

Proto·max™_{TG}

1. Product description – Features

New substrate

- For better toughness
- H12F → 12% Co

50° helix angle

Shank according to DIN 6535 HA and HB

- Tolerance h5

Variable flute depth

- Big chip room in the front (up to $0,9 \times D_c$)
- Stable core in the back

With and without neck (d_2)

Unequal divide

- Against vibration

Pretreatment of the cutting edge

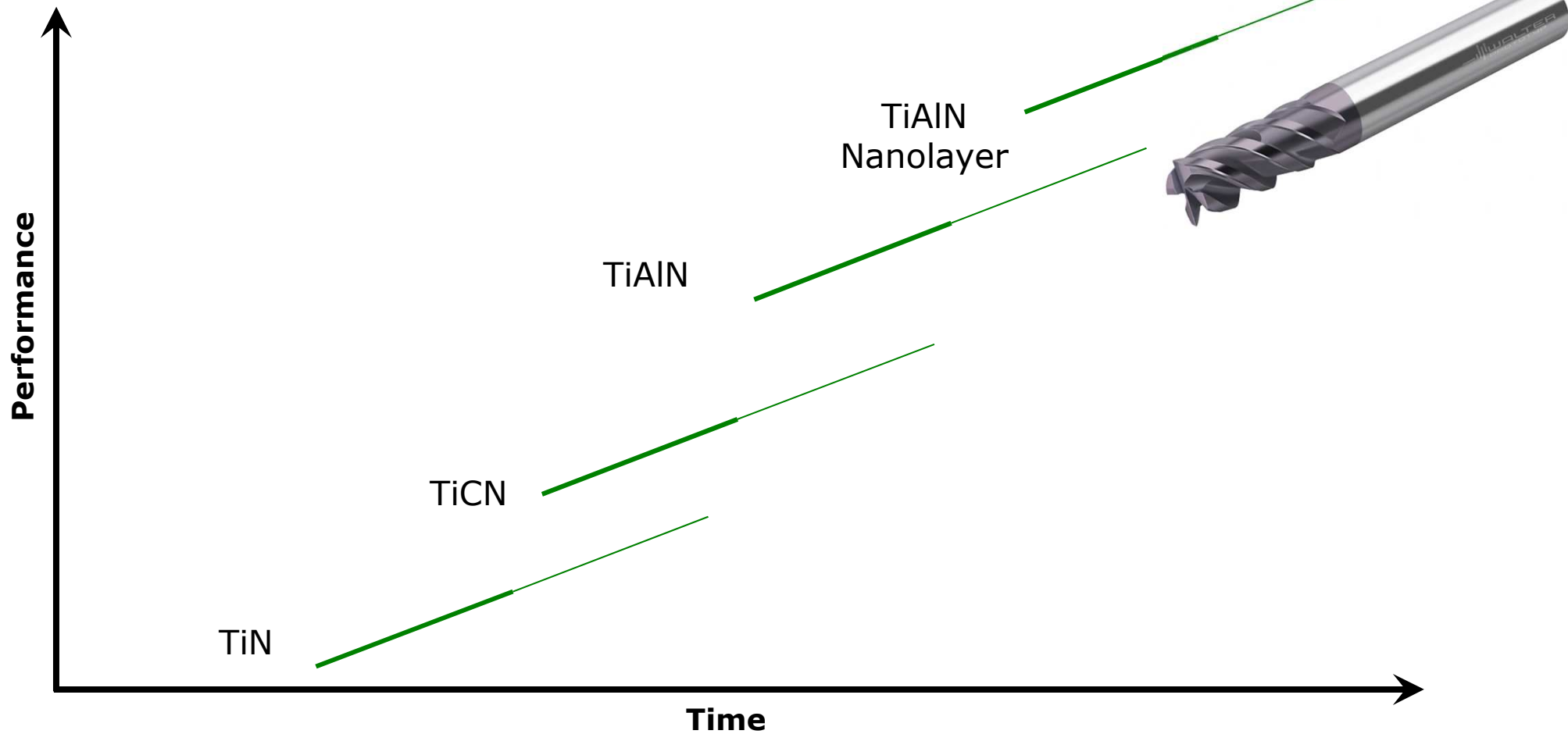
- Optimized micro geometry

NEW TAT-coating

- Walter own TiAlN coating
- $1,5\mu\text{m}$

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1. Product description – PVD strategy



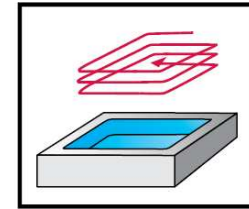
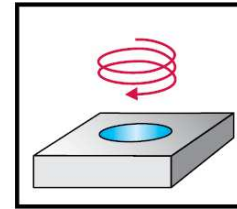
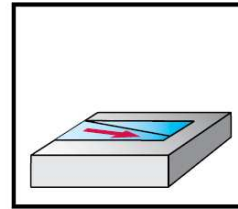
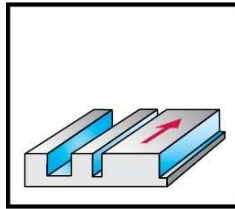
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2. Application area

ISO –
material groups

P	M	K	N	S	H	O
● ●	●	●		●		

Application



Additional
information

Fullslotting

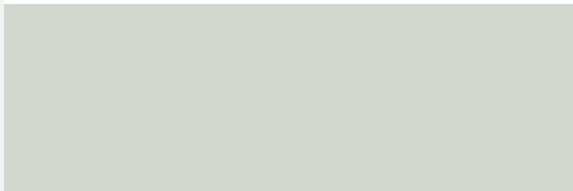
- $a_{pmax.} = 0,9 \times D_c$

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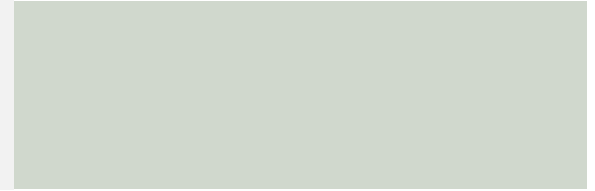
2. Application area



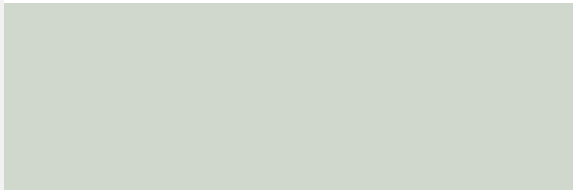
General engineering



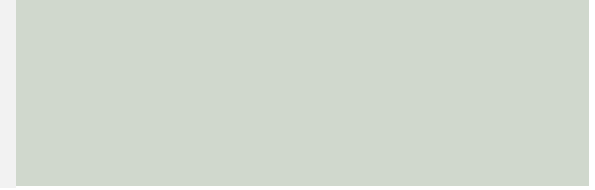
Aerospace



Automotive



Energy



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3. Field test – WAT

Workpiece

- Mouth piece

Material

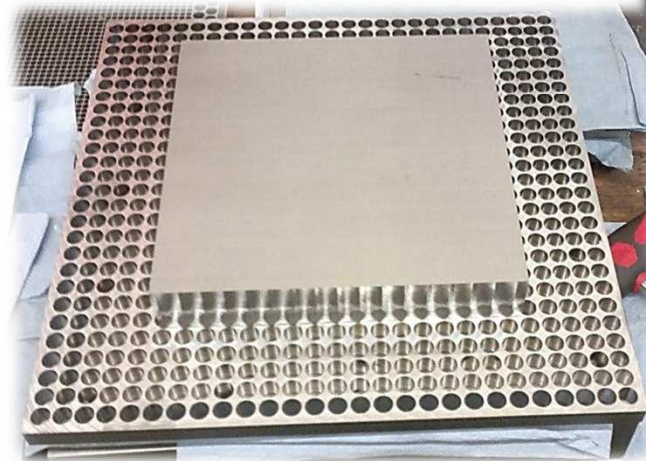
- X36CrMo17 / 1.2316
- Tensile strength $R_m = \text{ca. } 1000 \text{ N/mm}^2$

Machine

- Leadwell / MCV-OP
- SK 40

Operation

- Interrupted cut
- Holes



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3. Field test – WAT – Ø16mm – ISO P



Cutting data		Walter so far <i>Tough Guy</i> H3121217-16	Competitor	Walter new Proto·max™ _{TG} H3121278-16
v _c	[m/min]	125	100	189
n	[min ⁻¹]	2.500	1.989	3.760
f _z	[mm]	0,09	0,09	0,12
v _f	[mm/min]	900	716	1.804
a _p	[mm]	11	11	11
a _e	[mm]	3	3	3

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3. Field test – WAT

Toollife:

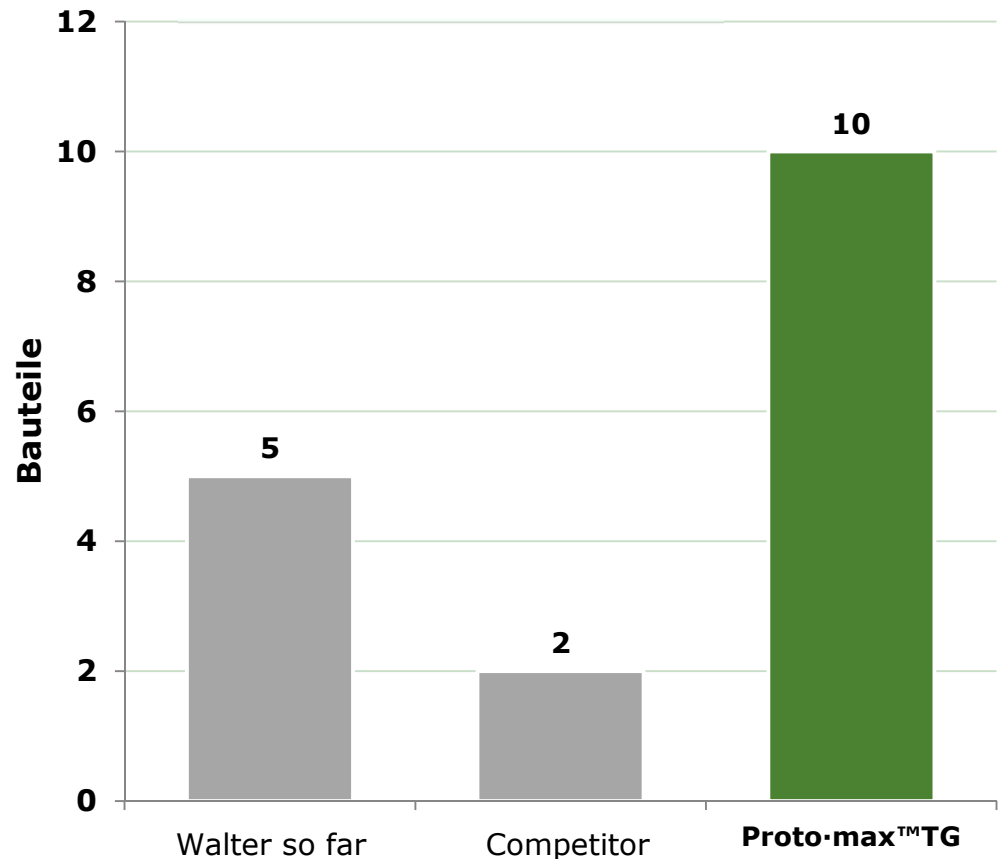
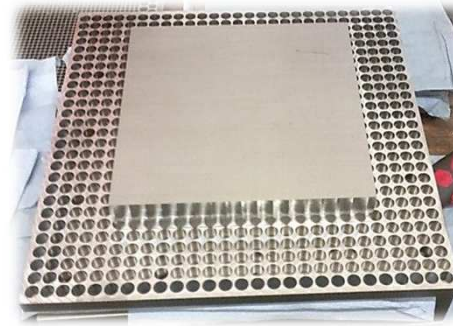
- Doubled the number of workpieces

Machining time:

- v_f 100% increased

Customer statement:

- According to the customer the new tools are a „Woahnsinn“ (awesome)



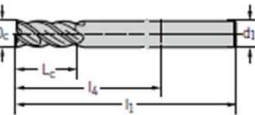
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4. Product program

Proto-max™_{TG} H3021178

- Ø2 – 20mm
- 3 + 4 teeth
- P-Norm L
- Shank
 - DIN 6535 HA

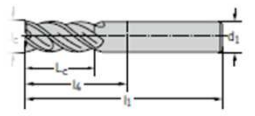
P-Norm L	D _c h10 mm	L _c mm	l ₁ mm	l ₄ mm	d ₁ h6 mm	Z	TAT Bezeichnung H3021178
Schaft DIN 6535 HA	2	7	57	21	6	3	★ -2
	2.5	8	57	21	6	3	★ -2.5
	3	8	57	21	6	3	★ -3
	3.5	10	57	21	6	3	★ -3.5
	4	11	57	21	6	3	★ -4
	4.5	11	57	21	6	3	★ -4.5
	5	13	57	21	6	3	★ -5
	6	13	65	29	6	4	★ -6
	7	16	80	44	8	4	★ -7
	8	19	80	44	8	4	
	9	19	100	60	10	4	
	10	22	100	60	10	4	
	11	26	100	55	12	4	
	12	26	100	55	12	4	
	14	26	104	59	14	4	



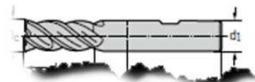
Proto-max™_{TG} H3*21378

- Ø6 – 25mm
- 4 + 5 teeth
- DIN 6527 L
- Shank
 - DIN 6535 HA & HB

DIN 6527 L	D _c h10 mm	L _c mm	l ₁ mm	l ₄ mm	d ₁ h6 mm	Z	TAT Bezeichnung H3021378
Schaft DIN 6535 HA	6	13	57	21	6	4	★ -6
	8	19	63	27	8	4	★ -8
	10	22	72	32	10	4	★ -10
	12	26	83	38	12	4	★ -12
	14	26	83	38	14	4	★ -14
	16	32	92	44	16	4	★ -16
	18	32	92	44	18	4	★ -18
	20	38	104	54	20	4	★ -20
	25	45	121	65	25	5	★ -25



DIN 6527 L	D _c h10 mm	L _c mm	l ₁ mm	l ₄ mm	d ₁ h6 mm	Z	TAT
Schaft DIN 6535 HB	6	13	57	21	6	4	
	8	19	63	27	8	4	
	10	22	72	32	10	4	
	12	26	83	38	12	4	
	14	26	83	38	14	4	



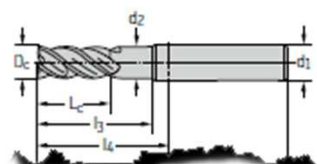
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4. Product program

Proto-max™_{TG} H4121078

- Ø6 – 20mm
- 4 teeth
- DIN 6527 L
- Neck (d₂)
- Shank
 - DIN 6535 HB

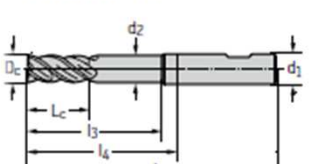
DIN 6527 L	D _c h10 mm	L _c mm	l ₃ mm	d ₂ mm	l ₁ mm	l ₄ mm	d ₁ h6 mm	Z	TAT Bezeichnung H4121078
Schaft DIN 6535 HB	6	13	19	5,7	57	21	6	4	★ -6
	8	19	25	7,6	63	27	8	4	★ -8
	10	22	30	9,5	72	32	10	4	★ -10
	12	26	36	11,4	83	38	12	4	★ -12
	14	26	36	13,3	83	38	14	4	★ -14
	16	32	42	15,2	92	44	16	4	
	20	38	52	19	104	54	20	4	



Proto-max™_{TG} H4121178

- Ø6 – 20mm
- 3 + 4 teeth
- P-Norm L
- Neck (d₂)
- Shank
 - DIN 6535 HB

P-Norm L	D _c h10 mm	L _c mm	l ₃ mm	d ₂ mm	l ₁ mm	l ₄ mm	d ₁ h6 mm	Z	TAT Bezeichnung H4121178
Schaft DIN 6535 HB	4	11	15	3,8	57	21	6	3	★ -4
	5	13	16	4,75	57	21	6	3	★ -5
	6	13	27	5,7	65	29	6	4	★ -6
	8	19	42	7,6	80	44	8	4	★ -8
	10	22	58	9,5	100	60	10	4	★ -10
	12	26	53	11,4	100	55	12	4	
	14	26	57	13,3	104	59	14	4	
	16	32	65	15,2	115	67	16	4	



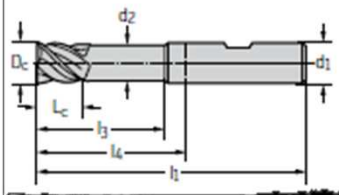
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4. Product program

Proto·max™_{TG} H4121278

- Ø6 – 16mm
- 4 teeth
- DIN 6527 L
- Neck (d₂)
- Shank
 - DIN 6535 HB

DIN 6527 L	D _c h10 mm	L _c mm	l ₃ mm	d ₂ mm	l ₁ mm	l ₄ mm	d ₁ h6 mm	Z	TAT Bezeichnung H4121278
Schaft DIN 6535 HB	6	6	19	5,7	57	21	6	4	★ -6
	8	8	25	7,6	63	27	8	4	★ -8
	10	10	30	9,5	72	32	10	4	★ -10
	12	12	36	11,4	83	38	12	4	★ -12
	14	14	36	13,3	83	38	14	4	★ -14
	16	16	42	15,2	92	44	16	4	★



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Agenda

1. Product description
2. Lab tests
3. Competitors
4. Field tests
5. Product program
6. Application area
- 7. Advantages and customer benefits**
8. Additional information



Thank you!

