

# PRECISION BORING HEADS

**VH 70**

**VH 110**

**VH 140**

## INSTRUCTIONS

No.: 520304



**NAREX**  **MTE**®

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**Application:** precision adjustable boring heads are used for high-precision machining of previously drilled holes as well as holes being prefinished by another way – in the given working range (see Table 1). These heads can be used for boring and milling machines, NC-machine tools, etc. Shanks for clamping the head may be dismantled and exchanged, their wide stock enables to fulfill almost any requirement quickly.

**Boring head specification:**

(Numbers of positions refer to the “VH 110”)

These heads are composed of a body (No. 1) and of an exchangeable taper shank (No. 18) which is attached to the head by four screws (No. 11). Inside the body, there is a cross-feed slide (No. 3). The screw has two-handed threads of the different diameters and pitch. The coarser thread feeds a carrier pin (No. 5) which is fixed in the slide by the screw (No. 8) and ensures the slide motion. The finer thread feeds a round nut (No. 4) which is pivoted with the possibility of breaking its motion by tightening the screw (No. 10). The choice of coarse or fine feeds of the slide is determined by the arresting screw position (No. 10).

**Screw position No. 1.:**

The arresting screw (No. 10) is tightened, the round nut (No. 4) is braked to stop, the operating screw feeds both nuts (No. 4 and 5), the slide feed refers to the difference of the pitch of both threads.

1 operating screw revolution = 0,2 mm/Ø  
 1 DIV on the dial = 0,0025 mm/Ø

**Screw position No. 2:**

The arresting screw (No. 10) is loosened and the round nut being carried by the operating screw, rotates free within the body. The brake (No. 7) which is forced to the operating screw thread by the small screw (No. 9) ensures the reliable carrying of the round nut. The access to this screw is enabled through the opening in the body of the head with the nut suitable turned. In this case, the slide feed is proportional to the size of coarser pitch.

1 operating screw revolution = 1,6 mm/Ø  
 1 DIV on the dial = 0,02 mm/Ø

After adjusting to the requested position, the slide is arrested by tightening of 2 or 3 screws (No. 12).

**Attention: In case of a major extension of the slide, when any of the arresting screws does not touch the body – do not tighten the screw!**

**Size adjustment**

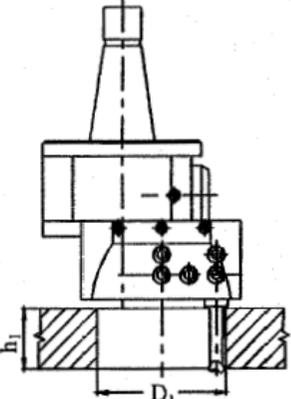
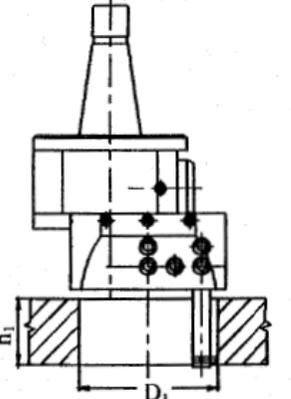
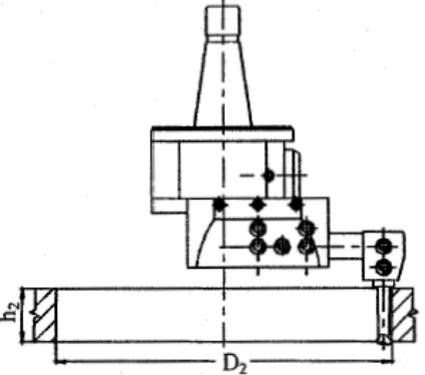
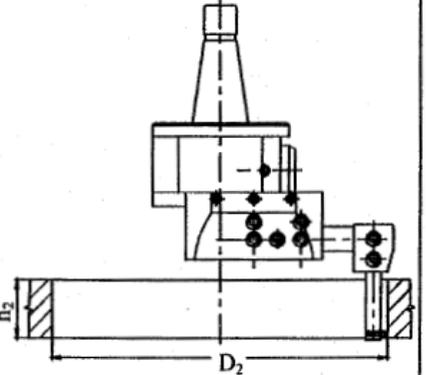
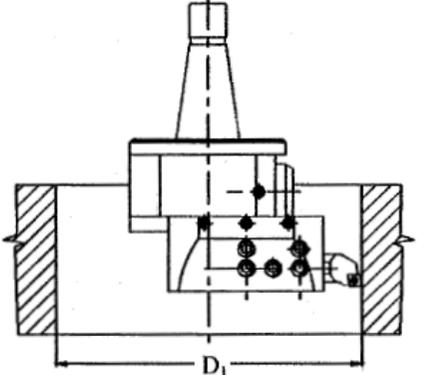
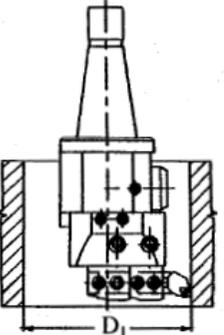
- 1) Adjust the frictional force of the break in the round nut (No. 4), which must be reliably carried by the operating screw. The check and adjustment are done as follows:
  - a) Loosen the screws (No. 12 and 10).
  - b) Put in the screwdriver to the screw slot (No. 9).
  - c) Put on the NAREX wrench “4” (No. 17) to the operating screw head ( No. 3) and turn mildly the screw to the left and to the right.
  - d) Set up the thrust of the brake to such a position that a recognisable resistance is necessary to overcome when turning the operating screw.

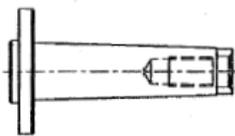
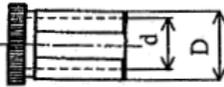
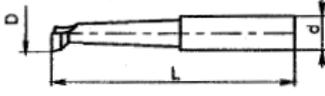
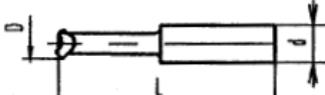
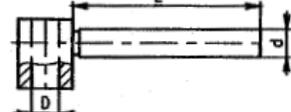
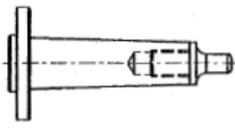
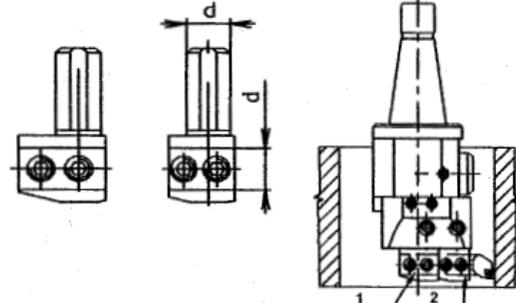
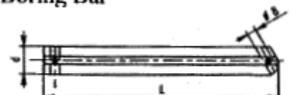
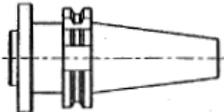
By the wear of functional surfaces of the brake, the frictional intensity decreases and, therefore, the thrust must be checked.

- 2) Set up the dial of the operating screw for the fine feed application.
  - a) Retighten the screw (No. 10)
  - b) Put the NAREX wrench “4” to the operating screw and turn the screw to the left (anticlockwise). The screw head will be pushed out of the recess in the body to such a position that the rear dial face does not exceed the level of the body face.
  - c) Loosen the screw (No. 10).
- 3) By turning the operating screw – the screw (No. 10) is loosened – the slide moves at the coarse feed to the required position. By retightening the screw (No. 10) the fine feed for the precision adjustment is opted.

**Note:**

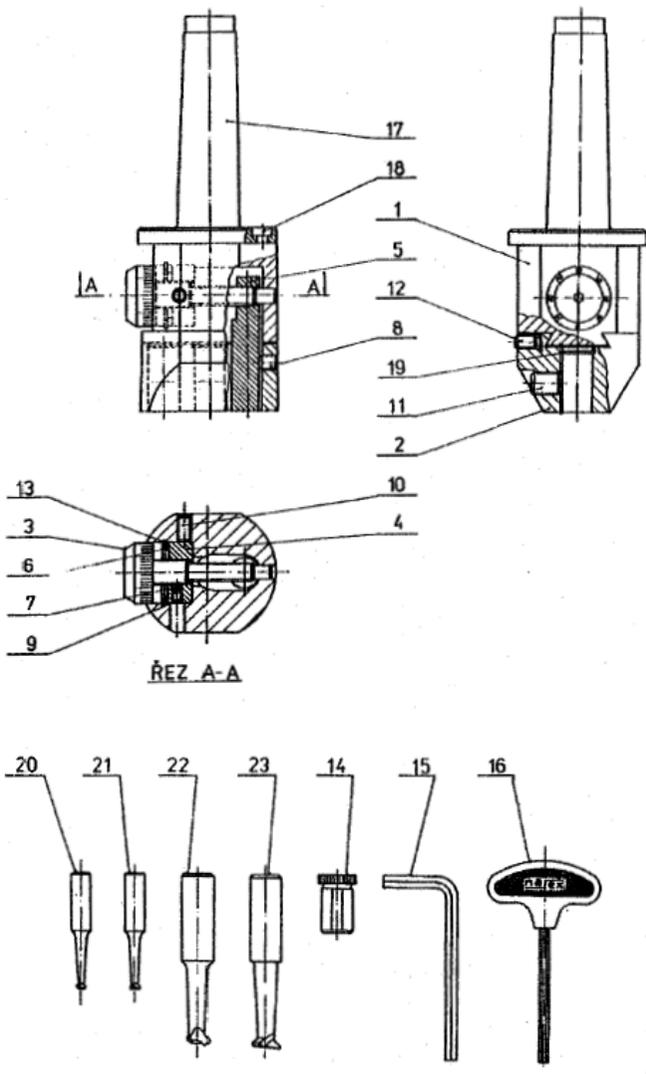
*On using the fine feed the maximal extension of the slide is limited to approximately 0,7 mm. When the extension of the slide is insufficient, proceed according to item No. 2.*

		$D_1 \text{ min}$	$D_1 \text{ max}$	$h_1 \text{ max}$		
	VH - 70	6	100	28/41		
	VH - 110	15	160	40		
	VH - 140	15	225	40		
* Boring Bar						
		-	-	-	VH - 70	
		36	220	115	VH - 110	
		36	260	115	VH - 140	
		$D_2 \text{ min}$	$D_2 \text{ max}$	$h_2 \text{ max}$		
	VH - 70	-	-	-		
	VH - 110	170	310	40		
	VH - 140	197	385	40		
* Boring Bar						
		-	-	-	VH - 70	
		190	345	115	VH - 110	
		220	415	115	VH - 140	
		$D_1 \text{ min}$	$D_1 \text{ max}$	$h_1 \text{ max}$		
	VH - 70	-	-	-		
	VH - 110	150	270	-		
	VH - 140	165	300	-		
Extension Holders						
		154	218	-	VH - 70	
		-	-	-	VH - 110	
		-	-	-	VH - 140	

Exchangeable Taper Shanks					Primary Accessories				
No. 18		VH - 70	VH - 110	VH-140	No. - VH - 110	d	D	L	
 <p>TYPE 1 ČSN 22 0420</p>	Mk 3	x	--	--	 <p>No. 15</p>	10	16	--	VH - 70
	Mk 4	x	x	--		16	25	--	VH-110
	Mk 5	--	x	x	 <p>No. 23</p>	10	5	60	VH - 70
	Mk 6	--	x	x		16	13	90	VH - 70
 <p>TYPE 2 ČSN 22 0424</p>	Mk 3	x	--	--	 <p>No. 22</p>	10	5	60	VH - 70
	Mk 4	x	x	--		16	13	90	VH - 70
	Mk 5	x	x	x	 <p>No. 14</p>	25	25	115	VH-110
	Mk 6	--	x	x				135	VH-140
 <p>TYPE 3 Removable Tang</p>	ISO 30	x	--	--	<p>Special Accessories – for VH - 70</p>  <p>1. Extension Holder 4 - 1127 2. Extension Holder 4 - 1128 d = 16 mm</p>				
	ISO 40	x	x	x					
	ISO 50	x	x	x					
 <p>ISO 279 DIN 2080 ČSN 22 0430</p>	ISO 30	x	--	--	<p>Special Accessories</p>  <p>Boring Bar</p> <p>Boring Tool HSS 8x8-30</p> <p>Boring Tool P20 8x8-30</p> <p>Boring Tools with VSDK</p>				
	ISO 40	x	x	x					
	ISO 50	--	x	x					
 <p>ISO 7388/1 DIN 69871/A ČSN 22 0434 ČSN 22 0432</p>	ISO 30	x	--	--	25	--	100	VH-110 VH-140	
	ISO 40	x	x	x	25	--	160		
	ISO 50	--	x	x					

VH 70

Spare Part List



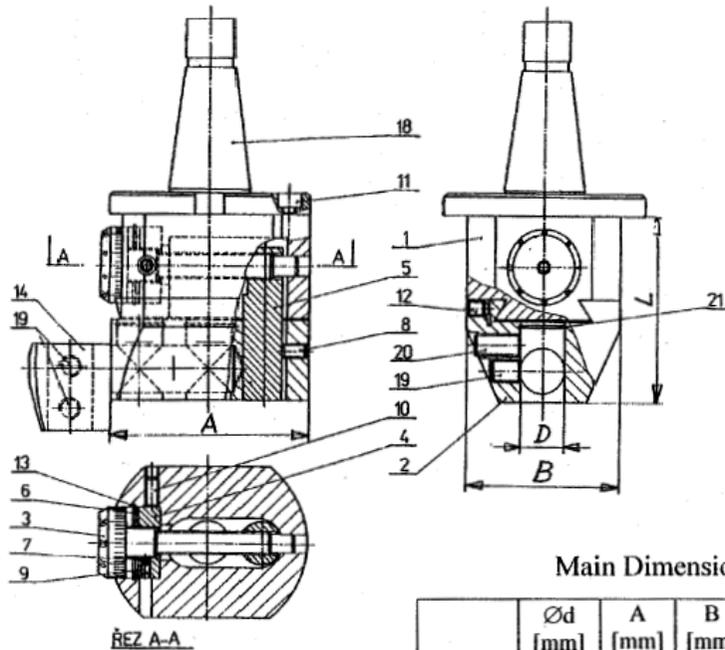
No.	Name	Pcs	Cod
1	Body	1	410.070.110.101.00
2	Slide	1	410.070.110.201.00
3	Operating Screw	1	410.070.110.301.00
4	Round Nut	1	410.070.110.401.00
5	Carrier Pin	1	410.070.110.501.00
6	Spacing Ring	1	410.070.110.601.00
7	Insert	1	410.070.110.701.00
8	Screw	1	309.787.508.010.00
9	Screw	1	309.281.006.006.00
10	Screw	1	309.787.508.012.00
11	Screw	2	309.787.512.015.00
12	Screw	2	309.787.508.012.00
13	Circlip	1	410.070.110.801.00
14	Reduction Sleeve	1	412.126.014.300.00
15	Wrench	1	413.324.000.600.00
16	Wrench 4 „NAREX“	1	412.926.016.100.00
17	--	--	--
18	Screw	4	309.543.005.012.00
19	Circlip	2	311.733.100.160.00
20	B.T. 5X10X60 221710	1	411.172.101.306.00
21	B.T. 5X10X60 221711	1	411.172.111.306.00
22	B.T. 13X16X90 221710	1	411.172.104.409.00
23	B.T. 13X16X90 221711	1	411.172.114.409.00

Special Accessories

a	Extension Holder 4 - 1127	--	410 070 112 701.00
b	Extension Holder 4 - 1128	--	410 070 112 801.00
c	Screw M8x1-10 021187	2	309 787 508 010.00

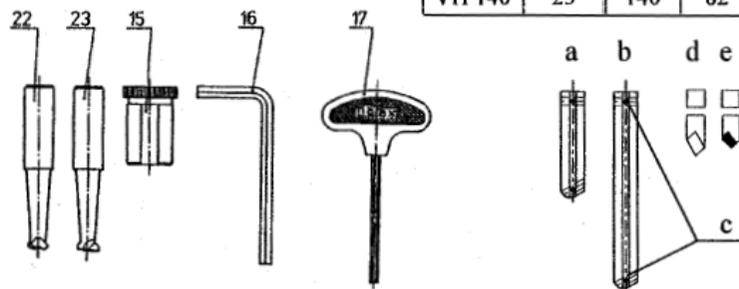
VH 110

Spare Part List



Main Dimensions

	Ød [mm]	A [mm]	B [mm]	L [mm]	m [kg]
VH 70	16	70	62	82	2
VH 110	25	110	84	100	4,4
VH 140	25	140	82	104	6.1



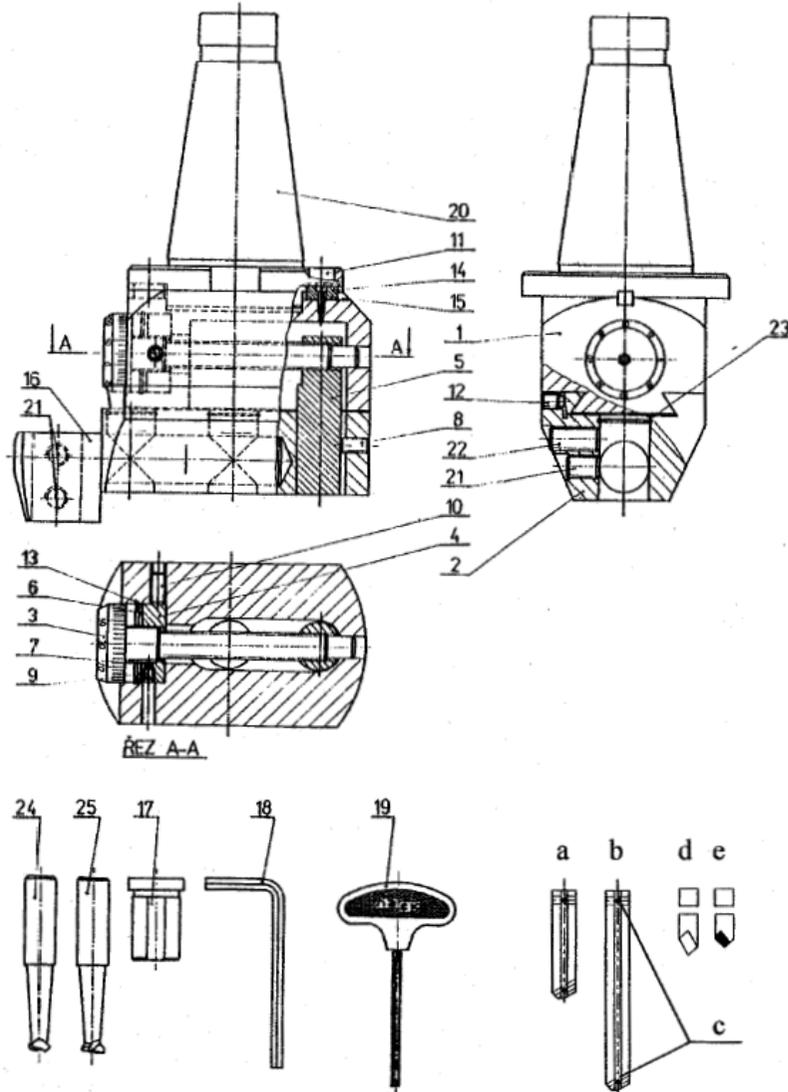
No.	Name	Pcs	Cod
1	Body	1	410.110.111.101.00
2	Slide	1	410.110.111.201.00
3	Operating Screw	1	410.110.111.301.00
4	Round Nut	1	410.110.111.401.00
5	Carrier Pin	1	410.110.111.501.00
6	Spacing Ring	1	410.110.111.601.00
7	Insert	1	410.110.111.701.00
8	Screw	1	309.787.508.010.00
9	Screw	1	309.281.006.006.00
10	Screw	1	309.787.508.015.00
11	Screw	4	309.543.008.012.00
12	Screw	3	309.787.508.012.00
13	Circlip	1	410.110.111.801.00
14	Extension Holder	1	410.110.111.901.00
15	Reduction Sleeve	1	412.926.021.700.00
16	Wrench	1	413.324.000.600.00
17	Wrench „NAREX“	1	412.926.016.100.00
18	Taper Shank	--	--
19	Screw	5	309.787.512.015.00
20	Screw	2	309.787.512.025.00
21	Circlip	2	311.733.100.250.00
22	B.T. 13X16X90 221710	1	411.172.104.409.00
23	B.T. 13X16X90 221711	1	411.172.114.409.00

Special Accessories

a	Boring Bar 25-100		412 926 019 600.00
b	Boring Bar 25-160		412 926 019 400.00
c	Screw M8x1-10 021187	2	309 787 508 010.00
d	B.T. 8X8X30 HSS		412 926 022 400.00
e	B.T. 8X8X30 S20		415 249 324 821.00

VH 140

Spare Part List



No.	Name	Pcs	Cod
1	Body	1	410.140.112.201.00
2	Slide	1	410.140.112.301.00
3	Operating Screw	1	410.140.112.401.00
4	Round Nut	1	410.110.111.401.00
5	Carrier Pin	1	410.110.111.501.00
6	Spacing Ring	1	410.110.111.601.00
7	Insert	1	410.110.111.701.00
8	Screw	1	309.787.508.010.00
9	Screw	1	309.281.006.006.00
10	Screw	1	309.787.508.015.00
11	Screw	4	309.543.008.012.00
12	Screw	3	309.787.508.012.00
13	Circlip	1	410.110.111.801.00
14	Parallel Key	2	412.926.028.700.00
15	Screw	2	309.231.003.008.00
16	Extension Holder	1	410.140.112.501.00
17	Reduction Sleeve	1	412.926.021.700.00
18	Wrench 6	1	413.324.000.600.00
19	Wrench 4	1	412.926.016.100.00
20	Taper Shank	--	--
21	Screw	5	309.787.512.015.00
22	Screw	2	309.787.512.025.00
23	Circlip	2	311.733.100.250.00
24	B.T. 13X16X90 221710	1	411.172.104.409.00
25	B.T. 13X16X90 221711	1	411.172.114.409.00

Special Accessories

a	Boring Bar 25-100		412 926 019 600.00
b	Boring Bar 25-160		412 926 019 400.00
c	Screw M8x1-10 021187	2	309 787 508 010.00
d	B.T. 8X8X30 HSS		412 926 022 400.00
e	B.T. 8X8X30 S20		415 249 324 821.00