



VID

GLASSPARTNER

The Synthetic Diamond Technology

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**■ DIAMOND WHEELS
FOR GRINDING OF CUTTERS**





2015

Diamond grinding wheels

Resin bonded synthetic diamond grinding surface

About the synthetic diamond

The synthetic diamond originates through the action of high pressure and temperature on the natural graphite. Through various levels of pressure and temperature different degrees of hardness of the synthetic diamond grain are achieved. The requested grit size is then achieved through crushing, grinding, sifting and rinsing.

Diamond is the hardest known material and in the hardness scale it is assigned number 10. Besides its hardness, this material is also exceptional for its good thermal conductivity and resistance to temperatures up to 700C (1292F) and for its resistance to all kinds of chemical effect at standard temperatures.

Table of grain size of the synthetic diamond powder

FEPA ISO 6106	Dimension µm	US Standard ASTM E 11	ČSN 224015
D 151	150/125	100/120	160/125
D 126	125/106	120/140	125/100
D 107	106/90	140/170	100/80
D 91	90/75	170/200	
D 76	75/63	200/230	80/63
D 64	63/53	230/270	63/50
D 54	53/45	270/325	50/40
D 46	45/38	325/400	

Contact for the receipt of orders

Address: VID GlassPartner s.r.o., U nádraží 1297, 511 01 Turnov, Czech Republic

E-mail: info@vid-glasspartner.com

Charge-free advisory service

Besides suggesting the proper wheel shape and its specific grinding qualities (free of charge), we offer an advisory service as well as a thorough counseling in areas of individual technologic steps and complex technologies according to the needs and demands of our customers.

Designing of such technologic steps will be charged after mutual consent and consultation with the sales department.

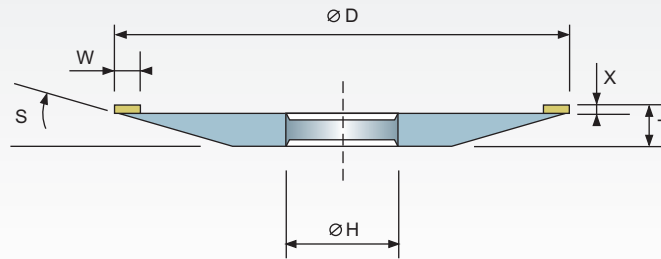
The charge-free advisory service email account: info@vid-glasspartner.com

2. Diamond wheels for grinding of cutters



2.1 Diamond wheels for grinding of the cutting face of the cutter knives

Resin bonded synthetic diamond grinding surface



4A2 (FEPA)

Catalogue No.	D mm	W mm	X mm	H mm	T mm	S	Grain	Bond	Concentration
	125	4	2	20/32	9	15°	D46 - D126	DIA505M-D DIA504M-W	C75 C50
	125	4	3	20/32	10	15°			
	125	4	4	20/32	11	15°			
	125	5	2	20/32	9	15°			
	125	5	3	20/32	10	15°			
	125	5	4	20/32	11	15°			
	150	4	2	20/32	11	15°			
	150	4	3	20/32	12	15°			
	150	4	4	20/32	13	15°			
	150	5	2	20/32	11	15°			
	150	5	3	20/32	12	15°			
	150	5	4	20/32	13	15°			
	200	4	1,5	20/32	15	15°			
	200	4	3	20/32	15	15°			

With the bond type DIA505M-D, designed for dry grinding, we recommend to use the concentration C75.

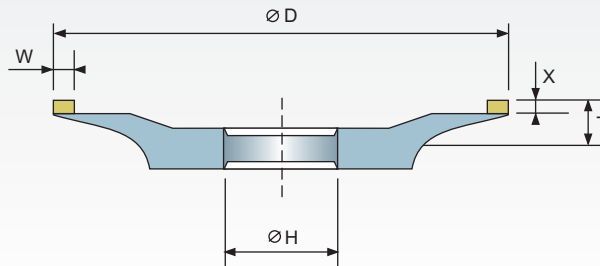
With the bond type DIA504M-W, designed for wet grinding, we recommend to use the concentration C50.

2. Diamond wheels for grinding of cutters



2.1 Diamond wheels for grinding of the cutting face of the cutter knives

Resin bonded synthetic diamond grinding surface



13A2 (FEPA)

Catalogue No.	D mm	W mm	X mm	H mm	T mm	S	Grain	Bond	Concentration
	125	5	2	20	23	-	D45 - D126	DIA505M-D DIA504M-W	C75 C50
	125	5	4	20	23	-			
	150	5	2	20	23	-			
	150	5	4	20	23	-			

A larger width of grinding (e.g. 25mm and more) is characteristic for grinding of the cutting faces of the cutters on universal lathes. This brings a considerable reduction to the grinding regimes (e.g. grinding depth = t), as opposed to grinding of narrow surfaces (e.g. the ridge of the cutter, see 2.3). For this operation the bond types DIA505H-D(C) for dry grinding and the bond type DIA504M-W(A) for wet grinding using emulsion as the coolant are recommended.

Concentration C100 should be used for dry grinding.

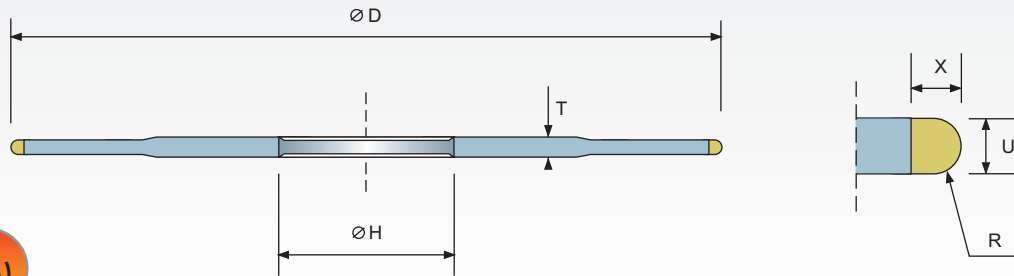
Concentration C50 should be used for wet grinding.

Bond	Coolant
DIA505H-D(C)	x
DIA504M-W(A)	emulsion

2. Diamond wheels for grinding of cutters



2.2 Diamond wheels for profile grinding of the back side of the cutter knives Resin bonded synthetic diamond grinding surface



14F1R (FEPA)

Catalogue No.	D mm	X mm	U mm	H mm	T mm	R	Grain	Bond	Concentration
	200	6	2	20-60	10	R1	D64, D91, D151	DIA600H-W	C100
	200	6	4	20-60	10	R2			
	200	6	6	20-60	10	R3			

For wet profile grinding of the ridge of the cutter the bond type **DIA600H-W(A)** using emulsion as the coolant is recommended, for example at production of the saw blade with the grinding depth of $t=0.8\text{mm}$ and the grit D151, or at smooth grinding with the grinding depth of $t=0.05\text{mm}$ and the grit D64.

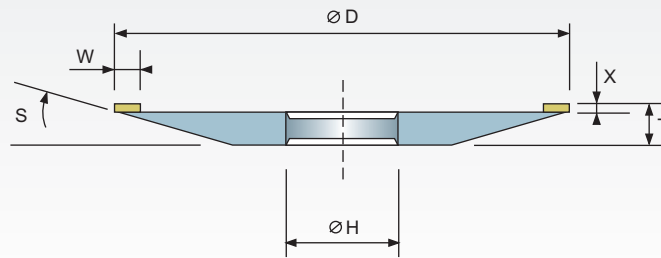
Bond	Coolant
DIA600H-W(A)	emulsion



2. Diamond wheels for grinding of cutters



2.3 Diamond wheels for grinding of the back side of the cutter knives Resin bonded synthetic diamond grinding surface



4A2 (FEPA)

Catalogue No.	D mm	W mm	X mm	H mm	T mm	S	Grain	Bond	Concentration
	125	4	2	20/32	9	15°	D46 - D126	DIA600H-D DIA504M-D DIA650H-W DIA504H-W	C75
	125	4	3	20/32	10	15°			
	125	4	4	20/32	11	15°			
	125	5	2	20/32	9	15°			
	125	5	3	20/32	10	15°			
	125	5	4	20/32	11	15°			
	150	4	2	20/32	11	15°			
	150	4	3	20/32	12	15°			
	150	4	4	20/32	13	15°			
	150	5	2	20/32	11	15°			
	150	5	3	20/32	12	15°			
	150	5	4	20/32	13	15°			
	200	4	1,5	20/32	15	15°			
	200	4	3	20/32	15	15°			

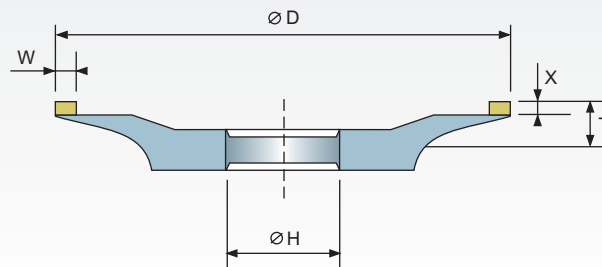


2. Diamond wheels for grinding of cutters



2.3 Diamond wheels for grinding of the back side of the cutter knives

Resin bonded synthetic diamond grinding surface



13A2 (FEPA)

Catalogue No.	D mm	W mm	X mm	H mm	T mm	S	Grain	Bond	Concentration
	125	5	2	20/32	23	-	D46 - D126	DIA600H-D DIA504M-D DIA650H-W DIA504H-W	C75
	125	5	4	20/32	23	-			
	150	5	2	20/32	23	-			
	150	5	4	20/32	23	-			

For grinding of the ridge of the cutter on universal lathes, a narrow width of grinding is characteristic. This allows for enhancing of the grinding regimes (e.g. grinding depth = t), as opposed to grinding of the cutting face of the cutter (see 2.1.).

For the given operation the following types of bond are recommended: **DIA600H-D(B)** and **DIA504M-D(B)** for dry grinding, and **DIA600H-W(A)** and **DIA504H-W(A)** for wet grinding using emulsion as the coolant.

For dry grinding we recommend the bond type **DIA600H-D(B)** for grinding of narrow surfaces (e.g. b=4mm) and the bond type **DIA504M-D(B)** for grinding of larger surfaces (e.g. b=8mm).

For wet grinding with more intensive regimes (e.g. for deep grinding) we recommend the bond type **DIA600H-W(A)** using emulsion as the coolant, while **DIA504H-W(A)** should be used with less intensive regimes.

Bond	Coolant
DIA600H-D(B)	x
DIA504M-D(B)	x
DIA600H-W(A)	x
DIA504H-W(A)	x