



COOL-CUT

GRINDING TOOLS FOR THE KNIFE
AND CUTTING TOOLS INDUSTRY

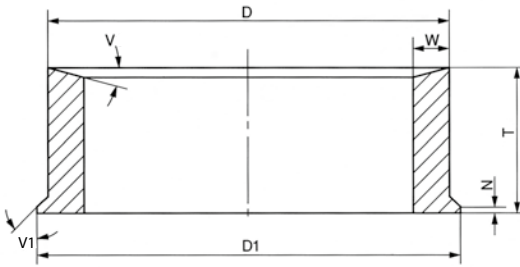


EXPLANATION OF SYMBOLS AND TERMINOLOGY

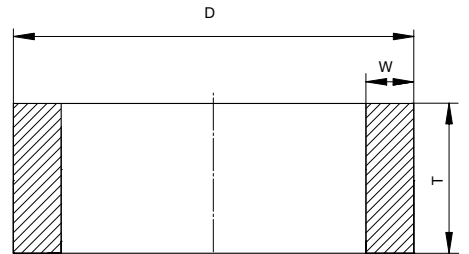
A	Number of nuts
D, D ₁	External diameter of grinding wheel
DB	Pitch circle diameter for thread bush
E	Base thickness of grinding wheel
GE	Thread diameter
H, H ₁	Bore diameter
J	Diameter of graduation on offset grinding wheels
N	Height of graduation
T, T ₁	Width of the grinding wheel
V, V ₁	Edge profile angle
W	Wall thickness
X	Incremental width of edge profiles
v _s	Peripheral speed

STANDARD SHAPES

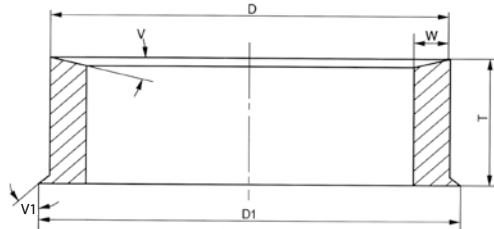
Shape 209



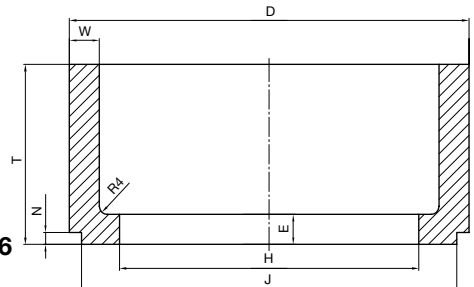
Shape 2



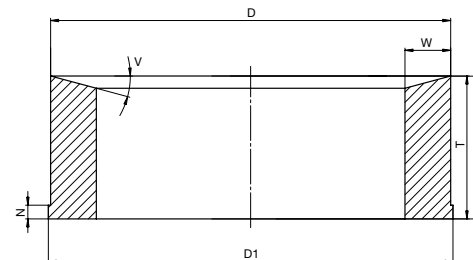
Shape 210



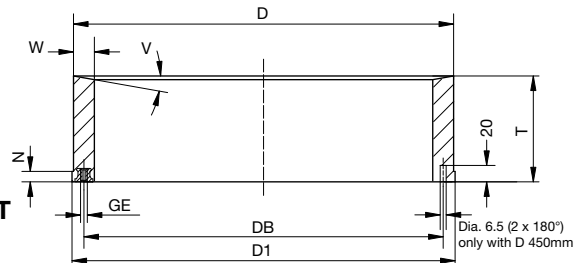
Shape 6



Shape 211



Shape 37ST



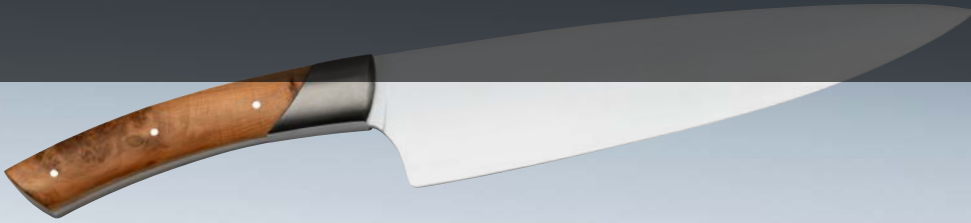


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Dual-layer grinding and polishing wheels	5
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COOL-CUT

GRINDING AND POLISHING TOOLS FOR THE KNIFE, SCISSOR AND CUTTING TOOL INDUSTRY

After a period of intense research, TYROLIT has developed COOL-CUT, a high-performance cool-grinding tool.

Advantages of the new system:

- One bond system for the machining of many different types of steel and a variety of knife styles – both forged and steel plate knives
- Higher productivity due to improved stock removal rates
- Cool grinding for high feed rates
- Self-sharpening, no dressing required
- Environmentally friendly

Standard tool colours

- Green – Bond BD740 – Soft
- Yellow – Bond BD760 – Medium
- Red – Bond BD780 – Hard

Special model colours

- Light grey – Bond BD745 – Medium-hard, open-pore
- Blue – Bond BD71P – Magnesite wheel replacement (soft)
- Grey – Bond BD61P – Magnesite wheel replacement (hard)
- Black – Bond BD63
- Pink – Bond BD22 – Scissor machining
- Claret – Bond BD33 – Knife hollow grinding
- White – Bond BD41 – Knife grinding

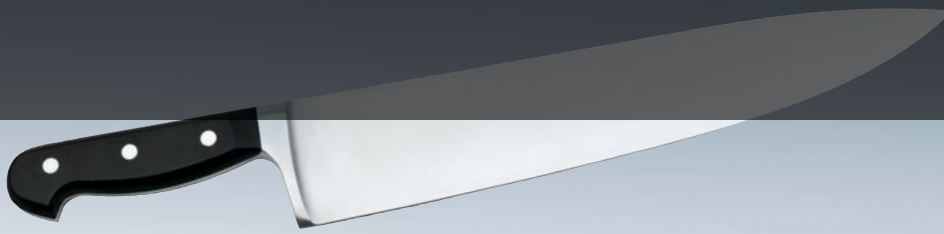
Only suitable for wet grinding.

For an explanation of symbols and terminology, please consult the fold-out page.
Grinding parameter data sheet

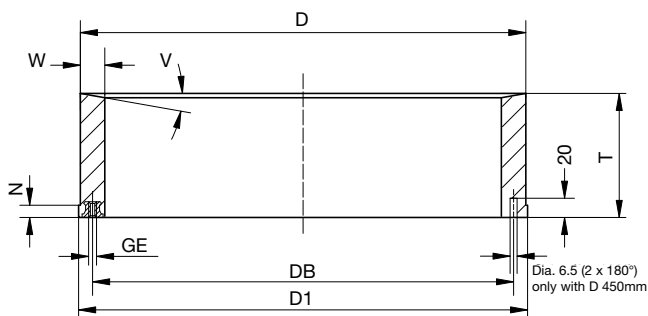
This catalogue is intended to give you an overview of the different applications in the cutting tools industry. COOL-CUT is also an alternative to magnesite wheels. TYROLIT is one of the world's largest manufacturers of bonded grinding, cutting, drilling and dressing tools. As the leading brand in innovation and technology, the Tyrolit name is today synonymous with each and every conceivable abrasive application.

TYROLIT has 25 production plants in 16 countries, and a global network of sales organisations and distributors. TYROLIT is part of the SWAROVSKI Group.





COOL-CUT GRINDING TOOLS FOR FACE GRINDING



STANDARD DIMENSIONS

- Application:
Face grinding of cutting tools such as knives, axes, etc.
- Machine types:
e.g. Berger, Siepmann
- Peripheral speed:
vs = up to 40 m/s; BD740 vs 32 m/s
- Grinding wheel shapes:
37 ST with nuts
- For wet grinding only, no dressing required
- Additional specifications and wheel dimensions available on request

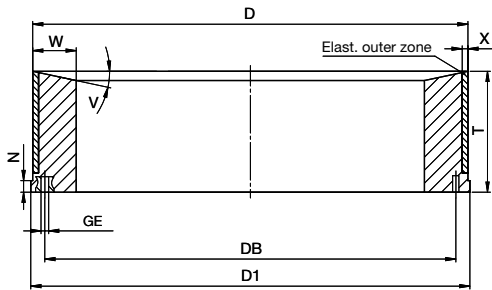
Shape	D/D1	T/N	W	V	DB	GE	A
37ST - 1243A	350/354	125/12	30	22°	325	M8	6
37ST - 1153J	450/454	125/12	25	10°	425	M8	6
37ST - 1153K	450/454	125/12	35	10°	425	M8	6
37ST - 1153N	450/454	125/12	45	10°	425	M8	6
37ST - 1153W	450/454	125/12	45	7°	425	M8	6
37ST - 1260D	500/509	160	25	-	475	M8	8
37ST - 1260B	500/509	125	35	-	475	M8	8
37ST - 1260A	500/509	160	45	-	475	M8	8
37ST - 1186F	710/715	200/12	30	8°	685	M10	10
37ST - 1287A	710	200	45	5°	685	M10	10
37ST - 1186C	710/715	200/12	45	16°	685	M10	10
37ST - 1299A	710	200	45	13°	685	M10	10

Recommendation and stock types

Shape	D x T - W	Specification	Type No.
37ST - 1153W	450 x 125 - W45	89A120S14BD745	718161*

* Stock type

COOL-CUT GRINDING TOOLS DUAL LAYER, GRINDING AND POLISHING WHEELS "Z"



STANDARD DIMENSIONS

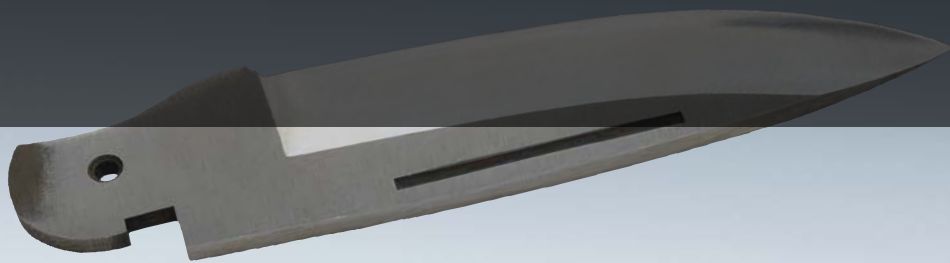
- Application:
Grinding and polishing of cutting tools in a single process, e.g. knives, scissors, etc.
- Machine types:
e.g. Berger, Siepmann
- Peripheral speed:
 $v_s = \text{up to } 40 \text{ m/s; BD740 vs } 32 \text{ m/s}$
- Grinding wheel shapes:
2, 209, 210, 211, 37 ST
- For wet grinding only,
no dressing required
- Additional specifications and wheel dimensions available on request

Shape	D	D1	T	N	W	V	X	DB	GE	A
37ST - 1243H	258	260	125	-	25	41°	3	235	M8	4
209 - 1013C	260	265	100	10	30	15°	6	-	-	-
209 - 1013D	350	359	125	5	25	15°	6	-	-	-
37ST - 1136A	350	354	125	12	40	15°	6	325	M8	6
209 - 1013A	350	359	125	5	40	15°	6	-	-	-
211 - 1005A	350	354	125	12	40	-	6	-	-	-
37ST - 1153Q	450	454	125	12	25	12°	6	425	M8	6
37ST - 1128C	450	450	125	-	25	10°	6	425	M8	6
37ST - 1153D	450	454	125	12	25	8°	6	425	M8	6
37ST - 1153P	450	454	125	12	35	12°	6	425	M8	6
209 - 1012B	450	459	125	5	45	-	6	-	-	-
209 - 1013B	450	459	125	5	45	15°	6	-	-	-
37ST - 1153L	450	454	125	12	45	12°	6	425	M8	6
37ST - 1153A	450	454	125	12	45	7°	6	425	M8	6
37ST - 1176F	710	715	200	12	45	-	6	685	M10	10

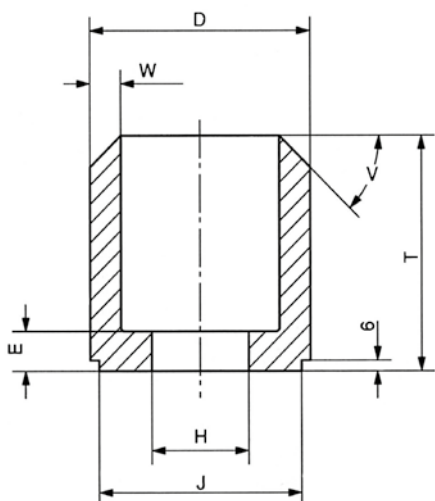
Recommendation and stock type

Shape	D x T - W	Specification	Type No.
37ST - 1153A	450 x 125 - W45	89A120S14BD745Z	50871*

* Stock type



COOL-CUT GRINDING TOOLS FOR KNIFE HOLLOW GRINDING



STANDARD DIMENSIONS

- Application:
Hollow grinding of knives
- Machine types:
e.g. Berger, Siepmann
- Peripheral speed:
vs = max. 32 m/s
- Grinding wheel shape: 6
- For wet grinding only,
no dressing required
- For wall thicknesses less than W/2.
Specifications available on request

Shape	D	T	H	J	W	E	V
6 - 1383A	125	130	55	115	17.5	22	45°
6 - 1383C	125	130	55	115	12	22	45°
6 - 1383E	125	130	55	115	15	22	45°
6	172	95	80	-	16	15	45°
6	175	120	125	-	15	15	45°
6	190	100	125	-	15	15	45°
6 - 1386A	200	105	150	190	15	15	45°
6 - 1385B	200	100	100	-	20	20	52°

Recommendation

Specification	
Standard 93A100P0BD33	Longer life 93A100R0BD33

Ordering example

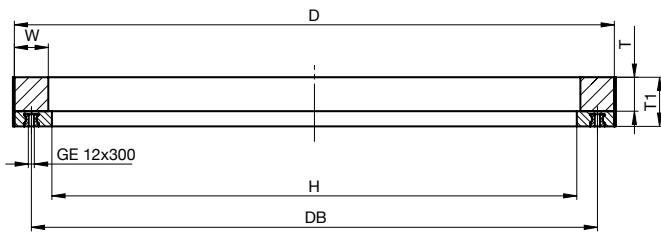
Shape	D x T x H	Specification
6 - 1383A	125 x 130 x 55	93A100P0BD33*

* 2 items = 1 set

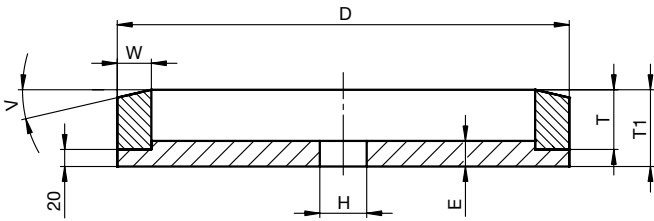
COOL-CUT GRINDING TOOLS

FINE CONGLOMERATE POLISHING WHEELS

Shape 37ST



Shape 2



STANDARD DIMENSIONS

Application:

Fine polishing consists of a surface treatment using flexible grinding wheels. The surface receives a matt gloss finish across the knife's longitudinal axis.

Fine polishing also makes knives more resistant to corrosion. In addition, fine polishing is employed as an interim processing step after grinding high-quality mirror-finish knives. These wheels require the use of solid or liquid polishing or grinding paste as an additive (or emulsion).

Peripheral speed
 $v_s = \text{max. } 20 \text{ m/s}$

Shape	D	T	T ₁	W	V	H	E	DB	GE	A
2 - 1034B	530	50	70	40	15°	35	30	-	-	-
2 - 1034C	530	60	80	40	15°	35	30	-	-	-
2 - 1034G	530	50	70	40	10°	55	30	-	-	-
2 - 1010B	530	55	75	40	15°	51	30	-	-	-
2 - 1110B	530	52	72	40	-	320	32	-	-	-
2 - 1077A	695	70	90	45	5°	50	35	-	-	-
2 - 1159E	795	60	80	45	5°	50	35	-	-	-
37ST - 1220D	795	45	65	45	5°	695.5	20	750	M8	12
2 - 1001B	800	53	73	45	5°	50	35	-	-	-
37ST - 1220A	800	50	70	45	5°	695.5	20	750	M8	12

Recommendation

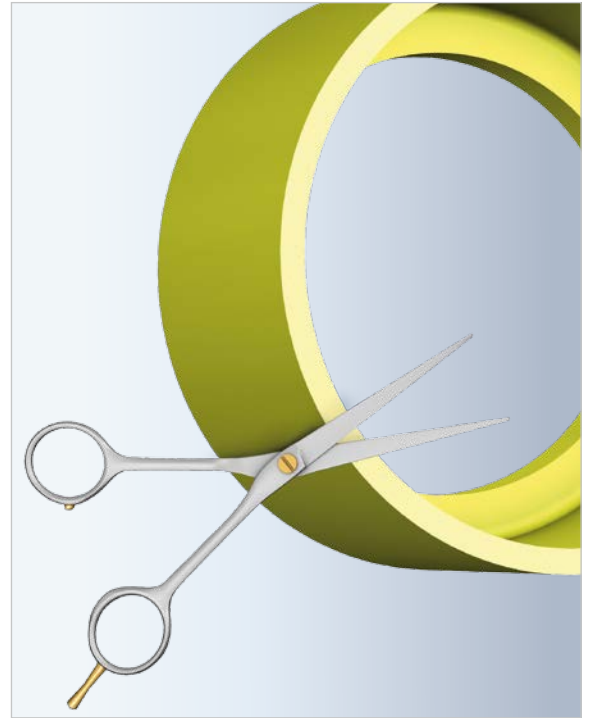
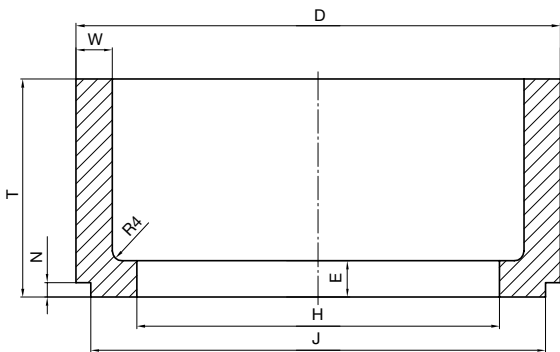
Application	Standard specification	Machine type
For standard knives	A100-BE14TFK2	Siepmann or Berger machine
For large knives	C100-BE1405FK	Siepmann or Berger machine
For finer surfaces	C150-BE1405FK	Siepmann or Berger machine
For longer tool life	C100-BE15FK	Siepmann or Berger machine

Stock types

Shape	D x T - W	Specification	Type No.
37ST - 1220D	795 x 65 - W45	C100-BE1405FK	475504*

* Stock type

COOL-CUT GRINDING TOOLS FOR SCISSOR MACHINING



- Application:**
Grinding scissors
- Machine types:
e.g. Berger, Siepmann
- Peripheral speed:
 $v_s = \text{up to } 40 \text{ m/s}$
- Grinding wheel shape: 6
- For wet grinding only,
no dressing required

STANDARD DIMENSIONS

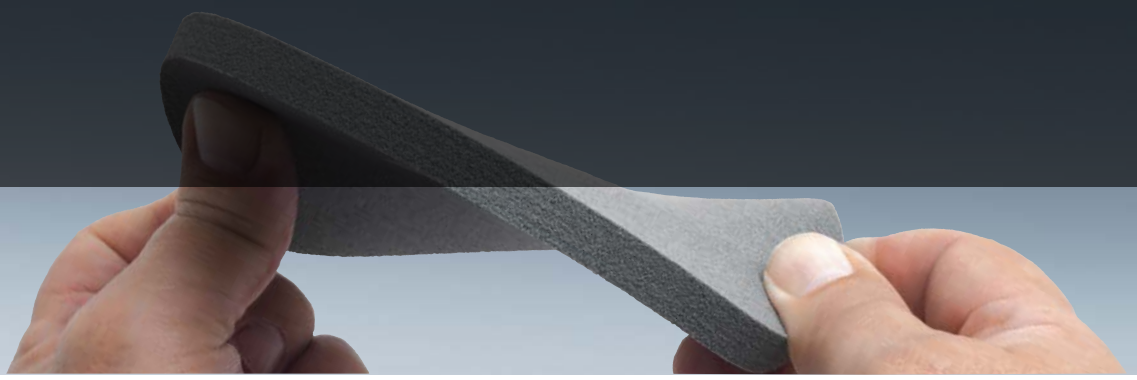
Shape	D	T	H	J	W	E	N
6 - 1112D	200	90	150	188	5	17	6
6 - 1112F	200	90	150	188	6	17	6
6 - 1112A	200	90	150	188	8	17	6
6 - 1112C	200	90	150	188	10	15	6
6 - 1112B	200	90	150	188	15	15	6
6 - 1112E	200	90	150	188	20	22	6
6 - 1302B	200	110	150	188	5	17	6
6 - 1302A	200	110	150	188	8	17	6
6 - 1302C	200	110	150	188	20	22	6
6 - 1223B	200	120	140	190	15	20	6

Recommendation

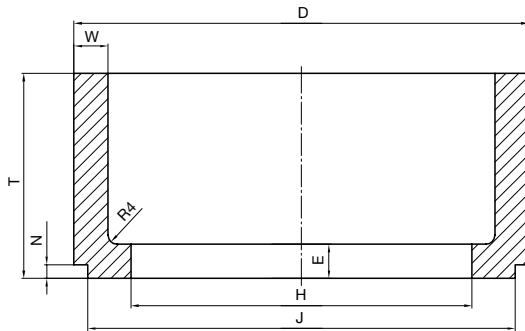
Specification	
Easy cutting 89A180S14BD780	Standard 91A150R14BD800

Ordering example

Shape	D x T x H	Specification
6F - 1112C	200 x 90 x 150	91A150R14BD800



COOL-CUT GRINDING TOOLS FOR SCALPELS



- **Application:**
Grinding and polishing of knives for medical applications
- Machine types:
e.g. Berger, Siepmann
- Peripheral speed:
 v_s = see table
- Grinding wheel shapes:
1, 2, 209, 6
- Wet grinding for grinding and sharpening wheels
- Wet and dry grinding for polishing wheels

GRINDING

Shape	D	T	W	H	E	Specification	$V_{max.}$
6 - 1112F	200	90	6	150	17	91A150R14BD800	40 m/s
6 - 1112A	200	90	8	150	17		
6 - 1112C	200	90	10	150	15		
6 - 1112B	200	90	15	150	15		
6 - 1112E	200	90	20	150	22	89A180S14BD760	40 m/s
209 - 1002L	350	125	20	-	-		
209 - 1002T	350	125	25	-	-		

SHARPENING

Shape	D	T	H	Specification	$V_{max.}$	Typ No.
1	150	6	16	89A120P6BY40	32 m/s	532312

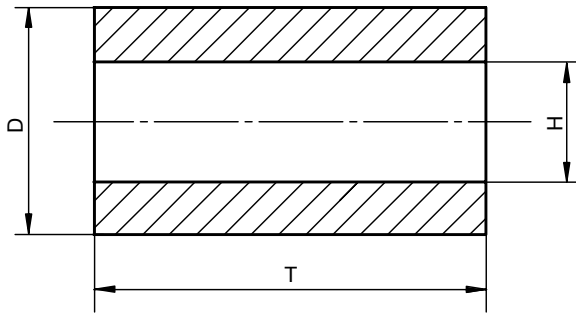
POLISHING

Shape	D	T	H	Specification	$V_{max.}$	Type No.
1	150	20	20	C80 - BE15	25 m/s	7186*
1	150	20	20	C150 - BE15	25 m/s	2661*
1	200	25	20	C240 - BE15	25 m/s	320369*
1	200	25	32	C400 - BE15	25 m/s	22411*
1	150	20	20	C400 - BE16	32 m/s	71212*
1	150	20	20	C800 - BE11	25 m/s	669110*
1	175	20	32	C800 - BE11	25 m/s	669109*

* Stock type



COOL-CUT PRODUCT EXTRAS
 CERAMIC GRINDING WHEELS FOR
 SERRATED PROFILE GRINDING



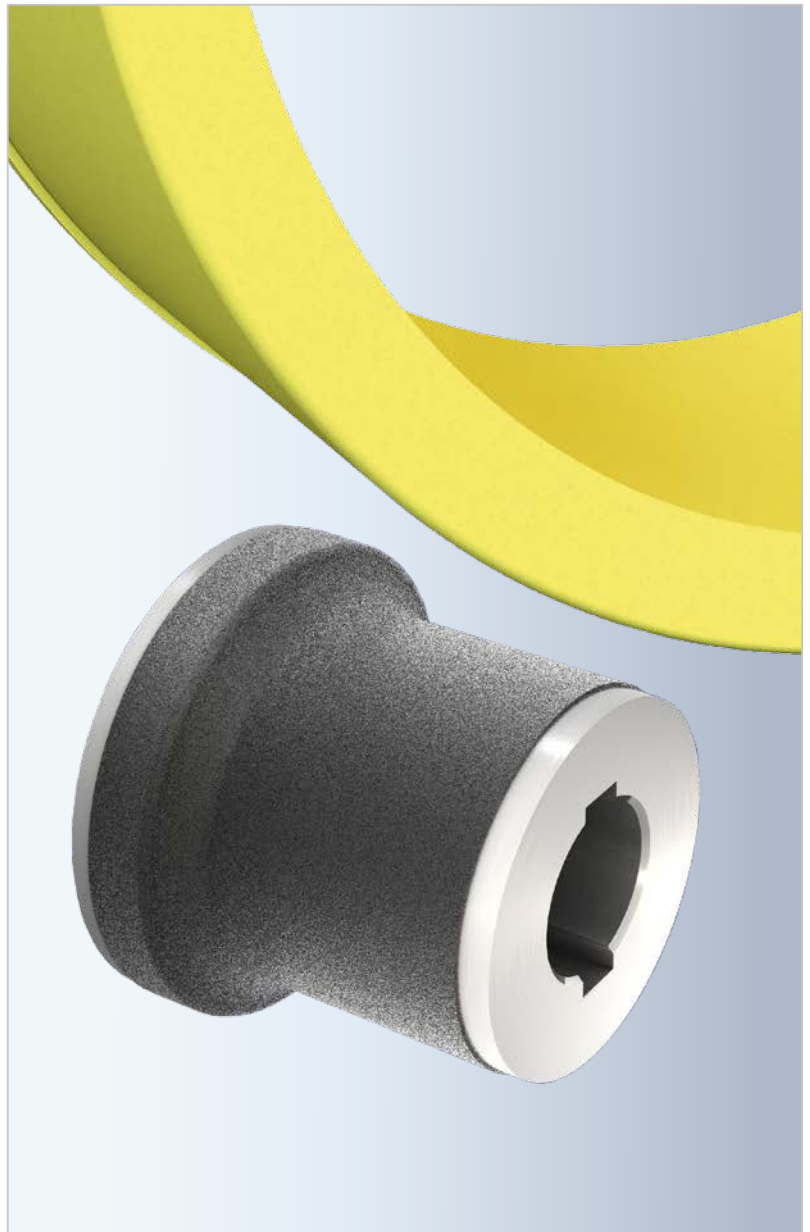
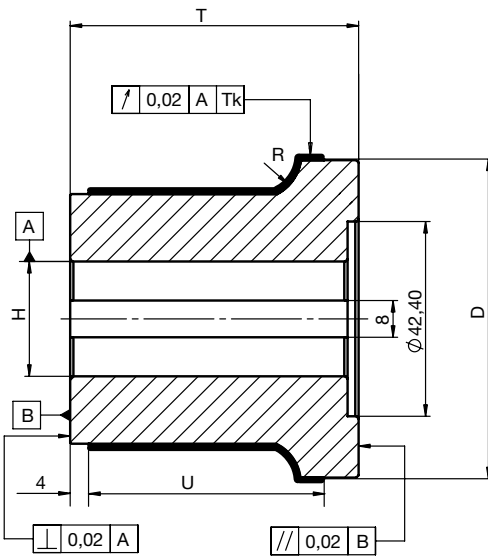
Ordering example

- Application:**
Profile grinding of serrated knives
- For wet grinding only
- Profiling is performed by the customer using a profile or crushing roller
- Other specifications and dimensions on request
- Bond V3 cuts easier than V112
V112 is better at retaining its profile

Shape	D x T x H	Specification	Type No.
1	500 x 129 x 230	89A100K6V112/50	70986
	500 x 220 x 230		927532
	500 x 270 x 230		896083
	500 x 280 x 230		512319
	500 x 300 x 230		895747
	300 x 180 x 140		515339
1	300 x 109 x 55	92A120J9V3	515109
	600 x 130 x 415	92A 180 J9 V3	488 195
1	300 x 120 x 127	89A180H9AV227	593596



COOL-CUT PRODUCT EXTRAS DIAMOND ROLLER DRESSER



Application:
Profiling Cool-Cut grinding rings
Additional finishes available on request

Ordering example

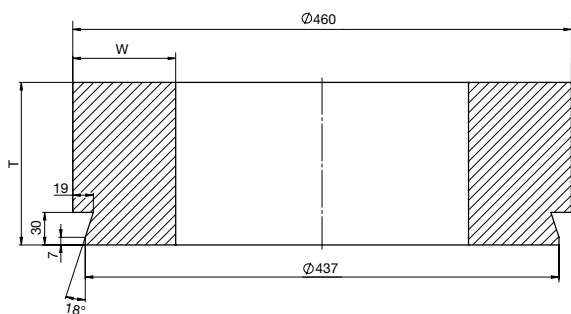
Shape	D x T x H / U - R	Specification
14 S1N	69.6 x 62.8 x 25 / 51.3 - R9.5	D251 X G36



COOL-CUT GRINDING TOOLS

FLEXIBLE GRINDING WHEELS: PATENTED SPECIAL VERSION "P"

Shape 207



Application:

Magnesite wheel replacement
For maximum stock removal with simultaneous cool grind on slow-running machines (18 - to max. 25 m/s)

Magnesite wheel replacement!

Important:

Only suitable for wheel wall thicknesses of at least 50 mm and peripheral speeds of up to 25 m/s.

Grinding wheel shapes:

207, 209, 210, 211, 37ST

Grinding wheel dimensional range:

Ø 350 - 950 mm

For wet grinding only, no dressing required

Other shapes and dimensions on request

STANDARD DIMENSIONS

Shape	D/D1	T/N	W	V
209	350/359	130/5	50	15°
209	450/459	140/5	70	15°
211	540/558	200/15	60	-
209	550/558	180/5	50	15°
210	600/610	130	60	15°
210	600/610	150	50	15°
209	710/715	150/14	100	22°
210	710/715	150	60	8°
211	710/715	190/15	100	-
207 - 1001B	460	150	95	-

Recommendation

Application	Standard specification	Machine type
For large knives	89A90L4BD61P	e.g. Siepmann
Agricultural knives	89A100K4BD71P	e.g. Giustina, Bach
Mower blades (trapezium blade)	89A54L4BD61P	e.g. Siepmann
Tools	89A46K4BD71P	e.g. Bach, Berger

Ordering example

Shape	Dimensions	Specification
211	540/558 x 200/ 15 - W60	89A90L4BD61P



SOLUTIONS EXPERTISE - APPLICATION TECHNOLOGY

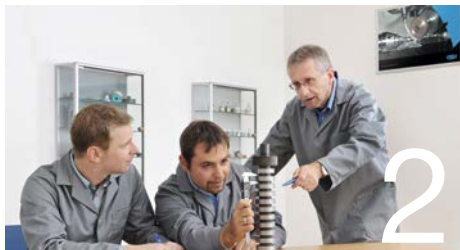
Successful enterprises expect not only top products from their partners, but also process know-how and a programme of comprehensive support for their individual requirements.

Concentrating on the production and supply of top quality tools is in itself no longer sufficient. Good “software” has to be offered alongside the “hardware”. With the wealth of process expertise commanded by our team of application engineers, we are able to provide our customers with sustained solutions in line with today’s demanding technical and economical expectations.



Clarify the task

We place great emphasis on knowing the objectives of our customers. Application technology specialists analyse the task in detail. A requirements profile which takes technological and economic efficiency aspects into account is then drawn up together with the customer.



Define the concept

The team of experienced application engineers defines approaches to the solution, calling on the additional input from our specialists in R&D and our technology test centre as required.



Realise the solution

The process solution is then taken direct to the customer where it is put into practice on the relevant machine. Within the scope of sustained process optimisation, the application engineer sets the mode of operation for the grinding tool, the interaction between machine, workpiece, material, cooling lubricant and kinematic setting parameters.



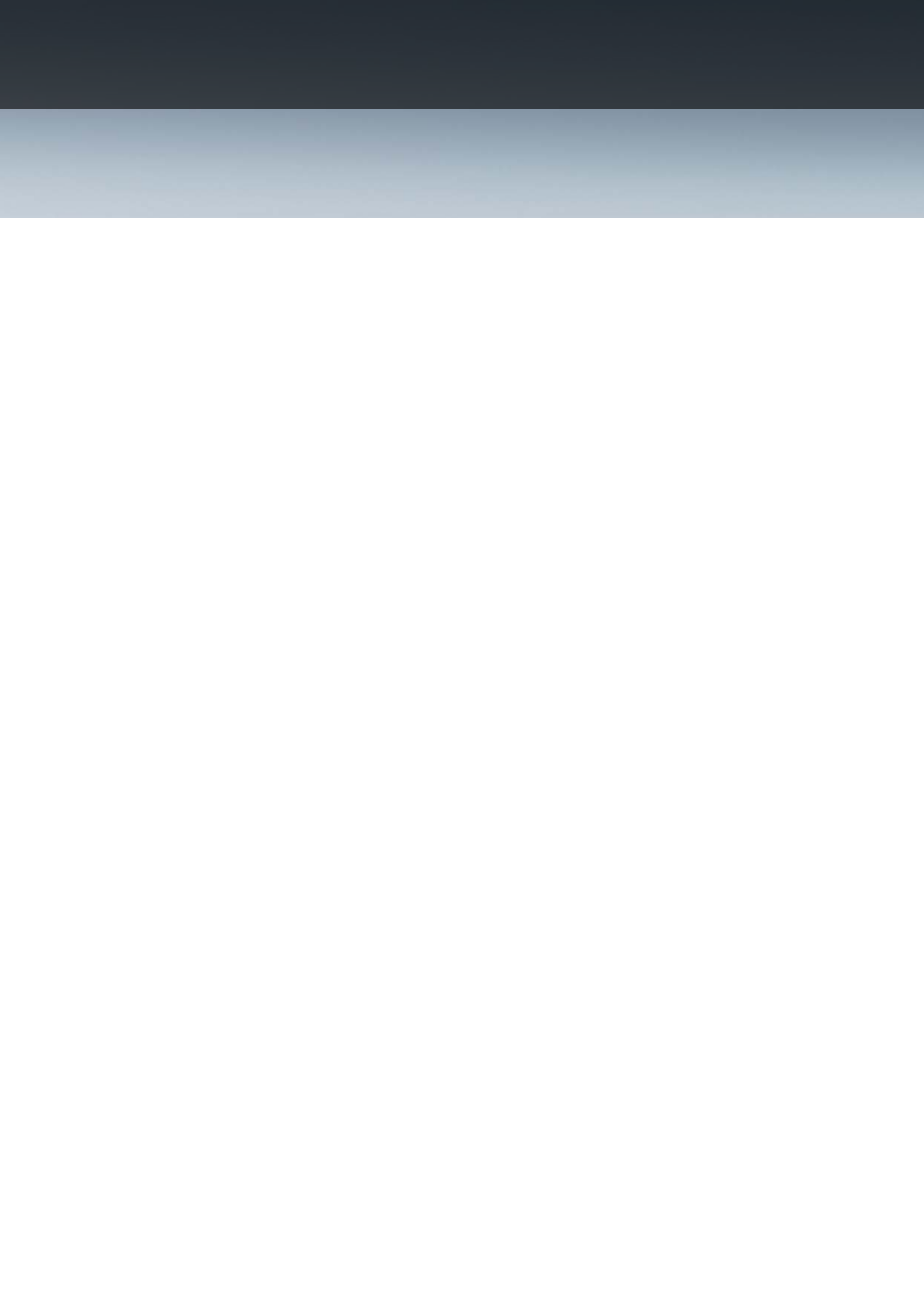
Share the know-how

Our know-how in the field of grinding technology is crucial to successful cooperation. One-time optimisation at the client's site is not enough. Sustainable success is only achieved by widely applying experiences already gained. We also offer our customers practical-oriented information, data preparation, training and seminar services.



Precision Data Sheet		Recorded by: on:	
Customer	ATDB number:		Country:
	Target group:		Product family:
	Requirement of item:		
	Customer: *		Classification:
	Department:		Customer number:
	Contact:		Phone / fax:
Customer	Shape: *		1 set = units:
	Dimensions (mm): *		
	Dimensions (mm):		Tolerance:
	Specifications:		
	Manufacturer:		Current price:
	Vs max. (m/s) *		Quantity ordered:
Customer	Grinding process:		
	Machine manufacturer:		
	Vs (m/s):		
	Coolant / lubricant:		
	Dressing tool:		
	Dressing cycle:		Dressing amount:
Work piece	Workpiece: *		Dimensions (mm): *
	Material group: *		Stock (mm):
	Condition: *		Hardness: *
Objective	Surface finish:		Contact time:
	Wheel life:		
	Additive:		
Sample	Specifications:		
	Specifications:		
	Specifications:		
Information			Drawing:
Copies to:			

* MANDATORY fields have a grey background



TYROLIT SCHLEIFMITTELWERKE SWAROVSKI K.G.

Swarovskistraße 33 | 6130 Schwaz | Austria
Tel +43 5242 606-0 | Fax +43 5242 63398

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on our website at www.tyrolit.com



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