

Precision Tools

Catalogue 2019



Solid carbide tools for metal cutting

WUNSCHMANN
PRÄZISIONSWERKZEUGE

Contents

Page

- 4 Special tools
- 5 Ordering information

Item description	Item no..	Ø	No of teeth	Spiral angle	Coating	P	K	M	N	H	S
6 SC finishing cutter	I 12	03–20	3	30°	TiALN	•	•	•	•		
6 SC finishing cutter	I 15	06–20	3	45°	TiALN	•	•	•	•		
7 SC finishing cutter	I 22	04–20	4	30°	TiALN	•	•	•	•		
7 SC finishing cutter	I 62	06–20	6	45°	TiALN	•	•	•	•		
8 SC-HPC cutter	I 80	03–20	4	35°/38°	TiALN	•	•	•	•		
8 SC-HPC cutter, long	I 81	06–20	4	35°/38°	TiALN	•	•	•	•		
9 SC-HPC cutter, long	I 82	06–20	4	35°/38°	TiALN	•	•	•	•		
10 SC-HPC-V cutter	I 86	03–20	4	35°/38°	TiALN-pol	•	•	•	•		
10 SC-HPC-Vplus cutter	I 87	03–20	4	35°/38°	HE-X	•	•	•	•		
11 SC-HPC trochoidal cutter	I 85	06–20	5		HE-X	•	•	•	•		
12 SC-HPC trochoidal cutter ER	I 75	06–20	5		HE-S	•	•	•	•		•
12 SC-HPC cutter VA	I 88	03–20	4	35°/38°	HE-X	•	•	•	•		
13 SC-HPC-RH cutter	I 89	06–20	4	35°/38°	HE-X	•	•	•	•		
14 SC-HPC aluminium cutter	I 83	03–20	3			•	•	•	•		
14 SC-HPC aluminium cutter	I 84	03–20	3	35°/38°	ZRN	•	•	•	•		
15 SC-HPC aluminium cutter ER	I 84WR	05–20	3	35°/38°	ZRN	•	•	•	•		
15 SC-HPC aluminium cutter, long	I 84WL	06–20	3	35°/38°	ZRN	•	•	•	•		
16 SC-HPC roughing cutter	I 90	06–20	4	30°	TiALN	•	•	•	•		
16 SC-HPC roughing cutter VA	I 98	06–20	4	35°/38°	HE-X	•	•	•	•		
17 SC-HPC aluminium roughing cutter	I 94	06–20	3	35°/38°		•	•	•	•		
18 SC-HRC cutter	I 70	03–20	4-8	55°	HE-S	•	•	•	•	•	
18 SC-HRC cutter ER	I 70R	04–20	4-8	55°	HE-S	•	•	•	•	•	
19 SC-HRC full radius cutter	I 34	03–12	2	30°	HE-S	•	•	•	•	•	
19 SC-HRC full radius cutter	I 51	03–20	4	30°	HE-S	•	•	•	•	•	
20 SC deburrer	24	04–12	4		TiALN	•	•	•	•		
20 SC-NC centre bit	28	03–16	2		TiALN	•	•	•	•		

- 21 Sharpening service
- 22 Laser inscription
- 23 Sales, delivery and payment conditions

Persuasive precision and performance

Precision tools for metal cutting have been our business for over 40 years. Our top goal was and is the production of standard and custom tools which stand out from the rest through their high performance capability and exceptional cost-to-benefit ratio.

To be able to produce competitively, our customers need cutting tools which offer the longest possible service life in metalworking while providing the highest possible precision. Depending on the cutting task, this may be a standard tool, a modified serial production tool or a 100% custom tool.

Our product range covers a constantly growing, extensive line-up of high-performance solid carbide metal cutters and drills for a wide variety of different tasks and materials.



*At home on the production floor:
Stephan Wunschmann*



*Controlled quality:
SC-HRC cutter*

We produce cutting tools, drills, multi-stage and contour tools on high-tech grinding centres of the latest generation. We also offer our renowned sharpening service on the same machines.

Special tools

Customer-specific custom metal cutting tools have been one of our specialties for many years. And our customers know it. At lot size 1 and up we develop and produce tools which leave competing products from big-name manufacturers far behind in tests. That's what drives us on!

This 2019 catalogue contains our current standard range with a great many new products.

If you have any special metal cutting tasks, I would be delighted if you would call or write me an e-mail.

Yours,

S. Wunschmann

Stephan Wunschmann

stephan@wunschmann.de
Phone +49 (0) 7457 8059

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Tailor-made quality tools

Custom SC cutting tools or drills for specific cutting tasks can really pay off. This has been our experience in numerous customer projects.

We develop and produce modified standard tools and 100% custom precision tools. In doing so, we place great value on close and trusting cooperation with the user.



*Tailor-made precision:
Special tools from Wunschmann*



*Indispensable in quality assurance:
State-of-the-art measurement machines*

Based on the workpiece drawing, we will develop the required tool with exactly the right geometry and coating. We work with the latest CAD programs and are happy to provide 3D tool simulations.

The grinding and measurement work is done on state-of-the-art CNC machines. All Wunschmann tools undergo strict quality control before shipping – with measurement report upon request. Follow-up orders or sharpening work is made simple thanks to item numbers, even for custom tools.

Choose, order and cut: the sure way to the right tool

Order Wunschmann tools with ease

You will find all important information on the tool in the product descriptions in this catalogue: fields of application, coating, geometry, dimensions and item number.

The quoted cutting specifications are approximate values. The actual cutting speeds and feed rates depend on the working conditions at hand.

You can place your order by telephone, e-mail or fax. Simply name us the type, item number and desired number of tools.



It takes a close look to discern precision workmanship



A good atmosphere promotes good performance.

Here is how you can reach us:

Phone: +49 (0) 7457 8059

Fax: +49 (0) 7457 4697

E-mail: info@wunschmann.de

E-mail for custom tools:

stephan@wunschmann.de

Material groups as per ISO standard

P

Unalloyed and high-alloyed steels, including steel casting

M

Rust-free steels (ferritic, martensitic, austenitic, austenitic-ferritic)

K

Cast iron (grey iron GCI, malleable cast iron MCI, spheroidal graphite cast iron NCI, vermicular cast iron CGI, bainitic cast iron ADI)

N

Non-ferrous metals (such as aluminium, copper, brass)

S

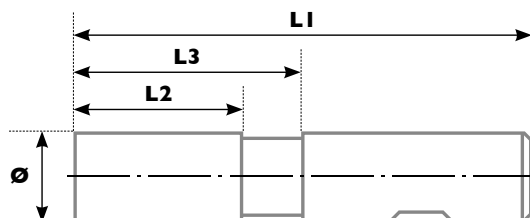
Heat-resistant super-alloys (HRSA)

H

Steels with a hardness of 45–68 HRC, chilled casting 400–600 HB

Cutter dimensions

L1: Total length L2: Cutting length L3: Neck length

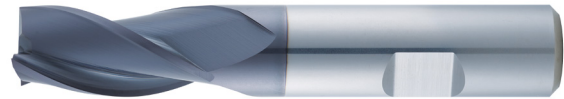


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SC finishing cutter type 112

for universal use

- ▲ durable cutting edges
- ▲ good chip removal
- ▲ K 40 ultrafine grade
- ▲ right-hand cutting
- ▲ Weldon shank



Material	Steel < 500N	Steel < 900N	Steel < 1100N	Cast iron
$V_c = \text{m/min}$	105	100	70	90
$a_p = 1 \times D$	$a_e = 0.3 \times D$			

P	K	N
Z-3 over centre	DIN 6528	Shaft 6535 HB
Corner chamfer	30° spiral	TiALN

Ø mm	Cutting length mm (L2)	Overall length mm (L1)	Item no.	Price €	FPT full slot	FPT lateral
3*	8	57	11203W	13.48	0.010	0.011
4*	13	57	11204W	13.34	0.020	0.023
5*	13	57	11205W	13.34	0.020	0.023
6	13	57	11206W	13.01	0.030	0.033
8	21	63	11208W	17.94	0.040	0.045
10	22	72	11210W	24.21	0.050	0.060
12	26	83	11212W	32.67	0.060	0.080
14	26	83	11214W	42.85	0.060	0.080
16	32	92	11216W	53.05	0.080	0.100
18	32	92	11218W	81.97	0.080	0.100
20	38	104	11220W	84.56	0.100	0.120

Other dimensions, special lengths, torus cutters upon request.

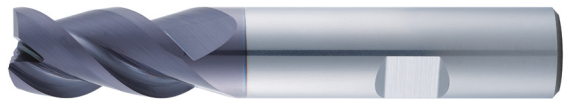
Prices not including statutory VAT.

* Shaft Ø 6.0

SC finishing cutter type 115

for universal use

- ▲ good chip removal
- ▲ durable cutting edges
- ▲ K 40 ultrafine grade
- ▲ right-hand cutting
- ▲ Weldon shank



Material	Steel < 500N	Steel < 900N	Steel < 1100N	Cast iron
$V_c = \text{m/min}$	105	100	70	90
$a_p = 1 \times D$	$a_e = 0.3 \times D$			

P	K	N
Z-3 over centre	DIN 6528	Shaft 6535 HB
Corner chamfer	45° spiral	TiALN

Ø mm	Cutting length mm (L2)	Overall length mm (L1)	Item no.	Price €	FPT full slot	FPT lateral
6	13	57	11506W	13.01	0.030	0.033
8	21	63	11508W	17.94	0.040	0.045
10	22	72	11510W	24.21	0.050	0.060
12	26	83	11512W	32.67	0.060	0.080
14	26	83	11514W	42.85	0.060	0.080
16	32	92	11516W	53.05	0.080	0.100
18	32	92	11518W	81.97	0.080	0.100
20	38	104	11520W	84.56	0.100	0.120

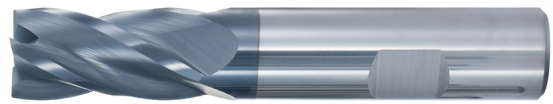
Other dimensions, special lengths, torus cutters upon request.

Prices not including statutory VAT.

SC finishing cutter type I22

for universal use

- ▲ high accuracy of fit
- ▲ good surface quality
- ▲ K 40 ultrafine grade
- ▲ right-hand cutting
- ▲ Weldon shank



Material	Steel < 500N	Steel < 900N	Steel < 1100N	Cast iron
$V_c = \text{m/min}$	110	100	70	90
$a_p = 1 \times D$	$a_e = 0.4 \times D$			

P	K	N
Z-4 over centre	DIN 6527	Shaft 6535 HB
Corner chamfer	30° spiral	TiALN

Ø mm	Cutting length mm (L2)	Overall length mm (L1)	Item no.	Price €	FPT full slot	FPT lateral
4*	13	57	I2204W	16.37	0.020	0.023
5*	13	57	I2205W	16.37	0.020	0.023
6	16	57	I2206W	15.40	0.030	0.033
8	22	63	I2208W	21.15	0.040	0.045
10	25	72	I2210W	24.30	0.050	0.060
12	28	83	I2212W	33.39	0.060	0.080
14	28	83	I2214W	42.10	0.060	0.080
16	32	92	I2216W	62.42	0.080	0.100
18	32	92	I2218W	70.97	0.080	0.100
20	38	104	I2220W	103.43	0.100	0.120

Other dimensions, special lengths, torus cutters upon request.

Prices not including statutory VAT.

* Shaft Ø 6.0

SC finishing cutter type I62

for finishing cutting during peripheral
and contour milling

- ▲ high accuracy to size
- ▲ excellent surface quality
- ▲ K 40 ultrafine grade
- ▲ right-hand cutting
- ▲ Weldon shank



Material	Steel < 500N	Steel < 900N	Steel < 1100N	Cast iron
$V_c = \text{m/min}$	150	120	85	120
$a_e = 0.07 \times D$				

P	K	
Z-6 over centre	DIN 6527	Shaft 6535 HB
Corner chamfer	45° spiral	TiALN

Ø mm	Cutting length mm (L2)	Overall length mm (L1)	Item no.	Price €	FPT lateral
6	13	57	I6206W	17.17	0.040
8	19	63	I6208W	23.74	0.045
10	22	72	I6210W	31.39	0.050
12	26	83	I6212W	41.53	0.050
16	32	92	I6216W	62.42	0.060
20	38	104	I6220W	90.76	0.080

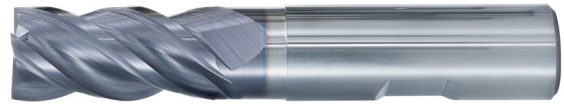
Other dimensions, special lengths,
torus cutters upon request.

Prices not including statutory VAT.

SC-HPC cutter, uneven cutting pitch type I80

for roughing and finishing

- ▲ up to $1.5 \times D$ in solid material
- ▲ high-performance and quiet running
- ▲ best surface quality and accuracy to size
- ▲ K 40 ultrafine grade
- ▲ Weldon shank



Material	Steel < 500N	Steel < 900N	Steel < 1100N	Cast iron
$V_c = \text{m/min}$	150	110	80	90
$a_p = 1.5 \times D$	$a_e = 0.5 \times D$			

P	K		
Z-4 over centre	DIN 6527	Shaft 6535 HB	Corner chamfer
35°/38° spiral	TiAlN	Neck	

Ø mm	Cutting length mm (L2)	Overall length mm (L1)	Neck length mm	Item No €	Price €	FPT full slot	FPT lateral
3*	8	57	13	18003W	20.11	0.010	0.015
4*	11	57	15	18004W	20.11	0.010	0.020
5*	13	57	18	18005W	19.92	0.020	0.030
6	13	57	18	18006W	19.92	0.025	0.035
8	22	63	27	18008W	26.05	0.030	0.040
10	25	72	30	18010W	32.50	0.045	0.050
12	25	83	36	18012W	41.14	0.050	0.055
14	30	83	36	18014W	59.71	0.050	0.070
16	35	92	42	18016W	71.84	0.050	0.070
18	35	92	42	18018W	94.45	0.070	0.085
20	38	104	52	18020W	106.57	0.070	0.085

Other dimensions, special lengths, torus cutters upon request.

Prices not including statutory VAT.

* Shaft Ø 6.0

SC-HPC cutter, long with extra long blade type I81

for roughing and finishing

- ▲ up to $1.0 \times D$ in solid material
- ▲ high-performance and smooth running
- ▲ very good surface quality and accuracy to size
- ▲ Weldon shank



Material	Steel < 500N	Steel < 900N	Steel < 1100N	Cast iron
$V_c = \text{m/min}$	75	55	45	60
$a_e = 0.1 \times D$				

P	K	
Z-4 over centre	DIN 6527	Shaft 6535 HB
Corner chamfer	35°/38° spiral	TiAlN

Ø mm	Cutting length mm (L2)	Overall length mm (L1)	Item no.	Price €	FPT lateral
6	24	80	18106W	23.46	0.040
8	30	80	18108W	34.99	0.050
10	32	100	18110W	41.65	0.055
12	32	120	18112W	54.56	0.065
16	45	150	18116W	105.26	0.080
20	50	150	18120W	153.41	0.090

Other dimensions, special lengths,
torus cutters upon request..

Prices not including statutory VAT.

SC-HPC cutter, long, stepped shaft type 182

with extra-longneck for roughing and finishing

- ▲ up to $1.0 \times D$ in solid material
- ▲ high-performance and quiet running
- ▲ best surface quality and accuracy to size
- ▲ Weldon shank



Material	Steel < 500N	Steel < 900N	Steel < 1100N	Cast iron
$V_c = \text{m/min}$	75	55	45	60
$a_e = 0,1 \times D$				

P	K		
Z-4 over centre	DIN 6527	Shaft 6535 HB	Corner chamfer
35°/38° spiral	TiALN	Neck	

Ø mm	Cutting length mm (L2)	Overall length mm (L1)	Neck length mm (L3)	Item no.	Price €	FPT lateral
6	13	80	40	18206W	28.60	0.040
8	22	100	60	18208W	35.16	0.050
10	25	100	60	18210W	46.84	0.055
12	25	120	75	18212W	60.07	0.065
16	35	150	100	18216W	107.17	0.080
20	40	150	100	18220W	153.36	0.090

Other dimensions, special lengths, torus cutters upon request.

Prices not including statutory VAT.

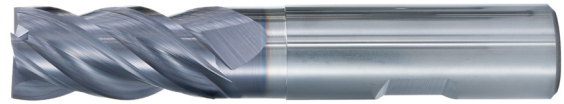


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SC-HPC-V cutter up to 2 × D type I86

for roughing and finishing at maximum feed rates

- ▲ excellent surface quality and accuracy to size
- ▲ smooth running
- ▲ gets the most out of the machine
- ▲ Weldon shank



Material	Steel < 500N	Steel < 900N	Steel < 1100N	Cast iron < 240HB	Cast iron < 300HB
$V_c = \text{m/min}$	180	120	100	120	100
$a_p = 2 \times D$	$a_e = 0.5 \times D$				

P	K		
Z-4 over centre	DIN 6527	Shaft 6535 HB	Corner chamfer
35°/38° spiral	TiAlN polished	Neck	

Ø mm	Cutting length mm (L2)	Overall length mm (L1)	Neck length mm (L3)	Item no.	Price €	FPT full slot	FPT lateral
3*	8	57	13	18603W	23.97	0.015	0.035
4*	11	57	16	18604W	22.92	0.018	0.035
5*	13	57	18	18605W	22.92	0.025	0.045
6	13	57	18	18606W	22.92	0.035	0.050
8	22	63	27	18608W	29.96	0.040	0.055
10	25	72	30	18610W	37.39	0.050	0.075
12	25	83	36	18612W	47.32	0.055	0.080
14	30	83	36	18614W	61.06	0.055	0.080
16	35	92	42	18616W	82.64	0.080	0.100
18	35	92	42	18618W	94.50	0.080	0.100
20	40	104	52	18620W	122.58	0.100	0.130

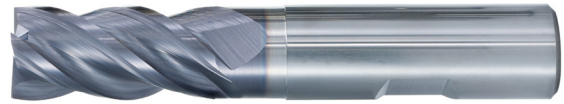
Other dimensions, special lengths, torus cutters upon request.
* Shaft Ø 6.0

Prices not including statutory VAT.

SC-HPC-Vplus cutter up to 2 × D type I87

for roughing, semi-finishing, finishing

- ▲ special edge preparation
- ▲ superlative feed rates
- ▲ high metal removal rate
- ▲ smooth running and high toughness
- ▲ high process reliability
- ▲ for medium and large series
- ▲ Weldon shank



Material	Steel < 500N	Steel < 900N	Steel < 1100N	Cast iron < 240HB	Cast iron < 300HB
$V_c = \text{m/min}$	180	120	100	120	100
$a_p = 2 \times D$	$a_e = 0.5 \times D$				

P	K		
Z-4	DIN 6527	Shaft 6535 HB	Corner chamfer 45°
35°/38° spiral	Neck	HE-X	

Ø mm	Cutting length mm (L2)	Overall length mm (L1)	Neck length mm (L3)	Item no.	Price €	FPT full slot	FPT lateral
3*	8	57	13	18703W	25,79	0.015	0.035
4*	11	57	16	18704W	25,79	0.018	0.035
5*	13	57	18	18705W	25,79	0.025	0.045
6	13	57	18	18706W	25,79	0.035	0.050
8	22	63	27	18708W	35,37	0.040	0.055
10	25	72	30	18710W	50,33	0.050	0.075
12	25	83	36	18712W	57,82	0.055	0.080
14	30	83	36	18714W	68,27	0.055	0.080
16	35	92	42	18716W	85,06	0.080	0.100
18	35	92	42	18718W	95,78	0.080	0.100
20	40	104	52	18720W	127,71	0.100	0.130

Other dimensions, special lengths, torus cutters upon request.
* Shaft Ø 6.0

Prices not including statutory VAT.

SC-HPC trochoidal cutter type I85

Process-reliable cutting with high cutting performance

- ▲ high metal removal rate
- ▲ great cutting depths
- ▲ low tool wear
- ▲ low thermal stress for the tool
- ▲ machining with unstable clamping possible
- ▲ Weldon shank



Material	Steel < 500N	Steel < 900N	Steel < 1100N	Stainless < 1500N	Stainless < 900N	Stainless > 900N
V _c = m/min	350	320	250	170	240	180

P	K	M
Z-5	HE-X	Chip breaker flutes
Neck	Shaft HB	Corner chamfer
		Uneven cutting pitch

Ø mm	Cutting length mm (L2)	Overall length mm (L1)	Neck length mm (L3)	Item no.	Price €
6	18	62	25	18506W	37.02
8	24	68	30	18508W	47.17
10	22	72	30	18510WL-20	53.32
10	32	80	38	18510W	59.78
10	42	90	-	18510WL-40	71.18
10*	52	100	-	18510WL-50	80.07
12	22	83	30	18512WL-20	67.82
12	32	90	38	18512WL-30	74.52
12	42	100	-	18512WL-40	84.07
12*	52	120	-	18512WL-50	96.90
16	32	92	42	18516WL-30	89.72
16	42	100	50	18516WL-40	104.24
16	50	108	55	18516W	120.31
20	42	104	50	18520WL-40	141.71
20	62	125	70	18520W	165.04
20	70	135	82	18520WL-70	184.05

* Second Weldon face for short chucks.

Additional dimensions and corner radii upon request.

Prices not including statutory VAT.



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SC-HPC trochoidal cutter, corner radius type 175

High-performance cutter for cutting super-alloys

- ▲ excellent cutting rates in different materials
- ▲ high metal removal rate
- ▲ Weldon shank



Material	Stainless	Heat-resistant alloys	Titanium alloys
$V_c = \text{m/min}$	130–190	50–80	80–130

P	K	M	S
Z-5 over centre	Chip breaker flute	Shaft HB	Corner radius
Uneven cutting pitch	HE-S	Neck	

Ø mm	Cutting length mm (L2)	Overall length mm (L1)	Neck length mm (L3)	Radius mm	Item no.	Price €
6	18	62	25	0.25	17506W	61.59
8	24	68	30	0.25	17508W	68.77
10	22	72	30	0.5	17510WL-20	70.18
10	32	80	38	0.5	17510WL-30	76.65
10	42	90	-	0.5	17510WL-40	82.93
10*	52	100	-	0.5	17510WL-50	90.97
12	22	83	30	0.5	17512WL-20	76.67
12	32	90	38	0.5	17512WL-30	89.00
12	42	100	-	0.5	17512WL-40	106.39
12*	52	120	-	0.5	17512WL-50	110.45
16	32	92	42	0.5	17516WL-30	113.25
16	42	100	50	0.5	17516WL-40	125.29
16	50	108	55	0.5	17516WL-50	130.05
20	42	104	50	0.5	17520WL-40	151.84
20	62	125	70	0.5	17520WL-60	177.99
20	70	135	82	0.5	17520WL-70	190.35

* Second Weldon face for short chucks.

Prices not including statutory VAT.

Additional dimensions and corner radii upon request.

SC-HPC cutter VA type 188

Ideal all-rounder for roughing, semi-finishing and finishing

- ▲ impressively smooth running
- ▲ superlative feed rates
- ▲ very good surface quality
- ▲ up to $1.5 \times D$ in solid material
- ▲ Weldon shank



Material	Steel < 500N	Steel < 900N	Steel < 1100N	Stainless < 900N	Stainless > 900N
$V_c = \text{m/min}$	230	170	140	75	60
$a_p = 1.5 \times D$	$a_e = 0.4 \times D$				

P	K	M	
Z-4 over centre	DIN 6527	Shaft 6535 HB	Corner chamfer
35°/38° spiral	HE-X	Neck	

Ø mm	Cutting length mm (L2)	Overall length mm (L1)	Neck length mm (L3)	Item no.	Price €	FPT full slot	FPT lateral
3*	8	57	12	18803W	24.41	0.015	0.025
4*	11	57	15	18804W	24.41	0.018	0.025
5*	13	57	17	18805W	24.41	0.025	0.045
6	13	57	21	18806W	26.47	0.035	0.045
8	19	63	27	18808W	28.95	0.035	0.045
10	22	72	32	18810W	37.39	0.045	0.065
12	26	83	38	18812W	44.70	0.050	0.070
14	26	83	42	18814W	59.56	0.050	0.070
16	32	92	44	18816W	82.66	0.080	0.100
18	32	92	50	18818W	92.31	0.080	0.100
20	38	104	54	18820W	122.62	0.100	1.130

Other dimensions, special lengths, torus cutters upon request.

Prices not including statutory VAT.

* Shaft Ø 6.0

SC-HPC-RH cutter, ramp type I89

- ▲ continuously linear diagonal immersion up to 42°
- ▲ deep slots, new face geometry
- ▲ Weldon shank



P	K	M	
Z-4 over centre	DIN 6527	Shaft 6535 HB	Corner chamfer
35°/38° Spiral	HE-X	Neck	

Ø mm	Cutting length mm (L2)	Overall length mm (L1)	Neck length mm (L3)	Item no.	Price €
6	13	57	21	18906W	39.71
8	19	63	27	18908W	43.44
10	22	72	32	18910W	56.08
12	26	83	38	18912W	67.05
16	32	92	44	18916W	123.99
20	38	104	54	18920W	183.94

Other dimensions, special lengths,
torus cutters upon request.

Prices not including statutory VAT.

In use by customers:
1.2085; 1.2343; 1.2379; 1.2510

HELIX values:

Material	V _c	Ø	FPT	a _p	a _e	Helix angle
Steel 750– 1000N	160	6	0.040	9.0	2.4	20°
	160	8	0.050	12.0	3.2	20°
	160	10	0.065	15.0	4.0	20°
	160	12	0.075	18.0	4.8	20°
	160	16	0.085	24.0	6.4	20°
	160	20	0.100	30.0	8.0	20°
Steel 1000– 1400N	120	6	0.040	9.0	2.4	17.5°
	120	8	0.050	12.0	3.2	17.5°
	120	10	0.065	15.0	4.0	17.5°
	120	12	0.075	18.0	4.8	17.5°
	120	16	0.085	24.0	6.4	17.5°
	120	20	0.100	30.0	8.0	17.5°
Tool Steel 50– 54HRC	65	6	0.025	9.0	2.4	15°
	65	8	0.030	12.0	3.2	15°
	65	10	0.035	15.0	4.0	15°
	65	12	0.045	18.0	4.8	15°
	65	16	0.055	24.0	6.4	15°
	65	20	0.070	30.0	8.0	15°

Ramp values

Material	V _c	Ø	FPT	a _p	a _e	Ramp angle
Steel 750– 1000N	160	6	0.040	7.5	6.0	32°
	160	8	0.050	10.0	8.0	32°
	160	10	0.065	12.5	10.0	32°
	160	12	0.075	15.0	12.0	32°
	160	16	0.085	20.0	16.0	32°
	160	20	0.100	25.0	18.0	32°
Steel 1000– 1400N	160	6	0.040	7.5	6.0	28°
	160	8	0.050	10.0	8.0	28°
	160	10	0.065	12.5	10.0	28°
	160	12	0.075	15.0	12.0	28°
	160	16	0.085	20.0	16.0	28°
	160	20	0.100	25.0	20.0	28°
Tool Steel 50– 54HRC	160	6	0.040	7.5	6.0	24°
	160	8	0.050	10.0	8.0	24°
	160	10	0.065	12.5	10.0	24°
	160	12	0.075	15.0	12.0	24°
	160	16	0.085	20.0	16.0	24°
	160	20	0.100	25.0	20.0	24°

SC-HPC aluminium cutter type I83

for roughing and finishing of non ferrous metal

- ▲ smooth running
- ▲ polished chip spaces
- ▲ specifically suitable for fluting
- ▲ Weldon shank



Material	Aluminium, long cutting	Aluminium, short cutting	Aluminium cast Si < 8%	Plastics	CuZn
$V_c = \text{m/min}$	420	400	300	400	100
$a_p = 1,5 \times D$	$a_e = 0,4 \times D$				

N		
Z-3 over centre	DIN 6527	Shaft 6535 HB
Corner chamfer	Neck	

Ø mm	Cutting length mm (L2)	Overall length mm (L1)	Neck length mm (L3)	Item no.	Price €	FPT full slot	FPT lateral
3*	8	57	13	18303W	31.72	0.015	0.020
4*	11	57	16	18304W	31.72	0.015	0.020
5*	13	57	18	18305W	31.72	0.020	0.025
6	13	57	18	18306W	31.72	0.025	0.030
8	22	63	27	18308W	42.34	0.030	0.040
10	22	72	30	18310W	53.45	0.040	0.050
12	25	83	36	18312W	64.09	0.050	0.070
16	35	92	42	18316W	74.68	0.065	0.090
20	40	104	52	18320W	104.47	0.085	0.120

Other dimensions, special lengths, torus cutters upon request.

Prices not including statutory VAT.

* Shaft Ø 6,0

SC-HPC aluminium cutter type I84

with double flute for better chip removal of non ferrous metal

- ▲ polished chip spaces
- ▲ special face geometry for immersion
- ▲ Weldon shank



Material	Aluminium, long cutting	Aluminium, short cutting	Aluminium cast Si < 8%	Plastics	CuZn
$V_c = \text{m/min}$	500	400	300	400	170
$a_p = 1,5 \times D$	$a_e = 0,4 \times D$				

N			
Z-3 over centre	DIN 6527	Shaft 6535 HB	Corner chamfer
35°/38° spiral	ZRN	Neck	

Ø mm	Cutting length mm (L2)	Overall length mm (L1)	Neck length mm (L3)	Item no.	Price €	FPT Full slot	FPT lateral
3*	8	57	13	18403W	33.40	0.015	0.020
4*	11	57	16	18404W	33.40	0.015	0.020
5*	13	57	18	18405W	33.40	0.020	0.025
6	13	57	18	18406W	33.40	0.025	0.030
8	21	63	27	18408W	40.56	0.030	0.040
10	22	72	30	18410W	48.76	0.040	0.050
12	25	83	36	18412W	60.52	0.050	0.070
16	35	92	42	18416W	88.46	0.065	0.090
20	40	104	52	18420W	126.04	0.085	0.120

Other dimensions, special lengths, torus cutters upon request.

Prices not including statutory VAT.

* Shaft Ø 6,0

SC-HPC aluminium cutter with corner radius type I84WR

- ▲ roughing, finishing, fluting
- ▲ with double flute
- ▲ polished chip spaces
- ▲ smooth running
- ▲ Weldon shank



Material	Aluminium, long cutting	Aluminium, short cutting	Aluminium cast Si < 8%	Plastics	CuZn
$V_c = \text{m/min}$	500	400	240	400	170
$a_p = 1.5 \times D$	$a_e = 0.4 \times D$				

N			
Z-3 over centre	DIN 6527	Shaft 6535 HB	Corner radius
35°/38° spiral	ZRN	Neck	



Corner radius as
per customer request

Ø mm	Cutting length mm (L2)	Overall length mm (L1)	Neck length mm (L3)	Item no.	Price €	FPT full slot	FPT lateral
5*	13	57	18	I8405WR	39.93	0.020	0.025
6	13	57	18	I8406WR	39.93	0.025	0.030
8	21	63	27	I8408WR	47.29	0.030	0.040
10	22	72	30	I8410WR	57.39	0.040	0.050
12	25	83	36	I8412WR	69.14	0.050	0.070
16	35	92	42	I8416WR	101.06	0.065	0.090
20	40	104	52	I8420WR	137.62	0.085	0.120

Other dimensions, special lengths, torus cutters upon request.

* Shaft Ø 6.0

Prices not including statutory VAT.

HPC aluminium cutter with long, offset shaft type I84WL

Roughing and finishing of aluminium
and non-ferrous alloys

- ▲ with double flute
- ▲ polished chip spaces
- ▲ reinforced core
- ▲ extra-long neck
- ▲ Weldon shank



Material	Aluminium, long cutting	Aluminium, short cutting	Aluminium cast Si < 8%	Plastics	CuZn
$V_c = \text{m/min}$	240	220	120	240	120
$a_p = 1.5 \times D$	$a_e = 0.3 \times D$				

N			
Z-3 over centre	DIN 6527	Shaft 6535 HB	
35°/38° spiral	ZRN	Neck	

Ø mm	Cutting length mm (L2)	Overall length mm (L1)	Neck length mm (L3)	Item no.	Price €	FPT Full slot	FPT lateral
6	13	80	42	I8406WL	47.40	0.025	0.030
8	21	100	62	I8408WL	67.62	0.030	0.040
10	22	100	58	I8410WL	77.19	0.040	0.050
12	26	120	73	I8412WL	97.92	0.050	0.070
16	36	150	100	I8416WL	154.95	0.065	0.090
20	41	150	100	I8420WL	204.19	0.085	0.120

Other dimensions, special lengths, torus cutters upon request.

Prices not including statutory VAT.

SC-HPC roughing cutter type 190

- ▲ durable cutting edges
- ▲ good chip removal
- ▲ for cutting with high material removal
- ▲ Weldon shank



Material	Steel < 500N	Steel < 900N	Steel < 1100N	Cast iron
$V_c = \text{m/min}$	100	80	45	95
$a_p = 1 \times D$	$a_e = 0.4 \times D$			

P	K	
Z-4 over centre	DIN 6527	Shaft 6535 HB
Corner chamfer	30° spiral	TiAlN

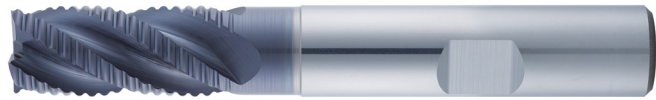
Ø mm	Cutting length mm (L2)	Overall length mm (L1)	Number of teeth	Item no.	Price €	FPT Full slot	FPT lateral
6	13	57	4	19006W	27.13	0.025	0.030
8	22	63	4	19008W	32.96	0.035	0.450
10	22	72	4	19010W	47.06	0.050	0.060
12	25	83	4	19012W	72.41	0.055	0.065
16	32	92	4	19016W	94.23	0.700	0.080
20	38	104	4	19020W	125.63	0.090	0.120

Other dimensions, special lengths, torus cutters upon request.

Prices not including statutory VAT.

SC-HPC roughing cutter VA type 198

- specifically for roughing VA materials
- ▲ smooth running and high feed rates
 - ▲ very good surface quality
 - ▲ up to $1 \times D$ in solid material
 - ▲ Weldon shank



Material	Steel < 500N	Steel < 900N	Steel < 1100N	Stainless < 900N	Stainless > 900N
$V_c = \text{m/min}$	200	160	140	65	55
$a_p = 1 \times D$	$a_e = 0.5 \times D$				

P	K	M	
Z-4 over centre	DIN 6527	Shaft 6535 HB	Corner chamfer
35°/38° spiral	HE-X	Neck	

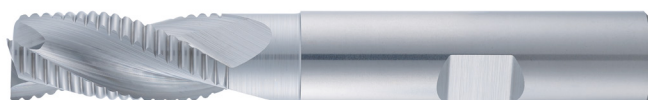
Ø mm	Cutting length mm (L2)	Overall length mm (L1)	Neck length mm (L3)	Item no.	Price €	FPT Full slot	FPT lateral
6	13	57	21	19806W	30.77	0.025	0.030
8	19	63	27	19808W	38.02	0.040	0.050
10	22	72	32	19810W	46.77	0.050	0.060
12	26	83	38	19812W	59.48	0.060	0.070
16	32	92	44	19816W	93.77	0.080	0.090
20	38	104	54	19820W	133.37	0.090	0.120

Other dimensions, special lengths, torus cutters upon request.

Prices not including statutory VAT.

SC aluminium roughing cutter, non-ferrous metals type 194

- ▲ durable roughing cutter
- ▲ coarse cord-roughing toothing
- ▲ special edge for cutting non-ferrous metals
- ▲ Weldon shank



Material	Aluminium, long cutting	Aluminium, short cutting	Aluminium cast Si < 8 %	Plastics
V _c = m/min	250	230	160	250



Z-3 over centre	DIN 6527	Shaft 6535 HB
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Corner chamfer	35°/38° spiral	Neck
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Ø mm	Cutting length mm (L2)	Overall length mm (L1)	Neck length mm (L3)	Item no.	Price €	FPT full slot	FPT lateral
6	13	57	21	19406W	27.21	0.060	0.080
8	16	63	27	19408W	33.06	0.060	0.080
10	22	72	32	19410W	43.07	0.070	0.090
12	26	83	38	19412W	60.74	0.070	0.090
16	32	92	44	19416W	90.88	0.090	0.110
20	38	104	54	19420W	137.30	0.120	0.140

Other dimensions. special lengths. torus cutters upon request.

Prices not including statutory VAT.



SC-HRC cutter type 170

for hard machining

- ▲ special coating
- ▲ K 44 ultrafine grade
- ▲ negative cutting angle
- ▲ suitable for dry cutting



H		
Z-4 Z-8	DIN 6527	Shaft 6535 HA
Corner chamfer	55° spiral	HE-S

Material	Steel < 1500N	Steel < HRC56	Steel > HRC56
$V_c = \text{m/min}$	110	80	55
$a_p = 1.5 \times D$	$a_e = 0.03 \times D$		

Ø mm	Cutting length mm (L2)	Overall length mm (L1)	Number of teeth	Item no.	Price €	fz lateral
3*	13	58	4	17003	30.56	0.018
4*	13	58	4	17004	30.56	0.018
5*	13	58	4	17005	30.56	0.020
6	18	58	6	17006	30.56	0.020
8	24	63	6	17008	34.01	0.025
10	25	72	6	17010	49.77	0.030
12	30	83	6	17012	57.96	0.035
16	32	92	6	17016	120.51	0.045
20	38	104	8	17020	212.85	0.050

Other dimensions, special lengths upon request.

Prices not including statutory VAT.

* Shaft Ø 6.0

SC-HRC with corner radius type 170R

- ▲ special coating
- ▲ K 44 ultrafine grade
- ▲ negative cutting angle
- ▲ suitable for dry cutting

H		
Z-4 Z-8	DIN 6527	Shaft 6535 HA
Corner radius	55° spiral	HE-S

Material	Steel < 1500N	Steel < HRC56	Steel > HRC56
$V_c = \text{m/min}$	110	80	55
$a_p = 1.5 \times D$	$a_e = 0.03 \times D$		

Ø mm	Cutting length mm (L2)	Overall length mm (L1)	Number of teeth	Item no.	Price €	FPT lateral
4*	13	58	4	17004R	38.24	0.018
5*	13	58	4	17005R	38.24	0.020
6	18	58	6	17006R	38.24	0.020
8	24	63	6	17008R	41.72	0.025
10	25	72	6	17010R	57.64	0.030
12	30	83	6	17012R	65.90	0.035
16	32	92	6	17016R	133.52	0.045
20	38	104	8	17020R	229.67	0.050

Other dimensions and special lengths upon request.

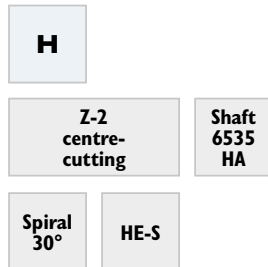
Prices not including statutory VAT.

* Shaft Ø 6.0

SC full radius cutter HRC type I34

for hard machining

- ▲ special geometry
- ▲ special carbide
- ▲ special coating
- ▲ centre cut



Material	Steel < 1500N	Steel < HRC56	Steel > HRC56
$V_C = \text{m/min}$	200	170–190	110–150
$a_p = 0,1 \times D$	$a_e = 0,1-0,2 \times D$		

Ø mm	Cutting length mm (L2)	Overall length mm (L1)	Item no.	Price €	FPT lateral
3*	5	70	I3403neg	33.62	0.040
4*	8	70	I3404neg	31.56	0.054
5*	9	80	I3405neg	32.16	0.068
6	10	90	I3406neg	33.06	0.080
8	12	100	I3408neg	45.28	0.108
10	15	100	I3410neg	60.02	0.130
12	18	110	I3412neg	75.36	0.151

Other dimensions, special lengths upon request.

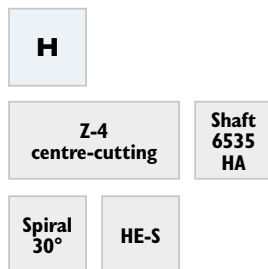
Prices not including statutory VAT.

* Shaft Ø 6.0

SC full radius cutter HRC type I51

for hard machining

- ▲ special geometry
- ▲ special carbide
- ▲ special coating
- ▲ centre cut



Material	Steel < 1500N	Steel < HRC56	Steel > HRC56
$V_C = \text{m/min}$	190	170	110–150
$a_p = 0,05 \times D$	$a_e = 0,2 \times D$		

Ø mm	Cutting length mm (L2)	Overall length mm (L1)	Item no.	Price €	FPT lateral
3*	5	54	I5103	43.52	0.019
4*	8	54	I5104	43.52	0.019
5*	9	54	I5105	38.59	0.040
6	10	54	I5106	38.59	0.045
8	12	58	I5108	44.97	0.060
10	14	66	I5110	59.79	0.070
12	16	73	I5112	77.28	0.080
16	22	82	I5116	125.24	0.090
20	26	92	I5120	172.12	0.100

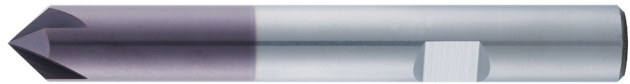
Other dimensions, special lengths upon request

Prices not including statutory VAT.

* Shaft Ø 6.0

SC deburrer 60°/ 90°, tiny chamfers type 24

- ▲ configured for the smallest chamfers
- ▲ special edge all the way to the tip
- ▲ chamfering and deburring
- ▲ for various materials
- ▲ Weldon shank



Material	Steel < 500N	Steel < 900N	Steel < 1100N	Stainless < 900N	Stainless > 900N	Cast iron	Aluminium, plastics
V _c = m/min	120	100	65	60	50	80	250

P	M	K	N
Z-4	DIN 6527	Shaft 6535 HB	TiALN

Ø mm	Overall length mm (L1)	Number of teeth	Item no. 60°	Price €	Item no. 90°	Price €	FPT lateral
4*	54	4	24004	14.04	24104	14.04	0.02
6	57	4	24006	14.61	24106	14.61	0.03
8	63	4	24008	20.35	24108	20.35	0.04
10	72	4	24010	29.44	24110	29.44	0.05
12	82	4	24012	41.51	24112	41.51	0.06

Other dimensions and special lengths upon request.

Prices not including statutory VAT.

* without Weldon shank

SC-NC centre bit 90 °/120 ° type 28

- ▲ special centre polish all the way to the tip
- ▲ precise centring and chamfering
- ▲ for various materials



Material	Steel < 500N	Steel < 900N	Steel < 1100N	Stainless < 900N	Stainless > 900N	Cast iron	Aluminium, plastics
V _c = m/min	70	60	50	40	30	80	220

P	M	K	N
DIN 6527	Shaft 6535 HA	TiALN	

SC-NC centre bit 90°

Ø mm	Overall length mm (L1)	Cutting length mm (L2)	Item no.	Price €	Item no. TiALN	Price €	Feed per revolution mm
3	38	6	28003/90	10.51	28103/90	12.23	0.12
4	46	8	28004/90	10.51	28104/90	12.23	0.12
6	65	10	28006/90	14.94	28106/90	16.71	0.15
8	65	15	28008/90	24.19	28108/90	25.97	0.15
10	72	20	28010/90	34.69	28110/90	37.67	0.15
12	85	25	28012/90	48.35	28112/90	51.32	0.15
14	100	30	28014/90	67.16	28114/90	70.13	0.17
16	100	35	28016/90	88.85	28116/90	94.78	0.17

SC-NC centre bit 120°

Ø mm	Overall length mm (L1)	Cutting length mm (L2)	Item no.	Price €	Item no. TiALN	Price €	Feed per revolution mm
3	38	6	28003/120	10.51	28103/120	12.23	0.12
4	46	8	28004/120	10.51	28104/120	12.23	0.12
6	65	10	28006/120	14.94	28106/120	16.71	0.15
8	65	15	28008/120	24.19	28108/120	25.97	0.15
10	72	20	28010/120	34.69	28110/120	37.67	0.15
12	85	25	28012/120	48.35	28112/120	51.32	0.15
14	100	30	28014/120	67.16	28114/120	70.13	0.17
16	100	35	28016/120	88.85	28116/120	94.78	0.17

Other dimensions and special lengths upon request.

Prices not including statutory VAT.

Sharpening reduces tool costs

Sharpening and recoating significantly reduce cutting tool costs. For instance, sharpening and recoating a carbide shaft cutter three times reduces the tool costs by up to 50 percent – without compromising on performance or dimensional accuracy.

We have been grinding precision tools since 1976 and know what it takes to sharpen tools. We grind all tools on modern 5-axis grinding centres and have access to a large database with tool data and geometries from numerous manufacturers.

We also offer all conventional types of coating for the recoating. We will create a detailed measurement report for each tool upon request.

*Convenient and secure:
the Wunschmann box*



*Resharpened:
HSS metal circular saw blades*

*Sharpening reduces
tool costs*

Many companies large and small have us sharpen and recoat their tools on a regular basis.

We sharpen:

- ▲ SC and HSS cutters
- ▲ SCC and HSS drill tools
- ▲ SC DIN saw blades
(ø 20 to 250 mm, tooth shapes A and BW)
- ▲ HSS saw blades
(ø 30 to 910 mm)
- ▲ Saw blades with special tooth shapes and chip breaker slots

It is as simple as this:

You pack all of the tools to be sharpened in the Wunschmann box; our sales force (in Baden-Württemberg only) or the package service will pick up the box from you. We will sharpen your tools within the agreed time and deliver them carriage paid. Thanks to our modern fleet of machines, we can sharpen individual tools as well as large numbers of parts at short notice – in proven Wunschmann quality.

WUNSCHMANN
PRÄZISIONSWERKZEUGE

Laser inscription: precise and reliable

With our laser marking system we can inscribe and mark according to your requirements: precision tools, components, products or promotional gifts. A laser inscription is easily legible, precise, permanent, forgery-proof and non-destructive. Please contact us; we will be glad to make you an offer or inscribe a prototype.



*Permanently inscribed
tools and parts*



*Easily legible
and forgery-proof*

Inscriptions:

Text, logo, ID number, bar code, QR code, type designation, scales, industrial markings, consecutive numbering, etc.

Materials:

Metals (steel, carbide, stainless steel, titanium, nickel, chrome, copper etc.), plastic, laser foil (others materials upon request)

File formats:

*.jpg, *.pdf, *.cdr, *.dxf, *.dwg, *.igs (other formats upon request)

Part size:

max. 480 × 478 × 290 mm

Laser technology

EF technology or Yb-fibre for contact-free two-dimensional marking

Marking area:

max. 100 × 100 mm

*Forgery-proof
and non-destructive*



Sales, delivery and payment conditions

General

- ▲ All prices are non-binding recommended prices and do not include surcharges for alloys or value-added tax.
- ▲ All previous catalogues and brochures will cease to be valid after the appearance of this price catalogue.
- ▲ Printing errors of any kind, including errors relating to technical data or prices, will constitute no reason for claims.
- ▲ We reserve the right to make changes to dimensions or prices due to further developments or changes to standards.
- ▲ All cutting performance specifications are approximate values. Actual cutting speeds and feed rates depend on the working conditions at hand.
- ▲ The General Terms and Conditions (GTCs) apply exclusively in relation to companies and legal entities under public law.
- ▲ The customer is deemed to have accepted the GTCs at the latest upon receiving the goods. The GTCs are also deemed to have been agreed upon for all future deliveries and services to the customer.
- ▲ All deliveries and services will be governed by these conditions as well as any separate contractual agreements. Acceptance of an order will not imply acceptance of the ordering party's purchasing conditions as part of the agreement, unless the supplier has agreed to this separately in writing.
- ▲ The supplier reserves ownership rights and intellectual property rights to samples, images, drawings, etc., including those in electronic form. These may not be made accessible to third parties. The ordering party is not permitted to make copies of any documents.
- ▲ Price lists which are handed over or sent by the supplier constitute the submission of an offer. All offers are non-binding concerning prices and delivery options, and are subject to prior sale.
- ▲ Standard tools conform to our catalogue specifications, which, however, are subject to change due to technological progress. Changes due to such progress will not entitle the ordering party to file a complaint.
- ▲ Verbal side agreements do not exist. Amendments must be made in writing to be valid.

Order acceptance

- ▲ An agreement is established upon written confirmation of the order or upon the delivery of the goods. The ordering party assumes responsibility for the correctness of the documents (drawings, samples, etc.) it provides to the supplier. If the ordering party's drawings contain no unequivocal design-related tolerances, the supplier will manufacture according to its own experience and accepted industry standards.
- ▲ In the case of custom tools, the supplier reserves the right to under- or over-delivery by up to 10% of the quantities ordered.

Prices and payment

- ▲ Prices are subject to change without notice and are quoted in Euros ex works, not including the statutory value-added tax at the current rate and the costs for any packaging, transport and insurance.
- ▲ Payment is to be made strictly net within 8 days of the invoice date in the case of custom tools and within 8 days with 2% discount or strictly net within 30 days in the case of standard tools.
- ▲ In the case of a delay in payment, the supplier will charge interest on arrears at the level of the usual bank interest rates.
- ▲ We will be entitled to render outstanding deliveries or services exclusively in return for advance payment if, after concluding the agreement, we gain knowledge of circumstances which significantly reduce the customer's creditworthiness and could jeopardise the payment of open receivables from the contractual relationship in question.

Delivery date

- ▲ The delivery dates we specify are non-binding, unless otherwise explicitly agreed upon with the customer in writing.
- ▲ Compliance with the delivery time is subject to the correct and punctual availability of supplies and raw materials.
- ▲ Partial deliveries are permissible. In case of default, the ordering party may withdraw from the agreement after the lapse of a reasonable grace period if the goods have not been declared ready to ship by that time.
- ▲ The delivery deadline will be deemed met if the goods are declared ready to ship by that time.
- ▲ Delivery will be made by our sales force or a package service and will be carriage free within Europe at a goods value of € 100.00 and up.

Retention of title

- ▲ The ordering party is not released from conducting an incoming goods inspection, especially not if we were instructed to meet specific tolerances when the order was placed.
- ▲ If goods under retention of title are sold, the customer will assign the purchase price and any claim for work compensation to us at the amount of the invoice sum.
- ▲ If any third party should lay claim to goods under retention of title, in particular by way of attachment, the customer shall inform said parties of our title to the goods and notify us without delay, in order to enable us to assert our rights to retention of title.

Claims for defects

- ▲ The ordering party is not released from conducting an incoming goods inspection, especially not if we were instructed to meet specific tolerances when the order was placed.
- ▲ Notices of defects are to be sent to us in writing within 5 business days. The goods subject to complaint must be provided to us for reworking starting at the date of the defect notice. Justified complaints which relate to defects or assured properties oblige us to perform rework free of charge. The ordering party may withdraw from the order after a second unsuccessful attempt at rework.
- ▲ The supplier assumes liability only up to the amount of its processing costs. Liability for further damages of any kind is excluded. This applies especially to indirect damages and consequential damages from defects.
- ▲ We will assume no liability for the behaviour of the material sent to us. Our entitlement to remuneration will remain unaffected.
- ▲ We will accept no responsibility for defects and damages resulting from unsuitable and improper use and failure to observe the instructions for use, non-observance of ambient conditions and conditions of use described, or improper maintenance. The customer is obliged to check our deliveries and services in terms of suitability for their intended use.

Applicable law

The sole legal venue for any disputes resulting directly or indirectly from the contractual relationship will be the domicile of our company. The same applies if the customer has no general legal venue in Germany or if its place of residence and/or habitual abode is not known at the time the complaint is filed. The registered office of our company is deemed the agreed place of performance for all services, deliveries and payments.

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