

 **Aeroline**
AEROSPACE TOOLS



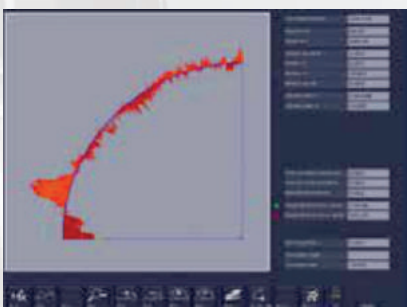
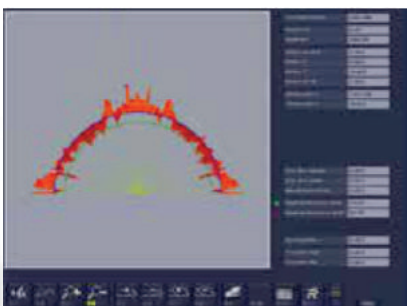
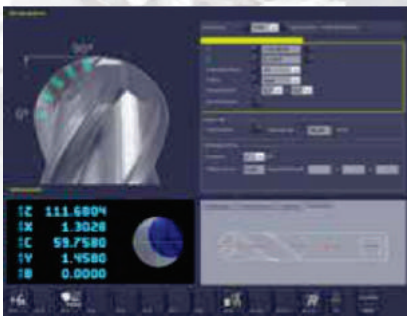


TruCut - ensures highest quality level has its own In-house Design & Development Facility utilizing latest software. This provides clear vision of the finished products

TruCut manufacturing facility includes 5 Axis / 4 Axis CNC Grinding Machines and full range of Manual Shop along side the expert team to ensure close tolerance at every Level

CNC Tool Grinders with advance geometry supported Grinding Machine included CNC grinding equipment in production line for advance geometry

All tools are inspected on Zoller-Germany CNC Tool Inspection Machine which optimize & control quality to precision level for longer tool life.



Ghasing

Heavy Ghasing for better Strength & Shearing Action

Rigid Flute

Appropriate Designed Rack Angle Determines the Size & Shape of Chip as well Pressure and Temperature on Tool for Advance Hi speed Productivity

Alcrn Coat

Advance Alcrn Coating Now has Higher Hardness Properties Combined with Improved Toughness and smooth chip flow for low Friction with Hardened Material upto 62 HRC

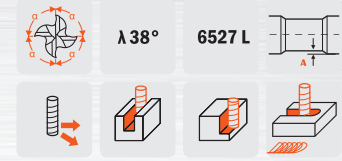
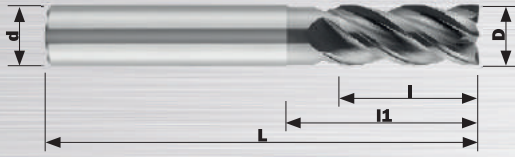
Premium Carbide

Untrafine Substract material used for its Properties of Wear Resitance & Toughness



154

4 FLUTE END MILL FOR HIGH CHIP REMOVAL



45°

D h10	d h6	L	l ap	l1	a	45°	Z	Item Code
3,0	6	57	8,0	11,0	0,10	0,10	4	154SFC-0300
4,0	6	57	9,0	16,0	0,10	0,10	4	154SFC-0400
5,0	6	57	13,0	18,0	0,10	0,10	4	154SFC-0500
6,0	6	57	13,0	20,0	0,15	0,10	4	154SFC-0600
8,0	8	63	19,0	25,0	0,15	0,15	4	154SFC-0800
10,0	10	72	22,0	30,0	0,15	0,15	4	154SFC-1000
12,0	12	83	26,0	36,0	0,20	0,15	4	154SFC-1200
16,0	16	92	32,0	42,0	0,20	0,20	4	154SFC-1600
20,0	20	104	38,0	52,0	0,20	0,20	4	154SFC-2000
25,0	25	125	45,0	65,0	0,25	0,20	4	154SFC-2500

Cr



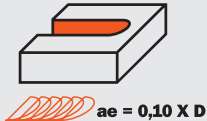
D h10	d h6	L	l ap	l1	a	Cr	Z	Item Code
6,0	6	57	13,0	20,0	0,15	0,50	4	154CRS-0605
6,0	6	57	13,0	20,0	0,15	1,00	4	154CRS-0610
8,0	8	63	19,0	25,0	0,15	0,50	4	154CRS-0805
8,0	8	63	19,0	25,0	0,15	1,00	4	154CRS-0810
8,0	8	63	19,0	25,0	0,15	2,00	4	154CRS-0820
10,0	10	72	22,0	30,0	0,20	0,50	4	154CRS-1005
10,0	10	72	22,0	30,0	0,20	1,00	4	154CRS-1010
10,0	10	72	22,0	30,0	0,20	2,00	4	154CRS-1020
12,0	12	83	26,0	36,0	0,20	0,50	4	154CRS-1205
12,0	12	83	26,0	36,0	0,20	1,00	4	154CRS-1210
12,0	12	83	26,0	36,0	0,20	2,00	4	154CRS-1220
12,0	12	83	26,0	36,0	0,20	3,00	4	154CRS-1230
16,0	16	92	32,0	42,0	0,20	1,00	4	154CRS-1610
16,0	16	92	32,0	42,0	0,20	2,00	4	154CRS-1620
16,0	16	92	32,0	42,0	0,20	3,00	4	154CRS-1630
16,0	16	92	32,0	42,0	0,20	4,00	4	154CRS-1640
20,0	20	104	38,0	52,0	0,20	1,00	4	154CRS-2010
20,0	20	104	38,0	52,0	0,20	2,00	4	154CRS-2020
20,0	20	104	38,0	52,0	0,20	3,00	4	154CRS-2030
20,0	20	104	38,0	52,0	0,20	4,00	4	154CRS-2040
25,0	25	124	45,0	65,0	0,22	2,00	4	154CRS-2520
25,0	25	124	45,0	65,0	0,25	3,00	4	154CRS-2530
25,0	25	124	45,0	65,0	0,25	4,00	4	154CRS-2540

90°

D h10	d h6	L	l ap	l1	a	90°	Z	Item Code
3,0	6	57	8,0	11,0	0,10	-	4	154SF-0300
4,0	6	57	9,0	16,0	0,10	-	4	154SF-0400
5,0	6	57	13,0	18,0	0,10	-	4	154SF-0500
6,0	6	57	13,0	20,0	0,15	-	4	154SF-0600
8,0	8	63	19,0	25,0	0,15	-	4	154SF-0800
10,0	10	72	22,0	30,0	0,15	-	4	154SF-1000
12,0	12	83	26,0	36,0	0,20	-	4	154SF-1200
16,0	16	92	32,0	42,0	0,20	-	4	154SF-1600
20,0	20	104	38,0	52,0	0,20	-	4	154SF-2000
25,0	25	124	45,0	65,0	0,25	-	4	154SF-2500

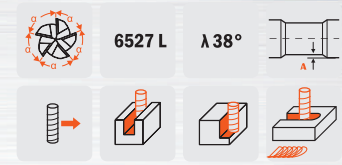
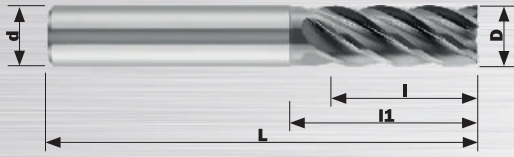
Series - 154

Working Parameters

Material	Diameter	 1,00 D			 0,40 D			 ae = 0,10 X D		
		m/min	Vc=140			Vc=130			Vc=170	
Ferritic stainless steel	D mm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm
	3,0	0,013	772	14854	0,013	717	13793	0,020	1443	18038
	4,0	0,020	891	11141	0,020	828	10345	0,060	3247	13528
	6,0	0,030	891	7427	0,030	828	6897	0,130	4690	9019
	8,0	0,040	891	5570	0,040	828	5173	0,160	4329	6764
	10,0	0,050	891	4456	0,050	828	4138	0,190	4113	5411
	12,0	0,060	891	3714	0,060	828	3448	0,220	3968	4509
	14,0	0,065	828	3183	0,065	768	2956	0,250	3865	3865
	16,0	0,070	780	2785	0,070	724	2586	0,250	3382	3382
	20,0	0,080	713	2228	0,080	662	2069	0,300	3247	2706
25,0	0,090	642	1783	0,090	596	1655	0,350	3030	2165	
Austenitic stainless steel	m/min	Vc=120			Vc=110			Vc=150		
	D mm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm
	3,0	0,013	662	12732	0,013	607	11671	0,020	1273	15915
	4,0	0,020	764	9549	0,020	700	8754	0,060	2865	11937
	6,0	0,030	764	6366	0,030	700	5836	0,130	4138	7958
	8,0	0,040	764	4775	0,040	700	4377	0,160	3820	5968
	10,0	0,050	764	3820	0,050	700	3501	0,190	3629	4775
	12,0	0,060	764	3183	0,060	700	2918	0,220	3501	3979
	14,0	0,065	709	2728	0,065	650	2501	0,250	3410	3410
	16,0	0,070	668	2387	0,070	613	2188	0,250	2984	2984
20,0	0,080	611	1910	0,080	560	1751	0,300	2865	2387	
25,0	0,090	550	1528	0,090	504	1401	0,350	2674	1910	
Titanium	m/min	Vc=80			Vc=80			Vc=100		
	D mm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm
	3,0	0,004	136	8488	0,011	373	8488	0,020	849	10610
	4,0	0,006	153	6366	0,015	382	6366	0,060	1910	7958
	6,0	0,009	153	4244	0,023	390	4244	0,130	2759	5305
	8,0	0,012	153	3183	0,030	382	3183	0,160	2546	3979
	10,0	0,015	153	2546	0,040	407	2546	0,190	2419	3183
	12,0	0,020	170	2122	0,050	424	2122	0,220	2334	2653
	14,0	0,025	182	1819	0,055	400	1819	0,250	2274	2274
	16,0	0,030	191	1592	0,060	382	1592	0,250	1989	1989
20,0	0,040	204	1273	0,075	382	1273	0,300	1910	1592	
25,0	0,050	204	1019	0,090	367	1019	0,350	1783	1273	
Steel < 800 N/mm²	m/min	Vc=195			Vc=210			Vc=220		
	D mm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm
	3,0	0,008	662	20690	0,008	713	22282	0,020	1867	23343
	4,0	0,012	745	15518	0,012	802	16711	0,060	4202	17507
	6,0	0,020	828	10345	0,020	891	11141	0,130	6069	11671
	8,0	0,030	931	7759	0,030	1003	8356	0,160	5602	8754
	10,0	0,040	993	6207	0,040	1070	6685	0,190	5322	7003
	12,0	0,050	1035	5173	0,050	1114	5570	0,220	5135	5836
	14,0	0,055	975	4434	0,055	1050	4775	0,250	5002	5002
	16,0	0,060	931	3879	0,060	1003	4178	0,250	4377	4377
20,0	0,070	869	3104	0,070	936	3342	0,300	4202	3501	
25,0	0,080	795	2483	0,080	856	2674	0,350	3922	2801	
Steel <1000 N/mm²	m/min	Vc=140			Vc=150			Vc=180		
	D mm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm
	3,0	0,008	475	14854	0,008	509	15915	0,020	1528	19099
	4,0	0,012	535	11141	0,012	573	11937	0,060	3438	14324
	6,0	0,020	594	7427	0,020	637	7958	0,130	4966	9549
	8,0	0,030	668	5570	0,030	716	5968	0,160	4584	7162
	10,0	0,040	713	4456	0,040	764	4775	0,190	4354	5730
	12,0	0,050	743	3714	0,050	796	3979	0,220	4202	4775
	14,0	0,055	700	3183	0,055	750	3410	0,250	4093	4093
	16,0	0,060	668	2785	0,060	716	2984	0,250	3581	3581
20,0	0,070	624	2228	0,070	668	2387	0,300	3438	2865	
25,0	0,080	570	1783	0,080	611	1910	0,350	3209	2292	

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5 FLUTE END MILL FOR HIGH CHIP REMOVAL



45°

D h10	d h6	L	l ap	l1	a	45°	Z	Item Code
6,0	6	57	13,0	20,0	0,15	0,10	5	155SFC-0600
8,0	8	63	19,0	25,0	0,15	0,15	5	155SFC-0800
10,0	10	72	22,0	30,0	0,15	0,15	5	155SFC-1000
12,0	12	83	26,0	36,0	0,20	0,15	5	155SFC-1200
16,0	16	92	32,0	42,0	0,20	0,20	5	155SFC-1600
20,0	20	104	38,0	52,0	0,20	0,20	5	155SFC-2000

Cr




D h10	d h6	L	l ap	l1	a	Cr	Z	Item Code
6,0	6	57	13,0	20,0	0,15	0,50	5	155CRS-0605
6,0	6	57	13,0	20,0	0,15	1,00	5	155CRS-0610
8,0	8	63	19,0	25,0	0,15	0,50	5	155CRS-0805
8,0	8	63	19,0	25,0	0,15	1,00	5	155CRS-0810
8,0	8	63	19,0	25,0	0,15	2,00	5	155CRS-0820
10,0	10	72	22,0	30,0	0,15	0,50	5	155CRS-1005
10,0	10	72	22,0	30,0	0,15	1,00	5	155CRS-1010
10,0	10	72	22,0	30,0	0,15	2,00	5	155CRS-1020
12,0	12	83	26,0	36,0	0,20	0,50	5	155CRS-1205
12,0	12	83	26,0	36,0	0,20	1,00	5	155CRS-1210
12,0	12	83	26,0	36,0	0,20	2,00	5	155CRS-1220
12,0	12	83	26,0	36,0	0,20	3,00	5	155CRS-1230
16,0	16	92	32,0	42,0	0,20	1,00	5	155CRS-1610
16,0	16	92	32,0	42,0	0,20	2,00	5	155CRS-1620
16,0	16	92	32,0	42,0	0,20	3,00	5	155CRS-1630
16,0	16	92	32,0	42,0	0,20	4,00	5	155CRS-1640
20,0	20	104	38,0	52,0	0,20	2,00	5	155CRS-2020
20,0	20	104	38,0	52,0	0,20	3,00	5	155CRS-2030
20,0	20	104	38,0	52,0	0,20	4,00	5	155CRS-2040

90°

D h10	d h6	L	l ap	l1	a	90°	Z	Item Code
6,0	6	57	13,0	20,0	0,15	-	5	155SF-0600
8,0	6	63	19,0	25,0	0,15	-	5	155SF-0800
10,0	10	72	22,0	30,0	0,20	-	5	155SF-1000
12,0	12	83	26,0	36,0	0,20	-	5	155SF-1200
16,0	16	92	32,0	42,0	0,20	-	5	155SF-1600
20,0	20	104	38,0	52,0	0,20	-	5	155SF-2000

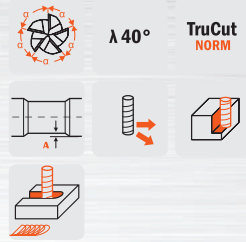
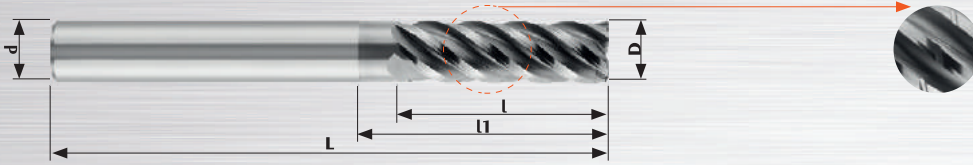
Series - 155

Working Parameters

Material	Diameter	 1,00 D			 0,40 D			 ae = 0,10 X D		
		m/min	Vc=130			Vc=130			Vc=170	
Ferritic stainless steel	D mm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm
	6,0	0,015	517	6897	0,030	1035	6897	0,130	5862	9019
	8,0	0,025	647	5173	0,040	1035	5173	0,160	5411	6764
	10,0	0,035	724	4138	0,050	1035	4138	0,190	5141	5411
	12,0	0,045	776	3448	0,060	1035	3448	0,220	4960	4509
	16,0	0,055	711	2586	0,070	905	2586	0,250	4228	3382
20,0	0,060	621	2069	0,080	828	2069	0,300	4058	2706	
Austenitic stainless Steel	m/min	Vc=110			Vc=110			Vc=150		
	D mm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm
	6,0	0,015	438	5836	0,030	875	5836	0,130	5173	7958
	8,0	0,025	547	4377	0,040	875	4377	0,160	4775	5968
	10,0	0,035	613	3501	0,050	875	3501	0,190	4536	4775
	12,0	0,045	657	2918	0,060	875	2918	0,220	4277	3979
16,0	0,055	602	2188	0,070	766	2188	0,250	3730	2984	
20,0	0,060	525	1751	0,080	700	1751	0,300	3581	2387	
Titanium	m/min	Vc=80			Vc=80			Vc=80		
	D mm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm
	6,0	0,006	127	4244	0,023	477	4244	0,130	2759	4244
	8,0	0,008	127	3183	0,030	477	3183	0,160	2546	3183
	10,0	0,010	127	2546	0,040	509	2546	0,190	2419	2546
	12,0	0,012	127	2122	0,050	531	2122	0,220	2334	2122
16,0	0,016	127	1592	0,060	477	1592	0,250	1989	1592	
20,0	0,024	153	1273	0,070	446	1273	0,300	1910	1273	
Steel < 800 N/mm ²	m/min	Vc=170			Vc=195			Vc=220		
	D mm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm
	6,0	0,020	902	9019	0,030	1552	10345	0,130	7586	11671
	8,0	0,030	1051	6764	0,040	1552	7759	0,160	7003	8754
	10,0	0,040	1082	5411	0,050	1552	6207	0,190	6653	7003
	12,0	0,045	1015	4509	0,060	1552	5173	0,220	6419	5836
16,0	0,055	930	3382	0,068	1319	3879	0,250	5471	4377	
20,0	0,065	879	2706	0,075	1164	3104	0,300	5252	3501	
Steel <1000 N/mm ²	m/min	Vc=130			Vc=150			Vc=180		
	D mm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm
	6,0	0,020	690	6897	0,030	1194	7958	0,130	6207	9549
	8,0	0,030	776	5173	0,040	1194	5968	0,160	5730	7162
	10,0	0,040	828	4138	0,050	1194	4775	0,190	5443	5730
	12,0	0,045	776	3448	0,060	1194	3979	0,220	5252	4775
16,0	0,055	711	2586	0,068	1015	2984	0,250	4476	3581	
20,0	0,065	621	2069	0,075	895	2387	0,300	4297	2865	

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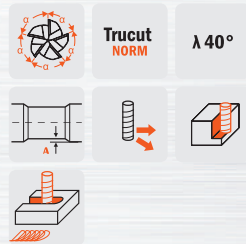
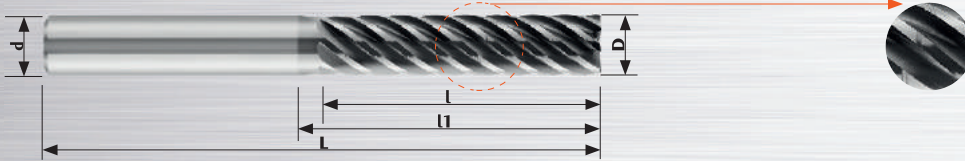
5 FLUTE END MILL WITH UNEQUAL FLUTE SPACING, LONG VERSION



Cr

D h10	d h6	L	l ap	l1	a	Cr	Z	Item Code
6,0	6	63	18,0	24,0	0,25	0,30	5	155CRL-0603
8,0	8	70	24,0	31,0	0,25	0,50	5	155CRL-0805
10,0	10	78	30,0	37,0	0,25	0,50	5	155CRL-1005
12,0	12	92	36,0	46,0	0,25	0,50	5	155CRL-1205
16,0	16	110	48,0	60,0	0,25	0,50	5	155CRL-1605
20,0	20	134	60,0	80,0	0,25	0,50	5	155CRL-2005

5 FLUTE END MILL WITH UNEQUAL FLUTE SPACING, EXTRA LONG SERIES

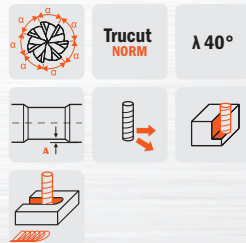
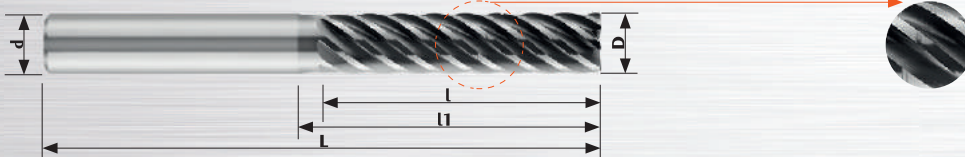


Cr

D h10	d h6	L	l ap	l1	a	Cr	Z	Item Code
6,0	6	70	24,0	30,0	0,25	0,30	5	155CREL-0603
8,0	8	80	32,0	40,0	0,25	0,50	5	155CREL-0805
10,0	10	87	40,0	46,0	0,25	0,50	5	155CREL-1005
12,0	12	108	48,0	58,0	0,25	0,50	5	155CREL-1205

157


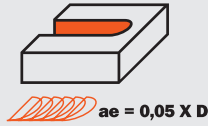
7 FLUTE END MILL WITH UNEQUAL FLUTE SPACING, EXTRA LONG SERIES



D h10	d h6	L	l ap	l1	a	Cr	Z	Item Code
8,0	8	80	32,0	40,0	0,25	0,50	7	157CREL-0805
10,0	10	87	40,0	46,0	0,25	0,50	7	157CREL-1005
12,0	12	108	48,0	58,0	0,25	0,50	7	157CREL-1205
16,0	16	120	64,0	68,0	0,25	0,50	7	157CREL-1605
20,0	20	134	80,0	-	-	0,50	7	157CREL-2005

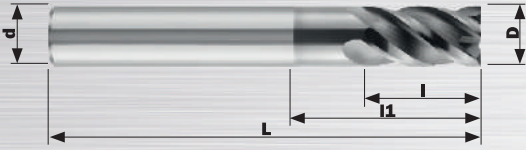
Series - 155 - Long & Ex-Long

Working Parameters

Material	Diameter	 FULL I 0,02 D			 ae = 0,05 X D		
		m/min	Vc=130			Vc=220	
Ferritic stainless steel	D mm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm
	4,0	0,018	745	10345	0,050	3501	17507
	6,0	0,026	897	6897	0,080	4669	11671
	8,0	0,034	879	5173	0,130	5690	8754
	10,0	0,043	890	4138	0,160	5602	7003
	12,0	0,055	948	3448	0,190	5544	5836
	16,0	0,070	905	2586	0,220	4814	4377
	20,0	0,080	1159	2069	0,280	6863	3501
Austenitic stainless Steel	m/min	Vc=120			Vc=190		
	D mm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm
	4,0	0,018	688	9549	0,050	3024	15120
	6,0	0,026	828	6366	0,080	4032	10080
	8,0	0,034	812	4775	0,130	4914	7560
	10,0	0,043	821	3820	0,160	4838	6048
	12,0	0,055	875	3183	0,190	4788	5040
	16,0	0,070	836	2387	0,220	4158	3780
20,0	0,080	1070	1910	0,280	5927	3024	
Titanium	m/min	Vc=65			Vc=160		
	D mm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm
	4,0	0,018	372	5173	0,050	2546	12732
	6,0	0,026	448	3448	0,080	3395	8488
	8,0	0,034	440	2586	0,130	4138	6366
	10,0	0,043	445	2069	0,160	4074	5093
	12,0	0,055	474	1724	0,190	4032	4244
	16,0	0,070	453	1293	0,220	3501	3183
20,0	0,080	579	1035	0,280	4991	2546	
Steel < 800 N/mm ²	m/min	Vc=180			Vc=250		
	D mm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm
	4,0	0,018	1031	14324	0,050	3979	19894
	6,0	0,026	1241	9549	0,080	5305	13263
	8,0	0,034	1218	7162	0,130	6466	9947
	10,0	0,043	1232	5730	0,160	6366	7958
	12,0	0,055	1313	4775	0,190	6300	6631
	16,0	0,070	1253	3581	0,220	5471	4974
20,0	0,080	1604	2865	0,280	7799	3979	
Steel <1000 N/mm ²	m/min	Vc=140			Vc=220		
	D mm	fz mm/z	F mm/min	n rpm	fz mm/z	F mm/min	n rpm
	4,0	0,018	802	11141	0,050	3501	17507
	6,0	0,026	966	7427	0,080	4669	11671
	8,0	0,034	947	5570	0,130	5690	8754
	10,0	0,043	958	4456	0,160	5602	7003
	12,0	0,055	1021	3714	0,190	5544	5836
	16,0	0,070	975	2785	0,220	4814	4377
20,0	0,080	1248	2228	0,280	6863	3501	

124

4 FLUTE END MILL FOR THE MACHINING OF DUPLEX



TruCut
NORM

λ 38°
 λ 41°



45°

D e8	d h6	L	l ap	l1	a	45°	Z	Item Code
4,0	6	57	6,0	-	-	0,05	4	124IDS-0400
5,0	6	57	7,5	-	-	0,05	4	124IDS-0500
6,0	6	57	9,0	18,0	0,15	0,05	4	124IDS-0600
8,0	8	63	12,0	24,0	0,15	0,05	4	124IDS-0800
10,0	10	72	15,0	30,0	0,15	0,05	4	124IDS-1000
12,0	12	83	18,0	36,0	0,20	0,05	4	124IDS-1200
16,0	16	92	24,0	42,0	0,20	0,05	4	124IDS-1600
20,0	20	104	30,0	52,0	0,20	0,05	4	124IDS-2000

Cr

D e8	d h6	L	l ap	l1	a	Cr	Z	Item Code
6,0	6	57	9,0	18,0	0,15	0,50	4	124IDR-0600
8,0	8	63	12,0	24,0	0,15	0,50	4	124IDR-0800
10,0	10	72	15,0	30,0	0,15	1,00	4	124IDR-1000
12,0	12	83	18,0	36,0	0,20	1,00	4	124IDR-1200
16,0	16	92	24,0	42,0	0,20	1,00	4	124IDR-1600
20,0	20	104	30,0	52,0	0,20	1,00	4	124IDR-2000

Series - 124

Working Parameters

Material	Diameter	1,00 D			0,25 D			0,10 D		
		Vc=60			Vc=60			Vc=60		
Ph/Duplex	m/min	fz	F	n	fz	F	n	fz	F	n
	D mm	mm/z	mm/min	rpm	mm/z	mm/min	rpm	mm/z	mm/min	rpm
	4,0	0,009	172	4775	0,009	172	4775	0,012	229	4775
	6,0	0,016	205	3180	0,015	190	3180	0,020	255	3180
	8,0	0,022	210	2390	0,022	210	2390	0,030	285	2390
	10,0	0,030	230	1910	0,029	220	1910	0,040	305	1910
	12,0	0,040	255	1590	0,038	240	1590	0,050	320	1590
	16,0	0,047	225	1190	0,045	215	1190	0,060	285	1190
20,0	0,052	200	960	0,050	190	950	0,065	250	950	

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