

### Equipment

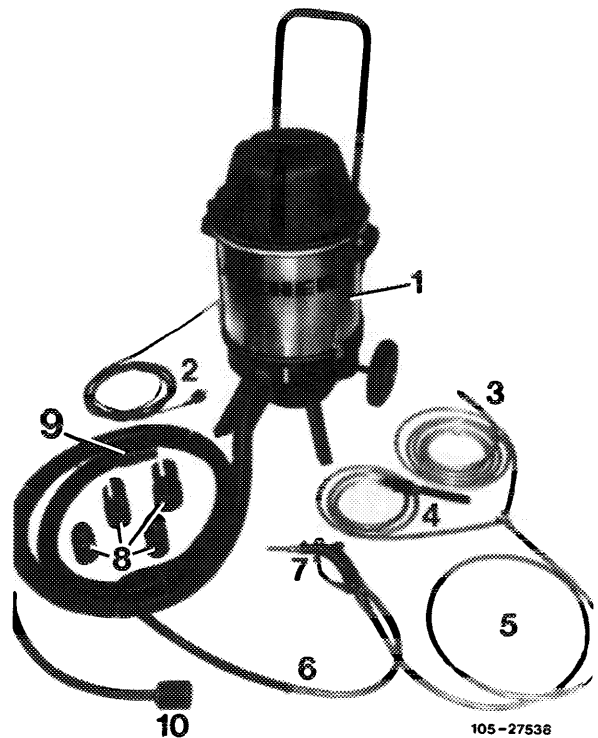
|                                                       |                                                                                                             |
|-------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| Sandblasting device for walnut shell granulate        | e.g. Alfred Kärcher<br>Leutenbacher Straße 30—40,<br>D—7057 Winnenden<br>Order No. 1.486.601                |
| Walnut shell granulate (25 kg)<br>Grain size 1—1.5 mm | e.g. Eisenwerk Würth GmbH & Co.<br>Friedrichshaller Straße,<br>D—7107 Bad Friedrichshall<br>Order No. 10407 |

### Note

Transition fault during the warming-up phase on vehicles with KA injection system can be caused by coked-up inlet valves.

The inlet valves can be cleaned with a sandblasting device without removing the intake manifold.

- 1 Sandblasting device
- 2 Power connection cable (220 volts)
- 3 Compressed-air connection
- 4 Blow-out valve
- 5 Compressed-air supply line
- 6 Granulate feed line
- 7 Compressed-air gun with nozzle
- 8 Adapter
- 9 Extraction line with plug connection
- 10 Extraction pipe



### Cleaning procedure

Walnut shell granulate under high pressure is blasted on the disks of the closed inlet valves via the mounting bores of the injection valves. At the same time, the carbon residue is extracted together with the granulate via the throttle valve pipe into the sandblasting unit.

The valve disk is partly obstructed by the valve stem. In order to clean the obstructed part the valve must be turned once by 180°.

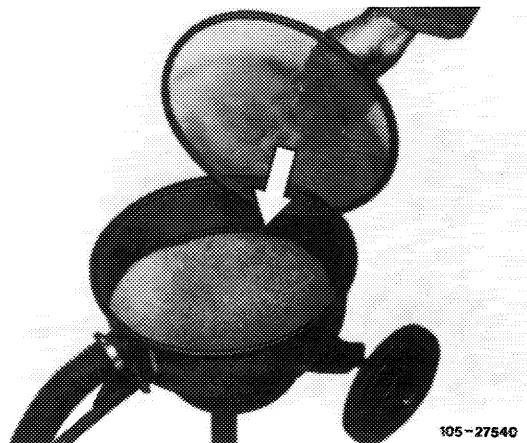
## Maintenance and filling of sandblasting device

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- 1 After approx. 20–30 cleaning processes, shake off the carbon pieces on the outside of filter bag (arrow).
- 2 When fitting the upper part, observe the marking (M).



- 3 Fill the unit lower part with approx. 4 kg of walnut shell granulate, grain size 1–1.5 mm up to the lower edge (arrow).
- 4 If lumps are formed and in the case of high dust content the granulate must be renewed because of its inefficient cleaning effect.



## Decoking

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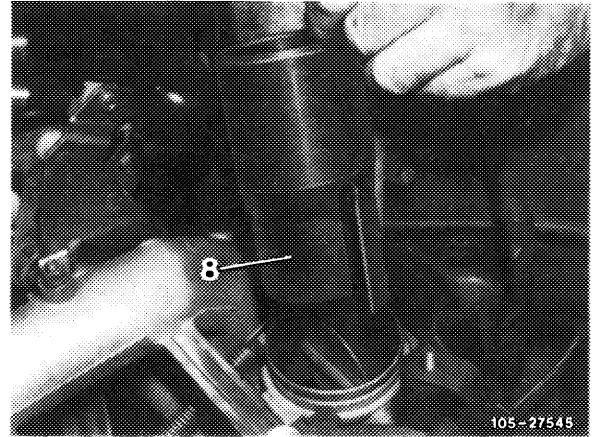
- 1 Remove mixture control unit with air intake housing.
- 2 Remove injection valves.
- 3 Remove all rocker arms and thrust pieces.

### Caution!

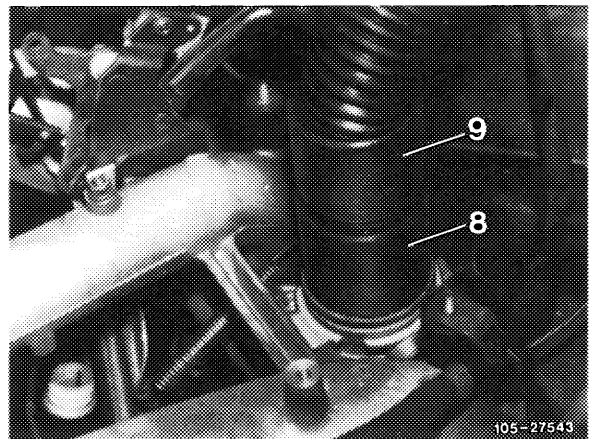
Rocker arms and thrust pieces must be installed in the same position from which they were removed.

4 Cover valve area and camshaft with a cleaning rag.

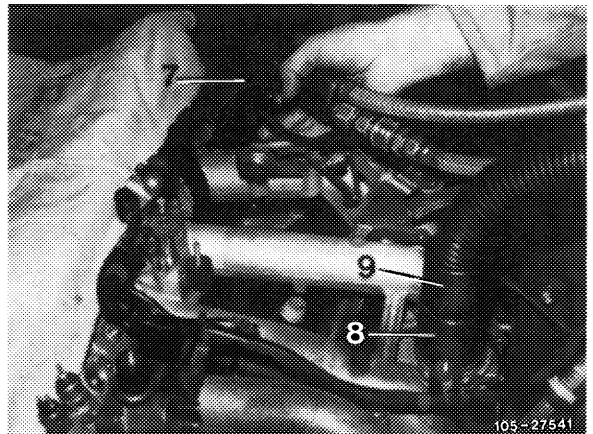
5 Fit adapter (8) with open throttle valve.



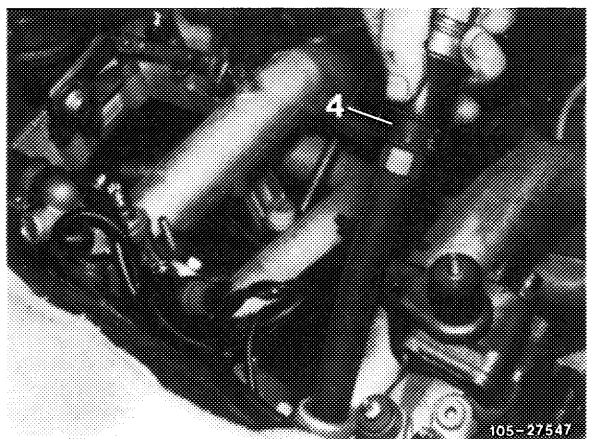
6 Connect extraction line (9) to the adapter (8).



7 Place compressed-air gun (7) with nozzle in the bore for the injection valve. Blast the injection valve for approx. 30–60 seconds.



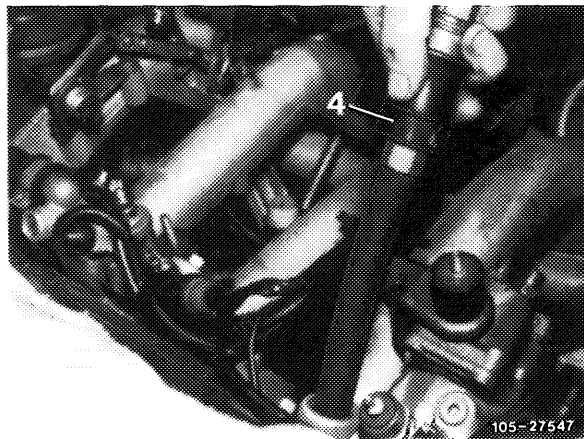
8 Blow out intake port with the blow-out valve (4) via the injection valve bore with the extraction switched on.



9 Force inlet valve down by means of the valve spring compressor 123 589 03 61 00 while turning the valve by 180°.

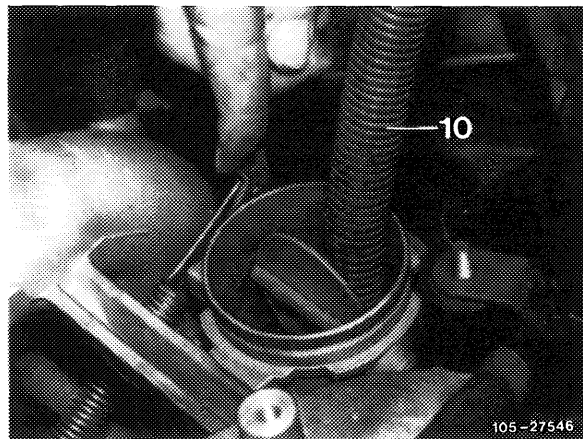
10 Blast inlet valve for approx. 15–30 seconds.

11 Blow inlet port with blow-out valve (4) via the injection valve bore with the extraction switched on.



12 Insert the extraction pipe (10) via the throttle valve intake pipe and extract the remaining granulate from the intake manifold lower part and from the exhaust gas recirculation line.

13 Using a light, inspect intake manifold lower part and all cylinders for residual granulate, extract if necessary.



14 Flush throttle valve intake pipe and throttle valve with benzine.

15 Install removed parts.

16 Adjust idle speed (07.3–100).