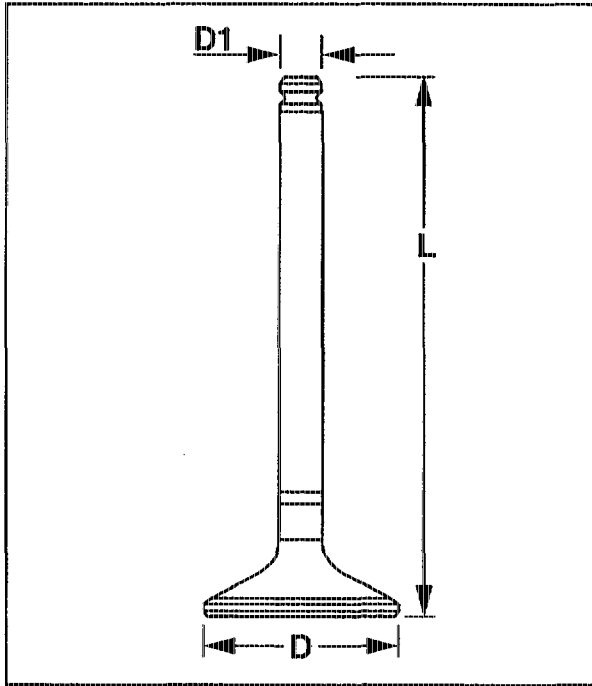


## 05-2800 Inspecting and machining valves

Preceding work  
 Cylinder head removed (01-4150).  
 Valve springs removed (05-2500).  
 Valves removed

Operation no. of operation texts and work units or standard texts  
 and flat rates ..... 05-4201



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Valves .....	clean, inspect visually.
Valve stem .....	inspect for runout (max. 0.03 mm).
Valve seat .....	inspect for runout (max. 0.05 mm), grind.
Dimensions and angle .....	inspect (table).

**Data**

Engine	up to 119.960 12 011 930		as of 119.960 12 011 931		
	Inlet valve	Exh. valve	Inlet valve	Exh. valve	
Valve disc Ø (D)	<u>37.90</u> 38.10	<u>32.90</u> 33.10	<u>37.90</u> 38.10	<u>32.90</u> 33.10	
Height (h) of valve disc	when new	1.15–1.45	1.55–1.65	1.15–1.45	1.4–1.7
	limit val.	1.05	1.3	1.05	1.3
Setting angle (α) for machining valve	45° + 15'	45° + 15'	45° + 15'	45° + 15'	
Valve stem Ø (D 1)	<u>7.970</u> 7.955	<u>8.960</u> 8.938	<u>6.975</u> 6.960	<u>6.970</u> 6.950	
Sodium filling	without	with	without	with	
Valve length (L)	95.8	102.6	95.8	102.6	
Width of valve seat	min. 1.4 max. 2.0	min. 1.4 max. 2.0	min. 1.4 max. 2.0	min. 1.4 max. 2.0	
Maximum permissible runout at valve stem and valve seat	0.05	0.05	0.05	0.05	
Grooves for wedges on stem	1	1	3	3	

**Daten**

Engine	up to 119.970 12 049 738 up to 119.972 12 010 751 up to 119.974 12 009 281		as of 119.970 12 049 739 as of 119.972 12 010 752 as of 119.974 12 009 282		
	Inlet valve	Exh. valve	Inlet valve	Exh. valve	
Valve disc Ø (D)	<u>37.90</u> 38.10	<u>32.90</u> 33.10	<u>37.90</u> 38.10	<u>32.90</u> 33.10	
Height (h) of valve disc	when new	1.15–1.45	1.4–1.7	1.05–1.35	1.4–1.7
	limit val.	1.05	1.3	0.95	1.3
Setting angle (α) for machining valve	45° + 15'	45° + 15'	45° + 15'	45° + 15'	
Valve stem Ø (D 1)	<u>6.975</u> 6.960	<u>6.970</u> 6.950	<u>6.970</u> 6.950	<u>6.970</u> 6.950	
Sodium filling	without	with	without	with	
Valve length (L)	95.8	102.6	95.7	102.6	
Width of valve seat	min. 1.4 max. 2.0	min. 1.4 max. 2.0	min. 1.4 max. 2.0	min. 1.4 max. 2.0	
Maximum permissible runout at valve stem and valve seat	0.05	0.05	0.05	0.05	
Grooves for wedges on stem	3	3	1	1	

## Data

Engine	up to 119.971 12 023 158 up to 119.975 12 018 412		as of 119.971 12 023 159 as of 119.975 12 018 413 as of 119.98 start of prod.	
	Inlet valve	Exh. valve	Inlet valve	Exh. valve
Valve disc Ø (D)	<u>34.90</u> 35.10	<u>32.90</u> 33.10	<u>34.90</u> 35.10	<u>32.90</u> 33.10
Height (h) of valve disc	when new	1.15–1.45	1.4–1.7	1.05–1.35
	limit val.	1.05	1.3	0.95
Setting angle (α) for machining valve	45° + 15'	45° + 15'	45° + 15'	45° + 15'
Valve stem Ø (D 1)	<u>6.975</u> 6.960	<u>6.970</u> 6.950	<u>6.970</u> 6.950	<u>6.970</u> 6.950
Sodium filling	wihtout	with	wihtout	with
Valve length (L)	95.8	102.6	95.8	102.6
Width of valve seat	min. 1.4 max. 2.0	min. 1.4 max. 2.0	min. 1.4 max. 2.0	min. 1.4 max. 2.0
Maximum permissible runout at valve stem and valve seat	0.05	0.05	0.05	0.05
Grooves for wedges on stem	3	3	1	1

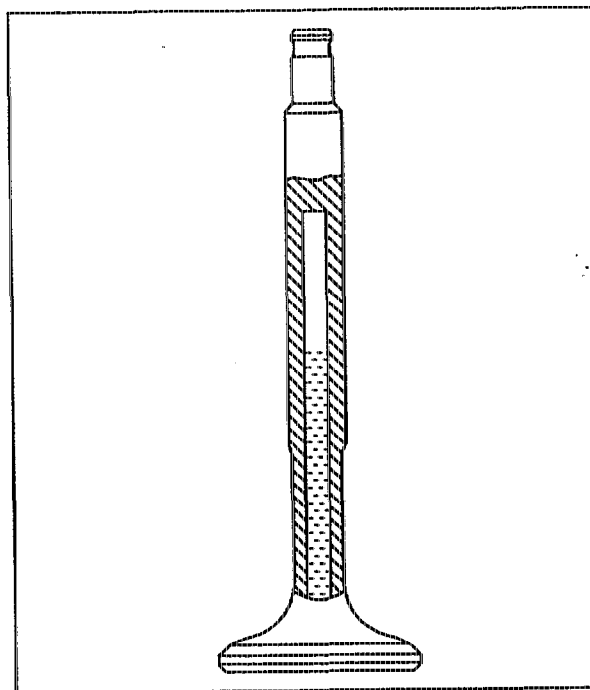
**Note**

The stem of the exhaust valve is filled with sodium.



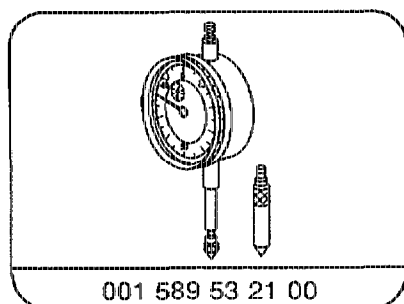
Unusable valves filled with sodium should be neutralized before scrapping. They should therefore be gathered by the relevant workshop sector foreman and returned to:

Mercedes-Benz AG  
Werk Marienfelde  
Daimlerstraße 145  
Anlieferstelle KST 3153  
Arbeitsvorbereitung TAI



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Exhaust valve

**Special tools**

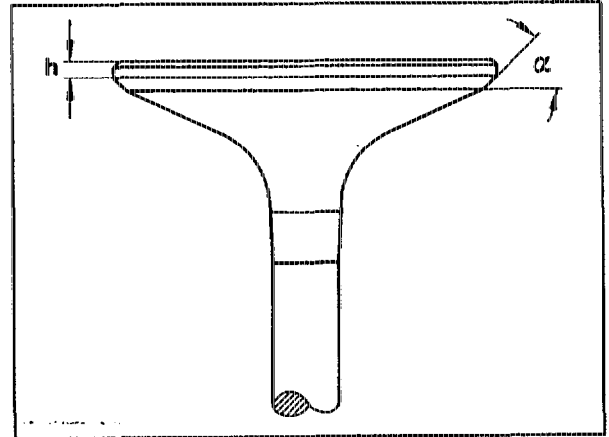
## Commercially available tools and testers

Designation	e. g. make	Order no.
Valve cone grinding machine or valve cone turning tool	Hunger, D-81375 München Gräflingerstr. 146	Type VKM 1 A Order no. 231 00 001

## Inspecting and machining

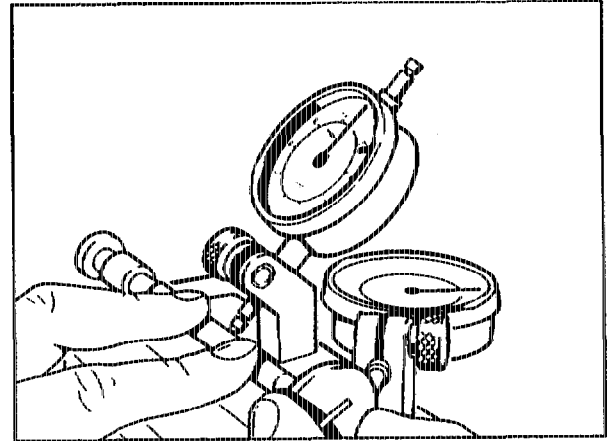
- 1 Clean valves and conduct a visual inspection.

Valves with scorched valve disc, insufficient height (h) of valve disc or with worn or scored valve stem should be replaced.



P05-0035-13

- 2 Measure runout at valve stem. If a runout of more than 0.03 mm is measured, replace valve.



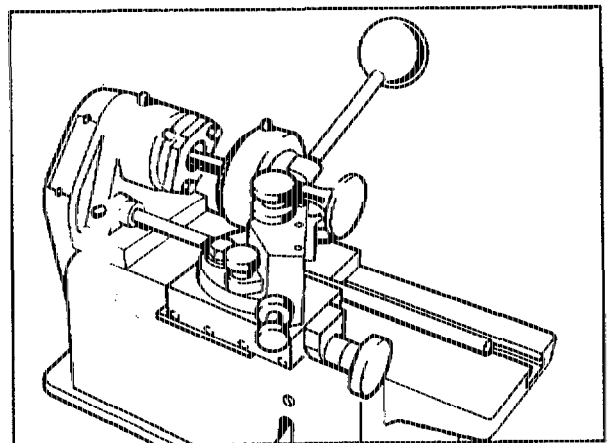
P05-2130-13

- 3 Machine valve seat.

Pay attention to operating instructions of machining equipment and setting angle ( $\alpha$ )  $45^\circ + 15'$ .



If conducting facing work on cylinder head and re-setting of valve seats, always replace valves. The valve seats of valves as of model designation M119.98 must not be remachined; these should be replaced when performing repairs.



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- 4 Measure runout at valve seat and height (h) of the valve disc.

If the runout is greater than 0.05 mm or the height (h) is less than the specification in the table, replace the valve.