

B. OM 621

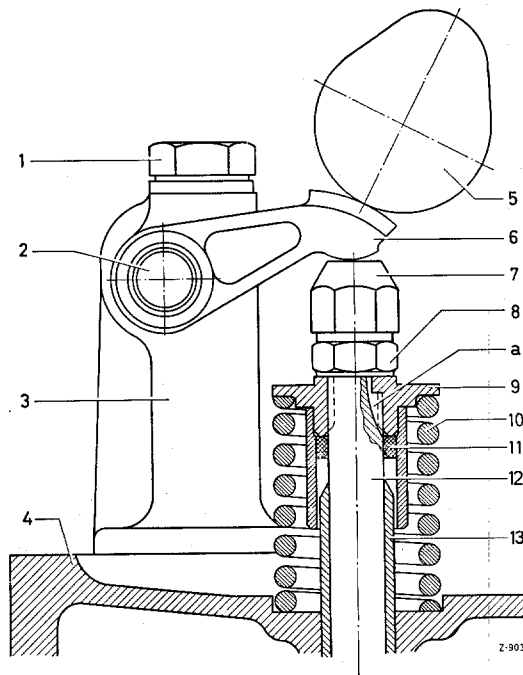


Figure 05-11/4

Exhaust valve models 190 D,
190 Db, type 621.910

- | | |
|------------------------|-------------------------|
| a Groove in valve stem | 7 Cap nut |
| 1 Necked-down bolt | 8 Counternut |
| 2 Rocker arm shaft | 9 Valve spring retainer |
| 3 Rocker arm bracket | with seal ring holder |
| 4 Cylinder head | 10 Valve spring |
| 5 Camshaft | 11 Rubber seal ring |
| 6 Rocker arm | 12 Valve stem |
| | 13 Valve guide |

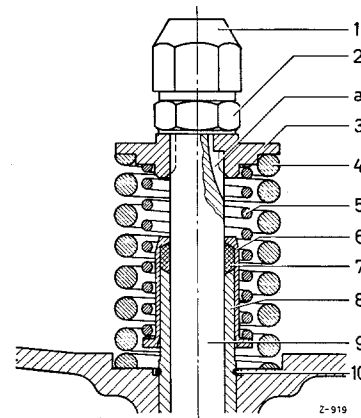


Figure 05-11/5

Intake valve

- | |
|-------------------------|
| a Groove in valve stem |
| 1 Cap nut |
| 2 Counternut |
| 3 Valve spring retainer |
| 4 Outer valve spring |
| 5 Inner valve spring |
| 6 Seal ring holder |
| 7 Silicon seal ring |
| 8 Valve guide |
| 9 Valve stem |
| 10 Snap ring |

- x **Engines of models 190 Dc and L and O 319 D are provided with a mechanically operating valve rotating device (6) and a new valve seal (5)** (refer to Fig. 05-11/6). This rotating device is a complete unit and requires no servicing. The device will definitely increase the life of the valves since the heat is dissipated more uniformly and the rotation will remove combustion residue from valve seat.
- x **Model 180 Dc** has the same valve seal as model 190 Dc (refer to Fig. 05-11/6). But instead of the valve rotating device (6) there is a filler piece serving as valve spring support.

Removal:

1. Remove the cylinder head (see Job No. 01-3).
2. Remove the valves. To do this, loosen the cap nut (1) at the valve, retaining the counternut (2). Then unscrew the two nuts (1 and 2), remove the valve spring (4) and the inner valve spring (5) in the case of the intake valves, the seal ring holder (6) and the seal ring (7). Remove the valves from the cylinder head (see Figure 05-11/5).

Note: For models 190 D and 190 Db the intake valve has two, whereas the exhaust valve has only one valve spring. With the exhaust valve, a seal ring holder is firmly mounted to the valve spring retainer (9); this holder projects beyond the valve guide (13). There is a rubber seal ring (11) between the seal ring holder (9) and the valve stem (12). Further, the seal ring holder serves as an additional oil screen (see Figure 05-11/4). With the intake valve the sealing is effected through a seal ring

holder (6) with inserted Silicon ring (7), which is slid over the valve guide (8) and pressed on through the inner valve spring (5) (see Figure 05-11/5).

If the old valves are to be built in again, do not fail to mark them through punch marks or embossing numbers before removal. It is, however, more advisable to use a marking board.

3. Cleaning, checking and preliminary works (see Section A, items 4 through 10).

Installation:

4. Apply graphited oil to the stems of the valves, insert them into the cylinder head observing the correct order and check for ease of movement.
5. With the intake valves for models 190 D and 190 Db mount the seal ring (7), the seal ring holder (6), the inner and the outer spring, the valve spring retainer (3), the counternut (2) and the cap nut (1) (see Figure 05-11/5).

With the exhaust valves, press the seal ring (11) into the seal ring holder of the valve spring retainer (9); then install the valve spring (10), the valve spring retainer (9), the counternut (8) and the cap nut (7) (see Figure 05-11/4).

- x When installing valves in **models 190 Dc, 180 Dc, and L and O 319 D**, be sure to replace the valve seal (5) (Fig. 05-11/6). The seal for intake and exhaust is the same. First attach valve rotating device (6) or on 180 Dc insert filler piece (Fig. 05-11/6). **Place assembly sleeve 000 589 16 61 00 over respective valve** to prevent damaging Teflon sealing ring in valve seal by thread on valve stem. Slide valve seal across lubricated assembly sleeve until seal snaps into groove of valve guide, then install valve spring (4), valve spring retainer (3), hex nut (2) and cap nut (1) (refer to Fig. 05-11/6).

6. Install cylinder head (refer to Job No. 01-3).

Safety precautions for scrapping sodium-filled valves

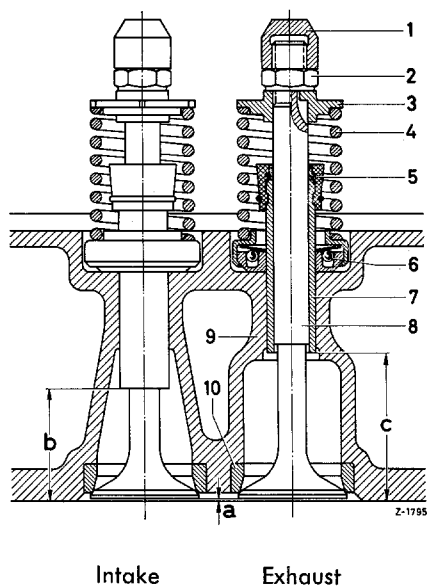
In order to ensure better cooling, the OM 621 is equipped with sodium-filled exhaust valves. **Because of the danger of explosion such valves must not be smelted, without removing the sodium filling before. It is also dangerous to manufacture tools from sodium-filled valves, such as punches, screw drivers, chisels etc., without removing the sodium filling before.**

Take care when removing the sodium from the valves, because sodium reacts explosively if brought in contact with water and watery solutions and the produced hydrogen gas may cause fire.

Since our agencies will have to deal with a comparatively small quantity of sodium-filled valves, it would be uneconomical to procure a special equipment for the neutralization of sodium. Therefore, collect your sodium-filled valves and send them to the Garantieprüfstelle (testing department), Stuttgart-Untertürkheim Plant for scrapping.

Figure 05-11/6

Model 190 Dc (type 621.912) and
model L and O 319 D (type 621.913)



- 1 Cap nut
- 2 Hex nut
- 3 Valve spring retainer
- 4 Valve spring
- 5 Valve seal
- 6 Valve rotating device
- 7 Valve guide - exhaust
- 8 Exhaust valve
- 9 Cylinder head
- 10 Valve seat ring - exhaust
- a = Distance from sep. surface cyl. head to valve retainer
- b = Distance from sep. surface cyl. head to face end intake valve guide
- c = Distance from sep. surface cyl. head to face end exhaust valve guide

x For this design the supporting surfaces for the valve springs or valve rotating device, respectively, at the cylinder head were made deeper; in addition, the cylinder head for intake and exhaust valve has been provided with valve seat rings.