

NEW PRODUCT

BASIC LINE+

► 5 flute Trochoidal end mills with variable helix



The SCT 5 flute Trochoidal end mills combine a few unique characteristics to make them ideally suited for machining different types of steel (37°-38° helix) or stainless steel/heat resistant alloys (41°-42° helix) with the trochoidal milling techniques.

Milling cutter dia.	6 - 25 mm
Shank type	DIN 6535 HA DIN 6535 HB
Coating	AlTiN / AlCr-based
Number of flutes	5
Helix angle	37°-38° / 41°-42°

EXTRA LONG CUTTING LENGTH

3xD Cutting length in a variable 37°-38° helix geometry for machining steel and a variable 41°-42° helix geometry for stainless steel and other heat resistant alloys.

CHIP BREAKER

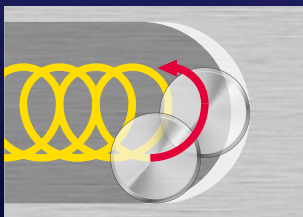
The chip breaker creates short chips and smooth chip evacuation to serve high cutting speeds when using the entire flute length.

CORNER RADIUS AND CHAMFER

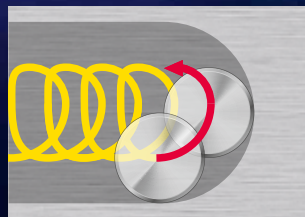
The 5 flute trochoidal tools are available with various corner radius and chamfer sizes.

Trochoidal milling

Static



Dynamic



Improving Quality Through Innovation

Product of Holland

5-flute end mill; 37°-38° helix; SCT Norm; extra long length; AlCrN coated

Workpiece material groups and cutting speed

	Material	Tensile strength Rm [N/mm ²]	Hardness [HB/HRC]	Cutting speed Vc [m/min]		
				min	opt	max
P	Plain carbon steel	< 600	< 230	220	300	380
	Alloy Steel	< 1200	< 350	200	250	300
	High alloy steel and tool steel	< 1400	< 380	180	210	250
M	Aust. and Ferr. Stainless steel	< 680	< 220	-	-	-
	Mart. Stainless steel	< 820	< 240	-	-	-
K	Grey cast iron	-	< 280	-	-	-
	Ductile cast iron	-	< 320	-	-	-
S	High temperature alloys Fe, Ni and Co based	< 3300	< 350	-	-	-
	Titanium alloys; Alpha and Beta	< 2100	< 400	-	-	-
H	Hardened steel	-	< 54 HRC	70	100	130
	Hardened steel	-	52-60 HRC	50	90	120
	Hardened steel	-	> 58 HRC	-	-	-
G	Graphite	-	-	-	-	-

Cutting conditions



Trochoidal milling

Dc	Ap [3xD]	Ae 1 [0.1xD]	Ae 2 [0.2xD]	fz 1 ▼▼	fz 2 ▼▼	hm
6	18	0,6	1,2	0,087	0,062	0,028
8	24	0,8	1,6	0,117	0,083	0,037
10	30	1,0	2,0	0,146	0,104	0,046
12	36	1,2	2,4	0,175	0,125	0,055
14	42	1,4	2,8	0,204	0,146	0,065
16	48	1,6	3,2	0,233	0,166	0,074
18	54	1,8	3,6	0,262	0,187	0,083
20	60	2,0	4,0	0,292	0,208	0,092
25	75	2,5	5,0	0,365	0,260	0,115

Cutting formula

Average chip thickness

$$h_m = f_z \times \sqrt{\frac{A_e}{D_c}} \text{ [mm]}$$

h_m Average chip thickness [mm]

f_z Feed per tooth [mm]

A_e Width of cut [mm]

D_c Cutting diameter [mm]

5-flute end mill; 37°-38° helix; SCT Norm; extra long length; AlCrN coated

Specifications


Chamfer

DIN 6535 HA	DIN 6535 HB	Dc	Ds	Lc	Ln	Dn	Lt	c [45°]	z	Price / pc.
BLC5L06038VN	BLW5L06038VN	6	6	18	24	5,7	62	0,12	5	€ 30,75
BLC5L08038VN	BLW5L08038VN	8	8	24	30	7,6	68	0,16	5	€ 39,35
BLC5L10038VN	BLW5L10038VN	10	10	30	38	9,5	80	0,20	5	€ 58,25
BLC5L12038VN	BLW5L12038VN	12	12	36	46	11,5	93	0,24	5	€ 77,70
BLC5L14038VN	BLW5L14038VN	14	14	42	50	13,0	100	0,28	5	€ 105,60
BLC5L16038VN	BLW5L16038VN	16	16	48	58	15,5	108	0,32	5	€ 144,75
BLC5L18038VN	BLW5L18038VN	18	18	54	67	17,0	115	0,36	5	€ 184,80
BLC5L20038VN	BLW5L20038VN	20	20	60	74	19,5	126	0,40	5	€ 224,20
BLC5L25038VN	BLW5L25038VN	25	25	75	92	24,0	150	0,50	5	€ 395,70



Other dimensions on request

Dimensions in mm


Corner radius

DIN 6535 HA	DIN 6535 HB	Dc	Ds	Lc	Ln	Dn	Lt	r	z	Price / pc.
BLC5L06038VNT05	BLW5L06038VNT05	6	6	18	24	5,7	62	0,5	5	€ 35,00
BLC5L06038VNT10	BLW5L06038VNT10	6	6	18	24	5,7	62	1,0	5	€ 35,00
BLC5L08038VNT05	BLW5L08038VNT05	8	8	24	30	7,6	68	0,5	5	€ 48,75
BLC5L08038VNT10	BLW5L08038VNT10	8	8	24	30	7,6	68	1,0	5	€ 48,75
BLC5L10038VNT05	BLW5L10038VNT05	10	10	30	38	9,5	80	0,5	5	€ 71,95
BLC5L10038VNT10	BLW5L10038VNT10	10	10	30	38	9,5	80	1,0	5	€ 71,95
BLC5L10038VNT20	BLW5L10038VNT20	10	10	30	38	9,5	80	2,0	5	€ 71,95
BLC5L12038VNT05	BLW5L12038VNT05	12	12	36	46	11,5	93	0,5	5	€ 94,75
BLC5L12038VNT10	BLW5L12038VNT10	12	12	36	46	11,5	93	1,0	5	€ 94,75
BLC5L12038VNT20	BLW5L12038VNT20	12	12	36	46	11,5	93	2,0	5	€ 94,75
BLC5L16038VNT05	BLW5L16038VNT05	16	16	48	58	15,5	108	0,5	5	€ 152,65
BLC5L16038VNT10	BLW5L16038VNT10	16	16	48	58	15,5	108	1,0	5	€ 152,65
BLC5L16038VNT20	BLW5L16038VNT20	16	16	48	58	15,5	108	2,0	5	€ 152,65
BLC5L20038VNT10	BLW5L20038VNT10	20	20	60	74	19,5	126	1,0	5	€ 234,35
BLC5L20038VNT20	BLW5L20038VNT20	20	20	60	74	19,5	126	2,0	5	€ 234,45
BLC5L20038VNT30	BLW5L20038VNT30	20	20	60	74	19,5	126	3,0	5	€ 242,95

Other dimensions on request

Dimensions in mm

5-flute end mill; 41°-42° helix; SCT Norm; extra long length; AlCr-based coated

Workpiece material groups and cutting speed

Material	Tensile strength Rm [N/mm ²]	Hardness [HB/HRC]	Cutting speed Vc [m/min]		
			min	opt	max
P Plain carbon steel Alloy Steel High alloy steel and tool steel	< 600	< 230	-	-	-
	< 1200	< 350	-	-	-
	< 1400	< 380	-	-	-
M Aust. and Ferr. Stainless steel Mart. Stainless steel	< 680	< 220	150	190	230
	< 820	< 240	130	170	200
K Grey cast iron Ductile cast iron	-	< 280	-	-	-
	-	< 320	-	-	-
S High temperature alloys Fe, Ni and Co based Titanium alloys; Alpha and Beta	< 3300	< 350	50	80	100
	< 2100	< 400	80	130	170
H Hardened steel Hardened steel Hardened steel	-	< 54 HRC	-	-	-
	-	52-60 HRC	-	-	-
	-	> 58 HRC	-	-	-
G Graphite	-	-	-	-	-

Cutting conditions



Trochoidal milling

Dc	Ap [3xD]	Ae 1 [0.06xD]	Ae 2 [0.12xD]	fz 1 ▼▼	fz 2 ▼▼	hm
6	18	0,36	0,72	0,072	0,030	0,032
8	24	0,48	0,96	0,096	0,040	0,043
10	30	0,60	1,20	0,120	0,050	0,054
12	36	0,72	1,44	0,144	0,060	0,065
14	42	0,84	1,68	0,168	0,070	0,076
16	48	0,96	1,92	0,192	0,080	0,086
18	54	1,08	2,16	0,216	0,090	0,097
20	60	1,20	2,40	0,240	0,100	0,108
25	75	1,50	3,00	0,300	0,125	0,135

Cutting formula

Average chip thickness

$$h_m = f_z \times \sqrt{\frac{A_e}{D_c}} \text{ [mm]}$$

h_m Average chip thickness [mm]

f_z Feed per tooth [mm]

A_e Width of cut [mm]

D_c Cutting diameter [mm]

5-flute end mill; 41°-42° helix; SCT Norm; extra long length; AlCr-based coated

Specifications



Chamfer

DIN 6535 HA	DIN 6535 HB	Dc	Ds	Lc	Ln	Dn	Lt	c [45°]	z	Price / pc.
BLC5L06042VN	BLW5L06042VN	6	6	18	24	5,7	62	0,12	5	€ 33,25
BLC5L08042VN	BLW5L08042VN	8	8	24	30	7,6	68	0,16	5	€ 40,95
BLC5L10042VN	BLW5L10042VN	10	10	30	38	9,5	80	0,20	5	€ 60,80
BLC5L12042VN	BLW5L12042VN	12	12	36	46	11,5	93	0,24	5	€ 81,00
BLC5L14042VN	BLW5L14042VN	14	14	42	50	13,0	100	0,28	5	€ 114,55
BLC5L16042VN	BLW5L16042VN	16	16	48	58	15,5	108	0,32	5	€ 155,45
BLC5L18042VN	BLW5L18042VN	18	18	54	67	17,0	115	0,36	5	€ 196,75
BLC5L20042VN	BLW5L20042VN	20	20	60	74	19,5	126	0,40	5	€ 237,90
BLC5L25042VN	BLW5L25042VN	25	25	75	92	24,0	150	0,50	5	€ 416,20



Other dimensions on request

Dimensions in mm



Corner radius

DIN 6535 HA	DIN 6535 HB	Dc	Ds	Lc	Ln	Dn	Lt	r	z	Price / pc.
BLC5L06042VNT01	BLW5L06042VNT01	6	6	18	24	5,7	62	0,1	5	€ 38,85
BLC5L06042VNT05	BLW5L06042VNT05	6	6	18	24	5,7	62	0,5	5	€ 38,85
BLC5L06042VNT10	BLW5L06042VNT10	6	6	18	24	5,7	62	1,0	5	€ 38,85
BLC5L08042VNT02	BLW5L08042VNT02	8	8	24	30	7,6	68	0,2	5	€ 52,00
BLC5L08042VNT05	BLW5L08042VNT05	8	8	24	30	7,6	68	0,5	5	€ 52,00
BLC5L08042VNT10	BLW5L08042VNT10	8	8	24	30	7,6	68	1,0	5	€ 52,00
BLC5L10042VNT02	BLW5L10042VNT02	10	10	30	38	9,5	80	0,2	5	€ 75,70
BLC5L10042VNT05	BLW5L10042VNT05	10	10	30	38	9,5	80	0,5	5	€ 75,70
BLC5L10042VNT10	BLW5L10042VNT10	10	10	30	38	9,5	80	1,0	5	€ 75,70
BLC5L10042VNT20	BLW5L10042VNT20	10	10	30	38	9,5	80	2,0	5	€ 75,70
BLC5L12042VNT03	BLW5L12042VNT03	12	12	36	46	11,5	93	0,3	5	€ 99,45
BLC5L12042VNT05	BLW5L12042VNT05	12	12	36	46	11,5	93	0,5	5	€ 99,45
BLC5L12042VNT10	BLW5L12042VNT10	12	12	36	46	11,5	93	1,0	5	€ 99,45
BLC5L12042VNT20	BLW5L12042VNT20	12	12	36	46	11,5	93	2,0	5	€ 99,45
BLC5L16042VNT03	BLW5L16042VNT03	16	16	48	58	15,5	108	0,3	5	€ 159,05
BLC5L16042VNT05	BLW5L16042VNT05	16	16	48	58	15,5	108	0,5	5	€ 159,05
BLC5L16042VNT10	BLW5L16042VNT10	16	16	48	58	15,5	108	1,0	5	€ 159,05
BLC5L16042VNT20	BLW5L16042VNT20	16	16	48	58	15,5	108	2,0	5	€ 159,05
BLC5L20042VNT03	BLW5L20042VNT03	20	20	60	74	19,5	126	0,3	5	€ 241,50
BLC5L20042VNT10	BLW5L20042VNT10	20	20	60	74	19,5	126	1,0	5	€ 241,50
BLC5L20042VNT20	BLW5L20042VNT20	20	20	60	74	19,5	126	2,0	5	€ 241,55
BLC5L20042VNT30	BLW5L20042VNT30	20	20	60	74	19,5	126	3,0	5	€ 250,15

Other dimensions on request

Dimensions in mm