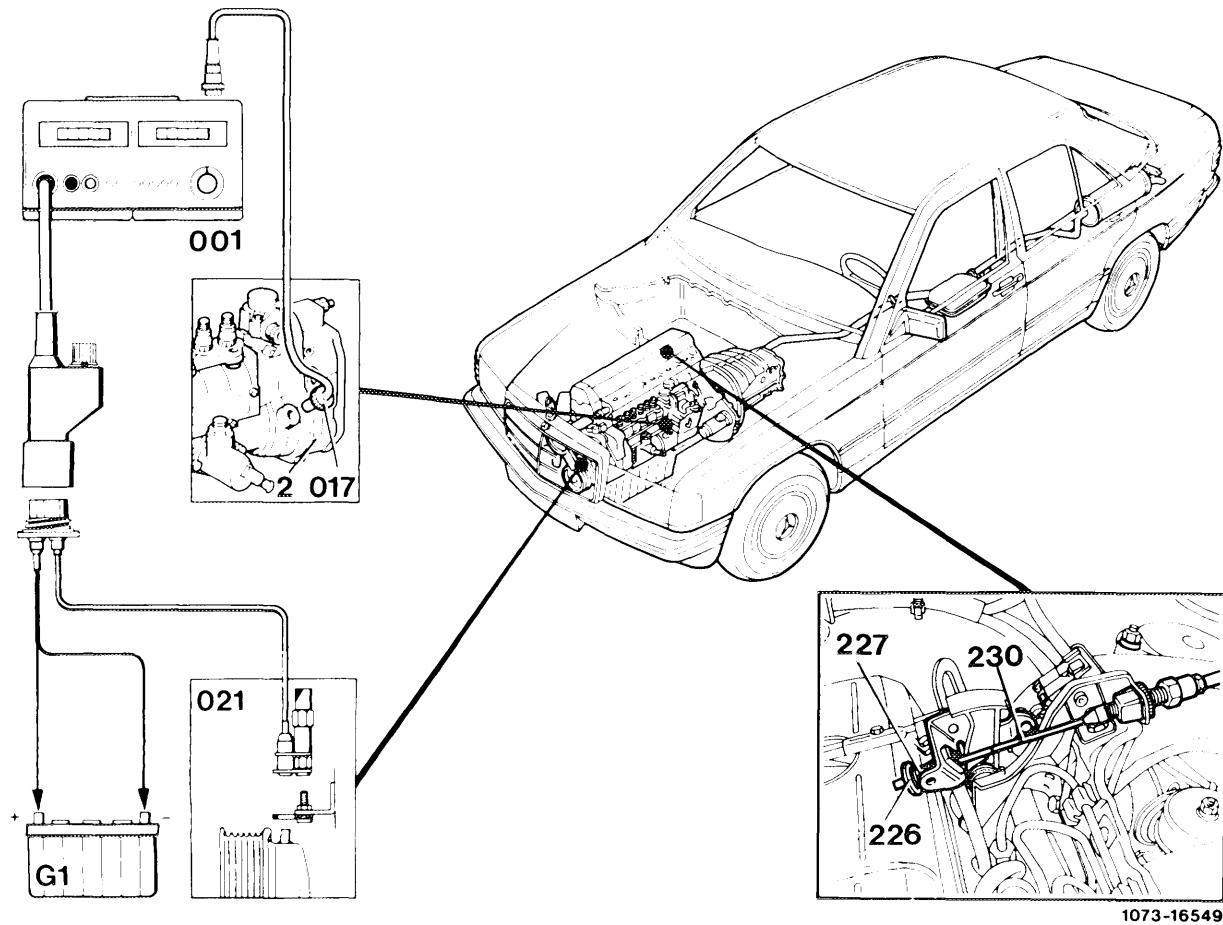


07.1-110 Checking, tuning engine



1073-16549

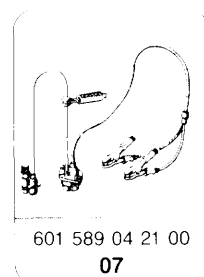
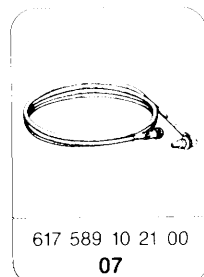
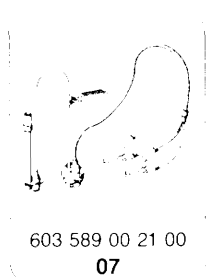
Test sheet	complete.
Coolant level	check, correct.
Engine oil level	check, observe oil condition (visual inspection).
Oil level in automatic transmission	check, correct.
Air cleaner	remove, reinstall.
Testers (001, 017)	connect
Pulse generator (021)	connect.

Control linkage	check for easy operation and condition. Lubricate pivots of reverse- transfer levers, ball sockets.
Full throttle stop on Bowden cable	check, adjust if required.
Idle stop on Bowden cable	check, adjust if required
Battery voltage	check. Set value: minimum 11.5 V.
Engine	run to 60-80 °C coolant temperature.
Air conditioner or automatic climate control	switch off.
Idle speed	check, adjust if required. Pull plug off electromagnetic actuator.
Start of delivery	check.
Maximum speed	check.
Injection timing device	check. Set value: approx. +3° to +5° after RIV at approx. 5100/min.

Test and adjusting values

Engine		602.911
Idle speed 1 min	Electronic idle speed increase	680 ± 20
Maximum no-load speed		5150 ± 150
Start of delivery with digital tester	RI set value	-15° ± 1° ATDC

Special Tools



Commercially available testers

Use without adapter

Digital testers

e.g. AVL, Diesel-Tester 873

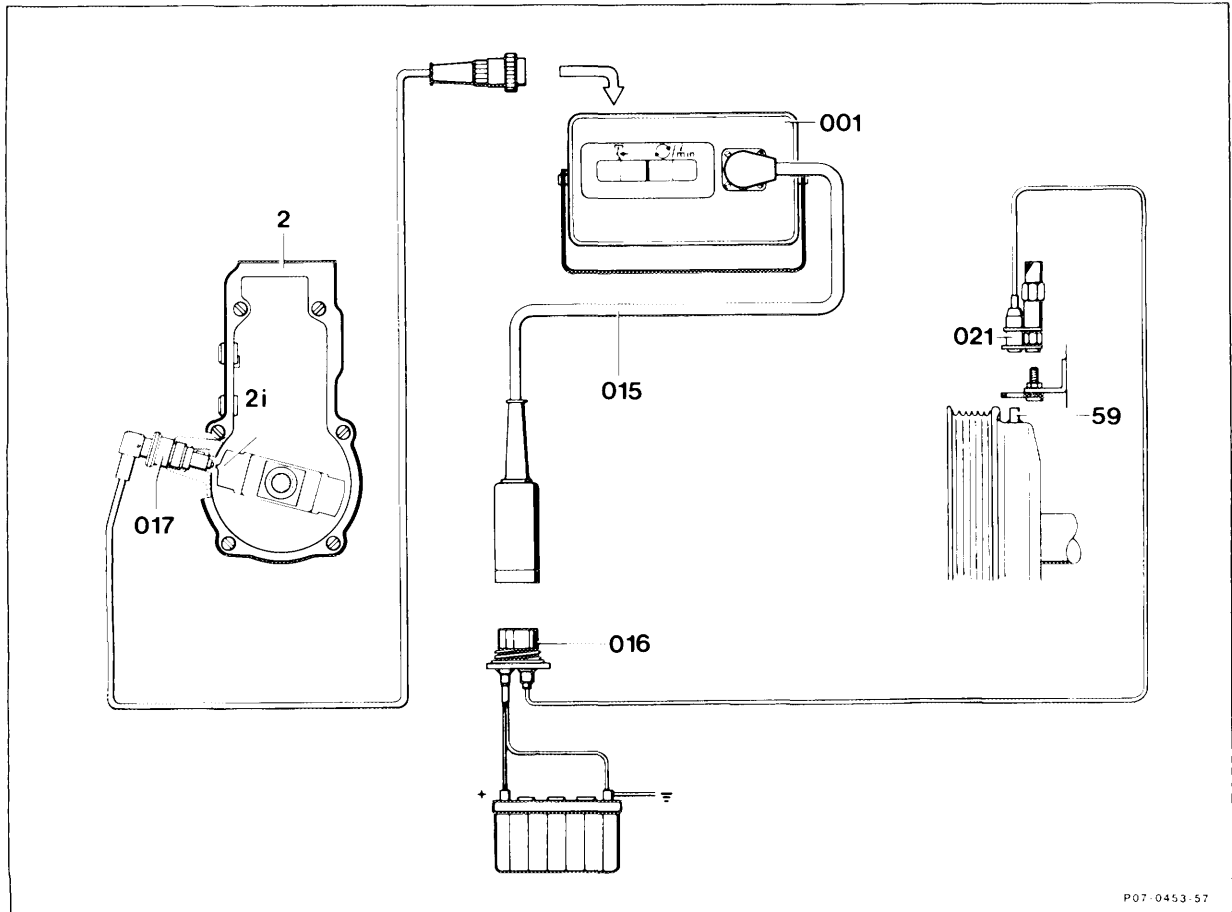
e.g. Bosch, ETD 019.002 or
MOT 350 500 501

Use with adapter

e.g. Sun, DIT 9100

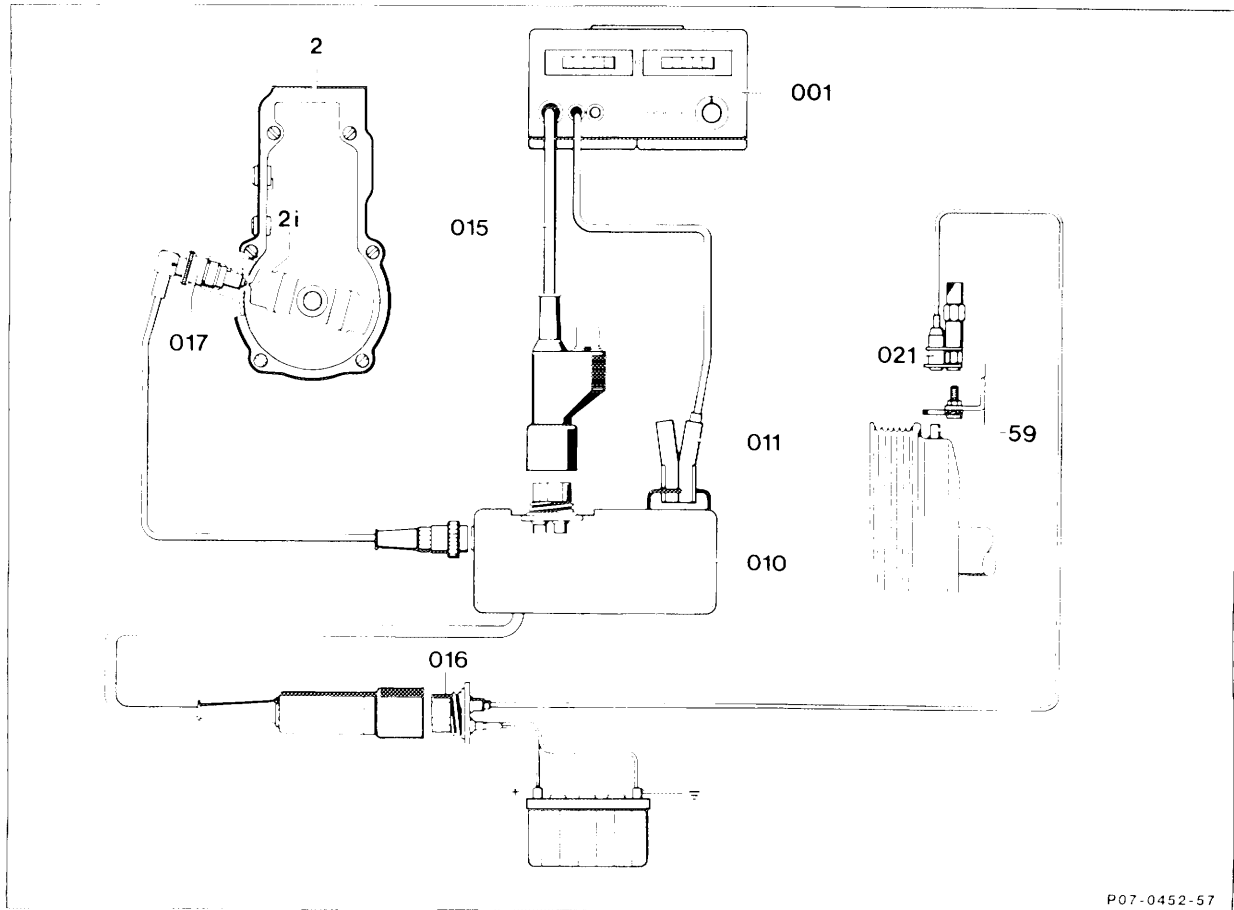
Digital testers

e.g. Bosch, MOT 001.03



Connection diagram for testers without adapter

- | | | | |
|-----|-------------------------|-----|-----------------------------|
| 001 | Digital testers | 021 | TDC impulse sensor |
| 015 | Test cable with plug | 59 | TDC sensor pin |
| 016 | Diagnostic socket | 2 | Governor |
| 017 | Governor impulse sensor | 2i | Governor impulse sensor pin |



P07-0452-57

Connection diagram for existing testers with adapter

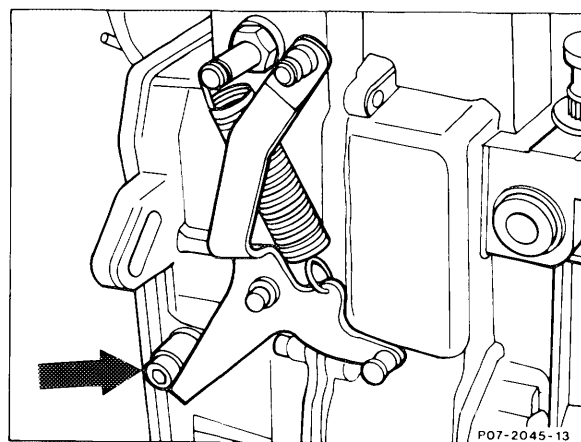
001	Digital tester	017	Governor impulse sensor
010	Adapter	021	TDC impulse sensor
011	Alligator clamp	59	TDC sensor pin
015	Test cable with plug	2	Governor
016	Diagnostic socket	2i	Governor impulse sensor pin

Checking, tuning

- 1 Complete test sheet, enter measured values.
- 2 Check, correct coolant level.
- 3 Check engine oil, inspect oil condition.
- 4 Check oil level in automatic transmission.
- 5 Connect testers (001, 017) according to connection diagram.
- 6 Connect pulse generator (021).
- 7 Remove, reinstall air cleaner element; check for contamination.
- 8 Check control for easy operation and condition and lubricate.

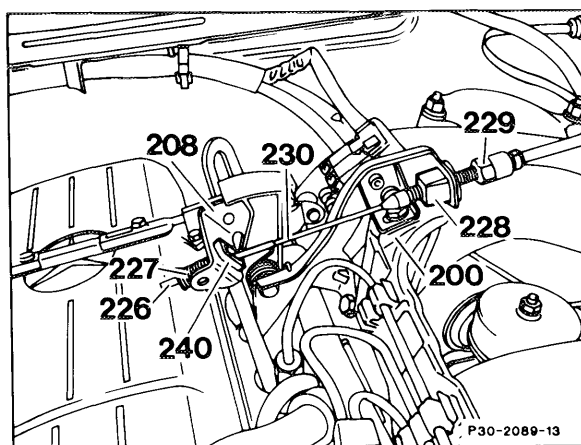
- 9 Check full load stop.

With engine off, fully depress accelerator pedal. The control lever must contact the full load stop (arrow).

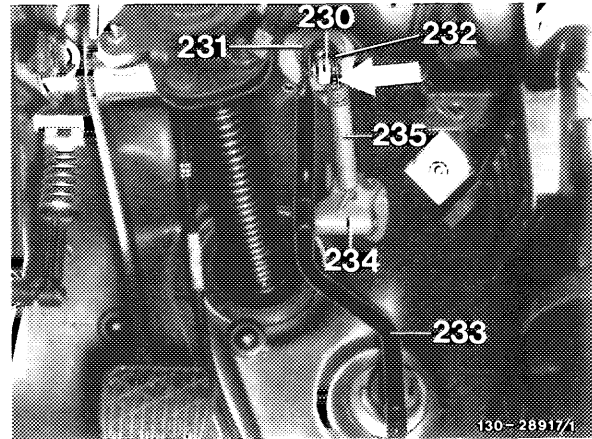


- 10 Check idle stop.

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



Adjust Bowden cable (230) with the adjusting nut (232) from the vehicle inside if required.



11 Check battery voltage.
Set value: at least 11.5 V.

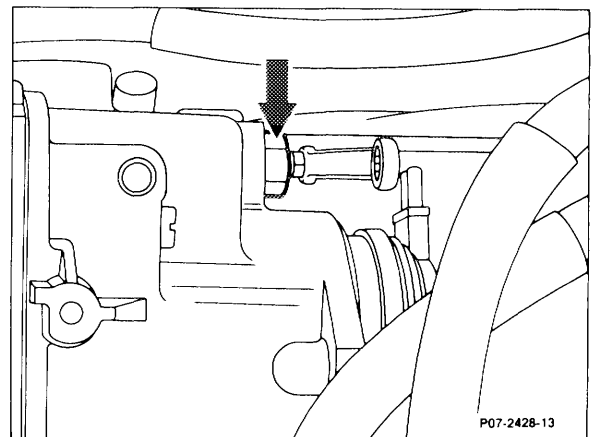
12 Run engine to a coolant temperature of 60-80 °C.

13 Switch off air conditioner and automatic climate control.

14 Check idle speed; read off start of delivery.
RI set value $15 \pm 1^\circ$ ATDC.

a) Engine 602 with electronic idle speed increase

Pull double coupling off electromagnetic actuator. Loosen lock nut (arrow) and adjust idle speed.



15 Check maximum no-load speed.

16 Check injection timing device without load.
Set value: 3° to 5° BTDC according to RIV at approx. 5100 min.