



**NORTON**

SAINT-GOBAIN®

# WINTER



GRINDING TOOLS FOR  
MACHINING CIRCULAR  
SAWS AND BAND SAWS



SAINT-GOBAIN

# Grinding tools for machining circular saws and band saws



Various types of saws (e.g. circular saws and band saws) are used in the woodworking and plastics processing industries.

Grinding technology is used to create the tooth geometry of these saws. A basic distinction can be made between one-piece saws and composite saws.

For example, HSS band saws and HSS circular saw blades are one-piece saws. The tooth geometry required for these saws is ground under CNC-control using radial grinding wheels (see our 'profile S' programme). Saws of this type are sometimes also manufactured as segmented saws.

Composite saws, on the other hand, have carbide, cermet or diamond tips brazed onto a metal core. The shape of the teeth (face, top and flank) is then ground sequentially (see illustration on next page).



## Information

Further information on applications and products can be found at [www.winter-superabrasives.com](http://www.winter-superabrasives.com)

### 60 Grinding tools for machining carbide-tipped circular saw blades

61 Grinding wheels for the tooth face

66 Grinding wheels for top grinding

72 Grinding wheels for flank grinding

75 Grinding pins for hollow ground saw blades

76 Grinding wheels for chip breaker flutes

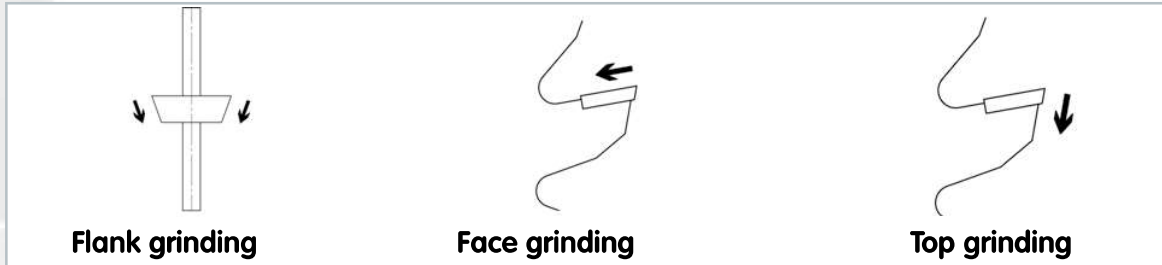
### 77 Grinding wheels for Stellite circular saw blades

### 78 Grinding wheels for HSS circular saw blades

### 80 Grinding wheels for machining band saws

# Grinding tools for machining carbide-tipped circular saw blades

The manufacture of tungsten carbide-tipped circular saw blades consists of a number of steps that are performed sequentially on different machines. The first step is flank grinding, followed by the face and top grinding. Next the chip breaker flutes and hollow-tooth profiles are produced as required.



These steps can be carried out on a number of different machines, each needing its own grinding wheel geometry. With the unusually large range of WINTER grinding wheels available we offer the optimum tool for all machines and applications. The following table is colour coded to help you quickly and easily find the wheel you need for your saw grinding machine.

Machine	Machine type	Coding
Vollmer Biberach	CB, CC, CE, CEN, CEP, CHC, CHC, CHM, CHP, CHT, CNHB, CX and others	1
	CHD	2
	CC, CEF, CFL, CHAFT, CHAFTE, CHHF, CHF and others	3
Vollmer Dornhan	Finimat 600	1
	Finimat 800, Finimax	2
	Finimat Beta, Gamma	3
	Uniläpp	4
	Uniläpp F2	5
	Duo TS	6
Woodtronic	NC2, NC3, C4, C5	1
	CNC5	2
	CNC6F	3
Akemat	Akemat B / B10	1
	Akemat U / U10	2
	Akemat F / F10	3
Widma	Unimat	1
	HKS700/HIII	2
	HKS400, FS1000	3

For universal grinding machines and for Widma machines with bore H20 (BS700, HKS 500, HKS700, HKS700/H, HKS700/HI, HKS700/HII and others), please see our product programme in the chapter 'Milling cutters'.

WINTER  
FactsShank  
tools

Saws

Inserts

PCD  
PCBN

Knives

Milling  
cuttersMould  
and dieService  
Glossary  
Contact

# Grinding wheels for the tooth face

Depending on the tooth pitch, differently shaped grinding wheels are needed to grind the tooth face. The greater the number of teeth around the circumference, the narrower the space between them and the thinner the grinding wheel has to be. Even the narrowest tooth gaps can be machined with our Tiger grinding wheels. For reasons of stability, conventional tooth gaps are mainly ground using 4A2, 12V2 or 222 grinding wheels.



### Selection assistant for WINTER bond systems

Diamond grinding wheels	Wear resistance	Recommendations for use
Tiger / Tiger II	↑	Wear-resistant resin bond for tooth-face grinding
K+920 / K+921		Wear-resistant resin bond for tooth-face grinding
K+4821		Free-grinding CNC bond, e.g. for Cermet
K+888TY		Universal resin bond for wet grinding
K+888RY		Universal resin bond for wet grinding

### Standard dimensions for grinding the tooth face

Workpiece	Material	Machine	Cup grinding wheels		Coolant
			Shape	Bond	
Circular saw blade tooth face grinding	Tungsten carbide Cermet	All established saw grinding machines	4A2, 12V2, 12V9, 222 Ø 100...200 W 2.3...8 X 2...5.5	Various bonds (see above)	Emulsion Oil

Other dimensions on request



The WINTER Tiger grinding wheel is the solution for economically grinding the cutting face on carbide-tipped saw blades.

The innovative geometry of the Tiger grinding wheel enables the tooth face to be ground without difficulty even where the chip spaces are narrow. The new design of the Tiger grinding wheel enables markedly narrower pitches to be machined.

The approved WINTER K+bonds also guarantee long wheel life. Consequently, Tiger grinding wheels make every face grinding process not only faster, but economically more attractive.



WINTER Facts

Shank tools

Saws

Inserts

PCD PCBN

Knives

Milling cutters

Mould and die

Service Glossary Contact

All dimensions in mm

Please feel free to contact our sales engineers at any time. Contact details can be found on the last page.



The Tiger II grinding wheel from WINTER is the improved version of the proven Tiger face grinding wheel. It is designed with a stable aluminium body that reduces grinding pressure even further and in addition offers a high degree of fracture resistance. With an angle of 25°, and on the new Tiger II 20° an even narrower angle of just 20°, narrow pitches are no problem for the Tiger II grinding wheel. The Tiger II grinding wheel is the perfect combination of innovative wheel geometry and WINTER's powerful K+ bonds.



**Recommended use**

**Grinding tool:** Tiger or Tiger II  
**Machine:** Vollmer CHD  
**Coolant:** Oil  
**Workpiece:** Carbide-tipped circular saw

**Grinding parameters**

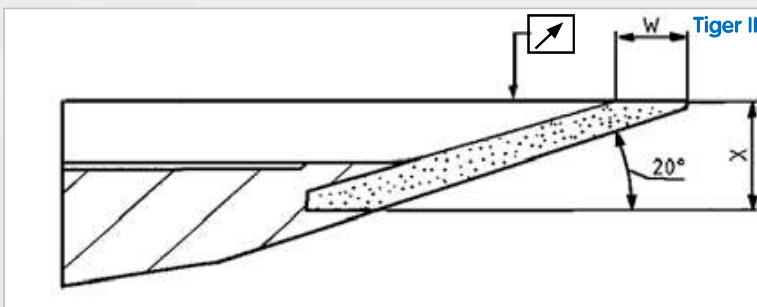
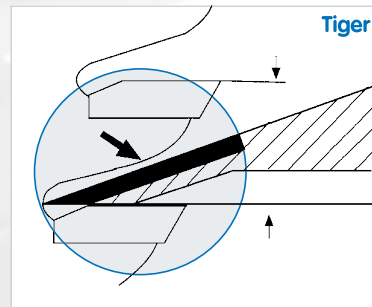
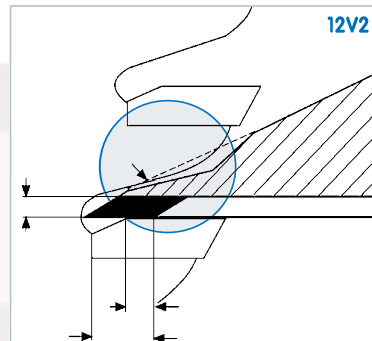
**Feed:**  $v_f = 3 \dots 10 \text{ mm/s}$   
**Infeed:**  $a_e = 0.05 \dots 0.2 \text{ mm}$   
**Cutting speed:**  $v_c = 45 \text{ m/s}$   
**Specific material removal rate:**  $Q'_w = 0.15 \dots 2 \text{ mm}^3/\text{mm} \cdot \text{s}$

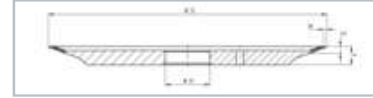
**Benefit:**

For narrow chip spaces  
 High fracture resistance  
 Short grinding times  
 Long lifetime

**Advantages of the Tiger and Tiger II face grinding wheels**

- Versions available for all automatic saw sharpening machines
- Particularly suitable for very narrow chip spaces
- Produces a very flat cutting face with no distortion
- No aluminium welding
- Self-dressing body (Tiger, Tiger II has no support of layer)
- Shorter grinding times, reduced grinding path (see diagram)
- Very long wheel life

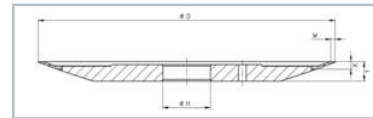




## 12V9 (Tiger) Stock programme

Diamond grinding wheels											
Shape	D	W	X	H	Grit size	Bond	Concentration	Body	Order number	Machine	Comment
3K12V9	100	2,3	4	25		Tiger		D	66260387961	1 2 1	S = 20°, T = 10
3K12V9	125	2,3	4	25		Tiger		D	66260135761	2 1 2	S = 20°, T = 10
1K12V9	125	2,3	4	32		Tiger		D	66260383182	1	S = 20°, T = 13
1K12V9	150	2,3	4	32		Tiger		D	66260385221	1	S = 20°, T = 13
1K12V9	155	2,3	4	32		Tiger		D	66260378555 <sup>2)</sup>	1 1	S = 20°, T = 13
						Tiger G		D	66260354959	1 1	
1K12V9	200	2,3	4	32		Tiger		D	66260383180	2 2 2	S = 20°, T = 13

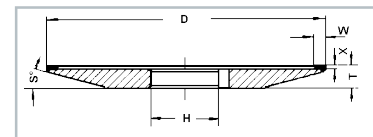
May differ slightly from illustration depending on the machine's adapter flange



## 12V2 (Tiger II) Stock programme

Diamond grinding wheels											
Shape	D	W	X	H	Grit size	Bond	Concentration	Body	Order number	Machine	Comment
1K12V2	125	2.5	5.5	32		Tiger II		A	66260375783	1	S = 25°, T = 13
1K12V2	125	2.9	5.5	32		Tiger II 20°		A	60157695569	1	S = 20°, T = 13
1K12V2	155	2.5	5.5	32		Tiger II		A	69014168642	1 1	S = 25°, T = 13
1K12V2	160	2.5	5.5	32		Tiger II		A	60157672258 <sup>1)</sup>	1	S = 25°, T = 13
1K12V2	200	2.5	5.5	32		Tiger II		A	66260382131	2 2 2	S = 25°, T = 13
1K12V2	200	2.9	5.5	32		Tiger II 20°		A	60157680758	2 2 2	S = 20°, T = 13

May differ slightly from illustration depending on the machine's adapter flange



## 4A2 Stock programme

Diamond grinding wheels											
Shape	D	W	X	H	Grit size	Bond	Concentration	Body	Order number	Machine	Comment
1K4A2	100	4	1	25	D64	K+888RY	C100	H	66260137093 <sup>2)</sup>	1 2 1	S = 15°, T = 8
1K4A2	100	4	3	25	D46	K+888RY	C75	H	66260137095	1 2 1	S = 25°, T = 12

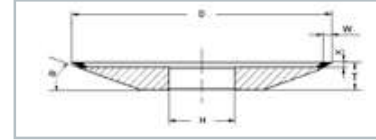
<sup>1)</sup> Delivery time 5 - 6 weeks

<sup>2)</sup> Available while stocks last

All dimensions in mm

Please feel free to contact our sales engineers at any time. Contact details can be found on the last page.

## 12V2 Stock programme



Diamond grinding wheels											
Shape	D	W	X	H	Grit size	Bond	Concentration	Body	Order number	Machine	Comment
2K12V2	100	4	2	25	D46	K+921	C125	A	66260128232	1 2 1	S = 20°, T = 10 V = 30°
					D76	K+4821	C125	A	66260333648	1 2 1	
2K12V2	125	4	2	25	D46	K+921	C125	A	66260127431 <sup>2)</sup>	2 1 2	S = 25°, T = 11 V = 30°
					D76	K+4821	C125	A	66260112238 <sup>1)</sup>	2 1 2	
5K12V2	125	4	2	32	D20A	K+730	C75	A	66260114168	1	S = 20°, T = 13 V = 30°
					D46	K+921	C125	A	66260115804	1	
					D46	K+4821	C125	A	66260134429	1	
					D76	K+888RY	C125	A	66260135735	1	
					D76	K+4821	C125	A	66260134487	1	
6K12V2	150	4	2	32	D46	K+921	C125	A	66260127225	1 1	S = 15°, T = 13 V = 30°
					D46	K+888RY	C125	A	66260113968	1 1	
					D64	K+921	C125	A	66260118587	1 1	
1K12V2	200	2	2	32	D46	K+921	C125	A	66260133948	2 2 2	S = 20°, T = 13 V = 30°
2K12V2	200	4	2	32	D25	K+921	C100	A	66260130483	2 2 2	S = 20°, T = 13 V = 30°
					D46	K+921	C125	A	66260117017	2 2 2	
					D76	K+888RY	C125	A	66260115113	2 2 2	

WINTER  
FactsShank  
tools

Saws

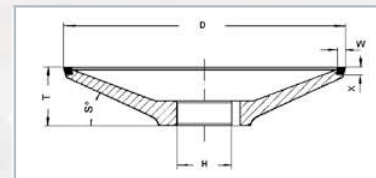
Inserts

PCD  
PCBN

Knives

Milling  
cuttersMould  
and dieService  
Glossary  
Contact

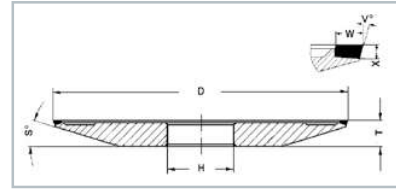
May differ slightly from illustration depending on the machine's adapter flange



## 222 Delivery programme

Diamond grinding wheels											
Shape	D	W	X	H	Grit size	Bond	Concentration	Body	Order number	Machine	Comment
1K222	125	3	3.3	25	D54	K+888RY	C75	A	60157642734 <sup>2)</sup>	4	S = 25°, T = 26 V = 15°

<sup>1)</sup> Delivery time 5 - 6 weeks<sup>2)</sup> Available while stocks last



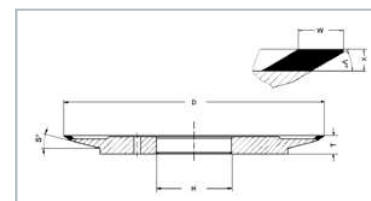
## 222 Stock programme

Diamond grinding wheels													
Shape	D	W	X	H	Grit size	Bond	Concentration	Body	Order number	Machine		Comment	
1K222	100	2	1.6	25	D76	K+888RY	C125	A	60157643361 <sup>2)</sup>	1	2	1	S = 15°, T = 8 V = 15°
1K222	100	3	3.3	25	D54	K+888RY	C75	A	60157642681 <sup>2)</sup>	1	2	1	S = 15°, T = 10 V = 15°
					D76	K+888RY	C75	A	66260137081	1	2	1	
2K222	100	3	1.8	25	D54	K+888RY	C75	A	60157642713	1	2	1	S = 15°, T = 8 V = 15°
					D64	K+888RY	C75	A	66260135818 <sup>2)</sup>	1	2	1	
1K222	125	2.5	1.2	32	D54	K+888RY	C75	A	60157642666	1			S = 15°, T = 11.5 V = 15°
					D76	K+888RY	C125	A	66260135745	1			
1K222	125	3	3.8	32	D54	K+888RY	C75	A	60157642674	1			S = 15°, T = 14 V = 15°
1K222	150	3	1.5	32	D64	K+920	C100	A	66260135724	1	1		S = 15°, T = 11.5 V = 15°
5K222	150	3	2	32	D91	K+888TY	C150	A	60157643360	1	1		S = 15°, T = 12 V = 15°
1K222	160	3	2	32	D64	K+921	C125	A	66260128437 <sup>2)</sup>	1			S = 15°, T = 12 V = 15°

May differ slightly from illustration depending on the machine's adapter flange

<sup>1)</sup> Delivery time 5 - 6 weeks

<sup>2)</sup> Available while stocks last



Diamond grinding wheels													
Shape	D	W	X	H	Grit size	Bond	Concentration	Body	Order number	Machine		Comment	
1K222	175	4	2	50.8	D76	K+888RY	C125	A	66260136435	3	5		S = 15°, T = 12 V = 30°

WINTER  
Facts

Shank  
tools

Saws

Inserts

PCD  
PCBN

Knives

Milling  
cutters

Mould  
and die

Service  
Glossary  
Contact

All dimensions in mm

Please feel free to contact our sales engineers at any time. Contact details can be found on the last page.

# Grinding wheels for top grinding

Top grinding describes the peripheral grinding process of circular saw blades. This has two purposes: it ensures that the circularity of the saw is optimized and it defines the wedge and clearance angles, both of which are crucial for the cutting performance of any circular saw.



## Selection assistant for WINTER bond systems

Diamond grinding wheels	Wear resistance	Recommendations for use
K+921	↑	More wear-resistant resin bond preferably wet grinding
K+1313RY		Resin bond for mixed grinding and wet grinding
K+1421R		Standard resin bond for CNC applications
K+4821		Free-grinding CNC bond, e.g. for Cermet
K+888RY		Universal resin bond for wet grinding
K+1066		Resin bond for top grinding (resharpening, copes with body contact)
K+434		Free-grinding resin bond (synthetic coolant)
K+777N		Free-grinding resin bond (production grinding, oil)
K+777J		Free-grinding resin bond (production grinding, oil)

### WINTER Facts

### Shank tools

### Saws

### Inserts

### PCD PCBN

### Knives

### Milling cutters

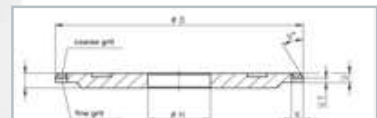
### Mould and die

### Service Glossary Contact

Workpiece	Material	Machine	Grinding wheel		Coolant
			Shape	Bond	
Circular saw blade tooth top grinding	Tungsten carbide Cermet	All established saw grinding machines	4B1, 14M1, 222,... Ø 100...200 W 3...6 resp. U 5...8 X 3...10	Various bonds (see above)	Emulsion Oil

Other dimensions on request

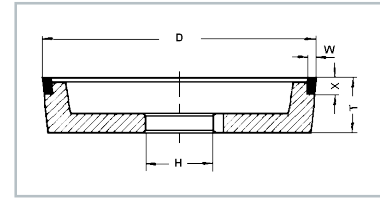
## 3M1 Double-layer stock programme



Diamond grinding wheels													
Shape	D	U	X	V°		H	Grit size	Bond	Concentration	Body	Order number	Machine	Comment
1K3M1	125	5	5	15	2B	32	D20B	K+1313RY	C100	A	60157643272 <sup>1)</sup>	2	T = 8 mm U <sub>fine</sub> = 2.5
							D126		C125				
1K3M1	127	5	6	15	2B	32	D54	K+1313RY	C75	A	60157643404	2	T = 8 mm U <sub>fine</sub> = 2.5
							D126		C100				

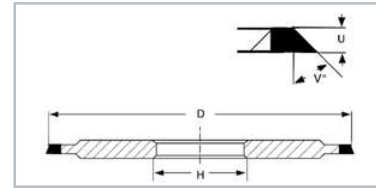
<sup>1)</sup> Available while stocks last

## 11V9 Stock programme



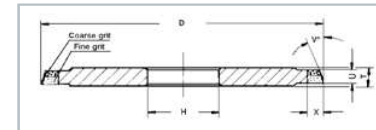
Diamond grinding wheels											
Shape	D	W	X	H	Grit size	Bond	Concentration	Body	Order number	Machine	Comment
1K11V9	100	3	6	25	D54	K+888RY	C100	A	60157643081 <sup>1)</sup>	1 2	S = 5°, T = 20

## 14B1 Stock programme



Diamond grinding wheels												
Shape	D	U	X	V°	H	Grit size	Bond	Concentration	Body	Order number	Machine	Comment
2K14B1	127	5	7	15	32	D54	K+921	C125	A	66260114938 <sup>1)</sup>	2	T = 8

## 14B1 Double-layer stock programme



Diamond grinding wheels													
Shape	D	U	X	V°	H	Grit size	Bond	Concentration	Body	Order number	Machine	Comment	
1K14B1	127	5	7	5	2B	32	D46	K+4821	C75	H	66260134416	2	T = 8 U <sub>fine</sub> = 2.5
							D107						
1K14B1	127	5	7	15	2B	32	D54	K+1313RY	C100	A	66260117412	2	T = 8 U <sub>fine</sub> = 2.5
							D126						
							D46	K+4821	C75	A	60157643587	2	T = 8 U <sub>fine</sub> = 2.5
D107	C100												

<sup>1)</sup> Available while stocks last

All dimensions in mm

Please feel free to contact our sales engineers at any time. Contact details can be found on the last page.

WINTER  
Facts

Shank  
tools

Saws

Inserts

PCD  
PCBN

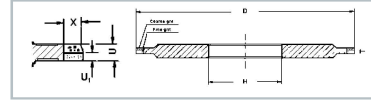
Knives

Milling  
cutters

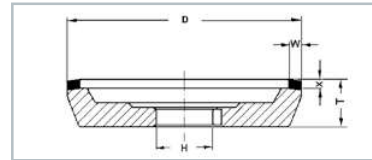
Mould  
and die

Service  
Glossary  
Contact

### 14M1 Double-layer stock programme

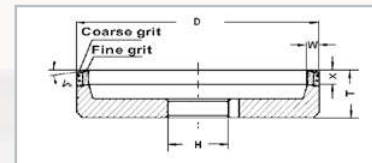


Diamond grinding wheels														
Shape	D	U	X	V°		H	Grit size	Bond	Concentration	Body	Order number	Machine	Comment	
1K14M1	150	5	8	8	2B	32	D46	K+921	C75	A	66260130887	1 2	U <sub>fine</sub> = 2.5	
							D107		C100					
							D46	K+1421R	C75	A		66260346277 <sup>1)</sup>	1 2	U <sub>fine</sub> = 2.5
							D107		C100					
1K14M1	200	5	8	8	2B	32	D20B	K+1066	C75	A	66260379464	2	U <sub>fine</sub> = 2.0	
							D91		C100					
1K14M1	200	5	8	8	2B	32	D46	K+921	C75	A	66260375347	2	U <sub>fine</sub> = 2.5	
							D107		C100					



### 222 Stock programme

Diamond grinding wheels													
Shape	D	W	X	V°		H	Grit size	Bond	Concentration	Body	Order number	Machine	Comment
5K222	100	5	4	4		25	D76	K+888RY	C75	H	60157643743	1 2 1 2	T = 20



### 222 Double-layer stock programme

Diamond grinding wheels													
Shape	D	W	X	V°		H	Grit size	Bond	Concentration	Body	Order number	Machine	Comment
6K222	100	5	6	8	2B	25	D46	K+888RY	C75	H	66260135827	1 2	T = 20 W <sub>fine</sub> = 2.5
							D126		C100				
1K222	100	5	10	8	2B	25	D46	K+434	C75	H	66260135783	1 2	T = 24 W <sub>fine</sub> = 2.5
							D126		C100				
2K222	100	5	10	8	2B	25	D46	K+888RY	C100	H	60157643263	1 2	T = 24 W <sub>fine</sub> = 2.0
							D126		C125				
9K222	125	5	6	8	2B	25	D46	K+888RY	C75	H	60157643868	4 1	T = 20 W <sub>fine</sub> = 2.5
							D126		C100				

WINTER Facts

Shank tools

Saws

Inserts

PCD PCBN

Knives

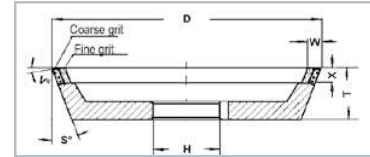
Milling cutters

Mould and die

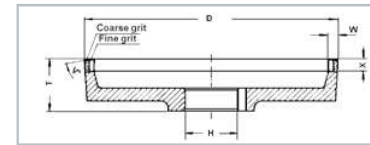
Service Glossary Contact

<sup>1)</sup> Delivery time 5 - 6 weeks

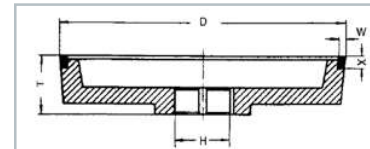
## 222 Double-layer stock programme



Diamond grinding wheels													
Shape	D	W	X	V°		H	Grit size	Bond	Concentration	Body	Order number	Machine	Comment
4K222	100	5	6	8	2B	25	D46	K+888RY	C75	H	60157642914	1 2	T = 20 W <sub>line</sub> = 2.5
							D126		C100				



Diamond grinding wheels													
Shape	D	W	X	V°		H	Grit size	Bond	Concentration	Body	Order number	Machine	Comment
4K222	125	5	6	8	2B	25	D46	K+888RY	C75	H	60157643430 <sup>1)</sup>	4	S = 20°, T = 26 W <sub>line</sub> = 2.5
							D126		C100				



## 222 Stock programme

Diamond grinding wheels													
Shape	D	W	X	V°		H	Grit size	Bond	Concentration	Body	Order number	Machine	Comment
1K222	125	3	5	5		25	D54	K+888RY	C100	A	60157642941	4	S = 5°, T = 26



Diamond grinding wheels													
Shape	D	W	X	V°		H	Grit size	Bond	Concentration	Body	Order number	Machine	Comment
1K222	125	3	6,5	5		32	D54	K+888RY	C100	A	60157642641	1 2	S = 35°, T = 18
							D126		K+888RY				

<sup>1)</sup> Available while stocks last

All dimensions in mm

Please feel free to contact our sales engineers at any time. Contact details can be found on the last page.

WINTER  
Facts

Shank  
tools

Saws

Inserts

PCD  
PCBN

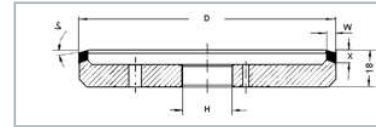
Knives

Milling  
cutters

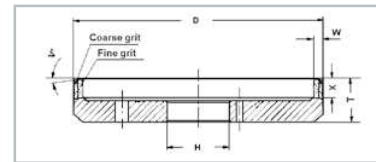
Mould  
and die

Service  
Glossary  
Contact

## 222 Stock programme



Diamond grinding wheels													
Shape	D	W	X	V°		H	Grit size	Bond	Concentration	Body	Order Number	Machine	Comment
27K222	125	5	6	8		32	D91	K+4821	C100	A	60157643295	1 2	T = 18
18K222	125	5	10	8		32	D64	K+777N	C75	H	60157643301	1 2	T = 22

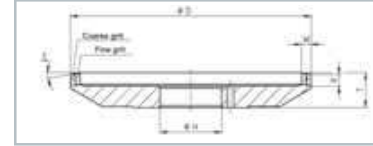


## 222 Double-layer stock programme

Diamond grinding wheels													
Shape	D	W	X	V°		H	Grit size	Bond	Concentration	Body	Order Number	Machine	Comment
3K222	125	5	6	8	2B	32	D46	K+434	C75	H	66260136498	1 2	T = 18 W <sub>fine</sub> = 2.5
							D126		C100				
							D46	K+888RY	C75	H	66260136530	1 2	
							D126		C100				
							D46		C100				
D126	C125												
5K222	125	5	10	8	2B	32	D15C	K+888RY	C50	H	66260115711	1 2	T = 22 W <sub>fine</sub> = 2.5
							D91		C75				
							D20B	K+1066	C100	H	66260127556	1 2	
							D126		C125				
							D25	K+888RY	C100	H	60157643637	1 2	
							D76		C125				
							D46	K+434	C75	H	60157642597	1 2	
							D126		C100				
							D46	K+921	C100	H	66260133442	1 2	
							D126		C125				
							D46	K+1066	C100	H	66260134470	1 2	
D126	C125												
D64	K+777J	C75	H	66260390259 <sup>1)</sup>	1 2								
D107		C100											

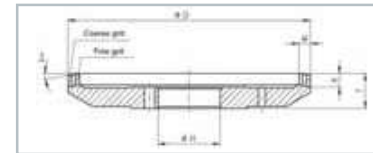
<sup>1)</sup> Available while stocks last

- WINTER Facts
- Shank tools
- Saws**
- Inserts
- PCD  
PCBN
- Knives
- Milling cutters
- Mould and die
- Service  
Glossary  
Contact



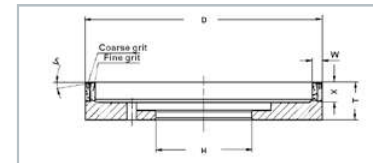
## 222 Double-layer stock programme

Diamond grinding wheels													
Shape	D	W	X	V°		H	Grit size	Bond	Concentration	Body	Order Number	Machine	Comment
52K222	125	5	6	5	2B	32	D20B	K+1313RY	C75	H	66260352075	1 2	T = 18 W <sub>fine</sub> = 2.5
							D126	K+1313RY-42	C75				



## 222 Triple-layer stock programme

Diamond grinding wheels													
Shape	D	W	X	V°		H	Grit size	Bond	Concentration	Body	Order Number	Machine	Comment
5K222	125	6	6	8	3B	32	D20B	K+1066	C75	H	66260132898	1 2	T = 18 W <sub>fine</sub> = 2 W <sub>coarse</sub> = 2
							D46		C100				
							D126		C100				



## 222 Double-layer stock programme

Diamond grinding wheels																
Shape	D	W	X	V°		H	Grit size	Bond	Concentration	Body	Order Number	Machine	Comment			
31K222	125	5	6	8	2B	50.8	D46	K+888RY	C75	H	66260135844	3 5	T = 20 W <sub>fine</sub> = 2.5			
							D126		C100							
8K222	125	5	10	8	2B	50.8	D20B	K+1313RY	C75	H	60157642975 <sup>1)</sup>	3 5	T = 20 W <sub>fine</sub> = 2.5			
							D126	K+1313RY-42	C100							
							D46	K+888RY	C75					H	66260135843	3 5
							D126		C100							

<sup>1)</sup> Available while stocks last

All dimensions in mm

Please feel free to contact our sales engineers at any time. Contact details can be found on the last page.

WINTER  
Facts

Shank  
tools

Saws

Inserts

PCD  
PCBN

Knives

Milling  
cutters

Mould  
and die

Service  
Glossary  
Contact



**Saint-Gobain Abrasives South-East Asia**

Email: [CS\\_SEA@saint-gobain.com](mailto:CS_SEA@saint-gobain.com)

Telephones:

**Thailand/Myanmar/Laos/Cambodia:**

+66 2 493 5400

**Indonesia:**

+62 21 8898 6262 / +62 31 8474 358

**Malaysia-Singapore:**

Toll free number For MY : 1800818821

Toll free number For SG : 8008526542

**Philippines:** +63 2 886 9176

**Vietnam:** +84 3776 2026 (Ext. 703)



[www.nortonabrasives.com/en-sea](http://www.nortonabrasives.com/en-sea)



Norton Abrasives SEA



Norton.SEA



Saint-gobain Aabrasives  
South-East Asia / Norton