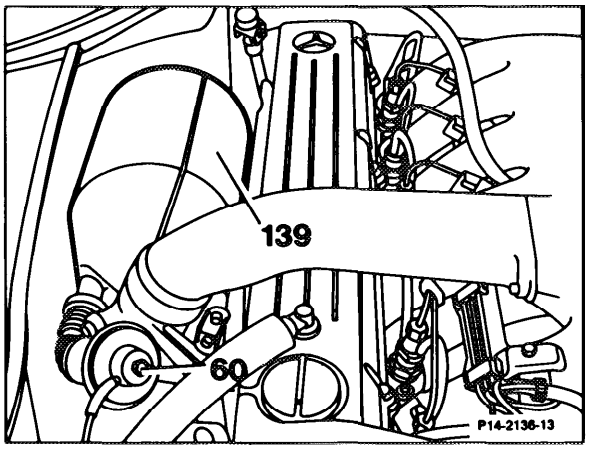
Job No.

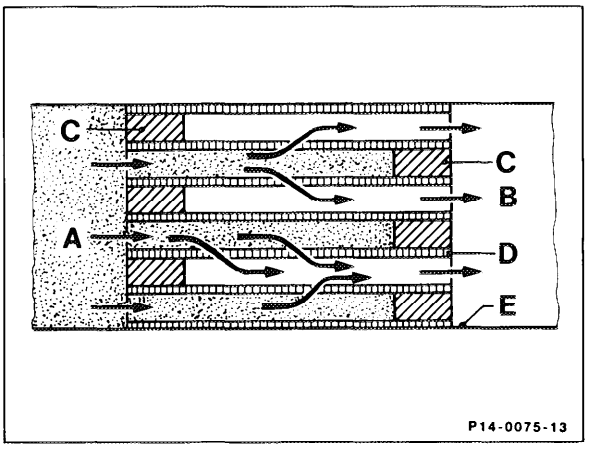
14–050 Function of trap oxidizer - Turbodiesel

The trap oxidizer is a self-regenerating filter installed between the exhaust manifold and turbocharger. It consists of a ceramic monolith surrounded by a metal plate and coated with silver alloy. This enables the oxidizing process to occur even at low exhaust temperatures.

The passages of the filter are closed alternately, forcing the exhaust gases to flow through the porous cell walls. The solid particles trapped as a result are oxidized at various engine operating phases at a high exhaust temperatures as a result of the residual oxygen which is always present in the diesel exhaust.



60 EGR valve
139 Trap oxidizer



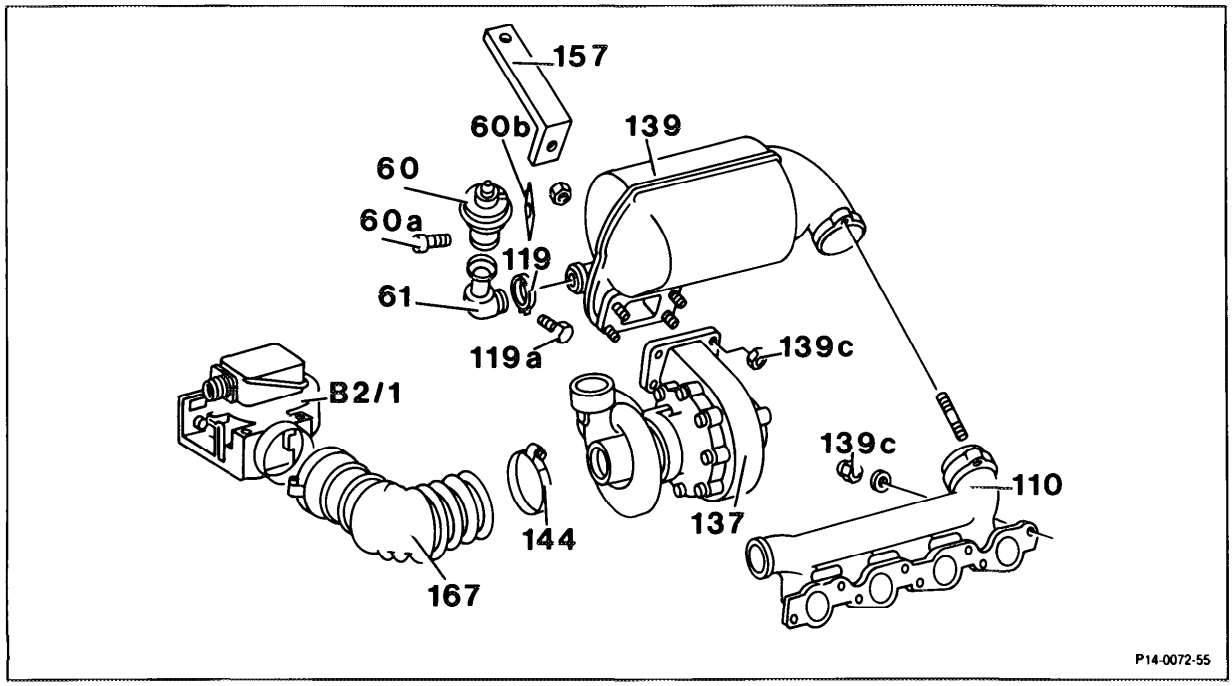
A Exhaust with soot
B Cleaned exhaust
C Ceramic monolith
D Porous cell walls
E Metal casing

Regeneration is dependent on:

- Temperature
- Oxygen content
- Load condition of engine
- Velocity of exhaust gases
- Duration

This oxidizing process begins at > 360 °C. If the exhaust temperatures are > 580 °C for prolonged periods, the trap oxidizer is completely regenerated.

The final product produced as a result of the oxidation of the soot in the filter is almost exclusively carbon dioxide (CO_2).

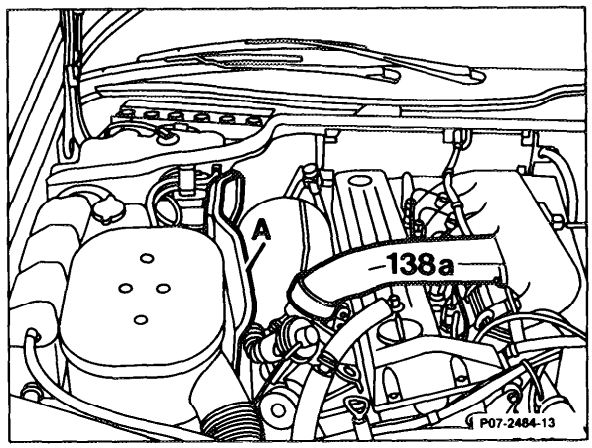


Vehicle	drive onto inspection platform or pit.
Bottom section of noise encapsulation	attach, detach (Model 124 only).
Air cleaner	remove, install (09-400).
Hose clip (144)	loosen at air flow sensor (B2/1) and detach intake hose (167), fit on.
Partition wall between trap oxidizer and air cleaner	remove, install (9 bolts) of which 6 are accessible from above, 3 accessible from below (refer to instruction).
Vacuum line red/violet/brown on EGR valve (60) and red/violet/blue on air recirculation valve	detach, fit on.
Clip (119) on corrugated pipe (61)	loosen, tighten.
EGR valve (60)	remove, install.
Trap oxidizer (139) on exhaust manifold (110)	unbolt, bolt on.
Supporting bracket	unbolt, bolt on and remove at the same time as trap oxidizer.

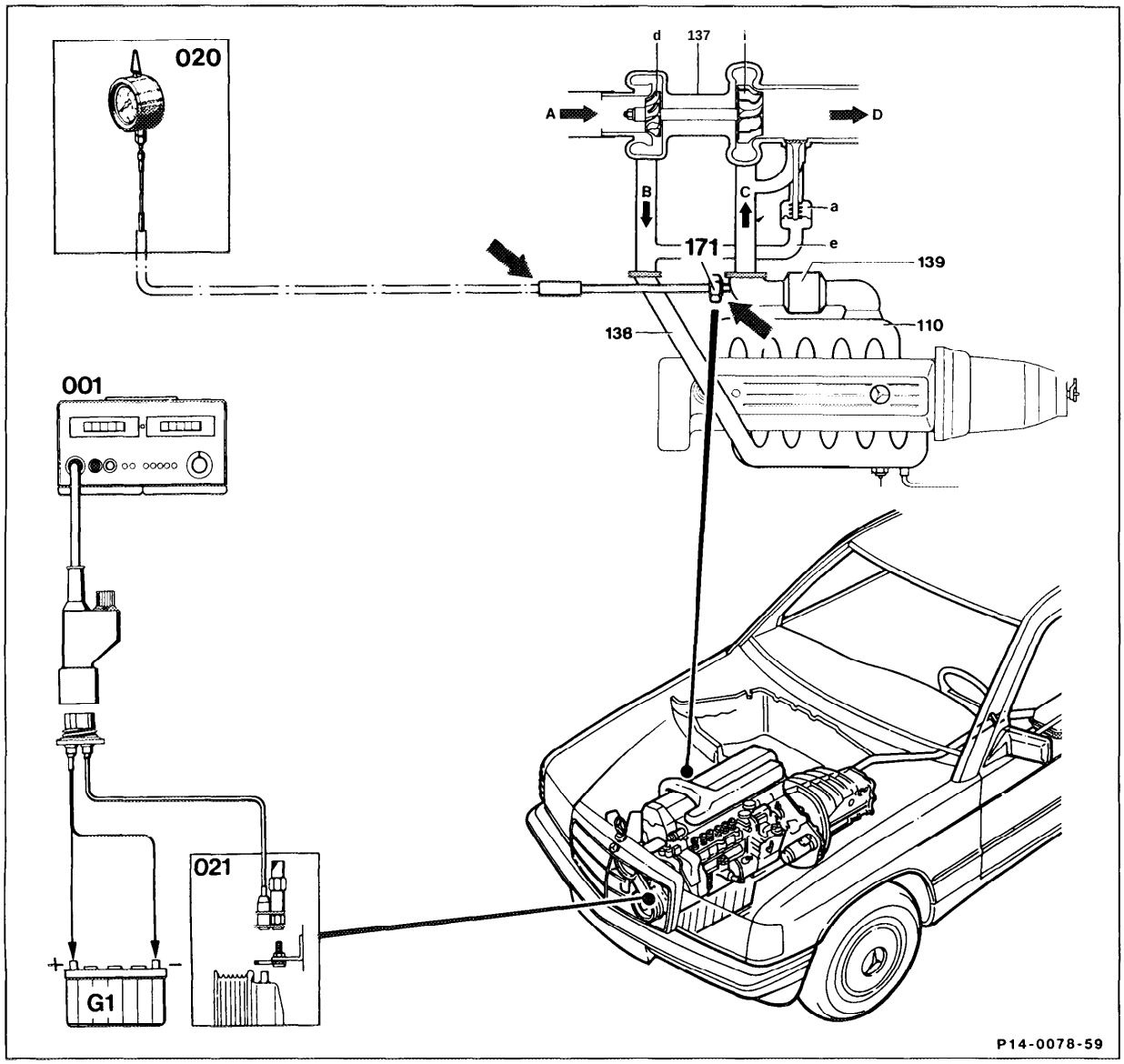
Bracket (157)	remove, install.
Sealing surfaces	clean.
Gasket (60 b)	replace.
Screw (60 a) 2 off	install, tightening torque 25 Nm.
Bolt for clip (119 a) Nut (139 c, 6 off M10)	install, tightening torque 45 Nm.

Note

Remove, install partition wall (A) (9 bolts), of which 6 are accessible from above and 3 are accessible from below.



14–150 ‘Testing exhaust backpressure - Turbodiesel



110	Exhaust manifold
137	turbocharger
138	Charge air pipe
a	boost pressure control valve
d	Compressor wheel
e	Control line
ı	Turbine wheel

A	Compressor inlet (fresh air)
B	Compressor outlet (precompressed air)
C	Exhaust gases to turbine wheel
D	Exhaust outlet

Digital tester (001) and TDC pulse generator (021)	connect, disconnect.
Screw plug (171)	remove, install.
Tester (020) with connection pipe	connect to exhaust manifold.
Engine	raise to operating temperature (coolant temperature 60-80° C)
Selector lever	move to position "P".
Engine	run up to 4000 rpm. Take test reading. **Specification: < 2.0 bar** Actual value > 2.5 bar. Perform regeneration of trap oxidizer as follows: with selector lever in position "2", run car on dynamometer or on road for a total of 2 minutes at full load. Test exhaust backpressure at 4000 rpm in position "P". **Specification: > 1.5 bar.** Repeat regeneration (max. once) if specified value is not reached, replace trap oxidizer and perform brief EDS test.

Note

If the the problem recurs after a short time, determine whether there are any special driving conditions (e.g. frequent short journeys, particularly in colder climatic conditions or prolonged idling).

Check the following before replacing the trap oxidizer:

1 EDS brief test (07.1-I 90)

2 Full throttle stop on injection pump (30-300)

3 Air cleaner element

4 boost pressure (09- 100)

5 Delivery of fuel pump (07-I 451146)

6 Fuel filter and pre-filter (07-245)

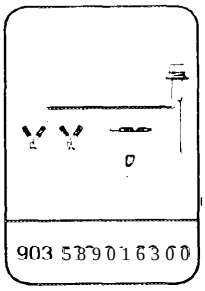
7 Start of delivery (07. I-I 17)

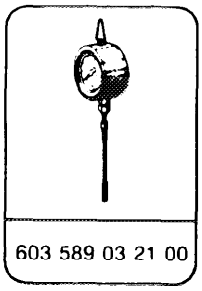
Note
Under normal driving conditions the test reading of the exhaust backpressure is approx. 2.0 bar.

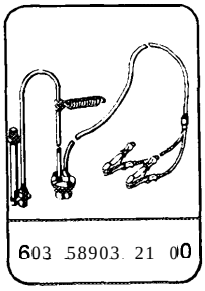
Test data

Selector lever in position "P"	Coolant temperature 60-80° C	At 4000 rpm approx. 2.0 bar

Special tools



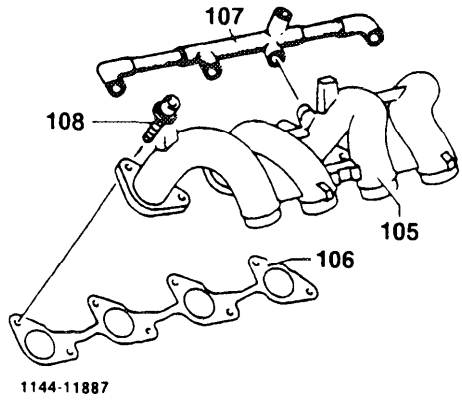




Commercial tester

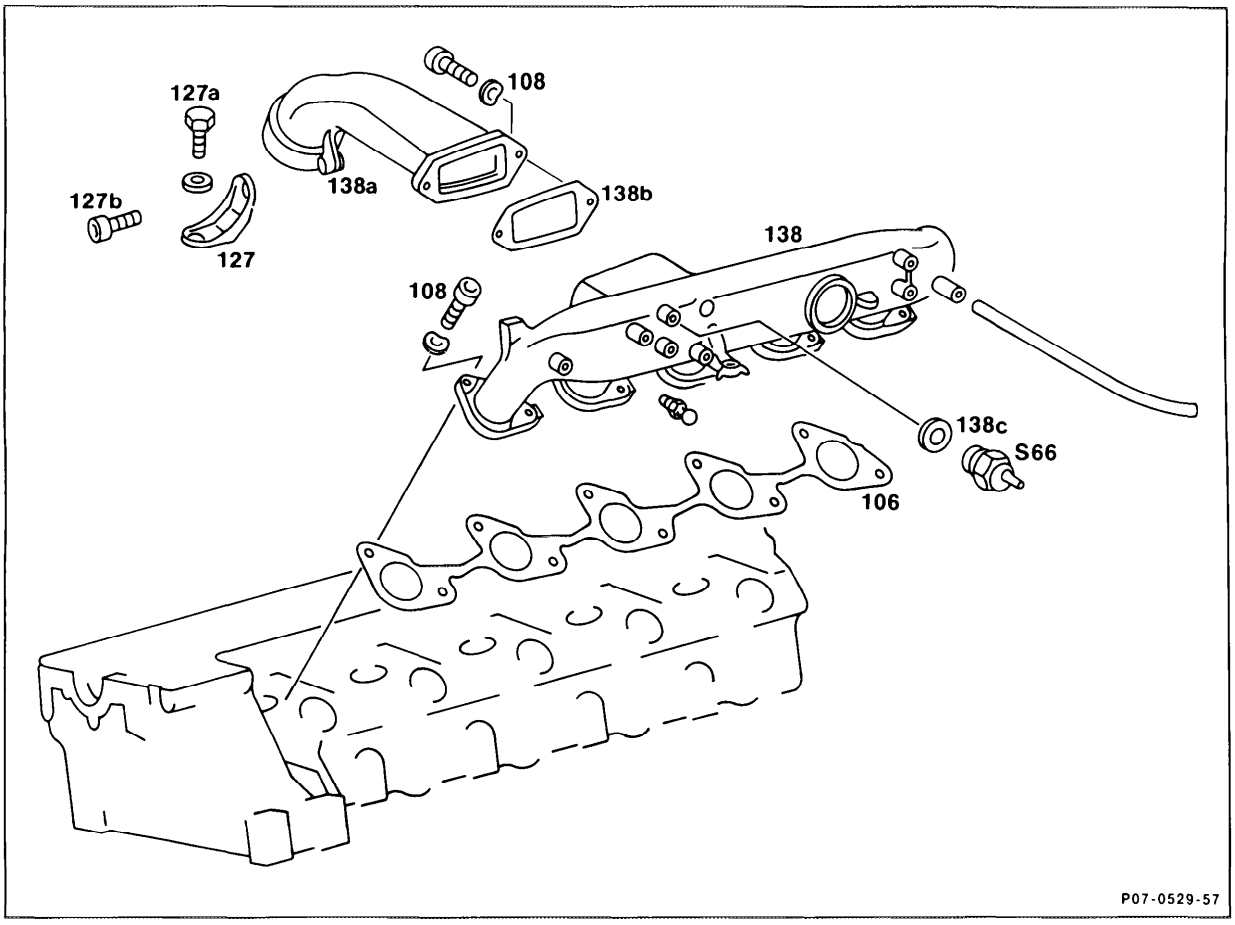
Digital tester	e.g.	Sun, EMT-1019 Master 3, Sun, MCM-2110. All-Test 361 O-MB

14-180 Removal and installation of intake manifold



Engine ventilation (107)	remove, reinstall.
Combination bolt M8 (108)	8, 10 or 12 off M 8 remove, reinstall, 25 Nm.
Intake manifold (105)	remove, reinstall.
Gasket (106)	replace.

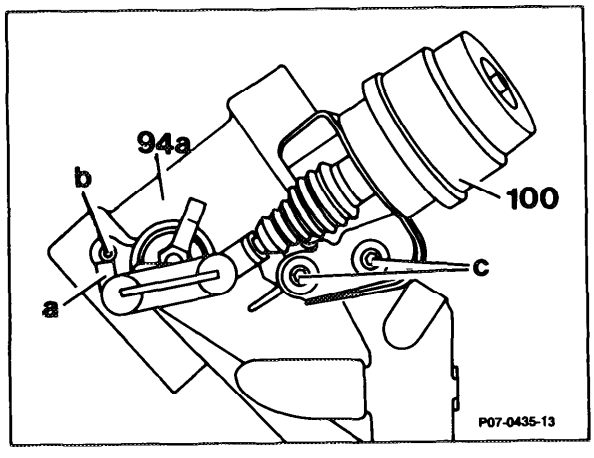
14–180 Removal and installation of charge air pipe - Turbodiesel



Pressure line (transparent) on charge air pipe . . .	disconnect, connect, loosen hose clamp.
Connector on pressure switch (S66)	disconnect, connect.
Pressure switch (S66)	remove, install, replace seal (138 c).
Bracket (127)	remove, install.
Screw-and-washer assemblies (108)	10 or 12 off, remove, install, torque 25 Nm.
Charge air connecting line (138a)	remove, put on, replace seal (138 b).
Charge air pipe (138)	remove, attach, replace gasket (106).

14–200 Removal and Installation of vacuum unit pressure control flap 1990 - Turbodiesel

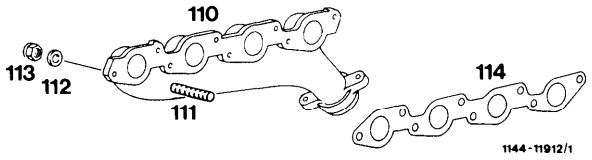
Engine 602.962



Vacuum unit (100)	remove, install.
Bolts (c)	tighten slightly.
Vacuum unit (100)	pressurize with 385 ± 5 mbar vacuum and slide into the elongated holes until the lever (a) contacts the stop (b). Tighten bolts (c) in this position. Bleed vacuum unit and repeat test, correcting the setting if required.

14-350 Removal and installation of exhaust manifold

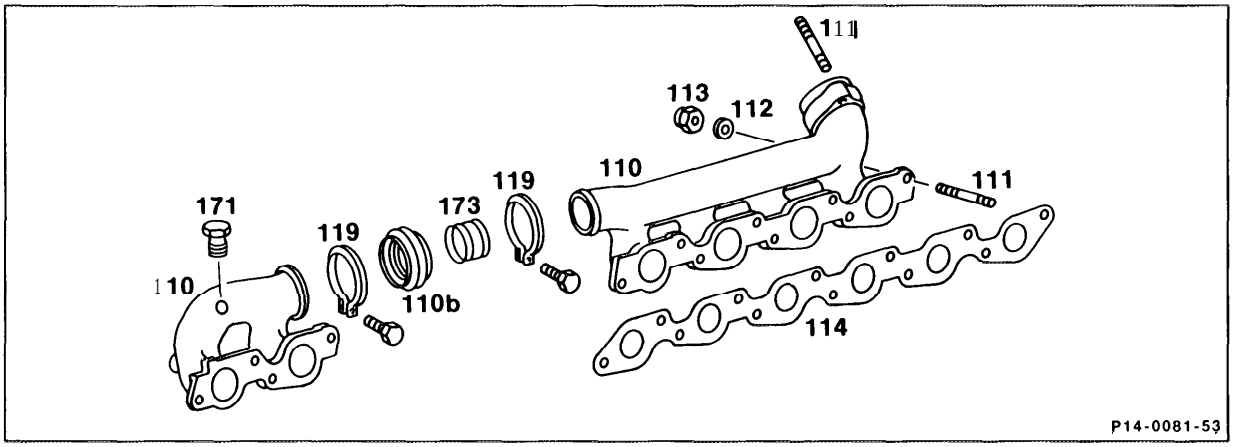
C. National version with exhaust gas recirculation



Clamp (119)	replace.
Nut (113)	8, 10 or 12 off Cu M 8, replace, 25 Nm.
Washer (112)	8, 10 or 12 off to item 113.
Exhaust manifold (110)	remove, reinstall.
Threaded studs in cylinder head (111)	8, 10 or 12 off, if damaged, replace, 12 Nm.
Gasket (114)	replace.
Flexible pipe (61)	remove, reinstall.
Exhaust gas recirculation valve (60)	remove, reinstall.
Exhaust gas recirculation line (120)	remove, reinstall.

14–350 Removal and installation of exhaust manifold - Turbodiesel

Preliminary operation
Turbocharger removed (09-I 50)



Clip (119, 2 off)	loosen.
Nut (113, 12 off)	replace, 25 Nm.
Washer (112, 12 off)	remove, install.
Metal hose (110 b)	remove, install.
Pipe (173)	remove, install.
Screw plug (171)	remove, install.
Exhaust manifold (110)	2-piece, remove, install.
Gasket (114)	replace.
Stay pin in cylinder head (111, 12 off)	check, replace if required.