Direction for Use

Ev.no.: 0620205

SVn

modular
boring
system
SVn 90, SVn 380, SVn 600

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NAREX MTE®

SVn - Modular boring system

Direction for use

Summary:

1. Way of delivery, list of spare parts, list of accessories

System is delivered especially in separately parts, if customer orderes concrete set, then can be delivered already assembled system up to his requirements. Tools are delivered in sets.

List of parts modular boring system SVn 90 + accessories

Code 281 605 body 1/0 (range 105-160) ..... 1 pc
+ binder screws M12 x 110 2 pcs
M12 x 60 2 pcs
M12 x 50 2 pcs
Washer 13 ..... 2 pcs

Code 281 766 set of tools 3/1+3/2 (range 105-160)..... 1 set
including put 2 pcs VBD CCMT 120408E-48 UM 8030

Code 281 773 set of tools 4/1+4/2 (range 105-160)..... 1 set
including put 2 pcs VBD SCMT 120408E-48 UM 8030

Accessories: screwdriver T 20 x 35 no. 808420 ..... 1 pc

List of parts modular boring system SVn 380 + accessories

Code 281 612 body 1/1 (range 150-260) ..... 1 pc
+ binder screws M12 x 110 2 pcs
M12 x 60 2 pcs
M12 x 50 2 pcs
washer 13 ..... 2 pcs

Code 281 636 body 1/2 (range 260-380) ..... 1 pc
+ binder screws M12 x 60 4 pcs

Code 281 681 shoulder 2/1 (range 260-380) …… 2 pcs
+ binder screws M12 x 50 2 pcs
washer 13 …….. 2 pcs

Code 281 704 set of tools 3/1+3/2 ……. 1 set
including put 2 pcs VBD CCMT 120408E-48 UM 8030
Code 281 711 set of tools 4/1+4/2 ……. 1 set
including put 2 pcs VBD SCMT 120408E-48 UM 8030

Code 281 728 set of tools 5/1+5/1 ……. 1 set
including put 2 pcs VBD CCMT 120408E-48 UM 8030

Code 281 735 finishing tool 6/1 ……... ……. 1 set
including tool unit 16 – 49 PN242421
(by original design 10 – 38 PN242421)
+ counterweight

Accessories: screwdriver T 20 x 35 no. 808420 …… 1 pc

List of parts modular boring system SVn 600 + accessories

Code 281 650 body 1/3 (range 370-600) …… 1 pc
+ binder screws M16 x 90 4 pcs

Code 281 681 shoulder 2/2 (range 370-490) …… 2 pcs
+ binder screws M12 x 50 2 pcs
washer 13 …….. 2 pcs

Code 281 698 shoulder 2/3 (range 480-600) …… 2 pcs
+ binder screws M12 x 50 2 pcs
washer 13 …….. 2 pcs

Code 281 704 set of tools 3/1+3/2 ……. 1 set
including put 2 pcs VBD CCMT 120408E-48 UM 8030

Code 281 711 set of tools 4/1+4/2 ……. 1 set
including pu 2 pcs VBD SCMT 120408E-48 UM 8030

Code 281 728 set of tools 5/1+5/1 ……. 1 set
including put 2 pcs VBD CCMT 120408E-48 UM 8030

Code 281 735 finishing tool 6/1 ……..……... 1 set
including tool unit 16 – 49 PN242421
(by original design 10 – 38 PN242421)
+ counterweight

Accessories: screwdriver T 20 x 35 no. 808420 …… 1 pc

Body is clamped on the interior cutters for cutter heads. Shank is delivered only if it was ordered.

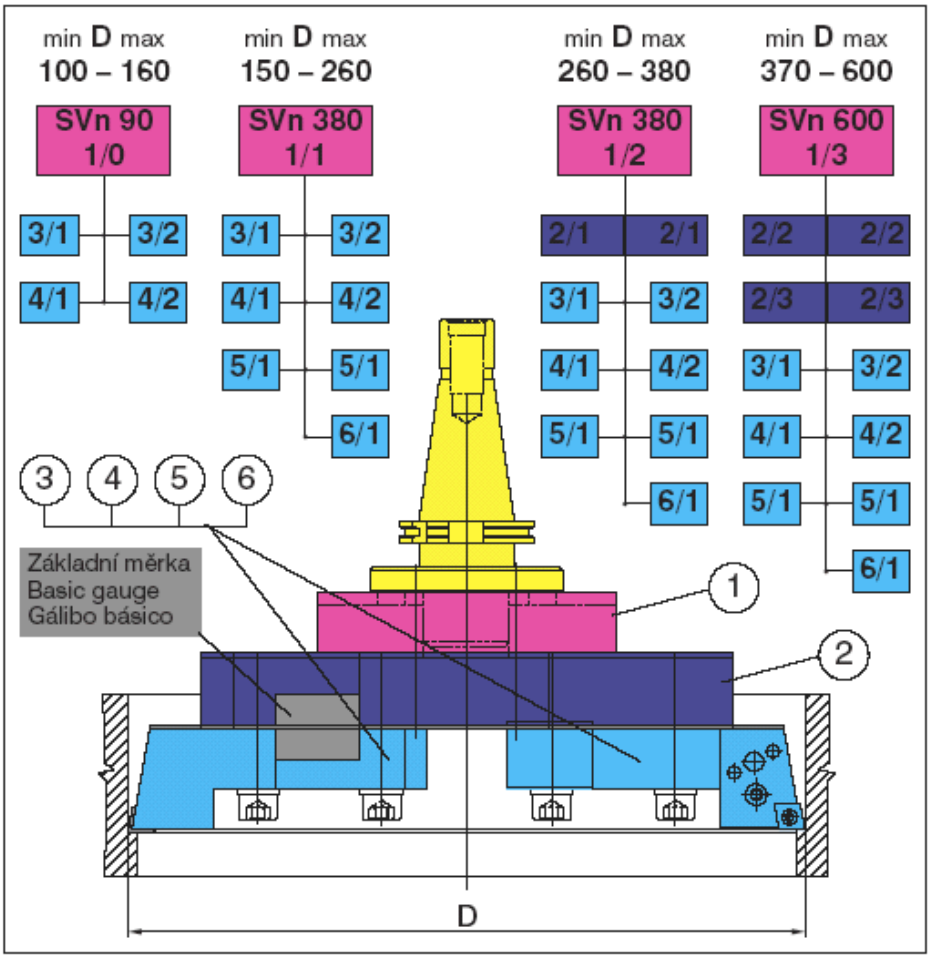
Arbors for body SVn 90 and SVn 380 (with 4-threads M12)

Code	208 909	arbor 40x40x90 with taper shank ISO 40 DIN 2080
	208 930	arbor 40x40x90 with taper shank ISO 40 ČSN 22 0432
	208 961	arbor 40x40x90 with taper shank ISO 40 DIN 69 871-A
	208 848	arbor 40x40x60 with taper shank MAS-BT 40
Code	208 919	arbor 50x40x90 with taper shank ISO 50 DIN 2080
	208 947	arbor 50x40x90 with taper shank ISO 50 ČSN 22 0432
	208 961	arbor 50x40x90 with taper shank ISO 50 DIN 69 871-A
	208 848	arbor 50x40x70 with taper shank MAS-BT 50
Code	208 879	arbor HSK – A63x40-60
	208 886	arbor HSK – A100x40-60

Arbors for body SVn 600 (with 4-threads M12)

Code	208 923	arbor 50x60x130 with taper shank ISO 50 DIN 2080
	208 954	arbor 50x60x130 with taper shank ISO 50 ČSN 22 0432
	208 985	arbor 50x60x130 with taper shank ISO 50 DIN 69 871-A
	208 862	arbor 50x60x80 with taper shank MAS-BT 50

2. Way of functional units assembly



Assembly of SVn 90

Into the body 1/0 is put arbor and crosswise is by 2 screws M12 x 60 screwed on. To the grooves on the body are put both tools from the set and each of tools is screwed on the body by screw M12 x 110. These 4 screws are screwed in the threads in interior cutter and simultaneously hold cutter on the body. Rest 2 screws M12 x 50 hold tools on the body.

Assembly of SVn 380 for range 150-260 mm

Into the body 1/1 is put arbor and crosswise is by 2 screws M12 x 60 screwed on . To the grooves on the body are put both tools from 1 set and each of tools is screwed on the body by screw M12 x 110. These 4 screwes are screwed in the threads in interior cutter and simultaneously hold cutter on the body. Rest 2 screws M12 x 50 hold tools on the body.

Assembly of SVn 380 for range 260-380 mm

Into the body 1/2 is put arbor, to the grooves on the body are put both shoulders 2/1 and all units hold together by 4 screws M12 x 60. On the end of both shoulders are screwed tools from one set – everytime by 2 screws M12 x 50.

Assembly SVn 600 for range 370-490 mm

Into the body 1/3 is put arbor, to the grooves on the body are put both shoulders 2/2 and all units hold together by 4 screws M16 x 90. On the end of both shoulders are screwed tools from one set – everytime by 2 screws M 12 x 50.

Assembly SVn 600 for range 480-600 mm

Into the body 1/3 is put arbor, to the grooves on the body are put both shoulders 2/3 and all units hold together by 4 screws M 16 x 90. On the end of both houlders are screwed tools from 1 set – everytime by 2 screws M 12 x 50.

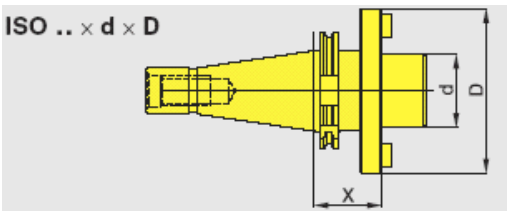
WARNING!
While assembly of tools and shoulders on the body as well as assembly tools on shoulders is necessary to orientate tools and shoulders such way that their straight sides must aim at each other. It means aim to the middle of the body and sides with polished mounting outwards. See on the picture xy.

3. Operating data

Working range of single systems SVn [mm]

Type/dimension	Slot boring	Plug turning
SVn 90	105 - 160	0
SVn 380		
System 150-260	150 - 265	60 - 175
System 260-380	260 - 380	170 - 290
SVn 600		
System 370-490	370 - 490	280 - 400
System 480-600	480 - 600	390 - 510

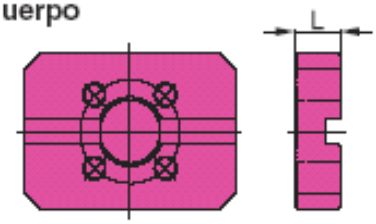
Interior cutter for cutter heads (with 4 threads M12)



Cutter norm	Name	d [mm]	D [mm]	X [mm]	[Kg]
DIN 2080	40x40x90	40 h6	90	42	2,1
(ČSN 22 0430)	50x40x90	40 h6	90	33	3,6
	50x60x130	60 h6	128	29	6,2
ČSN 22 0432	40x40x90	40 h6	90	37	2,2
	50x40x90	40 h6	90	40	3,9
	50x60x130	60 h6	130	55	6,3
DIN 69 871-A	40x40x90	40 h6	90	50	2,1
(ČSN 22 0434)	50x40x90	40 h6	88	70	3,9
	50x60x130	60 h6	128	70	6,3
MAS BT	40x40	40 h6	88	60	
	50x40	40 h6	88	70	
	50x60	60 h6	128	80	
DIN 69 893-1 (A)	HSK-A63x40-60	40 h6	89	60	
	HSK-A63x40-100	40 h6	89	100	
	HSK-A100x40-60	40 h6	89	60	

Body

Těleso–Body–Cuerpo



1

Name	Range	L [mm]
1/0	105 - 160	65
1/1	150 - 265	60
1/2	260 - 380	30
1/3	370 - 600	35

Shoulder (extension arm)

Rameno–Extension arm–Brazo

2

Name	Range	L [mm]
2.I	150 - 265	36
2/2	260 - 380	50
2/3	370 - 600	50

Internal tool

Nůž vnitřní–Internal tool–Cuchilla interior

3

Name	L[mm]	Type VBD	Šcrew
3/1	47	CCMT 120408E	US 14
3/2	48	UM 8030	M5x10,5

Internal tool – edge slope 10°

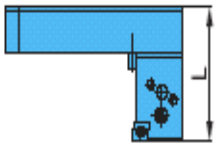
Nůž vnitřní–Internal tool–Cuchilla interior

4

Name	L[mm]	Type VBD	Šcrew
4/1	47	SCMT120408E	US 14
4/2	48	UM 8030	M5x10,5

External tool

Nůž vnější–External tool–Cuchilla exterior



5

Name	L[mm]	Type VBD	Screw
5/1	70	CCMT120408E	US 14
		UM 8030	M5x10,5

Finishing tool

Nůž dokončovací–Finishing tool–Cuchilla de acabado

6

Name	L[mm]	Type VBD	Screw
6.I	88	CCMT 060202 UM8016	T8
Tool unit: 10-38 PN242421			M2,5x5,5
6.I	81	TCMT 110202 UM8016	T8
Tool unit: 16-49 PN242421			M2,5x7

Tool units are delivered without VBD.

4. Way of usage

Modular boring system SVn is used for boring of blanked, rough or other way prepared holes. It is rigid unit with 2 opposite tools which are put in the longitudinal slotting because of the possibility of their shifting duirng adjusting boring diameter. In that the length „L“ by one set of tools 3/1+3/2 and 4/1+4/2 differes for 1 mm, can be to each of both tools from set adjusted own depth of cut. Maximum depth on one tool is 8mm. During blind holes boring can different length of tools obstruct. Then we recommend to order 2 sets of the same tools and couple them on one length.
If both screws clamping tool are free we can shift by tool in longitudinal groove of body or shoulder. On tools sides, shoulders and bodys are grounded surfaces of mounting which can be used for measuring of position during their shifting if there isn´t used setting apparatus. Between these grounded surfaces can be pressed e.g. gauge block, adjusted on given length of tool shift. Tool 5/1 is for machining of short outer diamteres up to the bottom. Finishing tool 6/1 is used separately with counterweight. It can be used for finishing of prepared holes in accuracy IT7.

Max. allowed revolutions of instrument:
SVn 90 …….. 700 rev/min
SVn 380 (range 150-265) ……. 450 rev/min
SVn 380 (range 260-380) ……. 350 rev/min
SVn 600 (range 370-490) ……. 250 rev/min
SVn 600 (range 480-600) ……. 200 rev/min

Max. depth of cut on 1 tool …….. 8 mm

Max. feeds:
Steel roughing cut with rigidity to 500 Mpa …… 0,7 mm/rev
Stell roughing cut with rigidity to 700 Mpa …… 0,5 mm/rev
Finish work ……. 0,2 – 0,4 mm/rev
Tool unit ……..…. 0,2 mm/rev

Finishing tool – dimension adjusting

1. Body of the tool adjust so that the pike of tool unit must touch the surface of prepared hole
2. On the scale of tool unit adjust necessary protrusion of the tool – 1 DIV of the scale = 0,02mm/Ø.
3. Bore and gauge trial hole diameter.
4. Correct the tool unit adjusting.

<u>Procedure of tool unit handling</u>
Rough adjusting – (advance of tool for more than 0,3 mm)
Fine adjusting – (advance of tool up to 0,3 mm)

By both ways of adjusting is scale of the tool turning. Body of the tool is put in the holder but it is protected against turning. The scale is simultaneously nut which during turning moves tool out from the holder. Removal tool from the holder is limited by strengthening screw and disc springs.

Rough adjusting is done this way:

1. Loosen strengthening screw in spindle centerline on it ´s back part
2. By scale turning move tool out on the approximate diameter
3. Tighten strengthening screw.

Fine adjusting is done this way:

1. Strengthening screw loosen for **one third** of one revolution (loosen can´t be higher than 120°)
2. Scale turns for relevant number of divisions (max for 30 DIV = 0,6mm/ Ø).
3. **WARNING!** Strengthening screw isn´t fully tightened.

5. Security recommendation

1. Pay attention to screw up all clamping screws of instrument.
2. Before setting off spindle revolutions with clamped instrument is necessary to assure that there is nothing hindering the turning of instrument and further to close work space of machine by the cover.
3. While manual handling with instrument is necessary to be aware about risk of fall.
4. We don´t recommend to get over tolerable spindle revolutions and maximum value of tolerable shifts and depth of cut. Cutting conditions must be in keeping with possibilities of used machine tool.

6. Conditions of guarantee

1. Term of guarantee: The producer provides a 12 month guarantee for defect-free operation starting from the day of purchase by the first direct consumer (maximum 18 month guarantee from delivery from the producer to the distributor).
2. The guarantee does not cover the parts that have shorter service life as specified by corresponding technical standards or that are regularly replaced. The producer does not guarantee for damage caused by the shipping company, for defect caused by incompetent manipulation, inadequate storage conditions, overloading or severe treatment.
3. Transportation costs for shipping to the place of guarantee repair and back are paid by the producer on condition the producer approved the means of transportation.
4. When exercising a complaint it is unconditionally necessary to send or submit the invoice testifying the purchase of the instrument. Without this document, the repair will not be considered as guarantee repair and will be billed. The claim is considered as guarantee repair on condition that
    a) the product works in such conditions and in such manner as specified in the operation manual and the maintenance and operation instructions are observed.
    b) no design modification were performed on the product by the customer or another person without prior approval of the producer and the product suffered no incompetent assembly interventions.
5. Guarantee repairs are performed by the producer within 30 days from the complaint admission.

The producer also performs all repair of the products after the the guarantee period expires.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