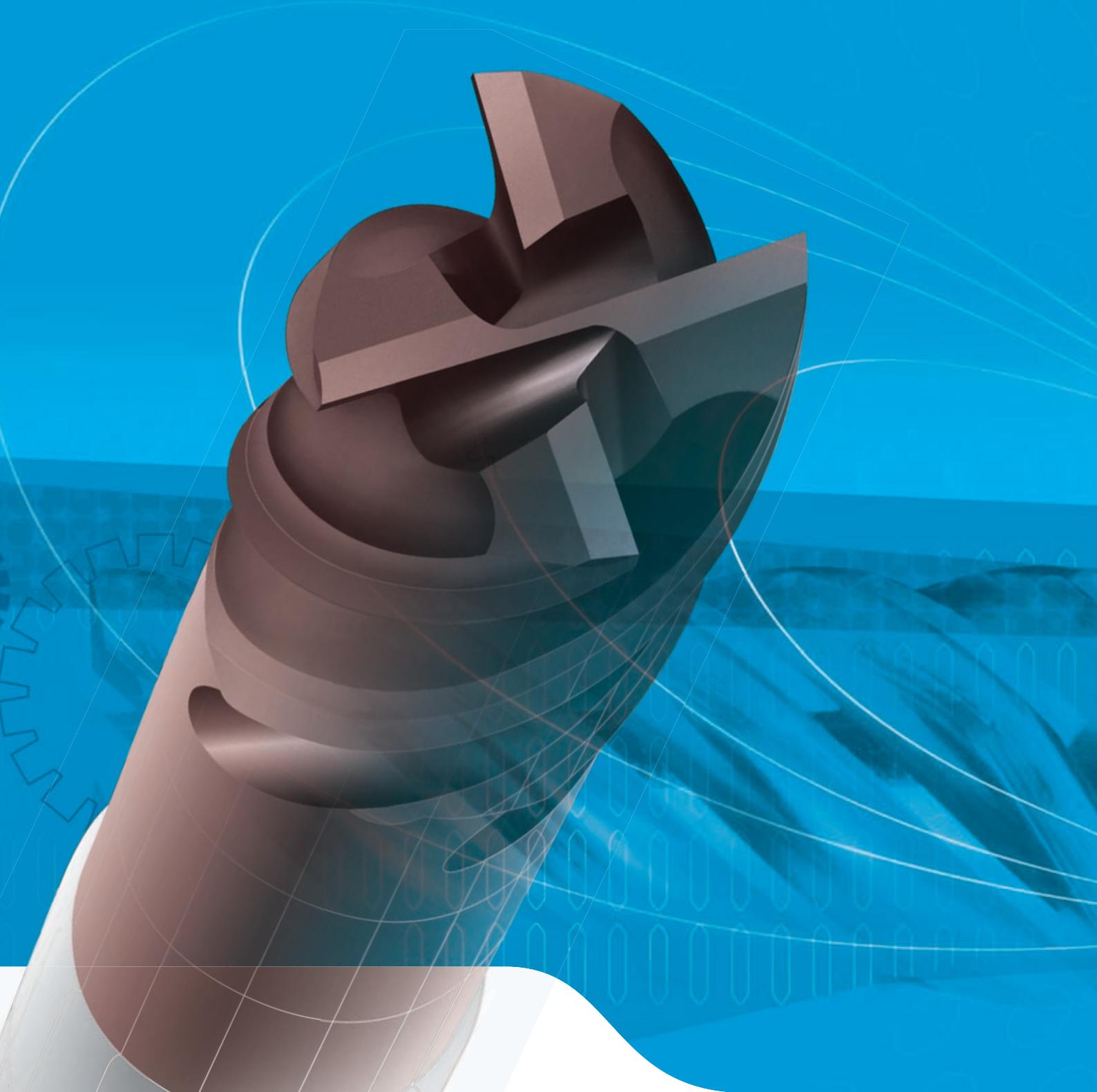


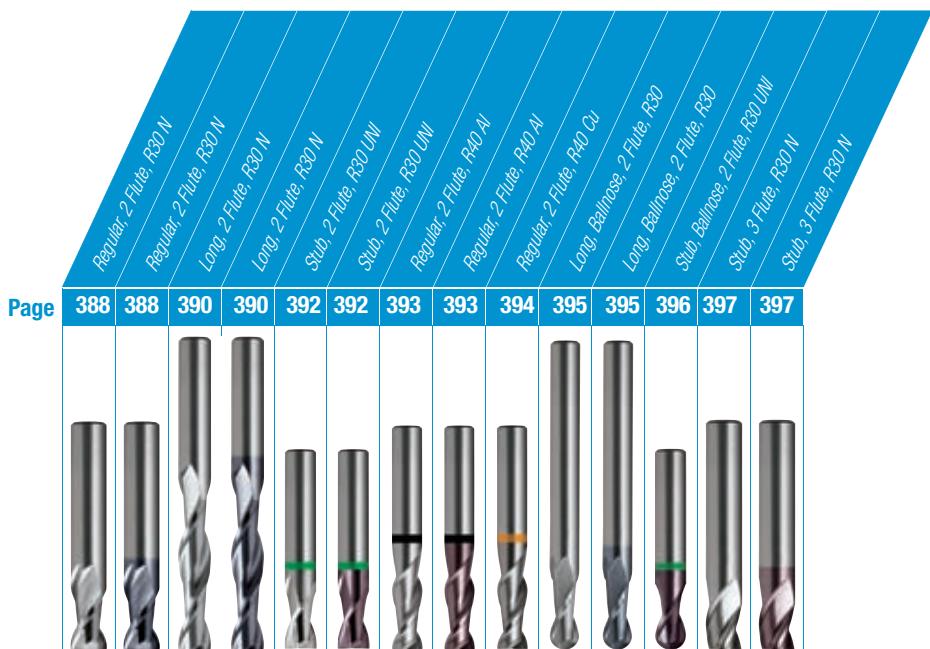
ENDMILLS



Endmills

Cost effective machining

- Solutions for slotting, finishing, roughing & profiling
 - 8% Co & PM grades of HSS
 - Various shank styles to suit your needs
 - Short & Long Series
- General purpose & Application specific geometries



Catalogue Code E100 E101 E102 E103 E108 E109 E110 E111 E112 E113 E114 E118 E187 E188

Material HSS Co.8 SPM HSS Co HSS Co.8 SPM HSS Co.8

Surface Finish Brt TiCN Brt TiCN Brt TiAIN Brt TiAIN CrN Brt TiCN TiAIN Brt TiAIN

Colour Ring & Application N UNI AI Cu General Purpose UNI N

Standard JIS DIN 327D DIN 844K DIN 844K - DIN 327D DIN 327D

Type of Cut Slitting Profiling Slotting / Finishing

Material Shank Tolerance h6

1.0 Steels		HB	N/mm ²	% Elong.												
1.1	Mild steels, magnetic soft steel	<200	>200 <400	10	●	●	●	●	●	●	●	●	●	●	●	●
1.2	Free cutting, structural, unalloyed	<200	>350 <700	30	●	●	●	●	●	●	●	●	●	●	●	●
1.3	Plain carbon, low alloyed	<300	>350 <850	20	○	●	○	○	●	●	●	●	○	●	●	●
1.4	Alloy steels harden. / tempered	<250	>500 <850	30	○	○	○	○	○	○	●	●	○	○	●	○
1.5	Alloy steels harden. / tempered	<350	>850 <1200	30	○	○	○	○	○	○	●	●	○	○	●	○
1.6	Hardened, heat treated, high tensile alloy	<420	>1500	12	○	○	○	○	○	○	○	○	○	○	○	○
1.7	Hardened Steel 45-50 Rc	<550		<12												
1.8	Hardened Steel 50-62 Rc	<700		<12												
2.0 Stainless Steels																
2.1	Free machining	<250	<850	25	○	○	○	○	●	●			○	○	●	○
2.2	Austenitic	<250	<850	20	○	○	○	○	●	●			○	○	●	○
2.3	Ferritic + martensitic	<250	<850	20				○	○	○			○	○		○
3.0 Cast Irons																
3.1	Lamellar graphite (Grey soft)	<150	<500	10	○	●	○	●	●	●			○	●	●	○
3.2	Lamellar graphite (Grey hard)	<300	<1000	10	○	●			○	○			○	●	●	○
3.3	Nodular (spheroidal) graphite & malleable	<200	<700	10	○	○			○	○			○	○	○	○
4.0 Titanium																
4.1	Pure Titanium	<250	<850	20												
4.2	Titanium alloys	>250	>850	20												
5.0 Nickels																
5.1	Nickel alloys	<250	<850	25												
5.2	Nickel alloys	>250	>850	25												
6.0 Coppers																
6.1	Pure Copper (electrolytic copper)	<120	<400	12	○	○	○	○	○	○	○	●	○	○	○	○
6.2	Short chip Brass, Phosphor Bronze, gun metal	<200	<700	12												
6.3	Long chip Brass, Bronze	<200	<700	12	○	○	○	○	○	○	●	●	●	○	○	○
7.0 Aluminiums																
7.1	Aluminium unalloyed	<100	<350	15	○	○	○	○	○	○	●	●	●	○	○	○
7.2	Magnesium unalloyed	<150	<350	15	○	○	○	○	○	○	●	●	●	○	○	○
7.3	Al Alloyed Si < 1.5 %	<120	<500	15	○	○	○	○	○	○	●	●	●	○	○	○
7.4	Al Alloyed 1.5 % < Si < 10%	<120	<400	10	○	○	○	○	○	○	●	●	○	○	○	○
7.5	Al Alloyed > 10 % Si	-	<400	N	○	○			○	○	○	○	○	○	○	○
7.6	Magnesium alloys	-	<400	N	○	○			○	○	○	○	○	○	○	○
8.0 Plastics																
8.1	Plastics, Thermoplastics, Polyethylene	<340	<50	N	○	○	○	○	○	○	●	●	●	○	○	○

● Optimal ○ Effective

Stub, 3 Flute, R30 N Keyway																		
Stub, 3 Flute, R30 N Keyway																		
Regular, 3 Flute, R45 W																		
Regular, 3 Flute, R45 W																		
Long, 3 Flute, R40 W																		
Long, 3 Flute, R40 W																		
Regular, 486 Flute, R30 N																		
Regular, 486 Flute, R30 N																		
Long, 486 Flute, R30 N																		
Regular, 4 Flute, R30/32, Harmony																		
Long, 4 Flute, R30/32, Harmony																		
Regular, 4 Flute, R50 VA																		
398	398	399	399	400	400	401	401	403	403	404	405	406						
E232	E240	E121	E122	E123	E124	E125	E126	E127	E128	E134	E136	E137						
HSS Co.8	SPM				HSS Co.8				SPM									
<i>Brt</i>	<i>TiAIN</i>	<i>Brt</i>	<i>TiAIN</i>	<i>Brt</i>	<i>TiAIN</i>	<i>Brt</i>	<i>TiCN</i>	<i>Brt</i>	<i>TiCN</i>	<i>TiAIN</i>								
N	W				N				UNI		VA							
DIN 327D	DIN 844K		DIN 844L		JIS				DIN 844K	DIN 844L	DIN 844K							
Slotting / Finishing					Finishing													
h6																		
●	●							●	●	●	●	●	●	●				
●	●							●	●	●	●	●	●	●				
○	●							○	●	○	●	●	○	○				
○	○							○	○	○	○	●	○	○				
○	○							○	○	○	○	●	●	○				
○	○							○	○	○	○	○	○	○				
○	○							○	○	○	○	○	○	●				
○	○							○	○	○	○	○	○	●				
	○							○	○	○	○	○	○	●				
○	●							○	●	○	●	●	●	●				
○	●							○	●	○	●	●	●	●				
○	○							○	○	○	○	○	○	○				
○	○	●	●	●	●	●	●	○	○	○	○	○	○	○				
○	○	●	●	●	●	●	●	○	○	○	○	○	○	●				
○	○	●	●	●	●	●	●	○	○	○	○	○	○	●				
○	○	○	●	●	●	●	●	○	○	○	○	○	○	○				
	○							○	○	○	○	○	○					
○	○							○	○	○	○	○	○					



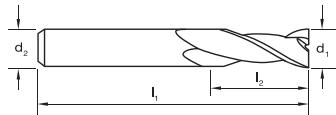
Page	HSS Endmills													
	407	407	408	408	409	409	410	410	411	411	412	412	413	413
Catalogue Code	E201	E202	E205	E206	E144	E145	E140	E141	E148	E149	E162	E163	E170	E171
Material	HSS Co.8													
Surface Finish	BrT	TiAlN	BrT	TiAlN	BrT	TiCN	BrT	TiCN	BrT	TiCN	BrT	TiCN	BrT	TiCN
Colour Ring & Application	N	N			Soft-Medium <22HRc						Med-Hard 22-40HRc			
Standard	DIN 844K	DIN 844L			JIS	DIN 844K	DIN 844L		DIN 327D		JIS			
Type of Cut	Semi Finishing				Roughing									
Material	Shank Tolerance h6													
1.0 Steels	HB	N/mm²	% Elong.											
1.1 Mild steels, magnetic soft steel	<200	>200 <400	10	●	●	●	●		●	●	●	●		
1.2 Free cutting, structural, unalloyed	<200	>350 <700	30	●	●	●	●		○	○	○	○		
1.3 Plain carbon, low alloyed	<300	>350 <850	20	○	●	○	●		○	○	○	○		
1.4 Alloy steels harden. / tempered	<250	>500 <850	30	○	●	○	●					●	●	
1.5 Alloy steels harden. / tempered	<350	>850 <1200	30	○	●		●				○	●		
1.6 Hardened, heat treated, high tensile alloy	<420	>1500	12	○	●		●				○	○		
1.7 Hardened Steel 45-50 Rc	<550		<12											
1.8 Hardened Steel 50-62 Rc	<700		<12											
2.0 Stainless Steels											○	○		
2.1 Free machining	<250	<850	25	○	●	○	●							
2.2 Austenitic	<250	<850	20	○	●	○	●					○		
2.3 Ferritic + martensitic	<250	<850	20	○	○		○					○		
3.0 Cast Irons														
3.1 Lamellar graphite (Grey soft)	<150	<500	10	○	●	○	●		○	●	○	●	○	●
3.2 Lamellar graphite (Grey hard)	<300	<1000	10	○	○	○	○		○	○	○	○	○	○
3.3 Nodular (spheroidal) graphite & malleable	<200	<700	10	○	○	○	○		○	○	○	○	○	○
4.0 Titaniums														
4.1 Pure Titanium	<250	<850	20	○	○		○							
4.2 Titanium alloys	>250	>850	20	○	○		○							
5.0 Nickels														
5.1 Nickel alloys	<250	<850	25	○	○		○							
5.2 Nickel alloys	>250	>850	25	○	○		○							
6.0 Coppers														
6.1 Pure Copper (electrolytic copper)	<120	<400	12	●	●	●	●			○	○			
6.2 Short chip Brass, Phosphor Bronze, gun metal	<200	<700	12	○	○		○				○	●		
6.3 Long chip Brass, Bronze	<200	<700	12	○	●	○	●			○	○			
7.0 Aluminiums														
7.1 Aluminium unalloyed	<100	<350	15	●	●	●	●		○	○	○			
7.2 Magnesium unalloyed	<150	<350	15	○	○	○	○		○	○	○			
7.3 Al Alloyed Si < 1.5 %	<120	<500	15	○	○	○	○		○	○	○			
7.4 Al Alloyed 1.5 % < Si < 10%	<120	<400	10	○	○	○	○		○	○	○			
7.5 Al Alloyed > 10% Si	-	<400	N											
7.6 Magnesium alloys	-	<400	N											
8.0 Plastics														
8.1 Plastics, Thermoplastics, Polyethylene	<340	<50	N			○	●		○	○	○	○		

● Optimal ○ Effective

Slot Drills Regular, 2 Flute, R30 N



- For precision milling of slots & cavities
- Suitable for materials up to 1000 N/mm²
- For soft steels & non-ferrous material
- TiCN for longer tool life



Catalogue Code Size Ref.

E100 **0100**

Item #



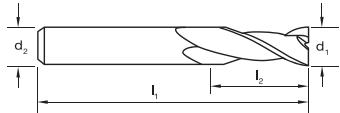
Catalogue Code	E100	E101
Discount Group	B0502	B0516
Material	HSS Co.8	HSS Co.8
Surface Finish	BrT	TiCN
Colour Ring & Application	N	N
Geometry	R30	R30
Shank Form (DIN 1835)	A	A
Shank Tolerance	h6	h6

Size Ref.	d ₁ (mm)	l ₁ (mm)	l ₂ (mm)	d ₂ (mm)	z	Item #	Item #
0100	1	50	3	6	2	E100 0100	E101 0100
0150	1.5	50	4.5	6	2	E100 0150	E101 0150
0200	2	50	7	6	2	E100 0200	E101 0200
0250	2.5	50	7	6	2	E100 0250	E101 0250
0300	3	50	9	6	2	E100 0300	E101 0300
0350	3.5	60	12	8	2	E100 0350	E101 0350
0400	4	60	12	8	2	E100 0400	E101 0400
0450	4.5	60	15	8	2	E100 0450	E101 0450
0500	5	60	15	8	2	E100 0500	E101 0500
0550	5.5	60	15	8	2	E100 0550	E101 0550
0600	6	60	15	8	2	E100 0600	E101 0600
0650	6.5	65	20	10	2	E100 0650	E101 0650
0700	7	65	20	10	2	E100 0700	E101 0700
0750	7.5	65	20	10	2	E100 0750	E101 0750
0800	8	65	20	10	2	E100 0800	E101 0800
0850	8.5	75	25	10	2	E100 0850	E101 0850
0900	9	75	25	10	2	E100 0900	E101 0900
0950	9.5	75	25	10	2	E100 0950	E101 0950
1000	10	75	25	10	2	E100 1000	E101 1000
1100	11	80	30	12	2	E100 1100	E101 1100
1200	12	80	30	12	2	E100 1200	E101 1200
1300	13	90	35	16	2	E100 1300	E101 1300
1400	14	90	35	16	2	E100 1400	E101 1400
1500	15	95	40	16	2	E100 1500	E101 1500
1600	16	95	40	16	2	E100 1600	E101 1600
1700	17	105	40	20	2	E100 1700	E101 1700
1800	18	105	40	20	2	E100 1800	E101 1800
1900	19	110	45	20	2	E100 1900	E101 1900
2000	20	110	45	20	2	E100 2000	E101 2000
2100	21	110	45	20	2	E100 2100	E101 2100
2200	22	110	45	20	2	E100 2200	E101 2200
2400	24	120	50	25	2	E100 2400	E101 2400
2500	25	120	50	25	2	E100 2500	E101 2500
2800	28	125	55	25	2	E100 2800	E101 2800
3000	30	125	55	25	2	E100 3000	E101 3000
3200	32	145	60	32	2	E100 3200	E101 3200
3500	35	145	60	32	2	E100 3500	E101 3500
4000	40	150	65	32	2	E100 4000	E101 4000
4500	45	155	70	32	2	E100 4500	E101 4500
5000	50	155	70	32	2	E100 5000	E101 5000

Slot Drills Regular, 2 Flute, R30 N



- For precision milling of slots & cavities
- Suitable for materials up to 1000 N/mm^2
- For soft steels & non-ferrous material
- TiCN for longer tool life



Catalogue Code Size Ref.

E100 0100

▼ Item #



Catalogue Code	E100	E101
Discount Group	B0502	B0516
Material	HSS Co.8	HSS Co.8
Surface Finish	Brt	TiCN
Colour Ring & Application	N	N
Geometry	R30	R30
Shank Form (DIN 1835)	A	A
Shank Tolerance	b6	b6

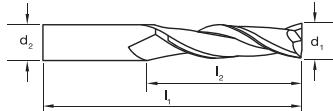
Size Ref.	d ₁ (e8)	I ₁	I ₂	d ₂	z	Shaft Tolerances	Notes	Notes
0159	1/16	1-31/32	1/8	1/4	2		E100 0159	E101 0159
0238	3/32	1-31/32	3/16	1/4	2		E100 0238	E101 0238
0318	1/8	1-31/32	7/32	1/4	2		E100 0318	E101 0318
0397	5/32	2-3/8	5/16	1/4	2		E100 0397	E101 0397
0476	3/16	2-3/8	3/8	1/4	2		E100 0476	E101 0476
0635	1/4	2-9/16	9/16	1/4	2		E100 0635	E101 0635
0794	5/16	2-9/16	9/16	3/8	2		E100 0794	E101 0794
0953	3/8	2-3/4	23/32	3/8	2		E100 0953	E101 0953
1270	1/2	3-17/32	1	1/2	2		E100 1270	E101 1270
1588	5/8	3-3/4	1-3/16	5/8	2		E100 1588	E101 1588
1905	3/4	4-5/16	1-9/16	3/4	2		E100 1905	•
2223	7/8	4-17/32	1-3/4	3/4	2		E100 2223	•
2540	1	4-23/32	2	3/4	2		E100 2540	•

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

Slot Drills Long, 2 Flute, R30 N



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



Catalogue Code Size Ref.

ef.

E100 | 0100

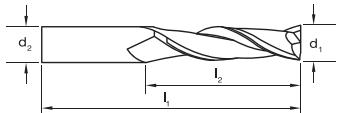
Item #



Slot Drills Long, 2 Flute, R30 N



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



Catalogue Code Size Ref.

E100 O100

▼ Item #

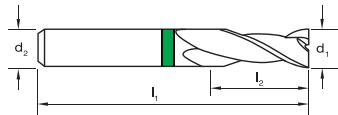


Catalogue Code	E102
Discount Group	B0502
Material	HSS Co.8
Surface Finish	Brt
Colour Ring & Application	N
Geometry	R30
Shank Form (DIN 1835)	A
Shank Tolerance	h6

Slot Drills Stub, 2 Flute, R30 UNI



- SPM offers superior performance
- For precision milling of slots & cavities
- Suitable for materials up to 1400 N/mm²
- For steels & non-ferrous materials
- TiAIN for longer tool life



Catalogue Code Size Ref.

Item #

E100 0100



Catalogue Code	E108	E109
Discount Group	B0610	B0612
Material	SPM	SPM
Surface Finish	Brt	TIAIN
Colour Ring & Application	UNI	UNI
Geometry	R30	R30
Shank Form (DIN 1835)	A	A
Shank Tolerance	b6	b6

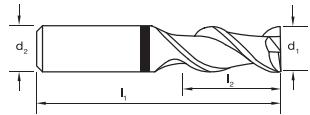
Size Ref.	d ₁ (e8)	I ₁	I ₂	d ₂	z	Shaft Tolerance	Item #	Item #
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0200	2	48	4	6	2		E108 0200	E109 0200
0300	3	49	5	6	2		E108 0300	E109 0300
0400	4	51	7	6	2		E108 0400	E109 0400
0500	5	52	8	6	2		E108 0500	E109 0500
0600	6	52	8	6	2		E108 0600	E109 0600
0800	8	61	11	10	2		E108 0800	E109 0800
1000	10	63	13	10	2		E108 1000	E109 1000
1200	12	73	16	12	2		E108 1200	E109 1200
1400	14	73	16	12	2		E108 1400	•
1600	16	79	19	16	2		E108 1600	E109 1600
1800	18	79	19	16	2		E108 1800	•
2000	20	88	22	20	2		E108 2000	E109 2000
2200	22	88	22	20	2		E108 2200	•

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

Slot Drills Regular, 2 Flute, R40 AI



- For precision milling of slots & cavities
 - Optimised for Wrought Aluminium Alloys
 - Brt for Unalloyed Aluminiums & Al Si ≤ 0.5%
 - TiAIN for Alloyed Aluminiums, offering excellent resistant to abrasion



Catalogue Code Size Ref.

Item #

E100 0100

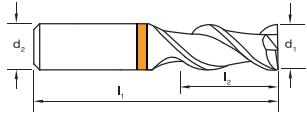


Catalogue Code	E110	E111
Discount Group	B0606	B0608
Material	HSS Co.8	HSS Co.8
Surface Finish	Brt	TiAIN
Colour Ring & Application	AI	AI
Geometry	R40	R40
Shank Form (DIN 1835)	A	A
Shank Tolerance	b6	b6

Slot Drills Regular, 2 Flute, R40 Cu



- For precision milling of slots & cavities
- Optimised for Copper & Copper Alloys
- CrN for superior finish and tool life in copper



Catalogue Code Size Ref.

Item #

E100 0100



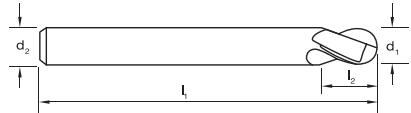
Catalogue Code	E112
Discount Group	B0608
Material	HSS Co.8
Surface Finish	CrN
Colour Ring & Application	Cu
Geometry	R40
Shank Form (DIN 1835)	A
Shank Tolerance	h6

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

Slot Drills Long, Ballnose, 2 Flute, R30



- For long-reach profiling & contour milling applications
- Suitable for materials up to 1000 N/mm²
- TiCN for longer tool life



Catalogue Code Size Ref

E100 0100

Item #



Catalogue Code	E113	E114
Discount Group	B0502	B0516
Material	HSS Co.8	HSS Co.8
Surface Finish	Brt	TiCN
Colour Ring & Application	N	N
Geometry	R30	R30
Shank Form (DIN 1835)	A	A
Shank Tolerance	b6	b6

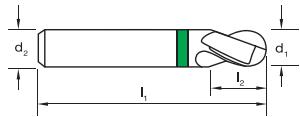
* Not available once current stock is depleted.

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

Slot Drills Stub, Ballnose, 2 Flute, R30 UNI



- SPM offers superior performance
- For profile & contour milling applications
- Suitable for materials up to 1400 N/mm²
- TiAIN for longer tool life



Catalogue Code Size Ref.

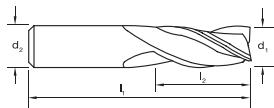
E100 0100

Item #

Endmills Stub, 3 Flute, R30 N



- Universal use for slotting and finishing with the one tool
- Suitable for materials up to 1000 N/mm²
- TiAIN for longer tool life



**DIN
327**



Catalogue Code Size Ref.

E100 0100

Item #

Catalogue Code	E187	E188
Discount Group	B0606	B0608
Material	HSS Co.8	HSS Co.8
Surface Finish	<i>Br</i>	<i>TiAIN</i>
Colour Ring & Application		
Geometry		
Shank Form (DIN 1835)		
Shank Tolerance		

Size Ref.	d ₁ (e8)	l ₁	l ₂	d ₂	z
0200	2	48	4	6	3
0250	2.5	49	5	6	3
0300	3	49	5	6	3
0350	3.5	50	6	6	3
0400	4	51	7	6	3
0500	5	52	8	6	3
0600	6	52	8	6	3
0700	7	60	10	10	3
0800	8	61	11	10	3
0900	9	61	11	10	3
1000	10	63	13	10	3
1200	12	73	16	12	3
1400	14	73	16	12	3
1500	15	73	16	12	3
1600	16	79	19	16	3
1800	18	79	19	16	3
2000	20	88	22	20	3
2200	22	88	22	20	3

E187	E188
B0606	B0608

HSS Co.8	HSS Co.8
<i>Br</i>	<i>TiAIN</i>

N	N
R30	R30

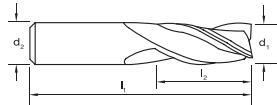
A	A
h6	h6

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

Endmills Stub, 3 Flute, R30 N, Keyway



- Universal use for slotting and finishing with the one tool
 - Suitable for materials up to 1000 N/mm²
 - TiAIN for longer tool life



Catalogue Code Size Ref.

Item #



atalogue Code Size Ref.

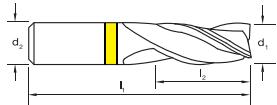
E100 0100

Catalogue Code	E232	E240
Discount Group	B0606	B0608
Material	HSS Co.8	HSS Co.8
Surface Finish	Brt	TiAIN
Colour Ring & Application	N	N
Geometry	R30	R30
Shank Form (DIN 1835)	A	A
Shank Tolerance	h6	h6

Endmills Regular, 3 Flute, R45 W



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



Catalogue Code Size Ref.

E100 | 0100

Item #

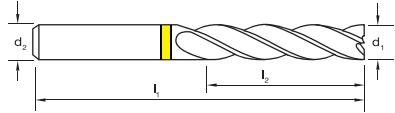


Catalogue Code	E121	E122
Discount Group	B0610	B0612
Material	SPM	SPM
Surface Finish	Brt	TIAIN
Colour Ring & Application	W	W
Geometry	R45	R45
Shank Form (DIN 1835)	A	A
Shank Tolerance	h6	h6

Endmills Long, 3 Flute, R40 W



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



The logo for DIN 844L features the text "DIN 844L" in a bold, sans-serif font. To the right of the text are three blue icons: a bar chart, a roll of paper being cut, and a roll of paper being wound onto a reel.

Catalogue Code Size Ref.

E100 0100

Item #

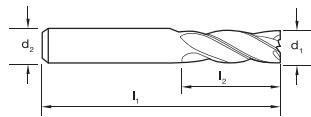


Catalogue Code	E123	E124
Discount Group	B0610	B0612
Material	SPM	SPM
Surface Finish	Brt	TIAIN
Colour Ring & Application	W	W
Geometry	R40	R40
Shank Form (DIN 1835)	A	A
Shank Tolerance	h6	h6

Endmills Regular, 4&6 Flute, R30 N



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



Catalogue Code Size Ref.

E100 **0100**

Item #

Catalogue Code
Discount Group
Material
Surface Finish
Colour Ring & Application
Geometry
Shank Form (DIN 1835)
Shank Tolerance

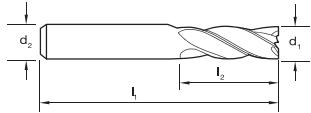
E125	E227	E126	E228
B0502	B0502	B0516	B0516
HSS Co.8	HSS Co.8	HSS Co.8	HSS Co.8
Brt	Brt	TiCN	TiCN
N	N	N	N
R30	R30	R30	R30
A	A	A	A
h6	h6	h6	h6

Size Ref.	d ₁ (k9)	l ₁	l ₂	d ₂	z	Item #	Item #	Item #	Item #
0150	1.5	50	3	6	4	E125 0150		E126 0150	
0200	2.0	50	6	6	4	E125 0200		E126 0200	
0250	2.5	50	7	6	4	E125 0250		E126 0250	
0300	3.0	50	9	6	4	E125 0300		E126 0300	
0350	3.5	60	12	6	4		E227 0350		E228 0350
0350	3.5	60	12	8	4	E125 0350		E126 0350	
0400	4.0	60	12	6	4		E227 0400		E228 0400
0400	4.0	60	12	8	4	E125 0400		E126 0400	
0450	4.5	60	15	6	4		E227 0450		E228 0450
0450	4.5	60	15	8	4	E125 0450		E126 0450	
0500	5.0	60	15	6	4		E227 0500		E228 0500
0500	5.0	60	15	8	4	E125 0500		E126 0500	
0550	5.5	60	15	6	4		E227 0550		E228 0550
0550	5.5	60	15	8	4	E125 0550		E126 0550	
0600	6.0	60	15	6	4		E227 0600		E228 0600
0600	6.0	60	15	8	4	E125 0600		E126 0600	
0650	6.5	65	20	10	4	E125 0650		E126 0650	
0700	7.0	65	20	10	4	E125 0700		E126 0700	
0750	7.5	65	20	10	4	E125 0750		E126 0750	
0800	8.0	65	20	10	4	E125 0800		E126 0800	
0850	8.5	75	25	10	4	E125 0850		E126 0850	
0900	9.0	75	25	10	4	E125 0900		E126 0900	
0950	9.5	75	25	10	4	E125 0950		E126 0950	
1000	10.0	75	25	10	4	E125 1000		E126 1000	
1050	10.5	80	30	12	4	E125 1050		E126 1050	
1100	11.0	80	30	12	4	E125 1100		E126 1100	
1150	11.5	80	30	12	4	E125 1150		E126 1150	
1200	12.0	80	30	12	4	E125 1200		E126 1200	
1300	13.0	90	35	16	4	E125 1300		E126 1300	
1400	14.0	90	35	16	4	E125 1400		E126 1400	
1500	15.0	95	40	16	4	E125 1500		E126 1500	
1600	16.0	95	40	16	4	E125 1600		E126 1600	
1700	17.0	105	40	20	4	E125 1700		E126 1700	
1800	18.0	105	40	20	4	E125 1800		E126 1800	
1900	19.0	110	45	20	4	E125 1900		E126 1900	
2000	20.0	110	45	20	4	E125 2000		E126 2000	
2200	22.0	110	45	20	4	E125 2200		E126 2200	
2400	24.0	120	50	25	4	E125 2400		E126 2400	
2500	25.0	120	50	25	4	E125 2500		E126 2500	
2600	26.0	120	50	25	4			E126 2600	
2800	28.0	125	55	25	6	E125 2800		E126 2800	
3000	30.0	125	55	25	6	E125 3000		E126 3000	
3200	32.0	145	60	32	6	E125 3200		E126 3200	
3500	35.0	145	60	32	6	E125 3500		E126 3500	
4000	40.0	150	65	32	6	E125 4000		E126 4000	
4500	45.0	155	70	32	6	E125 4500		E126 4500	
5000	50.0	155	70	32	6	E125 5000		E126 5000	

Endmills Regular, 4&6 Flute, R30 N



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



Catalogue Code Size Ref.

E100 0100

Item #



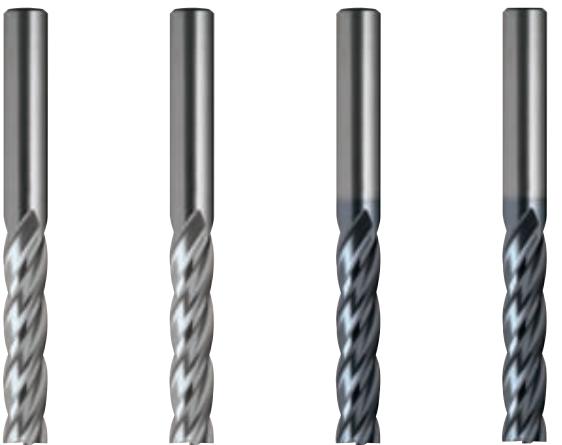
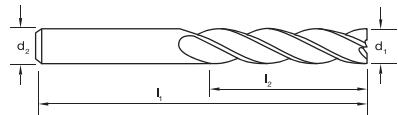
Catalogue Code	E125	E126
Discount Group	B0502	B0516
Material	HSS Co.8	HSS Co.8
Surface Finish	Brt	TiCN
Colour Ring & Application	N	N
Geometry	R30	R30
Shank Form (DIN 1835)	A	A
Shank Tolerance	h6	h6

Size Ref.	d ₁ (k9)	I ₁	I ₂	d ₂	z	Shaft Tolerances	Item #	Item #
0159	1/16	1-31/32	1/4	1/4	4		E125 0159	E126 0159
0238	3/32	1-31/32	9/32	1/4	4		E125 0238	E126 0238
0318	1/8	1-31/32	11/32	1/4	4		E125 0318	E126 0318
0397	5/32	2-11/32	15/32	1/4	4		E125 0397	E126 0397
0476	3/16	2-11/32	19/32	1/4	4		E125 0476	E126 0476
0635	1/4	2-11/32	19/32	1/4	4		E125 0635	E126 0635
0794	5/16	2-9/16	25/32	3/8	4		E125 0794	E126 0794
0953	3/8	2-15/16	31/32	3/8	4		E125 0953	E126 0953
1270	1/2	3-7/32	1-3/8	1/2	4		E125 1270	E126 1270
1588	5/8	3-3/4	1-9/16	5/8	4		E125 1588	E126 1588
1905	3/4	4-5/16	1-3/4	3/4	4		E125 1905	E126 1905
2223	7/8	4-5/16	1-3/4	3/4	4		E125 2223	E126 2223
2540	1	4-23/32	1-31/32	3/4	4		E125 2540	E126 2540
2541	1	4-23/32	1-31/32	1	4		E125 2541	E126 2541

Endmills Long, 4&6 Flute, R30 N



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



Catalogue Code Size Ref.

E100 **0100**

Item #

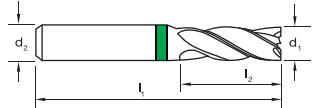
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Discount Group	B0502	B0502	B0516	B0516
Material	HSS Co.8	HSS Co.8	HSS Co.8	HSS Co.8
Surface Finish	<i>BrT</i>	<i>BrT</i>	<i>TiCN</i>	<i>TiCN</i>
Colour Ring & Application	N	N	N	N
Geometry	R30	R30	R30	R30
Shank Form (DIN 1835)	A	A	A	A
Shank Tolerance	h6	h6	h6	h6

Size Ref.	d ₁ (k10)	l ₁	l ₂	d ₂	z	Item #	Item #	Item #	Item #
0200	2.0	60	10	6	4	E127 0200		E128 0200	
0250	2.5	60	15	6	4	E127 0250		E128 0250	
0300	3.0	60	15	6	4	E127 0300		E128 0300	
0350	3.5	60	20	6	4	E127 0350		E128 0350	E230 0350
0350	3.5	60	20	8	4		E229 0400		E230 0400
0400	4.0	60	20	6	4	E127 0400		E128 0400	
0400	4.0	60	20	8	4			E128 0400	
0450	4.5	65	25	6	4	E127 0450		E128 0450	E230 0450
0450	4.5	65	25	8	4			E128 0450	
0500	5.0	65	25	6	4	E127 0500		E128 0500	E230 0500
0500	5.0	65	25	8	4			E128 0500	
0550	5.5	65	25	6	4	E127 0550		E128 0550	E230 0550
0550	5.5	65	25	8	4			E128 0550	
0600	6.0	65	25	6	4	E127 0600		E128 0600	E230 0600
0600	6.0	65	25	8	4			E128 0600	
0650	6.5	80	35	10	4	E127 0650		E128 0650	
0700	7.0	80	35	10	4	E127 0700		E128 0700	
0750	7.5	80	35	10	4	E127 0750		E128 0750	
0800	8.0	80	35	10	4	E127 0800		E128 0800	
0850	8.5	95	45	10	4	E127 0850		E128 0850	
0900	9.0	95	45	10	4	E127 0900		E128 0900	
0950	9.5	95	45	10	4	E127 0950		E128 0950	
1000	10.0	95	45	10	4	E127 1000		E128 1000	
1100	11.0	105	55	12	4	E127 1100		E128 1100	
1200	12.0	105	55	12	4	E127 1200		E128 1200	
1400	14.0	110	55	16	4	E127 1400		E128 1400	
1600	16.0	120	65	16	4	E127 1600		E128 1600	
1800	18.0	130	65	20	4	E127 1800		E128 1800	
1900	19.0	140	75	20	4	E127 1900		E128 1900	
2000	20.0	140	75	20	4	E127 2000		E128 2000	
2200	22.0	140	75	20	4	E127 2200		E128 2200	
2400	24.0	160	90	25	4	E127 2400		E128 2400	
2500	25.0	160	90	25	4	E127 2500		E128 2500	
3000	30.0	160	90	25	6	E127 3000		E128 3000	
3200	32.0	190	105	32	6	E127 3200		E128 3200	
4000	40.0	210	125	32	6	E127 4000			
0159	1/16	2-3/8	3/8	1/4	4	E127 0159		E128 0159	
0238	3/32	2-3/8	3/8	1/4	4	E127 0238		E128 0238	
0318	1/8	2-3/8	19/32	1/4	4	E127 0318		E128 0318	
0397	5/32	2-3/8	25/32	1/4	4	E127 0397		E128 0397	
0476	3/16	2-9/16	31/32	1/4	4	E127 0476		E128 0476	
0635	1/4	2-9/16	31/32	1/4	4	E127 0635		E128 0635	
0794	5/16	3-5/32	1-3/8	3/8	4	E127 0794		E128 0794	
0953	3/8	3-3/4	1-25/32	3/8	4	E127 0953		E128 0953	
1270	1/2	4-5/16	2-5/32	1/2	4	E127 1270		E128 1270	
1588	5/8	4-23/32	2-9/16	5/8	4	E127 1588		E128 1588	
1905	3/4	5-1/2	2-15/16	3/4	4	E127 1905		E128 1905	
2223	7/8	5-1/2	2-15/16	3/4	4	E127 2223		E128 2223	
2540	1	6-5/16	3-17/32	3/4	4	E127 2540		E128 2540	

Endmills Regular, 4 Flute, R30/32, *Harmony*



- SPM offers superior performance
- 30/32° variable flute helix for chatter free milling
- Suitable for materials up to 1400 N/mm²
- TiAIN for longer tool life



Catalogue Code Size Ref.

Item #

E100 0100



Catalogue Code

Discount Group

Material

Face Finish

Application

Geometry

(DIN 1835)

E134

B0612

SPM

TiAIN

ARB-MON

B30 / 32

1

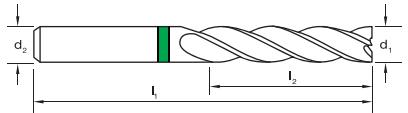
b6

Size Ref.	d ₁ (k10)	I ₁	I ₂	d ₂	z	Shaft Tolerance	Item #
0200	2	51	7	6	4		E134 0200
0300	3	52	8	6	4		E134 0300
0400	4	55	11	6	4		E134 0400
0500	5	57	13	6	4		E134 0500
0600	6	57	13	6	4		E134 0600
0800	8	69	19	10	4		E134 0800
1000	10	72	22	10	4		E134 1000
1200	12	83	26	12	4		E134 1200
1400	14	83	26	12	4		E134 1400
1600	16	92	32	16	4		E134 1600
1800	18	92	32	16	4		E134 1800
2000	20	104	38	20	4		E134 2000

Endmills Long, 4 Flute, R30/32, *Harmony*



- SPM offers superior performance
- 30/32° variable flute helix for chatter free milling
- Suitable for materials up to 1400 N/mm²
- TiAIN for longer tool life



ode Size Ref.

E100 **0100**



Catalogue Code Discount Group

Material

Face Finish

Surface Finish

Learning & Application

Geometry

Font Form (DIN 1835)

Shank Tolerance

www.nature.com/scientificreports/

E136

B0612

SPM

TiAIN

MAIN
ABITION

ANSWER

R30 / 32

A

h6

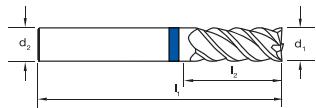
Item #

136 030

Endmills Regular, 4 Flute, R50 VA



- SPM offers superior performance
- For superior finishing applications
- Optimised geometry for stainless steels & long chipping materials up to 1000 N/mm²
- TiAlN for longer tool life



Catalogue Code Size Ref.

Item #

E100 0100



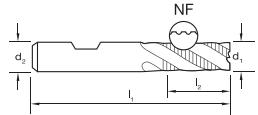
Catalogue Code	E137
Discount Group	B0612
Material	SPM
Surface Finish	TIAN
Colour Ring & Application	VA
Geometry	R50
Shank Form (DIN 1835)	A
Shank Tolerance	h6

Size Ref.	d ₁ (k8)	I ₁	I ₂	d ₂	z	Item #
0600	6	57	13	6	4	E137 0600
0800	8	69	19	10	4	E137 0800
1000	10	72	22	10	4	E137 1000
1200	12	83	26	12	4	E137 1200
1400	14	83	26	12	4	E137 1400
1600	16	92	32	16	4	E137 1600
1800	18	92	32	16	4	E137 1800
2000	20	104	38	20	4	E137 2000

Roughers Regular, 3-6 Flute, R30, NF (semi roughing)



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



Catalogue Code Size Ref.

E100 0100

Item #



Catalogue Code	E201	E202
Discount Group	B0402	B0404
Material	HSS Co.8	HSS Co.8
Surface Finish	Brt	TiAIN
Colour Ring & Application	N	N
Geometry	R30 NF (semi roughing)	R30 NF (semi roughing)
Shank Form (DIN 1835)	B	B
Shank Tolerance	b6	b6

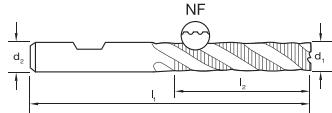
Size Ref.	d ₁ (js14)	Shaft Tolerance					Item #	Item #
		I ₁	I ₂	d ₂	z	no		
0600	6	57	13	6	3		E201 0600	E202 0600
0800	8	69	19	10	3		E201 0800	E202 0800
1000	10	72	22	10	4		E201 1000	E202 1000
1200	12	83	26	12	4		E201 1200	E202 1200
1400	14	83	26	12	4		E201 1400	E202 1400
1600	16	92	32	16	4		E201 1600	E202 1600
1800	18	92	32	16	4		E201 1800	E202 1800
2000	20	104	38	20	4		E201 2000	E202 2000
2200	22	104	38	20	5		E201 2200	E202 2200
2500	25	121	45	25	5		E201 2500	E202 2500
3000	30	121	45	25	6		E201 3000	E202 3000
3200	32	133	53	32	6	•	•	•
3600	36	133	53	32	6	•	•	•
4000	40	155	63	40	6	•	•	•

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

Roughers Long, 3-6 Flute, R30, NF (semi roughing)



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



Catalogue Code Size Ref.

Item #



Catalogue Code	E205	E206
Discount Group	B0402	B0404
Material	HSS Co.8	HSS Co.8
Surface Finish	Brt	TIAIN
Colour Ring & Application	N	N
Geometry	R30 NF (semi roughing)	R30 NF (semi roughing)
Shank Form (DIN 1835)	B	B
Shank Tolerance	h6	h6

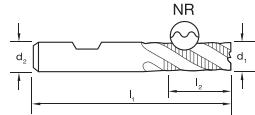
Size Ref.	d ₁ (js14)	I ₁	I ₂	d ₂	z	Item #	Item #
0600	6	68	24	6	3	•	•
0800	8	88	38	10	3	•	•
1000	10	95	45	10	4	E205 1000	E206 1000
1200	12	110	53	12	4	E205 1200	E206 1200
1400	14	110	53	12	4	E205 1400	E206 1400
1600	16	123	63	16	4	E205 1600	E206 1600
1800	18	123	63	16	4	E205 1800	E206 1800
2000	20	141	75	20	4	E205 2000	E206 2000
2200	22	141	75	20	5	E205 2200	E206 2200
2500	25	166	90	25	5	E205 2500	E206 2500
3000	30	166	90	25	6	E205 3000	E206 3000
3200	32	186	106	32	6	•	•
3600	36	186	106	32	6	•	•
4000	40	217	125	40	6	•	•

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

Roughers Regular, 3-6 Flute, R30 NR (coarse pitch)



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



Catalogue Code Size Ref

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E100

0100

Item #

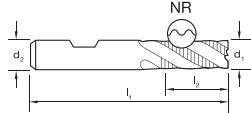
Catalogue Code	E142	E144	E143	E145
Discount Group	B0402	B0402	B0404	B0404
Material	HSS Co.8	HSS Co.8	HSS Co.8	HSS Co.8
Surface Finish	<i>Brt</i>	<i>Brt</i>	<i>TiCN</i>	<i>TiCN</i>
Colour Ring & Application	Soft-Medium <22HR _c	Soft-Medium <22HR _c	Soft-Medium <22HR _c	Soft-Medium <22HR _c
Geometry	R30 NR	R30 NR	R30 NR	R30 NR
Shank Form (DIN 1835)	A	B	A	B
Shank Tolerance	b6	b6	b6	b6

Size Ref.	Shaft Tolerance					Item #	Item #	Item #	Item #
	d ₁ (js14)	l ₁	l ₂	d ₂	z				
0600	6.0	60	15	10	3	E142 0600		E143 0600	
0700	7.0	65	20	10	3	E142 0700		E143 0700	
0800	8.0	65	20	10	3	E142 0800		E143 0800	
0900	9.0	75	25	10	3	E142 0900		E143 0900	
1000	10.0	75	25	10	4	E142 1000		E143 1000	
1100	11.0	80	30	12	4	E142 1100		E143 1100	
1200	12.0	80	30	12	4	E142 1200		E143 1200	
1300	13.0	90	35	16	4	E142 1300		E143 1300	
1400	14.0	90	35	16	4	E142 1400		E143 1400	
1500	15.0	95	40	16	4	E142 1500		E143 1500	
1600	16.0	95	40	16	4		E144 1600		E145 1600
1800	18.0	105	40	20	4		E144 1800		E145 1800
2000	20.0	110	45	20	4		E144 2000		E145 2000
2200	22.0	110	45	20	4		E144 2200		E145 2200
2500	25.0	120	50	25	5		E144 2500		E145 2500
3000	30.0	125	55	25	6		E144 3000		E145 3000

Roughers Regular, 3-6 Flute, R30, NR (coarse pitch)



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



Catalogue Code Size Ref.

ef.

E100 | 0100

Item #

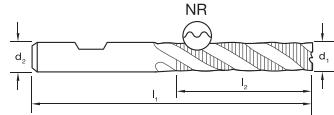
- Available on request as special manufacture. Subject to lead time.

* Not available once current stock is depleted.

Roughers Long, 3-6 Flute, R30, NR (coarse pitch)



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



Catalogue Code Size Ref

e Ref

E100

0100

Item #

Catalogue Code	E146	E148	E147	E149
Discount Group	B0402	B0402	B0404	B0404
Material	HSS Co.8	HSS Co.8	HSS Co.8	HSS Co.8
Surface Finish	Brt	Brt	TiCN	TiCN
Colour Ring & Application	Soft-Med <22HR _c	Soft-Med <22HR _c	Soft-Med <22HR _c	Soft-Med <22HR _c
Geometry	R30 NR (coarse pitch)			
Shank Form (DIN 1835)	A	B	A	B
Shank Tolerance	b6	b6	b6	b6

Size Ref.	d ₁ (js14)	Shaft Tolerance					Item #	Item #	Item #	Item #
		I ₁	I ₂	d ₂	z	No				
0600	6	68	24	6	3		E146 0600	E148 0600	E147 0600	E149 0600
0800	8	88	38	10	3		E146 0800	E148 0800	E147 0800	E149 0800
1000	10	95	45	10	4		E146 1000	E148 1000	E147 1000	E149 1000
1200	12	110	53	12	4		E146 1200	E148 1200	E147 1200	E149 1200
1600	16	123	63	16	4		E146 1600	E148 1600	E147 1600	E149 1600
1800	18	123	63	16	4		E146 1800		E147 1800	•
2000	20	141	75	20	4		E146 2000	E148 2000	E147 2000	E149 2000
2200	22	141	75	20	4		E146 2200		E147 2200	•
2500	25	166	90	25	5		E146 2500	E148 2500	E147 2500	E149 2500
3000	30	166	90	25	6		E146 3000	E148 3000	E147 3000	•
3200	32	186	106	32	6		•	•	•	•
4000*	40	217	125	40	6		E146 4000			
1270	1/2	4-5/16	2-1/16	1/2	4		E146 1270	•	E147 1270	•
1588	5/8	4-27/32	2-1/2	5/8	4		E146 1588	•	E147 1588	•
1905	3/4	5-9/16	2-15/16	3/4	4		E146 1905	•	E147 1905	•
2540	1	6-9/16	3-9/16	1	5		E146 2540	•	E147 2540	•
3175	1-1/4	7-5/16	4-3/16	1-1/4	6		E146 3175	•	E147 3175	•
3210	1-1/2	8-17/32	4-23/32	1-1/4	6		E146 3210		E147 3210	

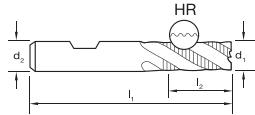
- Available on request as special manufacture. Subject to lead time.

*** Not available once current stock is depleted.**

Roughers Stub, 3-4 Flute, R30, HR (fine pitch)



- For roughing applications
- HR geometry allows for heavy cuts, in harder materials
- Suitable for materials up to 1300 N/mm²
- TiCN for longer tool life



Catalogue Code Size Ref.

ef.

E100 0100

Item #

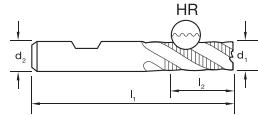
E160 B0402	E162 B0402	E161 B0404	E163 B0404
HSS Co	HSS Co	HSS Co	HSS Co
Brt	Brt	TiCN	TiCN
Med-Hard 22-40HRc	Med-Hard 22-40HRc	Med-Hard 22-40HRc	Med-Hard 22-40HRc
R30 HR (fine pitch)			
A	B	A	B

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

Roughers Regular, 3-6 Flute, R30 HR (fine pitch)



- For roughing applications
 - HR geometry allows for heavy cuts, in harder materials
 - Suitable for materials up to 1300 N/mm²
 - TiCN for longer tool life



Catalogue Code Size Ref

Size Ref

E100

0100

▼ Item #

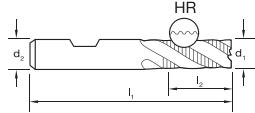
Catalogue Code	E168	E170	E169	E171
Discount Group	B0402	B0402	B0404	B0404
Material	HSS Co.8	HSS Co.8	HSS Co.8	HSS Co.8
Surface Finish	Brt	Brt	TiCN	TiCN
Colour Ring & Application	Med-Hard 22-40HR _c	Med-Hard 22-40HR _c	Med-Hard 22-40HR _c	Med-Hard 22-40HR _c
Geometry	R30 HR	R30 HR	R30 HR	R30 HR
Shank Form (DIN 1835)	A	B	A	B
Shank Tolerance	b6	b6	b6	b6

Size Ref.	Chain Tolerance					Item #	Item #	Item #	Item #
	d ₁ (js14)	l ₁	l ₂	d ₂	z				
0600	6.0	60	15	10	3	E168 0600		E169 0600	
0700	7.0	65	20	10	3	E168 0700		E169 0700	
0800	8.0	65	20	10	3	E168 0800		E169 0800	
0900	9.0	75	25	10	3	E168 0900		E169 0900	
1000	10.0	75	25	10	4	E168 1000		E169 1000	
1100	11.0	80	30	12	4	E168 1100		E169 1100	
1200	12.0	80	30	12	4	E168 1200		E169 1200	
1400	14.0	90	35	16	4	E168 1400		E169 1400	
1500	15.0	95	40	16	4	E168 1500		E169 1500	
1600	16.0	95	40	16	4		E170 1600		E171 1600
1800	18.0	105	40	20	4		E170 1800		E171 1800
2000	20.0	110	45	20	4		E170 2000		E171 2000
2200	22.0	110	45	20	4		E170 2200		E171 2200
2500	25.0	120	50	25	5		E170 2500		E171 2500
3000	30.0	125	55	25	6		E170 3000		E171 3000

Roughers Regular, 4-6 Flute, R30, HR (fine pitch)



- For roughing applications
 - HR geometry allows for heavy cuts, in harder materials
 - Suitable for materials up to 1300 N/mm²
 - TiCN for longer tool life



Catalogue Code Size Ref.

Item #

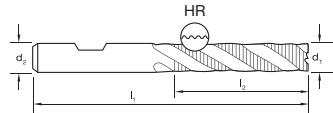
- Available on request as special manufacture. Subject to lead time.

* Not available once current stock is depleted.

Roughers Long, 4-6 Flute, R30, HR (fine pitch)



- For roughing applications
 - HR geometry allows for heavy cuts, in harder materials
 - Suitable for materials up to 1300 N/mm²
 - TiCN for longer tool life



Catalogue Code Size Ref

See Ref

E100

0100

Item #

Catalogue Code	E172	E174	E173	E175
Discount Group	B0402	B0402	B0404	B0404
Material	HSS Co	HSS Co	HSS Co	HSS Co
Surface Finish	Brt	Brt	TiCN	TiCN
Colour Ring & Application	Med-Hard 22-40HR _c	Med-Hard 22-40HR _c	Med-Hard 22-40HR _c	Med-Hard 22-40HR _c
Geometry	R30 HR (fine pitch)			
Shank Form (DIN 1835)	A	B	A	B
Shank Tolerance	b6	b6	b6	b6

Size Ref.	Chain Tolerance					no	no	no	no
	d ₁ (js14)	I ₁	I ₂	d ₂	z				
1200	12	110	53	12	4	E172 1200	E174 1200	E173 1200	E175 1200
1600	16	123	63	16	4	E172 1600	E174 1600	E173 1600	E175 1600
1800	18	123	63	16	4	E172 1800	E174 1800	E173 1800	•
2000	20	141	75	20	4	E172 2000	E174 2000	E173 2000	E175 2000
2200	22	141	75	20	4	E172 2200	E174 2200	E173 2200	•
2500	25	166	90	25	5	E172 2500	E174 2500	E173 2500	E175 2500
3000	30	166	90	25	6	E172 3000	E174 3000	E173 3000	•
4000*	40	217	125	40	6	E172 4000			

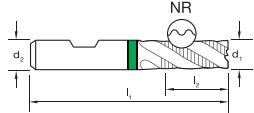
- Available on request as special manufacture. Subject to lead time.

* Not available once current stock is depleted.

Roughers Regular, 3-5 Flute, R30 UNI, NR (coarse pitch)



- SPM offers superior performance
 - For roughing applications
 - NR geometry allows for heavy cuts
 - Suitable for materials up to 1000 N/mm²
 - TiAlN for longer tool life



Catalogue Code Size Ref.

E100 0100

Item #

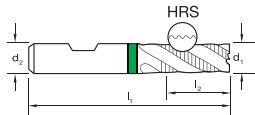


Catalogue Code	E150
Discount Group	B0408
Material	SPM
Surface Finish	TAIN
Colour Ring & Application	UNI
Geometry	R30 NR (coarse pitch)
Shank Form (DIN 1835)	B
Shank Tolerance	h6

Roughers Regular, 3-6 Flute, R45 UNI, HRS (fine pitch)



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



Catalogue Code Size Ref

size Ref.

E100 0100

Item #



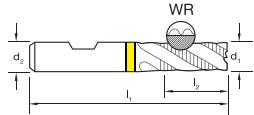
Catalogue Code	E151
Discount Group	B0408
Material	SPM
Surface Finish	TIAIN
Colour Ring & Application	UNI
Geometry	R45 HRS (fine pitch)
Shank Form (DIN 1835)	B
Shank Tolerance	b6

Size Ref.	d ₁ (k8)	I ₁	I ₂	d ₂	z	Shaft Tolerance	Item #
0400	4	55	11	6	3		E151 0400
0500	5	57	13	6	4		E151 0500
0600	6	57	13	6	4		E151 0600
0700	7	66	16	10	4		E151 0700
0800	8	69	19	10	4		E151 0800
0900	9	69	19	10	4		E151 0900
1000	10	72	22	10	4		E151 1000
1200	12	83	26	12	4		E151 1200
1400	14	83	26	12	5		E151 1400
1600	16	92	32	16	5		E151 1600
1800	18	92	32	16	6		E151 1800
2000	20	104	38	20	6		E151 2000
2500	25	121	45	25	6		E151 2500

Roughers Regular, 3 Flute, R35, WR (coarse pitch)



- SPM offers superior performance
 - For roughing applications
 - WR geometry allows for heavy cuts in long chipping materials
 - Brt for non ferrous materials
 - TiAIN for longer tool life



Catalogue Code Size Ref.

Item #

E100 **0100**

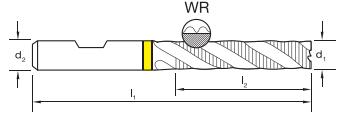


Catalogue Code	E152	E153
Discount Group	B0406	B0408
Material	SPM	SPM
Surface Finish	Brt	TIAIN
Colour Ring & Application	W	W
Geometry	R35 WR (coarse pitch)	R35 WR (coarse pitch)
Shank Form (DIN 1835)	B	B
Shank Tolerance	h6	h6

Roughers Long, 3 Flute, R35, WR (coarse pitch)



- SPM offers superior performance
 - For roughing applications
 - WR geometry allows for heavy cuts in long chipping materials
 - Brt for non ferrous materials
 - TiAIN for longer tool life



Catalogue Code Size Ref

e Ref.

E100 0100

▼ Item #



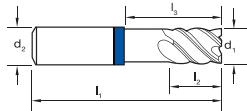
Catalogue Code	E154	E155
Discount Group	B0406	B0408
Material	SPM	SPM
Surface Finish	Brt	TiAIN
Colour Ring & Application	W	W
Geometry	R35 WR (coarse pitch)	R35 WR (coarse pitch)
Shank Form (DIN 1835)	B	B
Shank Tolerance	b6	b6

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

Roughers Regular, 4 Flute, R55 VA



- SPM offers superior performance
 - For roughing & finishing applications
 - Optimised geometry for stainless steels & long chipping materials up to 1000 N/mm²
 - TiAlN for longer tool life



Catalogue Code Size Ref.

ef.

E100 | 0100

Item #



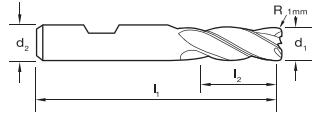
Catalogue Code	E156	E157
Discount Group	B0612	B0612
Material	SPM	SPM
Surface Finish	TiAIN	TiAIN
Colour Ring & Application	VA	VA
Geometry	R55	R55
Shank Form (DIN 1835)	A	B
Shank Tolerance	b6	b6

*DIN 844K - all dimensions except I_2 and I_3

Roughers Regular, 4 Flute, R30 Ti



- SPM offers superior performance
- For roughing applications in Titaniums
- Unique chip breaking qualities
- TiAIN for longer tool life



Catalogue Code Size Ref.

ode Size Ref.

E100 0100

Item #

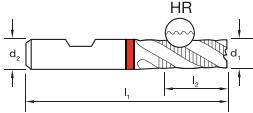


Catalogue Code	E158	E159
Discount Group	B0406	B0408
Material	SPM	SPM
Surface Finish	Brt	TAIN
Colour Ring & Application	Titanium Alloys	Titanium Alloys
Geometry	R30°	R30°
Shank Form (DIN 1835)	B	B
Shank Tolerance	h6	h6

Roughers Regular, 4-5 Flute, R30, HR (fine pitch)



- SPM offers superior performance
 - For roughing applications
 - HR geometry allows for heavy cuts, in harder materials
 - Suitable for materials up to 1400 N/mm²
 - TiAIN for longer tool life



Catalogue Code Size Ref.

E100 0100

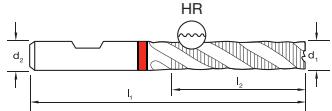


Catalogue Code	E176
Discount Group	B0408
Material	SPM
Surface Finish	TIAIN
Colour Ring & Application	H
Geometry	R30° HR (fine pitch)
Shank Form (DIN 1835)	B
Shank Tolerance	h6

Roughers Long, 4-5 Flute, R30, HR (fine pitch)



- SPM offers superior performance
 - For roughing applications
 - HR geometry allows for heavy cuts, in harder materials
 - Suitable for materials up to 1400 N/mm²
 - TiAIN for longer tool life



Catalogue Code Size Ref

ode Size Ref.

E100 Q100

▼ Item #



Catalogue Code	E177
Discount Group	B0408
Material	SPM
Surface Finish	TIAIN
Colour Ring & Application	H
Geometry	R30 HR (fine pitch)
Shank Form (DIN 1835)	B
Shank Tolerance	h6

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