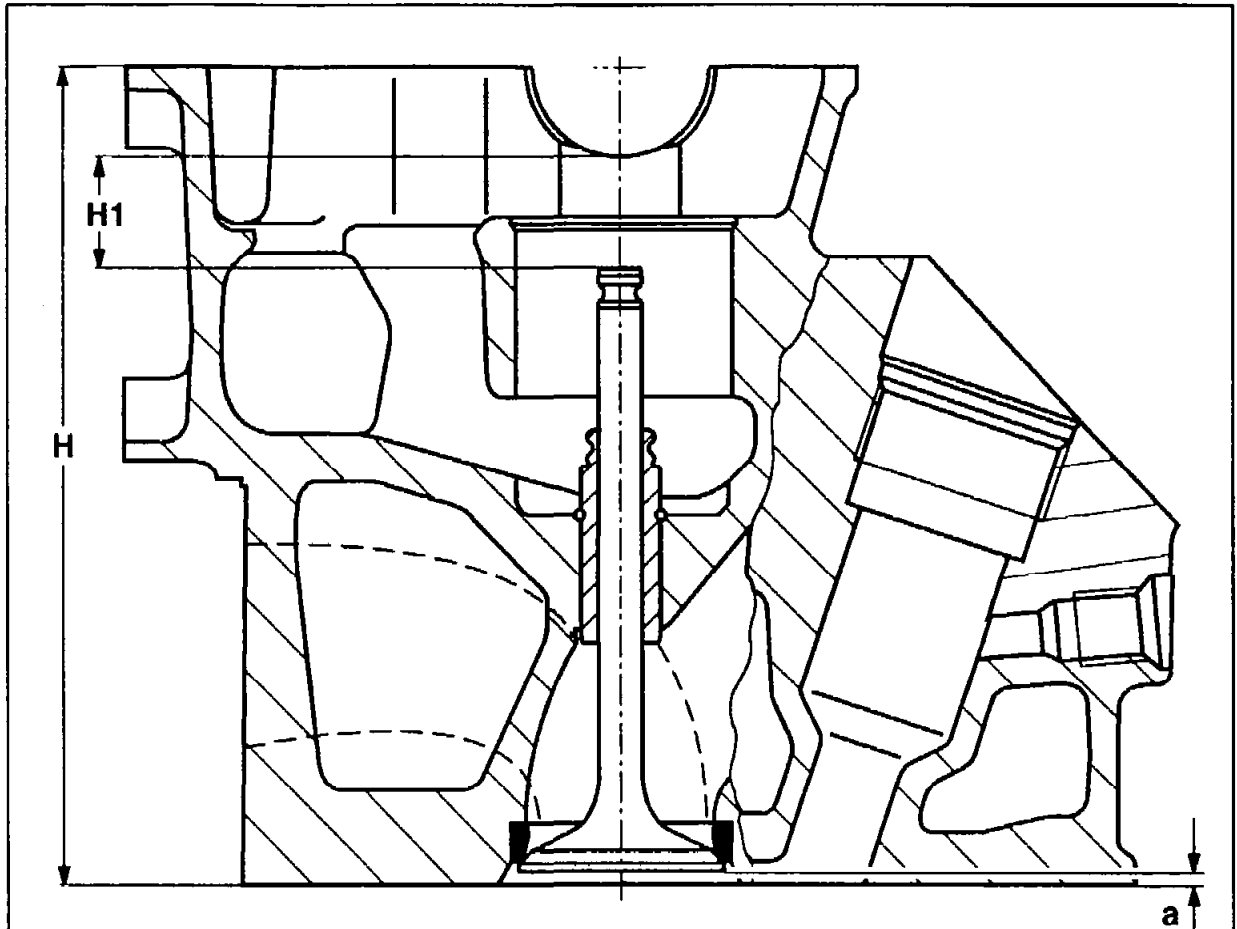


01-418 Facing cylinder head contact face

Preceding work:
Valves removed.
Valve guides checked (05-285).
Precombustion chambers removed (01-417).
Cylinder head pressure-tested (01-420).

Operation no. of operation texts and work units or standard texts
and flat rates 01-7162



P05-5466-57



Machine cylinder head contact face only if porous or damaged points exist or if measuring the flatness in the longitudinal direction reveals an impermissible difference.

The top cylinder head contact face must not be machined, otherwise the basic bores of the camshaft bearings will be altered.

If cracks are suspected (internal loss of coolant), the cylinder head must be pressure-tested.

Hardness test at cylinder head	perform (page 4).
Parting surface (1)	plane according to operating instructions of tool manufacturer.
Note	
Observe permissible minimum height (H) and machining data.	
Valve seats (2)	refinish until minimum interval (a) is reached (05-291).
After assembly	check engine timing (05-215).

Data

Total height of cylinder head in mm ¹⁾		142.9–143.1
Minimum height (H) after machining in mm		142.4
Material removal per planing operation in mm		0.5
Permissible unevenness of parting surface in mm	in longitudinal direction	0.08
	in transverse direction	0.0
Permissible deviation in parallel of upper parting surface in relation to lower surface in longitudinal direction in mm		0.1
Roughness in mm		0.004
Test pressure with air under water in bars gauge pressure in mm		2
Minimum distance (a) (recess) with new valves and new valve seats in mm	Intake	-0.1 to -0,5
	Exhaust	-0.1 to -0,5
Max. distance (a) (recess) with new valves and machined valve seats in mm	Intake	-0.7
	Exhaust	-0.7
Permissible clearance of valve stem end to camshaft bearing base (H1)		20.4–21.4 ²⁾
		21.4–21.97 ³⁾
		19.5–20.3 ⁴⁾

- 1) It is not permitted to machine the cylinder head at the top contact face.
- 2) Valve can be re-used.
- 3) Install new valve with length of 106.4 mm.
- 4) Install repair valve with length of 105.5 mm.

Commercially available tools and testers

Designation	e.g. Make	Order no.
Face grinding machine with milling device for light alloy surface	Sceledurn/Kindermann or Roaro & Fi. Schio/Italien	Model RT-Y
Knife-edge straightedge approx. 500 mm long	Roaro & Fi. Schio/Italien	
Impace hardness tester, Poldi System	Hahn & Kolb Borsigstraße 50 70459 Stuttgart	82110-82113

Hardness test on cylinder head before face-milling

General

A loss of coolant or faults in the coolant circuit or through the cylinder head gasket can result in overheating and thus in a distortion of the cylinder head.

Subsequent face-milling only results in a leak-tight joint between cylinder head, cylinder head gasket and crankcase provided the hardness in the area of the sealing bead is greater than 70 HB.

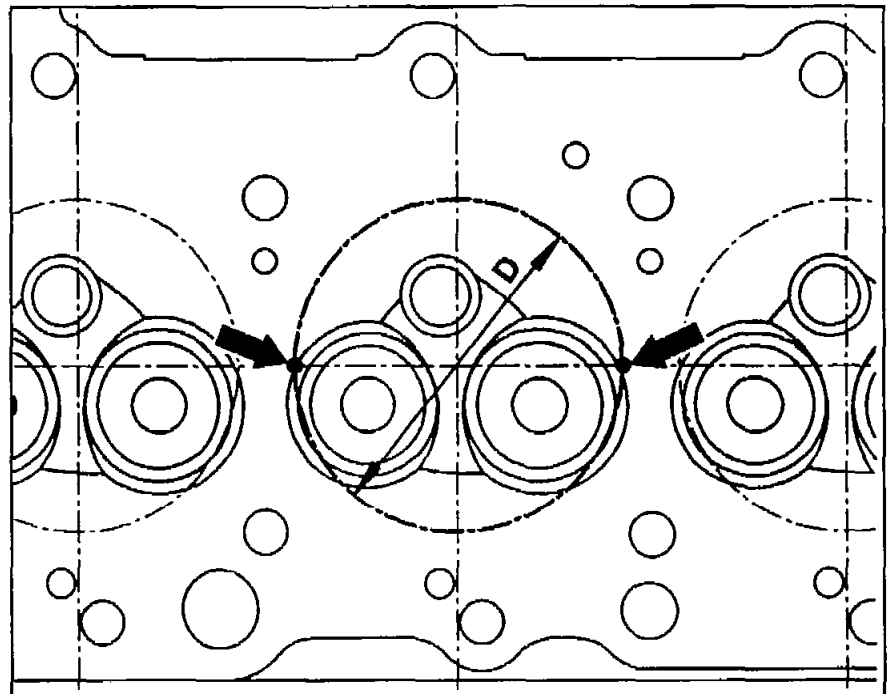
Measuring

The measurement is performed in the combustion chamber to a dia. 4 mm less than the cylinder bore (e.g. dia. 83 mm) at 2 points (arrows) in the direction of the engine axis and in the area of the traces of blisters in the cylinder head gasket.

The surfaces to be examined should be smoothed in one direction with a stroke using fine emery paper.

Measuring points –
arrows

Size D = 83 mm
Brinell hardness > 70 HB



P01-5778-35

Commercially available tools and testers

Designation	e.g. Make	Order no.
Impact hardness tester Poldi system	Hahn und Kolb Borsigstraße 50 70459 Stuttgart	82110-82113