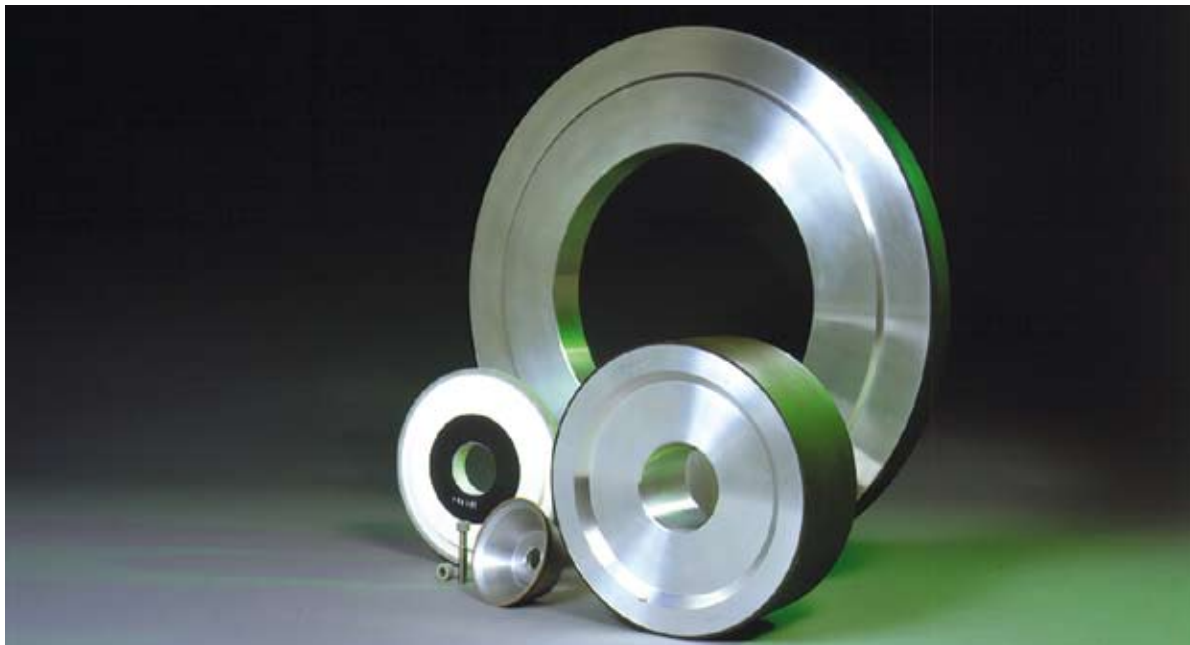


TECHNODIAMANT

Grinding wheels



Diamond grinding wheels

with resin binder,
metal binder,
ceramic binder.

for grinding:

- tungsten carbides
- flame-sprayed wear resistant alloys
- tungsten carbide/steel combinations
- glass
- ferrites

CBN grinding wheels

with resin binder,
metal binder,
ceramic binder.

for grinding:

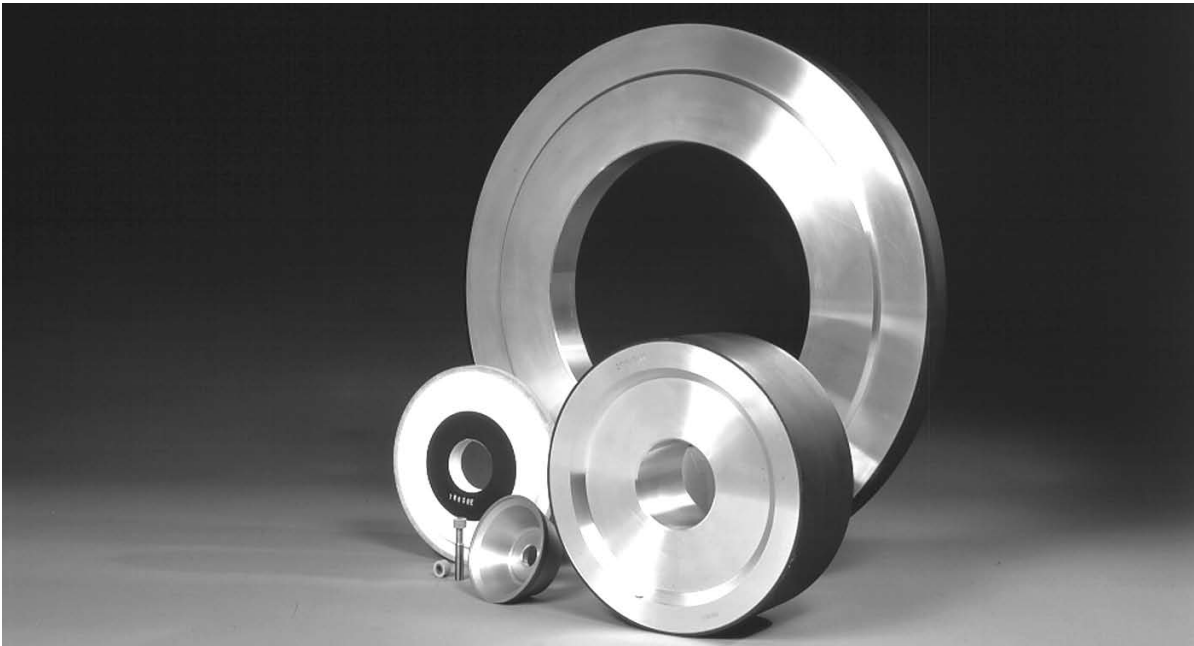
- high speed steels
- hardened high speed steels
- hardened 12% chromium steel
- flame-sprayed wear resistant alloys

Enclosed you will find a sheet for each type of wheel.
The dimensions are not included in the tables because this catalogue offers you the facility of noting down the specifications of all the wheels you use.
We hope that the catalogue will thus become a useful reference document, specific to your requirements.

TECHNODIAMANT

Technodiamant Almere B.V.
Markerkant 13-11, 1314 AL Almere
PO Box 1204, 1300 BE Almere
The Netherlands
Tel: +31(0)36-5343044
Fax: +31(0)36-5342636
E-mail: info@technodiamant.nl
Internet: www.technodiamant.nl

For U.S.A., Canada and Mexico:
Technodiamant U.S.A. Inc.
200 Valley Road, Suite 107
Mt. Arlington, NJ 07856
Tel: +1-973-770 7220
Fax +1-973-770 7225
E-mail: info@technodiamant.com
Internet: www.technodiamant.com



Contents

	Page
Concentrations for diamond and CBN (incl. table)	3
The effect of concentration	4
Cutting depth for diamond and CBN grinding wheels	5
Permissible cutting depth (incl. table)	5
Comparison table for grit systems	6
Suggestions for the use of diamond wheels for grinding carbide	7
Explanation of wheel symbols	8
Explanation of letters in specifications	8
Wheel types	9 - 26

Concentrations for diamond and CBN

Concentration	Percentage volume	Carats per cm ³	CBN incl. 60 per cent by weight nickel coating
25	6.25	1.1	B - 62.5
40	10	1.76	B - 100
50	12.5	2.2	B - 125
75	18.75	3.3	B - 188
100	25	4.4	B - 250
150	37.5	6.6	B - 375
175	43.75	7.7	B - 420

We use the same indication of concentration for both diamond and CBN, which corresponds to the internationally accepted standard for:

$$\text{concentration } 100 = 4.4 \text{ crt/cm}^3 \text{ (1 Carat} = 0.2 \text{ g)}$$

This is used to express the weight of DIAMOND or CBN per cm³. Because there are also indications of concentration used for resinbond CBN grinding wheels which are based on the gross weight of nickel coated CBN grains (60% of the gross grain weight consisting of nickel), the last column of the table above also shows these concentrations, preceded by the letter B.

The effect of concentration

Concentrations:

The content of diamond or CBN in the grinding rim is heavily dependent upon the application. Generally, where rapid stockremoval of tungsten carbide or hardened steel is intended, a concentration of 75 to 125 is selected. When a good surface finish is demanded, lower concentrations in combination with finer diamond or CBN powder are required.

Concentrations of up to 150 are used for profile grinding wheels and cylindrical wheels which have a small contact area.

Needless to say that Technodiamant guarantees the specified concentrations.

Grit size:

Diamond and CBN grit are available in many sizes and types. The gritsize is dependent upon the desired surface finish. In addition, the gritsize also has an important effect on the grinding behaviour of the wheel.

As far as the gritsize is concerned, Technodiamant complies with the FEPA standard. You will find a comparison table for the various grit systems on page 6 in this catalogue.

Binders:

Technodiamant has a large number of in house developed binders available. The type of binder is often selected in combination with the type of grit and concentration. Binders are divided into metal, resin and ceramic binders. Solid metal binders are often applied to grind glass and ceramics, whereas resin binders, porous metal binders and ceramic binders are usually used for grinding tungsten carbides and hardened steel.

The following more or less "universal" binder codes are often used by Technodiamant:

XX	Wet grinding of carbide
X2	Dry grinding of carbide
C2	Dry and wet grinding of carbide and hardened steel.
T2	Dry and wet grinding of hardened steel with cylindrical wheels.
T3	Dry and wet grinding of hardened steel with cup wheels.
GS30 (GR)	Wet grinding of flat glass.
S149	Wet grinding of optical glass.

Ceramic binder:

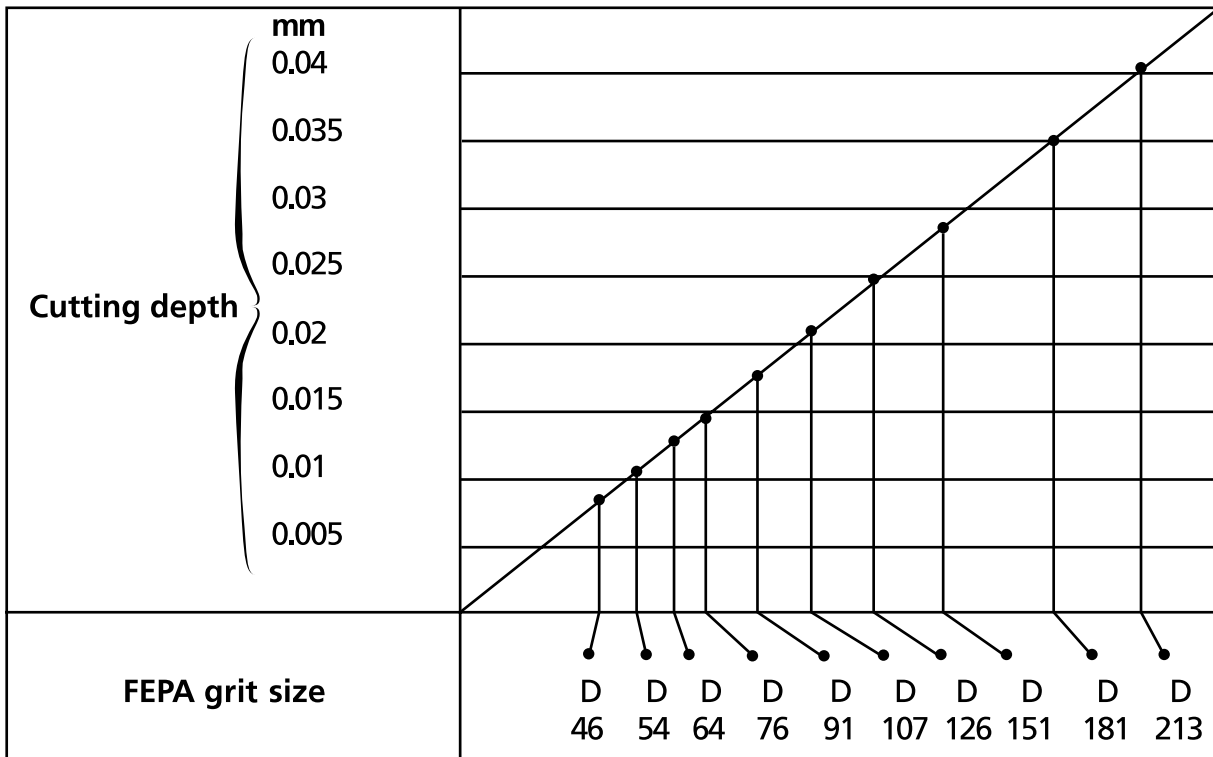
V-number Wet grinding of tungsten carbide, HSS, etc.

Cutting depth for diamond and CBN grinding wheels

The depth of cutting for oscillating grinding with forced feeding is associated with the grit size of the wheel and the fineness required for the surface. The depth of cut must always be less than the protrusion of the grit from the binder. For a sharp grinding wheel the protrusion will be 1/4 to 1/5 of the grit size at the most. However, the generation of heat must be held within certain limits as well. When dry grinding with a large contact area between the wheel and the work piece, the depth of cut

must be much less than when grinding with a small contact area. For creep feed grinding the grinding depth setting is not the same as the depth of cut, since the latter is limited by the speed of the table. Special metal and resin wear resistant binders have been developed for creep feed grinding. Because the contact area between the wheel and the work piece is usually large for this grinding method, proper cooling is of extreme importance.

Permissible cutting depth

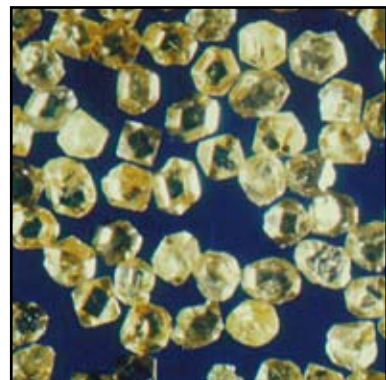
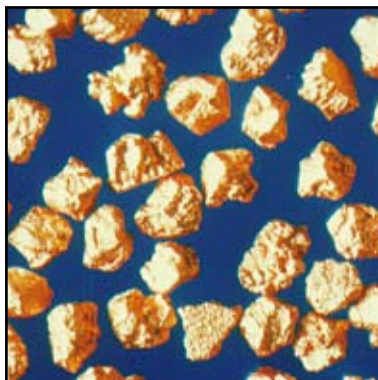
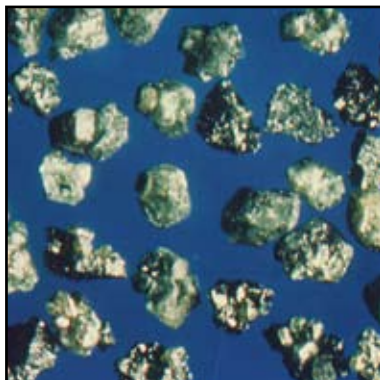


See comparison table for grit systems on page 6

TECHNODIAMANT

Grinding wheels

Comparison table for grit systems					
µm	DIN 848	FEPA-STANDARD		US-MESH	µm
1250	D 1100				1190
1000	D 900	D 1182	D 1181	16/18	1000
800	D 700		D 1001	18/20	850
630	D 550	D 852	D 851	20/25	710
500	D 450	D 602	D 711	25/30	600
400	D 350	D 427	D 601	30/35	500
315	D 280		D 501	35/40	425
250	D 220	D 252	D 426	40/45	355
200	D 180		D 356	45/50	300
160	D 140		D 301	50/60	250
125	D 110		D 251	60/80	212
100	D 90		D 213	80/100	180
80	D 65		D 181	100/120	150
63	D 55		D 151	120/140	125
50	D 45		D 126	140/170	106
40	D 35		D 107	170/200	90
32	D 25		D 91	200/230	75
25			D 76	230/270	63
			D 64	270/325	53
			D 54	325/400	45
			D 46		38
			D 35		32
			D 30	500/600	25
			D 25		20
			D 15		10



* Wheels can also be supplied in grit sizes: D3 - D5 - D7 - D10

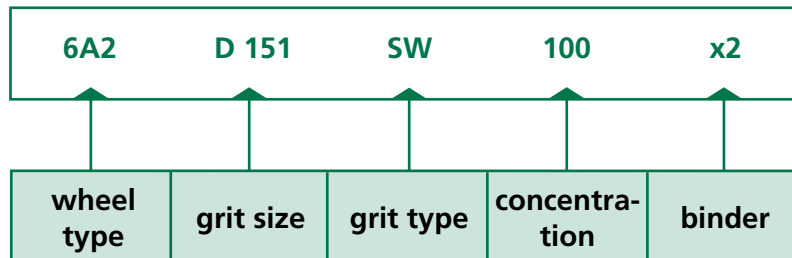
Suggestions for the use of diamond wheels for grinding carbide

Type of machining	FEPA wheel	Pre-grinding			Fine grinding			Lapping		
			FEPA grit	concentration		FEPA grit	concentration		FEPA grit	concentration
hand grinding	6A2 11A2	M	D 151 D 181 D 213	100	M	D 76 D 91 D 107	50	M K	D 46 D 54 D 30	40
cutters, reamers, etc. on universal tooling grinding machines	11A2 12A2 11V9	M K	D 151 D 181 D 213 D 107 D 126	100	M K	D 76 D 91 D 46 D 54 D 64	75 75	K	D 30 D 46 D 54	40-50
grinding profiles on profile grinding machines	1EE1 1E1Q	M	D 107 D 126 D 151 D 181 D 213	100-125	K	D 46 D 54 D 64 D 76 D 91	75-100	K	D 30 D 46 D 54	75
cutters planers, saws for wood-working	4A2 6A2 11A2 11V9 12A2 15A2	K	D 107 D 126 D 151 D 181 D 213	100-125	K	D 46 D 54 D 64 D 76 D 91	75-100	K	D 10 D 15 D 30	50
flat grinding, cylindrical grinding	1A1 14A1	K	D 107 D 126 D 151 D 181 D 213	100	K	D 46 D 54 D 64 D 76 D 91	75	K	D 7 D 10 D 15 D 30	25-50
internal grinding	1A1 1A1W	M	D 151 D 181 D 213	150	M K	D 107 D 126	150 100	K	D 30 D 46 D 54 D 64	75-100

M = metal binder
K = resin binder

The table on page 6 shows a comparison of FEPA grits against US mesh and DIN 848.

Explanation of wheel symbols



The FEPA standard shapes for grinding wheels are shown on the following pages.

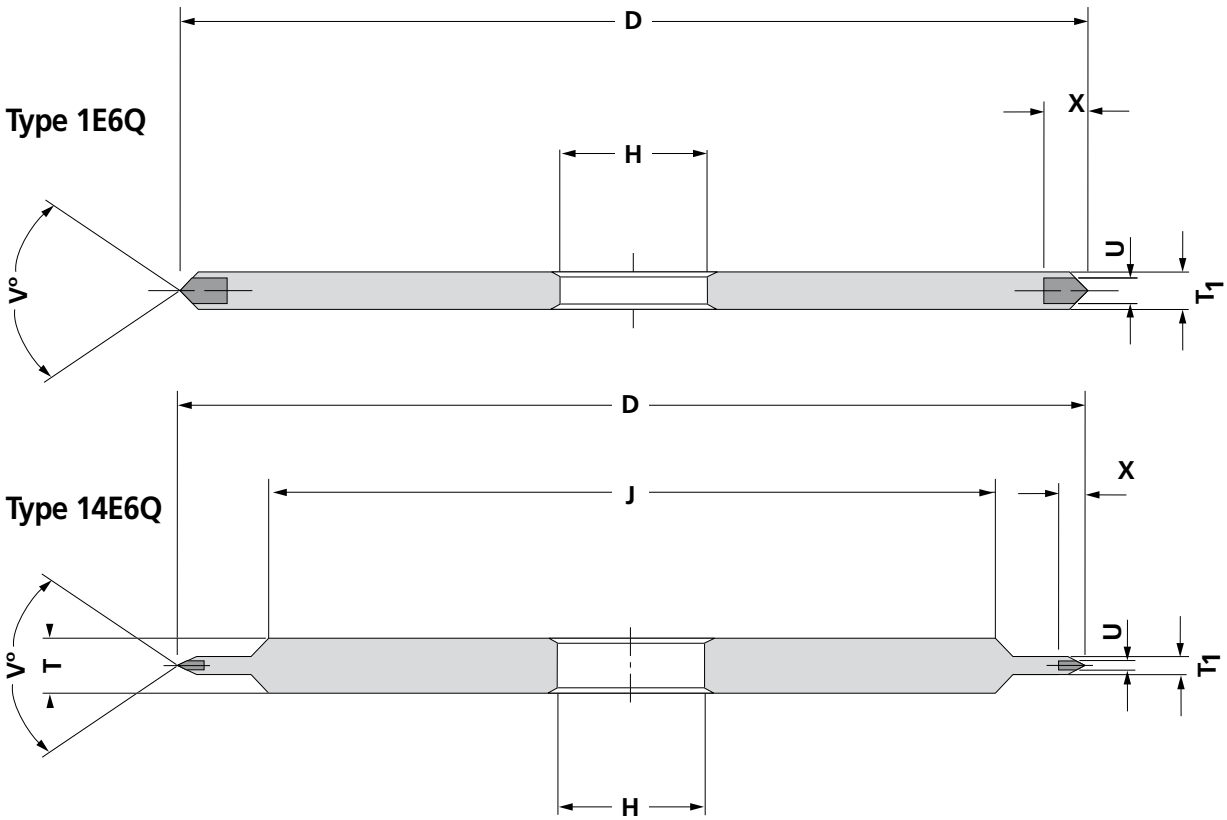
We are also able to supply shapes and sizes which differ from the FEPA standard.

Explanation of letters in specifications

D = diameter	S = chamfer external angle
E = thickness at shaft hole	T = total thickness
H = shaft hole diameter	T1 = reduced thickness
J = mounting surface diameter	U = diamond coating thickness (if less than T or T1)
K = clamping surface diameter	V = surface angle
L = total stick length	W = grinding rim width
L1 = shank length	X = grinding rim thickness
L2 = diamond coating length	Y = shank diameter
R = radius	

TECHNODIAMANT

Type
1E6Q/14E6Q



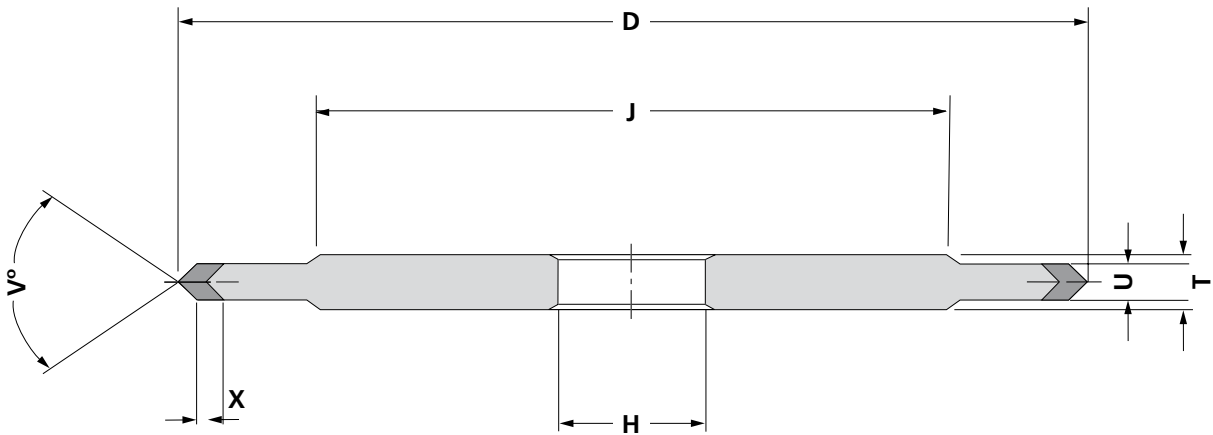
D	U	X	T1	14E6Q			V°	Korrel Grit Körnung Grain	Concentratie Concentration Konzentration Concentration	Binding Binder Bindemittel Liant	Artikelnummer Reference code Ident nummer Numéro de identité
				H	T	J					
							<div style="text-align: center;">20</div> <div style="text-align: center;">↓</div> <div style="text-align: center;">160</div>				

SLIPPSCHIJVEN / GRINDING WHEELS / SCHLEIFSCHEIBEN / MEULES

TECHNODIAMANT

Type 14EE1

SLIPPSCHIJVEN / GRINDING WHEELS / SCHLEIFSCHEIBEN / MEULES



Type 14EE1

D	U	X	H	T	J	V°	Korrel Grit Körnung Grain	Concentratie Concentration Konzentration Concentration	Binding Binder Bindemittel Liant	Artikelnummer Reference code Ident nummer Numéro de identité	

