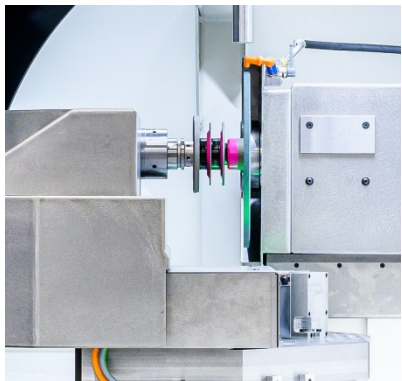
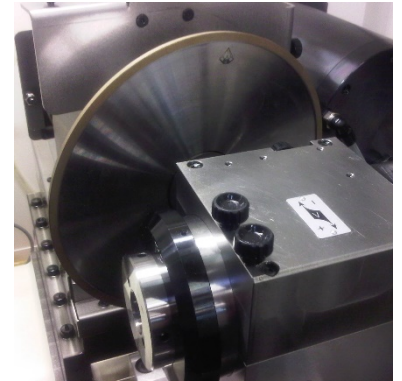


ACTION SUPER ABRASIVE SA



CATALOGUE



DIAMOND & CBN WHEEL PRODUCTS DRESSING MACHINE



Action Super Abrasive SA • 11, Prés-Bersot • 2087 Cornaux • Switzerland

www.actionsuper.ch • info@actionsuper.ch



INTRODUCTION

ASA (Action Super Abrasive SA), company founded in 1993, is specialized in the development and production of Diamond and CBN grinding wheels with Resin- (Phenolic and Polyimide), Hybrid- and Metal bonds used for manufacturing cutting tools.

From the very beginning Action Super Abrasive SA has attached a fundamental importance to its production quality and flexibility. Our main goals still lie today in the ability to provide a product from the concept stage to its unit or volume production in a very short delivery period.

Our know-how combined with many years of experience has granted us a big advantage to advise and support our customers in developing specific bonds for each grinding application. The constant improvement of our wheel production machines and a very advanced laboratory ensure highest repeatable quality and reliability in production.



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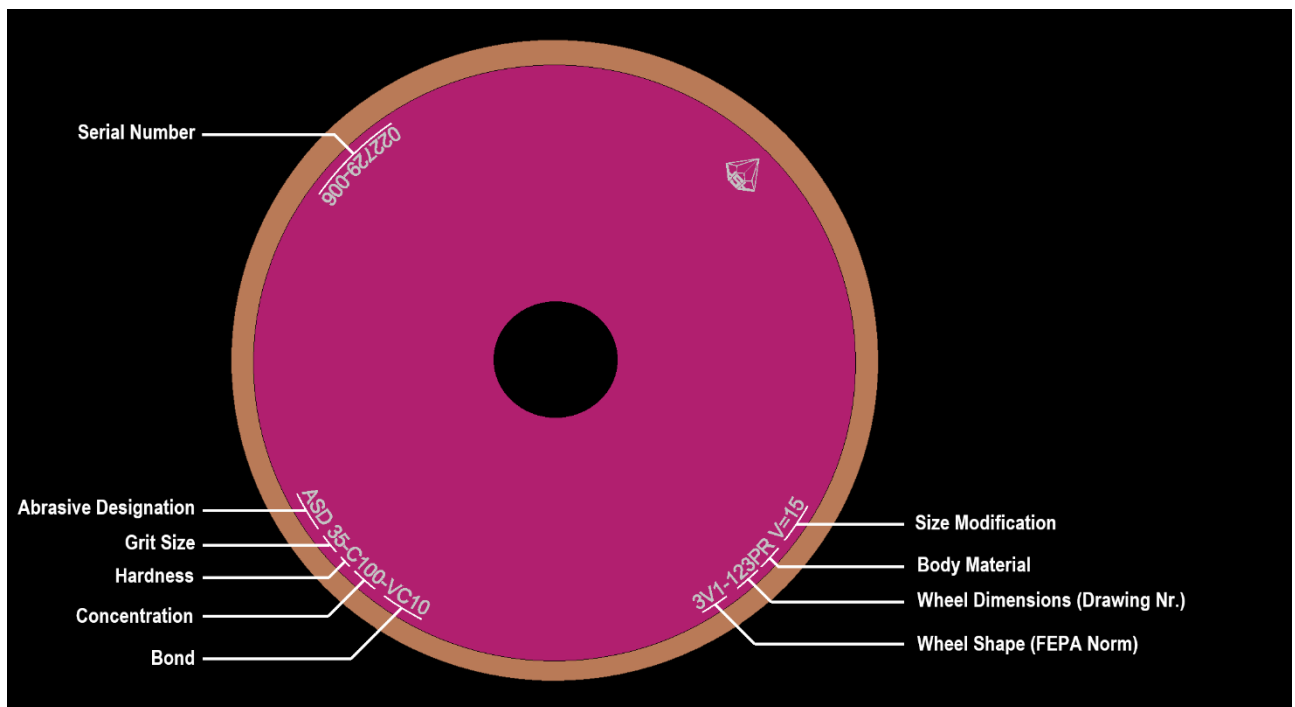
ORDER DETAILS

The following descriptions are required for processing your enquiries or orders. Furthermore, please also indicate the application of the wheel, used coolant and machine type.

It is important to inform us about the most important criteria required in expected balance between form hold, surface quality and grinding conditions.



EXPLANATION ENGRAVING



The number following the wheel shape (FEPA), determines all the dimensions of the wheel, also we add additional space regards size modification (e.g.: an angle).

All this information appears on all our documents under description:

022729-006
3V1-123PR V=15 ASD 35-C100-VC10
D150-T8-H31.75-U3-X6-V30



SERIAL NUMBER

The serial number is unique for the traceability of the wheel specifications.

The first part indicates the confirmation number, the second part the indexed number.



ABRASIVE DESIGNATION / DIAMOND

DIAMOND

Diamond is used to grind tools made of non-ferrous metals, non-metallic materials and composites. (Hardness KNOOP 8000-9000).

DESCRIPTION	
SD	Used in our Polyimide, Hybrid and Phenolic bonds intended for dry grinding. Grit size available from 1 to 35.
ASD*	Its coating helps grit retention in the bonding layer and enhances heat dissipation which assures extended lifetime. Mostly used in our Phenolic bond under lubrication. Grit size available from 15 to 252.
ASD6*	Its coating is specially designed to achieve improved retention in the bond layer for operations under lubrication. Used in our Polyimide and Hybrid bonds. Grit size available from 46 to 252.
DMD	Used in our Metal bonds. Grit size available from 10 to 252.
ASDC	Coated diamond specifically used for dry grinding operations. Grit size available from 46 to 252.
ASDK	Ideal for grinding difficult materials such as Ceramic and Cermet. Used in our Phenolic, Polyimide and Hybrid bonds. Grit size available from 46 to 252.
ASDS	Specially designed and coated diamond for cut-off wheels. Grit size available from 46 to 252.



ABRASIVE DESIGNATION / CBN

BORAZON

Cubic Boron Nitride (CBN) is used to grind tools made of hardened ferrous metals and super-alloys. (Hardness KNOOP 4600).

DESCRIPTION	
B	Used in our Polyimide, Hybrid and Phenolic bonds. Grit size available from 6 to 10.
CBN*	Its coating helps grit retention in the bonding layer and enhances heat dissipation from the grinding contact point. Used in our Polyimide, Hybrid and Phenolic bonds. Grit size available from 15 to 252.
BM	Used in our Metal bonds. Grit size available from 10 to 252.

SURFACE QUALITY

(Rough measure estimation, depending on the bindings and materials used)

DIAMANT	D7	D15	D25	D46	D76	D126	D252	
	D10	D20	D30	D54	D91	D151		
				D64	D107	D181		
	N1	N2	N3	N4	N5	N6	N7	N8
Ra (µm)	0,025	0,06	0,12	0,25	0,5	1,0	1,6	3,2
Rt (µm)	0,5	0,5	1,0	2,0	4,0	8,0	12,5	32,0
Rz (µm)	0,18	0,38	0,75	1,6	3,2	6,3	10,0	16,0
	N1	N2	N3	N4	N5	N6	N7	N8
CBN		B10	B15	B30	B46	B76	B151	B252
			B20		B54	B91	B181	B301
					B64	B107		



GRIT SIZES

All our dimensions are engraved according to FEPA standards.

DIAMOND (FEPA)	CBN (FEPA)	MICRON	US MESH
1	-	1-2 µm	14'000
3	-	2-4 µm	8'000
5	-	4-6 µm	6'000
-	6	4-8 µm	3'000
7	-	6-8 µm	2'500
10	10	6-12 µm	1'800
15	15	10-20 µm	1'200
20	20	15-25 µm	1'000
25	25	20-30 µm	800
30	30	22-36 µm	700
35	(40)	30-40 µm	600
46	46	38-45 µm	325/400
54	54	45-53 µm	270/325
64	64	53-63 µm	230/270
76	76	63-75 µm	200/230
91	91	75-90 µm	170/200
107	107	90-106 µm	140/170
126	126	106-125 µm	120/140
151	151	125-150 µm	100/120
181	181	150-180 µm	80/100
252	252	212-250 µm	60/70
301	301	250-300 µm	50/60



HARDNESS OF THE WHEEL

This letter is always placed before the concentration so that we have the option to change the base bond.

LETTER	HARDNESS
L	Soft
N	Middle
C	Hard (with diamond abrasive in concentration 100)
R	Hard (with CBN abrasive in concentration 100)
V	Very Hard



CONCENTRATION

We use the same concentration figures for both abrasive materials that meet internationally accepted standards.

This expresses the weight of the abrasive per cm³. (1carat = 0.2g)

CONCENTRATION	CTS/CM ³
25	1.1
50	2.2
75	3.3
100	4.4
125	5.5
150	6.6
175	7.7



BOND / LEGEND

The table below describes the qualitative levels of our binders based on the 3 most referenced criteria among our customers. To meet your specific needs, we can adapt this criteria by flexible variation between concentration and hardness.

	LOW	ACCEPTABLE	MEDIUM	GOOD	EXCELLENT
Cutting power	●●●●	●●●●	●●●●	●●●●	●●●●
Form hold	●●●●	●●●●	●●●●	●●●●	●●●●
Surface Quality	●●●●	●●●●	●●●●	●●●●	●●●●



BOND / PHENOLIC

RESIN PHENOLIC: Used for grinding and re-grinding small to medium batches and low stock removal to achieve best surface finish. Dry grinding possible with variable binders.

BOND	DIAMOND	CBN
B21	-For polishing (flute, end-face). -For micron grit. 	-For polishing (flute, end-face). -For micron grit.
VC10	-Universal bond (end-face). -Dry grinding possible. 	-Universal bond (end-face). -Dry grinding possible.
B16	-For surfacing and plunging. 	-For surfacing and plunging.
B25	-For cut-off wheels. 	-For cut-off wheels.
BC4	-Universal bond (flute). -Dry grinding possible. -For micron grit. 	-Universal bond (flute). -Dry grinding possible. -For micron grit.
BC3	-Same as BC4 but for bigger grit. 	-Same as BC4 but for bigger grit.
BC5	-Universal bond (gash). -Dry grinding possible. 	-Universal bond (gash). -Dry grinding possible.
BW2	-Replaced by H6 Piranha, still in our program until 2024.	-Replaced by H6 Piranha, still in our program until 2024.
BW3	- Cup wheel, rough grinding discs on surface grinder with rotary table, with coolant. 	
ADS	-For polishing (watch industry). 	



BOND / POLYIMIDE

RESIN POLYIMIDE: Used for grinding medium to large batches under lubrication with good surface finish.

BOND	DIAMOND	CBN
BP4	-Universal bond (fluting, gash). 	-Universal bond (fluting, gash).
BP11	-Finish grinding. -For micron grit. 	-Finish grinding. -For micron grit.
BP17	-Super finish grinding. -For micron grit. 	
BP40	-Replaced by BPM5, still in our program until 2024.	-Replaced by BPM5, still in our program until 2024.



BOND / HYBRID

RESIN METAL: Used for grinding large batches due to strong form retention and cutting power, but less surface finish compared to Polyimide.

BOND	DIAMOND	CBN
BPM2A	-For gashing and fluting of micro- and nano-tools. -For micro grit. 	
BPM3	-High stock removal grinding. Very free cutting. 	-High stock removal grinding. Very free cutting.
BPM5	-High stock removal grinding (End-face). 	-High stock removal grinding (End-face).
H6 PIRANHA	-High stock removal grinding (flute tool size from ø4 to 8mm). 	-High stock removal grinding (flute tool size from ø4 to +).



BOND / METAL MNG*

METAL: Used for grinding large batches due to its form retention and heat resistance.

BOND	DIAMOND	CBN
MNG1	-Roughing wheel for reducing diameter (Rollomatic NP4, NP5, NP50). 	-Roughing wheel for reducing diameter (Rollomatic NP4, NP5, NP50).
MNG2	-Cup Wheel (insert). 	
MNG4	-For higher material removal than MNG5 bond. 	
MNG5	-For dental tools (flutes). 	-For form tools.
MNG8	-For form tools. -For micron grit. 	-For form tools. -For micron grit.



BOND / METAL-VITRIFIED

METAL VITRIFIED: Used for large batches due to its cutting power and heat resistance.

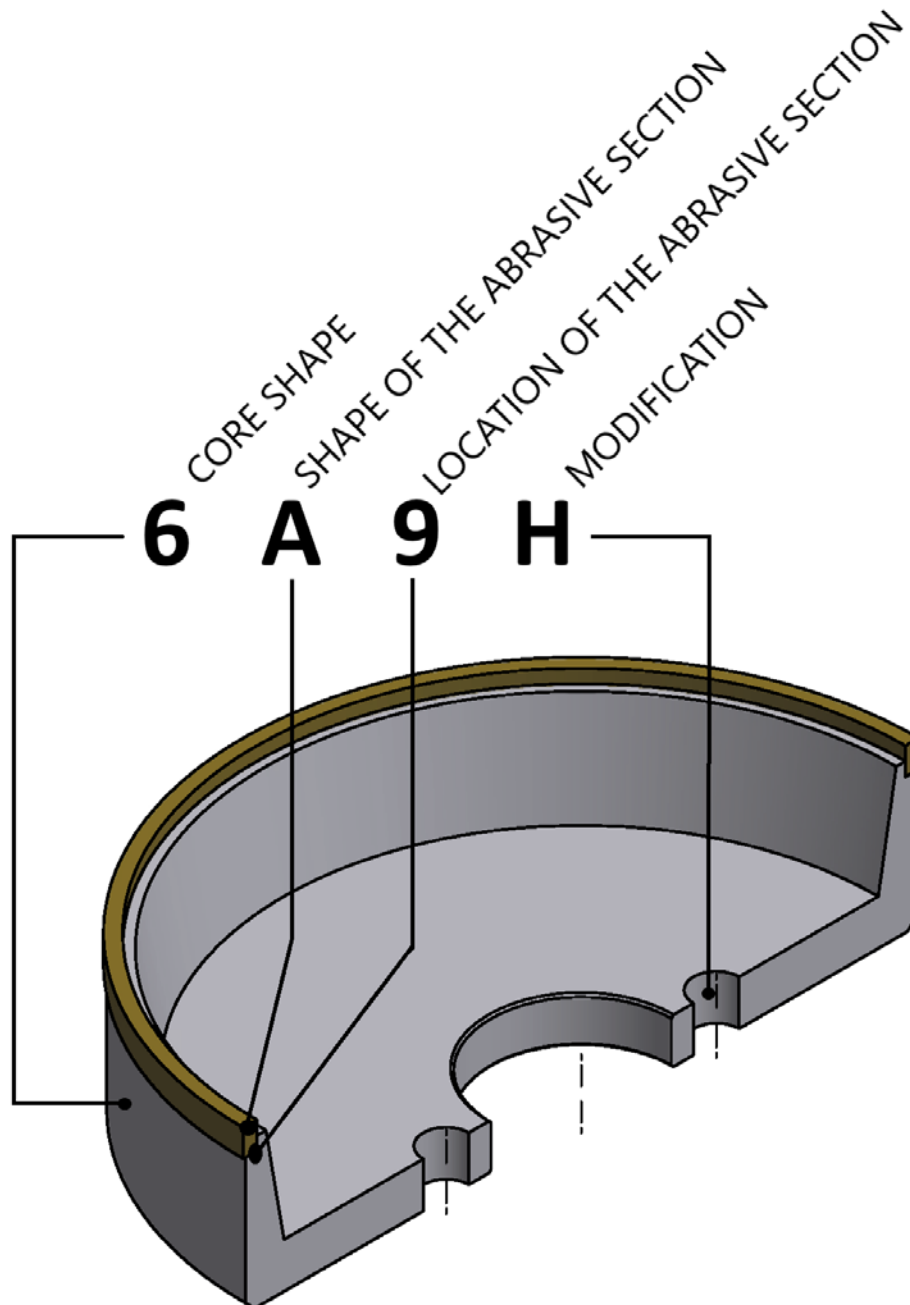
BOND	DIAMOND	CBN
M1 SHARK	-Grinding high stock removal (flute tool size from ø8 to +). 	



WHEEL SHAPE

The shapes of our wheels are based on the FEPA standards. (European Federation of manufacturers of Abrasive Products.)

All our shapes are detailed from page 16.





WHEEL DIMENSIONS

The number (drawing number) that follows the shape of the wheel defines all its dimensions. You can consult the list of all our drawings on our website. www.actionsuper.ch

The dimensions of our grinding wheels are preceded by a letter, which determines a specific dimension of the wheel.

D	Diameter	T ₁	Reduced hub thickness
T	Overall thickness	U ₁	Reduced thickness of the section
H	Bore	E	Thickness at bore
U	Thickness of the section	K	Inside recess diameter
X	Depth of the section	J	Hub diameter
W	Rim width	d	Offset diameter from body
V	Face angle	S	Angle of body
A	Angle n°1	BC	Bolt circle
B	Angle n°2		
R	Radius		



BODY MATERIAL

The two letters after the drawing number are defining the body type. The first letter defines the material, while the second defines the type of bond.

AR	Aluminium / phenolic bond
MR	Pressed aluminium (cup wheel) / phenolic bond
PR	Pressed aluminium / phenolic bond
SR	Steel / phenolic bond
AP	Aluminium / polyimide and hybrid bond
CP	Pressed copper / polyimide and hybrid bond
XP	Aluminium and Pressed Copper / polyimide and hybrid bond
AM	Aluminium / metal bond
SM	Steel / metal bond
SH	Steel / metal-vitrified bond

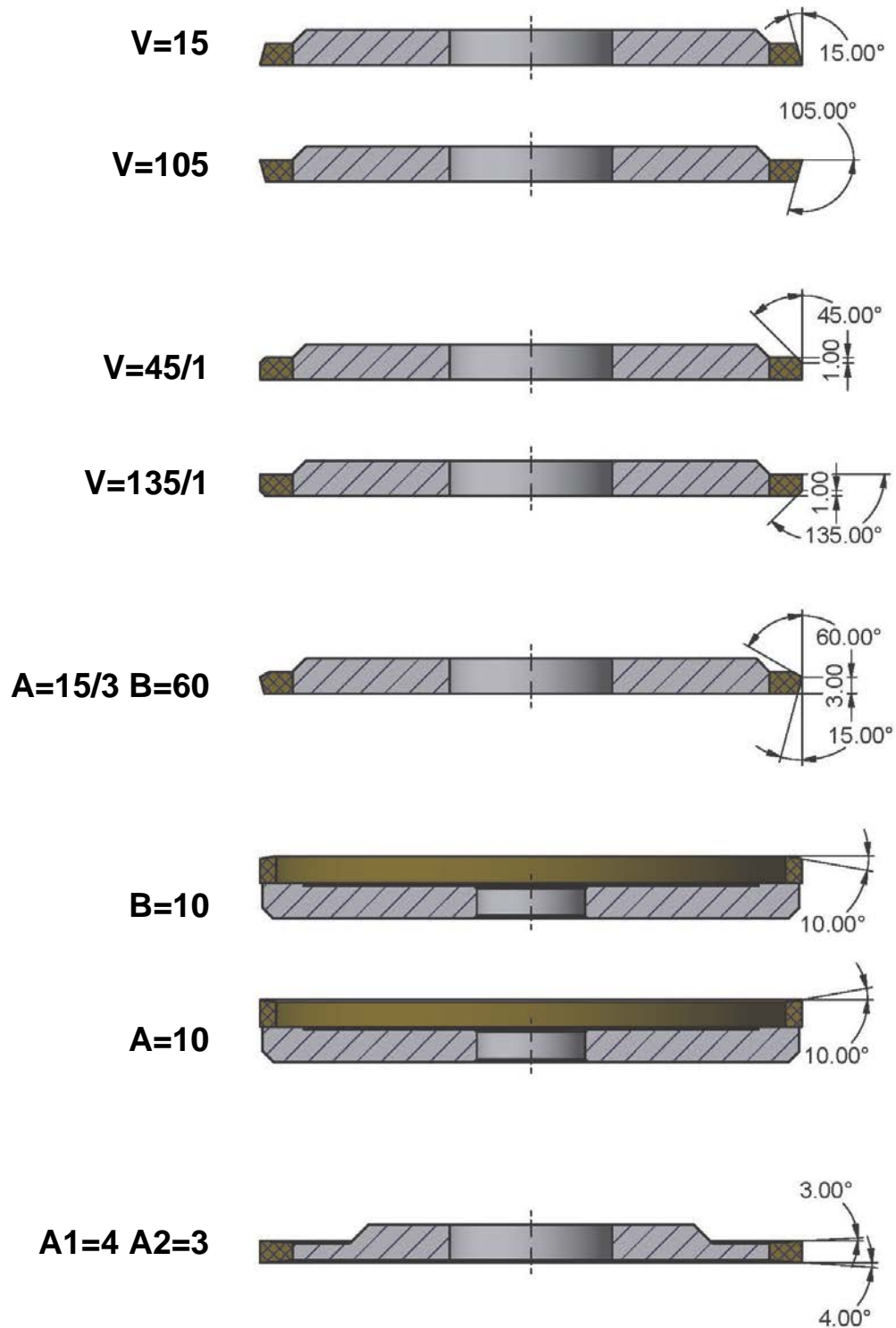


SIZE MODIFICATION

The modification engraved after the drawing number allows us to change a dimension (e.g., angle) without having to create a new drawing number and to profile the wheel according to customer requirements.

ENGRAVING

MODIFICATION





REQUEST FOR QUOTATION

Please copy this page and provide us the required information.

CUSTOMER

Company: _____ **Contact:** _____
Address: _____ **Function:** _____
 _____ **Tel.:** _____
Zip Code: _____ **E-Mail:** _____
City: _____ **Country:** _____

SHAPE AND WHEEL'S DIMENSIONS

Please use this field to make a sketch of the grinding wheel:

Shape: _____ **N° :** _____
D : _____ **A :** _____
T : _____ **B :** _____
H : _____ **T₁ :** _____
U : _____ **U₁ :** _____
X : _____ **E :** _____
W : _____ **K :** _____
V : _____ **S :** _____
R : _____ **J :** _____

Sketch

MACHINE

Manufacturer: _____ **Type:** _____
Coolant: _____ **Pressure:** _____ **Bars**
Speed from: _____ **to** _____ RPM **or** m/sec
Feed from: _____ **to** _____ mm/min **or other** _____

TOOLS TO GRIND

If the drawing of the tool is available, please attach it to the request.

Material: _____ **Grade:** _____
Harness HRC: _____ **Surface Quality Ra:** _____
Variation of the feed during grinding: Yes No
Grinding operation: _____

Total material removal: _____ mm mm² mm³
Depth of cut a_e: _____ mm **Number of passes:** _____
Diameter: _____ mm **Length:** _____ mm
Width: _____ mm **Other dimensions:** _____
Other information: _____



DRESSING

To avoid a large stock of dressing wheels, but balanced in compromise, we recommend the following two types of dressing wheels:

For the grit size from 10 to 35, the description of the dressing wheel is defined as:

80C 500 I7 V62A

For the grit size from 46 to 252, the description of the dressing wheel is defined as:

10C 120 KL7V

In cases you are able to allow a large stock of dressing wheels, which all grit sizes representing we recommend the following dressing wheels.

GRITE SIZE	SPECIFICATION	MANUFACTURER
1 to 10	SC9-1000-J12 RE DM	Atlantic GmbH
15 to 25	80C 500 I7 V62A	Stella Keramik GmbH
30 to 46	10C 320 KL7V	Comet Schleiftechnik GmbH
54 to 76	10C 220 KL7V	Comet Schleiftechnik GmbH
91 to 107	10C 120 KL7V	Comet Schleiftechnik GmbH
126 to 252	10C 60 KL7V	Comet Schleiftechnik GmbH

Recommendations for a reliable dressing procedure:

- The dressing machine must be robust and stable without vibrations.
- Dress the wheels under lubricated conditions. (We recommend oil)
- The dressing wheel must be as wide as possible, and larger in diameter than the wheel to be dressed.
- The dressing wheel rotates in the opposite direction of the wheel to be dressed.
- Dressing wheel speed : 12-15 m/sec (120 mesh)
10-12 m/sec (500 mesh)
8-10 m/sec (1000 mesh)
- Grinding Wheel speed : 2-4m/sec
- Roughing infeed depth : 0.01-0.05mm
- Finishing infeed depth : 0.002-0.02mm
- For grinding wheels with a pointed profile, we recommend using a dressing wheel from a range below than the one recommended. This way it will avoid chipping on your grinding wheel while dressing.
- Dressing wheel feed rate: Consider the diameter and the depth of abrasive rim to be dressed

Large diameter or thin depth abrasive rim = reduce the feed rate.

Small diameter or wide depth abrasive rim = increase the feed rate.

Example, for a wheel with a diameter of 150 and 3mm depth of abrasive rim, the feed rate would be of about 0.5m/min.



SHARPENING

After dressing your grinding wheel, especially if it is dressed dry, the surface of the abrasive rim is blunt. In order to obtain optimum cutting quality, we recommend you treat the grinding wheel first with a carborundum stick before starting the grinding process.

The carborundum stick must be wet (oil) and used on the grinding wheel with same grinding rotation direction and same grinding rotation speed as the applicated operation before the grinding process is started.

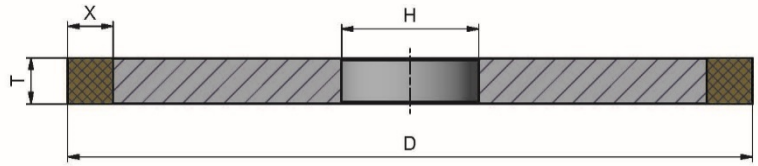
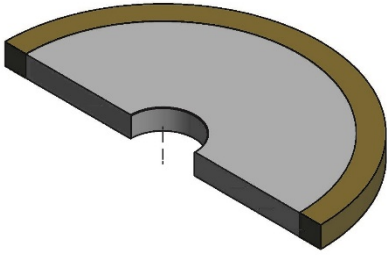
TYPE	DESCRIPTION	DIMENSIONS
STICK ASA-N°1	Grit size from 46 to 252	13 x 25 x 102 mm
STICK ASA-N°2	Grit size from 1 to 40	13 x 25 x 102 mm



NOTES

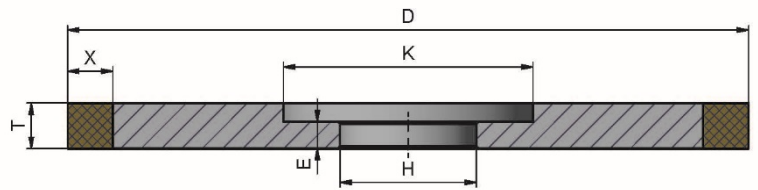
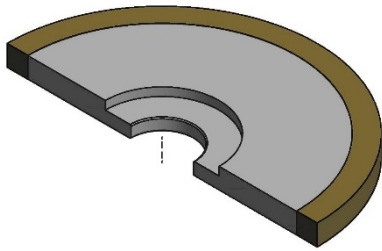
1A1 (shape N°1)

D__-T__-H__-X__



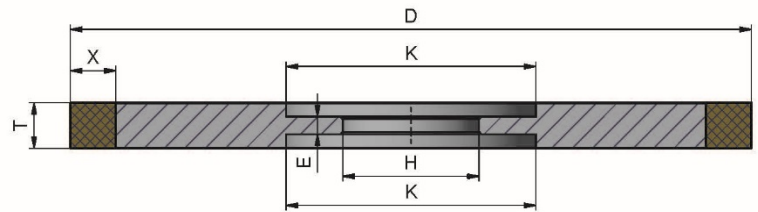
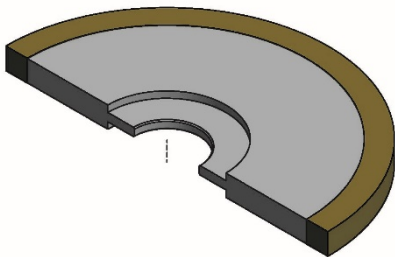
1A1 (shape N°2)

D__-T__-H__-X__-E__-K__ / N°2



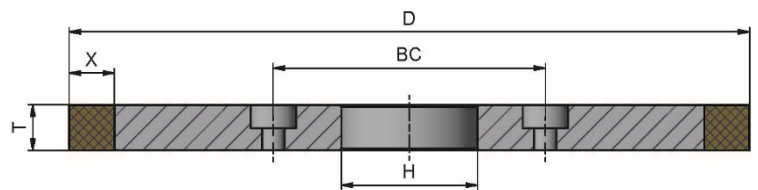
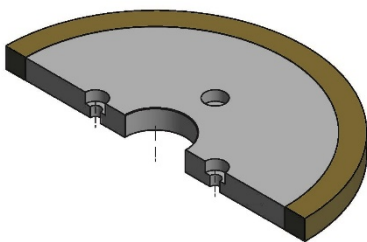
1A1 (shape N°3)

D__-T__-H__-X__-E__-K__ / N°3



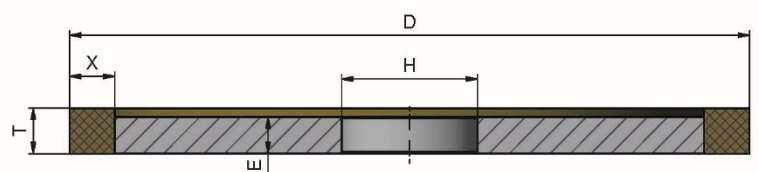
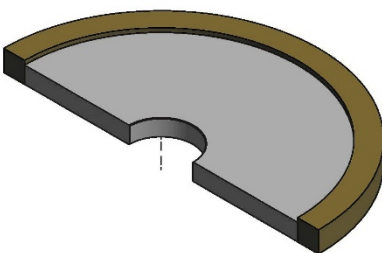
1A1B

D__-T__-H__-X__-BC__



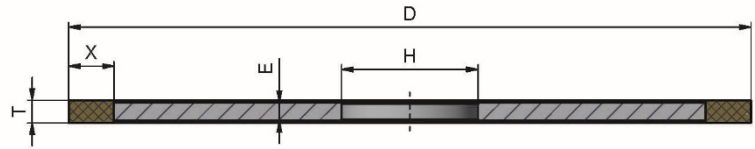
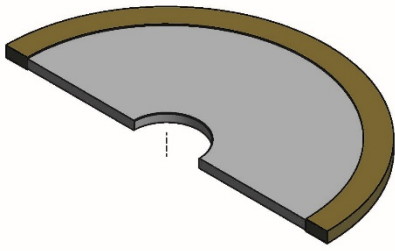
1A1P

D__-T__-H__-X__-E__



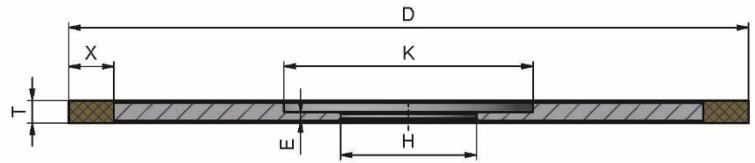
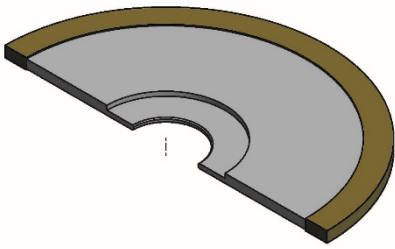
1A1R (shape N°1)

D__-T__-H__-X__-E__



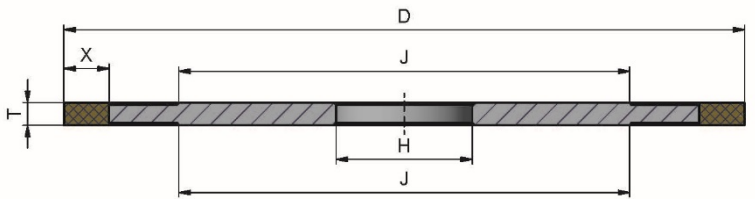
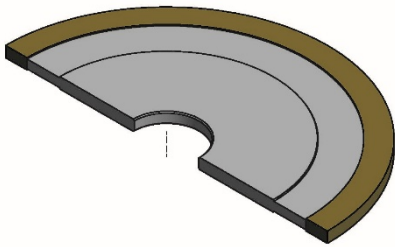
1A1R (shape N°2)

D__-T__-H__-X__-E__-K__ / N°2



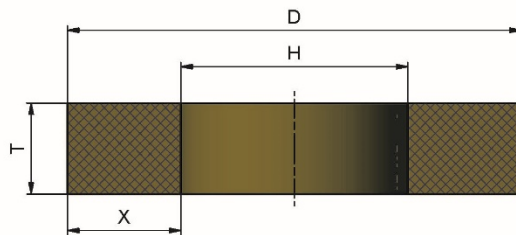
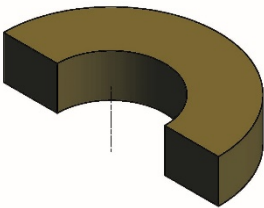
1A1R (shape N°3)

D__-T__-H__-X__-J__ / N°3



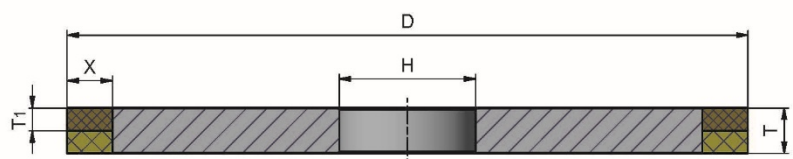
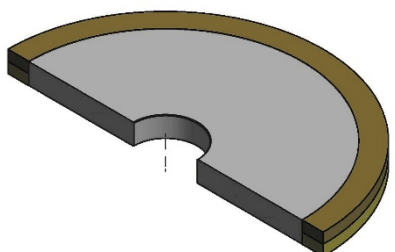
1A8

D__-T__-H__-(X__)



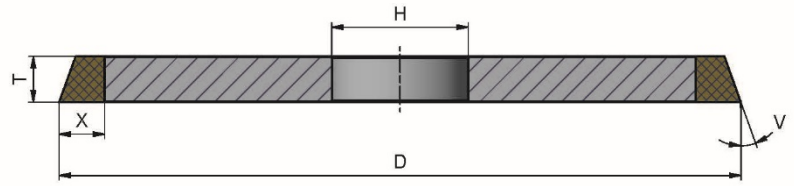
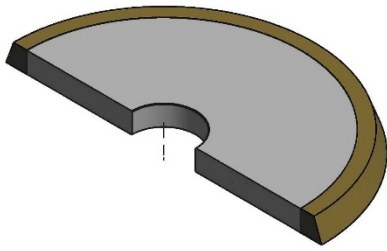
1AA1

D__-T__-H__-X__-T1__



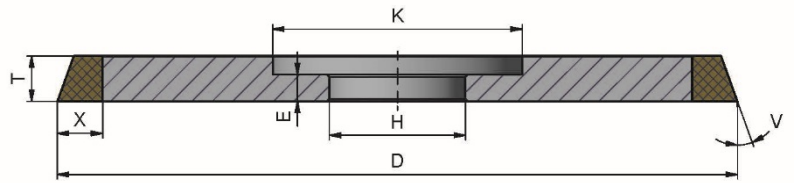
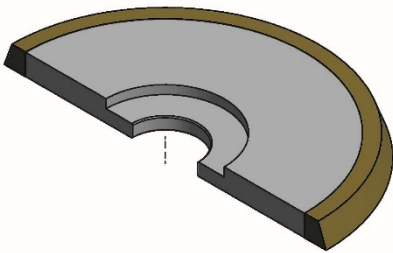
1B1 (shape N°1)

D__-T__-H__-X__-V__



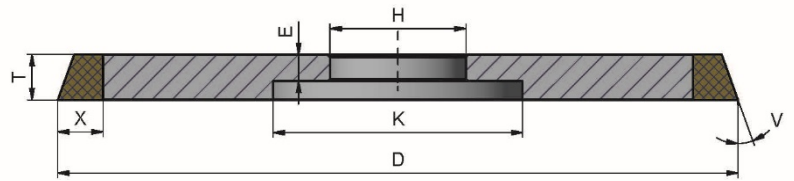
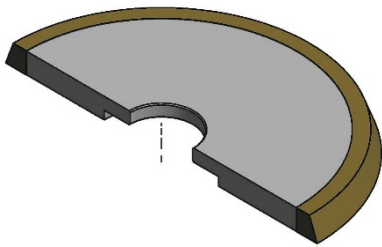
1B1 (shape N°2)

D__-T__-H__-X__-V__-E__-K__ / N°2



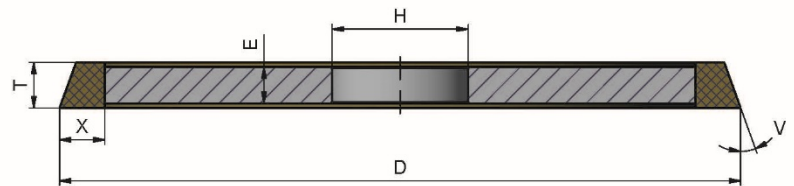
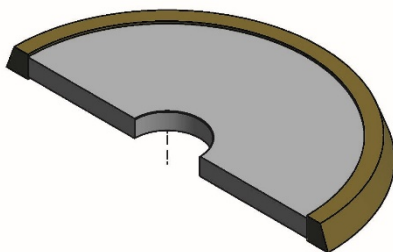
1B1 (shape N°3)

D__-T__-H__-X__-V__-E__-K__ / N°3



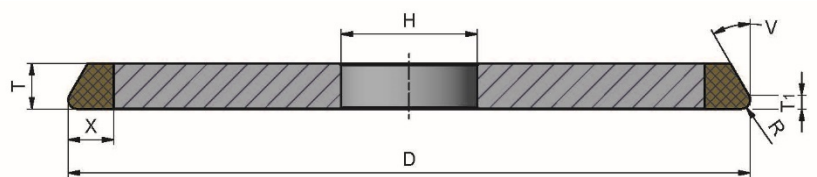
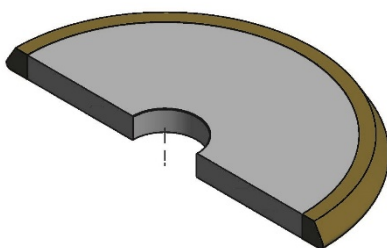
1B1R

D__-T__-H__-X__-V__-E__



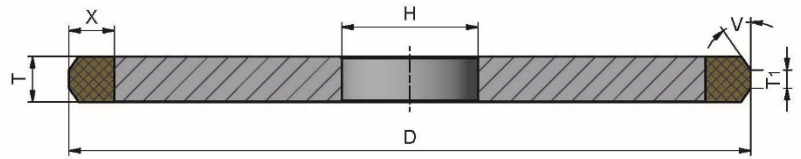
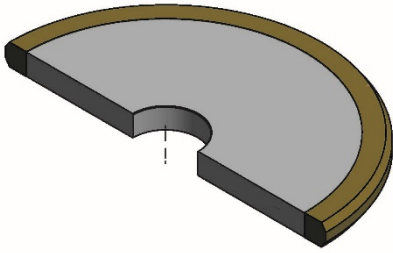
1BF1

D__-T__-H__-X__-V__-R__-T1__



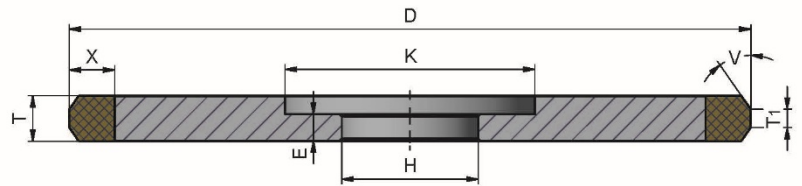
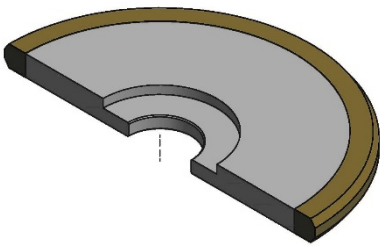
1D1 (shape N°1)

D__-T__-H__-X__-V__-T1__



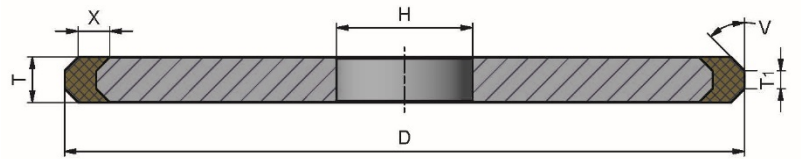
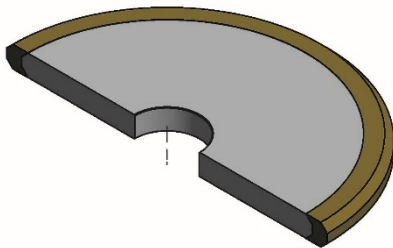
1D1 (shape N°2)

D__-T__-H__-X__-V__-T1__-E__-K__ / N°2



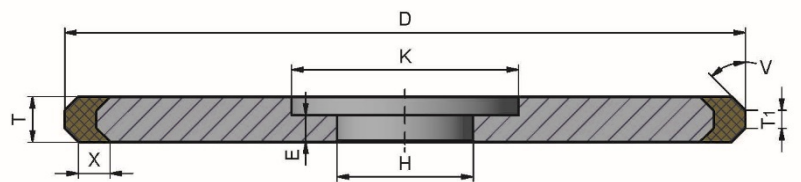
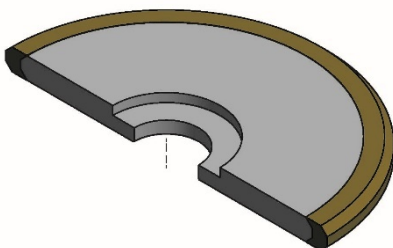
1DD1 (shape N°1)

D__-T__-H__-X__-V__-T1__



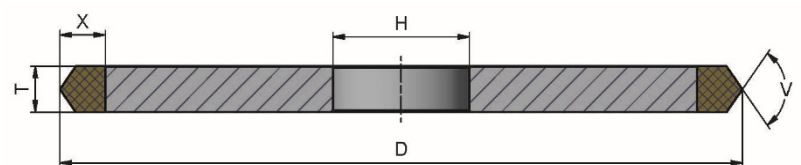
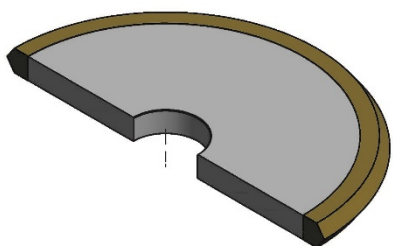
1DD1 (shape N°2)

D__-T__-H__-X__-V__-T1__-E__-K__ / N°2



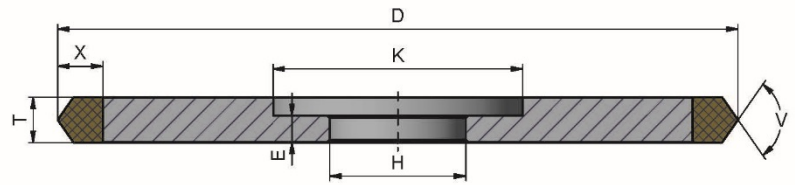
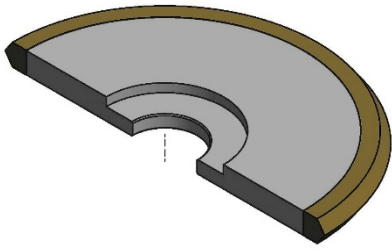
1E1 (shape N°1)

D__-T__-H__-X__-V__



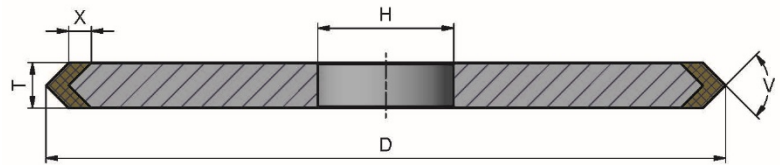
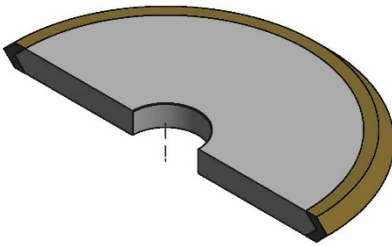
1E1 (shape N°2)

D__-T__-H__-X__-V__-E__-K__ / N°2



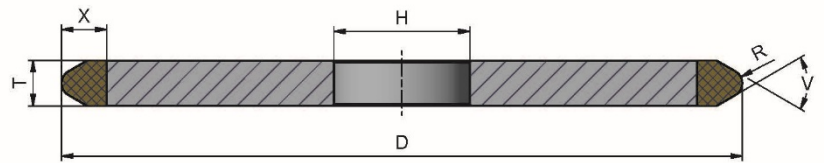
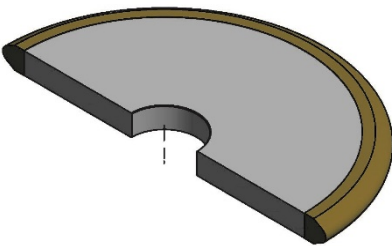
1EE1

D__-T__-H__-X__-V__



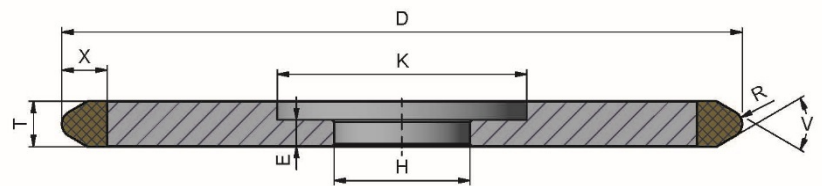
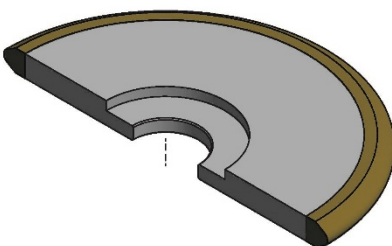
1EF1 (shape N°1)

D__-T__-H__-X__-V__-R__



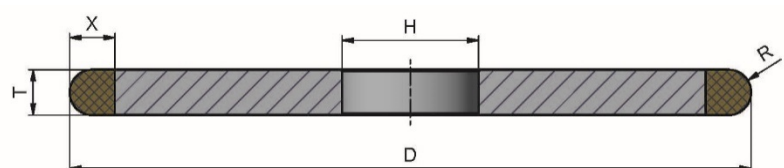
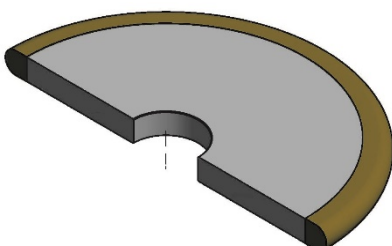
1EF1 (shape N°2)

D__-T__-H__-X__-V__-R__-E__-K__ / N°2



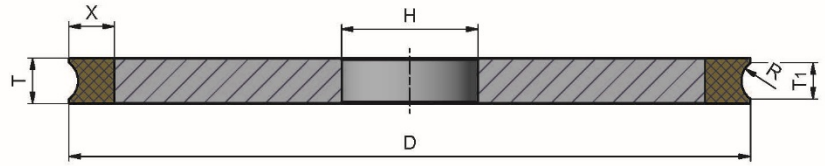
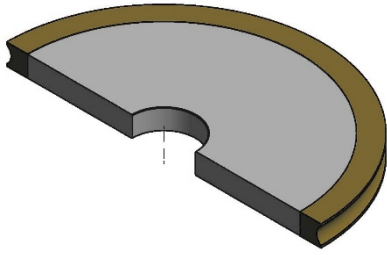
1F1

D__-T__-H__-X__-R__



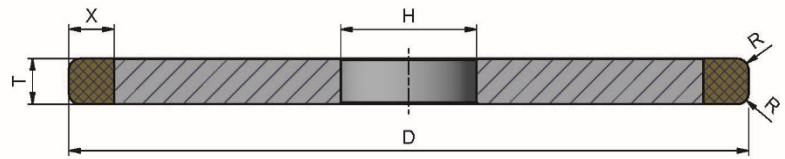
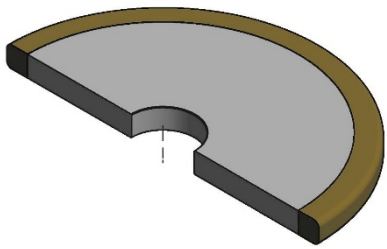
1J1

D__-T__-H__-X__-R__-T1__



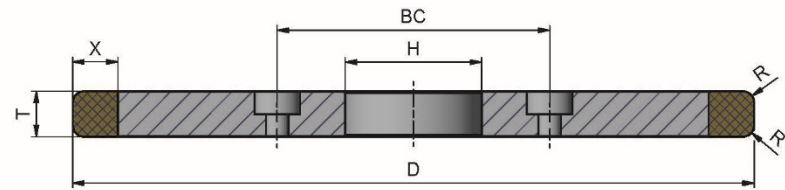
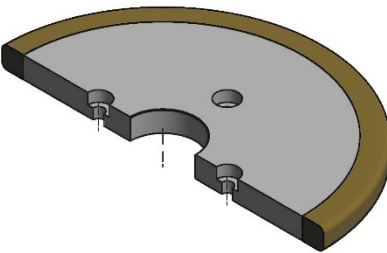
1L1

D__-T__-H__-X__-R__



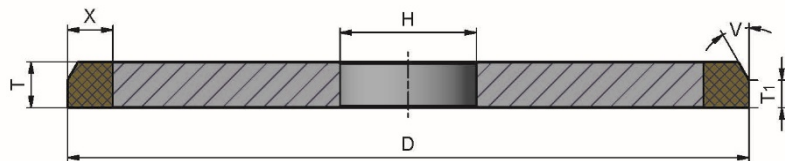
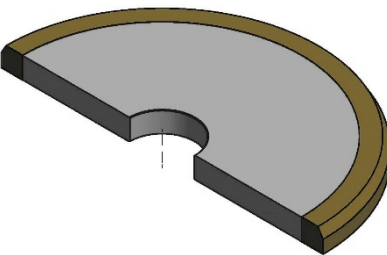
1L1B

D__-T__-H__-X__-R__-BC__



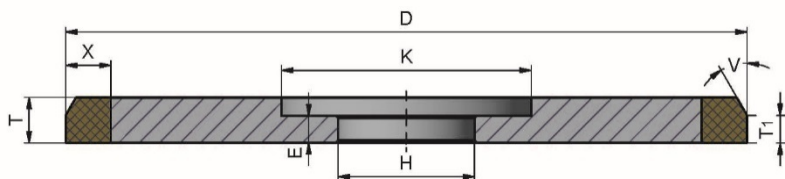
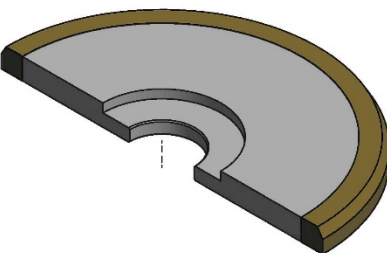
1M1 (shape N°1)

D__-T__-H__-X__-V__-T1__



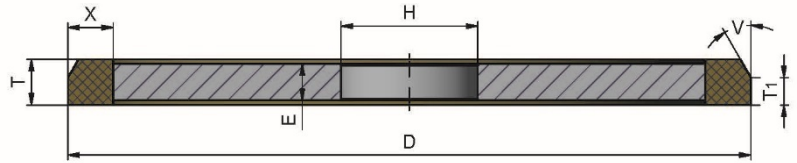
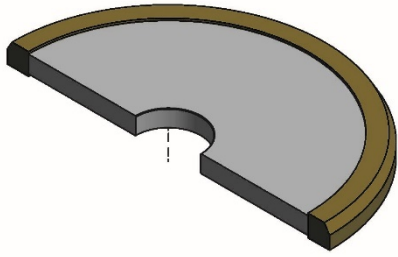
1M1 (shape N°2)

D__-T__-H__-X__-V__-T1__-E__-K__ / N°2



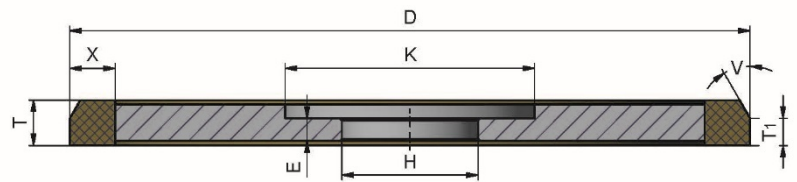
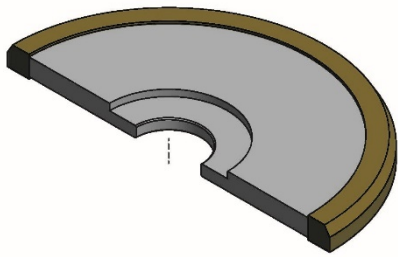
1M1R (shape N°1)

D__-T__-H__-X__-V__-T1__-E__



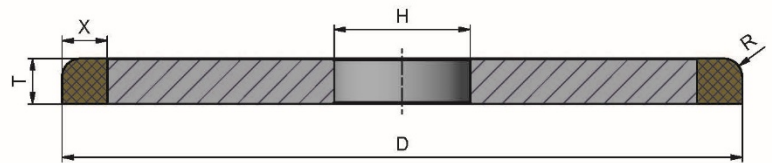
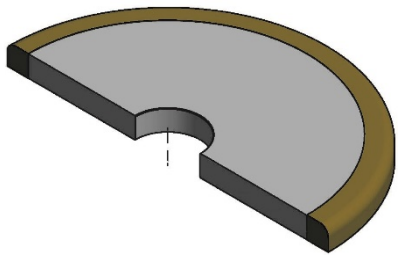
1M1R (shape N°2)

D__-T__-H__-X__-V__-T1__-E__-K__ / N°2



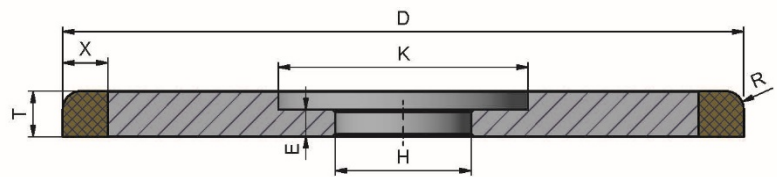
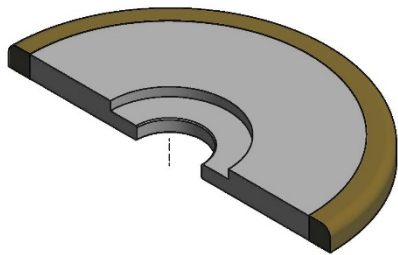
1Q1 (shape N°1)

D__-T__-H__-X__-R__



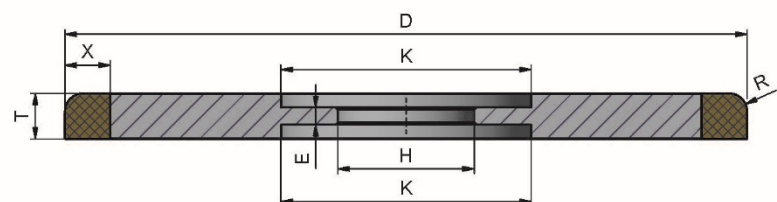
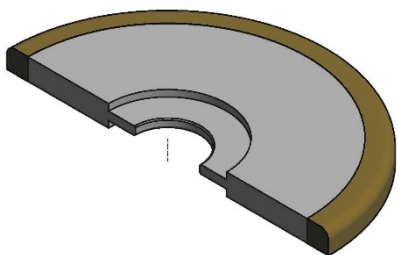
1Q1 (shape N°2)

D__-T__-H__-X__-R__-E__-K__ / N°2



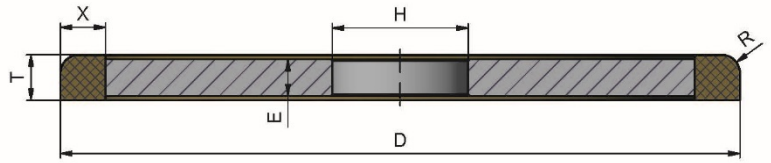
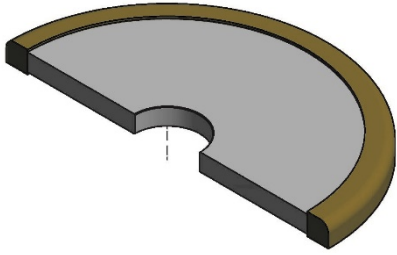
1Q1 (shape N°3)

D__-T__-H__-X__-R__-E__-K__ / N°3



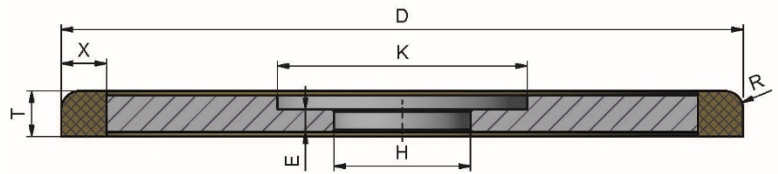
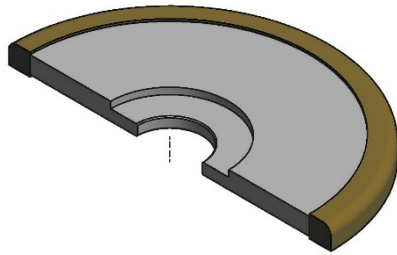
1Q1R (shape N°1)

D__-T__-H__-X__-R__-E__



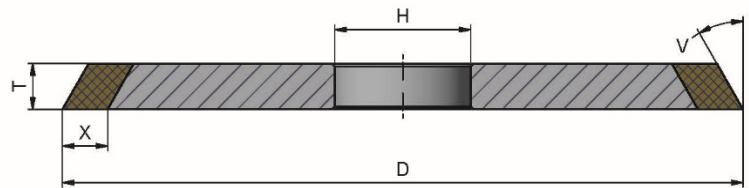
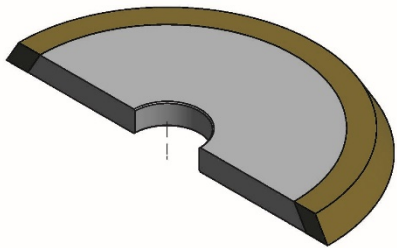
1Q1R (shape N°2)

D__-T__-H__-X__-R__-E__-K__ / N°2



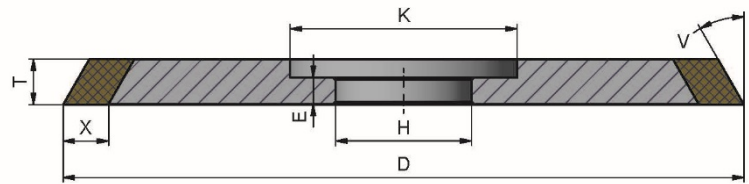
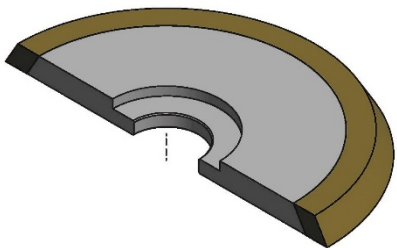
1V1 (shape N°1)

D__-T__-H__-X__-V__



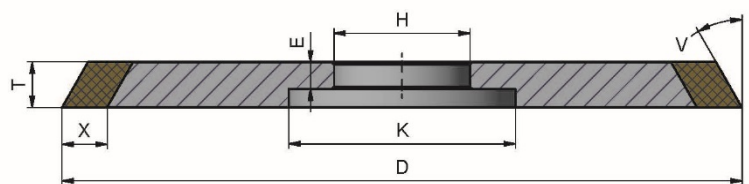
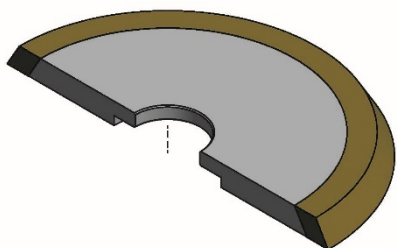
1V1 (shape N°2)

D__-T__-H__-X__-V__-E__-K__ / N°2



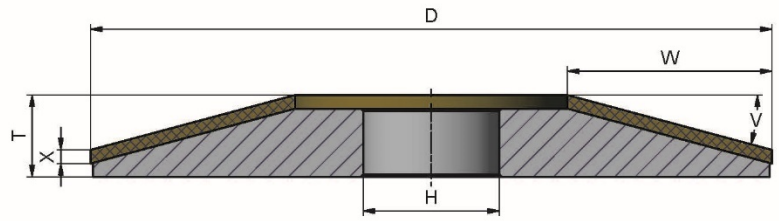
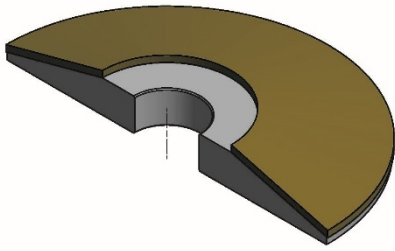
1V1 (shape N°3)

D__-T__-H__-X__-V__-E__-K__ / N°3



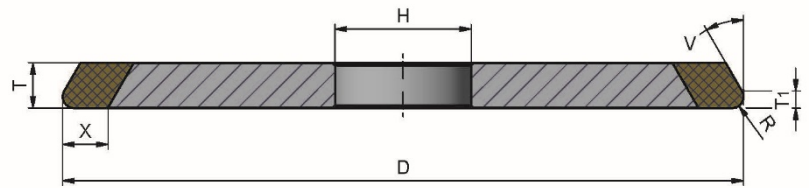
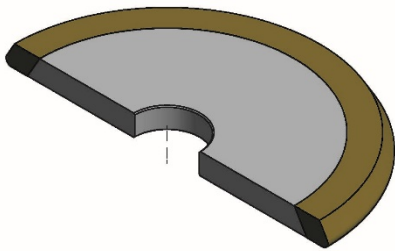
1V5

D__-T__-H__-W__-X__-V__



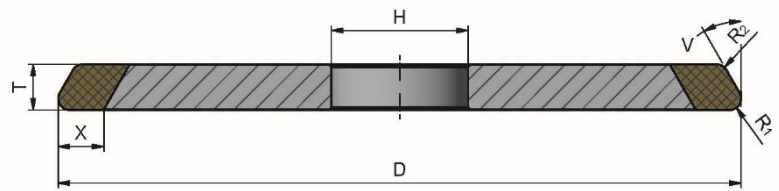
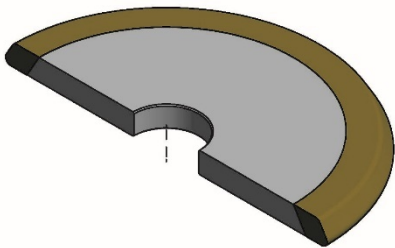
1VF1

D__-T__-H__-X__-V__-R__-T1__



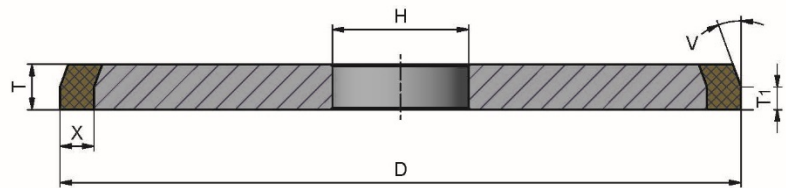
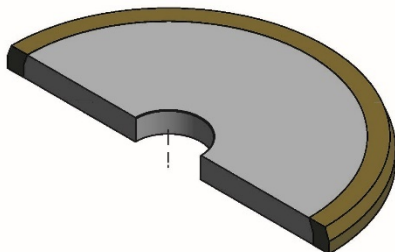
1VL1

D__-T__-H__-X__-V__-R1__-R2__



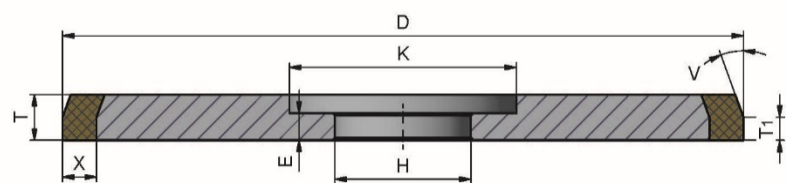
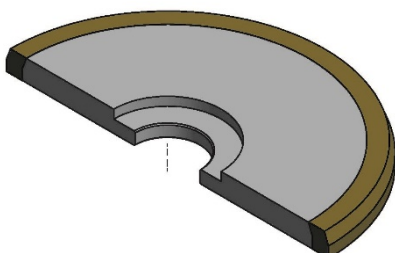
1Y1 (shape N°1)

D__-T__-H__-X__-V__-T1__



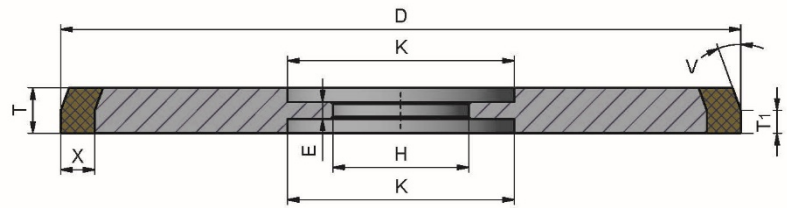
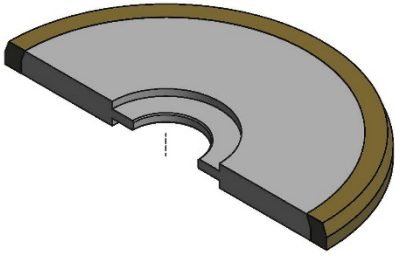
1Y1 (shape N°2)

D__-T__-H__-X__-V__-T1__-E__-K__ / N°2



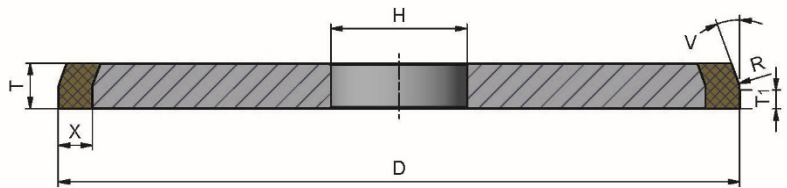
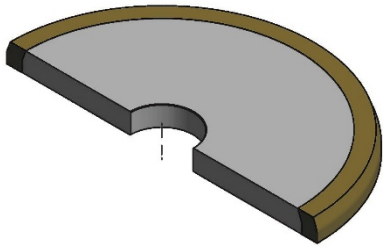
1Y1 (shape N°3)

D__-T__-H__-X__-V__-T1__-E__-K__ / N°3



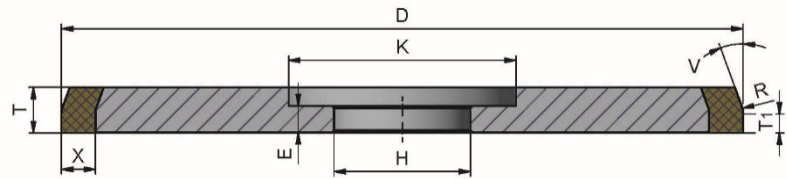
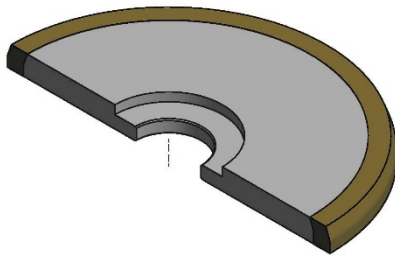
1Y1F (shape N°1)

D__-T__-H__-X__-V__-T1__-R__



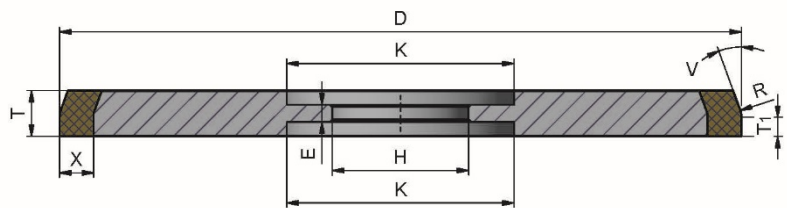
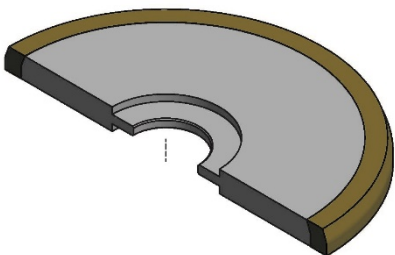
1Y1F (shape N°2)

D__-T__-H__-X__-V__-T1__-R__-E__-K__ / N°2



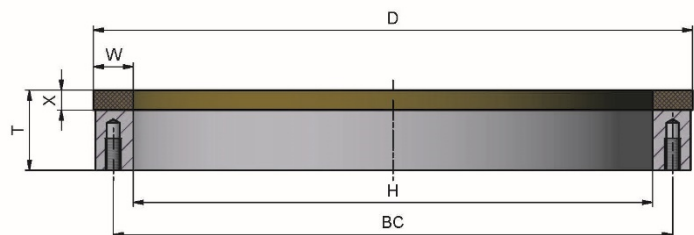
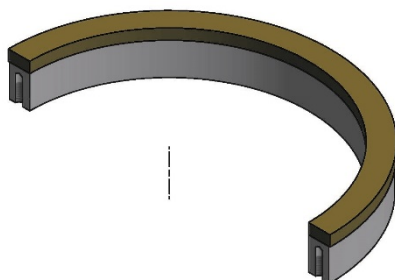
1Y1F (shape N°3)

D__-T__-H__-X__-V__-T1__-R__-E__-K__ / N°3



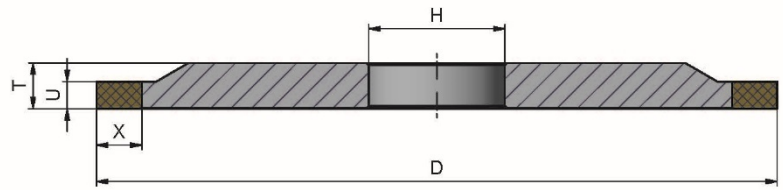
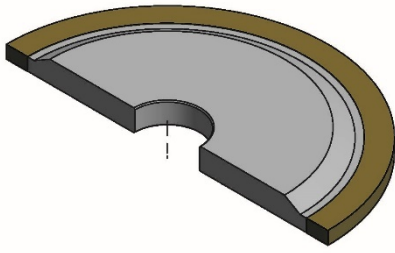
2A2T

D__-T__-H__-W__-X__-BC__



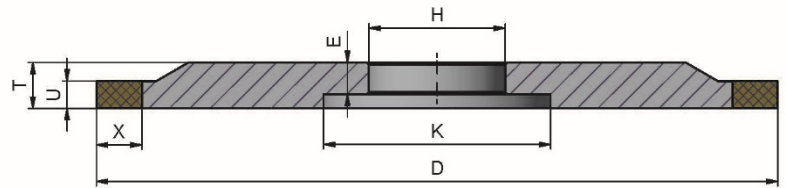
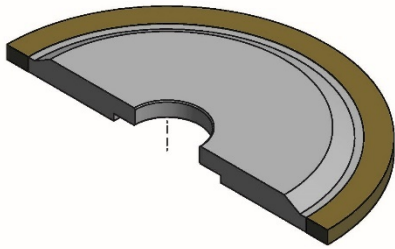
3A1 (shape N°1)

D__-T__-H__-U__-X__



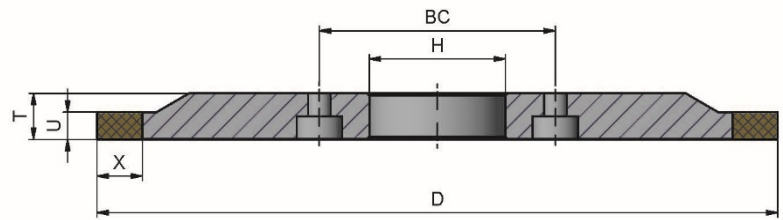
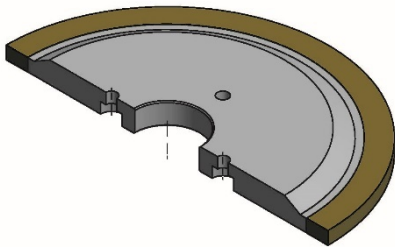
3A1 (shape N°2)

D__-T__-H__-U__-X__-E__-K__ / N°2



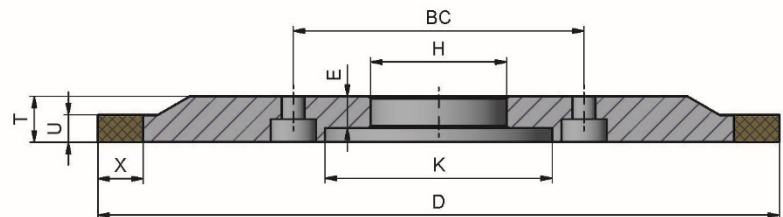
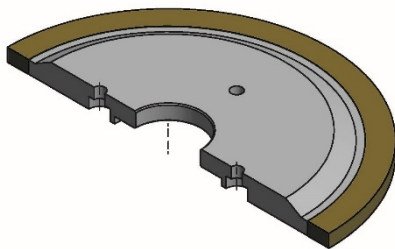
3A1B (shape N°1)

D__-T__-H__-U__-X__-BC__



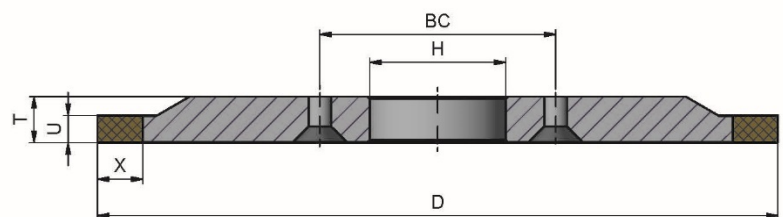
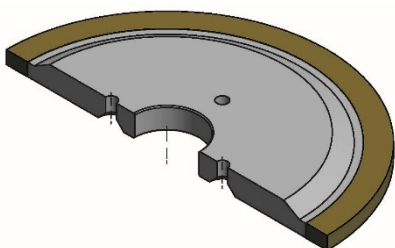
3A1B (shape N°2)

D__-T__-H__-U__-X__-BC__-E__-K__ / N°2



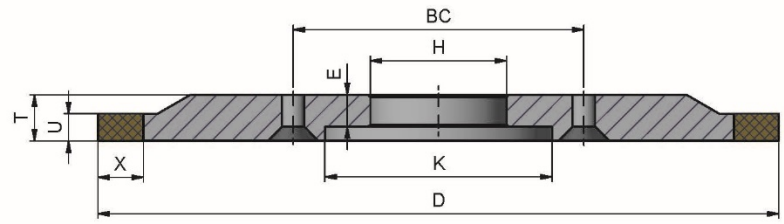
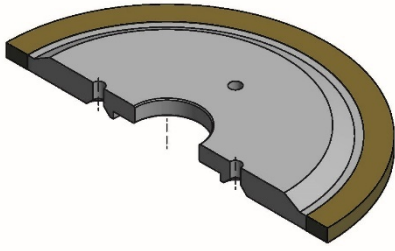
3A1C (shape N°1)

D__-T__-H__-U__-X__-BC__



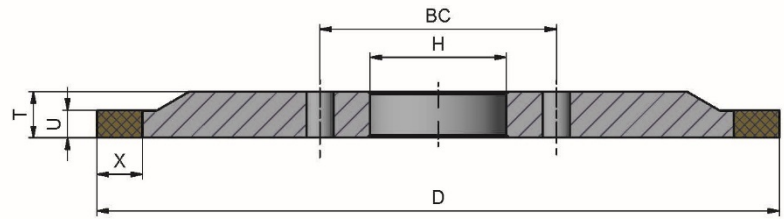
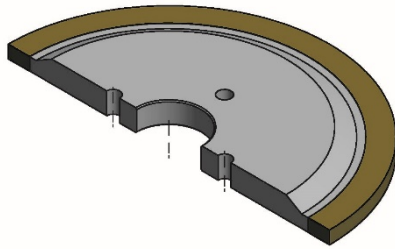
3A1C (shape N°2)

D__-T__-H__-U__-X__-BC__-E__-K__ / N°2



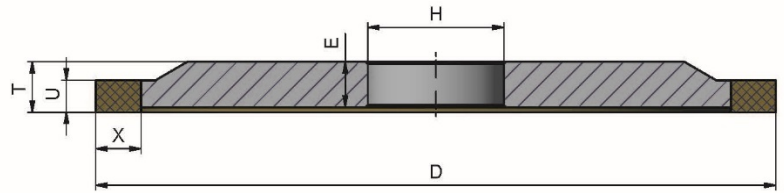
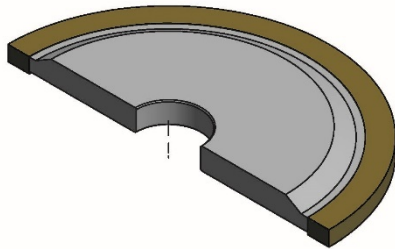
3A1H

D__-T__-H__-U__-X__-BC__



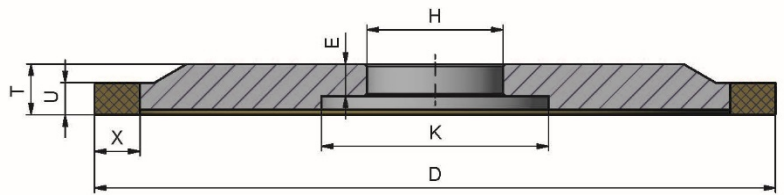
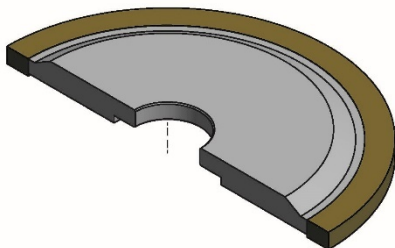
3A1P (shape N°1)

D__-T__-H__-U__-X__-E__



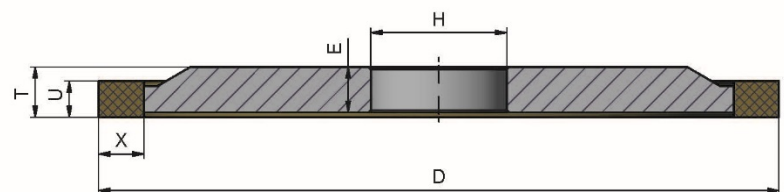
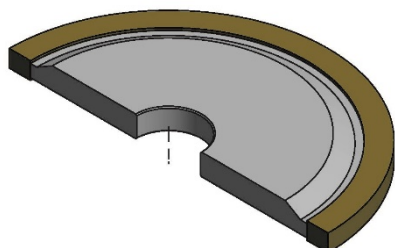
3A1P (shape N°2)

D__-T__-H__-U__-X__-E__-K__ / N°2



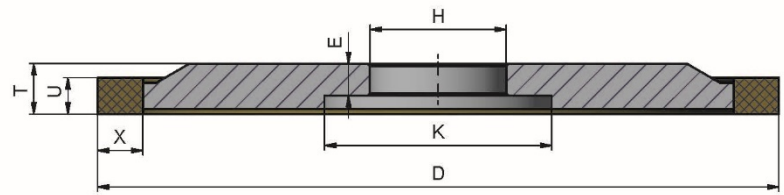
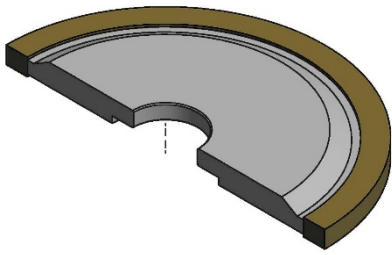
3A1R (shape N°1)

D__-T__-H__-U__-X__-E__



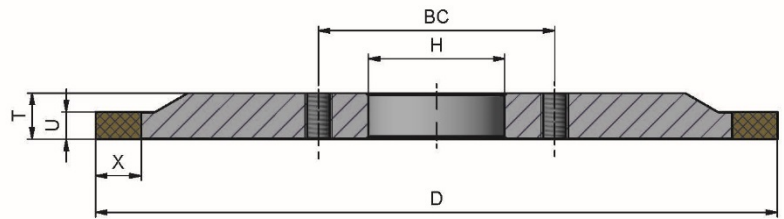
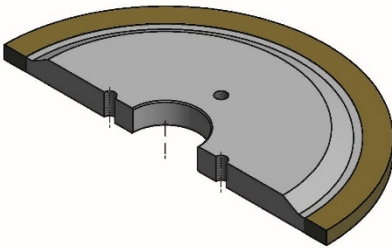
3A1R (shape N°2)

D__-T__-H__-U__-X__-E__-K__ / N°2



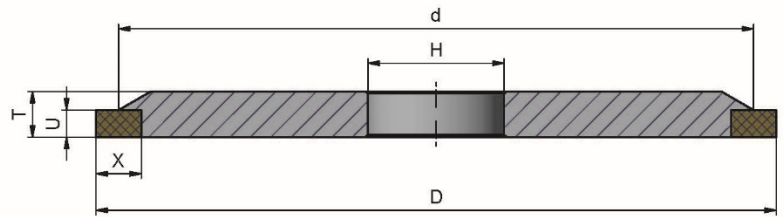
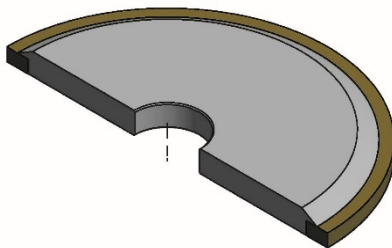
3A1T

D__-T__-H__-U__-X__-BC__



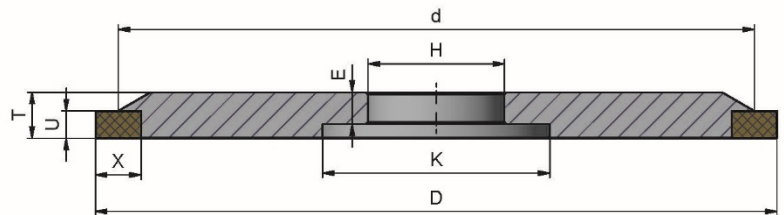
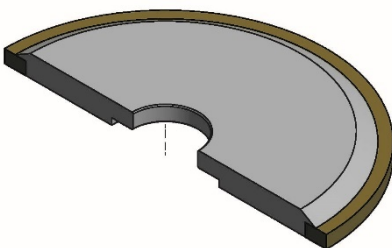
3A9 (shape N°1)

D__-T__-H__-U__-X__-d__



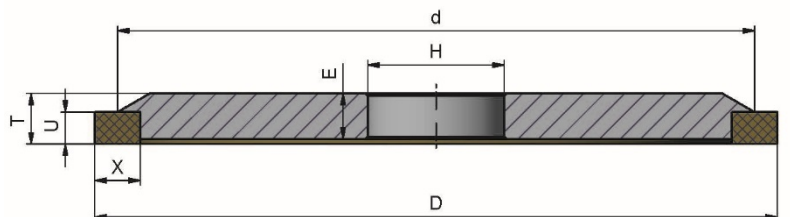
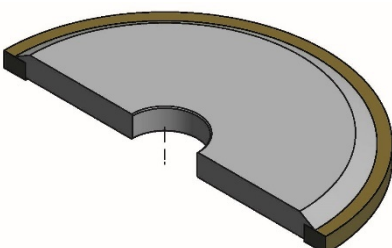
3A9 (shape N°2)

D__-T__-H__-U__-X__-d__-E__-K__ / N°2



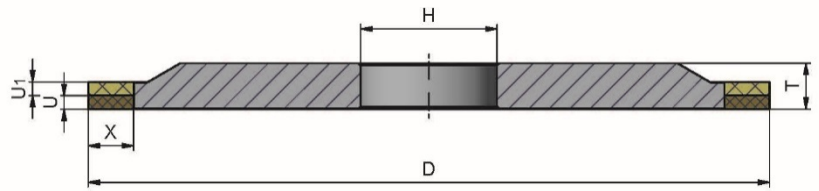
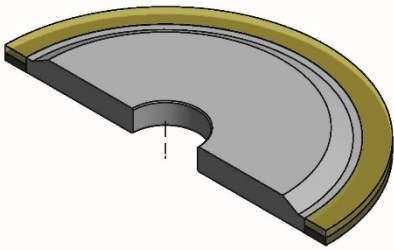
3A9P

D__-T__-H__-U__-X__-E__-d__



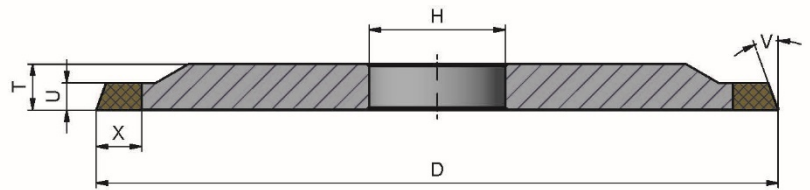
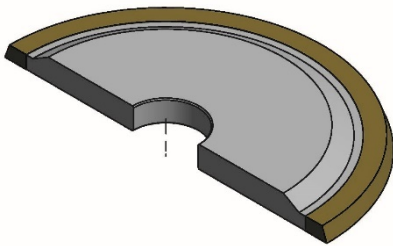
3AA1

D__-T__-H__-U__-X__-U1__



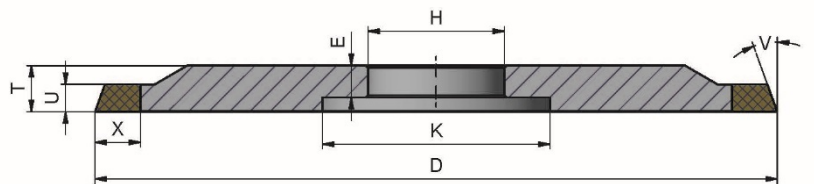
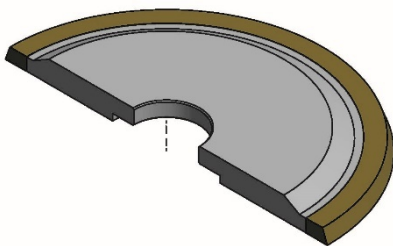
3B1 (shape N°1)

D__-T__-H__-U__-X__-V__



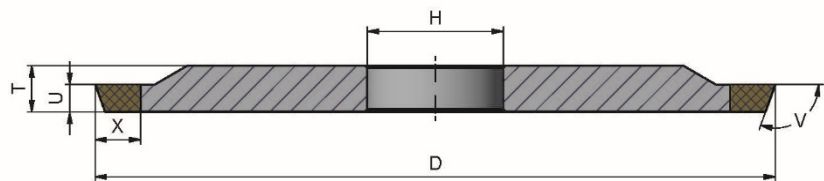
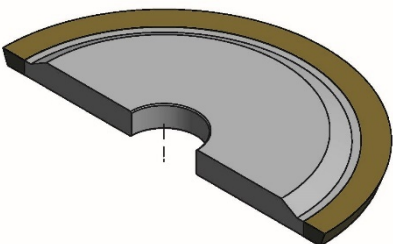
3B1 (shape N°2)

D__-T__-H__-U__-X__-V__-E__-K__ / N°2



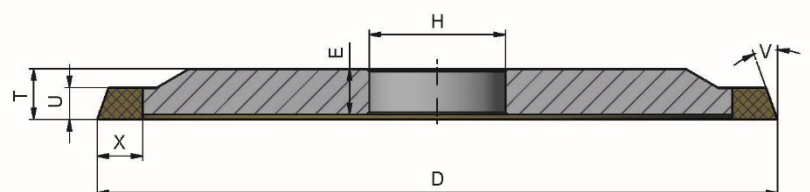
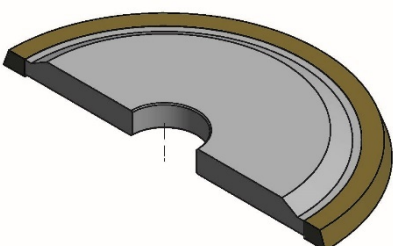
3B1 (shape N°3)

D__-T__-H__-U__-X__-V__ / N°3



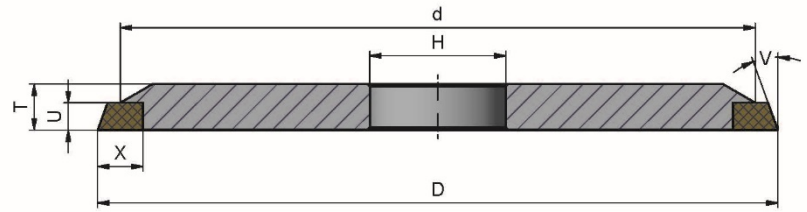
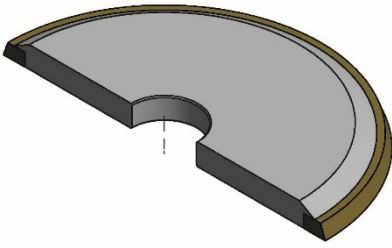
3B1P

D__-T__-H__-U__-X__-V__-E__



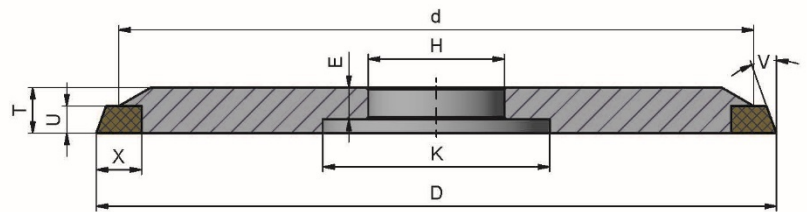
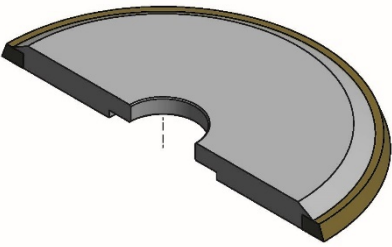
3B9 (shape N°1)

D__T__H__U__X__V__d__



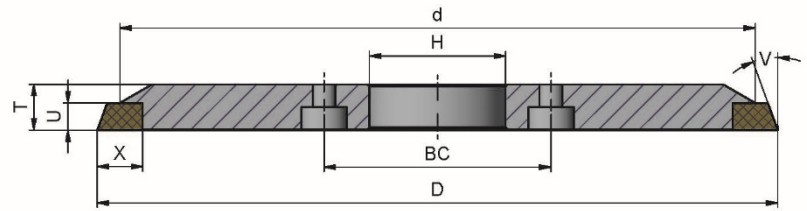
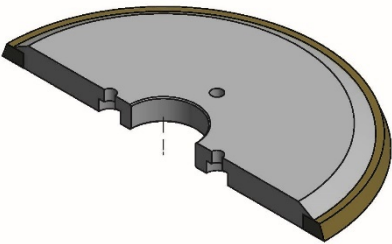
3B9 (shape N°2)

D__T__H__U__X__V__d__E__K__ / N°2



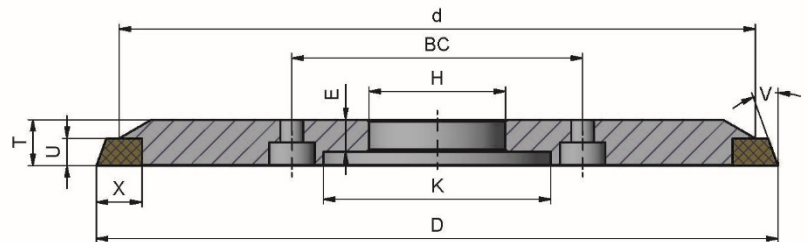
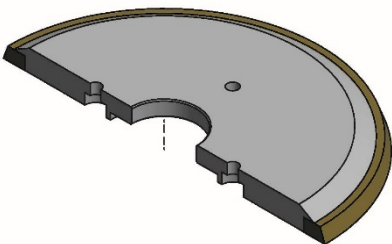
3B9B (shape N°1)

D__T__H__U__X__V__d__BC__



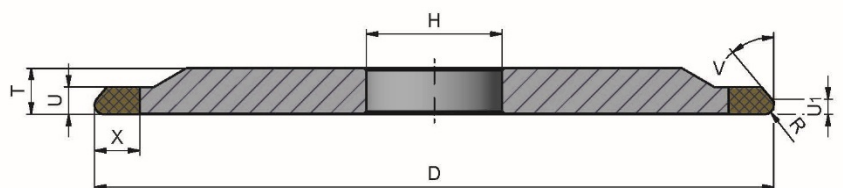
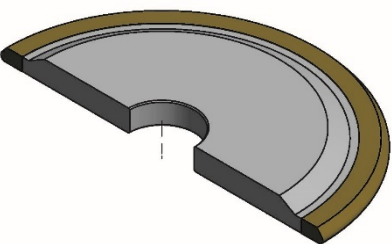
3B9B (shape N°2)

D__T__H__U__X__V__d__E__K__BC__ / N°2



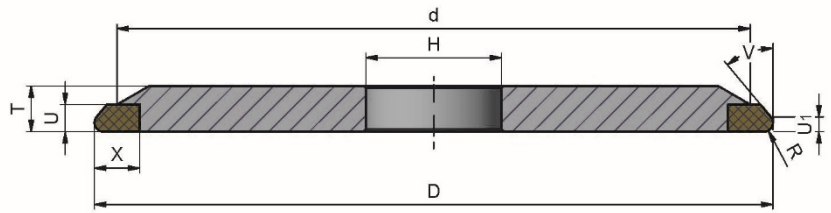
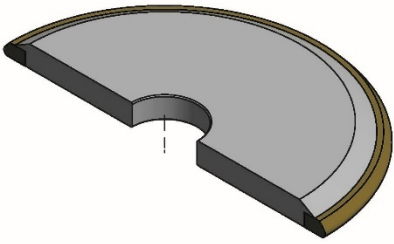
3BF1

D__T__H__U__X__V__R__U1__



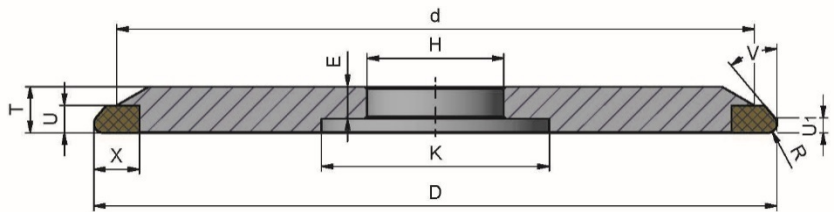
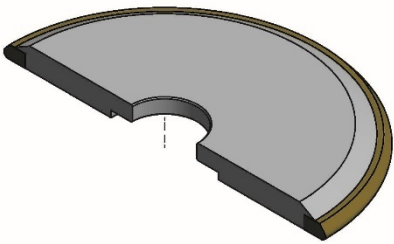
3BF9 (shape N°1)

D__T__H__U__X__V__R__U1__d__



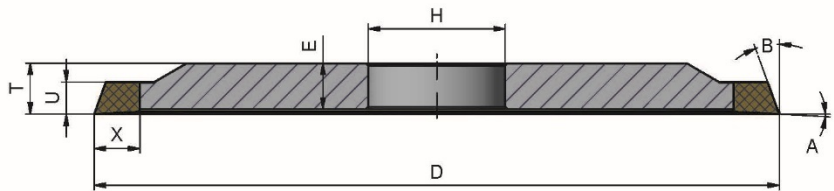
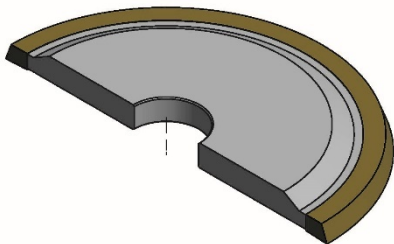
3BF9 (shape N°2)

D__T__H__U__X__V__R__U1__d__E__K__ / N°2



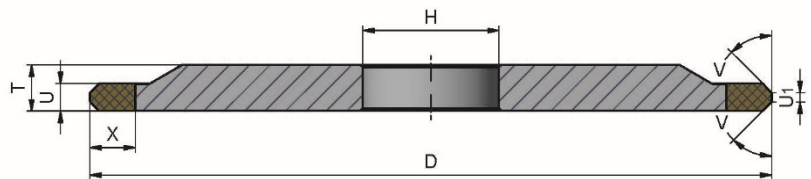
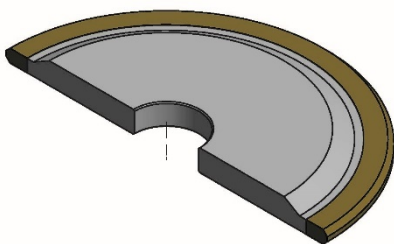
3BT1P

D__T__H__U__X__A__B__E__



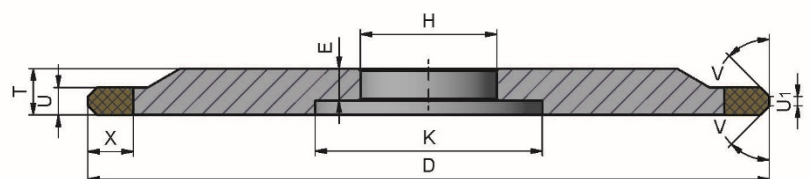
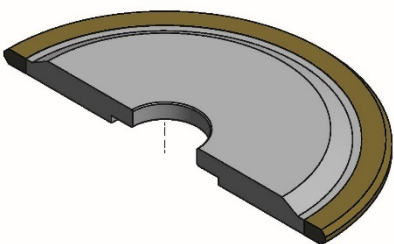
3D1 (shape N°1)

D__T__H__U__X__V__U1__



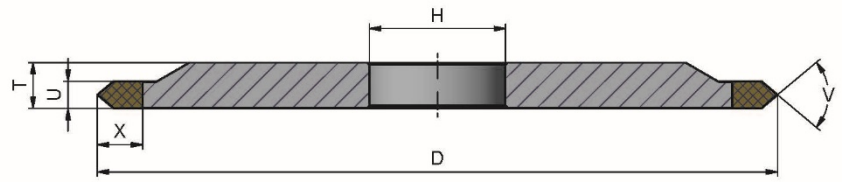
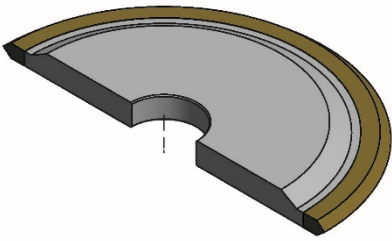
3D1 (shape N°2)

D__T__H__U__X__V__E__K__U1__ / N°2



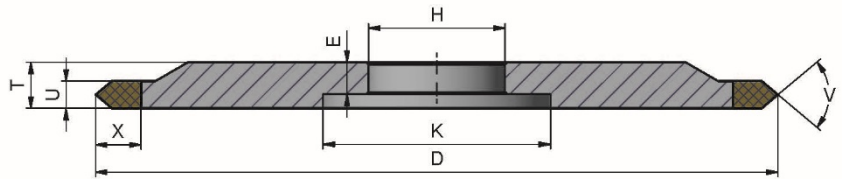
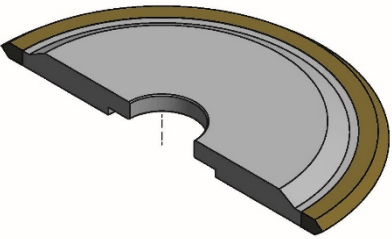
3E1 (shape N°1)

D__-T__-H__-U__-X__-V__



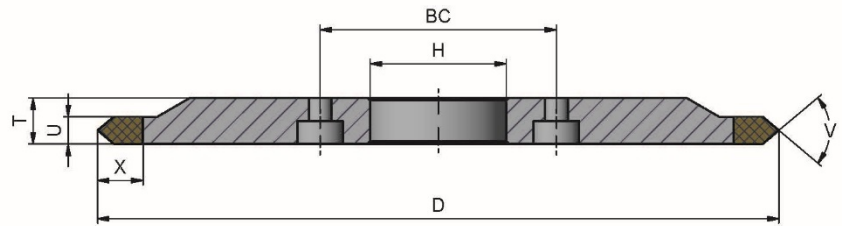
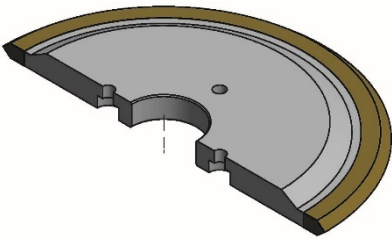
3E1 (shape N°2)

D__-T__-H__-U__-X__-V__-E__-K__ / N°2



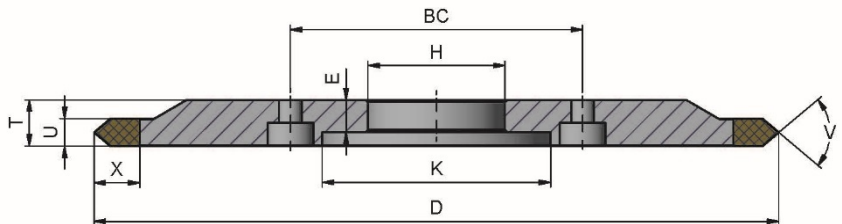
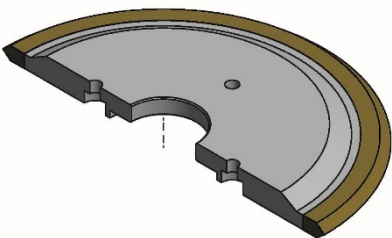
3E1B (shape N°1)

D__-T__-H__-U__-X__-V__-BC__



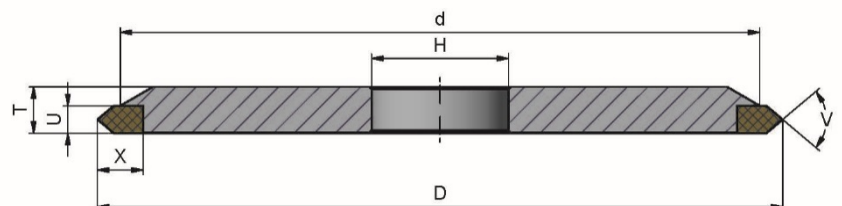
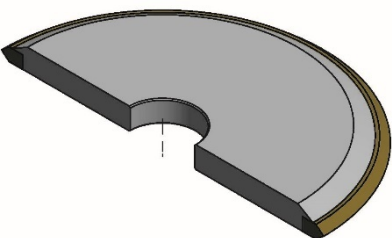
3E1B (shape N°2)

D__-T__-H__-U__-X__-V__-E__-K__-BC__ / N°2



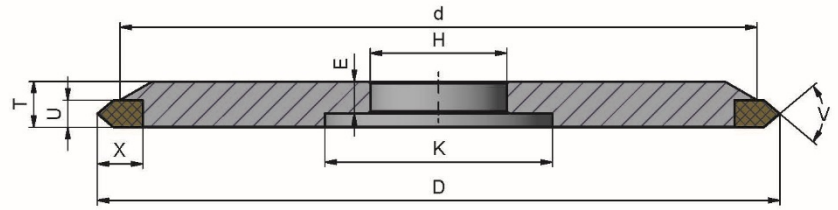
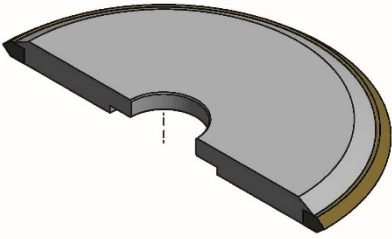
3E9 (shape N°1)

D__-T__-H__-U__-X__-V__-d__



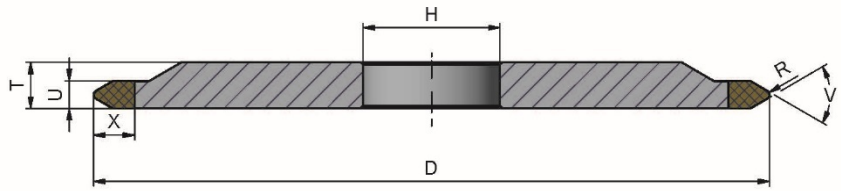
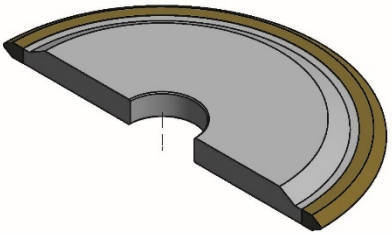
3E9 (shape N°2)

D__T__H__U__X__V__d__E__K__ / N°2



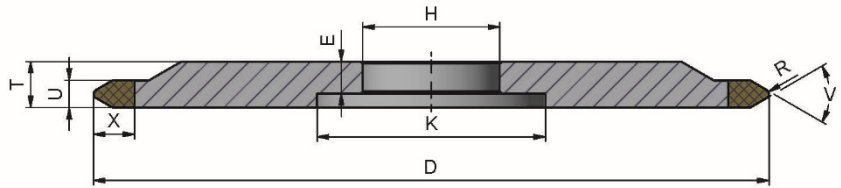
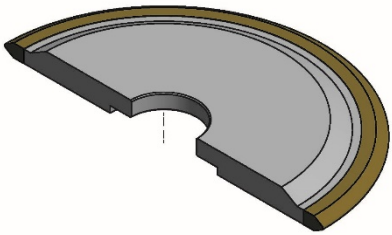
3EF1 (shape N°1)

D__T__H__U__X__V__R__



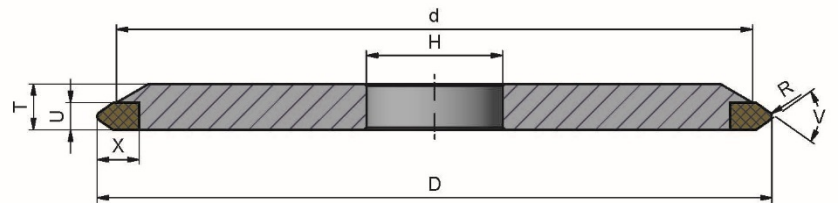
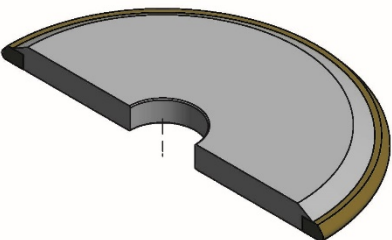
3EF1 (shape N°2)

D__T__H__U__X__V__R__E__K__ / N°2



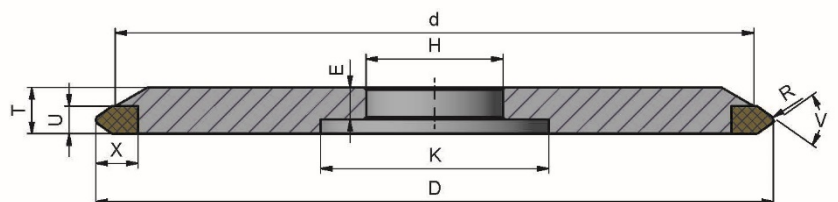
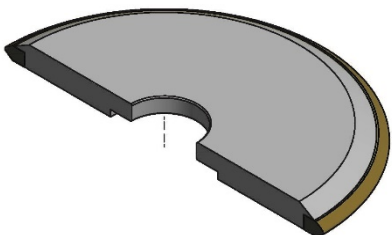
3EF9 (shape N°1)

D__T__H__U__X__V__R__d__



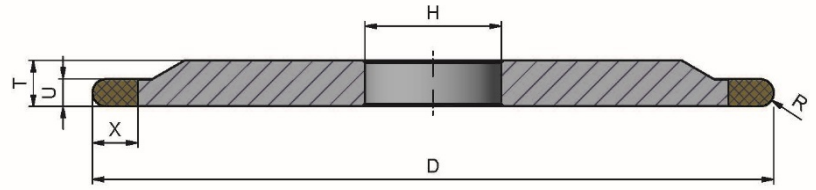
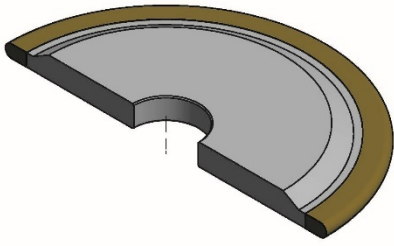
3EF9 (shape N°2)

D__T__H__U__X__V__R__d__E__K__ / N°2



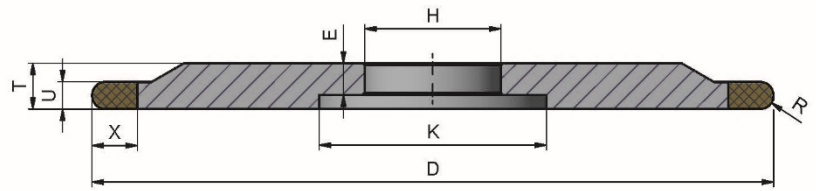
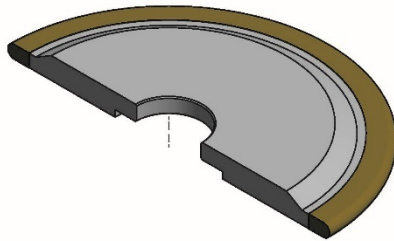
3F1 (shape N°1)

D__-T__-H__-U__-X__-R__



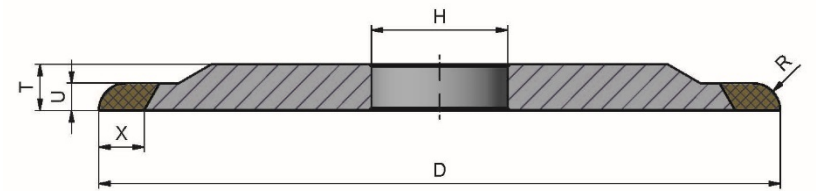
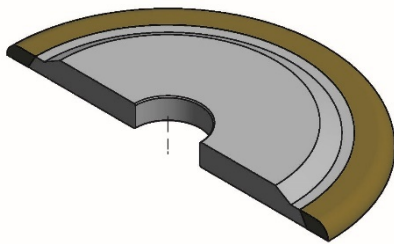
3F1 (shape N°2)

D__-T__-H__-U__-X__-R__-E__-K__ / N°2



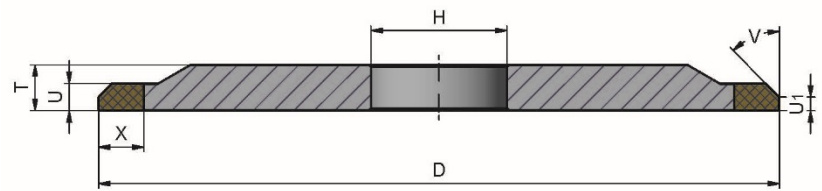
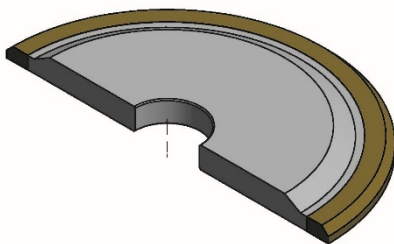
3H1

D__-T__-H__-U__-X__-R__



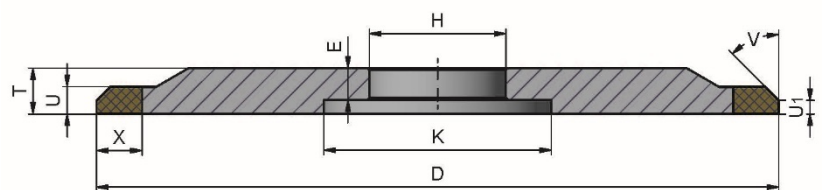
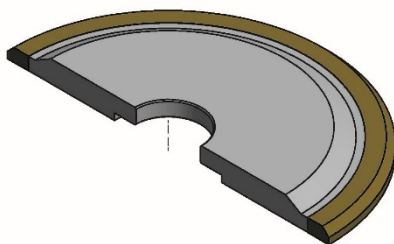
3M1 (shape N°1)

D__-T__-H__-U__-X__-V__-U1__



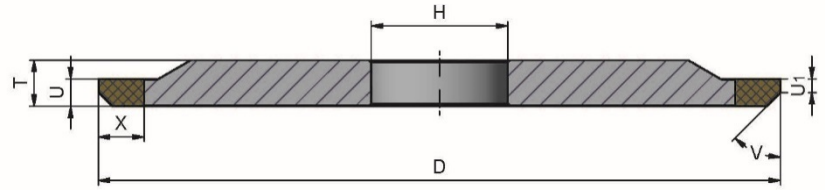
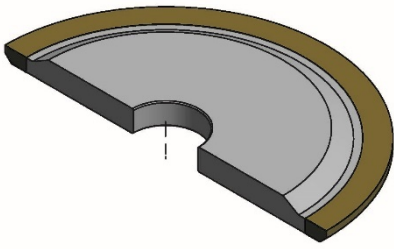
3M1 (shape N°2)

D__-T__-H__-U__-X__-V__-U1__-E__-K__ / N°2



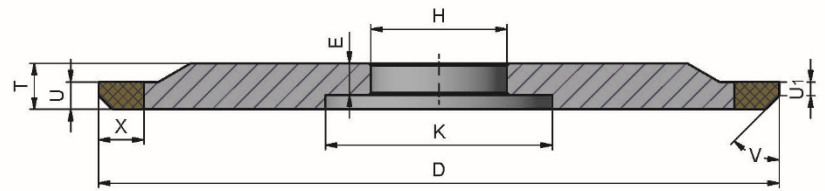
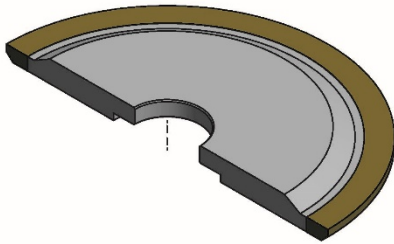
3M1 (shape N°3)

D__-T__-H__-U__-X__-V__-U1__ / N°3



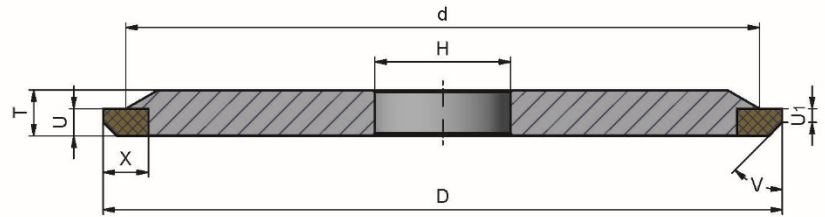
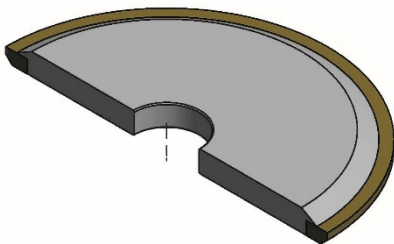
3M1 (shape N°4)

D__-T__-H__-U__-X__-V__-U1__-E__-K__ / N°4



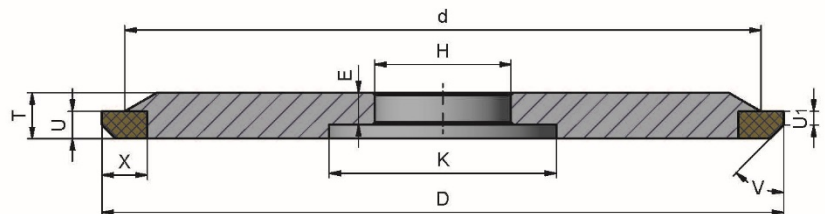
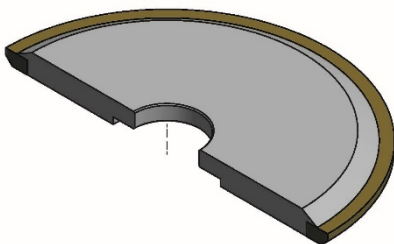
3M9 (shape N°1)

D__-T__-H__-U__-X__-V__-U1__-d__



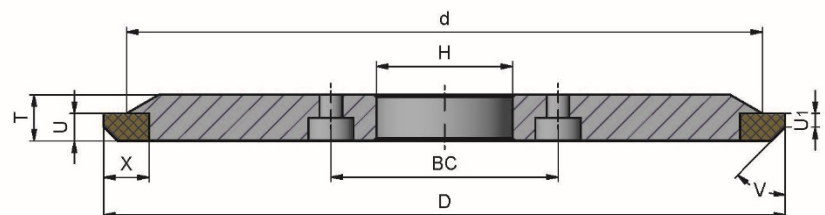
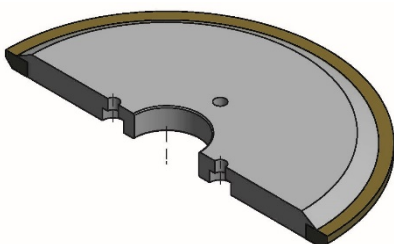
3M9 (shape N°2)

D__-T__-H__-U__-X__-V__-U1__-d__-E__-K__ / N°2



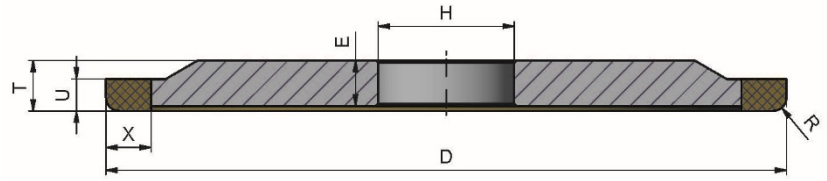
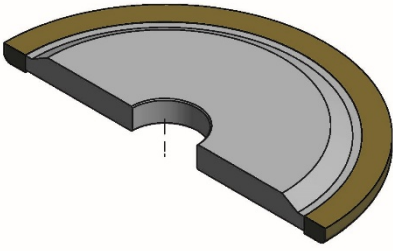
3M9B

D__-T__-H__-U__-X__-V__-U1__-BC__-d__



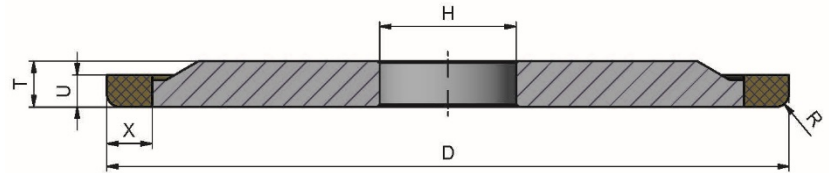
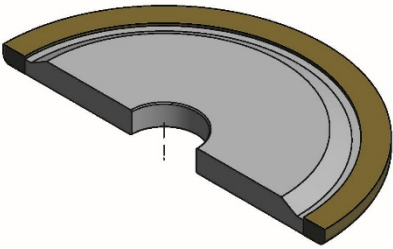
3Q1P (shape N°1)

D__T__H__U__X__R__E__



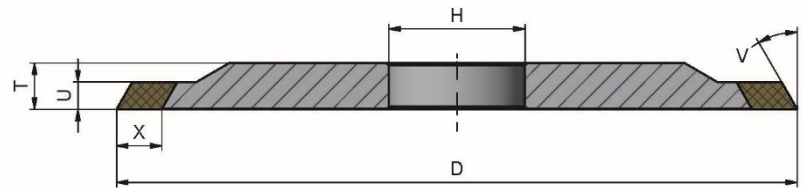
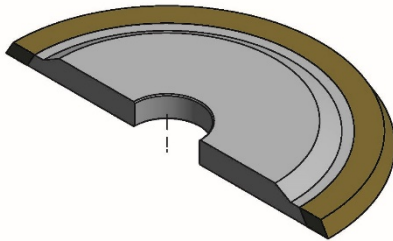
3Q1P (shape N°2)

D__T__H__U__X__R__ / N°2



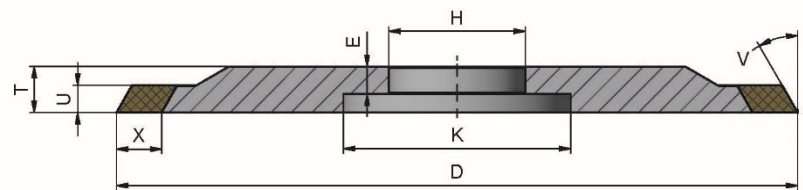
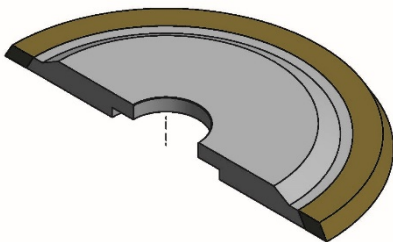
3V1 (shape N°1)

D__T__H__U__X__V__



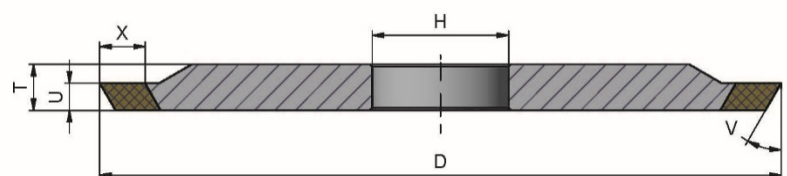
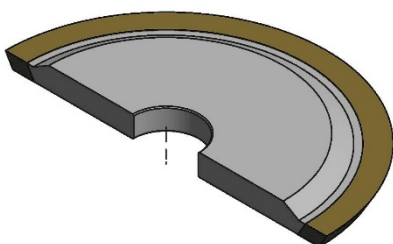
3V1 (shape N°2)

D__T__H__U__X__V__E__K__ / N°2



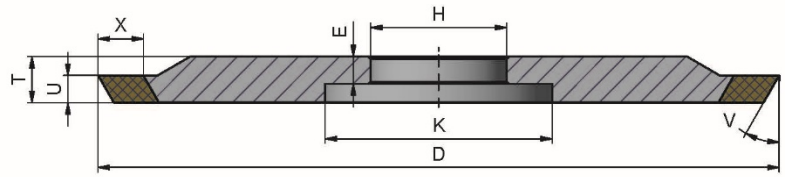
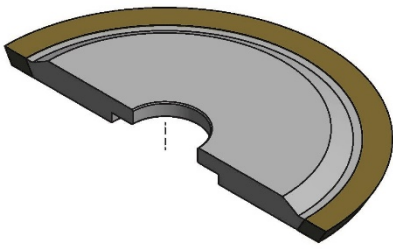
3V9 (shape N°1)

D__T__H__U__X__V__



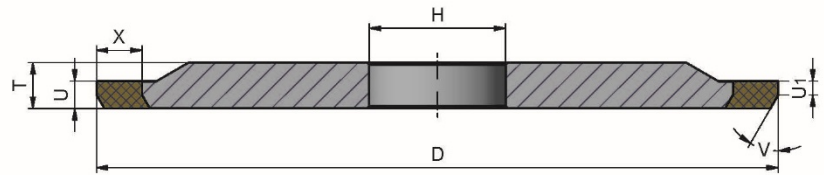
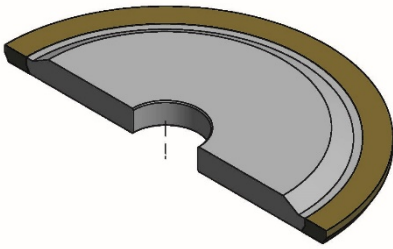
3V9 (shape N°2)

D__-T__-H__-U__-X__-V__-E__-K__ / N°2



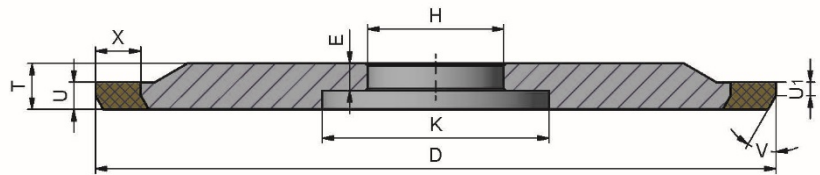
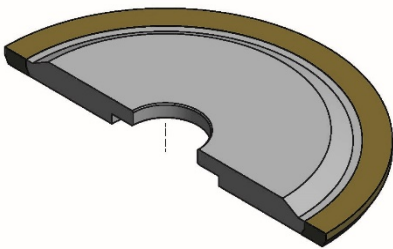
3Y1 (shape N°1)

D__-T__-H__-U__-X__-V__-U1__



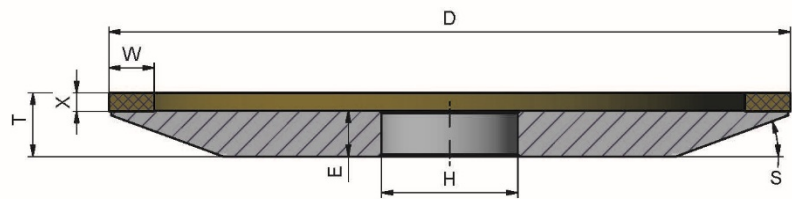
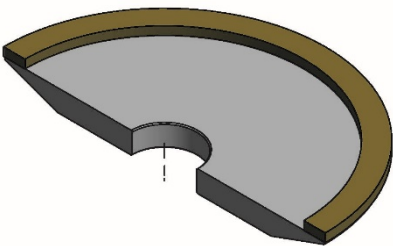
3Y1 (shape N°2)

D__-T__-H__-U__-X__-V__-U1__-E__-K__ / N°2



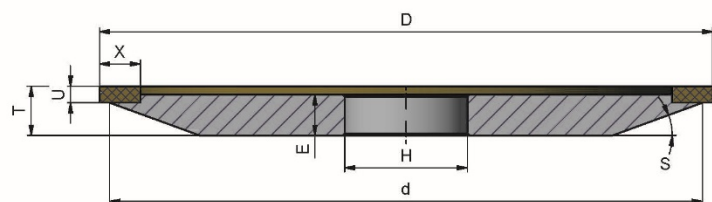
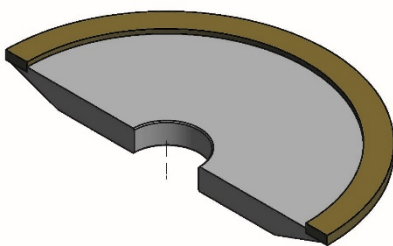
4A2

D__-T__-H__-W__-X__-E__-S__



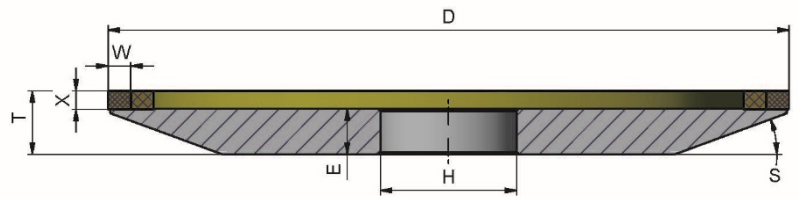
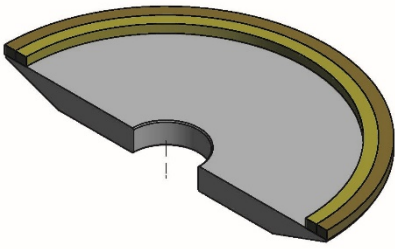
4A9P

D__-T__-H__-U__-X__-E__-S__-d__



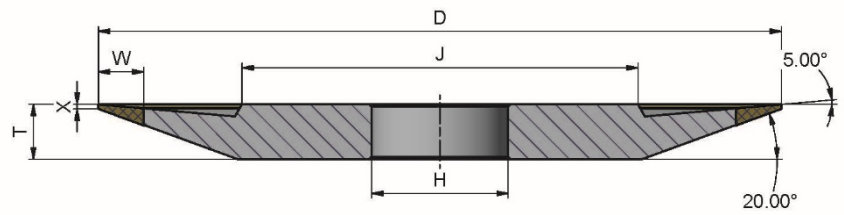
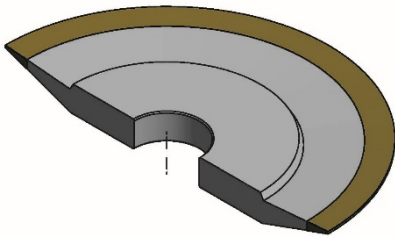
4AA2

D__T__H__W__/_X__E__S__



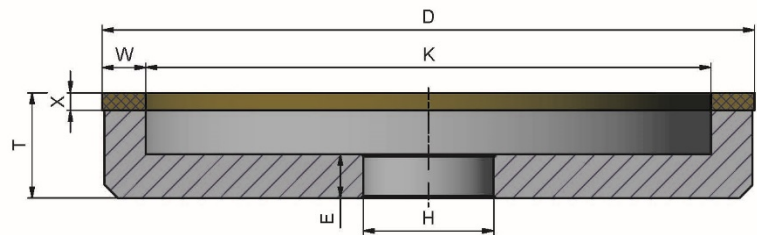
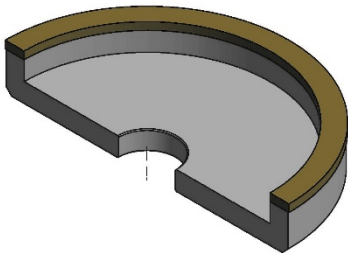
4BT9

D__T__H__W__-X__-J__



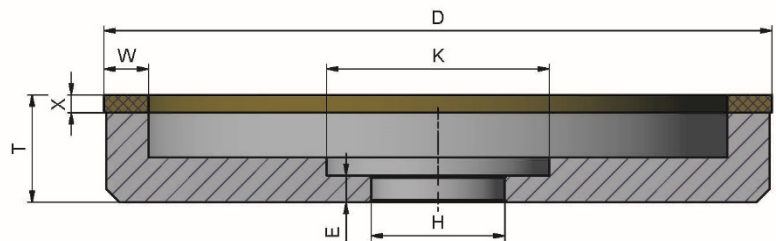
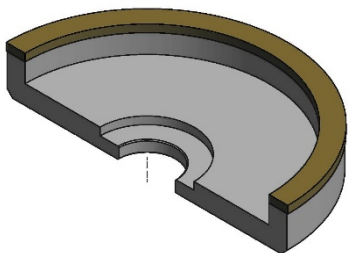
6A2 (shape N°1)

D__T__H__W__-X__-E__-K__



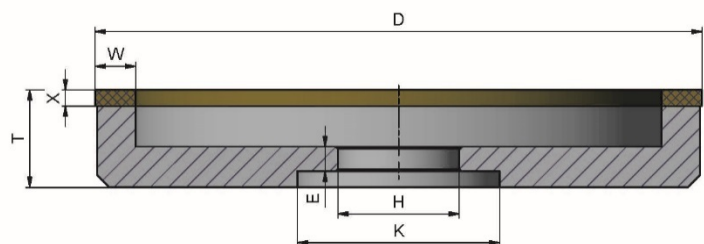
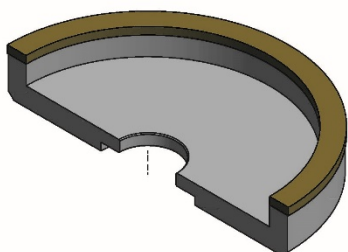
6A2 (shape N°2)

D__T__H__W__-X__-E__-K__ / N°2



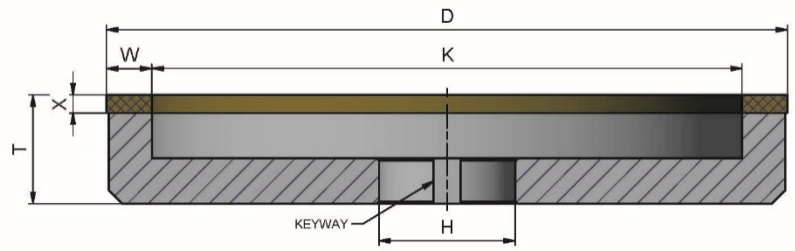
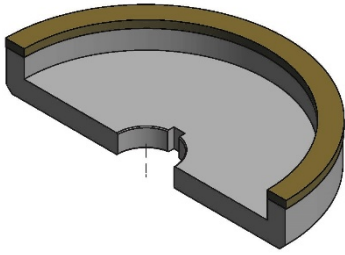
6A2 (shape N°3)

D__T__H__W__-X__-E__-K__ / N°3



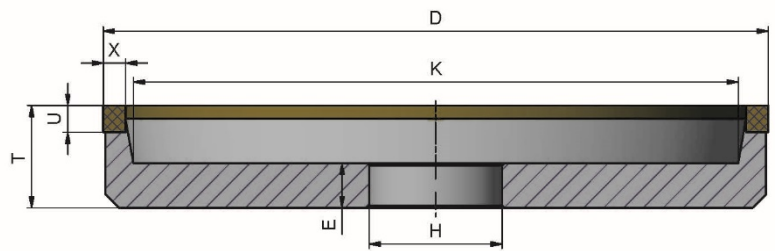
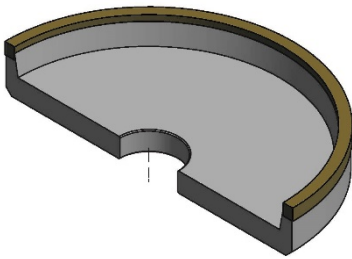
6A2K

D__-T__-H__-W__-X__-E__-K__



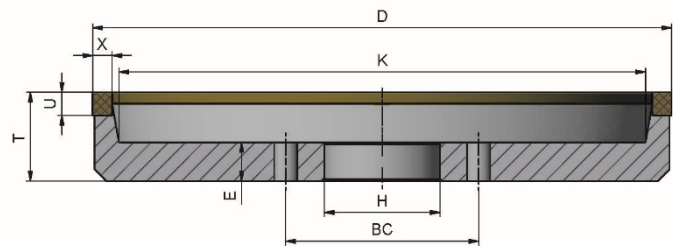
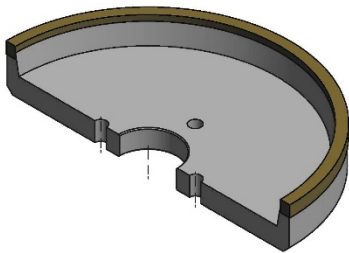
6A9

D__-T__-H__-U__-X__-E__-K__



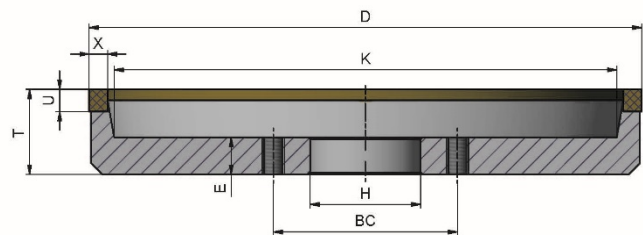
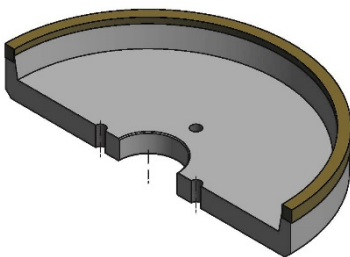
6A9H

D__-T__-H__-U__-X__-E__-K__-BC__



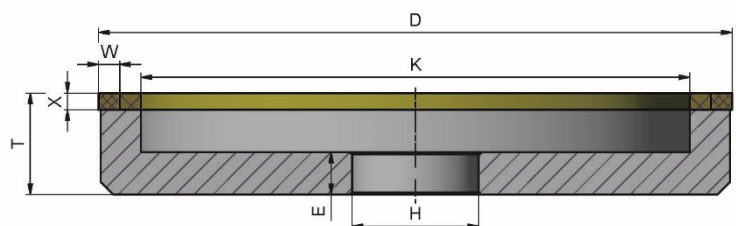
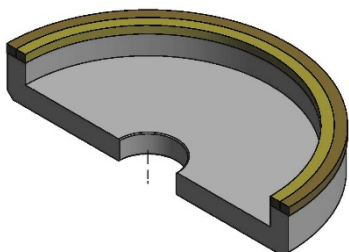
6A9T

D__-T__-H__-U__-X__-E__-K__-BC__



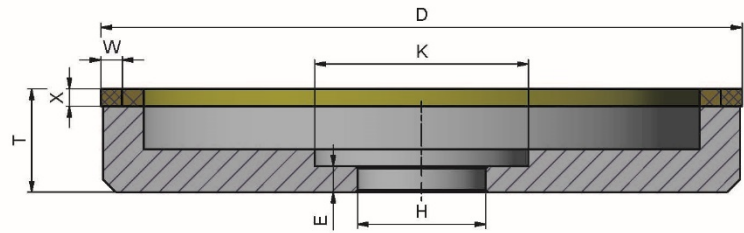
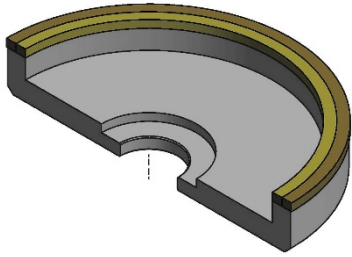
6AA2 (shape N°1)

D__-T__-H__-W__/_/_-X__-E__-K__



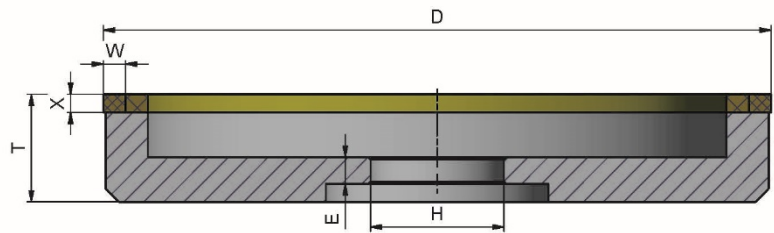
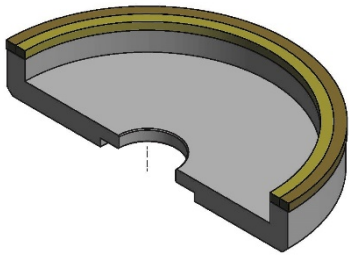
6AA2 (shape N°2)

D__-T__-H__-W__/_-X__-E__-K__ / N°2



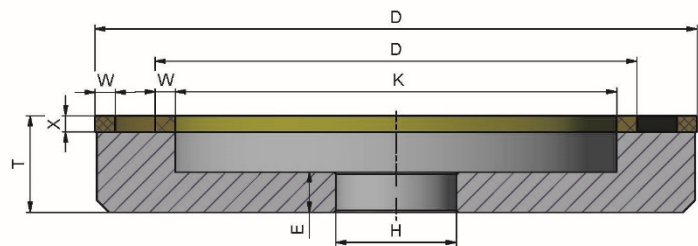
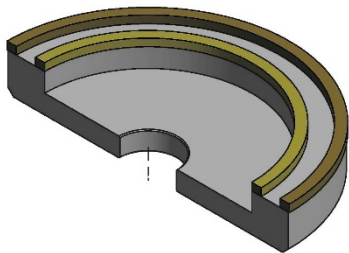
6AA2 (shape N°3)

D__-T__-H__-W__/_-X__-E__-K__ / N°3



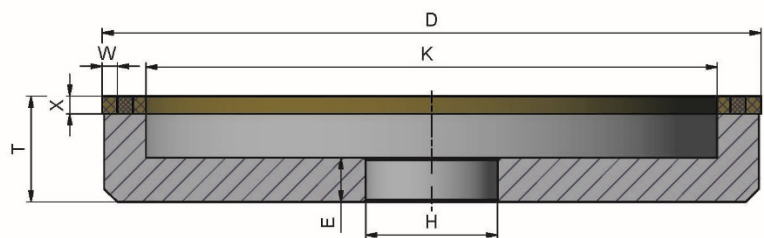
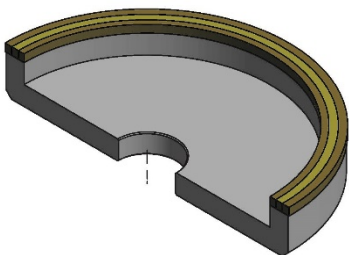
6AA7

D__/_-T__-H__-W__/_-X__-E__-K__



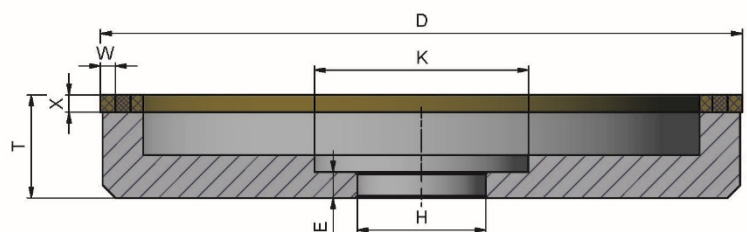
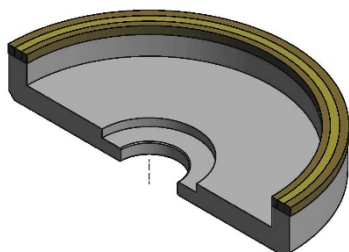
6AAA2 (shape N°1)

D__-T__-H__-W__/_/_-X__-E__-K__



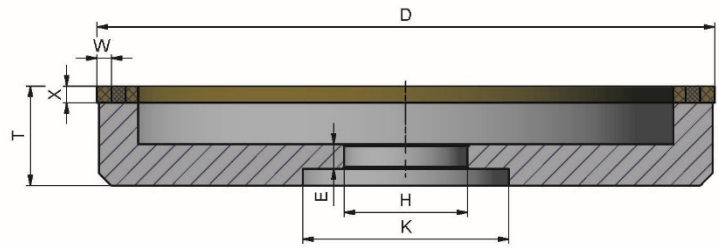
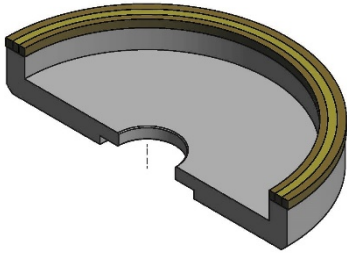
6AAA2 (shape N°2)

D__-T__-H__-W__/_/_-X__-E__-K__ / N°2



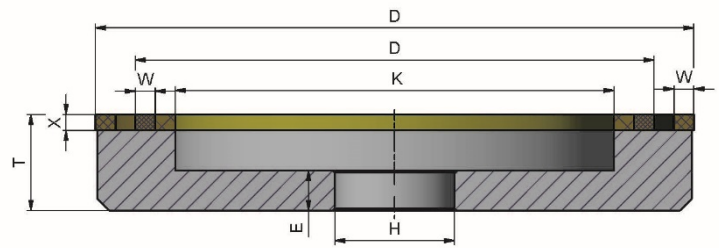
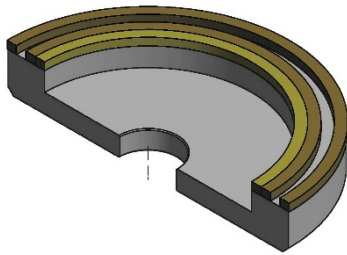
6AAA2 (shape N°3)

D__-T__-H__-W__/_/_-X__-E__-K__ / N°3



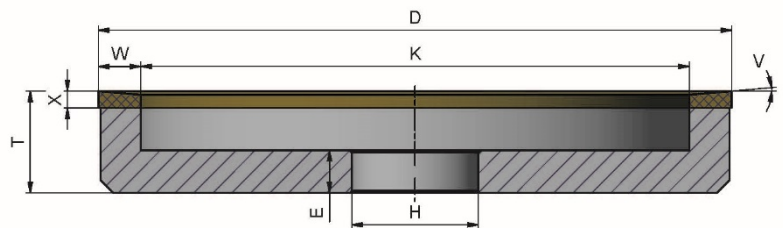
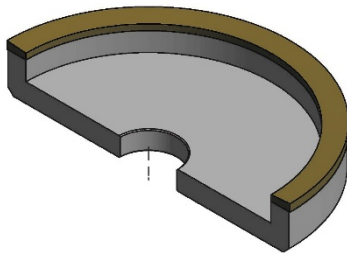
6AAA7

D__/_-T__-H__-W__/_/_-X__-E__-K__



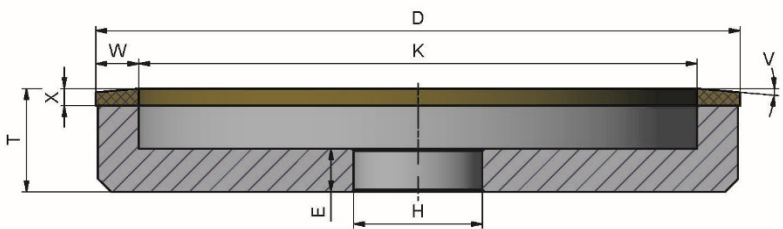
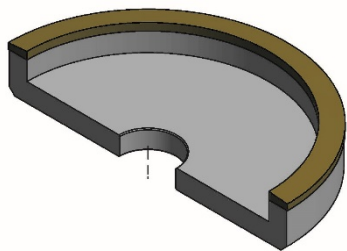
6B2 (shape N°1)

D__-T__-H__-W__-X__-V__-E__-K__



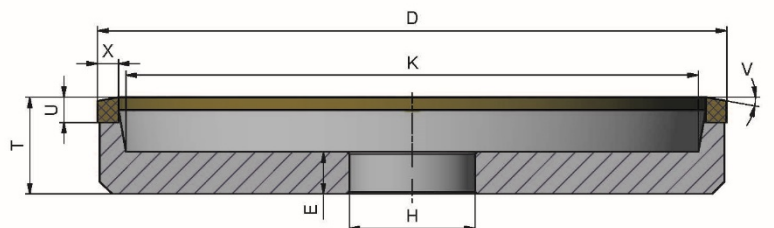
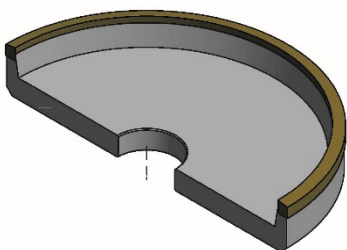
6B2 (shape N°2)

D__-T__-H__-W__-X__-V__-E__-K__ / N°2



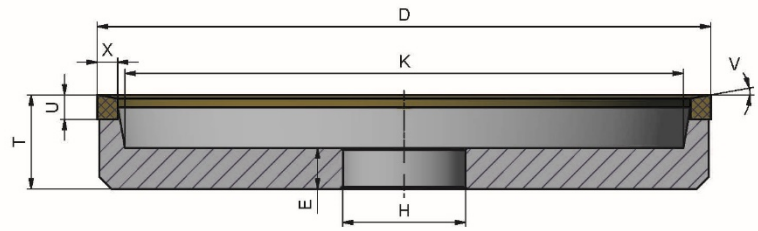
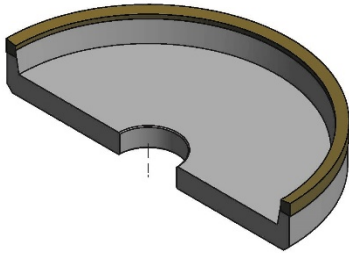
6B9 (shape N°1)

D__-T__-H__-U__-X__-V__-E__-K__



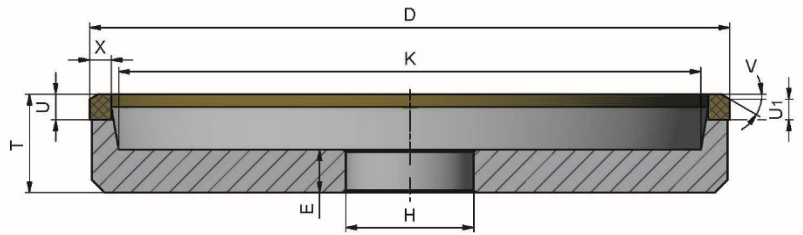
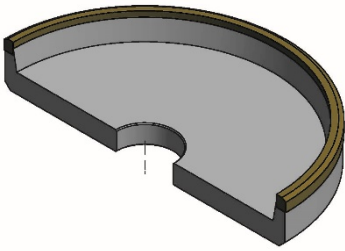
6B9 (shape N°2)

D__T__H__U__X__V__E__K__ / N°2



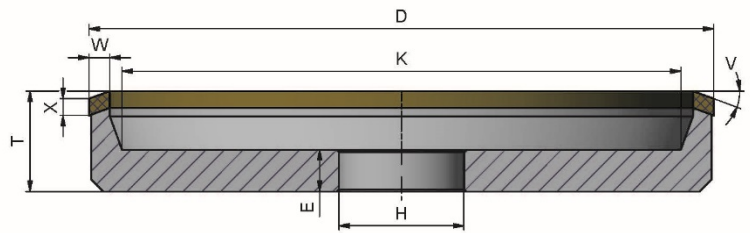
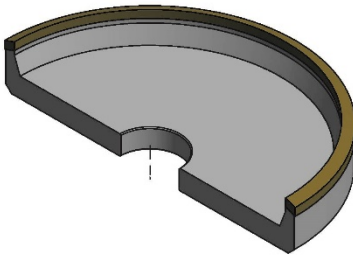
6M9

D__T__H__U__X__E__K__V__U1__



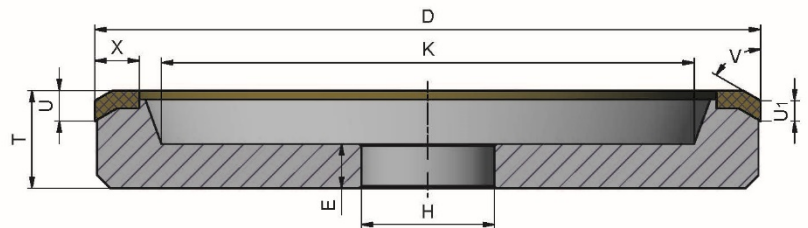
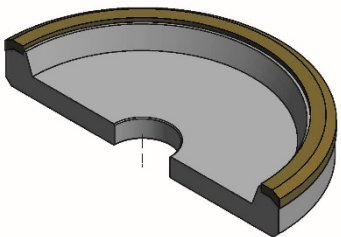
6V5

D__T__H__W__X__V__E__K__



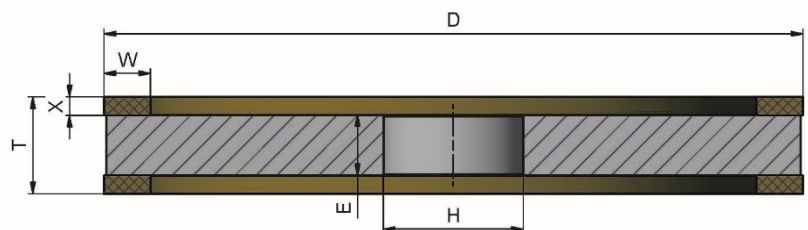
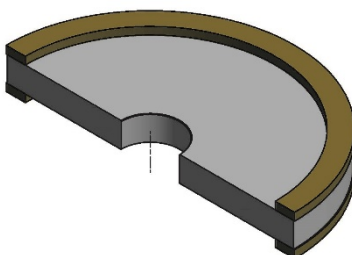
6Y9

D__T__H__U__X__E__K__V__U1__



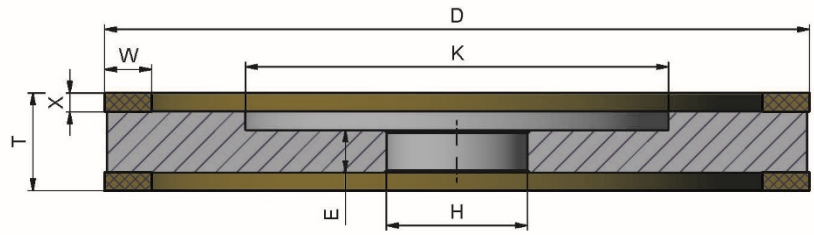
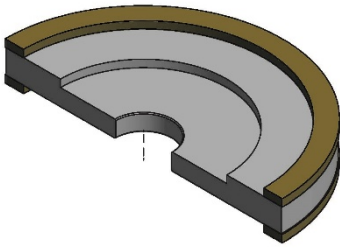
9A3 (shape N°1)

D__T__H__W__X__E__



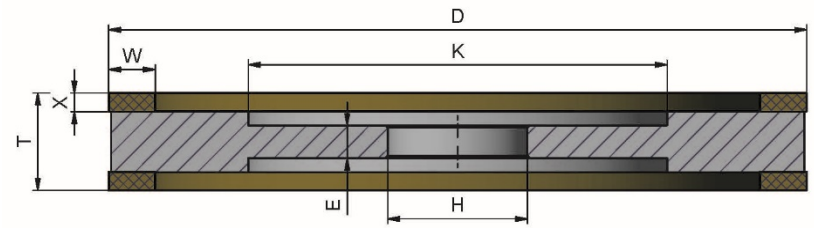
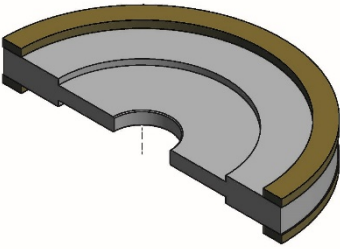
9A3 (shape N°2)

D__-T__-H__-W__-X__-E__-K__ / N°2



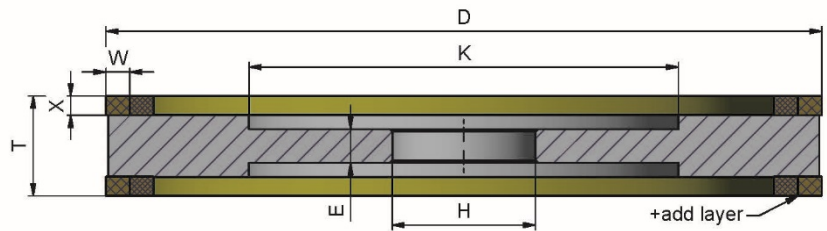
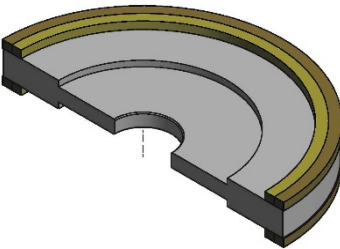
9A3 (shape N°3)

D__-T__-H__-W__-X__-E__-K__ / N°3



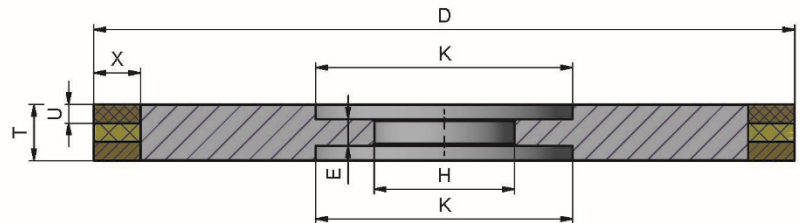
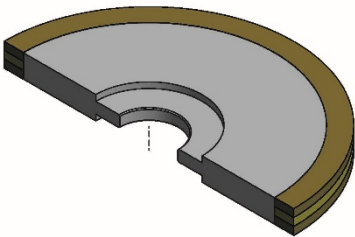
9AA3

D__-T__-H__-W__/_-X__-E__-K__



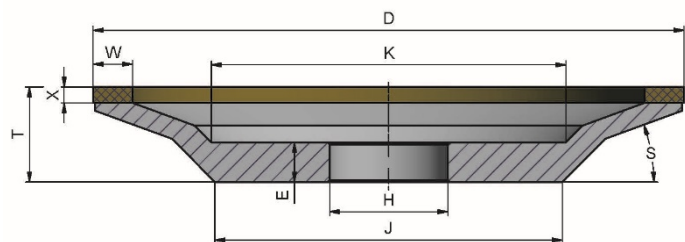
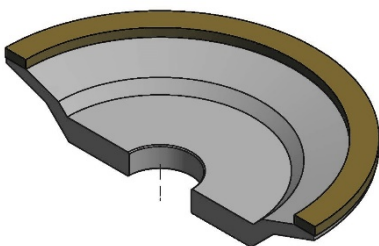
9AAA1

D__-T__-H__-U__-X__-E__-K__



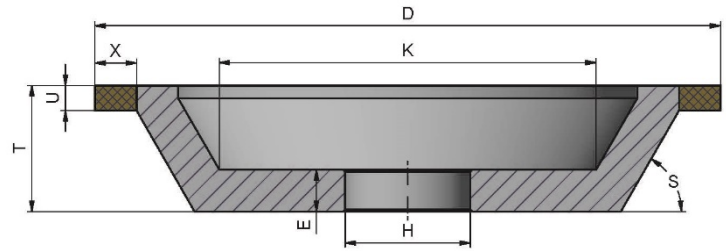
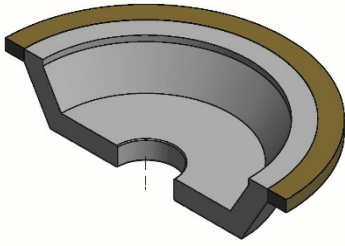
10A2

D__-T__-H__-W__-X__-E__-K__-J__-S__



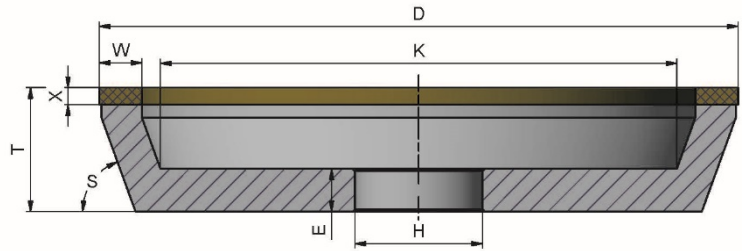
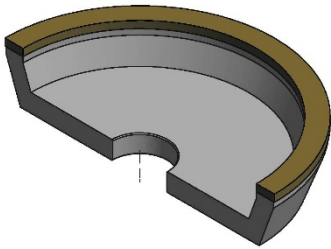
11A1

D__T__H__U__X__E__K__S__



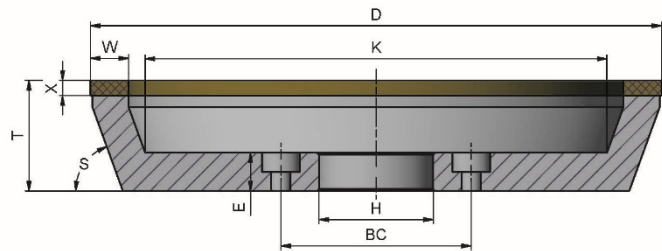
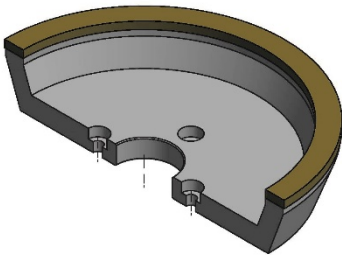
11A2

D__T__H__W__X__E__K__S__



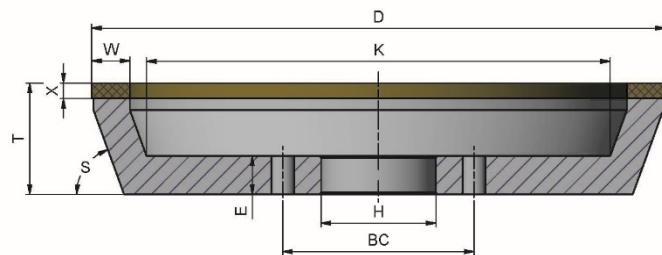
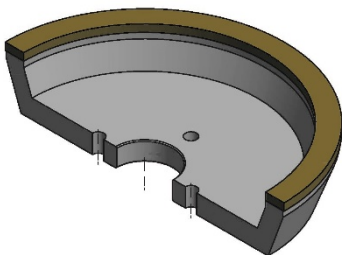
11A2B

D__T__H__W__X__E__K__S__-BC__



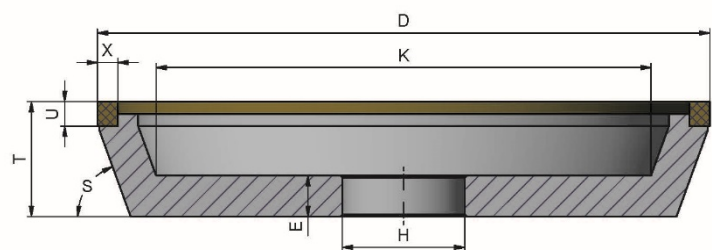
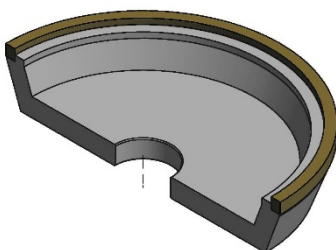
11A2H

D__T__H__W__X__E__K__S__-BC__



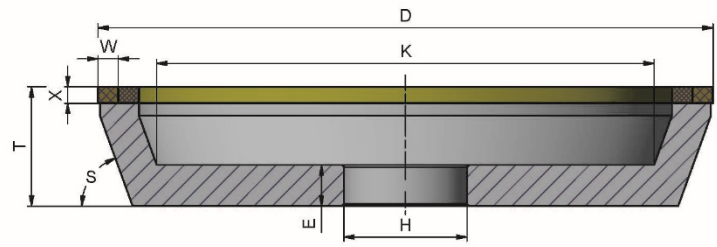
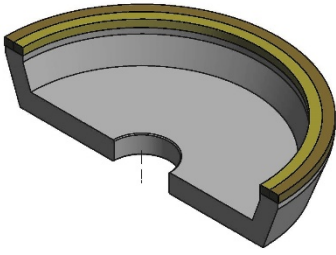
11A9

D__T__H__U__X__E__K__S__



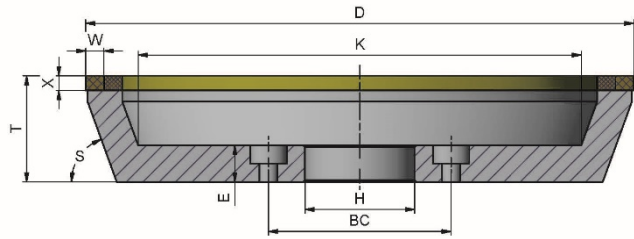
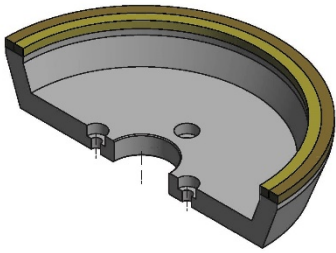
11AA2

D__T__H__W__/_X__E__K__S__



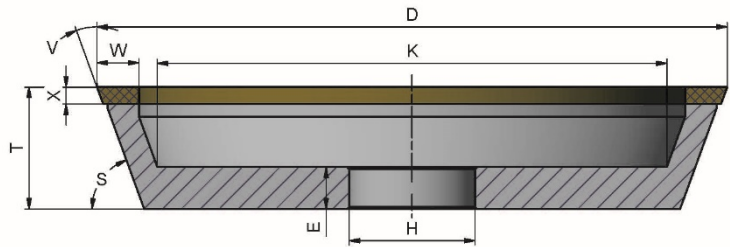
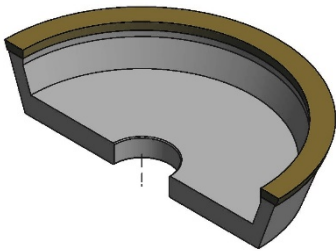
11AA2B

D__T__H__W__/_X__E__K__S__-BC



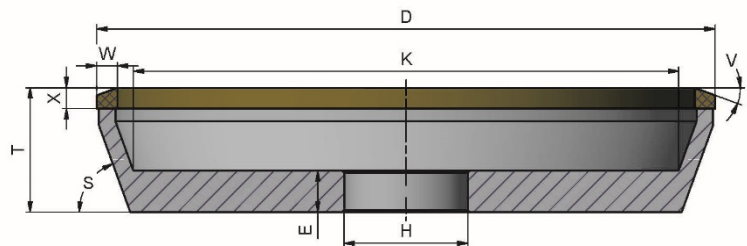
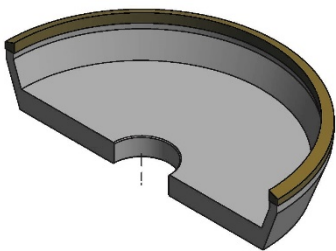
11B2

D__T__H__W__-X__V__E__K__S__



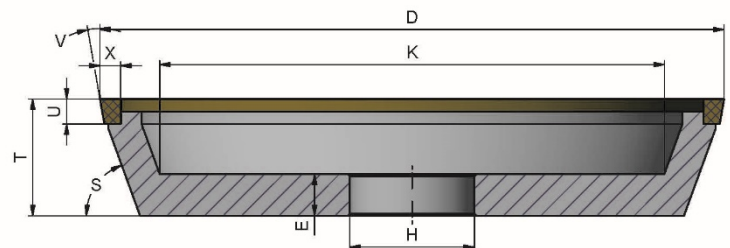
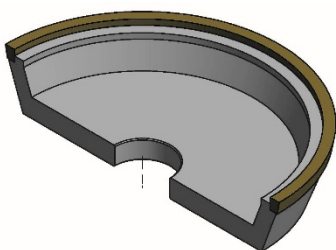
11B2R

D__T__H__W__-X__V__E__K__S__



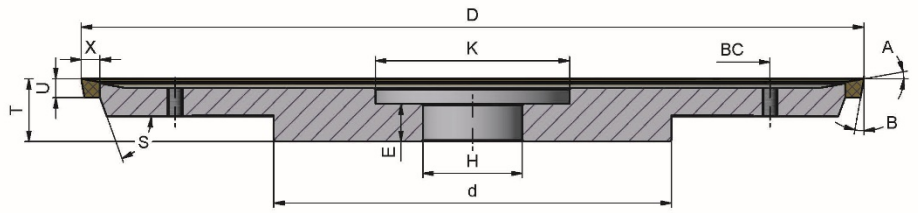
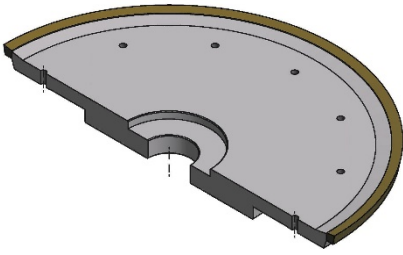
11B9

D__T__H__U__-X__V__E__K__S__



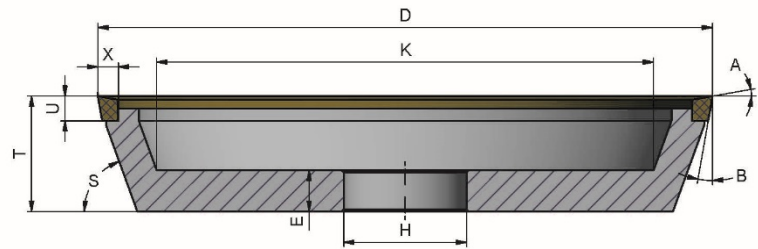
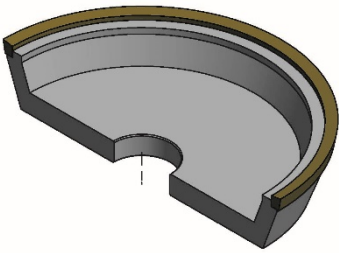
11BT1T

D__T__H__U__X__E__K__A__B__S__BC__d__



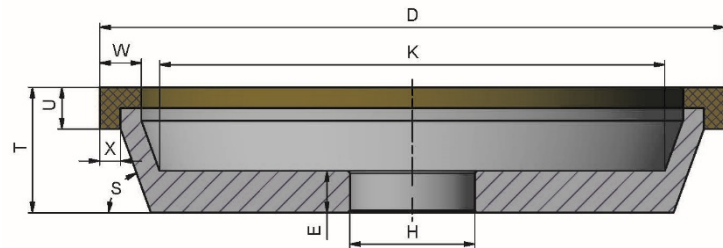
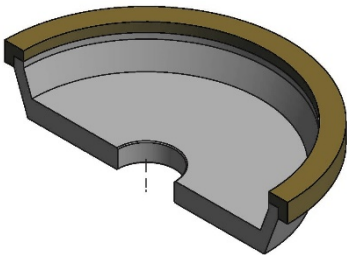
11BT9

D__T__H__U__X__E__K__A__B__S__



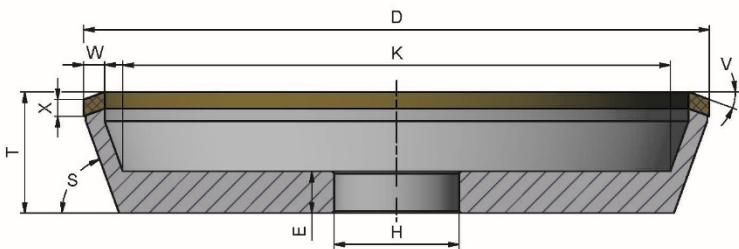
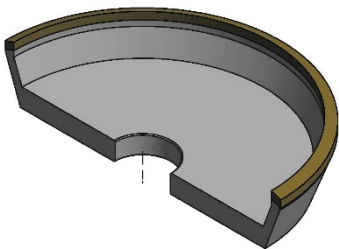
11C9

D__T__H__U__W__X__E__K__S__



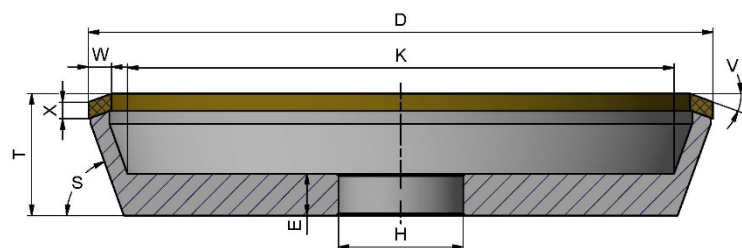
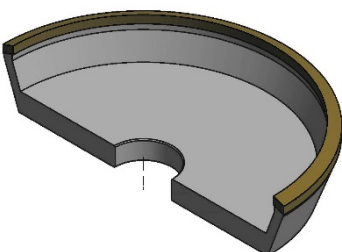
11V5

D__T__H__W__X__V__E__K__S__



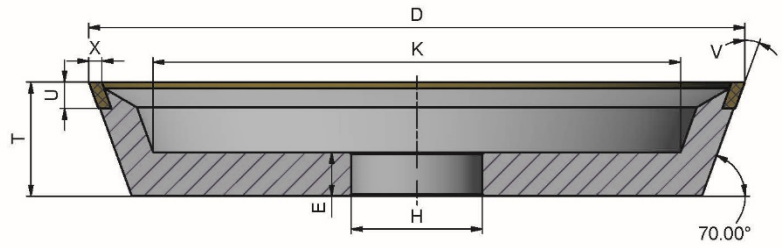
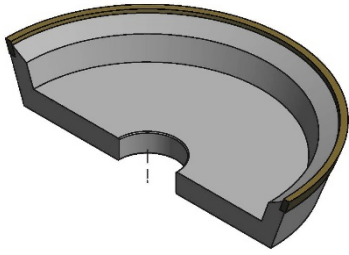
11V5R

D__T__H__W__X__V__E__K__S__



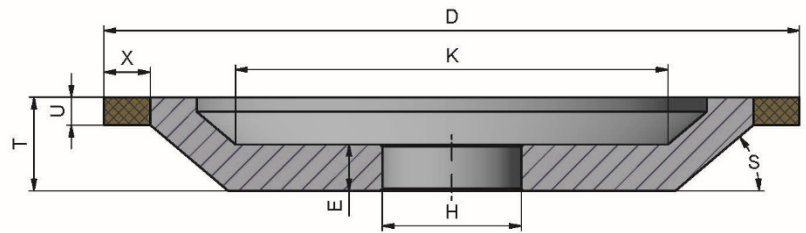
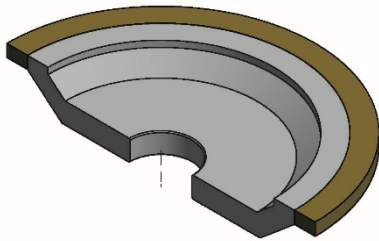
11V9

D__T__H__U__X__V__E__K__



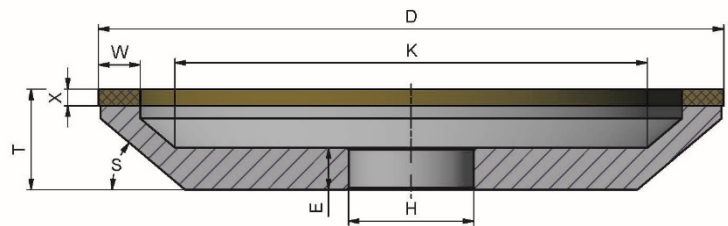
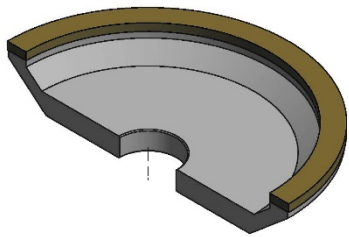
12A1

D__T__H__U__X__E__K__S__



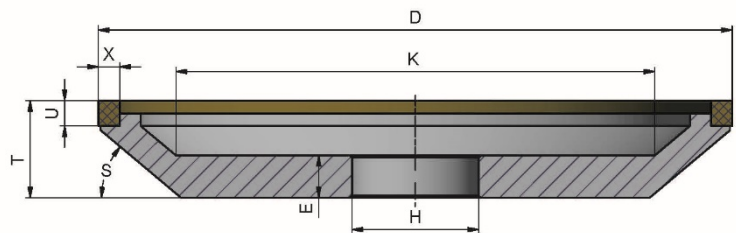
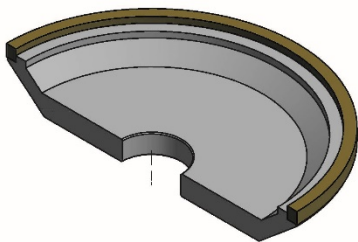
12A2

D__T__H__W__X__E__K__S__



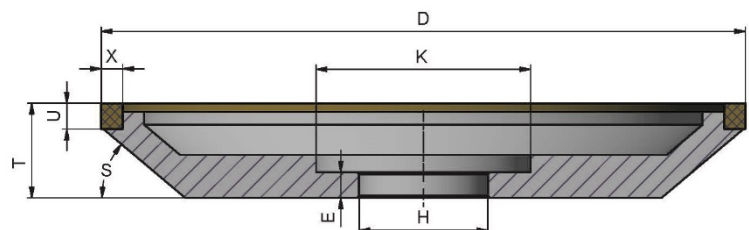
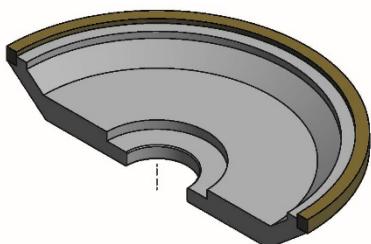
12A9 (shape N°1)

D__T__H__U__X__E__K__S__



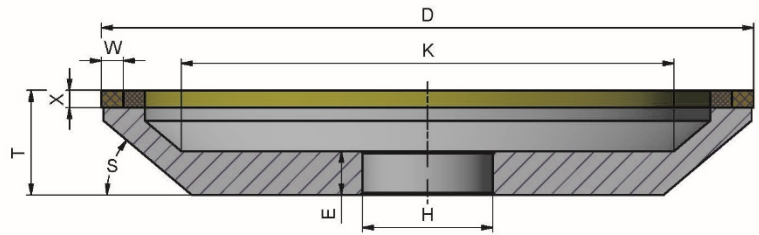
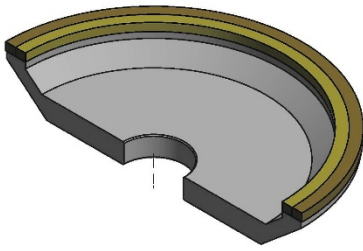
12A9 (shape N°2)

D__T__H__U__X__E__K__S__ / N°2



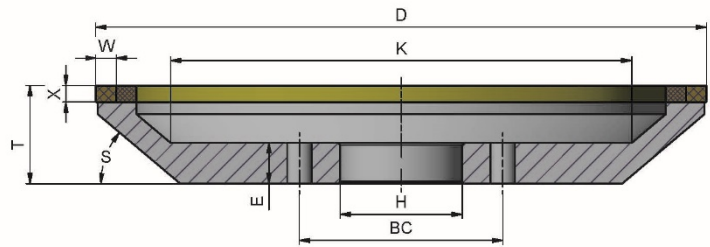
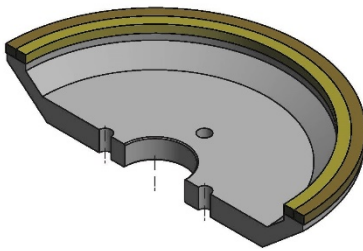
12AA2

D__T__H__W__/_X__E__K__S__



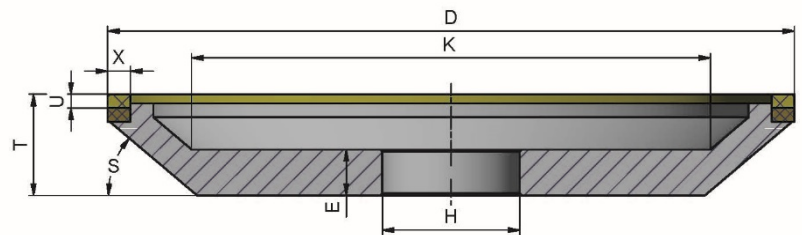
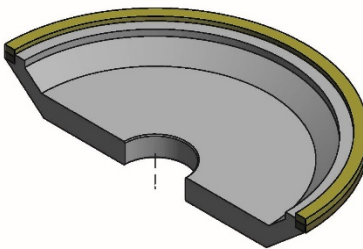
12AA2H

D__T__H__W__/_X__E__K__S__-BC



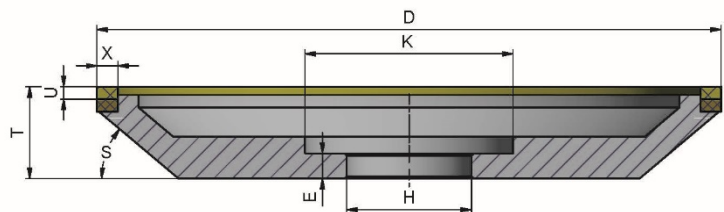
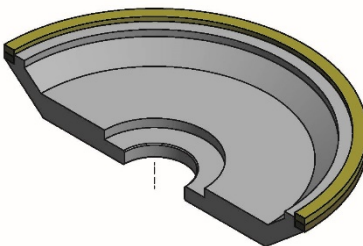
12AA9 (shape N°1)

D__T__H__U__/_X__E__K__S__



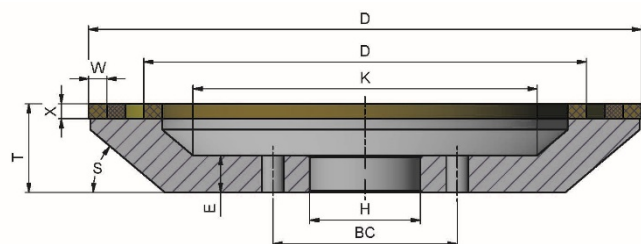
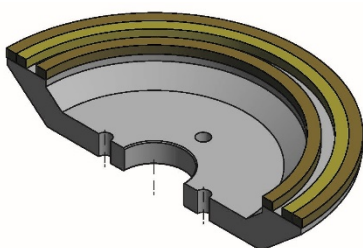
12AA9 (shape N°2)

D__T__H__U__/_X__E__K__S__ / N°2



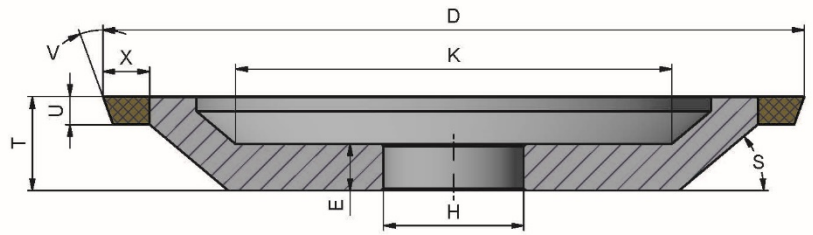
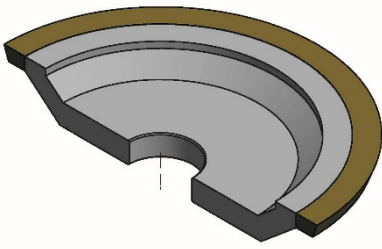
12AAA7H

D__/_T__H__W__/_/_X__E__K__S__-BC



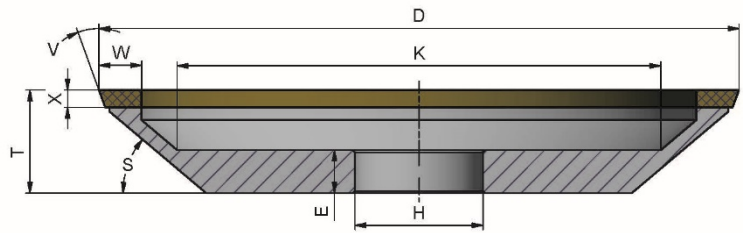
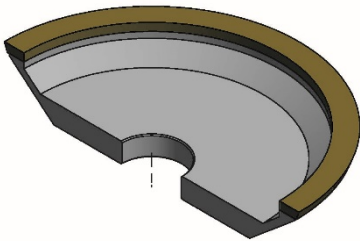
12B1

D__T__H__U__X__V__E__K__S__



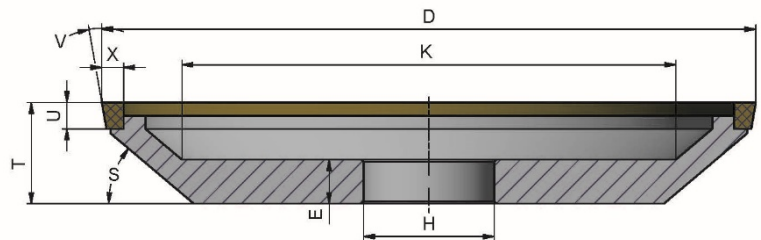
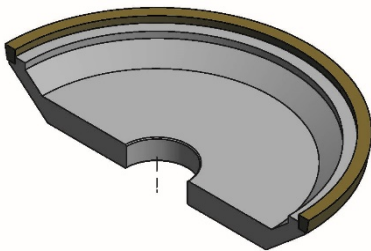
12B2

D__T__H__W__X__V__E__K__S__



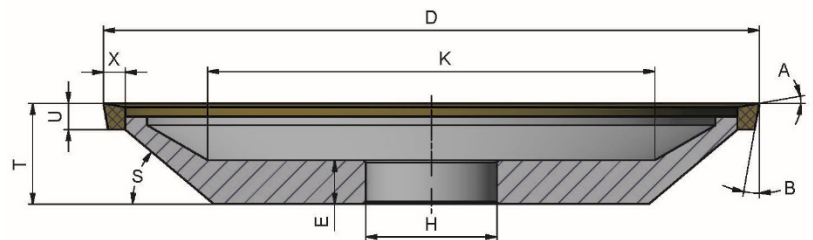
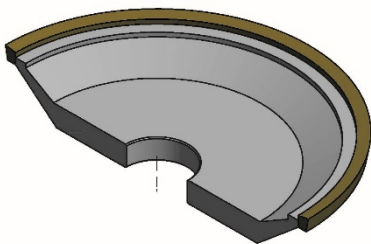
12B9

D__T__H__U__X__V__E__K__S__



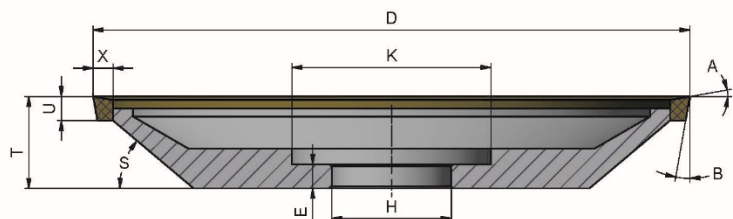
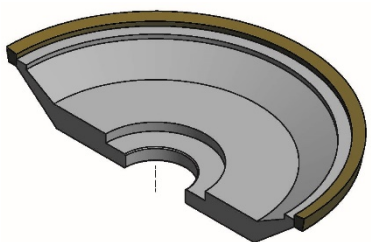
12BT1 (shape N°1)

D__T__H__U__X__A__B__E__K__S__



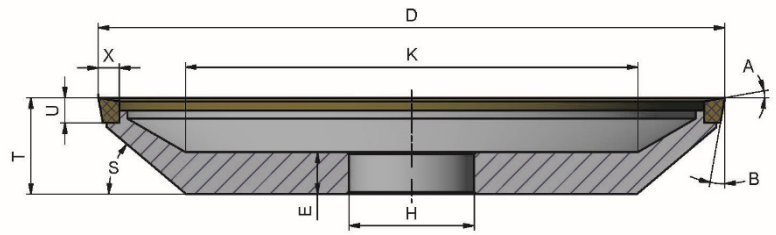
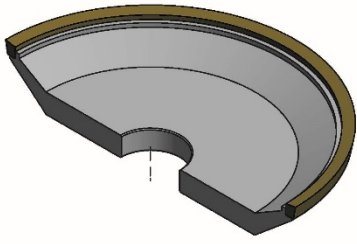
12BT1 (shape N°2)

D__T__H__U__X__A__B__E__K__S__ / N°2



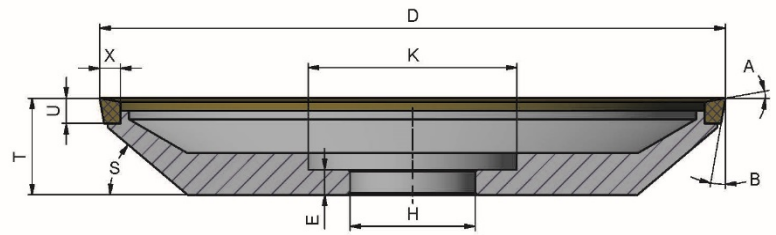
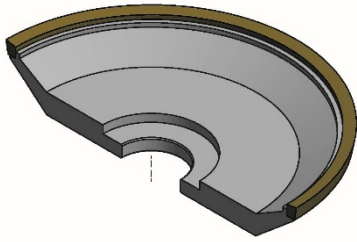
12BT9 (shape N°1)

D__T__H__U__X__A__B__E__K__S__



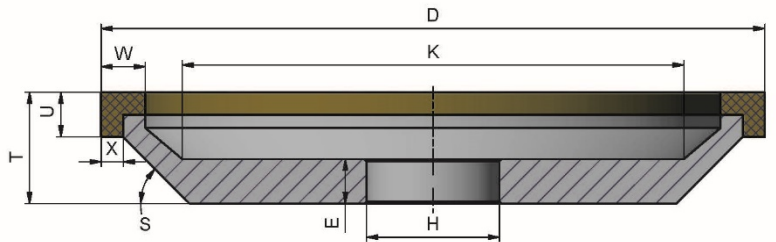
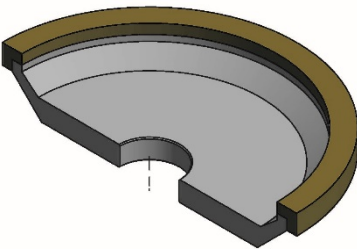
12BT9 (shape N°2)

D__T__H__U__X__A__B__E__K__S__ / N°2



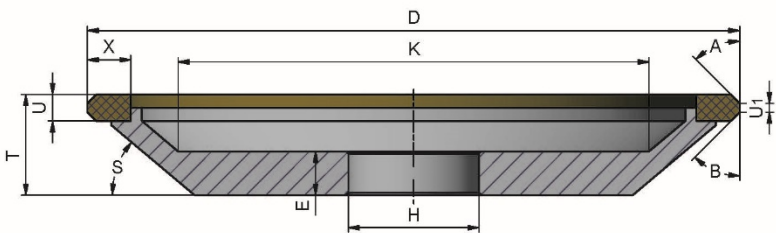
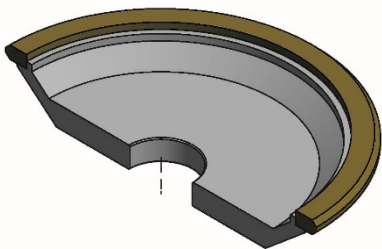
12C9

D__T__H__U__W__X__E__K__S__



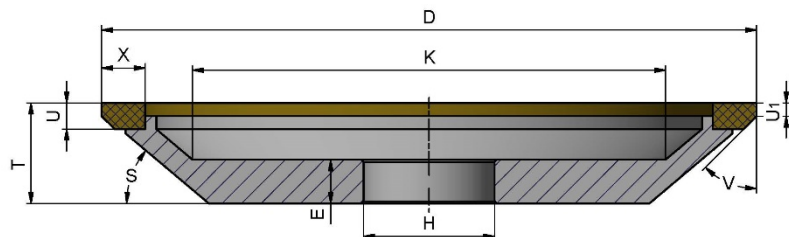
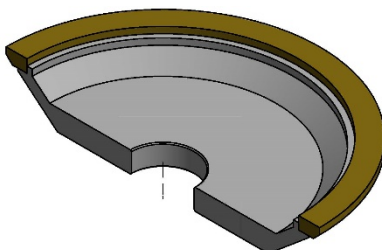
12D9

D__T__H__U__X__A__B__U1__E__K__S__



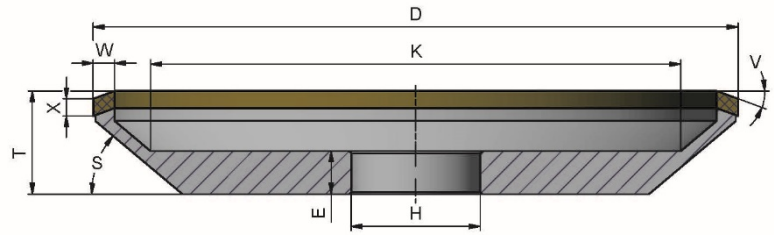
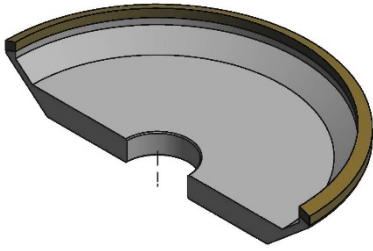
12M9

D__T__H__U__X__V__U1__E__K__S__



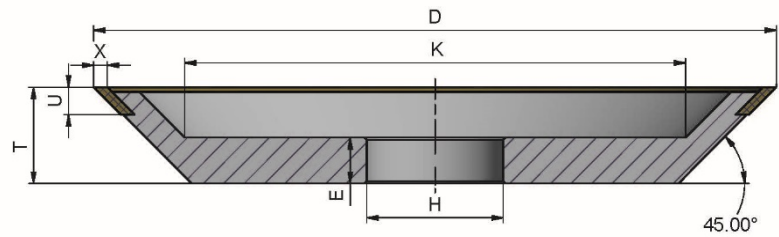
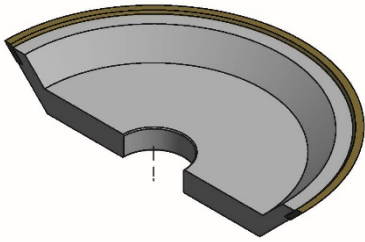
12V5

D__-T__-H__-W__-X__-V__-E__-K__-S__



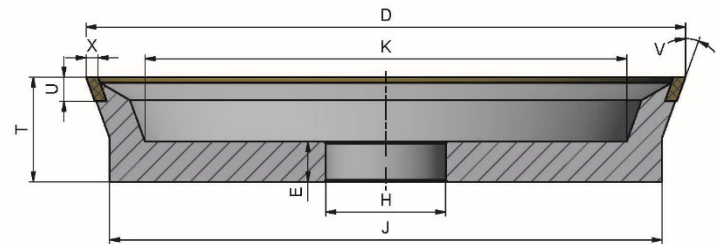
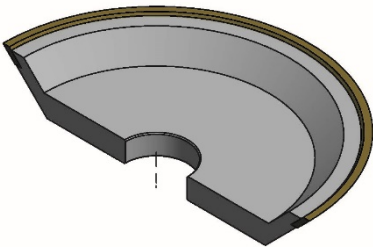
12V9

D__-T__-H__-U__-X__-E__-K__



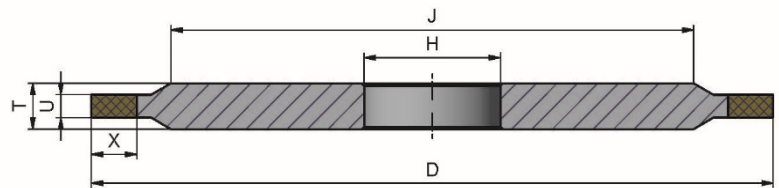
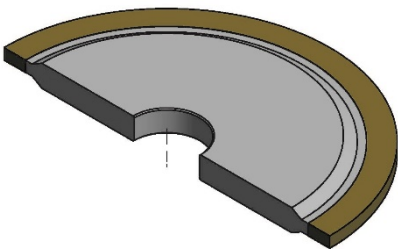
13V9

D__-T__-H__-U__-X__-V__-E__-K__-J__



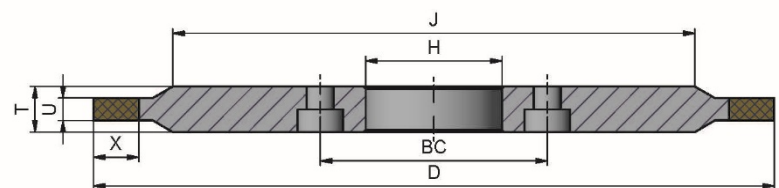
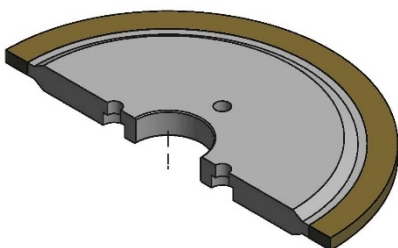
14A1

D__-T__-H__-U__-X__-J__



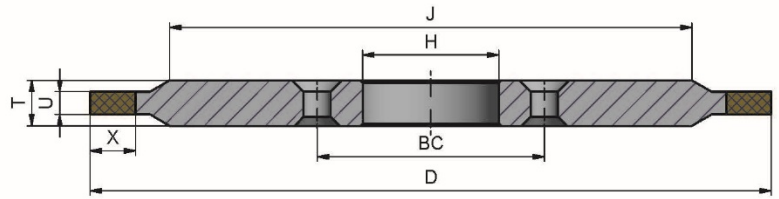
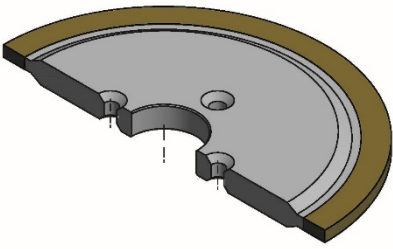
14A1B

D__-T__-H__-U__-X__-J__-BC__



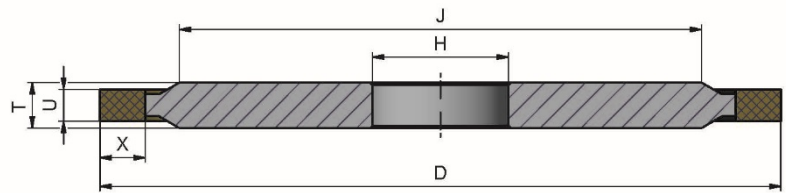
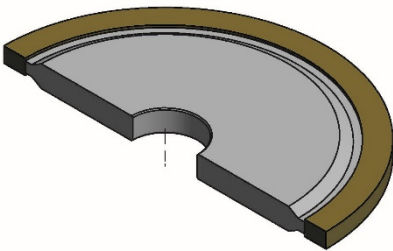
14A1CC

D__-T__-H__-U__-X__-J__-BC__



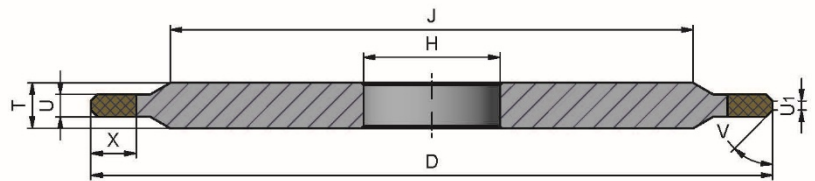
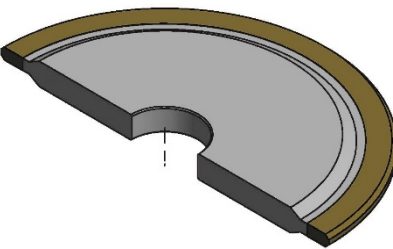
14A1R

D__-T__-H__-U__-X__-J__



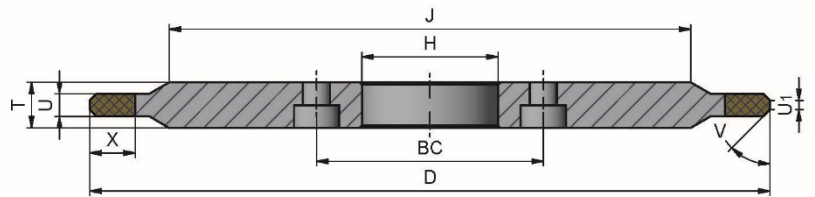
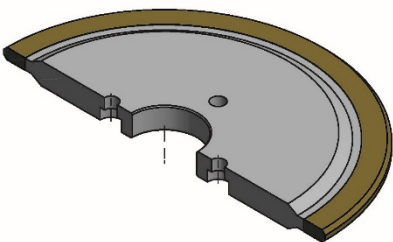
14D1

D__-T__-H__-U__-X__-V__-U1__-J__



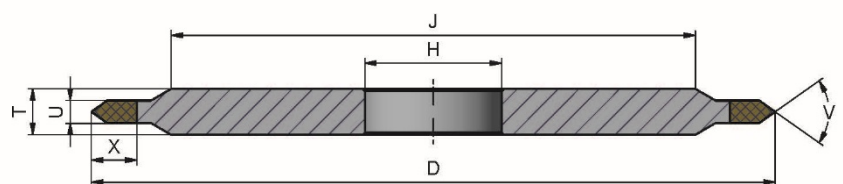
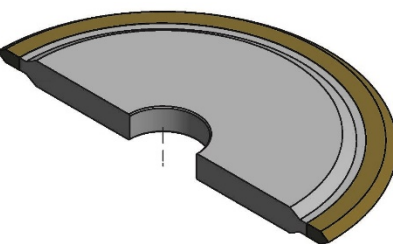
14D1B

D__-T__-H__-U__-X__-V__-U1__-J__-BC__



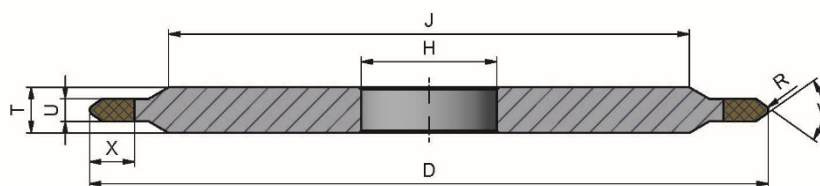
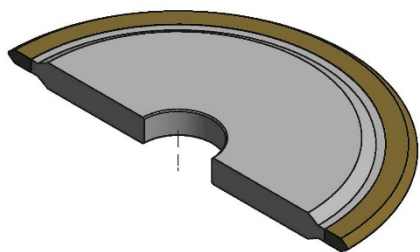
14E1

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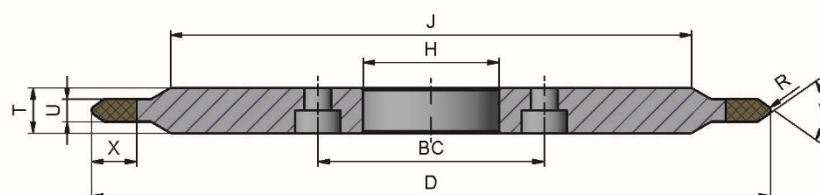
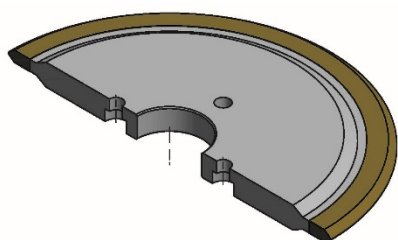
14EF1

D__-T__-H__-U__-X__-V__-R__-J__



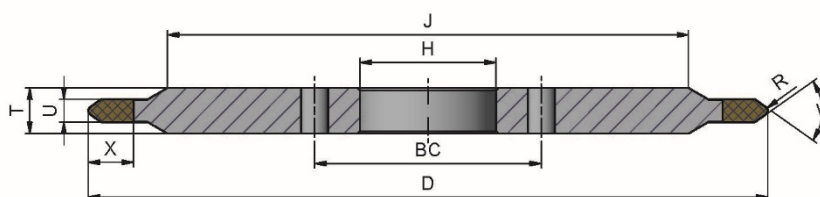
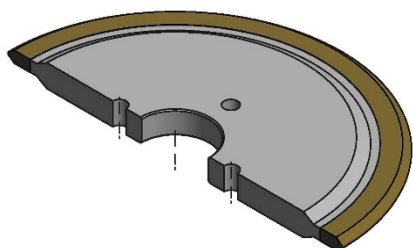
14EF1B

D__-T__-H__-U__-X__-V__-R__-J__-BC__



14EF1H

D__-T__-H__-U__-X__-V__-R__-J__-BC__



STICK

ARTICLE

A x B x C



A11261	ASA N°2 / 10 – 35 micron	13x25x102mm
A11260	ASA N°1 / STICK > 46	13x25x102mm
A12848	ASA N°3 / STICK > 46	25.4x25.4x152mm