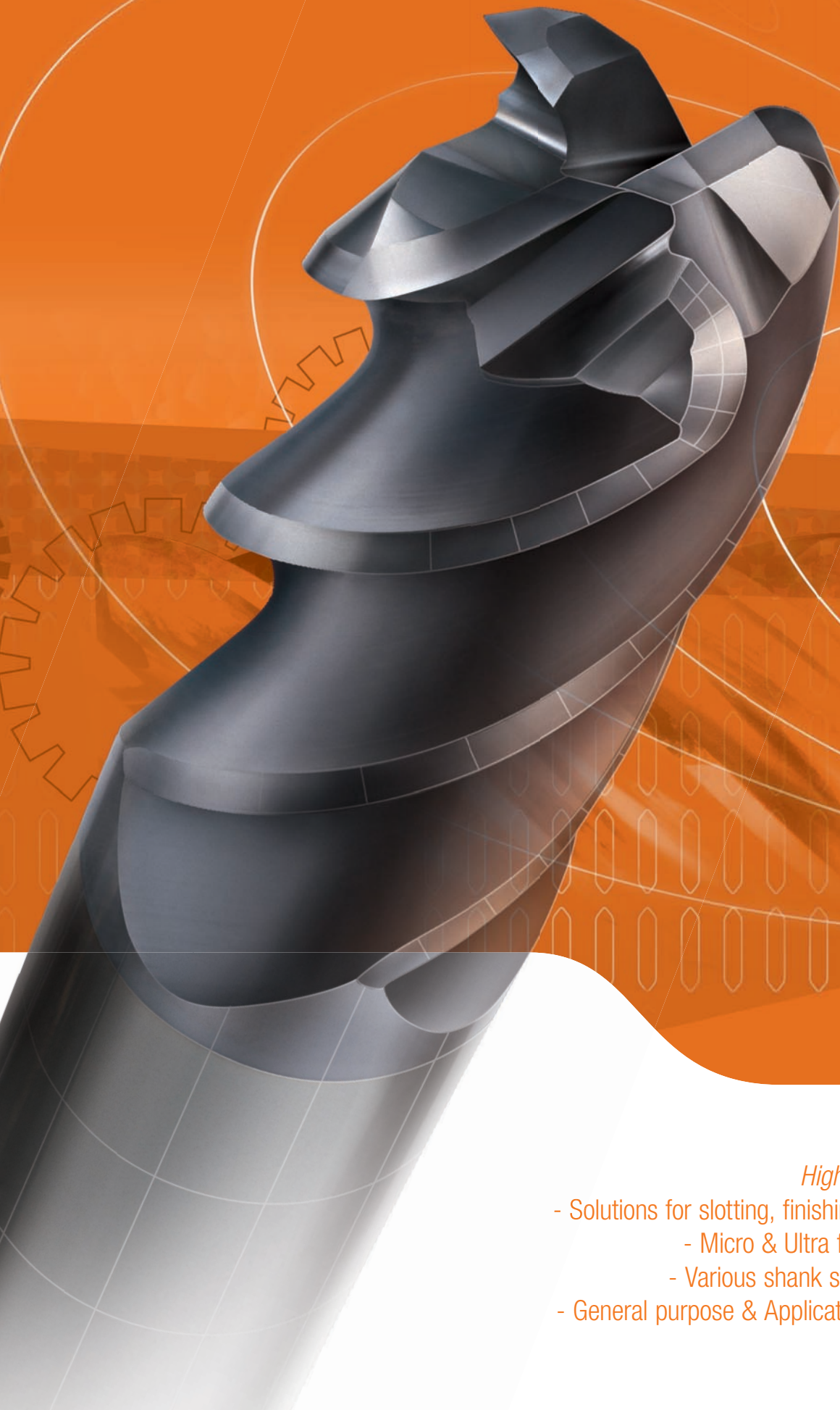


# CARBIDE ENDMILLS



## **Carbide Endmills**

*High performance solutions*

- Solutions for slotting, finishing, roughing & profiling
  - Micro & Ultra fine grain type carbides
  - Various shank styles to suit your needs
- General purpose & Application specific geometries



Page	Short, 2 Flute, R30	Short, 2 Flute, R30	Long, 2 Flute, R30	Long, 2 Flute, R30	Long, 2 Flute, R40, AlCrN	Short, 3 Flute, R30	Short, 3 Flute, R30	Long, 3 Flute, R30	Long, 3 Flute, R30
<b>Catalogue Code</b>	E500	E502	E504	E506	E310	E509	E511	E513	E515
<b>Material</b>	VHM								
<b>Surface Finish</b>	Brt	AlCrN	Brt	AlCrN	Brt	Brt	AlCrN	Brt	AlCrN
<b>Colour Ring &amp; Application</b>	Up to 1600N/mm <sup>2</sup>				Al	Up to 1600N/mm <sup>2</sup>			
<b>Standard</b>	DIN 6527				-	DIN 6527			
<b>Type of Cut</b>	Slotting					Slotting / Finishing			
<b>Material</b>									
<b>Shank Tolerance</b>	h6								

Material	HB	N/mm <sup>2</sup>	% Elong.									
<b>1.0 Steels</b>												
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 allowed	<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									
<b>2.0 Stainless Steels</b>												
2.1 Free machining	<250	<850	25	●	●	●	●		●	●	●	●
2.2 Austenitic	<250	<850	20	○	○	○	○		○	○	○	○
2.3 Ferritic + martensitic	<250	<850	20	○	○	○	○		○	○	○	○
<b>3.0 Cast Irons</b>												
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	○	●	○	●		○	●	○	●
<b>4.0 Titaniums</b>												
4.1 Pure Titanium	<250	<850	20	○	○	○	○		○	○	○	○
4.2 Titanium alloys	>250	>850	20	○	○	○	○		○	○	○	○
<b>5.0 Nickels</b>												
5.1 Nickel alloys	<250	<850	25	○	○	○	○		○	○	○	○
5.2 Nickel alloys	>250	>850	25	○	○	○	○		○	○	○	○
<b>6.0 Coppers</b>												
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	○	○	○	○	●	○	○	○	○
<b>7.0 Aluminiums</b>												
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	○	○	○	○	●	○	○	○	○
<b>8.0 Plastics</b>												
8.1 Plastics, Thermoplastics, Polyethylene	<340	<50	N	○	○	○	○	○	○	○	○	○

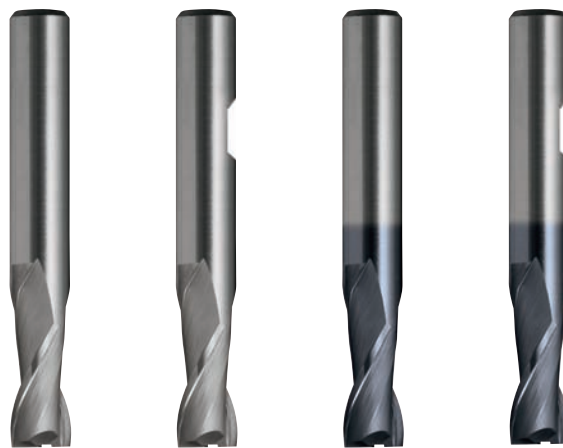
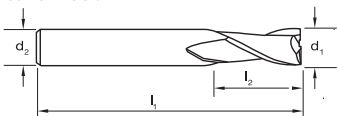




# Endmills Carbide, Long, 2 Flute, R30



- For precision milling of slots & cavities
- Suitable for materials up to 1600 N/mm<sup>2</sup>
- AlCrN longer tool life

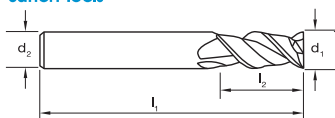


					<b>E504</b>	<b>E505</b>	<b>E506</b>	<b>E507</b>
<b>Catalogue Code</b>					B0208	B0208	B0210	B0210
<b>Discount Group</b>								
<b>Material</b>					<b>VHM</b>	<b>VHM</b>	<b>VHM</b>	<b>VHM</b>
<b>Surface Finish</b>					<b>Brt</b>	<b>Brt</b>	<b>AlCrN</b>	<b>AlCrN</b>
<b>Colour Ring &amp; Application</b>					Up to 1600N/mm <sup>2</sup>	Up to 1600N/mm <sup>2</sup>	Up to 1600N/mm <sup>2</sup>	Up to 1600N/mm <sup>2</sup>
<b>Geometry</b>					R30°	R30°	R30°	R30°
<b>Shank Form (DIN 6535)</b>					HA	HB	HA	HB
<b>Shank Tolerance</b>					h6	h6	h6	h6
<b>d<sub>1</sub></b>	<b>l<sub>1</sub></b>	<b>l<sub>2</sub></b>	<b>d<sub>2</sub></b>	<b>z</b>	<b>Item #</b>	<b>Item #</b>	<b>Item #</b>	<b>Item #</b>
2.0	57	6	6	2	E504 0200	E505 0200	E506 0200	E507 0200
3.0	57	7	6	2	E504 0300	E505 0300	E506 0300	E507 0300
4.0	57	8	6	2	E504 0400	E505 0400	E506 0400	E507 0400
5.0	57	10	6	2	E504 0500	E505 0500	E506 0500	E507 0500
6.0	57	10	6	2	E504 0600	E505 0600	E506 0600	E507 0600
7.0	63	13	8	2	E504 0700	E505 0700	E506 0700	E507 0700
8.0	63	16	8	2	E504 0800	E505 0800	E506 0800	E507 0800
9.0	72	16	10	2	E504 0900	E505 0900	E506 0900	E507 0900
10.0	72	19	10	2	E504 1000	E505 1000	E506 1000	E507 1000
12.0	83	22	12	2	E504 1200	E505 1200	E506 1200	E507 1200
14.0	83	22	14	2	E504 1400	E505 1400	E506 1400	E507 1400
16.0	92	26	16	2	E504 1600	E505 1600	E506 1600	E507 1600
18.0	92	26	18	2	E504 1800	E505 1800	E506 1800	E507 1800
20.0	104	32	20	2	E504 2000	E505 2000	E506 2000	E507 2000

# Endmills Carbide, Long, 2 Flute, R40, AlCarb



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



Catalogue Code

Discount Group

Material

Surface Finish

Colour Ring & Application

Geometry

Shank Form (DIN 6535)

Shank Tolerance

**E310**

B0208

**VHM**

**Brt**

**Al**

R40°

HA

h6

d <sub>1</sub>	l <sub>1</sub>	l <sub>2</sub>	d <sub>2</sub>	z	Item #
3.0	60	10	6	2	E310 0300
4.0	60	14	6	2	E310 0400
5.0	60	15	6	2	E310 0500
6.0	60	20	6	2	E310 0600
8.0	64	20	8	2	E310 0800
10.0	70	22	10	2	E310 1000
12.0	75	25	12	2	E310 1200
16.0	90	32	16	2	E310 1600
20.0	100	38	20	2	E310 2000





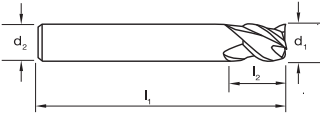




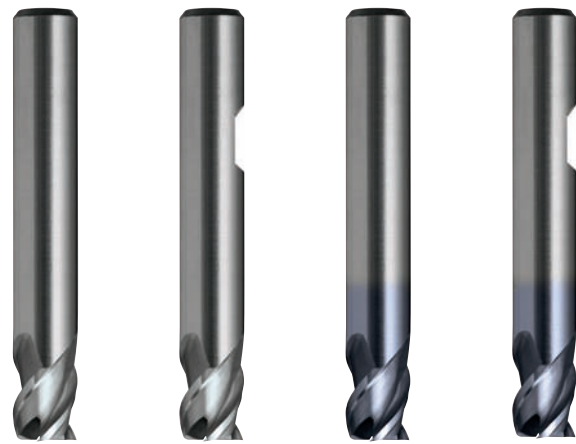
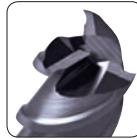
# Endmills Carbide, Short, 3 Flute, R45 W



- Universal use for slotting & finishing applications, with one tool
- Optimized geometry for soft materials
- Brt for non ferrous materials
- AlCrN for longer tool life



DIN 6527K

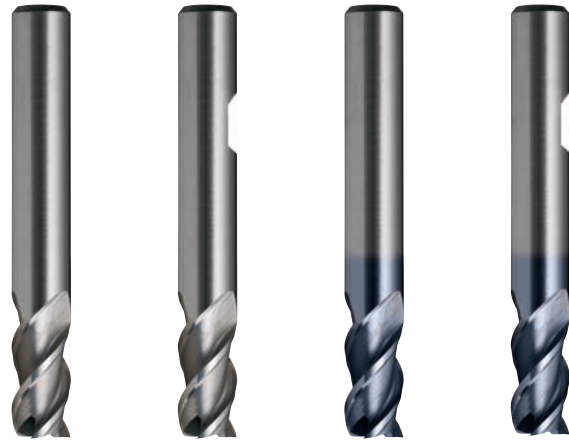
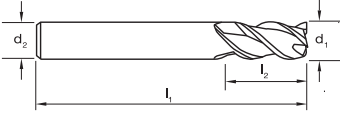


Catalogue Code	<b>E517</b>		<b>E518</b>		<b>E519</b>		<b>E520</b>	
Discount Group	B0208		B0208		B0210		B0210	
Material	<b>VHM</b>		<b>VHM</b>		<b>VHM</b>		<b>VHM</b>	
Surface Finish	<b>Brt</b>		<b>Brt</b>		<b>AlCrN</b>		<b>AlCrN</b>	
Colour Ring & Application	<b>W</b>		<b>W</b>		<b>W</b>		<b>W</b>	
Geometry	R45°		R45°		R45°		R45°	
Shank Form (DIN 6535)	HA		HB		HA		HB	
Shank Tolerance	h6		h6		h6		h6	
$d_1$	$l_1$	$l_2$	$d_2$	$z$	Item #	Item #	Item #	Item #
3.0	50	4	6	3	E517 0300	E518 0300	E519 0300	E520 0300
4.0	54	5	6	3	E517 0400	E518 0400	E519 0400	E520 0400
5.0	54	6	6	3	E517 0500	E518 0500	E519 0500	E520 0500
6.0	54	7	6	3	E517 0600	E518 0600	E519 0600	E520 0600
8.0	58	9	8	3	E517 0800	E518 0800	E519 0800	E520 0800
10.0	66	11	10	3	E517 1000	E518 1000	E519 1000	E520 1000
12.0	73	12	12	3	E517 1200	E518 1200	E519 1200	E520 1200
16.0	82	16	16	3	E517 1600	E518 1600	E519 1600	E520 1600
20.0	92	20	20	3	E517 2000	E518 2000	E519 2000	E520 2000

# Endmills Carbide, Long, 3 Flute, R45 W



- Universal use for slotting & finishing applications, with one tool
- Optimized geometry for soft materials
- Brt for non ferrous materials
- AlCrN for longer tool life

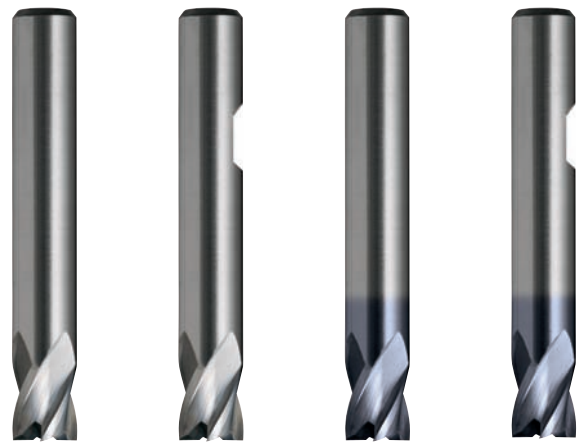
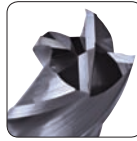
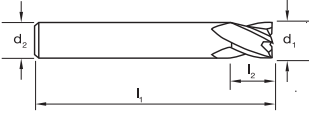


<b>Catalogue Code</b>					<b>E521</b>	<b>E522</b>	<b>E523</b>	<b>E524</b>
<b>Discount Group</b>					B0208	B0208	B0210	B0210
<b>Material</b>					<b>VHM</b>	<b>VHM</b>	<b>VHM</b>	<b>VHM</b>
<b>Surface Finish</b>					<b>Brt</b>	<b>Brt</b>	<b>AlCrN</b>	<b>AlCrN</b>
<b>Colour Ring &amp; Application</b>					<b>W</b>	<b>W</b>	<b>W</b>	<b>W</b>
<b>Geometry</b>					R45°	R45°	R45°	R45°
<b>Shank Form (DIN 6535)</b>					HA	HB	HA	HB
<b>Shank Tolerance</b>					h6	h6	h6	h6
<b>d<sub>1</sub></b>	<b>l<sub>1</sub></b>	<b>l<sub>2</sub></b>	<b>d<sub>2</sub></b>	<b>z</b>	<b>Item #</b>	<b>Item #</b>	<b>Item #</b>	<b>Item #</b>
3.0	57	7	6	3	E521 0300	E522 0300	E523 0300	E524 0300
4.0	57	8	6	3	E521 0400	E522 0400	E523 0400	E524 0400
5.0	57	10	6	3	E521 0500	E522 0500	E523 0500	E524 0500
6.0	57	10	6	3	E521 0600	E522 0600	E523 0600	E524 0600
8.0	63	16	8	3	E521 0800	E522 0800	E523 0800	E524 0800
10.0	72	19	10	3	E521 1000	E522 1000	E523 1000	E524 1000
12.0	83	22	12	3	E521 1200	E522 1200	E523 1200	E524 1200
16.0	92	26	16	3	E521 1600	E522 1600	E523 1600	E524 1600
20.0	104	32	20	3	E521 2000	E522 2000	E523 2000	E524 2000

# Endmills Carbide, Short, 4 Flute, R30



- For precision finish milling applications
- Suitable for materials up to 1600 N/mm<sup>2</sup>
- AlCrN for longer tool life

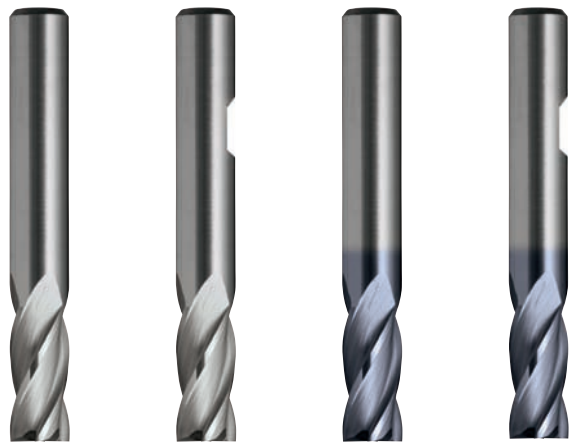
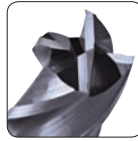
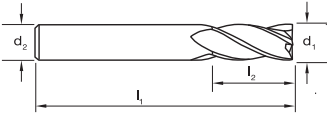


					<b>E525</b>	<b>E526</b>	<b>E527</b>	<b>E528</b>
<b>Catalogue Code</b>					B0208	B0208	B0210	B0210
<b>Discount Group</b>								
<b>Material</b>					<b>VHM</b>	<b>VHM</b>	<b>VHM</b>	<b>VHM</b>
<b>Surface Finish</b>					<b>Brt</b>	<b>Brt</b>	<b>AlCrN</b>	<b>AlCrN</b>
<b>Colour Ring &amp; Application</b>					Up to 1600N/mm <sup>2</sup>	Up to 1600N/mm <sup>2</sup>	Up to 1600N/mm <sup>2</sup>	Up to 1600N/mm <sup>2</sup>
<b>Geometry</b>					R30°	R30°	R30°	R30°
<b>Shank Form (DIN 6535)</b>					HA	HB	HA	HB
<b>Shank Tolerance</b>					h6	h6	h6	h6
<b>d<sub>1</sub></b>	<b>l<sub>1</sub></b>	<b>l<sub>2</sub></b>	<b>d<sub>2</sub></b>	<b>z</b>	<b>Item #</b>	<b>Item #</b>	<b>Item #</b>	<b>Item #</b>
3.0	50	5	6	4	E525 0300	E526 0300	E527 0300	E528 0300
4.0	54	8	6	4	E525 0400	E526 0400	E527 0400	E528 0400
5.0	54	9	6	4	E525 0500	E526 0500	E527 0500	E528 0500
6.0	54	10	6	4	E525 0600	E526 0600	E527 0600	E528 0600
8.0	58	12	8	4	E525 0800	E526 0800	E527 0800	E528 0800
10.0	66	14	10	4	E525 1000	E526 1000	E527 1000	E528 1000
12.0	73	16	12	4	E525 1200	E526 1200	E527 1200	E528 1200
16.0	82	22	16	4	E525 1600	E526 1600	E527 1600	E528 1600
20.0	92	26	20	4	E525 2000	E526 2000	E527 2000	E528 2000

# Endmills Carbide, Long, 4 Flute, R30



- For precision finish milling applications
- Suitable for materials up to 1600 N/mm<sup>2</sup>
- AlCrN for longer tool life

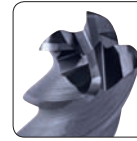
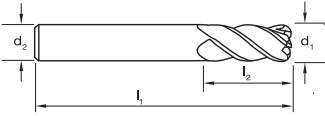


					<b>E529</b>	<b>E530</b>	<b>E531</b>	<b>E532</b>
<b>Catalogue Code</b>					B0208	B0208	B0210	B0210
<b>Discount Group</b>								
<b>Material</b>					<b>VHM</b>	<b>VHM</b>	<b>VHM</b>	<b>VHM</b>
<b>Surface Finish</b>					<b>Brt</b>	<b>Brt</b>	<b>AlCrN</b>	<b>AlCrN</b>
<b>Colour Ring &amp; Application</b>					Up to 1600N/mm <sup>2</sup>	Up to 1600N/mm <sup>2</sup>	Up to 1600N/mm <sup>2</sup>	Up to 1600N/mm <sup>2</sup>
<b>Geometry</b>					R30°	R30°	R30°	R30°
<b>Shank Form (DIN 6535)</b>					HA	HB	HA	HB
<b>Shank Tolerance</b>					h6	h6	h6	h6
<b>d<sub>1</sub></b>	<b>l<sub>1</sub></b>	<b>l<sub>2</sub></b>	<b>d<sub>2</sub></b>	<b>z</b>	<b>Item #</b>	<b>Item #</b>	<b>Item #</b>	<b>Item #</b>
3.0	57	8	6	4	E529 0300	E530 0300	E531 0300	E532 0300
4.0	57	11	6	4	E529 0400	E530 0400	E531 0400	E532 0400
5.0	57	13	6	4	E529 0500	E530 0500	E531 0500	E532 0500
6.0	57	13	6	4	E529 0600	E530 0600	E531 0600	E532 0600
7.0	63	16	8	4	E529 0700	E530 0700	E531 0700	E532 0700
8.0	63	19	8	4	E529 0800	E530 0800	E531 0800	E532 0800
9.0	72	19	10	4	E529 0900	E530 0900	E531 0900	E532 0900
10.0	72	22	10	4	E529 1000	E530 1000	E531 1000	E532 1000
12.0	83	26	12	4	E529 1200	E530 1200	E531 1200	E532 1200
14.0	83	26	14	4	E529 1400	E530 1400	E531 1400	E532 1400
16.0	92	32	16	4	E529 1600	E530 1600	E531 1600	E532 1600
18.0	92	32	18	4	E529 1800	E530 1800	E531 1800	E532 1800
20.0	104	38	20	4	E529 2000	E530 2000	E531 2000	E532 2000

# Endmills Carbide, Long, 4 Flute, R40, Corner Radius



- For precision finishing applications
- Ideally suited to materials up to 1300 N/mm<sup>2</sup>
- AlCrN for longer tool life



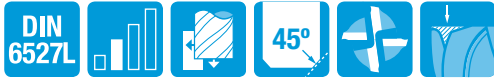
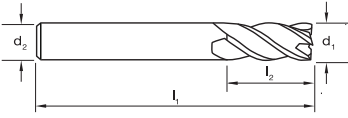
Catalogue Code							<b>E348</b>
Discount Group							B0210
Material							<b>VHM</b>
Surface Finish							<b>AlCrN</b>
Colour Ring & Application							Up to 1300N/mm <sup>2</sup>
Geometry							R40°
Shank Form (DIN 6535)							HA
Shank Tolerance							h6
<b>d<sub>1</sub></b>	<b>l<sub>1</sub></b>	<b>l<sub>2</sub></b>	<b>d<sub>2</sub></b>	<b>z</b>	<b>rad</b>	<b>Item #</b>	
3	40	9	3	4	0.3	E348 0303	
						E348 0305	
4	50	12	4	4	0.3	E348 0403	
						E348 0405	
						E348 0410	
5	50	15	5	4	0.3	E348 0503	
						E348 0505	
						E348 0510	
6	60	20	6	4	0.3	E348 0603	
						E348 0605	
						E348 0610	
8	64	20	8	4	0.3	E348 0803	
						E348 0805	
						E348 0810	
						E348 0815	
						E348 0820	
10	70	22	10	4	0.3	E348 1003	
						E348 1005	
						E348 1010	
						E348 1015	
						E348 1020	
12	75	25	12	4	0.3	E348 1203	
						E348 1205	
						E348 1210	
						E348 1215	
						E348 1220	
16	90	32	16	4	0.5	E348 1605	
						E348 1610	
						E348 1615	
						E348 1620	
						E348 1630	
20	100	38	20	4	0.5	E348 2005	
						E348 2010	
						E348 2015	
						E348 2020	
						E348 2030	



# Endmills Carbide, Long, 4 Flute, R35/38, 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/mm<sup>2</sup>
- AlCrN for longer tool life



Catalogue Code					<b>E535</b>	<b>E536</b>
Discount Group					B0210	B0210
Material					<b>VHM-ULTRA</b>	<b>VHM-ULTRA</b>
Surface Finish					<b>AlCrN</b>	<b>AlCrN</b>
Colour Ring & Application					<b>UNI</b>	<b>UNI</b>
Geometry					R35° / 38°	R35° / 38°
Shank Form (DIN 6535)					HA	HB
Shank Tolerance					h6	h6
d <sub>1</sub>	l <sub>1</sub>	l <sub>2</sub>	d <sub>2</sub>	z	Item #	Item #
<b>6.0</b>	57	13	6	4	E535 0600	E536 0600
<b>8.0</b>	63	19	8	4	E535 0800	E536 0800
<b>10.0</b>	72	22	10	4	E535 1000	E536 1000
<b>12.0</b>	83	26	12	4	E535 1200	E536 1200
<b>16.0</b>	92	32	16	4	E535 1600	E536 1600
<b>20.0</b>	104	38	20	4	E535 2000	E536 2000















