

## **COOL-CUT**

GRINDING TOOLS FOR THE KNIFE AND  
CUTTING TOOL INDUSTRY



# CONTENTS

## COOL-CUT GRINDING TOOLS

Knife grinding	2
Dual-layer grinding and polishing wheels	3
Hollow grinding – knives	4
Fine polishing wheels	5
Scissor machining	6
Scalpel machining	7
Serrated knife grinding	8
Diamond dressing rollers	9
Patented flexible grinding wheels to replace magnesite	10
Datasheet	11

## COOL-CUT

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

After our intensive research, TYROLIT developed the COOL-CUT, a cool-grinding high-performance grinding tool.

### Advantages of the new system:

- The bonding system can handle 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 maximum feed rates
- Self-sharpening, so no dressing required
- Environmentally friendly

Only suitable for wet grinding.

This catalogue provides an overview of possible applications in the cutting tool industry.

COOL-CUT is also an alternative to magnesite products.

TYROLIT is one of the world's leading manufacturers of bonded grinding, cutting, drilling, and dressing tools. As the leading brand in the world of innovation and technology, TYROLIT is synonymous with every conceivable grinding technology.

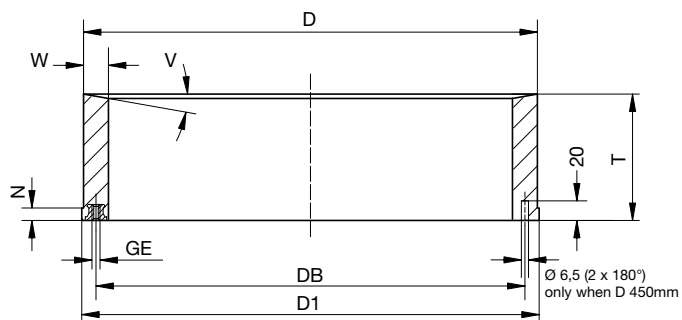
TYROLIT has 25 production plants in 16 countries and representatives in more than 60 countries.

TYROLIT is part of the SWAROVSKI Group.



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

# COOL-CUT GRINDING TOOLS FACE GRINDING



## STANDARD DIMENSIONS

- Application: Side grinding of cutting tools such as knives, axes, etc.
- Machine types: e.g. Berger, Siepmann
- Surface speed: vs = up to 40 m/s
- Grinding wheel shapes: 37 ST with threaded 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 - 1197A	450/454	125/12	25	10°	425	M8	6
37ST - 1153K	450/454	125/12	35	10°	425	M8	6
37ST - 1197B	450/454	125/12	35	10°	425	M8	6
37ST - 1153N	450/454	125/12	45	10°	425	M8	6
37ST - 1260D	500/509	160	25	-	475	M8	8
37ST - 1260E	500/509	160	30	-	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 - 1292A	710/715	200/12	45	13°	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 - 1292A	710 x 200 - W45	89A120R14BD760	495852*
37ST - 1197B	450 x 125 - W35	89A120R14BD760	473726*

\* Stock type

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



**Application:** Grinding and polishing of cutting tools in a single process, e.g. knives, scissors, etc.

**Machine types:**

e.g. Berger, Siepmann

**Surface speed:**

$v_s =$  up to 40 m/s

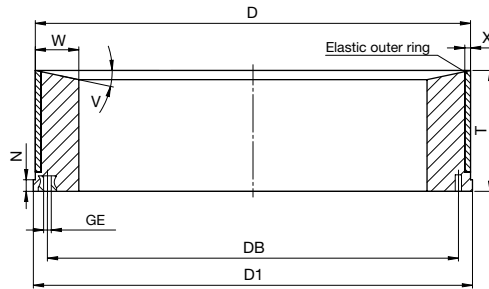
**Grinding wheel shapes:**

2, 209, 210, 211, 37 ST

For wet grinding only,

no dressing required

Additional specifications and wheel dimensions available on request



## STANDARD DIMENSIONS

Shape	D	D1	T	N	W	V	X	DB	GE	A
37ST - 1243C	260	260	125	-	25	39°	4	235	M8	4
209 - 1013C	260	265	100	10	30	15°	6	-	-	-
209 - 1013D	350	359	125	5	25	15°	6	-	-	-
37ST - 1243G	350	354	125	12	30	15°	5	325	M8	6
37ST - 1136A	350	354	125	12	40	15°	6	325	M8	6
209 - 1013A	350	359	125	5	40	15°	6	-	-	-
209 - 1012A	350	359	125	5	40	-	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 - 1128D	450	450	125	20	35	10°	6	425	M8	6
209 - 1012B	450	459	125	5	45	-	6	-	-	-
209 - 1013B	450	459	125	5	45	15°	6	-	-	-
211 - 1008B	450	454	125	12	45	15°	6	-	-	-
37ST - 1128A	450	450	125	-	45	10°	6	425	M8	6
37ST - 1153L	450	454	125	12	45	12°	6	425	M8	6
37ST - 1176F	710	715	200	12	45	-	6	685	M10	10

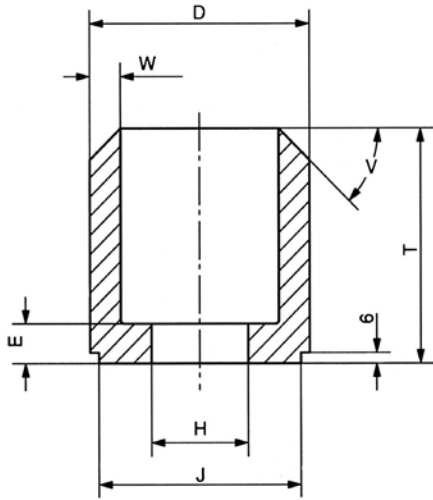
## Recommendation and stock type

Shape	D x T - W	Specification	Type-No.
37ST - 1153L	450 x 125 - W45	89A120R14BD760Z	524656*

\* Stock type



# COOL-CUT GRINDING TOOLS HOLLOW GRINDING KNIVES



- Application:  
Concave grinding of knives
- Machine types:  
e.g. Berger, Siepmann
- Surface speed:  
vs = max. 32 m/s
- Grinding wheel shape: 6F
- For wet grinding only
- No dressing required
- For rim thicknesses less than W12
- Specifications available on request

## STANDARD DIMENSIONS

Shape	D	T	H	J	W	E	V
6F - 1004A	125	130	55	115	17,5	22	45°
6F - 1004C	125	130	55	115	12	22	45°
6F - 1004E	125	130	55	115	15	22	45°
6F - 1003A	172	95	80	-	16	15	45°
6F - 1015A	175	120	125	-	15	15	45°
6F - 1019A	200	105	150	190	15	15	45°
6F - 1019B	200	105	150	190	20	15	45°
6F - 1019C	200	100	130	190	25	15	30°
6F - 1017A	200	130	55	-	20	20	45°
6F - 1017B	200	130	55	-	27,5	20	45°
6F - 1039A	200	100	100	-	15	15	52°
6F - 1039B	200	100	100	-	20	20	52°

## Recommendation

Specification	
Standard	longer life
93A100P0BD33	93A100R0BD33

## Example of order

Shape	D x T x H	Specification
6F - 1004C	125 x 130 x 55	93A100P0BD33*

\* 2 items = 1 set

# COOL-CUT GRINDING TOOLS

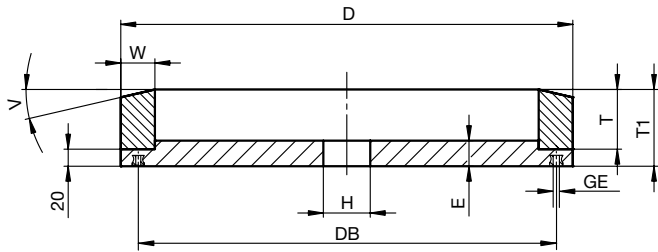
## FINE CONGLOMERATE POLISHING WHEELS

### 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 the grinding of high-quality mirror finish knife blades. These wheels require the use of solid or liquid polishing or grinding grease as an additive (or emulsion.)

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



### STANDARD DIMENSIONS

Shape	D	T	T <sub>1</sub>	W	V	H	E	DB	GE	A
2 - 1034M	530	50	70	30	10°	55	30	-	-	-
2 - 1034A	530	40	60	40	15°	35	30	-	-	-
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 - 1034K	530	65	85	40	10°	50	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 - 1220B	795	45	65	45	-	695,5	20	750	M8	12
37ST - 1220C	795	40	60	45	7°	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	Standardspecification	Machine type
For standard knives	A100-BE14TFK2	Siepmann or Berger-Maschine
For large knives	C100-BE1405FK	Siepmann or Berger-Maschine

### Stock types

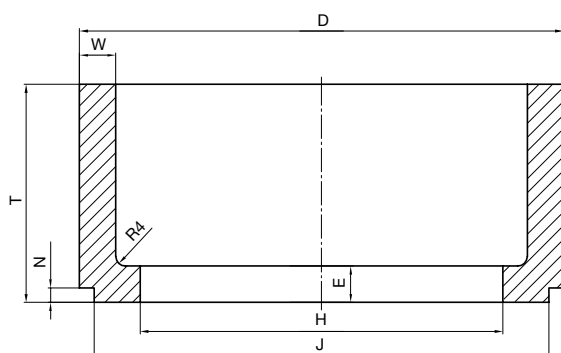
Shape	D x T - W	Specification	Type-No.
2 - 1034K	530 x 65 - W40	C100-BE1405FK	404881*
37ST - 1220B	795 x 65 - W45	C100-BE1405FK	475504*

\* Stock type



# COOL-CUT GRINDING TOOLS

## SCISSOR GRINDING



- Application: Grinding scissors
- Machine types: e.g. Berger, Siepmann
- Surface 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		
easier cuts	standard	longer life
C180T8BD43W3D	89A180S14BD760	91A150R14BD760

### Example of order

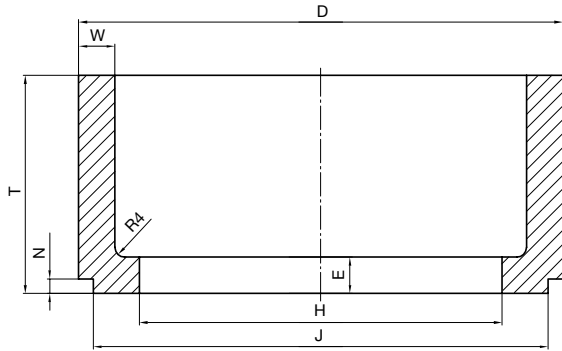
Shape	D x T x H	Specification
6F - 1112C	200 x 90 x 150	89A180S14BD760

# COOL-CUT GRINDING TOOLS SCALPELS



**Application:** Grinding and polishing of knives for medical applications

- Machine types: e.g. Berger, Siepmann
- Surface speed:  $v_s$  = see table
- Grinding wheel shapes: 1, 2, 209, 6
- Wet grinding for grinding and sharpening wheel
- Wet and dry grinding for polishing wheels



## GRINDING:

Shape	D	T	W	H	E	Specification	V <sub>max.</sub>
6 - 1112F	200	90	6	150	17	89A220S14BD760	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		
209 - 1002L	350	125	20	-	-	89A180S14BD760	40 m/s
209 - 1002T	350	125	25	-	-		

## SHARPENING:

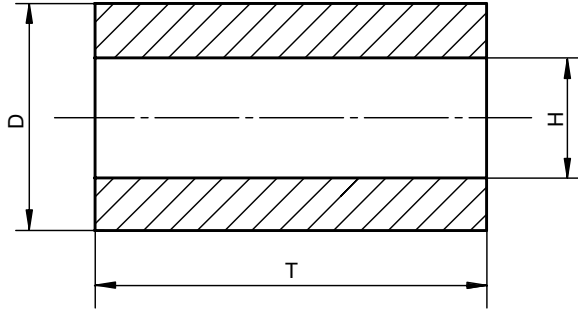
Shape	D	T	H	Specification	V <sub>max.</sub>	Type-No.
1	150	6	16	89A120P6BY40	32 m/s	532312

## POLISHING:

Shape	D	T	H	Specification	V <sub>max.</sub>	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	2667*
1	175	20	32	C800 - BE11	25 m/s	18380*

\* Stock type

# COOL-CUT GRINDING TOOLS VITRIFIED GRINDING WHEELS FOR SERRATED PROFILE GRINDING



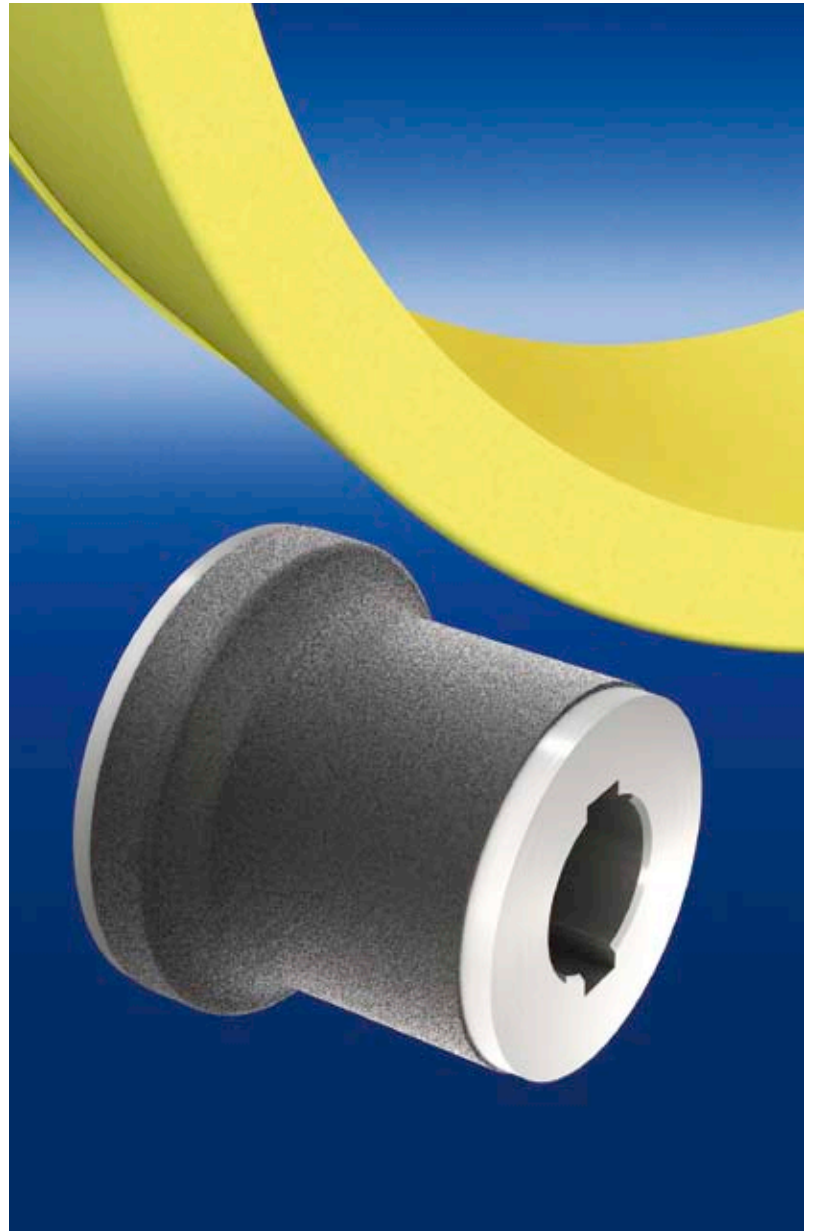
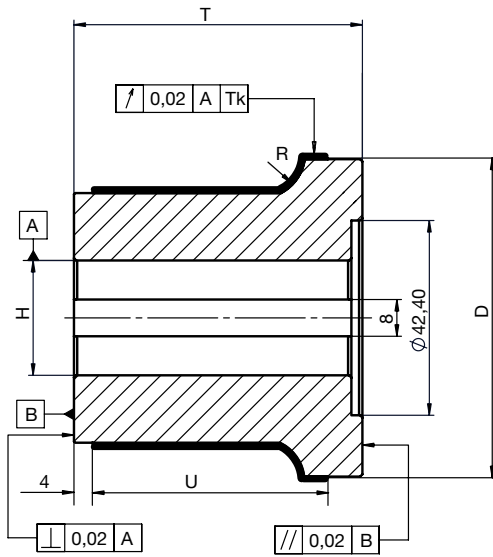
## Application:

- Profile grinding of serrated knives
- For wet grinding only
- Profiling is performed by the customer using a profile or crusher roller
- Additional specifications and dimensions available on request

## Example of order

Shape	D x T x H	Specification	Type-No.
1	500 x 129 x 230	89A100K6V112/50	70986
	500 x 220 x 230		527532
	500 x 270 x 230		896083
1	300 x 109 x 55	92A120J9V3	515109
	300 x 180 x 140		515332

# COOL-CUT GRINDING TOOLS DIAMOND DRESSING ROLLERS



## Application:

Profiling Cool-Cut grinding rings

Additional finishes available on request!

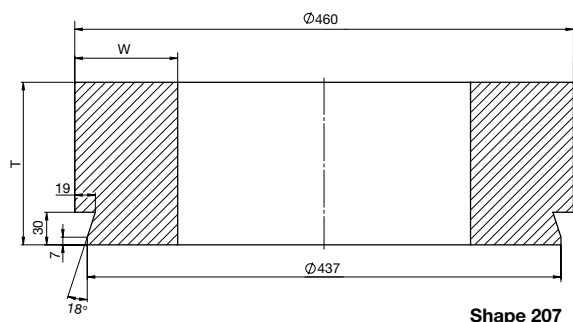
## Example of order

Shape	D x T x H / U - R	Specification
14 S1N	69,6 x 62,8 x 25 / 51,3 - R9,5	B181 X G36

# COOL-CUT GRINDING TOOLS

## FLEXIBLE GRINDING WHEELS

### "P" PATENTED SPECIAL FINISH



#### Application:

Replacement of magnesite wheels  
For optimum stock removal performance  
where there is a simultaneously cool  
grind on slow-running machines  
(18 - to max. 25 m/s)

#### Magnesite wheel replacement

#### Important:

Only suitable for wheel rim thicknesses  
of at least 50 mm and surface speeds of  
max. 25 m/s

#### Grinding wheel shapes:

207, 209, 210, 211, 37ST

#### Grinding wheel dimension range:

Ø 350 - 950 mm

For wet grinding only,  
no dressing required

Other shapes and dimensions  
available on request

#### STANDARD DIMENSIONS

Shape	Dimensions
209	350/359 x 130/5 - W50 V15°
209	450/459 x 140/5 - W70 V15°
211	540/558 x 200/15 - W60
209	550/558 x 180/5 - W50 V15°
210	600/610 x 130 - W60 V15°
210	600/610 x 150 - W50 V15°
209	710/715 x 150/14 - W100 V22°
210	710/715 x 150 - W60 V8°
207 - 1001B	460 x 150 - W95
211	710/715 x 190 - W100

#### Recommendation

Application	Standardspecification	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

#### Example of order

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

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

Concentration 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 targets of our customers. Application engineering specialists analyze the task in detail. A requirements profile which takes technological and profitability 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 from R & D and our in-house test center as required.



## Realize 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 a sustained process optimization the application engineer sets the mode of operation for the grinding tool, the interaction between machine, workpiece, material, cooling lubricant and kinematic limitations.



## Share the know-how

Our know-how in the field of grinding technology is crucial to successful cooperation. A one-off optimization is not the solution for the customer. Sustained results come from the continuous application of the experience on a broad basis. Service is also offered to our customers by way of practice-oriented information, data preparation, trainings and seminars.



Precision Datasheet			Recorded by: on:	
<b>Customer</b>	ATDB number:		<b>Country:</b>	
	<b>Target group:</b>		<b>Product family:</b>	
	<b>Item requirements:</b>			
	Customer: *		Classification:	
	Department:		Customer number:	
	Contact:		Phone / fax:	
<b>Customer</b>	<b>Shape: *</b>		<b>1 set = units:</b>	
	<b>Dimensions (mm): *</b>			
	<b>Dimensions (mm):</b>		Tolerance:	
	Specifications:			
	Manufacturer:		<b>Current price:</b>	
	<b>Vs max. (m/s) *</b>		Order quantity:	
<b>Customer</b>	<b>Grinding process:</b>			
	<b>Machine manufacturer:</b>			
	Vs (m/s):			
	<b>Coolant / lubricant:</b>			
	<b>Dressing tool:</b>			
	Dressing cycle:		Dressing amount:	
<b>Work piece</b>	<b>Workpiece: *</b>		<b>Dimensions (mm): *</b>	
	<b>Material group: *</b>		<b>Oversize allowance (mm):</b>	
	<b>Condition: *</b>		<b>Hardness: *</b>	
<b>Objective</b>	<b>Surface roughness:</b>		<b>Contact time:</b>	
	Durability:			
	Additive:			
<b>Sample</b>	Specifications:			
	Specifications:			
	Specifications:			
<b>Information</b>			Sketch:	
Copies to:				

\* MANDATORY fields have a grey background

For technical inquiries, please complete the MANDATORY fields and send the datasheet to your TYROLIT representative.

**TYROLIT SCHLEIFMITTELWERKE SWAROVSKI K.G.**

Swarovskistraße 33 | 6130 Schwaz/Austria  
Tel +43 5242 606-0 | Fax +43 5242 606-98

E-Mail [office@tyrolit.com](mailto:office@tyrolit.com) | [www.tyrolit.com](http://www.tyrolit.com)

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