



***sutton**tools*

HSS ENDMILLS

- Solutions for slotting, finishing, roughing and profiling
 - 8% Co & PM grades of HSS
 - Short and long series
- General purpose and application specific geometries

Endmills HSS Finder

ISO	VDI	Material Group	Sutton	Page
P	A	Steel	N	448
M	R	Stainless Steel	VA	
K	F	Cast Iron	GG	
N	N	Non-Ferrous Metals, Aluminiums & Coppers	Al W	
S	S	Titaniums & Super Alloys	Ti	
H	H	Hard Materials (≥ 45 HRC)	H	451

^ VDI 3323 material groups can also be determined by referring to the material cross reference listing in the application guide at the back of this catalogue.

Catalogue Code
Type of Cut: **Slotting**
Finishing
Universal
Roughing
Profiling
Material
Surface Finish
Sutton Designation
Standard
Shank Tolerance

448	448	449	449	450	450	451	451
							
E179	E180	E183	E184	E191	E192	E201	E202
●	●	●	●	●	●	●	●
				●	●		
				●	●	●	●
						●	●
HSS Co.8		HSS Co.8		HSS Co.8		HSS Co.8	HSS Co.8
Brt	TiAlN	Brt	TiAlN	Brt	TiAlN	Brt	TiAlN
N	N	N	N	N	N	N	N
DIN 327	DIN 844L	DIN 844K	DIN 844K	DIN 844K	DIN 844K	DIN 844K	DIN 844K
h6	h6	h6	h6	h6	h6	h6	h6

ISO	VDI ³³²³	Material	Condition	HB	N/mm²								
P	1	Steel - Non-alloy, cast & free cutting	~ 0.15 %C	A	125	440	●	●	●	●	●	●	●
	2			A	190	640	●	●	●	●	●	●	●
	3		~ 0.45 %C	QT	250	840	○	●	○	●	○	●	●
	4			A	270	910	○	●	○	●	○	●	●
	5		~ 0.75 %C	QT	300	1010	○	○	○	○	○	○	●
	6	Steel - Low alloy & cast < 5% of alloying elements	Ferritic / Martensitic	A	180	610	●	●	●	●	●	●	●
	7			QT	275	930	○	○	○	○	○	○	●
	8			QT	300	1010	○	○	○	○	○	○	●
	9			QT	350	1180		○		○		○	○
	10	Steel - High alloy, cast & tool	Martensitic	A	200	680	○	●	○	●	○	●	●
	11			HT	325	1100		○		○		○	○
M	12	Steel - Corrosion resistant & cast	Ferritic / Martensitic	A	200	680		○		○		○	○
	13			QT	240	810	○	○	○	○	○	○	○
	14.1		Austenitic	AH	180	610		○		○		○	○
K	14.2	Stainless Steel	Duplex		250	840		○		○		○	○
	14.3		Precipitation Hardening		250	840		○		○		○	○
	15		Ferritic / Pearlitic		180	610	○	●		○	●	○	●
	16	Cast Iron - Grey (GG)	Pearlitic		260	880	○	○		○	○	○	○
N	17	Cast Iron - Nodular (GGG)	Ferritic		160	570	○	●	○	●	○	●	○
	18		Pearlitic		250	840	○	●		○	○	○	○
	19	Cast Iron - Malleable	Ferritic		130	460	○	○		○	●	○	○
	20		Pearlitic		230	780	○	○		○	○	○	○
S	21	Aluminum & Magnesium - wrought alloy	Non Heat Treatable		60	210	●	○	●	○	●	○	○
	22		Heat Treatable	AH	100	360	●	○	●	○	●	○	○
	23	Aluminum & Magnesium - cast alloy ≤12% Si	Non Heat Treatable		75	270	○	○	○	○	○	○	○
	24		Heat Treatable	AH	90	320	○	○	○	○	○	○	○
	25	Al & Mg - cast alloy >12% Si	Non Heat Treatable		130	460	○	○		○			
	26	Copper & Cu alloys (Brass/Bronze)	Free cutting, Pb > 1%		110	390	○	○		○		○	●
	27		Brass (CuZn, CuSnZn)		90	320						○	○
	28		Bronze (CuSn)		100	360	○	○	○	○	○	●	●
	29	Non-metallic - Thermosetting & fiber-reinforced plastics											
	30	Non-metallic - Hard rubber, wood etc.											
H	31	High temp. alloys	Fe based	A	200	680							○
	32			AH	280	950							○
	33		Ni / Co based	A	250	840							○
	34			AH	350	1180							○
	35			C	320	1080							○
	36	Titanium & Ti alloys	CP Titanium		400 MPa								○
	37.1		Alpha alloys		860 MPa								○
	37.2		Alpha / Beta alloys	A	960 MPa								○
	37.3			AH	1170 MPa								○
	37.4		Beta alloys	A	830 MPa								○
	37.5			AH	1400 MPa								○
H	38.1	Hardened steel	Chilled	HT	45 HRC								
	38.2			HT	55 HRC								
	39.1			HT	58 HRC								
	39.2			HT	62 HRC								
	40			C	400	1350		●		●		○	
	41	Cast Iron		HT	55 HRC								

Condition: A (Annealed), AH (Age Hardened), C (Cast), HT (Hardened & Tempered), QT (Quenched & Tempered)

452	452	453	453	454	454	455	456	456	457	457	458		
													
E205	E206	E140	E141	E146	E147	E151	E123	E124	E251	E255	E252		
							●	●					
●	●						●	●					
●	●	●	●	●	●	●			●	●	●		
HSS Co.8		HSS Co.8		HSS Co.8		SPM	SPM		SPM	SPM	SPM		
Br _t	TiAlN	Br _t	TiCN	Br _t	TiCN	TiAlN	Br _t	TiAlN	AlCrN	AlCrN	AlCrN		
N		NR		NR		UNI	W		VA	VA	VA		
DIN 844L		DIN 844K		DIN 844L		DIN 844K	DIN 844L		DIN 844K	DIN 844K	DIN 844L		
h6		h6		h6		h6	h6		h6	h6	h6		
												VDI 3323	ISO
●	●	●	●	●	●	○			○	○	○	1	P
●	●	●	●	●	●	○			○	○	○	2	
○	●	○	○	○	○	○			○	○	○	3	
○	●	○	○	○	○	○			○	○	○	4	
○	●		○		○	●			●	●	●	5	
●	●	●	●	●	●	○			○	○	○	6	
○	●		○		○	○			●	●	●	7	
○	●		○		○	●			●	●	●	8	
	○					●						9	
	●					○			●	●	●	10	
	○					●						11	
	○					○			○	○	○	12	
	○					●			●	●	●	13	
	●					○			●	●	●	14.1	M
	●					○			●	●	●	14.2	
	○					○			○	○	○	14.3	
○	●		○		○	●					○	15	K
○	○					○					○	16	
○	●		○		○	●					○	17	
○	○					○					○	18	
○	○		○		○	●					○	19	
○	○					○					○	20	
●	○	●	○	●	○		●	●				21	N
●	○	●	○	●	○		●	●				22	
○	○	○	○	○	○	○	●	●				23	
○	○	○	○	○	○	○	●	●				24	
							○	○				25	
○	●	○	○	○	○		●	●				26	
	○						○					27	
●	●	○	○	○	○		●	●				28	
												29	S
												30	
	○								○	○	○	31	
	○								○	○	○	32	
	○								○	○	○	33	
	○								○	○	○	34	
	○								○	○	○	35	
	○								○	○	○	36	
	○								○	●	○	37.1	
	○								○	●	○	37.2	
	○								○	●	○	37.3	
	○								○	●	○	37.4	
	○								○	○	○	37.5	
									○	○	○	38.1	H
												38.2	
												39.1	
												39.2	
	○					○						40	
												41	

- 



Shank Tolerance

The diagram shows a drill bit composed of two parts. The first part is a straight section with diameter d_2 and length l_1 . The second part is a double-flute section with diameter d_1 and length l_2 . The total length of the drill bit is $l_1 + l_2$.

[illegible]

● Optimal ○ Effective

Slot Drills 2 Flute, R30 N, Long



- For long-reach slotting applications
- Suitable for materials up to 1000 N/mm²
- For soft steels & non-ferrous material
- TiAlN for longer tool life



Fraises 2 dents, R30°, Longue

- Pour la réalisation de rainures et de poches
- Convient aux matériaux jusqu'à 1000 N/mm²
- Pour aciers doux et non-ferreux
- Revêtement TiAlN pour une meilleure durée de vie



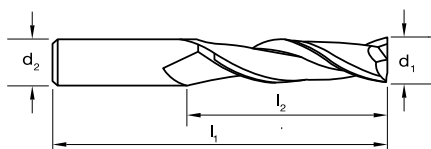
Frese Metallo Duro 2 Taglienti, R30 N, Lunga

- Fresatura di cave molto profonda
- Ideale per materiali fino a 1000 N/mm²
- Geometria ottimizzata per materiali morbidi & non ferrosi
- TiAlN per Ottimizzare vita utensile



Fresas, 2 ranuras, R30 N, Larga

- Para fresado de precisión de ranuras y cavidades
- Adecuado para materiales hasta 1000 N/mm²
- Para aceros blandos y materiales no ferrosos.
- TiAlN para una mayor vida útil de la herramienta



Catalogue Code
Discount Group
Material
Surface Finish
Sutton Designation
Geometry
Shank Form (DIN 1835)
Shank Tolerance



E183	E185	E184	E186
B0606	B0606	B0608	B0608
HSS Co.8	HSS Co.8	HSS Co.8	HSS Co.8
BrT	BrT	TiAlN	TiAlN
N	N	N	N
R30	R30	R30	R30
A	B	A	B
h6	h6	h6	h6

Size Ref.	d ₁ (e8)	l ₁	l ₂	d ₂	z	Item #	Item #	Item #	Item #
0200	2.0	54	10	6	2	E183 0200	E185 0200	E184 0200	E186 0200
0250	2.5	56	12	6	2	E183 0250	E185 0250	E184 0250	E186 0250
0300	3.0	56	12	6	2	E183 0300	E185 0300	E184 0300	E186 0300
0350	3.5	59	15	6	2	E183 0350	E185 0350	E184 0350	E186 0350
0400	4.0	63	19	6	2	E183 0400	E185 0400	E184 0400	E186 0400
0450	4.5	63	19	6	2	E183 0450	E185 0450	E184 0450	E186 0450
0500	5.0	68	24	6	2	E183 0500	E185 0500	E184 0500	E186 0500
0550	5.5	68	24	6	2	E183 0550	E185 0550	E184 0550	E186 0550
0600	6.0	68	24	6	2	E183 0600	E185 0600	E184 0600	E186 0600
0650	6.5	80	30	10	2	E183 0650	E185 0650	E184 0650	E186 0650
0700	7.0	80	30	10	2	E183 0700	E185 0700	E184 0700	E186 0700
0750	7.5	80	30	10	2	E183 0750	E185 0750	E184 0750	E186 0750
0800	8.0	88	38	10	2	E183 0800	E185 0800	E184 0800	E186 0800
0850	8.5	88	38	10	2	E183 0850	E185 0850	E184 0850	E186 0850
0900	9.0	88	38	10	2	E183 0900	E185 0900	E184 0900	E186 0900
0950	9.5	88	38	10	2	E183 0950	E185 0950	E184 0950	E186 0950
1000	10.0	95	45	10	2	E183 1000	E185 1000	E184 1000	E186 1000
1100	11.0	102	45	12	2	E183 1100	E185 1100	E184 1100	E186 1100
1200	12.0	110	53	12	2	E183 1200	E185 1200	E184 1200	E186 1200
1300	13.0	110	53	12	2	E183 1300	E185 1300	E184 1300	E186 1300
1400	14.0	110	53	12	2	E183 1400	E185 1400	E184 1400	E186 1400
1500	15.0	110	53	12	2	E183 1500	E185 1500	E184 1500	E186 1500
1600	16.0	123	63	16	2	E183 1600	E185 1600	E184 1600	E186 1600
1800	18.0	123	63	16	2	E183 1800	E185 1800	E184 1800	E186 1800
2000	20.0	141	75	20	2	E183 2000	E185 2000	E184 2000	E186 2000
2200	22.0	141	75	20	2		E185 2200		E186 2200
2300	23.0	141	75	20	2		E185 2300		E186 2300
2400	24.0	166	90	25	2		E185 2400		E186 2400
2500	25.0	166	90	25	2		E185 2500		E186 2500
3000	30.0	166	90	25	2		•		•
3200	32.0	186	106	32	2		•		•
4000	40.0	217	125	40	2		•		•

ISO	P													M	K							N										S										H							
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14.1	14.2	14.3	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37.1	37.2	37.3	37.4	37.5	38.1	38.2	39.1	39.2	40	41
E183	●	●	○	○	○	●	○	○		○										○			●	●	○	○		○		○																			
E184	●	●	●	●	●	●	○	○	○	●	○	○	○	○	○	○	●		●				○	○	○	○	○	○	○	○																			

P Steel M Stainless Steel K Cast Iron N Non-Ferrous Metals S Titanium & Super Alloys H Hard Materials

• Optimal ○ Effective

• Available on request as special manufacture. Subject to lead time.

Endmills 4 Flute, R30 N, Regular



- For precision milling applications
- Suitable for materials up to 1000 N/mm²
- TiCN for longer tool life



Fraises 4 dents, R30°

- Pour les opérations de finitions et de précision
- Convient aux matériaux jusqu'à 1000 N/mm²
- TiCN pour une meilleure durée de vie



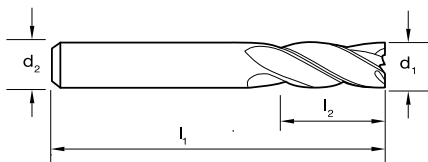
Frese Metallo Duro 4 Taglienti, R30 N, Media

- Fresatura di cave ad alta precisione
- Ideale per materiali fino a 1000 N/mm²
- TiCN per Ottimizzare vita utensile



Fresas, 4 ranuras, R30 N, Regular

- Para aplicaciones de fresado
- Adecuado para materiales hasta 1000 N/mm²
- TiCN para una mayor vida útil de la herramienta



Catalogue Code

Discount Group

Material

Surface Finish

Sutton Designation

Geometry

Shank Form (DIN 1835)

Shank Tolerance

E191	E193	E192	E194
B0606	B0606	B0608	B0608
HSS Co.8	HSS Co.8	HSS Co.8	HSS Co.8
<i>Brt</i>	<i>Brt</i>	<i>TIAIN</i>	<i>TIAIN</i>
N	N	N	N
R30	R30	R30	R30
A	B	A	B
h6	h6	h6	h6

Size Ref.	d ₁ (k10)	l ₁	l ₂	d ₂	z	Item #	Item #	Item #	Item #
0200	2.0	51	7	6	4	E191 0200	E193 0200	E192 0200	E194 0200
0250	2.5	52	8	6	4	E191 0250	E193 0250	E192 0250	E194 0250
0300	3.0	52	8	6	4	E191 0300	E193 0300	E192 0300	E194 0300
0400	4.0	55	11	6	4	E191 0400	E193 0400	E192 0400	E194 0400
0500	5.0	57	13	6	4	E191 0500	E193 0500	E192 0500	E194 0500
0600	6.0	57	13	6	4	E191 0600	E193 0600	E192 0600	E194 0600
0700	7.0	66	16	10	4	E191 0700	E193 0700	E192 0700	E194 0700
0800	8.0	69	19	10	4	E191 0800	E193 0800	E192 0800	E194 0800
0900	9.0	69	19	10	4	E191 0900	E193 0900	E192 0900	E194 0900
1000	10.0	72	22	10	4	E191 1000	E193 1000	E192 1000	E194 1000
1100	11.0	79	22	12	4	E191 1100	E193 1100	E192 1100	E194 1100
1200	12.0	83	26	12	4	E191 1200	E193 1200	E192 1200	E194 1200
1300	13.0	83	26	12	4	E191 1300	E193 1300	E192 1300	E194 1300
1400	14.0	83	26	12	4	E191 1400	E193 1400	E192 1400	E194 1400
1500	15.0	83	26	12	4	E191 1500	E193 1500	E192 1500	E194 1500
1600	16.0	92	32	16	4	E191 1600	E193 1600	E192 1600	E194 1600
1700	17.0	92	32	16	4	E191 1700	E193 1700	E192 1700	E194 1700
1800	18.0	92	32	16	4	E191 1800	E193 1800	E192 1800	E194 1800
2000	20.0	104	38	20	4	E191 2000	E193 2000	E192 2000	E194 2000
2100	21.0	104	38	20	6	•	E193 2100	E192 2100	E194 2100
2200	22.0	121	45	20	6	•	E193 2200	E192 2200	E194 2200
2500	25.0	121	45	25	6		E193 2500		E194 2500
2800	28.0	121	45	25	6		E193 2800		E194 2800
3000	30.0	133	45	25	6		E193 3000		E194 3000
3200	32.0	133	53	32	6		E193 3200		E194 3200
3500	35.0	133	53	32	6		E193 3500		E194 3500
3600	36.0	133	53	32	6		E193 3600		E194 3600
3800	38.0	155	63	40	6		E193 3800		E194 3800
4000	40.0	155	63	40	6		E193 4000		E194 4000
4200	42.0	155	63	40	6		E193 4200		E194 4200
4500	45.0	155	63	40	6		E193 4500		E194 4500
5000	50.0	177	75	40*	6		E193 5000		E194 5000

[illegible]

P Steel **M** Stainless Steel **K** Cast Iron **N** Non-Ferrous Metals **S** Titanium & Super Alloys **H** Hard Materials

● Optimal ○ Effective

Roughers NF (semi roughing), R30 N, Regular



- For roughing applications
- NF geometry allows for heavy cuts, with a good surface finish
- Suitable for materials up to 1100 N/mm²
- TiAlN for longer tool life



Fraises de semi-ébauche profil plat NF, R30°

- Pour les opérations de semi-ébauches
- Géométrie NF permettant une surface finie propre
- Convient aux matériaux jusqu'à 1100N/mm²
- Revêtement TiAlN pour une meilleure durée de vie



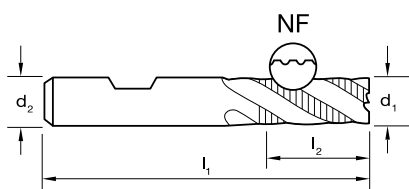
Rompi Truciolo NF (Semi Sgrossatura), R30 N, Media

- Fresa ideale per lavorazioni di sgrossatura
- Geometria NF permette lavorazioni gravose mantenendo una buona superficie
- Ideale per materiali fino a 1100 N/mm²
- TiAlN per Ottimizzare vita utensile



Fresas Desbaste NF (semi), R30 N, Regular

- Para aplicaciones de desbaste
- La geometría NF permite cortes pesados, con un buen acabado superficial
- Adecuado para materiales hasta 1100 N/mm²
- TiAlN para una mayor vida útil de la herramienta



Catalogue Code	E201	E202
Discount Group	B0402	B0404
Material	HSS Co.8	HSS Co.8
Surface Finish	Br	TiAlN
Sutton Designation	N	N
Geometry	R30 NF	R30 NF
Shank Form (DIN 1835)	B	B
Shank Tolerance	h6	h6

Size Ref.	d ₁ (js14)	l ₁	l ₂	d ₂	z	Item #	Item #
0600	6.0	57	13	6	3	E201 0600	E202 0600
0800	8.0	69	19	10	3	E201 0800	E202 0800
1000	10.0	72	22	10	4	E201 1000	E202 1000
1200	12.0	83	26	12	4	E201 1200	E202 1200
1400	14.0	83	26	12	4	E201 1400	E202 1400
1600	16.0	92	32	16	4	E201 1600	E202 1600
1800	18.0	92	32	16	4	E201 1800	E202 1800
2000	20.0	104	38	20	4	E201 2000	E202 2000
2200	22.0	104	38	20	5	E201 2200	E202 2200
2500	25.0	121	45	25	5	E201 2500	E202 2500
3000	30.0	121	45	25	6	E201 3000	E202 3000
3200	32.0	133	53	32	6	E201 3200	E202 3200
3600	36.0	133	53	32	6	E201 3600	E202 3600
4000	40.0	155	63	40	6	E201 4000	E202 4000

ISO	P													M			K					N										S										H												
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14.1	14.2	14.3	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37.1	37.2	37.3	37.4	37.5	38.1	38.2	39.1	39.2	40	41					
E201	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●					
E202	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●				
P	Steel			M			Stainless Steel			K			Cast Iron			N			Non-Ferrous Metals			S			Titanium & Super Alloys			H			Hard Materials																		●	Optimal		○	Effective	

P Steel M Stainless Steel K Cast Iron N Non-Ferrous Metals S Titanium & Super Alloys H Hard Materials

● Optimal ○ Effective

Roughers NF (semi roughing), R30 N, Long



- For roughing applications
- NF geometry allows for heavy cuts, with a good surface finish
- Suitable for materials up to 1100 N/mm²
- TiAlN for longer tool life



Fraises de semi-ébauche profil plat NF, R30°, Longue

- Pour les opérations de semi-ébauches
- Géométrie NF permettant une surface finie propre
- Convient aux matériaux jusqu'à 1100N/mm²
- Revêtement TiAlN pour une meilleure durée de vie



Rompi Truciolo NF (Semi Sgrossatura), R30 N, Lunga

- Fresa ideale per lavorazioni di sgrossatura
- Geometria NF permette lavorazioni gravose mantenendo una buona superficie
- Ideale per materiali fino a 1100 N/mm²
- TiAlN per Ottimizzare vita utensile

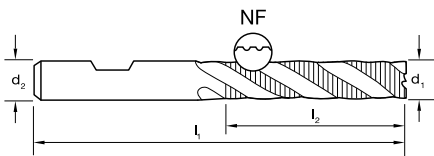


Fresas Desbaste NF (semi), R30 N, Larga

- Para aplicaciones de desbaste
- La geometría NF permite cortes pesados, con un buen acabado superficial
- Adecuado para materiales hasta 1100 N/mm²
- TiAlN para una mayor vida útil de la herramienta



Catalogue Code	E205	E206
Discount Group	B0402	B0404
Material	HSS Co.8	HSS Co.8
Surface Finish	Brt	TIAIN
Sutton Designation	N	N
Geometry	R30 NF	R30 NF
Shank Form (DIN 1835)	B	B
Shank Tolerance	h6	h6



Size Ref.	d_1 (js14)	l_1	l_2	d_2	z	Item #	Item #
0600	6.0	68	24	6	3	•	•
0800	8.0	88	38	10	3	•	•
1000	10.0	95	45	10	4	E205 1000	E206 1000
1200	12.0	110	53	12	4	E205 1200	E206 1200
1400	14.0	110	53	12	4	E205 1400	E206 1400
1600	16.0	123	63	16	4	E205 1600	E206 1600
1800	18.0	123	63	16	4	E205 1800	E206 1800
2000	20.0	141	75	20	4	E205 2000	E206 2000
2200	22.0	141	75	20	5	E205 2200	E206 2200
2500	25.0	166	90	25	5	E205 2500	E206 2500
3000	30.0	166	90	25	6	E205 3000	E206 3000
3200	32.0	186	106	32	6	E205 3200	E206 3200
3600	36.0	186	106	32	6	E205 3600	E206 3600
4000	40.0	217	125	40	6	E205 4000	E206 4000

ISO	P													M	K					N										S										H									
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14.1	14.2	14.3	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37.1	37.2	37.3	37.4	37.5	38.1	38.2	39.1	39.2	40	41
E205	●	●	○	○	○	●	○										○	○	○	○	○	○	●	●	○			○		●																			
E206	●	●	●	●	●	●	●	○	●	○	○			●	●		●	○	●	○	○	○		○	○			●	○	●				○	○	○	○	○	○	○	○	○					○		

P Steel **M** Stainless Steel **K** Cast Iron **N** Non-Ferrous Metals **S** Titanium & Super Alloys **H** Hard Materials

● Optimal ○ Effective

Roughers NR (normal), R30 NR, Regular



- For roughing applications
- NR geometry allows for heavy cuts
- Suitable for materials up to 1000 N/mm²
- TiCN for longer tool life



Fraises d'ébauche profil NR, R30°

- Pour les opérations de d'ébauches
- Géométrie NR pour les coupes difficiles
- Convient aux matériaux jusqu'à 1100N/mm²
- Revêtement TiCN pour une meilleure durée de vie



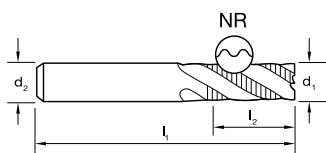
Rompi Truciolo NR (Normale), R30 NR, Media

- Fresa ideale per lavorazioni di sgrossatura
- Geometria NR permette lavorazioni gravose
- Ideale per materiali fino a 1000 N/mm²
- TiCN per Ottimizzare vita utensile



Fresas Desbaste NR (normal), R30 N, Regular

- Para aplicaciones de desbaste
- La geometría NR permite cortes pesados
- Adecuado para materiales hasta 1000 N/mm²
- TiCN para una mayor vida útil de la herramienta



Catalogue Code	E140*	E141*
Discount Group	B0402	B0404
Material	HSS Co.8	HSS Co.8
Surface Finish	Br	TiCN
Sutton Designation	NR	NR
Geometry	R30 NR (coarse pitch)	R30 NR (coarse pitch)
Shank Form (DIN 1835)	B	B
Shank Tolerance	h6	h6

Size Ref.	d ₁ (js14)	l ₁	l ₂	d ₂	z	Item #	Item #
0600	6	57	13	6	3	E140 0600	E141 0600
0800	8	69	19	10	3	E140 0800	E141 0800
1000	10	72	22	10	4		E141 1000
1200	12	83	26	12	4	E140 1200	E141 1200
1600	16	92	32	16	4	E140 1600	E141 1600
2000	20	104	38	20	4	E140 2000	E141 2000
2200	22	104	38	20	4	E140 2200	
2500	25	121	45	25	5		E141 2500
3000	30	121	45	25	6	E140 3000	

ISO	P													M		K					N										S										H								
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14.1	14.2	14.3	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37.1	37.2	37.3	37.4	37.5	38.1	38.2	39.1	39.2	40	41
E140	●	●	○			●																	●	●	●			○		○																			
E141	●	●	○	○	○	○	○	○										○		○		○		○	○	○	○	○																					
P	Steel			M	Stainless Steel			K	Cast Iron			N	Non-Ferrous Metals			S	Titanium & Super Alloys			H	Hard Materials																							●	Optimal		○	Effective	

P Steel M Stainless Steel K Cast Iron N Non-Ferrous Metals S Titanium & Super Alloys H Hard Materials

● Optimal ○ Effective

* Not available once current stock is depleted.

Roughers NR (normal), R30 NR, Long



- For roughing applications
- NR geometry allows for heavy cuts
- Suitable for materials up to 1000 N/mm²
- TiCN for longer tool life



Fraises d'ébauche profil NR, R30°, Longue

- Pour les opérations de d'ébauches
- Géométrie NR pour les coupes difficiles
- Convient aux matériaux jusqu'à 1100N/mm²
- Revêtement TiCN pour une meilleure durée de vie



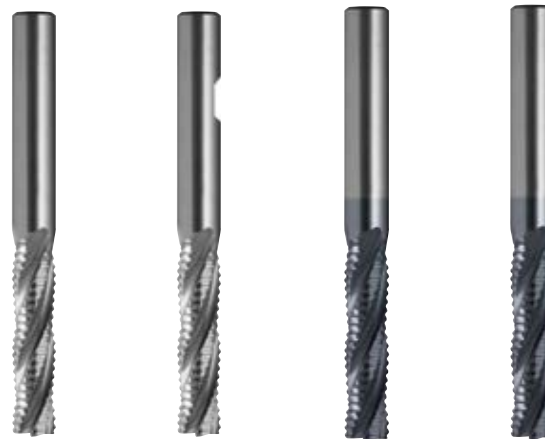
Rompi Truciolo NR (Normale), R30 NR, Lunga

- Fresa ideale per lavorazioni di sgrossatura
- Geometria NR permette lavorazioni gravose
- Ideale per materiali fino a 1000 N/mm²
- TiCN per Ottimizzare vita utensile



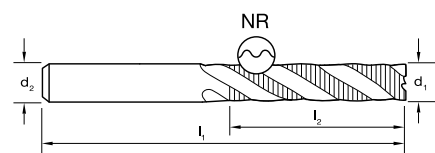
Fresas Desbaste NR (normal), R30 N, Larga

- Para aplicaciones de desbaste
- La geometría NR permite cortes pesados
- Adecuado para materiales hasta 1000 N/mm²
- TiCN para una mayor vida útil de la herramienta



Catalogue Code
Discount Group
Material
Surface Finish
Sutton Designation
Geometry
Shank Form (DIN 1835)
Shank Tolerance

E146	E148*	E147	E149*
B0402	B0402	B0404	B0404
HSS Co.8	HSS Co.8	HSS Co.8	HSS Co.8
BrT	BrT	TiCN	TiCN
NR	NR	NR	NR
R30 NR (coarse pitch)	R30 NR (coarse pitch)	R30 NR (coarse pitch)	R30 NR (coarse pitch)
A	B	A	B
h6	h6	h6	h6



Size Ref.	d ₁ (js14)	l ₁	l ₂	d ₂	z	Item #	Item #	Item #	Item #
0600	6	68	24	6	3	E146 0600	E148 0600	E147 0600	E149 0600
0800	8	88	38	10	3	E146 0800	E148 0800	E147 0800	E149 0800
1000	10	95	45	10	4	E146 1000	E148 1000	E147 1000	E149 1000
1200	12	110	53	12	4	E146 1200	E148 1200	E147 1200	E149 1200
1600	16	123	63	16	4	E146 1600	E148 1600	E147 1600	E149 1600
1800	18	123	63	16	4	E146 1800		E147 1800	
2000	20	141	75	20	4	E146 2000	E148 2000	E147 2000	E149 2000
2200	22	141	75	20	5	E146 2200		E147 2200	
2500	25	166	90	25	5	E146 2500	E148 2500	E147 2500	E149 2500
3000	30	166	90	25	6	E146 3000	E148 3000	E147 3000	E149 3000

ISO	P													M		K					N										S										H																																													
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14.1	14.2	14.3	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37.1	37.2	37.3	37.4	37.5	38.1	38.2	39.1	39.2	40	41																																					
E146 / E148	●	●	●	○	○	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○																																				
E147 / E149	●	●	○	○	○	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○																																				
P	Steel			M	Stainless Steel			K	Cast Iron			N	Non-Ferrous Metals										S	Titanium & Super Alloys										H	Hard Materials																																																			
																																											●	Optimal		○	Effective																																							

P Steel M Stainless Steel K Cast Iron N Non-Ferrous Metals S Titanium & Super Alloys H Hard Materials

● Optimal ○ Effective

Roughers HRS (fine), R45 UNI, Regular



- SPM offers superior performance
- For roughing applications
- HRS geometry allows for heavy cuts in short & long chipping materials
- TiAlN for longer tool life



Fraises d'ébauche profil fin HRS, R45°, UNI

- SPM pour une meilleure performance
- Pour les opérations d'ébauches
- Géométrie HRS pour les matériaux tendres à copeaux longs
- Revêtement TiAlN pour une meilleure durée de vie



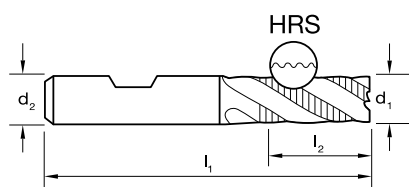
Rompi Truciolo HRS (Fine), R45 UNI, Media

- SPM offre una prestazione superiore
- Fresa ideale per lavorazioni di sgrossatura
- Geometria HRS permette lavorazioni gravose su materiale da truciolo corto & lungo
- TiAlN per Ottimizzare vita utensile



Fresas Desbaste HRS (fino), R45 UNI, Regular

- SPM ofrece un rendimiento superior
- Para aplicaciones de desbaste
- La geometría HRS permite cortes pesados, en materiales de viruta corta y larga
- TiAlN para una mayor vida útil de la herramienta



Catalogue Code

E151

Discount Group

B0408

Material

SPM

Surface Finish

TiAlN

Sutton Designation

UNI

Geometry

R45 HRS

Shank Form (DIN 1835)

B

Shank Tolerance

h6

Size Ref.	d ₁ (js14)	l ₁	l ₂	d ₂	z	Item #
0400	4.0	55	11	6	3	E151 0400
0500	5.0	57	13	6	4	E151 0500
0600	6.0	57	13	6	4	E151 0600
0700	7.0	66	16	10	4	E151 0700
0800	8.0	69	19	10	4	E151 0800
0900	9.0	69	19	10	4	E151 0900
1000	10.0	72	22	10	4	E151 1000
1200	12.0	83	26	12	4	E151 1200
1400	14.0	83	26	12	5	E151 1400
1600	16.0	92	32	16	5	E151 1600
1800	18.0	92	32	16	6	E151 1800
2000	20.0	104	38	20	6	E151 2000
2500	25.0	121	45	25	6	E151 2500

ISO	P													M	K					N										S										H									
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14.1	14.2	14.3	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37.1	37.2	37.3	37.4	37.5	38.1	38.2	39.1	39.2	40	41
E151	○	○	○	○	●	○	○	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○				○	○																					○	
P	Steel			M	Stainless Steel			K	Cast Iron			N	Non-Ferrous Metals			S	Titanium & Super Alloys			H	Hard Materials																							●	Optimal		○	Effective	

P Steel **M** Stainless Steel **K** Cast Iron **N** Non-Ferrous Metals **S** Titanium & Super Alloys **H** Hard Materials

● Optimal ○ Effective

Endmills 3 Flute, R40 W, Long



- SPM offers superior performance
- Universal use for slotting & finishing applications, with one tool
- Optimised geometry for soft materials
- Brt for non ferrous materials
- TiAlN for longer tool life



Fraises 3 dents, R40°, W, Long

- SPM pour une meilleure performance
- Pour la réalisation de rainures & finition avec le même outil
- Géométrie optimisée pour les matériaux tendres
- Brt pour les non-ferreux
- Revêtement TiAlN pour une meilleure durée de vie



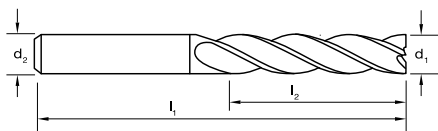
Frese Metallo Duro 3 Taglienti, R40 W, Lunga

- SPM offre una prestazione superiore
- Fresa universale per cave e lavorazioni di finitura
- Geometria tagliente ottimizzate per materiali morbidi
- Brt per materiali non ferrosi
- TiAlN per Ottimizzare vita utensile



Fresas, 3 ranuras, R40 W, Larga

- SPM ofrece un rendimiento superior
- Uso universal para aplicaciones de ranurado y acabado con una herramienta
- Geometría optimizada para materiales blandos
- Brt para materiales no ferrosos
- TiAlN para una mayor vida útil de la herramienta



Catalogue Code	E123*	E124*
Discount Group	B0610	B0612
Material	SPM	SPM
Surface Finish	Brt	TiAlN
Sutton Designation	W	W
Geometry	R40	R40
Shank Form (DIN 1835)	A	A
Shank Tolerance	h6	h6

Size Ref.	d ₁ (e8)	l ₁	l ₂	d ₂	z	Item #	Item #
0300	3.0	56	12	6	3	E123 0300	E124 0300
0400	4.0	63	19	6	3	E123 0400	E124 0400
0500	5.0	68	24	6	3	E123 0500	E124 0500
0600	6.0	68	24	6	3	E123 0600	E124 0600
0800	8.0	88	38	10	3	E123 0800	E124 0800
1000	10.0	95	45	10	3	E123 1000	E124 1000
1200	12.0	110	53	12	3	E123 1200	E124 1200
1400	14.0	110	53	12	3	E123 1400	E124 1400
1600	16.0	123	63	16	3	E123 1600	E124 1600
1800	18.0	123	63	16	3	E123 1800	E124 1800
2000	20.0	141	75	20	3	E123 2000	E124 2000

ISO	P													M			K						N										S										H						
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14.1	14.2	14.3	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37.1	37.2	37.3	37.4	37.5	38.1	38.2	39.1	39.2	40	41
E123																							●	●	●	●	○	○	○	●																			
E124																							●	●	●	●	○	●		●																			

P Steel M Stainless Steel K Cast Iron N Non-Ferrous Metals S Titanium & Super Alloys H Hard Materials

● Optimal ○ Effective

Roughers SPM, R30 VA-R, Regular

suttontools



- HSS-SPM
- Unique HR geometry offers stable performance in difficult to machine materials for roughing applications
- Ideal for large volume metal removal



Fraises d'ébauche SPM, R30° VA-R

- SPM pour une meilleure performance.
- Géométrie unique HR pour meilleure stabilité pendant l'usinage dans les matériaux difficiles et super-alliages
- Adapté aux gros volumes copeaux
- Revêtement AlCrN pour une meilleure durée de vie



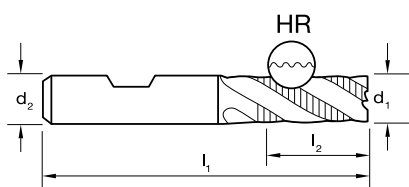
Rompi Truciolo SPM, R30 VA-R, Media

- HSS-SPM
- Geometria HR unica nell'offrire prestazioni stabili nelle operazioni di sgrossatura
- Ideale per alti volumi di asportazione truciolo



Fresas Desbaste SPM, R30 VA-R, Regular

- HSS-SPM
- La geometría HR única ofrece un rendimiento estable en materiales difíciles de mecanizar para aplicaciones de desbaste
- Ideal para la extracción de viruta de gran volumen



Catalogue Code	E251	E255
Product Group	B0408	B0408
Material	SPM	SPM
Surface Finish	AlCrN	AlCrN
Sutton Designation	VA	VA
Geometry	R30 VA-R	R30 VA-R Corner Rad
Shank Form (DIN 1835)	B	B
Shank Tolerance	h6	h6

Size Ref.	d ₁ (js14)	l ₁	l ₂	d ₂	z	rad	Item #	Item #
DIN 844K								
0600	6.0	57	13	6	4		E251 0600	•
0800	8.0	69	19	10	4		E251 0800	•
1000	10.0	72	22	10	4		E251 1000	•
1025	10.0	72	22	10	4	2.5	•	E255 1025
1040	10.0	72	22	10	4	4	•	E255 1040
1200	12.0	83	26	12	4		E251 1200	•
1225		83	26	12	4	2.5	•	E255 1225
1240		83	26	12	4	4	•	E255 1240
1600	16.0	92	32	16	4		E251 1600	•
1605		92	32	16	5		E251 1605	•
1625		92	32	16	5	2.5	•	E255 1625
1640		92	32	16	5	4	•	E255 1640
2000	20.0	104	38	20	4		E251 2000	•
2005		104	38	20	5		E251 2005	•
2025		104	38	20	5	2.5	•	E255 2025
2040		104	38	20	5	4	•	E255 2040
2050		104	38	20	5	5	•	E255 2050
2060		104	38	20	5	6	•	E255 2060
2500	25.0	121	45	25	5		E251 2500	•
2525		121	45	25	5	2.5	•	E255 2525
2540		121	45	25	5	4	•	E255 2540
2550		121	45	25	5	5	•	E255 2550
2560		121	45	25	5	6	•	E255 2560
3040	30.0	121	45	25	6	4	•	E255 3040
3200	32.0	133	53	32	6		E251 3200	•
3240	32.0	133	53	32	6	4	•	E255 3240

ISO	P													M		K						N										S										H			
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41				
E251	○	○	○	○	●	○	●	●		●		○	●	●	○																	○	○	○	○	○	○	○	○	○	○	○	○	○	
E255	○	○	○	○	○	○	○	○		○		○	○	○	○																	○	○	○	○	○	○	○	○	○	○	○	○	○	○

P Steel **M** Stainless Steel **K** Cast Iron **N** Non-Ferrous Metals **S** Titanium & Super Alloys **H** Hard Materials

● Optimal ○ Effective

• Available on request as special manufacture. Subject to lead time.

Roughers SPM, R30 VA-R, Long



- HSS-SPM
- Unique HR geometry offers stable performance in difficult to machine materials for roughing applications
- Ideal for large volume metal removal



Fraises d'ébauche SPM, R30° VA-R

- SPM pour une meilleure performance.
- Géométrie unique HR pour meilleure stabilité pendant l'usinage dans les matériaux difficiles et super-alliages
- Adapté aux gros volumes copeaux
- Revêtement AlCrN pour une meilleure durée de vie



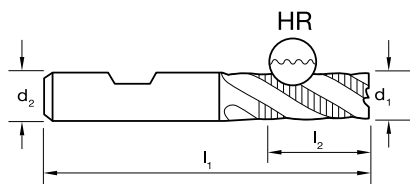
Rompi Truciolo SPM, R30 VA-R, Media

- HSS-SPM
- Geometria HR unica nell'offrire prestazioni stabili nelle operazioni di sgrossatura
- Ideale per alti volumi di asportazione truciolo



Fresas Desbaste SPM, R30 VA-R, Regular

- HSS-SPM
- La geometría HR única ofrece un rendimiento estable en materiales difíciles de mecanizar para aplicaciones de desbaste
- Ideal para la extracción de viruta de gran volumen



Catalogue Code	E252
Product Group	B0408
Material	SPM
Surface Finish	AlCrN
Sutton Designation	VA
Geometry	R30 VA-R
Shank Form (DIN 1835)	B
Shank Tolerance	h6

Size Ref.	d ₁ (js14)	l ₁	l ₂	d ₂	z	Item #
DIN 844L						
0600	6.0	68	24	6	3	E252 0600
0800	8.0	88	38	10	3	E252 0800
1000	10.0	95	45	10	4	E252 1000
1200	12.0	110	53	12	4	E252 1200
1600	16.0	123	63	16	4	E252 1600
2000	20.0	141	75	20	4	E252 2000
2500	25.0	166	90	25	5	E252 2500

ISO	P													M	K					N										S										H									
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14.1	14.2	14.3	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37.1	37.2	37.3	37.4	37.5	38.1	38.2	39.1	39.2	40	41
E252	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

P

Steel

M

Stainless Steel

K

Cast Iron

N

Non-Ferrous Metals

S

Titanium & Super Alloys

H

Hard Materials

●

Optimal

○

Effective

P Steel M Stainless Steel K Cast Iron N Non-Ferrous Metals S Titanium & Super Alloys H Hard Materials

● Optimal ○ Effective