

A. OM 636

Removal:

1. Remove the cylinder head (see Job No. 01-3).
2. Remove the valves with the Valve Lifter Part No. 636 589 03 31 (see Figure 05-11/1). To do this, place the clamping jaws (2) of the valve lifter over the valve stem end and fasten tightly the screw (3). Then by clockwise turning of the crank (1) compress the valve spring so much that the valve cone halves (4) can be removed (see Figure 05-11/1).

Now release the valve spring, then loosen the screw (3) by half a turn and remove the valve lifter.

Remove the valve spring retainer, the rubber ring and the valve spring (on light metal cylinder heads also the lower valve thrust collar).

For the removal and installation of the valves also a commercial valve lifter can be used.

Note: If the old valves will be installed again, mark them with centre punch or by punching in numbers before removal. More practicable, however, is the use of a marked receiving board.

3. Turn the cylinder head and remove the valves.

Cleaning, Testing and Preparation

4. Remove the oil carbon from the cylinder head and the valves, clean valve springs, valve-spring retainers, valve cone halves and sealing rings.
5. Test and grind the valves (see Job. No. 05-13).
6. Test the valve springs (see Job No. 05-14).

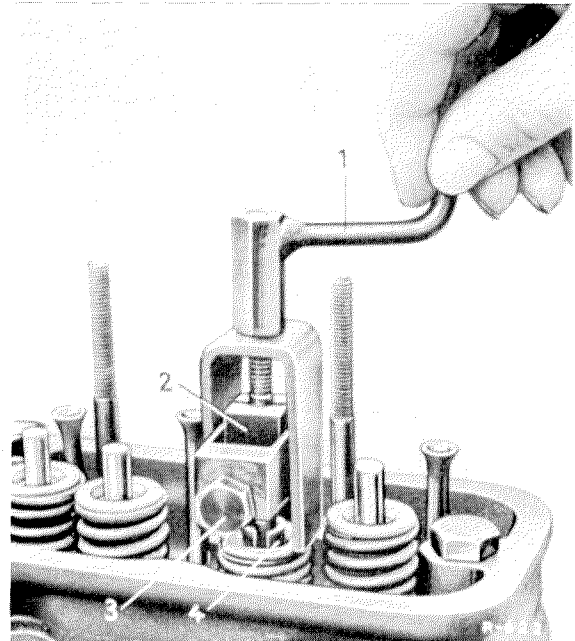


Figure 05-11/1

- 1 Crank to tension valve spring
- 2 Clamping jaws
- 3 Screw to clamp the valve lifter to the valve stem
- 4 Valve cone halves

7. Check the valve guides, replace if necessary (see Job No. 01-6).
8. Check and machine the valve seats in the cylinder head (see Job No. 01-8).
9. Apply a small quantity of lap abrasive to the seats of the valves and lap in valve seats for a short period to level unevenness (such as rough grinding and possible light chatter marks).

A prolonged lapping-in, however, makes the valve seats worse.

10. Thoroughly clean again all parts, especially the holes of the valve guides and the valve stems to prevent sticking of the valves. In addition it is advisable to hone and polish the valve stems with polishing paper in the longitudinal direction after lapping-in of the valves.

Installation:

11. Apply graphited oil to the stems of the valves, insert the valves in the cylinder head in the correct order (see Note of Paragraph 2) and check operating ease.
12. Set the valve springs with their larger diameter on the seat for the valve springs in the cylinder head (see Figure 05-11/2).

Note: On the light metal cylinder head, the thrust ring of the valve spring (1) must be installed first (see Figure 01-6/1).

13. Mount valve-spring retainer (3) with sleeve on the valve spring (2). Lightly oil the sealing ring (6), slide it over the valve stem and press down as far as possible. (Use only new sealing rings.) (See Figure 05-11/2).
14. Clamp the Valve Lifter Part No. 6365890331 with the clamping jaws (2) to the protruding part of the valve stem by tightening the screw (3) (see Figure 05-11/1). Then compress the valve spring by clockwise turning of the crank (1) and push the

sealing ring downwards, so that the valve cone halves can be installed. After installing the valve cone halves (5) release again the valve spring (2) (see Figure 05-11/2) and after loosening the screw (3) remove the valve lifter (see Figure 05-11/1).

Check seating of valve cone halves and valve springs. The gap at the valve cone halves must be equal on both sides.

Note: The sealing ring is not installed in the design without valve stem sealing, and the valve-spring retainer is without sleeve (see Figure 05-11/3 and Job No. 05-16).

If the valve stem sealing (see Figure 05-11/2) has not yet been installed, subsequent installation can be limited to cases in which there is reason to complain about excessive oil consumption (also see Job No. 05-16. Replacement or subsequent Installation of Valve Stem Sealing).

15. Mount the cylinder head (see Job No. 01-3).

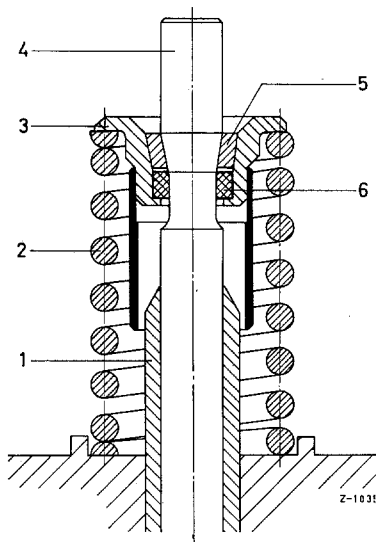


Figure 05-11/2

Present Version with Valve Sealing

- | | |
|-------------------------------------|---------------------|
| 1 Valve guide | 4 Valve |
| 2 Valve spring | 5 Valve cone halves |
| 3 Valve-spring retainer with sleeve | 6 Sealing ring |

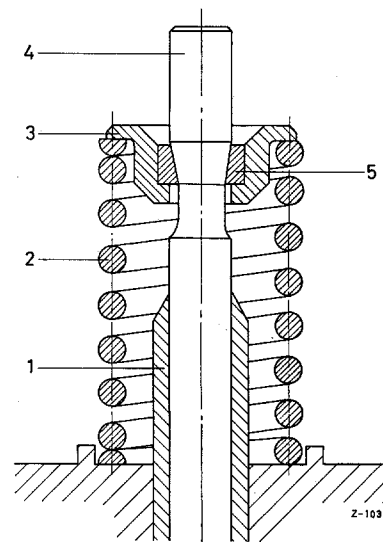


Figure 05-11/3

Former Version without Valve Sealing

- | | |
|-------------------------|---------------------|
| 1 Valve guide | 4 Valve |
| 2 Valve spring | 5 Valve cone halves |
| 3 Valve-spring retainer | |