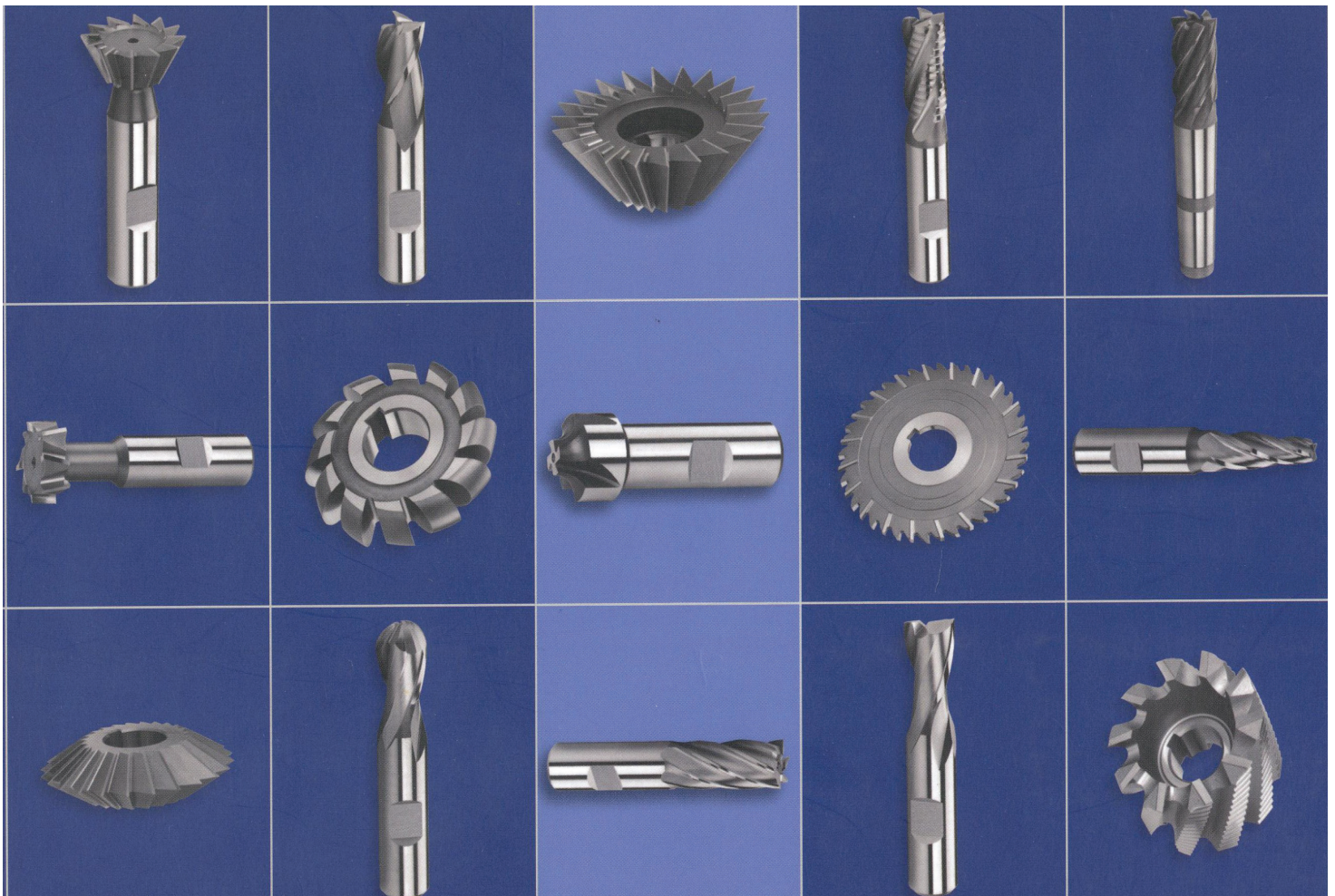
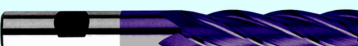
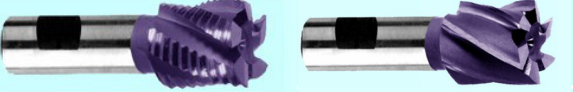
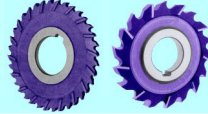


PM - ASP

Pulverstahl + HSS-E - Co8 - Fräser



HSS - X - XENIX			Seite
			2/2
Nutenfräser			
		Mini-3-Schneidenfräser kurz / lang	2/3
		Langlochfräser / Bohrnutenfräser kurz / lang	2/4
		3-Schneiden-Schlichtfräser kurz / lang	2/5
		Pulverstahl - Bohrnutenfräser ASP	2/8
		Pulverstahl - 3-Schneiden-Fräser ASP	2/9
Schlichtfräser			
		Schlichtfräser kurz / lang	2/6
		Pulverstahl - Schlichtfräser ASP	2/10
Feinschruppfräser			
		Feinschruppfräser kurz / lang	2/7
		Pulverstahl - Feinschruppfräser ASP	2/11
		Schruppfräser kurz / lang	2/12
		Schlichtfräser ALU	2/13
Schruppfräser			
		Schruppfräser ALU kurz / ALU lang	2/14
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		Schrupp-Radiusfräser	2/16
		Radiusfräser kurz / lang	2/17
		Schlichtfräser extra lang	2/18
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Walzenstirnfräser			
		Walzenstirnfräser-Schlicht Walzenstirnfräser ALU	2/19 2/19
		Walzenstirnfräser-Schrupp Walzenstirnfräser-Feinschupp	2/19 2/19
		Scheibenfräser kreuzverzahnt Winkel- und Prismenfräser Halbkreisfräser Konvex / Konkav	2/20 + 2/21 2/25 2/26
T-Nuten - und Schlitzfräser			
		Schlitzfräser	2/22
		T-Nutenfräser	2/22
		Winkelfräser 45° / 60°	2/23
		Viertelkreisfräser	2/24

HSS - X - XENIX

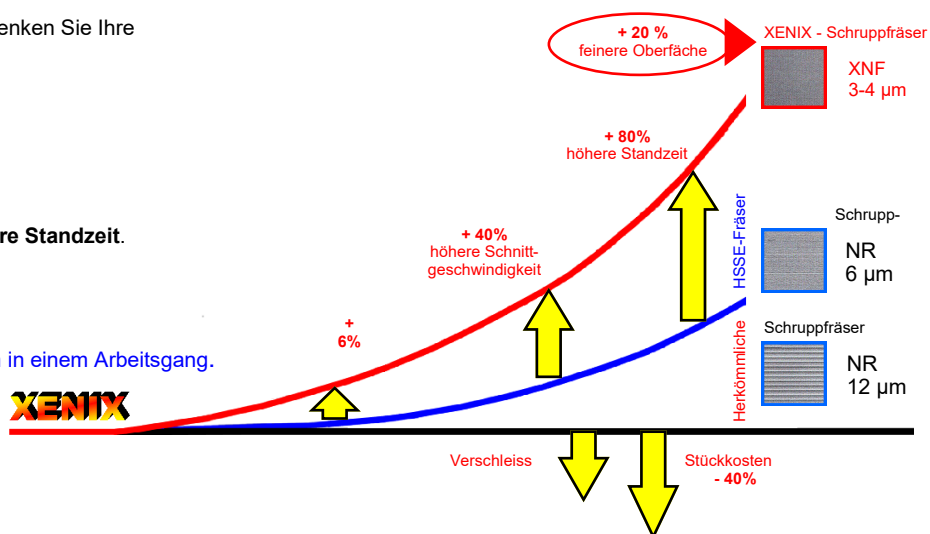
Art.-Nr. 7000
Schlichtfräser

Art.-Nr. 7010
Feinschruppfräser

Art.-Nr. 7020
Schruppfräser **XNF**



- ★ Mit diesen **neuentwickelten** HSS-Fräsern senken Sie Ihre Stückkosten um mindestens **40%**.
- ★ **Extrem zäh** bei 68 HRC.
- ★ **40%** höhere Schnittgeschwindigkeit.
- ★ weniger Verschleiss, daher wesentlich **höhere Standzeit**.
- ★ **40%** tiefere Werkzeugkosten.
- ★ Art. Nr. 7020 **schruppen + fertigmachen** in einem Arbeitsgang.



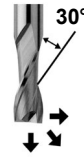
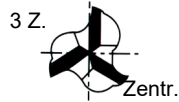
Best.-Nr. 7000b... 7010b... 7020b...	Ø	Schneid- länge	Schaft- Ø	Gesamt- länge	7000	Zähne 7010	7020	7000 B N	7010 B HR	7020 B XNF
..0600	6	13	6	57	4	4	3	23.80	37.80	44.30
..0800	8	19	10	69	4	4	3	25.90	43.20	50.80
..1000	10	22	10	72	4	5	4	30.20	47.50	57.20
..1200	12	26	12	83	4	5	4	36.70	61.60	63.70
..1400	14	26	12	83	4	5	4	50.80	69.10	75.60
..1600	16	32	16	92	6	5	4	62.60	75.60	85.30
..1800	18	32	16	92	6	5	4	74.50	87.50	102.60
..2000	20	38	20	104	6	5	4	83.20	114.50	121.00
..2200	22	38	20	104	4	5	5	113.40	141.50	179.30
..2500	25	45	25	121	6	6	5	160.90	164.20	185.80
..3000	30	45	25	121	6	6	5	173.90	233.30	256.00
Artikel Nr. 7100	Typ N		6 Stk.	Ø 6-8-10-12-16-20 mm		Set		259.20		
Artikel Nr. 7200	Typ HR		6 Stk.	Ø 6-8-10-12-16-20 mm		Set			371.50	
Artikel Nr. 7300	Typ XNF		6 Stk.	Ø 6-8-10-12-16-20 mm		Set				420.10

HSSE-Co 8 Mini-3-Schneiden-Fräser

1281 W Kurz
1291 W Lang

1281 WB Kurz
1291 WB Lang

TiAIN
beschichtet



Typ
N



- Universal einsetzbar für **sämtliche Werkstoffe. Höhere Schnittleistung** dank **3 Schneiden**. Zum Fräsen von Keilnuten in Passung P9. **Speziell preisgünstig!**
- Höchstleistung mit **PLUS - FUTURE** - Beschichtung.



TiAIN



1281 W

1281 WB



TiAIN



1291 W

1291 WB

Best.-Nr. 1281w... 1281wb... 1291w... 1291wb...	Thermo Plast.	Al	Alu Guss > 10% Si	Stahl < 750N	Stahl < 900N	Stahl < 1400N	Stahl < 55HRC	INOX	Ti + Cu	GG (G)	Uni- versal	1281 W Kurz	1281 WB Kurz beschichtet	1291 W Lang	1291 WB Lang beschichtet
	Ø e ₈	Schneid- länge		Schaft- Ø	Gesamt- länge		Z								
												1281 W	1281 WB	1291 W	1291 WB
..0100	1	2		6	34		3					8.60	13.00	—	—
..0150	1.5	3		6	34		3					8.60	13.00	---	---
..0180	1.8	3		6	34		3					8.60	13.00	—	—
..0200	2	4		6	35		3					8.60	13.00	---	---
..0200	2	7		6	38		3					---	---	9.70	15.10
..0230	2.3	4		6	35		3					8.60	13.00	—	—
..0250	2.5	5		6	36		3					8.60	13.00	---	---
..0250	2.5	8		6	39		3					---	---	9.70	15.10
..0280	2.8	5		6	36		3					8.60	13.00	---	---
..0300	3	5		6	36		3					8.60	13.00	---	---
..0300	3	8		6	39		3					---	---	9.70	15.10
..0330	3.3	6		6	37		3					8.60	13.00	---	---
..0350	3.5	6		6	37		3					8.60	13.00	---	---
..0350	3.5	10		6	41		3					---	---	9.70	15.10
..0380	3.8	7		6	38		3					8.60	13.00	---	---
..0400	4	7		6	38		3					8.60	13.00	---	—
..0400	4	11		6	42		3					---	—	9.70	15.10
..0430	4.3	7		6	38		3					8.60	13.00	—	—
..0450	4.5	7		6	38		3					8.60	13.00	---	---
..0450	4.5	11		6	42		3					---	---	9.70	15.10
..0480	4.8	8		6	39		3					8.60	13.00	—	—
..0500	5	8		6	39		3					8.60	13.00	—	—
..0500	5	13		6	44		3					---	—	9.70	15.10
..0550	5.5	8		6	39		3					8.60	13.00	---	---
..0550	5.5	13		6	44		3					---	---	9.70	15.10
..0575	5.75	8		6	39		3					8.60	13.00	---	---
..0600	6	8		6	39		3					8.60	13.00	—	—
..0600	6	13		6	44		3					---	—	9.70	15.10
..0650	6.5	10		8	42		3					9.70	16.20	—	—
..0650	6.5	16		8	48		3					---	—	10.80	18.40
..0700	7	10		8	42		3					9.70	16.20-	---	---
..0700	7	16		8	48		3					---	---	10.80	18.40
..0750	7.5	10		8	42		3					9.70	16.20	—	—
..0750	7.5	16		8	48		3					---	---	10.80	18.40
..0800	8	11		8	43		3					9.70	16.20	---	---
..0800	8	19		8	51		3					---	---	10.80	18.40
..0850	8.5	11		10	48		3					11.90	19.40	—	—
..0850	8.5	19		10	56		3					---	—	13.00	20.50
..0900	9	11		10	48		3					11.90	19.40	—	—
..0900	9	19		10	56		3					---	---	13.00	20.50
..0950	9.5	11		10	48		3					11.90	19.40	—	—
..1000	10	13		10	50		3					11.90	19.40	—	—
..1000	10	22		10	59		3					---	—	13.00	20.50
..1200	12	16		12	58		3					18.40	25.90	—	—
..1600	16	19		16	64		3					25.90	38.90	---	---
..2000	20	22		20	78		3					42.10	59.40	---	---

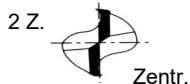
HSSE-Co 8 Langlochfräser / Bohrnutenfräser

1001 W Kurz
1021 W Lang

DIN 327
M42-Co 8

1001 WB Kurz
1021 WB Lang

TiAIN
beschichtet



Typ
N

- Universal einsetzbar für sämtliche Werkstoffe sowie zum Fräsen von Keilnuten in Passung P9.

Werkstoffe

Höchstleistung mit **TiAIN**-Beschichtung.



Thermo Plast Alu	Alu	Alu Guss 10% BI	Stahl < 750N	Stahl < 900N	Stahl < 1400N	Stahl < 55HRC	INOX	Ti + Cu	GG (G)	Uni- ver- sal	1001 W Kurz	1001 WB Kurz beschichtet	1021 W Lang	1021 WB Lang beschichtet
Best.-Nr. 1001w... 1001wb... 1021w... 1021wb...			Ø e ₈	Schneid- länge	Schaft- Ø	Gesamt- länge	Z				1001 W	1001WB	1021 W	1021WB
			1	2.5	6	47	2				15.10	20.50	---	---
			1.5	3	6	47	2				15.10	20.50	---	---
			2	4	6	48	2				11.90	19.40	---	---
			2.5	5	6	49	2				11.90	19.40	16.20	---
			2.8	5	6	49	2				10.80	19.40	---	---
			3	5	6	49	2				11.90	18.40	---	---
			3	8	6	56	2				---	---	16.20	24.80
			3.5	6	6	50	2				10.80	18.40	---	---
			3.5	10	6	59	2				---	---	16.20	24.80
			3.8	7	6	51	2				10.80	18.40	---	---
			4	7	6	51	2				10.80	18.40	---	---
			4	11	6	63	2				---	---	16.20	24.80
			4.5	7	6	51	2				10.80	18.40	---	---
			4.5	11	6	63	2				---	---	16.20	24.80
			4.8	8	6	52	2				10.80	18.40	---	---
			5	8	6	52	2				10.80	18.40	---	---
			5	13	6	68	2				---	---	16.2	24.80
			5.5	8	6	52	2				10.80	18.40	---	---
			5.5	13	6	68	2				---	---	16.20	24.80
			5.75	8	6	52	2				10.80	18.40	---	---
			6	8	6	52	2				10.80	18.40	---	---
			6	13	6	68	2				---	---	16.20	23.80
			6.5	10	10	60	2				15.10	21.60-	---	---
			6.5	16	10	80	2				---	---	24.80	34.60
			6.75	10	10	60	2				15.10	21.60	---	---
			7	10	10	60	2				15.10	21.60	---	---
			7	16	10	80	2				---	----	24.80	34.60
			7.5	10	10	60	2				15.10	21.60	---	---
			7.75	11	10	61	2				15.10	21.60	---	---
			8	11	10	61	2				15.10	21.60	---	---
			8	19	10	88	2				---	----	23.80	32.40
			8.5	11	10	61	2				16.20	22.70	---	---
			8.5	19	10	88	2				---	---	28.10	35.60
			9	11	10	61	2				16.20	21.60	---	---
			9	19	10	88	2				---	----	28.10	35.60
			9.5	11	10	61	2				16.20	21.60	---	---
			10	13	10	63	2				16.20	21.60	---	---
			10	22	10	95	2				---	---	24.80	33.50
			11	13	12	70	2				20.50	30.20	---	---
			12	16	12	73	2				20.50	30.20	---	---
			12	26	12	110	2				---	---	30.20	42.10
			13	16	12	73	2				22.70	33.50	---	---
			14	16	12	73	2				22.70	33.50	---	---
			14	26	12	110	2				---	---	45.40	58.30
			15	16	12	73	2				30.20	43.20	---	---
			16	19	16	79	2				30.20	43.20	---	---
			16	32	16	123	2				---	---	47.50	63.70
			17	19	16	79	2				34.60	51.80	---	---
			18	19	16	79	2				34.60	51.80	---	---
			18	32	16	123	2				---	---	61.60	82.10
			19	19	16	79	2				43.20	63.70	---	---
			20	22	20	88	2				43.20	63.70	---	---
			20	38	20	141	2				---	---	68.00	87.50
			22	22	20	88	2				69.10	90.70	---	---
			22	38	20	141	2				---	---	99.40	130.70
			24	26	25	102	2				71.30	101.50	---	---
			25	26	25	102	2				74.50	109.10	---	---
			25	45	25	166	2				---	---	113.40	152.30
			26	26	25	102	2				87.50	132.80	---	---
			28	26	25	102	2				89.60	139.30	---	---
			30	26	25	102	2				111.20	163.10	---	---
			32	32	32	112	2				116.60	186.40	---	---

1001 W

1001 WB

1021 W

1021 WB

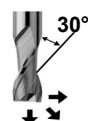
HSSE-Co 8 3-Schneiden-Schlichtfräser

1041 W Kurz
1051 W Lang

DIN 844
M42-Co 8

1041 WB Kurz
1051 WB Lang

TiAIN
beschichtet



Typ
N

- Universal einsetzbar für sämtliche Werkstoffe, auch für Keilbahn P9 verwendbar. Höhere Schnittleistung dank 3 Schneiden.
- Höchstleistung mit **TiAIN** - Beschichtung.



1041 W **1041 WB**



1051 W **1051 WB**

Thermo Plast Alu	Alu	Alu Guss 10% BI	Stahl < 750N	Stahl < 900N	Stahl < 1400N	Stahl < 55HRC	INOX	Ti + Cu	GG (G)	Uni- versal	1041 W Kurz	1041 WB Kurz beschichtet	1051 W Lang	1051 WB Lang beschichtet
			●	●	○		○	○	○	●				
Best.-Nr. 1041w... 1041wb... 1051w... 1051wb...	Ø e ₈	Schneid- länge	Schaft- Ø	Gesamt- länge	Z	1041 W	1041 WB	1051 W	1051 WB					
..0150	1.5	7	6	51	3	15.10	21.60	---	---					
..0200	2	7	6	51	3	15.10	21.60	---	---					
..0250	2.5	8	6	52	3	15.10	23.80	---	---					
..0300	3	8	6	52	3	15.10	21.60	---	---					
..0300	3	12	6	56	3	---	---	18.40	23.80					
..0350	3.5	10	6	54	3	15.10	23.80	---	---					
..0400	4	11	6	55	3	11.80	19.40	---	---					
..0400	4	19	6	63	3	---	---	18.40	23.80					
..0450	4.5	11	6	55	3	11.80	22.70	---	---					
..0500	5	13	6	57	3	11.80	19.40	---	---					
..0500	5	24	6	68	3	---	---	18.40	23.80					
..0550	5.5	13	6	57	3	11.80	22.70	---	---					
..0600	6	13	6	57	3	11.80	19.40	---	---					
..0600	6	24	6	68	3	---	---	18.40	23.80					
..0650	6.5	16	10	66	3	21.60	30.20	---	---					
..0700	7	16	10	66	3	19.40	23.80	24.80	---					
..0700	7	30	10	80	3	---	---	---	35.60					
..0750	7.5	16	10	66	3	21.60	32.40	---	---					
..0800	8	19	10	69	3	19.40	23.80	---	---					
..0800	8	38	10	88	3	---	---	24.80	35.60					
..0850	8.5	19	10	69	3	23.80	32.40	---	---					
..0900	9	19	10	69	3	21.60	24.80	---	---					
..0900	9	38	10	88	3	---	---	24.80	35.60					
..1000	10	22	10	72	3	21.60	24.80	---	---					
..1000	10	45	10	95	3	---	---	24.80	35.60					
..1200	12	26	12	83	3	21.60	32.40	---	---					
..1200	12	53	12	110	3	---	---	34.60	47.50					
..1400	14	26	12	83	3	30.20	42.20	---	---					
..1400	14	53	12	110	3	---	---	49.70	63.70					
..1600	16	32	16	92	3	34.60	49.70	---	---					
..1600	16	63	16	123	3	---	---	51.80	71.30					
..1800	18	32	16	92	3	47.50	62.60	---	---					
..1800	18	63	16	123	3	---	---	69.10	90.70					
..2000	20	38	20	104	3	49.70	73.40	---	---					
..2000	20	75	20	141	3	---	---	74.50	98.30					
..2200	22	38	20	104	3	83.20	109.10	---	---					
..2200	22	75	20	141	3	---	---	111.20	145.80					
..2500	25	45	25	121	3	75.60	115.60	---	---					
..2500	25	90	25	166	3	---	---	126.40	168.50					
..2800	28	45	25	121	3	167.40	225.70	---	---					



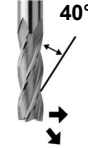
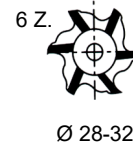
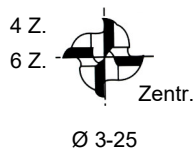
HSSE-Co 8 Schlichtfräser

1071 W Kurz
1081 W Lang

DIN 844
M42-Co 8

1071 WB Kurz
1081 WB Lang

TiAIN
beschichtet



Typ
N

- Universal einsetzbar für sämtliche Werkstoffe.
- Höchstleistung mit **TiAIN** - Beschichtung.

Thermo Plast Alu	Alu	Alu Guss 10% BI	Stahl < 750N	Stahl < 900N	Stahl < 1400N	Stahl < 55HRC	INOX	Ti + Cu	GG (G)	Uni- ver- sal	1071 W Kurz	1071 WB Kurz beschichtet	1081 W Lang	1081 WB Lang beschichtet
0		0			0		0		0					
Best.-Nr. 1071w... 1071wb... 1081w... 1081wb...	Ø e ₈	Schneid- länge	Schaft- Ø	Gesamt- länge	Z	1071 W	1071 WB	1081 W	1081 WB					
..0300	3	8	6	52	4	13.00	18.40	---	---					
..0300	3	12	6	56	4	---	---	16.20	21.60					
..0350	3.5	10	6	54	4	13.00	18.40	---	---					
..0350	3.5	15	6	59	4	---	---	16.20	21.60					
..0400	4	11	6	55	4	13.00	18.40	---	---					
..0400	4	19	6	63	4	---	---	16.20	21.60					
..0450	4.5	19	6	63	4	---	---	16.20	21.60					
..0500	5	13	6	57	4	13.00	18.40	---	---					
..0500	5	24	6	68	4	---	---	16.20-	21.60					
..0600	6	13	6	57	4	13.00	18.40	---	---					
..0600	6	24	6	68	4	---	---	16.20	21.60					
..0700	7	16	10	66	4	18.40	22.70	---	---					
..0700	7	30	10	80	4	---	---	22.70	32.40					
..0800	8	19	10	69	4	18.40	21.60	---	---					
..0800	8	38	10	88	4	---	---	22.70	32.40					
..0900	9	19	10	69	4	18.40	22.70	---	---					
..0900	9	38	10	88	4	---	---	22.70-	32.40					
..1000	10	22	10	72	4	18.40	21.60	---	---					
..1000	10	45	10	95	4	---	---	22.70	32.40					
..1100	11	22	12	79	4	23.80	30.20	---	---					
..1100	11	45	12	102	4	---	---	31.30	43.20					
..1200	12	26	12	83	4	22.70	30.20	---	---					
..1200	12	53	12	110	4	---	---	31.30	43.20					
..1300	13	26	12	83	4	30.20	36.70	---	---					
..1400	14	26	12	83	4	34.60	43.20	---	---					
..1400	14	53	12	110	4	---	---	45.40	58.30					
..1600	16	32	16	92	4	33.50	43.20	---	---					
..1600	16	63	16	123	4	---	---	47.50	63.70					
..1800	18	32	16	92	4	46.40	58.30	---	---					
..1800	18	63	16	123	4	---	---	61.60	80.10					
..2000	20	38	20	104	4	51.80	63.70	---	---					
..2000	20	75	20	141	4	---	---	63.70	86.40					
..2200	22	38	20	104	6	65.90	91.80	---	---					
..2200	22	75	20	141	6	---	---	99.40	129.60					
..2400	24	90	25	166	6	---	---	111.20	150.10					
..2500	25	45	25	121	6	84.20	115.60	---	---					
..2500	25	90	25	166	6	---	---	111.20	151.20					
..2800	28	45	25	121	6	123.10	167.40	---	---					
..3000	30	45	25	121	6	128.50	182.50	---	---					
..3200	32	53	32	133	6	146.90	225.70	---	---					



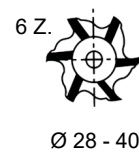
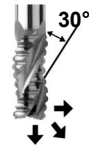
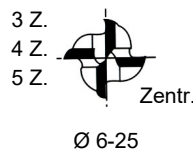
HSSE-Co 8 Feinschruppfräser

1211 W Kurz
1221 W Lang

DIN 844
M42-Co 8

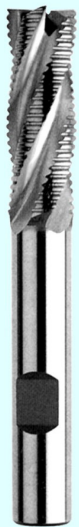
1211 WB Kurz
1221 WB Lang

TiAIN
beschichtet



Typ
 HR

- Universal einsetzbar für sämtliche Werkstoffe.
- Höchstleistung mit **TiAIN** - Beschichtung.



TiAIN



1211 W

1211



TiAIN



1221 W

1221 WB

Thermo Plast Alu	Alu	Alu Guss 10% BI	Stahl < 750N	Stahl < 900N	Stahl < 1400N	Stahl < 55HRC	INOX	Ti + Cu	GG (G)	Uni- ver- sal	1211 W Kurz	1211 WB Kurz beschichtet	1221 W Lang	1221 WB Lang beschichtet
														
Best.-Nr. 1211w... 1211wb... 1221w... 1221wb...	Ø e ₈	Schneid- länge	Schaft- Ø	Gesamt- länge	Z									
..0600	6	13	6	57	4	31.30	36.70	---	---					
..0600	6	24	6	68	3	---	---	43.20	46.40					
..0700	7	30	10	80	3	---	---	59.40	69.10					
..0800	8	19	10	69	4	34.60	42.10	---	---					
..0800	8	38	10	88	4	---	---	50.80	58.30					
..0900	9	38	10	88	3	---	---	60.50	70.20					
..1000	10	22	10	72	4	34.60	42.10	---	---					
..1000	10	45	10	95	4	---	---	50.80	58.30					
..1100	11	45	12	102	4	---	---	62.60	75.60					
..1200	12	26	12	83	4	47.50	55.10	---	---					
..1200	12	53	12	110	4	---	---	62.60	75.60					
..1300	13	53	12	110	4	---	---	74.50	87.50					
..1400	14	26	12	83	4	55.10	62.60	---	---					
..1400	14	53	12	110	4	---	---	69.10	82.10					
..1600	16	32	16	92	4	59.40	69.10	---	---					
..1600	16	63	16	123	4	---	---	72.40	87.50					
..1800	18	32	16	92	4	70.20	82.10	---	---					
..1800	18	63	16	123	4	---	---	89.60	110.20					
..2000	20	38	20	104	4	77.80	94.00	---	---					
..2000	20	75	20	141	4	---	---	114.50	135.00					
..2200	22	75	20	141	5	---	---	130.70	162.00					
..2500	25	45	25	121	5	139.30	165.20	---	---					
..2500	25	90	25	166	5	---	---	155.50	191.20					
..2800	28	90	25	166	6	---	---	225.70	264.60					
..3000	30	45	25	121	6	173.90	225.70	---	---					
..3000	30	90	25	166	6	---	---	233.30	280.80					
..3200	32	53	32	133	6	202.00	253.80	---	---					
..3200	32	106	32	186	6	---	---	253.80	330.50					
..4000	40	125	32	217	6	---	---	411.50	481.70					



Pulverstahl – Bohrnutenfräser

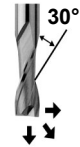
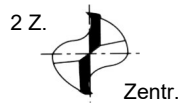
ASP

1900 W

DIN 327
M42-Co 8

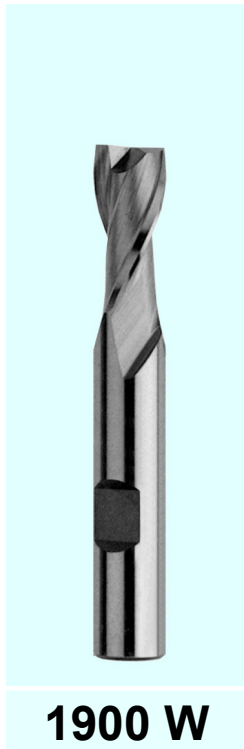
1900 WB

TiAIN
beschichtet

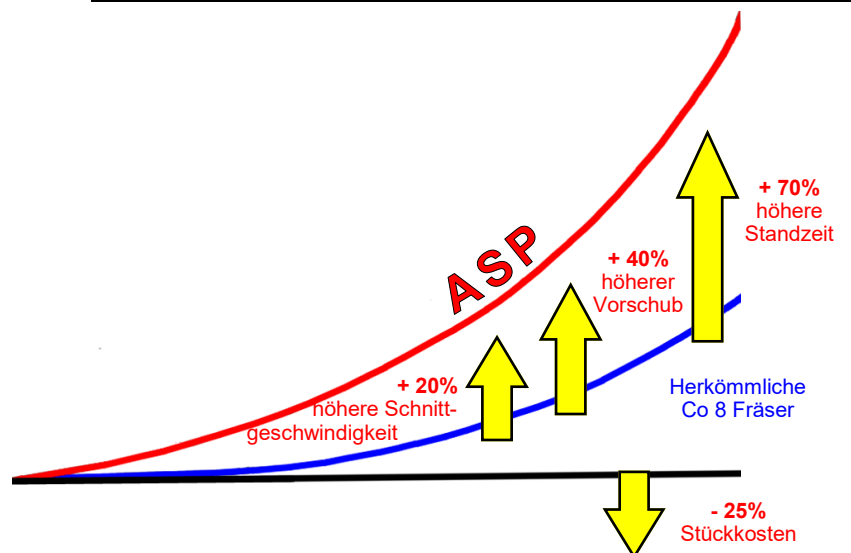


Typ
N

- Universal einsetzbar für sämtliche Werkstoffe sowie zum Fräsen von Keilnuten in Passung P9.
- Höchstleistung mit **TiAIN** - Beschichtung.



	Alu Guss > 10% Si	Stahl < 750N	Stahl < 900N	Stahl < 1400N	Stahl < 55HRC	Stahl < 60HRC	Stahl < 67HRC	INOX	Ti + Cu	GG (G)	Uni- versal	1900 W	1900 WB
	○	●	●	○	○	○	○	○	○	○	○		
Best.-Nr.	Ø e ₈	Schneid- länge	Schaft- Ø	Gesamt- länge	Z	1900 W	1900 WB						
1900w...													
1900wb...													
..0300	3	5	6	49	2	19.40	25.90						
..0400	4	7	6	51	2	19.40	25.90						
..0500	5	8	6	52	2	19.40	25.90						
..0600	6	8	6	52	2	19.40	25.90						
..0700	7	10	10	60	2	23.80	32.40						
..0800	8	11	10	61	2	23.80	32.40						
..0900	9	11	10	61	2	28.10	35.60						
..1000	10	13	10	63	2	28.10	35.60						
..1100	11	13	12	70	2	32.40	43.20						
..1200	12	16	12	73	2	32.40	43.20						
..1300	13	16	12	73	2	37.80	49.70						
..1400	14	16	12	73	2	37.80	49.70						
..1500	15	16	12	73	2	50.80	68.00						
..1600	16	19	16	79	2	50.80	68.00						
..1800	18	19	16	79	2	50.80	84.20						
..2000	20	22	20	88	2	69.10	91.80						



Pulverstahl - 3-Schneiden-Fräser

ASP

1910 W

1910 WB

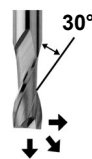
TiAIN
beschichtet



1910 W



1910 WB

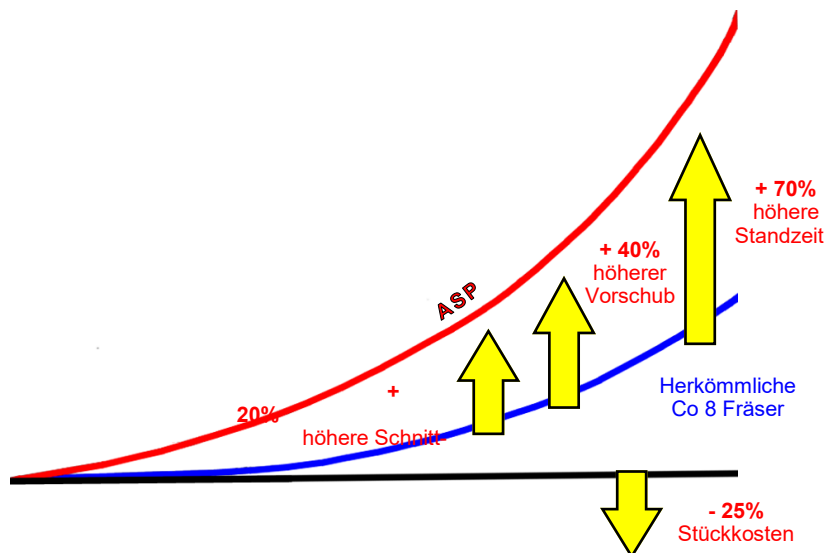


Typ
N

- Universal einsetzbar für sämtliche Werkstoffe.
Höhere Schnittleistung dank **3 Schneiden**.
Zum Fräsen von Keilnuten in Passung P9.
Speziell preisgünstig!
- Höchstleistung mit **TiAIN** - Beschichtung.



	Alu Guss > 10% Si	Stahl < 750N	Stahl 900N	Stahl < 1400N	Stahl < 55HRC	Stahl < 60HRC	Stahl < 67HRC	INOX	Ti + Cu	GG (G)	Uni- versal	1910 W	1910 WB
	●	●	●	○				●		○	●		
Best.-Nr. 1910w... 1910wb...	Ø e8	Schneid- länge	Schaft- Ø	Gesamt- länge	Z								
..0200	2	7	6	38	3	15.10	20.50						
..0250	2,5	8	6	39	3	15.10	20.50						
..0300	3	8	6	39	3	15.10	20.50						
..0350	3,5	10	6	41	3	15.10	20.50						
..0400	4	11	6	42	3	15.10	20.50						
..0450	4,5	11	6	42	3	15.10	20.50						
..0500	5	13	6	44	3	15.10	20.50						
..0550	5,5	13	6	44	3	15.10	20.50						
..0600	6	13	6	44	3	15.10	20.50						
..0650	6,5	16	8	48	3	18.40	24.80						
..0700	7	16	8	48	3	18.40	24.80						
..0750	7,5	16	8	48	3	18.40	24.80						
..0800	8	19	8	51	3	18.40	24.80						
..0850	8,5	19	10	56	3	22.70	31.30						
..0900	9	19	10	56	3	22.70	31.30						
..0950	9,5	20	10	56	3	22.70	31.30						
..1000	10	22	10	59	3	22.70	31.30						



Pulverstahl - Schlichtfräser

ASP

2000 W ASP

DIN 844
M42-Co 8

2000 WB ASP

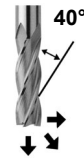
TiAIN
beschichtet



2000 W



2000 WB



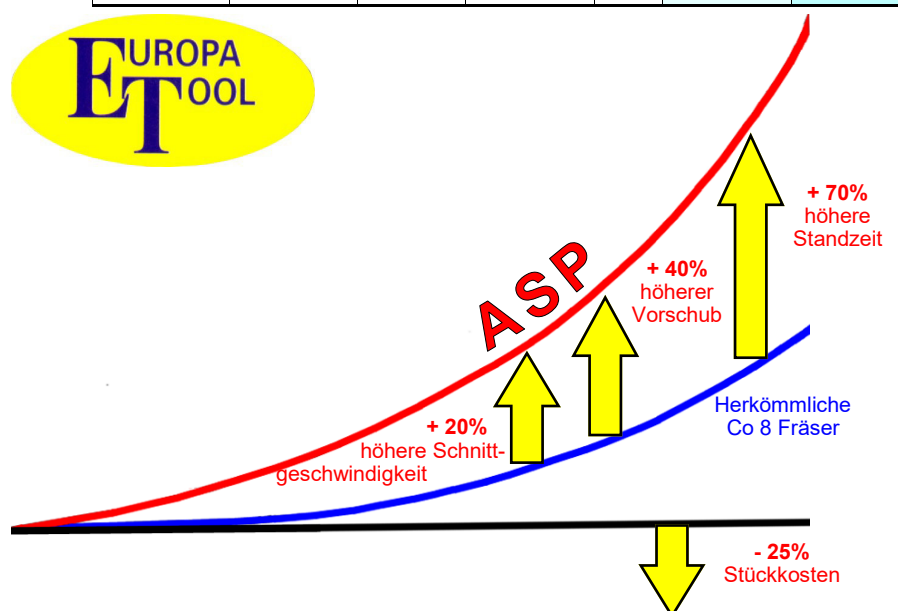
Typ
N

- Mit diesem **Pulverstahl-Hochleistungswerkzeug** senken Sie Ihre Stückkosten um **mindestens 25 %**. Besonders geeignet für hochlegierte sowie rostfreie Stähle, aber auch zum Trockenfräsen. Die Schnittgeschwindigkeit kann wesentlich erhöht werden (siehe Grafik unten).

- Höchstleistung mit **TiAIN** - Beschichtung.

High - Flyer

Best.-Nr. 2000w... 2000wb...	Thermo Plast. Alu	Alu	Alu Guss > 10% Si	Stahl < 750N	Stahl < 900N	Stahl < 1400N	Stahl < 55HRC	INOX	Ti + Cu	GG (G)	Uni- versal	2000 W	2000 WB
	Ø k ₁₀	Schneid- länge	Schaft- Ø	Gesamt- länge	Z	2000 W		2000 WB					
..0300	3	8	6	52	4	18.40	22.70						
..0400	4	11	6	55	4	18.40	22.70						
..0500	5	13	6	57	4	18.40	22.70						
..0600	6	13	6	57	4	18.40	22.70						
..0800	8	19	10	69	4	21.60	25.90						
..1000	10	22	10	72	4	23.80	30.20						
..1200	12	26	12	83	4	32.40	37.80						
..1400	14	26	12	83	4	47.50	57.20						
..1600	16	32	16	92	6	49.70	60.50						
..1800	18	32	16	92	6	62.60	75.60						
..2000	20	38	20	104	6	62.60	88.60						
..2500	25	45	25	121	6	128.50	164.20						



Pulverstahl - Feinschruppfräser

ASP

2010 W ASP

2010 WB ASP

AITiN

beschichtet



Typ
HR

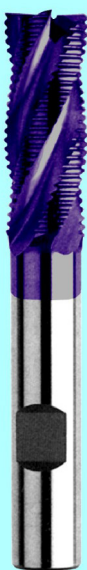
- Mit diesem **Pulverstahl-Hochleistungswerkzeug** senken Sie Ihre Stückkosten um **mindestens 25 %**. Besonders geeignet für hochlegierte sowie rostfreie Stähle, aber auch zum Trockenfräsen. Die Schnittgeschwindigkeit kann wesentlich erhöht werden (siehe Grafik unten).

- Höchstleistung mit **AITiN** - Beschichtung.

High - Flyer

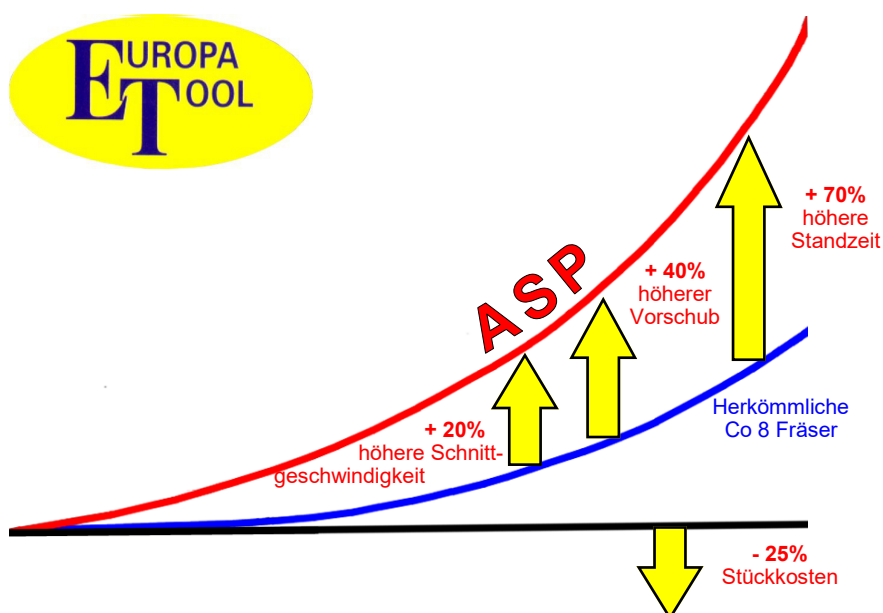


2010 W



2010 WB

	Alu	Alu Guss > 10% Si	Stahl < 750N	Stahl < 900N	Stahl < 1400N	Stahl < 55HRC	Stahl < 60HRC	Stahl < 67HRC	INOX	Ti > 850N	GG (G)	Uni- versal	2010 W	2010 WB
Best.-Nr. 2010w... 2010wb...	Ø js ₁₂												2010 W	2010 WB
..0600	6												34.60	42.10
..0800	8												38.90	46.40
..1000	10												42.10	47.50
..1200	12												55.10	61.60
..1400	14												61.60	71.30
..1600	16												73.40	84.20
..1800	18												77.80	90.70
..2000	20												98.30	115.60
..2200	22												115.60	141.50
..2500	25												145.80	173.90
..3000	30												206.30	259.20

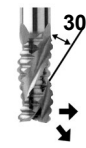
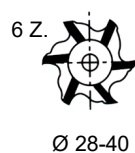
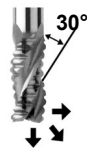
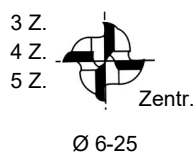


HSSE-Co 8 Schrappfräser

1181 W Kurz
1191 W Lang

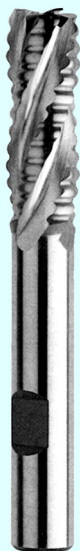
DIN 844
M42-Co 8

1181 WB Kurz **PLUS - FUTURE**
1191 WB Lang beschichtet



Typ
NR

- Universal Werkstoffe. einsetzbar für sämtliche
- Höchstleistung mit **PLUS - FUTURE** - Beschichtung.



PLUS - FUTURE



1181 W

1181 WB



PLUS - FUTURE



1191 W

1191 WB

Thermo Plast Alu	Alu Guss 10% Bi	Stahl < 900N	Stahl < 1400	Stahl < 55HRC	INOX Ti + Cu	GG (G)	Uni- ver- sal	1181 W Kurz	1181 WB Kurz beschichtet	1191 W Lang	1191 WB Lang beschichtet
0.020	0	●	●	●	○	○	●				
Best.-Nr.	Ø e ₈	Schneid- länge	Schaft- Ø	Gesamt- länge	Z			1181W	1181WB	1191W	1191WB
1181w...											
1181wb...											
1191w...											
1191wb...											
..0600	6	13	6	57	4			30.20	35.60	---	---
..0600	6	24	6	68	3			---	---	37.80	45.40
..0700	7	16	10	66	4			36.70	45.40	---	---
..0700	7	30	10	80	3			---	---	58.30	69.10
..0800	8	19	10	69	4			34.60	42.10	---	---
..0800	8	38	10	88	3			---	---	49.70	58.30
..0900	9	19	10	69	4			42.10	47.50	---	---
..0900	9	38	10	88	3			---	---	61.60	72.40
..0900	10	22	10	72	4			36.70	44.30	---	---
..1000	10	45	10	95	4			---	---	50.80	59.40
..1100	11	22	12	79	4			49.70	60.50-	---	---
..1100	11	45	12	102	4			---	---	63.70	77.80
..1200	12	26	12	83	4			45.40	51.80	---	---
..1200	12	53	12	110	4			---	---	60.50	73.40
..1300	13	26	12	83	4			47.50	58.30	---	---
..1300	13	53	12	110	4			---	---	84.20	98.30
..1300	14	26	12	83	4			50.80	60.50	---	---
..1400	14	53	12	110	4			---	---	69.10	83.20
..1500	15	26	12	83	4			60.50	73.40	---	---
..1500	15	53	12	110	4			---	---	90.70	109.10
..1600	16	32	16	92	4			60.50	73.40	---	---
..1600	16	63	16	123	4			---	---	71.30	91.80
..1700	17	32	16	92	4			71.30	86.40	---	---
..1700	17	63	16	123	4			---	---	103.70	122.00
..1800	18	32	16	92	4			63.70	81.00	---	---
..1800	18	63	16	123	4			---	---	90.70	113.40
..1900	19	32	16	92	4			82.10	98.30	---	---
..1900	19	63	16	123	4			---	---	129.60	153.40
..2000	20	38	20	104	4			77.80	95.00	---	---
..2000	20	75	20	141	4			---	---	110.20	133.90
..2200	22	38	20	104	5			95.00	122.00	---	---
..2200	22	75	20	141	5			---	---	129.60	164.20
..2400	24	45	25	121	5			116.60	151.20	---	---
..2400	24	90	25	166	5			---	---	167.40	206.30
..2500	25	45	25	121	5			116.60	151.20	---	---
..2500	25	90	25	166	5			---	---	154.40	193.30
..2600	26	90	25	166	6			---	---	225.70	277.60
..2800	28	45	25	121	6			150.10	189.00	---	---
..2800	28	90	25	166	6			---	---	214.90	267.80
..3000	30	45	25	121	6			168.50	213.80	---	---
..3000	30	90	25	166	6			---	---	225.70	272.20
..3200	32	53	32	133	6			193.30	248.40	---	---
..3200	32	106	32	186	6			---	---	238.70	304.60
..3600	36	53	32	133	6			253.80	319.70	---	---
..3600	36	106	32	186	6			---	---	293.80	358.60
..3800	38	63	32	155	6			295.90	371.50	---	---
..3800	38	125	32	217	6			---	---	389.90	467.60
..4000	40	63	32	155	6			304.60	379.10	---	---
..4000	40	125	32	217	6			---	---	413.60	491.40



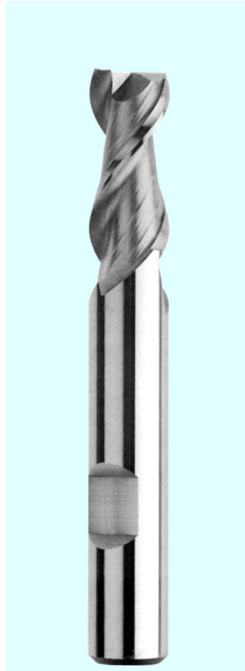
HSSE-Co 8 ALU-Schlichtfräser

1311 W

DIN 844
M42-Co 8

1311 WB

CNR
beschichtet

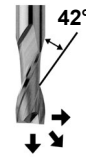
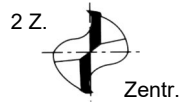


1311 W



CNR

1311 WB



Typ
N

- Eintauchen und Längsfräsen von Keilnuten P9 sowie für sämtliche ALU- und NE-Metalle.
- Höchstleistung mit **CNR** - Beschichtung.

Best-Nr. 1311w... 1311wb...	Thermo Plast. Alu	Alu	Alu Guss > 10% Si	Stahl < 750N	Stahl < 900N	Stahl < 1400N	Stahl < 55HRC	INOX	Ti + Cu	GG (G)	Uni- versal	1311 W	1311 WB
	Ø e ₈	Schneid- länge	Schaft- Ø	Gesamt- länge	Z	1311 W	1311 WB						
..0400	4	11	6	55	2	19.40	22.70						
..0450	4,5	11	6	55	2	19.40	22.70						
..0500	5	13	6	57	2	19.40	22.70						
..0550	5,5	13	6	57	2	19.40	22.70						
..0600	6	13	6	57	2	19.40	22.70						
..0650	6,5	16	10	66	2	28.10	33.50						
..0700	7	16	10	66	2	30.20	34.60						
..0750	7,5	16	10	66	2	32.40	36.70						
..0800	8	19	10	69	2	24.80	31.30						
..0850	8,5	19	10	69	2	32.40	36.70						
..0900	9	19	10	69	2	32.40	36.70						
..1000	10	22	10	72	2	24.80	31.30						
..1100	11	22	12	79	2	36.70	44.30						
..1200	12	26	12	83	2	32.40	36.70						
..1300	13	26	12	83	2	43.20	49.70						
..1400	14	26	12	83	2	43.20	49.70						
..1500	15	26	12	83	2	49.70	62.60						
..1600	16	32	16	92	2	45.40	58.30						
..1700	17	32	16	92	2	62.40	78.80						
..1800	18	32	16	92	2	62.40	78.80						
..1900	19	32	16	92	2	77.80	101.50						
..2000	20	38	20	104	2	77.80	101.50						
..2100	21	38	20	104	2	110.20	137.20						
..2200	22	38	20	104	2	110.20	139.30						
..2300	23	38	20	104	2	113.40	141.50						
..2400	24	45	25	121	2	113.40	143.60						
..2500	25	45	25	121	2	115.60	155.50						

HSSE-Co 8 ALU-Schruppfräser

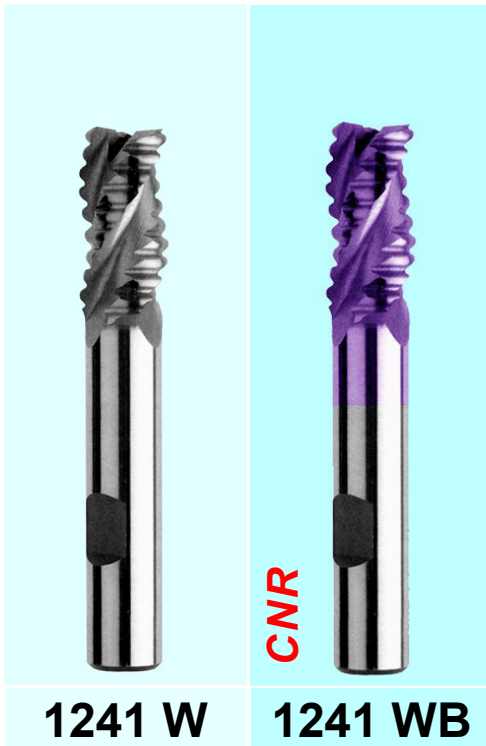
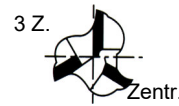
1241 W

DIN 844
M42-Co 8

1241 WB

CRN

beschichtet



- Hohe Zerspanungsleistung mit grossen Spanräumen;
für alle ALU- und NE-Metalle.
- Höchstleistung mit **CRN** - Beschichtung.

Best.-Nr. 1241w... 1241wb...	Thermo Plast. Alu	Alu	Alu Guss > 10% Si	Stahl < 750N	Stahl < 900N	Stahl < 1400N	Stahl < 55HRC	INOX	Ti + Cu	GG (G)	Uni- versal	1241 W	1241 WB
													
	Ø js ₁₂	Schneid- länge	Schaft- Ø	Gesamt- länge		Z	1241 W		1241 WB				
..0600	6	13	6	57		3	47.50		50.80				
..0800	8	19	10	69		3	47.50		49.70				
..1000	10	22	10	72		3	47.50		50.80				
..1200	12	26	12	83		3	60.50		68.00				
..1400	14	26	12	83		3	73.40		82.10				
..1600	16	32	16	92		3	73.40		86.40				
..1800	18	32	16	92		3	95.00		106.90				
..2000	20	38	20	104		3	110.20		126.40				
..2200	22	38	20	104		3	154.40		178.20				
..2500	25	45	25	121		3	191.20		214.90				
..3000	30	45	25	121		3	259.20		297.00				

HSSE-Co 8 ALU-Schruppfräser lang

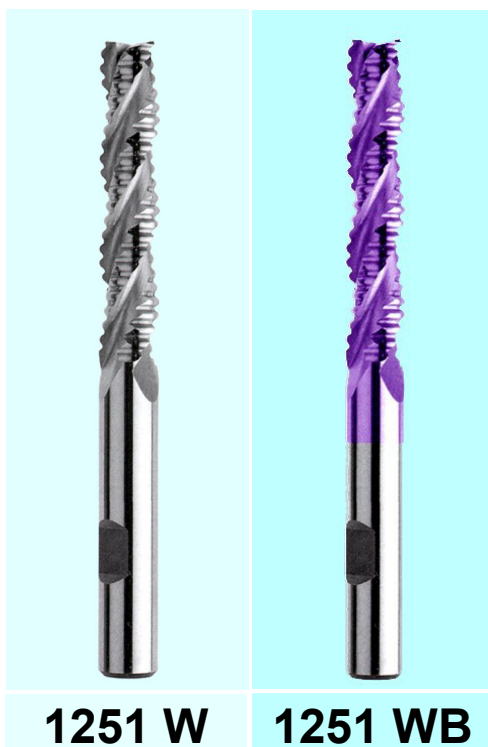
1251 W

DIN 844
M42-Co 8

1251 WB

CRN

beschichtet



- Hohe Zerspanungsleistung mit grossen Spanräumen;
für alle ALU- und NE-Metalle.
- Höchstleistung mit **CRN** - Beschichtung.

Best.-Nr. 1251w... 1251wb...	Thermo Plast. Alu	Alu	Alu Guss > 10% Si	Stahl < 750N	Stahl < 900N	Stahl < 1400N	Stahl < 55HRC	INOX	Ti + Cu	GG (G)	Uni- versal	1251 W	1251 WB
													
	Ø js ₁₂	Schneid- länge		Schaft- Ø		Gesamt- länge		Z					
												1251 W	1251 WB
..1000	10		45		10		95		3			57.20	61.60
..1200	12		53		12		110		3			70.20	77.80
..1400	14		53		12		110		3			96.10	103.70
..1600	16		63		16		123		3			102.60	113.40
..1800	18		63		16		123		3			128.50	142.60
..2000	20		75		20		141		3			141.50	160.90
..2200	22		75		20		141		3			214.90	233.30
..2500	25		90		25		166		3			246.20	273.20
..3000	30		90		25		166		3			344.50	388.80

HSSE-Co 5 Einzahnfräser ALU

1353

1363



Typ
N

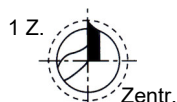


1353

- Zum Fräsen von Schlitzern an Türen und Fenstern aus Aluminium oder Kunststoff.
Für ELU-, Haffner- und ROTOX-Maschinen.

Thermo Plast. Alu 000000	Alu	Alu Guss > 10% Si	1353
●	●	●	

Best.-Nr. 1353...	Ø js ₁₄	Schneid- länge	Schaft- Ø	Gesamt- länge	Zähne	1353
..0300	3	12	8	60	1	16.20
..0400	4	12	8	60	1	16.20
..0500	5	14	8	60	1	16.20
..0600	6	14	8	60	1	16.20
..0800	8	14	8	80	1	18.40
..1000	10	14	8	80	1	23.80



Typ
N



1363

lange Ausführung

Thermo Plast. Alu 000000	Alu	Alu Guss > 10% Si	1363
●	●	●	

Best.-Nr. 1363...	Ø js ₁₄	Schneid- länge	Ø D2 Nutzlänge	Schaft- Ø	Gesamt- länge	Zähne	1363
..0500080	5	16	4.7 x 45	8	80	1	22.70
..0500080	5	16	4.7 x 84	8	120	1	36.70
..0600090	6	16	5.8 x 45	8	90	1	36.70
..0800100	8	30	7.5 x 70	8	100	1	36.70
..0800120	8	18	7.5 x 70	8	120	1	43.20
..1000120	10	18	9.7 x 80	10	120	1	47.50



ASP + HSS-E Co8 Schaftfräser im Probeset

HSSE-Co 8

Mini-3-Schneiden-Fräser, lang

Ø 2 3 4 5 6 8
3 Zähne

Art.-Nr. 1260 Fr. 46.40

PLUS - FUTURE -
beschichtet

Art.-Nr. 1260 B Fr. 73.40

Weitere HSS-E Co8 Schaftfräser - Sets

Set à 6 Stk.	Zähne	Art. - Nr. Preis CHF	TiAIN beschichtet
Alu-Schlichtfräser Ø 6/8/10/12/16/20 mm	2	1262 221.40	1262 B 277.60
Langlochfräser Ø 6/8/10/12/16/20 mm	2	1264 111.20	1264 B 193.30
Schlichtfräser Ø 6/8/10/12/16/20 mm	3	1266 155.50	1266 B 221.40
Schlichtfräser Ø 6/8/10/12/16/20 mm	4	1268 154.40	1268 B 193.30
Feinschruppfräser Ø 6/8/10/12/16/20 mm	3 + 4	1270 281.90	1270 B 332.60
Schruppfräser Ø 6/8/10/12/16/20 mm	3 + 4	1272 281.90	1272 B 339.10
ASP-Schlichtfräser Ø 6/8/10/12/16/20 mm	4 + 6	2002 206.30	2002 B 252.70

ASP
Pulverstahl - Feinschruppfräser

Ø 6 8 10 12 16 20
4 + 5 Zähne

Art.-Nr. 2910 Fr. 279.70

PLUS - FUTURE -
beschichtet

Art.-Nr. 2910 B Fr. 325.10

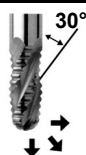
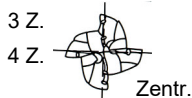
HSSE-Co 8 Schrump-Radiusfräser **TiAIN**

1271 W

DIN 844
M42-Co 8

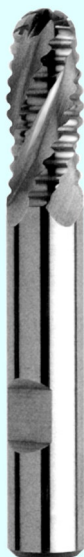
1271 WB

TiAIN
beschichtet

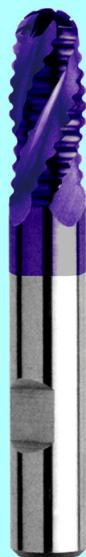


Typ
NR

- Universal einsetzbar für sämtliche Werkstoffe, vorwiegend für Werkzeug- und Formenbau
- Höchstleistung mit **PLUS - FUTURE** - Beschichtung



1271 W



1271 WB

Thermo Plast. Alu 0.012002	Alu	Alu Guss 10% Si	Stahl 750N	Stahl < 900N	Stahl < 1400N	Stahl < 55HRC	INOX	Ti + Cu	GG (G)	Uni- versal	1271 W	1271 WB
			●	●			●		●	●		
Best.-Nr. 1271w... 1271wb...		Ø js ₁₂	Schneid- länge	Schaft- Ø	Gesamt- länge	Zähne						
..0800		8	19	10	69	3	63.70	68.00				
..1000		10	22	10	72	3	63.70	69.10				
..1200		12	26	12	83	4	70.20	77.80				
..1600		16	32	16	92	4	90.70	99.40				
..2000		20	38	20	104	4	113.40	128.50				
..2500		25	45	25	121	4	167.40	191.20				



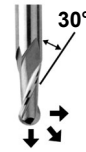
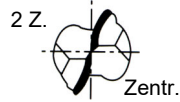
HSSE-Co 8 Radiusfräser

1121 W Kurz
1141 W Lang

DIN 327
M42-Co 8

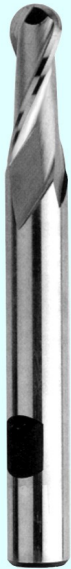
1121 WB Kurz
1141 WB Lang

TiAIN
beschichtet



Typ
N

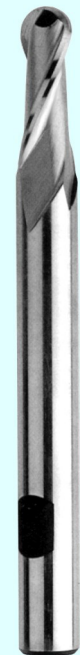
- Universal einsetzbar für sämtliche Werkstoffe, vorwiegend für Werkzeug- und Formenbau.
- Höchstleistung mit **TiAIN** - Beschichtung.



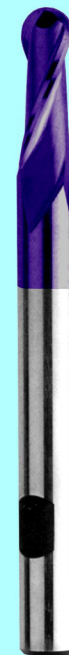
1121 W



1121



1141 W



1141

Thermo Plast Alu	Alu	Alu Guss 10% Bi	Stahl < 750N	Stahl < 900N	Stahl < 1400N	Stahl < 55HRC	INOX	Ti + Cu	GG (G)	Uni- ver- sal	1121 W Kurz	1121 WB Kurz beschichtet	1141 W Lang	1141 WB Lang beschichtet
0	0	0	0	0	0	0	0	0	0	0				
Best.-Nr.	Ø e ₈	Schneid- länge	Schaft- Ø	Gesamt- länge	Z						1121W	1121WB	1141W	1141WB
1121w...														
1121wb...														
1141w...														
1141wb...														
..0300	3	5	6	49	2						19.40	23.80	---	---
..0300	3	8	6	56	2						---	---	24.80	32.40
..0350	3.5	6	6	50	2						19.40	23.80	---	---
..0400	4	7	6	51	2						19.40	23.80	---	---
..0400	4	11	6	63	2						--	---	24.80	32.40
..0450	4.5	7	6	51	2						19.40	23.80	---	---
..0500	5	8	6	52	2						19.40	23.80	---	---
..0500	5	13	6	68	2						---	---	24.80	32.40
..0550	5.5	8	6	52	2						20.50	24.80	---	---
..0600	6	8	6	52	2						20.50	24.80	---	---
..0600	6	13	6	68	2						---	---	24.80	32.40
..0700	7	10	10	60	2						25.90	34.60	---	---
..0800	8	11	10	61	2						21.60	30.20	---	---
..0800	8	19	10	88	2						---	---	28.10	35.60
..0900	9	11	10	61	2						30.20	36.70	---	---
..1000	10	13	10	63	2						22.70	31.30	---	---
..1000	10	22	10	95	2						---	---	34.60	43.20-
..1200	12	16	12	73	2						28.10	35.60	---	---
..1200	12	26	12	110	2						---	---	37.80	50.80
..1300	13	16	12	73	2						37.80	48.60	---	---
..1300	13	26	12	110	2						---	---	48.60	62.60
..1400	14	16	12	73	2						34.60	45.40	---	---
..1400	14	26	12	110	2						---	---	44.30	58.30
..1500	15	16	12	73	2						47.50	60.50	---	---
..1500	15	26	12	110	2						---	---	56.20	73.40
..1600	16	19	16	79	2						42.10	55.10	---	---
..1600	16	32	16	123	2						---	---	56.20	73.40
..1700	17	19	16	79	2						58.30	73.40	---	---
..1800	18	19	16	79	2						51.80	69.10	---	---
..1800	18	32	16	123	2						---	---	63.70	86.40
..1900	19	19	16	79	2						62.60	82.10	---	---
..2000	20	22	20	88	2						62.60	74.50	---	---
..2000	20	38	20	141	2						---	---	75.60	102.60
..2200	22	22	20	88	2						77.80	108.00	---	---



HSSE-Co 8 Schlichtfräser extra lang

1091 W

M42-Co 8

1091 WB

TiAIN
beschichtet



Typ
N

- Universal einsetzbar für sämtliche Werkstoffe; speziell lange Ausführung für Arbeiten an tiefliegenden und schwer erreichbaren Stellen.
- Höchstleistung mit **PLUS - FUTURE** - Beschichtung.

Thermo Plast. Alu 	Alu	Alu Guss > 10% Si	Stahl ≤ 750N	Stahl ≤ 900N	Stahl ≤ 1400N	Stahl ≤ 55HRC	INOX	Ti + Cu	GG (G)	Uni- versal	1091 W	1091 WB
												
Ø k ₁₀	Schneid- länge		Schaft- Ø		Gesamt- länge		Z					
									1091 W	1091 WB		
6	60		6		110		4		90.70	119.90		
8	60		10		110		4		113.40	153.40		
10	70		10		120		4		123.10	158.80		
12	100		12		160		4		139.30	181.40		
14	130		12		190		4		168.50	244.10		
16	150		16		210		4		194.40	257.00		
18	180		16		240		4		339.10	482.80		
20	180		20		240		4		381.20	530.30		

1091 W

1091 WB

HSSE-Co 8 -

Schlicht-Fräser kurz

1161 W

1161 WB

TiAIN beschichtet

Schrupp-Fräser kurz

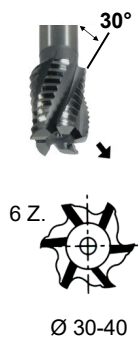
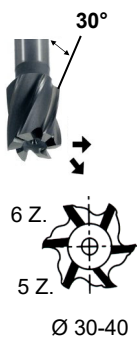
1171 W

1171 WB

TiAIN beschichtet

Typ
N

Typ
NR



Ø 30-40

Ø 30-40

- Sehr stabiler HSS-Fräser!
- Durch die kurze Ausladung auch auf älteren Maschinen sehr hohe

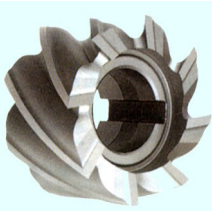
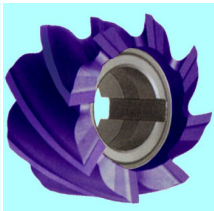
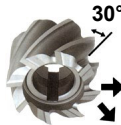
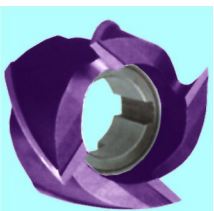
1161 W

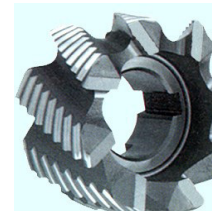
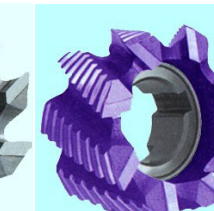
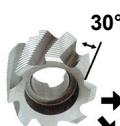
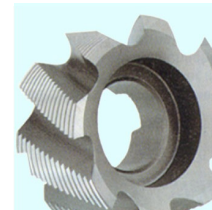
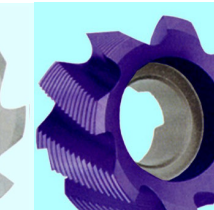
1161 WB

1171 W

1171 WB

						Alu Guss > 10% Si	Stahl < 750N	Stahl < 900N	Stahl < 1400N	INOX	Ti + Cu	GG (G)	Uni- versal							
						●	●	●		○		○	●							
Best.-Nr. 1161w... 1161wb...	Ø	SL	Schaft- Ø	Ges.- L	Z	Schlicht		Best.-Nr. 1171w... 1171wb...						Ø	SL	Schaft- Ø	Ges.- L	Z	Schrupp	
						1161 W	1161 WB												1171 W	1171 WB
						..3000	30	30	20	90	6	162.00	205.20						..3000	30
..3500	35	30	20	90	6	176.00	240.80	..3500	35	30	20	90	6	227.90	293.80					
..4000	40	32	25	95	8	216.00	292.70	..4000	40	32	25	95	8	311.00	387.70					
..5000	50	36	32	100	8	386.60	464.40	..5000	50	36	32	100	8	454.70	518.40					

HSSE-Co 8 Walzenstirnfräser-Schlicht				HSSE-Co 8 Walzenstirnfräser CNR																																																																																																																																																																																									
1421 DIN 1880 M42-Co 8		1421 B TiAIN beschichtet		1431		1431 B CNR beschichtet																																																																																																																																																																																							
						Typ N																																																																																																																																																																																							
1421		1421 B		- Universal einsetzbar für sämtliche Werkstoffe. - Höchstleistung mit TiAIN - Beschichtung, und speziell für schwer zerspanbare und rostfreie Stähle. - Speziell geeignet für ALU und sämtliche NE-Metalle; extra grosse Spanräume. - Höchstleistung mit CNR - Beschichtung.																																																																																																																																																																																									
		TiAIN																																																																																																																																																																																											
																																																																																																																																																																																													
1431		1431 B																																																																																																																																																																																											
		CNR																																																																																																																																																																																											
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	Thermo Plast. Alu	Alu < 750N	Alu Guss > 10% Si	Stahl < 900N	Stahl < 1400N	INOX < 55HRC	Ti < 1400N	GG (G)	Uni- versal	1421	1421 B	1431	1431 B																																																																																																																																																																																
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HSSE-Co 8 Walzenstirnfräser-Schrupp				HSSE-Co 8 Walzenstirnfräser-Feinschrupp																																																																																																																																																																																									
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		TiAIN		- Universal einsetzbar für sämtliche Werkstoffe. - Höchstleistung mit PLUS - FUTURE - Beschichtung, und speziell für schwer zerspanbare und rostfreie Stähle.																																																																																																																																																																																									
																																																																																																																																																																																													
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	Alu Guss > 10% Si	Stahl < 750N	Stahl < 900N	Stahl < 1400N	Stahl 55HRC	INOX < 55HRC	Ti < 1400N	GG (G)	Uni- versal	1441 Schrupp	1441 B Schrupp	1451 Feinschrupp	1451 B Feinschrupp																																																																																																																																																																																
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..08000	80	45	27	8	10	437.40	539.90	437.40	538.90																																																																																																																																																																																				
..10000	100	50	32	10	12	546.50	700.90	546.50	657.70																																																																																																																																																																																				
..12500	125	56	40	12	12	783.00	1010.90	781.90	1010.90																																																																																																																																																																																				

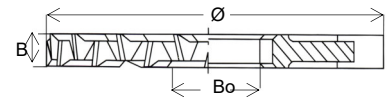
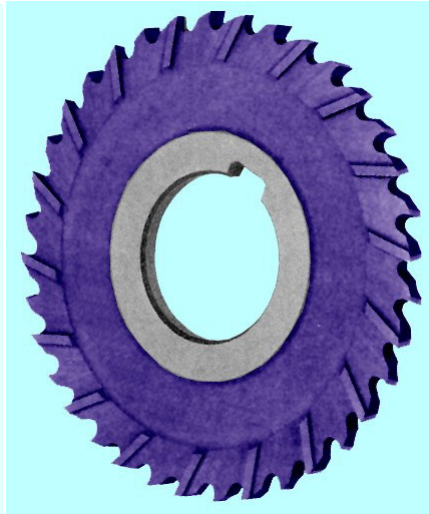
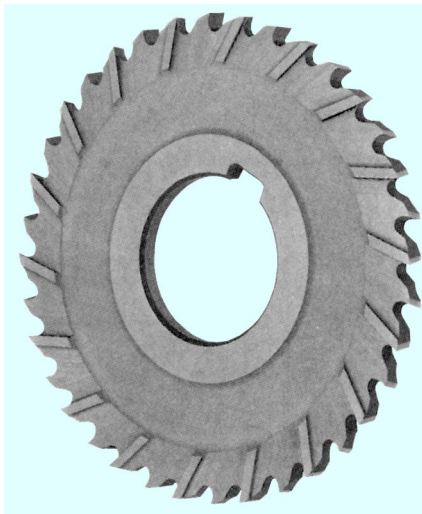
HSSE Scheibenfräser

kreuzverzahnt

1470

1470 B

TiAIN



- Universal einsetzbar für sämtliche Werkstoffe. 3-seitig schneidend; damit wird beim Schlitzfräsen eine genaue und saubere Oberfläche erzielt.

TiAIN

Best.-Nr. 1470... 1470b...						1470	1470 B
	Ø	Breite	Bohrung	Z			
..0500160	50	1,6	16	22	102.60	150.10	
..0500200	50	2	16	22	103.70	151.20	
..0500250	50	2,5	16	22	108.00	154.40	
..0500300	50	3	16	22	109.10	155.50	
..0500350	50	3,5	16	22	128.50	176.00	
..0630160	63	1,6	22	28	85.30	132.80	
..0630200	63	2	22	28	82.10	128.50	
..0630250	63	2,5	22	28	82.10	128.50	
..0630300	63	3	22	28	84.20	130.70	
..0630400	63	4	22	28	84.20	130.70	
..0630500	63	5	22	28	91.80	139.30	
..0800160	80	1,6	27	32	104.80	167.40	
..0800200	80	2	27	32	99.40	163.10	
..0800250	80	2,5	27	32	99.40	163.10	
..0800300	80	3	27	32	104.80	167.40	
..0800350	80	3,5	27	32	128.50	191.20	
..0800400	80	4	27	32	114.50	177.10	
..0800500	80	5	27	32	117.70	180.40	
..0800600	80	6	27	32	128.50	371.50	
..1000160	100	1,6	32	36	135.00	198.70	
..1000200	100	2	32	36	128.50	191.20	
..1000250	100	2,5	32	36	129.60	192.20	
..1000300	100	3	32	36	132.80	194.40	

Best.-Nr. 1470... 1470b...						1470	1470 B
	Ø	Breite	Bohrung	Z			
..1000350	100	3,5	32	36	165.20	227.90	
..1000400	100	4	32	36	143.60	206.30	
..1000500	100	5	32	36	154.40	217.10	
..1000600	100	6	32	36	167.40	230.00	
..1000800	100	8	32	36	205.20	268.90	
..1250200	125	2	32	40	155.50	233.30	
..1250250	125	2,5	32	40	162.00	238.70	
..1250300	125	3	32	40	169.60	247.30	
..1250350	125	3,5	32	40	178.20	256.00	
..1250400	125	4	32	40	187.90	264.60	
..1250500	125	5	32	40	209.50	286.20	
..1250600	125	6	32	40	226.80	304.60	
..1250800	125	8	32	32	289.40	366.10	
..1251000	125	10	32	32	322.90	400.70	
..1600200	160	2	40	48	245.20	372.60	
..1600250	160	2,5	40	48	245.20	372.60	
..1600300	160	3	40	48	239.80	368.30	
..1600350	160	3,5	40	48	252.70	381.20	
..1600400	160	4	40	48	251.60	379.10	
..1600500	160	5	40	48	280.80	408.20	
..1600600	160	6	40	48	298.10	424.40	
..1600800	160	8	40	36	345.60	474.10	
..1601000	160	10	40	36	387.70	515.20	
..1601200	160	12	40	36	467.60	596.20	

HSSE Scheibenfräser

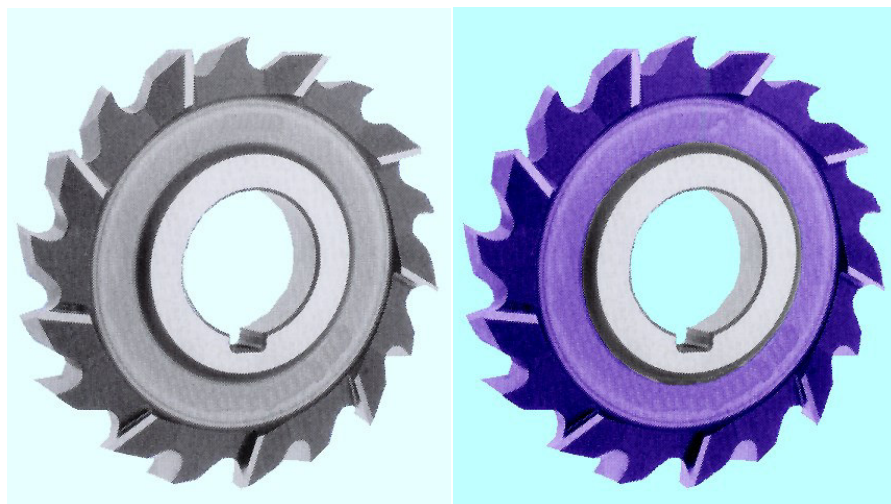
kreuzverzahnt

1480

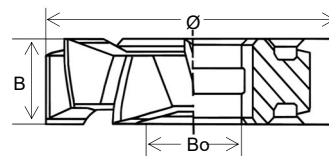
1480 B

TiAIN

beschichtet



TiAIN



- Universal einsetzbar für sämtliche Werkstoffe. Für tiefe Schlitzte. 3-seitig schneidend.

Best.-Nr. 1480... 1480b...	Alu	Alu Guss > 10% Si	Stahl < 750N	Stahl < 900N	Stahl < 1400N	INOX	Uni- versal	1480	1480 B
	Ø	Breite	Bohrung	Z					
..0500400	50	4	16	10	83.20	122.00			
..0500500	50	5	16	10	82.10	122.00			
..0500600	50	6	16	10	85.30	125.30			
..0500800	50	8	16	10	91.80	132.80			
..0501000	50	10	16	10	99.40	140.40			
..0630400	63	4	22	12	91.80	132.80			
..0630500	63	5	22	12	95.00	135.00			
..0630600	63	6	22	12	97.20	137.20			
..0630800	63	8	22	12	108.00	146.90			
..0631000	63	10	22	12	121.00	160.90			
..0631200	63	12	22	12	127.40	166.30			
..0800400	80	4	27	18	115.50	166.30			
..0800500	80	5	27	14	121.00	175.00			
..0800600	80	6	27	14	127.40	180.40			
..0800800	80	8	27	14	130.70	185.80			
..0801000	80	10	27	14	142.60	196.60			
..0801200	80	12	27	14	154.40	208.40			
..1000400	100	4	32	22	153.40	206.30			

Best.-Nr. 1480... 1480b...	Alu	Alu Guss > 10% Si	Stahl < 750N	Stahl < 900N	Stahl < 1400N	INOX	Uni- versal	1480	1480 B
	Ø	Breite	Bohrung	Z					
..1000500	100	5	32	22	154.40	208.40			
..1000600	100	6	32	16	165.20	218.20			
..1000800	100	8	32	16	180.40	233.30			
..1001000	100	10	32	16	198.70	251.60			
..1001200	100	12	32	16	218.20	271.10			
..1250600	125	6	32	24	233.30	299.20			
..1250800	125	8	32	16	263.50	330.50			
..1251000	125	10	32	16	263.50	330.50			
..1251200	125	12	32	16	283.00	347.80			
..1600600	160	6	40	26	358.60	467.60			
..1600800	160	8	40	18	359.60	469.80			
..1601000									
..1601200	160	12	40	18	420.10	530.30			
..1601400	160	14	40	18	464.40	573.50			
..2001200	200	12	40	22	640.40	804.60			
..2001400	200	14	40	22	691.20	855.40			
..2001600	200	16	40	22	745.20	898.60			
..2002000	200	20	40	22	883.40	1047.60			

HSSE - Co8 Schlitzfräser

1482 W

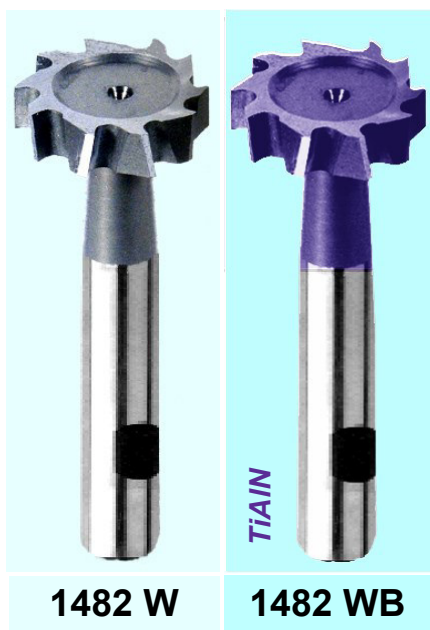
1482 WB

TiAIN

beschichtet



- Universal einsetzbar, am Umfang schneidend, seitlich freigeschliffen, kreuzverzahnt.
- Höchstleistung mit **TiAIN** Beschichtung, speziell für schwer zerspanbare und rostfreie Stähle.



Best.-Nr.
1482w...
1482wb...

Thermo Plast. Alu 0,22002	Alu ○	Alu Guss > 10% Si ○	Stahl < 750N ●	Stahl < 900N ●	Stahl < 1400N	Stahl < 55HRC	INOX ●	Ti + Cu ○	GG (G) ○	Uni- versal ●	1482 W	1482 WB
Ø x B			Schaft- Ø		Gesamt- länge		Z				1482 W	 1482 WB
7,5 x 1,5 7,5 x 2			6 6		50 50		6 6		37.80 37.80		49.70 49.70	
10,5 x 2 10,5 x 2,5			6 6		50 50		6 6		37.80 37.80		49.70 49.70	
10,5 x 3 13,5 x 2			6 10		50 56		6 8		37.80 44.30		49.70 57.20	
13,5 x 3 13,5 x 4			10 10		56 56		8 8		44.30 44.30		57.20 57.20	
16,5 x 3 16,5 x 4			10 10		56 56		8 8		50.80 50.80		68.00 68.00	
16,5 x 5 19,5 x 3			10 10		56 56		8 8		50.80 58.30		68.00 83.20	
19,5 x 4 19,5 x 5			10 10		56 56		8 8		58.30 58.30		83.20 83.20	
22,5 x 4 22,5 x 5			10 10		56 56		8 8		69.10 69.10		102.60 102.60	
22,5 x 6 25,5 x 4			10 10		56 56		8 8		69.10 78.80		102.60 121.00	
25,5 x 5 25,5 x 6			10 10		56 56		8 8		78.80 78.80		121.00 121.00	
25,5 x 8 28,5 x 6			10 10		56 56		8 8		78.80 91.80		121.00 133.90	
28,5 x 8 32,5 x 6			10 10		56 56		8 10		91.80 109.10		133.90 164.20	
32,5 x 7 32,5 x 8			10 10		56 56		10 10		109.10 109.10		164.20 164.20	
45,5 x 10			12		63		10		155.50		217.10	

HSSE - Co8 - T - Nutenfräser

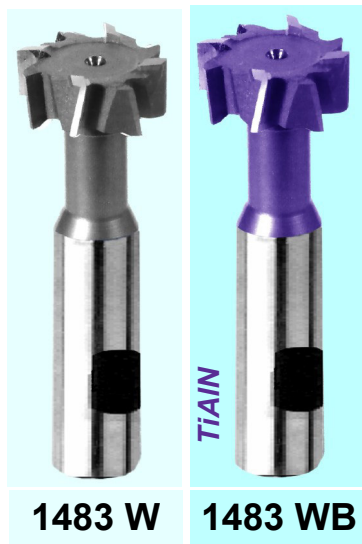
1483 W

1483 WB

TiAIN

beschichtet

- am Umfang und seitlich schneidend
- kreuzverzahnt



Best.-Nr.
1483w...
1483wb...

Thermo Plast. Alu	Alu	Alu Guss > 10% Si	Stahl < 750N	Stahl < 900N	Stahl < 1400N	Stahl < 55HRC	INOX	Ti + Cu	GG (G)	Uni- versal	1483 W	1483 WB
												
Ø x B			Schaft- Ø		Gesamt- länge		Z				1483 W	1483 WB
12,5 x 6			10		57		6				60.00	74.50
16 x 8			10		62		6				71.30	89.60
18 x 8			12		70		6				81.00	101.50
19 x 9			12		70		6				83.20	109.10
21 x 9			12		74		6				81.00	121.00
22 x 10			12		74		6				83.20	122.00
25 x 11			16		82		6				95.00	135.00
28 x 12			16		85		6				108.00	160.90
32 x 14			16		90		8				126.40	186.80
36 x 16			25		103		8				158.80	229.00
40 x 18			25		108		8				203.00	289.40

HSSE - Co8 Winkelfräser 45°/60°

1484 W
45°

1484 WB
TiAIN

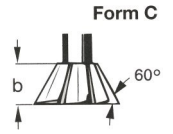
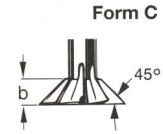
1485 W
60°

1485 WB
TiAIN

Form C



DIN 1833



- Form C am Umfang + stirnseitig schneidend
- Höchstleistung mit **TiAIN**-Beschichtung

Best.-Nr.
1484w...
1484wb...
1485w...
1485wb...

Thermo Plast. Alu	Alu	Alu Guss > 10% Si	Stahl < 750N	Stahl < 900N	Stahl < 1400N	Stahl < 55HRC	INOX	Ti + Cu	GG (G)	Uni- versal	1484 W 45°	1484 WB 45°	1485 W 60°	1485 WB 60°
○	○	○	●	●			●	○	○	●				
Ø	Ø D2	Schneiden- breite 45° 60°		Schaft- Ø		Ges.- länge	Z							
16	6	4	6,3	12	60	10	43.20	56.20	43.20	56.20				
20	7.8	5	8	12	63	10	49.70	59.40	49.70	59.40				
25	9	6,3	10	16	67	10	62.60	87.50	62.60	87.50				
32	15	8	12,5	16	71	12	94.00	125.30	94.00	125.30				

1484 W **1484 WB** 45°

1485 W **1485 WB** 60°

1486 W
45°

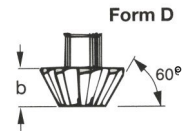
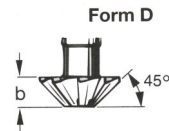
1486 WB
TiAIN beschichtet

1487 W
60°

1487 WB
TiAIN beschichtet

Form D

DIN 1833



- Form D nur am Umfang schneidend
- Höchstleistung mit **TiAIN**-Beschichtung

Best.-Nr.
1486w...
1486wb...
1487w...
1487wb...

Thermo Plast. Alu	Alu	Alu Guss > 10% Si	Stahl < 750N	Stahl < 900N	Stahl < 1400N	Stahl < 55HRC	INOX	Ti + Cu	GG (G)	Uni- versal	1486 W 45°	1486 WB 45°	1487 W 60°	1487 WB 60°
														
Ø	Ø D2	Schneiden- breite 45° 60°		Schaft - Ø		Ges.- länge		Z						
16	8.2	4	6,3	12	60	10	42.10	55.10	42.10	55.10				
20	10.5	5	8	12	63	10	47.50	63.70	47.50	63.70				
25	11.5	6,3	10	16	67	10	60.50	85.30	60.50	85.30				
32	15	8	12,5	16	71	12	91.80	123.10	91.80	123.10				

1486 W **1486 WB** 45°

1487 W **1487 WB** 60°

HSSE - Co8 - Viertelkreisfräser

1488 WR

1488 WBR

TiAIN

beschichtet

- Universal einsetzbar zum Kanten abrunden
- Höchstleistung mit **PLUS - FUTURE** - Beschichtung.



Best.-Nr. 1488wr... 1488wbr...	Thermo Plast. Alu	Alu Guss > 10% Si	Stahl < 750N	Stahl < 900N	Stahl < 1400N	Stahl < 55HRC	INOX	Ti + Cu	GG (G)	Uni- versal	1488 WR	1488 WBR
	○	○	●	●			○	○	○	●		
	R	Ø	Schaft- Ø		Gesamtlänge		Z				1488 WR	1488 WBR
..0100	1	8	10		60		4				76.00	89.40
..0150	1,5	9	10		60		4				83.00	99.20
..0200	2	10	10		60		4				83.00	99.20
..0250	2,5	11	10		60		4				83.00	99.20
..0300	3	12	12		60		4				86.20	104.90
..0350	3,5	13	12		60		4				93.30	114.80
..0400	4	14	12		60		4				93.30	114.80
..0450	4,5	15	12		60		4				100.00	122.90
..0500	5	16	12		60		4				100.00	124.30
..0550	5,5	19	16		67		4				105.40	135.60
..0600	6	20	16		67		4				105.40	135.60
..0650	6,5	21	16		71		4				129.60	164.60
..0700	7	22	16		71		4				129.60	164.60
..0750	7,5	23	16		71		4				129.60	164.60
..0800	8	24	16		71		4				129.60	164.60
..0850	8,5	28	20		85		4				155.80	197.20
..0900	9	28	20		85		4				155.80	197.20
..0950	9,5	28	20		85		4				155.80	197.20
..1000	10	28	25		85		4				155.80	197.20
..1050	10,5	32	25		90		4				172.20	222.30
..1100	11	32	25		90		4				172.20	222.30
..1200	12	34	25		90		4				172.20	222.30
..1400	14	44	25		100		6				248.30	312.20
..1500	15	46	25		100		6				288.30	357.10
..1600	16	48	25		100		6				283.80	357.10
..1800	18	52	32		112		6				320.20	402.80
..2000	20	56	32		112		6				355.70	444.80



HSSE - Co - Winkelfräser

1490 45°

1491 60°

1490 B 45°

1491 B 60°

Alu	Alu Guss	Stahl	Stahl	Stahl	INOX	Uni- versal
○	> ○	●	●	○	○	●

Best.-Nr.

1490...

1490b...

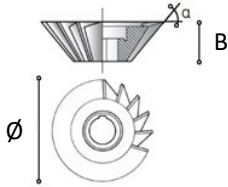
..05000

..06300

..08000

..10000

Ø	Winkel a ± 25'	Breite B	Boh- rung	Zähne	1490	1490 B
50	45°	13	13	16	149.00	206.30
63	45°	18	16	16	198.70	259.20
80	45°	22	22	18	311.00	382.30
100	45°	28	28	20	531.40	612.40



Best.-Nr.

1491...

1491b...

..05000

..06300

..08000

..10000

Ø	Winkel a ± 25'	Breite B	Boh- rung	Zähne	1491	1491 B
50	60°	16	13	16	149.00	206.30
63	60°	20	16	16	198.70	259.20
80	60°	25	22	18	311.00	382.30
100	60°	32	27	20	531.40	612.40

HSSE - Co - Prismenfräser

1493 45°

1494 60°

1495 90°

1493B 45°

1494B 60°

1495B 90°

Alu	Alu Guss	Stahl	Stahl	Stahl	INOX	Uni- versal
○	> ○	●	●	○	○	●

Best.-Nr.

1493...

1493b...

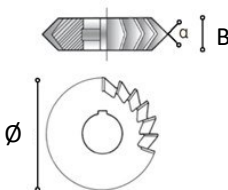
..05000

..06300

..08000

..10000

Ø	Winkel a ± 25'	Breite B	Boh- rung	Zähne	1493	1493 B
50	45°	8	16	16	125.30	177.10
63	45°	10	22	18	168.50	214.90
80	45°	12	27	18	252.70	324.00
100	45°	18	32	20	362.90	453.60



Best.-Nr.

1494...

1494b...

..05000

..06300

..08000

..10000

Ø	Winkel a ± 25'	Breite B	Boh- rung	Zähne	1494	1494 B
50	60°	10	16	16	135.00	185.80
63	60°	14	22	18	179.30	246.20
80	60°	18	27	18	259.20	330.50
100	60°	25	32	20	395.30	505.40

Best.-Nr.

1495...

1495b...

..05000

..06300

..08000

..10000

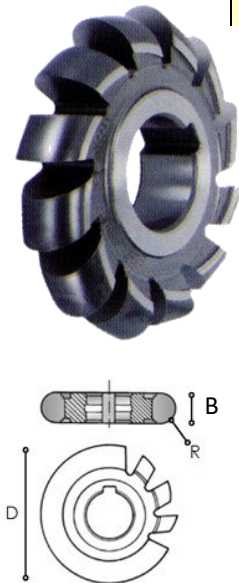
Ø	Winkel a ± 25'	Breite B	Boh- rung	Zähne	1495	1495 B
50	90°	14	16	16	140.40	193.30
63	90°	20	22	18	192.20	259.20
80	90°	22	27	18	285.10	358.60
100	90°	32	32	20	425.50	570.20

HSSE - Co - Halbkreisfräser, konvex

1497

1497 B

Alu	Alu Guss	Stahl	Stahl	Stahl	INOX	Uni- versal	Best.-Nr.
○	> ○	●	●	○	○	●	1497...
							1497b...



	Radius	Ø	Breite B	Boh- rung	Zähne	1497	1497 B
..0100	1	50	2	16	14	109.10	154.40
..0150	1.5	50	3	16	14	144.50	165.20
..0200	2	50	4	16	14	116.60	168.50
..0250	2.5	63	5	22	12	125.30	173.90
..0300	3	63	6	22	12	130.70	177.12
..0350	3.5	63	7	22	12	151.20	202.00
..0400	4	63	8	22	12	156.60	212.80
..0450	4.5	63	9	22	12	165.20	220.30
..0500	5	63	10	22	12	172.80	227.90
..0550	5.5	80	11	27	12	202.00	257.00
..0600	6	80	12	27	12	202.00	259.20
..0800	8	80	16	27	12	245.20	308.90
..1000	10	100	20	32	12	325.10	428.80

HSSE - Co - Halbkreisfräser, konkav

1499

1499 B

Alu	Alu Guss	Stahl	Stahl	Stahl	INOX	Uni- versal
○	> ○	●	●	○	○	●



Best.-Nr.	Radius	Ø	Breite B	Boh- rung	Zähne	1499	1499 B
1499...							
1499b...							
..0100	1	50	6	16	14	139.30	180.40
..0150	1.5	50	8	16	14	145.80	192.20
..0200	2	50	9	16	14	143.60	194.40
..0250	2.5	63	10	22	12	149.00	198.70
..0300	3	63	12	22	12	169.60	220.30
..0400	4	63	16	22	12	204.10	272.20
..0500	5	63	20	22	12	232.20	306.70
..0600	6	80	24	27	12	287.30	374.80
..0800	8	80	32	27	12	422.30	518.40
..1000	10	100	36	32	12	561.60	690.10