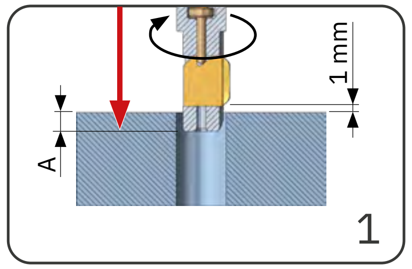
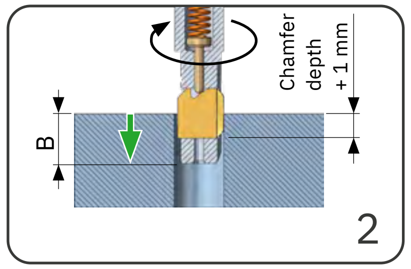
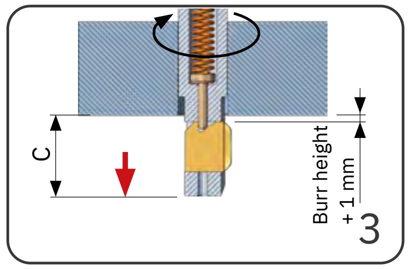
SNAP PROCESS STEPS



- Rapid feed to position **A** or 1.0 mm distance
- Spindle rotation clockwise
- External coolant on



- Working feed to position **B** or chamfer depth + 1.0 mm



- Rapid feed to position **C** or burr height + 1.0 mm
- Dwell time 1 sec.

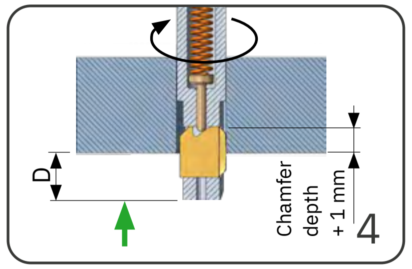
Example

G0 Z-3.0
S1100 M3
M8

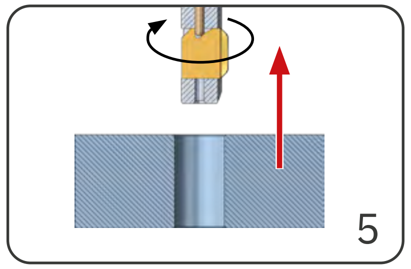
G1 Z-8.0 F165

G0 Z-29.5[1)]

[1)] 29.5=16.5+13.0



- Working feed to position **D** or chamfer depth + 1 mm



- Rapid traverse out of the workpiece

G1 Z-24.5[2)]

G0 Z+2.0

[2)] 24.5=16.5+8.0

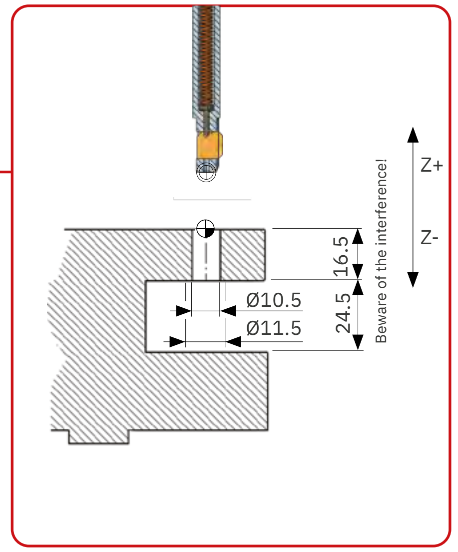
DIMENSION TABLE FOR PROGRAMMING

	A mm	B mm	C mm	D mm
SNAP2	1.0	3.0	5.0	3.0
SNAP3	1.0	3.5	6.0	3.5
SNAP4	1.0	4.0	7.0	4.0
SNAP5	2.0	6.0	9.5	6.0
SNAP8	3.0	8.0	13.0	8.0
SNAP12	5.5	10.5	15.5	10.5
SNAP20	6.0	12.0	18.0	12.0

The cutting data listed are guide values! For materials that are difficult to machine or uneven bore edges, we recommend applying cutting speeds that are at the lower end of the range.

When using DR blades in the event of a malfunction, always evacuate the tool from the workpiece with the spindle rotating.

APPLICATION AND PROGRAMMING EXAMPLE



Application data

Workpiece height:	16.5 mm
Bore Ø:	Ø10.5 mm
Chamfer Ø:	Ø11.5 mm
Material:	P3 / steel C45
Machining:	both bore edges

Tool and blade selection

Tool:	SNAP8/10.5
Blade:	GH-Q-M-03726, forward and backward cutting
Tool Ø D2:	Ø12.1 mm (note interfering edge)
Working length:	68.0 mm (note interfering edge)

Cutting data

Cutting speed V_c:	30–50 m/min.
Tool working feed:	0.1–0.2 mm/rev

SNAP2–20 GS CUTTING DATA[1)]

	Description	Tensile str. RM (MPa)*	Hardness (HB)	Hardn. (HRC)	SNAP 2/3/4/5 GS geometry			SNAP 8/12/20 GS geometry		
					VC	FZ	B*	VC	FZ	B*
P0	Low-carbon steel, long-chipping, C <0.25%	<530	<125	–	40–60	0.02–0.1	A	40–60	0.1–0.3	T
P1	Low-carbon steel, short-chipping, C <0.25%	<530	<125	–	40–60	0.02–0.1	A	40–60	0.1–0.3	T
P2	Steel with carbon content C >0.25%	>530	<220	<25	40–60	0.02–0.1	A	40–60	0.1–0.3	T
P3	Alloy steel and tool steel, C >0.25%	600–850	<330	<35	30–50	0.02–0.1	A	30–50	0.1–0.2	T
P4	Alloy steel and tool steel, C >0.25%	850–1400	340–450	35–48	30–50	0.02–0.1	A	30–50	0.1–0.2	A
P5	Ferritic, martensitic and stainless PH steel	600–900	<330	<35	20–40	0.02–0.05	A	20–40	0.05–0.15	A
P6	High-strength ferritic, martensitic and PH stainless steel	900–1350	350–450	35–48	20–40	0.02–0.05	A	20–40	0.05–0.15	A
M1	Austenitic stainless steel	<600	130–200	–	10–20	0.02–0.05	A	10–20	0.05–0.15	A
M2	High-strength austenitic stainless steel	600–800	150–230	<25	10–20	0.02–0.05	A	10–20	0.05–0.15	A
M3	Duplex stainless steel	<800	135–275	<30	10–20	0.02–0.05	A	10–20	0.05–0.15	A
K1	Cast iron	125–500	120–290	<32	50–90	0.02–0.1	A	50–90	0.1–0.3	T
K2	Ductile cast iron with up to medium strength	<600	130–260	<28	40–60	0.02–0.1	A	40–60	0.1–0.3	T
K3	High-strength cast iron and bainitic cast iron	>600	180–350	<43	40–60	0.02–0.1	A	40–60	0.1–0.3	T
N1	Wrought aluminium alloys	–	–	–	70–120	0.05–0.15	D	70–120	0.1–0.3	T
N2	Aluminium alloys with low Si content	–	–	–	70–120	0.05–0.15	D	70–120	0.1–0.3	T
N3	Aluminium alloys with high Si content	–	–	–	70–120	0.05–0.15	D	70–120	0.1–0.3	T
N4	Copper, brass and zinc base	–	–	–	30–70	0.02–0.05	D	30–70	0.05–0.15	T
S1	Iron-based heat-resistant alloys	500–1200	160–260	25–48	8–15	0.02–0.05	A	8–15	0.02–0.1	A
S2	Cobalt-based heat-resistant alloys	1000–1450	250–450	25–48	8–15	0.02–0.05	A	8–15	0.02–0.1	A
S3	Nickel-based heat-resistant alloys	600–1700	160–450	<48	8–15	0.02–0.05	A	8–15	0.02–0.1	A
S4	Titanium and titanium alloys	900–1600	300–400	33–48	8–15	0.02–0.05	A	8–15	0.02–0.1	A

[1)] For cutting data for DF and DR blade geometry, see following page
* coating for blades

SNAP5–20 DF/DR CUTTING DATA

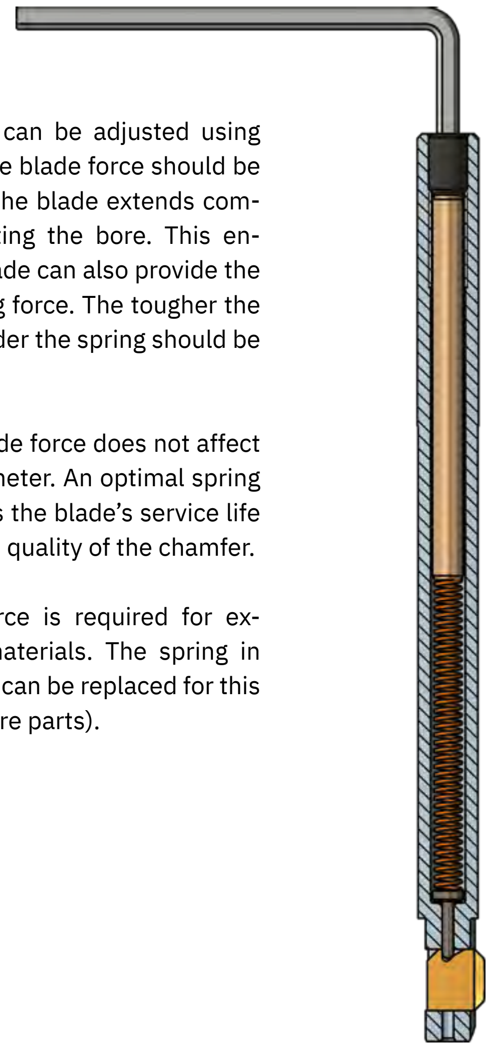
	Description	Tensile str. RM (MPa)*	Hardness (HB)	Hardn. (HRC)	SNAP5-20 DF DF geometry			SNAP5-20 DR DR geometry		
					VC	FZ	B*	VC	FZ	B*
P0	Low-carbon steel, long-chipping, C <0.25%	<530	<125	–	40–60	0.02–0.06	A	40–60	0.05–0.1	A
P1	Low-carbon steel, short-chipping, C <0.25%	<530	<125	–	40–60	0.02–0.06	A	40–60	0.05–0.1	A
P2	Steel with carbon content C >0.25%	>530	<220	<25	40–60	0.02–0.06	A	40–60	0.05–0.1	A
P3	Alloy steel and tool steel, C >0.25%	600–850	<330	<35	30–50	0.02–0.06	A	30–50	0.05–0.1	A
P4	Alloy steel and tool steel, C >0.25%	850–1400	340–450	35–48	30–50	0.02–0.06	A	30–50	0.05–0.1	A
P5	Ferritic, martensitic and stainless PH steel	600–900	<330	<35	20–40	0.02–0.06	A	20–40	0.05–0.08	A
P6	High-strength ferritic, martensitic and PH stainless steel	900–1350	350–450	35–48	20–40	0.02–0.06	A	20–40	0.05–0.08	A
M1	Austenitic stainless steel	<600	130–200	–	10–20	0.02–0.06	A	10–20	0.05–0.08	A
M2	High-strength austenitic stainless steel	600–800	150–230	<25	10–20	0.02–0.06	A	10–20	0.05–0.08	A
M3	Duplex stainless steel	<800	135–275	<30	10–20	0.02–0.06	A	10–20	0.05–0.08	A
K1	Cast iron	125–500	120–290	<32	50–90	0.02–0.06	A	50–90	0.05–0.1	A
K2	Ductile cast iron with up to medium strength	<600	130–260	<28	40–60	0.02–0.06	A	40–60	0.05–0.1	A
K3	High-strength cast iron and bainitic cast iron	>600	180–350	<43	40–60	0.02–0.06	A	40–60	0.05–0.1	A
N1	Wrought aluminium alloys	–	–	–	70–120	0.02–0.08	D	70–120	0.05–0.2	D
N2	Aluminium alloys with low Si content	–	–	–	70–120	0.02–0.08	D	70–120	0.05–0.2	D
N3	Aluminium alloys with high Si content	–	–	–	70–120	0.02–0.08	D	70–120	0.05–0.2	D
N4	Copper, brass and zinc base	–	–	–	30–70	0.02–0.08	D	30–70	0.05–0.15	D
S1	Iron-based heat-resistant alloys	500–1200	160–260	25–48	8–15	0.02–0.05	A	8–15	0.02–0.06	A
S2	Cobalt-based heat-resistant alloys	1000–1450	250–450	25–48	8–15	0.02–0.05	A	8–15	0.02–0.06	A
S3	Nickel-based heat-resistant alloys	600–1700	160–450	<48	8–15	0.02–0.05	A	8–15	0.02–0.06	A
S4	Titanium and titanium alloys	900–1600	300–400	33–48	8–15	0.02–0.05	A	8–15	0.02–0.06	A

* coating for blades

The cutting data listed are guide values! For materials that are difficult to machine or slightly uneven bore edges, we recommend applying cutting speeds that are at the lower end of the range.

When using DR blades in the event of a malfunction, always evacuate the tool from the workpiece with the spindle rotating.

SETTING THE BLADE FORCE



The blade force can be adjusted using the set screw. The blade force should be set so high that the blade extends completely after exiting the bore. This ensures that the blade can also provide the necessary cutting force. The tougher the material, the harder the spring should be set.

However, the blade force does not affect the chamfer diameter. An optimal spring tension increases the blade's service life and improves the quality of the chamfer.

A high blade force is required for extremely tough materials. The spring in SNAP5, 8 and 12 can be replaced for this purpose (see spare parts).

How it works:
Clockwise rotation increases the spring load (tough steel, Inconel, titanium).

Anti-clockwise rotation reduces the spring load (aluminium).

Important!

The blade force does not define the chamfer diameter. This is essentially determined by the blade selected. Each blade produces a specific chamfer diameter.

BLADE FORCE SETTING TABLE

Tool	Thread size	Standard setting	max. screw-in depth	
	of set screw	Number of revolutions	mm	Number of revolutions
SNAP2/3/4	M3	4	6.0	12
SNAP5	M3	4	6.0	12
SNAP5 thread	M3	4	14.0	28
SNAP8	M5	4	11.0	13
SNAP12	M5	4	11.0	13
SNAP20	M5	4	11.0	13