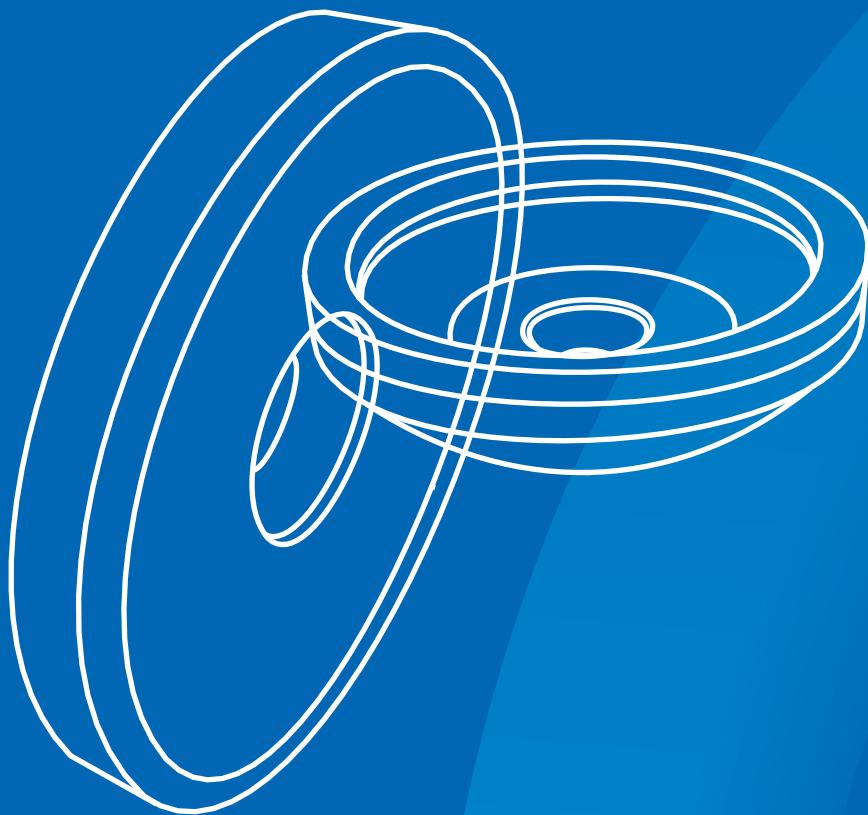


POLTAVA
DIAMOND
TOOLS

CATALOGUE OF PRODUCTS



2009





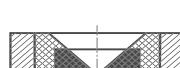
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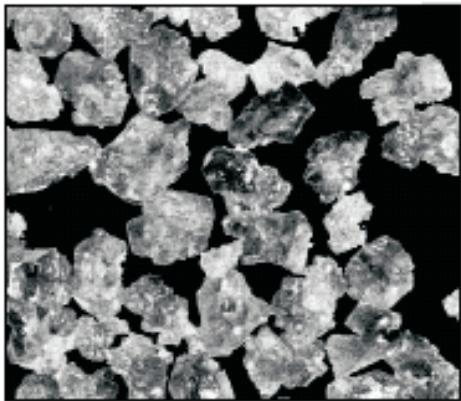
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APPLICATION OF DIAMOND TOOLS AND THEIR ADVANTAGES OVER ABRASIVE TOOLS.



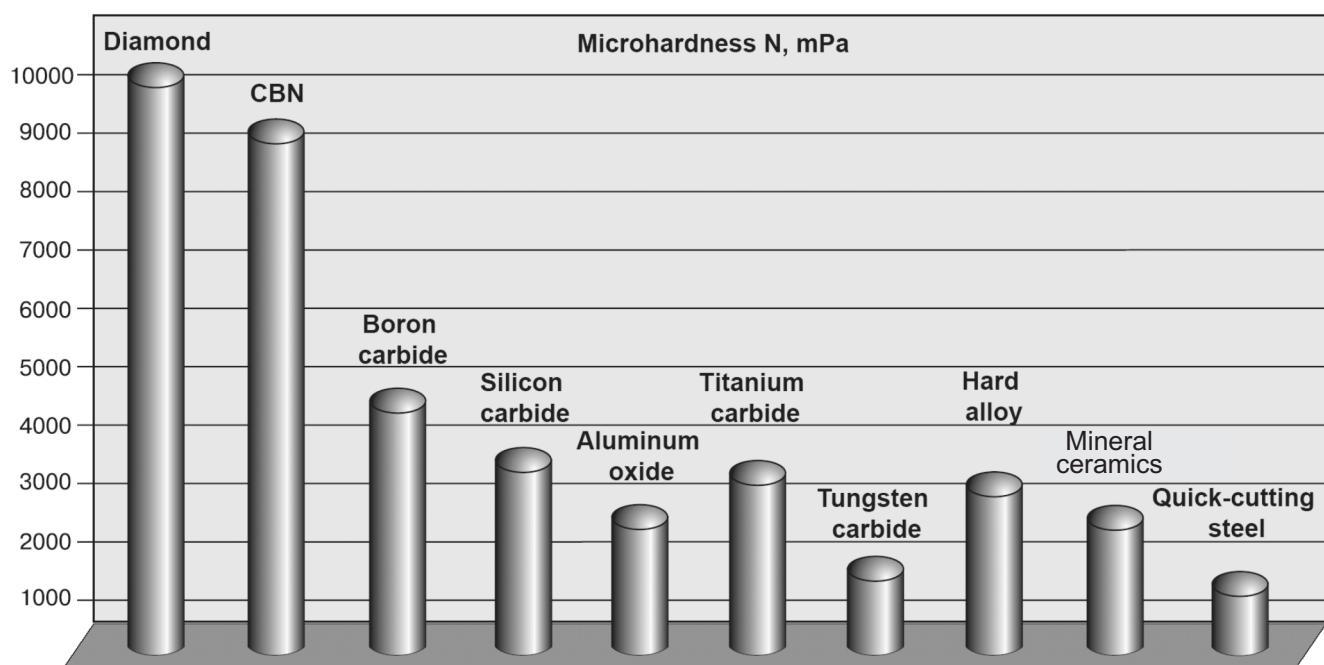
Applications of diamond tools.

- Processing, sharpening and finishing of tools made of all alloy types.
- Sharpening and finishing of carbide tools.
- Processing and cutting of silicon, germanium and other semiconducting materials.
- Processing, cutting and finishing of tools made of ferrite, ceramic and glass materials.
- Processing of graphite and carbon reinforced plastics.
- Processing and cutting of armored fiber glass plastics, fiberplastics.
- Finishing and polishing of precious stones.
- Cutting, finishing and polishing of artificial and natural stones.
- Processing of all types of decorative and technical glasses and porcelain.
- Cutting and processing of all types of refractory materials.

ADVANTAGES OF DIAMOND GRINDING TOOLS OVER ABRASIVE TOOLS

- High wear resistance.
- Workpiece life longer after diamond tool profiling.
- Less thermal workpiece damage due to lower temperature in grinding zone.
- Longer lasting, hence reduced changeover times.
- Higher volumes at the same level of quality.

PHYSICOMECHANICAL CHARACTERISTICS OF ABRASIVE TOOL MATERIALS





TYPES OF DIAMOND POWDERS AND THEIR APPLICATION FIELD

Type	Characteristic	Recommended application field
Grinding powders		
AC4	Synthetic diamond powders in the form of aggregates	Used for production of resin bonds tools, grinding and sharpening of carbide tools
AC6	Synthetic diamond powders in the form of individual crystals with a more developed surface and aggregates	Used for production of resin and metal bonds tools for grinding and sharpening of carbide tools
AC15	Synthetic diamond powders in the form of aggregates (less than 60%) and elongated crystals with a powder shape coefficient less than 1,6	Used for production of resin and metal bonds tools for sharpening and grinding of carbide tools, ceramics, glass, quartz and other hard-to-machine materials
AC20	Synthetic diamond powders in the form of aggregates (less than 40%) and individual elongated crystals with a powder shape coefficient less than 1,5	Used for production of resin and metal bond tools for sharpening and grinding of carbide tools, ceramics, glass, quartz and other hard-to-machine materials
AC32	Synthetic diamond powders in the form of well formed whole crystals (more than 12%) and aggregates (less than 15%) with a powder shape coefficient less than 1,2	Used for production of metal bond tools for stone grinding, light rock cutting, for the processing of glass, for processing of glass and rubies, honing of machine parts
Micro grinding powders		
ACM	Synthetic diamonds of standard abrasive capability	Used for production of resin and metal bond tools, pastes, suspensions, for grinding and finishing of machine parts and equipment made of carbide, cast iron, ceramics, glass, semi-Conducting materials
ACH	Synthetic diamonds of high abrasive capability	Used for production of resin and metal bond tools, pastes, suspensions, for finishing and polishing of hard and superhard-to-machine materials, corundum, ceramics, diamonds, precious and semiprecious stones
Submicron grinding powders		
ACM5	Synthetic diamonds of the following grades: — 1/0,5 mcm — 0,5/0 mcm — 0,3/0 mcm	Used for production of pastes, suspensions, for finishing and polishing of hard-to-machine materials, corundum, ceramic, diamonds, precious stones and semiconducting materials



ALLOWANCES FOR DIAMOND WHEELS AND TOOLS

The allowances for standard size diamond wheels should correspond to the following:

- bore diameter of an A8 wheel H12;
- bore diameter of wheels of other shapes H7;
- outer diameter of 14EE1, 1EE1, 1FF1 js14;
- diameter of the mounted side; outer and inner diameter of hub js16;
- linear measurements up to 10 mm $\pm \frac{IT15}{2}$,
- linear measurement higher than 10 mm $\pm \frac{IT14}{2}$

Allowances for radial and axial run-out of the working surfaces and run-out of mounted sides (other than wheels of A8 shape) relative to the surface of the bore of a diamond wheel should correspond to:

- For diameters up to 30 mm 8th degree of precision
- For diameters higher than 30 mm 7th degree of precision

The allowance for the circular form of the outer surface of A8 wheels should correspond to the 9th degree of precision:

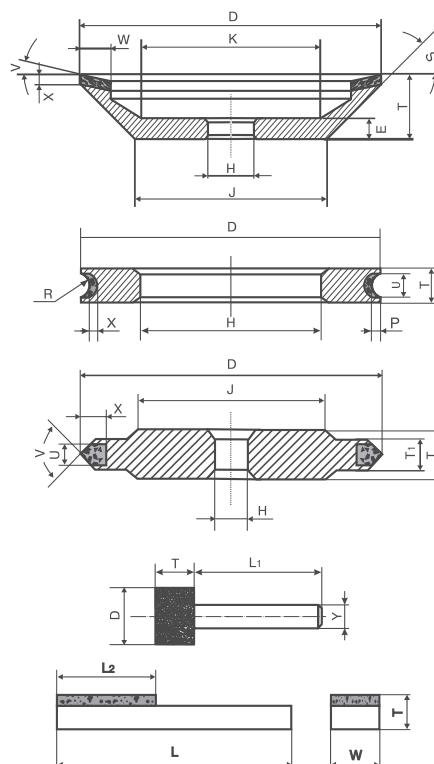
Nº	External diameter of A8 diamond wheels, mm	Allowance for the circular form of the outer surface of A8 wheels, mm
1	6...10	0,010
2	12...16	0,012
3	18...30	0,016
4	more than 30	0,020



WHEEL PARAMETERS

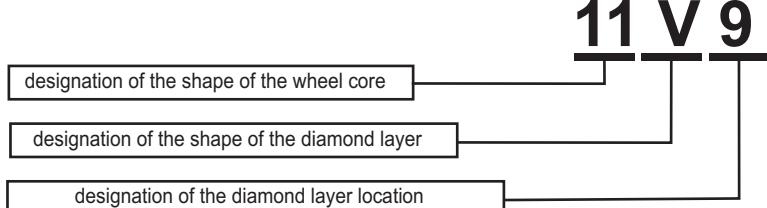
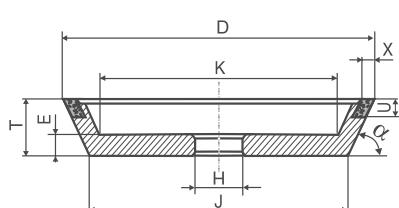
Parameters used in the catalogue are based on the FEPA standard for diamond tools

D	— external diameter of an item
E	— thickness at bore
H	— bore diameter
J	— mounting diameter
K	— inside recess diameter
L	— total stick length
L ₁	— length of shank
L ₂	— length of diamond layer
R	— radius
S	— external angle of tapered core
T	— wheel thickness
T ₁	— reduced hub thickness
U	— thickness of diamond layer (if T< or T ₁)
V	— face angle
W	— rim width
X	— thickness of diamond layer
Y	— shank diameter
P	— depth of concavity of working layer



SHAPES OF DIAMOND GRINDING WHEELS

Diamond grinding wheels are described in the catalogue are based on the FEPA standard for diamond tools.



Identification number for general shapes of grinding wheels bodies.
General shapes of grinding wheel are identified in following table:

1		Flat wheel without recesses, D/H ≥ 1,8
2		Rim wheel, face wheel, D/H < 1,8
3		Flat wheel with one-sided relief
4		Flat wheel with one-sided cone
6		Flat wheel with one-sided recess
9		Flat wheel with double-sided recess
11		Cup wheel $45^\circ < \alpha < 90^\circ$
12		Dish wheel $\alpha \leq 45^\circ$
14		Flat wheel with double-sided relief



DESIGNATION OF PROFILE OF DIAMOND LAYER

A		CH		G		M	
AH		D		H		Q	
B		E		K		U	
C		F		L		V	

Location of diamond layer on the wheel core

1		At the periphery of a wheel core, covering its entire thickness	6		At the periphery of a wheel core periphery, but not extending to its face surfaces
2		On the face of a wheel core	7		On the face surface of a wheel core. It may extend to the wheel center, but not to its peripheral surfaces
3		On the two face surfaces of a wheel	8		The working layer is in the shape of a cylinder without a core
4		On the face surface at an angle, the lower point of which is closer to the wheel center	9		At the periphery of the wheel core at its corners
5		On the face surface in the form of an arc, the higher point of which is closer to the wheel center	10		On the inside surface of the wheel core



RECOMMENDATIONS FOR THE USE, TURNING AND DRESSING OF DIAMOND WHEELS

When using diamond grinding wheels, the following instructions should be observed:

- grinding wheels are to be mounted on holders or flanges and should not be removed until final usage has occurred
- The tools are to be mounted strongly on the machine spindle in accordance with the technical specifications of the equipment used for diamond tool machining
- Metal bonded and vitrified bonded grinding wheels must be used with coolant; coolant is also advisable for resin bonded diamond wheels
- The cleaning of resin bonded diamond wheels is to be performed with a pumice stone, of metal bonded wheels with a green silicon carbide bar made with grit sizes 1 or 2 sizes larger than that of the diamond wheel.

Dressing (turning) of the diamond layer is necessary to restore its shape, eliminate defects from its working surface, and to restore the required profile. As a rule this is performed without coolant. The most productive way of dressing a diamond layer is to grind it with abrasive wheels. The dressing is performed by wheels White Alumina and Green Silicon Carbide with vitrified bonds with grit sizes 1 or 2 sizes bigger than those of the diamond wheels. Wheels with a hardness of K-H are necessary for dressing of resin bond wheels and wheels of a hardness of M-K are necessary for dressing of metal bond wheels. The smaller the grit size of the superabrasive material, the softer the dressing tool must be.

Conditions of diamond layer dressing

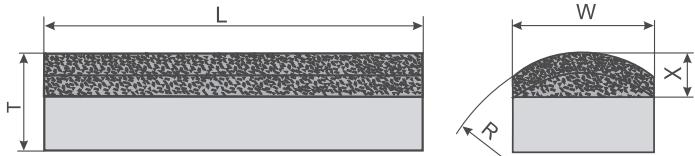
Diamond grinding wheel position	Condition of dressing			
	Round speed, m/s		Longitudinal feeding, m/min	Cross feeding, mm/double stroke
	Abrasive wheel	Diamond wheel		
Diamond grinding wheel set on a machine fixture or in the center of round grinding or sharpening machine	25 — 35	0,5 — 1,0	1,0 — 2,0	0,02 — 0,04
Diamond grinding wheel set on the spindle of grinding or sharpening machine	30 — 40	25 — 35	0,5 — 1,0	0,02 — 0,04

Characteristics of vitrified bonded abrasive wheels for dressing of diamond layer

Diamond layer characteristics		Characteristics of profiling wheel		
Type of bonds	Diamond grade, FEPA Standard	Abrasive type	Abrasive grades, FEPA Standard	Hardness
Resin bonds	D181-D126	Aluminum oxide	70-100	M-L
	D107-D76		100-150	L-K
	D64-D46		150-220	K-J
	M40-M16		360-400	J
Vitrified bonds, Metal bonds	D251-D213	Silicon carbide	46-54	O-N
	D181-D126		60-70	N-M
	D107-D76		80-100	M-L
	D64 and lower		120-180	L-K



RECOMMENDATIONS FOR DIAMOND HONES



Diamond hones are used for high-precision apertures, processing cast iron, steel and other machine parts such as cylinder blocks, cylinder liners, bushes for car and tractor engines, hydro-and pneumatic units, compressor cylinders, bushes for ship diesel engines, brake units, gears, connecting-rods, fuel pump bushes.

The diamond layer is made of diamond grinding powder with metal or resin bonds.

Recommended hones use environment

Workpiece material	Rotation at speed m/min	Reciprocal speed m/min	Honing stick pressure kg/cm ²	Coolant
Steel	30-60	8-15	3-10	Kerosine -70%
Cast iron	60-80	10-20	5-15	spindle oil - 30%

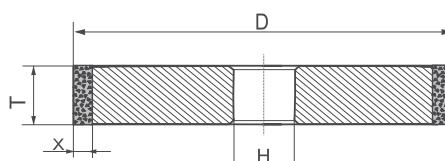
**CALCULATION of SPINDLE TURNS for DIAMOND GRINDING WHEELS of DIFFERENT DIAMETERS at a GIVEN CIRCUMFERENTIAL SPEED**

Wheel diameter, mm	Circumferential speed, m/s									
	10	15	20	25	30	35	40	45	50	60
3	63 700	95 540								
4	47 770	71 660	95 540							
5	38 220	57 320	76 440	95 540						
6	31 850	47 770	63 700	79 620	95 540					
8	23 890	35 830	47 770	59 720	71 660	83 600	95 540			
10	19 110	28 660	38 220	47 770	57 320	66 880	76 440	83 980	95 540	
12	15 920	23 880	31 850	39 810	47 770	55 750	63 700	71 650	79 600	95 540
16	11 940	17 910	23 880	29 860	35 830	41 800	47 770	53 250	59 700	71 650
20	9 550	14 330	19 110	23 880	28 660	33 440	38 220	42 990	47 770	57 320
25	7 640	11 450	15 290	19 110	22 930	26 750	30 570	34 390	38 210	45 860
30	6 370	9 550	12 740	15 920	19 110	22 290	25 480	28 660	31 850	38 210
35	5 640	8 190	10 950	13 650	16 380	19 110	21 840	24 560	27 290	32 750
40	4 780	7 170	9 550	11 940	14 330	16 720	19 110	21 500	23 880	28 660
45	4 250	6 370	8 490	10 610	12 740	14 860	16 980	19 110	21 230	25 480
50	3 820	5 730	7 640	9 550	11 460	13 370	15 290	17 200	19 110	22 930
60	3 180	4 780	6 370	7 960	9 550	11 150	12 740	14 330	15 920	19 110
70	2 730	4 090	5 466	6 820	8 190	9 550	10 920	12 280	13 650	16 380
75	2 550	3 820	5 090	6 370	7 640	8 910	10 190	11 460	12 740	15 280
80	2 340	3 580	4 780	5 970	7 170	8 360	9 550	10 750	11 940	14 330
90	2 120	3 180	4 250	5 310	6 370	7 430	8 490	9 550	10 610	12 740
100	1 910	2 870	3 820	4 780	5 730	6 690	7 640	8 600	9 550	11 460
110	1 740	2 600	3 470	4 340	5 210	6 080	6 950	7 820	8 680	10 420
125	1 530	2 290	3 060	3 820	4 580	5 350	6 110	6 880	7 640	9 170
150	1 270	1 910	2 550	3 180	3 820	4 460	5 090	5 730	6 370	7 640
175	1 090	1 640	2 180	2 730	3 270	3 818	4 360	4 910	5 450	6 540
200	960	1 430	1 910	2 390	2 870	3 340	3 820	4 300	4 720	5 730
220	870	1 300	1 740	2 170	2 600	3 040	3 470	3 910	4 340	5 210
225	850	1 270	1 700	2 120	2 550	2 970	3 400	3 820	4 250	5 090
250	760	1 150	1 530	1 910	2 300	2 670	3 060	3 440	3 820	4 580
270	710	1 060	1 410	1 770	2 120	2 470	2 830	3 180	3 530	4 240
275	690	1 040	1 390	1 730	2 080	2 430	2 770	3 120	3 460	4 160
300	640	950	1 270	1 590	1 910	2 230	2 550	2 870	3 180	3 820
340	560	840	1 120	1 400	1 690	1 970	2 250	2 530	2 810	3 370
350	540	820	1 090	1 360	1 640	1 910	2 190	2 450	2 730	3 270
400	480	720	960	1 190	1 430	1 670	1 910	2 150	2 380	2 810
450	420	640	850	1 060	1 270	1 480	1 700	1 910	2 120	2 550
475	400	600	800	1 000	1 210	1 410	1 610	1 810	2 010	2 410
500	380	570	760	950	1 150	1 340	1 530	1 720	1 910	2 290
585	330	490	660	820	980	1 150	1 310	1 480	1 640	1 970
600	320	480	640	800	950	1 110	1 280	1 430	1 600	1 910



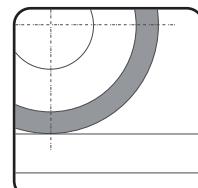
**DIAMOND GRINDING WHEELS
for MACHINE BUILDING, ELECTRONICS, TOOL
and WOODWORKING INDUSTRIES**

**Other specifications
and sizes are available on request**

**1A1****STRAIGHT
GRINDING
WHEELS**

1A1 D*T*X*H

- Application:
- Used for machining of conical, cylindrical and flat surfaces, cylindrical and conical apertures.
- Machining of cylindrical surface parts and surface ends at one set-up.
- Machining of recesses and slots of carbide stamps.
- Sharpening and finishing of carbide tools.
- The diamond layer is made of diamond grinding powder with metal or resin bonds.
- For metal bonded tools, coolant is required



Flat surface processing

Catalogue number	D, mm	T, mm	X, mm	H, mm
0-0004	16	8	2	6
0-0005	16	13	2	6
0-0010	20	10	2	6
0-0011	20	16	2	6
0-0016	25	10	3	6
0-0018	25	16	3	6
0-0022	32	10	3	10
0-0024	32	16	3	10
0-0031	40	16	3	16
0-0037	50	16	3	16
0-0044	63	16	3	20
0-0045	80	3	3	20
0-0048	80	6	3	20
0-0054	80	6	5	20
0-0050	80	10	3	20
0-0056	80	10	5	20
0-0053	80	20	3	20
0-0059	80	20	5	20
0-0060	100	3	3	20
0-0063	100	6	3	20
0-0065	100	10	3	20
0-0071	100	10	5	20
0-0068	100	20	3	20
0-0076	125	3	3	32
0-0078	125	5	3	32
0-0079	125	6	3	32
0-0080	125	10	3	32
0-0085	125	10	5	32
0-0083	125	20	3	32
0-0088	125	20	5	32
0-0089	125	32	5	32
0-0091	150	3	3	32
0-0093	150	5	3	32
0-0094	150	6	3	32
0-0100	150	6	5	32
0-0096	150	10	3	32
0-0102	150	10	5	32
0-0099	150	20	3	32
0-0105	150	20	5	32
0-0109	200	6	3	76
0-0111	200	10	3	76
0-0116	200	10	5	76
0-0114	200	20	3	76



Catalogue number	D, mm	T, mm	X, mm	H, mm
0-0119	200	20	5	76
0-0120	200	40	5	76
0-0126	250	10	5	76
0-0128	250	15	5	76
0-0129	250	20	5	76
0-0130	250	40	5	76
0-0131	250	50	5	76
0-0137	300	15	5	76
0-0145	300	15	5	127
0-0138	300	20	5	76
0-0146	300	20	5	127
0-0139	300	40	5	76
0-0149	350	20	5	127
0-0158	400	25	4	203
0-0154	400	25	6	127
0-0155	400	40	6	127
0-0159	400	40	6	203
0-0169	500	50	6	305
0-0162	500	20	6	203
0-0164	500	40	6	203

STRAIGHT GRINDING WHEEL 1A1 (special)

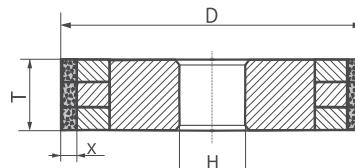
Catalogue number	D, mm	T, mm	X, mm	H, mm
9-6643	40	10	3	20
9-9603	63	3	2,5	20
9-9604	63	3	3	20
9-6944	100	16	2	17
9-8130	142	16	2	24
9-8144	152	19	3	25,4
9-8139	155	15	3	20
9-6950	200	20	3	32
9-3230	200	20	5	127

Example of an order for a straight grinding wheel 1A1 (catalogue number 0-0116), parameters 200-10-5-76

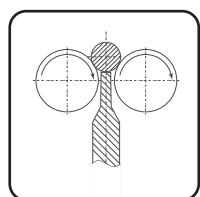
with diamonds ACH grit size M63, concentration 100 %, with metal bond M2-01:

0-0116 1A1 200-10-5-76 ACH M63 100 % M2-01

1A1 compound STRAIGHT GRINDING WHEEL



1A1 D*T*X*H



Centerless grinding

Catalogue number	D, mm	T, mm	X, mm	H, mm
9-6993	300	100	5	127
0-2821	350	100	5	200
9-6997	350	100	5	127
9-6998	350	100	5	203
9-9606	400	150	5	203
9-6999	400	150	5	305
9-2034	500	200	3	304,8
9-2033	500	200	6	304,8

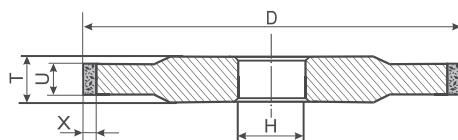
Example of an order for a straight grinding wheel 1A1 (catalogue number 9-6998), parameters 350-100-5-203 with diamonds ACH grit size M63, concentration 100 %, with metal bond M2-01:

9-6998 1A1 350-100-5-203 ACH M63 100 % M2-01



14A1

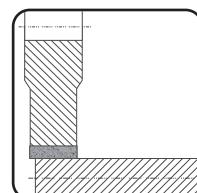
STRAIGHT FLAT GRINDING WHEELS



14A1 D*T*U*X*H

Application:

- Used for machining of conical, cylindrical and flat surfaces, cylindrical and conical apertures, sharpening and finishing of carbide tools.
- The diamond layer is made of diamond grinding powder with metal or resin bonds.
- For metal bonded tools coolant is required.

Cylindrical
surface
grinding

Catalogue number	D, mm	T, mm	X, mm	R, mm	H, mm
0-0301	100	6	3	3	20
0-0302	100	6	5	3	20
0-0303	100	6	3	5	20
0-0304	100	6	5	5	20
0-0305	125	6	3	3	32
0-0306	125	6	5	3	32
0-0307	125	6	3	5	32
0-0308	125	6	5	5	32
0-0309	150	8	3	3	32
0-0310	150	8	5	3	32
0-0311	150	8	3	5	32
0-0312	150	8	5	5	32
0-0315	150	10	7	7	32
0-0316	150	10	9	7	32
0-0317	175	8	3	3	51
0-0318	175	8	5	3	51
0-0319	175	8	3	5	51
0-0320	175	8	5	5	51
0-0321	200	10	3	3	51
0-0322	200	10	5	3	51
0-0323	200	10	3	5	51
0-0324	200	10	5	5	51
0-0327	200	10	7	7	51
0-0328	200	10	9	7	51
0-0329	250	10	3	5	51
0-0330	250	10	5	5	51
0-0333	250	10	7	7	51
0-0334	250	10	3	5	76
0-0335	250	10	5	5	76
0-0338	250	10	7	7	76

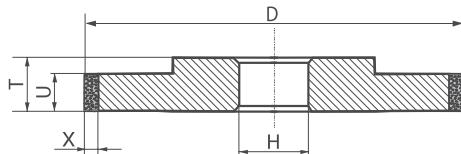
Example of an order for a straight surface grinding wheel 14A1 (catalogue number 0-0335), parameters 250-10-5-5-76 with diamonds AC4 grit size D107, concentration 100 %, with resin bond B2-01:

0-0335 14A1 250 - 10 - 5 - 5 - 76 AC4 D107 100% B2-01



3A1

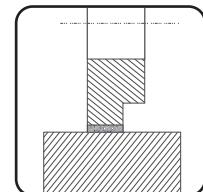
STRAIGHT GRINDING WHEELS



3A1 D*T*U*X*H

· Application:

- Used for processing of cylindrical and flat surfaces on cylindrical and surface grinding machines.
- The diamond layer is made of diamond grinding powder with metal or resin bonds.
- For metal bonded tools coolant is required.



Flat surface grinding

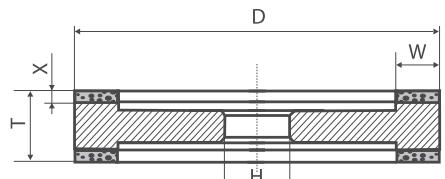
Catalogue number	D, mm	T, mm	U, mm	X, mm	H, mm
9-5030	150	10	2	3	31,75
9-5031	150	10	3	3	31,75
9-5032	200	10	3	3	31,75
9-5021	300	14	5,5	3	127
9-5022	300	19	8	3	127
9-5023	300	14	10	3	127
9-5024	300	14	12	3	127
9-5020	350	22	10	5	127

Example of an order for a straight grinding wheel 3A1 (catalogue number 9-5030), parameters 150-10-2,0-3-31,75 with diamonds ACH grit size M63, concentration 100 %, with metal bond M2-01:

9-5030 3A1 150-10-2,0-3-31,75 ACH M63 100% M2-01

9A3

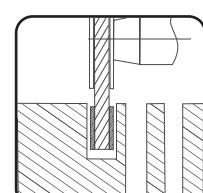
FLAT GRINDING WHEELS WITH DOUBLE-SIDED RECESS



9A3 D*T*W*X*H

· Application:

- Used for sharpening and finishing of carbide tools, machining of glass, ceramics, quartz, semiconducting materials.
- The diamond layer is made of diamond grinding powder with metal or resin bonds.
- For metal bonded tools coolant is required.

Onepass groove
grinding

Catalogue number	D, mm	T, mm	X, mm	W, mm	H, mm
3-0132	100	10	6	1,5	20
3-0135	125	20	10	2	32
3-0136	125	20	15	2	32
3-0137	150	16	6	3	32
3-0138	150	16	10	3	32
3-0139	150	16	20	3	32
3-0149	200	16	20	3	32
3-0160	250	21	10	3	76
3-0161	250	21	20	3	76

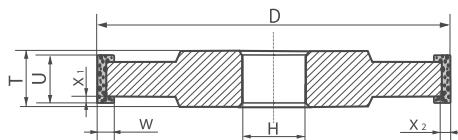
Example of an order for a surface grinding wheel 9A3 (catalogue number 3-0138), parameters 150-16-10-3-32 with diamonds AC4 grit size D126, concentration 100 %, with resin bond B2-01:

3-0138 9A3 150 - 16 - 10 - 3 - 32 AC4 D126 100% B2-01

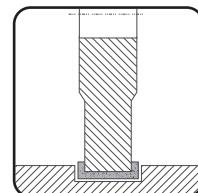


14U1

THREE-SIDED GRINDING WHEELS

14U1 D*T*U*W*X,*X₂*H**· Application:**

- Used for grinding of carbide slots.
- The diamond layer is made of diamond grinding powder with metal or resin bonds.
- For metal bonded tools coolant is required.



Slots grinding

Catalogue number	D, mm	T, mm	U, mm	W, mm	X, mm	X ₂ , mm	H, mm
0-0201	125	10	6	4	2	2	32
0-0202	125	10	8	4	2	2	32
0-0203	150	12	8	4	2	2	32
0-0204	150	12	10	4	2	2	32
0-0205	150	12	8	6	2	2	32
0-0206	150	12	10	6	2	2	32
0-0207	150	12	8	4	2	2	51
0-0208	150	12	10	4	2	2	51
0-0209	150	12	8	6	2	2	51
0-0210	150	12	10	6	2	2	51
0-0211	200	16	12	6	3	3	32
0-0212	200	16	14	6	3	3	32
0-0213	200	16	12	10	3	3	32
0-0214	200	16	14	10	3	3	32
0-0215	200	16	12	6	3	3	51
0-0216	200	16	14	6	3	3	51
0-0217	200	16	12	10	3	3	51
0-0218	200	16	14	10	3	3	51
0-0219	250	20	16	8	3	3	76
0-0220	250	20	20	8	3	3	76
0-0221	250	20	16	12	3	3	76
0-0222	250	20	20	12	3	3	76

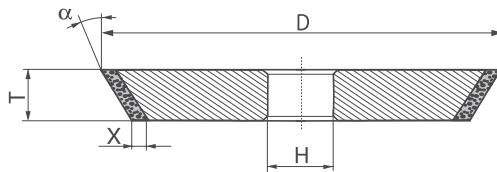
Example of an order for a cutting wheel 14U1 (catalogue number 0-0206), parameters 150-12-10-6-2-2-32 with diamonds AC4 grit size D107, concentration 100 %, with resin bond B2-01:

0-0206 14U1 150 - 12 - 10 - 6 - 2 - 2 - 32 AC4 D107 100% B2-01



1V1 special

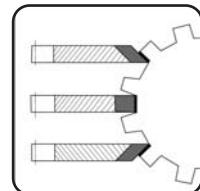
GRINDING WHEELS



1V1 D*T*X* αH

Application:

- Used for grinding of cylindrical and tapered surfaces.
- The diamond layer is made of diamond grinding powder with metal or resin bonds.
- For metal bonded tools coolant is required.



Machining
of teeth

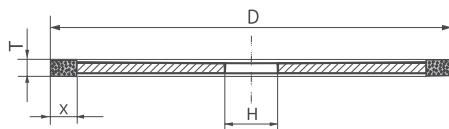
Catalogue number	D, mm	T, mm	X, mm	α , °	H, mm
9-3206	100	12	6	15	31,75
9-3207	100	12	6	30	31,75
9-3208	100	12	6	45	31,75
9-3209	125	12	6	15	31,75
9-3211	125	12	6	20	31,75
9-3212	125	12	6	25	31,75
9-3213	125	12	6	30	31,75
9-3214	125	12	3	10	31,75
9-3215	125	12	3	15	31,75
9-3216	125	12	3	20	31,75
9-3217	125	12	3	25	31,75
9-3218	125	12	3	30	31,75
9-3219	125	12	3	45	31,75
9-3220	125	6	6	30	50,80
9-3222	100	10	3	20	20,00
9-3221	125	10	3	20	20,00
9-3223	125	12	3	20	20,00
9-3241	125	10	6	45	31,75
9-3248	100	6	5	30	31,75
9-3249	100	6	5	45	31,75
9-1043	4"	1/2"	1/4"	10	1/4"
9-1044	4"	1/2"	1/4"	15	1/4"
9-1045	4"	1/2"	1/4"	20	1/4"
9-1046	4"	1/2"	1/4"	25	1/4"
9-1047	4"	1/2"	1/4"	30	1/4"
9-1000	4"	1/2"	1/4"	45	1/4"

Example of an order for a cutting wheel 1V1 (catalogue number 9-3248), parameters 100-6-5-30-31,75 with diamonds Ac4 grit size D64, concentration 100 %, with resin bond B2-01:

9-3248 1V1 100 - 6 - 5 - 30 - 31,75 AC4 D64 100% B2-01



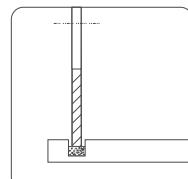
1A1R CUTTING WHEELS



1A1R D*T*X*H

Application:

- Used for cutting of carbide, glass, marble, quartz, semiconducting materials, ceramics, decorative stones.
- The diamond layer is made of diamond grinding powder with metal or resin bonds.
- For metal bonded tools coolant is required.



Material cutting

Catalogue number	D, mm	T, mm	X, mm	H, mm
6-0127	50	1,0	5	12
6-0165	100	0,8	5	20
6-0167	100	1,0	5	20
6-0185	125	0,8	5	32
6-0187	125	1,0	5	32
6-0191	125	1,2	5	20
6-0189	125	1,2	5	32
6-0209	150	0,8	5	32
6-0212	150	1,0	5	32
6-0219	150	1,2	5	20
6-0214	150	1,2	5	32
6-0216	150	1,5	5	32
6-0223	175	1,0	5	32
6-0225	175	1,5	5	32
6-0229	200	1,0	5	32
6-0682	200	1,2	10	32
6-0232	200	1,2	5	32
6-0234	200	1,5	5	32
6-0236	200	2,0	5	32
6-0238	200	2,2	5	32
6-0241	250	1,5	5	32
6-0243	250	2,0	5	32
6-0245	250	2,2	5	32
6-0691	300	2,2	5	32
6-0703	350	2,2	5	32
6-0707	350	2,2	5	76
6-0705	350	2,2	10	32
6-0712	400	2,2	5	32
6-0267	400	2,2	5	76

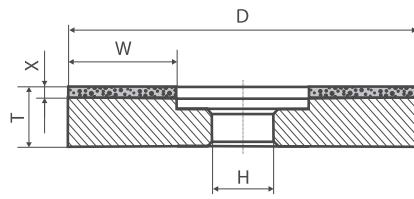
Example of an order for a cutting wheel 1A1R (catalogue number 6-0691), parameters 300-2,20-5-32 with diamonds Ac20 grit size D251, concentration 100 %, with metal bond M2-01:

6-0691 1A1R 300 - 2,2 - 5 - 32 AC20 D251 50% M2-01



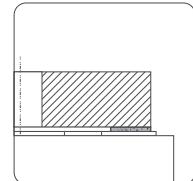
6A2

RECESSED FLAT GRINDING WHEELS



Application:

- Used for sharpening and finishing of carbide tools (cutters, drills and others)
- Machining of glass, ceramics, quartz, semiconductors and other non-metal materials.
- The diamond layer is made of diamond grinding powder with metal or resin bonds.
- For metal bonded tools coolant is required.



Face grinding

Catalogue number	D, mm	T, mm	W, mm	X, mm	H, mm
3-0001	50	22	3	2	16
3-0002	50	22	5	2	16
3-0003	75	22	3	2	20
3-0004	75	22	5	2	20
3-0005	75	22	10	2	20
3-0007	100	22	5	2	20
3-0008	100	22	10	2	20
3-0009	100	22	15	2	20
3-0011	100	24	5	4	20
3-0012	100	24	10	4	20
3-0013	100	24	15	4	20
3-0019	125	22	6	2	32
3-0020	125	22	10	2	32
3-0021	125	22	15	2	32
3-0023	125	24	6	4	32
3-0024	125	24	10	4	32
3-0025	125	24	15	4	32
3-0026	150	24	6	4	32
3-0027	150	24	10	4	32
3-0028	150	24	20	4	32
3-0035	150	26	6	6	51
3-0036	150	26	10	6	51
3-0037	150	26	20	6	51
3-0038	200	29	10	4	51
3-0039	200	29	20	4	51
3-0057	250	29	20	4	76
3-0058	250	29	40	4	76

Flat grinding wheels 6A2 special

Catalogue number	D, mm	T, mm	W, mm	X, mm	H, mm
3-2111	50	10	4	2	16
3-0170	100	20	35	5	20
3-0171	150	20	30	5	20
3-1306	250	23	60	3	51
3-2694	350	35	10	6	315
3-1401	500	34	50	8	325

Flat grinding wheels 6A2 special, with galvanic bonds

Catalogue number	D, mm	T, mm	W, mm	H, mm
6-1217	360	18	165	160
6-1218	400	18	185	160
6-1221	500	18	235	160
6-1219	600	18	285	160
6-1220	700	18	305	200

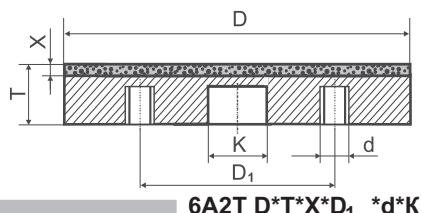
Example of an order for a surface wheel 6A2 (catalogue number 3-0057), parameters 250-29-20-4-76 with diamonds Ac6 grit size D107, concentration 100 %, with metal bond M1-02:

3-0057 6A2 250 - 29 - 20 - 4 - 76 AC6 D107 100% M1-01



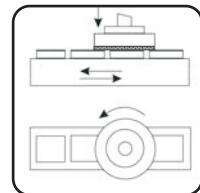
6A2T

FLAT GRINDING WHEELS


· Application:

- Used for machining of flat and shaped surfaces of glass, ceramics, quartz, Semiconductors, and decorative stones.
- The diamond layer is made of diamond grinding powder with metal bonds.
- Coolant is required.

Surface grinding



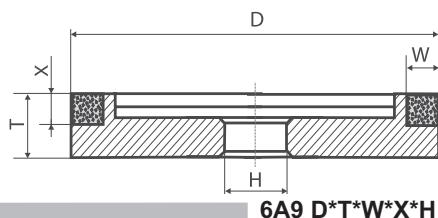
Catalogue number	D, mm	T, mm	X, mm	D ₁ , mm	d, mm	K, mm
3-0201	100	18	3	70	M8	40
3-0202	150	18	3	70	M8	40
3-0203	200	18	3	150	M8	80
3-0204	250	18	3	150	M10	80
3-0205	300	20	3	260	M10	80

Example of an order for a surface wheel 6A2T (catalogue number 3-0202), parameters 150-18-3-70-M8-40 with diamonds AC6 grit size D64, concentration 50 %, with metal bond M2-01:

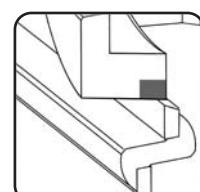
3-0202 6A2T 150 -18 - 3 - 70 - M8 - 40 - AC6 D64 50% M2-01

6A9

RECESSED FLAT GRINDING WHEELS


· Application:

- Used for sharpening and finishing of special tools.
- The diamond layer is made of diamond grinding powder with resin bonds.
- For metal bonded tools coolant is required.

Saw end surface
sharpening

Catalogue number	D, mm	T, mm	W, mm	X, mm	H, mm
9-8150	100	30	3	6	20
9-3421	125	18	3	6,5	32
9-8142	175	20	2	6	32

Example of an order for a surface wheel 6A9 (catalogue number 9-8150), parameters 100-30-6-3-20 with diamonds ACH grit size M63, concentration 100 %, with resin bond B2-01:

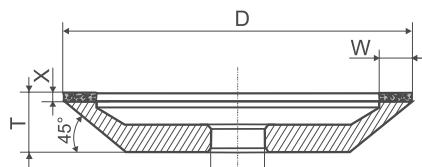
9-8150 6A9 100 - 30 - 6 - 3 - 20 ACH M63 100% B2-01

Other specifications and sizes are available on request.



12A2-45°

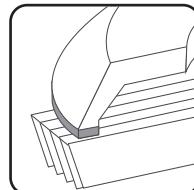
CUP GRINDING WHEELS



12A2-45 ° D*T*W*X*H

Application:

- Used for sharpening and finishing of front and back surfaces of multiple-blade carbide tools (with straight and spiral teeth), cutters, drills and other tools
- Used for processing of flat machine part surfaces, semiconductors, ceramic materials, precious stones, quartz and other materials
- The diamond layer is made of diamond grinding powder with metal or resin bonds.
- For metal bonded tools coolant is required.



Face grinding

Catalogue number	D, mm	T, mm	W, mm	X, mm	H, mm
4-0004	50	21	3	3	16
4-0117	75	21	3	3	20
4-0118	75	21	6	3	20
4-0015	100	32	3	3	20
4-0016	100	32	5	3	20
4-0017	100	32	10	3	20
4-0027	125	40	3	3	32
4-0028	125	40	5	3	32
4-0029	125	40	10	3	32
4-0031	125	42	5	5	32
4-0040	150	40	10	3	32
4-0043	150	42	10	5	32
4-0041	150	40	20	3	32
4-0044	150	42	20	5	32
4-0073	200	50	10	3	51
4-0074	200	50	20	3	51
4-0076	200	52	20	5	51
4-0092	250	50	20	3	76

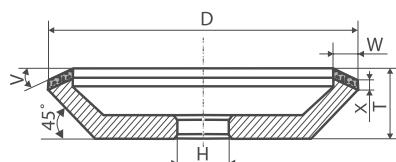
Example of an order for a cup wheel 12A2-450 (catalogue number 4-0041), parameters 150-40-20-3-32 with diamonds AC4 grit size D107, concentration 100 %, with resin bond B2-01:

4-0041 12A2-45 150 - 40 - 20 - 3 - 32 AC4 D107 100% B2-01



12V5-45°

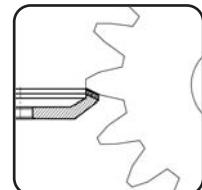
GRINDING CUP WHEELS



12V5-45° D*T*W*X*V*H

Application:

- Used for sharpening and finishing of back surfaces of multiple-blade carbide tools (with straight and spiral teeth), cutters, drills and other tools.
- Used for processing of semiconductors, ceramic material, quartz and other materials.
- The diamond layer is made of diamond grinding powder with metal or resin bonds.
- For metal bonded tools coolant is required.



Ram sharpening

Catalogue number	D, mm	T, mm	W, mm	X, mm	V, °	H, mm
4-0121	50	20	3	3	15	16
4-0122	50	20	3	3	25	16
4-0123	75	25	3	3	15	20
4-0124	75	25	3	3	25	20
4-0125	75	25	6	3	15	20
4-0126	75	25	6	3	25	20
4-0127	100	32	3	4	15	20
4-0128	100	32	3	4	25	20
4-0129	100	32	6	4	15	20
4-0130	100	32	6	4	25	20
4-0131	125	40	3	4	15	32
4-0132	125	40	3	4	25	32
4-0133	125	40	6	4	15	32
4-0134	125	40	6	4	25	32
4-0135	150	40	6	5	15	32
4-0136	150	40	6	5	25	32
4-0137	150	40	6	5	15	51
4-0138	150	40	6	5	25	51

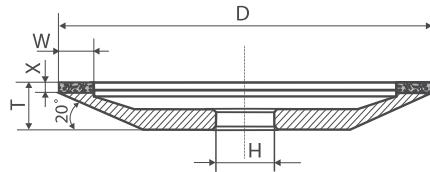
Example of an order for a cup wheel 12V5-450 (catalogue number 4-0129), parameters 100-32-6-4-15-20 with diamonds AC6 grit size D126, concentration 100 %, with metal bond M2-01:

4-0129 12V5-45 100 - 32 - 6 - 4 - 15 - 20 AC6 D126 100% M2-01



12A2-20°

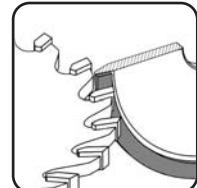
DISH GRINDING WHEELS



12A2-20° D*T*W*X*H

Application:

- Used for sharpening and finishing of front surfaces of reamer teeth, cutters, circular saws, drawing dies and tools made of hard alloys.
- The diamond layer is made of diamond grinding powder with metal or resin bonds.
- For metal bonded tools coolant is required.

Tools front surfaces
sharpening

Catalogue number	D, mm	T, mm	W, mm	X, mm	H, mm
5-0005	75	10	3	2	16
5-0006	75	10	6	2	16
5-0007	100	12	3	2	20
5-0008	100	12	6	2	20
5-0009	125	16	3	2	32
5-0010	125	16	6	2	32
5-0011	125	16	10	2	32
5-0012	150	18	3	2	32
5-0013	150	18	6	2	32
5-0014	150	18	10	2	32
5-0018	200	22	10	2	51

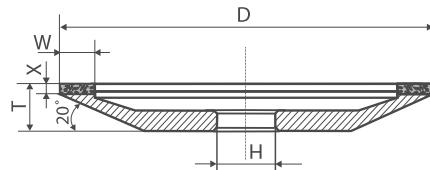
Example of an order for a dish wheel 12A2-200 (catalogue number 5-0014), parameters 150-18-10-2-32 with diamonds Ac4 grit size D126, concentration 100 %, with resin bond B2-01:

5-0014 12A2-20 150 - 18 - 10 - 2 - 32 AC4 D126 100% B2-01

12A2-20°

special

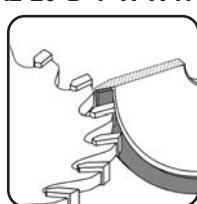
GRINDING DISH WHEELS



12A2-20° D*T*W*X*H

Application:

- Used for sharpening and finishing of front surfaces of reamer teeth, cutters, circular saws, drawing dies and tools made of hard alloys.
- The diamond layer is made of diamond grinding powder with metal or resin bonds.
- For metal bonded tools coolant is required.

Tools front surfaces
sharpening

Catalogue number	D, mm	T, mm	W, mm	X, mm	H, mm
9-5025	50	10	2,3	2,18	16
9-5045	50	10	2,3	2,2	16
5-1011	75	10	6	2	20
9-3151	125	12	6(3+3)	1,5	32
9-5006	150	19	10	3	32
9-5042	175	21	10	3	32

Example of an order for a dish wheel 12A2-200 (catalogue number 5-0014), parameters 150-18-10-2-32 with diamonds Ac4 grit size D126, concentration 100 %, with resin bond B2-01:

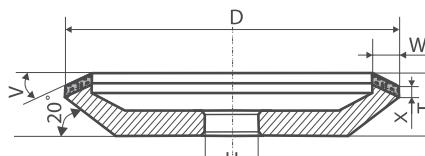
9-5006 12A2-20 150 - 19 - 10 - 3 - 32 AC4 D126 100% B2-01

Other specifications and sizes are available on request.



12V5-20°

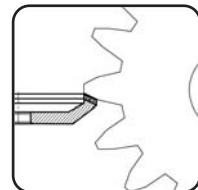
GRINDING DISH WHEELS



12V5-20° D*T*W*X*V*H

Application:

- Used for sharpening and finishing of multiple-blade tools cutters back surfaces (with straight and spiral teeth), drills and other tools made of hard alloys.
- Used for processing of semiconducting material, ceramic material, quartz and other materials
- The diamond layer is made of diamond grinding powder with metal or resin bonds.
- For metal bonded tools coolant is required.



Ram sharpening

Catalogue number	D,mm	T,mm	W,mm	X,mm	V,°	H,mm
5-0078	75	10	5	2	25	20
5-0086	125	13	5	2	25	32
5-0090	150	16	10	3	25	32
5-0080	100	10	3	2	25	20

Example of an order for a dish wheel 12V5-200 (catalogue number 5-0094), parameters 150-16-10-3-200-51 with diamonds

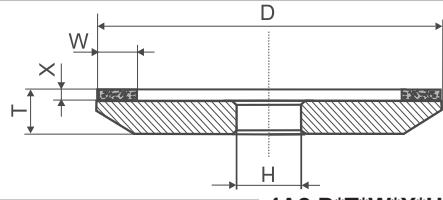
AC6 grit size D126, concentration 100 %, with metal bond M2-01:

5-0090 12V5-20 150 - 16 - 10 - 3 - 25 - 32 AC6 D126 100% M2-01

Other specifications and sizes are available on request.

4A2

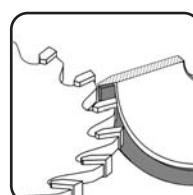
GRINDING DISH WHEEL



4A2 D*T*W*X*H

Application:

- Used for sharpening and finishing of front surfaces of multiple-blade tools.
- The diamond layer is made of diamond grinding powder in metal or resin bonds.



Milling cutter front surface sharpening

Catalogue number	D, mm	T, mm	W, mm	X, mm	H, mm
9-8151	100	10	3	2	20
4-1140	100	10	6	1	22,20
4-1116	100	10	6	1,5	31,75
9-9161	125	10	6	3	31,75
9-9166	125	10	6	3	32
9-9165	125	10	8	2	20
9-9160	150	11,5	4	2	31,75
9-8158	150	12	5	3	20
9-9162	150	12	6	3	31,75
9-9167	150	12	6	3	32
4-1141	300	50	8	2	76

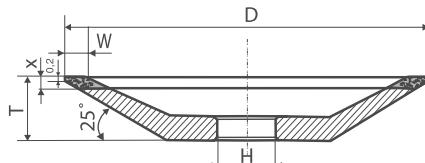
Example of an order for a dish wheel 4A2 (catalogue number 9-8151), parameters 100-10-3-2-20 with diamonds ACH grit size M63, concentration 100 %, with resin bond B2-01:

9-8151 4A2 100 - 10 - 3 - 2 - 20 ACH M63 100% B2-01

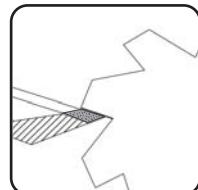


12R4

GRINDING DISH WHEELS



12R4 D*T*W*X*H



Front surface sharpening

Catalogue number	D, mm	T, mm	W, mm	X, mm	H, mm
5-0041	50	6	2	1,5	16
5-0042	75	10	3	2	20
5-0043	100	10	3	2	32
5-0045	150	16	5	3	32
5-1031	100	10	3	2	32
5-1041	125	13	3	2	32
5-1051	150	16	5	3	32
5-1052	150	16	5	3	51

The dishes 5-1031; 5-1041; 5-1051; 5-1052 have pressed core

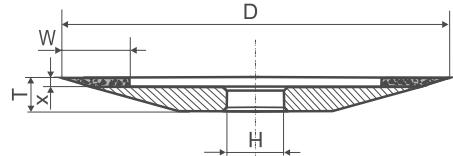
Example of an order for a dish wheel 12R4 (catalogue number 5-1041), parameters 125-13-3-2-32 with diamonds Ac4 grit size D107, concentration 100 %, with resin bond B2-01:

5-1041 12R4 125 - 13 - 3 - 2 - 32 AC4 D107 100% B2-01

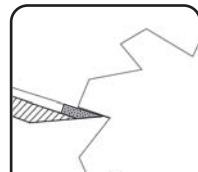
4B2

GRINDING DISH WHEELS

special



4B2 D*T*W*X*H



Tool front surface sharpening

Catalogue number	D, mm	T, mm	W, mm	X, mm	H, mm
8-7002	100	10	6	1,5	31,75
8-7004	150	12	6	1,5	31,75
8-7005	175	14	6	1,5	31,75
8-7006	180	14	6	1,5	31,75
8-7008	125	10	6	2	32
8-7009	150	12	6	1,5	32
8-7010	100	10	6	1,5	32

Example of an order for a dish wheel 4B2 (catalogue number 8-7009), parameters 150-12-6-1,5-32 with diamonds AC4 grit size D126, concentration 100 %, with resin bond B2-01

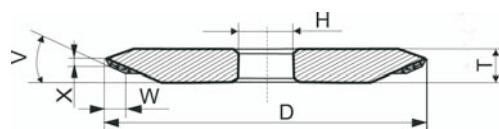
8-7009 4B2 150 - 12 - 6 - 1,5 - 32 AC4 D126 100% B2-01

Other specifications and sizes are available on request.



12D9

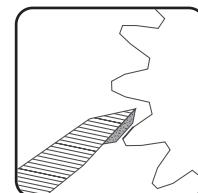
GRINDING DISH WHEELS



12D9 D*T*W*X*V*H

·Application:

- Used for sharpening and finishing of front and back surfaces of carbide tools.
- The diamond layer is made of diamond grinding powder with metal or resin bonds.
- For metal bonded tools coolant is required.

Front surfaces
sharpening

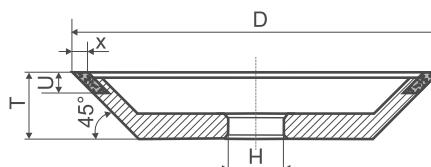
Catalogue number	D, mm	T, mm	W, mm	X, mm	V, °	H, mm
5-0102	125	11	4	2	20	32
5-0104	125	11	8	2	20	32
5-0106	150	13	8	3	20	32
5-0108	150	13	16	3	20	32
5-0110	200	16	8	3	20	32
5-0112	200	16	16	3	20	32
5-0126	250	20	16	3	20	76
5-0128	250	20	25	3	20	76

Example of an order for a dish wheel 12D9 (catalogue number 5-0110), parameters 200-16-8-3-20-32 with diamonds ACH grit size M63, concentration 100 %, with metal bond M2-01:

5-0110 12D9 200 - 16 - 8 - 3 - 20 - 32 ACH M63 100% M2-01

12V9-45°

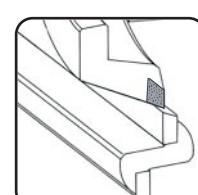
GRINDING DISH WHEELS

special

12V9-45° D*T*U*X*H

·Application:

- Used for sharpening and finishing of cutting tool back surfaces.
- The diamond layer is made of diamond grinding powder with metal or resin bonds.
- For metal bonded tools coolant is required.



Back surface sharpening

Catalogue number	D, mm	T, mm	U, mm	X, mm	H, mm
4-2513	75	12	10	4	31,75
4-2503	75	18	6	1,5	31,75
4-1503	75	20	6	2	20
9-3154	75	20	6	3,5	10
4-2510	100	20	6	1,5	31,75
4-1510	100	18	10	2	20
4-2512	100	20	10	3	31,75
9-3108	125	25	10	3	20

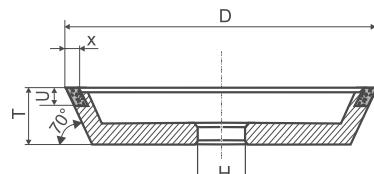
Example of an order for a dish wheel 12V9-45° (catalogue number 4-1503), parameters 75-20-6-2-20 with diamonds AC6 grit size D76, concentration 100 %, with metal bond M2-01:

4-1503 12V9-45° 75 - 20 - 6 - 2 - 20 AC6 D76 100% M2-01



11V9-70°

TAPERED CUP GRINDING WHEELS



11V9-70° D*T*U*X*H

Application:

- Used for sharpening and finishing of back and side surfaces of carbide tools.
- The diamond layer is made of diamond grinding powder with metal or resin bonds.
- For metal bonded tools coolant is required.



Sharpening of back
and side surfaces

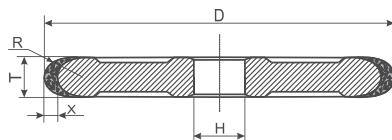
Catalogue number	D, mm	T, mm	U, mm	X, mm	H, mm
4-0101	50	20	3	1,5	16
4-0102	75	32	6	2	20
4-0103	100	40	6	2	20
4-0104	100	40	10	2	20
4-0105	125	40	6	3	32
4-0106	125	40	8	3	32
4-0107	125	40	10	3	32
4-0108	150	40	6	3	32
4-0109	150	40	10	3	51

Example of an order for a wheel 11 V9-700 (catalogue number 9-0019), parameters 150-40-10-3-51 with diamonds AC4 grit size D126, concentration 100 %, with resin bond B2-01:

4-0109 11V9-70° 150 - 40 - 10 - 3 - 51 AC4 D126 100% B2-01



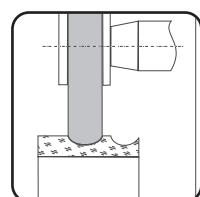
1FF1 FLAT GRINDING WHEELS WITH SEMICIRCULAR-CONVEX PROFILE



1FF1 D*T*X*R*H

Application:

- Used for machining chip-breaking flutes in tools.
- Grinding of shaped profiles.
- The diamond layer is made of diamond grinding powder with metal or resin bonds.
- For metal bonded tools coolant is required.



Processing of shaped profile

Catalogue number	D, mm	T, mm	X, mm	R, mm	H, mm
9-0001	50	2	2	1,0	16
9-0002	50	3	4	1,5	16
9-0003	50	4	4	2,0	16
9-0004	75	4	4	2,0	20
9-0005	75	5	4	2,5	20
9-0006	75	6	4	3,0	20
9-0007	75	8	4	4,0	20
9-0008	75	10	4	5,0	20
9-0009	100	4	4	2,0	20
9-0010	100	5	4	2,5	20
9-0011	100	6	4	3,0	20
9-0012	100	8	4	4,0	20
9-0013	100	10	4	5,0	20
9-0014	100	12	6	6,0	20
9-0015	100	16	6	8,0	20
9-0016	100	20	6	10,0	20
9-0017	125	4	4	2,0	32
9-0018	125	5	4	2,5	32
9-0019	125	6	4	3,0	32
9-0020	125	8	4	4,0	32
9-0021	125	10	4	5,0	32
9-0022	125	12	6	6,0	32
9-0023	125	16	6	8,0	32
9-0024	125	20	6	10	32
9-0025	150	10	4	5	32
9-0027	150	16	4	8	32
9-0028	150	20	6	10	32
9-0029	200	20	6	10	51
9-0030	200	30	6	15	51
9-0031	250	20	6	10	51
9-0032	250	30	6	15	51
5-9156	80	40	5	26	32
5-9122	100	4	4	2	31,75
5-9123	100	6	4	3	31,75
5-9124	100	8	4	4	31,75
5-9125	100	10	4	5	31,75
5-9185	150	24	7	12	32
5-9188	150	32	7	16	32
9-0304	200	12	10	5	127
9-2802	300	30	5	15	42

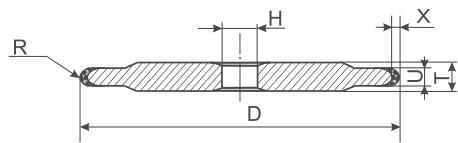
Example of an order for a wheel 1FF1 (catalogue number 9-0019), parameters 125-6-4-3-32 with diamonds AC 4 grit size D107, concentration 100 %, with resin bond B2-01:

9-0019 1FF1 125 - 6 - 4 - 3 - 32 AC4 D107 100% B2-01



14FF1

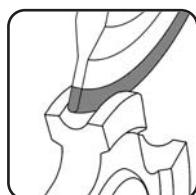
DIAMOND GRINDING WHEELS WITH SEMICIRCULAR-CONVEX PROFILE



14FF1 D*T*U*X*R*H

Application:

- Used for machining chip-breaking flutes in tools.
- Grinding of the shaped profile.
- The diamond layer is made of diamond grinding powder with metal or resin bonds.
- For metal bonded tools coolant is required.



Profile grinding

Catalogue number	D, mm	T, mm	U, mm	X, mm	R, mm	H, mm
9-2515	150	8	4	4	2	32
9-2639	200	10	3	4	1,5	51
9-2653	200	10	3	4	1,5	60
9-2640	200	10	4	4	2	60
9-2641	200	10	5	4	2,5	60
9-2642	200	10	6	4	3	51
9-2655	200	10	6	4	3	60
9-2656	200	10	8	4	4	60

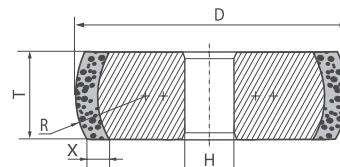
Example of an order for a grinding wheel 1FF1 (catalogue number 9-2640), parameters 200?-10-4-4-2-60 with diamonds AC4 grit size D107, concentration 100 %, with resin bond B2-01:

9-2640 14FF1 200 - 10 - 4 - 4 - 2 - 60 AC4 D107 100% B2-01

1P1

DIAMOND GRINDING WHEELS

special



1P1 D*R*T*X*H

Application:

- processing of workpieces with complex shapes made of titanium alloys.
- The diamond layer is made of diamond grinding powder with metal or resin bonds.
- For metal bonded tools coolant is required.



Profile grinding

Catalogue number	D, mm	T, mm	X, mm	R, mm	H, mm
5-9133	100	10	3	50	20
5-9135	100	10	5	50	20
5-9134	100	15	3	50	40
9-2387	100	15	5	50	40
5-9136	125	15	5	62,5	55
5-9137	125	15	5	62,5	80
5-9105	150	15	5	75	80
5-9138	250	15	5	125	75

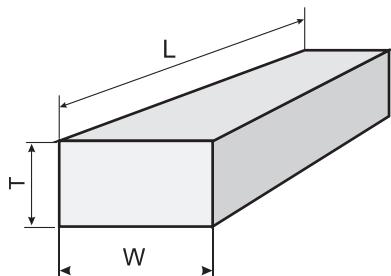
Example of an order for a grinding wheel 1P1 (catalogue number 5-9105), parameters 150-15-5-75-80 with diamonds AC20 grit size D251, concentration 100 %, with metal bond M2-09:

5-9105 1P1 150 - 15 - 5 - 75 - 80 AC20 D251 100% M2-09

Other specifications and sizes are available on request.



Diamond Honing Sticks (monolayer)



Diamond honing sticks are used in processing of high-precision apertures in such cast iron and steel workpieces as cylinder blocks, sleeves, liners of automobile and tractor engines, hydro- and pneumatic equipment, compressor cylinders, sleeves of marine diesels, components of brake system, gear wheels, con-rods, liners of fuel-injection pumps.

Diamond layer is made of diamond grinding and microgrinding powders with metal and resin bonds.

code	L, MM	W, MM	T, MM
125125	125	12	5
125-84	125	8	4
100-53	100	5	3
100-84	100	8	4
100-85	100	8	5
80-3-5	80	3	5
80-5-5	80	5	5
75-6-4	75	6	4
75-6-5	75	6	5
75-2-5	75	2,1	5,5
60-3-3	60	3	3
50-4-3	50	4	3
50-4-4	50	4	4
50-6-4	50	6	4
50-2-2	50	2	2
35-4-4	35	4	4
35-4-4	35	4	4
35-3-4	35	3	4
12-3-4	12	3	4

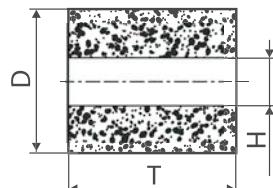
RECOMMENDED ALLOWANCE AND SURFACE FINISH CLASS AFTER PROCESSING WITH HONING STICKS.

indices	processable material	grit of honing sticks						
		400/315	250/200	160/125	100/80	63/50	40/28	20/14
		315/250	200/160	125/100	80/63	50/40	28/20	14/10
allowance, mm	steel	0,15	0,10	0,08	0,06	0,01	0,001	0,005
	cast iron	0,20	0,15	0,10	0,08	0,03	0,002	0,01
roughness of processed surface, Ra, mcm	steel	5	2,5	2,5-1,32	1,32-0,63	0,63-0,32	0,32-0,16	0,16-0,08
	cast iron	5	5-2,5	2,5	2,5-1,75	1,32-0,63	0,63-0,32	0,32-0,16



A8

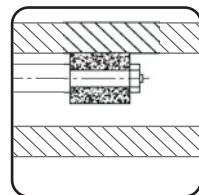
STRAIGHT FLAT GRINDING DIAMOND WHEELS



A8 D*T*H

Application:

- Circular internal grinding of cylindrical surfaces of carbide, ceramic, glass and other hard-to-process materials.
- The diamond layer is made of diamond grinding powder and micropowders with metal or resin bonds.
- For metal bonded tools coolant is required.



Internal grinding

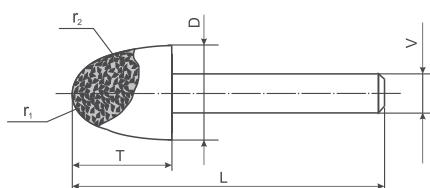
Catalogue number	D, mm	T, mm	H, mm
0-0181	6	6	2
0-0182	8	6	3
0-0183	8	10	3
0-0184	10	6	4
0-0185	10	10	4
0-0187	13	10	4

Example of an order for a grinding wheel (catalogue number 0-0187), parameters 13-10-4 with diamonds AC4 grit size D151, concentration 100 %, with resin bond B2-01:

0-0187 A8 13 - 10 - 4 AC4 D151 100% B2-01

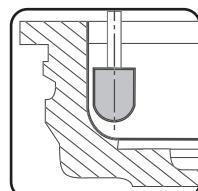


F1W SEMICIRCULAR DIAMOND MOUNTED POINTS

F1W D*T*L*V*r₁*r₂

Application:

- internal grinding of complex surfaces.
- The diamond layer is made of diamond grinding powder and micropowders with metal or resin bonds.
- For metal bonded tools coolant is required.



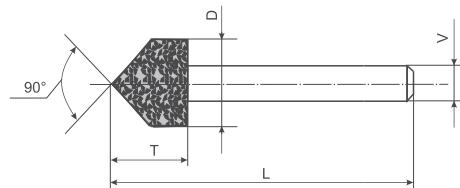
Profile internal grinding

Catalogue number	D, mm	T, mm	L, mm	V, mm	r ₁ , mm	r ₂ , mm
9-3130	6	9	60	3	1,5	12
9-3132	8	12	60	3	1,5	15
9-3137	10	14	60	6	2	15
9-3144	12	16	80	6	2	22
9-3146	16	20	80	8	3	25
9-3148	20	24	80	8	3,5	29

Example of an order for a diamond mounted point F1W (catalogue number 9-3137), parameters 10-14-6-60-2-15 with diamonds AC4 grit size D107, concentration 100 %, with resin bond B2-01:

9-3137 F1W 10 - 14 - 6 - 60 - 2,0 - 15 AC4 D107 100% B2-01

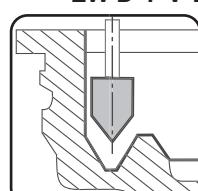
EW TAPERED DIAMOND MOUNTED POINTS



EW D*T*V*L

Application:

- internal grinding of complex surfaces.
- The diamond layer is made of diamond grinding powder and micropowders with metal or resin bonds.
- For metal bonded tools coolant is required.



Internal grinding

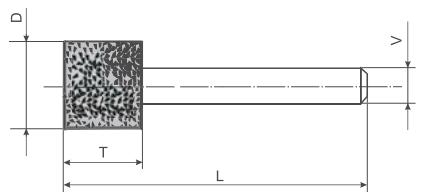
Catalogue number	D, mm	T, mm	V, mm	L, mm
9-3111	6	6	3	40
9-3113	8	8	3	40
9-3115	10	9	6	60
9-3117	12	10	6	60
9-3119	16	12	8	80
9-3121	20	18	8	80

Example of an order for a diamond mounted point EW (catalogue number 9-3115), parameters 10-9-6-60 with diamonds AC4 grit size D107, concentration 100 %, with resin bond B2-01:

9-3115 EW 10 - 9 - 6 - 60 AC4 D107 100% B2-01



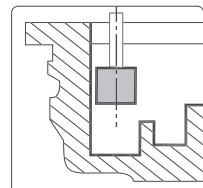
AW CYLINDRICAL DIAMOND POINTS



AW D*T*V*L

Application:

- grinding of cylindrical surfaces.
- The diamond layer is made of diamond grinding powder and micropowders with metal or resin bonds.
- For metal bonded tools coolant is required.



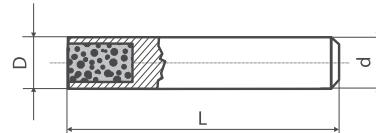
Internal grinding

Catalogue number	D, mm	T, mm	V, mm	L, mm
8-1011	6	6	3	60
8-1024	8	8	3	60
8-1033	10	10	6	80
8-1042	12	12	6	80
8-1049	16	16	8	80
8-1058	20	20	8	80

Example of an order for a diamond mounted point AW (catalogue number 8-1042), parameters 12-12-6-80 with diamonds AC4 grit size D107, concentration 100 %, with resin bond B2-01:

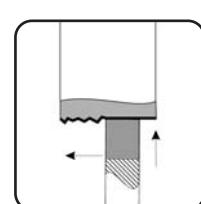
8-1042 AW 12 - 12 - 6 - 80 AC4 D107 100% B2-01

DIAMOND DRESSING STICKS TYPE A



Dressing sticks A — TYPE D*d*L*

- Dressing diamond sticks, type A, are used for dressing abrasive wheels (from F to L) used for industrial surface and circular grinding.
- The diamond layer is made of synthetic polycrystalline diamonds type APC3 With metal bonds.
- Diamond position: type 04 randomly dispersed



Abrasive wheel dressing

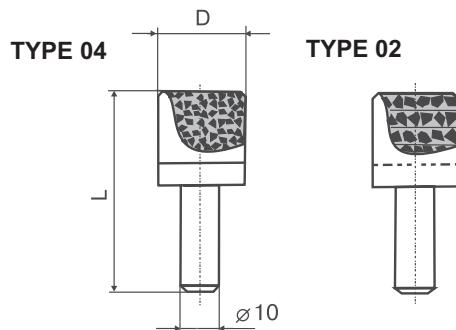
Catalogue number	Type	D, mm	d ,mm	L, mm
8-0841	04	10	10	45
8-0842		14	14	

Example of an order for a diamond dressing stick type A-04 (catalogue number 8-0841), parameters 10-10-45 with diamonds APC3 grit size 1000/800 mcm, concentration 100%, with metal bond M2-01:

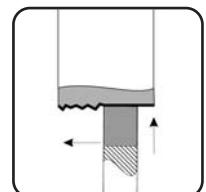
8-0841 dressing diamond type A-04 10 - 10 - 45 APC3 1000/800 mcm M2-01



DIAMOND DRESSING STICK TYPE C

Dressing diamond stick C — TYPE $D \times d \times L^*$

- Diamond Dressing Sticks, type C, are used for dressing abrasive wheels (from F to L degree of hardness) for industrial surface and circular grinding.
- The diamond layer is made of synthetic polycrystalline diamonds type APC3 with metal bonds.
- Diamond position: type 02-in layers
type 04-randomly dispersed.



Abrasive wheel dressing

Catalogue number	Type	D, mm	d, mm	L, mm	Diamond powder grades
8-0839	02	14	10	45	according to the order
8-0823	04	14	10	45	according to the order

Example of an order for a dressing diamond type C-02 (catalogue number 8-0839), parameters 14-10-45 with diamonds APC3 grit size 2000/1600 mcm, concentration 100 %, with metal bond M2-01:

8-0839 dressing diamond type C-02 14 - 10 - 45 APC3 2000/1600 mcm M2-01

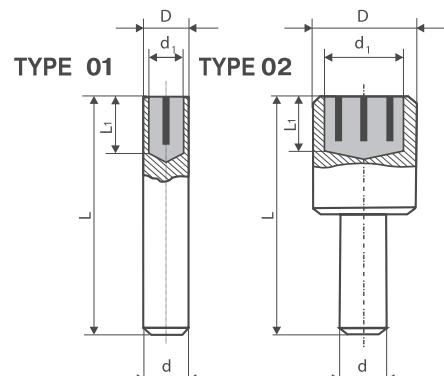
SPECIAL DIAMOND DRESSING STICKS TYPE A, C

- These wheels are used for dressing of straight abrasive wheels and face dressing of abrasive wheels.

Advantages of the new wheels:

A special form of the correcting crystal (a small cross-section with a long length) allows to effectively use the sticks for face dressing. Homogenic structure of crystals ensures the stability of dressing process.

- The stick life is close to one of natural diamonds.



Catalogue number	Type	Grade	D,mm	d, mm	d ₁ , mm	L, mm	L ₁ , mm	Number of crystals
8-0844	01	A	10	10	8	42	5	1
8-0845	01	A	10	10	8	42	9	2
8-0846	02	C	14	10	12	42	5	3

Example of an order for a special dressing diamond grade A type 01 (catalogue number 8-0844):

8-0844 special diamond stick A 01

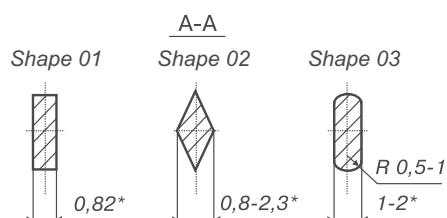
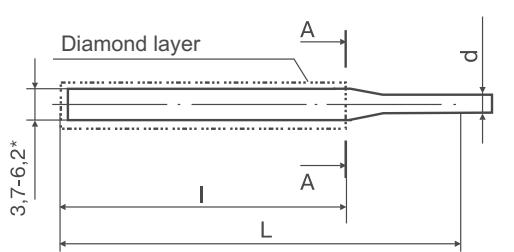


DIAMOND BROACH FILES

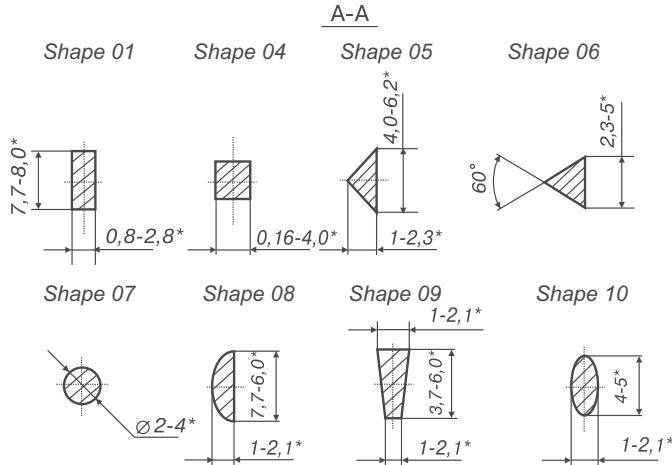
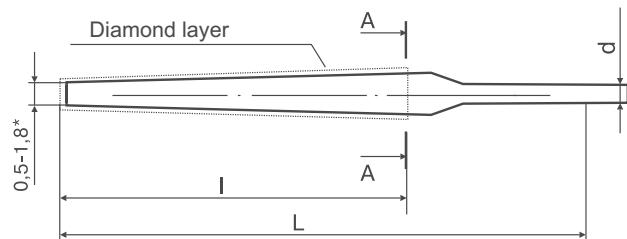
- Are used for hand processing of parts of press molds, stamps, finishing of cutter edges and other carbide materials, quick cutting steels, mineral ceramics, glass and crystal glass chamfering and other nonferrous materials.

Straight single end files

Type 1. Blunt files



Type 2. Tapered files



* sizes for reference

Broach file symbol	Shape symbol	L, mm Allowance limit - 5mm	I, mm Allowance limit - 3mm	d, mm Allowance limit - 0,5mm
BLUNT BROACH FILE				
2826-0001	01	100	50	2,5
2826-0002		120	60	
2826-0003		160	80	
2827-0028	02	100	50	2,5
2827-0029		120	60	
2827-0030		160	80	
2828-0028	03	100	50	2,5
2828-0029		120	60	
2828-0030		160	80	
TAPERED BROACH FILE				
2826-0012	01	100	50	2,5
2826-0014		120	60	
2826-0017		160	80	
2827-0003	04	100	50	2,5
2827-0005		120	60	
2827-0008		160	80	
2827-0012	05	100	50	2,5
2827-0014		120	60	
2827-0017		160	80	
2827-0021	06	100	50	2,5
2827-0023		120	60	
2827-0026		160	80	
2828-0003	07	100	50	2,5
2828-0005		120	60	
2828-0008		160	80	
2828-0012	08	100	50	2,5
2828-0014		120	60	
2828-0017		160	80	
2827-0043	09	100	50	2,5
2827-0045		120	60	
2827-0048		160	80	
2828-0021	10	100	50	2,5
2828-0023		120	60	
2828-0026		160	80	

Types and grades of diamond powder

AC15, AC32	ACH
D151, D126, D127, D91, D76 D64	M63, M40, M25



CJSC "POLTAVA DIAMOND TOOLS"



CBN GRINDING TOOLS WITH RESIN BONDS



APPLICATION OF CBN GRINDING TOOLS ON RESIN BONDS:

1. Finish grinding and sharpening of tools made of HSS, tungsten-molybdenum (P6M5) and other high-speed steel, particularly high-speed steels with increased capacity, which are alloyed with vanadium and cobalt.

2. Finish and final grinding of high-precision parts made of heat resistant, stainless and high-alloy steel which has high hardness (HRC55 and more), when getting of high precision with the help of abrasive tools is limited due to their quick run-out and bluntness.

See the standard-size range of the wheels below:

Wheel form	Range of bore diameter of a wheel	Range of wheel core thickness
1A1	16-500	8-200
14A1	100-250	6-10
3A1	150-350	10-22
9A3	100-250	10-21
1V1	100-125	6-12
6A2	50-500	10-34
6A9	100-175	18-30
12A2-45	50-250	21-52
12V5-45	50-150	20-40
12A2-20	75-200	10-22
2V5-20	75-150	10-16
4A2	100-150	10-12
12R4	50-150	6-16
4B2	100-175	10-14
12D9	125-250	11-20
12V9-45	75-125	12-25
11V9-70	50-150	20-40
1FF1	50-200	2-40
14FF1	150-200	8-10
A8	6-32	6-20
1EE1	125-250	6-10
14EE1	125-350	6-15

CBN 1 is a powder type of Cubic Boron Nitride used for tools with resin bonds.

Example of an order:

4-0040 12A2-45 150 10 3 40 32 B2-01 CBN 1 160/125 100%

Bond is a main characteristic of diamond tools. The selection of bond depends on processed material, demands to quality of processed surface, productiveness of grinding process and grinding conditions (usage of coolant, etc.)

CJSC "Poltava Diamond Tools" produces CBN wheels with traditional resin bonds B2-01, B1-02, B1-13, B1-09 as well as with new bonds BN130, BN220, Bn310, specially developed for CBN powders.

Bond name	Main characteristics
BN130	For high resisting edge
BN220	Universal
Bn310	Highly productive



PROCESSING OF NONFERROUS MATERIALS BY DIAMOND TOOLS

GLASS GRINDING

Diamond tools are used for glass grinding in a wide range of industries, including technical sheet glass processing, automobile glass, optical glass, crystal and glassware.

Diamond wheels with semicircular and trapezoidal profiles, as well as with other profiles, are used for grinding of glass surfaces. As a rule, diamond wheels with galvanic and metal bonds are used for glass surface grinding. The wheels are made with diamond powder types AC6-AC32 (synthetic diamonds) grit size D213 – D64 with galvanic bonds (nickel) or with metal bonds types M2-30, M2-01, M3-04, M-300.

In order to obtain the minimum run-out of the diamond layer, diamond wheels should be balanced after their mounting on the spindle. It is not recommended to take the diamond wheels off the flange until they are fully used. Turning and dressing are necessary to restore the profile and the cutting properties of the wheels with pressed metal bonds. Dressing is performed by a silicon carbide grinding wheel or by electrolytes.

For automobile glass surfaces, the following conditions of diamond grinding are recommended:

Grinding speed, m/sec	25- 30
Glass feeding speed, m/min.....	3,5-5,0
Wheel pressing power, H	0,35-0,50
Coolant usage (water based) is 10-15 l/min;	
Processing allowances	0,2-0,3 mm

During the use of the wheel, the cutting properties less, so for productivity it is necessary to increase the wheel pressure on the glass. If chips appear on the border of the glass, the wheel must be dressed.

CRYSTAL GLASS PROCESSING

Diamond tools are widely used in the manufacture of crystal and glassware: edge grinding, grinding of flat surfaces and bases (wine glasses, etc.), sharp edge blunting (facet grinding), engraving, grinding of conical surfaces. For such purposes diamond grinding wheels 14EE1, 1EE1 with metal bonds are used.

The wheel size and type are chosen depending on the kind of operation and the, shape and size of item to be processed. As a rule, medium sized and large items are processed on machines individually, small details are processed on automatic machines with programmed picturing.

Characteristics of diamond layers for decorative glass processing

Processing type	Processing detail	Diamond powder characteristics		
		Type	Grade	Diamond concentration, %
Edge grinding of width up to 5 mm	Small and medium	AC6	D54	50
Edge grinding of width more than 5 mm			D64	
Edge pregrinding of width more than 8 mm	Medium and Large	AC6, AC15	D213	100
			D181	
			D107	
Edge finishing of width more than 8 mm	Medium	AC6	D54	50
		AC4	D64	50; 100
			M40	
Engraving, cone engraving, fine facetting, drawing	Small	AC4	D54	50
	Medium	ACM	M63	
			M40	



CRYSTAL GLASS PROCESSING (continuation)

To prepare the grinding wheel for usage is of great importance. It is to be checked thoroughly after storage: cracks, diamond layer peeling, and nicks are not acceptable. The wheel must be balanced after mounting on the flange, and after its placement on the spindle the wheel must be adjusted to avoid run-out of the diamond layer.

The wheel profile angle as a rule is 90°, 110°, 130° or 140°. The characteristics of diamond wheels recommended for decorative and household glass are found in the table.

The articles have been divided into following sizes:

- Large – vases with height more than 250 mm, diameter 150 mm, decanters with capacity more than 500 ml,
- Medium - vases with height up to 250 mm, diameter 150 mm, decanters with capacity up to 500 ml,
- Small – wineglasses, glasses, salt shakers, etc.

During hand drawing operations, water based coolant is always used in order to visually control the process. Mineral oil coolant as well as water coolant are used in machine drawing operations.

DIAMOND DRILLS

Diamond drilling is the most productive method of making a hole in friable, hard, nonmetallic materials. The most commonly used in industry are tubular drills consisting of a diamond rim crown, fixed in a cylindrical core (drill end). These tools take off material only on the rim surface. Usage of drills of this type helps to reduce axial load and to ease coolant supply to the cutting area. It provides high productivity and quality of processing and decreases diamond expenses.

Recommended rotational frequency index of drills for glass drilling

Drill diameter, mm	Rotational frequency, RPM	Mechanical feeding, mm/min
1 — 3	6 000 — 24 000	20 — 50
3 — 6	3 000 — 12 000	30 — 60
6 — 15	2 600 — 6 000	30 — 50
15 — 25	2 000 — 4 500	25 — 40
25 — 50	1 200 — 2 500	20 — 30
50 — 100	500 — 1 200	10 — 20

In other cases of drilling, the coolant to the work area is supplied through an inside hollow of the tool. As a rule, for the hand drilling of furniture, mirror and automobile glass, industrial water is used.

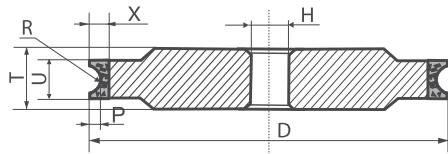
The pressure of the coolant supplied is normally determined by the drill diameter:

Drill diameter, mm	1 — 5	6 — 10	11 — 20	21 — 40	41 — 100
Coolant pressure, MPa	0,3 — 0,5	0,2 — 0,4	0,15 — 0,25	0,05 — 0,15	0,2 — 0,1



14F6V

SEMICIRCLE-CONCAVE FLAT GRINDING DIAMOND WHEELS

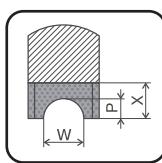


14F6V D*T*U*X*P*R*H

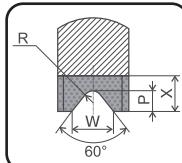
Application:

- processing of flanges of industrial glass.
- The diamond layer is made of diamond grinding powder and Micropowder with metal bonds.
- Usage of coolant is obligatory.

Picture 1



Picture 2

Processing of flange
of industrial glass

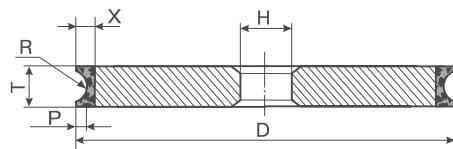
Catalogue number	Picture	D, mm	T, mm	U, mm	X, mm	P, mm	R, mm	W, mm	H, mm
9-8190	2	150	18	12	8	2	1,6	4,1	25
9-8180	2	150	18	12	8	2,5	2,5	5,8	25
9-8184	2	150	18	12	8	3	3	6,9	25
9-8185	2	150	18	12	8	3	4	8,1	25
9-8189	2	175	18	12	8	2	1,6	4,1	25
9-8188	2	175	18	12	8	2,5	2,5	5,8	25
9-8186	2	175	18	12	8	3	3	6,9	25
9-8187	2	175	18	12	8	2,5	4	7,6	25
9-0102	1	175	19	11	5	3	3	6,0	25
9-1102	2	175	20	11	7	1,5	1,8	3,5	15

Example of an order for a diamond wheel 14F6V (catalogue number 9-1102), parameters 175-20-11-7-1,5-1,8-15 with diamonds AC 20 grit size D107, concentration 50 %, with metal bond M2-01:

9-1102 14F6V 175 - 20 - 11 - 7 - 1,5 - 1,8 - 15 AC20 D107 50 M2-01



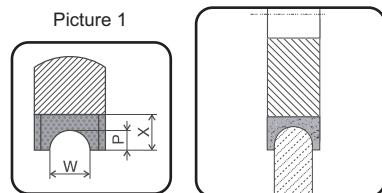
1FF6V SEMICIRCLE-CONCAVE FLAT GRINDING DIAMOND WHEELS



1FF6V D*T*X*P*R*H

Application:

- processing of flanges of industrial glass.
- The diamond layer is made of diamond grinding powder and micropowders with metal bonds
- Usage of coolant is obligatory.



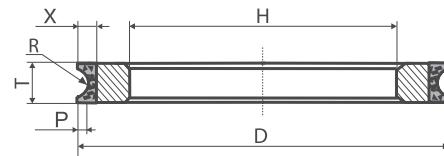
Processing of flange of industrial glass

Catalogue number	Picture	D, mm	T, mm	X, mm	P, mm	R, mm	W, mm	H, mm
9-0053	1	100	10	5,6	3,7	3,75	6,0	22
9-0052	1	100	9	5,3	1,3	3,0	5,0	22
9-0051	1	100	11	8,0	2,8	3,2	7,0	22
9-0056	1	150	15	7	2,5	3	7,0	32
9-0055	1	200	10	5	1,0	1,6	3,0	60

Example of an order for a diamond wheel 1FF6V (catalogue number 9-0056), parameters 150-15-7-2,5-3-32 with diamonds AC 15 grit size D107, concentration 75 %, with metal bond M2-01:

9-0056 1FF6V 150 - 15 - 7 - 2,5 - 3 - 32 AC15 D107 75% M2-01

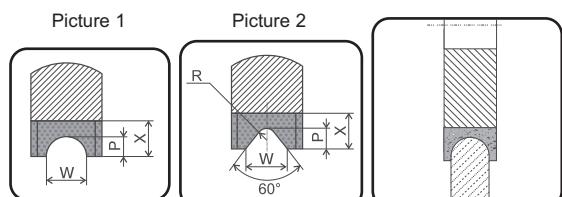
2F6V SEMICIRCLE-CONCAVE FLAT GRINDING DIAMOND WHEELS



2F6V D*T*X*P*R*H

Application:

- processing of flanges of industrial glass.
- The diamond layer is made of diamond grinding powder and Micropowders with metal bonds.
- Usage of coolant is obligatory.



Processing of flange of industrial glass

Catalogue number	Picture	D, mm	T, mm	X, mm	P, mm	R, mm	W, mm	H, mm
9-0119	2	150	15	5,3	1,8	1,8	4,25	35
9-0120	1	200	10	7,0	2,5	2,5	4,6	60
9-0121	2	200	20	8,0	2,0	2,0	4,2	130
9-0112	1	250	9	7,0	1,6	1,6	3,2	200
9-0113	1	250	9	7,0	1,8	1,8	3,6	200
9-0114	1	250	9	7,0	2,0	2,0	4,0	200
9-0117	2	250	10	6,0	2,0	1,6	4,0	200
9-0115	1	250	12	7,0	2,5	2,5	5,0	200
9-0101	1	250	12	7,0	3,0	3,0	6,0	200
9-0116	1	250	17	7,0	4,0	4,0	8,0	200
9-0103	1	250	17	9,0	5,0	5,0	10,0	200
9-0105	1	250	17	9,0	5,0	5,0	10,0	32

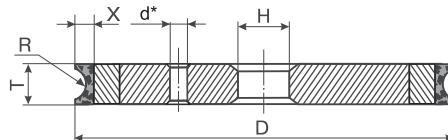
Example of an order for a diamond wheel 2F6V (catalogue number 9-0103), parameters 250-17-9-5-5-200 with diamonds AC15 grit size D76, concentration 50 %, with metal bond M2-01:

9-0103 2F6V 250 - 17 - 9 - 5 - 5 - 200 AC15 D76 50% M2-01



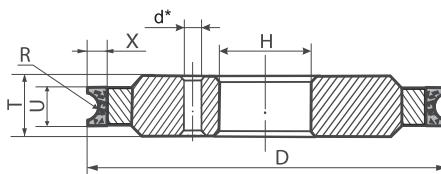
**DIAMOND FLAT GRINDING WHEELS WITH SEMICIRCULAR-CONCAVED PROFILE FOR MACHINES:
SULAK, INTERMAC, Z.BAVELLONI, SZILANK, etc.**

1F6V



1F6V D*T*X*R*W*H

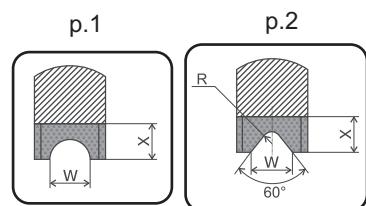
14F6V



14F6V D*T*U*X*R*W*H

d*- at D=150, 2 apertures Ø 7,0 x 180° by Ø 70

d*- at D=175, 3 apertures Ø 8,5 x 120° by Ø 76



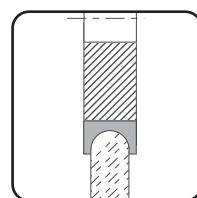
Application:

-processing of technical glass and mirrors

Diamond layer is made of diamond grinding powders and micro grinding powders with metal bonds.

Coolant is required.

Production is certificated.



**processing of technical
glass edge**

glass thickness, mm	whell form	pic.	code	D, MM	T, MM	U, MM	X, MM	R, MM	W, MM	H, MM
2	1F6V	1	150-02	150	10	-	5	1,8	3,5	22
3	1F6V	2	150-03	150	12	-	8	1,6	4,2	22
4	1F6V	2	150-04	150	12	-	8	2,0	4,6	22
5	1F6V	2	150-05	150	12	-	8	2,5	5,8	22
6	1F6V	2	150-06	150	12	-	8	4,0	8,1	22
8	1F6V	1	150-08	150	18	-	9	5,5	11,0	22
10	1F6V	1	150-10	150	18	-	8	8,6	12,1	22
2	14F6V	1	175-02	175	12	11	7	1,8	3,5	63,4
3	1F6V	2	175-03	175	12	-	7	1,6	4,2	63,4
4	1F6V	1	175-04	175	12	-	8	2,5	5,0	63,4
5	1F6V	2	175-05	175	12	-	8	2,5	5,8	63,4
6	14F6V	2	175-06	175	14	12	8	4,0	7,5	63,4
8	14F6V	1	175-08	175	17	12	8	5,5	10,0	63,4

Example of order:

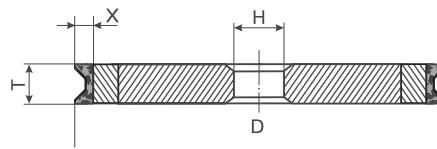
diamond wheel of form 1F6V (code 150-04) with parameters 150-12-8-2.0-4.6-22 with diamond type AC32, grit size 100/80 and relative concentration of diamond powder 50%, metal bond M2-01:

150-04 1F6V 150 - 12 - 8 - 2,0 - 4,6 - 22 AC32 100/80 50% M2-01



1DD6V

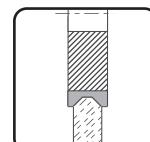
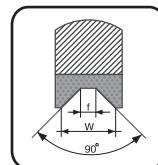
DIAMOND WHEELS FOR GLASS PROCESSING (A-LINE EDGE)



1DD6V D*T*X*f*W*H

Application:

- Processing of technical glass edge and mirrors on machines Sulak, Intermac, Z.Baveloni, Szilank, etc.
- Diamond layer is made of diamond grinding powders with metal bonds.
- Coolant is required.
- Production is certificated.



**processing of
technical glass edge**

glass thickness, mm	code	D, mm	T, mm	X, mm	W, mm	f, mm	H, mm
4	150T04	150	14	4,5	6,5	2,5	22
5	150T05	150	14	4,5	7,0	3,0	22
6	150T06	150	14	4,5	7,5	3,5	22
8	150T08	150	16	4,5	9,0	5,0	22
10	150T10	150	16	4,5	11,0	7,0	22

Example of order:

diamond wheel of form 1DD6V (code 150T04) with parameters 150-14-4.5-2.5-4.6.5-22 with diamond type AC32, grit size 100/80 and relative concentration of diamond powder 50%, metal bond M2-01:

150T04 1DD6V 150-14-4,5-2,5-6,5-22 AC32 100/80 50% M2-01

Attention: Other parameters of the wheel are available under request.



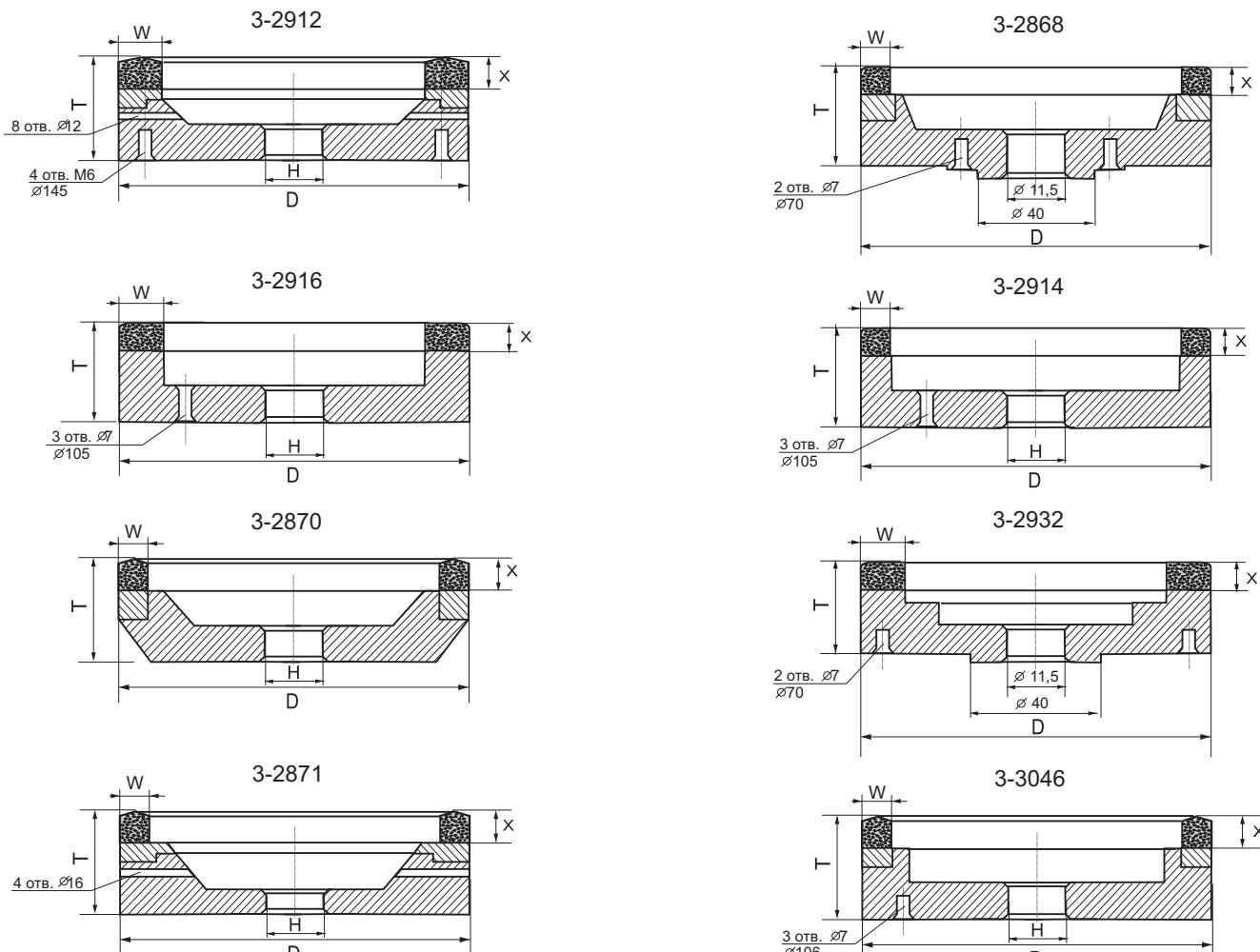
6A2

FLAT RECESSED DIAMOND GRINDING WHEELS

6A2 D*T*W*X*H

Application:

- processing of technical glass edge and mirrors.
- Diamond layer is made of diamond grinding powders with metal bonds.
- Coolant is required.
- Production is certificated.



code	D, mm	T,mm	W,mm	X,mm	H,mm
3-2912	160	51	12	8	130
3-2916	150	26	10	6	50
3-2870	150	40	8	8	30
3-2871	160	51	8	8	130
3-2868	150	42	5	8	-
3-2914	150	26	6	6	50
3-2932	100	23	15	6	-
3-3046	150	30	8	8	50

Example of order:

diamond wheel of form 6A2 (code3-2916) with parameters 150-26-10-6-50 with diamond type Ac32, grit size 125/100 and relative concentration of diamond powder 50%, metal bond M2-01

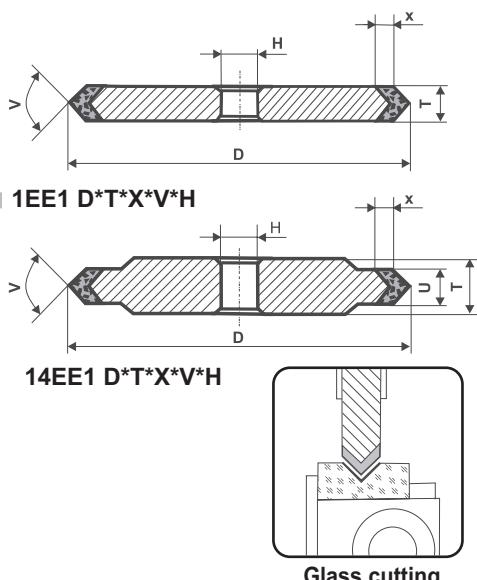
3-2916 6A2 150-26-10-6-50 AC32 125/100 50% M2-01



1EE1

14EE1

DOUBLE-SIDED CONICAL PROFILE FLAT GRINDING DIAMOND WHEELS


Application:

- processing of industrial and decorative glass, crystal, external threading and grinding,
- grinding of profiled details made of carbide and other hard to process materials.
- The diamond layer is made of diamond grinding powder and micropowders with metal or resin bonds.
- For metal bonded tools coolant is required.

Type 1EE1

Catalogue number	D, mm	T, mm	X, mm	V, °	H, mm
9-0616	30	4	2,5	30	6
7-1175	50	10	5	90	16
9-0035	50	10	5	120	16
7-0186	75	16	5	110	32
9-0618	80	10	10	120	32
7-1240	100	10	10	90	42
7-1246	100	10	10	120	42
7-0190	150	8	5	90	32
7-0191	150	8	5	110	32
7-0274	150	10	5	120	42
9-0539	150	10	10	90	32
9-0531	150	10	10	120	42
7-0193	150	12	5	90	32
7-0197	150	12	10	110	32
7-0303	150	12	10	110	42
7-0196	150	12	10	90	32
7-0200	150	16	5	110	32
7-0203	150	16	10	110	32
9-0034	200	10	10	90	42
9-0540	200	10	10	120	42
7-0210	250	10	10	110	32
7-0215	250	12	10	110	32
7-0216	250	16	5	90	32
7-0217	250	16	5	110	32
9-0604	256	30	3	130	76

Type 14EE1

Catalogue number	D, mm	T, mm	U, mm	X, mm	V, °	H, mm
9-3229	125	6	3	3	90	32
9-3133	125	6	3	4	60	32
9-3204	125	6	3	5	45	32
9-3203	125	6	3	6	35	32
9-3201	150	6	3	4	50	32
9-3239	150	8	5	3	90	32
9-3171	200	10	6	3	90	60
7-0154	250	10	5	6	110	32
7-0158	250	10	8	5	110	32
9-3226	350	15	4	6	60	127

Example of an order for a diamond wheel 1EE1 (catalogue number 7-0215), parameters 250-12-10-110-32 with diamonds AC6 grit size D64, concentration 50 %, with metal bond M2-01:

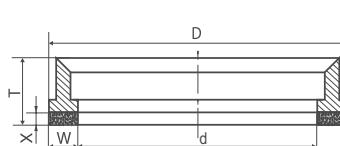
7-0215 1EE1 250 - 12 - 10 - 110 - 32 AC6 D64 50% M2-01



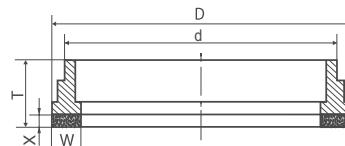
2A2

special

DIAMOND GRINDING FACE WHEELS



Picture 1

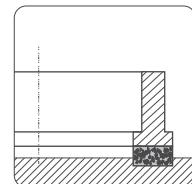


Picture 2

2A2 D*T*X*W*d

Application:

- grinding of spherical and flat surfaces made of non-metal hard materials (glass, silicon)
- producing of tube drills with diameters more than 20 mm.
- The diamond layer is made of diamond grinding powder and micropowders with metal bonds.
- Usage of coolant is obligatory.



Hole drilling

Catalogue number	Picture	D, mm	T, mm	X, mm	W, mm	d, mm
6-0100	1	30	32	10	5	20
6-0101	1	35	32	10	5	25
6-0102	1	40	32	10	5	30
6-0103	1	60	32	10	5	50
6-0104	1	50	32	10	5	40
6-0105	1	70	32	10	5	60
6-0106	1	80	32	10	5	70
6-0107	2	50	31	8	2,5	47
6-0108	2	60	31	8	2,5	57
6-0109	2	70	31	8	2,5	67
6-0110	2	80	31	8	2,5	77

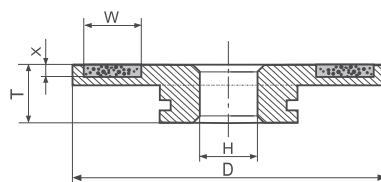
Example of an order for a diamond wheel 2A2 (catalogue number 6-0103), parameters 60-32-10-5-50 with diamonds AC 50 grit size D426, concentration 100 %, with metal bond M2-01:

6-0103 2A2 60 - 32 - 10 - 5 - 50 AC50 D426 100% M2-01



1A2

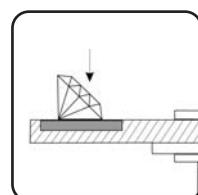
FLAT GRINDING DIAMOND WHEELS



1A2 D*T*W*X*H

· Application:

- processing of diamonds, precious and semiprecious stones, decorative stones
- Made with axe and without
- The diamond layer is made of diamond grinding powder and micropowders with metal bonds.



Diamond faceting

Catalogue number	D, mm	T, mm	W, mm	X, mm	H, mm
9-3050	270	22	30	2	50
9-3033	320	16	30	1,5	114
9-3034	315	30	30	1,5	114
9-3038	315	16	30	2	114
9-3035	315	22	40	1,5	114
9-3036	315	10,5	60	1,5	114
9-3037	315	22	40	1,5	50,8
9-3045	315	22	60	1,5	50,8
9-3043	315	44	30	1,5	30
9-3039	315	44	30	2	30
9-3040	315	44	35	2	30
9-3041	315	44	40	2	30
9-3042	315	44	60	2	30

Example of an order for a surface diamond wheel 1A2 (catalogue number 9-3035), parameters 315-22-40-1,5-114 with diamonds ACH, grit size M16 concentration 150 %, with metal bond M3-01:

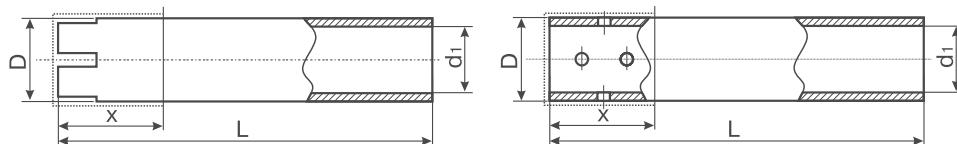
9-3035 1A2 315 - 22 - 40 - 1,5 - 114 ACH M16 150% M3-08



DIAMOND DRILLS

· Application:

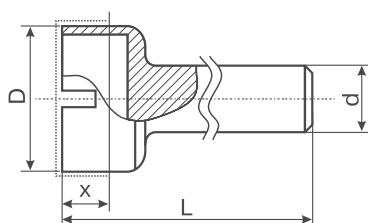
- drilling of holes in optical and industrial glass and other non-metal materials
- Diamond layer is made of diamond powders and micropowders with electroplated bonds
- Usage of coolant is obligatory.



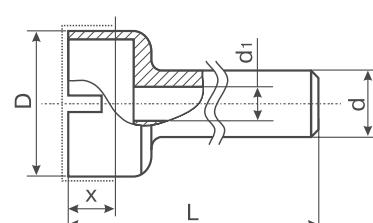
Picture 1

Picture 2

Designation of drill size and type	Core	Picture	D, mm	d ₁ , mm	L, mm	x, mm
04.01.159.00	Brass	1	3	2,5	57	6
04.01.159.00-01		1	4	3,5	57	6
04.01.159.00-02		1	5	4,5	57	6
04.01.159.00-03		1	6	5	57	6
04.01.159.00-04		1	7	6	57	6
04.01.159.00-05		1	8	7	57	6
04.01.159.00-06		1	9	8	57	6
04.01.159.00-07		1	10	9	57	6
04.01.159.00-08		1	12	10	57	6
04.01.159.00-09		1	14	12,8	57	6
04.01.159.00-10		1	16	14,8	57	6
04.01.242.00	Steel	1	3	1,4	50	6
04.01.242.00-01		1	4	2,4	50	6
04.01.242.00-02		1	5	3,4	50	6
04.01.242.00-03		1	6	4,4	50	6
04.01.242.00-04		1	7	5	50	6
04.01.242.00-05		1	8	6	50	6
04.01.242.00-06		1	9	7	50	6
04.01.242.00-07		1	10	8	50	6
04.01.242.00-08		1	12	10	50	6
04.01.242.00-09		1	14	12	50	6
04.01.242.00-10		1	16	14	50	6
04.01.242.00-11		1	14,6	13	60	6
04.01.242.00-12		1	19,6	17,6	60	8
04.01.242.00-13		1	18	15,6	60	8
06.02.002.00	Steel	2	3	2,5	57	8
06.02.002.00-01		2	4	3,5	57	8
06.02.002.00-02		2	5	4,5	57	8

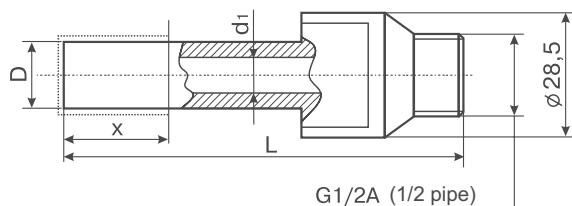


Picture 3



Picture 4

Designation of drill size and type	Picture	D, mm	d ,mm	φ , mm	L, mm	x, mm
06.02.001.00	3	65	9,5	?	60	10
06.03.001.00	4	19	9,5	4	70	7
06.03.001.00-30	4	10	9,5	4	70	8
06.03.001.00-31	4	12	9,5	4	70	8
06.03.001.00-32	4	14	9,5	4	70	8
06.03.001.00-33	4	16	9,5	4	70	8
06.03.001.00-34	4	20	9,5	4	70	8
06.03.001.00-36	4	17	9,5	4	70	14
06.03.001.00-04	4	26	9,5	4	70	8
06.03.001.00-08	4	22	9,5	4	70	8
06.03.001.00-09	4	24	9,5	4	70	8
06.03.001.00-13	4	25	9,5	4	70	8
06.03.001.00-14	4	27	9,5	4	70	8
06.03.001.00-05	4	30	6	4	50	8
06.03.001.00-46	4	32	9,5	4	70	8
06.03.001.00-24	4	35	9,5	4	70	8
06.03.001.00-35	4	36	9,5	4	70	8
06.03.001.00-40	4	40	9,5	4	70	14
06.03.001.00-16	4	50	9,5	4	60	10
06.03.001.00-49	4	60	9,5	4	50	10
06.03.001.00-17	4	70	9,5	4	50	10
06.03.001.00-12	4	80	9,5	4	60	10
06.03.001.00-01	4	81	9,5	4	60	10
06.03.001.00-02	4	86	9,5	4	50	10
06.03.001.00-48	4	120	9,5	4	60	10
06.03.005.00	4	12	9,5	4	70	8
06.03.005.00-01	4	14	9,5	4	70	8
06.03.005.00-02	4	16	9,5	4	70	8
06.03.005.00-03	4	26	9,5	4	70	8
06.03.005.00-04	4	30	9,5	4	70	8
06.03.005.00-05	4	35	9,5	4	70	8
06.03.005.00-06	4	55	9,5	4	70	8
06.03.005.00-07	4	75	9,5	4	70	10
06.03.005.00-08	4	90	9,5	4	70	10
06.03.005.00-09	4	40	9,5	5	65	10
06.03.006.00	4	78	28	M14	81	10



Picture 5

Designation of drill size and type	Picture	D, mm	d, mm	L, mm	x, mm
06.04.001.00	5	12	8	75	10
06.04.001.00-01	5	12,5	8	75	10
06.04.001.00-02	5	13	8	75	10
06.04.001.00-03	5	13,5	8	75	10
06.04.001.00-04	5	14	8	75	10
06.04.001.00-05	5	14,5	8	75	10
06.04.001.00-06	5	15	8	75	10
06.04.001.00-07	5	15,5	8	75	10
06.04.001.00-09	5	16	8	75	10
06.04.001.00-11	5	16,5	8	75	10
06.04.001.00-12	5	17	8	75	10
06.04.001.00-13	5	17,5	8	75	10
06.04.001.00-14	5	18	8	75	10
06.04.001.00-15	5	18,5	8	75	10
06.04.001.00-16	5	19	8	75	10
06.04.001.00-17	5	19,5	8	75	10
06.04.001.00-18	5	20	8	75	10
06.04.001.00-19	5	21	8	75	10
06.04.001.00-22	5	22	8	75	10
06.04.001.00-24	5	23	8	75	10
06.04.001.00-26	5	24	8	75	10
06.04.001.00-27	5	40	8	75	10
06.04.001.00-28	5	50	8	75	10
06.04.001.00-30	5	51	8	75	10
06.04.001.00-31	5	52	8	75	10
06.04.001.00-32	5	54	8	75	10
06.04.001.00-33	5	55	8	75	10
06.04.001.00-34	5	3	4	75	10
06.04.001.00-35	5	6	5	75	10
06.04.001.00-36	5	10	8	75	10
06.04.001.00-37	5	30	8	75	10
06.04.001.00-38	5	70	8	75	10
06.04.001.00-39	5	100	8	75	10
06.04.001.00-40	5	5	3,5	75	5

Example of an order for a diamond drill (picture 4), size type 06.03.005.00-08 with outside diameter D=90, made of diamond powder AC 32, grade D91 with galvanic bond:

06.03.005.00-08 90 AC32 D91 galvanic bond



CJSC "POLTAVA DIAMOND TOOLS"



POLYCRYSTALLINE SUPERHARD MATERIALS



Polycrystalline superhard materials

Quality can be greatly increased in the processing of workpieces made of cast iron and hardened steels by using tools made with superabrasive polycrystals of CBN and wurtzite boron nitride as well as diamonds.

Superabrasive bladed tools allow the processing various materials, including hardened steels and cast steels, nonferrous and titanium alloys, hard alloys with high degrees of precision and smoothness.

TYPES OF POLYCRYSTALLINE SUPERABRASIVES

- **Elbor-R** or composite 01 – CNB
- **Hexanite-R** or composite 10 – Wurtzite Boron Nitride
- **Carbonado** or composite 05-polycrystalline diamond
- **CKM-P** – superhard diamond composite material

The high productivity of superabrasive tools is due to the following properties:

- exceptionally high hardness (4000-7500 kg/mm²) that is 2-4 times higher than that of carbide tools
- lack of chemical interaction with the processed material
- high heat resistance (1100-1300 °C), and thermal conductivity (0,10-0,12 cal/cm per °C) that is close to that of carbides yet does not diminish even with increasing temperatures.
- high impact resistance

The following types of cutting tools are made with Hexanite-R:

- inserts for cutters (boring, threading and through cutters)
- solid holding cutters for working with mandrels
- coordinate boring cutters for boring through and closed holes with diameters of no more than 4 mm.
- changeable cutting plates K10D (round, rhombic, square).

The use of cutting tools with superabrasive is optimized by choosing the most advantageous and economic combination of cutting speed, depth and feeding.

Tools are considered to have worn out when the wear on the back side of the cutter is 0,3-0,4 mm. The cutters, however, do not lose their cutting properties until after 6-10 resharpenings, which are done on cup grinding diamond wheels grit size D151 with resin bonds BT with diamond powder concentration 150% and, if necessary, followed by the finishing of cutting edges by grinding wheels grit size M25 with resin bonds B3-01 with diamond powder concentration 100%.



JIG-BORING CUTTERS

These are used for semiclean and clean boring of through and closed holes with diameters of more than 4 mm in workpieces made of hardened steels, cast irons, hard alloys of tungsten and cobalt and non-tungsten hard alloys on jig-boring machines.

Because of the capabilities of Hexanite-R it is possible to use it under conditions of high impact: hole boring with key and spline slots, radial holes. The hardness of steel cutters cores permits making holes with a 7-9 class of precision. It is recommended to use cutters on machines of P class and higher. During adjustment it is necessary to elimination friction of the cutter back surface with the processing surface as well as smooth chip flow.

CHANGEABLE CUTTING INSERTS K10D

These are used for grinding and finishing of workpieces made of hardened steel (HRC 40...70), hard cast irons, hard alloys of tungsten and cobalt (with no more than 15% cobalt) and other hard to machine materials.

The cutting abilities of inserts do not diminish during turning with impact loads, so they can be used in working surfaces with added metal and in milling.

The inserts are mechanically fixed in turning cutters cores or face-milling cutters. When they become dull, the inserts should be turned in the tool at a specific angle, which eliminated the need for resharpening.

During processing on fixed and vibration resistant machines with optimal cutting conditions, the tools with K10D inserts allow 6-9h class precision processing with roughness Ra 0,20-1,25 mcm.

SUPERHARD COMPOSITE MATERIAL CKM-P

These are used in cutting tools. The blanks are made of CKM-P, a polycrystalline alloy from synthetic diamonds of cylindrical or segment shape that have properties similar to those of natural diamonds.

Cutters and edges equipped with blanks made of CKM-P are used for rough, semi finishing and precision turning as well as milling of different types of glass and glass-fiber materials, including materials with abrasive fillers, plasticized ceramics, graphitized carbon materials, high-silicon aluminum alloys, as well as alloys based on copper and titanium.

Cutter properties do not diminish after resharpening. Resharpening is done on universal sharpening machines by diamond grinding wheels with finishing by grinding wheels 12A2-45 150-10-3,32 AC6 D181 ... D107 M1-01 100% with a further sharpening by the wheels 12A2-45 150-10-3-32 ACN M40 BT 150%.

**RECOMMENDATIONS FOR USING TOOLS
MADE OF HEXANITE-R IN TURNING AND BORING (CUTTERS AND INSERTS)**

Processed material	Cutting process conditions	Conditions of cutting			Quality of processing	
		Speed, m/min	Feeding, mm/turn	Depth, mm	Surface roughness, Ra, mcm	Precision, class
Steels for tools, bearings, alloyed and low-alloyed steels, structural steels, hardened steels with hardness $40 \leq HRC \leq 58...60$	Without impact	50-180	0,03-0,20	0,05-3,0	0,32-0,63	7
	With impact	40-120	0,03-0,10	0,05-1,0	0,63-1,25	8-9
Quick-cutting steels, steels for tools, high-alloyed steels with hardness $58...60 \leq HRC \leq 70$	Without impact	50-120	0,03-0,10	0,05-0,8	0,20-0,32	6-7
	With impact	40-100	0,03-0,07	0,05-0,4	0,32-0,63	7
Gray cast and hardened irons with hardness HB 160...270	Without impact	400-1000	0,03-0,5	0,05-3,0	0,63-2,5	7-8
	With impact	300-800	0,03-0,2	0,05-2,0	2,5-5,0	8-9
Chilled cast iron with hardness HB 400...600	Without impact	50-200	0,03-0,5	0,05-2,0	0,32-1,25	7-8
	With impact	40-90	0,03-0,10	0,05-1,0	1,25-2,5	8-9
Hard alloys for stamps and press molds with cobalt content more than 15% with hardness HRA 88...90	Without impact	5-20	0,03-0,10	0,05-1,0	0,20-0,32	6-7
	Over rim	40-100	0,03-0,15	0,1-0,5	0,32-1,25	7-8

**RECOMMENDATIONS FOR USING TOOLS MADE OF HEXANITE-R
IN FACE MILLING (INSERTS)**

Processed material	Conditions of cutting			Quality of processing	
	Speed, m/min	Feeding, mm/tooth	Depth, mm	Surface roughness, Ra, mcm	Precision, class
Steels for tools, alloyed and low-alloyed steels, structural steels, hardened steels with hardness $40 < HRC < 58...60$	200-600	0,01-0,1	0,05-1,2	0,32-0,63	7
Structural steels, alloyed steels, hardened steels for tools HRC <30 (in supply condition)	400-900	0,01-0,1	0,05-1,5	0,20-0,32	6-7
Hardened cemented steel HRC 50...7	80-300	0,01-0,05	0,05-0,8	1,25-2,5	8-9
Quick-cutting steels HRC 60...70	20-40	0,01-0,05	0,05-0,6	2,0-5,0	8-9
Gray and hardened cast irons with hardness HB 160...270 (including over casting overcoat))	500-3000	0,01-0,1	0,05-6,0	1,25-2,5	8-9
Chilled cast iron with hardness HB 400...600	200-800	0,01-0,1	0,05-4,0	0,50-1,25	7-8



CHANGEABLE CUTTING INSERTS K10D

Processed material	Cutting conditions		
	Speed m/min	Feeding mm/turn	Depth, mm
Steels, HRC 40... 58	60-120	0,05-0,20	0,1- 1,5
Steels, HRC 58... 70	40-100	0,03-0,12	0,05-1,0
Cast irons, HB 150... 300	300-700	0,05-0,15	0,1- 1,5
Cast irons, HB 400...600	50-100	0,03-0,10	0,05-1,0
Hard alloys of tungsten and cobalt	10-30	0,03-0,10	0,05-0,8
Wear resistant coatings	50-100	0,05-0,12	0,1-0,5

Cutters made with superhard composite material CKM-P

Processed material	Cutting conditions			Surface roughness, Ra, mcm
	Speed m/min	Feeding mm/turn	Depth, mm	
Plastics and glass-reinforced resins	200-1000	0,03-0,3	0,05- 1,0	2,5
Plasticized ceramics	150-300	0,03- 0,10	0,05-1,0	1,00
Aluminum and its alloys	600-3000	0,03-0,3	0,05- 1,0	0,32
High-silicon aluminum alloys	500-1500	0,03-0,3	0,05- 1,0	0,50
Copper alloys	300-1000	0,03-0,3	0,05- 1,0	0,32
Titanium alloys	80-100	0,04-0,07	0,05-1,0	0,80
Mineral ceramics	120-200	0,02-0,07	0,05- 1,0	1,25
Hard alloys	15-40	0,03-0,10	0,05- 1,0	1,25
Brass (decorative turning)	200-400	0,01-0,05	0,05- 0,2	0,050
Woodchip materials	2000-4000	0,03-0,3	-	-
Rocks (sandstone, granite)	50-400	0,03-0,3	0,05-1,0	1,25

BORING TURNING CUTTERS MADE WITH HEXANITE-R FOR JIG-BORING AND TURNING MACHINES

Processed material	Cutting conditions	
	Speed m/min	Depth, mm
Steels, HRC 40... 58	50-80	0,05
Steels, HRC 58...70	30-60	0,05
Cast irons	50-150	0,05
Hard alloys Of tungsten and cobalt	10-20	0,05

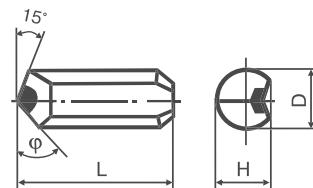
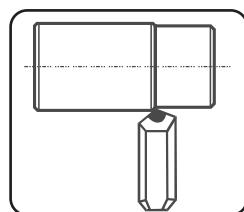




PB01

PB02

INSERTS FOR TURNING COMPOUND THROUGH STRAIGHT CUTTER

 $D^*H^*L^* \phi$ 

Flank processing

Catalogue code	Insert symbol	D, mm	H, mm	L, mm	ϕ , °
600900	PB 0101	8	6,5	12	30
600901	PB 0201	8	6,5	12	45
600902	PB 0102	9	7	15	30
600903	PB 0202	9	7	15	45
600904	PB 0103	10	8	15	30
600905	PB 0203	10	8	15	45
600906	PB 0104	12	10	20	30
600907	PB 0204	12	10	20	45
600908	PB 0105	16	12	20	30
600909	PB 0205	16	12	20	45
600910	—	10	8	35	30
600911	—	10	8	35	45

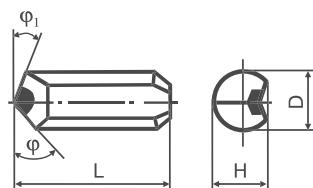
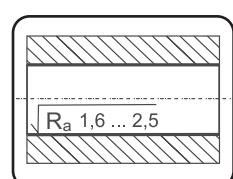
Example of an order for an insert PB 0103 for a compound through straight cutter (catalogue code 600904) parameters 10 - 8 - 15 - 30°:
600904 Insert PB 0103 10 - 8 - 15 - 30

PB10

INSERTS FOR TURNING COMPOUND BORING CUTTERS FOR THROUGH HOLES

PB15

WITH DIRECT OR 60 ° CLAMPING

 $D^*H^*L^* \phi \phi_1$ 

Aperture turning

Catalogue code	Insert symbol	D, mm	H, mm	L, mm	ϕ , °	ϕ_1 , °
601100	PB 1501	7	5,5	18	45	15
601101	PB 1001	7	5,5	18	15	45
601102	PB 1502	8	6,5	16	45	15
601103	PB 1002	8	6,5	15	15	45
601104	PB 1503	8	6,5	20	45	15
601105	PB 1003	8	6,5	20	15	45
601106	PB 1504	8	6,5	25	45	15
601107	PB 1004	8	6,5	25	15	45
601108	PB 1505	8	6,5	30	45	15
601109	—	10	8	30	15	45
601110	PB 1506	10	8	16	45	15
601111	PB 1005	8	6,5	30	15	45

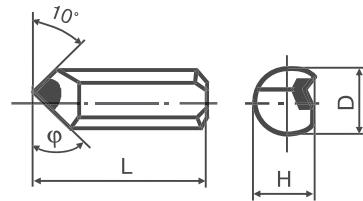
Example of an order for an insert PB 1501 for a compound boring cutter for through holes (catalogue code 601100) parameters 7 - 5,5 - 18 - 45° - 15°:

601100 Insert PB1501 7 - 5,5 - 18 - 45 - 15



PB30 PB31

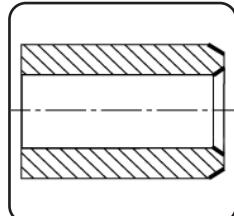
INSERTS FOR TURNING COMPOUND CHAMFERING CUTTER



Application:

- inserts made with Hexanite-R are used for processing of tool, bearing and alloyed steels, gray and chilled cast irons, hard alloys for stamps and press Molds and so on.

Chamfering



Catalogue code	Insert symbol	D, mm	H, mm	L, mm	ϕ , °
601300	PB 3001	8	6,5	12	30
601301	PB 3101	8	6,5	12	45
601302	PB 3002	9	7	15	30
601303	PB 3102	9	7	15	45
601304	PB 3003	10	8	15	30
601305	PB 3103	10	8	15	45

Example of an order for an insert PB 3002 for a compound threading (catalogue code 601302) parameters 9 - 7 - 15 - 30:

601302 Insert PB 3002 9 - 7 - 15 - 30

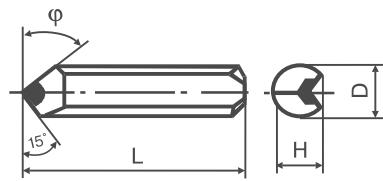


P50

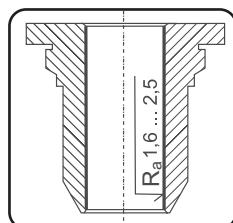
P51

BORING SOLID CUTTERS (CIRCULAR SECTION)

FOR DIRECT CLAMPING IN MANDRELS AND BORING BARS



- Application:
- inserts made with Hexanite-R are used for processing industrial, bearing, alloyed steels, cast and chilled irons and for stamps and press molds.



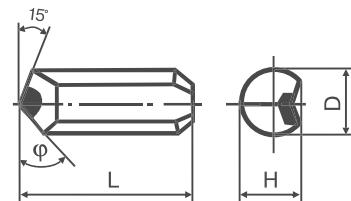
Aperture turning

Catalogue code	Cutter index	D, mm	H, mm	L, mm	$\phi, {}^\circ$
601400	P5001	7	5,5	18	30
601401	P5101	7	5,5	18	45
601402	P5002	8	6,5	25	30
601403	P5102	8	6,5	25	45
601404	P5003	8	6,5	35	30
601405	P5103	8	6,5	35	45
601406	P5004	10	8	40	30
601407	P5104	10	8	40	45
601408	P5005	12	10	60	30
601409	P5105	12	10	60	45
601410	P5006	16	12	80	30
601411	P5106	16	12	80	45
601412	P5007	20	16	100	30
601413	P5107	20	16	100	45

Example of an order for a boring solid cutter P5101 for direct clamping (catalogue code 601401) parameters 7 -5,5 - 18 - 45°:
601401 Cutter P 5101 7-5,5-18-45

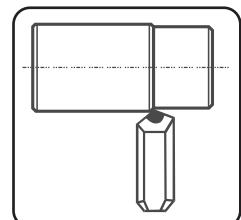


STRAIGHT TURNING CUTTERS



Application:

- cutters made with CKM-P are used for working parts made of glass-reinforced plastic, plastic high-silicon, aluminum alloys, copper and titanium based alloys, mineral ceramics, carbon plastics.



Flange processing

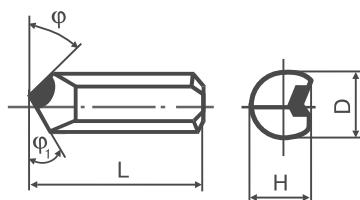
Catalogue code	D, mm	H, mm	L, mm	$\varphi, ^\circ$	CKM-P blank diameter, mm
101004	8	6,5	25	45	3,5
101005	8	6,5	25	60	3,5
101007	10	8	15	45	5
101008	10	8	15	60	5
101010	10	8	40	45	5
101011	10	8	40	60	5
101016	10	8	40	45	7
101017	10	8	40	60	7
101019	12	10	20	45	5
101020	12	10	20	60	5
101022	12	10	60	45	5
101023	12	10	60	60	5
101025	12	10	20	45	7
101026	12	10	20	60	7
101027	12	10	40	55	7
101029	12	10	60	45	7
101030	12	10	60	60	7
101032	12	10	20	45	8,5
101033	12	10	20	60	8,5
101035	12	10	60	45	8,5
101036	12	10	60	60	8,5
101043	16	12	80	45	8,5
101044	16	12	80	60	8,5

Example of an order for a solid straight cutter (catalogue code 101004) parameters 8 - 6,5 - 25 - 45 - 3,5:

101004 Cutter 8 - 6,5 - 25 - 45 - 3,5

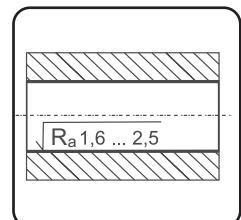


TURNING BORING CUTTERS



Application:

- cutters made with CKM-P are used for working parts made of glass-reinforced plastic, plastic high-silicon, aluminum alloys, copper and titanium based alloys, mineral ceramics, carbon plastics.



Bore drilling

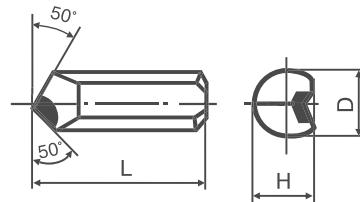
Catalogue code	D, mm	H, mm	L, mm	ϕ_1 , °	ϕ , °	CKM-P blank diameter, mm
102000	8	6,5	15	15	45	3,5
102001	8	6,5	15	15	60	3,5
102002	8	6,5	25	15	45	3,5
102003	8	6,5	25	15	60	3,5
102004	10	8	16	15	45	5
102005	10	8	16	15	60	5
102006	10	8	40	15	45	5
102007	10	8	40	15	60	5
102008	10	8	16	15	45	7
102009	10	8	16	15	60	7
102010	10	8	40	15	45	7
102011	10	8	40	15	60	7
102012	12	10	60	15	45	5
102013	12	10	60	15	60	5
102014	12	10	60	15	45	7
102015	12	10	60	15	60	7
102016	12	10	60	15	45	8,5
102017	12	10	60	15	60	8,5
102018	16	12	80	15	45	7
102019	16	12	80	15	60	7
102020	16	12	80	15	45	8,5
102021	16	12	80	15	60	8,5
034000	8	5,5	20	15	45	3,5
037000	6	4,4	15	45	15	3,5
037001	6	4,4	15,5	45	45	3,5
042000	8	5,5	21	15	45	5
042001	8	5,5	21	45	15	5
044000	8	5,5	23	15	45	5
050000	7,8	6,5	25	15	45	5

Example of an order for a solid straight cutter (catalogue code 102000) parameters 8 - 6,5 - 15 - 45 - 3,5:

102000 Cutter 8 - 6,5 - 15 - 45 - 3,5

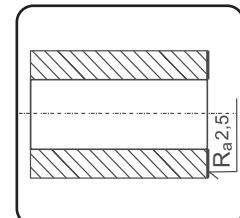


TURNING SIDE-FACING CUTTERS



Application:

- cutters made with CKM-P are used for working parts made of glass-reinforced plastic, plastic high-silicon aluminum alloys, copper and titanium based alloys, mineral ceramics, carbon plastics.



Flange processing

Catalogue code	D, mm	H, mm	L, mm	CKM-P blank diameter, mm
103000	8	6,5	12	3,5
103001	8	6,5	25	3,5
103002	10	8	15	5
103003	10	8	40	5
103004	10	8	15	7
103005	10	8	40	7
103006	12	10	20	5
103007	12	10	60	5
103008	12	10	20	7
103009	12	10	60	7
103010	12	10	20	8,5
103011	12	10	60	8,5
103012	16	12	20	7
103013	16	12	80	7
103014	16	12	20	8,5
103015	16	12	80	8,5

Example of an order for a solid straight cutter (catalogue code 103000) parameters 8 - 6,5 - 12 - 3,5:

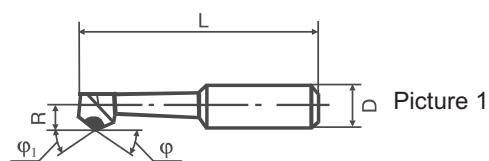
103000 Cutter 8 - 6,5 - 12 - 3,5



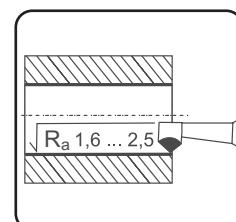
TURNING BORING CUTTERS FOR JIG-BORING MACHINES BORING OF THROUGH (Picture 1)

AND BLIND (Picture 2)

HOLES IN DIAMETER MORE THAN 4 mm



Aperture turning



Pic.	Catalogue code	D, mm	R, mm	L, mm	$\varphi_1, {}^\circ$	$\varphi, {}^\circ$
1	601600	6	2	40	45	10
	601601	6	2	40	60	10
	601602	6	3	45	45	10
	601603	6	3	45	60	10
	601604	8	4	50	45	10
	601605	8	4	50	60	10
	601606	8	4	50	45	10
	601607	8	4	50	60	10
	601608	8	5	55	45	15
	601609	8	5	55	60	15
	601610	8	5	55	45	15
	601611	8	5	55	60	15
2	601700	6	2	40	-	-
	601701	6	3	45	-	-
	601702	8	4	50	-	-
	601703	8	4	50	-	-
	601704	8	5	55	-	-
	601705	8	5	55	-	-

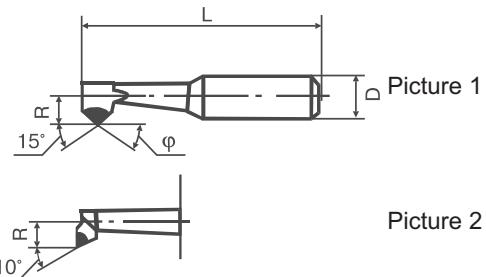
Example of an order for a boring cutter for jig-boring machines (catalogue code 601600) parameters 6 - 2 - 40 - 45 - 10:
601600 Boring cutter 6 - 2 - 40 - 45 - 10



TURNING BORING CUTTERS FOR JIG-BORING MACHINES BORING OF THROUGH (Picture 1)

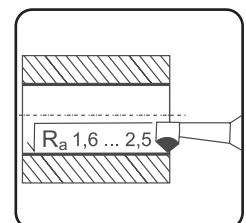
AND BLIND (Picture 2)

HOLES IN DIAMETER MORE THAN 12 MM



Application:

- inserts made with Hexanite-R are used for working parts of industrial, bearing, alloyed steels, cast and chilled irons, and for stamps and press molds.



Aperture turning

Pic.	Catalogue code	D, mm	R, mm	L, mm	ϕ , °
1	803900	12	6	70	45
	803901	12	6	70	60
	803902	12	6	70	45
	803903	12	6	70	60
	803904	12	8	80	45
	803905	12	8	80	60
	803906	12	10	100	45
	803907	12	10	100	60
2	604600	12	6	70	-
	604601	12	6	70	-
	604602	16	8	80	-
	604603	20	10	100	-
	604604	12	8	80	-
	604605	12	10	100	-

Example of an order for a boring cutter for jig-boring machines (catalogue code 803900) parameters 12 - 6 - 70 - 45:

803900 Boring cutter 12 - 6 - 70 - 45

CHANGEABLE CUTTING MULTI-FACETED. TWO-LAYER INSERTS (composite 10)

Shape	Index	Size mm		Note
		D	S	
	RNMN 05.T3.00F	5,56	3,97	-
	RNMN 05.T3.00T	5,56	3,97	0,2-0,3



CJSC "POLTAVA DIAMOND TOOLS"



DRAWING DIE TOOLS



DRAWING DIES

Two types of drawing dies with CKM and CBA-15BU polycrystals with an internal diameter of 0,05-5,0 are produced as well as special purpose drawing dies.

Type "M" drawing dies: used for cold (wet) drawing of nonferrous metals (copper, aluminum, silver, gold, platinum, etc.), for cable production, jewelry production.

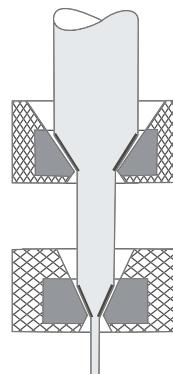
Type "C" drawing dies: used for cold (wet) drawing of steel and brass wire for metal cord production, bead brass wire, stainless and low-carbon steel for rope production.

Type "CG" drawing dies: used for hot drawing (tungsten, molybdenum, and their alloys)

Special duty drawing dies: used for mounted drawing of stainless steel tubes for injection needles and for graphite leads.

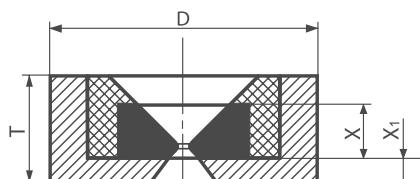
Notice:

In addition to drawing dies, the following items are also produced:
diamond mounts/holders for enameling semiconductors
diamond inserts for draw bars,
diamond draw plates, used for primary and secondary curling at light bulb factories
stream-forming nozzles for hydrostream cutting of different materials.

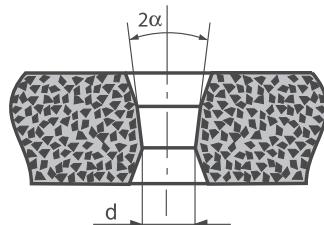


The following types of drawing dies are produced, depending on the application:

Type	Type of Superhard materials	Application	Diameter of calibration hole, mm less than
M	CKM	Cold drawing of metals and alloys with temporary resistance up to 500 MPa	0,801-3,00
	CB		0,100-0,800
C	CKM	Cold drawing of metals and alloys with temporary resistance more than 500 MPa	0,801-2,000
	CB		0,100-0,800
CG	CB	Hot drawing (tungsten, molybdenum, and their alloys)	0,050-0,800



Drawing die



Drawing die channel

Sizes, mm						Type	$2\alpha, {}^\circ$	
d		D	T	x_1	x			
From 0,050 to 0,100	$\pm 0,0015$	25				C	12°	
		16						
From 0,100 to 0,200	$\pm 0,002$	25				M, C		
		16						
From 0,200 to 0,300	$\pm 0,003$	25			1,5...2,4	M, C		
		16						
From 0,300 to 0,500		25						
		16						
From 0,500 to 0,800	$\pm 0,004$	25			1,5	M, C	for M —18°, for C—12°	
		16						
From 0,800 to 1,000	$\pm 0,005$	6...20			3,0...4,5	M, C		
From 1,000 to 1,200	$\pm 0,006$							
From 1,200 to 1,600	$\pm 0,008$							
From 1,600 to 2,000	25			4,0...5,0	M	18°		
From 2,000 to 2,500							$\pm 0,009$	
From 2,500 to 3,000								



CJSC "POLTAVA DIAMOND TOOLS"



DIAMOND PASTES



DIAMOND PASTES

Applications of diamond pastes: processing of ferrous and nonferrous metals, steels and semiconductors, alloyed steels, cast irons, ceramics, metal ceramics, carbide, ferrite, sapphire, glass, semiconductors, carbide tools, drawing dies.

Paste made of synthetic diamond ACH micropowders grit size M40 with normal mass content in the paste, washable by water, lubricated would be marked as follows: ACH M40 N W L.

Diamond pastes treat the processed surface chemically and mechanically. They produce fine-dispersion emulsions that allow for a smoother distribution of diamonds over the work piece surface. The paste also contains active surface agents, which make washing easier and help to remove flammable liquids, chips and slag generated on the surface. It raises productivity because of its higher abrasive properties and improves the surface processing quality.

Pastes are produced with normal (N), higher (H) and extra-high concentration (E), depending on the mass content of diamonds and grit size.

Mass content of diamond powder in diamond pastes.

Diamond powder grades	Mass content of diamond in pastes, %			Color of paste and label
	N	H	E	
D126-D76	40	60	—	Lilac
D64-D54	20	40	—	
M63-M40	8	20	40	Red
M25-M16	6	15	30	Blue
M10-M4	4	10	20	Green
M2,5-M1	2	5	10	Yellow
1/0,5-0,1/0 mcm	2	5	10	Not painted

On request it is possible to produce pastes with other diamond mass contents, without colorant and with non-standard diamond grit sizes.

Based on consistency, pastes can be divided into lubricated (L) and solid (S).

Lubricated pastes are delivered to consumers in syringes of 5, 10, 20 grams, in tubes of 40 and 80 grams or in cans of 500 or 1000 grams. Solid pastes are delivered in special cases. On request other packing is possible.

Depending on ingredients pastes are classified as follows:

(O) can be washed by organic solvents such as kerosene, petrol, alcohol, etc.

(W) can be dissolved and washed off by water.

(WO) can be washed off by water and by organic solvents, such as alcohol, industrial oils, petrol, kerosene.

Depending on grit size, pastes can be used for different processing types:

Diamond powder grit sizes	Surface roughness, Ra ,mcm		Type of processing
	Before processing	After processing	
D126-D54	—	—	Rough finishing
M63-M40	0,4 — 0,2	0,195 — 0,155	
M25-M16	0,16 — 0,1	0,12 — 0,075	Preprocessinga
M10-M4	0,08 — 0,05	0,06 — 0,038	Fine processing
M2,5-M1	0,04 — 0,025	0,03 — 0,02	Prepolishing
1/0,5 — 0,1/0	—	—	полирование



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