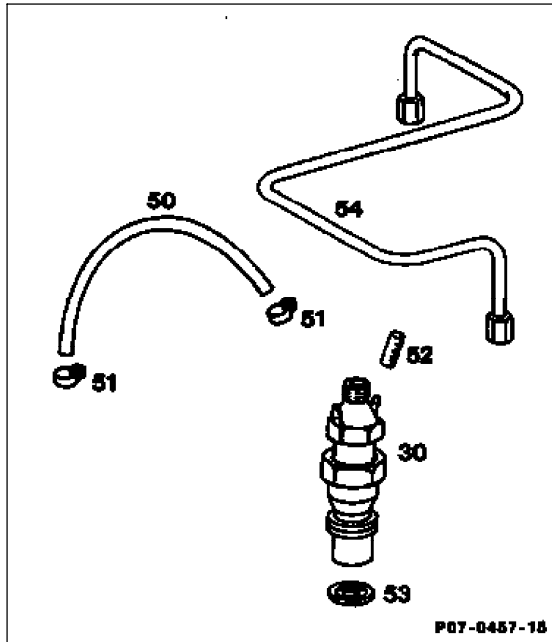


07.1-6810 Removing and Installing Injection Nozzle

Operation no. of operation texts and work units or standard texts and flat rates: 07-6810



Hose clip (S only) (51)	_____	open, close.
Leak oil hose (50), plug (52)	_____	remove, fit on.
Injection line (54)	_____	remove, install, tightening torque 10-20 Nm as reference value.
Injection nozzle (30)	_____	remove, install, tightening torque 70-80 Nm, Special tool 001 589 65 09 00.
Nozzle shim (53)	_____	renew.

Special tool

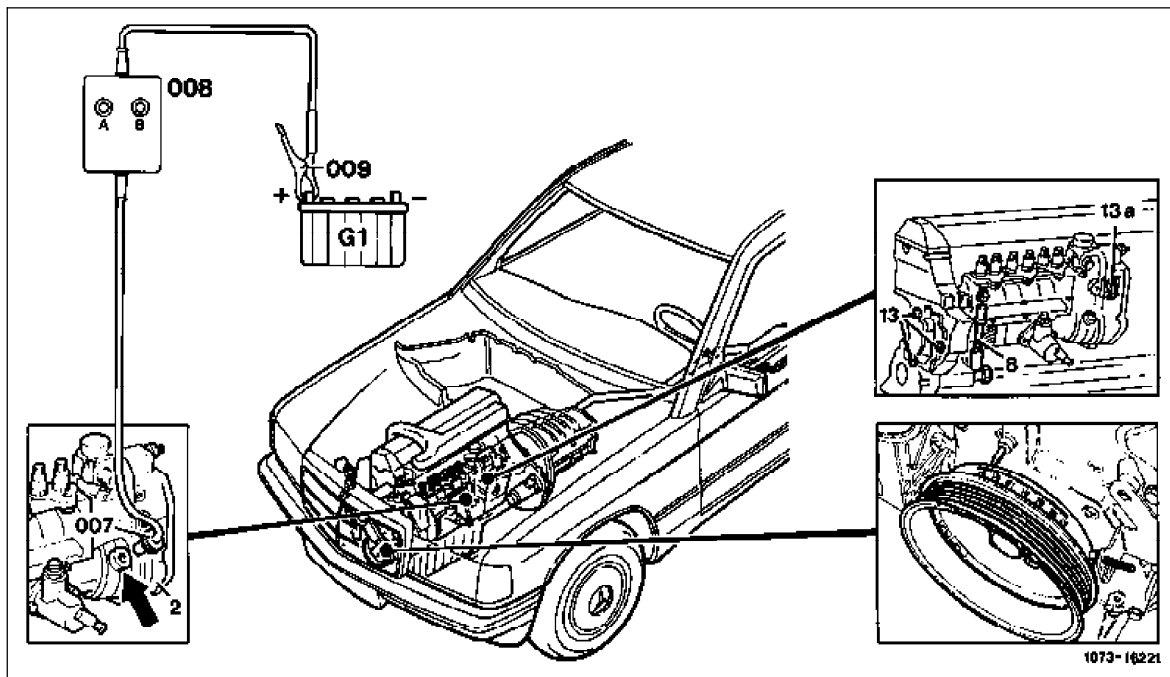


001 589 65 09 00
03 07 32

Test values

Model year	Indirect injection timing (after TDC)	
	RI (reference impulse) checking value	RI (reference impulse) adjusting value
1984-89	15° c 1°	15°
starting 1990	14°±0.5°	14°±0.5°

Adjusting injection timing (position sensor RIV method) - after checking (0760.2)



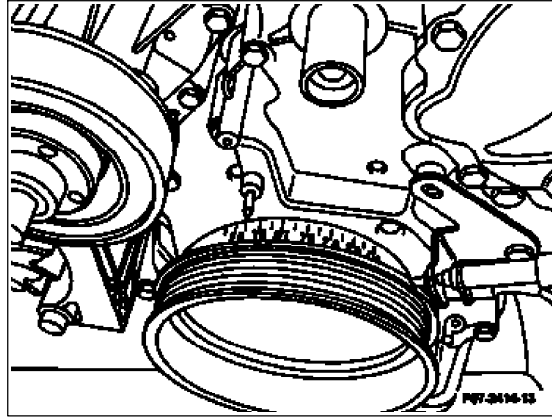
- Turn crankshaft in direction of rotation to _____ value in chart
- Injection pump mounting bolts (13 and 13A) at flange and bracket _____ loosen, 20-25 Nm.
- Indicator (008) and clamp (009) _____ connect to B+
- Pivot injection pump by turning injection timing adjustment screw (8) _____ both lamps, A and B, must light up in indicator (008)
- Adjustment screw direction
 - Right = Retard injection timing
 - Left = Advance injection timing
- RI (reference impulse) adjusting value: refer to chart
- Position sensor (007) _____ remove
- Plug (arrow) _____ screw in
- Regulating linkage _____ check, adjust if necessary (repair instruction 30-300)
- Leak check with running engine _____ perform
- Engine oil level _____ check, correct if necessary

Note:

Check injection timing before adjusting (0760.2)

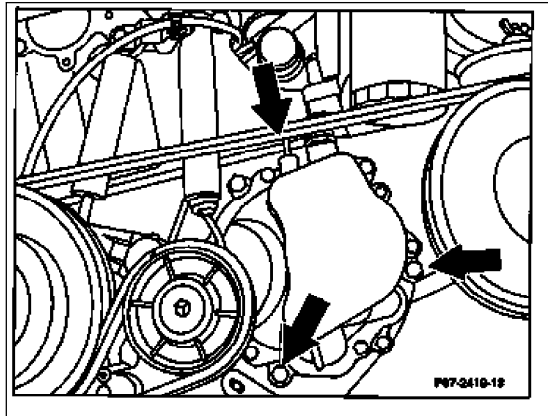
Adjusting

1. Turn crankshaft in direction of rotation to 15° ATDC on 1984-89 models; 14° ATDC on 1990 and later models.



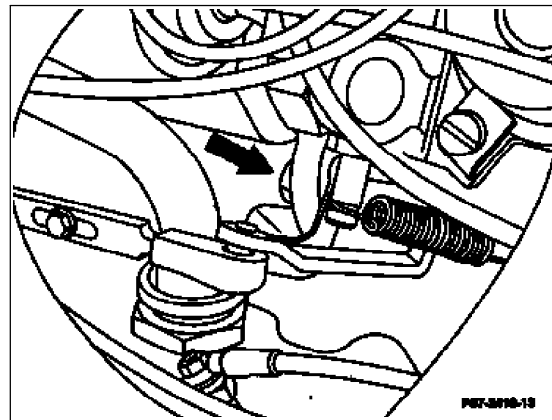
P07-2414-13

2. Loosen mounting bolts (arrows) at injection pump flange and bracket (arrow).



P07-2419-13

Bracket mounting bolt



P07-2418-13

3. Connect indicator (008) and clamp (009) to battery positive terminal.

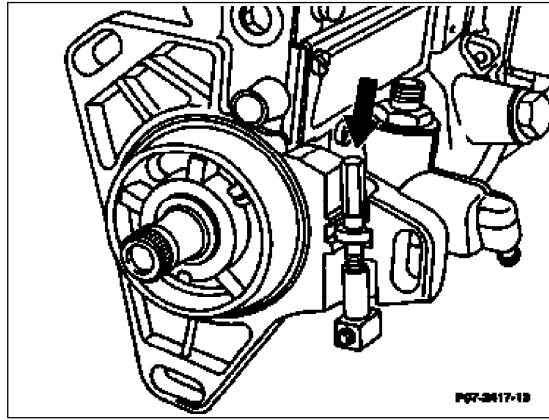
- Pivot injection pump by turning adjusting screw until both lamps A and B light.

Adjustment screw direction

- Right = Retard injection timing
Left = Advance injection timing

RI nominal value:

- 15° ATDC on 1984-89 models;
14°±0.5° ATDC on 1990 and later models.



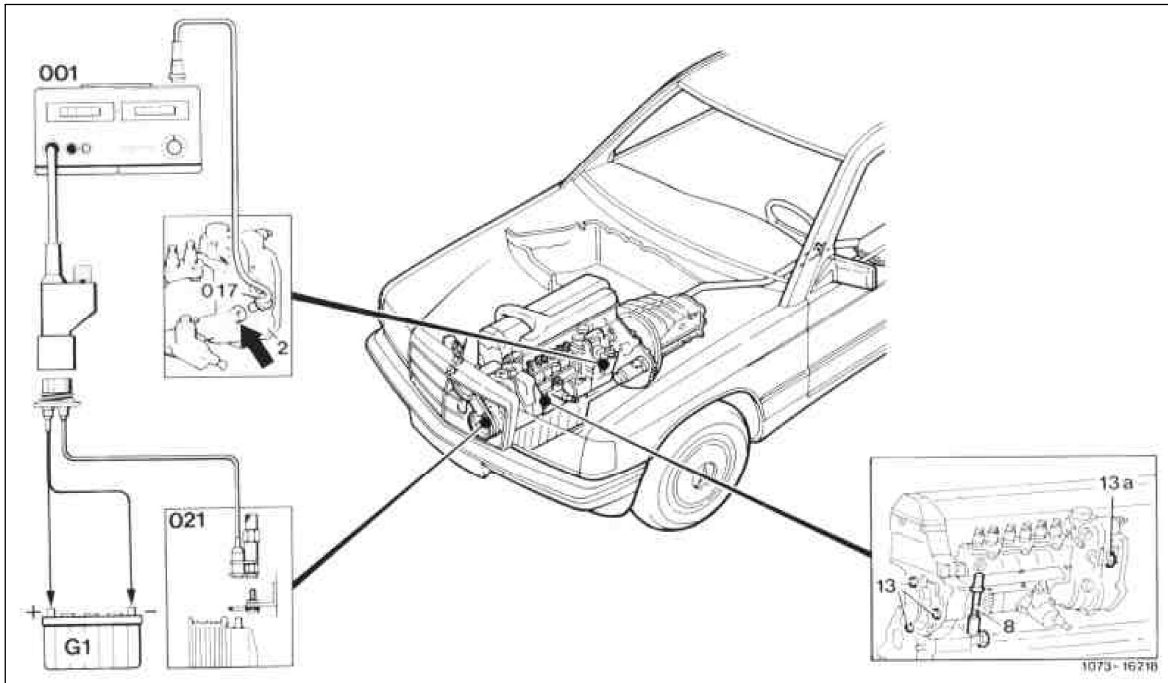
P07-2417-13

Note:

If the adjustment range is inadequate, the pump must be repositioned. Refer to SMS, Job No. 07.1-200, Injection pump removal and installation.

- Torque mounting bolts on injection pump flange and bracket to 20-25 Nm.
- Remove position transmitter.
- Install screw in plug, torque to 30-35 Nm.
- Check regulating linkage, and adjust if necessary (SMS, Job No. 30-300).
- Check for leaks with engine running.
- Check engine oil level, and correct if necessary.

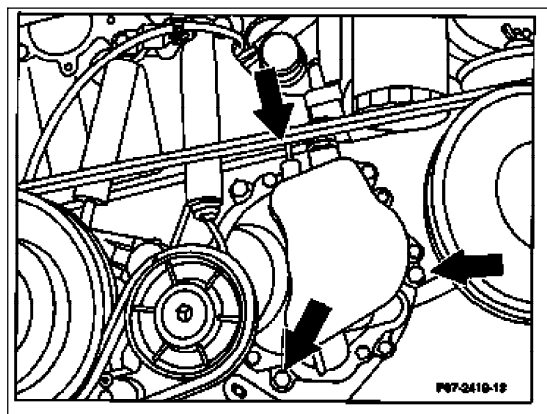
Adjusting injection timing using digital tester (RIV method) - after checking (0760.2)



- Injection pump mounting bolts (13 and 13A) at flange and bracket _____ loosen
- Engine _____ run at idle speed
- RI value (indirect injection timing) _____ adjust by turning injection timing adjustment screw (8)
- Adjustment screw (8) direction
 - Right = Retard injection timing
 - Left = Advance injection timing
- Engine _____ shut off
- Injection pump mounting bolts (13 and 13A) at flange and bracket _____ torque to 20-25 Nm.
- Tester _____ disconnect
- Plug (arrow) on governor _____ screw in and torque to 30-35 Nm
- Regulating linkage _____ check, adjust if necessary
(repair instruction SMS, Job No. 30-300)
- Leak check with running engine _____ perform
- Engine oil level _____ check, correct if necessary

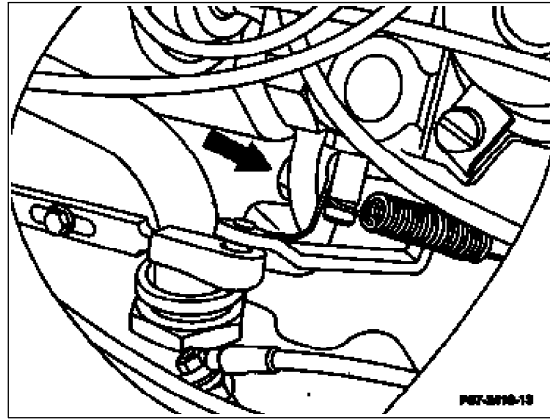
Note:
Check injection timing before adjusting (0760.2)

1. Loosen mounting bolts (arrows) at injection pump flange and bracket (arrow)



P07-2419-13

Bracket mounting bolt



P07-2416-13

P07-2418-13

2. Run engine at idle speed.
3. Adjust RI value (indirect injection timing) by turning adjusting screw.

RI nominal value:

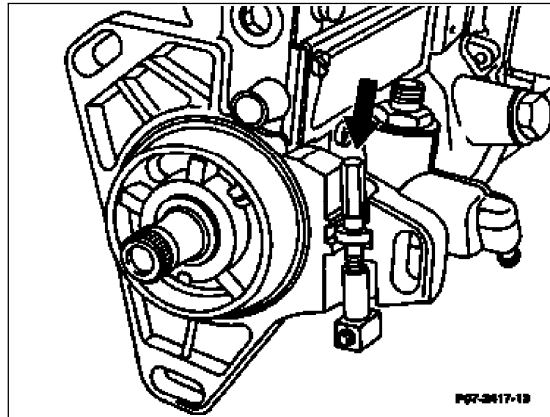
15° ATDC on 1984-89 models;

14°±0.5° ATDC on 1990 and later models.

Adjustment screw direction

Right = Retard injection timing

Left = Advance injection timing



P07-2417-13

P07-2417-13

Note:

If the adjustment range is inadequate, the pump must be repositioned. Refer to SMS, Job No. 07.1-200, Injection pump removal and installation.

4. Turn engine off.
5. Disconnect tester.
6. Install screw in plug on governor and torque to 30-35 Nm.
7. Torque mounting bolts on injection pump flange and bracket to 20-25 Nm.
8. Check regulating linkage, and adjust if necessary (SMS, Job No. 30-300).
9. Check for leaks with engine running.
10. Check engine oil level, and correct if necessary.