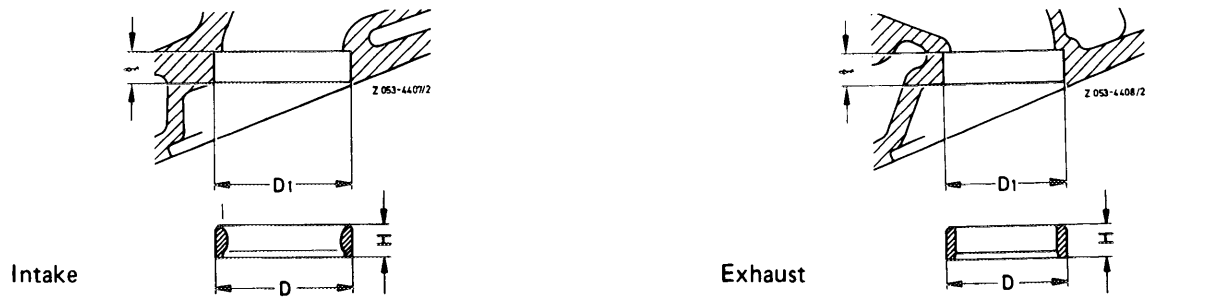


## 05-290 Replacing valve seat rings

Engine	116.960 116.961	116.960 AUS J USA 116.961 AUS J S USA	116.962 116.963	116.964 116.965 117.960 117.961	117.962 117.963 117.964 117.965	117.967 117.968
Standard Intake dimen.	46.000-46.016	41.000-41.016		46.000-46.016		47.400-47.416
D 1 Exhaust	40.000-40.016		42.000-42.016		--	
Standard Intake dimen.	46.090-46.100	41.090-41.100		46.090-46.100		47.490-47.500
D Exhaust	40.090-40.100		42.090-42.100		--	
Repair stage intake	D1 max. to	47.016	41.016	47.016	48.016	
	D roughing dimension	47.300	41.300	47.300	48.700	
Repair stage exhaust	D1 max. to	40.016		42.016	--	
	D roughing dimension	40.300		42.300	--	
t	10.300-10.800					
H	10.390-10.500					
Overlap of valve seat rings in cylinder head	0.074-0.100					



### Special tool

Plug gauge 9 mm dia.



117 589 03 23 00

### Conventional tools

Cylinder head clamping device

e.g. Rothenberger, D-6233 Kelkheim

Ring seat turning tool

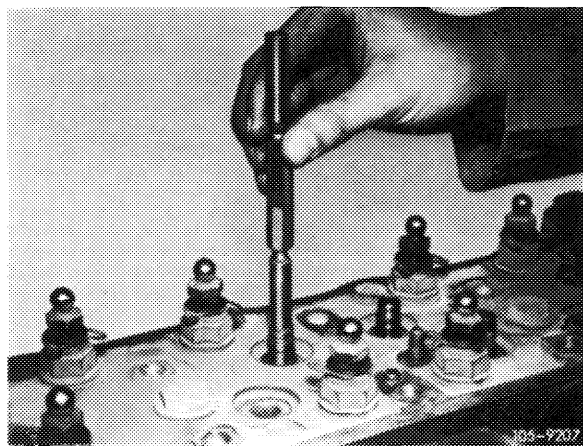
e.g. Hunger, D-8000 München  
Size 2, order No. 220.03.110

Valve seat turning tool	e.g. Hunger, D-8000 München Type VDSNL 1/45/30, order No. 236.03.308
Test set for valve seats	e.g. Hunger, D-8000 München Order No. 216.93.300
Internal measuring instrument (measuring range 25–60 mm)	e.g. Mahr, D-7300 Esslingen Order No. 844
Outside micrometer (measuring range 25–50 mm)	e.g. Mahr, D-7300 Esslingen Order No. 40 S

## Renewing

1 Remove old valve seat ring by means of a ring seat turning tool.

2 Check valve guides, renew if necessary (05–285).



3 Measure basic bore D 1.

A new valve seat ring **standard dimension** may be used if the specified overlap is available.

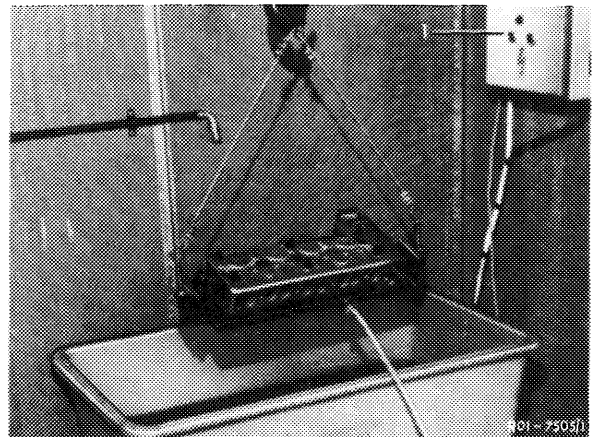
4 Machine basic bore repair stage D 1 with the valve seat ring turning tool until the bore is just clean.

5 Measure machined basic bore.

6 Machine valve seat ring repair stage until the specified overlap is attained.

7 Heat cylinder head in water bath.

8 Cool valve seat ring in liquid nitrogen.



9 Install valve seat ring with a suitable mandrel.

10 Machine valve seats (05-291).

