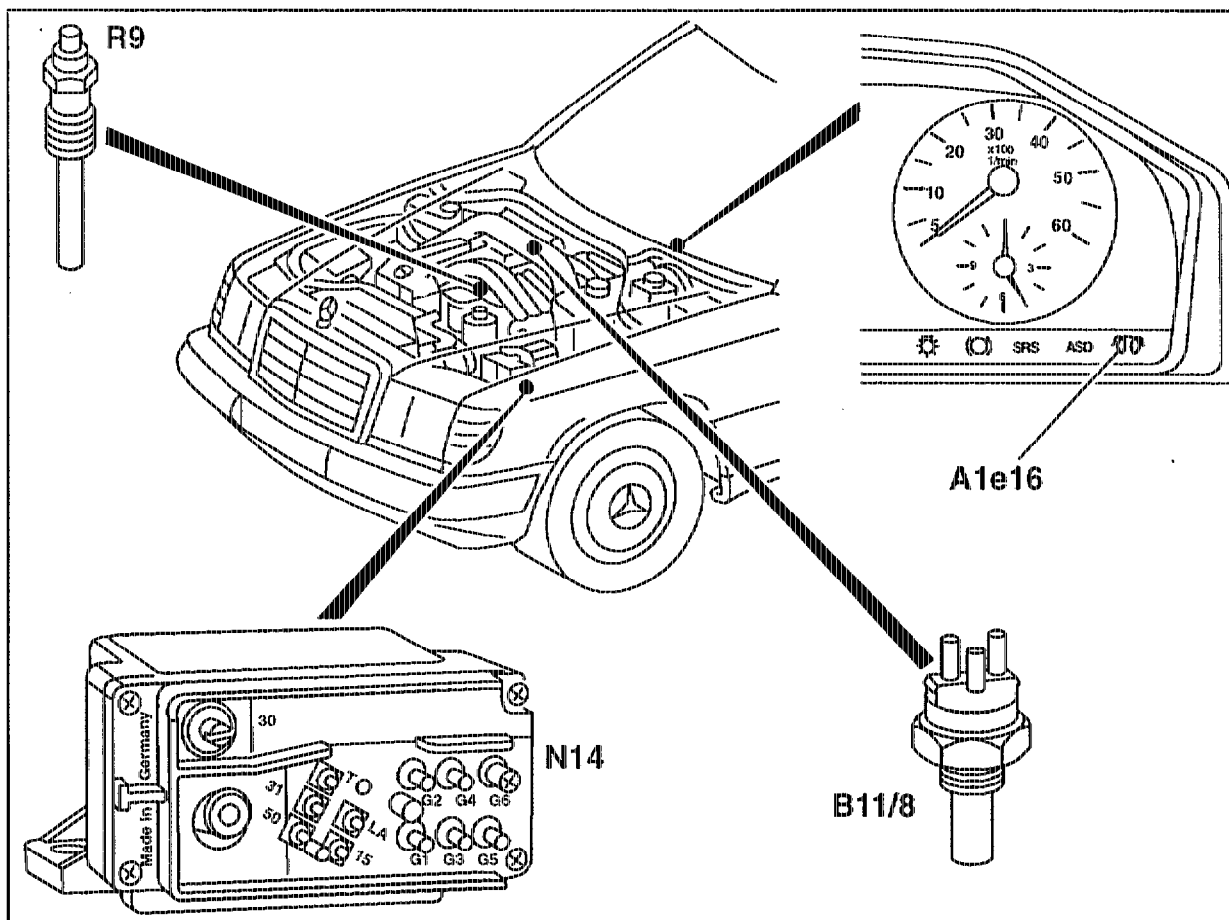


Operation no. of operation texts and work units or standard texts and flat rates:
15-4000



P15-5247-57

- A1e16 Preglow indicator lamp
- B11/8 Coolant temperature sensor, afterglow
- N14 Preglow time relay
- R9 Glow plugs

Test in accordance with test program
"preglow system" perform.

Commercially available tester (see Workshop Equipment Manual)

Designation	e. g. make, order no.
Multimeter	Firma Sun, DMM-5 Fluke 23 DB, 83, 88 ITT Metrix MX 47, 50, 51, 52

Note

Circuit protection of preglow circuit

An electronic short circuit protection is installed in the preglow time relay. In the event of a short circuit in the glow plugs or in the wiring, the circuit is interrupted.

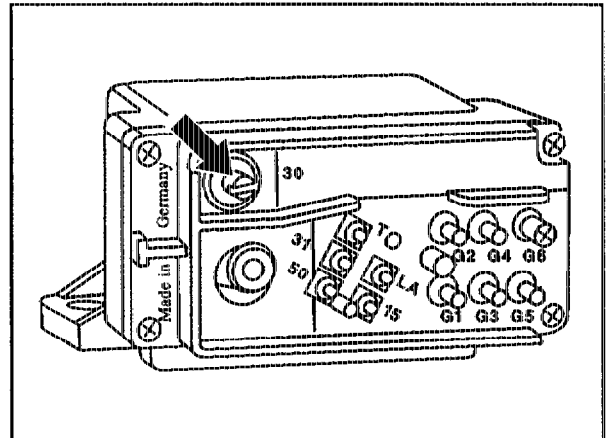
The preglow time relay is operational again once the short circuit has been rectified and the ignition key turned back to position "0".

Designation of the two preglow time relay couplings

Couplings with the pins T, 31, 50, 15, LA: (1.1) to (1.5).

Coupling with the pins G1–G6: (2.1) to (2.6)

Wiring diagrams of preglow system see Wiring Diagram Volume Model 124 as of 10/92 Volume 1.



P15-5248-13

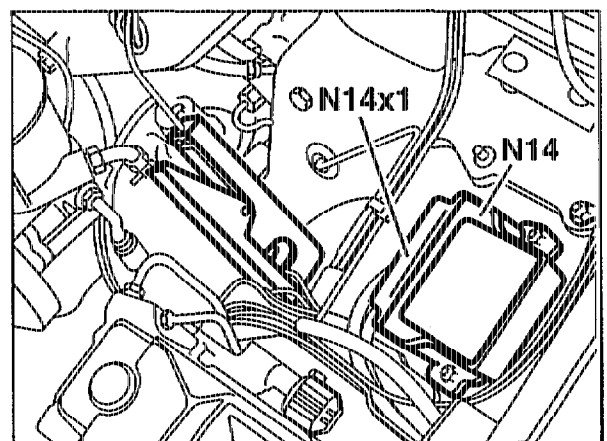
Troubleshooting table of preglow system

Complaint	Possible cause	Remedy/Test step
Preglow indicator lamp does not come on when preglow system switched on although engine can be started	Bulb faulty. Open circuit in wiring or short circuit.	1.0
Preglow indicator lamp comes on and stays on	Preglow time relay (N14) sticking.	Replace preglow time relay (N14)
Preglow indicator lamp does not come on, engine cannot be started	Preglow time relay (N14) faulty. No power supply to preglow time relay (N14).	2.0–2.3
Preglow indicator lamp does not come on when system switched on or comes on for about 1 minute when driving. Engine difficult to start.	Open circuit at one or several pencil-type glow plugs or in wiring to glow plugs. Fault in power consumption of glow plugs.	3.0
Preglow time until preglow indicator lamp goes out too short or too long.	Preglow temperature sensor (B11/8) faulty. Wiring to preglow temperature sensor (B11/8).	4.0

Test program preglow system

Test step	Test scope	Test connection	Operation/ Requirement	Specification	Possible cause/ Remedy
1.0	Preglow indicator lamp (A1e16)	<p style="text-align: center;">N14</p> <p>1 —(←(→)— 3 (1.1) (1.3)</p>	Ignition: ON Preglow time relay (N14) unplugged	Preglow indicator lamp comes on	Bulb Wiring
					Preglow time relay sticking Replace preglow time relay
2.0	Preglow time relay (N14) Voltage supply	<p style="text-align: center;">N14</p> <p>4 —(←(⊖)⊕)— 1 (1.4) (1.1)</p>	Ignition: ON Preglow time relay (N14) unplugged	11–14 V	Fuse Wiring Ground, component compartment (W16/3)
2.1	Voltage supply preglow time relay terminal 30	<p style="text-align: center;">N14</p> <p>⊥ ←(⊖)⊕ tml.30</p>	Ignition: OFF Preglow time relay (N14) unplugged	11–14 V	Wiring
2.2	Voltage supply preglow time relay terminal 15	<p style="text-align: center;">N14</p> <p>⊥ ←(⊖)⊕ 5 1 (1.1)</p>	Ignition: ON Preglow time relay (N14) unplugged	11–14 V	Fuse Wiring
2.3	Ground (W3) Preglow time relay terminal 31	<p style="text-align: center;">N14</p> <p>⊥ ←(⊖)⊕ 4 (1.4)</p>	Ignition: ON Preglow time relay (N14) unplugged	< 1 Ω	Wiring

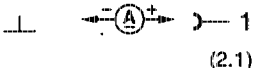
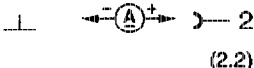
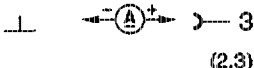
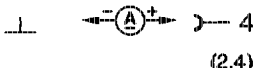
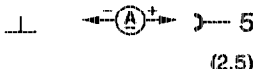
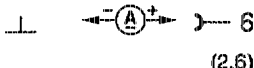

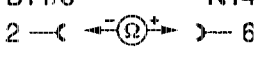
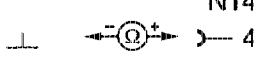
Current clamp over glow plug lead



N14 Preglow time relay
N14x1 Coupling at preglow time relay

P07-6142-13

Test program preglow system

Test step	Test scope	Test connection	Operation/ Requirement	Specification	Possible cause/ Remedy
3.0	Pencil-type glow plugs	Measure with d.c. clamp N14  1 (2.1)  2 (2.2)  3 (2.3)  4 (2.4)  5 (2.5)  6 (2.6)	At each measurement turn ignition key from OFF to position 2	8-15 A ¹⁾	Glow plugs Wiring
4.0	Coolant temperature sensor, afterglow (B11/8)	B11/8  1 2	Ignition: OFF Coupling at temperature sensor (B11/8) unplugged	°C Ω 20 2500 30 1700 40 1170 50 830 60 600 70 435 80 325 90 245 100 185 ± 5%	Replace afterglow temperature sensor (B11/8)
4.1	Cable	B11/8 N14 2 —<  6 N14  4	Ignition: OFF Coupling at temperature sensor (B11/8) and at preglow time relay (N14) unplugged	< 1 Ω < 1 Ω	Open circuit in wiring

¹⁾ Specification is briefly achieved after 10-20 seconds.