

AEROSPACE & DEFENCE



sutton[®]

^A 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.

Page



ISO M - Stainless Steel

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

HARMONY Ti

ISO S - Titanium

15	16	17	18	19	20	21	21	22	
									
E464	E466	E468	E470	E476	E477	E491	E492	E721	
•	•	•	•	•	•	•	•	•	Slotting
•	•	•	•	•	•	•	•	•	Finishing
•	•	•	•	•	•	•	•	•	Universal
								•	Troc/Dyn
									Roughing
									Ramping
									Profiling
VHM-ULTRA								ULTRA	
AINova								Xceed	
Ti	Ti		Ti	Ti	Ti	Ti	Ti	Ti - IK	
DIN 6527L	DIN 6527L		3XL	4XL	3XL	4XL		DIN 6527L	
h6	h6		h6		h6		h6	h6	
									ISO
									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

ISO	VDI	Material Group	Sutton
P	A	Steel	N
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 Ni
H	H	Hard Materials (≥ 45 HRC)	H

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Page

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

HARmony Ni

ISO S - Ni bases and Super-Duplex

23	24	25	27	26	28
					
E472	E474	E486	E493	E487	E494
•	•	•	•	•	•
•	•	•	•	•	•
•	•	•	•	•	•
VHM-ULTRA					
Xceed					
Ni	Ni	Ni	Ni	Ni	Ni
DIN 6527L	DIN 6527L	3XL	3XL	4XL	4XL
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		- 0.45 %C	A	190	640					
	3			QT	250	840					
	4		- 0.75 %C	A	270	910					
	5			QT	300	1010					
	6	Steel - Low alloy & cast < 5% of alloying elements		A	180	610	○	○	○	○	○
	7			QT	275	930	○	○	○	○	○
	8			QT	300	1010	○	○	○	○	○
	9			QT	350	1180	○	○	○	○	○
	10	Steel - High alloy, cast & tool		A	200	680	○	○	○	○	○
	11			HT	325	1100	○	○	○	○	○
M	12	Steel - Corrosion resistant & cast	Ferritic / Martensitic	A	200	680	○	○	○	○	○
	13		Martensitic	QT	240	810	○	○	○	○	○
	14.1		Austenitic	AH	180	610	●	●	●	●	●
	14.2	Stainless Steel	Duplex		230	780	●	●	●	●	●
K	14.3		Precipitation Hardening		300	780	●	●	●	●	●
	15	Cast Iron - Grey (GG)	Ferritic / Pearlitic		180	610					
	16		Pearlitic		260	880					
	17	Cast Iron - Nodular (GGG)	Ferritic		160	570					
	18		Pearlitic		250	840					
	19	Cast Iron - Malleable	Ferritic		130	460					
	20		Pearlitic		230	780					
N	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.									
S	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	Titanium & Ti alloys		C	320	1080	●	●	●	●	●
	36		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			A	830 MPa						
	37.5		Beta alloys	AH	1400 MPa						
H	38.1	Hardened steel		HT	45 HRC						
	38.2			HT	55 HRC						
	39.1			HT	58 HRC						
	39.2			HT	62 HRC						
	40	Cast Iron	Chilled	C	400	1350					
	41			HT	55 HRC						

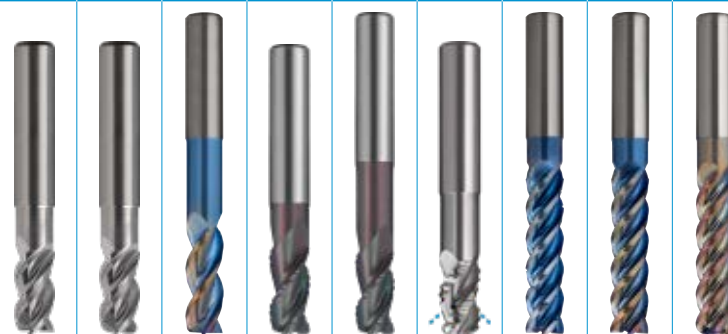
Condition: A (Annealed), AH (Age Hardened), C (Cast), HT (Hardened & Tempered), QT (Quenched & Tempered)

Slotting
Finishing
Universal
Troc/Dyn
Roughing
Ramping
Profiling

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HARMONY

ISO N - Aluminium



E480	E478	E668	E674	E675	E662	E663	E665	E667
●	●	●	●	●	●	●	●	●
●	●	●			●	●	●	●
●	●		●	●	●			
●	●	●				●	●	●
●	●		●	●	●	●	●	●
●	●	●	●	●	●			
Br_t	Br_t	HCR	HCR	HCR	Br_t	HCR		
AI	AI	AI	AI	AI	AI - IK	AI-CB		
DIN 6527L	DIN 6527L	-	DIN 6527L	-	-	DIN 6527L		
h5	h5	h5	h5	h5	h6	h6	h6	h6

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

ISO	VDI	Material Group	Sutton
P	A	Steel	N
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)	Ni

^ 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.

Page

BLACKMAGIC

BLACKMAGIC^{XL}

ISO P - Steel				ISO M - Stainless		ISO P - Steel							
43	44	45	46	47	48	49	50	51	51				
													
D383	D389	D386	D392	D356	D358	D371	D372	D373	D375				
VHM				VHM		VHM							
AlCrN				Helica		Pertura Tip							
UNI				VA		UNI							
DIN 6537				DIN 6537		-							
3 x D		5 x D		3 x D		12 x D		15 x D		20 x D		30 x D	
HA				HA		HA							

Catalogue Code
Material
Surface Finish
Sutton Designation
Standard
Depth of Cut
Shank Form (DIN 6535)

ISO	VDI ³³²³	Material	Condition	HB	N/mm ²										
P	1	Steel - Non-alloy, cast & free cutting	- 0.15 %C	A	125	440	●	●	●	●	●	●	●	●	●
	2		- 0.45 %C	A	190	640	●	●	●	●	●	●	●	●	●
	3			QT	250	840	●	●	●	●	●	●	●	●	●
	4		- 0.75 %C	A	270	910	●	●	●	●	●	●	●	●	●
	5			QT	300	1010	●	●	●	○	○	●	●	●	●
	6	Steel - Low alloy & cast < 5% of alloying elements		A	180	610	●	●	●	●	●	●	●	●	●
	7			QT	275	930	●	●	●	○	○	●	●	●	●
	8			QT	300	1010	●	●	●	○	○	●	●	●	●
	9			QT	350	1180	●	●	●			●	●	●	●
	10	Steel - High alloy, cast & tool		A	200	680	●	●	●	○	○	●	●	●	●
	11			HT	325	1100	●	●	●			○	○	○	○
	12		Ferritic / Martensitic	A	200	680		○	○	●	●	○	○	○	○
	13	Steel - Corrosion resistant & cast	Martensitic	QT	240	810	●	●	●	○	○	○	○	○	○
M	14.1	Stainless Steel	Austenitic	AH	180	610		○		○	●	○	○	○	○
	14.2		Duplex		230	780		○		○	●	○	○	○	○
	14.3		Precipitation Hardening		300	780	○	●	○	●	●	○	○	○	○
K	15	Cast Iron - Grey (GG)	Ferritic / Pearlitic		180	610	●	●	●	●		●	●	●	●
	16		Pearlitic		260	880	●	●	●	●		○	○	○	○
	17	Cast Iron - Nodular (GGG)	Ferritic		160	570	●	●	●	●		●	●	●	●
	18		Pearlitic		250	840	●	●	●	●		○	○	○	○
	19	Cast Iron - Malleable	Ferritic		130	460	●	●	●	●		○	○	○	○
	20		Pearlitic		230	780	●	●	●	●		○	○	○	○
N	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.													
S	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			A	830 MPa		○	○	○	○	●	●			
	37.5		Beta alloys	AH	1400 MPa			○		○	●	●			
H	38.1	Hardened steel	HT	45 HRC			○	●	○	●					
	38.2			55 HRC											
	39.1			58 HRC											
	39.2			62 HRC											
	40	Cast Iron	Chilled	C	400	1350	●	●	●	●					
	41			HT	55 HRC										

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

ISO	VDI	Material Group	Sutton
P	A	Steel	N
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 Ni
H	H	Hard Materials (≥ 45 HRC)	H

^ 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.

Page M
MF
UNC
UNF

Catalogue Code M
MF
UNC
UNF
Material
Surface Finish
Sutton Designation
Tapping Depth
Limit & Nut Tolerance

ISO M - Stainless Steel		ISO S - Universal for Super-Alloys			
56	57	52	53	54	55
58	59	52	53	54	55
60	61	62	63	64	65
		62	63	64	65
					
T840 / T841	T842 / T843	T215 / T216	T152 / T153	T217 / T218	T849
T844	T845	T788 / T789	T784 / T785	T792 / T793	
T846	T847	T790	T786	T794	T854
		T791	T787	T795	T857
PM-HSS Co					PM-HSSE V3
TiCN					
NH+	NH+	Ti	Ti	Ni	EG
≤ 3xØ	≤ 2.5xØ	≤ 1.5xØ	≤ 1.5xØ	≤ 1.5xØ	≤ 3xØ
6HX / 2BX	6HX	6HX/3BX	6HX / 3BX	6HX / 3BX	6H/3B

ISO	VDI ³³²³	Material	Condition	HB	N/mm ²						
P	1	Steel - Non-alloy, cast & free cutting	- 0.15 %C	A	125	440	●	●			●
	2		- 0.45 %C	A	190	640	●	●			●
	3			QT	250	840	●	●			●
	4		- 0.75 %C	A	270	910	●	●			
	5			QT	300	1010	●	●			
	6	Steel - Low alloy & cast < 5% of alloying elements		A	180	610	●	●			
	7			QT	275	930	●	●			
	8			QT	300	1010	●	●			
	9			QT	350	1180	●	●			
	10	Steel - High alloy, cast & tool		A	200	680	●	●			
	11			HT	325	1100	●	●			
	12	Steel - Corrosion resistant & cast	Ferritic / Martensitic	A	200	680	●	●			
	13		Martensitic	QT	240	810	○	○	○	○	
M	14.1	Stainless Steel	Austenitic	AH	180	610	●	●			●
	14.2		Duplex		230	780	●	●			●
	14.3		Precipitation Hardening		300	780	○	○	○	○	●
K	15	Cast Iron - Grey (GG)	Ferritic / Pearlitic		180	610	○	○			
	16		Pearlitic		260	880	○	○			
	17	Cast Iron - Nodular (GGG)	Ferritic		160	570	○	○			
	18		Pearlitic		250	840	○	○			
	19	Cast Iron - Malleable	Ferritic		130	460	○	○			
	20		Pearlitic		230	780	○	○			
N	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.									
S	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			A	960 MPa		●	●			
	37.3		Alpha / Beta alloys	AH	1170 MPa		○	○			
	37.4			A	830 MPa		●	●			
	37.5			AH	1400 MPa		○	○			
H	38.1	Hardened steel	HT		45 HRC		○	○			
	38.2				55 HRC						
	39.1				58 HRC						
	39.2				62 HRC						
	40	Cast Iron	Chilled	C	400	1350					
	41			HT	55 HRC						

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

Endmills Carbide, 4 Flute, R40/42, Stub, Harmony UNI+



- Unique end gash design provides ramping up to 45° in soft steels.
- Versatile endmill, best suited for materials up to 35 HRC



Fraise carbure 4 dents R40/42° universel + DIN 6527L Harmony

- Géométrie unique pour les applications de ramping jusqu'à 45° dans les aciers tendres.
- Fraise polyvalente, parfaite pour les matériaux jusqu'à 35Hrc



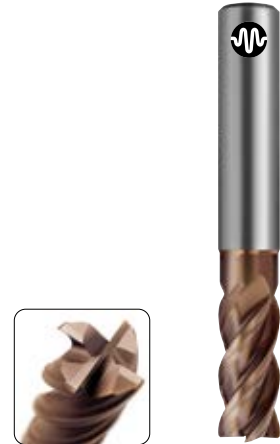
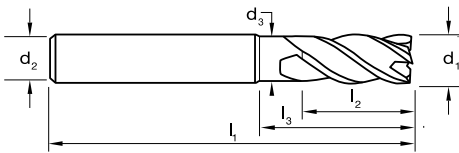
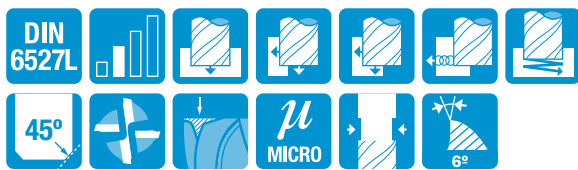
Frese in metallo duro, 4 taglienti, R40/42 UNI+, DIN6527L, Harmony

- L'esclusivo design dello scarico in testa dopo il tagliente, consente di lavorare in rampa fino a 45 gradi negli acciai dolci.
- Fresa a candela versatile, ideale per materiali fino a 35 HRC



Fresas de metal duro, 4 labios, R40/42 UNI+ DIN6527L, Harmony

- El diseño único de la hendidura final proporciona una rampa de hasta 45 grados en aceros blandos.
- Fresa versátil, más adecuada para materiales de hasta 35 HRC



ISO - M

Catalogue Code

E482

Product Group

B0210

Material

VHM-ULTRA

Surface Finish

TiSiNos

Sutton Designation

UNI+

Geometry

R40/42

Shank Form (DIN 6535)

HA

Shank Tolerance

h5

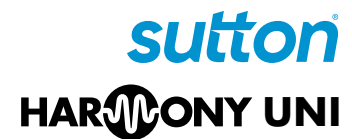
Size Ref.	d ₁ (e8)	l ₁	l ₂	l ₃	d ₂	d ₃	z	Cnr Chamf	Item #
0400	4.0	57	11	18	6	3.8	4	0.15	E482 0400
0500	5.0	57	13	18	6	4.8	4	0.15	E482 0500
0600	6.0	57	13	20	6	5.8	4	0.20	E482 0600
0800	8.0	63	19	26	8	7.6	4	0.20	E482 0800
1000	10.0	72	22	30	10	9.5	4	0.30	E482 1000
1200	12.0	83	26	36	12	11.5	4	0.35	E482 1200
1400	14.0	83	26	36	14	13.5	4	0.35	E482 1400
1600	16.0	92	32	42	16	15.5	4	0.40	E482 1600
2000	20.0	104	38	52	20	19.5	4	0.50	E482 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																																										
E482	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○																																										
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 Carbide, 5 Flute, R45, Extra Long, Chipbreaker, Harmony UNI



- Chipbreakers eliminate build up of swarf
- Increases machine productivity
- Designed for Trochoidal/Dynamic machining strategies
- TiSiNos for long tool life



Fraises en carbure, 5 cannelures, R45, extra longues, brise-copeaux

- Pour application d'ébauche en dynamique, trochoïdal et contournage
- TiSiNos pour une meilleure durée de vie dans les aciers à usinage difficiles



Frese in metallo duro, 5 taglienti, R45, extra lunghe, rompitruciolo

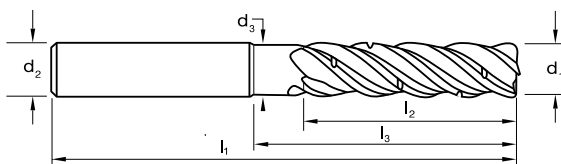
- I rompitruciolo evaquant velocemente i trucioli
- Aumento della produttività della macchina
- Progettato per strategie di lavorazione trocoidali/dinamiche



Fresas de carburo, 5 flautas, R45, extralargas, rompevirutas

- Los rompevirutas eliminan la acumulación de virutas
- Aumenta la productividad de la máquina
- Diseñado para estrategias de mecanizado trocoidal/dinámico.
- TiSiNos para una mayor vida útil de la herramienta

ISO - M



Catalogue Code
Product Group
Material
Surface Finish
Sutton Designation
Geometry
Shank Form (DIN 6535)
Shank Tolerance



E483	E484	E485
B0210	B0210	B0210
VHM-ULTRA	VHM-ULTRA	VHM-ULTRA
TiSiNos	TiSiNos	TiSiNos
UNI - 3XL	UNI - 4XL	UNI - 5XL
R45	R45	R45
HA	HA	HA
h6	h6	h6

Size Ref.	d ₁	l ₁	l ₂	l ₃	d ₂	d ₃	z	rad	Item #	Item #	Item #
0600	6.0	62	18	25	6	5.8	5	0.2	E483 0600		
0800	8.0	68	24	30	8	7.6	5	0.2	E483 0800		
1000	10.0	80	30	35	10	9.5	5	0.3	E483 1000		
1200	12.0	93	36	45	12	11.5	5	0.35	E483 1200		
1600	16.0	108	48	55	16	15.5	5	0.4	E483 1600		
2000	20.0	126	60	70	20	19.5	5	0.5	E483 2000		
0600	6.0	70	24	29	6	5.8	5	0.2		E484 0600	
0800	8.0	79	32	37	8	7.6	5	0.2		E484 0800	
1000	10.0	90	40	45	10	9.5	5	0.3		E484 1000	
1200	12.0	97	48	53	12	11.5	5	0.35		E484 1200	
1600	16.0	129	64	69	16	15.5	5	0.4		E484 1600	
2000	20.0	151	80	85	20	19.5	5	0.5		E484 2000	
0600	6.0	78	30	35	6	5.8	5	0.2			E485 0600
0800	8.0	90	40	45	8	7.6	5	0.2			E485 0800
1000	10.0	100	50	55	10	9.5	5	0.3			E485 1000
1200	12.0	120	60	65	12	11.5	5	0.35			E485 1200
1600	16.0	149	80	85	16	15.5	5	0.4			E485 1600
2000	20.0	175	100	105	20	19.5	5	0.5			E485 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
E483	●	●	●	●	●	●	●	●	○	●	○	○	○	●	○	○	●	○	●	○	○	●												○	○	○		○	○	○	○	○	○						
E484	●	●	●	●	●	●	●	●	○	●	○	○	○	●	○	○	●	○	●	○	○	●												○	○			○	○	○	○	○	○						
E485	●	●	●	●	●	●	●	●	○	●	○	○	○	●	○	○	●	○	●	○	○	●												○	○			○	○	○	○	○	○						

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

● Optimal ○ Effective



- Variable Helix minimises vibrations for stable machining
- Heavy duty core structure, enables highest metal removal rates
- Sinusoidal profile provides easy evacuation in heavy cutting
- AlCrN coating provides outstanding heat resistance & minimises tool wear
- Necked for extra reach



Fraise d'ébauche carbure hélice variable R39/41, DIN6527L

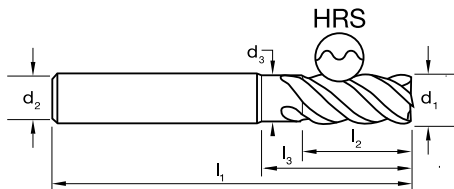
- Hélice variable pour la suppression des vibrations
- Structure renforcé pour le gros débit copeaux
- Profil sinusoidal pour une évacuation parfaite des copeaux
- Revêtement AlCrN pour une meilleure résistance
- Micro protection d'arete pour une meilleure stabilité



Sgrossatura Metallo duro, R39/41, DIN6527L

- Elica variabile per minimizzare le vibrazioni e avere una lavorazione stabile
- Nocciolo fresa irrobustito, adatto per i più alti volumi di asportazione truciolo
- Profilo sinusoidale per fornire una facile evquazione truciolo nelle alte asportazioni
- Micro protezione dello spigolo tagliente per aumentarne stabilità AlCrN per Ottimizzare vita utensile

DIN
6527L



Fresa de desbaste en Carburo, R39/41, DIN6527L

- La Hélice Variable minimiza la vibración para un mecanizado estable
- Núcleo reforzado para evitar flexión, permite volúmenes alto de arranque de viruta
- Perfil sinusoidal que permite una fácil evacuación en corte pesado
- Filo con microgeometría para una mayor estabilidad



ISO - M

Catalogue Code

E488

Product Group

B0210

Material

VHM-ULTRA

Surface Finish

AlCrN

Sutton Designation

VA-R

Geometry

R39/41

Shank Form (DIN 6535)

HA

Shank Tolerance

h6

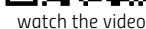
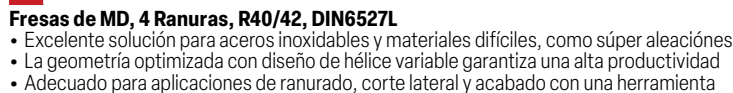
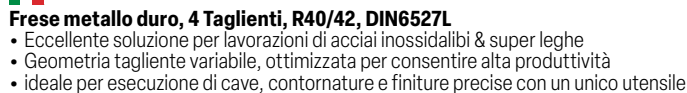
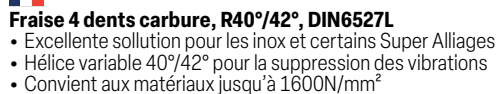
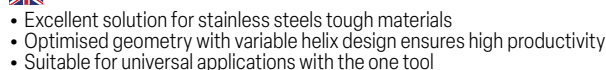
Size Ref.	d ₁ (e8)	l ₁	l ₂	l ₃	d ₂	d ₃	z	Item #
0400	4.0	57	11	17	6	3.8	4	E488 0400
0500	5.0	57	13	19	6	4.8	4	E488 0500
0600	6.0	57	13	21	6	5.8	4	E488 0600
0800	8.0	63	19	27	8	7.6	4	E488 0800
1000	10.0	72	22	32	10	9.5	4	E488 1000
1200	12.0	83	26	38	12	11.5	4	E488 1200
1600	16.0	92	32	44	16	15.5	4	E488 1600
2000	20.0	104	38	54	20	19.5	4	E488 2000
2500	25.0	121	45	65	25	24.5	4	E488 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
E488	●	●	●	●	●	●	○	○	○	●	○	○	○	●	●	●																																	
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

sutton®
Fenn
I-LINE

**FN314**

B0210

VHM-ULTRA

HELICA

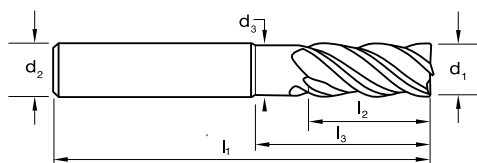
VA

R40/42

HA

h6

Item 1



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	42	
FN314							○	○	○	○	○	○	○	●	●	●								○	○	○	○	○	○	○	○			○	○	○	○	○	○	○	○	○	○	○	○						
P Steel M Stainless Steel K Cast Iron N Non-Ferrous Metals S Titanium & Super Alloys H Hard Materials Optimal Effective																																																			

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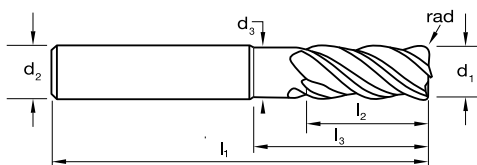
- 

watch the video



- 

Technical drawing symbols for DIN 6527L, including symbols for surface texture, roughness, and material properties.



h6

[illegible]

● Optimal ○ Effective

ISO - M

Endmills Carbide, 4 Flute, R40/42, Cnr Rad, Regular, Harmony VA

sutton
Fenn
I-LINE



- Excellent solution for stainless steels tough materials
- Optimised geometry with variable helix design ensures high productivity
- Suitable for universal applications with the one tool



Fraise 4 dents carbure, R40°/42°, Torique, DIN6527L

- Excellente solution pour les inox et certains Super Alliages
- Hélice variable 40°/42° pour la suppression des vibrations
- Convient aux matériaux jusqu'à 1600N/mm²



Frese metallo duro, 4 Taglienti, R40/42, Toriche, DIN6527L

- Eccellente soluzione per lavorazioni di acciai inossidabili & super leghe
- Geometria tagliente variabile, ottimizzata per consentire alta produttività
- ideale per esecuzione di cave, contornature e finiture precise con un unico utensile



Fresas de MD, 4 Ranuras, R40/42, Tórica, DIN6527L

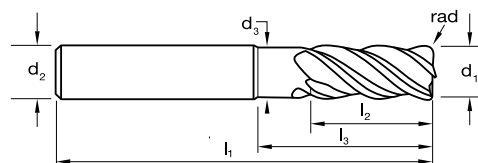
- Excelente solución para aceros inoxidable y materiales difíciles, como súper aleaciones
- La geometría optimizada con diseño de hélice variable garantiza una alta productividad
- Adecuado para aplicaciones de ranurado, corte lateral y acabado con una herramienta



watch the video



Catalogue Code **FN323**
Product Group **B0210**
Material **VHM-ULTRA**
Surface Finish **HELICA**
Sutton Designation **VA**
Geometry **R40/42**
Shank Form (DIN 6535) **HA**
Shank Tolerance **h6**



Size Ref.	d ₁ (e8)	l ₁	l ₂	l ₃	d ₂	d ₃	z	rad	Item #
1215	12.0	83	28		12		4	1.5	32312R15
1220		83	28		12		4	2.0	32312R20
1225		83	28		12		4	2.5	32312R25
1230		83	28		12		4	3.0	32312R30
1605	16.0	92	35		16		4	0.5	32316R05
1608		92	35		16		4	0.8	32316R08
1610		92	35		16		4	1.0	32316R10
1612		92	35		16		4	1.2	32316R12
1615		92	35		16		4	1.5	32316R15
1620		92	35		16		4	2.0	32316R20
1625		92	35		16		4	2.5	32316R25
1630		92	35		16		4	3.0	32316R30
2005	20.0	104	40		20		4	0.5	32320R05
2008		104	40		20		4	0.8	32320R08
2010		104	40		20		4	1.0	32320R10
2012		104	40		20		4	1.2	32320R12
2015		104	40		20		4	1.5	32320R15
2020		104	40		20		4	2.0	32320R20
2025		104	40		20		4	2.5	32320R25
2030		104	40		20		4	3.0	32320R30
2040		104	40		20		4	4.0	32320R40
2050		104	40		20		4	5.0	32320R50

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																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
FN323							○	○	○	○	○	○	○	●	●	●								○	○	○	○	○	○	○	○		○	○	○	○	○	○	○																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
P	Steel			M	Stainless Steel			K	Cast Iron			N	Non-Ferrous Metals			S	Titanium & Super Alloys					H	Hard Materials																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																</

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

● Optimal ○ Effective

Endmills Carbide, 5 Flute, R40/42, Regular, Harmony Ti

sutton
HARMONY Ti



- Square end for finishing applications
- Optimised for longer tool life in Titanium Alloys
- Variable helix design to suppress vibration
- Web taper to increase rigidity
- AlNova for outstanding oxidation resistance and hot hardness



Fraise 5 dents carbure, R40°/42°, DIN6527L

- Optimisée pour le Titane
- Hélice variable pour supprimer les vibrations
- Taillage conique pour conserver la rigidité
- Revêtement AlNova pour une bonne résistance à l'oxydation et à la haute vitesse



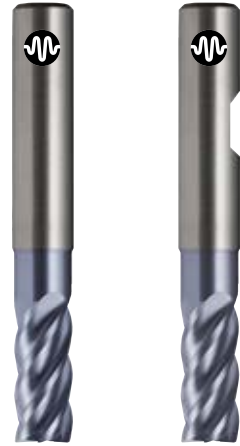
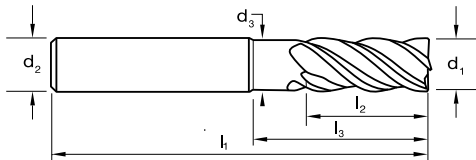
Frese metallo duro, 5 Taglienti, R40/42, DIN6527L

- Fresa a spigolo vivo per lavorazioni di finitura
- Ottimizzata per una vita utensile maggiore su leghe di Titanio
- Elica variabile per eliminare le vibrazioni
- Web rastremato per aumentare rigidità
- AlNova per un'eccezionale resistenza all'ossidazione e alle alte temperature



Fresas de MD, 5 Ranuras, R40/42, DIN6527L

- Filo facetado para aplicaciones de acabado
- Optimizado para una mayor vida útil de la herramienta en aleaciones de titanio
- Diseño de hélice variable para suprimir vibraciones
- Núcleo cónico para aumentar la rigidez
- AlNova para una excelente resistencia a la oxidación y dureza en caliente



ISO-S

Catalogue Code	E464	E465
Product Group	B0210	B0210
Material	VHM-ULTRA	VHM-ULTRA
Surface Finish	AlNova	AlNova
Sutton Designation	Ti	Ti
Geometry	R40/42	R40/42
Shank Form (DIN 6535)	HA	HB
Shank Tolerance	h6	h6

Size Ref.	d ₁ (e8)	l ₁	l ₂	l ₃	d ₂	d ₃	z	Item #	Item #
0600	6.0	57	13	21	6	5.7	5	E464 0600	
0800	8.0	63	19	27	8	7.6	5	E464 0800	
1000	10.0	72	22	32	10	9.5	5	E464 2000	
1200	12.0	83	26	36	12	11.5	5	E464 1200	E465 1200
1600	16.0	92	32	42	16	15.5	5	E464 1600	E465 1600
2000	20.0	104	38	52	20	19.5	5	E464 2000	E465 2000
2500	25.0	125	45	64	25	24	5	E464 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
E464																																																	
E465																																																	

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

● Optimal ○ Effective

Endmills Carbide, 5 Flute, R40/42, Cnr Rad, Regular, Harmony Ti

sutton
HARMONY Ti



- Unique corner radius grind for added strength
- Optimised for longer tool life in Titanium Alloys
- Variable helix design to suppress vibration
- AlNova for outstanding oxidation resistance and hot hardness



Fraise 5 dents carbure, R40°/42°, Torique, DIN6527L

- Optimisée pour le Titane
- Hélice variable pour supprimer les vibrations, Torique
- Taillage conique pour conserver la rigidité
- Revêtement AlNova pour une bonne résistance à l'oxydation et à la haute vitesse



Frese metallo duro, 5 Taglienti, R40/42, Toriche, DIN6527L

- Fresa torica il cui raggio di testa viene interamente rettificato in un'unica volta senza riprese
- Ottimizzata per una vita utensile maggiore su leghe di Titanio
- Elica variabile per eliminare le vibrazioni
- Web rastremato per aumentare la rigidità
- AlNova per un'eccellente resistenza all'ossidazione e alle alte temperature



Fresas de MD, 5 Ranuras, R40/42, Tórica, DIN6527L

- Filo facetado para aplicaciones de acabado
- Optimizado para una mayor vida útil de la herramienta en aleaciones de titanio
- Diseño de hélice variable para suprimir vibraciones
- Núcleo cónico para aumentar la rigidez
- AlNova para una excelente resistencia a la oxidación y dureza en caliente

DIN
6527L



Catalogue Code
Product Group
Material
Surface Finish
Sutton Designation
Geometry
Shank Form (DIN 6535)
Shank Tolerance

E466

B0210

VHM-ULTRA

AlNova

Ti

R40/42

HA

h6

E467

B0210

VHM-ULTRA

AlNova

Ti

R40/42

HB

h6

Size Ref.	d ₁ (e8)	l ₁	l ₂	l ₃	d ₂	d ₃	z	rad	Item #	Item #
0605	6.0	57	13	21	6	5.5	5	0.5	E466 0605	
0610	6.0	57	13	21	6	5.5	5	1.0	E466 0610	
0805	8.0	63	19	27	8	7.5	5	0.5	E466 0805	
0810	8.0	63	19	27	8	7.5	5	1.0	E466 0810	
1005	10.0	72	22	32	10	9.5	5	0.5	E466 1005	
1010	10.0	72	22	32	10	9.5	5	1.0	E466 1010	
1210	12.0	83	26	38	12	11.2	5	1.0	E466 1210	E467 1210
1215	12.0	83	26	38	12	11.2	5	1.5	E466 1215	
1225	12.0	83	26	38	12	11.2	5	2.5	E466 1225	E467 1225
1230	12.0	83	26	38	12	11.2	5	3.0	E466 1230	
1240	12.0	83	26	38	12	11.2	5	4.0	E466 1240	E467 1240
1610	16.0	92	32	44	16	15	5	1.0	E466 1610	E467 1610
1625	16.0	92	32	44	16	15	5	2.5	E466 1625	E467 1625
1630	16.0	92	32	44	16	15	5	3.0	E466 1630	E467 1630
1640	16.0	92	32	44	16	15	5	4.0	E466 1640	E467 1640
2010	20.0	104	38	54	20	19	5	1.0	E466 2010	E467 2010
2025	20.0	104	38	54	20	19	5	2.5	E466 2025	E467 2025
2030	20.0	104	38	54	20	19	5	3.0	E466 2030	
2040	20.0	104	38	54	20	19	5	4.0	E466 2040	E467 2040
2050	20.0	104	38	54	20	19	5	5.0	E466 2050	E467 2050
2060	20.0	104	38	54	20	19	5	6.0	E466 2060	E467 2060
2510	25.0	120	45	64	25	24	5	1.0	E466 2510	
2525	25.0	120	45	64	25	24	5	2.5	E466 2525	
2530	25.0	120	45	64	25	24	5	3.0	E466 2530	
2540	25.0	120	45	64	25	24	5	4.0	E466 2540	
2550	25.0	120	45	64	25	24	5	5.0	E466 2550	
2560	25.0	120	45	64	25	24	5	6.0	E466 2560	

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
E466																																																	
E467																																																	

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

● Optimal ○ Effective

Endmills Carbide, 6 Flute, R40/42, Regular, Harmony Ti



- Square end for finishing applications
- Optimised for longer tool life in Titanium Alloys
- Variable helix design to suppress vibration
- Web taper to increase rigidity
- AlNova for outstanding oxidation resistance and hot hardness



Fraise 6 dents carbure, R40°/42°, DIN6527L

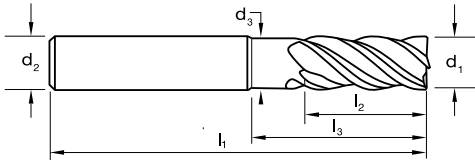
- Optimisée pour le Titane
- Hélice variable pour supprimer les vibrations
- Taillage conique pour conserver la rigidité
- Revêtement AlNova pour une bonne résistance à l'oxydation et à la haute vitesse



Frese metallo duro, 6 Taglienti, R40/42, DIN6527L

- Fresa a spigolo vivo per lavorazioni di finitura
- Ottimizzata per una vita utensile maggiore su leghe di Titanio
- Elica variabile per eliminare le vibrazioni
- Web rastremato per aumentare rigidità
- AlNova per un'eccezionale resistenza all'ossidazione e alle alte temperature

DIN
6527L



ISO

Catalogue Code

Product Group

Material

Surface Finish

Sutton Designation

Geometry

Shank Form (DIN 6535)

Shank Tolerance

E468

B0210

VHM-ULTRA

AlNova

Ti

R40/42

HA

h6

E469

B0210

VHM-ULTRA

AlNova

Ti

R40/42

HB

h6

Size Ref.	d ₁ (e8)	l ₁	l ₂	l ₃	d ₂	d ₃	z	Item #	Item #
1200	12.0	83	26	38	12	11.5	6	E468 1200	E469 1200
1600	16.0	92	32	44	16	15.5	6	E468 1600	E469 1600
2000	20.0	104	38	54	20	19.5	6	E468 2000	E469 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
E468																																																	
E469																																																	

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

● Optimal ○ Effective

- Unique corner radius grind for added strength
- Optimised for longer tool life in Titanium Alloys
- Variable helix design to suppress vibration
- AlNova for outstanding oxidation resistance and hot hardness



Fraise 6 dents carbure, R40°/42°, Torique, DIN6527L

- Optimisée pour le Titane
- Hélice variable pour supprimer les vibrations, Torique
- Revêtement AlNova pour une bonne résistance à l'oxydation et à la haute vitesse



Frese metallo duro, 6 Taglienti, R40/42, Toriche, DIN6527L

- Fresa metallica dura, 6 segmenti, 140°/21°, 10 mm, 21000 RPM
- Fresa torica il cui raggio di testa viene interamente rettificato in un'unica volta senza riprese
- Ottimizzata per una vita utensile maggiore su leghe di Titanio
- Elica variabile per eliminare le vibrazioni
- AlNova per un'eccezionale resistenza all'ossidazione e alle alte temperature



Fresas de MD, 6 Ranuras, R40/42, Tórica, DIN6527L

- Rectificado único del radio de la esquina para mayor resistencia
- Optimizado para una mayor vida útil de la herramienta en aleaciones de titanio
- Diseño de hélice variable para suprimir vibraciones
- AlNova para una excelente resistencia a la oxidación y dureza en caliente



Catalogue Code	E470	E471
Product Group	B0210	B0210
Material	VHM-ULTRA	VHM-ULTRA
Surface Finish	AiNova	AiNova
Sutton Designation	Ti	Ti
Geometry	R40/42	R40/42
Shank Form (DIN 6535)	HA	HB
Shank Tolerance	h6	h6

Size Ref.	d ₁ (e8)	l ₁	l ₂	l ₃	d ₂	d ₃	z	rad	Item #	Item #
1210	12.0	83	26	38	12	11.5	6	1.0	E470 1210	E471 1210
1225	12.0	83	26	38	12	11.5	6	2.5	E470 1225	E471 1225
1240	12.0	83	26	38	12	11.5	6	4.0	E470 1240	E471 1240
1610	16.0	92	32	44	16	15.5	6	1.0	E470 1610	E471 1610
1625	16.0	92	32	44	16	15.5	6	2.5	E470 1625	E471 1625
1630	16.0	92	32	44	16	15.5	6	3.0	E470 1630	•
1640	16.0	92	32	44	16	15.5	6	4.0	E470 1640	E471 1640
2010	20.0	104	38	54	20	19.5	6	1.0	E470 2010	E471 2010
2025	20.0	104	38	54	20	19.5	6	2.5	E470 2025	E471 2025
2030	20.0	104	38	54	20	19.5	6	3.0	E470 2030	•
2040	20.0	104	38	54	20	19.5	6	4.0	E470 2040	E471 2040
2050	20.0	104	38	54	20	19.5	6	5.0	E470 2050	E471 2050
2060	20.0	104	38	54	20	19.5	6	6.0	E470 2060	E471 2060

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
E470																																																	
E471																																																	

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



- Optimised design for trochoidal and HSM milling strategies in titanium alloys
- For extra deep pocket milling in typically thin wall components
- Variable helix design to suppress vibration
- AlNova for outstanding oxidation resistance and hot hardness



Fraise 5 dents carbure, R40°/42°, longue

- Optimisée pour le Titane, en fraiseage trochoïdale, dynamique, de poche et finition
- Hélice variable pour supprimer les vibrations
- Taillage conique pour conserver la rigidité
- Revêtement AlNova pour une bonne résistance à l'oxydation et à la haute vitesse
- Carbure VHM-ULTRA



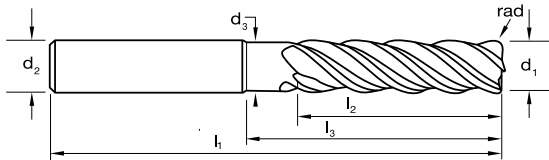
Frese metallo duro, 5 Taglienti, R40/42, Extra Lunga

- Design ottimizzato per lavorazioni con strategie di trocoidale e HSM su leghe di Titanio
- Ideale per fresare tasche molto profonde con pareti tipicamente molto sottili
- Elica variabile per eliminare le vibrazioni
- AlNova per un'eccezionale resistenza all'ossidazione e alle alte temperature



Fresas de MD, 5 Ranuras, R40/42, Extra Larga

- Diseño optimizado para fresado trocoidal y HSM en aleaciones de titanio
- Para fresado profundo en componentes de paredes delgadas
- Diseño de hélice variable para suprimir vibraciones
- AlNova para una excelente resistencia a la oxidación y dureza en caliente



ISO

Catalogue Code

Product Group

Material

Surface Finish

Sutton Designation

Geometry

Shank Form (DIN 6535)

Shank Tolerance

E476

B0210

VHM-ULTRA

AlNova

Ti-3XL

R40/42

HA

h6

Size Ref.	d ₁ (e8)	l ₁	l ₂	l ₃	d ₂	d ₃	z	rad	
SUTTON STD - 3XL									
1000	10.0	85	34	44	10	9.5	5	-	E476 1000
1020	10.0	85	34	44	10	9.5	5	2.0	E476 1020
1025	10.0	85	34	44	10	9.5	5	2.5	E476 1025
1040	10.0	85	34	44	10	9.5	5	4.0	E476 1040
1200	12.0	96	40	51	12	11.5	5	-	E476 1200
1210	12.0	96	40	51	12	11.5	5	1.0	E476 1210
1215	12.0	96	40	51	12	11.5	5	1.5	E476 1215
1220	12.0	96	40	51	12	11.5	5	2.0	E476 1220
1225	12.0	96	40	51	12	11.5	5	2.5	E476 1225
1230	12.0	96	40	51	12	11.5	5	3.0	E476 1230
1240	12.0	96	40	51	12	11.5	5	4.0	E476 1240
1600	16.0	105	52	57	16	15.5	5	-	E476 1600
1610	16.0	105	52	57	16	15.5	5	1.0	E476 1610
1615	16.0	105	52	57	16	15.5	5	1.5	E476 1615
1620	16.0	105	52	57	16	15.5	5	2.0	E476 1620
1625	16.0	105	52	57	16	15.5	5	2.5	E476 1625
1630	16.0	105	52	57	16	15.5	5	3.0	E476 1630
1640	16.0	105	52	57	16	15.5	5	4.0	E476 1640
2000	20.0	140	64	88	20	19.5	5	-	E476 2000
2010	20.0	140	64	88	20	19.5	5	1.0	E476 2010
2015	20.0	140	64	88	20	19.5	5	1.5	E476 2015
2020	20.0	140	64	88	20	19.5	5	2.0	E476 2020
2025	20.0	140	64	88	20	19.5	5	2.5	E476 2025
2030	20.0	140	64	88	20	19.5	5	3.0	E476 2030
2040	20.0	140	64	88	20	19.5	5	4.0	E476 2040
2050	20.0	140	64	88	20	19.5	5	5.0	E476 2050
2060	20.0	140	64	88	20	19.5	5	6.0	E476 2060

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
E476																○																																	

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

● Optimal ○ Effective



- Optimised design for trochoidal and HSM milling strategies in titanium alloys
- For extra deep pocket milling in typically thin wall components
- Variable helix design to suppress vibration
- AlNova for outstanding oxidation resistance and hot hardness



Fraise 5 dents carbure, R40°/42°, longue

- Optimisée pour le Titane, en fraisage trocoidale, dynamique, de poche et finition
- Hélice variable pour supprimer les vibrations
- Taillage conique pour conserver la rigidité
- Revêtement AlNova pour une bonne résistance à l'oxydation et à la haute vitesse
- Carbure VHM-ULTRA



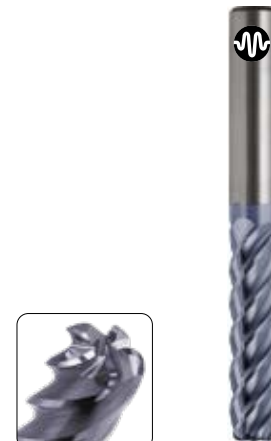
Frese metallo duro, 5 Taglienti, R40/42, Extra Lunga

- Design ottimizzato per lavorazioni con strategie di trocoidale e HSM su leghe di Titanio
- Ideale per fresare tasche molto profonde con pareti tipicamente molto sottili
- Elica variabile per eliminare le vibrazioni
- AlNova per un'eccezionale resistenza all'ossidazione e alle alte temperature

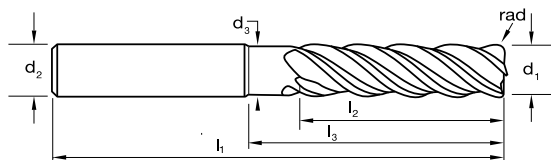


Fresas de MD, 5 Ranuras, R40/42, Extra Larga

- Diseño optimizado para fresado trocoidal y HSM en aleaciones de titanio
- Para fresado profundo en componentes de paredes delgadas
- Diseño de hélice variable para suprimir vibraciones
- AlNova para una excelente resistencia a la oxidación y dureza en caliente



Catalogue Code **E477**
Product Group **B0210**
Material **VHM-ULTRA**
Surface Finish **AlNova**
Sutton Designation **Ti-4XL**
Geometry **R40/42**
Shank Form (DIN 6535) **HA**
Shank Tolerance **h6**



Size Ref.	d ₁ (e8)	l ₁	l ₂	l ₃	d ₂	d ₃	z	rad	Item #
SUTTON STD - 4XL									
1000	10.0	93	42	52	10	9.5	5	-	E477 1000
1020	10.0	93	42	52	10	9.5	5	2.0	E477 1020
1025	10.0	93	42	52	10	9.5	5	2.5	E477 1025
1040	10.0	93	42	52	10	9.5	5	4.0	E477 1040
1200	12.0	110	50	65	12	11.5	5	-	E477 1200
1210	12.0	110	50	65	12	11.5	5	1.0	E477 1210
1215	12.0	110	50	65	12	11.5	5	1.5	E477 1215
1220	12.0	110	50	65	12	11.5	5	2.0	E477 1220
1225	12.0	110	50	65	12	11.5	5	2.5	E477 1225
1230	12.0	110	50	65	12	11.5	5	3.0	E477 1230
1240	12.0	110	50	65	12	11.5	5	4.0	E477 1240
1600	16.0	130	66	82	16	15.5	5	-	E477 1600
1610	16.0	130	66	82	16	15.5	5	1.0	E477 1610
1615	16.0	130	66	82	16	15.5	5	1.5	E477 1615
1620	16.0	130	66	82	16	15.5	5	2.0	E477 1620
1625	16.0	130	66	82	16	15.5	5	2.5	E477 1625
1630	16.0	130	66	82	16	15.5	5	3.0	E477 1630
1640	16.0	130	66	82	16	15.5	5	4.0	E477 1640
2000	20.0	160	82	100	20	19.5	5	-	E477 2000
2010	20.0	160	82	100	20	19.5	5	1.0	E477 2010
2015	20.0	160	82	100	20	19.5	5	1.5	E477 2015
2020	20.0	160	82	100	20	19.5	5	2.0	E477 2020
2025	20.0	160	82	100	20	19.5	5	2.5	E477 2025
2030	20.0	160	82	100	20	19.5	5	3.0	E477 2030
2040	20.0	160	82	100	20	19.5	5	4.0	E477 2040
2050	20.0	160	82	100	20	19.5	5	5.0	E477 2050
2060	20.0	160	82	100	20	19.5	5	6.0	E477 2060

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		
E477																																																			
P	Steel			M	Stainless Steel			K	Cast Iron			N	Non-Ferrous Metals			S	Titanium & Super Alloys			H	Hard Materials																														

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

● Optimal ○ Effective

Endmills Carbide, 5 Flute, R40/42, Extra Long, Chip Breaker, Harmony Ti



- Chipbreakers eliminate build up of swarf
- Increases machine productivity
- Designed for Trochoidal/Dynamic machining strategies in Titanium



Fraise 5 dents carbure 5 dents, R40°/42° Ti, longue, brises-copeaux

- L'apport des brise-copeaux permet d'éviter le collage et les longs copeaux
- D'augmenter la productivité et de la durée de vie des outils
- Parfait pour les applications de fraisage dynamique et trochoidal dans les Titanes



Freshe in metallo duro, 5 taglienti, R40/42 Ti, lunghe, rompitrucciolo

- I rompitrucciolo evaqualo velocemente i trucioli
- Aumento della produttività della macchina
- Progettato per strategie di lavorazione Trocoidale/Dinamica in Titanio

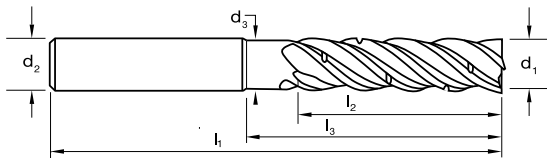


Fresas de MD, 5 labios, R40/42 Ti, Larga, Rompevirutas

- Los rompevirutas eliminan la acumulación de virutas
- Aumenta la productividad de la máquina
- Diseñado para estrategias de mecanizado trocoidal/dinámico en titanio



ISO-S



Catalogue Code
Product Group
Material
Surface Finish
Sutton Designation
Geometry
Shank Form (DIN 6535)
Shank Tolerance

E491	E492
B0210	B0210
VHM-ULTRA	VHM-ULTRA
AINova	AINova
Ti	Ti
R40/42	R40/42
HA	HA
h6	h6

Size Ref.	d ₁ (e8)	l ₁	l ₂	l ₃	d ₂	d ₃	z	Item #	Item #
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SUTTON STD - 3XL

1000	10.0	85	34	40	10	9.5	5	E491 1000	
1200	12.0	96	40	51	12	11.5	5	E491 1200	
1600	16.0	105	52	57	16	15.5	5	E491 1600	
2000	20.0	140	64	88	20	19.5	5	E491 2000	

SUTTON STD - 4XL

1000	10.0	93	42	52	10	9.5	5		E492 1000
1200	12.0	110	50	65	12	11.5	5		E492 1200
1600	16.0	130	66	82	16	15.5	5		E492 1600
2000	20.0	160	82	100	20	19.5	5		E492 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
E491																○																																	
E492																○																																	

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

● Optimal ○ Effective



- Variable Helix minimizes vibrations for stable machining
- Heavy duty core structure, enables highest metal removal rates
- Special edge profile & internal coolant ducts provides easy evacuation of chips in heavy cutting



Fraise carbure, brises-copeaux 6 dents, R40/42 arrosage central

- Hélice variable pour réduire les vibrations et stabiliser l'usinage
- Core macif permettant les gros enlèvements de copeaux
- Son profil spécial et l'arrosage au centre permettent une parfaite évacuation copeaux



Frese in metallo duro, 6 taglienti, R40/42 Ti, lunghe, rompitruciolo. Refrigerazione interna centrale e tagliente adatto a massima evacuazione trucioli

- Elica variabile per ridurre le vibrazioni e stabilizzare la lavorazione
- Nucleo Macif che consente una grande asportazione di trucioli
- Il suo profilo speciale e il refrigerante centrale consentono una perfetta evacuazione del truciolo



Fresas de MD, 6 labios, R40/42 Ti, Rompevirutas, Mejorado con refrigerante interior y forma de ranura ancha para la máxima evacuación de virutas

- Hélice variable para reducir las vibraciones y estabilizar el mecanizado
- Núcleo Macif que permite una gran eliminación de virutas
- Su perfil especial y su refrigerante central permiten una perfecta evacuación de la viruta



Catalogue Code	E721
Product Group	B0210
Material	VHM-ULTRA
Surface Finish	Xceed
Sutton Designation	Ti - IK
Geometry	R40/42
Shank Form (DIN 6535)	HB
Shank Tolerance	h6



Size Ref.	d ₁ (e8)	l ₁	l ₂	l ₃	d ₂	d ₃	z	rad	Item #
1200	12	83	26	38	12	11.4	6	-	E721 1200
1210	12	83	26	38	12	11.4	6	1.0	E721 1210
1220	12	83	26	38	12	11.4	6	2.0	E721 1220
1225	12	83	26	38	12	11.4	6	2.5	E721 1225
1230	12	83	26	38	12	11.4	6	3.0	E721 1230
1240	12	83	26	38	12	11.4	6	4.0	E721 1240
1600	16	92	34	44	16	15.2	6	-	E721 1600
1610	16	92	34	44	16	15.2	6	1.0	E721 1610
1620	16	92	34	44	16	15.2	6	2.0	E721 1620
1625	16	92	34	44	16	15.2	6	2.5	E721 1625
1630	16	92	34	44	16	15.2	6	3.0	E721 1630
1640	16	92	34	44	16	15.2	6	4.0	E721 1640
2000	20	104	42	52	20	19	6	-	E721 2000
2010	20	104	42	52	20	19	6	1.0	E721 2010
2020	20	104	42	52	20	19	6	2.0	E721 2020
2025	20	104	42	52	20	19	6	2.5	E721 2025
2030	20	104	42	52	20	19	6	3.0	E721 2030
2040	20	104	42	52	20	19	6	4.0	E721 2040

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
E721														○	○	○																		○	○	○	○	○	●	●	●	●	●						

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 5 Flute, R40/42, Regular, Harmony Ni



- Excellent solution for stainless steels and super alloy
- Optimised geometry with variable helix design
- Suitable for slotting, side cutting and finishing
- Xceed for outstanding oxidation resistance and hot hardness



Fraise 5 dents carbure, R40°/42°, Torique, DIN6527L

- Optimisée pour les bases Nickel, Duplex et Super-Duplex
- Hélice variable pour supprimer les vibrations
- Convient pour les applications de contourage, rainurage et trocoidale
- Revêtement Xceed pour une bonne résistance à l'oxydation et à les hautes températures



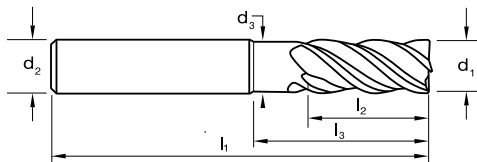
Frese metallo duro, 5 Taglienti, R40/42, Toriche, DIN6527L

- Fresa torica il cui raggio di testa viene interamente rettificato in un'unica volta senza riprese
- Ottimizzata per una vita utensile maggiore su leghe di inconel, acciaio inossidabile
- Elica variabile per eliminare le vibrazioni
- Web rastremato per aumentare rigidità
- Xceed per un'eccezionale resistenza all'ossidazione e alle alte temperature



Fresas de MD, 5 Ranuras, R40/42, DIN6527L

- Filo facetado para aplicaciones de acabado
- Optimizado para una mayor vida útil de la herramienta en aleaciones de inconel, acero inoxidable
- Diseño de hélice variable para suprimir vibraciones
- Núcleo cónico para aumentar la rigidez
- Xceed para una excelente resistencia a la oxidación y dureza en caliente



ISO-S

Catalogue Code
Product Group
Material
Surface Finish
Sutton Designation
Geometry
Shank Form (DIN 6535)
Shank Tolerance

E472	E473
B0210	B0210
VHM-ULTRA	VHM-ULTRA
Xceed	Xceed
Ni	Ni
R40/42	R40/42
HA	HB
h6	h6

Size Ref.	d ₁ (e8)	l ₁	l ₂	l ₃	d ₂	d ₃	z	chf	Item #	Item #
0600	6.0	57	13	21	6	5.7	5	0.20	E472 0600	E473 0600
0800	8.0	63	19	27	8	7.6	5	0.20	E472 0800	E473 0800
1000	10.0	72	22	32	10	9.5	5	0.25	E472 1000	E473 1000
1200	12.0	83	26	38	12	11.5	5	0.25	E472 1200	E473 1200
1600	16.0	92	32	44	16	15.5	5	0.35	E472 1600	E473 1600
2000	20.0	104	38	54	20	19.5	5	0.35	E472 2000	E473 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
E472							○	○	○	○	○	○	○	○	●	●																		●	●	●	●	●											
E473							○	○	○	○	○	○	○	○	●	●	●																		●	●	●	●	●										

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

● Optimal ○ Effective



- Excellent solution for stainless steels and super alloy
- Optimised geometry with variable helix design
- Suitable for slotting, side cutting and finishing
- Xceed for outstanding oxidation resistance and hot hardness



Fraise 5 dents carbure, R40°/42°, DIN6527L, Torique

- Optimisée pour les bases Nickel, Duplex et Super-Duplex
- Hélice variable pour supprimer les vibrations
- Convient pour les applications de contourage, rainurage et trocoidale
- Revêtement Xceed pour une bonne résistance à l'oxydation et à les hautes températures



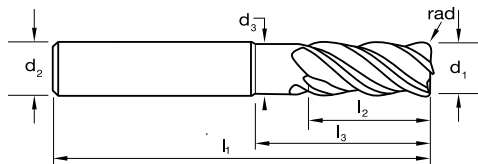
Frese metallo duro, 5 Taglienti, R40/42, Toriche, DIN6527L

- Fresa torica il cui raggio di testa viene interamente rettificato in un'unica volta senza riprese
- Ottimizzata per una vita utensile maggiore su leghe di inconfel, acciaio inossidabile
- Elica variabile per eliminare le vibrazioni
- Web rastremato per aumentare rigidità
- Xceed per un'eccezionale resistenza all'ossidazione e alle alte temperature



Fresas de MD, 5 Ranuras, R40/42, DIN6527L

- Filo facetado para aplicaciones de acabado
- Optimizado para una mayor vida útil de la herramienta en aleaciones de inconfel, acero inoxidable
- Diseño de hélice variable para suprimir vibraciones
- Núcleo cónico para aumentar la rigidez
- Xceed para una excelente resistencia a la oxidación y dureza en caliente



Catalogue Code
Product Group
Material
Surface Finish
Sutton Designation
Geometry
Shank Form (DIN 6535)
Shank Tolerance

E474	E475
B0210	B0210
VHM-ULTRA	VHM-ULTRA
Xceed	Xceed
Ni	Ni
R40/42	R40/42
HA	HB
h6	h6

Size Ref.	d ₁ (e8)	l ₁	l ₂	l ₃	d ₂	d ₃	z	rad	Item #	Item #
0605	6.0	57	13	21	6	5.7	5	0.5	E474 0605	E475 0605
0610	6.0	57	13	21	6	5.7	5	1.0	E474 0610	E475 0610
0805	8.0	63	19	27	8	7.6	5	0.5	E474 0805	E475 0805
0810	8.0	63	19	27	8	7.6	5	1.0	E474 0810	E475 0810
1005	10.0	72	22	32	10	9.5	5	0.5	E474 1005	E475 1005
1010	10.0	72	22	32	10	9.5	5	1.0	E474 1010	E475 1010
1210	12.0	83	26	38	12	11.5	5	1.0	E474 1210	E475 1210
1215	12.0	83	26	38	12	11.5	5	1.5	E474 1215	E475 1215
1225	12.0	83	26	38	12	11.5	5	2.5	E474 1225	E475 1225
1240	12.0	83	26	38	12	11.5	5	4.0	E474 1240	E475 1240
1610	16.0	92	32	44	16	15.5	5	1.0	E474 1610	E475 1610
1615	16.0	92	32	44	16	15.5	5	1.5	E474 1615	E475 1615
1625	16.0	92	32	44	16	15.5	5	2.5	E474 1625	E475 1625
1630	16.0	92	32	44	16	15.5	5	4.0	E474 1630	
1640	16.0	92	32	44	16	15.5	5	4.0	E474 1640	E475 1640
2010	20.0	104	38	54	20	19.5	5	1.0	E474 2010	E475 2010
2015	20.0	104	38	54	20	19.5	5	1.5	E474 2015	E475 2015
2025	20.0	104	38	54	20	19.5	5	2.5	E474 2025	E475 2025
2040	20.0	104	38	54	20	19.5	5	4.0	E474 2040	E475 2040

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
E474						○	○	○	○	○	○	○	○	●	●	●																		●	●	●	●	●											
E475						○	○	○	○	○	○	○	○	●	●	●																		●	●	●	●	●											

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

● Optimal ○ Effective



- Excellent solution for stainless steels and super alloy
- Optimised geometry with variable helix design
- Suitable for slotting, side cutting and finishing
- Xceed for outstanding oxidation resistance and hot hardness



Fraise 7 dents carbure, R40°/42°, Torique, DIN6527L

- Optimisée pour les bases Nickel, Duplex et Super-Duplex
- Hélice variable pour supprimer les vibrations
- Convient pour les applications de contournage, rainurage et trocoidale
- Revêtement Xceed pour une bonne résistance à l'oxydation et à les hautes températures



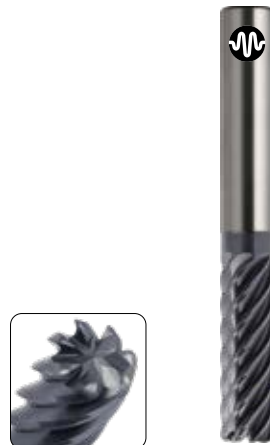
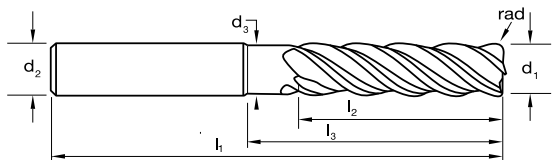
Frese metallo duro, 7 Taglienti, R40/42, Toriche, DIN6527L

- Fresa torica il cui raggio di testa viene interamente rettificato in un'unica volta senza riprese
- Ottimizzata per una vita utensile maggiore su leghe di inconfel, acciaio inossidabile
- Elica variabile per eliminare le vibrazioni
- Web rastremato per aumentare rigidità
- Xceed per un'eccezionale resistenza all'ossidazione e alle alte temperature



Fresas de MD, 7 Ranuras, R40/42, DIN6527L

- Filo facetado para aplicaciones de acabado
- Optimizado para una mayor vida útil de la herramienta en aleaciones de inconfel, acero inoxidable
- Diseño de hélice variable para suprimir vibraciones
- Núcleo cónico para aumentar la rigidez
- Xceed para una excelente resistencia a la oxidación y dureza en caliente



Catalogue Code

E486

Product Group

B0210

Material

VHM-ULTRA

Surface Finish

Xceed

Sutton Designation

Ni-3XL

Geometry

R40/42

Shank Form (DIN 6535)

HA

Shank Tolerance

h6

Size Ref.	d ₁ (e8)	l ₁	l ₂	l ₃	d ₂	d ₃	z	rad	Item #
SUTTON STD - 3XL									
1000	10.0	85	34	44	10	95	7	-	E486 1000
1020	10.0	85	34	44	10	95	7	2.0	E486 1020
1025	10.0	85	34	44	10	95	7	2.5	E486 1025
1040	10.0	85	34	44	10	95	7	4.0	E486 1040
1200	12.0	96	40	51	12	11.5	7	-	E486 1200
1210	12.0	96	40	51	12	11.5	7	1.0	E486 1210
1215	12.0	96	40	51	12	11.5	7	1.5	E486 1215
1220	12.0	96	40	51	12	11.5	7	2.0	E486 1220
1225	12.0	96	40	51	12	11.5	7	2.5	E486 1225
1230	12.0	96	40	51	12	11.5	7	3.0	E486 1230
1240	12.0	96	40	51	12	11.5	7	4.0	E486 1240
1600	16.0	105	52	57	16	15.5	7	-	E486 1600
1610	16.0	105	52	57	16	15.5	7	1.0	E486 1610
1615	16.0	105	52	57	16	15.5	7	1.5	E486 1615
1620	16.0	105	52	57	16	15.5	7	2.0	E486 1620
1625	16.0	105	52	57	16	15.5	7	2.5	E486 1625
1630	16.0	105	52	57	16	15.5	7	3.0	E486 1630
1640	16.0	105	52	57	16	15.5	7	4.0	E486 1640
2000	20.0	140	64	88	20	19.5	7	-	E486 2000
2010	20.0	140	64	88	20	19.5	7	1.0	E486 2010
2015	20.0	140	64	88	20	19.5	7	1.5	E486 2015
2020	20.0	140	64	88	20	19.5	7	2.0	E486 2020
2025	20.0	140	64	88	20	19.5	7	2.5	E486 2025
2030	20.0	140	64	88	20	19.5	7	3.0	E486 2030
2040	20.0	140	64	88	20	19.5	7	4.0	E486 2040
2050	20.0	140	64	88	20	19.5	7	5.0	E486 2050

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
E486																																																	

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

● Optimal ○ Effective



- Excellent solution for stainless steels and super alloy
- Optimised geometry with variable helix design
- Suitable for slotting, side cutting and finishing
- XCEED for outstanding oxidation resistance and hot hardness



Fraise 9 dents carbure, R40°/42°, Torique, DIN6527L

- Optimisée pour les bases Nickel, Duplex et Super-Duplex
- Hélice variable pour supprimer les vibrations
- Convient pour les applications de contournage, rainurage et trocoidale
- Revêtement Xceed pour une bonne résistance à l'oxydation et à les hautes températures



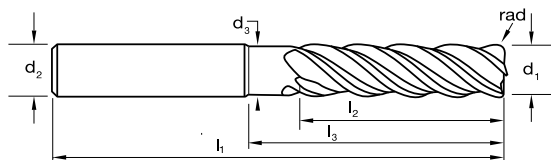
Frese metallo duro, 9 Taglienti, R40/42, Toriche, DIN6527L

- **Presi metallici duri, 5 ragni, 4/5, 10/10, 10/10, 10/10, 10/10**
- **Fresa torica** il cui raggio di testa viene interamente rettificato in un'unica volta senza riprese
- **Ottimizzata per una vita utensile maggiore** su leghe di Inconel, acciaio inossidabile
- **Elica variabile** per eliminare le vibrazioni
- **Web rastremato** per aumentare rigidità
- **Xceed** per un'eccezionale resistenza all'ossidazione e alle alte temperature



Fresas de MD, 9 Ranuras, R40/42, DIN6527L

- Filo facetado para aplicaciones de acabado
- Optimizado para una mayor vida útil de la herramienta en aleaciones de inconel, acero inoxidable
- Diseño de hélice variable para suprimir vibraciones
- Núcleo cónico para aumentar la rigidez
- Xceed para una excelente resistencia a la oxidación y dureza en caliente



Catalogue Code	E487
Product Group	B0210
Material	VHM-ULTRA
Surface Finish	Xceed
Sutton Designation	Ni-4XL
Geometry	R40/42
Shank Form (DIN 6535)	HA
Shank Tolerance	h6

Size Ref.	d ₁ (e8)	l ₁	l ₂	l ₃	d ₂	d ₃	z	rad	Item #
SUTTON STD - 4XL									
1000	10.0	93	42	52	10	9.5	9	-	E487 1000
1020	10.0	93	42	52	10	9.5	9	2.0	E487 1020
1025	10.0	93	42	52	10	9.5	9	2.5	E487 1025
1040	10.0	93	42	52	10	9.5	9	4.0	E487 1040
1200	12.0	110	50	65	12	11.5	9	-	E487 1200
1210	12.0	110	50	65	12	11.5	9	1.0	E487 1210
1215	12.0	110	50	65	12	11.5	9	1.5	E487 1215
1220	12.0	110	50	65	12	11.5	9	2.0	E487 1220
1225	12.0	110	50	65	12	11.5	9	2.5	E487 1225
1230	12.0	110	50	65	12	11.5	9	3.0	E487 1230
1240	12.0	110	50	65	12	11.5	9	4.0	E487 1240
1600	16.0	130	66	82	16	15.5	9	-	E487 1600
1610	16.0	130	66	82	16	15.5	9	1.0	E487 1610
1615	16.0	130	66	82	16	15.5	9	1.5	E487 1615
1620	16.0	130	66	82	16	15.5	9	2.0	E487 1620
1625	16.0	130	66	82	16	15.5	9	2.5	E487 1625
1630	16.0	130	66	82	16	15.5	9	3.0	E487 1630
1640	16.0	130	66	82	16	15.5	9	4.0	E487 1640
2000	20.0	160	82	100	20	19.5	9	-	E487 2000
2010	20.0	160	82	100	20	19.5	9	1.0	E487 2010
2015	20.0	160	82	100	20	19.5	9	1.5	E487 2015
2020	20.0	160	82	100	20	19.5	9	2.0	E487 2020
2025	20.0	160	82	100	20	19.5	9	2.5	E487 2025
2030	20.0	160	82	100	20	19.5	9	3.0	E487 2030
2040	20.0	160	82	100	20	19.5	9	4.0	E487 2040
2050	20.0	160	82	100	20	19.5	9	5.0	E487 2050

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

● Optimal ○ Effective

Endmills Carbide, 7 Flute, R40/42, Long, Chip Breaker, Harmony Ni



- Chipbreakers eliminate build up of swarf
- Increases machine productivity
- Designed for Trochoidal/Dynamic machining strategies in Nickel based alloys & stainless steels



Fraise carbure, 7 dents, R40°/42° Ni, longue, brises-copeaux

- L'apport des brise-copeaux permet d'éviter le collage et les longs copeaux,
- D'augmenter la productivité et de la durée de vie des outils
- Parfait pour les applications de fraisage dynamique et trochoidal dans les bases nickel et les inox



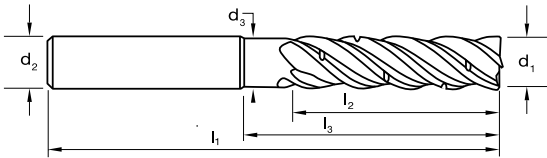
Frese a candela in metallo duro, 7 taglienti, R40/42 Ni, lunghe, rompitrucciolo

- I rompitrucciolo evaquoano velocemente i trucioli
- Aumento della produttività della macchina
- Progettato per strategie di lavorazione trocoidali/dinamiche in leghe a base di nichel



Fresas de MD, 7 Labios, R40/42 Ni, larga, Rompevirutas

- Los rompevirutas eliminan la acumulación de virutas
- Aumenta la productividad de la máquina
- Diseñado para estrategias de mecanizado trocoidal/dinámico en aleaciones a base de níquel.



ISO-S

Catalogue Code	E493
Product Group	B0210
Material	VHM-ULTRA
Surface Finish	Xceed
Sutton Designation	Ni-3XL
Geometry	R40/42
Shank Form (DIN 6535)	HA
Shank Tolerance	h6

Size Ref.	d ₁ (e8)	l ₁	l ₂	l ₃	d ₂	d ₃	z	Item #
SUTTON STD - 3XL								
1000	10.0	85	34	44	10	9.5	7	E493 1000
1200	12.0	96	40	51	12	11.5	7	E493 1200
1600	16.0	105	52	57	16	15.3	7	E493 1600
2000	20.0	140	64	88	20	19.3	7	E493 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
E493																																																	

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 Carbide, 9 Flute, R40/42, Long, Chip Breaker, Harmony Ni



- Chipbreakers eliminate build up of swarf
- Increases machine productivity
- Designed for Trochoidal/Dynamic machining strategies in Nickel based alloys & stainless steels



Fraise carbure, 9 dents, R40°/42° Ni, longue, brises-copeaux

- L'apport des brise-copeaux permet d'éviter le collage et les longs copeaux,
- D'augmenter de la productivité et de la durée de vie des outils
- Parfait pour les applications de fraisage dynamique et trocoidal dans les bases nickel et les inox



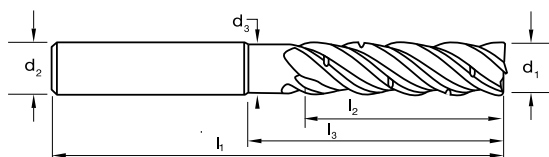
Frese a candela in metallo duro, 9 taglienti, R40/42 Ni, extra lunghe, rompitruciolo

- I rompitruciolo evaquano velocemente i trucioli
- Aumento della produttività della macchina
- Progettato per strategie di lavorazione trocoidali/dinamiche in leghe a base di nichel



Fresas de MD, 9 Labios, R40/42 Ni, extra larga, Rompevirutas

- Los rompevirutas eliminan la acumulación de virutas
- Aumenta la productividad de la máquina
- Diseñado para estrategias de mecanizado trocoidal/dinámico en aleaciones a base de níquel



Catalogue Code	E494
Product Group	B0210
Material	VHM-ULTRA
Surface Finish	Xceed
Sutton Designation	Ni-4XL
Geometry	R40/42
Shank Form (DIN 6535)	HA
Shank Tolerance	h6

Size Ref.	d ₁ (e8)	l ₁	l ₂	l ₃	d ₂	d ₃	z	Item #
SUTTON STD - 4XL								
1000	10.0	93	42	52	10	9.5	9	E494 1000
1200	12.0	110	50	65	12	11.5	9	E494 1200
1600	16.0	130	66	82	16	15.5	9	E494 1600
2000	20.0	160	82	100	20	19.5	9	E494 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
E494																																																	

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 Carbide, 4 Flute, R50 NH, Regular, *Harmony DUO*

sutton

HARMONY DUO



- Dual stepped core for optimal stability
- Ideal design for pocket milling in MQL & HSC
- Suitable for materials up to 48 HRC
- AlCrN for longer tool life



Fraise 4 dents carbure, R50°, DIN6527L

- Double goujures
- Ideale pour les ébauches de poches en MQL & HSC
- Convient aux matériaux jusqu'à 48 HRC et les super alliages
- Revêtement AlCrN pour une meilleure durée de vie



Frese metallo duro, 4 Taglienti, R50, DIN6527L

- Doppio gradino al nocciolo per un'ottima stabilità durante la lavorazione
- Progettata per la formazione di tasche con strategia MQL & HSC
- Ideale per materiale duri fino a 48 HRC
- AlCrN per Ottimizzare vita utensile



Fresas de MD, 4 Ranuras, R50, DIN6527L

- Doble núcleo escalonado para una estabilidad óptima
- Diseño ideal para fresado con sistemas MQL y HSC
- Adecuado para materiales hasta 48 HRC
- AlCrN para una mayor vida útil de la herramienta

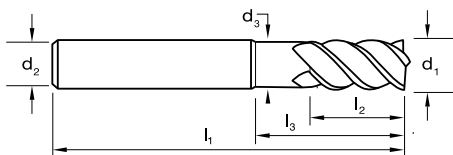


watch the video

DIN 6527L



ISO



Catalogue Code

Product Group

Material

Surface Finish

Sutton Designation

Geometry

Shank Form (DIN 6535)

Shank Tolerance

E562

B0210

VHM-ULTRA

AlCrN

NH

R50

HA

h6

E563

B0210

VHM-ULTRA

AlCrN

NH

R50

HB

h6

Size Ref.	d ₁ (h10)	l ₁	l ₂	l ₃	d ₂	d ₃	z	Item #	Item #
0600	6.0	57	13	21	6	5.5	4	E562 0600	E563 0600
0800	8.0	63	19	27	8	7.5	4	E562 0800	E563 0800
1000	10.0	72	22	32	10	9.5	4	E562 1000	E563 1000
1200	12.0	83	26	38	12	11.2	4	E562 1200	E563 1200
1400	14.0	83	26	38	14	13.0	4	E562 1400	E563 1400
1600	16.0	92	32	44	16	15.0	4	E562 1600	E563 1600
2000	20.0	104	38	54	20	19.0	4	E562 2000	E563 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
E562	○	○	○	○	●	○	○	●	○	●	○	●	○		●	○		○	○	○	○	○	○												●		○		○						●				
E563	○	○	○	○	●	○	○	●	○	●	○	●	○				○	○	○	○	○	○	○												●		○		○							●			

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

● Optimal ○ Effective



- VHM-ULTRA grade of carbide for high performance
- Dual stepped core for optimal stability
- Ideal design for pocket milling in MQL & HSC
- Suitable for materials up to 48 HRC
- AlCrN for longer tool life



Fraise 4 dents carbure. R50°. Torique. DIN6527L

- Carburé VHM-ULTRA pour une meilleure performance
- Double goujures
- Idéale pour les ébauches de poches en MQL & HSC
- Convient aux matériaux jusqu'à 48 HRC et les super alliages
- Revêtement AlCrN pour une meilleure durée de vie



Frese metallo duro, 4 Taglienti, R50, Toriche, DIN6527L

- VHM-ULTRA, grado di metallo duro per alte prestazione
- Doppio gradino al nocciolo per un'ottima stabilità durante la lavorazione
- Progettata per la formazione di tasche con strategia MQL & HSC
- Ideale per materiale duri fino a 48 HRC
- AlCrN per Ottimizzare vita utensile

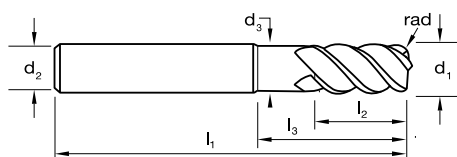


Fresas de MD, 4 Ranuras, R50, Tórica, DIN6527L

- Grado de MD, VHM-ULTRA para alto rendimiento
- Doble núcleo escalonado para una estabilidad óptima
- Diseño ideal para fresado con sistemas MQL y HSC
- Adecuado para materiales hasta 48 HRC
- AlCrN para una mayor vida útil de la herramienta



watch the video



Catalogue Code	E564	E565
Product Group	B0210	B0210
Material	VHM-ULTRA	VHM-ULTRA
Surface Finish	AIcRn	AIcRn
Sutton Designation	NH	NH
Geometry	R50	R50
Shank Form (DIN 6535)	HA	HB
Shank Tolerance	h6	h6

Size Ref.	d ₁ (h10)	l ₁	l ₂	l ₃	d ₂	d ₃	z	rad	Item #	Item #
0603	6.0	57	13	21	6	5.5	4	0.3	E564 0603	E565 0603
0605	6.0	57	13	21	6	5.5	4	0.5	E564 0605	E565 0605
0610	6.0	57	13	21	6	5.5	4	1.0	E564 0610	E565 0610
0803	8.0	63	19	27	8	7.5	4	0.3	E564 0803	E565 0803
0805	8.0	63	19	27	8	7.5	4	0.5	E564 0805	E565 0805
0810	8.0	63	19	27	8	7.5	4	1.0	E564 0810	E565 0810
0815	8.0	63	19	27	8	7.5	4	1.5	E564 0815	E565 0815
0820	8.0	63	19	27	8	7.5	4	2.0	E564 0820	E565 0820
1003	10.0	72	22	32	10	9.5	4	0.3	E564 1003	E565 1003
1005	10.0	72	22	32	10	9.5	4	0.5	E564 1005	E565 1005
1010	10.0	72	22	32	10	9.5	4	1.0	E564 1010	E565 1010
1015	10.0	72	22	32	10	9.5	4	1.5	E564 1015	E565 1015
1020	10.0	72	22	32	10	9.5	4	2.0	E564 1020	E565 1020
1203	12.0	83	26	38	12	11.2	4	0.3	E564 1203	E565 1203
1205	12.0	83	26	38	12	11.2	4	0.5	E564 1205	E565 1205
1210	12.0	83	26	38	12	11.2	4	1.0	E564 1210	E565 1210
1215	12.0	83	26	38	12	11.2	4	1.5	E564 1215	E565 1215
1220	12.0	83	26	38	12	11.2	4	2.0	E564 1220	E565 1220
1225	12.0	83	26	38	12	11.2	4	2.5	E564 1225	•
1230	12.0	83	26	38	12	11.2	4	3.0	E564 1230	E565 1230
1240	12.0	83	26	38	12	11.2	4	4.0	E564 1240	•
1403	14.0	83	26	38	14	13.0	4	0.3	E564 1403	E565 1403
1405	14.0	83	26	38	14	13.0	4	0.5	E564 1405	E565 1405
1410	14.0	83	26	38	14	13.0	4	1.0	E564 1410	E565 1410
1415	14.0	83	26	38	14	13.0	4	1.5	E564 1415	E565 1415
1420	14.0	83	26	38	14	13.0	4	2.0	E564 1420	E565 1420
1430	14.0	83	26	38	14	13.0	4	3.0	E564 1430	E565 1430
1605	16.0	92	32	44	16	15.0	4	0.5	E564 1605	E565 1605

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
E564	○	○	○	○	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○														●		●	●	●		○					●		
E565	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○																									●		

P Steel

M Stainless Steel

K Cast Iron

N Non-Ferrous Metals

S Titanium & Super Alloys

H Hard Materials

● Optimal

○ Effective

Endmills Carbide, 4 Flute, R50 NH, Extra Long, *Harmony DUO*

sutton
HARMONY DUO



- Ideal for long reach applications, such as multi-taskers & 5-axis
- The dual stepped core design improves rigidity in long overhang set-ups



Fraise carbure 4 dents, R50 NH, Extra longue, Harmony DUO

- Pour les applications à très longue portée, multi usages et fraisage 5 axes
- Le design à double noyau permet plus de rigidité



Frese in metallo duro, 4 taglienti, R50 NH, extra lunghe, Harmony DUO

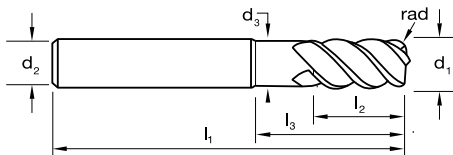
- Ideale per applicazioni su applicazioni profonde, come multi-tasker e 5 assi
- Il design a doppio nocciolo a gradini migliora la rigidità nelle configurazioni a sbalzo lungo.



Fresas de metal duro, 4 labios, R50 NH, Extra larga, Harmony DUO

- Ideal para aplicaciones de largo alcance, como multitarea y 5 ejes
- El diseño de doble núcleo escalonado mejora la rigidez en configuraciones de voladizos largos

DIN
6527L



ISO

Catalogue Code	E599
Product Group	B0210
Material	VHM-ULTRA
Surface Finish	AlCrN
Sutton Designation	NH
Geometry	R50
Shank Form (DIN 6535)	HA
Shank Tolerance	h6

Size Ref.	d ₁ (h10)	l ₁	l ₂	l ₃	d ₂	d ₃	z	rad	Item #
1200	12.0	100	26	53	12	11.4	4	0.0	E599 1200
1210	12.0	100	26	53	12	11.4	4	1.0	E599 1210
1215	12.0	100	26	53	12	11.4	4	1.5	•
1220	12.0	100	26	53	12	11.4	4	2.0	•
1225	12.0	100	26	53	12	11.4	4	2.5	•
1230	12.0	100	26	53	12	11.4	4	3.0	•
1240	12.0	100	26	53	12	11.4	4	4.0	E599 1240
1600	16.0	115	32	65	16	15.2	4	0.0	E599 1600
1610	16.0	115	32	65	16	15.2	4	1.0	E599 1610
1615	16.0	115	32	65	16	15.2	4	1.5	•
1620	16.0	115	32	65	16	15.2	4	2.0	•
1625	16.0	115	32	65	16	15.2	4	2.5	•
1630	16.0	115	32	65	16	15.2	4	3.0	•
1640	16.0	115	32	65	16	15.2	4	4.0	E599 1640
2000	20.0	125	38	73	20	19	4	0.0	E599 2000
2010	20.0	125	38	73	20	19	4	1.0	E599 2010
2015	20.0	125	38	73	20	19	4	1.5	•
2020	20.0	125	38	73	20	19	4	2.0	•
2025	20.0	125	38	73	20	19	4	2.5	•
2030	20.0	125	38	73	20	19	4	3.0	•
2040	20.0	125	38	73	20	19	4	4.0	E599 2040
2050	20.0	125	38	73	20	19	4	5.0	•
2060	20.0	125	38	73	20	19	4	6.0	•

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					
E599	○	○	○	○	●	○	○	●	●	○	●	●	●	○	●	●	○	○	●	○	○	○													●		●	●		○						●								
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

- VHM-ULTRA grade of carbide for high performance
- For profile & contour milling in long reach applications
- Suitable for materials up to 1600 N/mm²
- AlCrN for longer tool life



Fraise 4 dents carbure, R30°, Longue

- Pour le fraisage de formes et de poches profondes
- Convient aux matériaux jusqu'à 1600 N/mm²
- AlCrN et VHM-ULTRA pour une meilleure durée de vie



Frese metallo duro, Sferiche, 4 Taglienti, R30, Lunga Portata

- VHM-ULTRA, grado di metallo duro per alte prestazioni
- Ideale per lavorazioni di contornatura e profilatura
- Adatta per materiali fino a 1600 N/mm²
- AlCrN per Ottimizzare vita utensile



Fresas de MD, Esféricas, 4 ranuras, R30, Larga

- Grado de MD, VHM-ULTRA para alto rendimiento
- Para fresado de perfiles y contornos en aplicaciones de largo alcance
- Adecuado para materiales hasta 1600 N/mm²
- AlCrN para una mayor vida útil de la herramienta

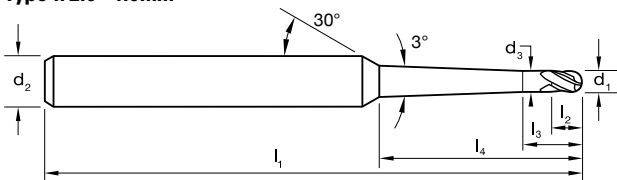


ISO-S

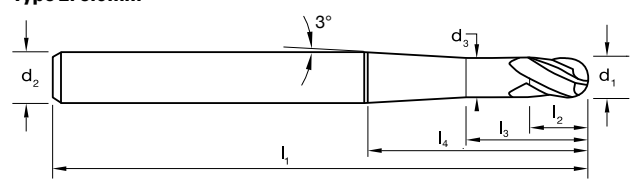
Catalogue Code	E481
Product Group	B0210
Material	VHM-ULTRA
Surface Finish	Xceed
Sutton Designation	Ti-Ni-VA
Geometry	R30
Shank Form (DIN 6535)	HA
Shank Tolerance	h5

Size Ref.	d ₁ (e8)	l ₁	l ₂	l ₃	l ₄	d ₂	d ₃	z	Angle	Item #
TYPE 1										
0200	2.0	62	3	9.0	24	6	1.9	4	3°	E481 0200
0300	3.0	62	4	10.0	24.6	6	2.8	4	3°	E481 0300
0400	4.0	62	5	12.0	25.3	6	3.8	4	3°	E481 0400
TYPE 2										
0500	5.0	80	6	14.5	25.95	6	4.8	4	3°	E481 0500
TYPE 3										
0600	6.0	80	7	17.0		6	5.7	4		E481 0600
0800	8.0	90	9	22.0		8	7.6	4		E481 0800
1000	10.0	100	11	27.0		10	9.5	4		E481 1000
1200	12.0	120	13	32.0		12	11.5	4		E481 1200
1600	16.0	140	17	42.0		16	15.5	4		E481 1600

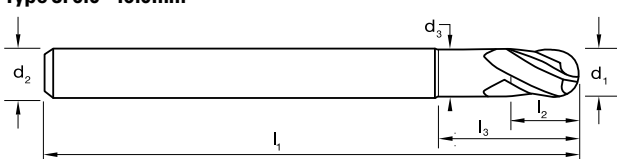
Type 1: 2.0 - 4.0mm



Type 2: 5.0mm



Type 3: 6.0 - 16.0mm



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
E481							○	●	●	○	●			●	○																			○	●	●	○	○	○	○	○	○	○	○	○				
P	Steel			M	Stainless Steel										K	Cast Iron				N	Non-Ferrous Metals										S	Titanium & Super Alloys							H	Hard Materials				●	Optimal		○	Effective	



- VHM-ULTRA grade of carbide for high performance
- For profile & contour milling in long reach applications
- Suitable for materials up to 1600 N/mm²
- AlCrN for longer tool life



Fraise 4 dents carbure, R30° UNI, Longue

- Pour le fraisage de formes et de poches profondes
- Convient au matériaux jusqu'à 1600 N/mm²
- AlCrN et VHM-ULTRA pour une meilleure durée de vie



Frese metallo duro, Sferiche, 4 Taglienti, R30 UNI, Lunga Portata

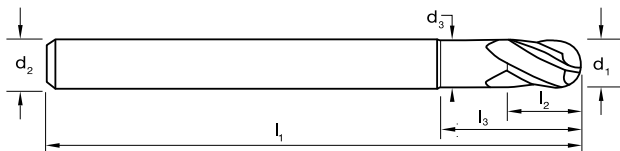
- VHM-ULTRA, grado di metallo duro per alte prestazioni
- Ideale per lavorazioni di contornatura e profilatura
- Adatta per materiali fino a 1600 N/mm²
- AlCrN per Ottimizzare vita utensile



Fresas de MD, Esféricas, 4 ranuras, R30 UNI, Larga

- Grado de MD, VHM-ULTRA para alto rendimiento
- Para fresado de perfiles y contornos en aplicaciones de largo alcance
- Adecuado para materiales hasta 1600 N/mm²
- AlCrN para una mayor vida útil de la herramienta

ISO-N



Catalogue Code	E442	E443
Product Group	B0210	B0210
Material	VHM-ULTRA	VHM-ULTRA
Surface Finish	AlCrN	AlCrN
Sutton Designation	UNI	UNI
Geometry	R30	R30
Shank Form (DIN 6535)	HA	HB
Shank Tolerance	h5	h5

Size Ref.	d ₁ (e8)	l ₁	l ₂	l ₃	d ₂	d ₃	z	Item #	Item #
0200	2.0	62	3	7	6	1.9	4	E442 0200	E443 0200
0300	3.0	62	4	9.5	6	2.8	4	E442 0300	E443 0300
0400	4.0	62	5	12	6	3.8	4	E442 0400	E443 0400
0500	5.0	80	6	14.5	6	4.8	4	E442 0500	E443 0500
0600	6.0	80	7	17	6	5.7	4	E442 0600	E443 0600
0800	8.0	90	9	22	8	7.6	4	E442 0800	E443 0800
1000	10.0	100	11	27	10	9.5	4	E442 1000	E443 1000
1200	12.0	120	13	32	12	11.5	4	E442 1200	E443 1200
1400	14.0	120	15	37	14	13.5	4	E442 1400	E443 1400
1600	16.0	140	17	42	16	15.5	4	E442 1600	E443 1600
1800	18.0	140	19	47	18	17.5	4	E442 1800	•
2000	20.0	160	21	52	20	19.5	4	E442 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																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
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P Steel M Stainless Steel K Cast Iron N Non-Ferrous Metals S Titanium & Super Alloys H Hard Materials

● Optimal ○ Effective

Endmills Carbide, 3 Flute, R45/46/44, Rad, Regular, Harmony AI



- VHM-ULTRA grade of carbide for high performance
- 45/46/44° variable flute helix for chatter free milling
- Optimised geometry for soft materials



Fraise 3 dents carbure, R45°/46°/44° AI, Longue

- Carbure VHM-ULTRA pour une meilleure performance
- Hélice variable 45°/46°/44° pour la suppression des vibrations
- Géométrie optimisée les non-ferreux et cuivres



Frese metallo duro, 3 Taglienti, R45/46/44 AI, Lunga Portata

- VHM-ULTRA, grado di metallo duro per alte prestazione
- Elica tagliente variabile 45/46/44° per lavorazioni senza vibrazioni
- Geometria ottimizzata per materiali morbidi

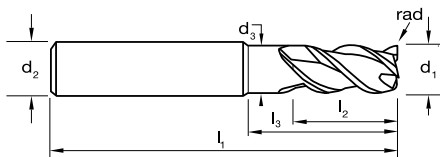


Fresas de MD, 3 ranuras, R45/46/44 AI, Larga

- Grado de MD, VHM-ULTRA para alto rendimiento
- Hélice de ranura variable 45/46/44° para fresado sin vibraciones
- Geometría optimizada para materiales blandos

ISO-N

DIN 6527L



Catalogue Code

E478

Product Group

B0210

Material

VHM-ULTRA

Surface Finish

Brt

Sutton Designation

AI

Geometry

R45/46/44

Shank Form (DIN 6535)

HA

Shank Tolerance

h5

Size Ref.	d ₁ (e8)	l ₁	l ₂	l ₃	d ₂	d ₃	rad	Item #
1210	12.0	83	26	40	12	11.1	1.0	E478 1210
1225	12.0	83	26	40	12	11.1	2.5	E478 1225
1230	12.0	83	26	40	12	11.1	3.0	E478 1230
1240	12.0	83	26	40	12	11.1	4.0	E478 1240
1610	16.0	92	32	50	16	14.8	1.0	E478 1610
1625	16.0	92	32	50	16	14.8	2.5	E478 1625
1630	16.0	92	32	50	16	14.8	3.0	E478 1630
1640	16.0	92	32	50	16	14.8	4.0	E478 1640
2010	20.0	104	38	60	20	18.5	1.0	E478 2010
2025	20.0	104	38	60	20	18.5	2.5	E478 2025
2030	20.0	104	38	60	20	18.5	3.0	E478 2030
2040	20.0	104	38	60	20	18.5	4.0	E478 2040

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

● Optimal ○ Effective



- 40° Helix, Centre cutting
- Extra reach with wide gullets to enable higher feed rates
- HCR coating allows for roughing and finishing using the same tool



Fraise 3 dents carbure, R40, Al, longue

- Hélice 40°, coupe au centre
- Série longue avec d'importantes goujures pour des avances plus élevées
- Revêtement HCR pour l'ébauche et la finition avec le même outil



Fresa metallo duro, 3 taglienti, R40, Al, Lavorazio profonda

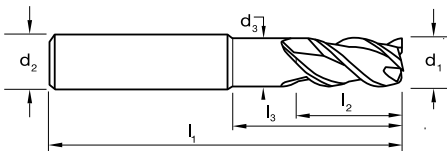
- 40° Elica, Tagliente al centro
- Lunghezza extra con scarico dopo tagliente per avanzamenti elevati
- Rivestimento HCR adatto per sgrossare e finire con lo stesso utensile



Fresas de MD, 3 ranuras, R40 Al, larga

- Hélice de 40°, corte frontal
- Alcance adicional facetas anchas para permitir mayores velocidades de corte
- El recubrimiento HCR permite desbaste y acabado con la misma herramienta

DIN
6527L



ISO

Catalogue Code

E668

Product Group

B0210

Material

VHM-ULTRA

Surface Finish

HCR

Sutton Designation

AI

Geometry

R40

Shank Form (DIN 6535)

HA

Shank Tolerance

h5

Size Ref.	d ₁ (k10)	l ₁	l ₂	l ₃	d ₂	d ₃	z	Item #
0600	6.0	100	24	50	6.0	5.7	3	E668 0600
0800	8.0	100	25	50	8.0	7.7	3	E668 0800
1000	10.0	100	27	50	10.0	9.5	3	E668 1000
1200	12.0	100	32	60	12.0	11.5	3	E668 1200
1600	16.0	125	39	80	16.0	15.3	3	E668 1600
2000	20.0	150	42	100	20.0	19.3	3	E668 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
E668																																																	
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



- V45/46/44° variable flute helix for chatter free milling
- Optimised geometry for soft materials



Fraise carbure, profil ébauche, 3 dents R45/46/44, AI

- Hélice variable pour la suppression des vibrations
- Géométrie optimisée les non-ferreux et cuivres



Fresa metallo duro, 3 taglienti, R45/46/44, AI

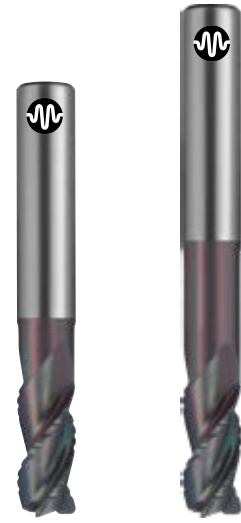
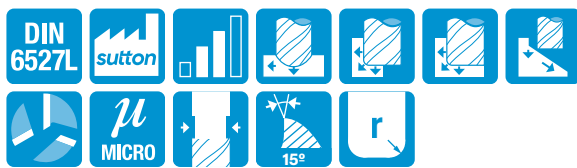
- Rompitrucciolo evaquano velocemente i trucioli
- Aumento della produttività della macchina
- Progettato per strategie di lavorazione trocoidali/dinamiche per materiali fino a 1300N/mm², TiSiN₂ per una maggiore durata dell' utensile



Fresas de MD, 3 ranuras, R45/46/44, AI

- Hélice de ranura variable para fresado sin vibraciones
- Geometría optimizada para materiales blandos

ISO - N



Catalogue Code
Product Group
Material
Surface Finish
Sutton Designation
Geometry
Shank Form (DIN 6535)
Shank Tolerance

E674	E675
B0210	B0210
VHM-ULTRA	VHM-ULTRA
HCR	HCR
AI	AI
R45/46/44	R45/46/44
HA	HA
h5	h5

Size Ref.	d ₁ (e8)	l ₁	l ₂	l ₃	d ₂	d ₃	z	rad	Item #	Item #
DIN6527L										
0610	6.0	60	13	23	6	5.7	3	1.0	E674 0610	
0810	8.0	64	18	28	8	7.7	3	1.0	E674 0810	
1010	10.0	73	21	31	10	9.5	3	1.0	E674 1010	
1210	12.0	84	25	35	12	11.5	3	1.0	E674 1210	
1610	16.0	93	32	50	16	15.3	3	1.0	E674 1610	
2010	20.0	104	40	60	20	19.3	3	1.0	E674 2010	
SUTTON STD										
1210	12.0	100	31	60	12	11.5	3	1.0		E675 1210
1610	16.0	130	41	80	16	15.3	3	1.0		E675 1610
2010	20.0	150	52	100	20	19.3	3	1.0		E675 2010

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	
E674																							●	●	●	●	●	●	●	●																				
E675																							●	●	●	●	●	●	●	●																				

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

● Optimal ○ Effective



- 45° Helix, Centre Cutting, Sinusoidal Form
- Uniquely designed for high material removal rates
- Enhanced with through coolant and wide flute form for maximum swarf removal



Fraise 3 dents carbure, R45, Al, arrosage central profil ebauche

- Hélice 45° sinusoidale, coupe au centre, série longue
- Idéale pour le fraisage trochoïdal et la finition
- Revêtement HCR



Fresa metallo duro, 3 taglienti, R45, Al, Refrigerazione interna con rompitruciolo

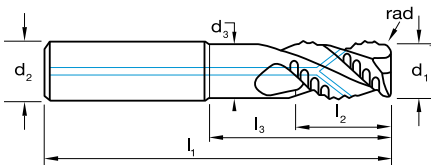
- 45° Elica, Tagliente al centro, Forma Sinusoidale
- Geometria unica per alti avanzamenti
- Refrigerazione interna centrale e tagliente adatto a massima evacuazione trucioli



Fresas Debaste, NR, R45, Al, Refrigerante

- Hélice de 45°, corte frontal, forma sinusoidal
- Diseñado exclusivamente para altos arranques de material
- Mejorado con refrigerante interior y forma de ranura ancha para la máxima evacuación de virutas

DIN
6527L



ISO

Catalogue Code	E662
Product Group	B0210
Material	VHM-ULTRA
Surface Finish	Brt
Sutton Designation	Al - IK
Geometry	R45
Shank Form (DIN 6535)	HA
Shank Tolerance	h6

Size Ref.	d ₁ (e8)	l ₁	l ₂	l ₃	d ₂	d ₃	z	rad	Item #
1210	12.0	83	18	40	12	-	3	1.0	E662 1210
1220	12.0	83	18	40	12	-	3	2.0	E662 1220
1225	12.0	83	18	40	12	-	3	2.5	E662 1225
1230	12.0	83	18	40	12	-	3	3.0	E662 1230
1240	12.0	83	18	40	12	-	3	4.0	E662 1240
1610	16.0	92	18	40	12	-	3	1.0	E662 1610
1620	16.0	92	25	50	16	-	3	2.0	E662 1620
1625	16.0	92	25	50	16	-	3	2.5	E662 1625
1630	16.0	92	25	50	16	-	3	3.0	E662 1630
1640	16.0	92	25	50	16	-	3	4.0	E662 1640
1650	16.0	92	25	50	16	-	3	5.0	E662 1650
2010	20.0	104	36	64	20	-	3	1.0	E662 2010
2020	20.0	104	36	64	20	-	3	2.0	E662 2020
2025	20.0	104	36	64	20	-	3	2.5	E662 2025
2030	20.0	104	36	64	20	-	3	3.0	E662 2030
2040	20.0	104	36	64	20	-	3	4.0	E662 2040
2050	20.0	104	36	64	20	-	3	5.0	E662 2050

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

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

● Optimal ○ Effective



- 45° Helix, Centre cutting
- Extended flute length and added chip breakers for excellent swarf removal
- Ideal for trochoidal milling
- HCR coating enables excellent feed rates



Fraise 4 dents carbure, R45, AI, Extra longue, brise copeaux

- Hélice 45°, coupe au centre
- Série longue avec brises copeaux
- Idéale pour le fraisage trochoidal
- Revêtement HCR



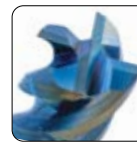
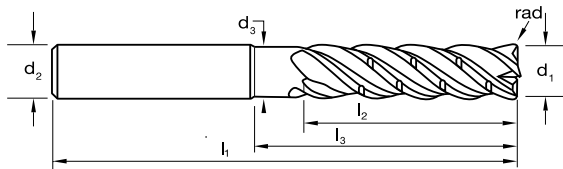
Fresa metallo duro, 4 taglienti, R45, AI, Extra lunga, Rompitrucciolo

- 45° Elica, Tagliente al centro
- Lunghezza tagliente esteso con rompitrucciolo per un eccellente lavorazione del materiale
- Ideale per lavorazioni in trocoidale
- Rivestimento HCR per supportare alte velocità di taglio



Fresas de MD, 4 ranuras, R40 AI, Extra larga, Torica

- Hélice de 45°, corte frontal
- Longitud de ranura extendida y rompevirutas para un excelente ratio de avance
- Ideal para molienda trocoidal
- El recubrimiento HCR permite excelentes velocidades de alimentación



Catalogue Code
Product Group
Material
Surface Finish
Sutton Designation
Geometry
Shank Form (DIN 6535)
Shank Tolerance

E663	E664
B0210	B0210
VHM-ULTRA	VHM-ULTRA
HCR	HCR
AI - CB	AI - CB
R45	R45
HA	HB
h6	h6

Size Ref.	d ₁ (e8)	l ₁	l ₂	l ₃	d ₂	d ₃	z	rad	Item #	Item #
0600	6.0	100	24	50	6	5.70	4	0.2	E663 0600	E664 0600
0800	8.0	100	32	50	8	7.70	4	0.2	E663 0800	E664 0800
1000	10.0	100	40	50	10	9.50	4	0.2	E663 1000	E664 1000
1200	12.0	100	48	60	12	11.50	4	0.2	E663 1200	E664 1200
1600	16.0	125	65	80	16	15.30	4	0.2	E663 1600	E664 1600
2000	20.0	150	80	100	20	19.30	4	0.2	E663 2000	E664 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
E663																																																	
E664																																																	

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

● Optimal ○ Effective



- 45° Helix, Centre cutting, extended flute length
- Excellent for trochoidal milling
- HCR coating enables excellent feed rates



Fraise 4 dents carbure, R45, Al extra longue, pour finition

- Hélice 45°, coupe au centre, série longue
- Idéale pour le fraisage trochoidal et la finition
- Revêtement HCR



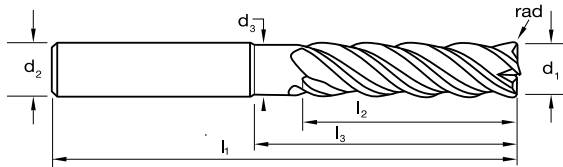
Fresa metallo duro, 4 taglienti, R45, Al, Extra lunga, Finitura

- 45° Elica, Tagliente al centro, Lunghezza tagliente esteso
- Eccellente per lavorazioni in trocoidale
- Rivestimento HCR per supportare alte velocità di taglio



Fresas de MD, 4 ranuras, R40 Al, extra larga

- Hélice de 45°, corte frontal, longitud de ranura ancha
- Excelente para fresado trocoidal
- El recubrimiento HCR permite excelentes velocidades de corte



ISO

Catalogue Code	E665	E666
Product Group	B0210	B0210
Material	VHM-ULTRA	VHM-ULTRA
Surface Finish	HCR	HCR
Sutton Designation	Al	Al
Geometry	R45	R45
Shank Form (DIN 6535)	HA	HB
Shank Tolerance	h6	h6

Size Ref.	d ₁ (e8)	l ₁	l ₂	l ₃	d ₂	d ₃	z	rad	Item #	Item #
0600	6.0	100	24	50	6.0	5.7	4	0.2	E665 0600	E666 0600
0800	8.0	100	32	50	8.0	7.7	4	0.2	E665 0800	E666 0800
1000	10.0	100	40	50	10.0	9.5	4	0.2	E665 1000	E666 1000
1200	12.0	100	48	60	12.0	11.5	4	0.2	E665 1200	E666 1200
1600	16.0	125	65	80	16.0	15.3	4	0.2	E665 1600	E666 1600
2000	20.0	150	80	100	20.0	19.3	4	0.2	E665 2000	E666 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	
E665																							●	●	●	●	●	●	●	●																				
E666																							●	●	●	●	●	●	●	●																				

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

● Optimal ○ Effective



- 45° Helix, Centre cutting, extended flute length
- Excellent for trochoidal milling
- HCR coating enables excellent feed rates



Fraise 4 dents carbure, R45, AI, extra longue, pour finition avec rayons

- Hélice 45°, coupe au centre, série longue
- Idéale pour le fraisage trochoidal
- Revêtement HCR



Fresa metallo duro, 4 taglienti, R45, AI, Extra lunga, Finitura, Torica

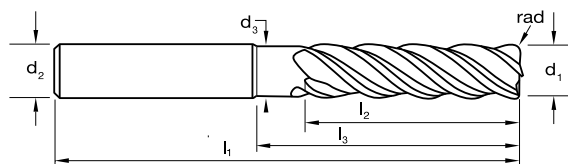
- 45° Elica, Tagliente al centro, Lunghezza tagliente esteso
- Eccellente per lavorazioni in trocoidale
- Rivestimento HCR per supportare alte velocità di taglio



Fresas de MD, 4 ranuras, R40 AI, extra larga, Torica

- Hélice de 45°, corte frontal, longitud de ranura ancha
- Excelente para fresado trocoidal
- El recubrimiento HCR permite excelentes velocidades de corte

ISO - N



Catalogue Code **E667**

Product Group **B0210**

Material **VHM-ULTRA**

Surface Finish **HCR**

Sutton Designation **AI**

Geometry **R45**

Shank Form (DIN 6535) **HA**

Shank Tolerance **h6**

Size Ref.	d ₁ (e8)	l ₁	l ₂	l ₃	d ₂	d ₃	z	rad	Item #
1210	12.0	100	48	60	12	11.5	4	1.0	E667 1210
1220	12.0	100	48	60	12	11.5	4	2.0	E667 1220
1225	12.0	100	48	60	12	11.5	4	2.5	E667 1225
1230	12.0	100	48	60	12	11.5	4	3.0	E667 1230
1240	12.0	100	48	60	12	11.5	4	4.0	E667 1240
1610	16.0	125	65	80	16	15.3	4	1.0	E667 1610
1620	16.0	125	65	80	16	15.3	4	2.0	E667 1620
1625	16.0	125	65	80	16	15.3	4	2.5	E667 1625
1630	16.0	125	65	80	16	15.3	4	3.0	E667 1630
1640	16.0	125	65	80	16	15.3	4	4.0	E667 1640
2010	20.0	150	80	100	20	19.3	4	1.0	E667 2010
2020	20.0	150	80	100	20	19.3	4	2.0	E667 2020
2025	20.0	150	80	100	20	19.3	4	2.5	E667 2025
2030	20.0	150	80	100	20	19.3	4	3.0	E667 2030
2040	20.0	150	80	100	20	19.3	4	4.0	E667 2040

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	
E667																																																		

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

● Optimal ○ Effective



- Suitable for materials up to 1400N/mm²
- Strong core
- Micro geometry & surface conditioning for optimal chip control
- AlCrN for maximum tool life



Forets carbure 3xD, hélice 30°, type UNI

- Convient aux matériaux jusqu'à 1400 N/mm²
- Noyau renforcé
- Micro géométrie et traitement surface optimisé pour un bon contrôle des copeaux
- Revêtement AlCrN pour une durée de vie maximum



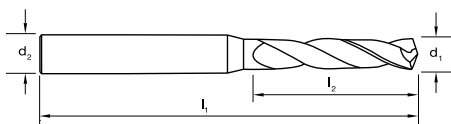
Punte Metallo Duro, 3 x D, R30 UNI

- Ideale per materiali fino a 1400N/mm²
- Nocciolo rinforzato
- Micro geometria & rivestimento tagliente ideale per un ottimo controllo truciolo
- AlCrN per massimizzare la vita utensile



Brocas de Metal Duro, 3 x D, R30 UNI

- Adecuado para materiales hasta 1400N/mm²
- Núcleo Reforzado
- Micro geometría y acondicionamiento de la superficie para un control óptimo de la viruta
- AlCrN para una máxima vida útil de la herramienta



Catalogue Code

D383

Product Group

A0210

Material

VHM

Surface Finish

AlCrN

Sutton Designation

UNI

Geometry

R30

Point Type

140° Form C

Shank Form (DIN 6535)

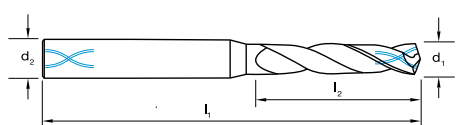
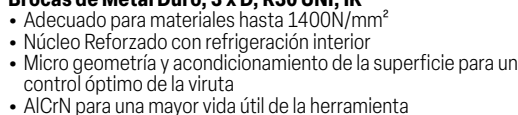
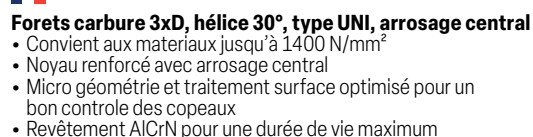
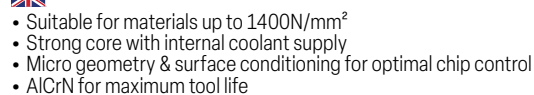
HA

Size Ref.	d ₁ (m7)		l ₁	l ₂	d ₂ (h6)	Max hole depth	Item #
mm	inch						
0100	1.0		55	7	4	4	D383 0100
0110	1.1		55	7	4	4	D383 0110
0120	1.2		55	7	4	4	D383 0120
0130	1.3		55	7	4	4	D383 0130
0140	1.4		55	7	4	4	D383 0140
0150	1.5		55	14	4	5	D383 0150
0160	1.6		55	14	4	5	D383 0160
0170	1.7		55	14	4	5	D383 0170
0180	1.8		55	14	4	5	D383 0180
0190	1.9		55	14	4	6	D383 0190
0200	2.0		55	20	4	6	D383 0200
0210	2.1		55	20	4	6	D383 0210
0220	2.2		55	20	4	7	D383 0220
0230	2.3		55	20	4	7	D383 0230
0240	2.4		55	20	4	7	D383 0240
0250	2.5		55	20	4	8	D383 0250
0260	2.6		55	20	4	8	D383 0260
0270	2.7		55	20	4	8	D383 0270
0280	2.8		55	20	4	8	D383 0280
0290	2.9		55	20	4	9	D383 0290
0300	3.0		62	20	6	9	D383 0300
0310	3.1		62	20	6	9	D383 0310
0318	3.18	1/8	62	20	6	10	D383 0318
0320	3.2		62	20	6	10	D383 0320
0330	3.3		62	20	6	10	D383 0330
0340	3.4		62	20	6	10	D383 0340
0350	3.5		62	20	6	11	D383 0350
0357	3.57	9/64	62	20	6	11	D383 0357

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
D383	●	●	●	●	●	●	●	●	●	●	●	●	●	●		○	●	●	●	●	●	●															○	○	○	○		○				●			
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



HA

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
D389	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

P

Steel

M

Stainless Steel

K

Cast Iron

N

Non-Ferrous Metals

S

Titanium & Super Alloys

H

Hard Materials

●

Optimal

○

Effective



- Suitable for materials up to 1400N/mm²
- Strong core
- Micro geometry & surface conditioning for optimal chip control
- AlCrN for maximum tool life



Forets carbure 5xD, hélice 30°, type UNI

- Convient aux matériaux jusqu'à 1400 N/mm²
- Noyau renforcé
- Micro géométrie et traitement surface optimisé pour un bon contrôle des copeaux
- Revêtement AlCrN pour une durée de vie maximum



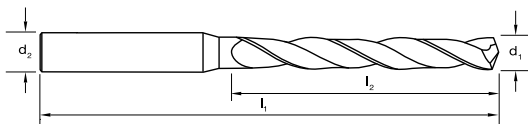
Punte Metallo Duro, 5 x D, R30 UNI

- Ideale per materiali fino a 1400N/mm²
- Nocciolo rinforzato
- Micro geometria & rivestimento tagliente ideale per un ottimo controllo truciolo
- AlCrN per massimizzare la vita utensile



Brocas de Metal Duro, 5 x D, R30 UNI

- Adecuado para materiales hasta 1400N/mm²
- Núcleo Reforzado
- Micro geometría y acondicionamiento de la superficie para un control óptimo de la viruta
- AlCrN para una mayor vida útil de la herramienta



Catalogue Code

D386

Product Group

A0210

Material

VHM

Surface Finish

AlCrN

Sutton Designation

UNI

Geometry

R30

Point Type

140° Form C

Shank Form (DIN 6535)

HA

Size Ref.	d ₁ (m7)		L ₁	L ₂	d ₂ (h6)	Max hole depth	Item #
0300	3.0		66	28	6	15	D386 0300
0310	3.1		66	28	6	16	D386 0310
0318	3.18	1/8	66	28	6	16	D386 0318
0320	3.2		66	28	6	16	D386 0320
0330	3.3		66	28	6	17	D386 0330
0340	3.4		66	28	6	17	D386 0340
0350	3.5		66	28	6	18	D386 0350
0357	3.57	9/64	66	28	6	18	D386 0357
0360	3.6		66	28	6	18	D386 0360
0370	3.7		66	28	6	19	D386 0370
0380	3.8		74	36	6	19	D386 0380
0390	3.9		74	36	6	20	D386 0390
0397	3.97	5/32	74	36	6	20	D386 0397
0400	4.0		74	36	6	20	D386 0400
0410	4.1		74	36	6	21	D386 0410
0420	4.2		74	36	6	21	D386 0420
0430	4.3		74	36	6	22	D386 0430
0437	4.37	11/64	74	36	6	22	D386 0437
0440	4.4		74	36	6	22	D386 0440
0450	4.5		74	36	6	23	D386 0450
0460	4.6		74	36	6	23	D386 0460
0470	4.7		74	36	6	24	D386 0470
0476	4.76	3/16	82	44	6	24	D386 0476
0480	4.8		82	44	6	24	D386 0480
0490	4.9		82	44	6	25	D386 0490
0500	5.0		82	44	6	25	D386 0500
0510	5.1		82	44	6	26	D386 0510
0516	5.16	13/64	82	44	6	26	D386 0516

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																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
D386	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

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

● Optimal ○ Effective



- Suitable for materials up to 1400N/mm²
- Strong core with internal coolant supply
- Micro geometry & surface conditioning for optimal chip control
- AlCrN for maximum tool life



Forets carbure 5xD, hélice 30°, type UNI, arrosage central

- Convient aux matériaux jusqu'à 1400 N/mm²
- Noyau renforcé avec arrosage central
- Micro géométrie et traitement surface optimisé pour un bon contrôle des copeaux
- Revêtement AlCrN pour une durée de vie maximum



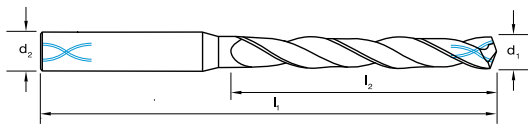
Punte Metallo Duro, 5 x D, R30 UNI, Refrigerazione Interna

- Ideale per materiali fino a 1400N/mm²
- Nocciolo rinforzato con fori di Lubrificazione interna
- Micro geometria & rivestimento tagliente ideale per un ottimo controllo truciolo
- AlCrN Per massimizzare la vita utensile



Brocas de Metal Duro, 5 x D, R30 UNI, IK

- Adecuado para materiales hasta 1400N/mm²
- Núcleo Reforzado con refrigeración interior
- Micro geometría y acondicionamiento de la superficie para un control óptimo de la viruta
- AlCrN para una mayor vida útil de la herramienta



Catalogue Code	D392
Product Group	A0210
Material	VHM
Surface Finish	AlCrN
Sutton Designation	UNI
Geometry	R30 - IK
Point Type	140° Form C
Shank Form (DIN 6535)	HA

Size Ref.	d ₁ (mm)	d ₁ (inch)	L ₁	L ₂	d ₂ (h6)	Max hole depth	Item #
0300	3.0		66	28	6	15	D392 0300
0310	3.1		66	28	6	16	D392 0310
0318	3.18	1/8	66	28	6	16	D392 0318
0320	3.2		66	28	6	16	D392 0320
0330	3.3		66	28	6	17	D392 0330
0340	3.4		66	28	6	17	D392 0340
0350	3.5		66	28	6	18	D392 0350
0357	3.57	9/64	66	28	6	18	D392 0357
0360	3.6		66	28	6	18	D392 0360
0370	3.7		66	28	6	19	D392 0370
0380	3.8		74	36	6	19	D392 0380
0390	3.9		74	36	6	20	D392 0390
0397	3.97	5/32	74	36	6	20	D392 0397
0400	4.0		74	36	6	20	D392 0400
0410	4.1		74	36	6	21	D392 0410
0420	4.2		74	36	6	21	D392 0420
0430	4.3		74	36	6	22	D392 0430
0437	4.37	11/64	74	36	6	22	D392 0437
0440	4.4		74	36	6	22	D392 0440
0450	4.5		74	36	6	23	D392 0450
0460	4.6		74	36	6	23	D392 0460
0470	4.7		74	36	6	24	D392 0470
0476	4.76	3/16	82	44	6	24	D392 0476
0480	4.8		82	44	6	24	D392 0480
0490	4.9		82	44	6	25	D392 0490
0500	5.0		82	44	6	25	D392 0500
0510	5.1		82	44	6	26	D392 0510
0516	5.16	13/64	82	44	6	26	D392 0516

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																																										
D392	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	●	●	●	●	●	●	●						○	○	○	○			○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○																																									
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

Drills Carbide 3 x D, R30 VA Black Magic



watch the video

sutton
BLACKMAGIC



- Excellent solution for stainless steels and difficult super alloy type materials
- Optimised geometry ensures no work hardening and high productivity
- HELICA for outstanding oxidation resistance and hot hardness



Forets carbure 3xD, hélice 30°, VA Black magic, arrosage central

- Convient aux alliages et super alliages, Inox, Titane, Inconel et Duplex
- Géométrie optimisée pour un bon contrôle des copeaux
- Revêtement Helica pour une meilleure résistance à l'oxydation et la haute température



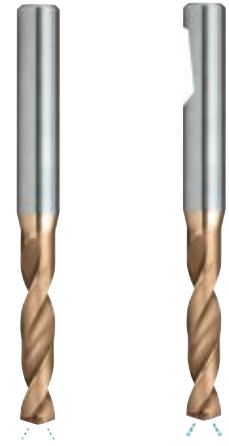
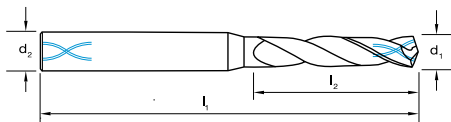
Punte Metallo Duro, 3 x D, R30 N, VA Black Magic

- Eccellente soluzione specifica per acciai inossidabili e super leghe
- Geometria ottimizzata per garantire facile lavorabilità ad alta produzione
- HELICA per un'eccezionale resistenza a ossidazione da alte temperature



Brocas de Metal Duro, 3 x D, R30 VA Black Magic

- Excelente solución para aceros inoxidables y super aleaciones de difícil mecanización
- La geometría optimizada asegura no endurecer el trabajo para una alta productividad
- HELICA para una excelente resistencia a la oxidación y dureza en caliente



Catalogue Code	D356	D357
Product Group	A0210	A0210
Material	VHM	VHM
Surface Finish	HELICA	HELICA
Sutton Designation	VA	VA
Geometry	R30 - IK	R30 - IK
Point Type	140° 4 Facet Form C	140° 4 Facet Form C
Shank Form (DIN 6535)	HA	HE

Size Ref.	d ₁ (m7)		L ₁	L ₂	d ₂ (h6)	Max hole depth	Item #	Item #
0300	3.0		62	20	6	9	D356 0300	D357 0300
0310	3.1		62	20	6	9	D356 0310	D357 0310
0318	3.18	1/8	62	20	6	10	D356 0318	D357 0318
0320	3.2		62	20	6	10	D356 0320	D357 0320
0330	3.3		62	20	6	10	D356 0330	D357 0330
0340	3.4		62	20	6	10	D356 0340	D357 0340
0350	3.5		62	20	6	11	D356 0350	D357 0350
0357	3.57	9/64	62	20	6	11	D356 0357	D357 0357
0360	3.6		62	20	6	11	D356 0360	D357 0360
0370	3.7		62	20	6	11	D356 0370	D357 0370
0380	3.8		66	24	6	11	D356 0380	D357 0380
0390	3.9		66	24	6	12	D356 0390	D357 0390
0397	3.97	5/32	66	24	6	12	D356 0397	D357 0397
0400	4.0		66	24	6	12	D356 0400	D357 0400
0410	4.1		66	24	6	12	D356 0410	D357 0410
0420	4.2		66	24	6	13	D356 0420	D357 0420
0430	4.3		66	24	6	13	D356 0430	D357 0430
0437	4.37	11/64	66	24	6	13	D356 0437	D357 0437
0440	4.4		66	24	6	13	D356 0440	D357 0440
0450	4.5		66	24	6	14	D356 0450	D357 0450
0460	4.6		66	24	6	14	D356 0460	D357 0460
0470	4.7		66	24	6	14	D356 0470	D357 0470
0476	4.76	3/16	66	28	6	14	D356 0476	D357 0476
0480	4.8		66	28	6	14	D356 0480	D357 0480
0490	4.9		66	28	6	15	D356 0490	D357 0490
0500	5.0		66	28	6	15	D356 0500	D357 0500
0510	5.1		66	28	6	15	D356 0510	D357 0510
0516	5.16	13/64	66	28	6	15	D356 0516	D357 0516

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	
D356	●	●	●	●	●	●	○	○		○		●	○	●	●	●							●	●	●	●	●							●	○	○	○	○	●	●	●	●	●	●						
D357	●	●	●	●	○	○	○	○		○		●	○	●	●	●							●	●	●	●	●							●	○	○	○	○	●	●	●	●	●	●						

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

● Optimal ○ Effective

NOTE: HE shanks available, subject to lead time.

ISO - M

Drills Carbide 5 x D, R30 VA, *Black Magic*



- Excellent solution for stainless steels and difficult super alloy type materials
- Optimised geometry ensures no work hardening and high productivity
- HELICA for outstanding oxidation resistance and hot hardness



Forets carbure 5xD hélice 30°, VA Blagic Magic, arrosage central

- Convient aux alliages et super alliages, Inox, Titane, Inconel et Duplex
- Géométrie optimisée pour un bon contrôle des copeaux
- Revêtement Helica pour une meilleure résistance à l'oxydation et la haute température



Punte Metallo Duro, 5 x D, R30 N, VA Black Magic

- Eccellente soluzione specifica per acciai inossidabili e super leghe
- Geometria ottimizzata per garantire facile lavorabilità ad alta produzione
- HELICA per un'eccezionale resistenza a ossidazione da alte temperature



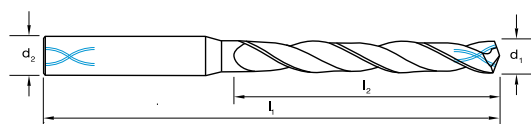
Brocas de Metal Duro, 5 x D, R30 VA Black Magic

- Excelente solución para aceros inoxidables y super aleaciones de difícil mecanización
- La geometría optimizada asegura no endurecer el trabajo para una alta productividad
- HELICA para una excelente resistencia a la oxidación y dureza en caliente



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Catalogue Code

Product Group

Material

Surface Finish

Sutton Designation

Geometry

Point Type

Shank Form (DIN 6535)



D358

D359

A0210

A0210

VHM

VHM

HELICA

HELICA

VA

VA

R30 - IK

R30 - IK

140° 4 Facet Form C

140° 4 Facet Form C

HA

HE

Size Ref.	d ₁ (mm)	d ₁ (inch)	l ₁	l ₂	d ₂ (h6)	Max hole depth	Item #	Item #
0300	3.0		66	28	6	15	D358 0300	D359 0300
0310	3.1		66	28	6	16	D358 0310	D359 0310
0318	3.18	1/8	66	28	6	16	D358 0318	D359 0318
0320	3.2		66	28	6	16	D358 0320	D359 0320
0330	3.3		66	28	6	17	D358 0330	D359 0330
0340	3.4		66	28	6	17	D358 0340	D359 0340
0350	3.5		66	28	6	18	D358 0350	D359 0350
0357	3.57	9/64	66	28	6	18	D358 0357	D359 0357
0360	3.6		66	28	6	18	D358 0360	D359 0360
0370	3.7		66	28	6	19	D358 0370	D359 0370
0380	3.8		74	36	6	19	D358 0380	D359 0380
0390	3.9		74	36	6	20	D358 0390	D359 0390
0397	3.97	5/32	74	36	6	20	D358 0397	D359 0397
0400	4.0		74	36	6	20	D358 0400	D359 0400
0410	4.1		74	36	6	21	D358 0410	D359 0410
0420	4.2		74	36	6	21	D358 0420	D359 0420
0430	4.3		74	36	6	22	D358 0430	D359 0430
0437	4.37	11/64	74	36	6	22	D358 0437	D359 0437
0440	4.4		74	36	6	22	D358 0440	D359 0440
0450	4.5		74	36	6	23	D358 0450	D359 0450
0460	4.6		74	36	6	23	D358 0460	D359 0460
0470	4.7		74	36	6	24	D358 0470	D359 0470
0476	4.76	3/16	82	44	6	24	D358 0476	D359 0476
0480	4.8		82	44	6	24	D358 0480	D359 0480
0490	4.9		82	44	6	25	D358 0490	D359 0490
0500	5.0		82	44	6	25	D358 0500	D359 0500
0510	5.1		82	44	6	26	D358 0510	D359 0510
0516	5.16	13/64	82	44	6	26	D358 0516	D359 0516
0520	5.2		82	44	6	26	D358 0520	D359 0520
0530	5.3		82	44	6	27	D358 0530	D359 0530

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	
D358	●	●	●	●	○	○	○					○	○	●	●	●								●	●	●	●	●							●	○	●	○	●	●	●	●	●	●	●	●	●			
D359	●	●	●	●	○	○	○					○	○	●	●	●								●	●	●	●	●							●	○	●	○	●	●	●	●	●	●	●	●	●	●		
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

NOTE: HE shanks available, subject to lead time.

Drills Carbide, 12 x D, R30 UNI, IK, Black Magic XL



- Suitable for materials up to 1200N/mm²
- Strong core with internal coolant supply
- Micro geometry & surface conditioning for optimal chip control
- Pertura for maximum tool life



Forets carbure 12xD, hélice 30°, type UNI, arrosage central

- Convient aux matériaux jusqu'à 1200 N/mm², les Inox et les fontes
- Noyau renforcé et arrosage central
- Micro géométrie et traitement surface optimisé pour un bon contrôle des copeaux
- Revêtement Pertura pour une durée de vie maximum



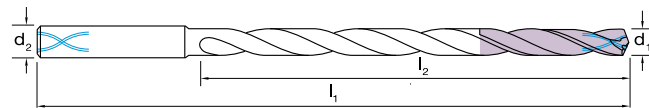
Punte Metallo Duro, 12 x D, R30 UNI, Refrigerazione Interna

- Ideale per materiali fino a 1200N/mm²
- Nocciolo rinforzato con fori di Lubrificazione interna
- Micro geometria & rivestimento tagliente ideale per un ottimo controllo truciolo
- Pertura Per massimizzare la vita utensile



Brocas de Metal Duro, 12 x D, R30 UNI, IK

- Adecuado para materiales hasta 1200N/mm²
- Núcleo Reforzado con refrigeración interior
- Micro geometría y acondicionamiento de la superficie para un control óptimo de la viruta
- Pertura para una mayor vida útil de la herramienta



Catalogue Code

D371

Product Group

A0210

Material

VHM

Surface Finish

Pertura Tip

Sutton Designation

UNI

Geometry

R30 - IK

Point Type

135° Form C

Shank Form (DIN 6535)

HA

Size Ref.	d ₁ (h7)		L ₁	L ₂	d ₂ (h6)	Max hole depth	Item #
mm	inch						
0300	3.0		90	50	6	36	D371 0300
0310	3.1		90	50	6	37	D371 0310
0320	3.2		90	50	6	38	D371 0320
0330	3.3		90	50	6	40	D371 0330
0340	3.4		90	50	6	41	D371 0340
0350	3.5		90	50	6	42	D371 0350
0360	3.6		90	50	6	43	D371 0360
0370	3.7		90	50	6	44	D371 0370
0380	3.8		102	64	6	46	D371 0380
0390	3.9		102	64	6	47	D371 0390
0400	4.0		102	64	6	48	D371 0400
0410	4.1		102	64	6	49	D371 0410
0420	4.2		102	64	6	50	D371 0420
0430	4.3		102	64	6	52	D371 0430
0440	4.4		102	64	6	53	D371 0440
0450	4.5		102	64	6	54	D371 0450
0460	4.6		102	64	6	55	D371 0460
0470	4.7		102	64	6	56	D371 0470
0480	4.8		116	78	6	58	D371 0480
0490	4.9		116	78	6	59	D371 0490
0500	5.0		116	78	6	60	D371 0500
0510	5.1		116	78	6	61	D371 0510
0520	5.2		116	78	6	62	D371 0520
0530	5.3		116	78	6	64	D371 0530
0540	5.4		116	78	6	65	D371 0540
0550	5.5		116	78	6	66	D371 0550
0560	5.6		116	78	6	67	D371 0560
0570	5.7		116	78	6	68	D371 0570

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
D371	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
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

ISO - P

Drills Carbide, 15 x D, R30 UNI, IK, Black Magic XL

sutton
BLACKMAGIC
XL



- Suitable for materials up to 1200N/mm²
- Strong core with internal coolant supply
- Micro geometry & surface conditioning for optimal chip control
- Pertura coated tip for maximum tool life



Forets carbure Extra Long arrosage central

- Convient aux matériaux jusqu'à 1200 N/mm², les Inox et les fontes
- Noyau renforcé et arrosage central
- Micro géométrie et traitement surface optimisé pour un bon contrôle des copeaux
- Revêtement Pertura pour une durée de vie maximum



Punte Metallo Duro, Foratura Profonda

- Ideale per materiali fino a 1200N/mm²
- Nocciolo rinforzato con fori di Lubrificazione interna
- Micro geometria & rivestimento tagliente ideale per un ottimo controllo truciolo
- AlCrN Per massimizzare la vita utensile

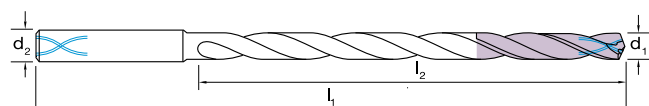


Brocas de Metal Duro, Extra Larga

- Adecuado para materiales hasta 1200N/mm²
- Núcleo Reforzado con refrigeración interior
- Micro geometría y acondicionamiento de la superficie para un control óptimo de la viruta
- Recubrimiento de punta TIP para una mayor vida útil de la herramienta



Catalogue Code	D372
Product Group	A0210
Material	VHM
Surface Finish	Pertura Tip
Application	UNI
Geometry	R30 - IK
Point Type	135° Form C
Shank Form (DIN 6535)	HA



Size Ref.	d ₁ (h7)	l ₁	l ₂	d ₂ (h6)	Max hole depth	Item #
15xD						
0300	3.0	100	55	6	45	D372 0300
0320	3.2	105	60	6	48	D372 0320
0330	3.3	105	60	6	50	D372 0330
0350	3.5	110	64	6	53	D372 0350
0400	4.0	118	73	6	60	D372 0400
0430	4.3	126	82	6	65	D372 0430
0450	4.5	126	82	6	68	D372 0450
0500	5.0	136	92	6	75	D372 0500
0510	5.1	140	95	6	77	D372 0510
0520	5.2	140	95	6	78	D372 0520
0530	5.3	140	95	6	80	D372 0530
0540	5.4	145	100	6	81	D372 0540
0550	5.5	145	100	6	83	D372 0550
0560	5.6	145	100	6	84	D372 0560
0600	6.0	155	110	6	90	D372 0600
0630	6.3	163	118	8	95	D372 0630
0650	6.5	165	120	8	98	D372 0650
0700	7.0	173	128	8	105	D372 0700
0750	7.5	184	138	8	113	D372 0750
0780	7.8	191	145	8	117	D372 0780
0800	8.0	191	145	8	120	D372 0800
0850	8.5	205	155	10	128	D372 0850
0900	9.0	215	164	10	135	D372 0900
1000	10.0	234	182	10	150	D372 1000
1100	11.0	255	200	12	165	D372 1100
1200	12.0	275	218	12	180	D372 1200

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
D372	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

P Steel

M Stainless Steel

K Cast Iron

N Non-Ferrous Metals

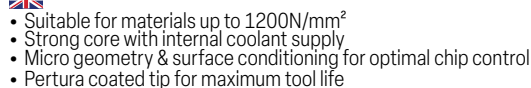
S Titanium & Super Alloys

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



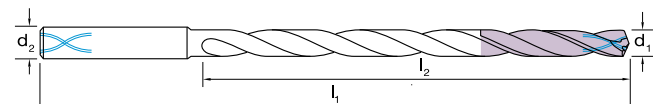
- Convient aux matériaux jusqu'à 1200 N/mm², les Inox et les fontes
- Noyau renforcé et arrosage central
- Micro géométrie et traitement surface optimisé pour un bon contrôle des copeaux
- Revêtement Pertura pour une durée de vie maximum



- Ideale per materiali fino a 1200N/mm²
- Nocciolo rinforzato con fori di Lubrificazione interna
- Micro geometria & rivestimento tagliente ideale per un ottimo controllo truciolo
- AlCrN Per massimizzare la vita utensile



- Adecuado para materiales hasta 1200N/mm²
- Núcleo Reforzado con refrigeración interior
- Micro geometría y acondicionamiento de la superficie para un control óptimo de la viruta
- Recubrimiento de punta TIP para una mayor vida útil de la herramienta



20xD	30xD
D373	D375
A0210	A0210
VHM	VHM
<i>Pertura Tip</i>	<i>Pertura Tip</i>
UNI	UNI
R30 - IK	R30 - IK
135° Form C	135° Form C
HA	HA

SO-P

[illegible]

● Optimal ○ Effective



- For Titanium based alloys
- Unique cutting geometry for highly efficient swarf ejection
- Optimised micro-finish for optimal process reliability and excellent thread quality
- Blind holes up to approx. 1.5 x d₁



Tarauds DIN Métrique, Hélice 15°, type Ti

- Recommandé pour les bases Titanes
- Géométrie de coupe unique pour une bonne évacuation copeaux
- Microfinition optimisée pour une fiabilité de processus optimale et une excellente qualité de filetage
- Trous borgnes jusqu'à 1.5 x d₁



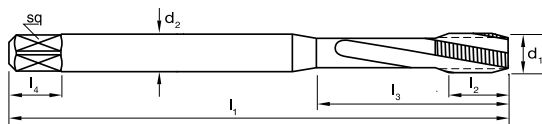
DIN Maschi metrici, Tagliente a Elica, R15 Ti

- Per leghe a base di Titanio
- Unica geometria di del tagliente per un efficiente evacuazione truciolo
- Processo di micro finitura del tagliente ottimizzata per ottenere un risultato di eccellente qualità
- Fori ciechi fino a circa 1,5 x d₁



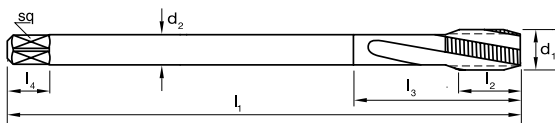
Machos DIN Métrico, Helicoidal R15, Ti

- Para aleaciones con base de titanio
- Geometría de corte única para una extracción de virutas altamente eficiente
- Optimizado para micro-acabado una confiabilidad óptima del proceso y una excelente calidad de rosca
- Agujeros ciegos hasta 1.5 x d₁



Catalogue Code	T215	T788
Product Group	D0408	D0408
Material	PM-HSS Co	PM-HSS Co
Surface Finish	TiCN	TiCN
Sutton Designation	Ti	Ti
Geometry	R15	R15
Chamfer	Form C / 3 x P	Form C / 3 x P
Limit & Nut Tolerance	6HX	MJ-4HX

Size Ref.	d ₁	Pitch	l ₁	l ₂	l ₃	d ₂	sq	l ₄	z	drill Ø	Item #	Item #
DIN 371 REINFORCED SHANK												
0300	M 3	x 0.5	56	6	18	3.5	2.7	6	3	2.5	T215 0300	•
0400	M 4	x 0.7	63	7	21	4.5	3.4	6	3	3.3	T215 0400	•
0500	M 5	x 0.8	70	8	25	6.0	4.9	8	3	4.2	T215 0500	•
0600	M 6	x 1	80	10	30	6.0	4.9	8	3	5.0	T215 0600	•
0800	M 8	x 1.25	90	12.5	35	8.0	6.2	9	3	6.8	T215 0800	•
1000	M 10	x 1.5	100	15	39	10.0	8.0	11	3	8.5	T215 1000	•



Size Ref.	d ₁	Pitch	l ₁	l ₂	l ₃	d ₂	sq	l ₄	z	drill Ø	Item #	
DIN376 REDUCED SHANK											T216	T789
1200	M12	x1.75	110	17.5	-	9.0	7.0	10	3	10.2	T216 1200	•
1400	M14	x2	110	20	-	11.0	9.0	12	3	12.0	T216 1400	•
1600	M16	x2	110	20	-	12.0	9.0	12	3	14.0	T216 1600	•
1800	M18	x2.5	125	25	-	14.0	11.0	14	4	15.5	T216 1800	•
2000	M20	x2.5	140	25	-	16.0	12.0	15	4	17.5	T216 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	
T215 / T216													○			○																							●	●	○	●	●							
T788 / T789													○			○																								●	●	○	●	○						

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

● Optimal ○ Effective



- For Titanium based alloys
- Unique cutting geometry for highly efficient swarf ejection
- Optimised micro-finish for optimal process reliability and excellent thread quality
- Blind holes up to approx. 1.5 x d₁, Through holes



Tarauds DIN Métrique, Hélice à gauche 12°, type Ti

- Recommandé pour les bases Titanes
- Géométrie de coupe unique pour une bonne évacuation copeaux
- Microfinition optimisée pour une fiabilité de processus optimale et une excellente qualité de filetage
- Trous débouchants jusqu'à 1.5 x d₁



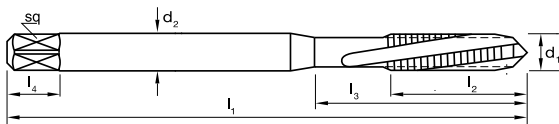
DIN Maschi metrici, Tagliente a Elica, L12 Ti

- Per leghe a base di Titanio
- Unica geometria di del tagliente per un efficiente evacuazione truciolo
- Processo di micro finitura del tagliente ottimizzata per ottenere un risultato di eccellente qualità
- Fori ciechi fino a circa 1,5 x d₁



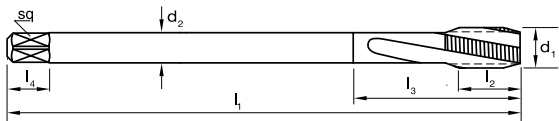
Machos DIN Métrico, Helicoidal, L12 Ti

- Para aleaciones con base de titanio
- Geometría de corte única para una extracción de virutas altamente eficiente
- Optimizado para micro-acabado una confiabilidad óptima del proceso y una excelente calidad de rosca
- Agujeros ciegos hasta 1.5 x d₁



Catalogue Code	T152	T784
Product Group	D0408	D0408
Material	PM-HSS Co	PM-HSS Co
Surface Finish	TiCN	TiCN
Sutton Designation	Ti	Ti
Geometry	L12	L12
Chamfer	Form B / 4.5 x P	Form B / 4.5 x P
Limit & Nut Tolerance	6HX	MJ-4HX

Size Ref.	d ₁	Pitch	l ₁	l ₂	l ₃	d ₂	sq	l ₄	z	drill Ø	Item #	Item #
DIN 371 REINFORCED SHANK												
0300	M 3	x 0.5	56	11	18	3.5	2.7	6	3	2.5	T152 0300	•
0400	M 4	x 0.7	63	13	21	4.5	3.4	6	3	3.3	T152 0400	•
0500	M 5	x 0.8	70	16	25	6.0	4.9	8	3	4.2	T152 0500	•
0600	M 6	x 1	80	19	30	6.0	4.9	8	3	5.0	T152 0600	•
0800	M 8	x 1.25	90	22	35	8.0	6.2	9	3	6.8	T152 0800	•
1000	M 10	x 1.5	100	24	39	10.0	8.0	11	3	8.5	T152 1000	•



Size Ref.	d ₁	Pitch	l ₁	l ₂	l ₃	d ₂	sq	l ₄	z	drill Ø	Item #	Item #
DIN376 REDUCED SHANK												
1200	M 12	x 1.75	110	29	-	9.0	7.0	10	3	10.2	T153 1200	•
1400	M 14	x 2	110	30	-	11.0	9.0	12	3	12.0	T153 1400	•
1600	M 16	x 2	110	32	-	12.0	9.0	12	3	14.0	T153 1600	•
1800	M 18	x 2.5	125	34	-	14.0	11.0	14	4	15.5	T153 1800	•
2000	M 20	x 2.5	140	34	-	16.0	12.0	15	4	17.5	T153 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																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
T152 / T153													○			○																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
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P Steel	M Stainless Steel	K Cast Iron	N Non-Ferrous Metals	S Titanium & Super Alloys	H Hard Materials																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									

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

● Optimal ○ Effective



- For Nickel alloys / age-hardened super alloys >1150N/mm²
- Reinforced cutting geometry
- Blind or through holes
- Depths up to approx. 1.5 x d₁



Tarauds DIN Métrique, Hélice 10°, type Ni

- Recommandé pour les bases Nickel >1150N/mm²
- Géométrie de coupe renforcée
- Trous borgnes et débouchants
- Profondeur jusqu'à 1.5 x d₁



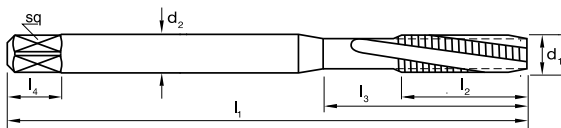
DIN Maschi metrici, Tagliente a Elica, R10 Ni

- Ideale per leghe Nickel / Super leghe invecchiate >1150N/mm²
- Geometria del tagliente rinforzata
- Fori ciechi & passanti
- Profondità fino a circa 1,5 x d₁



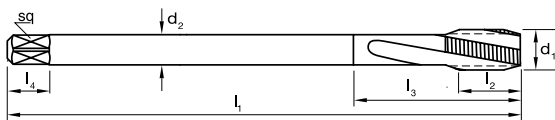
Machos DIN Métrico, Helicoidal R10, Ni

- Para aleaciones de níquel y súper aleaciones endurecidas >1150N/mm²
- Geometría de corte reforzada
- Agujeros ciegos o pasantes
- Profundidades hasta 1.5 x d₁



Catalogue Code	T217	T792
Product Group	D0408	D0408
Material	PM-HSS Co	PM-HSS Co
Surface Finish	TiCN	TiCN
Sutton Designation	Ni	Ni
Geometry	R10	R10
Chamfer	Form C / 3 x P	Form C / 3 x P
Limit & Nut Tolerance	6HX	MJ-4HX

Size Ref.	d ₁	Pitch	l ₁	l ₂	l ₃	d ₂	sq	l ₄	z	drill Ø	Item #	Item #
DIN 371 REINFORCED SHANK												
0300	M 3	x 0.5	56	11	18	3.5	2.7	6	3	2.5	T217 0300	•
0400	M 4	x 0.7	63	13	21	4.5	3.4	6	3	3.3	T217 0400	•
0500	M 5	x 0.8	70	16	25	6.0	4.9	8	3	4.2	T217 0500	•
0600	M 6	x 1	80	19	30	6.0	4.9	8	3	5.0	T217 0600	•
0800	M 8	x 1.25	90	22	35	8.0	6.2	9	3	6.8	T217 0800	•
1000	M 10	x 1.5	100	24	39	10.0	8.0	11	3	8.5	T217 1000	•



Size Ref.	d ₁	Pitch	l ₁	l ₂	l ₃	d ₂	sq	l ₄	z	drill Ø	Item #	Item #
DIN376 REDUCED SHANK												
1200	M 12	x 1.75	110	29	-	9.0	7.0	10	3	10.2	T218 1200	•
1400	M 14	x 2	110	30	-	11.0	9.0	12	3	12.0	T218 1400	•
1600	M 16	x 2	110	32	-	12.0	9.0	12	3	14.0	T218 1600	•
2000	M 20	x 2.5	140	34	-	16.0	12.0	15	4	17.5	T218 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	
T217 / T218																																																		
T792 / T793																																																		

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

● Optimal ○ Effective

DIN Taps Metric, Spiral Point (Gun), NH+



- Suitable for harder materials up to 42 HRC
- Through holes
- Depths up to $3 \times d_1$



Tarauds DiN Métriques, Pointe Spirale, NH+

- recommandé pour les aciers jusqu'à 42HRC
- Trous débouchants
- Profondeur jusqu'à $3 \times d_1$



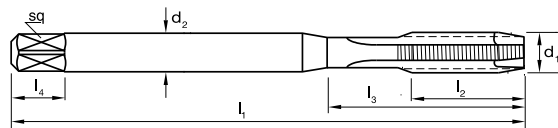
Maschi DIN metrici, Punta Elicoidale, NH+

- Adatto per materiali più duri fino a 42 HRC
- Fori passanti
- Profondità fino a $3 \times d_1$

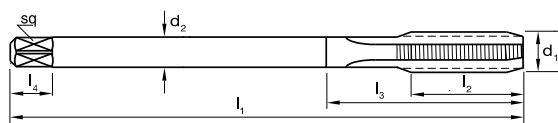


Machos DIN Métrico, Entrada Corregida, Pasante NH+

- Adecuado para aceros generales hasta 42 HRC
- Agujeros pasantes
- Profundidades hasta $3 \times d_1$



Size Ref.	d ₁	Pitch	l ₁	l ₂	l ₃	d ₂	sq	l ₄	z	drill Ø	Item #
DIN 371 REINFORCED SHANK											
0300	M 3	x 0.5	56	11	18	3.5	2.7	6	3	2.5	T840 0300
0400	M 4	x 0.7	63	13	21	4.5	3.4	6	3	3.3	T840 0400
0500	M 5	x 0.8	70	16	25	6.0	4.9	8	3	4.2	T840 0500
0600	M 6	x 1	80	19	30	6.0	4.9	8	3	5.0	T840 0600
0800	M 8	x 1.25	90	22	35	8.0	6.2	9	3	6.8	T840 0800
1000	M 10	x 1.5	100	24	39	10.0	8.0	11	3	8.5	T840 1000



Size Ref.	d ₁	Pitch	l ₁	l ₂	l ₃	d ₂	sq	l ₄	z	drill Ø	Item #
DIN 376 REDUCED SHANK											
1200	M 12	x 1.75	110	28	-	9.0	7.0	10	3	10.2	T841 1200
1400	M 14	x 2	110	30	-	11.0	9.0	12	3	12.0	•
1600	M 16	x 2	110	32	-	12.0	9.0	12	4	14.0	•
1800	M 18	x 2.5	125	34	-	14.0	11.0	14	4	15.5	•
2000	M 20	x 2.5	140	34	-	16.0	12.0	15	4	17.5	•

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
T840	●	●	●	●	●	●	●	●	●	●	●	●	●	○	●	○	○	○	○	○	○	○	○	●	●	○	○	○	○	○												○							
T841	●	●	●	●	●	●	●	●	●	●	●	●	●	○	●	○	○	○	○	○	○	○	○	●	●	○	○	○	○	○													○						

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

• Optimal ○ Effective

DIN Taps Metric, Spiral Flute, R45 NH+



- Suitable for harder materials up to 42 HRC
- Blind holes
- Depths up to 3 x d₁



Tarauds DiN Métriques, Hélicoïdal, 45° NH+

- recommandé pour les aciers jusqu'à 42HRC
- Trous borgnes
- Profondeur jusqu'à 3xD



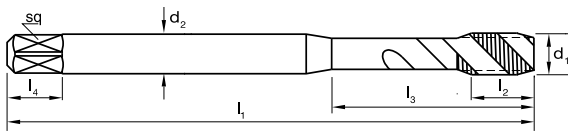
Maschi DIN metrici, Tagliente a Elica, R45 NH+

- Adatto per materiali più duri fino a 42 HRC
- Fori ciechi
- Profondità fino a 3 x d₁



Machos DIN Métrico, Ranura Helicoidal, Ciego, R45 NH+

- Adecuado para aceros generales hasta 42 HRC
- Agujeros ciegos
- Profundidades hasta 3 x d₁



	T842
Product Group	D0408
Material	PM-HSS Co
Surface Finish	TiCN
Sutton Designation	NH +
Geometry	R45
Chamfer	Form C / 2.5 x P
Limit & Nut Tolerance	6HX

Size Ref.	d ₁	Pitch	l ₁	l ₂	l ₃	d ₂	sq	l ₄	z	drill Ø	Item #
DIN 371 REINFORCED SHANK											
0300	M 3	x 0.5	56	5	18	3.5	2.7	6	3	2.5	T842 0300
0400	M 4	x 0.7	63	7	21	4.5	3.4	6	3	3.3	T842 0400
0500	M 5	x 0.8	70	8	25	6.0	4.9	8	3	4.2	T842 0500
0600	M 6	x 1	80	10	30	6.0	4.9	8	3	5.0	T842 0600
0800	M 8	x 1.25	90	13	35	8.0	6.2	9	3	6.8	T842 0800
1000	M 10	x 1.5	100	15	39	10.0	8.0	11	3	8.5	T842 1000



Size Ref.	d ₁	Pitch	l ₁	l ₂	l ₃	d ₂	sq	l ₄	z	drill Ø	Item #
DIN 376 REDUCED SHANK											T843
1200	M 12	x 1.75	110	17.5	-	9.0	7.0	10	3	10.2	T843 1200
1400	M 14	x 2	110	20	-	11.0	9.0	12	3	12.0	T843 1400
1600	M 16	x 2	110	20	-	12.0	9.0	12	4	14.0	T843 1600
1800	M 18	x 2.5	125	25	-	14.0	11.0	14	4	15.5	T843 1800
2000	M 20	x 2.5	140	25	-	16.0	12.0	15	4	17.5	T843 2000

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	37.1	37.2	37.3	37.4	37.5	38.1	38.2	39.1	39.2	40	41		
T842	●	●	●	●	●	●	●	●	●	●	●	●	○	●	○	○	○	○	○	○	○	●	●	●	○	○	○															○							
T843	●	●	●	●	●	●	●	●	●	●	●	●	○	●	○	○	○	○	○	○	○	○	○	○	○	○	○																○						
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

DIN Taps Metric Fine, Spiral Point (Gun), NH+



- Suitable for harder materials up to 42 HRC
- Through holes
- Depths up to $3 \times d_1$



Tarauds DiN Métriques Fin, Gun, NH+

- recommandé pour les aciers jusqu'à 42HRC
- Trous débouchants
- Profondeur jusqu'à $3 \times D$



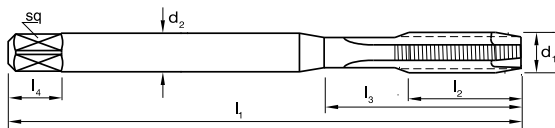
Maschi DIN metrici fini, Gun, NH+

- Adatto per materiali più duri fino a 42 HRC
- Fori passanti
- Profondità fino a $3 \times d_1$



Machos DIN Métrico Fino, Entrada Corregida, Pasante, NH+

- Adecuado para aceros generales hasta 42 HRC
- Agujeros pasantes
- Profundidades hasta $3 \times d_1$



	T844
Product Group	D0408
Material	PM-HSS Co
Surface Finish	TiCN
Sutton Designation	NH+
Geometry	Special Relief
Chamfer	Form B / 4.5 x P
Limit & Nut Tolerance	6HX

Size Ref.	d ₁	Pitch	l ₁	l ₂	l ₃	d ₂	sq	l ₄	z	drill Ø	Item #
0604	MF 6	x0.75	80	14	-	4.5	3.4	6	3	5.3	•
0805	MF 8	x1	90	22	-	6.0	4.9	8	3	7.0	•
1004	MF 10	x0.75	90	20	-	7.0	5.5	8	3	9.3	•
1005	MF 10	x1	90	20	-	7.0	5.5	8	3	9.0	•
1006	MF 10	x1.25	100	24	-	7.0	5.5	8	3	8.8	•
1205	MF 12	x1	100	22	-	9.0	7.0	10	3	11.0	•
1206	MF 12	x1.25	100	22	-	9.0	7.0	10	3	10.8	•
1207	MF 12	x1.5	100	22	-	9.0	7.0	10	3	10.5	•
1405	MF 14	x1	100	22	-	11.0	9.0	12	3	13.0	•
1406	MF 14	x1.25	100	22	-	11.0	9.0	12	3	12.8	•
1407	MF 14	x1.5	100	22	-	11.0	9.0	12	3	12.5	•
1605	MF 16	x1	100	22	-	12.0	9.0	12	3	15.0	•
1607	MF 16	x1.5	100	22	-	12.0	9.0	12	3	14.5	•
1805	MF 18	x1	110	25	-	14.0	11.0	14	4	17.0	•
1807	MF 18	x1.5	110	25	-	14.0	11.0	14	4	16.5	•
2005	MF 20	x1	125	25	-	16.0	12.0	15	4	19.0	•
2007	MF 20	x1.5	125	25	-	16.0	12.0	15	4	18.5	•

ISO - M

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
T844	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•

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

• Optimal ○ Effective

DIN Taps Metric Fine, Spiral Flute, R45 NH+



- Suitable for harder materials up to 42 HRC
- Blind holes
- Depths up to 3 x d₁



Tarauds DiN Métriques Fin, Hélicoïdal, 45° NH+

- Recommandé pour les aciers jusqu'à 42HRC
- Trous borgnes
- Profondeur jusqu'à 3xD



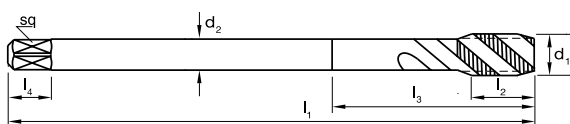
Maschi DIN metrici fini, tagliente a elica, R45 NH+

- Adatto per materiali più duri fino a 42 HRC
- Fori ciechi
- Profondità fino a 3 x d₁



Machos DIN Métrico Fino, Ranura Helicoidal, Ciego, R45 NH+

- Adecuado para aceros generales hasta 42 HRC
- Agujeros ciegos
- Profundidades hasta 3 x d₁



Product Group	T845
Material	D0408
Surface Finish	PM-HSS Co
Sutton Designation	TiCN
Geometry	NH +
Chamfer	R45
Limit & Nut Tolerance	Form C / 2.5 x P 6HX

Size Ref.	d ₁	Pitch	l ₁	l ₂	l ₃	d ₂	sq	l ₄	z	drill Ø	Item #
0604	MF 6	x0.75	80	10	-	4.5	3.4	6	3	5.3	T845 0604
0805	MF 8	x1	90	12	-	6.0	4.9	8	3	7.0	T845 0805
1004	MF 10	x0.75	90	10	-	7.0	5.5	8	3	9.3	T845 1004
1005	MF 10	x1	90	12	-	7.0	5.5	8	3	9.0	T845 1005
1006	MF 10	x1.25	100	15	-	7.0	5.5	8	3	8.8	T845 1006
1205	MF 12	x1	100	14	-	9.0	7.0	10	3	11.0	T845 1205
1206	MF 12	x1.25	100	14	-	9.0	7.0	10	3	10.8	T845 1206
1207	MF 12	x1.5	100	14	-	9.0	7.0	10	3	10.5	T845 1207
1405	MF 14	x1	100	16	-	11.0	9.0	12	3	13.0	T845 1405
1406	MF 14	x1.25	100	16	-	11.0	9.0	12	3	12.8	T845 1406
1407	MF 14	x1.5	100	16	-	11.0	9.0	12	3	12.5	T845 1407
1605	MF 16	x1	100	16	-	12.0	9.0	12	3	15.0	T845 1605
1607	MF 16	x1.5	100	16	-	12.0	9.0	12	3	14.5	T845 1607
1805	MF 18	x1	110	18	-	14.0	11.0	14	4	17.0	T845 1805
1807	MF 18	x1.5	110	18	-	14.0	11.0	14	4	16.5	T845 1807
2005	MF 20	x1	125	18	-	16.0	12.0	15	4	19.0	T845 2005
2007	MF 20	x1.5	125	18	-	16.0	12.0	15	4	18.5	T845 2007

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
T845	●	●	●	●	●	●	●	●	●	●	●	●	○	○	●	○	○	○	○	○	○	○	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
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

DIN Taps UNC, Spiral Point (Gun), NH+



- Suitable for harder materials up to 42 HRC
- Through holes
- Depths up to $3 \times d_1$



Tarauds DiN UNC, Gun, NH+

- recommandé pour les aciers jusqu'à 42HRC
- Trous débouchants
- Profondeur jusqu'à $3 \times d_1$



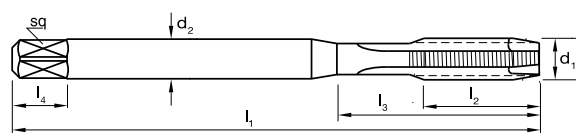
Maschi DIN UNC, Gun, NH+

- Adatto per materiali più duri fino a 42 HRC
- Fori passanti
- Profondità fino a $3 \times d_1$



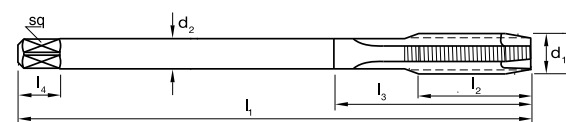
Machos DIN UNC, Entrada Corregida, Pasante, NH+

- Adecuado para aceros generales hasta 42 HRC
- Agujeros pasantes
- Profundidades hasta $3 \times d_1$



Catalogue Code	T846
Product Group	D0408
Material	PM-HSS Co
Surface Finish	TICN
Sutton Designation	NH+
Geometry	Special Relief
Chamfer	Form B / 4.5 x P
Limit & Nut Tolerance	2B

Size Ref.	d ₁	Pitch	l ₁	l ₂	l ₃	d ₂	sq	l ₄	z	drill Ø	Item #
DIN 2184-1 UNC REINFORCED SHANK											
0218	# 2	56	45	9	12	2.8	2.1	5	3	1.85	T846 0218
0284	# 4	40	56	11	18	3.5	2.7	6	3	2.35	T846 0284
0351	# 6	32	56	12	20	4	3	6	3	2.85	T846 0351
0417	# 8	32	63	13	21	4.5	3.4	6	3	3.50	T846 0417
0483	# 10	24	70	16	25	6	4.9	8	3	3.90	T846 0483
0635	1/4	20	80	19	30	7	5.5	8	3	5.10	T846 0635



Size Ref.	d ₁	TPI	l ₁	l ₂	l ₃	d ₂	sq	l ₄	z	drill Ø	Item #
DIN 2184-1 UNC REDUCED SHANK											
0794	5/16	18	90	22	-	6	4.9	8	3	6.60	T846 0794
0953	3/8	16	100	24	-	7	5.5	8	3	8.00	T846 0953
1270	1/2	13	110	28	-	9	7	10	4	10.80	T846 1270
1588	5/8	11	110	32	-	12	9	12	4	13.50	T846 1588
1905	3/4	10	125	34	-	14	11	14	4	16.50	T846 1905
2540	1	8	160	38	-	18	14.5	17	4	22.2	T846 2540

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																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
T846	●	●	●	●	●	●	●	●	●	●	●	●	○	●	○	○	○	○	○	○	○	○	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
P		Steel		M		Stainless Steel		K		Cast Iron		N		Non-Ferrous Metals		S		Titanium & Super Alloys		H		Hard Materials																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													

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

● Optimal ○ Effective



- For Titanium based alloys
- Unique cutting geometry for highly efficient swarf ejection
- Optimised micro-finish for optimal process reliability and excellent thread quality
- Blind holes up to approx. $1.5 \times d_1$



Tarauds DIN UNJ, Hélice 15°, type Ti

- Recommandé pour les bases Titanes
- Géométrie de coupe unique pour une bonne évacuation copeaux
- Microfinition optimisée pour une fiabilité de processus optimale et une excellente qualité de filetage
- Trous borgnes jusqu'à $1.5 \times d_1$



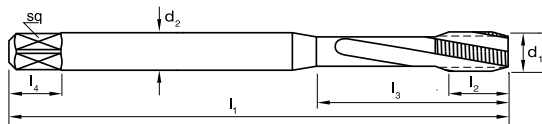
DIN Maschi UNJ, Tagliente a Elica, R15 Ti

- Per leghe a base di Titanio
- Unica geometria di del tagliente per un efficiente evacuazione truciolo
- Processo di micro finitura del tagliente ottimizzata per ottenere un risultato di eccellente qualità
- Fori ciechi fino a circa $1,5 \times d_1$



Machos DIN UNJ, Helicoidal R15, Ti

- Para aleaciones con base de titanio
- Geometría de corte única para una extracción de virutas altamente eficiente
- Optimizado para micro-acabado una confiabilidad óptima del proceso y una excelente calidad de rosca
- Agujeros ciegos hasta $1.5 \times d_1$



Catalogue Code	T790
Product Group	D0408
Material	PM-HSS Co
Surface Finish	TiCN
Sutton Designation	Ti
Geometry	R15
Chamfer	Form C / 3 x P
Limit & Nut Tolerance	3BX

Size Ref.	d ₁	TPI	l ₁	l ₂	l ₃	d ₂	sq	l ₄	z	drill Ø	Item #
UNJC											
0284	#4	40	56	5	18	3.5	2.7	6	2	2.3	T790 0284
0351	#6	32	56	6	19	4.0	3.0	6	3	2.8	T790 0351
0417	#8	32	63	7	19	4.5	3.4	6	3	3.5	T790 0417
0483	#10	24	70	8	20	6.0	4.9	8	3	3.9	T790 0483
0635	1/4	20	80	10	30	7.0	5.5	8	3	5.3	T790 0635
0794	5/16	18	90	13	34	8.0	6.2	9	3	6.7	T790 0794
0953	3/8	16	100	15	35	10.0	7.0	10	3	8.1	T790 0953
1270	1/2	13	110	18	-	9.0	7.0	10	4	10.9	T790 1270
UNJF											
0635	1/4	28	80	10	30	7.0	5.5	8	3	5.6	T791 T791 0635
0794	5/16	24	90	13	34	8.0	6.2	9	3	7.0	T791 0794
0953	3/8	24	100	15	35	10.0	7.0	10	3	8.6	T791 0953
1270	1/2	13	110	18	-	9.0	7.0	10	4	11.6	T791 1270

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																						
T790													○			○																							●	●	●	●	○																												
T791													○			○																								●	●	●	●	○																											
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



- For Titanium based alloys
- Unique cutting geometry for highly efficient swarf ejection
- Optimised micro-finish for optimal process reliability and excellent thread quality
- Blind holes up to approx. 1.5 x d TROUGH



Tarauds DIN UNJ, Hélice à gauche 12°, type Ti

- Recommandé pour les bases Titanes
- Géométrie de coupe unique pour une bonne évacuation copeaux
- Microfinition optimisée pour une fiabilité de processus optimale et une excellente qualité de filetage
- Trous débouchants jusqu'à 1.5 x d₁



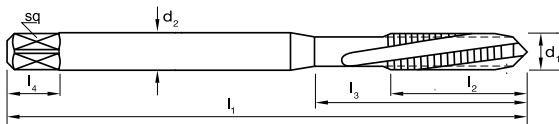
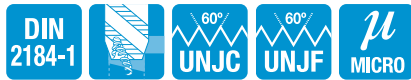
DIN Maschi UNJ, Tagliente a Elica, L12 Ti

- Per leghe a base di Titanio
- Unica geometria di del tagliente per un efficiente evacuazione truciolo
- Processo di micro finitura del tagliente ottimizzata per ottenere un risultato di eccellente qualità
- Fori ciechi fino a circa 1,5 x d₁



Machos DIN UNJ, Helicoidal, L12 Ti

- Para aleaciones con base de titanio
- Geometría de corte única para una extracción de virutas altamente eficiente
- Optimizado para micro-acabado una confiabilidad óptima del proceso y una excelente calidad de rosca
- Agujeros ciegos hasta 1.5 x d₁



Catalogue Code	T786
Product Group	D0408
Material	PM-HSS Co
Surface Finish	TiCN
Sutton Designation	Ti
Geometry	L12
Chamfer	Form B / 4.5 x P
Limit & Nut Tolerance	3BX

Size Ref.	d ₁	TPI	l ₁	l ₂	l ₃	d ₂	sq	l ₄	z	drill Ø	Item #
UNJC											
0284	#4	40	56	11	18	3.5	2.7	6	2	2.3	T786 0284
0351	#6	32	56	13	19	4.0	3.0	6	3	2.8	T786 0351
0417	#8	32	63	13	19	4.5	3.4	6	3	3.5	T786 0417
0483	#10	24	70	16	20	6.0	4.9	8	3	3.9	T786 0483
0635	1/4	20	80	19	30	7.0	5.5	8	3	5.3	T786 0635
0794	5/16	18	90	22	34	8.0	6.2	9	3	6.7	T786 0794
0953	3/8	16	100	22	35	10.0	7.0	10	3	8.1	T786 0953
1270	1/2	13	110	28	-	9.0	7.0	10	3	10.9	T786 1270
1588	5/8	11	110	32	-	12.0	9.0	12	3	13.8	T786 1588
1905	3/4	10	125	34	-	14.0	11.0	14	4	16.7	T786 1905
2540	1	8	160	38	-	22.0	18.0	21	4	22.5	T786 2540

UNJF											T787
0483	#10	32	70	16	20	6	4.9	8	3	4.2	T787 0483
0635	1/4	28	80	19	30	7	5.5	8	3	5.6	T787 0635
0794	5/16	24	90	22	34	8	6.2	9	3	7.0	T787 0794
0953	3/8	24	100	22	35	10	7	10	3	8.6	T787 0953
1270	1/2	20	110	28	-	9	7	10	3	11.6	T787 1270
1588	5/8	18	110	32	-	12	9	12	3	14.6	T787 1588
1905	3/4	16	125	34	-	14	11	14	4	17.6	T787 1905
2540	1	12	160	38	-	22	18	21	4	23.5	T787 2540

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	
T786													○			○																																		
T787													○			○																																		

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

● Optimal ○ Effective

- For Nickel alloys / age-hardened super alloys $>1150\text{M/mm}^2$
- Reinforced cutting geometry
- Blind or through holes
- Depths up to approx. $1.5 \times d_1$



Tarauds DIN UNJ, Hélice 10°, type Ni

- Recommandé pour les bases Nickel $>1150\text{N/mm}^2$
- Géométrie de coupe renforcée
- Trous borgnes et débouchants
- Profondeur jusqu'à $1.5 \times d_1$



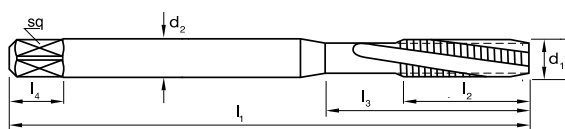
DIN Maschi UNJ, Tagliente a Elica, R10 Ni

- Ideale per leghe Nickel / Super leghe invecchiate $>1150/\text{mm}^2$
- Geometria del tagliente rinforzata
- Fori ciechi & passanti
- Profondità fino a circa $1,5 \times d_1$



Machos DIN UNJ, Helicoidal R10, Ni

- Para aleaciones de níquel y súper aleaciones endurecidas $> 1150\text{N/mm}^2$
- Geometría de corte reforzada
- Agujeros ciegos o pasantes
- Profundidades hasta $1.5 \times d_1$



Catalogue Code	T794
Product Group	D0408
Material	PM-HSS Co
Surface Finish	TiCN
Sutton Designation	Ni
Geometry	R10
Chamfer	Form C / 3 x P
Limit & Nut Tolerance	3BX

Size Ref.	d ₁	TPI	l ₁	l ₂	l ₃	d ₂	sq	l ₄	z	drill Ø [†]	Limit & Nat. Tolerance	SDS
												Item #
UNJC												
0284	#4	40	56	11	-	3.5	2.7	6	2	2.3		T794 0284
0351	#6	32	56	13	-	4.0	3.0	6	3	2.8		T794 0351
0417	#8	32	63	13	-	4.5	3.4	6	3	3.5		T794 0417
0483	#10	24	70	16	-	6.0	4.9	8	3	3.9		T794 0483
0635	1/4	20	80	19	-	7.0	5.5	8	3	5.3		T794 0635
0794	5/16	18	90	22	-	8.0	6.2	9	3	6.7		T794 0794
0953	3/8	16	100	22	-	10.0	7.0	10	3	8.1		T794 0953
1270	1/2	13	110	28	-	9.0	7.0	10	3	10.9		T794 1270

	UNJF										T795
0483	#10	32	70	16	-	6	4.9	8	3	4.2	T795 0483
0635	1/4	28	80	19	-	7	5.5	8	3	5.6	T795 0635
0794	5/16	24	90	22	-	8	6.2	9	3	7.0	T795 0794
0953	3/8	24	100	22	-	10	7	10	3	8.6	T795 0953
1270	1/2	20	110	28	-	9	7	10	3	11.6	T795 1270
1588	5/8	18	110	32	-	12	9	12	3	14.6	T795 1588
1905	3/4	16	125	34	-	14	11	14	4	17.6	T795 1905
2540	1	12	160	38	-	22	18	21	4	23.5	T795 2540

[illegible]

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

● Optimal ○ Effective



- Screw thread insert (STI)
- For soft materials & stainless steels
- Rigid tapping only



Tarauds DIN UNJC, Série EG, Hélicoïdal, R45°

- Pour inserts filetés (STI)
- Pour matériaux tendres et aciers inoxydables
- Taraudage rigide uniquement



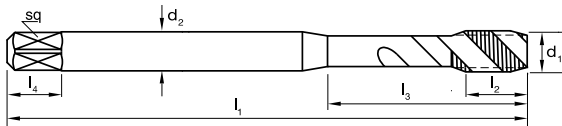
Maschi DIN UNJC, Serie EG, Tagliente a Elica, R45

- Maschio per Helicoil (STI)
- Per materiali morbidi e acciai inossidabili
- Solo maschiatura rigida



Machos DIN UNJC, Serie EG, Ranura Helicoidal, R45

- Inserto rosca de tornillo (STI)
- Para materiales blandos y aceros inoxidable
- Solo roscado rígido



Catalogue Code	T854
Product Group	D0408
Material	PM-HSSE V3
Surface Finish	TiCN
Sutton Designation	UNI
Geometry	R45
Chamfer	Form C / 3 x P
Limit & Nut Tolerance	3B

Size Ref.	d ₁	TPI	l ₁	l ₂	l ₃	d ₂	sq	l ₄	z	drill Ø [†]	Item #
EG-UNJC (NASM 33537)											
0284	#4	40	63	7	21	4.50	3.4	6	3	3.05	T854 0284
0351	#6	32	70	8	25	6.00	4.9	6	3	3.8	T854 0351
0417	#8	32	80	10	30	6.00	4.9	8	3	4.4	T854 0417
0483	#10	24	80	10	30	7.00	5.5	8	3	5.2	T854 0483
0635	1/4	20	90	13	34	8.00	6.2	9	3	6.15	T854 0635
0794	5/16	18	100	15	39	10.00	8	11	3	8.4	T854 0794
0953	3/8	16	100	15	-	9.00	7	10	3	10.1	T854 0953
1270	1/2	13	110	20	-	12.00	9	12	3	13.1	T854 1270
EG-UNJF (NASM 33537)											
0351	#6	40	70	8	25	6.00	4.9	6	3	3.75	T857 T857 0351
0417	#8	36	80	10	30	6.00	4.9	8	3	4.4	T857 0417
0483	#10	32	80	10	30	6.00	4.9	8	3	5.1	T857 0483
0635	1/4	28	90	13	34	8.00	6.2	9	3	6.65	T857 0635
0794	5/16	24	100	15	39	10.00	8	11	3	8.3	T857 0794
0953	3/8	24	100	15	-	9.00	7	10	3	9.9	T857 0953

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							
T854																																																								
T857																																																								

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 & MOQ.

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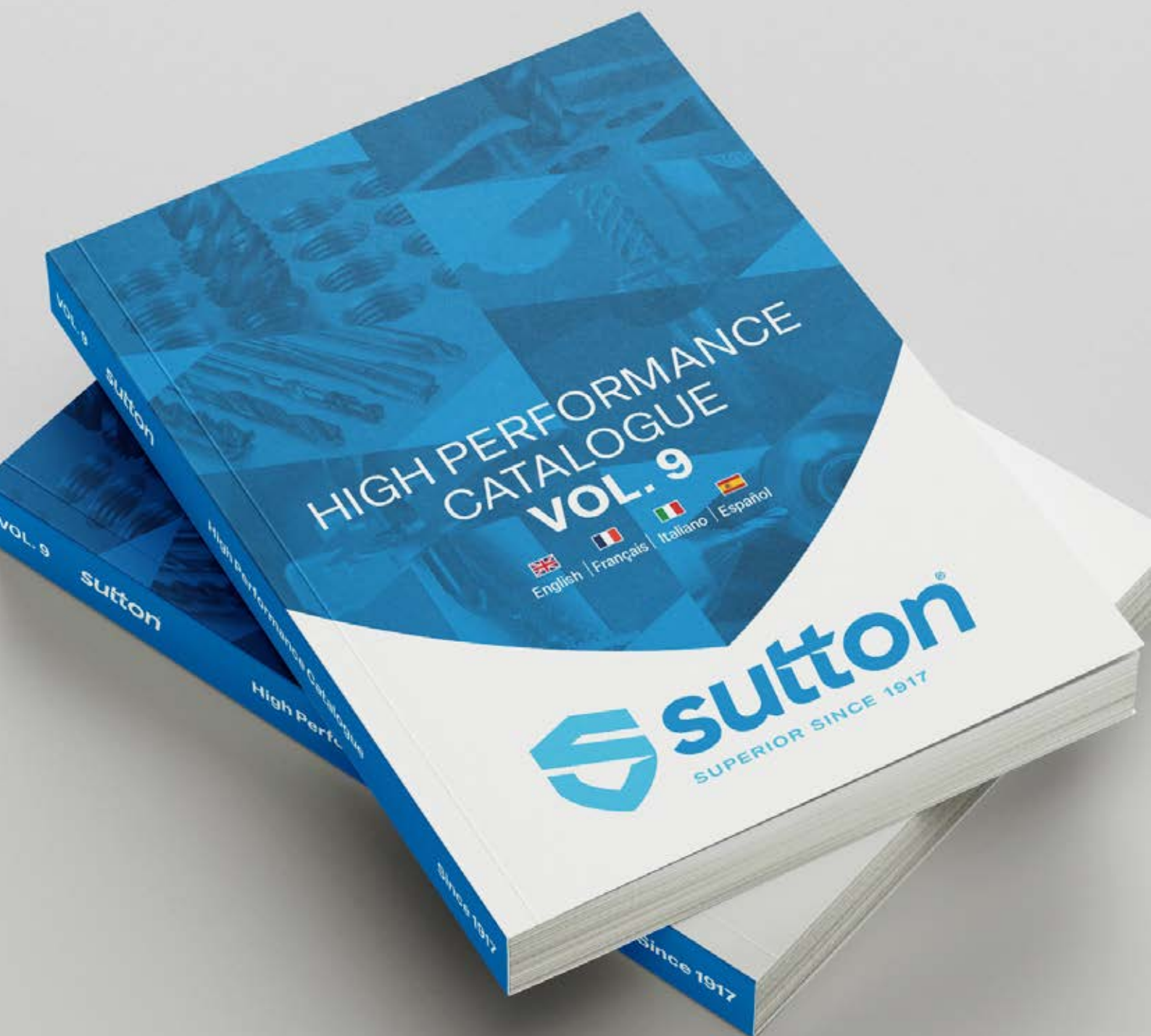


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