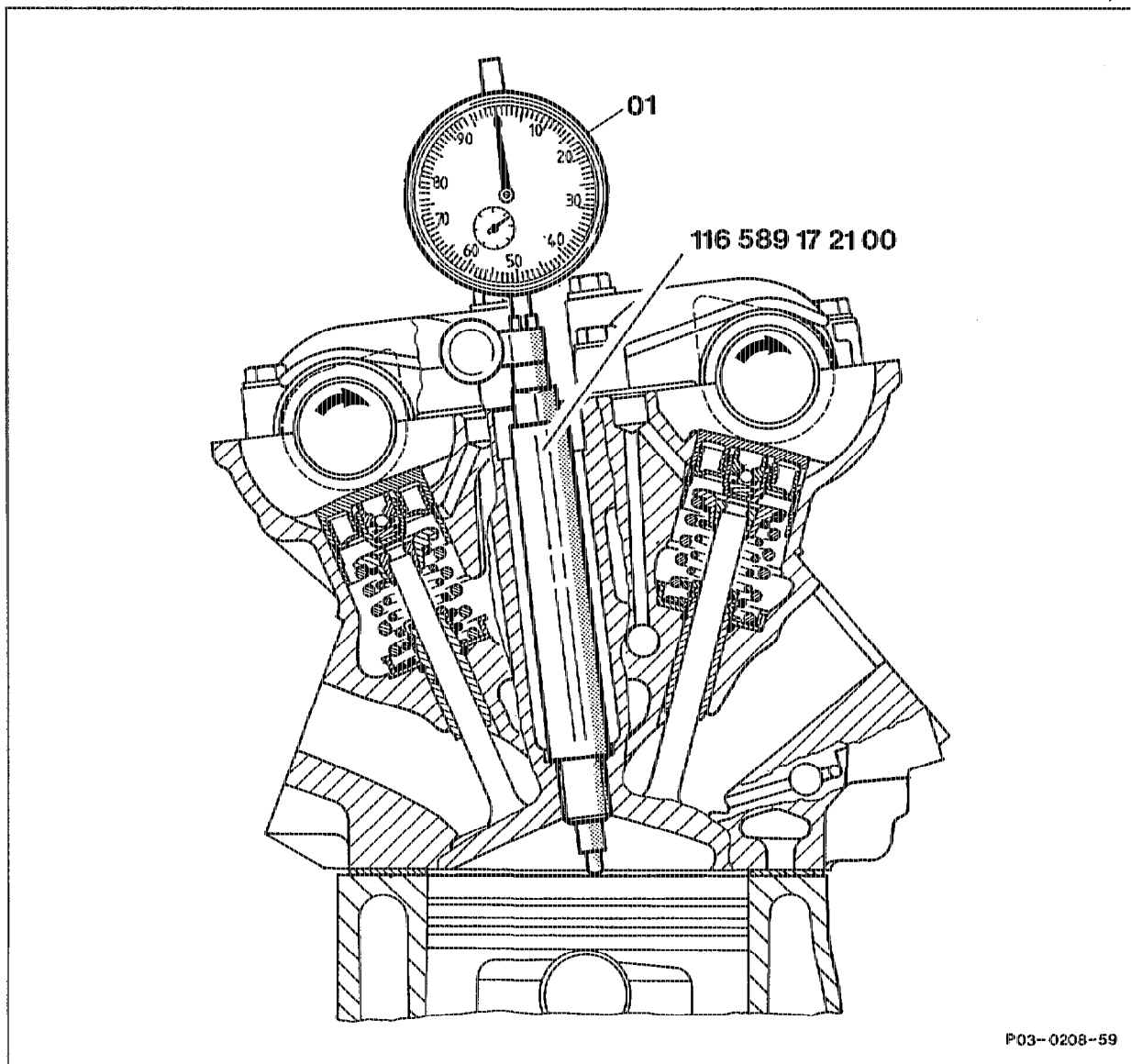


## 03-3450 Checking and correcting setting of TDC sensor

Operation no. of operation texts and work units or standard texts  
and flat rates  
03-1101, 1122



P03-0208-59

Ground cable of battery .....	disconnect, connect.
Poly V-belt tensioning device .....	remove, install (13-3450).
Right cylinder head cover .....	remove, install (01-0500).
Piston of no. 1 cylinder .....	set to 10° before TDC.
Spark plug at no. 1 cylinder .....	remove, install (25 Nm)
Measuring pin 116 589 17 21 00 .....	screw into spark plug thread of No. 1 cylinder, unscrew (step 6).
TDC sensor .....	remove, install (step 7).

### Checking setting of TDC sensor

Dial gauge (01) .....	clamp tight in measuring pin with 4 mm preload, special tool 116 589 17 21 00 (step 8).
Crankshaft .....	turn in direction of rotation of engine and set TDC with dial gauge (01) (step 8).
Large point of dial gauge .....	set to "0" (step 8).
Engine .....	rotate with wrench socket in direction of rotation of engine until dial gauge has moved back by the value, see table "Data" (20° after TDC), special tool 001 589 65 09 00.
Fixing device .....	insert into adjusting slide, special tool 119 589 00 21 00 (step 10).
Fixing device .....	must engage in measuring cam on vibration damper, special too 119 589 00 21 00 (step 10).

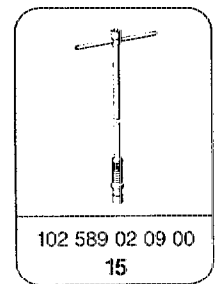
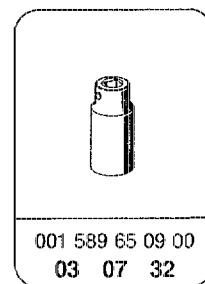
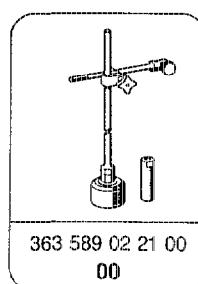
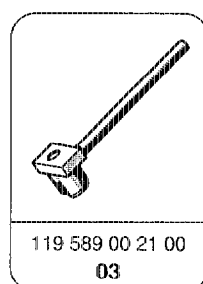
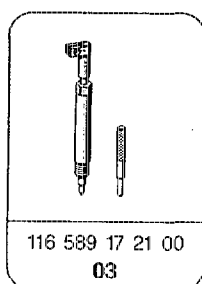
### Correcting setting of TDC sensor

Nut of adjusting slide .....	slacken (step 11).
Adjusting slide .....	move until fixing device locks in place in measuring cam on vibration damper, special tool 119 589 00 21 00 (step 11).
Nut of adjusting slide .....	tighten (step 12).

### Piston travel at crankshaft setting of 20° after TDC

Engine	119.960	119.970/974	119.971
Measurement through spark plug bore	3.25 mm	3.28 mm	2.99 mm
Vertical to piston	3.27 mm	3.30 mm	3.01 mm

### Special tools



### Commercially available tool

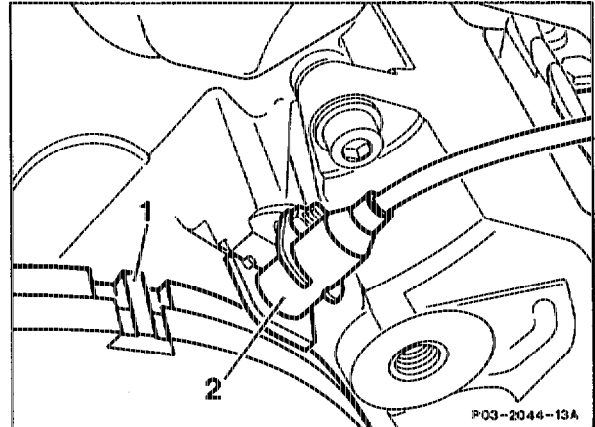
Dial gauge A 1 DIN 878

e. g. Mahr  
D-7300 Esslingen  
Order no. 311 000

### Notes

The TDC sensor (2) with bracket is attached to the timing case cover.

The measuring cam (1) on the vibration damper must be positioned in the middle below the TDC sensor (2) when the crankshaft is in the position 20° after TDC.



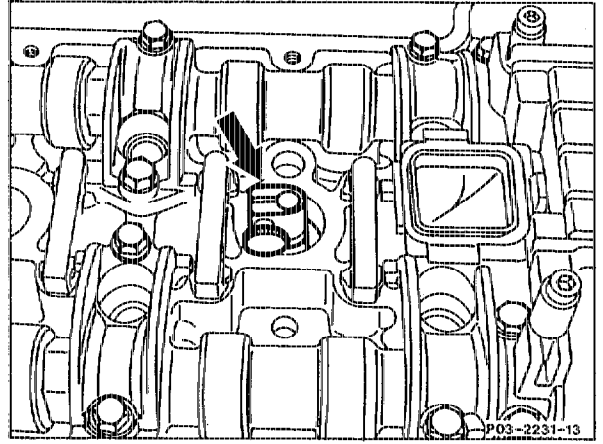
The setting of the TDC sensor must be checked and corrected:

- When replacing the crankshaft of the vibration damper.
- When replacing the timing case cover.
- When fitting parts to basic engines.

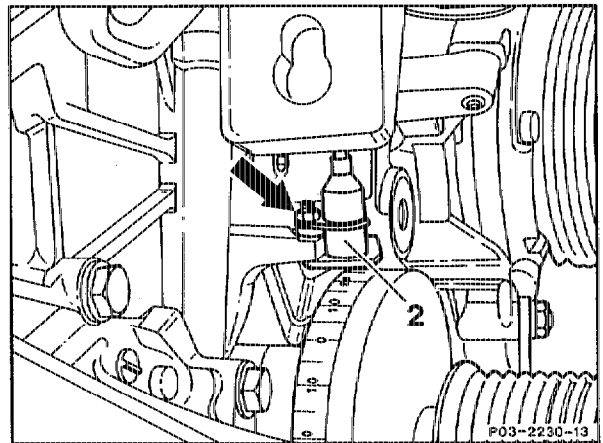
With the cylinder head removed, attach the dial gauge holder to the crankcase and position dial gauge pin on the piston crown.

- 1 Disconnect ground cable at battery.
- 2 Remove poly V-belt tensioning device (13-3450).
- 3 Remove right cylinder head cover (01-0500).
- 4 Position piston of No. 1 cylinder to 10° before TDC.
- 5 Unscrew spark plug of No. 1 cylinder.

6 Screw measuring pin (arrow), special tool 116 589 17 21 00, into spark plug bore at No. 1 cylinder.



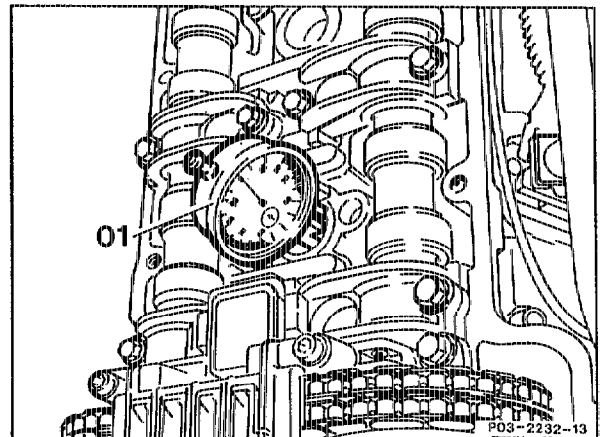
7 Unscrew hexagon nut (arrow) and withdraw TDC sensor (2).



### Checking

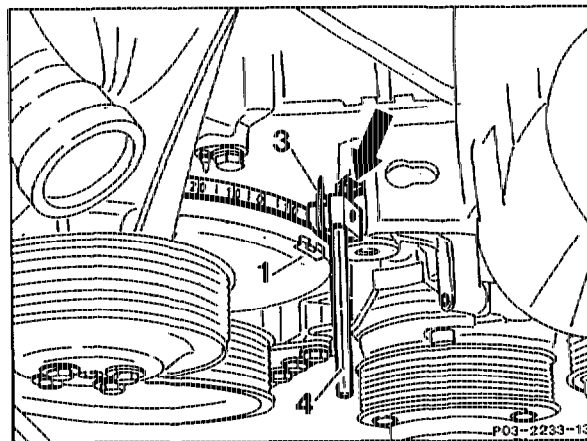
8 Clamp dial gauge (01) tight into measuring pin, special tool 116 589 17 21 00, with 4 mm preload.

Rotate crankshaft in direction of rotation of engine and set TDC precisely with the dial gauge (01). Turn scale of dial gauge until large pointer of gauge (01) is set to "0".



9 Rotate crankshaft further in direction of rotation until the dial gauge has moved back by the relevant value (piston travel).

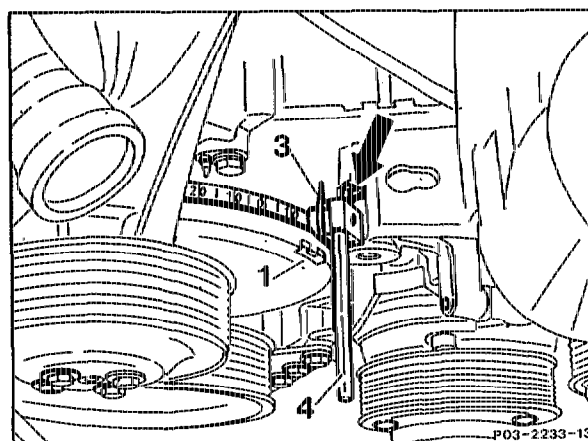
10 Position fixing device (4) 119 589 00 21 00 into the setting slide (3).  
The groove of the fixing device (4) must engage in the measuring cam (1) on the vibration damper.  
If the fixing device (4) does not engage, correct position of setting slide (3).



### Correcting

11 Slacken nut (arrow) of setting slide and move it until the fixing device (4), special tool 119 589 00 21 00, engages in the measuring cam (1).

12 Screw on setting slide (3) and remove fixing device (4).



13 Insert TDC sensor (2) and screw on (arrow).

14 Remove dial gauge and measuring pin.

15 Install in the reverse order beginning from step 5.

