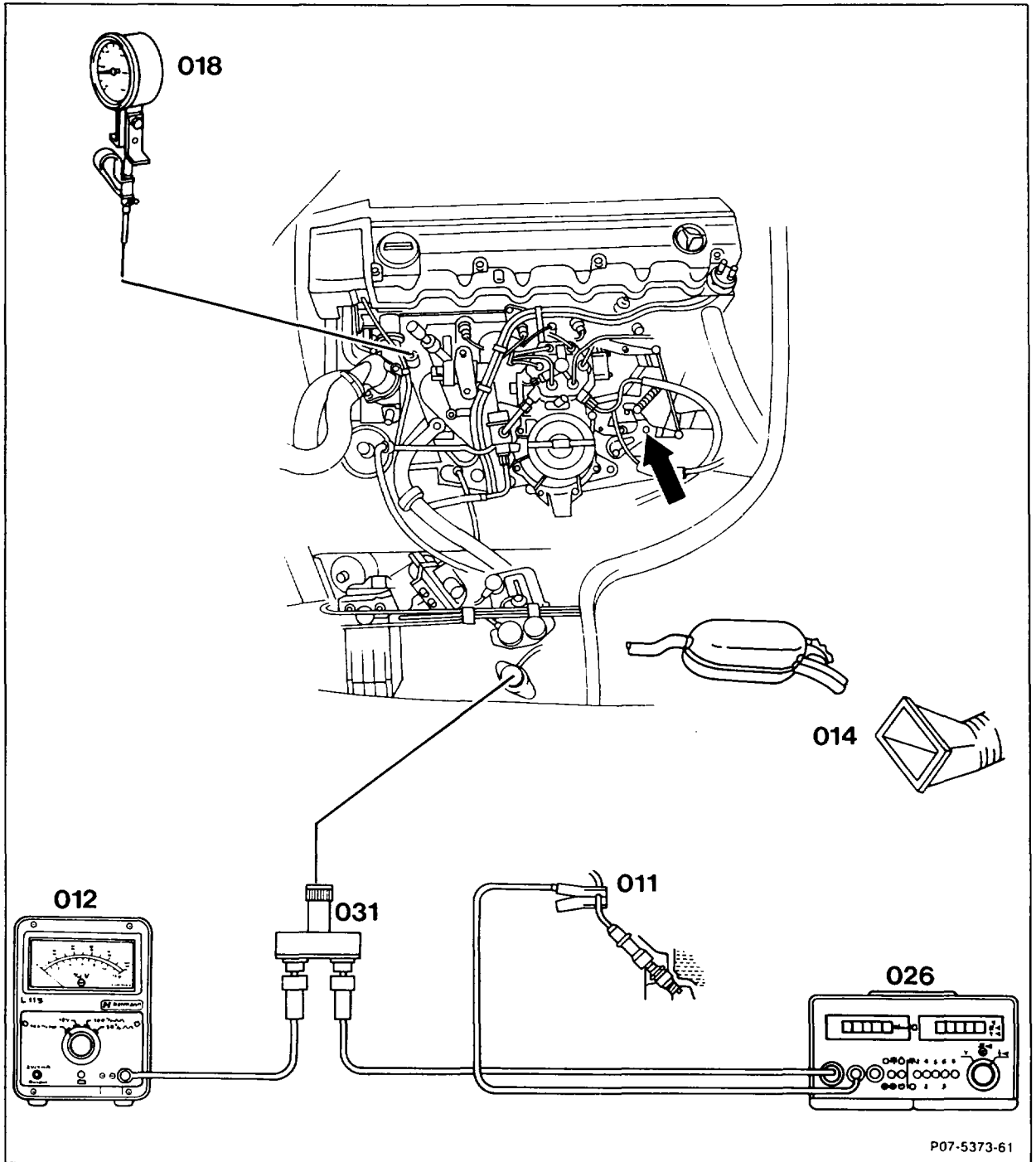


07.3-5203 Testing on/off ratio (USA) as of 1986

Operation no. of operation texts and work units or standard texts
and flat rates:
07-5203.



P07-5373-61

Air conditioner or automatic climate control switch off.
Selector lever move into position "P."


Testers	connect: oil remote thermometer (018) 124 589 07 21 00, lambda control tester (012), twin socket (031), engine tester (026), trigger clamp (011).
Extraction device (014)	position at exhaust tailpipe.
Accelerator control (arrow)	check ease of movement and condition.
Ignition timing	test (see table).
Engine oil temperature	approx. 80°C.
Idle speed	test (see table).
Lambda control	test (see table).




Any adjustment which is necessary must only be performed when replacing a fuel injection system component or performing engine repairs. Pay attention to note.
Install repair kit 102 070 01 74.

Smooth engine running check, switch on all ancillaries for this step.

Test and adjustment data

National version  1986 – 1989 information plate black

 as of 1990 information plate Federal black, California yellow

Engine	Version	Idle speed		Idle emissions level	Lambda control
		1/min	Control range	% CO	Control range %
103.94		700 ± 50	35–45%	–	1)
103.98		650 ± 50; as of model year 1990 700 ± 50			

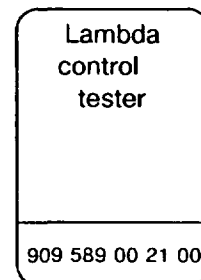
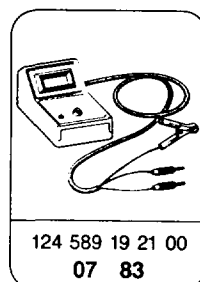
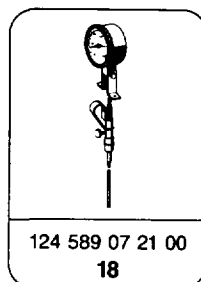
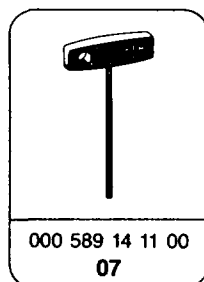
1) Test lambda control at 2500/min and read off average value. Detach regeneration line at regeneration valve for this step and close. Compare this reading with the idle speed reading. The average value at idle speed must not differ by more than ± 10 from the reading obtained at 2500/min.



EZL ignition timing

Engine	EZL ignition control unit	Engine speed 1/min	Ignition timing point in ° CA before TDC		
			Resistance trimming plug position or fuel type	Without vacuum	With vacuum
National version (USA)					
103.940	005 545 84 32	3200	Reference resistor 750 Ω	25–29	40–44
103.942	005 545 86 32	Idle speed		7–11	7–11
	006 545 73 32				
	006 545 75 32				
	008 545 61 32				
	008 545 63 32				
	008 545 95 32				
	009 545 79 32				
103.981	004 545 44 32	3200	Reference resistor 750 Ω	27–31	40–44
103.983	004 545 46 32	Idle speed		6–11	6–11
	005 545 85 32				
	005 545 87 32				
	006 545 74 32				
	006 545 76 32				
	008 545 96 32				
	009 545 80 32				

Special tools

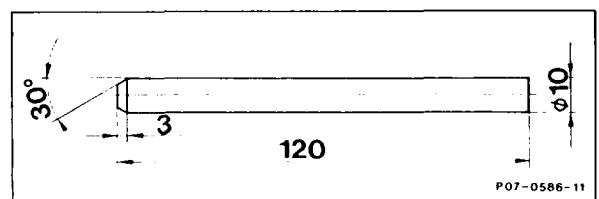


Commercially available tools and testers (see Workshop Equipment Manual)

Designation	e.g. Make, order no.
Twin socket	Hermann, ECD 53
Engine tester (engine speed, dwell angle, ignition angle)	Bosch, MOT 001.03

Shop-made tool

Slugging drift for steel anti-tamper lock.



Note

The adjusting device (42) for the fuel/air mixture setting is protected against unauthorized adjustment with a steel anti-tamper lock (41).

This anti-tamper lock is knocked in with a special tool in the factory after setting the fuel/air mixture and **must not be removed in the workshop.**

The fuel/air mixture setting may only be corrected when replacing a component of the fuel injection system (e.g. fuel distributor) or when performing engine repairs.

In this case, the adjusting device (42) must be replaced.

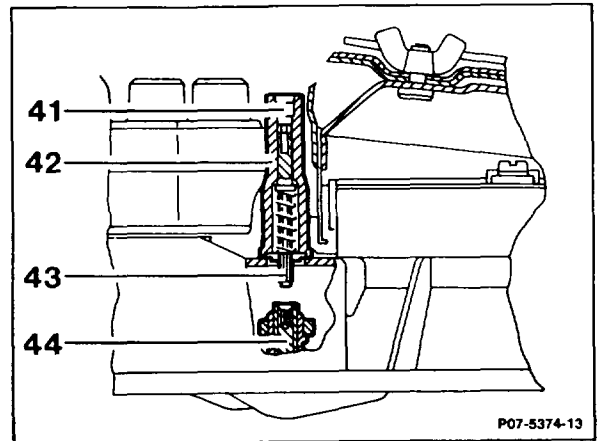
The lambda control must not be tested when the engine is too hot, e.g. immediately after driving sharply or after measuring engine output on the dynamometer.

1 Switch off air conditioner or automatic climate control. Move selector lever into position "P."

2 Connect testers:
oil remote thermometer (018) 124 589 07 21 00,
lambda control tester (012),
twin socket (031),
engine tester (026),
trigger clamp (011).

3 Position extraction device (014) at exhaust tailpipe.

4 Check ease of movement and condition of accelerator control.



- 41 Steel anti-tamper lock
- 42 Adjusting device
- 43 Hexagon head
- 44 Mixture regulating screw


- 5 Test ignition timing (see table).
- 6 Warm engine up to oil temperature of approx. 80°C.
- 7 Test idle speed (see table).

Note

If idle speed differs, test electronic idle speed control (07.3–2006).

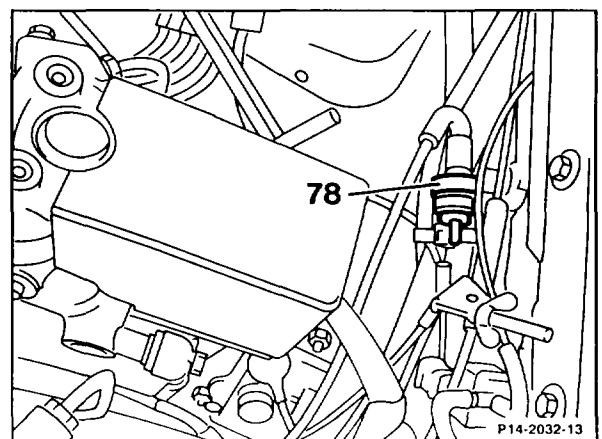
- 8 Test lambda control.

Note

Lambda control tester	Position
Bosch	100% IR
Hermann	100% 

The readout must fluctuate during the measurement. If a constant readout is displayed there is a fault in the lambda control, e.g. oxygen sensor unplugged. See "Testing electronic components of KE injection system" (07.3–0121) for troubleshooting diagram.

- Detach regeneration line to throttle valve assembly at regeneration valve (78) and seal.
- Connect tester to diagnostic socket.
- Test button as specified in the table. Test on/off ratio at 2500/min and read off average value. Compare this reading with the idle speed value. The average value at idle speed must not differ by more than ± 10 (as of 1989 +10) from the reading obtained at 2500/min.



Only (USA) California as of model year 1988 and (USA) (J) as of model year 1990

The KE control unit must be switched over to on/off ratio output with the pulse reader or with the pushbutton switch (California only) at the test coupling for diagnosis (X92 or X11/4) (see also 07.3-0121, section d).

(USA) Californien version:

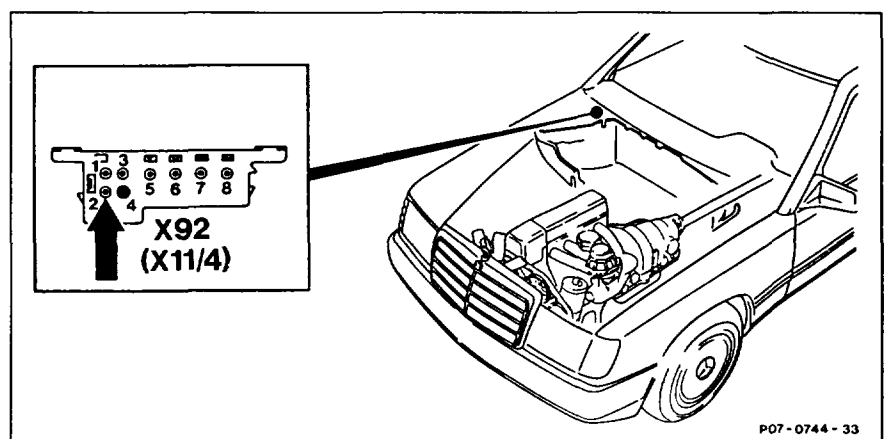
Operate pushbutton switch (2, arrow) at test coupling (X92 or X11/4) for between 2 and 4 seconds. LED (4) flashes once (no fault stored in system).

Once again press pushbutton switch (2) for between 2 and 4 seconds. KE control unit is switched over to on/off ratio output. LED shows a steady light.

Note

"CHECK ENGINE" warning light does not come on.

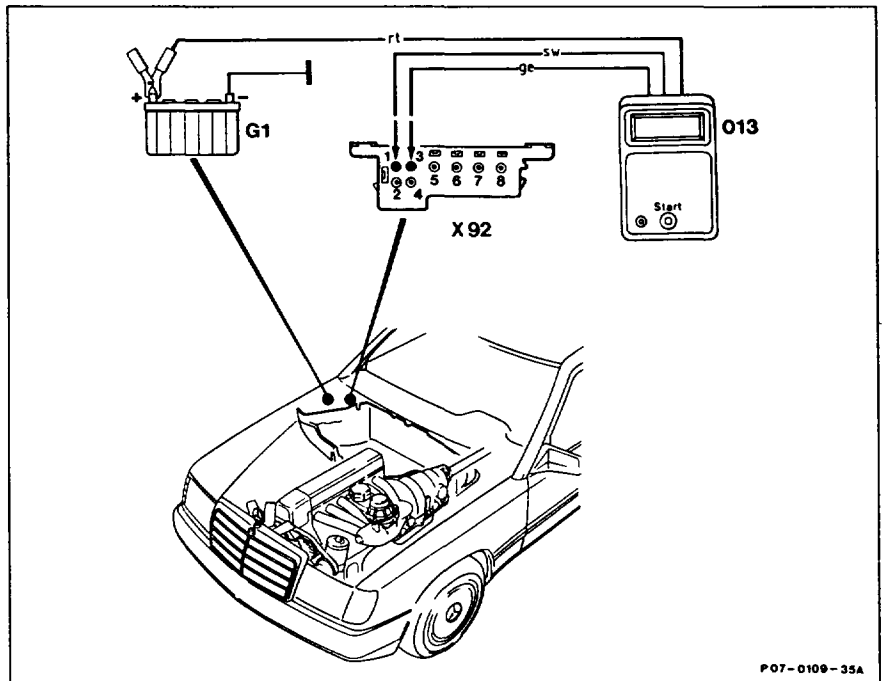
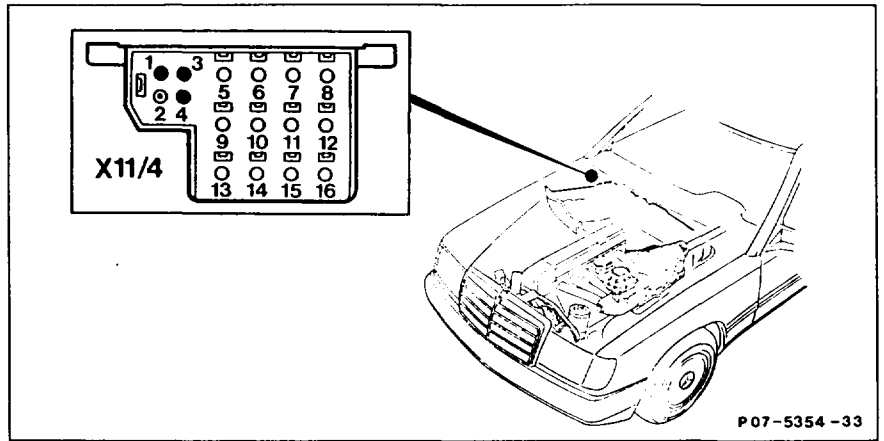
If "CHECK ENGINE" does not light up, perform test program 07.3-0121, testing electrical components of KE injection system.



Models 124, 126,
201 up to model year
1989

P07-0744-33

Models 124, 126, 201
as of model year 1990



- 013 Pulse counter
- G1 Battery
- X92 Test coupling for
(X11/4) diagnosis (flash code)

Note

The fault memory must have been read out first before the output for the fault diagnosis using the on/off ratio can be performed.

If the pulse readout is "1" or after the last fault has been read, the pushbutton switch on the pulse counter must once again be pressed (2-4 seconds) in order to output the on/off ratio.

9 Set lambda control.

If it is necessary to set the on/off ratio after performing engine repairs or replacing a part of the KE injection system, proceed as follows:

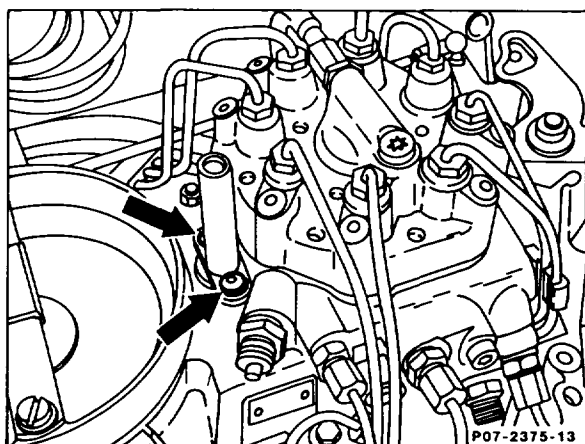
- Take off air cleaner.

- Make punch marks in the middle of the shear bolts (arrows) and drill approx. 6–8 mm deep with a 2.5 mm twist drill.



Do not drill through bolts as the metal swarf can cause engine damage. Thoroughly remove metal swarf with cleaning rags.

- Unscrew shear bolts with left-hand twist drill.

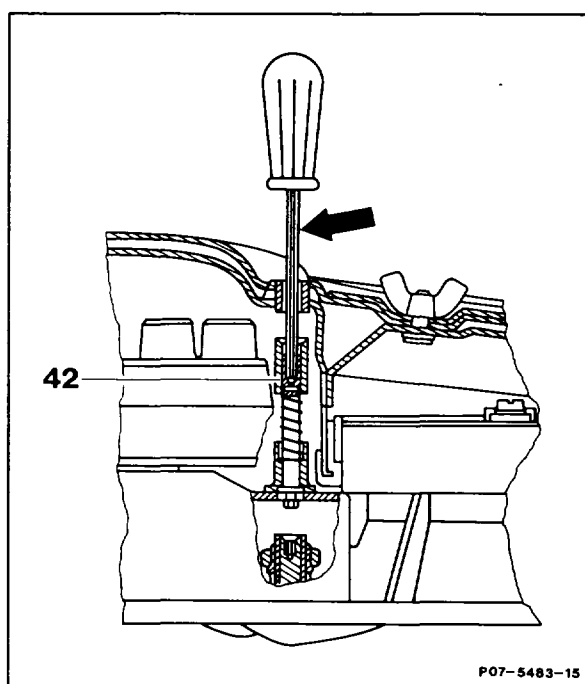


- Install new repair kit, part no. 102 070 01 74. Tighten bolts until the head shears off.

- Fit on air cleaner.

- Start engine.

- Insert the screwdriver (arrow) through the opening in the top of the air cleaner and press onto the adjusting device (42).

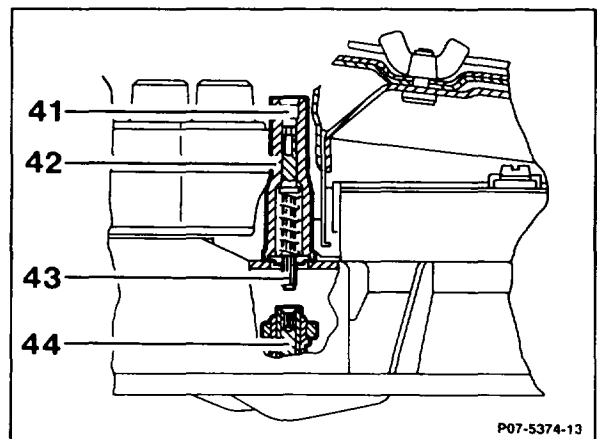


- Press the adjusting device down with a screwdriver against the spring force, turn slightly until the hexagon head (43) engages in the mixture regulating screw (61):
Turning to left = leaner – on/off ratio rises.
Turning to right = richer – on/off ratio drops.

After each adjustment, briefly accelerate and check deviations between 2500/min and idle speed, adjust if necessary.

- Switch off engine.
- Take off air cleaner.

- Use the shop-made slugging drift to knock in steel anti-tamper lock (41) with the chamfered side sufficiently for the surface of the anti-tamper lock to be flush with the bottom edge of the taper of the adjusting device (42) or to be slightly deeper.



- Install air cleaner.
- Re-connect regeneration line.

10 Check smooth engine running by moving selector lever into Drive mode, switching on air conditioner/automatic climate control, turning power steering to full lock. Engine must still run smoothly. If necessary, test electronic idle speed control (07.3-2006).

Note

Models 107, 124, 126

Since January 1989 the steel anti-tamper lock (41) has been designed as a steel ball, previously steel cylinder.

Production breakpoint: 12/88

Model	Vehicle ident end no.
124 Station Wagon	F 096787
201	F 574637

Production breakpoint: 01/89

Model	Vehicle ident end no.
124 Sedan	A 933300
124 Coupé	A 934867
126	A 458731

