

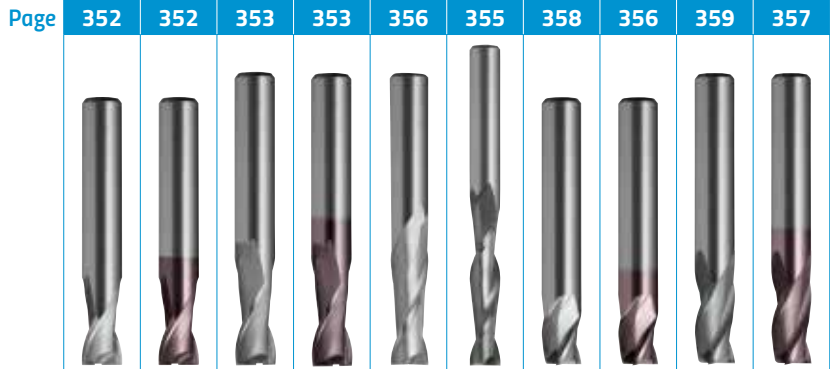


***sutton**tools*

CARBIDE ENDMILLS

- High performance solutions for slotting, finishing, roughing and profiling
 - Micro and ultra fine grain type carbides
- General purpose and application specific geometries

ISO	VDI	Material Group	Sutton	Page
P	A	Steel	N	352
M	R	Stainless Steel	VA	352
K	F	Cast Iron	GG	353
N	N	Non-Ferrous Metals, Aluminiums & Coppers	Al W	353
S	S	Titaniums & Super Alloys	Ti Ni	356
H	H	Hard Materials (≥ 45 HRC)	H	355



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

Material Group	Page	Slotting	Finishing	Universal	Roughing	Profiling	Material	Surface Finish	Sutton Designation	Standard	Shank Tolerance
P	352	●	●				VHM	Br	N	DIN 6527K	h6
P	352	●	●				VHM	TiAlN	N	-	h6
P	353	●	●				VHM	Br	N	-	h6
P	353	●	●				VHM	TiAlN	N	-	h6
P	356	●	●				VHM	Br	N	-	h6
P	355	●	●				VHM	Br	N	DIN 6527K	h6
P	358	●	●				VHM	TiAlN	N	DIN 6527K	h6
P	356	●	●				VHM	Br	N	DIN 6527L	h6
P	359	●	●				VHM	Br	N	DIN 6527L	h6
P	357	●	●				VHM	TiAlN	N	DIN 6527L	h6

ISO	VDI ³³²³	Material	Condition	HB	N/mm ²	P	M	K	N	S	H
P	1	Steel - Non-alloy, cast & free cutting	~ 0.15 %C	A	125	440	●	●	●	●	●
	2		~ 0.45 %C	A	190	640	●	●	●	●	●
	3		~ 0.75 %C	QT	250	840	●	●	●	○	●
	4			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		250	840	○	●	○	○	○
	14.3		Precipitation Hardening		250	840	○	●	○	○	○
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				860 MPa		○	○		○	○
	37.2		Alpha / Beta alloys	A	960 MPa		○	○		○	○
37.3	AH			1170 MPa		○	○		○	○	
37.4	A			830 MPa		○	○		○	○	
37.5		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							

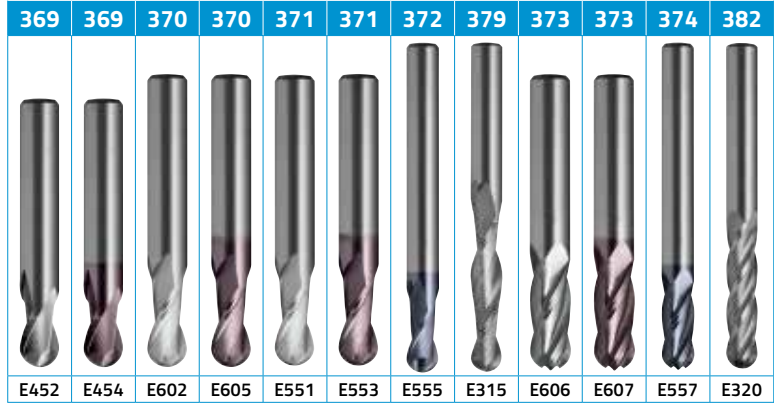
Condition: A (Annealed), AH (Age Hardened), C (Cast), HT (Hardened & Tempered), QT (Quenched & Tempered)

358	358	361	359	362	360	363	361	362	362	363	367	367	368	366	367	368	
E610	E611	E517	E519	E521	E523	E525	E527	E601	E604	E635	E529	E531	E344	E609	E547	E450	
		●	●	●	●					●			●	●		●	
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		●	
●		●	●	●	●	●	●	●					●		●	●	
VHM		VHM		VHM		VHM		VHM		VHM-ULTRA	VHM		VHM	VHM			
Br	TiAIN	Br	TiAIN	Br	TiAIN	Br	TiAIN	Br	TiAIN	TiAIN	Br	TiAIN	TiAIN	Br	TiAIN		
N		W		W		N		N		N		N	N	N		WN	
-		DIN 6527K		DIN 6527L		DIN 6527K		-		-		DIN 6527L		-		DIN 6527L	
h6		h6		h6		h6		h6		h6	h6		h6	h6		h6	
																VDI 3323	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

Page



Product Code	E452	E454	E602	E605	E551	E553	E555	E315	E606	E607	E557	E320
Type of Cut:												
Finishing												
Universal												
Roughing												
Profiling												
Material												
Surface Finish												
Sutton Designation												
Standard												
Shank Tolerance												
	●	●	●	●	●	●	●	●	●	●	●	●
	VHM	VHM	VHM	VHM	VHM	VHM-ULTRA	VHM	VHM	VHM	VHM-ULTRA	VHM	VHM
Brt	TiAlN	Br	TiAlN	Br	TiAlN	AlCrN	Br	Br	TiAlN	AlCrN	Br	Br
	N	N	N	N	N	N	N	N	N	N	N	N
	DIN 6527K	-	DIN 6527L	-	-	-	-	-	-	-	-	-
	h6	h6	h6	h6	h6	h6	h6	h6	h6	h6	h6	h6

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

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

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	250	840	○	●	○	○	○	○	○	○	○	○	○	○	
	14.3		Precipitation Hardening	250	840	●	●	○	○	○	○	○	○	○	○	○	○	
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	Beta alloys		A	830 MPa							○	○			○	○		
37.5		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)

400	401	392	393	394	395	396	398	399	400	401	402	403	
E418	E420	E422	E424	E533	E535	E559	E426	E430	E545	E549	E440	E442	
●	●	●	●		●	●	●	●	●	●			
●	●	●	●	●	●	●	●	●	●	●			
●	●	●	●	●	●	●	●	●	●	●	●	●	
VHM-ULTRA		ULTRA		VHM-ULTRA		VHM-ULTRA		ULTRA		ULTRA		VHM-ULTRA	
AICrN		AICrN		AICrN		AICrN		AICrN		AICrN		AICrN	
UNI		UNI		UNI		UNI		UNI		UNI		UNI	
-		DIN 6527K		DIN 6527L		DIN 6527L		-		DIN 6527L		-	
h5		h5		h5		h5		h5		h6		h5	

375	379	381	383	387
E580	E581	E582	E598	E650
●	●	●	●	●
●	●	●	●	●
VHM				
TiSiN				
NH		N		
-				
h6				

389	390	391
E456	E457	E458
●	●	●
VHM		
TiAlN		
N		
-		
h6		

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

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	404	405	406	407	408	409	410	411	420	412	413	414
	E444	E310	E400	E402	E408	E480	E478	E446	E404	E410	E459	E462
Type of Cut:	•	•	•	•		•	•	•	•	•	•	•
Finishing						•	•					
Universal	•	•	•	•		•	•	•	•	•	•	•
Roughing	•	•	•	•	•			•	•	•		
Profiling					•							
Material												
Surface Finish												
Sutton Designation												
Standard												
Shank Tolerance												
	VHM	VHM	VHM-ULTRA	VHM-ULTRA	VHM-ULTRA	VHM-ULTRA	VHM	VHM-ULTRA	VHM-ULTRA	VHM-ULTRA	VHM-ULTRA	VHM-ULTRA
	Brt	Brt	CrN	CrN	Brt	Brt	CrN	CrN	Brt	CrN	HELICA	HELICA
	Al	Al	Al	Al	Al	Al	Al	Al	Al	Al	VA	VA
	-	DIN 6527L	DIN 6527L	-	-	DIN 6527L	DIN 6527L	DIN 6527L	DIN 6527L	DIN 6527L	DIN 6527L	DIN 6527L
	h6	h6	h5	h5	h5	h5	h5	h5	h5	h5	h6	h6

ISO	VDI ³³²³	Material	Condition	HB	N/mm ²	404	405	406	407	408	409	410	411	420	412	413	414			
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		250	840									●	●	●			
	14.3		Precipitation Hardening		250	840									●	●	●			
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	Beta alloys		A	830 MPa												●	○	○		
37.5		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)

415	416	417	418	419	420	422	423	424	425	426	427	428	429	430	431	432	433	434			
E432	E434	E436	E543	E562	E564	E566	E568	E464	E466	E468	E470	E476	E477	E472	E474	E486	E487	E481			
•	•	•	•	•	•							•	•			•	•				
•	•	•	•	•	•	•	•	•	•	•	•		•	•		•	•		•		
												•	•			•	•				
																			•		
VHM-ULTRA	VHM-ULTRA	VHM-ULTRA	VHM-ULTRA	VHM-ULTRA	VHM-ULTRA	VHM-ULTRA	VHM-ULTRA	VHM-ULTRA	VHM-ULTRA	VHM-ULTRA	VHM-ULTRA	VHM-ULTRA	VHM-ULTRA	VHM-ULTRA	VHM-ULTRA	VHM-ULTRA	VHM-ULTRA	VHM-ULTRA	VHM-ULTRA		
AlCrN	AlCrN	AlCrN	AlCrN	AlCrN	AlCrN	AlCrN	AlCrN	AlCrN	AlCrN	AlCrN	AlCrN	AlCrN	AlCrN	AlCrN	AlCrN	AlCrN	AlCrN	AlCrN	AlCrN		
NH	NH	NH	NH	NH	NH	NH	NH	NH	NH	NH	NH	NH	NH	NH	NH	NH	NH	NH	NH		
DIN 6527L	-	DIN 6527L	DIN 6527L	DIN 6527L	DIN 6527L	DIN 6527L	DIN 6527L	DIN 6527L	DIN 6527L	DIN 6527L	DIN 6527L	-	-	DIN 6527L	DIN 6527L	DIN 6527L	DIN 6527L	DIN 6527L	-		
h5		h6	h6	h6	h6	h6	h6	h6	h6	h6	h6	h6	h6	h6	h6	h6	h6	h6	h5		
																			VDI 3323	ISO	
○	○	○																	1	P	
○	○	○																	2		
●	●	●																	3		
●	●	●																	4		
●	●	●	●	●	●														5		
○	○	○												○	○	○	○		6		
●	●	●	●	●	●									○	○	○	○	○	7		
●	●	●	●	●	●									○	○	○	○	○	8		
●	●	●	●	●	●									○	○	○	○	○	9		
●	●	●	●	●	●									○	○	○	○	○	10		
●	●	●	●	●	●									○	○	○	○	○	11		
○	○	○	○	○	○									○	○	○	○	○	12		
●	●	●	●	●	●									○	○	○	○	○	13		
			○											●	●	●	●	●	14.1	M	
			●	●	●									●	●	●	●	●	○		14.2
			●	●	●							○	○	●	●	●	●	●	○		14.3
●	●	●	●	●	●															15	
●	●	●	●	●	●															16	
●	●	●	●	●	●															17	
●	●	●	●	●	●															18	
●	●	●	●	●	●															19	
●	●	●	●	●	●															20	
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																				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	

Slot Drills Carbide, 2 Flute, R30 N, DIN6527K



- For precision milling of slots & cavities
- Suitable for materials up to 1600 N/mm²
- TiAlN for longer tool life



Fraise à rainurer 2 dents carbure, R30N, DIN6527K

- Pour le fraisage de rainures et de poches
- Convient au matériaux jusqu'à 1600 N/mm²
- TiAlN pour une meilleure durée de vie



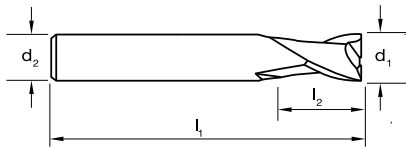
Fresa metallo duro, 2 Taglienti, R30 N, DIN6527K

- Fresatura di cave ad alta precisione
- Ideale per materiali fino a 1600 N/mm²
- TiAlN per Ottimizzare vita utensile



Fresas de MD, 2 ranuras, R30 N, DIN6527K

- Para fresado de precisión de ranuras
- Adecuado para materiales de hasta 1600 N/mm²
- TiAlN para una mayor vida útil de la herramienta



Catalogue Code	E502	E503
Discount Group	B0210	B0210
Material	VHM	VHM
Surface Finish	TiAlN	TiAlN
Sutton Designation	N	N
Geometry	R30	R30
Shank Form (DIN 6535)	HA	HB
Shank Tolerance	h6	h6

Size Ref.	d ₁ (h10)	l ₁	l ₂	d ₂	z	Item #	Item #
0200	2.0	50	3	6	2	E502 0200	E503 0200
0300	3.0	50	4	6	2	E502 0300	E503 0300
0400	4.0	54	5	6	2	E502 0400	E503 0400
0500	5.0	54	6	6	2	E502 0500	E503 0500
0600	6.0	54	7	6	2	E502 0600	E503 0600
0800	8.0	58	9	8	2	E502 0800	E503 0800
1000	10.0	66	11	10	2	E502 1000	E503 1000
1200	12.0	72	12	12	2	E502 1200	E503 1200
1600	16.0	82	16	16	2	E502 1600	E503 1600
2000	20.0	92	20	20	2	E502 2000	E503 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					
E500 / E501	●	●	●	●	○	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○											○	○	○	○	○	○	○	○	○	○	○											
E502 / E503	●	●	●	●	○	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○											○	○	○	○	○	○	○	○	○	○	○											

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

Slot Drills Carbide, 2 Flute, R30 N, Regular



- For precision milling of slots & cavities
- Suitable for materials up to 1600 N/mm²
- TiAlN for longer tool life



Fraise à rainurer 2 dents carbure, R30N

- Pour le fraisage de rainures et de poches
- Convient au matériaux jusqu'à 1600 N/mm²
- TiAlN pour une meilleure durée de vie



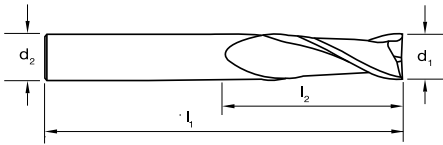
Frese metallo duro, 2 Taglienti, R30 N, Media

- Fresatura di cave ad alta precisione
- Ideale per materiali fino a 1600 N/mm²
- TiAlN per Ottimizzare vita utensile



Fresas de MD, 2 ranuras, R30 N, Regular

- Para fresado de precisión de ranuras
- Adecuado para materiales de hasta 1600 N/mm²
- TiAlN para una mayor vida útil de la herramienta



Catalogue Code	E600	E603
Discount Group	B0212	B0214
Material	VHM	VHM
Surface Finish	Brt	TiAlN
Sutton Designation	N	N
Geometry	R30	R30
Shank Form (DIN 6535)	HA	HA
Shank Tolerance	h6	h6

Size Ref.	d ₁	l ₁	l ₂	d ₂	z	Item #	Item #
0100	1.0	38	4	3	2	E600 0100	E603 0100
0150	1.5	38	4.5	3	2	E600 0150	E603 0150
0200	2.0	38	6	3	2	E600 0200	E603 0200
0250	2.5	38	9.5	3	2	E600 0250	E603 0250
0300	3.0	38	12	3	2	E600 0300	E603 0300
0350	3.5	50	12	4	2	E600 0350	E603 0350
0400	4.0	50	14	4	2	E600 0400	E603 0400
0450	4.5	50	16	6	2	E600 0450	E603 0450
0500	5.0	50	16	6	2	E600 0500	E603 0500
0600	6.0	50	19	6	2	E600 0600	E603 0600
0700	7.0	63	19	8	2	E600 0700	E603 0700
0800	8.0	63	20	8	2	E600 0800	E603 0800
0900	9.0	75	22	10	2	E600 0900	E603 0900
1000	10.0	75	22	10	2	E600 1000	E603 1000
1100	11.0	75	25	12	2	E600 1100	E603 1100
1200	12.0	75	25	12	2	E600 1200	E603 1200
1400	14.0	89	32	14	2	E600 1400	E603 1400
1600	16.0	89	32	16	2	E600 1600	E603 1600
1800	18.0	100	38	18	2	E600 1800	E603 1800
2000	20.0	100	38	20	2	E600 2000	E603 2000
2500	25.0	100	38	25	2	E600 2500	E603 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	
E600	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
E603	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

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

● Optimal ○ Effective

Slot Drills Carbide, 2 Flute, R30 N, DIN6527L



- For precision milling of slots & cavities
- Suitable for materials up to 1600 N/mm²
- TiAlN for longer tool life



Fraise à rainurer 2 dents carbure, R30N, DIN6527L

- Pour le fraisage de rainures et de poches
- Convient au matériaux jusqu'à 1600 N/mm²
- TiAlN pour une meilleure durée de vie



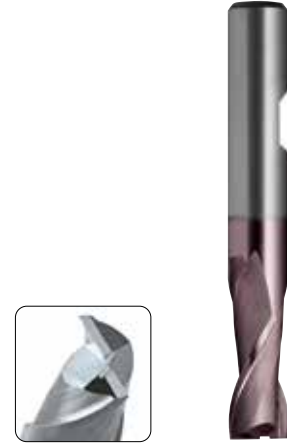
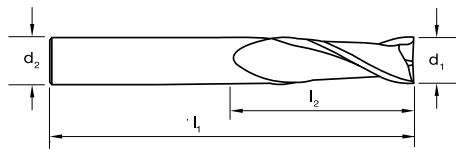
Frese metallo duro, 2 Taglienti, R30 N, DIN6527L

- Fresatura di cave ad alta precisione
- Ideale per materiali fino a 1600 N/mm²
- TiAlN per Ottimizzare vita utensile



Fresas de MD, 2 ranuras, R30 N, DIN6527L

- Para fresado de precisión de ranuras
- Adecuado para materiales de hasta 1600 N/mm²
- TiAlN para una mayor vida útil de la herramienta



Catalogue Code	E507
Discount Group	B0210
Material	VHM
Surface Finish	TiAlN
Sutton Designation	N
Geometry	R30
Shank Form (DIN 6535)	HB
Shank Tolerance	h6

Size Ref.	d ₁ (h10)	l ₁	l ₂	d ₂	z	Item #
0200	2.0	57	6	6	2	E507 0200
0300	3.0	57	7	6	2	E507 0300
0350	3.5	57	7	6	2	• •
0400	4.0	57	8	6	2	E507 0400
0450	4.5	57	8	6	2	• •
0500	5.0	57	10	6	2	E507 0500
0600	6.0	57	10	6	2	E507 0600
0700	7.0	63	16	8	2	E507 0700
0800	8.0	63	16	8	2	E507 0800
0900	9.0	72	19	10	2	E507 0900
1000	10.0	72	22	10	2	E507 1000
1200	12.0	83	22	12	2	E507 1200
1400	14.0	83	22	14	2	E507 1400
1600	16.0	92	26	16	2	E507 1600
1800	18.0	92	26	18	2	E507 1800
2000	20.0	104	32	20	2	E507 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				
E505	●	●	●	●	○	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○																															
E507	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

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

Endmills Carbide, 2 Flute, R30 N, Extra Long



- For precision milling of slots & cavities
- Suitable for materials up to 1600 N/mm²



Fraise à rainurer 2 dents carbure, R30N, Extra Longue

- Pour le fraisage de poches et finition.
- Convient au matériaux jusqu'à 1600 N/mm²



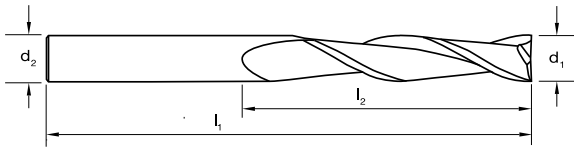
Frese metallo duro, 2 Taglienti, R30 N, Extra Lunga

- Fresatura di cave molto profonda
- Ideale per materiali fino a 1600 N/mm²



Fresas de MD, 2 ranuras, R30 N, Extra Larga

- Para fresado de precisión de ranuras
- Adecuado para materiales de hasta 1600 N/mm²



Catalogue Code	E608
Discount Group	B0212
Material	VHM
Surface Finish	Brf
Sutton Designation	N
Geometry	R30
Shank Form (DIN 6535)	HA
Shank Tolerance	h6

Size Ref.	d ₁	l ₁	l ₂	d ₂	z	Item #
0300	3.0	100	40	3	2	E608 0300
0400	4.0	100	40	4	2	E608 0400
0500	5.0	100	40	5	2	E608 0500
0600	6.0	100	50	6	2	E608 0600
0800	8.0	100	50	8	2	E608 0800
1000	10.0	150	75	10	2	E608 1000
1200	12.0	150	75	12	2	E608 1200
1600	16.0	150	75	16	2	E608 1600
2000	20.0	150	75	20	2	E608 2000

ISO	P							M							K							N							S							H																
	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			
E608	●	●	○	○	○	●	○			○				○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○																					

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, R30 N, DIN6527K



- Universal use for slotting and finishing with the one tool
- Suitable for materials up to 1600 N/mm²
- TiAlN for longer tool life



Fraise à rainurer 3 dents carbure, R30N, DIN6527K

- Pour le fraisage de rainures, de poches et finition.
- Convient au matériaux jusqu'à 1600 N/mm²
- TiAlN pour une meilleure durée de vie



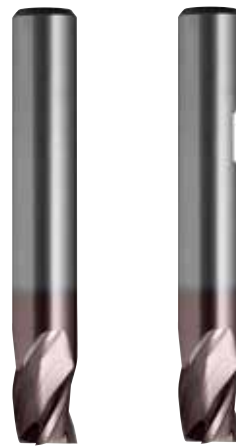
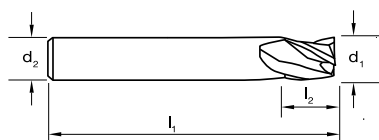
Frese metallo duro, 3 Taglienti, R30 N, DIN6527K

- Fresa universale per cave e lavorazioni di finitura
- Ideale per materiali fino a 1600 N/mm²
- TiAlN per Ottimizzare vita utensile



Fresas de MD, 3 ranuras, R30 N, DIN6527K

- Para fresado de precisión de ranuras
- Adecuado para materiales de hasta 1600 N/mm²
- TiAlN para una mayor vida útil de la herramienta



Catalogue Code	E511	E512
Discount Group	B0210	B0210
Material	VHM	VHM
Surface Finish	TIAlN	TIAlN
Sutton Designation	N	N
Geometry	R30	R30
Shank Form (DIN 6535)	HA	HB
Shank Tolerance	h6	h6

Size Ref.	d ₁ (h10)	l ₁	l ₂	d ₂	z	Item #	Item #
0300	3.0	50	4	6	3	E511 0300	E512 0300
0400	4.0	54	5	6	3	E511 0400	E512 0400
0500	5.0	54	6	6	3	E511 0500	E512 0500
0600	6.0	54	7	6	3	E511 0600	E512 0600
0800	8.0	58	9	8	3	E511 0800	E512 0800
1000	10.0	66	11	10	3	E511 1000	E512 1000
1200	12.0	73	12	12	3	E511 1200	E512 1200
1400	14.0	75	14	14	3	•	•
1600	16.0	82	16	16	3	E511 1600	E512 1600
1800	18.0	84	18	18	3	•	•
2000	20.0	92	20	20	3	E511 2000	E512 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				
E509 / E510	●	●	●	●	○	●	●	○		○			○	○	○	○	○	○	○	○	○	○												○	○	○	○	○	○	○	○	○	○	○	○	○	○						
E511 / E512	●	●	●	●	○	●	●	○		○			○	○	○	○	○	○	○	○	○	○											○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○				

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, R30 N, DIN6527L



- Universal use for slotting and finishing with the one tool
- Suitable for materials up to 1600 N/mm²
- TiAlN for longer tool life



Fraise à rainurer 3 dents carbure, R30N, DIN6527L

- Pour le fraisage de rainures, de poches et finition.
- Convient au matériaux jusqu'à 1600 N/mm²
- TiAlN pour une meilleure durée de vie



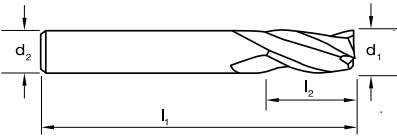
Frese metallo duro, 3 Taglienti, R30 N, DIN6527L

- Fresa universale per cave e lavorazioni di finitura
- Ideale per materiali fino a 1600 N/mm²
- TiAlN per Ottimizzare vita utensile



Fresas de MD, 3 ranuras, R30 N, DIN6527L

- Para fresado de precisión de ranuras
- Adecuado para materiales de hasta 1600 N/mm²
- TiAlN para una mayor vida útil de la herramienta



Catalogue Code	E515	E516
Discount Group	B0210	B0210
Material	VHM	VHM
Surface Finish	TiAlN	TiAlN
Sutton Designation	N	N
Geometry	R30	R30
Shank Form (DIN 6535)	HA	HB
Shank Tolerance	h6	h6

Size Ref.	d ₁ (h10)	l ₁	l ₂	d ₂	z	Item #	Item #
0300	3.0	57	7	6	3	E515 0300	E516 0300
0350	3.5	57	7	6	3	•	•
0400	4.0	57	8	6	3	E515 0400	E516 0400
0450	4.5	57	8	6	3	•	•
0500	5.0	57	10	6	3	E515 0500	E516 0500
0600	6.0	57	10	6	3	E515 0600	E516 0600
0700	7.0	63	13	8	3	E515 0700	E516 0700
0800	8.0	63	16	8	3	E515 0800	E516 0800
0900	9.0	72	16	10	3	E515 0900	E516 0900
1000	10.0	72	19	10	3	E515 1000	E516 1000
1200	12.0	83	22	12	3	E515 1200	E516 1200
1400	14.0	83	22	14	3	E515 1400	E516 1400
1600	16.0	92	26	16	3	E515 1600	E516 1600
1800	18.0	92	26	18	3	E515 1800	E516 1800
2000	20.0	104	32	20	3	E515 2000	E516 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						
E513 / E514	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
E515 / E516	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

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

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

Endmills Carbide, 3 Flute, R30 N, Regular



- For precision milling of slots & cavities
- Suitable for materials up to 1600 N/mm²
- TiAIN for longer tool life



Fraise à rainurer 3 dents carbure, R30N

- Pour le fraisage de rainures et de poches
- Convient au matériaux jusqu'à 1600 N/mm²
- TiAIN pour une meilleure durée de vie



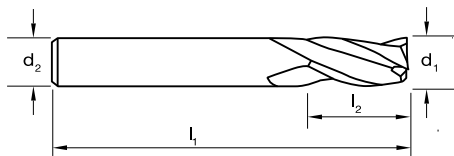
Fresse metallo duro, 3 Taglienti, R30 N, Media

- Fresatura di cave ad alta precisione
- Ideale per materiali fino a 1600 N/mm²
- TiAIN per Ottimizzare vita utensile



Fresas de MD, 3 ranuras, R30 N, Regular

- Para fresado de precisión de ranuras
- Adecuado para materiales de hasta 1600 N/mm²
- TiAIN para una mayor vida útil de la herramienta



Catalogue Code	E610	E611
Product Group	B0212	B0214
Material	VHM	VHM
Surface Finish	Brt	TiAIN
Sutton Designation	N	N
Geometry	R30	R30
Shank Form (DIN 6535)	HA	HA
Shank Tolerance	h6	h6

Size Ref.	d ₁	l ₁	l ₂	d ₂	z	Item #	Item #
0100	1.0	38	4	3	2	E610 0100	E611 0100
0150	1.5	38	4.5	3	2	E610 0150	E611 0150
0200	2.0	38	6	3	2	E610 0200	E611 0200
0250	2.5	38	9.5	3	2	E610 0250	E611 0250
0300	3.0	38	12	3	2	E610 0300	E611 0300
0350	3.5	50	12	4	2	E610 0350	E611 0350
0400	4.0	50	14	4	2	E610 0400	E611 0400
0450	4.5	50	16	6	2	E610 0450	E611 0450
0500	5.0	50	16	6	2	E610 0500	E611 0500
0600	6.0	50	19	6	2	E610 0600	E611 0600
0700	7.0	63	19	8	2	E610 0700	E611 0700
0800	8.0	63	20	8	2	E610 0800	E611 0800
0900	9.0	75	22	10	2	E610 0900	E611 0900
1000	10.0	75	22	10	2	E610 1000	E611 1000
1100	11.0	75	25	12	2	E610 1100	E611 1100
1200	12.0	75	25	12	2	E610 1200	E611 1200
1400	14.0	89	32	14	2	E610 1400	E611 1400
1600	16.0	89	32	16	2	E610 1600	E611 1600
1800	18.0	100	38	18	2	E610 1800	E611 1800
2000	20.0	100	38	20	2	E610 2000	E611 2000
2500	25.0	100	38	25	2	E610 2500	E611 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	
E610	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
E611	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

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 W, DIN6527K



- Universal use for slotting and finishing with the one tool
- Suitable for materials up to 45 HRC, SOFT MATERIALS
- TiAlN for longer tool life



Fraise à rainurer 3 dents carbure, R45 W, DIN6527K

- Pour le fraisage de rainures, de poches et finition.
- Convient au matériaux aciers doux et non-ferreux
- Brt pour les non-ferreux
- TiAlN pour une meilleure durée de vie



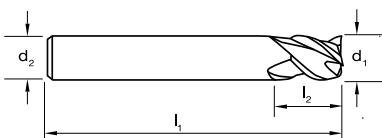
Frese metallo duro, 3 Taglienti, R45 W, DIN6527K

- Fresa universale per cave e lavorazioni di finitura
- Ideale per materiali fino a 45 HRC
- TiAlN per Ottimizzare vita utensile



Fresas de MD, 3 ranuras, R45 W, DIN6527K

- Para ranurado y acabado con una herramienta
- Geometría optimizada para materiales blandos
- Brt para materiales no férricos.
- TiAlN para una mayor vida útil de la herramienta



Catalogue Code	E519	E520
Discount Group	B0210	B0210
Material	VHM	VHM
Surface Finish	TiAlN	TiAlN
Sutton Designation	W	W
Geometry	R45	R45
Shank Form (DIN 6535)	HA	HB
Shank Tolerance	h6	h6

Size Ref.	d ₁ (e8)	l ₁	l ₂	d ₂	z	Item #	Item #
0300	3.0	50	4	6	3	E519 0300	E520 0300
0400	4.0	54	5	6	3	E519 0400	E520 0400
0500	5.0	54	6	6	3	E519 0500	E520 0500
0600	6.0	54	7	6	3	E519 0600	E520 0600
0800	8.0	58	9	8	3	E519 0800	E520 0800
1000	10.0	66	11	10	3	E519 1000	E520 1000
1200	12.0	73	12	12	3	E519 1200	E520 1200
1600	16.0	82	16	16	3	E519 1600	E520 1600
2000	20.0	92	20	20	3	E519 2000	E520 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									
E517 / E518	●	●	●	○	○	○	○	○															●	●	●	○	○	○	○	○																												
E519 / E520	●	●	●	○	○	○	○	○															●	●	●	○	○	○	○	○																												

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 W, DIN6527L



- Universal use for slotting and finishing with the one tool
- Optimised geometry for soft materials
- Brt for non-ferrous materials
- TiAIN for longer tool life



Fraise à rainurer 3 dents carbure, R45 W, DIN6527L

- Pour le fraisage de rainures, de poches et finition.
- Convient au matériaux aciers doux et non-ferreux
- Brt pour les non-ferreux
- TiAIN pour une meilleure durée de vie



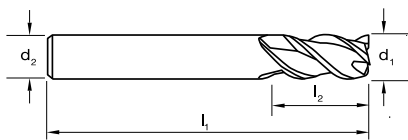
Frese metallo duro, 3 Taglienti, R45 W, DIN6527L

- Fresa universale per cave e lavorazioni di finitura
- Geometria tagliente ottimizzate per materiali morbidi
- Brt per materiali non ferrosi
- TiAIN per Ottimizzare vita utensile



Fresas de MD, 3 ranuras, R45 W, DIN6527L

- Para ranurado y acabado con una herramienta
- Geometría optimizada para materiales blandos
- Brt para materiales no férricos.
- TiAIN para una mayor vida útil de la herramienta



Catalogue Code	E523	E524
Discount Group	B0210	B0210
Material	VHM	VHM
Surface Finish	TiAIN	TiAIN
Sutton Designation	W	W
Geometry	R45	R45
Shank Form (DIN 6535)	HA	HB
Shank Tolerance	h6	h6

Size Ref.	d ₁ (e8)	l ₁	l ₂	d ₂	z	Item #	Item #
0300	3.0	57	7	6	3	E523 0300	E524 0300
0400	4.0	57	8	6	3	E523 0400	E524 0400
0500	5.0	57	10	6	3	E523 0500	E524 0500
0600	6.0	57	10	6	3	E523 0600	E524 0600
0800	8.0	63	16	8	3	E523 0800	E524 0800
1000	10.0	72	19	10	3	E523 1000	E524 1000
1200	12.0	83	22	12	3	E523 1200	E524 1200
1600	16.0	92	26	16	3	E523 1600	E524 1600
2000	20.0	104	32	20	3	E523 2000	E524 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				
E521 / E522	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
E523 / E524	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

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, R30 N, DIN6527K



- For precision finish milling applications
- Suitable for materials up to 1600 N/mm²
- TiAIN for longer tool life



Fraise 4 dents carbure, R30N, DIN6527K

- Pour le fraisage de rainures, de poches et finition.
- Convient au matériaux jusqu'à 1600 N/mm²
- TiAIN pour une meilleure durée de vie



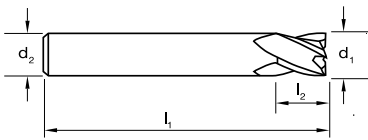
Frese metallo duro, 4 Taglienti, R30 N, DIN6527K

- Fresa ideale per lavorazioni di finitura
- Ideale per materiali fino a 1600 N/mm²
- TiAIN per Ottimizzare vita utensile



Fresas de MD, 4 ranuras, R30 N, DIN6527K

- Para fresado de precisión de ranuras
- Adecuado para materiales de hasta 1600 N/mm²
- TiAIN para una mayor vida útil de la herramienta



Catalogue Code	E527	E528
Discount Group	B0210	B0210
Material	VHM	VHM
Surface Finish	TiAIN	TiAIN
Sutton Designation	N	N
Geometry	R30	R30
Shank Form (DIN 6535)	HA	HB
Shank Tolerance	h6	h6

Size Ref.	d ₁ (h10)	l ₁	l ₂	d ₂	z	Item #	Item #
0300	3.0	50	5	6	4	E527 0300	E528 0300
0400	4.0	54	8	6	4	E527 0400	E528 0400
0500	5.0	54	9	6	4	E527 0500	E528 0500
0600	6.0	54	10	6	4	E527 0600	E528 0600
0800	8.0	58	12	8	4	E527 0800	E528 0800
1000	10.0	66	14	10	4	E527 1000	E528 1000
1200	12.0	73	16	12	4	E527 1200	E528 1200
1600	16.0	82	22	16	4	E527 1600	E528 1600
2000	20.0	92	26	20	4	E527 2000	E528 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			
E525 / E526	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
E527 / E528	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

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

Endmills Carbide, 4 Flute, R30 N, Regular



- For precision finish milling applications
- Suitable for materials up to 1600 N/mm²
- TiAlN for longer tool life



Fraise 4 dents carbure, R30N

- Pour le fraisage de rainures, de poches et finition.
- Convient au matériaux jusqu'à 1600 N/mm²
- TiAlN pour une meilleure durée de vie



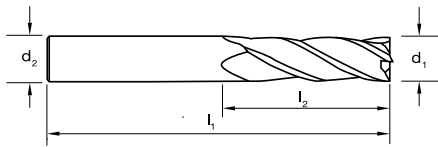
Fresa metallo duro, 4 Taglienti, R30 N, Media

- Fresa ideale per lavorazioni di finitura
- Ideale per materiali fino a 1600 N/mm²
- TiAlN per Ottimizzare vita utensile



Fresas de MD, 4 ranuras, R30 N, Regular

- Para fresado de precisión de ranuras
- Adecuado para materiales de hasta 1600 N/mm²
- TiAlN para una mayor vida útil de la herramienta



Catalogue Code	E601	E604
Discount Group	B0212	B0214
Material	VHM	VHM
Surface Finish	Br	TiAlN
Sutton Designation	N	N
Geometry	R30	R30
Shank Form (DIN 6535)	HA	HA
Shank Tolerance	h6	h6

Size Ref.	d ₁ (h10)	l ₁	l ₂	d ₂	z	Item #	Item #
0100	1.0	38	4	3	4	E601 0100	E604 0100
0150	1.5	38	4.5	3	4	E601 0150	E604 0150
0200	2.0	38	6	3	4	E601 0200	E604 0200
0250	2.5	38	9.5	3	4	E601 0250	E604 0250
0300	3.0	38	12	3	4	E601 0300	E604 0300
0350	3.5	50	12	4	4	E601 0350	E604 0350
0400	4.0	50	14	4	4	E601 0400	E604 0400
0450	4.5	50	16	6	4	E601 0450	E604 0450
0500	5.0	50	16	6	4	E601 0500	E604 0500
0600	6.0	50	19	6	4	E601 0600	E604 0600
0700	7.0	63	19	8	4	E601 0700	E604 0700
0800	8.0	63	20	8	4	E601 0800	E604 0800
0900	9.0	75	22	10	4	E601 0900	E604 0900
1000	10.0	75	22	10	4	E601 1000	E604 1000
1100	11.0	75	25	12	4	E601 1100	E604 1100
1200	12.0	75	25	12	4	E601 1200	E604 1200
1400	14.0	89	32	14	4	E601 1400	E604 1400
1600	16.0	89	32	16	4	E601 1600	E604 1600
1800	18.0	100	38	18	4	E601 1800	E604 1800
2000	20.0	100	38	20	4	E601 2000	E604 2000
2500	25.0	100	38	25	4	E601 2500	E604 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				
E601	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
E604	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

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, R35/38, Regular



- 35/38° variable flute helix for chatter free milling
- Suitable for materials up to 1600 N/mm²
- TiAIN for longer tool life



Fraise 4 dents carbure, R35°/38°, Régulières

- Hélice variable 35/38° pour la suppression des vibrations
- Convient aux matériaux jusqu'à 1600N/mm²
- TiAIN pour une meilleure durée de vie



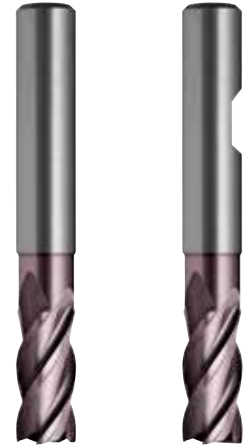
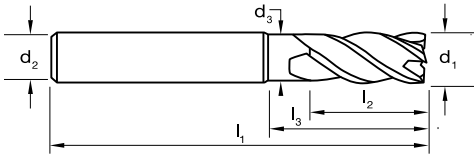
Frese metallo duro, 4 Taglienti, R35°/38°, Media

- Elica tagliente variabile 35/38° per lavorazioni senza vibrazioni
- Adatta per materiali fino a 1600 N/mm²
- TiAIN per Ottimizzare vita utensile



Fresas de MD, 4 ranuras, R35°/38°, Regular

- Hélice de ranura variable 35/38° para fresado sin vibraciones
- Adecuado para materiales hasta 1600 N/mm²
- TiAIN para una mayor vida útil de la herramienta

Catalogue Code	E635	E636
Product Group	B0214	B0214
Material	VHM-ULTRA	VHM-ULTRA
Surface Finish	TiAIN	TiAIN
Sutton Designation	N	N
Geometry	R35/38	R35/38
Shank Form (DIN 6535)	HA	HB
Shank Tolerance	h6	h6

Size Ref.	d ₁	l ₁	l ₂	l ₃	d ₂	d ₃	z	Item #	Item #
0300	3.0	57	8	19	6	2.8	4	E635 0300	E636 0300
0400	4.0	57	11	19	6	3.7	4	E635 0400	E636 0400
0500	5.0	57	13	20	6	4.6	4	E635 0500	E636 0500
0600	6.0	57	13	21	6	5.5	4	E635 0600	E636 0600
0800	8.0	63	19	27	8	7.5	4	E635 0800	E636 0800
1000	10.0	72	22	32	10	9.5	4	E635 1000	E636 1000
1200	12.0	83	26	38	12	11.2	4	E635 1200	E636 1200
1400	14.0	83	26	38	14	13.0	4	•	E636 1400
1600	16.0	92	32	44	16	15.0	4	E635 1600	E636 1600
2000	20.0	104	38	54	20	19.0	4	E635 2000	E636 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	
E635	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
E636	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

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

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

Endmills Carbide, 4 Flute, R30 N, Regular



- For precision finish milling applications
- Suitable for materials up to 1600 N/mm²
- TiAlN for longer tool life



Fraise 4 dents carbure, R30N

- Pour le fraisage de rainures, de poches et finition.
- Convient aux matériaux jusqu'à 1600 N/mm²
- TiAlN pour une meilleure durée de vie



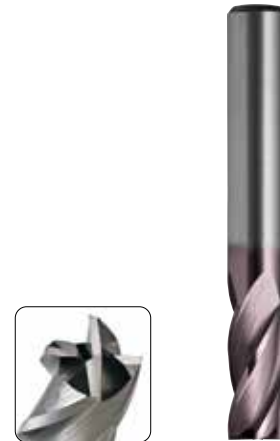
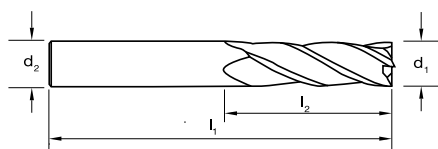
Fresa metallo duro, 4 Taglienti, R30 N, Media

- Fresa ideale per lavorazioni di finitura
- Ideale per materiali fino a 1600 N/mm²
- TiAlN per Ottimizzare vita utensile



Fresas de MD, 4 ranuras, R30 N, Regular

- Para fresado de precisión de ranuras
- Adecuado para materiales de hasta 1600 N/mm²
- TiAlN para una mayor vida útil de la herramienta



Catalogue Code	E333
Discount Group	B0212
Material	VHM
Surface Finish	Brt
Sutton Designation	N
Geometry	R30
Shank Form (DIN 6535)	HA
Shank Tolerance	h6

Size Ref.	d ₁ (h10)	l ₁	l ₂	d ₂	z	Item #
0159	1/16	1-1/2	3/16	1/8	4	E336 0159
0238	3/32	1-1/2	5/16	1/8	4	E336 0238
0318	1/8	1-1/2	1/2	1/8	4	E336 0318
0397	5/32	2	9/16	5/32	4	E336 0397
0476	3/16	2	5/8	3/16	4	E336 0476
0556	7/32	2-1/2	5/8	7/32	4	E336 0556
0635	1/4	2-1/2	3/4	1/4	4	E336 0635
0794	5/16	2-1/2	13/16	5/16	4	E336 0794
0953	3/8	2-1/2	7/8	3/8	4	E336 0953
1270	1/2	3	1	1/2	4	E336 1270
1588	5/8	3-1/2	1-1/4	5/8	4	E336 1588
1905	3/4	4	1-1/2	3/4	4	E336 1905

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										
E333	●	●	●	●		●	○								○	○			○	○	○	○	○																																				
E336	●	●	●	●	○	●	○	○	○	○	○				○	○			○	○	○	○	○																																				

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, R30 N, DIN6527L



- For precision finish milling applications
- Suitable for materials up to 1600 N/mm²
- TiAlN for longer tool life



Fraise 4 dents carbure, R30N, DIN6527L

- Pour le fraisage de rainures, de poches et finition.
- Convient au matériaux jusqu'à 1600 N/mm²
- TiAlN pour une meilleure durée de vie



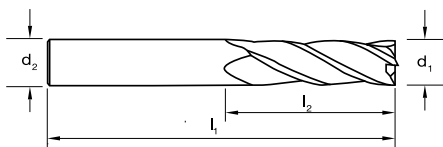
Frese metallo duro, 4 Taglienti, R30 N, DIN6527L

- Fresa ideale per lavorazioni di finitura
- Ideale per materiali fino a 1600 N/mm²
- TiAlN per Ottimizzare vita utensile



Fresas de MD, 4 ranuras, R30 N, DIN6527L

- Para fresado de precisión de ranuras
- Adecuado para materiales de hasta 1600 N/mm²
- TiAlN para una mayor vida útil de la herramienta



Catalogue Code	E532
Discount Group	B0210
Material	VHM
Surface Finish	TiAlN
Sutton Designation	N
Geometry	R30
Shank Form (DIN 6535)	HB
Shank Tolerance	h6

Size Ref.	d ₁ (h10)	l ₁	l ₂	d ₂	z	Item #
0300	3.0	57	8	6	4	E532 0300
0400	4.0	57	11	6	4	E532 0400
0500	5.0	57	13	6	4	E532 0500
0600	6.0	57	13	6	4	E532 0600
0700	7.0	63	16	8	4	E532 0700
0800	8.0	63	19	8	4	E532 0800
0900	9.0	72	19	10	4	E532 0900
1000	10.0	72	22	10	4	E532 1000
1200	12.0	83	26	12	4	E532 1200
1400	14.0	83	26	14	4	E532 1400
1600	16.0	92	32	16	4	E532 1600
1800	18.0	92	32	18	4	E532 1800
2000	20.0	104	38	20	4	E532 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			
E529 / E530	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
E531 / E532	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

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, R30 N, Extra Long



- For precision finish milling applications
- Suitable for materials up to 1600 N/mm²



Fraise 4 dents carbure, R30N, Extra Longue

- Pour le fraisage de poches et finition.
- Convient au matériaux jusqu'à 1300 N/mm²



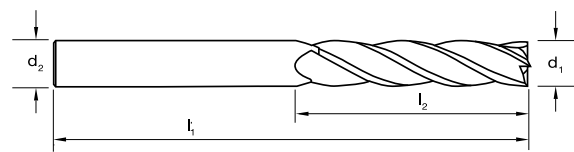
Frese metallo duro, 4 Taglienti, R30 N, Extra Lunga

- Fresa ideale per lavorazioni di finitura
- Ideale per materiali fino a 1600 N/mm²



Fresas de MD, 2 ranuras, R30 N, Extra Larga

- Para fresado de precisión de ranuras
- Adecuado para materiales de hasta 1600 N/mm²



Catalogue Code	E609
Discount Group	B0212
Material	VHM
Surface Finish	Brt
Sutton Designation	N
Geometry	R30
Shank Form (DIN 6535)	HA
Shank Tolerance	h6

Size Ref.	d ₁ (h10)	l ₁	l ₂	d ₂	z	Item #
0300	3.0	100	40	3	4	E609 0300
0400	4.0	100	40	4	4	E609 0400
0500	5.0	100	40	5	4	E609 0500
0600	6.0	100	50	6	4	E609 0600
0800	8.0	100	50	8	4	E609 0800
1000	10.0	150	75	10	4	E609 1000
1200	12.0	150	75	12	4	E609 1200
1600	16.0	150	75	16	4	E609 1600
2000	20.0	150	75	20	4	E609 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
E609	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

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

Roughers Carbide, NR (normal), R30N, DIN6527L



- For roughing applications
- NR geometry allows for heavy cuts
- Suitable for materials up to 1600 N/mm²
- TiAlN for longer tool life



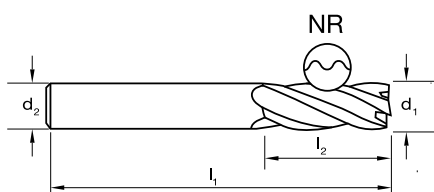
Fraise ravageuse carbure, profil NR (normal) R30°, Type N, Din 6527L

- Pour les applications d' ébauche
- Convient aux matériaux jusqu'à 1600N/mm²
- Revêtement TiAlN pour une meilleure durée de vie
- Brise-copeaux (NR) pour les coupes difficiles



Frese metallo duro rompi triciolo, NR (normal), R30 N, DIN6527L

- Fresa ideale per lavorazioni di sgrossatura
- Geometria NR permette lavorazioni gravose
- Ideale per materiali fino a 1600 N/mm²
- TiAlN per Ottimizzare vita utensile



Fresas Desbaste, NR (normal), R30 N, DIN6527L

- Para aplicaciones de desbaste
- La geometría NR permite grandes pasadas
- Adecuado para materiales de hasta 1200 N/mm²
- TiAlN para una mayor vida útil de la herramienta



Catalogue Code	E547	E548
Discount Group	B0210	B0210
Material	VHM	VHM
Surface Finish	TiAlN	TiAlN
Sutton Designation	N	N
Geometry	R30 NR	R30 NR
Shank Form (DIN 6535)	HA	HB
Shank Tolerance	h6	h6

Size Ref.	d ₁ (js14)	l ₁	l ₂	d ₂	z	Item #	Item #
0400	4.0	57	11	6	3	E547 0400	E548 0400
0500	5.0	57	13	6	3	E547 0500	E548 0500
0600	6.0	57	13	6	3	E547 0600	E548 0600
0800	8.0	63	19	8	3	E547 0800	E548 0800
1000	10.0	72	22	10	4	E547 1000	E548 1000
1200	12.0	83	26	12	4	E547 1200	E548 1200
1600	16.0	92	32	16	4	E547 1600	E548 1600
2000	20.0	104	38	20	4	E547 2000	E548 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			
E547	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
E548	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

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

Roughers Carbide, HR (fine), R20 WN, DIN6527L



- For roughing applications
- HR geometry allows for heavier cuts in harder materials
- Suitable for materials up to 1200 N/mm²
- TiAlN for longer tool life



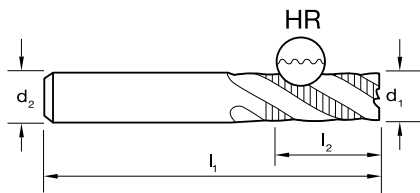
Fraise carbure, Ebauche, profil HR, R20 WN, DIN 6527L

- Pour les applications d'ébauche
- Brises copeaux HR pour les gros enlèvements dans les matériaux durs
- Convient aux matériaux jusqu'à 1200 N/mm²
- Revêtement TiAlN pour une meilleure durée de vie



Fresa metallo duro rompi triciolo, HR (fine), R20 WN, DIN6527L

- Fresa ideale per lavorazioni di sgrossatura
- Geometria HR permette lavorazioni gravose su materiali di difficile lavorabilità
- Ideale per materiali fino a 1200 N/mm²
- TiAlN per Ottimizzare vita utensile



Fresas Desbaste, HR (fino), R20 WN, DIN6527L

- Para aplicaciones de desbaste
- La geometría HR permite mayores pasadas en materiales más duros.
- Adecuado para materiales de hasta 1600 N/mm²
- TiAlN para una mayor vida útil de la herramienta.



Catalogue Code	E450	E451
Discount Group	B0210	B0210
Material	VHM	VHM
Surface Finish	TiAlN	TiAlN
Sutton Designation	WN	WN
Geometry	R20 HR	R20 HR
Shank Form (DIN 6535)	HA	HB
Shank Tolerance	h6	h6

Size Ref.	d ₁ (h10)	l ₁	l ₂	d ₂	z	Item #	Item #
0600	6.0	57	13	6	3	E450 0600	E451 0600
0800	8.0	63	19	8	3	E450 0800	E451 0800
1000	10.0	72	22	10	4	E450 1000	E451 1000
1200	12.0	83	26	12	4	E450 1200	E451 1200
1400	14.0	83	26	14	4	•	•
1600	16.0	92	32	16	4	E450 1600	E451 1600
1800	18.0	92	32	18	4	•	•
2000	20.0	104	38	20	4	E450 2000	E451 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				
E450	●	●	●	●	○	●	●	○	○	○							●	●	●	●	●	●												●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
E451	●	●	●	●	○	●	●	○	○	○							●	●	●	●	●	●	●											●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

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

Slot Drills Carbide, Ballnose, 2 Flute, R30 N, Regular



- For profile & contour milling applications
- Suitable for materials up to 1600N/mm²
- TiAlN for longer tool life



Fraise à rainurer 2 dents carbure, Hémisphérique, R30N

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



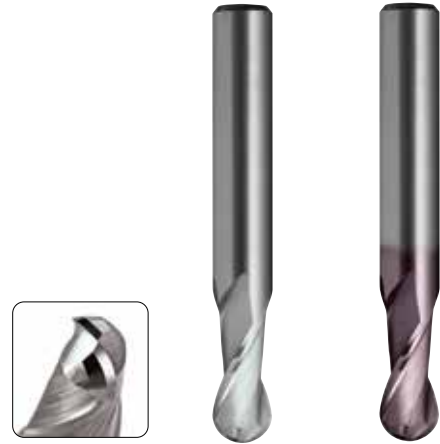
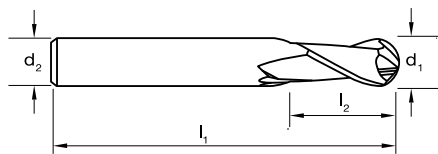
Frese metallo duro, Sferiche, 2 Taglienti, R30 N, Media

- Ideale per lavorazioni di contornatura e profilatura
- Adatta per materiali fino a 1600 N/mm²
- TiAlN per Ottimizzare vita utensile



Fresas de MD esféricas, 2 ranuras, R30 N, Regular

- Para fresado de perfiles y contornos en aplicaciones de largo alcance
- Adecuado para materiales hasta 1600 N/mm²
- TiAlN para una mayor vida útil de la herramienta



Catalogue Code	E602	E605
Discount Group	B0212	B0214
Material	VHM	VHM
Surface Finish	Brt	TiAlN
Sutton Designation	N	N
Geometry	R30	R30
Shank Form (DIN 6535)	HA	HA
Shank Tolerance	h6	h6

Size Ref.	d ₁	l ₁	l ₂	d ₂	z	Item #	Item #
0100	1.0	38	4	3	2	E602 0100	E605 0100
0150	1.5	38	4.5	3	2	E602 0150	E605 0150
0200	2.0	38	6	3	2	E602 0200	E605 0200
0250	2.5	38	9.5	3	2	E602 0250	E605 0250
0300	3.0	38	12	3	2	E602 0300	E605 0300
0350	3.5	50	12	4	2		E605 0350
0400	4.0	50	14	4	2	E602 0400	E605 0400
0500	5.0	50	16	6	2	E602 0500	E605 0500
0600	6.0	50	19	6	2	E602 0600	E605 0600
0700	7.0	63	19	8	2	E602 0700	E605 0700
0800	8.0	63	20	8	2	E602 0800	E605 0800
0900	9.0	75	20	10	2	E602 0900	E605 0900
1000	10.0	75	22	10	2	E602 1000	E605 1000
1100	11.0	75	25	12	2		E605 1100
1200	12.0	75	25	12	2	E602 1200	E605 1200
1400	14.0	89	32	14	2		E605 1400
1600	16.0	89	32	16	2	E602 1600	E605 1600
1800	18.0	100	38	18	2		E605 1800
2000	20.0	100	38	20	2	E602 2000	E605 2000
2500	25.0	100	38	25	2		E605 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
E602	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
E605	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

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

● Optimal ○ Effective

Slot Drills Carbide, Ballnose, 2 Flute, R30 N, DIN6527L



- For profile & contour milling applications
- Suitable for materials up to 1600N/mm²
- TiAlN for longer tool life



Fraise à rainurer 2 dents carbure, Hémisphérique, R30N, DIN6527L

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



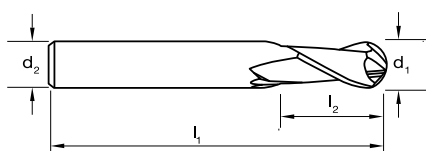
Fresе metallo duro, Sferiche, 2 Taglienti, R30 N, DIN6527L

- Ideale per lavorazioni di contornatura e profilatura
- Adatta per materiali fino a 1600 N/mm²
- TiAlN per Ottimizzare vita utensile



Fresas de MD esféricas, 2 ranuras, R30 N, DIN6527L

- Para fresado de perfiles y contornos en aplicaciones de largo alcance
- Adecuado para materiales hasta 1600 N/mm²
- TiAlN para una mayor vida útil de la herramienta



Catalogue Code	E551	E553	E554
Discount Group	B0208	B0210	B0210
Material	VHM	VHM	VHM
Surface Finish	Brt	TiAlN	TiAlN
Sutton Designation	N	N	N
Geometry	R30	R30	R30
Shank Form (DIN 6535)	HA	HA	HB
Shank Tolerance	h6	h6	h6

Size Ref.	d ₁ (h10)	l ₁	l ₂	d ₂	z	Item #	Item #	Item #
0200	2.0	57	6	6	2	E551 0200	E553 0200	E554 0200
0300	3.0	57	7	6	2	E551 0300	E553 0300	E554 0300
0400	4.0	57	8	6	2	E551 0400	E553 0400	E554 0400
0500	5.0	57	10	6	2	E551 0500	E553 0500	E554 0500
0600	6.0	57	10	6	2	E551 0600	E553 0600	E554 0600
0800	8.0	63	16	8	2	E551 0800	E553 0800	E554 0800
1000	10.0	72	19	10	2	E551 1000	E553 1000	E554 1000
1200	12.0	83	22	12	2	E551 1200	E553 1200	E554 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	
E551 / E552	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
E553 / E554	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

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

Endmills Carbide, Ballnose, 4 Flute, R30 N, Regular



- For profile & contour milling applications
- Suitable for materials up to 1600N/mm²
- TiAlN for longer tool life



Fraise 4 dents carbure, Hémisphérique, R30N

- Pour le fraisage de rainures, de poches et finition
- Convient au matériaux jusqu'à 1600 N/mm²
- TiAlN pour une meilleure durée de vie



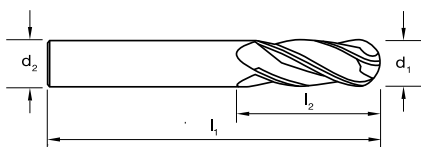
Fresa metallo duro, Sferiche, 4 Taglienti, R30 N, Media

- Ideale per lavorazioni di contornatura e profilatura
- Adatta per materiali fino a 1600 N/mm²
- TiAlN per Ottimizzare vita utensile



Fresas de MD esféricas, 4 ranuras, R30 N, Regular

- Para fresado de perfiles y contornos en aplicaciones de largo alcance
- Adecuado para materiales hasta 1600 N/mm²
- TiAlN para una mayor vida útil de la herramienta



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

	E606	E607
Discount Group	B0208	B0214
Material	VHM	VHM
Surface Finish	Brf	TiAlN
Sutton Designation	N	N
Geometry	R30	R30
Shank Form (DIN 6535)	HA	HA
Shank Tolerance	h6	h6

Size Ref.	d ₁ (h10)	l ₁	l ₂	d ₂	z	Item #	Item #
0100	1.0	38	4	3	4	E606 0100	E607 0100
0150	1.5	38	4.5	3	4	E606 0150	E607 0150
0200	2.0	38	6	3	4	E606 0200	E607 0200
0250	2.5	38	9.5	3	4	E606 0250	E607 0250
0300	3.0	38	12	3	4	E606 0300	E607 0300
0350	3.5	50	12	4	4		E607 0350
0400	4.0	50	14	4	4	E606 0400	E607 0400
0450	4.5	50	16	6	4		E607 0450
0500	5.0	50	16	6	4	E606 0500	E607 0500
0600	6.0	50	19	6	4	E606 0600	E607 0600
0700	7.0	63	19	8	4		E607 0700
0800	8.0	63	20	8	4	E606 0800	E607 0800
0900	9.0	75	22	10	4		
1000	10.0	75	22	10	4	E606 1000	E607 1000
1100	11.0	75	25	12	4		E607 1100
1200	12.0	75	25	12	4	E606 1200	E607 1200
1400	14.0	89	32	14	4		E607 1400
1600	16.0	89	32	16	4	E606 1600	E607 1600
1800	18.0	100	38	18	4		E607 1800
2000	20.0	100	38	20	4	E606 2000	E607 2000
2500	25.0	100	38	25	4		E607 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				
E606 / E316	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
E607 / E319	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

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.



- 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



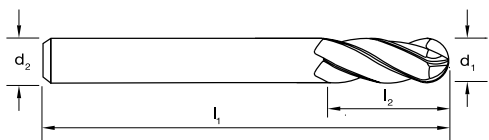
Fraise 4 dents carbure, Hémisphérique, R30N, Long

- 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 N, Lunga Portata

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



Fresas de MD eféricas, 4 ranuras, R30 N, Larga

- Para fresado de perfiles y contornos en aplicaciones de largo alcance
- Adecuado para materiales hasta 1600 N/mm²
- TiAlN para una mayor vida útil de la herramienta



Catalogue Code	E557	E558
Discount Group	B0210	B0210
Material	VHM-ULTRA	VHM-ULTRA
Surface Finish	AlCrN	AlCrN
Sutton Designation	N	N
Geometry	R30	R30
Shank Form (DIN 6535)	HA	HB
Shank Tolerance	h6	h6

Size Ref.	d ₁ (h10)	l ₁	l ₂	d ₂	z	Item #	Item #
0200	2.0	50	5	6	4	E557 0200	E558 0200
0300	3.0	60	8	6	4	E557 0300	E558 0300
0400	4.0	70	8	6	4	E557 0400	E558 0400
0500	5.0	80	10	6	4	E557 0500	E558 0500
0600	6.0	90	12	6	4	E557 0600	E558 0600
0800	8.0	100	14	8	4	E557 0800	E558 0800
1000	10.0	100	18	10	4	E557 1000	E558 1000
1200	12.0	110	22	12	4	E557 1200	E558 1200
1400	14.0	110	26	14	4	E557 1400	E558 1400
1600	16.0	140	30	16	4	E557 1600	E558 1600
1800	18.0	140	34	16	4	E557 1800	E558 1800
2000	20.0	160	38	20	4	E557 2000	E558 2000
2500	25.0	182	61	25	4	E557 2500	E558 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				
E557	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
E558	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

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

● Optimal ○ Effective

Endmills Carbide, Micro, 2 Flute, Long Reach



- For precision milling of cavities
- Suitable for materials up to 35-52 HRC
- TiSiN for high speed machining



Micro-fraise 2 dents

- Pour le Micro-Fraisage de poches, de rainures et gravage
- Convient aux matériaux de 35-52 HRC
- Revêtement TiSiN, résistant à la haute vitesse



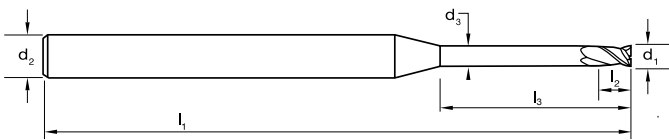
Fresse metallo duro, Micro, 2 Taglienti, Lunga Portata

- Fresatura cave di precisione
- Ideale per materiali fino a 32-45 HRC
- TiSiN per Lavorazioni ad alto avanzamento



Fresas de MD micro, 2 ranuras, Larga

- Para ranurado de precisión
- Adecuado para materiales entre 35-52 HRC
- TiSiN para mecanizado de alta velocidad



Catalogue Code	E580
Discount Group	B0218
Material	VHM
Surface Finish	TiSiN
Application	NH
Geometry	R40
Shank Form (DIN 6535)	HA
Shank Tolerance	h6

Size Ref.	d ₁ *	l ₁	l ₂	l ₃	d ₂	d ₃	z	Item #
0021	0.2	50	0.2	0.5	4	0.16	2	E580 0021
0022		50	0.2	1	4	0.16	2	E580 0022
0023		50	0.2	1.5	4	0.16	2	E580 0023
0031	0.3	50	0.4	1	4	0.26	2	E580 0031
0032		50	0.4	2	4	0.26	2	E580 0032
0033		50	0.4	3	4	0.26	2	E580 0033
0041	0.4	50	0.4	2	4	0.37	2	E580 0041
0042		50	0.4	4	4	0.37	2	E580 0042
0043		50	0.6	3	4	0.37	2	E580 0043
0044		50	0.6	5	4	0.37	2	E580 0044
0051	0.5	50	0.7	2	4	0.45	2	E580 0051
0052		50	0.7	4	4	0.45	2	E580 0052
0053		50	0.7	6	4	0.45	2	E580 0053
0054		50	0.7	8	4	0.45	2	E580 0054
0060	0.6	50	0.9	2	4	0.55	2	E580 0060
0061		50	0.9	4	4	0.55	2	E580 0061
0062		50	0.9	8	4	0.55	2	E580 0062
0063		50	0.9	8	4	0.55	2	E580 0063
0064		50	0.9	10	4	0.55	2	E580 0064
0070	0.7	50	1	2	4	0.65	2	E580 0070
0072		50	1	6	4	0.65	2	E580 0072
0073		50	1	8	4	0.65	2	E580 0073
0074		50	1	10	4	0.65	2	E580 0074
0081	0.8	50	1.2	4	4	0.75	2	E580 0081
0082		50	1.2	6	4	0.75	2	E580 0082
0083		50	1.2	8	4	0.75	2	E580 0083
0084		50	1.2	10	4	0.75	2	E580 0084
0085		50	1.2	12	4	0.75	2	E580 0085

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	
E580									●		●		○	○	○																																			

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

*Cutting Ø tolerance: d₁ < 0.7 = 0 / -0.012 d₁ > 0.7 = 0 / -0.020

Endmills Carbide, Micro, 2 Flute, Long Reach



- For precision milling of cavities
- Suitable for materials up to 35-52 HRC
- TiSiN for high speed machining



Micro-fraise 2 dents

- Pour le Micro-Fraisage de poches, de rainures et gravage
- Convient aux matériaux de 35-52 HRC
- Revêtement TiSiN, résistant à la haute vitesse



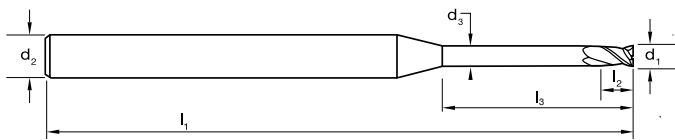
Frese metallo duro, Micro, 2 Taglienti, Lunga Portata

- Fresatura cave di precisione
- Ideale per materiali fino a 32-45 HRC
- TiSiN per Lavorazioni ad alto avanzamento



Fresas de MD micro, 2 ranuras, Larga

- Para ranurado de precisión
- Adecuado para materiales entre 35-52 HRC
- TiSiN para mecanizado de alta velocidad



Catalogue Code	E580
Discount Group	B0218
Material	VHM
Surface Finish	TiSiN
Application	NH
Geometry	R40
Shank Form (DIN 6535)	HA
Shank Tolerance	h6

Size Ref.	d ₁ *	l ₁	l ₂	l ₃	d ₂	d ₃	z	Item #
0092		50	1.4	6	4	0.75	2	E580 0092
0093		50	1.4	8	4	0.75	2	E580 0093
0094	0.9	50	1.4	10	4	0.85	2	E580 0094
0096		50	1.4	15	4	0.85	2	E580 0096
0101	1	50	1.5	6	4	0.95	2	E580 0101
0102		50	1.5	8	4	0.95	2	E580 0102
0103		50	1.5	10	4	0.95	2	E580 0103
0104		50	1.5	12	4	0.95	2	E580 0104
0105		50	1.5	16	4	0.95	2	E580 0105
0106		50	1.5	14	4	0.95	2	E580 0106
0121	1.2	50	1.8	6	4	1.15	2	E580 0121
0122		50	1.8	10	4	1.15	2	E580 0122
0123		50	1.8	12	4	1.15	2	E580 0123
0124		50	1.8	8	4	1.15	2	E580 0124
0141	1.4	50	2.1	6	4	1.35	2	E580 0141
0142		50	2.1	8	4	1.35	2	E580 0142
0143		50	2.1	10	4	1.35	2	E580 0143
0144		50	2.1	12	4	1.35	2	E580 0144
0145		50	2.1	14	4	1.35	2	E580 0145
0146		50	2.1	16	4	1.35	2	E580 0146
0151	1.5	50	2.3	6	4	1.45	2	E580 0151
0152		50	2.3	8	4	1.45	2	E580 0152
0153		50	2.3	12	4	1.45	2	E580 0153
0154		50	2.3	16	4	1.45	2	E580 0154
0155		60	2.3	20	4	1.45	2	E580 0155
0156		50	2.3	10	4	1.45	2	E580 0156
0157		50	2.3	14	4	1.45	2	E580 0157
0158		60	2.3	18	4	1.45	2	E580 0158

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							
E580									●	●	○			○	●																					●	●				●	●	●	●	●	●										

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

Endmills Carbide, Micro, 2 Flute, Long Reach



- For precision milling of cavities
- Suitable for materials up to 35-52 HRC
- TiSiN for high speed machining



Micro-fraise 2 dents

- Pour le Micro-Fraisage de poches, de rainures et gravage
- Convient aux matériaux de 35-52 HRC
- Revêtement TiSiN, résistant à la haute vitesse



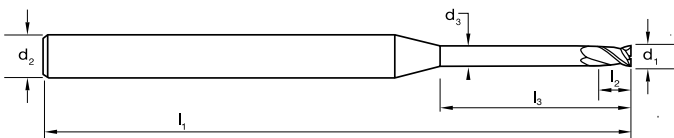
Frese metallo duro, Micro, 2 Taglienti, Lunga Portata

- Fresatura cave di precisione
- Ideale per materiali fino a 32-45 HRC
- TiSiN per Lavorazioni ad alto avanzamento



Fresas de MD micro, 2 ranuras, Larga

- Para ranurado de precisión
- Adecuado para materiales entre 35-52 HRC
- TiSiN para mecanizado de alta velocidad



Catalogue Code	E580
Discount Group	B0218
Material	VHM
Surface Finish	TiSiN
Application	NH
Geometry	R40
Shank Form (DIN 6535)	HA
Shank Tolerance	h6

Size Ref.	d ₁ *	l ₁	l ₂	l ₃	d ₂	d ₃	z	Item #
0161	1.6	50	2.4	6	4	1.55	2	E580 0161
0162		50	2.4	8	4	1.55	2	E580 0162
0163		50	2.4	10	4	1.55	2	E580 0163
0164		50	2.4	12	4	1.55	2	E580 0164
0165		50	2.4	14	4	1.55	2	E580 0165
0166		50	2.4	16	4	1.55	2	E580 0166
0167		60	2.4	18	4	1.55	2	E580 0167
0168		60	2.4	20	4	1.55	2	E580 0168
0181	1.8	50	2.7	6	4	1.75	2	E580 0181
0182		50	2.7	8	4	1.75	2	E580 0182
0183		50	2.7	10	4	1.75	2	E580 0183
0184		50	2.7	12	4	1.75	2	E580 0184
0185		50	2.7	14	4	1.75	2	E580 0185
0186		50	2.7	16	4	1.75	2	E580 0186
0187		60	2.7	18	4	1.75	2	E580 0187
0188		60	2.7	20	4	1.75	2	E580 0188
0201	2	50	3.0	6	4	1.95	2	E580 0201
0202		50	3.0	8	4	1.95	2	E580 0202
0203		50	3.0	10	4	1.95	2	E580 0203
0204		50	3.0	12	4	1.95	2	E580 0204
0205		50	3.0	16	4	1.95	2	E580 0205
0206		60	3.0	20	4	1.95	2	E580 0206
0207		75	3.0	25	4	1.95	2	E580 0207
0208	2	50	3	14	4	1.95	2	E580 0208
0209		60	3	18	4	1.95	2	E580 0209
0210		75	3	30	4	1.95	2	E580 0210
0251	2.5	50	3.7	8	4	2.40	2	E580 0251
0252		50	3.7	12	4	2.40	2	E580 0252

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		
E580									●	●			○																																						

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

*Cutting Ø tolerance: d₁ < 0.7 = 0 / -0.012 d₁ > 0.7 = 0 / -0.020

Endmills Carbide, Micro, 2 Flute, Long Reach



- For precision milling of cavities
- Suitable for materials up to 35-52 HRC
- TiSiN for high speed machining



Micro-fraise 2 dents

- Pour le Micro-Fraisage de poches, de rainures et gravage
- Convient aux matériaux de 35-52 HRC
- Revêtement TiSiN, résistant à la haute vitesse



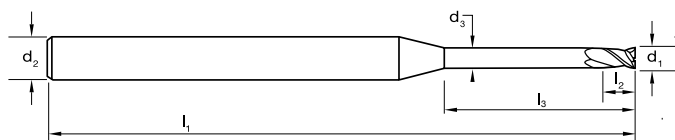
Fresate metallo duro, Micro, 2 Taglienti, Lunga Portata

- Fresatura cave di precisione
- Ideale per materiali fino a 32-45 HRC
- TiSiN per Lavorazioni ad alto avanzamento



Fresas de MD micro, 2 ranuras, Larga

- Para ranurado de precisión
- Adecuado para materiales entre 35-52 HRC
- TiSiN para mecanizado de alta velocidad



Catalogue Code	E580
Discount Group	B0218
Material	VHM
Surface Finish	TiSiN
Application	NH
Geometry	R40
Shank Form (DIN 6535)	HA
Shank Tolerance	h6

Size Ref.	d ₁ *	l ₁	l ₂	l ₃	d ₂	d ₃	z	Item #
0253		50	3.7	10	4	2.40	2	E580 0253
0254		50	3.7	14	4	2.40	2	E580 0254
0255		50	3.7	16	4	2.40	2	E580 0255
0256		60	3.7	18	4	2.40	2	E580 0256
0257		60	3.7	20	4	2.40	2	E580 0257
0258		60	3.7	25	4	2.40	2	E580 0258
0259		75	3.7	30	4	2.40	2	E580 0259
0301	3	60	4.5	16	6	2.85	2	E580 0301
0302		60	4.5	20	6	2.85	2	E580 0302
0303		75	4.5	25	6	2.85	2	E580 0303
0304		50	4.5	8	6	2.85	2	E580 0304
0305		50	4.5	10	6	2.85	2	E580 0305
0306		50	4.5	12	6	2.85	2	E580 0306
0307		50	4.5	14	6	2.85	2	E580 0307
0308		60	4.5	18	6	2.85	2	E580 0308
0401	4	60	4.5	10	6	3.85	2	E580 0401
0402		60	4.5	15	6	3.85	2	E580 0402
0403		60	4.5	20	6	3.85	2	E580 0403
0404		75	4.5	25	6	3.85	2	E580 0404
0405		75	4.5	30	6	3.85	2	E580 0405
0406		75	4.5	40	6	3.85	2	E580 0406

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							
E580									●	●	○			○	○	○																				●	●				●				●	●										

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

● Optimal ○ Effective

Endmills Carbide, Micro, 2 Flute, Corner Rad



- For precision milling of cavities
- Suitable for materials up to 35-52 HRC
- TiSiN for high speed machining



Micro-fraise 2 dents, Torique

- Pour le Micro-Fraisage de poches
- Convient aux matériaux de 35-52 HRC
- Revêtement TiSiN, résistant à la haute vitesse



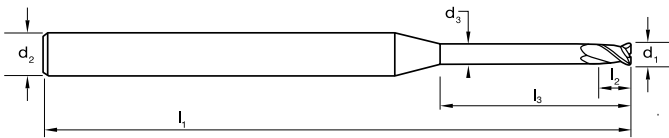
Frese metallo duro, Micro, 2 Taglienti, Toriche

- Fresatura cave di precisione
- Ideale per materiali fino a 32-45 HRC
- TiSiN per Lavorazioni ad alto avanzamento



Fresas de MD micro, 2 ranuras, Tórica

- Para ranurado de precisión
- Adecuado para materiales entre 35-52 HRC
- TiSiN para mecanizado de alta velocidad



Catalogue Code	E581
Discount Group	B0218
Material	VHM
Surface Finish	TiSiN
Application	NH
Geometry	R40
Shank Form (DIN 6535)	HA
Shank Tolerance	h6

Size Ref.	d ₁ *	l ₁	l ₂	l ₃	d ₂	d ₃	z	rad†	Item #
0021	0.2	50	0.3	0.5	4	0.16	2	0.02	E581 0021
0022		50	0.3	1	4	0.16	2	0.02	E581 0022
0023		50	0.3	1.5	4	0.16	2	0.02	E581 0023
0041	0.4	50	0.6	2	4	0.37	2	0.03	E581 0041
0042		50	0.6	4	4	0.37	2	0.03	E581 0042
0051	0.5	50	0.7	2	4	0.45	2	0.05	E581 0051
0052		50	0.7	4	4	0.45	2	0.05	E581 0052
0053		50	0.7	6	4	0.45	2	0.05	E581 0053
0061	0.6	50	0.9	4	4	0.55	2	0.05	E581 0061
0062		50	0.9	8	4	0.55	2	0.05	E581 0062
0081	0.8	50	1.2	4	4	0.75	2	0.08	E581 0081
0082		50	1.2	6	4	0.75	2	0.08	E581 0082
0083		50	1.2	8	4	0.75	2	0.08	E581 0083
0101	1	50	1.5	6	4	0.95	2	0.1	E581 0101
0102		50	1.5	8	4	0.95	2	0.1	E581 0102
0103		50	1.5	10	4	0.95	2	0.1	E581 0103
0104		50	1.5	12	4	0.95	2	0.1	E581 0104
0105		50	1.5	16	4	0.95	2	0.1	E581 0105
0121	1.2	50	1.8	6	4	1.15	2	0.1	E581 0121
0122		50	1.8	10	4	1.15	2	0.1	E581 0122
0123		50	1.8	12	4	1.15	2	0.1	E581 0123
0151	1.5	50	2.3	6	4	1.45	2	0.15	E581 0151
0152		50	2.3	8	4	1.45	2	0.15	E581 0152
0153		50	2.3	12	4	1.45	2	0.15	E581 0153
0154		50	2.3	16	4	1.45	2	0.15	E581 0154
0155		60	2.3	20	4	1.45	2	0.15	E581 0155
0201	2	50	3.0	6	4	1.95	2	0.2	E581 0201
0202		50	3.0	8	4	1.95	2	0.2	E581 0202

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			
E581																																																				

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

*Cutting Ø tolerance: d₁ < 0.7 = 0 / -0.012 d₁ > 0.7 = 0 / -0.020 †Radius tolerance: Rad = +-0.01

Endmills Carbide, Micro, 2 Flute, Corner Rad



- For precision milling of cavities
- Suitable for materials up to 35-52 HRC
- TiSiN for high speed machining



Micro-fraise 2 dents, Torique

- Pour le Micro-Fraisage de poches
- Convient aux matériaux de 35-52 HRC
- Revêtement TiSiN, résistant à la haute vitesse



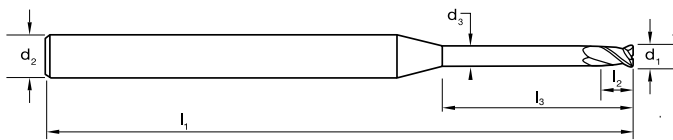
Frese metallo duro, Micro, 2 Taglienti, Toriche

- Fresatura cave di precisione
- Ideale per materiali fino a 32-45 HRC
- TiSiN per Lavorazioni ad alto avanzamento



Fresas de MD micro, 2 ranuras, Tórica

- Para ranurado de precisión
- Adecuado para materiales entre 35-52 HRC
- TiSiN para mecanizado de alta velocidad



Catalogue Code	E581
Discount Group	B0218
Material	VHM
Surface Finish	TiSiN
Application	NH
Geometry	R40
Shank Form (DIN 6535)	HA
Shank Tolerance	h6

Size Ref.	d ₁ *	l ₁	l ₂	l ₃	d ₂	d ₃	z	rad†	Item #
0203		50	3.0	10	4	1.95	2	0.2	E581 0203
0204		50	3.0	12	4	1.95	2	0.2	E581 0204
0205		50	3.0	16	4	1.95	2	0.2	E581 0205
0206		60	3.0	20	4	1.95	2	0.2	E581 0206
0207		75	3.0	25	4	1.95	2	0.2	E581 0207
0251	2.5	50	3.7	8	4	2.40	2	0.3	E581 0251
0252		50	3.7	12	4	2.40	2	0.3	E581 0252
0301	3	60	4.5	16	6	2.95	2	0.3	E581 0301
0302		60	4.5	20	6	2.95	2	0.3	E581 0302
0303		75	4.5	25	6	2.95	2	0.3	E581 0303

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								
E581									●	●		○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

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

Endmills Carbide, Micro, Ballnose, 2 Flute, Long Reach



- For profile & contour milling applications
- Suitable for materials up to 35-52 HRC
- TiSiN for high speed machining



Fraise à rainurer 2 dents carbure, Hémisphérique, R30N, Longue

- Pour le Micro-Fraisage de poches et super finition
- Convient aux matériaux de 35-52 HRC
- Revêtement TiSiN, résistant à la haute vitesse



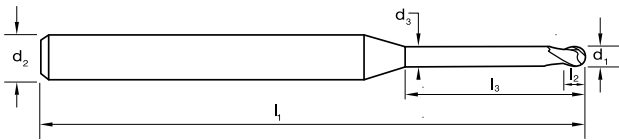
Frese metallo duro, Micro, Sferiche, 2 Taglienti, Lunga Portata

- Fresatura cave di precisione
- Ideale per materiali fino a 32-45 HRC
- TiSiN per Lavorazioni ad alto avanzamento



Fresas de MD micro, eféricas, 2 ranuras, Larga

- Para ranurado de precisión
- Adecuado para materiales entre 35-52 HRC
- TiSiN para mecanizado de alta velocidad



Catalogue Code	E582
Discount Group	B0218
Material	VHM
Surface Finish	TiSiN
Application	NH
Geometry	R30
Shank Form (DIN 6535)	HA
Shank Tolerance	h6

Size Ref.	d ₁ *	l ₁	l ₂	l ₃	d ₂	d ₃	z	rad†	Item #
0021	0.2	50	0.2	0.5	4	0.15	2	0.1	E582 0021
0022		50	0.2	1	4	0.15	2	0.1	E582 0022
0023		50	0.2	1.5	4	0.15	2	0.1	E582 0023
0031	0.3	50	0.3	1	4	0.25	2	0.15	E582 0031
0032		50	0.3	2	4	0.25	2	0.15	E582 0032
0033		50	0.3	3	4	0.25	2	0.15	E582 0033
0040	0.4	50	0.4	1	4	0.35	2	0.2	E582 0040
0041		50	0.4	2	4	0.35	2	0.2	E582 0041
0042		50	0.4	4	4	0.35	2	0.2	E582 0042
0043		50	0.4	3	4	0.35	2	0.2	E582 0043
0044		50	0.4	5	4	0.35	2	0.2	E582 0044
0051	0.5	50	0.4	2	4	0.45	2	0.25	E582 0051
0052		50	0.4	6	4	0.45	2	0.25	E582 0052
0053		50	0.4	3	4	0.45	2	0.25	E582 0053
0054		50	0.4	4	4	0.45	2	0.25	E582 0054
0055		50	0.4	5	4	0.45	2	0.25	E582 0055
0056		50	0.4	8	4	0.45	2	0.25	E582 0056
0061	0.6	50	0.5	2	4	0.55	2	0.3	E582 0061
0062		50	0.5	4	4	0.55	2	0.3	E582 0062
0063		50	0.5	6	4	0.55	2	0.3	E582 0063
0064		50	0.5	8	4	0.55	2	0.3	E582 0064
0065		50	0.5	3	4	0.55	2	0.3	E582 0065
0066		50	0.5	5	4	0.55	2	0.3	E582 0066
0081	0.8	50	0.6	4	4	0.75	2	0.4	E582 0081
0082		50	0.6	8	4	0.75	2	0.4	E582 0082
0083		50	0.6	10	4	0.75	2	0.4	E582 0083
0101	1	50	0.8	4	4	0.95	2	0.5	E582 0101
0102		50	0.8	6	4	0.95	2	0.5	E582 0102

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						
E582									●		●		○																																										

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

*Cutting Ø tolerance: d₁ < 0.7 = 0 / -0.012 d₁ > 0.7 = 0 / -0.020 †Radius tolerance: Rad = +-0.01

Endmills Carbide, Micro, Ballnose, 2 Flute, Long Reach



- For profile & contour milling applications
- Suitable for materials up to 35-52 HRC
- TiSiN for high speed machining



Fraise à rainurer 2 dents carbure, Hémisphérique, R30N, Longue

- Pour le Micro-Fraisage de poches et super finition
- Convient aux matériaux de 35-52 HRC
- Revêtement TiSiN, résistant à la haute vitesse



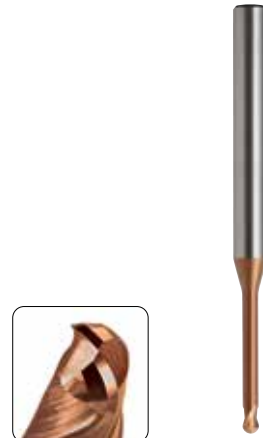
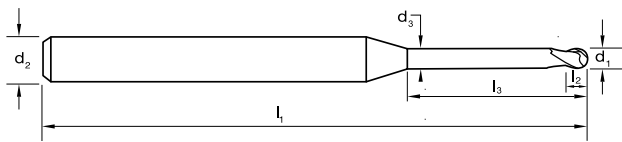
Fresse metallo duro, Micro, Sferiche, 2 Taglienti, Lunga Portata

- Fresatura cave di precisione
- Ideale per materiali fino a 32-45 HRC
- TiSiN per Lavorazioni ad alto avanzamento



Fresas de MD micro, esféricas, 2 ranuras, Larga

- Para ranurado de precisión
- Adecuado para materiales entre 35-52 HRC
- TiSiN para mecanizado de alta velocidad



Catalogue Code	E582
Discount Group	B0218
Material	VHM
Surface Finish	TiSiN
Application	NH
Geometry	R30
Shank Form (DIN 6535)	HA
Shank Tolerance	h6

Size Ref.	d ₁ *	l ₁	l ₂	l ₃	d ₂	d ₃	z	rad†	Item #
0103		50	0.8	8	4	0.95	2	0.5	E582 0103
0104		50	0.8	10	4	0.95	2	0.5	E582 0104
0105		50	0.8	12	4	0.95	2	0.5	E582 0105
0106		50	0.8	14	4	0.95	2	0.5	E582 0106
0107		60	0.8	20	4	0.95	2	0.5	E582 0107
0121	1.2	50	1.0	8	4	1.15	2	0.6	E582 0121
0123		50	1.0	10	4	1.15	2	0.6	E582 0123
0122		50	1.0	12	4	1.15	2	0.6	E582 0122
0151	1.5	50	1.2	8	4	1.45	2	0.75	E582 0151
0152		50	1.2	12	4	1.45	2	0.75	E582 0152
0153		50	1.2	16	4	1.45	2	0.75	E582 0153
0154		50	1.2	18	4	1.45	2	0.75	E582 0154
0201	2	50	1.6	6	4	1.95	2	1.0	E582 0201
0202		50	1.6	8	4	1.95	2	1.0	E582 0202
0203		50	1.6	12	4	1.95	2	1.0	E582 0203
0204		50	1.6	16	4	1.95	2	1.0	E582 0204
0205		60	1.6	20	4	1.95	2	1.0	E582 0205
0206		75	1.6	30	4	1.95	2	1.0	E582 0206
0301	3	50	2.4	10	6	2.85	2	1.5	E582 0301
0302		60	2.4	16	6	2.85	2	1.5	E582 0302
0303		75	2.4	25	6	2.85	2	1.5	E582 0303
0304		75	2.4	30	6	2.85	2	1.5	E582 0304

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						
E582									●	●	○			○	●																					●	●				●	●		●	●										

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

Endmills Carbide, Hi-Feed Micro, 4 Flute, Corner Rad



- Increased feedrates
- Tough coating for long tool life
- Variable helix design for chatter-free machining
- Machine Material 35 to 68HRC ?



Fraise 4 dents carbure, Hi-Feed, Torique

- Fraise grande avance
- Revêtement TiSiN pour une meilleure durée de vie
- Convient aux matériaux de 35 to 68HRC



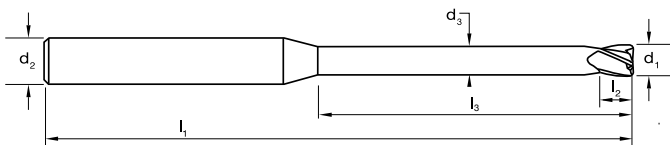
Frese metallo duro, Hi-Feed Micro, 4 Taglienti, Toriche

- Lavorazione ad alti avanzamenti
- Rivestimento resistente per una lunga vita utensile
- Tagliante a elica variabile per lavorazioni prive di vibrazioni
- Adatta per materiali da 35 a 68HRC



Fresas de MD alto avance, micro, 4 ranuras, Tórica

- Aumento de avance
- Recubrimiento resistente para una larga vida útil de la herramienta.
- Diseño de hélice variable para mecanizado sin vibraciones.
- Material de la máquina entre 35 - 68HRC



Catalogue Code	E598
Product Group	B0218
Material	VHM
Surface Finish	TiSiN
Application	N
Geometry	R40
Shank Form (DIN 6535)	HA
Shank Tolerance	h6

Size Ref.	d ₁ *	l ₁	l ₂	l ₃	d ₂	d ₃	z	rad†	Item #
0102	1	50	1	4	4	-	4	0.1	E598 0102
0103	1	50	1	6	4	-	4	0.1	E598 0103
0104	1	50	1	8	4	-	4	0.1	E598 0104
0105	1	50	1	10	4	-	4	0.1	E598 0105
0106	1	50	1	12	4	-	4	0.1	E598 0106
0107	1	50	1	14	4	-	4	0.1	E598 0107
0108	1	50	1	16	4	-	4	0.1	E598 0108
0110	1	75	1	20	4	-	4	0.1	E598 0110
0112	1	50	1	4	4	-	4	0.2	E598 0112
0113	1	50	1	6	4	-	4	0.2	E598 0113
0114	1	50	1	8	4	-	4	0.2	E598 0114
0115	1	50	1	10	4	-	4	0.2	E598 0115
0116	1	50	1	12	4	-	4	0.2	E598 0116
0117	1	50	1	14	4	-	4	0.2	E598 0117
0118	1	50	1	16	4	-	4	0.2	E598 0118
0120	1	60	1	20	4	-	4	0.2	E598 0120
0122	1	50	1	6	4	-	4	0.3	E598 0122
0123	1	50	1	10	4	-	4	0.3	E598 0123
0124	1	50	1	16	4	-	4	0.3	E598 0124
0126	1	60	1	20	4	-	4	0.3	E598 0126
0152	1.5	50	1.5	6	4	-	4	0.1	E598 0152
0153	1.5	50	1.5	8	4	-	4	0.1	E598 0153
0154	1.5	50	1.5	12	4	-	4	0.1	E598 0154
0155	1.5	50	1.5	16	4	-	4	0.1	E598 0155
0157	1.5	60	1.5	20	4	-	4	0.1	E598 0157
0159	1.5	50	1.5	6	4	-	4	0.2	E598 0159
0160	1.5	50	1.5	8	4	-	4	0.2	E598 0160
0161	1.5	50	1.5	10	4	-	4	0.2	E598 0161

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							
E598				○	●			●	●	●	●	○	○																																											

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

● Optimal ○ Effective

*Cutting Ø tolerance: d₁ < 0.7 = 0 / -0.012 d₁ > 0.7 = 0 / -0.020

Endmills Carbide, Hi-Feed Micro, 4 Flute, Corner Rad



- Increased feedrates
- Tough coating for long tool life
- Variable helix design for chatter-free machining
- Machine Material 35 to 68HRC ?



Fraise 4 dents carbure, Hi-Feed, Torique

- Fraise grande avance
- Revêtement TiSiN pour une meilleure durée de vie
- Convient aux matériaux de 35 to 68HRC



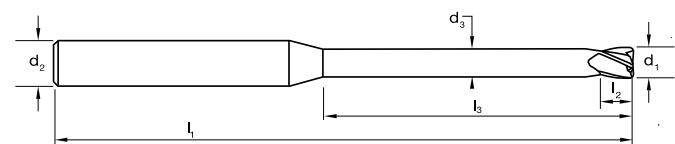
Frese metallo duro, Hi-Feed Micro, 4 Taglienti, Toriche

- Lavorazione ad alti avanzamenti
- Rivestimento resistente per una lunga vita utensile
- Tagliente a elica variabile per lavorazioni prive di vibrazioni
- Adatta per materiali da 35 a 68HRC



Fresas de MD alto avance, micro, 4 ranuras, Tórica

- Aumento de avance
- Recubrimiento resistente para una larga vida útil de la herramienta.
- Diseño de hélice variable para mecanizado sin vibraciones.
- Material de la máquina entre 35 - 68HRC



Catalogue Code	E598
Product Group	B0218
Material	VHM
Surface Finish	TiSiN
Application	N
Geometry	R40
Shank Form (DIN 6535)	HA
Shank Tolerance	h6

Size Ref.	d_1^*	l_1	l_2	l_3	d_2	d_3	z	rad [†]	Item #
0162	1.5	50	1.5	12	4	-	4	0.2	E598 0162
0163	1.5	50	1.5	14	4	-	4	0.2	E598 0163
0164	1.5	50	1.5	16	4	-	4	0.2	E598 0164
0166	1.5	60	1.5	18	4	-	4	0.2	E598 0166
0167	1.5	60	1.5	20	4	-	4	0.2	E598 0167
0169	1.5	50	1.5	8	4	-	4	0.3	E598 0169
0170	1.5	50	1.5	16	4	-	4	0.3	E598 0170
0172	1.5	60	1.5	20	4	-	4	0.3	E598 0172
0202	2	50	2	6	4	-	4	0.2	E598 0202
0203	2	50	2	8	4	-	4	0.2	E598 0203
0204	2	50	2	10	4	-	4	0.2	E598 0204
0205	2	50	2	12	4	-	4	0.2	E598 0205
0206	2	50	2	14	4	-	4	0.2	E598 0206
0207	2	50	2	16	4	-	4	0.2	E598 0207
0209	2	60	2	18	4	-	4	0.2	E598 0209
0210	2	60	2	20	4	-	4	0.2	E598 0210
0212	2	75	2	25	4	-	4	0.2	E598 0212
0213	2	75	2	30	4	-	4	0.2	E598 0213
0215	2	50	2	8	4	-	4	0.3	E598 0215
0216	2	50	2	16	4	-	4	0.3	E598 0216
0218	2	60	2	20	4	-	4	0.3	E598 0218
0220	2	50	2	6	4	-	4	0.5	E598 0220
0221	2	50	2	8	4	-	4	0.5	E598 0221
0222	2	50	2	12	4	-	4	0.5	E598 0222
0223	2	50	2	16	4	-	4	0.5	E598 0223
0225	2	60	2	20	4	-	4	0.5	E598 0225
0227	2	75	2	25	4	-	4	0.5	E598 0227
0228	2	75	2	30	4	-	4	0.5	E598 0228

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		
E598																																																			

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

Endmills Carbide, Hi-Feed Micro, 4 Flute, Corner Rad



- Increased feedrates
- Tough coating for long tool life
- Variable helix design for chatter-free machining
- Machine Material 35 to 68HRC



Fraise 4 dents carbure, Hi-Feed, Torique

- Fraise grande avance
- Revêtement TiSiN pour une meilleure durée de vie
- Convient aux matériaux de 35 to 68HRC



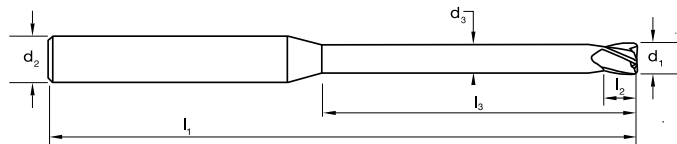
Frese metallo duro, Hi-Feed Micro, 4 Taglienti, Toriche

- Lavorazione ad alti avanzamenti
- Rivestimento resistente per una lunga vita utensile
- Tagliente a elica variabile per lavorazioni prive di vibrazioni
- Adatta per materiali da 35 a 68HRC



Fresas de MD alto avance, micro, 4 ranuras, Tórica

- Aumento de avance
- Recubrimiento resistente para una larga vida útil de la herramienta.
- Diseño de hélice variable para mecanizado sin vibraciones.
- Material de la máquina entre 35 - 68HRC



Size Ref.	d ₁ *	l ₁	l ₂	l ₃	d ₂	d ₃	z	rad†	Item #
0320	3	60	3	18	6	-	4	0.3	E598 0320
0321	3	60	3	20	6	-	4	0.3	E598 0321
0323	3	75	3	30	6	-	4	0.3	E598 0323
0325	3	50	3	8	6	-	4	0.5	E598 0325
0326	3	50	3	10	6	-	4	0.5	E598 0326
0327	3	50	3	12	6	-	4	0.5	E598 0327
0328	3	50	3	14	6	-	4	0.5	E598 0328
0330	3	60	3	16	6	-	4	0.5	E598 0330
0331	3	60	3	18	6	-	4	0.5	E598 0331
0332	3	60	3	20	6	-	4	0.5	E598 0332
0334	3	75	3	30	6	-	4	0.5	E598 0334
0402	4	60	4	10	6	-	4	0.3	E598 0402
0403	4	60	4	15	6	-	4	0.3	E598 0403
0404	4	60	4	20	6	-	4	0.3	E598 0404
0406	4	75	4	25	6	-	4	0.3	E598 0406
0407	4	75	4	32	6	-	4	0.3	E598 0407
0408	4	75	4	40	6	-	4	0.3	E598 0408
0410	4	60	4	10	6	-	4	0.5	E598 0410
0411	4	60	4	15	6	-	4	0.5	E598 0411
0412	4	60	4	20	6	-	4	0.5	E598 0412
0414	4	75	4	25	6	-	4	0.5	E598 0414
0415	4	75	4	32	6	-	4	0.5	E598 0415
0416	4	75	4	40	6	-	4	0.5	E598 0416



Catalogue Code	E598
Product Group	B0218
Material	VHM
Surface Finish	TiSiN
Application	N
Geometry	R40
Shank Form (DIN 6535)	HA
Shank Tolerance	h6

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	
E598	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

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

*Cutting Ø tolerance: d₁ < 0.7 = 0 / -0.012 d₁ > 0.7 = 0 / -0.020

Endmills Carbide, Hi-Feed, 4 Flute, Corner Rad



- Increased feedrates
- Tough coating for long tool life
- Variable helix design for chatter-free machining
- Machine Material 35 to 68HRC



Fraise 4 dents carbure, Hi-Feed, Torique

- Fraise grande avance
- Revêtement TiSiN pour une meilleure durée de vie
- Convient aux matériaux de 35 to 68HRC



Frese metallo duro, Hi-Feed, 4 Taglienti, Toriche

- Lavorazione ad alti avanzamenti
- Rivestimento resistente per una lunga vita utensile
- Tagliente a elica variabile per lavorazioni prive di vibrazioni
- Adatta per materiali da 35 a 68HRC



Fresas de MD alto avance, 4 ranuras, Tórica

- Aumento de avance
- Recubrimiento resistente para una larga vida útil de la herramienta.
- Diseño de hélice variable para mecanizado sin vibraciones.
- Material de la máquina entre 35 - 68HRC



Catalogue Code	E650
Product Group	B0218
Material	VHM
Surface Finish	TiSiN
Application	N
Geometry	R40
Shank Form (DIN 6535)	HA
Shank Tolerance	h6

Size Ref.	d ₁ *	l ₁	l ₂	l ₃	d ₂	d ₃	z	rad†	Item #
0201	2	60	2	6	6	-	4	0.3	E650 0201
0202	2	60	2	6	6	-	4	0.5	E650 0202
0301	3	60	3	7	6	-	4	0.3	E650 0301
0302	3	60	3	7	6	-	4	0.5	E650 0302
0401	4	60	4	8	6	-	4	0.3	E650 0401
0402	4	60	4	8	6	-	4	0.5	E650 0402
0601	6	60	6	-	6	-	4	0.3	E650 0601
0602	6	60	6	-	6	-	4	0.5	E650 0602
0603	6	60	6	-	6	-	4	1.0	E650 0603

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								
E650				●				●	●	●	●	○	○																																												

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

*Cutting Ø tolerance: d₁ < 0.7 = 0 / -0.012 d₁ > 0.7 = 0 / -0.020

Endmills Carbide, Chamfer, 4 Flute 60°



- For chamfering & deburring component edges
- Straight flute for smooth cutting
- 60° form
- TiAlN for longer tool life



Fraise 4 dents carbure, à chanfreiner 60°

- Pour le chanfreinage et cassage d'angles
- Goujures droites, coupe douce
- Angle 60°
- Revêtement TiAlN pour une meilleure durée de vie



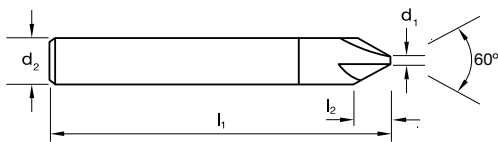
Frese metallo duro, Svasatori, 4 Taglienti 60°

- Fresatura di smussi e sbavature
- Tagliente dritto e liscio
- Inclinazione tagliente 60°
- TiAlN per Ottimizzare vita utensile



Fresas de MD, Avellanado, 4 ranuras 60°

- Para biselar y desbarbar bordes de componentes
- Ranuras rectas para un corte suave
- Forma 60°
- TiAlN para una mayor vida útil de la herramienta



Catalogue Code	E457
Discount Group	B0210
Material	VHM
Surface Finish	TiAlN
Sutton Designation	N
Geometry	60°
Shank Form (DIN 6535)	HA
Shank Tolerance	h6

Size Ref.	l_2	l_1	d_1	d_2	z	Item #
0600	3.8	57	1.2	6	4	E457 0600
0800	5.5	63	1.6	8	4	E457 0800
1000	6.9	72	2.0	10	4	E457 1000
1200	8.3	83	2.4	12	4	E457 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	
E457	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

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

● Optimal ○ Effective

Endmills Carbide, Chamfer, 4 Flute, Corner Rad



- For chamfering & deburring component edges
- Straight flute for smooth cutting
- Radius for corner rounding
- TiAlN for longer tool life



Fraise 4 dents carbure, à rayons

- Pour le chabrefinage et cassage d'angles
- Goujures droites, coupe douce
- Rayons suivant diamètres
- Revêtement TiAlN pour une meilleure durée de vie



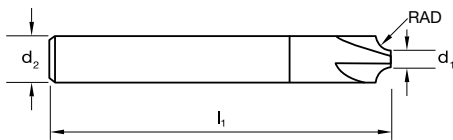
Frese metallo duro, Svasatori, 4 Taglienti, Toriche

- Fresatura di smussi e sbavature
- Tagliente dritto e liscio
- Affilatura concava del tagliente per angoli raggianti
- TiAlN per Ottimizzare vita utensile



Fresas de MD, Avellanado, 4 ranuras, Tórica

- Para biselar y desbarbar bordes de componentes
- Ranuras rectas para un corte suave
- Radio para redondear esquinas
- TiAlN para una mayor vida útil de la herramienta



Catalogue Code	E458
Discount Group	B0210
Material	VHM
Surface Finish	TiAlN
Sutton Designation	N
Geometry	Rad
Shank Form (DIN 6535)	HA
Shank Tolerance	h6

Size Ref.	rad	d ₁	l ₁	d ₂	z	Item #
0605	0.5	5.0	57	6	4	E458 0605
0610	1	4.0	57	6	4	E458 0610
0815	1.5	5.0	63	8	4	E458 0815
0820	2	4.0	63	8	4	E458 0820
1025	2.5	5.0	72	10	4	E458 1025
1030	3	4.0	72	10	4	E458 1030
1235	3.5	5.0	83	12	4	E458 1235
1240	4	4.0	83	12	4	E458 1240

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		
E458	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

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, R38/37/39 UNI, DIN6527K, Harmony



- Universal use for slotting & finishing with the one tool
- 38/37/39° variable flute helix for chatter free milling
- Suitable for materials up to 1600 N/mm²



Fraise 3 dents carbure, R35°/38° UNI, DIN6527I, HARMONY

- Pour le rainurage et la finition
- Hélice variable 38°/37°/39° pour la suppression des vibrations
- Convient aux matériaux jusqu'à 1600N/mm²



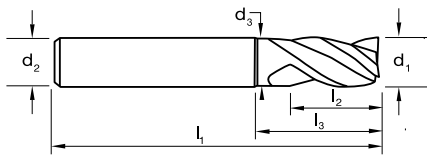
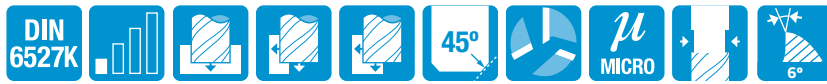
Fresa metallo duro, 3 Taglienti, R38/37/39 UNI, DIN 6527K, Harmony

- Fresa universale per cave e lavorazioni di finitura
- Elica tagliente variabile 38/37/39° per lavorazioni senza vibrazioni
- Adatta per materiali fino a 1600 N/mm²



Fresas de MD, 3 ranuras, R38/37/39 UNI, DIN6527K, Harmony

- Uso universal para ranurado y acabado con una herramienta
- Hélice de ranura variable 38/37/39° para fresado sin vibraciones
- Adecuado para materiales hasta 1600 N/mm²



Catalogue Code	E422	E423
Discount Group	B0210	B0210
Material	VHM-ULTRA	VHM-ULTRA
Surface Finish	AICrN	AICrN
Sutton Designation	UNI	UNI
Geometry	R38/37/39	R38/37/39
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 #
0300	3.0	50	5	-	6	-	3	E422 0300	E423 0300
0350	3.5	50	6	-	6	-	3	E422 0350	E423 0350
0400	4.0	54	8	13	6	3.8	3	E422 0400	E423 0400
0450	4.5	54	8	13	6	4.3	3	E422 0450	E423 0450
0500	5.0	54	9	15	6	4.8	3	E422 0500	E423 0500
0550	5.5	54	9	15	6	5.3	3	E422 0550	E423 0550
0600	6.0	54	10	16	6	5.7	3	E422 0600	E423 0600
0800	8.0	58	12	20	8	7.6	3	E422 0800	E423 0800
1000	10.0	66	14	24	10	9.5	3	E422 1000	E423 1000
1200	12.0	73	16	26	12	11.5	3	E422 1200	E423 1200
1400	14.0	73	16	26	14	13.5	3	E422 1400	E423 1400
1600	16.0	82	22	32	16	15.5	3	E422 1600	E423 1600
1800	18.0	82	22	32	18	17.5	3	E422 1800	E423 1800
2000	20.0	92	26	40	20	19.5	3	E422 2000	E423 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						
E422	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
E423	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

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, R38/37/39 UNI, DIN6527L, Harmony



- VHM-ULTRA grade of carbide for high performance
- Universal use for slotting & finishing with the one tool
- 38/37/39° variable flute helix for chatter free milling
- Suitable for materials up to 1600 N/mm²
- AlCrN for longer tool life



Fraise 3 dents carbure, R35°/38° UNI, DIN6527L, HARMONY

- Carbure VHM-ULTRA pour une meilleure performance
- Pour le rainurage et la finition
- Hélice variable 38°/37°/39° pour la suppression des vibrations
- Convient aux matériaux jusqu'à 1600N/mm²
- Revêtement AlCrN pour une meilleure durée de vie



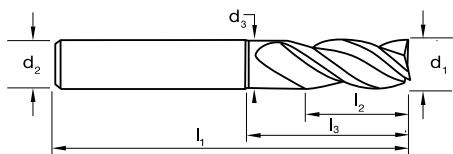
Frese metallo duro, 3 Taglienti, R38/37/39 UNI, DIN6527L, Harmony

- VHM-ULTRA, grado di metallo duro per alte prestazione
- Fresa universale per cave e lavorazioni di finitura
- Elica tagliente variabile 38/37/39° per lavorazioni senza vibrazioni
- Adatta per materiali fino a 1600 N/mm²
- AlCrN per Ottimizzare vita utensile



Fresas de MD, 3 ranuras, R38/37/39 UNI, DIN6527L, Harmony

- Grado de MD, VHM-ULTRA para alto rendimiento
- Uso universal para ranurado y acabado con una herramienta
- Hélice de ranura variable 38/37/39° para fresado sin vibraciones
- Adecuado para materiales hasta 1600 N/mm²
- AlCrN para una mayor vida útil de la herramienta



Catalogue Code	E424	E425
Discount Group	B0210	B0210
Material	VHM-ULTRA	VHM-ULTRA
Surface Finish	AlCrN	AlCrN
Sutton Designation	UNI	UNI
Geometry	R38/37/39	R38/37/39
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 #
0300	3.0	57	8	14	6	2.8	3	E424 0300	E425 0300
0350	3.5	57	8	14	6	3.3	3	E424 0350	E425 0350
0400	4.0	57	11	16	6	3.8	3	E424 0400	E425 0400
0450	4.5	57	11	16	6	4.3	3	E424 0450	E425 0450
0500	5.0	57	13	18	6	4.8	3	E424 0500	E425 0500
0550	5.5	57	13	18	6	5.3	3	E424 0550	E425 0550
0600	6.0	57	13	19	6	5.7	3	E424 0600	E425 0600
0800	8.0	63	19	25	8	7.6	3	E424 0800	E425 0800
1000	10.0	72	22	30	10	9.5	3	E424 1000	E425 1000
1200	12.0	83	26	36	12	11.5	3	E424 1200	E425 1200
1400	14.0	83	26	36	14	13.5	3	E424 1400	E425 1400
1600	16.0	92	32	42	16	15.5	3	E424 1600	E425 1600
1800	18.0	92	32	42	18	17.5	3	E424 1800	E425 1800
2000	20.0	104	38	52	20	19.5	3	E424 2000	E425 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
E424	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
E425	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

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, R35/38 UNI, DIN6527K, Harmony



- VHM-ULTRA grade of carbide for high performance
- 35/38° variable flute helix for chatter free milling
- Suitable for materials up to 1600 N/mm²
- AlCrN for longer tool life



Fraise 4 dents carbure, R35°/38° UNI, DIN6527K, HARMONY

- Carbure VHM-ULTRA pour une meilleure performance
- Hélice variable 35/38° pour la suppression des vibrations
- Convient aux matériaux jusqu'à 1600N/mm²
- Revêtement AlCrN pour une meilleure durée de vie



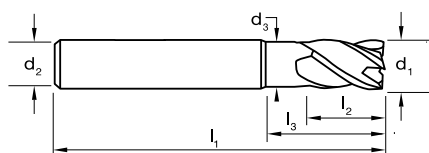
Frese metallo duro, 4 Taglienti, R35/38 UNI, DIN6527K, Harmony

- VHM-ULTRA, grado di metallo duro per alte prestazione
- Elica tagliente variabile 35/38° per lavorazioni senza vibrazioni
- Adatta per materiali fino a 1600 N/mm²
- AlCrN per Ottimizzare vita utensile



Fresas de MD, 4 ranuras, R35/38 UNI, DIN6527K, Harmony

- Grado de MD, VHM-ULTRA para alto rendimiento
- Hélice de ranura variable 35/38° para fresado sin vibraciones
- Adecuado para materiales hasta 1600 N/mm²
- AlCrN para una mayor vida útil de la herramienta



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

E533	E534
B0210	B0210
VHM-ULTRA	VHM-ULTRA
AlCrN	AlCrN
UNI	UNI
R35/38	R35/38
HA	HB
h6	h6

Size Ref.	d ₁ (h9)	l ₁	l ₂	l ₃	d ₂	d ₃	z	Item #	Item #
0600	6.0	54	10	18	6	5.5	4	E533 0600	E534 0600
0800	8.0	58	12	22	8	7.5	4	E533 0800	E534 0800
1000	10.0	66	14	24	10	9.5	4	E533 1000	E534 1000
1200	12.0	73	16	28	12	11.2	4	E533 1200	E534 1200
1600	16.0	82	22	34	16	15.0	4	E533 1600	E534 1600
2000	20.0	92	26	42	20	19.0	4	E533 2000	E534 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			
E533	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
E534	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

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, R35/38 UNI, Cnr Rad, DIN6527L, Harmony



- For precision finishing applications
- Ideally suited to materials up to 1300 N/mm²
- AlCrN for longer tool life



Fraise 4 dents carbure, R35°/38° UNI, Torique, DIN6527L, HARMONY

- Carbure VHM-ULTRA pour une meilleure performance
- Hélice variable 35/38° pour la suppression des vibrations
- Convient aux matériaux jusqu'à 1300N/mm²
- Revêtement AlCrN pour une meilleure durée de vie



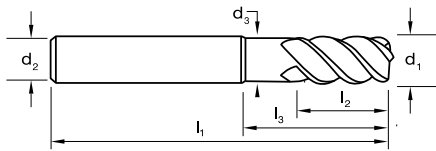
Frese metallo duro, 4 Taglienti, R35/38 UNI, Toriche, DIN6527L, Harmony

- Fresa ideale per lavorazioni di finitura
- Adatta per materiali fino a 1300 N/mm²
- AlCrN per Ottimizzare vita utensile



Fresas de MD, 4 ranuras, R35/38 UNI, Tórica, DIN6527L, Harmony

- Grado de MD, VHM-ULTRA para alto rendimiento
- Para fresado de precisión de ranuras
- Adecuado para materiales hasta 1300 N/mm²
- AlCrN para una mayor vida útil de la herramienta



Catalogue Code	E559	E560
Discount Group	B0210	B0210
Material	VHM-ULTRA	VHM-ULTRA
Surface Finish	AlCrN	AlCrN
Sutton Designation	UNI	UNI
Geometry	R35/38	R35/38
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 #
0303	3.0	57	8	19	6	3.7	4	0.3	E559 0303	E560 0303
0305		57	8	19	6	3.7	4	0.5	E559 0305	E560 0305
0403	4.0	57	11	19	6	3.7	4	0.3	E559 0403	E560 0403
0405		57	11	19	6	3.7	4	0.5	E559 0405	E560 0405
0410		57	11	19	6	3.7	4	1.0	E559 0410	E560 0410
0503	5.0	57	13	20	6	4.6	4	0.3	E559 0503	E560 0503
0505		57	13	20	6	4.6	4	0.5	E559 0505	E560 0505
0510		57	13	20	6	4.6	4	1.0	E559 0510	E560 0510
0603	6.0	57	13	21	6	5.5	4	0.3	E559 0603	E560 0603
0605		57	13	21	6	5.5	4	0.5	E559 0605	E560 0605
0610		57	13	21	6	5.5	4	1.0	E559 0610	E560 0610
0803	8.0	63	19	27	8	7.5	4	0.3	E559 0803	E560 0803
0805		63	19	27	8	7.5	4	0.5	E559 0805	E560 0805
0810		63	19	27	8	7.5	4	1.0	E559 0810	E560 0810
0815		63	19	27	8	7.5	4	1.5	E559 0815	E560 0815
0820		63	19	27	8	7.5	4	2.0	E559 0820	E560 0820
1003	10.0	72	22	32	10	9.5	4	0.3	E559 1003	E560 1003
1005		72	22	32	10	9.5	4	0.5	E559 1005	E560 1005
1010		72	22	32	10	9.5	4	1.0	E559 1010	E560 1010
1015		72	22	32	10	9.5	4	1.5	E559 1015	E560 1015
1020		72	22	32	10	9.5	4	2.0	E559 1020	E560 1020
1203	12.0	83	26	38	12	11.2	4	0.3	E559 1203	E560 1203
1205		83	26	38	12	11.2	4	0.5	E559 1205	E560 1205
1210		83	26	38	12	11.2	4	1.0	E559 1210	E560 1210
1215		83	26	38	12	11.2	4	1.5	E559 1215	E560 1215
1220		83	26	38	12	11.2	4	2.0	E559 1220	E560 1220
1230		83	26	38	12	11.2	4	3.0	E559 1230	E560 1230
1605	16.0	92	32	44	16	15.0	4	0.5	E559 1605	E560 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				
E559	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
E560	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

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, R35/38UNI, Cnr Rad, DIN6527L, Harmony



- For precision finishing applications
- Ideally suited to materials up to 1300 N/mm²
- AlCrN for longer tool life



Fraise 4 dents carbure, R35°/38° UNI, Torique, DIN6527L, HARMONY

- Carbure VHM-ULTRA pour une meilleure performance
- Hélice variable 35/38° pour la suppression des vibrations
- Convient aux matériaux jusqu'à 1300N/mm²
- Revêtement AlCrN pour une meilleure durée de vie



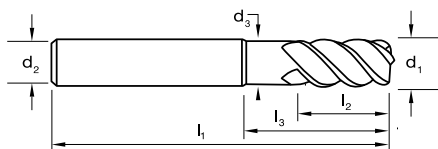
Frese metallo duro, 4 Taglienti, R35/38 UNI, Toriche, DIN6527L, Harmony

- Fresa ideale per lavorazioni di finitura
- Adatta per materiali fino a 1300 N/mm²
- AlCrN per Ottimizzare vita utensile



Fresas de MD, 4 ranuras, R35/38 UNI, Tórica, DIN6527L, Harmony

- Grado de MD, VHM-ULTRA para alto rendimiento
- Para fresado de precisión de ranuras
- Adecuado para materiales hasta 1300 N/mm²
- AlCrN para una mayor vida útil de la herramienta



Catalogue Code	E559	E560
Discount Group	B0210	B0210
Material	VHM-ULTRA	VHM-ULTRA
Surface Finish	AlCrN	AlCrN
Sutton Designation	UNI	UNI
Geometry	R35/38	R35/38
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 #
1610		92	32	44	16	15.0	4	1.0	E559 1610	E560 1610
1615		92	32	44	16	15.0	4	1.5	E559 1615	E560 1615
1620		92	32	44	16	15.0	4	2.0	E559 1620	E560 1620
1630		92	32	44	16	15.0	4	3.0	E559 1630	E560 1630
2005	20.0	104	38	54	20	19.0	4	0.5	E559 2005	E560 2005
2010		104	38	54	20	19.0	4	1.0	E559 2010	E560 2010
2015		104	38	54	20	19.0	4	1.5	E559 2015	E560 2015
2020		104	38	54	20	19.0	4	2.0	E559 2020	E560 2020
2030		104	38	54	20	19.0	4	3.0	E559 2030	E560 2030

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										
E559	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○				
E560	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

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, R45/44 UNI, DIN6527L, Harmony



- VHM-ULTRA grade of carbide for high performance
- 45/44° variable flute helix for chatter free milling
- Suitable for materials up to 1600 N/mm²
- AlCrN for longer tool life



Fraise 4 dents carbure, R45°/44° UNI, DIN6527K, HARMONY

- Carburé VHM-ULTRA pour une meilleure performance
- Hélice variable 45°/44° pour la suppression des vibrations
- Convient aux matériaux jusqu'à 1600N/mm²
- Revêtement AlCrN pour une meilleure durée de vie



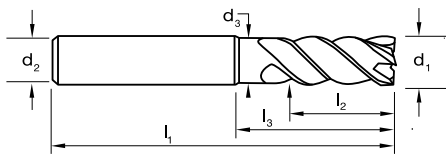
Frese metallo duro, 4 Taglienti, R45/44 UNI, DIN6527L, Harmony

- VHM-ULTRA, grado di metallo duro per alte prestazione
- Elica tagliente variabile 44/45° per lavorazioni senza vibrazioni
- Adatta per materiali fino a 1600 N/mm²
- AlCrN per Ottimizzare vita utensile



Fresas de MD, 4 ranuras, R45/44 UNI, Tórica, DIN6527L, Harmony

- Grado de MD, VHM-ULTRA para alto rendimiento
- Hélice de ranura variable 45/44° para fresado sin vibraciones
- Adecuado para materiales hasta 1300 N/mm²
- AlCrN para una mayor vida útil de la herramienta



Catalogue Code	E426	E427
Discount Group	B0210	B0210
Material	VHM-ULTRA	VHM-ULTRA
Surface Finish	AlCrN	AlCrN
Sutton Designation	UNI	UNI
Geometry	R45/44	R45/44
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 #
0300	3.0	57	8	14	6	2.8	4	E426 0300	E427 0300
0350	3.5	57	11	16	6	3.3	4	E426 0350	E427 0350
0400	4.0	57	11	16	6	3.8	4	E426 0400	E427 0400
0450	4.5	57	13	18	6	4.3	4	E426 0450	E427 0450
0500	5.0	57	13	18	6	4.8	4	E426 0500	E427 0500
0550	5.5	57	13	18	6	5.3	4	E426 0550	E427 0550
0600	6.0	57	13	19	6	5.7	4	E426 0600	E427 0600
0800	8.0	63	19	25	8	7.6	4	E426 0800	E427 0800
1000	10.0	72	22	30	10	9.5	4	E426 1000	E427 1000
1200	12.0	83	26	36	12	11.5	4	E426 1200	E427 1200
1400	14.0	83	26	36	14	13.5	4	E426 1400	E427 1400
1600	16.0	92	32	42	16	15.5	4	E426 1600	E427 1600
1800	18.0	92	32	42	18	17.5	4	E426 1800	E427 1800
2000	20.0	104	38	52	20	19.5	4	E426 2000	E427 2000
2500	25.0	120	45	62	25	24.0	4	E426 2500	E427 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									
E426	●	●	●	●	●	●	●	●	●	●	●	●	●				●	●	●	●	●	●											○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
E427	●	●	●	●	●	●	●	●	●	●	●	●	●				●	●	●	●	●	●											○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

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, R45/44 UNI, Cnr Rad, Long Reach, Harmony



- VHM-ULTRA grade of carbide for high performance
- 45/44° variable flute helix for chatter free milling
- Suitable for materials up to 1300 N/mm²
- AlCrN for longer tool life



Fraise 4 dents carbure, R45°/44° UNI, Torique, Longue HARMONY

- Carbure VHM-ULTRA pour une meilleure performance
- Hélice variable 45°/44° pour la suppression des vibrations
- Convient aux matériaux jusqu'à 1300N/mm²
- Revêtement AlCrN pour une meilleure durée de vie



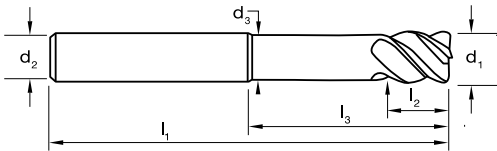
Frese metallo duro, 4 Taglienti, R45/44 UNI, Toriche, Lunga Portata, Harmony

- VHM-ULTRA, grado di metallo duro per alte prestazione
- Elica togliente variabile 44/45° per lavorazioni senza vibrazioni
- Adatta per materiali fino a 1600 N/mm²
- AlCrN per Ottimizzare vita utensile



Fresas de MD, 4 ranuras, R45/44 UNI, Tórica, DIN6527L, Harmony

- Grado de MD, VHM-ULTRA para alto rendimiento
- Hélice de ranura variable 45/44° para fresado sin vibraciones
- Adecuado para materiales hasta 1300 N/mm²
- AlCrN para una mayor vida útil de la herramienta



Catalogue Code	E430	E431
Discount Group	B0210	B0210
Material	VHM-ULTRA	VHM-ULTRA
Surface Finish	AlCrN	AlCrN
Sutton Designation	UNI	UNI
Geometry	R45/44	R45/44
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	rad	Item #	Item #
0403	4.0	57	5	16	6	3.6	4	0.3	E430 0403	E431 0403
0405		57	5	16	6	3.6	4	0.5	E430 0405	E431 0405
0603	6.0	62	7	24	6	5.4	4	0.3	E430 0603	E431 0603
0605		62	7	24	6	5.4	4	0.5	E430 0605	E431 0605
0610		62	7	24	6	5.4	4	1.0	E430 0610	E431 0610
0615		62	7	24	6	5.4	4	1.5	E430 0615	E431 0615
0803	8.0	68	9	30	8	7.2	4	0.3	E430 0803	E431 0803
0805		68	9	30	8	7.2	4	0.5	E430 0805	E431 0805
0810		68	9	30	8	7.2	4	1.0	E430 0810	E431 0810
0815		68	9	30	8	7.2	4	1.5	E430 0815	E431 0815
1005	10.0	80	11	38	10	9.0	4	0.5	E430 1005	E431 1005
1010		80	11	38	10	9.0	4	1.0	E430 1010	E431 1010
1015		80	11	38	10	9.0	4	1.5	E430 1015	E431 1015
1020		80	11	38	10	9.0	4	2.0	E430 1020	E431 1020
1205	12.0	93	13	46	12	11.0	4	0.5	E430 1205	E431 1205
1210		93	13	46	12	11.0	4	1.0	E430 1210	E431 1210
1215		93	13	46	12	11.0	4	1.5	E430 1215	E431 1215
1220		93	13	46	12	11.0	4	2.0	E430 1220	E431 1220
1610	16.0	108	17	58	16	15.0	4	1.0	E430 1610	E431 1610
1620		108	17	58	16	15.0	4	2.0	E430 1620	E431 1620
1630		108	17	58	16	15.0	4	3.0	E430 1630	E431 1630
1640		108	17	58	16	15.0	4	4.0	E430 1640	E431 1640

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	
E430	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
E431	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

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

● Optimal ○ Effective

Roughers Carbide, STF, R45 UNI, DIN6527L, Harmony



- For finishing & semi-roughing applications
- Suitable for materials up to 1400 N/mm²
- Unequal flute design with Special Tooth Form (STF)
- Eliminates the use of finishing Endmills in many cases



Fresas de MD, Desbaste, STF, R45 UNI, DIN6527L, Harmony

- Para aplicaciones de acabado y semi desbaste.
- Adecuado para materiales de hasta 1600 N/mm²
- Diseño de ranura desigual con forma de diente especial (STF), produce un excelente acabado superficial
- Elimina el uso de fresas de acabado en muchos casos



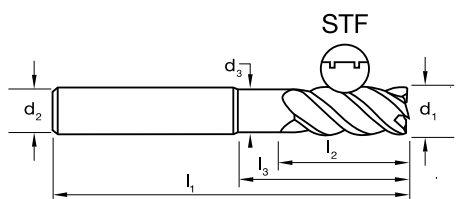
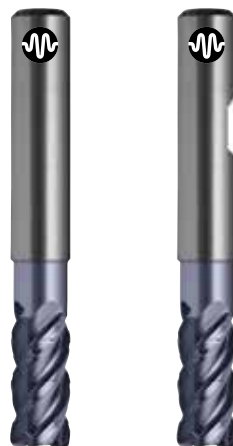
Fraise d'ébauche carbure, Profil STF, R45°, UNI, DIN 6527L, HARMONY

- Pour la finition et la semie-ébauche
- Micro brise-copeaux (STF) pour une excellente évacuation dans les matériaux tendres
- Convient aux matériaux jusqu'à 1400N/mm²



Frese metallo duro, STF, R45 UNI, DIN6527L, Harmony

- Ideale per applicazioni di finitura e semi sgrassatura
- Adatta per materiali fino a 1400 N/mm²
- Speciale profilo tagliente con sezioni interrotte per controllo truciolo e eccellente finitura
- Evita l'uso di frese di finitura in molti casi



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

E545	E546*
B0210	B0210
VHM-ULTRA	VHM-ULTRA
AICrN	AICrN
UNI	UNI
R45	R45
HA	HB
h6	h6

Size Ref.	d ₁ (e8)	l ₁	l ₂	l ₃	d ₂	d ₃	z	Item #	Item #
0400	4.0	57	11	19	6	3.7	4	E545 0400	E546 0400
0500	5.0	57	13	20	6	4.6	4	E545 0500	E546 0500
0600	6.0	57	13	21	6	5.5	4	E545 0600	E546 0600
0800	8.0	63	19	27	8	7.5	4	E545 0800	E546 0800
1000	10.0	72	22	32	10	9.5	4	E545 1000	E546 1000
1200	12.0	83	26	38	12	11.2	4	E545 1200	E546 1200
1600	16.0	92	32	44	16	15.0	4	E545 1600	E546 1600
2000	20.0	104	38	54	20	19.0	4	E545 2000	E546 2000

ISO	P							M			K				N							S						H																								
	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			
VDI 3323																																																				
E545	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
E546	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

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

● Optimal ○ Effective

Roughers Carbide, HRS, R45 UNI, DIN6527L Harmony



- HRS geometry allows for heavy cuts in short & long chipping materials
- Suitable for materials up to 1600 N/mm²
- AlCrN for longer tool life



Fraise d'ébauche carbure, Profil HRS, R45°, UNI, DIN 6527L, HARMONY

- Brise-copeaux (HRS) pour dans les matériaux à coupeaux longs
- Convient aux matériaux jusqu'à 1600N/mm²
- Revêtement AlCrN pour une meilleure durée de vie



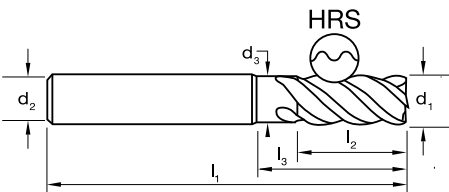
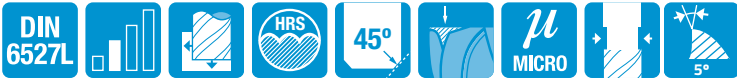
Frese metallo duro rompitrucolo, HRS, R45 UNI, DIN6527L Harmony

- Geometria HR permette lavorazioni gravose su materiali di difficile lavorabilità
- Ideale per materiali fino a 1600 N/mm²
- AlCrN per Ottimizzare vita utensile



Fresas de MD, Desbaste, HRS, R45 UNI, DIN6527L, Harmony

- Adecuado para materiales de hasta 1600 N/mm²
- Diseño de ranura (HRS), para gran desbaste en materiales de viruta corta y larga
- AlCrN para una mayor vida útil de la herramienta



Catalogue Code	E549	E550
Discount Group	B0210	B0210
Material	VHM-ULTRA	VHM-ULTRA
Surface Finish	AlCrN	AlCrN
Sutton Designation	UNI	UNI
Geometry	R45 HRS	R45 HRS
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	Item #	Item #
0400	4.0	57	11	19	6	3.7	3	E549 0400	E550 0400
0500	5.0	57	13	20	6	4.6	4	E549 0500	E550 0500
0600	6.0	57	16	21	6	5.5	4	E549 0600	E550 0600
0800	8.0	63	19	27	8	7.5	4	E549 0800	E550 0800
1000	10.0	72	22	32	10	9.5	4	E549 1000	E550 1000
1200	12.0	83	26	38	12	11.2	4	E549 1200	E550 1200
1400	14.0	83	26	38	14	13.5	4		E550 1400
1600	16.0	92	32	44	16	15.5	5	E549 1600	E550 1600
1800	18.0	92	32	44	16	17.5	5	E549 1800	E550 1800
2000	20.0	104	38	54	20	19.0	6	E549 2000	E550 2000
2500	25.0	120	45	60	25	24.5	6	E549 2500	E550 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	
E549	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
E550	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

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

● Optimal ○ Effective

Endmills Carbide, Ballnose, 4 Flute, R30 UNI, Long Reach



- 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

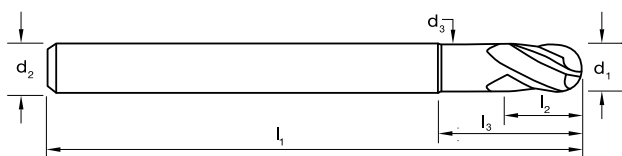
Frese metallo duro, Sferiche, 4 Taglienti, R30 UNI, Lunga Portata

- VHM-ULTRA, grado di metallo duro per alte prestazione
- 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



Catalogue Code	E442	E443
Discount 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	7.0	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	12.0	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	17.0	6	5.7	4	E442 0600	E443 0600
0800	8.0	90	9	22.0	8	7.6	4	E442 0800	E443 0800
1000	10.0	100	11	27.0	10	9.5	4	E442 1000	E443 1000
1200	12.0	120	13	32.0	12	11.5	4	E442 1200	E443 1200
1400	14.0	120	15	37.0	14	13.5	4	E442 1400	E443 1400
1600	16.0	140	17	42.0	16	15.5	4	E442 1600	E443 1600
1800	18.0	140	19	47.0	18	17.5	4	E442 1800	•
2000	20.0	160	21	52.0	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			
E442			○	○	○	○	○	○	○	○	○	○	○				○	○	○	○	○	○											○	○	○	○	○	○	○	○	○	○	○	○	○	○						
E443			○	○	○	○	○	○	○	○	○	○	○				○	○	○	○	○	○											○	○	○	○	○	○	○	○	○	○	○	○	○	○						

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

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

Endmills Carbide, 1 Flute, R30 AI, Short



- For non ferrous aluminium alloys such as aluminium sheet & extrusions, brass & bronze
- Large single flute provides maximum chip evacuation when ran at high RPM & feed rates
- Centre cutting for straight plunging or ramping
- Suitable for use in hi speed routers & air tools for trimming plastics and similar materials



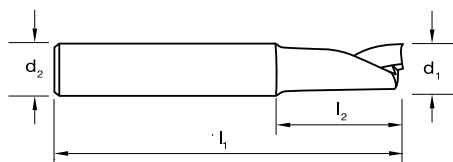
Fraise 1 dent carbure, R30° AL, courte

- Recommandé pour l'aluminium en feuille et extrusion, les bronzes et plastiques
- Grosse goujure pour une évacuation maximale pendant les utilisations à haute vitesses
- Coupe au centre pour les opérations de plongées ou ramping, utilisation sous AIR recommandée pour les plastiques



Frese metallo duro, 1 Taglienti, R30 AI, Corte

- Ideale per material non ferrosi, leghe di alluminio, lamiera di alluminio & fusioni, ottone e bronzo
- Ampio vano truciolo in un unico tagliente consentendo al massimo l'evacuazione truciolo riferito ad alti avanzanzamenti
- Tagliente al centro per consentire applicazione forante
- Ideale per essere applicate su utensili pneumatici utili per taglio di, aterie plastiche e similari



Fresas de MD, 1 ranura, R30 AI, Corta

- Para aleaciones de aluminio no ferrosos, como láminas y perfiles de aluminio, latón y bronce.
- La ranura única y grande proporciona la máxima evacuación de viruta cuando se trabaja a altas RPM y velocidades de avance
- Corte central para perforaciones o rampas rectas
- Adecuado para usar en husillos de alta velocidad y husillos neumáticos, para recortar plásticos y materiales similares



Catalogue Code	E444
Discount Group	B0208
Material	VHM
Surface Finish	Brt
Sutton Designation	AI
Geometry	R30
Shank Form (DIN 6535)	HA
Shank Tolerance	h6

Size Ref.	d ₁ (h10)	l ₁	l ₂	d ₂	z	Item #
0300	3.0	50	8	6	1	E444 0300
0400	4.0	54	11	6	1	E444 0400
0500	5.0	54	13	6	1	E444 0500
0600	6.0	54	13	6	1	E444 0600
0800	8.0	58	19	8	1	E444 0800
1000	10.0	66	22	10	1	E444 1000
1200	12.0	73	26	12	1	E444 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						
E444																							●	●	●	●	○			○																									

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

Slot Drills Carbide, 2 Flute, R40 AlCarb, DIN6527L



- For precision milling of slots & cavities
- Optimised geometry for aluminiums & non-ferrous materials
- High speed & high feed rates can be achieved
- Highly efficient chip disposal



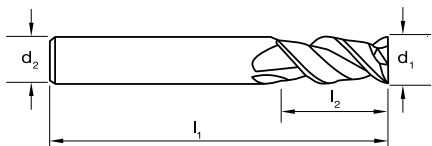
Fraise 2 dents carbure, R30° AL, courte

- Pour le fraisage de rainures, de poches dans les aluminiums et non-ferreux
- Utilisable en haute vitesse
- Evacuation copeaux optimale



Frese metallo duro, 2 Taglienti, R40 AlCarb, DIN6527L

- Fresa universale per cave e lavorazioni di finitura
- Geometria tagliente ottimizzata per materiali non ferrosi & alluminio
- Supporta alti avanzamenti e alte velocità di taglio
- Elevata evaquazione truciolo



Fresas de MD, 2 ranuras, R40 Al, DIN6527L

- Para fresado de precisión de ranuras y cavidades
- Geometría optimizada para aluminio y materiales no ferrosos
- Se pueden lograr altas velocidades de corte y altas velocidades de avance
- Eliminación de virutas altamente eficiente



Catalogue Code	E310
Discount Group	B0208
Material	VHM
Surface Finish	Brt
Sutton Designation	AI
Geometry	R40
Shank Form (DIN 6535)	HA
Shank Tolerance	h6

Size Ref.	d ₁ (h10)	l ₁	l ₂	l ₃	d ₂	z	chamf	Item #
0200	2.0	57	7	10	6	2	0.05	E310 0200
0300	3.0	57	8	10	6	2	0.05	E310 0300
0350	3.5	57	10	10	6	2	0.05	•
0400	4.0	57	11	10	6	2	0.05	E310 0400
0450	4.5	57	11	10	6	2	0.05	•
0500	5.0	57	13	8	6	2	0.05	E310 0500
0600	6.0	57	13		6	2	0.06	E310 0600
0700	7.0	63	16		8	2	0.07	•
0800	8.0	63	19		8	2	0.08	E310 0800
0900	9.0	72	19		10	2	0.09	•
1000	10.0	72	22		10	2	0.10	E310 1000
1200	12.0	83	26		12	2	0.12	E310 1200
1400	14.0	83	26		14	2	0.14	•
1600	16.0	92	32		16	2	0.16	E310 1600
1800	18.0	92	32		18	2	0.18	•
2000	20.0	104	38		20	2	0.20	E310 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
E310																								●	●	●	●	●	●	●																			

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 AI, DIN6527L, Harmony



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



Fresas de MD, 3 ranuras, R45/46/44 AI, DIN6527L, Harmony

- Grado de MD, VHM-ULTRA para alto rendimiento
- Hélice de ranura variable 45/46/44° para fresado sin vibraciones
- Geometría optimizada para materiales blandos
- CrN para cobres y materiales no ferrosos

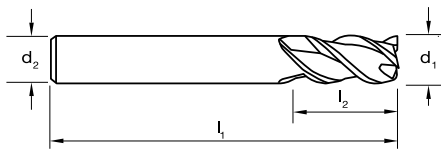
Fraise 3 dents carbure, R45°/46°/44° AL, DIN6527L HARMONY

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



Frese metallo duro, 3 Taglienti, R45/46/44 AI, DIN6527L, Harmony

- VHM-ULTRA, grado di metallo duro per alte prestazione
- Elica tagliente variabile 45/46/44° per lavorazioni senza vibrazioni
- Geometria ottimizzata per materiali morbidi
- CrN specifico per le lavorazioni di rame e materiali non ferrosi



Catalogue Code	E400	E401
Discount Group	B0210	B0210
Material	VHM-ULTRA	VHM-ULTRA
Surface Finish	CrN	CrN
Sutton Designation	AI	AI
Geometry	R45/46/44	R45/46/44
Shank Form (DIN 6535)	HA	HB
Shank Tolerance	h5	h5

Size Ref.	d ₁ (e8)	l ₁	l ₂	d ₂	z	rad	Item #	Item #
0600	6.0	57	13	6	3	0.2	E400 0600	E401 0600
0800	8.0	63	19	8	3	0.2	E400 0800	E401 0800
1000	10.0	72	24	10	3	0.3	E400 1000	E401 1000
1200	12.0	83	28	12	3	0.4	E400 1200	E401 1200
1400	14.0	83	30	14	3	0.4	E400 1400	E401 1400
1600	16.0	92	35	16	3	0.5	E400 1600	E401 1600
1800	18.0	92	38	18	3	0.5	E400 1800	E401 1800
2000	20.0	104	42	20	3	0.6	E400 2000	E401 2000
2500	25.0	120	50	25	3	0.6	E400 2500	E401 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				
E400																																																					
E401																																																					

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 Al, Long Reach, Harmony



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



Fraise 3 dents carbure, R45°/46°/44° AL, Longue HARMONY

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



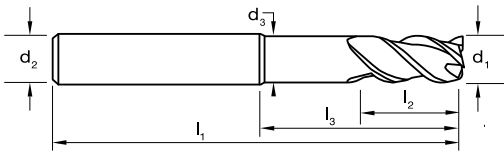
Frese metallo duro, 3 Taglienti, R45/46/44 Al, Lunga Portata, Harmony

- VHM-ULTRA, grado di metallo duro per alte prestazione
- Elica tagliente variabile 45/46/44° per lavorazioni senza vibrazioni
- Geometria ottimizzata per materiali morbidi
- CrN specifico per le lavorazioni di rame e materiali non ferrosi



Fresas de MD, 3 ranuras, R45/46/44 Al, Larga, Harmony

- Grado de MD, VHM-ULTRA para alto rendimiento
- Hélice de ranura variable 45/46/44° para fresado sin vibraciones
- Geometría optimizada para materiales blandos
- CrN para cobres y materiales no ferrosos



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

E402	E403
B0210	B0210
VHM-ULTRA	VHM-ULTRA
CrN	CrN
Al	Al
R45/46/44	R45/46/44
HA	HB
h5	h5

Size Ref.	d ₁ (k10)	l ₁	l ₂	l ₃	d ₂	d ₃	z	rad	Item #	Item #
0600	6.0	62	7	24	6	5.0	3	0.2	E402 0600	
0800	8.0	68	9	30	8	7.0	3	0.2	E402 0800	
1000	10.0	80	12	38	10	9.0	3	0.3	E402 1000	E403 1000
1200	12.0	93	14	46	12	11.0	3	0.4	E402 1200	E403 1200
1400	14.0	93	16	46	14	13.0	3	0.4	E402 1400	E403 1400
1600	16.0	108	18	58	16	15.0	3	0.5	E402 1600	E403 1600
1800	18.0	108	20	58	18	17.0	3	0.5	E402 1800	E403 1800
2000	20.0	126	22	74	20	19.0	3	0.6	E402 2000	E403 2000
2500	25.0	150	27	92	25	24.0	3	0.6	E402 2500	E403 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											
E402																							●	●	●	●	●	●	●	●	●	●																												
E403																							●	●	●	●	●	●	●	●	●	●																												

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

● Optimal ○ Effective

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

Endmills Carbide, Ballnose, 3 Flute, R45/46/44 AI, Long Reach, *Harmony*



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



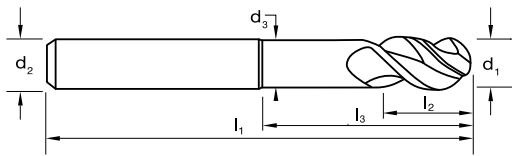
Fraise 3 dents carbure, Hémisphérique, R45°/46°/44° Longue, HARMONY

- Carbure VHM-ULTRA pour une meilleure performance
- Pour le fraisage de formes et de poches profondes
- Hélice variable 45°/46°/44° pour la suppression des vibrations
- Géométrie optimisée et revêtement CrN pour les non-ferreux et cuivres



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

- VHM-ULTRA, grado di metallo duro per alte prestazione
- Elica tagliente variabile 45/46/44° per lavorazioni senza vibrazioni
- Geometria ottimizzata per materiali morbidi
- CrN specifico per le lavorazioni di rame e materiali non ferrosi



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

- Grado de MD, VHM-ULTRA para alto rendimiento
- Hélice de ranura variable 45/46/44° para fresado sin vibraciones
- Geometría optimizada para materiales blandos
- CrN para cobres y materiales no ferrosos



Catalogue Code	E408	E409
Discount Group	B0210	B0210
Material	VHM-ULTRA	VHM-ULTRA
Surface Finish	CrN	CrN
Sutton Designation	AI	AI
Geometry	R45/46/44	R45/46/44
Shank Form (DIN 6535)	HA	HB
Shank Tolerance	h5	h5

Item #	Item #
E408 0600	E409 0600
E408 0800	E409 0800
E408 1000	E409 1000
E408 1200	E409 1200
E408 1400	E409 1400
E408 1600	E409 1600
E408 1800	E409 1800
E408 2000	E409 2000
E408 2500	E409 2500

Size Ref.	d ₁ (e8)	l ₁	l ₂	l ₃	d ₂	z
0600	6.0	62	9	24	6	3
0800	8.0	68	12	30	8	3
1000	10.0	80	15	38	10	3
1200	12.0	93	18	46	12	3
1400	14.0	93	21	46	14	3
1600	16.0	108	24	58	16	3
1800	18.0	108	27	58	18	3
2000	20.0	126	30	74	20	3
2500	25.0	150	38	92	25	3

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	37.1	37.2	37.3	37.4	37.5	38.1	38.2	39.1	39.2	40	41						
E408																							●	●	●	●	●	●	●	●																										
E409																							●	●	●	●	●	●	●	●																										

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 AI, DIN6527L, Harmony



- 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° AL, Longue HARMONY

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



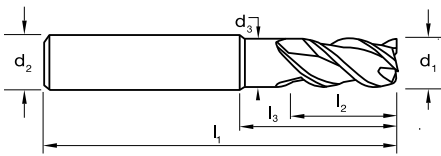
Fresе metallo duro, 3 Taglienti, R45/46/44 AI, Lunga Portata, Harmony

- 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, Harmony

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



Catalogue Code	E480
Discount Group	B0210
Material	VHM-ULTRA
Surface Finish	Br
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	Chamfer	Item #
0300	3.0	57	8	19	6	2.8	0.08/0.12 x 45°	E480 0300
0400	4.0	57	11	19	6	3.7	0.08/0.12 x 45°	E480 0400
0500	5.0	57	13	20	6	4.6	0.08/0.12 x 45°	E480 0500
0600	6.0	57	13	21	6	5.1	0.08/0.12 x 45°	E480 0600
0800	8.0	63	19	27	8	7.1	0.08/0.12 x 45°	E480 0800
1000	10.0	72	22	32	10	9.1	0.15/0.25 x 45°	E480 1000
1200	12.0	83	26	40	12	11.1	0.15/0.25 x 45°	E480 1200
1600	16.0	92	32	50	16	14.8	0.25/0.35 x 45°	E480 1600
2000	20.0	104	38	60	20	18.5	0.25/0.35 x 45°	E480 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		
E480																							●	●	●	●	●	●	●																						

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 Al, Rad, DIN6527L, Harmony



- 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° AL, Longue HARMONY

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



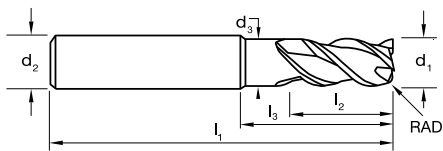
Frese metallo duro, 3 Taglienti, R45/46/44 Al, Lunga Portata, Harmony

- 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 Al, Larga, Harmony

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



Catalogue Code	E478
Discount 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	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	E478 1230
1240	12.0	83	26	40	12	11.1	4	E478 1240
1610	16.0	92	32	50	16	14.8	1	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	E478 1630
1640	16.0	92	32	50	16	14.8	4	E478 1640
2010	20.0	104	38	60	20	18.5	1	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	E478 2030
2040	20.0	104	38	60	20	18.5	4	E478 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
E478																								●	●	●	●	●	●	●																			

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

Roughers Carbide, NR (normal), R25 AI, DIN 6527L



- For roughing applications
- NR geometry allows for heavy cuts
- For soft non ferrous aluminium alloys
- High rake angle for long chipping materials



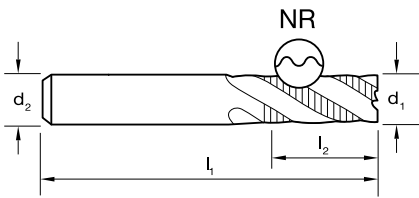
Fraise d'ébauche, Profil NR, R25° AL, DIN 6527L

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



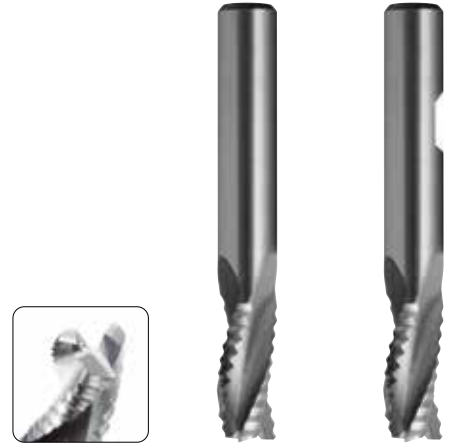
Frese metallo duro rompitruciolo, NR (normal), R25 AI, DIN 6527L

- Fresa ideale per lavorazioni di sgrossatura
- Geometria NR permette lavorazioni gravose
- Ideale per materiali morbidi o non ferrosi
- Elevato angolo di spoglia per lavorazione di materiale con difficile truciolabilità



Fresas Desbaste, NR (normal), R25 AI, DIN6527L

- Para aplicaciones de desbaste
- La geometría NR permite grandes pasadas
- Adecuado para materiales no ferrosos y aluminio aleado
- Ángulo de corte positivo, para materiales de viruta larga.



Catalogue Code	E446	E447
Discount Group	B0208	B0208
Material	VHM	VHM
Surface Finish	Brf	Brf
Sutton Designation	AI	AI
Geometry	R25 NR	R25 NR
Shank Form (DIN 6535)	HA	HB
Shank Tolerance	h5	h5

Size Ref.	d ₁ (h10)	l ₁	l ₂	d ₂	z	Item #	Item #
0600	6.0	57	13	6	3	E446 0600	E447 0600
0800	8.0	63	19	8	3	E446 0800	E447 0800
1000	10.0	72	22	10	3	E446 1000	E447 1000
1200	12.0	83	26	12	3	E446 1200	E447 1200
1400	14.0	83	26	14	3	•	•
1600	16.0	92	32	16	3	E446 1600	E447 1600
1800	18.0	92	32	18	3	•	•
2000	20.0	104	38	20	3	E446 2000	E447 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			
E446																							●	●	●	●	○	○	○																							
E447																							●	●	●	●	○	○	○																							

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

● Optimal ○ Effective

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

Endmills Carbide, 3 Flute, R55/54/56 VA, DIN6527L, Harmony



- VHM-ULTRA grade of carbide for high performance
- Optimised geometry for stainless steels
- 55/54/56° variable flute helix for chatter free milling
- Universal use for slotting and finishing with the one tool
- Helica for superior wear resistance in stainless steel



Fraise 3 dents carbure, R55°/54°/56° VA, DIN6527L HARMONY

- Carbure VHM-ULTRA pour une meilleure performance
- Recommandé pour les inox
- Hélice variable 55°/54°/56° pour la suppression des vibrations
- Revêtement HELICA pour une meilleure durée de vie



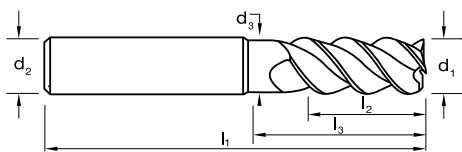
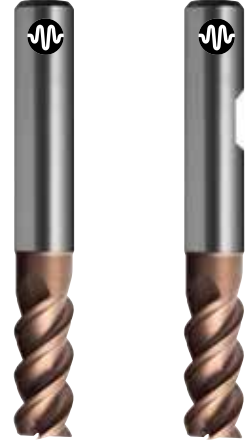
Frese metallo duro, 3 Taglienti, R55/54/56 VA, DIN6527L, Harmony

- VHM-ULTRA, grado di metallo duro per alte prestazione
- Geometria ottimizzata per acciai inossidabili
- Elica tagliente variabile 55/54/64° per lavorazioni senza vibrazioni
- Fresa universale per lavorazioni di cave e finitura di precisione
- Helica per consentire una resistenza all'usura superiore su acciai inossidabili



Fresas de MD, 3 Ranuras, R55/54/56 VA, DIN6527L, Harmony

- Grado de MD, VHM-ULTRA para alto rendimiento
- Geometría optimizada para aceros inoxidables
- 55/54/56° hélice de ranura variable para fresado sin vibraciones
- Uso universal para ranurado y acabado con una herramienta
- Helica para una resistencia al desgaste superior, en acero inoxidable



Catalogue Code	E410	E411
Discount Group	B0210	B0210
Material	VHM-ULTRA	VHM-ULTRA
Surface Finish	HELICA	HELICA
Sutton Designation	VA	VA
Geometry	R55/54/56	R55/54/56
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 #
0300	3.0	57	8	14	6	2.8	3	E410 0300	E411 0300
0400	4.0	57	11	16	6	3.8	3	E410 0400	E411 0400
0500	5.0	57	13	18	6	4.8	3	E410 0500	E411 0500
0600	6.0	57	13	19	6	5.7	3	E410 0600	E411 0600
0800	8.0	63	19	25	8	7.6	3	E410 0800	E411 0800
1000	10.0	72	22	30	10	9.5	3	E410 1000	E411 1000
1200	12.0	83	26	36	12	11.5	3	E410 1200	E411 1200
1400	14.0	83	26	36	14	13.5	3	E410 1400	E411 1400
1600	16.0	92	32	42	16	15.5	3	E410 1600	E411 1600
1800	18.0	92	32	42	18	17.5	3	E410 1800	E411 1800
2000	20.0	104	38	52	20	19.5	3	E410 2000	E411 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							
E410												○	○	●	●	●																	○	○	○	○	○	○	○	○	○	○	○	○												
E411												○	○	○	○	○																	○	○	○	○	○	○	○	○	○	○	○	○												

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

Endmills Carbide, 6-8 Flute, R50/35 NH, DIN6527L, Harmony



- VHM-ULTRA grade of carbide for high performance
- For super fine finishing applications
- 50/35° variable flute helix for chatter free milling
- Suitable for hard, short chipping materials up to 48 HRC
- AlCrN for longer tool life



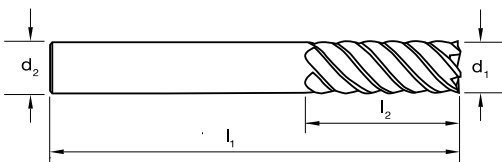
Fraise carbure Multi-Dents, R50°/35° NH, DIN6527L, HARMONY

- Carbure VHM-ULTRA pour une meilleure performance
- Pour la super finition
- Hélice variable 50°/35° pour la suppression des vibrations
- Convient pour les matériaux à copeaux courts jusqu'à 48 HRC
- AlCrN pour une meilleure durée de vie



Frese metallo duro, 6-8 Taglienti, R50/35 NH, DIN6527L, Harmony

- VHM-ULTRA, grado di metallo duro per alte prestazione
- Fresa specifica per finiture ad altissima precisione
- Elica tagliente variabile 50/35° per lavorazioni senza vibrazioni
- Ideale per materiale duri, con truciolo corto fino a 48 HRC
- AlCrN per Ottimizzare vita utensile



Fresas de MD, 6-8 ranuras, R50/35 NH, DIN6527L, Harmony

- Grado de carburo VHM-ULTRA para alto rendimiento
- Para aplicaciones de super acabado
- Hélice de ranura variable de 50/35° para fresado sin vibraciones
- Geometría optimizada para materiales de viruta corta hasta 48HrC
- AlCrN para una mayor vida de la herramienta



Catalogue Code	E432	E433
Discount Group	B0210	B0210
Material	VHM-ULTRA	VHM-ULTRA
Surface Finish	AlCrN	AlCrN
Sutton Designation	NH	NH
Geometry	R50/35	R50/35
Shank Form (DIN 6535)	HA	HB
Shank Tolerance	h5	h5

Size Ref.	d ₁ (e8)	l ₁	l ₂	d ₂	z	Item #	Item #
0600	6.0	57	13	6	6	E432 0600	E433 0600
0800	8.0	63	19	8	6	E432 0800	E433 0800
1000	10.0	72	22	10	6	E432 1000	E433 1000
1200	12.0	83	26	12	6	E432 1200	E433 1200
1400	14.0	83	26	14	6	E432 1400	E433 1400
1600	16.0	92	32	16	6	E432 1600	E433 1600
1800	18.0	92	32	18	8	E432 1800	E433 1800
2000	20.0	104	38	20	8	E432 2000	E433 2000
2500	25.0	120	45	25	8	E432 2500	E433 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								
E432	○	○	○	○	○	○	○	○	○	○	○	○	○				●	●	●	●	●	●												○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
E433	○	○	○	○	○	○	○	○	○	○	○	○	○				●	●	●	●	●	●												○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

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

Endmills Carbide, 6-8 Flute, R50/35 NH, Extra Long, Harmony



- VHM-ULTRA grade of carbide for high performance
- For super fine finishing applications
- 50/35° variable flute helix for chatter free milling
- Suitable for hard, short chipping materials up to 48 HRC
- AlCrN for longer tool life



Fraise carbure Multi-Dents, R50°/35° NH, Extra-Longue, HARMONY

- Carbure VHM-ULTRA pour une meilleure performance
- Pour la super finition
- Hélice variable 50°/35° pour la suppression des vibrations
- Convient pour les matériaux à copeaux courts jusqu'à 48 HRC
- AlCrN pour une meilleure durée de vie



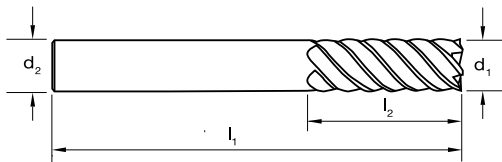
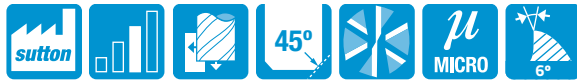
Frese metallo duro, 6-8 Taglienti, R50/35 NH, Extra Lunga, Harmony

- VHM-ULTRA, grado di metallo duro per alte prestazione
- Fresa specifica per finiture ad altissima precisione
- Elica tagliente variabile 50/35° per lavorazioni senza vibrazioni
- Ideale per materiale duri, con truciolo corto fino a 48 HRC
- AlCrN per Ottimizzare vita utensile



Fresas de MD, 6-8 ranuras, R50/35 NH, Extra Larga, Harmony

- Grado de carburo VHM-ULTRA para alto rendimiento
- Para aplicaciones de super acabado
- Hélice de ranura variable de 50/35° para fresado sin vibraciones
- Geometría optimizada para materiales de viruta corta hasta 48HRC
- AlCrN para una mayor vida de la herramienta



Catalogue Code	E434	E435
Discount Group	B0210	B0210
Material	VHM-ULTRA	VHM-ULTRA
Surface Finish	AlCrN	AlCrN
Sutton Designation	NH	NH
Geometry	R50/35	R50/35
Shank Form (DIN 6535)	HA	HB
Shank Tolerance	h5	h5

Size Ref.	d ₁ (e8)	l ₁	l ₂	d ₂	z	Item #	Item #
0600	6.0	62	18	6	6	E434 0600	E435 0600
0800	8.0	68	24	8	6	E434 0800	E435 0800
1000	10.0	80	30	10	6	E434 1000	E435 1000
1200	12.0	93	36	12	6	E434 1200	E435 1200
1600	16.0	108	48	16	6	E434 1600	E435 1600
2000	20.0	126	60	20	8	E434 2000	E435 2000
2500	25.0	150	85	25	8	E434 2500	E435 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			
E434	○	○	●	●	●	●	●	●	●	●	●	●	●				●	●	●	●	●													○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
E435	○	○	○	○	○	○	○	○	○	○	○	○	○				○	○	○	○	○													○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

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

Endmills Carbide, 6-8 Flute, R50/35 NH, Cnr Rad, Long Reach, Harmony



- VHM-ULTRA grade of carbide for high performance
- For super fine finishing applications
- 50/35° variable flute helix for chatter free milling
- Suitable for hard, short chipping materials up to 48 HRC
- AlCrN for longer tool life



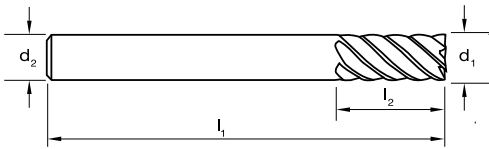
Fraise carbure Multi-Dents, R50°/35° NH, Torique, Extra-Longue, HARMONY

- Carbure VHM-ULTRA pour une meilleure performance
- Pour la super finition
- Hélice variable 50°/35° pour la suppression des vibrations
- Convient pour les matériaux à copeaux courts jusqu'à 48 HRC
- AlCrN pour une meilleure durée de vie



Frese metallo duro, 6-8 Taglienti, R50/35 NH, Toriche, Lunga Portata, Harmony

- VHM-ULTRA, grado di metallo duro per alte prestazione
- Fresa specifica per finiture ad altissima precisione
- Elica tagliente variabile 50/35° per lavorazioni senza vibrazioni
- Ideale per materiale duri, con truciolo corto fino a 48 HRC
- AlCrN per Ottimizzare vita utensile



Fresas de MD, 6-8 ranuras, R50/35 NH, Tórica, Larga, Harmony

- Grado de carburo VHM-ULTRA para alto rendimiento
- Para aplicaciones de super acabado
- Hélice de ranura variable de 50/35° para fresado sin vibraciones
- Geometría optimizada para materiales de viruta corta hasta 48HrC
- AlCrN para una mayor vida de la herramienta



Catalogue Code	E436	E437
Discount Group	B0210	B0210
Material	VHM-ULTRA	VHM-ULTRA
Surface Finish	AlCrN	AlCrN
Sutton Designation	NH	NH
Geometry	R50/35	R50/35
Shank Form (DIN 6535)	HA	HB
Shank Tolerance	h5	h5

Size Ref.	d ₁ (e8)	l ₁	l ₂	d ₂	z	rad	Item #	Item #
0605	6.0	62	13	6	6	0.5	E436 0605	E437 0605
0610		62	13	6	6	1.0	E436 0610	E437 0610
0805	8.0	68	19	8	6	0.5	E436 0805	E437 0805
0810		68	19	8	6	1.0	E436 0810	E437 0810
1005	10.0	80	22	10	6	0.5	E436 1005	E437 1005
1010		80	22	10	6	1.0	E436 1010	E437 1010
1015		80	22	10	6	1.5	E436 1015	E437 1015
1020		80	22	10	6	2.0	E436 1020	E437 1020
1205	12.0	93	26	12	6	0.5	E436 1205	E437 1205
1210		93	26	12	6	1.0	E436 1210	E437 1210
1215		93	26	12	6	1.5	E436 1215	E437 1215
1220		93	26	12	6	2.0	E436 1220	E437 1220
1605	16.0	108	32	16	6	0.5	E436 1605	E437 1605
1610		108	32	16	6	1.0	E436 1610	E437 1610
1615		108	32	16	6	1.5	E436 1615	E437 1615
1620		108	32	16	6	2.0	E436 1620	E437 1620
2005	20.0	126	38	20	8	0.5	E436 2005	E437 2005
2010		126	38	20	8	1.0	E436 2010	E437 2010
2015		126	38	20	8	1.5	E436 2015	E437 2015
2020		126	38	20	8	2.0	E436 2020	E437 2020

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			
E436	○	○	●	●	●	●	●	●	●	●	●	●	●	○	○	○	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○				
E437	○	○	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

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

Endmills Carbide, 6-8 Flute, R45 NH, DIN6527L, Harmony



- For super fine finishing applications
- Suitable for various materials up to 56 HRC
- Multi-flute & heavy core design enable high feed rates
- AlCrN for longer tool life



Fraise carbure Multi-Dents, R45° NH, DIN6527L, HARMONY

- Pour la super finition
- Convient pour les matériaux jusqu'à 56 HRC
- Multi-dents avec un noyau renforcé
- AlCrN pour une meilleure durée de vie



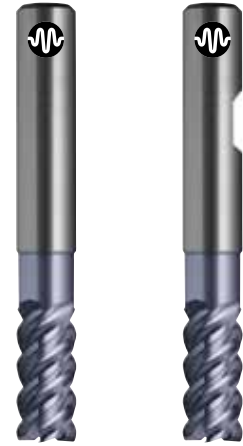
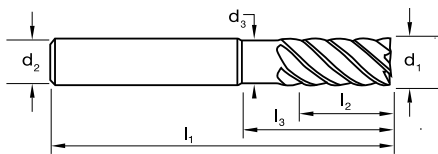
Frese metallo duro, 6-8 Taglienti, R45 NH, DIN6527L, Harmony

- Fresa specifica per finiture ad altissima precisione
- Ideale per vari materiali duri fino a 56 HRC
- Multi tagliente con nocciolo fresa rinforzato per consentire alti avanzamenti
- AlCrN per Ottimizzare vita utensile



Fresas de MD, 6-8 ranuras, R45 NH, DIN6527L, Harmony

- Para aplicaciones de acabado súper fino
- Adecuado para diversos materiales hasta 56HrC
- El diseño de múltiples ranuras y núcleo robusto, permite altas velocidades de avance
- AlCrN para una mayor vida útil de la herramienta



Catalogue Code	E543	E544
Discount Group	B0210	B0210
Material	VHM-ULTRA	VHM-ULTRA
Surface Finish	AlCrN	AlCrN
Sutton Designation	NH	NH
Geometry	R45	R45
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	Item #	Item #
0600	6.0	57	13	21	6	5.5	6	E543 0600	E544 0600
0800	8.0	63	19	27	8	7.5	6	E543 0800	E544 0800
1000	10.0	72	22	32	10	9.5	6	E543 1000	E544 1000
1200	12.0	83	26	38	12	11.2	6	E543 1200	E544 1200
1600	16.0	92	32	44	16	15.0	8	E543 1600	E544 1600
2000	20.0	104	38	54	20	19.0	8	E543 2000	E544 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						
E543					●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○				
E544					●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

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, DIN6527L, Harmony DUO

suttontools

HARMONY



- 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° NH, DIN6527L, HARMONY DUO

- 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 NH, DIN6527L, Harmony DUO

- 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

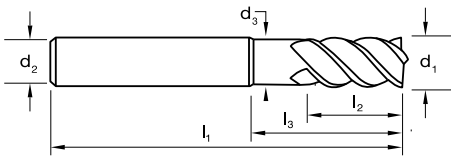


Fresas de MD, 4 Ranuras, R50 NH, DIN6527L, Harmony DUO

- 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	E562	E563
Discount Group	B0210	B0210
Material	VHM-ULTRA	VHM-ULTRA
Surface Finish	AlCrN	AlCrN
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	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

Endmills Carbide, 4 Flute, R50 NH, Cnr Rad, DIN6527L, Harmony DUO



- 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° NH, Torique, DIN6527L, HARMONY DUO

- Carbure VHM-ULTRA pour une meilleure performance
- 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



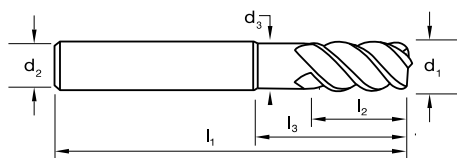
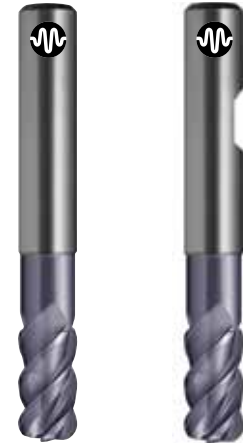
Freses metallo duro, 4 Taglienti, R50 NH, Toriche, DIN6527L, Harmony DUO

- 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 NH, Tórica, DIN6527L, Harmony DUO

- 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



Catalogue Code	E564	E565
Discount Group	B0210	B0210
Material	VHM-ULTRA	VHM-ULTRA
Surface Finish	AlCrN	AlCrN
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		57	13	21	6	5.5	4	0.5	E564 0605	E565 0605
0610		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		63	19	27	8	7.5	4	0.5	E564 0805	E565 0805
0810		63	19	27	8	7.5	4	1.0	E564 0810	E565 0810
0815		63	19	27	8	7.5	4	1.5	E564 0815	E565 0815
0820		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		72	22	32	10	9.5	4	0.5	E564 1005	E565 1005
1010		72	22	32	10	9.5	4	1.0	E564 1010	E565 1010
1015		72	22	32	10	9.5	4	1.5	E564 1015	E565 1015
1020		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		83	26	38	12	11.2	4	0.5	E564 1205	E565 1205
1210		83	26	38	12	11.2	4	1.0	E564 1210	E565 1210
1215		83	26	38	12	11.2	4	1.5	E564 1215	E565 1215
1220		83	26	38	12	11.2	4	2.0	E564 1220	E565 1220
1225		83	26	38	12	11.2	4	2.5	E564 1225	•
1230		83	26	38	12	11.2	4	3.0	E564 1230	E565 1230
1240		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		83	26	38	14	13.0	4	0.5	E564 1405	E565 1405
1410		83	26	38	14	13.0	4	1.0	E564 1410	E565 1410
1415		83	26	38	14	13.0	4	1.5	E564 1415	E565 1415
1420		83	26	38	14	13.0	4	2.0	E564 1420	E565 1420
1430		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, Cnr Rad, DIN6527L, Harmony DUO

suttontools

HARMONY



- 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



Fresas de MD, 4 Ranuras, R50 NH, Tórica, DIN6527L, Harmony DUO

- 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



Fraise 4 dents carbure, R50° NH, Torique, DIN6527L, HARMONY DUO

- Carbure VHM-ULTRA pour une meilleure performance
- 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



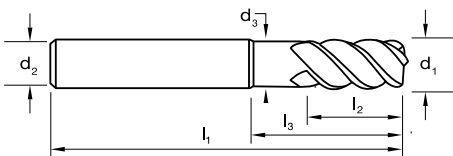
Frese metallo duro, 4 Taglienti, R50 NH, Toriche, DIN6527L, Harmony DUO

- 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



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

E564	E565
B0210	B0210
VHM-ULTRA	VHM-ULTRA
AlCrN	AlCrN
NH	NH
R50	R50
HA	HB
h6	h6



Size Ref.	d ₁ (h10)	l ₁	l ₂	l ₃	d ₂	d ₃	z	rad	Item #	Item #
1610		92	32	44	16	15.0	4	1.0	E564 1610	E565 1610
1615		92	32	44	16	15.0	4	1.5	E564 1615	E565 1615
1620		92	32	44	16	15.0	4	2.0	E564 1620	E565 1620
1625		92	32	44	16	15.0	4	2.5	E564 1625	•
1630		92	32	44	16	15.0	4	3.0	E564 1630	E565 1630
1640		92	32	44	16	15.0	4	4.0	E564 1640	E565 1640
2005	20.0	104	38	54	20	19.0	4	0.5	E564 2005	E565 2005
2010		104	38	54	20	19.0	4	1.0	E564 2010	E565 2010
2015		104	38	54	20	19.0	4	1.5	E564 2015	E565 2015
2020		104	38	54	20	19.0	4	2.0	E564 2020	E565 2020
2025		104	38	54	20	19.0	4	2.5	E564 2025	•
2030		104	38	54	20	19.0	4	3.0	E564 2030	E565 2030
2040		104	38	54	20	19.0	4	4.0	E564 2040	E565 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	
E564					●			●	●	●	●	●	●	●	●	●	●	●	●	●	●	●																	●	●	●	●	●	●	●	●				
E565					●			●	●	●	●	●	●	●	●	●	●	●	●	●	●	●																	●	●	●	●	●	●	●	●	●	●	●	●

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

● Optimal ○ Effective

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

Endmills Carbide, 4 Flute, R50 VH, DIN6527L, Harmony DUO



watch the video



- Dual stepped core for optimal strength
- Ideal design for hard machining
- Suitable for materials up to 63 HRC
- Aldura for longer tool life



Fraise 4 dents carbure, R50° VH, DIN6527L, HARMONY DUO

- Double goujures
- Ideale pour les opérations de fraisage difficiles
- Convient aux matériaux jusqu'à 63 HRC
- Revêtement Aldura pour une meilleure durée de vie



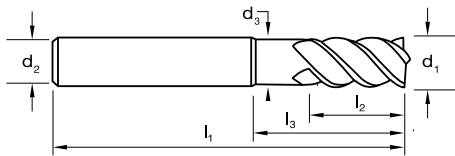
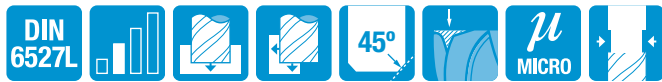
Frese metallo duro, 4 Taglienti, R50 VH, DIN6527L, Harmony DUO

- Doppio gradino al nocciolo per un ottima stabilità durante la lavorazione
- Progettata per lavorazioni gravose
- Ideale per materiali fino a 63 HRC
- Aldura per Ottimizzare vita utensile



Fresas de MD, 4 Ranuras, R50 VH, DIN6527L, Harmony DUO

- Doble núcleo escalonado para una resistencia óptima
- Diseño ideal para mecanizado duro.
- Adecuado para materiales hasta 63HrC
- Aldura para una mayor vida útil de la herramienta



Catalogue Code	E566	E567
Discount Group	B0210	B0210
Material	VHM-ULTRA	VHM-ULTRA
Surface Finish	Aldura	Aldura
Sutton Designation	VH	VH
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	Item #	Item #
0600	6.0	57	13	21	6	5.5	4	E566 0600	E567 0600
0800	8.0	63	19	27	8	7.5	4	E566 0800	E567 0800
1000	10.0	72	22	32	10	9.5	4	E566 1000	E567 1000
1200	12.0	83	26	38	12	11.2	4	E566 1200	E567 1200
1400	14.0	83	26	38	14	13.0	4	E566 1400	E567 1400
1600	16.0	92	32	44	16	15.0	4	E566 1600	E567 1600
2000	20.0	104	38	54	20	19.0	4	E566 2000	E567 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	
E566																																																		
E567																																																		

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 VH, Cnr Rad, DIN6527L, Harmony DUO



- VHM-ULTRA grade of carbide for high performance
- Dual stepped core for optimal strength
- Ideal design for hard machining
- Suitable for materials up to 63 HRC
- Aldura for longer tool life



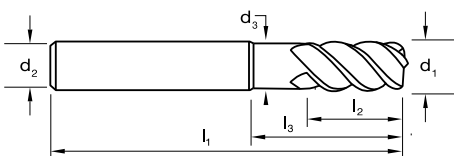
Fraise 4 dents carbure, R50° NH, Torique, DIN6527L, HARMONY DUO

- Carbure VHM-ULTRA pour une meilleure performance
- Double goujures
- Ideale pour les opérations de fraisage difficiles
- Convient aux matériaux jusqu'à 63 HRC
- Revêtement Aldura pour une meilleure durée de vie



Frese metallo duro, 4 Taglienti, R50 VH, Toriche, DIN6527L, Harmony DUO

- VHM-ULTRA, grado di metallo duro per alte prestazione
- Doppio gradino al nocciolo per un ottima stabilità durante la lavorazione
- Progettata per lavorazioni gravose
- Ideale per materiali fino a 63 HRC
- Aldura per Ottimizzare vita utensile



Fresas de MD, 4 Ranuras, R50 VH, Tórica, DIN6527L, Harmony DUO

- Grado de MD, VHM-ULTRA para alto rendimiento
- Doble núcleo escalonado para una resistencia óptima
- Diseño ideal para mecanizado duro.
- Adecuado para materiales hasta 63HrC
- Aldura para una mayor vida útil de la herramienta



Catalogue Code	E568	E569
Discount Group	B0210	B0210
Material	VHM-ULTRA	VHM-ULTRA
Surface Finish	Aldura	Aldura
Sutton Designation	VH	VH
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 #
0610	6.0	57	13	21	6	5.5	4	1.0	E568 0610	E569 0610
0820	8.0	63	19	27	8	7.5	4	2.0	E568 0820	E569 0820
1020	10.0	72	22	32	10	9.5	4	2.0	E568 1020	E569 1020
1230	12.0	83	26	38	12	11.2	4	3.0	E568 1230	E569 1230
1430	14.0	83	26	38	14	13.0	4	3.0	E568 1430	E569 1430
1640	16.0	92	32	44	16	15.0	4	4.0	E568 1640	E569 1640
2040	20.0	104	38	54	20	19.0	4	4.0	E568 2040	E569 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
E568																																																	
E569																																																	

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, R40/42Ti, DIN6527L, Harmony



- 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° Ti, DIN6527L, HARMONY

- 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.



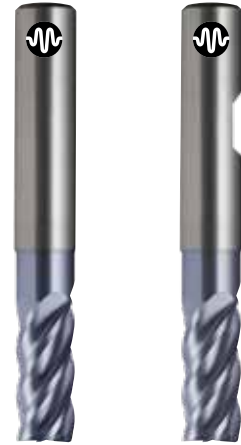
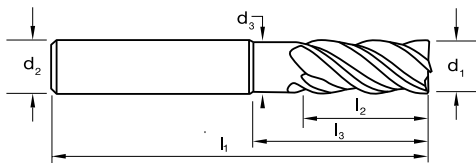
Frese metallo duro, 5 Taglienti, R40/42Ti, DIN6527L, Harmony

- 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 Ti, DIN6527L, Harmony

- 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



Catalogue Code	E464	E465
Discount 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, R40/42Ti, Cnr Rad, DIN6527L, Harmony

suttontools

HARMONY



- 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° Ti, Torique, DIN6527L, HARMONY

- 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'oxidation et à la haute vitesse.



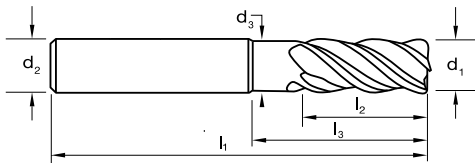
Frese metallo duro, 5 Taglienti, R40/42Ti, Toriche, DIN6527L, Harmony

- 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 rigidità
- AlNova per un'eccezionale resistenza all'ossidazione e alle alte temperature



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

- 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



Catalogue Code	E466	E467
Discount 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	rad	Item #	Item #
0605	6.0	57	13	21	6	5.5	5	0.5	E466 0605	
0610		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		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		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
1225		83	26	38	12	11.2	5	2.5	E466 1225	E467 1225
1240		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		92	32	44	16	15	5	2.5	E466 1625	E467 1625
1630		92	32	44	16	15	5	3.0		E467 1630
1640		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		104	38	54	20	19	5	2.5	E466 2025	E467 2025
2030		104	38	54	20	19	5	3.0	E466 2030	
2040		104	38	54	20	19	5	4.0	E466 2040	E467 2040
2050		104	38	54	20	19	5	5.0	E466 2050	E467 2050
2060		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		120	45	64	25	24	5	2.5	E466 2525	
2530		120	45	64	25	24	5	3.0	E466 2530	
2540		120	45	64	25	24	5	4.0	E466 2540	
2550		120	45	64	25	24	5	5.0	E466 2550	
2560		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, R40/42Ti, Cnr Rad, DIN6527L, Harmony



- 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° Ti, Torique, DIN6527L, HARMONY

- 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.



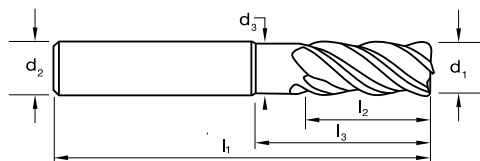
Frese metallo duro, 6 Taglienti, R40/42Ti, Toriche, DIN6527L, Harmony

- 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, R40/42Ti, Tórica, DIN6527L, Harmony

- 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	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	rad	Item #	Item #
1210	12.0	83	26	38	12	11.5	6	1.0	E470 1210	E471 1210
1225		83	26	38	12	11.5	6	2.5	E470 1225	E471 1225
1240		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		92	32	44	16	15.5	6	2.5	E470 1625	E471 1625
1630		92	32	44	16	15.5	6	3.0	E470 1630	•
1640		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		104	38	54	20	19.5	6	2.5	E470 2025	E471 2025
2030		104	38	54	20	19.5	6	3.0	E470 2030	•
2040		104	38	54	20	19.5	6	4.0	E470 2040	E471 2040
2050		104	38	54	20	19.5	6	5.0	E470 2050	E471 2050
2060		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

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

Endmills Carbide, 5 Flute, R40/42 Ti, Extra Long



- 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° Ti, longue HARMONY

- 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'oxidation et à la haute vitesse.
- Carbure VHM-ULTRA



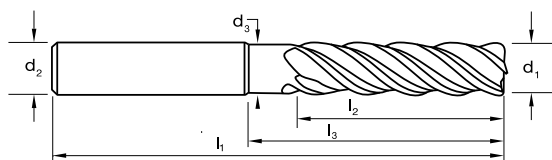
Frese metallo duro, 5 Taglienti, R40/42 Ti, Extra Lunga

- 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'eccellente resistenza all'ossidazione e alle alte temperature



Fresas de MD, 5 Ranuras, R40/42 Ti, 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	E476
Product Group	B0210
Material	VHM-ULTRA
Surface Finish	AlNova
Sutton Designation	Ti-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	
SUTTON STD - 3XL									
1000	10	85	34	44	10	9.5	5	-	E476 1000
1020	10	85	34	44	10	9.5	5	2	E476 1020
1025	10	85	34	44	10	9.5	5	2.5	E476 1025
1040	10	85	34	44	10	9.5	5	4	E476 1040
1200	12	96	40	51	12	11.5	5	-	E476 1200
1210	12	96	40	51	12	11.5	5	1	E476 1210
1215	12	96	40	51	12	11.5	5	1.5	E476 1215
1220	12	96	40	51	12	11.5	5	2	E476 1220
1225	12	96	40	51	12	11.5	5	2.5	E476 1225
1230	12	96	40	51	12	11.5	5	3	E476 1230
1240	12	96	40	51	12	11.5	5	4	E476 1240
1600	16	105	52	57	16	15.5	5	-	E476 1600
1610	16	105	52	57	16	15.5	5	1	E476 1610
1615	16	105	52	57	16	15.5	5	1.5	E476 1615
1620	16	105	52	57	16	15.5	5	2	E476 1620
1625	16	105	52	57	16	15.5	5	2.5	E476 1625
1630	16	105	52	57	16	15.5	5	3	E476 1630
1640	16	105	52	57	16	15.5	5	4	E476 1640
2000	20	140	64	80	20	19.5	5	-	E476 2000
2010	20	140	64	80	20	19.5	5	1	E476 2010
2015	20	140	64	80	20	19.5	5	1.5	E476 2015
2020	20	140	64	80	20	19.5	5	2	E476 2020
2025	20	140	64	80	20	19.5	5	2.5	E476 2025
2030	20	140	64	80	20	19.5	5	3	E476 2030
2040	20	140	64	80	20	19.5	5	4	E476 2040
2050	20	140	64	80	20	19.5	5	5	E476 2050
2060	20	140	64	80	20	19.5	5	6	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

Endmills Carbide, 5 Flute, R40/42 Ti, Extra Long



- 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° Ti, longue HARMONY

- Optimisée pour le Titane, en fraisage 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 Ti, 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

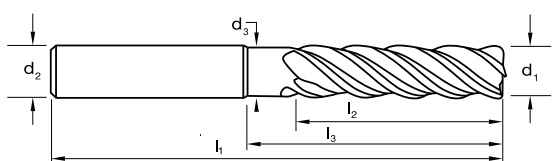


Fresas de MD, 5 Ranuras, R40/42 Ti, Extra Larga

- 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	93	42	52	10	9.5	5	-	E477 1000
1020	10	93	42	52	10	9.5	5	2	E477 1020
1025	10	93	42	52	10	9.5	5	2.5	E477 1025
1040	10	93	42	52	10	9.5	5	4	E477 1040
1200	12	110	50	65	12	11.5	5	-	E477 1200
1210	12	110	50	65	12	11.5	5	1	E477 1210
1215	12	110	50	65	12	11.5	5	1.5	E477 1215
1220	12	110	50	65	12	11.5	5	2	E477 1220
1225	12	110	50	65	12	11.5	5	2.5	E477 1225
1230	12	110	50	65	12	11.5	5	3	E477 1230
1240	12	110	50	65	12	11.5	5	4	E477 1240
1600	16	130	66	82	16	15.5	5	-	E477 1600
1610	16	130	66	82	16	15.5	5	1	E477 1610
1615	16	130	66	82	16	15.5	5	1.5	E477 1615
1620	16	130	66	82	16	15.5	5	2	E477 1620
1625	16	130	66	82	16	15.5	5	2.5	E477 1625
1630	16	130	66	82	16	15.5	5	3	E477 1630
1640	16	130	66	82	16	15.5	5	4	E477 1640
2000	20	160	82	100	20	19.5	5	-	E477 2000
2010	20	160	82	100	20	19.5	5	1	E477 2010
2015	20	160	82	100	20	19.5	5	1.5	E477 2015
2020	20	160	82	100	20	19.5	5	2	E477 2020
2025	20	160	82	100	20	19.5	5	2.5	E477 2025
2030	20	160	82	100	20	19.5	5	3	E477 2030
2040	20	160	82	100	20	19.5	5	4	E477 2040
2050	20	160	82	100	20	19.5	5	5	E477 2050
2060	20	160	82	100	20	19.5	5	6	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 ● Optimal ○ Effective

Endmills Carbide, 5 Flute, R40/42 Ni, DIN6527L, Harmony



- 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



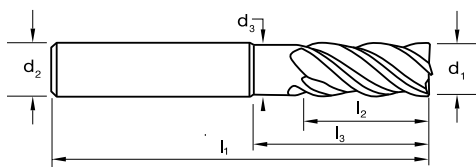
Fraise 5 dents carbure, R40°/42° Ni, DIN6527L, HARMONY, Torique

- 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'oxidation et à les hautes températures.



Fresa metallo duro, 5 Taglienti, R40/42 Ni, Toriche, DIN6527L, Harmony

- 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 Ni, DIN6527L, Harmony

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

	E472	E473
Product Group	B0210	B0210
Material	VHM-ULTRA	VHM-ULTRA
Surface Finish	Xceed	Xceed
Sutton Designation	Ni	Ni
Geometry	R40/42 Ni	R40/42 Ni
Shank Form (DIN 6535)	HA	HA
Shank Tolerance	h6	h6

Size Ref.	d ₁ (e8)	l ₁	l ₂	l ₃	d ₂	d ₃	z	chf	rad	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																																																	

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 Ni, Cnr Rad, DIN6527L, Harmony



- 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



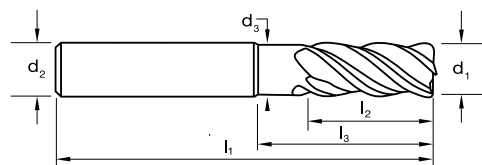
Fraise 5 dents carbure, R40°/42° Ni, DIN6527L, HARMONY, Torique

- 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, 5 Taglienti, R40/42 Ni, Toriche, DIN6527L, Harmony

- 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 iniconel, acciaio inossidabile
- Elica variabile per eliminare le vibrazioni
- Web rastremato per aumentare rigidità
- Xceed per un'eccezionale resistenza all'ossidazione e alle alte temperature



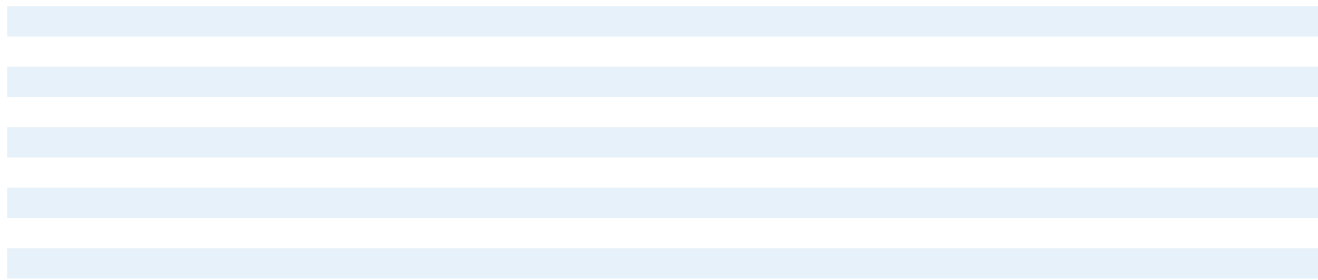
Fresas de MD, 5 Ranuras, R40/42 Ni, DIN6527L, Harmony

- Filo facetado para aplicaciones de acabado
- Optimizado para una mayor vida útil de la herramienta en aleaciones de iniconel, 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	E474	E475
Product Group	B0210	B0210
Material	VHM-ULTRA	VHM-ULTRA
Surface Finish	Xceed	Xceed
Sutton Designation	Ni	Ni
Geometry	R40/42 Ni	R40/42 Ni
Shank Form (DIN 6535)	HA	HA
Shank Tolerance	h6	h6

Size Ref.	d ₁ (e8)	l ₁	l ₂	l ₃	d ₂	d ₃	z	chf	rad	Item #	Item #
0605	6.0	57	13	21	6	5.7	5	-	0.5	E474 0605	E475 0605
0610		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		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		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		83	26	38	12	11.5	5	-	1.5	E474 1215	E475 1215
1225		83	26	38	12	11.5	5	-	2.5	E474 1225	E475 1225
1240		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		92	32	44	16	15.5	5	-	1.5	E474 1615	E475 1615
1625		92	32	44	16	15.5	5	-	2.5	E474 1625	E475 1625
1640		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		104	38	54	20	19.5	5	-	1.5	E474 2015	E475 2015
2025		104	38	54	20	19.5	5	-	2.5	E474 2025	E475 2025
2040		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														●	●	●																																					

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 Ni, Extra Long



- 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° Ni, DIN6527L, HARMONY, Torique

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



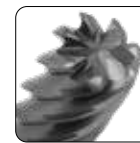
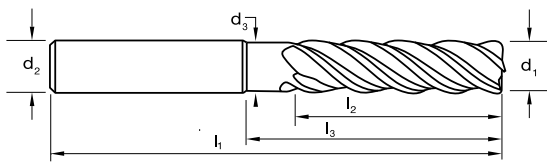
Frese metallo duro, 7 Taglienti, R40/42 Ni, Toriche, DIN6527L, Harmony

- 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, 7 Ranuras, R40/42 Ni, DIN6527L, Harmony

- 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	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	
SUTTON STD - 3XL									
1000	10	85	34	44	10	95	7	-	E486 1000
1020	10	85	34	44	10	95	7	2	E486 1020
1025	10	85	34	44	10	95	7	2.5	E486 1025
1040	10	85	34	44	10	95	7	4	E486 1040
1200	12	96	40	51	12	11.5	7	-	E486 1200
1210	12	96	40	51	12	11.5	7	1	E486 1210
1215	12	96	40	51	12	11.5	7	1.5	E486 1215
1220	12	96	40	51	12	11.5	7	2	E486 1220
1225	12	96	40	51	12	11.5	7	2.5	E486 1225
1230	12	96	40	51	12	11.5	7	3	E486 1230
1240	12	96	40	51	12	11.5	7	4	E486 1240
1600	16	105	52	57	16	15.5	7	-	E486 1600
1610	16	105	52	57	16	15.5	7	1	E486 1610
1615	16	105	52	57	16	15.5	7	1.5	E486 1615
1620	16	105	52	57	16	15.5	7	2	E486 1620
1625	16	105	52	57	16	15.5	7	2.5	E486 1625
1630	16	105	52	57	16	15.5	7	3	E486 1630
1640	16	105	52	57	16	15.5	7	4	E486 1640
2000	20	140	64	80	20	19.5	7	-	E486 2000
2010	20	140	64	80	20	19.5	7	1	E486 2010
2015	20	140	64	80	20	19.5	7	1.5	E486 2015
2020	20	140	64	80	20	19.5	7	2	E486 2020
2025	20	140	64	80	20	19.5	7	2.5	E486 2025
2030	20	140	64	80	20	19.5	7	3	E486 2030
2040	20	140	64	80	20	19.5	7	4	E486 2040
2050	20	140	64	80	20	19.5	7	5	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

Endmills Carbide, 9 Flute, R40/42 Ni, Extra Long



- 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° Ni, DIN6527L, HARMONY, Torique

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



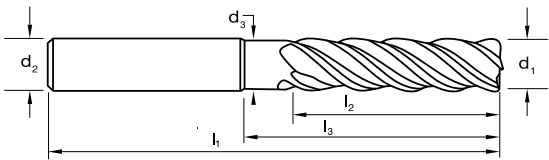
Frese metallo duro, 9 Taglienti, R40/42 Ni, Toriche, DIN6527L, Harmony

- Fresca 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 Ni, DIN6527L, Harmony

- 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)	I ₁	I ₂	I ₃	d ₂	d ₃	z	rad	Item #
SUTTON STD - 4XL									
1000	10	93	42	52	10	9.5	9	-	E487 1000
1020	10	93	42	52	10	9.5	9	2	E487 1020
1025	10	93	42	52	10	9.5	9	2.5	E487 1025
1040	10	93	42	52	10	9.5	9	4	E487 1040
1200	12	110	50	65	12	11.5	9	-	E487 1200
1210	12	110	50	65	12	11.5	9	1	E487 1210
1215	12	110	50	65	12	11.5	9	1.5	E487 1215
1220	12	110	50	65	12	11.5	9	2	E487 1220
1225	12	110	50	65	12	11.5	9	2.5	E487 1225
1230	12	110	50	65	12	11.5	9	3	E487 1230
1240	12	110	50	65	12	11.5	9	4	E487 1240
1600	16	130	66	82	16	15.5	9	-	E487 1600
1610	16	130	66	82	16	15.5	9	1	E487 1610
1615	16	130	66	82	16	15.5	9	1.5	E487 1615
1620	16	130	66	82	16	15.5	9	2	E487 1620
1625	16	130	66	82	16	15.5	9	2.5	E487 1625
1630	16	130	66	82	16	15.5	9	3	E487 1630
1640	16	130	66	82	16	15.5	9	4	E487 1640
2000	20	160	82	100	20	19.5	9	-	E487 2000
2010	20	160	82	100	20	19.5	9	1	E487 2010
2015	20	160	82	100	20	19.5	9	1.5	E487 2015
2020	20	160	82	100	20	19.5	9	2	E487 2020
2025	20	160	82	100	20	19.5	9	2.5	E487 2025
2030	20	160	82	100	20	19.5	9	3	E487 2030
2040	20	160	82	100	20	19.5	9	4	E487 2040
2050	20	160	82	100	20	19.5	9	5	E487 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	
E487						●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

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

Endmills Carbide, Ballnose, 4 Flute, R30 TiNi VA, Long Reach



- 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 prestazione
- 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



Catalogue Code **E481**

Discount Group **B0210**

Material **VHM-ULTRA**

Surface Finish **Xceed**

Sutton Designation **UNI**

Geometry **R30**

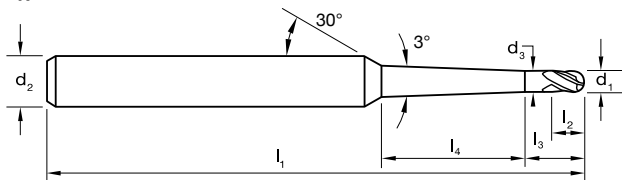
Shank Form (DIN 6535) **HA**

Shank Tolerance **h5**

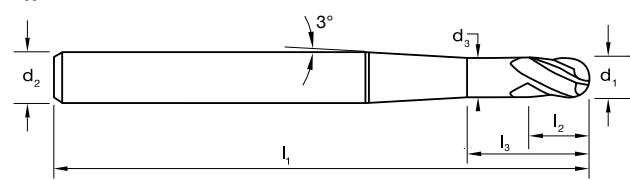


Size Ref.	d ₁ (e8)	l ₁	l ₂	l ₃	l ₄	d ₂	d ₃	z	Angle 1	Angle 2	Item #
TYPE 1											
0200	2.0	62	3	7.0	24	6	1.9	4	3°	30°	E481 0200
0300	3.0	62	4	9.5	24.6	6	2.8	4	3°	30°	E481 0300
0400	4.0	62	5	12.0	25.3	6	4.8	4	3°	30°	E481 0400
TYPE 2											
0500	5.0	80	6	14.5		6	4.8	4	3°		E481 0500
TYPE 3											
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

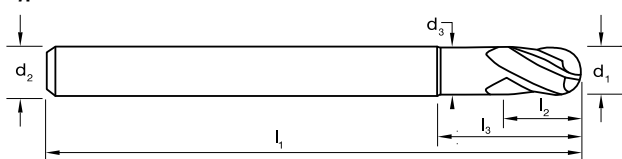
Type 1: 2.0 - 4.0mm



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

