

GUHRING

NEW



SpyroTec Chamfer Mills

- EW 100 G Deburring fork
- EWR 500 Deburring reamer
- SpyroTec chamfer mill
- Straight flute chamfer mill
- Front/back deburring mill
- Ball nose deburring mill



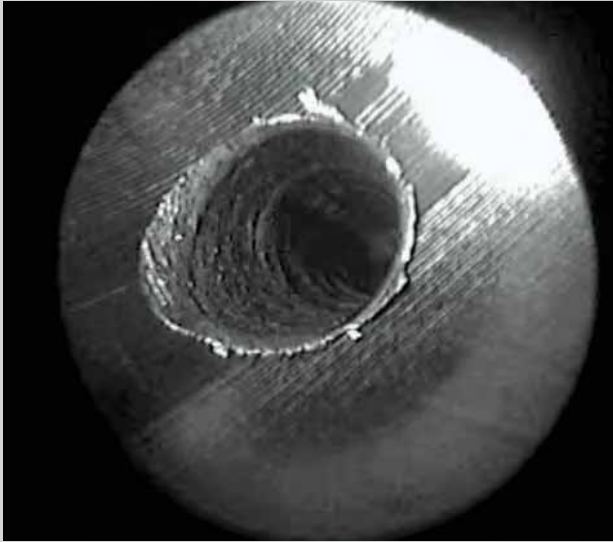
Deburring tools



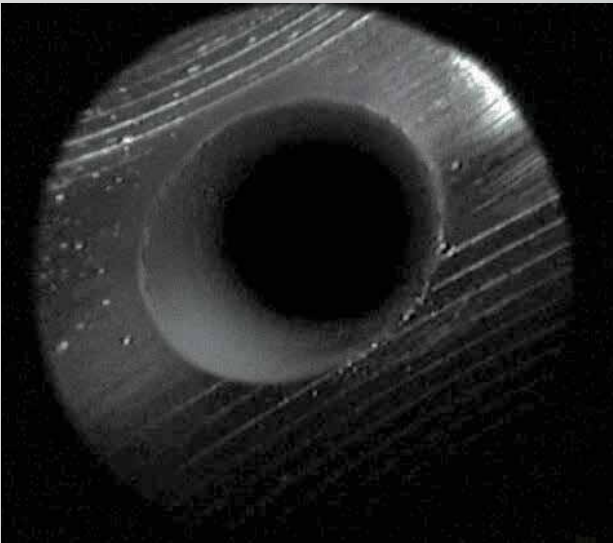
GUHRING – YOUR WORLDWIDE PARTNER

Deburring tools

Internal and external deburring operations – quick, clean and fully automated



Exit
of hole drilled in component prior to ...



...and following machining with deburring tool.

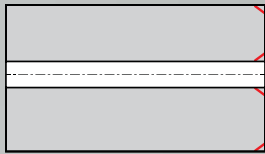
Guhring provides a comprehensive standard range of deburring tools, including the world's first solid carbide deburring tools. These tools allow for the automated deburring of hole entry, hole exit, and cross-hole exit, all while the part remains in your machine. Instead of implementing time-consuming and inefficient off-line manual deburring processes, you can reduce your production time by automating your deburring operations on your machine tool.

From a quality standpoint, the requirement for the deburring of intersecting cross-holes is becoming increasingly critical. For example, on oil galleries in modern high-performance engines, the optimal flow rate is dependent on seamless deburring of the exit. Precision deburring and chamfering is also required in crankshafts, valve blocks, steering arms, axle housings, drivetrain components, injector nozzles, and brake cylinders.

Although deburring the entry of cross-drilled holes rarely causes a problem, deburring the exit typically involves a more complicated operation which is usually performed manually off-line, resulting in a time-consuming and cost-prohibitive process. Guhring's latest innovation, the EWR 500 deburring reamer, is well-suited for these applications.

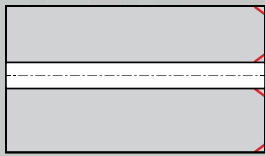
With multiple deburring tool options at your disposal, Guhring helps you achieve your complex deburring needs through automated processes. This results in considerable cost-savings and productivity gains, and more importantly, improved part quality and process reliability. In addition to our standard program, Guhring offers custom-made deburring tools manufactured specifically to meet your application requirements.

SpyroTec spiral fluted chamfer mill



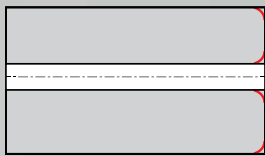
p. 6

Straight flute chamfer mill



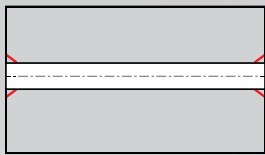
p. 10

Corner rounding milling cutters



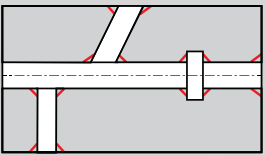
p. 15

Front/back deburring mill



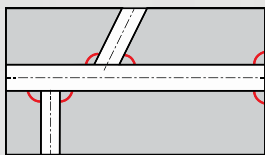
p. 16

EW 100 G Deburring fork



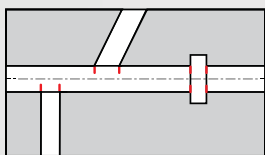
p. 18

Ball-nose deburring mill



p. 21

EWR 500 Deburring reamer



p. 22

SpyroTec

GUHRING

**THE INNOVATIVE, HELICAL HSS
AND HSCO COUNTERSINK**

NEW
SpyroTec 60°

SpyroTec 90°

NEW
SpyroTec 82°



CONVEX CUTTING EDGES

// Three different convex cutting edges in combination with three unequal helix angles enable extremely stable and low-vibration cutting processes without any chatter marks.

TiAlN COATING

// The titanium aluminum nitride coating provides high hardness and excellent thermal protection.

CUTTING MATERIAL

// The high-speed steel cobalt substrate holds up well in high temperature applications, providing long tool life in a wide variety of materials.

	Material group	Examples
P	Common structural steels	A283, A516, Gr50, 30, 35, 42, 45, 50, 55, 60, 65, 70, 75, 80, 85, 90, 100, 110, 135, 140, 145, 150, 160
	Free-cutting steels	1151, 1215, L10, 10L10, 10L15, 10L17, 10L20, 10L23, 10L25, 10L30, 10L35, 10L40, 10L42, 10L45, 10L49, 10L50, 10L55, 11L15, 11L16, 11L17, 11L37, 11L38, 11L39, 11L41, 11L44, 11L46, 12L11, 12L12, 12L13, 12L14, 12L15, 41L25, 41L30, 41L35, 41L40, 41L42, 41L47, 41L50 51L15, 51L17, 51L20, 86L20, 86L40
	Unalloyed heat-treatable steels	1005, 1006, 1008, 1009, 1010, 1011, 1012, 1013, 1015, 1016, 1017, 1018, 1019, 1020, 1021, 1022, 1023, 1025, 1026, 1029, 1030, 1033, 1035, 1037, 1038, 1039, 1040, 1042, 1043, 1044, 1045, 1046, 1049, 1050, 1053, 1055, 1059, 1060, 1064, 1065, 1069, 1070, 1071, 1074, 1075, 1078, 1080, 1084, 1085, 1086, 1090, 1095
	Alloyed heat-treatable steels	1330, 1335, 1340, 1345, 2340, 3140, 3145, 3150, 3230, 3240, 3335, 3340, 3435, 3450, 4032, 4037, 4063, 4130, 4135, 4137, 4140, 4142, 4145, 4147, 4150, 4161, 4337, 4340, 4640, 5045, 5046, 5060, 5130, 5132, 5135, 5140, 5145, 5157, 5150, 5155, 5160, 6130, 6135, 6140, 6145, 6150, 7140, 6145, 6150, 7140, 8630, 8632, 8635, 8637, 8640, 8642, 8645, 8650, 8650, 8660, 8735, 8740, 8742, 9250, 9254, 9255, 9260, 9262, 9840, 9850
	Unalloyed case hardened steels	1005, 1006, 1008, 1009, 1010, 1011, 1012, 1013, 1015, 1016, 1017, 1018, 1019, 1020, 1021, 1022, 1023, 1025, 1026, 1029, 1030, 1033, 1035, 1037, 1038, 1039, 1040, 1042, 1043, 1044, 1045, 1046, 1049, 1050, 1053, 1055, 1059, 1060, 1064, 1065, 1069, 1070, 1071, 1074, 1075, 1078, 1080, 1084, 1085, 1086, 1090, 1095
	Alloyed case hardened steels	2317, 2512, 2515, 2517, 3115, 3120, 3215, 3220, 3312, 3316, 3325, 4012, 4023, 4024, 4027, 4028, 4118, 4119, 4125, 4317, 4320, 4419, 4422, 4427, 4608, 4615, 4617, 4620, 4621, 4626, 4718, 4720, 4815, 4817, 4820, 5015, 5115, 5117, 5120, 6115, 6118, 6120, 6125, 8115, 8615, 8617, 8620, 8622, 8625, 8627, 8720, 8822, 9310, 9315, 9317
	Nitriding steels	1132, 1137, 1138, 1139, 1140, 1141, 1144, 1145, 1146, 1151
	Tool steels	A2, A3, A4, A5, A6, A8, A9, A10, O1, O2, O6, O7, A7, D2, D3, D4, D5, D7, H10, H11, H12, H13, H14, H19, H20, H21, H22, H23, H24, H25, H26, H41, H42, H43, L1, L3, W1, W2, W5
	High speed steels	M1, M2, M3-1, M3-2, M4, M6, M7, M10, M30, M33, M34, M36, M41, M42, M43, M44, M46, M47, T1, T2, T4, T5, T6, T8, T15
	Spring steels	5150, 5155, 6145, 6150, 9255
H	Hardened steels >48-60 Rc	Heat Treated Steels
M	Stainless steels, sulphured	203 Ez, 303 Se, 303 Ma, 303 Pb, 303 PlusX, 430F Se, 416 Se, 416 PlusX, 420F, 420F Se, 440F, 440F Se
	austenitic	201, 202, 301, 302B, 303, 304, 304L, 305, 308, 309, 309S, 310, 310S, 314, 316, 316L, 317, 321, 330, 347, 348, 384, 385, Nitronic 32, Nitronic 33, Nitronic 40, Nitronic 50, Nitronic 60, 17-7PH
	martensitic	403, 405, 410, 414, 416, 420, 422, 430, 431, 440A, 440B, 440C, 446, 501, 502, 630, Greek Ascology
K	Cast iron	A48-20 B, A48-30 B, A48-40 B, A48-50B, A159G1800, A159G2500, A159G3000, A159G3500, A159G4000
	Spheroidal graphite iron and malleable cast iron	60-10-18, 60-40-18, 65-45-12, 80-55-06, 100-70-03, 120-90-02, 32510, 35018, 40010, 50005, 60004, 70003, 80002, 90001, A220-70003, A220-8002, A536
	Chilled cast iron	
S	Special alloys	Inconel, Hastelloy, Monel, Nimonic, MAR-M246, DS-Ni, Waspalloy, Rene41
	Ti and Ti-alloys	Ti6AL4V, 5390A, TiCu2
N	Aluminium and Al-alloys	EC 1060, 1100, 1145, 1175, 1235, 2011, 2014, 2017, 2018, 2021, 2024, 2025, 2117, 2218, 2219, 2618, 3003, 3004, 3005, 4032, 4032-T6, 5005, 5050, 5052, 5056, 5083, 5086, 5154, 5252, 5254, 5454, 5456, 5457, 5652, 5657, 6053, 6061, 6061-T6, 6063, 6066, 6070, 6101, 6151, 6253, 6262, 6463, 6951, 7001, 7004, 7005, 7039, 7049, 7050, 7075, 7075-T6, 7079, 7175, 7178
	Al wrought alloys	1100-0, 3003-H18, 5056-0, 2024-T4, 4043-H18
	Al cast alloys	295-T6, 319-F, 356-T6, 380-F, 384-F, 390-F, 443-F, 413-F, 518-F, 713-TS, 850-TS
	Magnesium alloys	AZ31B, AZ63A, AZ80A, AZ91C, EZ33A, HK31A, QE22A, ZK60A
	Copper, low-alloyed	C10100, C27000, C71500, C52400, C77000, C17200, C71500, C95500, C86500
	Brass, short-chipping	CUZn10, CUZn20

SpyroTec

**THE SPIRAL-FLUTED 90° CHAMFERING MILLING CUTTER,
5 CUTTING EDGES**



90° Chamfer mill, spiral-flute

Series

6876



Tool material

Solid Carbide

Coating

nano-A™

Type

N

Shank

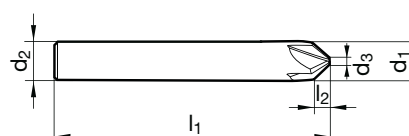
HA

Internal cooling



Material		Suitability
P	Steel	●
M	Stainless steel	●
K	Cast iron	○
N	Aluminum	●
S	Ni / Ti alloys	●
H	Hardened steel	
●=Optimal ○=Secondary		

- face cutting
- without center cutting



d1 js9	d2 h6	d3	l1	l2	Z	Code no.	EDP Number
fract	inch	inch	fract	fract	no. flutes		
1/4	0.2500	0.063	2 1/2	3/32	5	6.350	9068760063500
5/16	0.3125	0.078	2 1/2	7/64	5	7.940	9068760079400
3/8	0.3750	0.094	2 1/2	9/64	5	9.520	9068760095200
1/2	0.5000	0.125	3 1/2	3/16	5	12.700	9068760127000
5/8	0.6250	0.156	3 1/2	15/64	5	15.870	9068760158700
3/4	0.7500	0.188	4	9/32	5	19.050	9068760190500

Speeds & Feeds - Chamfering milling cutters

ISO	Hardness	SFM	Feed Rate IPT per Ø							
			1/8	1/4	5/16	3/8	1/2	5/8	3/4	
			Chamfering  ap/ae max = 0.25 x D							
P	Up to 25 HRC Over 25 HRC	630	0.0007	0.0014	0.0019	0.0024	0.0031	0.0039	0.0051	
		460	0.0006	0.0012	0.0016	0.0024	0.0028	0.0035	0.0047	
M	Up to 20 HRC 20-30 HRC	390	0.0005	0.0010	0.0013	0.0018	0.0020	0.0028	0.0035	
		260	0.0004	0.0007	0.0010	0.0014	0.0016	0.0024	0.0028	
K	< 240 HB	560	0.0006	0.0012	0.0016	0.0024	0.0028	0.0035	0.0047	
N	< 7% Si	820	0.0009	0.0019	0.0024	0.0031	0.0039	0.0051	0.0067	
S	Ti alloys ≤ 42 HRC Hi Temp ≤ 42 HRC	260	0.0003	0.0007	0.0009	0.0012	0.0016	0.0020	0.0023	
		130	0.0004	0.0006	0.0008	0.0009	0.0013	0.0016	0.0019	
H	Up to 55 HRC 55 - 63 HRC	160	0.0005	0.0010	0.0013	0.0020	0.0020	0.0027	0.0035	
		130	0.0004	0.0008	0.0010	0.0015	0.0016	0.0023	0.0027	

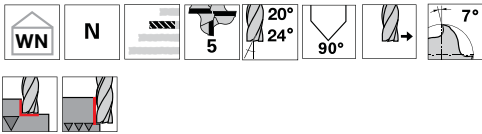
SFM	Feed Rate IPT per Ø							
	1/8	1/4	5/16	3/8	1/2	5/8	3/4	
	Deburring  ap/ae max = 0.05 x D							
820	0.0010	0.0023	0.0031	0.0040	0.0051	0.0067	0.0083	
590	0.0010	0.0020	0.0028	0.0039	0.0047	0.0063	0.0079	
525	0.0008	0.0017	0.0022	0.0031	0.0035	0.0047	0.0059	
325	0.0006	0.0013	0.0017	0.0024	0.0028	0.0039	0.0047	
755	0.0010	0.0020	0.0028	0.0039	0.0047	0.0063	0.0079	
1080	0.0015	0.0031	0.0041	0.0055	0.0067	0.0087	0.0110	
325	0.0005	0.0011	0.0014	0.0018	0.0024	0.0030	0.0035	
190	0.0006	0.0009	0.0012	0.0014	0.0020	0.0024	0.0029	
230	0.0008	0.0016	0.0022	0.0031	0.0035	0.0047	0.0059	
200	0.0007	0.0013	0.0017	0.0023	0.0027	0.0039	0.0047	

90° Chamfer mill, spiral-flute

Series

6992

6993



Tool material

Coating

Type

Shank

Internal cooling

Solid Carbide

Solid Carbide

nano-A™

nano-A™

N

N

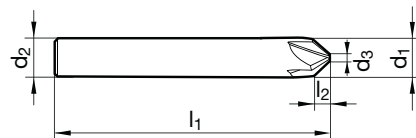
HA

HB



Material		Suitability
P	Steel	●
M	Stainless steel	●
K	Cast iron	○
N	Aluminum	●
S	Ni / Ti alloys	●
H	Hardened steel	
●=Optimal ○=Secondary		

- face cutting
- without center cutting



d1 js9	d2 h6	d3	l1	l2	Z	Code no.	EDP Number	EDP Number
mm	mm	mm	mm	m	no. flutes			
6.000	6.000	1.500	57.000	2.250	5	6.000	9069920060000	9069930060000
8.000	8.000	2.000	63.000	3.000	5	8.000	9069920080000	9069930080000
10.000	10.000	2.500	72.000	3.750	5	10.000	9069920100000	9069930100000
12.000	12.000	3.000	83.000	4.500	5	12.000	9069920120000	9069930120000
16.000	16.000	4.000	92.000	6.000	5	16.000	9069920160000	9069930160000
20.000	20.000	5.000	104.000	7.500	5	20.000	9069920200000	9069930200000

Speeds & Feeds - Chamfering milling cutters

ISO	Hardness	SFM	Feed Rate IPT per Ø							SFM	Feed Rate IPT per Ø						
			3	6	8	10	12	16	20		3	6	8	10	12	16	20
			Chamfering			ap/ae max = 0.25 x D					Deburring			ap/ae max = 0.05 x D			
P	Up to 25 HRC Over 25 HRC	630	0.0007	0.0014	0.0019	0.0024	0.0031	0.0039	0.0051	820	0.0010	0.0023	0.0031	0.0040	0.0051	0.0067	0.0083
		460	0.0006	0.0012	0.0016	0.0024	0.0028	0.0035	0.0047	590	0.0010	0.0020	0.0028	0.0039	0.0047	0.0063	0.0079
M	Up to 20 HRC 20-30 HRC	390	0.0005	0.0010	0.0013	0.0018	0.0020	0.0028	0.0035	525	0.0008	0.0017	0.0022	0.0031	0.0035	0.0047	0.0059
		260	0.0004	0.0007	0.0010	0.0014	0.0016	0.0024	0.0028	325	0.0006	0.0013	0.0017	0.0024	0.0028	0.0039	0.0047
K	< 240 HB	560	0.0006	0.0012	0.0016	0.0024	0.0028	0.0035	0.0047	755	0.0010	0.0020	0.0028	0.0039	0.0047	0.0063	0.0079
N	< 7% Si	820	0.0009	0.0019	0.0024	0.0031	0.0039	0.0051	0.0067	1080	0.0015	0.0031	0.0041	0.0055	0.0067	0.0087	0.0110
S	Ti alloys ≤ 42 HRC Hi Temp ≤ 42 HRC	260	0.0003	0.0007	0.0009	0.0012	0.0016	0.0020	0.0023	325	0.0005	0.0011	0.0014	0.0018	0.0024	0.0030	0.0035
		130	0.0004	0.0006	0.0008	0.0009	0.0013	0.0016	0.0019	190	0.0006	0.0009	0.0012	0.0014	0.0020	0.0024	0.0029
H	Up tp 55 HRC 55 - 63 HRC	160	0.0005	0.0010	0.0013	0.0020	0.0020	0.0027	0.0035	230	0.0008	0.0016	0.0022	0.0031	0.0035	0.0047	0.0059
		130	0.0004	0.0008	0.0010	0.0015	0.0016	0.0023	0.0027	200	0.0007	0.0013	0.0017	0.0023	0.0027	0.0039	0.0047

RT 100 **XF**

NEW.
EXTREME.
POWERFUL.

EXCEPTIONAL METAL REMOVAL RATE
POWERFUL MACHINING

- Optimized operating parameters deliver **exceptional feed rates** and **metal removal rates**
- Internally developed exclusive finishing processes **maximize performance**
- **Reduced cycle times** for difficult-to-machine materials and special applications in high production

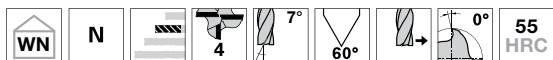


60° Chamfer mill, straight flute

Series no.

6711

6712



Tool material

Solid carbide

Coating

TiAlN

TiAlN

Type

N

N

Shank form

HA

HB

Material		Suitability
P	Steel	●
M	Stainless steel	●
K	Cast iron	●
N	Aluminum	●
S	Ni / Ti alloys	●
H	Hardened steel	○
●=Optimal ○=Secondary		



d1 js9	d2 h6	l1	l2	Z	Code no.
mm	mm	mm	mm	no. flutes	
4.000	4.000	50.000	3.500	4	4.000
6.000	6.000	57.000	5.200	4	6.000
8.000	8.000	63.000	7.000	4	8.000
10.000	10.000	72.000	8.700	4	10.000
12.000	12.000	83.000	10.400	4	12.000

EDP Number	
9067110040000	
9067110060000	9067120060000
9067110080000	9067120080000
9067110100000	9067120100000
9067110120000	9067120120000

Speeds & Feeds - Chamfering milling cutters

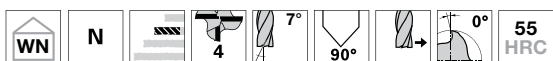
ISO	Hardness	SFM	Feed Rate IPT per Ø							SFM	Feed Rate IPT per Ø						
			3	6	8	10	12	16	20		3	6	8	10	12	16	20
			Chamfering				ap/ae max = 0.25 x D				Deburring				ap/ae max = 0.05 x D		
P	Up to 25 HRC Over 25 HRC	630	0.0007	0.0014	0.0019	0.0024	0.0031	0.0039	0.0051	820	0.0010	0.0023	0.0031	0.0040	0.0051	0.0067	0.0083
		460	0.0006	0.0012	0.0016	0.0024	0.0028	0.0035	0.0047	590	0.0010	0.0020	0.0028	0.0039	0.0047	0.0063	0.0079
M	Up to 20 HRC 20-30 HRC	390	0.0005	0.0010	0.0013	0.0018	0.0020	0.0028	0.0035	525	0.0008	0.0017	0.0022	0.0031	0.0035	0.0047	0.0059
		260	0.0004	0.0007	0.0010	0.0014	0.0016	0.0024	0.0028	325	0.0006	0.0013	0.0017	0.0024	0.0028	0.0039	0.0047
K	< 240 HB	560	0.0006	0.0012	0.0016	0.0024	0.0028	0.0035	0.0047	755	0.0010	0.0020	0.0028	0.0039	0.0047	0.0063	0.0079
N	< 7% Si	820	0.0009	0.0019	0.0024	0.0031	0.0039	0.0051	0.0067	1080	0.0015	0.0031	0.0041	0.0055	0.0067	0.0087	0.0110
S	Ti alloys ≤ 42 HRC Hi Temp ≤ 42 HRC	260	0.0003	0.0007	0.0009	0.0012	0.0016	0.0020	0.0023	325	0.0005	0.0011	0.0014	0.0018	0.0024	0.0030	0.0035
		130	0.0004	0.0006	0.0008	0.0009	0.0013	0.0016	0.0019	190	0.0006	0.0009	0.0012	0.0014	0.0020	0.0024	0.0029
H	Up to 55 HRC 55 - 63 HRC	160	0.0005	0.0010	0.0013	0.0020	0.0020	0.0027	0.0035	230	0.0008	0.0016	0.0022	0.0031	0.0035	0.0047	0.0059
		130	0.0004	0.0008	0.0010	0.0015	0.0016	0.0023	0.0027	200	0.0007	0.0013	0.0017	0.0023	0.0027	0.0039	0.0047

90° Chamfer mill, straight flute

Series no.

6713

3396



Tool material

Solid carbide

Coating

TiAlN

TiAlN

Type

N

N

Shank form

HA

HB

Material		Suitability
P	Steel	●
M	Stainless steel	●
K	Cast iron	●
N	Aluminum	●
S	Ni / Ti alloys	●
H	Hardened steel	○
●=Optimal ○=Secondary		



d1 js9	d2 h6	l1	l2	Z	Code no.
mm	mm	mm	mm	no. flutes	
4.000	4.000	50.000	2.000	4	4.000
6.000	6.000	57.000	3.000	4	6.000
8.000	8.000	63.000	4.000	4	8.000
10.000	10.000	72.000	5.000	4	10.000
12.000	12.000	83.000	6.000	4	12.000

EDP Number	
9067130040000	
9067130060000	9033960060000
9067130080000	9033960080000
9067130100000	9033960100000
9067130120000	9033960120000

Speeds & Feeds - Chamfering milling cutters

ISO	Hardness
P	Up to 25 HRC Over 25 HRC
M	Up to 20 HRC 20-30 HRC
K	< 240 HB
N	< 7% Si
S	Ti alloys ≤ 42 HRC Hi Temp ≤ 42 HRC
H	Up to 55 HRC 55 - 63 HRC

SFM	Feed Rate IPT per Ø						
	3	6	8	10	12	16	20
	Chamfering  ap/ae max = 0.25 x D						
630	0.0007	0.0014	0.0019	0.0024	0.0031	0.0039	0.0051
460	0.0006	0.0012	0.0016	0.0024	0.0028	0.0035	0.0047
390	0.0005	0.0010	0.0013	0.0018	0.0020	0.0028	0.0035
260	0.0004	0.0007	0.0010	0.0014	0.0016	0.0024	0.0028
560	0.0006	0.0012	0.0016	0.0024	0.0028	0.0035	0.0047
820	0.0009	0.0019	0.0024	0.0031	0.0039	0.0051	0.0067
260	0.0003	0.0007	0.0009	0.0012	0.0016	0.0020	0.0023
130	0.0004	0.0006	0.0008	0.0009	0.0013	0.0016	0.0019
160	0.0005	0.0010	0.0013	0.0020	0.0020	0.0027	0.0035
130	0.0004	0.0008	0.0010	0.0015	0.0016	0.0023	0.0027

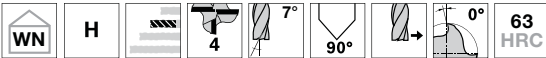
SFM	Feed Rate IPT per Ø						
	3	6	8	10	12	16	20
	Deburring  ap/ae max = 0.05 x D						
820	0.0010	0.0023	0.0031	0.0040	0.0051	0.0067	0.0083
590	0.0010	0.0020	0.0028	0.0039	0.0047	0.0063	0.0079
525	0.0008	0.0017	0.0022	0.0031	0.0035	0.0047	0.0059
325	0.0006	0.0013	0.0017	0.0024	0.0028	0.0039	0.0047
755	0.0010	0.0020	0.0028	0.0039	0.0047	0.0063	0.0079
1080	0.0015	0.0031	0.0041	0.0055	0.0067	0.0087	0.0110
325	0.0005	0.0011	0.0014	0.0018	0.0024	0.0030	0.0035
190	0.0006	0.0009	0.0012	0.0014	0.0020	0.0024	0.0029
230	0.0008	0.0016	0.0022	0.0031	0.0035	0.0047	0.0059
200	0.0007	0.0013	0.0017	0.0023	0.0027	0.0039	0.0047

90° Chamfer mill, straight flute - nano-Si coated

Series no.

6784

6785



Tool material

Solid carbide

Coating

nano-Si

nano-Si

Type

H

H

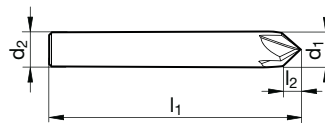
Shank form

HA

HB



Material		Suitability
P	Steel	●
M	Stainless steel	●
K	Cast iron	●
N	Aluminum	
S	Ni / Ti alloys	●
H	Hardened steel	●
●=Optimal ○=Secondary		



d1 js9	d2 h6	l1	l2	Z	Code no.
mm	mm	mm	mm	no. flutes	
4.000	4.000	50.000	2.000	4	4.000
6.000	6.000	57.000	3.000	4	6.000
8.000	8.000	63.000	4.000	4	8.000
10.000	10.000	72.000	5.000	4	10.000
12.000	12.000	83.000	6.000	4	12.000

EDP Number	
9067840040000	
9067840060000	9067850060000
9067840080000	9067850080000
9067840100000	9067850100000
9067840120000	9067850120000

Speeds & Feeds - Chamfering milling cutters

ISO	Hardness
P	Up to 25 HRC Over 25 HRC
M	Up to 20 HRC 20-30 HRC
K	< 240 HB
N	< 7% Si
S	Ti alloys ≤ 42 HRC Hi Temp ≤ 42 HRC
H	Up to 55 HRC 55 - 63 HRC

SFM	Feed Rate IPT per Ø							
	3	6	8	10	12	16	20	
	Chamfering ap/ae max = 0.25 x D							
630	0.0007	0.0014	0.0019	0.0024	0.0031	0.0039	0.0051	
460	0.0006	0.0012	0.0016	0.0024	0.0028	0.0035	0.0047	
390	0.0005	0.0010	0.0013	0.0018	0.0020	0.0028	0.0035	
260	0.0004	0.0007	0.0010	0.0014	0.0016	0.0024	0.0028	
560	0.0006	0.0012	0.0016	0.0024	0.0028	0.0035	0.0047	
820	0.0009	0.0019	0.0024	0.0031	0.0039	0.0051	0.0067	
260	0.0003	0.0007	0.0009	0.0012	0.0016	0.0020	0.0023	
130	0.0004	0.0006	0.0008	0.0009	0.0013	0.0016	0.0019	
160	0.0005	0.0010	0.0013	0.0020	0.0020	0.0027	0.0035	
130	0.0004	0.0008	0.0010	0.0015	0.0016	0.0023	0.0027	

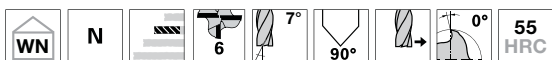
SFM	Feed Rate IPT per Ø							
	3	6	8	10	12	16	20	
	Deburring ap/ae max = 0.05 x D							
820	0.0010	0.0023	0.0031	0.0040	0.0051	0.0067	0.0083	
590	0.0010	0.0020	0.0028	0.0039	0.0047	0.0063	0.0079	
525	0.0008	0.0017	0.0022	0.0031	0.0035	0.0047	0.0059	
325	0.0006	0.0013	0.0017	0.0024	0.0028	0.0039	0.0047	
755	0.0010	0.0020	0.0028	0.0039	0.0047	0.0063	0.0079	
1080	0.0015	0.0031	0.0041	0.0055	0.0067	0.0087	0.0110	
325	0.0005	0.0011	0.0014	0.0018	0.0024	0.0030	0.0035	
190	0.0006	0.0009	0.0012	0.0014	0.0020	0.0024	0.0029	
230	0.0008	0.0016	0.0022	0.0031	0.0035	0.0047	0.0059	
200	0.0007	0.0013	0.0017	0.0023	0.0027	0.0039	0.0047	

90° Chamfer mill, straight flute - 6 flutes

Series no.

6786

6787



Tool material

Solid carbide

Coating

TiAlN

TiAlN

Type

N

N

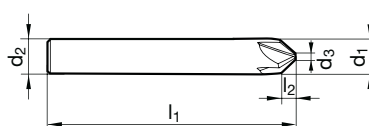
Shank form

HA

HB

Material		Suitability
P	Steel	●
M	Stainless steel	●
K	Cast iron	●
N	Aluminum	●
S	Ni / Ti alloys	○
H	Hardened steel	○
●=Optimal ○=Secondary		

- face cutting
- without center cutting



d1 js9	d2 h6	d3	l1	l2	Z	Code
mm	mm	mm	mm	mm	no. flutes	no.
6.000	6.000	1.500	57.00	2.25	6	6.000
8.000	8.000	2.000	63.00	3.00	6	8.000
10.000	10.000	3.000	72.00	3.50	6	10.000
12.000	12.000	3.000	83.00	4.50	6	12.000
16.000	16.000	4.000	92.00	6.00	6	16.000
20.000	20.000	6.000	92.00	7.00	6	20.000

EDP Number

9067860060000	9067870060000
9067860080000	9067870080000
9067860100000	9067870100000
9067860120000	9067870120000
9067860160000	9067870160000
9067860200000	9067870200000

Speeds & Feeds - Chamfering milling cutters

ISO	Hardness
P	Up to 25 HRC Over 25 HRC
M	Up to 20 HRC 20-30 HRC
K	< 240 HB
N	< 7% Si
S	Ti alloys ≤ 42 HRC Hi Temp ≤ 42 HRC
H	Up to 55 HRC 55 - 63 HRC

SFM	Feed Rate IPT per Ø						
	3	6	8	10	12	16	20
	Chamfering  ap/ae max = 0.25 x D						
630	0.0007	0.0014	0.0019	0.0024	0.0031	0.0039	0.0051
460	0.0006	0.0012	0.0016	0.0024	0.0028	0.0035	0.0047
390	0.0005	0.0010	0.0013	0.0018	0.0020	0.0028	0.0035
260	0.0004	0.0007	0.0010	0.0014	0.0016	0.0024	0.0028
560	0.0006	0.0012	0.0016	0.0024	0.0028	0.0035	0.0047
820	0.0009	0.0019	0.0024	0.0031	0.0039	0.0051	0.0067
260	0.0003	0.0007	0.0009	0.0012	0.0016	0.0020	0.0023
130	0.0004	0.0006	0.0008	0.0009	0.0013	0.0016	0.0019
160	0.0005	0.0010	0.0013	0.0020	0.0020	0.0027	0.0035
130	0.0004	0.0008	0.0010	0.0015	0.0016	0.0023	0.0027

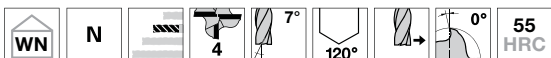
SFM	Feed Rate IPT per Ø						
	3	6	8	10	12	16	20
	Deburring  ap/ae max = 0.05 x D						
820	0.0010	0.0023	0.0031	0.0040	0.0051	0.0067	0.0083
590	0.0010	0.0020	0.0028	0.0039	0.0047	0.0063	0.0079
525	0.0008	0.0017	0.0022	0.0031	0.0035	0.0047	0.0059
325	0.0006	0.0013	0.0017	0.0024	0.0028	0.0039	0.0047
755	0.0010	0.0020	0.0028	0.0039	0.0047	0.0063	0.0079
1080	0.0015	0.0031	0.0041	0.0055	0.0067	0.0087	0.0110
325	0.0005	0.0011	0.0014	0.0018	0.0024	0.0030	0.0035
190	0.0006	0.0009	0.0012	0.0014	0.0020	0.0024	0.0029
230	0.0008	0.0016	0.0022	0.0031	0.0035	0.0047	0.0059
200	0.0007	0.0013	0.0017	0.0023	0.0027	0.0039	0.0047

120° Chamfer mill, straight flute

Series no.

6714

6715



Tool material

Solid carbide

Coating

TiAlN

TiAlN

Type

N

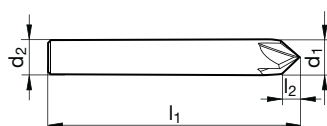
N

Shank form

HA

HB

Material		Suitability
P	Steel	●
M	Stainless steel	●
K	Cast iron	●
N	Aluminum	●
S	Ni / Ti alloys	●
H	Hardened steel	○
●=Optimal ○=Secondary		



d1 js9	d2 h6	l1	l2	Z	Code no.
mm	mm	mm	mm	no. flutes	
4.000	4.000	50.000	1.200	4	4.000
6.000	6.000	57.000	1.800	4	6.000
8.000	8.000	63.000	2.400	4	8.000
10.000	10.000	72.000	2.900	4	10.000
12.000	12.000	83.000	3.500	4	12.000

EDP Number	
9067140040000	
9067140060000	9067150060000
9067140080000	9067150080000
9067140100000	9067150100000
9067140120000	9067150120000

Speeds & Feeds - Chamfering milling cutters

ISO	Hardness
P	Up to 25 HRC Over 25 HRC
M	Up to 20 HRC 20-30 HRC
K	< 240 HB
N	< 7% Si
S	Ti alloys ≤ 42 HRC Hi Temp ≤ 42 HRC
H	Up to 55 HRC 55 - 63 HRC

SFM	Feed Rate IPT per Ø							
	3	6	8	10	12	16	20	
	Chamfering ap/ae max = 0.25 x D							
630	0.0007	0.0014	0.0019	0.0024	0.0031	0.0039	0.0051	
460	0.0006	0.0012	0.0016	0.0024	0.0028	0.0035	0.0047	
390	0.0005	0.0010	0.0013	0.0018	0.0020	0.0028	0.0035	
260	0.0004	0.0007	0.0010	0.0014	0.0016	0.0024	0.0028	
560	0.0006	0.0012	0.0016	0.0024	0.0028	0.0035	0.0047	
820	0.0009	0.0019	0.0024	0.0031	0.0039	0.0051	0.0067	
260	0.0003	0.0007	0.0009	0.0012	0.0016	0.0020	0.0023	
130	0.0004	0.0006	0.0008	0.0009	0.0013	0.0016	0.0019	
160	0.0005	0.0010	0.0013	0.0020	0.0020	0.0027	0.0035	
130	0.0004	0.0008	0.0010	0.0015	0.0016	0.0023	0.0027	

SFM	Feed Rate IPT per Ø							
	3	6	8	10	12	16	20	
	Deburring ap/ae max = 0.05 x D							
820	0.0010	0.0023	0.0031	0.0040	0.0051	0.0067	0.0083	
590	0.0010	0.0020	0.0028	0.0039	0.0047	0.0063	0.0079	
525	0.0008	0.0017	0.0022	0.0031	0.0035	0.0047	0.0059	
325	0.0006	0.0013	0.0017	0.0024	0.0028	0.0039	0.0047	
755	0.0010	0.0020	0.0028	0.0039	0.0047	0.0063	0.0079	
1080	0.0015	0.0031	0.0041	0.0055	0.0067	0.0087	0.0110	
325	0.0005	0.0011	0.0014	0.0018	0.0024	0.0030	0.0035	
190	0.0006	0.0009	0.0012	0.0014	0.0020	0.0024	0.0029	
230	0.0008	0.0016	0.0022	0.0031	0.0035	0.0047	0.0059	
200	0.0007	0.0013	0.0017	0.0023	0.0027	0.0039	0.0047	

Corner rounding milling cutters

Series no.

6788



Tool material

Solid carbide

Coating

FIREX

Type

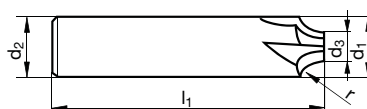
N

Shank form

HA

Material		Suitability
P	Steel	●
M	Stainless steel	●
K	Cast iron	●
N	Aluminum	●
S	Ni / Ti alloys	○
H	Hardened steel	●
●=Optimal ○=Secondary		

- without center cutting



d1	r	d2	d3	l1	Z	Code
mm	mm	mm	mm	mm	no. flutes	no.
6.000	0.50	6.000	5.000	50.00	4	6.005
6.000	1.00	6.000	4.000	50.00	4	6.010
8.000	1.50	8.000	5.000	58.00	4	8.015
10.000	2.00	10.000	6.000	66.00	4	10.020
10.000	2.50	10.000	5.000	66.00	4	10.025
12.000	3.00	12.000	6.000	73.00	4	12.030
14.000	3.50	14.000	7.000	75.00	4	14.035
14.000	4.00	14.000	6.000	75.00	4	14.040
16.000	4.50	16.000	7.000	76.00	4	16.045
16.000	5.00	16.000	6.000	76.00	4	16.050
20.000	5.50	20.000	9.000	92.00	4	20.055
20.000	6.00	20.000	8.000	92.00	4	20.060

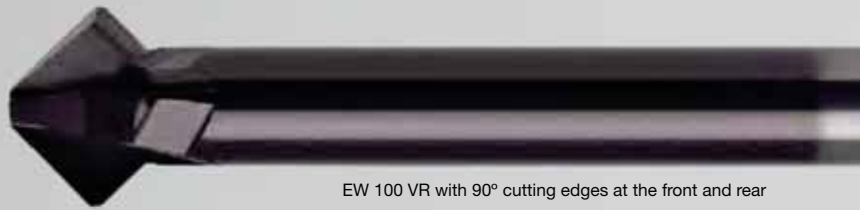
EDP Number
9067880060050
9067880060100
9067880080150
9067880100200
9067880100250
9067880120300
9067880140350
9067880140400
9067880160450
9067880160500
9067880200550
9067880200600

Speeds & Feeds - Corner rounding milling cutters

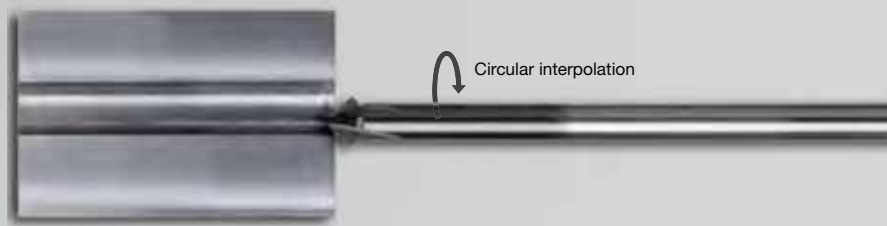
ISO	Hardness	SFM	Feed Rate IPT per Ø						
			3	6	8	10	12	16	20
			Chamfering			ap/ae max = 0.25 x D			
P	Up to 25 HRC Over 25 HRC	460 360	0.0006 0.0005	0.0011 0.0009	0.0014 0.0013	0.0019 0.0018	0.0023 0.0020	0.0031 0.0028	0.0039 0.0035
M	Up to 20 HRC 20-30 HRC	330 230	0.0004 0.0003	0.0007 0.0006	0.0010 0.0008	0.0014 0.0011	0.0016 0.0012	0.0024 0.0020	0.0028 0.0024
K	< 240 HB	425	0.0005	0.0010	0.0013	0.0018	0.0020	0.0028	0.0035
N	< 7% Si	620	0.0007	0.0014	0.0019	0.0025	0.0031	0.0039	0.0051
S	Ti alloys ≤ 42 HRC Hi Temp ≤ 42 HRC	230 115	0.0003 0.0003	0.0006 0.0006	0.0008 0.0008	0.0011 0.0010	0.0012 0.0011	0.0020 0.0018	0.0024 0.0020
H	Up to 55 HRC 55 - 63 HRC	130 115	0.0004 0.0003	0.0005 0.0006	0.0010 0.0008	0.0012 0.0010	0.0013 0.0011	0.0020 0.0018	0.0025 0.0020

EW 100 VR Front/back deburring mill

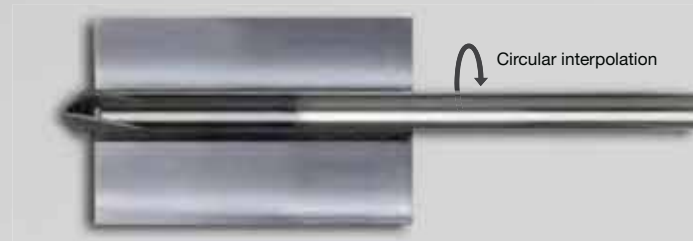
Guhring's standard solid carbide EW 100 VR front/back deburring mill with TiAlN coating can be utilized for both deburring and chamfering the entry and exit of a hole with a 90° angle. The EW 100 VR is a milling cutter with cutting edges on the front and back face. To deburr or chamfer a part the tool performs a circular interpolation along the edge or contour of the hole or part profile.



EW 100 VR with 90° cutting edges at the front and rear



Circular interpolation



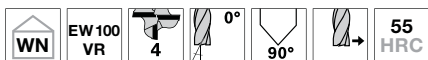
Circular interpolation

EW 100 VR

Front/back deburring mill 90°

Series no.

495



Tool material

Solid carbide

Coating

nano-A

Type

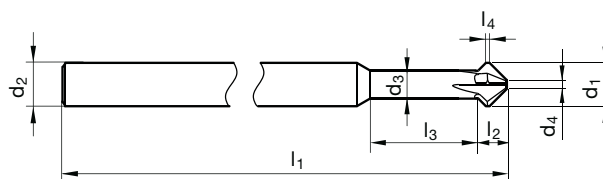
EW 100 VR

Shank form

HA

Material		Suitability
P	Steel	●
M	Stainless steel	●
K	Cast iron	●
N	Aluminum	○
S	Ni / Ti alloys	●
H	Hardened steel	●
●=Optimal ○=Secondary		

- neck clearance < Ø 6.0 mm
- without center cutting



d1	d2 h6	d3	d4	l1	l4	l3	l2	Z	Code no.	EDP Number
mm	mm	mm	mm	mm	mm	mm	mm	no. flutes		
3.000	4.000	2.200	0.600	75.00	0.50	9.30	2.10	4	3.000	9004950030000
4.000	4.000	2.900	0.800	75.00	0.50	12.30	2.70	4	4.000	9004950040000
5.000	5.000	3.900	1.000	75.00	0.50	15.00	3.00	4	5.000	9004950050000
6.000	6.000	3.900	1.200	100.00	0.50	14.30	3.50	4	6.000	9004950060000
8.000	6.000	6.000	1.600	100.00	0.50		4.70	4	8.000	9004950080000
10.000	6.000	6.000	2.000	100.00	0.50		6.50	4	10.000	9004950100000
12.000	6.000	6.000	2.400	100.00	0.50		8.30	4	12.000	9004950120000

Speeds & Feeds - Front/back deburrer

ISO	Hardness	SFM	Feed Rate IPT per Ø						
			3	6	8	10	12	16	20
P	≤ 25 HRC	590	0.0031	0.0047	0.0079	0.0079	0.0098	0.0098	0.0098
	> 25 HRC	490	0.0024	0.0039	0.0059	0.0059	0.0079	0.0079	0.0079
M	≤ 20 HRC	330	0.0024	0.0039	0.0059	0.0059	0.0079	0.0079	0.0079
	> 20 HRC	260	0.0020	0.0031	0.0047	0.0047	0.0059	0.0059	0.0059
K	≤ 350 HB	395	0.0031	0.0047	0.0079	0.0079	0.0098	0.0098	0.0098
N	≤ 3% Si	655	0.0039	0.0059	0.0098	0.0098	0.0118	0.0118	0.0118
	> 3% Si	490	0.0031	0.0047	0.0079	0.0079	0.0098	0.0098	0.0098
S	≤ 25 HRC	195	0.0020	0.0031	0.0047	0.0047	0.0059	0.0059	0.0059
	≤ 44 HRC	130	0.0016	0.0024	0.0039	0.0039	0.0047	0.0047	0.0047
H	< 55 HRC	330	0.0024	0.0039	0.0059	0.0059	0.0079	0.0079	0.0079
	≤ 63 HRC	130	0.0016	0.0020	0.0024	0.0024	0.0031	0.0031	0.0031

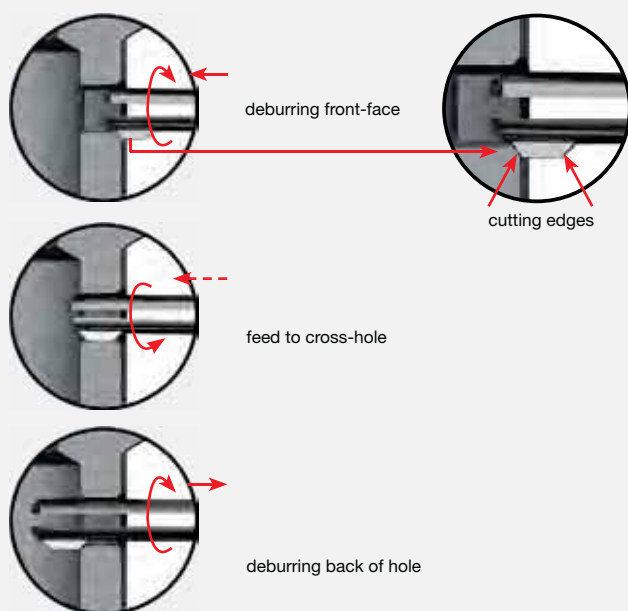
EW 100 G Deburring fork



Advantages

- ▶ cost saving. The standard tool offers outstanding price advantages in comparison with special tooling.
- ▶ universal tooling for milling, turning and robotic applications.
The range of 0.25 mm enables the application of our deburring fork in holes with large tolerances.
Reducing set-up time and cost!
- ▶ increased production. Deburring fork EW 100 G deburrs automatically with one set-up and short cycle times.
Expensive and extensive manual operations are no longer required.

Operation



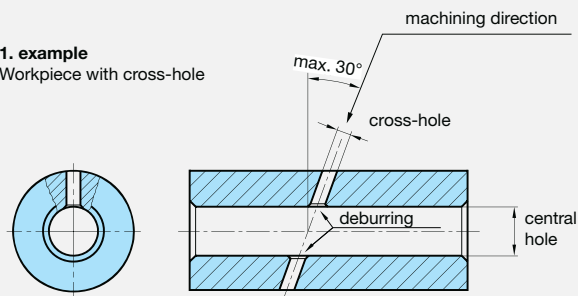
Step by step:

The automated internal and external deburring with deburring fork EW 100 G is a simple and economic alternative to common, extensive manual operations. Just one tool is required for all machining steps.

Application examples

1. example

Workpiece with cross-hole

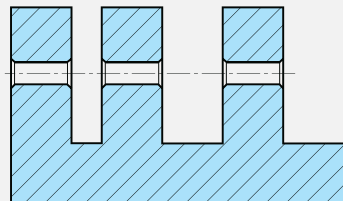


Please note when machining workpieces with cross-holes:

- the diameter of the cross-hole must be no more than 35% of the central hole diameter
- the diameter of the cross-hole must be 40% larger than the cutting length l_c

2. example

Workpiece with multiple interrupted cut zones



Universal application:

The new stock standard deburring fork is capable of machining workpieces with cross-holes as well as workpieces with multiple interrupted cuts. It cleanly removes the burrs from both entries and exits of holes.

Deburring fork with straight shank

Series no.

4100



Tool material

Solid carbide

Coating

Uncoated

Shank form

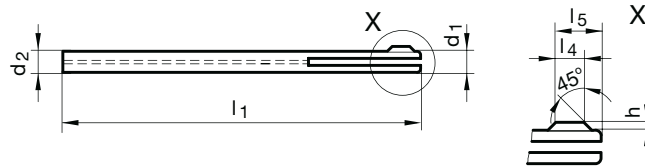
cyl.

Cutting direction



Material		Suitability
P	Steel	●
M	Stainless steel	●
K	Cast iron	●
N	Aluminum	○
S	Ni / Ti alloys	○
H	Hardened steel	○
		●=Optimal ○=Secondary

- with internal coolant supply
- for holding in collet chucks



Ø-range	d1	d2	l1	l4	l5	h	Code no.	EDP Number
	mm	mm	mm	mm	mm	mm		
1.91 -2.15	1.900	1.900	80.000	1.000	2.050	0.350	2.000	9041000020000
2.16 -2.40	2.100	2.100	80.000	1.500	2.600	0.400	2.250	9041000022500
2.41 -2.70	2.400	2.400	80.000	1.500	2.900	0.400	2.500	9041000025000
2.71 -2.90	2.600	2.600	90.000	1.500	2.950	0.450	2.750	9041000027500
2.91 -3.25	2.900	2.900	90.000	2.000	3.650	0.450	3.000	9041000030000
3.26 -3.60	3.200	3.200	90.000	2.000	3.800	0.600	3.500	9041000035000
3.61 -4.25	3.600	3.600	90.000	2.000	4.100	0.700	4.000	9041000040000
4.26 -4.75	4.200	4.200	90.000	2.500	4.600	0.700	4.500	9041000045000
4.76 -5.30	4.700	4.700	100.000	2.500	4.850	0.750	5.000	9041000050000
5.31 -5.80	5.200	5.200	100.000	2.500	4.850	0.750	5.500	9041000055000
5.81 -6.20	5.600	5.600	110.000	3.000	5.800	0.800	6.000	9041000060000
6.21 -6.70	6.000	6.000	110.000	3.000	5.900	0.900	6.500	9041000065000
6.71 -7.10	6.500	6.500	110.000	3.000	5.850	0.850	7.000	9041000070000
7.11 -7.60	6.900	6.900	110.000	3.500	6.950	0.950	7.500	9041000075000
7.61 -8.05	7.300	7.300	110.000	3.500	7.000	1.000	8.000	9041000080000

Speeds & Feeds - Deburring forks

ISO	Hardness	SFM	Feed Rate IPR per Ø						
			3	6	8	10	12	16	20
P	≤ 25 HRC	50	0.0059	0.0059	0.0079	0.0079	0.0079	0.0079	0.0079
	> 25 HRC	35	0.0039	0.0039	0.0059	0.0059	0.0059	0.0059	0.0059
M	≤ 20 HRC	40	0.0039	0.0039	0.0059	0.0059	0.0059	0.0059	0.0059
	> 20 HRC	25	0.0039	0.0039	0.0059	0.0059	0.0059	0.0059	0.0059
K	≤ 350 HB	65	0.0059	0.0059	0.0079	0.0079	0.0079	0.0079	0.0079
N	≤ 3% Si	100	0.0079	0.0079	0.0098	0.0098	0.0098	0.0098	0.0098
	> 3% Si	100	0.0079	0.0079	0.0098	0.0098	0.0098	0.0098	0.0098

Deburring fork with reinforced shank

Series no.

4101



Material	Suitability
P Steel	●
M Stainless steel	●
K Cast iron	●
N Aluminum	○
S Ni / Ti alloys	○
H Hardened steel	○
●=Optimal ○=Secondary	

for clamping in hydraulic & shrink fit chucks
 • with shank to DIN 6535
 • with internal coolant supply

Tool material

Solid carbide

Coating

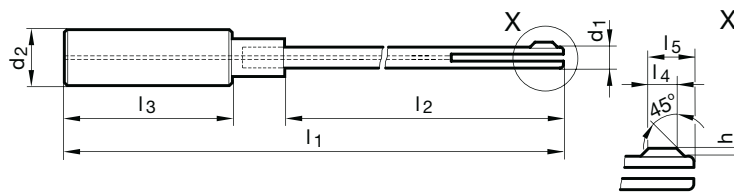
Uncoated

Shank form

HA

Cutting direction

R



Ø-range	d1	d2 h6	l1	l2	l3	l4	l5	h	Code no.	EDP Number
	mm	mm	mm	mm	mm	mm	mm	mm		
1.91 -2.15	1.900	6.000	120.000	69.000	36.000	1.000	2.050	0.350	2.000	9041010020000
2.16 -2.40	2.100	6.000	120.000	69.000	36.000	1.500	2.600	0.400	2.250	9041010022500
2.41 -2.70	2.400	6.000	120.000	69.000	36.000	1.500	2.900	0.400	2.500	9041010025000
2.71 -2.90	2.600	6.000	130.000	79.000	36.000	1.500	2.950	0.450	2.750	9041010027500
2.91 -3.25	2.900	6.000	130.000	79.000	36.000	2.000	3.650	0.450	3.000	9041010030000
3.26 -3.60	3.200	10.000	135.000	80.000	40.000	2.000	3.800	0.600	3.500	9041010035000
3.61 -4.25	3.600	10.000	135.000	80.000	40.000	2.000	4.100	0.700	4.000	9041010040000
4.26 -4.75	4.200	10.000	135.000	80.000	40.000	2.500	4.600	0.700	4.500	9041010045000
4.76 -5.30	4.700	10.000	145.000	80.000	40.000	2.500	4.850	0.750	5.000	9041010050000
5.31 -5.80	5.200	10.000	145.000	90.000	40.000	2.500	4.850	0.750	5.500	9041010055000
5.81 -6.20	5.600	10.000	155.000	90.000	40.000	3.000	5.800	0.800	6.000	9041010060000
6.21 -6.70	6.000	16.000	165.000	102.000	48.000	3.000	5.900	0.900	6.500	9041010065000
6.71 -7.10	6.500	16.000	165.000	102.000	48.000	3.000	5.850	0.850	7.000	9041010070000
7.11 -7.60	6.900	16.000	165.000	102.000	48.000	3.500	6.950	0.950	7.500	9041010075000
7.61 -8.05	7.300	16.000	165.000	102.000	48.000	3.500	7.000	1.000	8.000	9041010080000

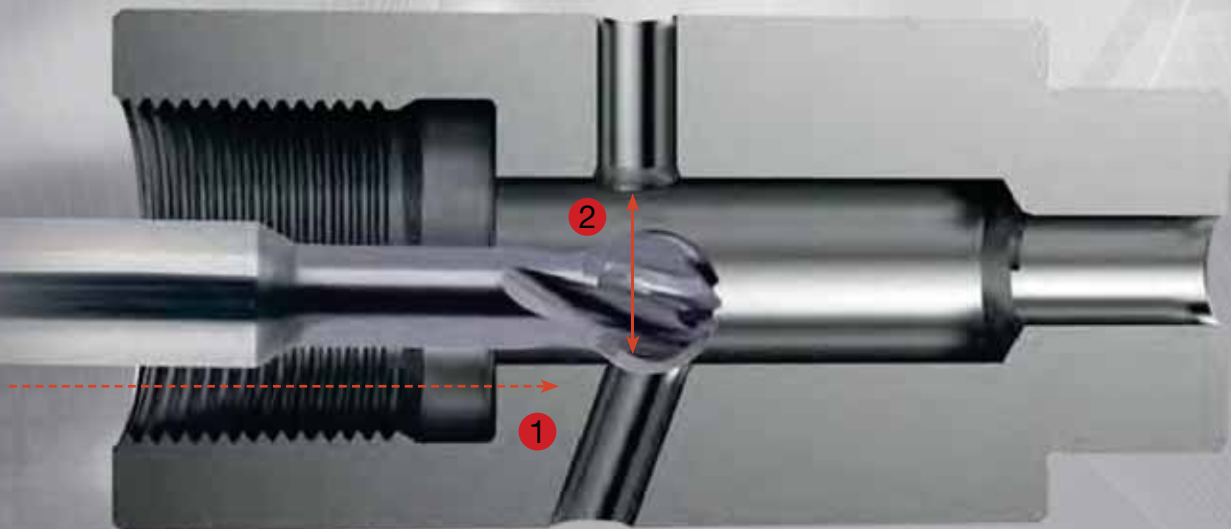
Speeds & Feeds - Deburring forks

ISO	Hardness	SFM	Feed Rate IPR per Ø						
			3	6	8	10	12	16	20
P	≤ 25 HRC	50	0.0059	0.0059	0.0079	0.0079	0.0079	0.0079	0.0079
	> 25 HRC	35	0.0039	0.0039	0.0059	0.0059	0.0059	0.0059	0.0059
M	≤ 20 HRC	40	0.0039	0.0039	0.0059	0.0059	0.0059	0.0059	0.0059
	> 20 HRC	25	0.0039	0.0039	0.0059	0.0059	0.0059	0.0059	0.0059
K	≤ 350 HB	65	0.0059	0.0059	0.0079	0.0079	0.0079	0.0079	0.0079
N	≤ 3% Si	100	0.0079	0.0079	0.0098	0.0098	0.0098	0.0098	0.0098
	> 3% Si	100	0.0079	0.0079	0.0098	0.0098	0.0098	0.0098	0.0098

Ball-nose deburring mill

Cross-holes and recessed edges, even those consisting of three-dimensional edge contours, can be deburred or chamfered with process reliability using the ball-nose deburring mill. Available in 2-flute or 4-flute designs, these ball-nose deburring mills are custom-made, designed for specifically for each unique application.

1. axial entry in main hole
2. radial deburring/chamfering cross hole



EWR 500 deburring reamer

Deburr cross holes with EWR 500

When using conventional reamers to deburr cross-drilled holes, the burr is simply folded over back into the cross-hole. However, while using the EWR 500 deburring reamer, the burr is consistently cut and removed from the part.



The radially exiting coolant pressure closes the gap on the opposite side between the reamer and the wall of the hole. The contact pressure enables clean removal of the burr at the root. The deburring reamer can also be applied for smooth surface finish requirements, as the wall of the hole is not damaged.



The programmed path of the deburring reamer is adjusted based on the application to accommodate the location and quantity of exit holes.

Constant contact pressure is maintained against the sidewall of the hole due to multiple coolant ports. This prevents a reduction in contact pressure while the tool feeds past the cross-holes.

EWR 500

- » the surface finish quality of the machined hole is retained
- » **short process times** as rapid feed rates are applied between cross-holes
- » **flexible diameter range**

Functional diameter range of standard program

Ø d1 (mm)	Hole diameter	
	from Ø [mm]	up to Ø [mm]
2.97	2.99	3.04
3.97	3.99	4.04
4.97	4.99	5.04
5.97	5.99	6.04
7.97	7.99	8.04
9.97	9.99	10.04
11.97	11.99	12.04

EWR 500 Deburring reamers

Series no. **4103**

Tool material **Solid carbide**

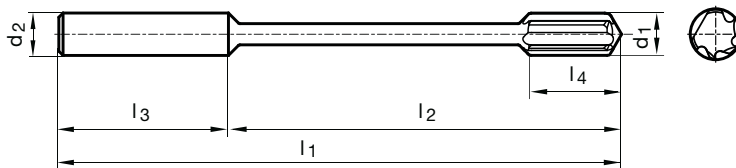
Coating nano-A

Shank form DIN 6535-HA

Cutting direction

Material		Suitability
P	Steel	●
M	Stainless steel	●
K	Cast iron	●
N	Aluminum	○
S	Ni / Ti alloys	●
H	Hardened steel	○
●=Optimal ○=Secondary		

deburring without damage to the bore surface
• short process times due to low feed rate
• minimum cooling pressure 15 bar (220psi)



d1	d2 h6	l1	l2	l3	l4	Code no.	EDP Number
mm	mm	mm	mm	mm	mm		
2.970	4.000	101.000	73.000	28.000	12.700	2.970	9041030029700
3.970	4.000	101.000	73.000	28.000	13.000	3.970	9041030039700
4.970	6.000	121.000	85.000	36.000	13.300	4.970	9041030049700
5.970	6.000	121.000	85.000	36.000	13.600	5.970	9041030059700
7.970	8.000	132.000	96.000	36.000	18.100	7.970	9041030079700
9.970	10.000	132.000	92.000	40.000	21.700	9.970	9041030099700
11.970	12.000	133.000	88.000	45.000	19.000	11.970	9041030119700

Speeds & Feeds - Deburring reamers

ISO	Hardness	SFM	Feed Rate IPR per Ø						
			3	6	8	10	12	16	20
P	≤ 25 HRC	490	0.0012	0.0012	0.0020	0.0020	0.0020	0.0020	0.0020
	> 25 HRC	395	0.0012	0.0012	0.0012	0.0012	0.0012	0.0012	0.0012
M	≤ 20 HRC	395	0.0012	0.0012	0.0020	0.0020	0.0020	0.0020	0.0020
	> 20 HRC	330	0.0012	0.0012	0.0012	0.0012	0.0012	0.0012	0.0012
K	≤ 350 HB	490	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020
N	≤ 3% Si	490	0.0012	0.0012	0.0012	0.0012	0.0012	0.0012	0.0012
	> 3% Si	490	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020	0.0020
S		330	0.0012	0.0012	0.0012	0.0012	0.0012	0.0012	0.0012



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