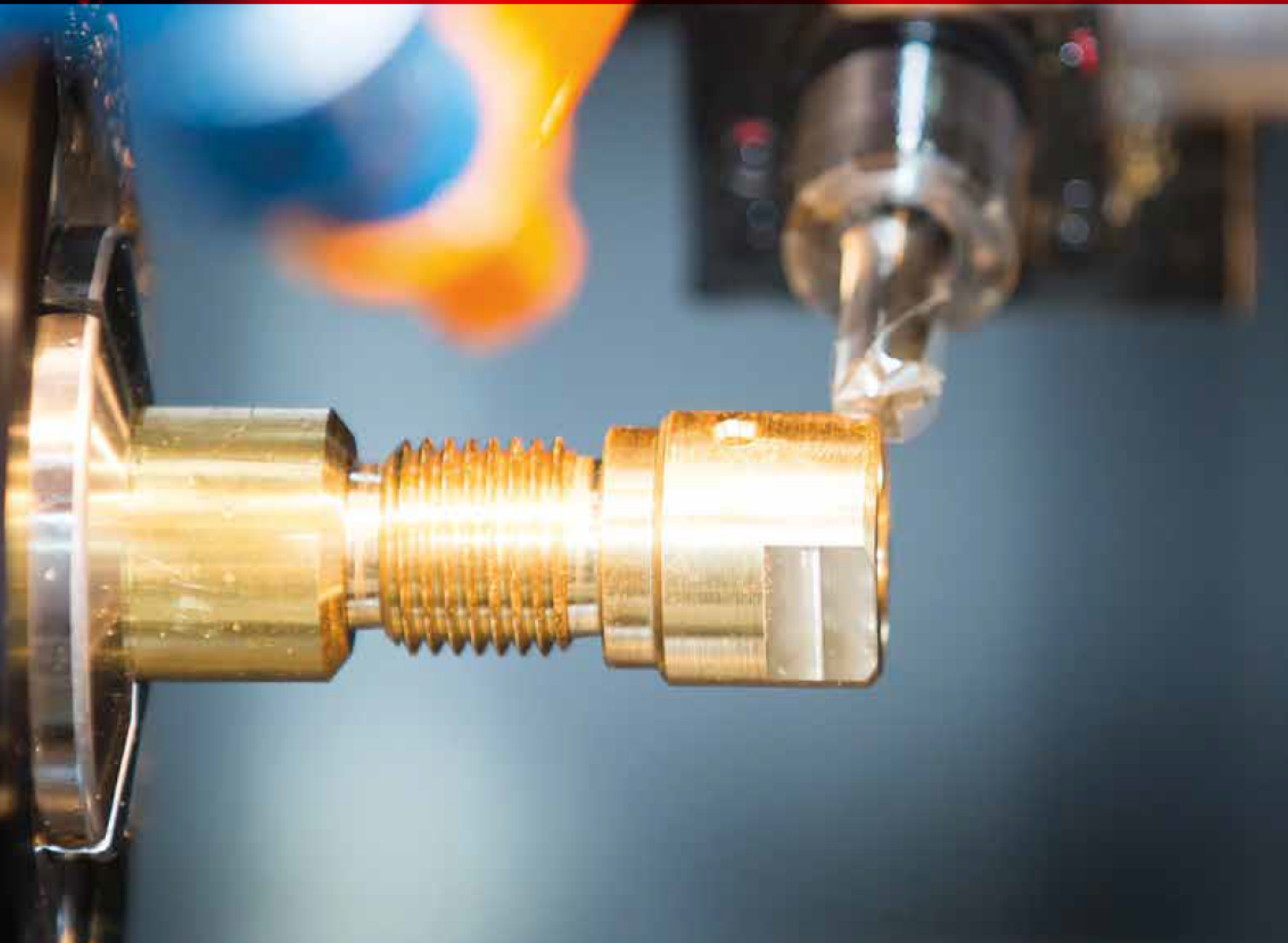


# TAKEOFF 04.21

valid until 31.01.2022 €



## ATORN

Solid carbide high-performance drill bit  
TiAlNplus HPC with internal cooling



P. 4

## ATORN

ROCKTEC PRO milling cutters



P. 12

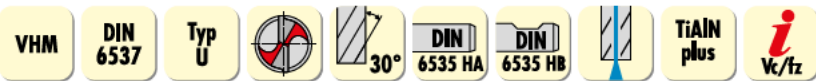
## ATORN

Recessing blades GROOVE

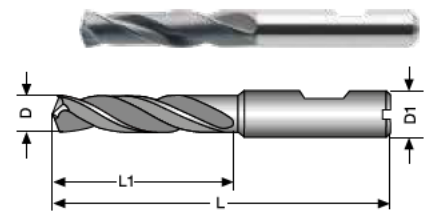


P. 19

# ATORN® Solid carbide high-performance drill bit **TiAlNplus HPC** with internal cooling



- Optimised shank diameter tolerance for use as a holding fixture in power chucks and hydraulic expansion chucks
- **Cutting material: ultra-fine grain solid carbide TiAlNplus**
- Efficient drilling in different materials
- Newly developed geometry in conjunction with a customised multilayer coating for enhanced output
- Special cutting edge finishing reduces micro-nicks and increases service life



## 3xD, HB

D1 h7 mm	D1 h6 mm	L mm	L1 mm	Feed f steel < 1000 N/mm <sup>2</sup> mm/rev	Art.no.	€
3	6	62	20	0.08	111565 0300	36,50
3.2	6	62	20	0.08	111565 0320	38,50
3.3	6	62	20	0.08	111565 0330	38,50
3.5	6	62	20	0.09	111565 0350	38,50
3.8	6	66	24	0.10	111565 0380	38,50
4	6	66	24	0.10	111565 0400	38,50
4.2	6	66	24	0.11	111565 0420	38,50
4.5	6	66	24	0.11	111565 0450	38,50
4.8	6	66	28	0.12	111565 0480	38,50
5	6	66	28	0.13	111565 0500	38,50
5.1	6	66	28	0.13	111565 0510	38,50
5.5	6	66	28	0.14	111565 0550	38,50
5.8	6	66	28	0.15	111565 0580	38,50
6	6	66	28	0.15	111565 0600	38,50
6.2	8	79	34	0.16	111565 0620	49,80
6.5	8	79	34	0.16	111565 0650	49,80
6.8	8	79	34	0.17	111565 0680	49,80
7	8	79	34	0.18	111565 0700	49,80
7.5	8	79	41	0.19	111565 0750	49,80
8	8	79	41	0.20	111565 0800	49,80
8.2	10	89	47	0.21	111565 0820	58,-
8.5	10	89	47	0.21	111565 0850	58,-
8.8	10	89	47	0.22	111565 0880	58,-
9	10	89	47	0.23	111565 0900	58,-

D1 h7 mm	D1 h6 mm	L mm	L1 mm	Feed f steel < 1000 N/mm <sup>2</sup> mm/rev	Art.no.	€
9.5	10	89	47	0.24	111565 0950	58,-
10	10	89	47	0.25	111565 1000	58,-
10.2	12	102	55	0.26	111565 1020	87,10
10.5	12	102	55	0.26	111565 1050	87,10
11	12	102	55	0.28	111565 1100	87,10
11.5	12	102	55	0.29	111565 1150	87,10
12	12	102	55	0.30	111565 1200	87,10
12.5	14	107	60	0.31	111565 1250	117,-
13	14	107	60	0.33	111565 1300	117,-
13.5	14	107	60	0.34	111565 1350	117,-
14	14	107	60	0.35	111565 1400	117,-
14.5	16	115	65	0.36	111565 1450	138,50
15	16	115	65	0.38	111565 1500	138,50
15.5	16	115	65	0.39	111565 1550	138,50
16	16	115	65	0.40	111565 1600	138,50
16.5	18	123	73	0.41	111565 1650	194,50
17	18	123	73	0.43	111565 1700	194,50
17.5	18	123	73	0.44	111565 1750	194,50
18	18	123	73	0.45	111565 1800	194,50
18.5	20	131	79	0.46	111565 1850	244,-
19	20	131	79	0.48	111565 1900	244,-
19.5	20	131	79	0.49	111565 1950	244,-
20	20	131	79	0.50	111565 2000	244,-

## 5xD, HB

D h7 mm	D1 h6 mm	L mm	L1 mm	Feed f steel < 1000 N/mm <sup>2</sup> mm/rev	Art.no.	€
3	6	66	28	0.08	111569 0300	47,90
3.2	6	66	28	0.08	111569 0320	47,90
3.3	6	66	28	0.08	111569 0330	47,90
3.5	6	66	28	0.09	111569 0350	47,90
3.8	6	74	36	0.10	111569 0380	47,90
4	6	74	36	0.10	111569 0400	47,90
4.2	6	74	36	0.11	111569 0420	48,60
4.5	6	74	36	0.11	111569 0450	48,60
4.8	6	82	44	0.12	111569 0480	48,60
5	6	82	44	0.13	111569 0500	48,60
5.1	6	82	44	0.13	111569 0510	48,60
5.5	6	82	44	0.14	111569 0550	48,60
5.8	6	82	44	0.15	111569 0580	48,60
6	6	82	44	0.15	111569 0600	48,60
6.2	8	91	53	0.16	111569 0620	53,60
6.5	8	91	53	0.16	111569 0650	53,60
6.8	8	91	53	0.17	111569 0680	53,60
7	8	91	53	0.18	111569 0700	53,60
7.5	8	91	53	0.19	111569 0750	53,60
8	8	91	53	0.20	111569 0800	53,60
8.2	10	103	61	0.21	111569 0820	62,90
8.5	10	103	61	0.21	111569 0850	62,90
8.8	10	103	61	0.22	111569 0880	62,90
9	10	103	61	0.23	111569 0900	62,90

D h7 mm	D1 h6 mm	L mm	L1 mm	Feed f steel < 1000 N/mm <sup>2</sup> mm/rev	Art.no.	€
9.5	10	103	61	0.24	111569 0950	62,90
10	10	103	61	0.25	111569 1000	62,90
10.2	12	118	71	0.26	111569 1020	89,50
10.5	12	118	71	0.26	111569 1050	89,50
11	12	118	71	0.28	111569 1100	89,50
11.5	12	118	71	0.29	111569 1150	89,50
12	12	118	71	0.30	111569 1200	89,50
12.5	14	124	77	0.31	111569 1250	119,50
13	14	124	77	0.33	111569 1300	119,50
13.5	14	124	77	0.34	111569 1350	119,50
14	14	124	77	0.35	111569 1400	119,50
14.5	16	133	83	0.36	111569 1450	141,-
15	16	133	83	0.38	111569 1500	141,-
15.5	16	133	83	0.39	111569 1550	141,-
16	16	133	83	0.40	111569 1600	141,-
16.5	18	143	93	0.41	111569 1650	225,-
17	18	143	93	0.43	111569 1700	225,-
17.5	18	143	93	0.44	111569 1750	225,-
18	18	143	93	0.45	111569 1800	225,-
18.5	20	153	101	0.46	111569 1850	238,-
19	20	153	101	0.48	111569 1900	238,-
19.5	20	153	101	0.49	111569 1950	245,-
20	20	153	101	0.50	111569 2000	245,-

# EXTREME LOW-VIBRATION DUE TO UNEQUAL PITCH



## HPMT End milling cutter

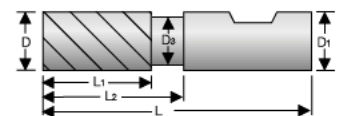


- With clearance
- Unequal pitch to minimise vibrations
- CNC repetition precision to within 10 µm
- For milling stainless steel, machining exotic materials, and general applications
- Especially suitable for slot milling and for lateral machining

**EXCLUSIVE item:  
The all-rounder!**



D mm	L1 mm	L2 mm	D1 mm	L mm	D3 mm	Feed fz		Art.no.	€
						steel < 1000 N/mm <sup>2</sup> mm/Z	steel < 1000 N/mm <sup>2</sup> mm/Z		
3	9	15	6	57	2.80	0.016	0.020	254121 0030	18,80
4	12	20	6	57	3.70	0.021	0.026	254121 0040	18,80
5	13	20	6	57	4.60	0.026	0.032	254121 0050	18,80
6	13	20	6	57	5.50	0.031	0.038	254121 0060	18,80
8	20	30	8	64	7.40	0.037	0.046	254121 0080	26,50
10	22	32	10	72	9.20	0.044	0.054	254121 0100	39,50
12	26	37	12	83	11.00	0.050	0.062	254121 0120	51,-
16	32	46	16	92	15.00	0.063	0.078	254121 0160	89,-
20	38	58	20	104	19.00	0.075	0.094	254121 0200	143,50



Material	● very well suited	○ well suited	Steel			Stainless steel			Cast iron		Titanium alloys	Super alloys Fe/NiCo-based		Aluminium		Copper Co-alloy	Graphite	Hardened steel			
			<700 N/mm <sup>2</sup>	<1000 N/mm <sup>2</sup>	<1400 N/mm <sup>2</sup>	ferri./marbns.	austenitic	duplex	GG/GTS	GGG		<30 HRC	≥30 HRC	<8% Si	≥8% Si		GRP/CF/kevlar	<55 HRC	<60 HRC	≥60 HRC	
			●	●	○	●	●	●			●	●	●	●	●	●					
			150-200	100-120	70-90	40-70	40-70	50-60			60-70	15-25	15-20	280-350	200-250	150-200					

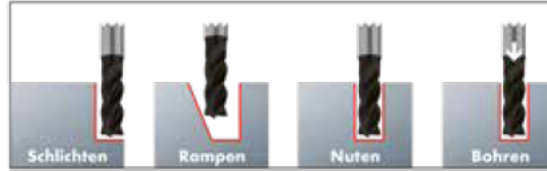
Cutting speed Vc m/min. Please adjust these guidelines according to clamping operation and machine set-up!

# SARA Drilling and plunge milling cutters

Drilling and milling with one tool

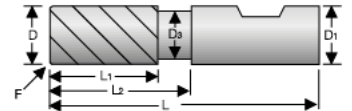


- **Face geometry for drilling and ramping**
- With clearance
- **Unequal pitch to minimise vibrations**
- High material removal rate
- **High feed rates for plunge milling and groove milling**
- up to 45° plunge angle
- Undersized for precise fitting grooves



## Standard with driving plane

D	L1	L2	D1	L	D3	F x 45°	Feed fz steel < 1000 N/mm² mm/Z	Feed fz steel < 1000 N/mm² mm/Z	DIN 6535-HB Art.no.	€
5.7	13	19	6	57	5.4	0.1	0.03	0.04	254145 0057	28,70
6	13	19	6	57	5.7	0.1	0.03	0.04	254145 0060	28,70
7.7	19	25	8	63	7.3	0.2	0.045	0.055	254145 0077	38,70
8	19	25	8	63	7.6	0.2	0.045	0.055	254145 0080	38,70
10	22	30	10	72	9.5	0.25	0.055	0.065	254145 0100	57,90
12	26	36	12	83	11.5	0.3	0.06	0.08	254145 0120	74,10
14	26	36	14	83	13.5	0.35	0.07	0.09	254145 0140	97,50
16	32	42	16	92	15.5	0.4	0.085	0.1	254145 0160	127,50
20	38	52	20	104	19.5	0.5	0.1	0.12	254145 0200	195,-



Material	Steel		Stainless steel			Cast iron		Titanium alloys	Super alloys Fe/NiCo-based		Aluminium		Copper Cu-alloy	Graphite	Hardened steel		
	<700 N/mm²	<1000 N/mm²	ferrit./martens.	austenitic	duplex	GG/GTS	GGG		<30 HRC	≥30 HRC	< 8 % Si	≥ 8 % Si		EP/CF/Inconel	< 55 HRC	< 60 HRC	≥ 60 HRC
● very well suited ○ well suited	●	●	●	●	●	●	○	○	○	○							
	210	175	120	110	110	90	150	110	60-70	20-35	15-30						

Cutting speed Vc m/min. Please adjust these guidelines according to clamping operation and machine set-up!

**Test Winner**

RockTec PRO emerged the winner in a comparative test conducted by GFE Gesellschaft für Fertigungstechnik und Entwicklung Schmalkalden e.V. Set against the competition, RockTec PRO milling cutters proved themselves in hard milling trials.

A 1.2379 (X153 CrMo V12) tool steel with a hardness of 58 HRC was machined. This involved milling test tracks with defined ap and ae using different solid carbide milling cutters. RockTec PRO milling cutters exhibited the longest tool life overall and so came in at Number 1 in the overall rating.



**Test results**

- low flank wear
- few nicks
- low edge build-up
- minimal coating wear

**Spiral angle**  
for extremely soft cutting in hard materials

**Geometry**  
reliable chip removal and consistently high process reliability

**Cutting material**  
Micrograin solid carbide, especially for hardened steels

**Front face**  
optimised radii and front face geometries

**Cutting edges**  
relief-ground cutting edges

**Coating**  
TiAlSiN multi-layer coating with extreme hardness

**ATORN® RockTec PRO milling cutters**

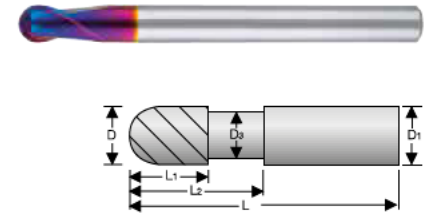
**NEW**



- For machining materials **from 47 to 65 HRC**
- Optimised geometry for hard machining
- **Solid carbide ultra-fine grain cutting material**
- State-of-the-art coating technology for reduced wear and extreme hardness
- **Subject to process-related colour variations in the coating.**

**Radius milling cutters**

D mm	D1 mm	D3 mm	L mm	L1 mm	L2 mm	Z	Feed fz hardened steel < 60 HRC mm/Z	Art.no.	€
1	6	0.96	65	1.5	3.5	2	0.005	257110 0010	42,30
1.5	6	1.44	65	2	4	2	0.005	257110 0015	41,60
2	6	1.95	65	2.5	4.5	2	0.005	257110 0020	41,30
2.5	6	-	65	3	6.5	2	0.019	257110 0025	40,60
3	6	-	65	3.5	7	2	0.019	257110 0030	40,20
4	6	-	65	4.5	7	2	0.019	257110 0040	39,90
5	6	-	65	5.5	10	2	0.048	257110 0050	39,20
6	6	-	65	7	-	2	0.048	257110 0060	38,10
8	8	-	85	9	-	2	0.06	257110 0080	48,30
10	10	-	85	93	-	2	0.07	257110 0100	63,70
12	12	-	93	14	-	2	0.08	257110 0120	84,-
16	16	-	110	18	-	2	0.09	257110 0160	159,-
20	20	-	126	22	-	2	0.1	257110 0200	229,-



Material	Steel			Stainless steel			Cast iron		Titanium alloys	Super alloys Fe/NiCo-based		Aluminium		Copper Co-alloy	Graphite	Hardened steel		
	● very well suited ○ well suited	<700 N/mm²	<1000 N/mm²	<1400 N/mm²	ferri./martens.	austenitic	duplex	GG/GTS	GGG	<30 HRC	≥30 HRC	<8% Si	≥8% Si	Co-alloy	GR/CF/Inconel	<55 HRC	<60 HRC	≥60 HRC
				● 140-160												● 80-110	● 80-110	● 50-80

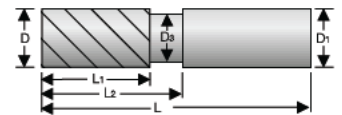
Cutting speed Vc m/min. Please adjust these guidelines according to clamping operation and machine set-up!

# ATORN® Multi-flute milling cutters 90° RockTec PRO

NEW



- For machining materials from **47 to 65 HRC**
- Optimised geometry for hard machining
- **Solid carbide ultra-fine grain cutting material**
- State-of-the-art coating technology for reduced wear and extreme hardness
- **Subject to process-related colour variations in the coating.**



## Short

D mm	D1 mm	D3 mm	L mm	L1 mm	L2 mm	Z	Feed fz hardened steel < 60 HRC mm/Z	Art.no.	€
3	6	2.9	57	4	12	6	0.009	257170 0030	23,90
4	6	3.8	57	5	14	6	0.011	257170 0040	23,90
5	6	4.7	57	6	16	6	0.013	257170 0050	27,90
6	6	5.6	57	7	20	6	0.015	257170 0060	32,20
8	8	7.6	63	9	26	6	0.018	257170 0080	36,70
10	10	9.4	72	11	32	6	0.019	257170 0100	63,30
12	12	11.4	83	12	38	6	0.023	257170 0120	86,50
16	16	15.4	92	16	44	8	0.025	257170 0160	154,-
20	20	19.4	104	20	52	10	0.03	257170 0200	219,-

## Standard

D mm	D1 mm	D3 mm	L mm	L1 mm	Z	Feed fz hardened steel < 60 HRC mm/Z	Art.no.	€
3	6	-	57	9	6	0.009	257175 0030	29,-
4	6	-	57	11	6	0.011	257175 0040	32,30
5	6	-	57	13	6	0.013	257175 0050	34,80
6	6	-	57	15	6	0.015	257175 0060	37,10
8	8	-	63	19	6	0.018	257175 0080	43,40
10	10	-	72	24	6	0.019	257175 0100	73,50
12	12	-	83	28	6	0.023	257175 0120	102,50
16	16	-	92	36	8	0.025	257175 0160	192,50
20	20	-	104	44	10	0.03	257175 0200	279,-



## Long

D mm	D1 mm	D3 mm	L mm	L1 mm	L2 mm	Z	Feed fz hardened steel < 60 HRC mm/Z	Art.no.	€
3	6	-	65	9	11	6	0.009	257180 0030	36,-
4	6	-	65	12	13	6	0.011	257180 0040	39,20
5	6	-	65	15	15	6	0.013	257180 0050	41,60
6	6	-	65	18	-	6	0.015	257180 0060	42,70
8	8	-	70	24	-	6	0.018	257180 0080	45,80
10	10	-	85	30	-	6	0.019	257180 0100	89,50
12	12	-	93	36	-	6	0.023	257180 0120	119,-
16	16	-	110	48	-	8	0.025	257180 0160	213,50
20	20	-	126	60	-	10	0.03	257180 0200	345,-



Material	Steel			Stainless steel			Cast iron		Titanium alloys	Super alloys Fe/AlCo-based		Aluminium		Copper Cu-alloy	Graphite	Hardened steel				
	● very well suited	○ well suited		ferrot./marbels	austenitic	duplex	GG/GTS	GGG		< 30 HRC	≥ 30 HRC	< 8 % Si	≥ 8 % Si		< 55 HRC	< 60 HRC	≥ 60 HRC			
			140-160												●	●	●	80-110	80-110	50-80

Cutting speed Vc m/min. Please adjust these guidelines according to clamping operation and machine set-up!

# MILLING INSERTS XNKU.. 06..

# TETRAFEED

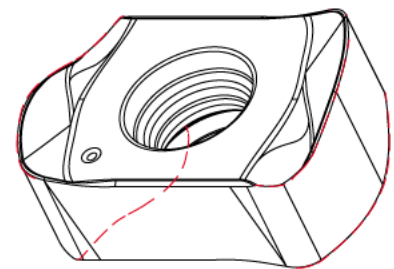


PHH

NEW  
GRADE

PHP

NEW  
GRADE



## PHP coating technology

The new PHP coating technology offers high levels of layer hardness and smooth surfaces for increased wear resistance and reduction of material build-up.

Suitable for high-performance applications in unalloyed, alloyed and high-speed steels as well as for the machining of cast iron.

## Optimised design for better chip removal

- More stable, improved insert seat for a long service life of the abrasive bead

## PHH coating technology

The new PHH coating technology has a very high level of thermal stability and offers long tool service lives.

Suitable for the machining of hardened steel, stainless steel and titanium alloys.

## Geometry

The reinforced cutting edge is designed for general applications in various substances.

## Plate width

- Large cross-section

## Cutting edge

- Stable cutting edge
- Increased wear resistance

## Double-sided indexable insert

- Double-sided indexable insert with 4 cutting edges

## palbit Shank 20° TETRAFEED

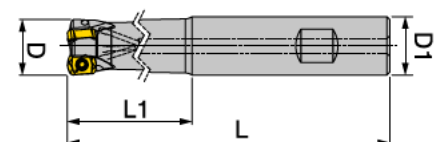


- For milling inserts XNKU 06
- Easy cutting action due to the positive installation position of the indexable insert
- **four cutting edges per insert**
- Tools deliver smooth milling performance
- **Internal coolant supply**

NEW



D mm	D1 mm	L mm	L1 mm	Z	Tightening torque max. N m	Art.no.	€
20	20	160	90	3	1.20	260311 0020	179,-
25	25	180	100	4	1.20	260311 0025	199,-
32	32	200	120	5	1.20	260311 0032	229,-



**palbit**  **Screw-in milling cutter 20° TETRAFEED**

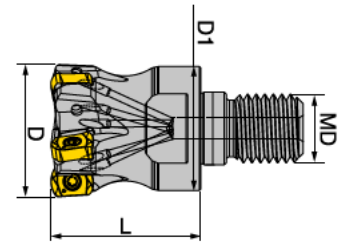
**NEW**



- For milling inserts XNKG 06
- Easy cutting action due to the positive installation position of the indexable insert
- **four cutting edges per insert**
- Tools deliver smooth milling performance
- **Internal coolant supply**



D mm	MD	D1 mm	L mm	Z	Tightening torque max. N m	Art.no.	€
16	M8	13	25	2	1.20	<b>260312 0016</b>	<b>129,-</b>
20	M10	18	28	3	1.20	260312 0020	<b>179,-</b>
25	M12	18	30	4	1.20	260312 0025	<b>195,-</b>
32	M16	29	35	5	1.20	260312 0032	<b>229,-</b>
35	M16	29	35	6	1.20	260312 0035	<b>235,-</b>
40	M16	29	45	5	1.20	260312 0040	<b>265,-</b>
42	M16	29	35	7	1.20	260312 0042	<b>269,-</b>

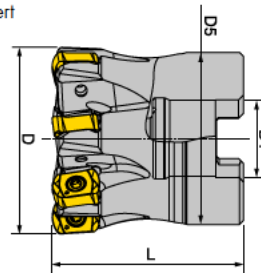


**palbit**  **20° corner milling cutter TETRAFEED**

**NEW**



- For milling inserts XNKG 06
- Easy cutting action due to the positive installation position of the indexable insert
- **four cutting edges per insert**
- Tools deliver smooth milling performance
- **Internal coolant supply**



D mm	D1 mm	D5 mm	L mm	Z	Tightening torque max. N m	Art.no.	€
40	16	36	40	7	1.20	<b>260313 0040</b>	<b>259,-</b>
50	22	42	40	8	1.20	260313 0050	<b>299,-</b>
52	22	40	40	8	1.20	260313 0052	<b>309,-</b>
63	22	40	40	9	1.20	260313 0063	<b>339,-</b>

**Milling inserts XNKG.. 06.. TETRAFEED**

**NEW**

F finishing	M medium	R roughing	ISO designation	ISO P	ISO M	ISO K	ISO N	ISO S	ISO H	Quality	Art.no.	€
-	-	-	XNKG 06T310-MP		●			●		PHH 930	10 285560 0167	9,50
				●		●				PHP 920	10 285560 0168	9,50
				●	●	●		●		PHS 740	10 285560 0174	9,50
				●						PHP 910	10 285560 0192	9,50

ISO	PHH 930	PHP 910	PHP 920	PHS 740
ISO P Steel		Vc = 140-250	Vc = 160-250	Vc = 140-230
ISO M Stainless steel	Vc = 80-170			Vc = 70-180
ISO K Cast iron			Vc = 100-320	Vc = 70-260
ISO S Superalloy	Vc = 30-75			Vc = 30-70
Vc - [m/min] fz - [mm/Z] ap - [mm]	fz = 0.5-1.4	fz = 0.5-1.5 ap = 1.0		fz = 0.5-1.3

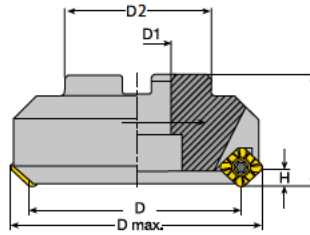


**palbit** Face milling cutter 45° **LINEPRO 09945**

With spacers



- for ISO milling inserts, type SE.. 13T3
- Highly positive rake angle
- With spacer
- Smooth, low-noise milling
- For plunge milling and face milling
- Supplied with clamping screws and wrench
- **Cutting angle:** Tool cutting-edge angle 45°, axial rake angle 20°



D mm	D1 mm	D max. mm	D2 mm	L mm	H mm	Z	Weight kg	Tightening torque max. Nm	Suitable indexable inserts	Art.no.	€
50	22	63	40	40	6.0	4	0.36	3.0	SE..13T3	260213 0050	219,-
63	22	76	48	40	6.0	5	0.59	3.0	SE..13T3	260213 0063	265,-
80	27	93	60	50	6.0	6	1.02	3.0	SE..13T3	260213 0080	315,-
100	32	113	70	50	6.0	7	1.52	3.0	SE..13T3	260213 0100	385,-
125	40	138	90	63	6.0	8	3.16	3.0	SE..13T3	260213 0125	459,-
160	40	173	110	63	6.0	10	4.61	3.0	SE..13T3	260213 0160	629,-

**Milling inserts SE..13T3.. LINEPRO 09945**

Compatible with:  
Sandvik Coro Mill® 245  
Mitsubishi ASX4S  
Sumitomo WGC

**SEHT 13T3**

F finishing	M medium	R roughing	ISO designation	ISO P	ISO M	ISO K	ISO N	ISO S	ISO H	Quality	Art.no.	€
-	-	-	SEHT 13T3 AGFN-LN				●			PH 0910	10 285234 0320	9,30
			SEHT 13T3 AGSN	●	●	●				PH 6740	10 285234 0139	9,30
				●		●				PH 6920	10 285234 0142	9,30

ISO	PH 0910	PH 6740	PH 6920
ISO P Steel		Vc = 100-160	Vc = 130-230
ISO M Stainless steel		Vc = 70-120	
ISO K Cast iron		Vc = 80-250	Vc = 80-280
ISO N Al/non-ferrous	Vc = 350-1400		
Vc - [m/min] fz - [mm/Z] ap - [mm]	fz = 0.1-0.2	fz = 0.1-0.25 ap = 0.05-6.0	

F finishing	M medium	R roughing	ISO designation	ISO P	ISO M	ISO K	ISO N	ISO S	ISO H	Quality	Art.no.	€
-	-	-	SEHT 13T3 AGSN-WIPER	●		●				PH 6920	10 285234 0442	10,95

ISO	PH 6920
ISO P Steel	Vc = 130-230
ISO K Cast iron	Vc = 80-280
Vc - [m/min] fz - [mm/Z] ap - [mm]	fz = 0.1-0.3 ap = 0.05-6.0

**SEHW 13T3**




F finishing	M medium	R roughing	ISO designation	ISO P	ISO M	ISO K	ISO N	ISO S	ISO H	Quality	Art.no.	€
-	-	-	SEHW 13T3 AGFN	●		●				PH 6920	10 285237 0142	9,30

ISO	PH 6920
ISO P Steel	Vc = 130-230
ISO K Cast iron	Vc = 80-280
Vc - [m/min] fz - [mm/Z] ap - [mm]	fz = 0.1-0.25 ap = 0.05-6.0




# ISO indexable cutting inserts, chip breaker GS

- The brandnew chip breaker GS from Palbit for machining ISO M and ISO S substances.
- The indexable cutting inserts are characterised by a very soft cut and smooth running.
- The dynamic chip breaker allows for good chip control, as well as an above-average material removal rate.
- Even duplex materials can be machined very well.




## Chip breaker GS negative

F finishing ○	M medium ●	R roughing -		ISO designation	ISO P	ISO M	ISO K	ISO N	ISO S	ISO H	Quality	Art.no.	€
						●			●		PHH 920	10 333577 0194	6,80
						●			●		PHH 910	10 333577 0195	6,80
						●			●		PHH 920	10 333577 0294	6,80
						●			●		PHH 910	10 333577 0295	6,80
						●			●		PHH 920	10 333577 0394	6,80
						●			●		PHH 910	10 333577 0395	6,80




## Chip breaker GS negative

F finishing ○	M medium ●	R roughing -		ISO designation	ISO P	ISO M	ISO K	ISO N	ISO S	ISO H	Quality	Art.no.	€
						●			●		PHH 920	10 333578 0794	6,75
						●			●		PHH 910	10 333578 0795	6,75
						●			●		PHH 920	10 333578 0894	6,75
						●			●		PHH 910	10 333578 0895	6,75
						●			●		PHH 920	10 333578 0194	8,90
						●			●		PHH 910	10 333578 0195	8,90
						●			●		PHH 920	10 333578 0294	8,90
						●			●		PHH 910	10 333578 0295	8,90
						●			●		PHH 920	10 333578 0394	8,90
						●			●		PHH 910	10 333578 0395	8,90
						●			●		PHH 920	10 333578 0494	9,95
						●			●		PHH 910	10 333578 0495	9,95
	●			●		PHH 920	10 333578 0594	9,95					
	●			●		PHH 910	10 333578 0595	9,95					
	●			●		PHH 920	10 333578 0694	9,95					
	●			●		PHH 910	10 333578 0695	9,95					

## Chip breaker GS negative

F finishing ○	M medium ●	R roughing -		ISO designation	ISO P	ISO M	ISO K	ISO N	ISO S	ISO H	Quality	Art.no.	€
						●			●		PHH 920	10 333582 0194	9,50
						●			●		PHH 910	10 333582 0195	9,50
						●			●		PHH 920	10 333582 0294	9,50
						●			●		PHH 910	10 333582 0295	9,50
						●			●		PHH 920	10 333582 0394	9,50
						●			●		PHH 910	10 333582 0395	9,50

## Chip breaker GS negative

F finishing ○	M medium ●	R roughing -		ISO designation	ISO P	ISO M	ISO K	ISO N	ISO S	ISO H	Quality	Art.no.	€
						●			●		PHH 920	10 333583 0494	6,15
						●			●		PHH 910	10 333583 0495	6,15
						●			●		PHH 920	10 333583 0594	6,15
						●			●		PHH 910	10 333583 0595	6,15
						●			●		PHH 920	10 333583 0194	7,40
						●			●		PHH 910	10 333583 0195	7,40
						●			●		PHH 920	10 333583 0294	7,40
						●			●		PHH 910	10 333583 0295	7,40
						●			●		PHH 920	10 333583 0394	7,40
						●			●		PHH 910	10 333583 0395	7,40

## ISO M

## ISO S

ISO	PHH 910	PHH 920
ISO M Stainless steel	Vc = 130-250	Vc = 110-220
ISO S Superalloy	Vc = 25-70	Vc = 20-60
Vc - (m/min) f - (mm/rev) ap - (mm)	f = 0.10-0.50 ap = 0.50-4.0	

ISO	PHH 910	PHH 920
ISO M Stainless steel	Vc = 130-250	Vc = 110-220
ISO S Superalloy	Vc = 25-70	Vc = 20-60
Vc - (m/min) f - (mm/rev) ap - (mm)	f = 0.10-0.35 ap = 0.15-3.0	

ISO	PHH 910	PHH 920
ISO M Stainless steel	Vc = 130-250	Vc = 110-220
ISO S Superalloy	Vc = 25-70	Vc = 20-60
Vc - (m/min) f - (mm/rev) ap - (mm)	f = 0.10-0.50 ap = 0.50-4.0	

ISO	PHH 910	PHH 920
ISO M Stainless steel	Vc = 130-250	Vc = 110-220
ISO S Superalloy	Vc = 25-70	Vc = 20-60
Vc - (m/min) f - (mm/rev) ap - (mm)	f = 0.10-0.40 ap = 0.15-3.50	

# ATORN® Recessing inserts AD neutral GROOVE

- The feed rates must be adjusted to the respective cutting edge width
- Cutting edge accuracy  $W \pm 0.02$  mm
- AD = double-edged cutting insert **max. 24 mm punching depth**
- AE = single-edged cutting insert **punching depth can be extended up to 50 mm depending on blade overhang**

## Chip breaker M-medium, universal

- For grooving
- Recessing insert with slightly negative edge rounding
- Appropriate for almost all areas of application
- Main application area steel and cast iron

ISO designation	Width mm	r mm	max. depth mm	ISO						Quality	Art.no.	€
				ISO P	ISO M	ISO K	ISO N	ISO S	ISO H			
AD 1.50-0.15 N-M	1.50	0.15	24	●	○	●				ACP 20 G	10 388030 1520	16,10
	1.50	0.15	24	●	○	●				APU 40 G	10 388030 1540	16,10
	1.50	0.15	24	○	○			●		APM 45 G	10 388030 1545	16,10
AD 2.00-0.2 N-M	2.00	0.2	24	●	○	●				ACP 20 G	10 388000 2035	12,95
	2.00	0.2	24	●	○	●				APU 40 G	10 388000 2040	12,95
	2.00	0.2	24	○	○			●		APM 45 G	10 388000 2045	12,95
AD 3.00-0.2 N-M	3.00	0.2	24	●	○	●				ACP 20 G	10 388000 3035	14,20
	3.00	0.2	24	●	○	●				APU 40 G	10 388000 3040	14,20
	3.00	0.2	24	○	○			●		APM 45 G	10 388000 3045	14,20
AD 4.00-0.3 N-M	4.00	0.3	24	●	○	●				ACP 20 G	10 388000 4035	15,90
	4.00	0.3	24	●	○	●				APU 40 G	10 388000 4040	15,90
	4.00	0.3	24	○	○			●		APM 45 G	10 388000 4045	15,90
AD 5.00-0.4 N-M	5.00	0.4	24	●	○	●				ACP 20 G	10 388000 5035	21,50
	5.00	0.4	24	●	○	●				APU 40 G	10 388000 5040	21,50
	5.00	0.4	24	○	○			●		APM 45 G	10 388000 5045	21,50
AD 6.00-0.4 N-M	6.00	0.4	24	●	○	●				ACP 20 G	10 388000 6035	22,60
	6.00	0.4	24	●	○	●				APU 40 G	10 388000 6040	22,60
	6.00	0.4	24	○	○			●		APM 45 G	10 388000 6045	22,60

ISO	ACP 20 G	APM 45 G	APU 40 G
ISO P Steel	Vc = 50-240	Vc = 40-120	Vc = 50-240
ISO M Stainless steel	Vc = 50-180	Vc = 60-180	Vc = 50-200
ISO K Cast iron	Vc = 80-200		Vc = 80-200
ISO S Superalloy		Vc = 15-120	
Vc - [m/min] f - [mm/rev]	f = 0.05-0.35		

## Chip breaker ET - extra

- For grooving
- Specially for stainless materials
- "Problem-solver" for materials that are difficult to machine such as titanium or duplex
- Extremely soft cutting

ISO designation	Width mm	r mm	max. depth mm	ISO						Quality	Art.no.	€
				ISO P	ISO M	ISO K	ISO N	ISO S	ISO H			
AD 1.50-0.15 N-ET	1.50	0.15	24	●	○	●				ACP 20 G	10 388031 1520	16,10
	1.50	0.15	24	●	○	●				APU 40 G	10 388031 1540	16,10
	1.50	0.15	24	○	○			●		APM 45 G	10 388031 1545	16,10
AD 2.00-0.2 N-ET	2.00	0.2	24	●	○	●				ACP 20 G	10 388012 2035	12,95
	2.00	0.2	24	●	○	●				APU 40 G	10 388012 2040	12,95
	2.00	0.2	24	○	○			●		APM 45 G	10 388012 2045	12,95
AD 3.00-0.2 N-ET	3.00	0.2	24	●	○	●				ACP 20 G	10 388012 3035	14,20
	3.00	0.2	24	●	○	●				APU 40 G	10 388012 3040	14,20
	3.00	0.2	24	○	○			●		APM 45 G	10 388012 3045	14,20
AD 4.00-0.3 N-ET	4.00	0.3	24	●	○	●				ACP 20 G	10 388012 4035	15,90
	4.00	0.3	24	●	○	●				APU 40 G	10 388012 4040	15,90
	4.00	0.3	24	○	○			●		APM 45 G	10 388012 4045	15,90
AD 5.00-0.4 N-ET	5.00	0.4	24	●	○	●				ACP 20 G	10 388012 5035	21,50
	5.00	0.4	24	●	○	●				APU 40 G	10 388012 5040	21,50
	5.00	0.4	24	○	○			●		APM 45 G	10 388012 5045	21,50
AD 6.00-0.4 N-ET	6.00	0.4	24	●	○	●				ACP 20 G	10 388012 6035	22,60
	6.00	0.4	24	●	○	●				APU 40 G	10 388012 6040	22,60
	6.00	0.4	24	○	○			●		APM 45 G	10 388012 6045	22,60

ISO	ACP 20 G	APM 45 G	APU 40 G
ISO P Steel	Vc = 50-240	Vc = 40-120	Vc = 50-240
ISO M Stainless steel	Vc = 50-180	Vc = 60-180	Vc = 50-200
ISO K Cast iron	Vc = 80-200		Vc = 80-200
ISO S Superalloy		Vc = 15-120	
Vc - [m/min] f - [mm/rev]	f = 0.06-0.27		

## ATORN® Recessing blades GROOVE

- For recessing inserts system AD / AE
- For parting-off and deep grooving
- Supplied without chuck key



### Recessing blade ABE neutral

ISO designation	B mm	L mm	W mm	Suitable cutting inserts	D max. mm	Suitable wrench	Art.no.	€
ABE N 26-ADE02	26	150	2.0	System AD/AE 2.0	50	3565000030	<b>356005 2602</b>	<b>89,-</b>
ABE N 26-ADE03	26	150	3.0	System AD/AE 3.0	70	3565000030	356005 2603	<b>77,-</b>
ABE N 26-ADE04	26	150	4.0	System AD/AE 4.0	80	3565000040	356005 2604	<b>84,-</b>
ABE N 32-ADE02	32	150	2.0	System AD/AE 2.0	50	3565000030	356005 3202	<b>90,-</b>
ABE N 32-ADE03	32	150	3.0	System AD/AE 3.0	100	3565000030	356005 3203	<b>77,-</b>
ABE N 32-ADE04	32	150	4.0	System AD/AE 4.0	100	3565000040	356005 3204	<b>84,50</b>



### Recessing blade ABE with internal cooling

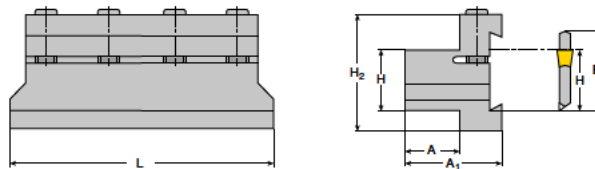
ISO designation	B mm	L mm	W mm	Suitable cutting inserts	D max. mm	Suitable wrench	Art.no.	€
ABE N 26-ADE02-C	26	150	2.0	System AD/AE 2.0	50	3565000030	<b>356050 2602</b>	<b>149,50</b>
ABE N 26-ADE03-C	26	150	3.0	System AD/AE 3.0	70	3565000030	356050 2603	<b>142,50</b>
ABE N 26-ADE04-C	26	150	4.0	System AD/AE 4.0	80	3565000040	356050 2604	<b>169,50</b>
ABE N 32-ADE02-C	32	150	2.0	System AD/AE 2.0	50	3565000030	356050 3202	<b>140,-</b>
ABE N 32-ADE03-C	32	150	3.0	System AD/AE 3.0	100	3565000030	356050 3203	<b>146,50</b>
ABE N 32-ADE04-C	32	150	4.0	System AD/AE 4.0	100	3565000040	356050 3204	<b>165,50</b>

### Chuck key

ISO designation	Wrench Art.no.	€
Wrench blade 2-3 mm system ASS/ABE/AD/AE	<b>356500 0030</b>	<b>29,90</b>
Wrench blade 4-6 mm system ASS/ABE/AD/AE	356500 0040	<b>29,90</b>



## ATORN® Recessing blade mount AD / AE / ASS GROOVE



### Recessing blade holder AEB

- For recessing blade ABE ASS without internal cooling
- For recessing blade ABE AD without internal cooling

ISO designation	H mm	A mm	B mm	L mm	A1 mm	H2 mm	Suitable Cutting edge holder	Art.no.	€
AEB26-2020	20	20	26	90	37	43	Dimension B = 26	<b>356101 2620</b>	<b>139,-</b>
AEB32-2525	25	20	32	110	38	49	Dimension B = 32	356101 3225	<b>152,-</b>



### Recessing blade holder AEB with internal cooling

- For recessing blade ABE AD with internal cooling

ISO designation	H mm	A mm	B mm	L mm	A1 mm	H2 mm	Suitable Cutting edge holder	Art.no.	€
AEB26-2020 IK	20	20	26	82	40	43	Dimension B = 26	<b>356100 2620</b>	<b>250,-</b>
AEB32-2525 IK	25	25	32	95	44.5	49	Dimension B = 32	356100 3225	<b>255,-</b>



- **Drilling and turning**
- Complete set including holder
- **L1 maximum turning depth**
- **L2 maximum drilling depth**
- Version: **right-hand cutting**
- Cutting inserts: **AL41F-TiAlN coated**
- Supplied in a case



**RDT-4**

- Internal machining from  $\varnothing$  3.7mm

Designation	d g6 mm	L1 mm	L2 mm	D min. mm	Art.no.	€
640.DT16, RDT.4-15, RDT.4-20	16	15, 20	10, 16	3.7	<b>304602 0001</b>	<b>172,50</b>

**RDT-5**

- Internal machining from  $\varnothing$  4.7mm

Designation	d g6 mm	L1 mm	L2 mm	D min. mm	Art.no.	€
650.DT16, RDT.5-15, RDT.5-25	16	15, 25	10, 20	4.7	<b>304602 0002</b>	<b>172,50</b>

**RDT-6**

- Internal machining from  $\varnothing$  5.7mm

Designation	d g6 mm	L1 mm	L2 mm	D min. mm	Art.no.	€
660.DT16, RDT.6-15, RDT.6-30	16	15, 30	10, 25	5.7	<b>304602 0003</b>	<b>172,50</b>

**RDT-7**

- Internal machining from  $\varnothing$  6.7mm

Designation	d g6 mm	L1 mm	L2 mm	D min. mm	Art.no.	€
670.DT16, RDT.7-20, RDT.7-35	16	20, 35	15, 30	6.7	<b>304602 0004</b>	<b>172,50</b>



High-gloss polished...

... extremely sharp.

**ATORN**<sup>®</sup>  
Leistung braucht Qualität

## ATORN® Quick-change tool holder

- Profile-ground, toothed central body attached to the lathe support along with the base body
- The base body can accommodate an unlimited number of interchangeable holders for turning or drilling tools, one after the other.
- 40 different steel holder angle settings possible
- Repetition precision  $\pm 0.01$  mm

### Quick-change D lathe tool holder

- Flat tool support
- Supplied with lockable height-adjustment screw and clamping screws

Suitable for holder size	D mm	Total length mm	Suitable quadratic-head bolt	Art.no.	€
AA	12	50	M5 x 0.8 x 18	446505 0012	65,-
A	16	75	M7 x 1 x 23	446505 1116	65,-
A	16	90	M7 x 1 x 23	446505 1117	65,-
A	20	75	M7 x 1 x 23	446505 1120	66,-
A	20	90	M7 x 1 x 23	446505 1121	66,-
B	25	120	M11 x 1 x 30	446505 2225	102,50
B	25	140	M11 x 1 x 30	446505 2226	102,50
B	32	120	M11 x 1 x 30	446505 2232	104,-
B	32	140	M11 x 1 x 30	446505 2233	104,-
C	32	150	M14 x 1.5 x 40	446505 3332	161,-
C	32	170	M14 x 1.5 x 40	446505 3333	161,-
C	40	150	M14 x 1.5 x 40	446505 3340	175,-
C	40	170	M14 x 1.5 x 40	446505 3341	175,-
C	45	170	M14 x 1.5 x 40	446505 3345	183,-
D1	40	180	M14 x 1.5 x 40	446505 4440	265,-
D1	50	180	M14 x 1.5 x 40	446505 4450	280,-
D1	63	180	M14 x 1.5 x 40	446505 4463	299,-



### Quick-change BS boring bar holder

- With straight bore for Morse taper sleeves and for direct attachment of boring bars
- Supplied with lockable height-adjustment screw and clamping screws
- Tool holder blanks available on request

Suitable for holder size	For boring bar Ø mm	Total length mm	Art.no.	€
AA	15	50	446520 0015	85,-
A	30	80	446520 1130	102,-
B	40	120	446520 2240	154,-
C	40	160	446520 3340	255,-
C	50	160	446520 3350	260,-
D1	63	180	446520 4463	535.00



### Morse taper sleeve, type H

- With jacking screw
- For mounting in BS quick-release boring bar holders, cylindrical outer diameter
- For tools with a Morse taper shank

Suitable for holder size	Shank Ø mm	Shank design interior	Art.no.	€
A	30	MK 1	446525 1101	35,50
A	30	MK 2	446525 1102	37,60
B	40	MK 3	446525 2203	46,-
B	40	MK 4	446525 2204	51,50
C	40	MK 3	446525 3303	46,-
C	40	MK 4	446525 3304	51,50
C	50	MK 3	446525 3313	58,-
C	50	MK 4	446525 3314	61,50
C	50	MK 5	446525 3315	83,50
D1	63	MK 5	446525 4405	121,-



## SARA Live centres

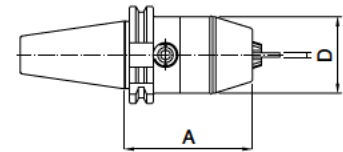
- Excellent true running accuracy thanks to reliable precision bearings
- Special lubrication for long service life and low maintenance costs
- 60° point angle



Shank	Projecting length mm	Head Ø mm	Moving point Ø x length mm	True running accuracy mm	Workpiece weight max. kg	Max. speed rpm	Art.no.	€
MK 2	65	45	20 x 41	0.005	200	7000	401516 0002	69,50
MK 3	79.5	60	25 x 48.5	0.005	500	5000	401516 0003	83,-
MK 4	102.5	70	32 x 61.5	0.005	800	3800	401516 0004	99,50
MK 5	129	90	40 x 78.5	0.005	2000	3000	401516 0005	165,-

## SARA NC short drill chuck with spur gear system

- Clamping via spur gear system
- Clockwise and anti-clockwise rotation possible
- True running accuracy 0.05 mm
- Reliable bevel-pinion gear
- Slim design
- max. permitted rotational speed with unbalanced tool 7,000 rpm



### DIN ISO 7388-1 Form A / DIN 69871

Shank	Clamping range mm	D mm	A mm	Tightening torque max. N m	Retention force N	Wt. width mm	True running accuracy mm	Art.no.	€
SK 40	0,5 - 13	50	84	20	40	6	0.05	440243 4013	152,50
SK 40	2,5 - 16	57	84	20	40	6	0.05	440243 4016	152,50



### DIN ISO 7388-2 Form A / (JIS B6339)

Shank	Clamping range mm	D mm	A mm	Tightening torque max. N m	Retention force N	Wt. width mm	True running accuracy mm	Art.no.	€
SK 40	0,5 - 13	50	94	20	40	6	0.05	440241 4013	152,50
SK 40	2,5 - 16	57	94	20	40	6	0.05	440241 4016	152,50



### DIN 2080, Form A

Shank	Clamping range mm	D mm	A mm	Tightening torque max. N m	Retention force N	Wt. width mm	True running accuracy mm	Art.no.	€
SK 40	0,5 - 13	50	78	20	40	6	0.05	440242 4013	152,50
SK 40	2,5 - 16	57	78	20	40	6	0.05	440242 4016	152,50



## SARA® Assembly system

- Aluminium housing
- 4 x 90° swivel-mounted
- Steel modular tool holders
- Quick and easy replacement of holding fixtures
- High flexibility
- Positive-locking fixing of the tools
- No damage to cone tip

- Interchangeable adapter for polygon shank according to DIN 26623-1 also available

### Assembly system

Designation	Art.no.	€
Basic unit, 4 x 90° swivel-mounted for interchangeable adapter	<b>438180 0001</b>	<b>145,-</b>



438180 0001

### Interchangeable adapter

- For DIN 69893 Form A (HSK-A)

Designation	Art.no.	€
Tool holder HSK 40	<b>438382 0040</b>	<b>139,-</b>
Tool holder HSK 50	438382 0050	<b>139,-</b>
Tool holder HSK 63	438382 0063	<b>139,-</b>
Tool holder HSK 80	438382 0080	<b>179,50</b>
Tool holder HSK 100	438382 0100	<b>179,50</b>



### Interchangeable adapter

- For DIN ISO 7388-1 (DIN 69871) / 7388-2 (JIS B) and DIN 2080

Designation	Art.no.	€
Tool holder SK 30	<b>438181 0030</b>	<b>145,-</b>
Tool holder SK 40	438181 0040	<b>145,-</b>
Tool holder SK 50	438181 0050	<b>169,-</b>



### Interchangeable adapter

- For DIN 69880 (VDI)

Designation	Art.no.	€
Tool holder VDI 20	<b>438383 0020</b>	<b>145,-</b>
Tool holder VDI 30	438383 0030	<b>145,-</b>
Tool holder VDI 40	438383 0040	<b>169,-</b>
Tool holder VDI 50	438383 0050	<b>169,-</b>



Best surfaces...

... with curve segment.

**ATORN®**  
Leistung braucht Qualität



## SARA® Digital micrometers

NEW



- Sturdy, with ratchet
- Painted steel frame with hand protection
- Spindle fixed by a locking lever
- Spindle Ø 6.5 mm
- Calibration including setting gauge
- Supplied with CR2032 battery (no. 548079 6032) and adjustment key, versions over 25 mm include setting gauge



Measurement range mm	Art.no.	€	DAkkS calibration	
			Art.no.	€
0-25	503490 0025	52,50	070160 D001	18,-
25-50	503490 0050	69,50	073103 D047	33,-
50-75	503490 0075	87,-	073103 D052	36,-
75-100	503490 0100	99,50	073103 D052	36,-

## SARA® Digital Vernier callipers for left-handed users



- Large high-contrast digital display
- Locking screw on top
- Precision-lapped measuring areas
- **Functions:** ON/OFF, ZERO, mm/inch
- Supplied with SR 44 battery, No. 500534 0001



Measurement range mm/inch	Jaw length mm	Error limit mm	Art.no.	€	DAkkS calibration	
					Art.no.	€
150/6 inch	40	0.03	500700 1150	69,90	072008 D001	14,-

## ATORN® Laser distance measuring instrument

NEW



- Easy-to-use, handy laser distance measuring instrument for measurements in single or continuous measurement mode
- Measurement range 0.05 to 30 m
- Backlit display
- Automatic switch-off
- Laser class 2
- Dimensions 80 x 30 x 22 mm
- Supplied with pouch and 2x LR3 batteries no. 548079 4003

Measurement range mm	Error limit mm	Weight kg	Art.no.	€
0.05 to 30	2	0.1	557530 1000	69,-



## Height adjustment device for lathes

NEW

- For quick and easy determination of the reference point in the lathes
- Appropriate for horizontal and vertical use
- Can be used only on electrically conductive materials
- **With illuminated display,** LED indicators with good all-round visibility
- Height tolerance  $\pm 0.01$  mm
- Travel reserve 2 mm
- Hardened probe tip, functional surfaces ground and lapped
- **Base equipped with three magnets for better grip when used horizontally**
- Supplied in wooden box with works certificate incl. 2x SR 44 batteries no. 500534 0001



Height mm	Support surface Ø mm	Sensor surface Ø mm	Art.no.	€
60	32	19	558030 1060	179,-

## SARA® Emulsion mist separator **Ultra-Jet**

- **Mechanical, with patented X-Cyclone® agglomerator system**
- **Thanks to European ErP directives, energy savings of several thousand euros can be had over conventional air purifiers.**
- **No rotational speed regulation**
- **No disposable filters**
- Depending on size, suitable for processing machines of approx. 1 – 3 m<sup>3</sup> Suitable for internal chamber volume and light-duty chip removal processes
- Compact design, direct mounting on the machine
- Up to four filter stages, can be retrofitted with a HEPA filter
- Dynamic-static combined filter system
- Dynamically balanced high-performance fan integrated into the filter unit
- Service opening with quick-release clamps
- ULTRA-JET is tested for flame resistance in accordance with DIN EN 16282
- Stainless steel housing powder-coated in RAL 7035 (light grey), high-performance X-Cyclone® separator profiles made of aluminium
- **Supplied with:** Ø 160/150 mm reducer with chip pre-filter insert, 3 m oil return hose
- **Pricing:** ex works, including packaging



### Single units

Model	Volume flow max. m <sup>3</sup> /h	Dimensions L x W x H mm	Connection Ø mm	Weight kg	Motor output kW	I(A)	Voltage V	Noise level dB	Art.no.	€
Ultra-Jet 1	1000	410 x 410 x 480	150	20	0.25	0.74	400	69	909016 0010	2.139,-
Ultra-Jet 2	1400	410 x 410 x 480	150	22	0.5	1.3	400	73	909016 0020	2.669,-

## SARA® Mobile smoke filter 3D

Ideal for 3D printing

- **Removal of smoke, vapour, odour and gas from exhaust air.**
- The fan is designed for energy-efficiency.
- Thorough air purification and air conditioning using gas filter for odour reduction, HEPA H13 high-performance particle and dust filter.
- Robust and torsion-free housing made of powder-coated stainless steel (RAL 7035 - light grey).
- The HEPA filter is equipped with a high-quality glass-fibre medium and has a large filtering surface.
- Suction arm with integrated stainless steel mechanics
- An intelligent monitoring system with electronic flow sensors guarantees the continuous function monitoring of the suction.
- The air flows indicated in the product description are achieved throughout the entire operating life.
- Designed, constructed and produced in Germany
- **Supplied with:** 3D smoke filter with two suction arms, gas filter, HEPA H13 high-performance particle filter, coarse particle filter
- **Pricing:** ex works, including packaging



Model	Volume flow max. m <sup>3</sup> /h	Suction arm	Dimensions L x W x H mm	Suction arm Ø mm	Weight kg	Noise level dB	Output W	I(A)	Voltage V	Art.no.	€
SMR-3D	500	2	400 x 400 x 622	70	33	≤ 50	168	1.4	230	909111 0010	2.899,-

## SARA® Cutting fluid

INFO

The SARA® cutting fluids product range is the latest generation of high-performance cutting fluids. These have been developed to meet high demands for product quality and manufacturing reliability in the machining process.

Thanks to the latest technologies, the cutting fluids offer a long service life, high lubricating and cooling performance, and low consumption. In addition, they are particularly user-friendly thanks to their environmentally friendly ingredients.



### Advantages

- Very good lubricating and cooling performance
- Low consumption and low odour
- For a long machine service life
- Low foaming in soft water or under high mechanical load
- Biostable against microorganisms
- High user-friendliness thanks to environmentally friendly ingredients (formaldehyde-free)

### Product overview/selection guide

	Ingredients				Materials										Machining				
	Contains boron	Contains amines	Contains form aldehyde	Mineral oil content in %	Steel	Stainless steel	Cast iron	Titanium alloys	Super alloys Fe/NiCo-based	Aluminium	Non-ferrous metals	Non-ferrous metals	Carbide metals	Plastics	Drilling, milling, turning	Threads	Deep-hole drilling	Grinding	Punching
<b>Water-miscible cutting fluids</b>																			
UNI SC 101	●	●		35	●	○	●			○	○			○	●	●	○	○	
HEAVY SC 201				50	●	●	●	●	●	●	●	●		○	●	●	●	○	
HPC SC 301	●	●		0	●	●	●			●	●	●		○	●	●	●	●	
HI-GRIND SC 401		●		0	●	○	●			○	○			○				●	
<b>Cutting oils</b>																			
UNI SC C0101				80	●	○	●			●	●	●		○	●	●	●	○	●
HEAVY SC C0201				0	●	●	●	●	●	●	●	●		○	●	●	●	○	●

● very well suited ○ limited suitability

## SARA® Cutting oil

NEW

- Non-water-soluble heavy-duty cutting oil

### UNI SC CO 101

- **Mineral oil-based**
- Universal application for all substances such as alloyed and unalloyed steels, cast iron, non-ferrous metals and aluminium
- Applied with a squeeze bottle, sprayer or lubricating device
- Massive increase in tool endurance
- **Chlorine-free**

Description	Contents l	Art.no.	€
Wash bottle	0.25	944001 0250	8,25
Wash bottle	0.5	944001 0500	12,15
Wash bottle	1.0	944001 1000	22,-
Canister	5.0	944001 0005	87,20
Canister	10.0	944001 0010	151,-
Canister	25.0	944001 0025	307,-



### HEAVY SC CO201

- **Ester-based**
- Especially for machining chrome-nickel, titanium, manganese, copper and its alloys, high-alloy and stainless steels.
- **Chlorine and mineral oil-free**

Description	Contents l	Art.no.	€
Wash bottle	0.25	944002 0250	9,10
Wash bottle	0.5	944002 0500	16,60
Wash bottle	1.0	944002 1000	30,-
Canister	5.0	944002 0005	119,-
Canister	10.0	944002 0010	206,-
Canister	25.0	944002 0025	420,-

MLQ minimum volume lubrication suitable

## SARA High-performance lubricating coolant concentrate

- Water-miscible

NEW

Particularly appropriate  
for NC and CNC centres

### UNI SC101

- With high additivation
- Universal for all materials
- Suitable for internal coolant supply and high pressure
- **Chlorine and formaldehyde-free**
- Application concentration 3-5%
- pH value at 5% concentration approx. 9.2
- Refractometer reading 1.4

Description	Contents l	Art.no.	€
Canister	5.0	943001 0005	68,50
Canister	10.0	943001 0010	128,-
Canister	25.0	943001 0025	219,-
Canister	60.0	943001 0060	519,-
Barrel	215.0	943001 0200	1.599,-



### HEAVY SC201

- Especially for difficult-to-machine and high-strength materials, difficult aluminium alloys and non-ferrous metals
- **Free from chlorine, boric acid, amines and formaldehyde**
- Application concentration 5-9%
- pH value at 5% concentration approx. 8.5
- Refractometer reading 1.0

Description	Contents l	Art.no.	€
Canister	5.0	943002 0005	76,10
Canister	10.0	943002 0010	139,50
Canister	25.0	943002 0025	238,-
Canister	60.0	943002 0060	549,-
Barrel	215.0	943002 0200	1.719,-

### HPC SC301

- **Ester-based**
- Especially for high-performance machining (HPC)
- Suitable for internal coolant supply and high pressure
- **Free from secondary amines, chlorine, mineral oil and formaldehyde**
- Application concentration 5-9%
- pH value at 5% concentration approx. 8.9-9.3
- Refractometer reading 1.56

Description	Contents l	Art.no.	€
Canister	5.0	943003 0005	77,10
Canister	10.0	943003 0010	143,50
Canister	25.0	943003 0025	245,-
Canister	60.0	943003 0060	569,-
Barrel	215.0	943003 0200	1.779,-

### HI-GRIND SC401

- **Synthetic**
- Transparent
- Excellent rinsability, prevents smearing on tool surfaces
- High and stable corrosion protection
- **Free from chlorine, silicone, formaldehyde and boric acid**
- Application concentration 3-5%
- pH value at 5% concentration approx. 9.1
- Refractometer reading 2.75

Description	Contents l	Art.no.	€
Canister	5.0	943004 0005	77,10
Canister	10.0	943004 0010	143,50
Canister	25.0	943004 0025	245,-
Canister	60.0	943004 0060	569,-
Barrel	215.0	943004 0200	1.779,-

Specially for grinding a  
wide range  
of substances

## pig Universal absorbent fleece

- Replaces cleaning cloth
- Perforations every 25cm
- Highly absorbent, fine-fibre structure that leaves virtually no liquid or fibre residues behind
- The single-layer design is ideal for small spills and cleaning operations.
- Ideal for workshops, tool trolleys, toolboxes and service areas

### Roller material

Type	Dimensions	Thickness	Contents	Absorption capacity	Art.no.	€
MAT1990-DE	38 cm x 15 m	Single thickness	1 roller	12.5 l	910110 0026	31,90
MAT1991-DE	38 cm x 15 m	Single thickness	12 rollers	150 l	910110 0027	375,-



910110 0026



910110 0027

NEW

For a clean workplace

## pig Absorbent mat roll holder

- PIG roll holder for fast removal of mats as required
- For clean and safe storage of PIG mats



Model	Description	Art.no.	€
57701	Magnetic roll holder for PIG rollers 38 cm x 15 m	910110 0017	10,20

## pig Barrel lid mats

- Keeps barrel lids clean and dry
- Absorbs oil, cooling solvents, water
- Pre-cut, fits perfectly onto a 210 litre barrel
- Price per pack



Type	Ø cm	Thickness	Contents	Absorption capacity	Art.no.	€
MAT 208	56	Double thickness	25 units in box	26 l	910101 0041	89,50

## pig DRAINBLOCKER®

- Drain covers
- Special surface formation creates a secure seal over the drain opening
- Made of flexible polyurethane for protection against water, oil and most chemicals
- Easy to clean and therefore re-usable
- Cover must overlap the drain by at least 8 cm on all sides



Type	Dimensions	Contents	Art.no.	€
PLRE 241	46 x 46 x 1.1 cm	1 unit	913020 0001	127,50
PLRE244	61 x 61 x 1.1 cm	1 unit	913020 0055	229,-
PLRE 242	91 x 91 x 1.1 cm	1 unit	913020 0002	435,-
PLRE 243	122 x 122 x 1.1 cm	1 unit	913020 0003	635,-

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