MOT 002.01 Sun, DIT 9000

Note

Electrical wiring diagrams see
 job no. 07.1-400.

Testing jobs

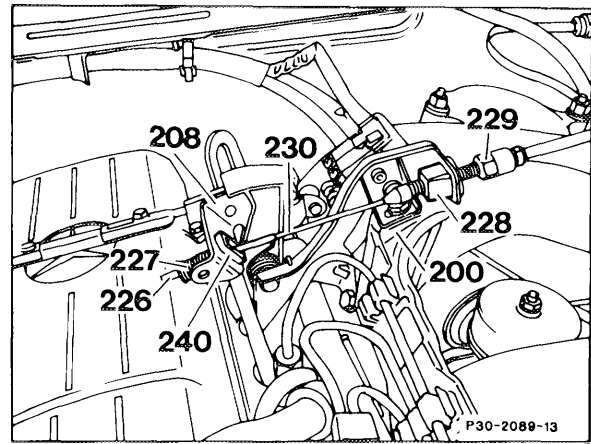
Connect digital tester (001) and pulse generator (021).

Check control for easy operation and condition.

Check idle speed stop on Bowden cable (230).

The spring retainer (226) of the Bowden cable (230) in idle speed position must contact the compression spring (227) without preload.

Run engine to 60-80 °C coolant temperature.



Checking overvoltage protection (K1 or K1/1)

Switch on ignition, pull off control unit (N8 or N8/1) and check voltage between the jacks (9 and 11).

Display: approx. = 12 V

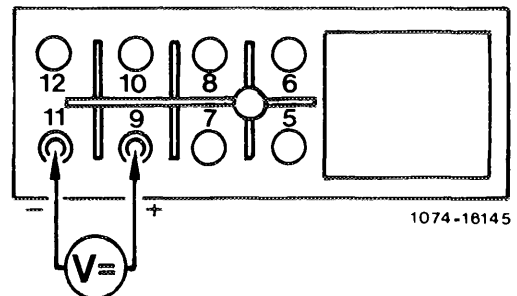
Yes

No

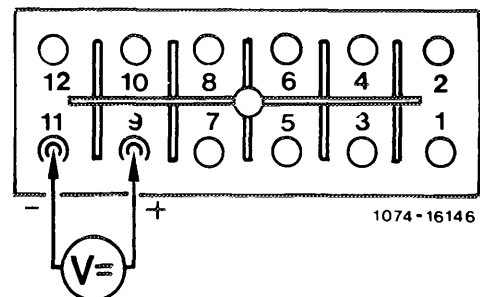
Check fuse on overvoltage protection.
Check activation according to electrical wiring diagram.

End of test

N8



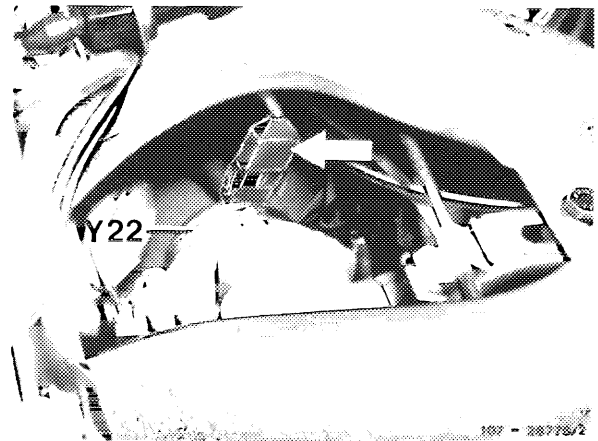
N8/1



Function check

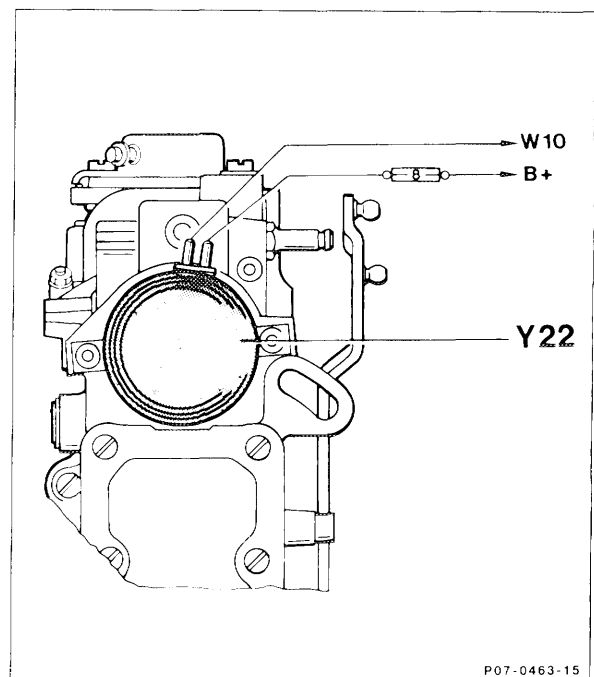
Engine idling. Pull double coupling (arrow) off ELR electromagnetic actuator (Y22) for at least 3 sec. and refit. Engine speed increases briefly.

Yes	No
-----	----



Briefly apply battery voltage (approx. 12 V) to ELR electromagnetic actuator (Y22). Idle speed increases.
Caution!
 If battery voltage is applied for longer than 3 sec. the ELR electromagnetic actuator will be damaged.

Yes	No
-----	----



Check individual parts.

Replace electromagnetic actuator (Y22).

Engine idling. Pull double coupling of electromagnetic actuator (Y22).
Check idle speed.

Set values:

Engine	Idle speed/min
602.911	620 ± 40

Yes

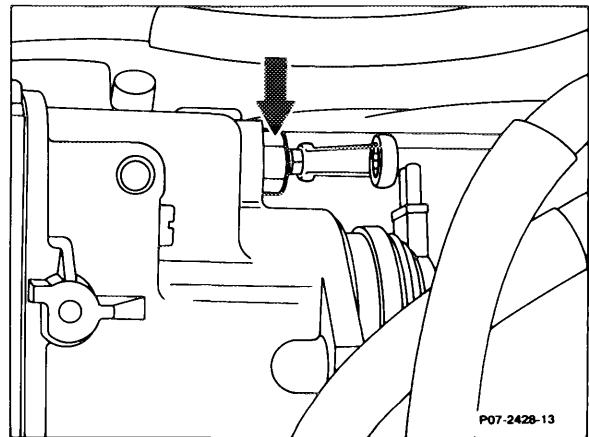
No

End of test

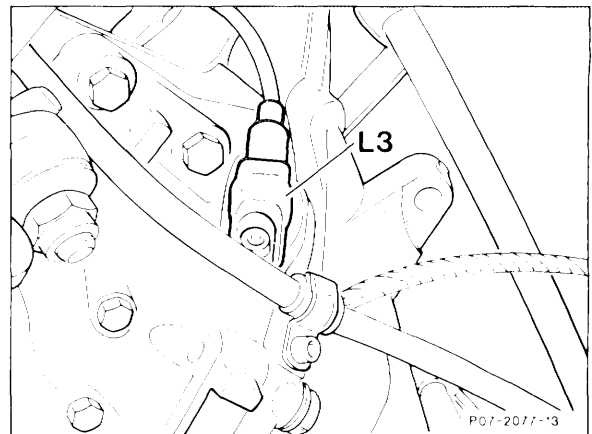
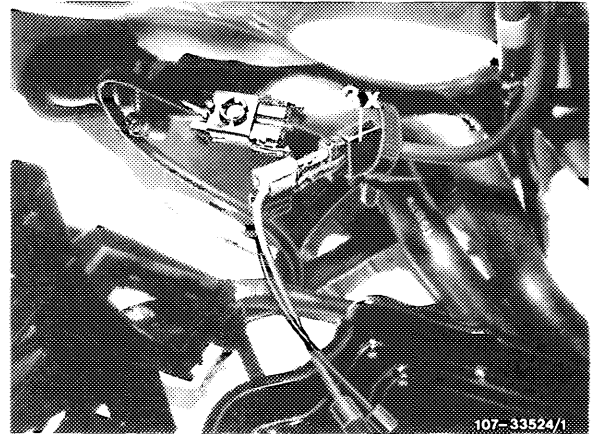
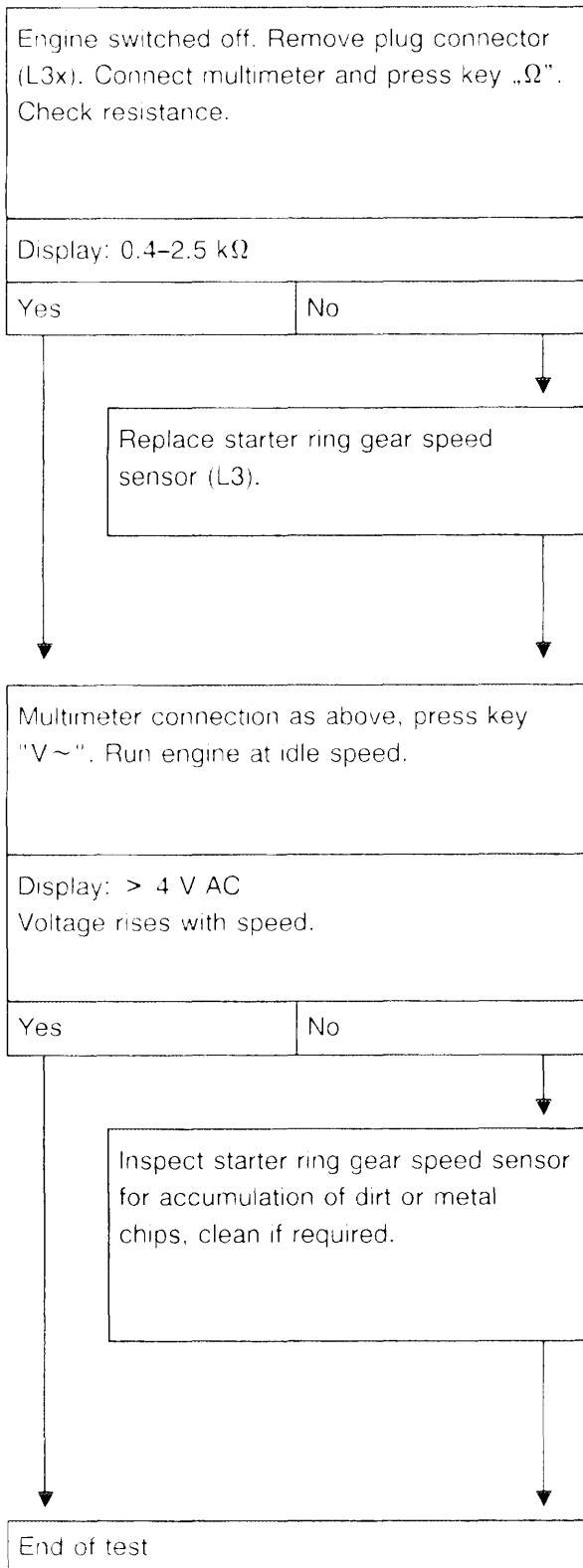
Adjust idle speed by loosening lock nut (arrow).

left = higher
right = lower

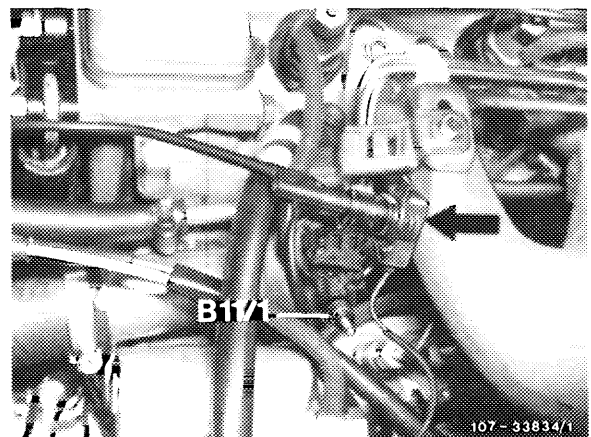
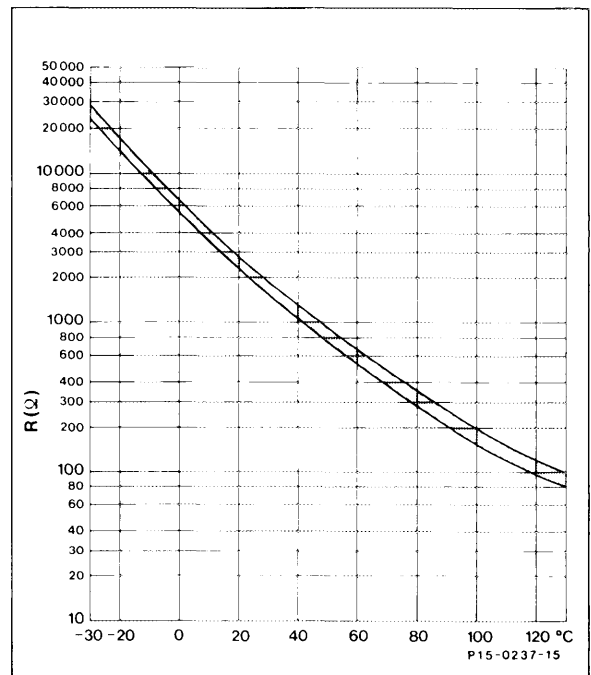
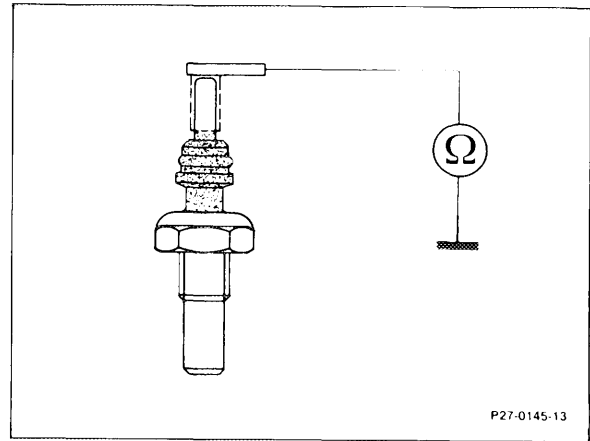
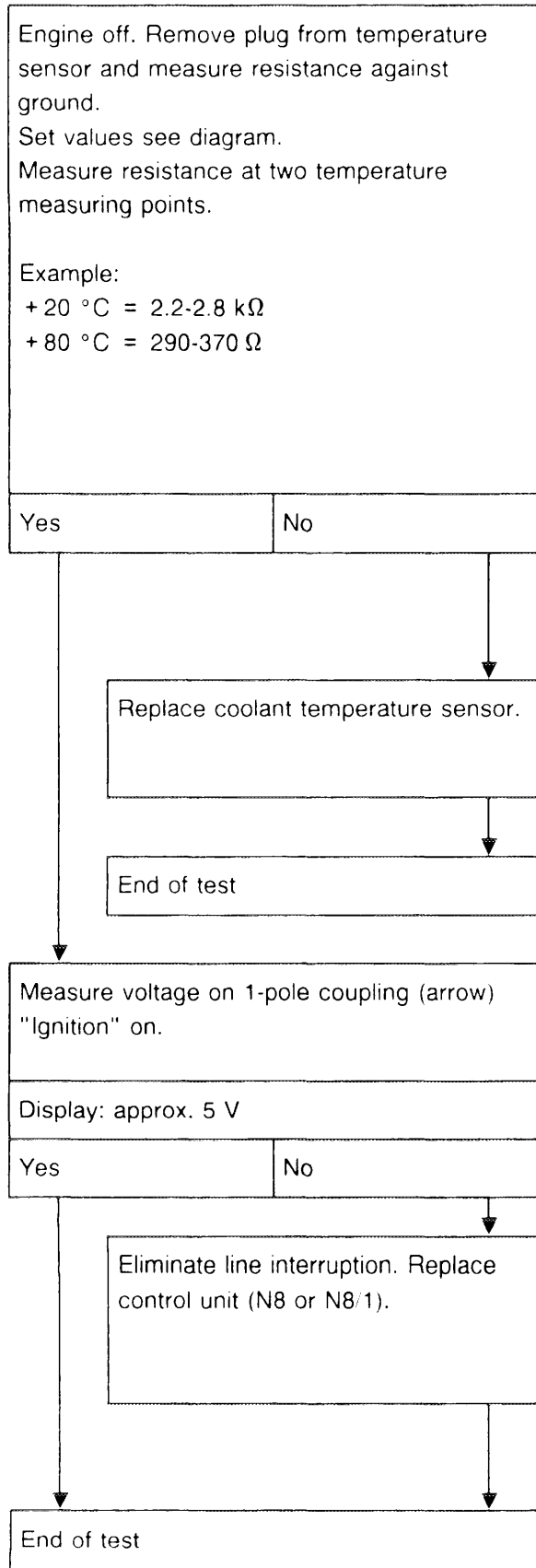
End of test



Checking speed sensor (L3)



Checking coolant temperature sensor (B11/1)



Checking electrical activation of electromagnetic actuator

