



***sutton**tools*

HSS ENDMILLS

- Slotting, Finishing, Roughing & Profiling
- Short & Long Series
- Various shank styles
- General purpose & application specific geometries



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.

For expert tooling recommendations, go to:
www.suttontools.com/expert-tool-selector

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

Model	E104	E105	E106	E119	E129	E130	E131	E178
Type of Cut	•	•	•	•	•	•	•	•
Material	HSS Co		HSS Co		HSS Co			HSS
Surface Finish	Brt	TiN	Brt	Brt	Brt	TiN	Brt	Brt
Sutton Designation	N		N		N			N
Standard	-		-		-			-
Shank Tolerance	-0.025		-0.025		-0.025			h6

ISO	VDI 3323	Material	Condition	HB	N/mm ²	128	128	130	131	132	132	134	135
P	1	Steel - Non-alloy, cast & free cutting	~ 0.15 %C	A	125	440	●	●	●	●	●	●	●
	2			A	190	640	●	●	●	●	●	●	●
	3		~ 0.45 %C	QT	250	840	○	●	○	○	○	○	○
	4		~ 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	C	400	1350		○			○		
	41	HT		55 HRC									

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

136	138	139	140	141	143	144	145	146	147	148	149	150	150
E100	E102 / E225	E226	E184	E125 / E227	E192	E127 / E229	E230	E142 / E144	E143	E146	E113	E168	E169
•	•	•	•										
				•	•	•	•						
				•	•	•	•	•	•	•	•	•	•
											•		
HSS Co.8	HSS Co.8		HSS Co.8	HSS Co.8	HSS Co.8	HSS Co.8		HSS Co.8		HSS Co.8	HSS Co.8	HSS Co.8	
<i>Br</i>	<i>Br</i>	<i>TiCN</i>	<i>TiAlN</i>	<i>Br</i>	<i>TiAlN</i>	<i>Br</i>	<i>TiCN</i>	<i>Br</i>	<i>TiCN</i>	<i>Br</i>	<i>Br</i>	<i>Br</i>	<i>TiCN</i>
N	N	N	N	N	N	N	N	WN	WN	WN	N	NH	NH
JIS	JIS	DIN 844L	JIS	DIN 844K	JIS	JIS	JIS	JIS	DIN 844L	-	-	JIS	JIS
h6	h6	h6	h6	h6	h6	h6	h6	h6	h6	h6	h6	h6	h6

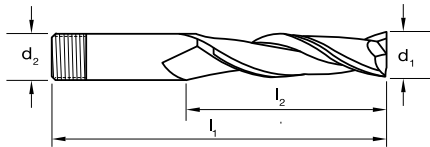
													VDI 3323	ISO
•	•	•	•	•	•	•	•	•	•	•	•	•		1
•	•	•	•	•	•	•	•	•	•	•	•	•		2
○	○	○	○	○	○	○	○	○	○	○	○	○	•	3
○	○	○	○	○	○	○	○	○	○	○	○	○	○	4
○	○	○	○	○	○	○	○	○	○	○	○	○	○	5
○	•	•	•	•	•	•	•	•	•	•	•	•	•	6
○	○	○	○	○	○	○	○	○	○	○	○	○	○	7
○	○	○	○	○	○	○	○	○	○	○	○	○	○	8
○	○	○	○	○	○	○	○	○	○	○	○	○	○	9
○	○	•	•	○	•	○	•				○	○	•	10
				○	○	○	○					○	•	11
		○	○	○	○	○	○					○	○	12
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		○	○		○		○					○	○	14.1
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					○		○					○	○	14.3
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○	○	•	•	○	•	○	•		○		○	○	•	17
○	○	○	○	○	○	○	○				○	○	○	18
○	○	○	○	○	○	○	○		○		○	○	•	19
○	○	○	○	○	○	○	○				○	○	○	20
•	•	○	○	•	○	•	○	•	○	•	•			21
•	•	○	○	•	○	•	○	•	○	•	•			22
○	○	○	○	○	○	○	○	○	○	○	○			23
○	○	○	○	○	○	○	○	○	○	○	○			24
○	○	○	○	○	○	○	○	○	○	○	○			25
○	○	○	○	○	○	○	○	○	○	○	○			26
○	○	○	○	○	○	○	○	○	○	○	○	○	•	27
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														39.1
					•		•						○	39.2
														40
														41



Slot Drills 2 Flute, R30 N, Long, Threaded

suttontools

- For general milling of slots & cavities
- Suitable for materials up to 850 N/mm²
- For soft steels & non-ferrous material



Catalogue Code	E106
Discount Group	B0602
Material	HSS Co
Surface Finish	Brf
Sutton Designation	N
Geometry	R30
Shank Form (DIN 1835)	D
Shank Tolerance	-0.025

Size Ref.	d ₁ (h9)	l ₁	l ₂	d ₂	z	Item #	List Price
0200	2	51	4	6	2	E106 0200	\$47.38
0300	3	60.5	11	6	2	E106 0300	\$47.38
0400	4	66.5	12.5	6	2	E106 0400	\$37.65
0500	5	70	12.5	6	2	E106 0500	\$38.80
0600	6	76	16	6	2	E106 0600	\$46.11
0700	7	76	16	10	2	E106 0700	\$57.81
0800	8	79.5	19	10	2	E106 0800	\$60.06
1000	10	82.5	22	10	2	E106 1000	\$61.47
1100	11	89	22	12	2	E106 1100	\$73.71
1200	12	95	25.5	12	2	E106 1200	\$73.71
1300	13	95	25.5	12	2	E106 1300	\$81.82
1400	14	101.5	28.5	12	2	E106 1400	\$85.46
1500	15	108	31.5	16	2	E106 1500	\$114.73
1600	16	108	31.5	16	2	E106 1600	\$114.73
1700	17	114.5	35	16	2	E106 1700	\$125.62
1800	18	114.5	35	16	2	E106 1800	\$132.19
2000	20	120.5	38	16	2	E106 2000	\$160.93
0159	1/16	2	3/16	1/4	2	E106 0159	\$42.12
0238	3/32	2	1/4	1/4	2	E106 0238	\$41.30
0318	1/8	2-1/2	7/16	1/4	2	E106 0318	\$43.22
0476	3/16	2-3/4	1/2	1/4	2	E106 0476	\$40.90
0635	1/4	3	5/8	1/4	2	E106 0635	\$47.25
0794	5/16	3-1/8	3/4	3/8	2	E106 0794	\$59.22
0953	3/8	3-1/4	7/8	3/8	2	E106 0953	\$60.06
1111	7/16	3-1/2	7/8	1/2	2	E106 1111	\$76.55
1270	1/2	3-3/4	1	1/2	2	E106 1270	\$68.52
1429	9/16	4	1-1/8	1/2	2	E106 1429	\$91.19
1588	5/8	4-1/4	1-1/4	5/8	2	E106 1588	\$108.18
1905	3/4	4-3/4	1-1/2	5/8	2	E106 1905	\$140.61
2223	7/8	5-3/4	1-5/8	1	2	E106 2223	\$217.84
2540	1	6-1/4	1-3/4	1	2	E106 2540	\$240.23

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						
E106	●	●	○	○	○	●	○										○	○	○	○	○	○	●	●	○	○																													

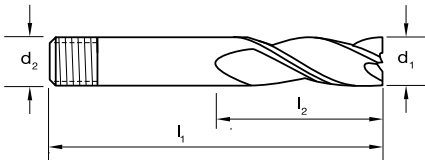
P Steel M Stainless Steel K Cast Iron N Non-Ferrous Metals S Titanium & Super Alloys H Hard Materials

● Optimal ○ Effective

Endmills 3 Flute, R30 N, Regular, Threaded

suttontools

- For slotting and finishing with the one tool
- Suitable for materials up to 850 N/mm²
- For soft steels & non-ferrous material



Catalogue Code	E119
Discount Group	B0602
Material	HSS Co
Surface Finish	Brt
Sutton Designation	N
Geometry	R30
Shank Form (DIN 1835)	D
Shank Tolerance	-0.025

Size Ref.	d ₁ (h9)	l ₁	l ₂	d ₂	z	Item #	List Price
0300	3	51	8	6	3	E119 0300	\$45.29
0400	4	53	10	6	3	E119 0400	\$45.29
0500	5	58	13	6	3	E119 0500	\$45.29
0600	6	58	13	6	3	E119 0600	\$45.29
0800	8	60	13	10	3	E119 0800	\$58.15
1000	10	61	15	10	3	E119 1000	\$69.48
1200	12	67	19	12	3	E119 1200	\$73.44
1400	14	69	22	12	3	E119 1400	\$100.17
1600	16	72	22	16	3	E119 1600	\$116.57
2000	20	77	26	16	3	E119 2000	\$161.90

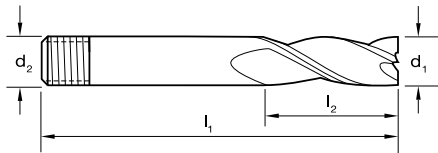
ISO	P													M			K					N							S							H																				
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14.1	14.2	14.3	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37.1	37.2	37.3	37.4	37.5	38.1	38.2	39.1	39.2	40	41							
E119	●	●	○	○	○	●	○																●	●	○	○	○																													

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

Endmills 4 Flute, R30 N, Regular, Threaded

suttontools

- For finish milling applications
- Suitable for materials up to 850 N/mm²
- For soft steels & non-ferrous material



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

	E129	E130
Catalogue Code	B0602	B0604
Material	HSS Co	HSS Co
Surface Finish	BrT	TiN
Sutton Designation	N	N
Geometry	R30	R30
Shank Form (DIN 1835)	D	D
Shank Tolerance	-0.025	-0.025

Size Ref.	d ₁ (k9)	l ₁	l ₂	d ₂	z	Item #	List Price	Item #	List Price
0300	3	54	10	6	4	E129 0300	\$31.70	E130 0300	\$59.95
0400	4	57	13	6	4	E129 0400	\$31.10	E130 0400	\$66.85
0500	5	60.5	16	6	4	E129 0500	\$31.70	E130 0500	\$60.16
0600	6	60.5	16	6	4	E129 0600	\$31.10	E130 0600	\$55.67
0800	8	63.5	18	10	4	E129 0800	\$41.01	E130 0800	\$67.49
1000	10	66.5	21	10	4	E129 1000	\$41.01	E130 1000	\$64.22
1200	12	70	24	12	4	E129 1200	\$52.52	E130 1200	\$81.69
1400	14	73	28.5	12	4	E129 1400	\$65.52		
1600	16	77	26.5	16	4	E129 1600	\$75.34	E130 1600	\$128.18
1800	18	80	35	16	4	E129 1800	\$89.19		
2000	20	83.5	38	16	4	E129 2000	\$116.22	E130 2000	\$145.17
2200	22	98.5	41.5	25	4	E129 2200	\$161.77		
2500	25	101.5	44.5	25	4	E129 2500	\$167.54		
2800	28	104.5	46	25	6	E129 2800	\$222.90		
3000	30	104.5	46	25	6	E129 3000	\$246.14		
3200	32	112.5	51	32	6	E129 3200	\$273.99		
3600	36	116	54	32	6	E129 3600	\$311.33		
4000	40	117.5	55.5	32	6	E129 4000	\$459.50		
4500	45	119	57	32	6	E129 4500	\$587.23		
5000	50	127	65	32	6	E129 5000	\$668.63		

EM2M 6 piece set 4, 5, 6, 8, 10, 12mm E129 EM2M \$254.43



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	
E129	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
E130	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

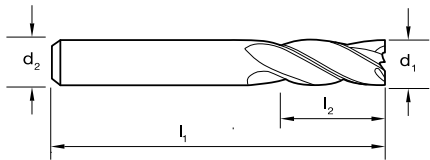
P Steel M Stainless Steel K Cast Iron N Non-Ferrous Metals S Titanium & Super Alloys H Hard Materials

● Optimal ○ Effective

Endmills 4 Flute, R30 N, Regular

suttontools

- For precision finish milling applications
- Suitable for materials up to 1000 N/mm²



Catalogue Code	E125
Discount Group	B0502
Material	HSS Co.8
Surface Finish	Br
Sutton Designation	N
Geometry	R30
Shank Form (DIN 1835)	A
Shank Tolerance	h6

Size Ref.	d ₁ (k9)	l ₁	l ₂	d ₂	z	Item #	List Price
0159	1/16	1-31/32	1/4	1/4	4	E125 0159	\$80.42
0238	3/32	1-31/32	9/32	1/4	4	E125 0238	\$73.21
0318	1/8	1-31/32	11/32	1/4	4	E125 0318	\$32.98
0476	3/16	2-11/32	19/32	1/4	4	E125 0476	\$32.98
0635	1/4	2-11/32	19/32	1/4	4	E125 0635	\$32.98
0794	5/16	2-9/16	25/32	3/8	4	E125 0794	\$41.17
0953	3/8	2-15/16	31/32	3/8	4	E125 0953	\$42.00
1270	1/2	3-7/32	1-3/8	1/2	4	E125 1270	\$53.36
1588	5/8	3-3/4	1-9/16	5/8	4	E125 1588	\$70.01
1905	3/4	4-5/16	1-3/4	3/4	4	E125 1905	\$153.38
2223	7/8	4-5/16	1-3/4	3/4	4	E125 2223	\$243.65
2540	1	4-23/32	1-31/32	3/4	4	E125 2540	\$277.02
2541	1	4-23/32	1-31/32	1	4	E125 2541	\$167.96

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	
E125	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

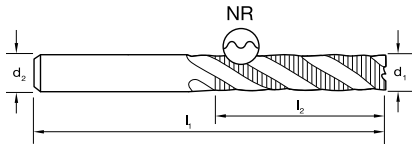
P Steel M Stainless Steel K Cast Iron N Non-Ferrous Metals S Titanium & Super Alloys H Hard Materials

● Optimal ○ Effective

Roughers NR (normal), R30 WN, Long

suttontools

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



Catalogue Code E146
Discount Group B0402
Material HSS Co.8
Surface Finish Brt
Sutton Designation WN
Geometry R30 NR (coarse pitch)
Shank Form (DIN 1835) A
Shank Tolerance h6

Size Ref.	d ₁ (js14)	l ₁	l ₂	d ₂	z	Item #	List Price
0600	6	68	24	6	3	E146 0600	\$69.32
0800	8	88	38	10	3	E146 0800	\$84.71
1000	10	95	45	10	4	E146 1000	\$89.90
1200	12	110	53	12	4	E146 1200	\$107.81
1600	16	123	63	16	4	E146 1600	\$164.33
1800	18	123	63	16	4	E146 1800	\$246.49
2000	20	141	75	20	4	E146 2000	\$220.80
2200	22	141	75	20	5	E146 2200	\$400.51
2500	25	166	90	25	5	E146 2500	\$400.51
3000	30	166	90	25	6	E146 3000	\$513.50
3200	32	186	106	32	6	•	
1270	1/2	4-5/16	2-1/16	1/2	4	E146 1270	\$107.81
1588	5/8	4-27/32	2-1/2	5/8	4	E146 1588	\$164.33
1905	3/4	5-9/16	2-15/16	3/4	4	E146 1905	\$220.80
2540	1	6-9/16	3-9/16	1	5	E146 2540	\$400.51
3175	1-1/4	7-5/16	4-3/16	1-1/4	6	E146 3175	\$593.06
3810	1-1/2	8-17/32	4-29/32	1-1/4	6	E146 3810	\$765.11

ISO	P													M			K							N							S										H																	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14.1	14.2	14.3	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37.1	37.2	37.3	37.4	37.5	38.1	38.2	39.1	39.2	40	41									
E146	●	●	○	○	○	●																	●	●	●	○				○																												

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

● Optimal ○ Effective



Scan to watch the video



Performance Unequaled... Harmony Endmills

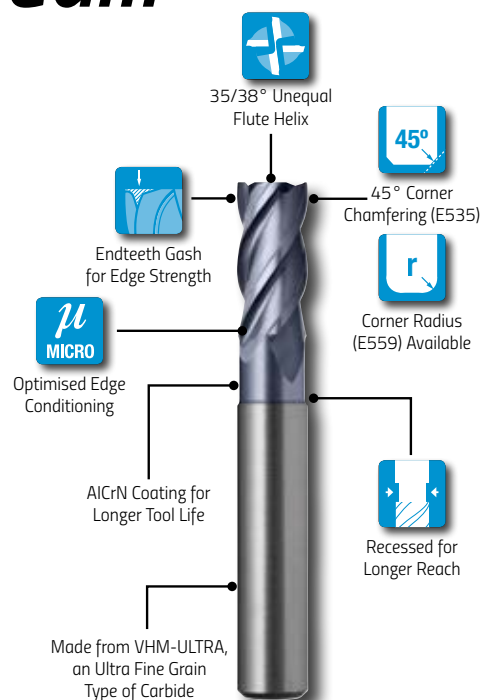
The Harmony range of Endmills represents world's latest technologies to provide increases in both performance and tool life. The key to successful milling is to minimise or eliminate the harmonic vibration produced in the cutting action.

The Harmony Endmill overcomes vibration, through the latest technologies in tool engineering:

- Premium Grade Carbide
- AlCrN Coating
- 35/38° Variable Helix
- 45° Corner Chamfering
- Gash grind of the endteeth
- Post grind treatment of cutting edges

The bottom line for you:

- Longer tool life
- Improved surface finish
- Increased productivity
- Reduced production costs



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world class cutting tools



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Sutton Tools Expert Tool Selector enables easy tool selection for your machining task. The Expert Tool Selector will recommend the right tool for your application, with advice on suitable cutting parameters. Simply select your work piece material, and enter your machining operation and setup to get the best advice in 5 easy steps:

1
Material

2
Task

3
Setup

4
Select

5
Results



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