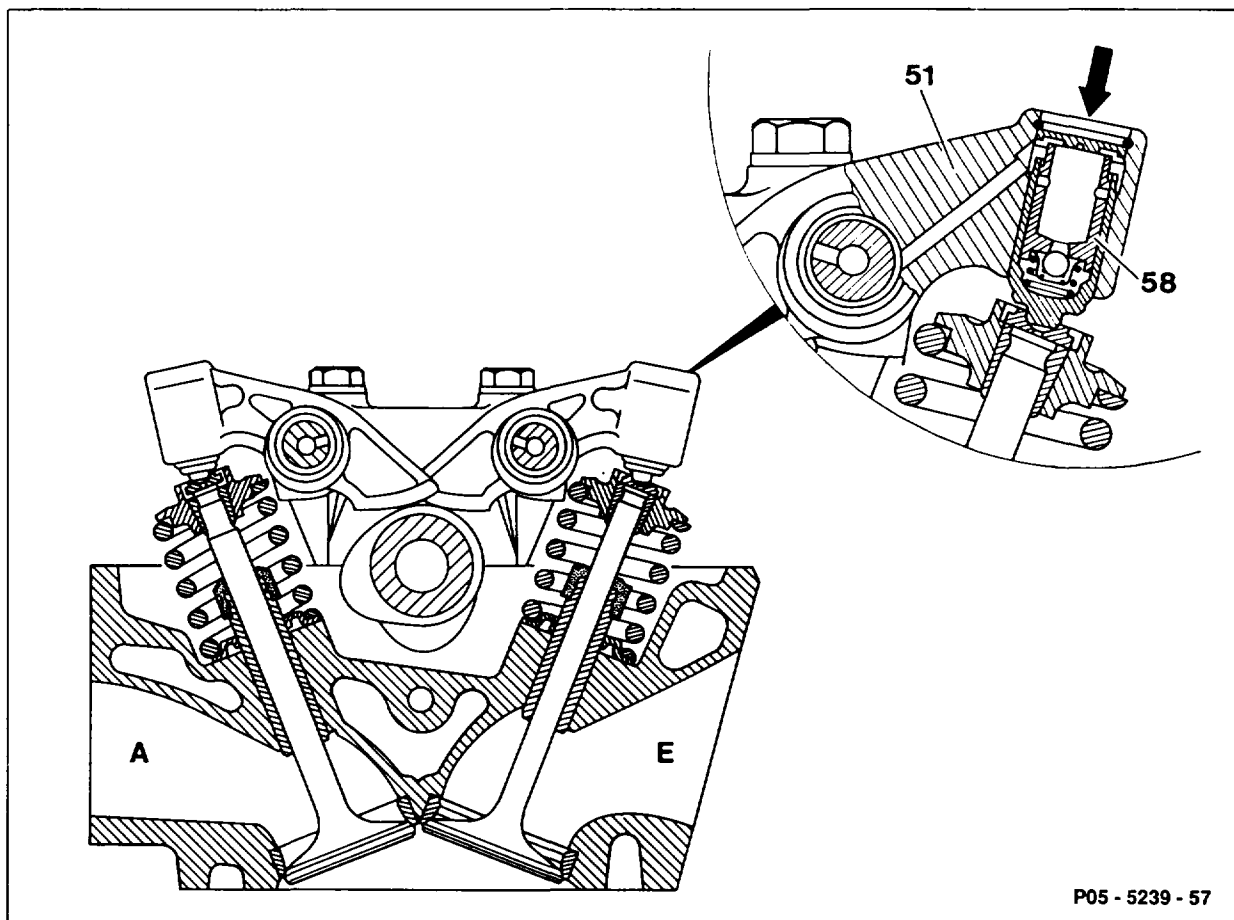


## 05-2110 Checking and replacing hydraulic valve clearance compensating elements

Preceding work:

Warm engine up to operating temperature (80 °C)

Cylinder head cover removed (01-0500).

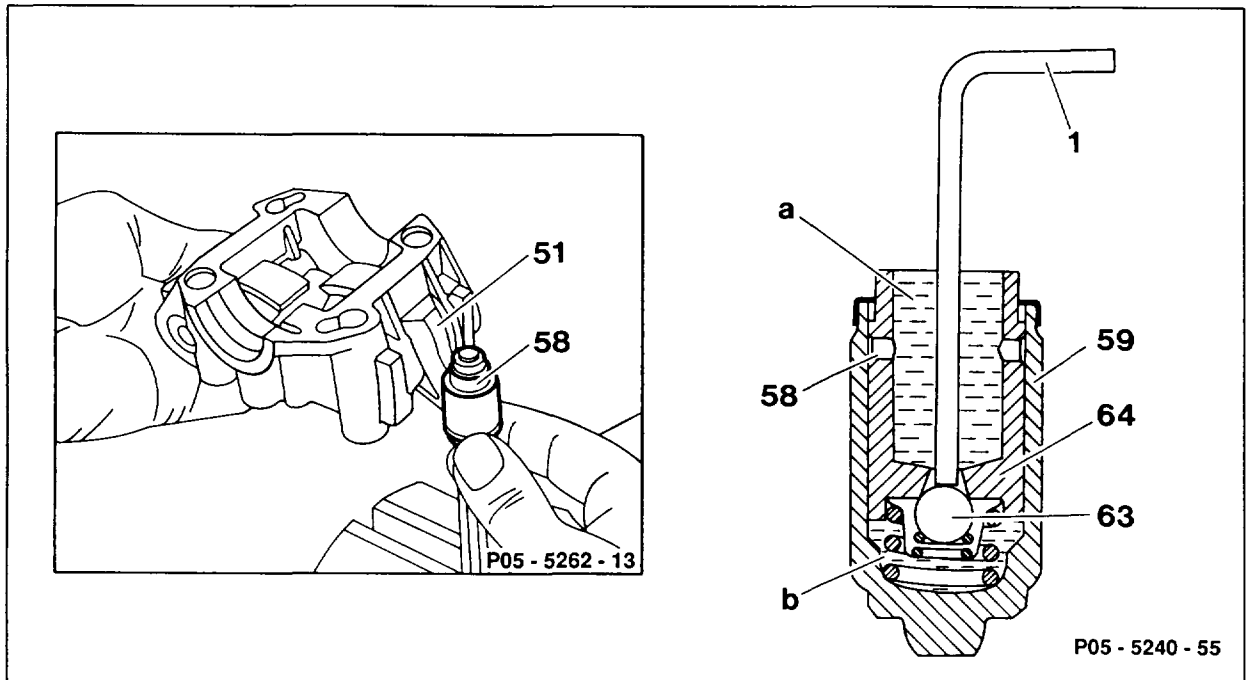


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### Checking (compensating element installed)

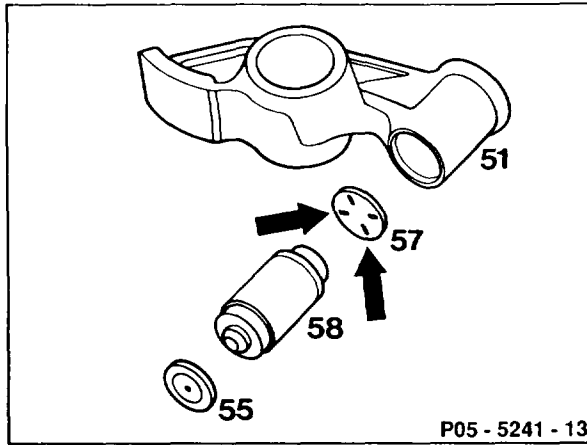
- |                                           |                                                                                    |
|-------------------------------------------|------------------------------------------------------------------------------------|
| Crankshaft .....                          | rotate and position cam of compensating element (58) to be checked to base circle. |
| Hydraulic compensating element (58) ..... | apply load with handle of hammer or similar for approx. 5 - 10 seconds (arrow).    |
- ⚠
- Do not press valves against piston when testing pressure.
- If compensating element (58) drops, there is a leak on the inside and it must be replaced.
- Remove relevant camshaft bearing cap (05-2320).

- |                                                                                      |                                                                           |
|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------|
| If compensating element (58) does not drop, . . . . .                                | check play between compensating element (58) and rocker arm (51) by hand. |
| If play exists between hard compensating element (58) and rocker arm (51), . . . . . | check basic position of compensating element (05-2130).                   |
| Camshaft bearing cap . . . . .                                                       | remove (05-2320).                                                         |



**Checking** (compensating element removed)

- |                                                                   |                                                                                                                                   |
|-------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| Compensating element (58) . . . . .                               | press out of rocker arm (51) with washer using aluminium or brass drift.                                                          |
| Compensating element (58) . . . . .                               | position vertical.                                                                                                                |
| Oil supply chamber (a) . . . . .                                  | fill with engine oil.                                                                                                             |
| Ball valve (63) . . . . .                                         | open with wire (1) (dia. approx. 1.5 mm).                                                                                         |
| Pressure pin (64) . . . . .                                       | push down as far as stop and release. Repeat operation as often as necessary until working chamber (b) is filled with engine oil. |
| Pressure pin (64) of vertical compensating element (58) . . . . . | press down firmly with handle of hammer or similar for approx. 10 seconds.                                                        |
| If pressure pin (64) drops, replace . . . . .                     | compensating element (58).                                                                                                        |



### Replacing

Washer (57) and compensating element (58) . . .	push into rocker arm (51) until it touches snap ring.
Grooves (arrow) of washer (57) . . . . .	must be facing compensating element (58).
Rocker arm bearing bracket with ball socket (55) . . . . .	install (05-2190).
Basic position of hydraulic compensating element . . . . .	check (05-2130).

### Note

If the compensating elements do not drop, check whether oil drillings in cylinder head in rocker arm bearing bracket, rocker arm shaft and rocker arm are clear.

Clean oil drillings if necessary.

If several compensating elements are soft, check whether oil nozzle return lock in cylinder head is tightly seated, replace if necessary (18-4150).

Adjust oil to correct level (oil foaming).