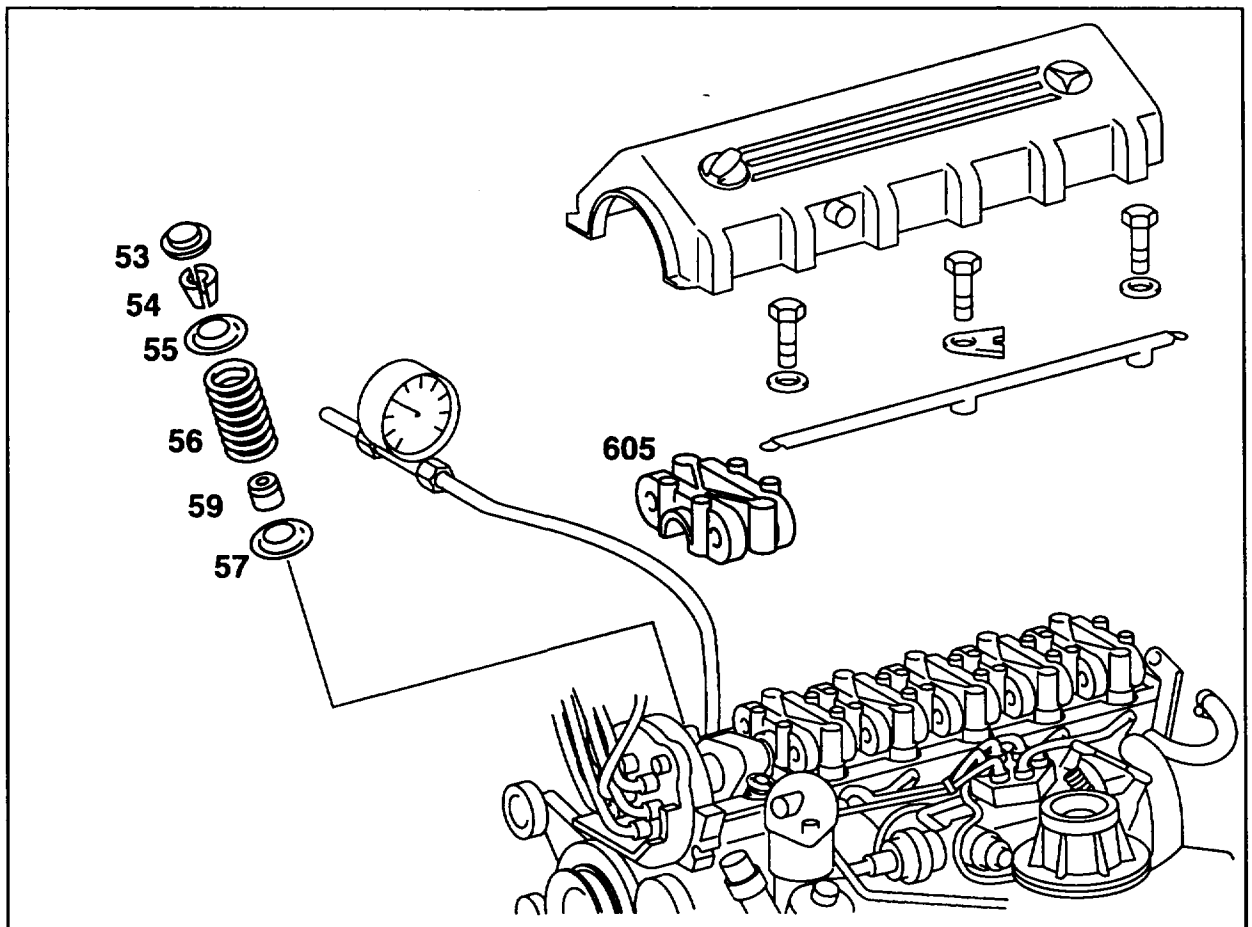


05-2500 Removing and installing valve springs

Preceding work:
 Air cleaner removed (09-1051).
 Camshaft oil pipe removed (18-4200).
 Spark plugs removed (15-1031)

Operation no. of operation texts and work units or standard texts
 and flat rates
 05-3510



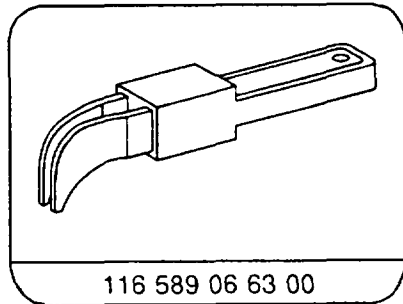
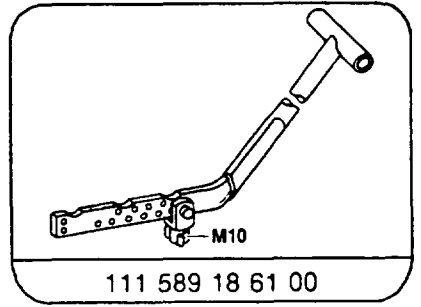
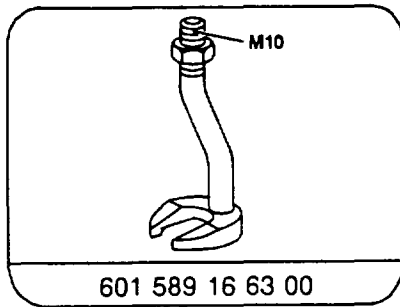
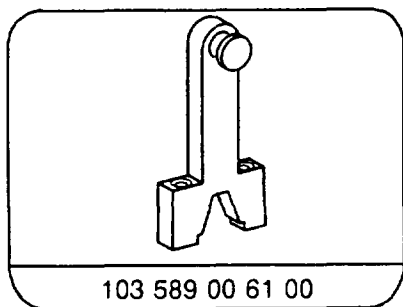
P05-5513-57

Camshaft bearing cap (605) of the relevant cylinder	remove, install (05-2190)
Ball sockets (53)	take off, insert. Use magnetic finger 116 589 06 63 00 (step 2)
Piston of relevant cylinder	position to TDC (step 3)
Supporting bracket 103 589 00 61 00	install (step 4)
Relevant cylinder	pressurize (step 5)
Valve collets (54), valve spring retainer (55) and valve springs (56)	remove, install. Use lever presser 111 589 18 61 00 and thrust piece 601 589 16 63 00 (steps 6 to 9)

Upper and lower valve spring retainers

(55 and 57)	check for signs of scores (visual inspection) (step 12); remove valve stem seals if necessary (05-2700) and replace lower valve spring retainer (57).
Valve keyway	check
Valve springs (56)	check (05-2600)
Valve length	check; remove valve stem seal (59) and lower valve spring retainer (57) (05-2700) for this step and check size from valve stem end to contact surface on cylinder head, see (05-2910)

Special tools



Commercially available tools

Cylinder leak tester	eg. Bosch, EFAW 210 A Sun, CLT 228
Tweezers, straight 160 mm with rounded tips	eg. Stahlwille D-42349 Wuppertal

Note

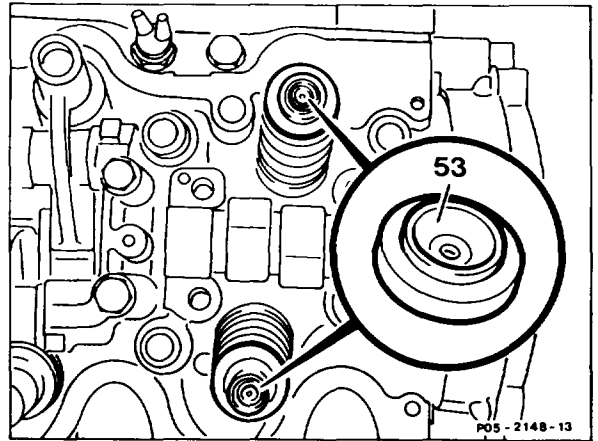
On engine 103.983 AMG the valve spring disk contact surfaces on the cylinder head are lower by 0.5 mm on the inlet and exhaust valves.

Removal, installation

- 1 Remove camshaft bearing cap of the relevant cylinder (05-2190)
- 2 Use magnetic finger 116 589 06 63 00 to lift out ball sockets (53)

Installation note

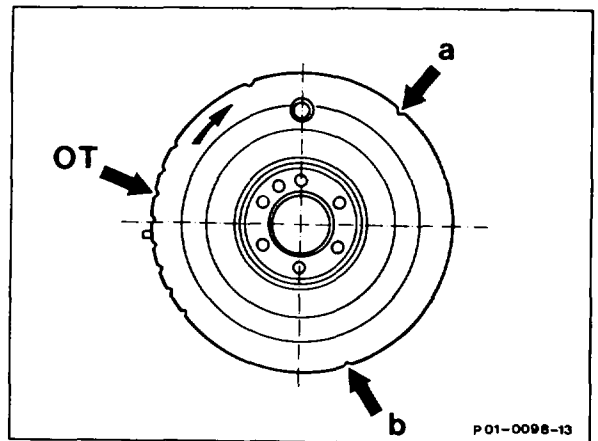
Ball sockets must be re-installed at the same point.



- 3 Position piston of the relevant cylinder to TDC.

Note

The relevant pistons are in the TDC position if the markings shown in the drawing opposite (arrows) on the vibration damper are aligned with the TDC pointer and the cams of the relevant cylinder are positioned at base circle.



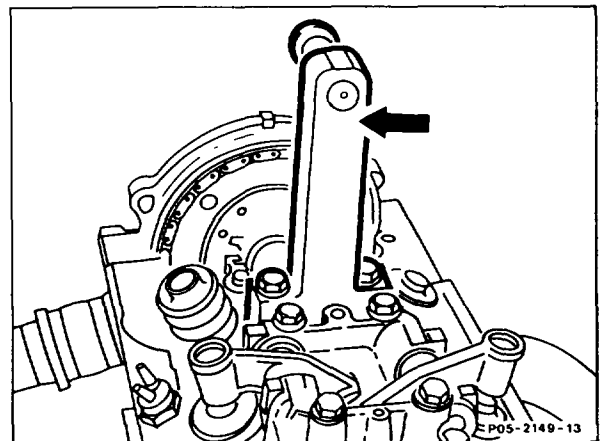
Marking	TDC	b = 120	a = 240
Pistons of cylinders at TDC	1 and 6	2 and 5	3 and 4

- 4 Bolt supporting bracket (arrow) 103 589 00 61 00 to the cylinder head.

- 5 Screw connection hose of cylinder leak tester into the spark plug hole and pressurize compression chamber (about 5 bar)

Note

If the crankshaft rotates, install retaining lock for crankshaft/ring gear (03-5000).

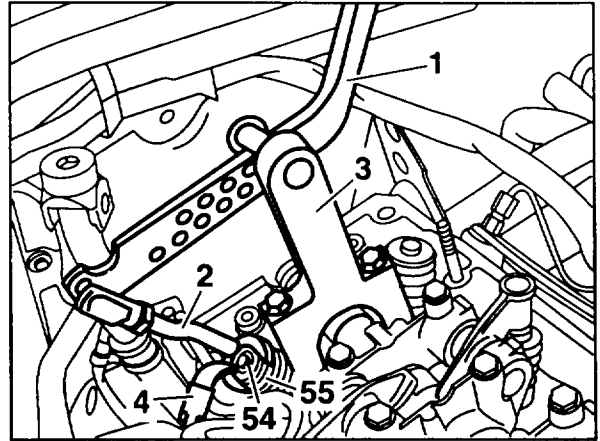


6 Attach lever depresser (1) 111 589 18 61 00 with thrust piece (2) 601 589 16 63 00 to the supporting bracket (3) and position against the valve spring retainer (55).

7 Apply slight pressure to valve spring retainer (55). Detach valve collets (54).

8 Compress valve spring, use magnetic finger (4) 116 589 06 63 00 or tweezers (commercially available tool) to remove valve collets (54).

9 Remove valve spring retainer (55) and valve spring (56).



P05-5514-13

Note

The valve spring retainers and valve springs of the exhaust and inlet valves are identical.

10 Examine upper and lower valve spring retainers for signs of scoring (visual inspection). If scores exist on the contact surfaces, replace valve spring retainers; remove valve stem seals for this step (05-2700).

11 Check valve keyway.

12 Check valve springs (05-2600).

13 Check valve length, see (05-2910).

14 Install in the reverse order.