

SNAP

With SNAP, chamfering couldn't be simpler or safer. This productivity champion is in a league of its own.

The advantages – Your benefit

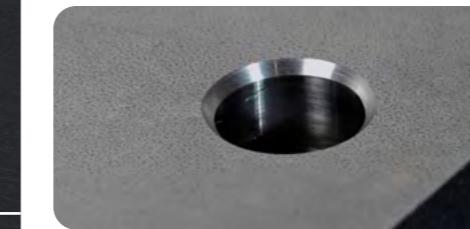


SNAP reliably removes burrs and chamfers hard to reach bore edges without turning the workpiece or stopping the spindle.

The mechanical, spring-controlled operating principle and the robust design ensure a reliable and safe process.



SNAP is specially designed for CNC operation with large batch sizes. It is characterised by extremely quick and easy blade changes that can be carried out directly on the machine.



Regardless of the height of the surface to be machined, SNAP always produces a consistent chamfer.



THE RANGE

Standard version

Bore Ø range mm	Chamfering capacity max. mm	Series	Catalogue page
Ø2.0–2.9	0.2–0.3	SNAP2	74
Ø3.0–3.9	0.3–0.5	SNAP3	76
Ø4.0–5.0	0.6–0.75	SNAP4	78
Ø5.0–10.0	1.00	SNAP5	80
Ø8.0–12.0	0.5–0.75	SNAP8	82
Ø12.0–20.0	1.00	SNAP12	84
Ø25.0–35.0	1.50	SNAP20	86

Cassette tools

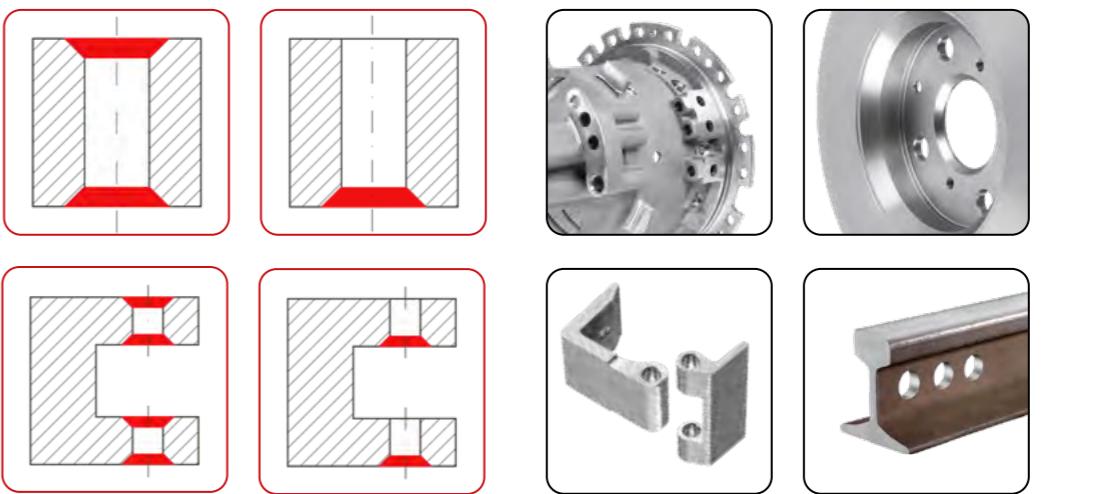
For installation in holder/combination tools for machining large bore diameters

Bore Ø range mm	Chamfering capacity max. mm	Series	Catalogue page
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
> Ø12.6	1.50	SNAP5/12.6	94
> Ø25.0	1.50	SNAP20/25.0	94
> Ø35.0	1.50	SNAP20/35.0	94

For **thread series**: see page 90.

If the required tool is not included in the standard range above, our **INDIVIDUAL** range often has a possible solution. If required, we can also develop custom solutions that are fully tailored to your application.

FIELD OF APPLICATION



OPERATING PRINCIPLE

The SNAP chamfering blade is kept movable by a spring-loaded control bolt in the tool body. The specially ground SNAP blade, which cuts forwards and backwards or backward cutting only, produces the desired chamfer in the working feed.

Upon reaching the defined chamfer size, the blade retracts into the tool body. The chamfer size and angle are geometrically defined by the blade and can only be changed by using a different SNAP blade.

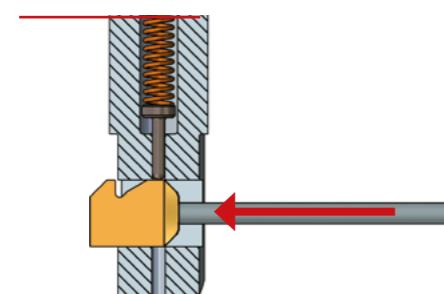
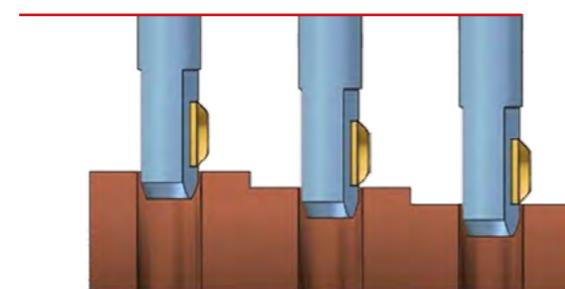
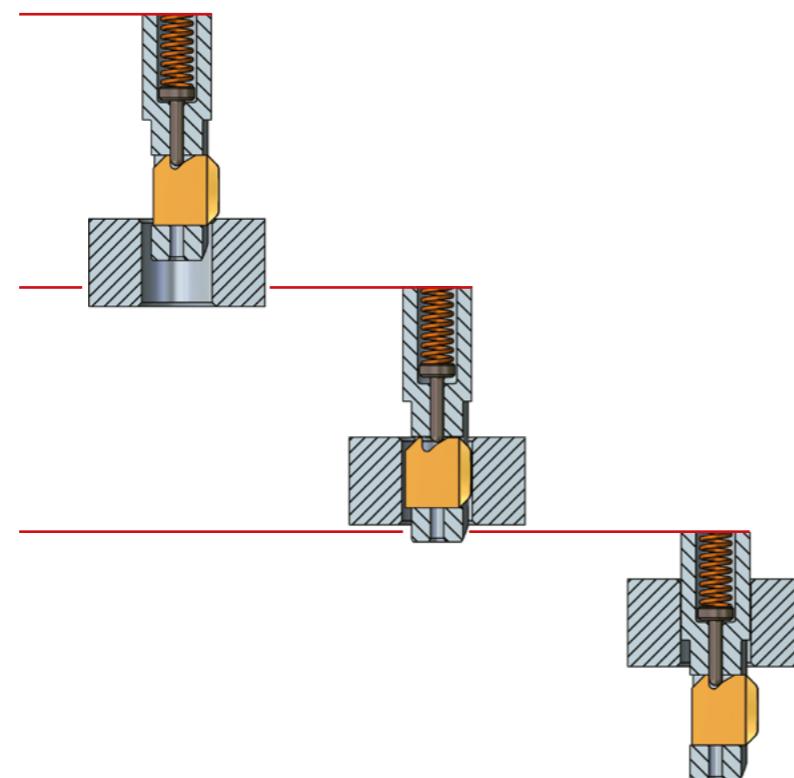
A specially designed sliding section of the blade prevents the bore from being damaged. When exiting the bore, the spring-loaded control bolt returns the blade to its neutral position to machine the edge of the bore.

Compensation of height differences
SNAP automatically compensates for possible height differences in the components to be machined, e.g. cast parts. The blade only begins to retract or cut on contact with the workpiece. This means that the chamfer size remains constant.

BLADE CHANGE

The coated carbide blades can be replaced by hand in a matter of seconds.

A blunt object can be used as an optional aid.

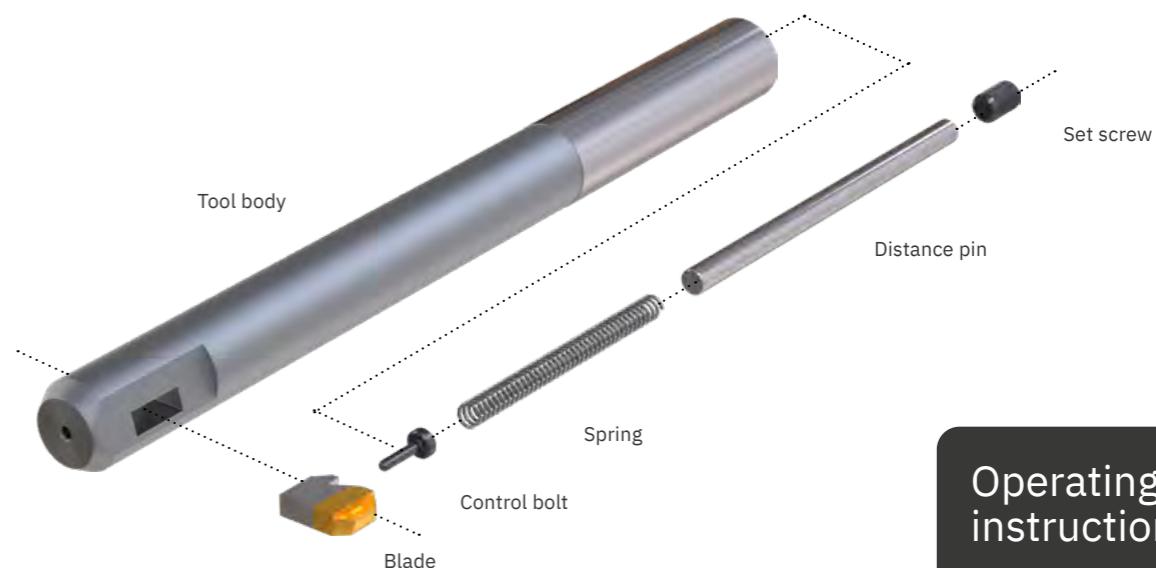
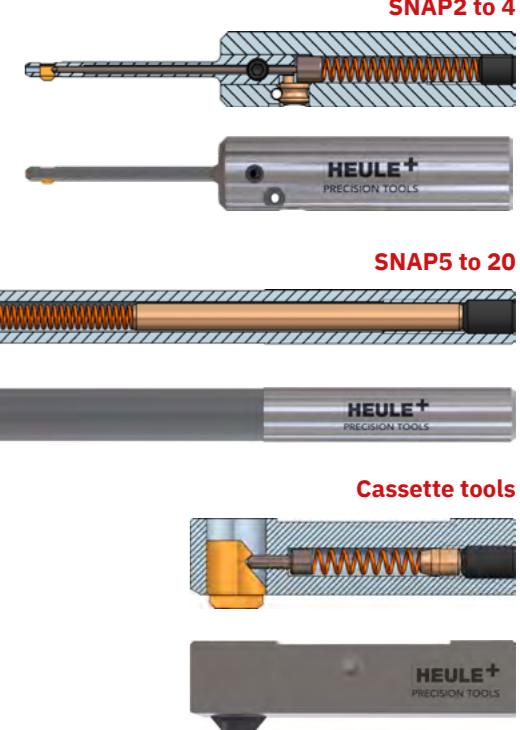


TOOL DESIGN

SNAP is HEULE's answer to the demand for ever simpler and more flexible manufacturing solutions.

The SNAP tool family is made up of 3 groups of tools. These are SNAP2, 3 and 4, SNAP5 to 20 and the cassette tools.

The tool body for SNAP2 to 4 consists of a tool body and blade housing, while the tool body for SNAP5 to 20 is designed as one piece. The cassette tools have the same operating principle as SNAP5 to 20, but in a compact design, making it ideal for installation in a tool holder.

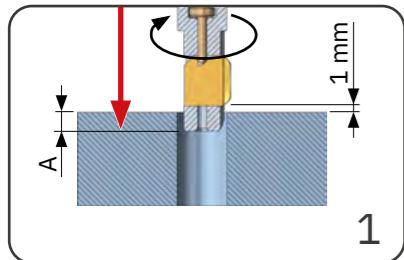


Operating instructions

- > Blade change
- heule.com > Service > Media & download centre

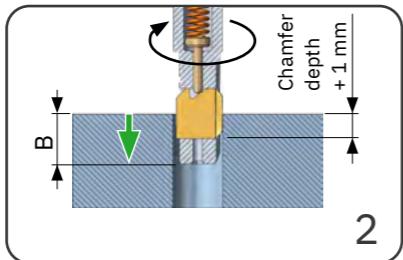


SNAP PROCESS STEPS



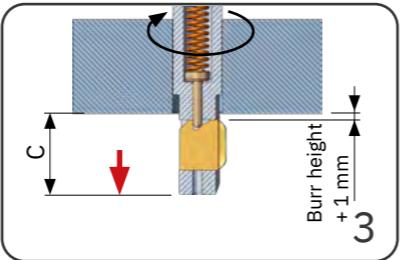
- Rapid feed to position **A** or 1.0 mm distance
- Spindle rotation clockwise
- External coolant on

Example
G0 Z-3.0
S1100 M3
M8



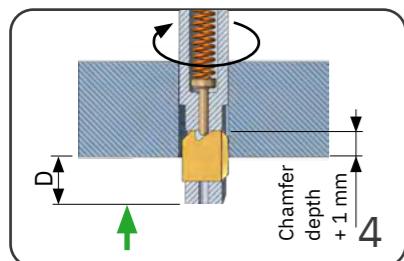
- Working feed to position **B** or chamfer depth + 1.0 mm

G1 Z-8.0 F165



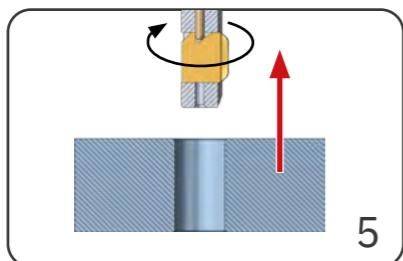
- Rapid feed to position **C** or burr height + 1.0 mm
- Dwell time 1 sec.

G0 Z-29.5¹⁾
¹⁾29.5=16.5+13.0



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

G1 Z-24.5²⁾
²⁾24.5=16.5+8.0



- Rapid traverse out of the workpiece

G0 Z+2.0

DIMENSION TABLE FOR PROGRAMMING

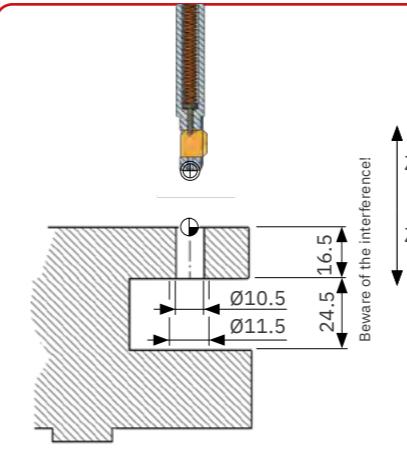
	A mm	B mm	C mm	D mm
SNAP2	1.0	3.0	5.0	3.0
SNAP3	1.0	3.5	6.0	3.5
SNAP4	1.0	4.0	7.0	4.0
SNAP5	2.0	6.0	9.5	6.0
SNAP8	3.0	8.0	13.0	8.0
SNAP12	5.5	10.5	15.5	10.5
SNAP20	6.0	12.0	18.0	12.0



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 DATA¹⁾

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

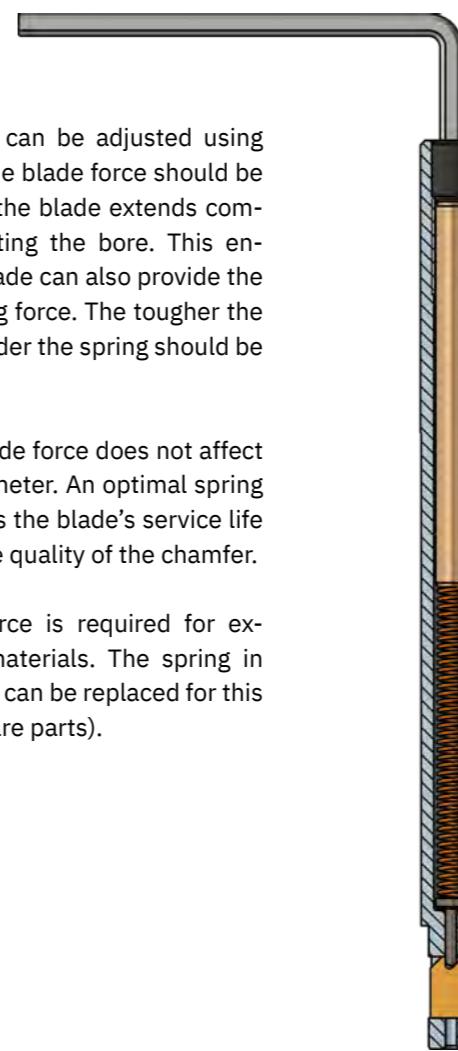
* coating for blades

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

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).

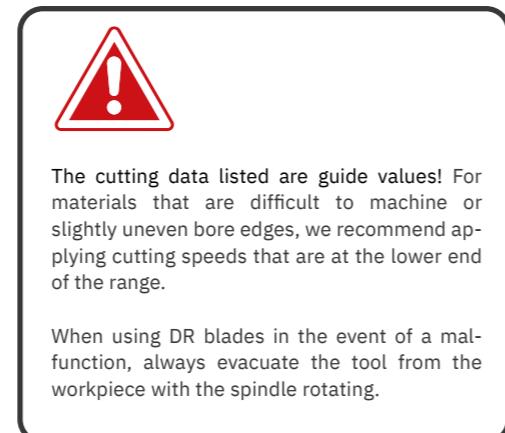
How it works:
Clockwise rotation increases the spring load (tough steel, Inconel, titanium).

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 of set screw	Standard setting Number of revolutions	max. screw-in depth	
			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

Selecting the correct SNAP tool

TOOL SELECTOR TOOL TABLES

The HEULE Tool Selector is the quickest and easiest way to find the right tool.

Send your search results along with your application data to your HEULE representative, who will check the application and offer you options if required.

If your search produces no results, please contact HEULE with your application data anyway. We also develop customised solutions and are happy to advise you.

The correct tool is primarily determined by the bore diameter to be machined. This table also shows the possible chamfer diameters, working lengths and tool diameters.

The tool tables cover the standard range. The tool part numbers highlighted in green are available from stock.

SNAP also offers various blade coatings to meet the requirements based on the type of material.

If the standard does not fit your needs, please do not hesitate to contact your HEULE representative for advice, either using the enquiry form (www.heule.com > contact) or by telephone.

Tool Selector

> Step-by-step guide to find the right solution

heule.com/en/tool-selector/snap



Tool Selector

Still have questions?

> HEULE Consulting and Support

heule.com/en/contact



CONFIGURING SNAP TOOLS

1. Select tool



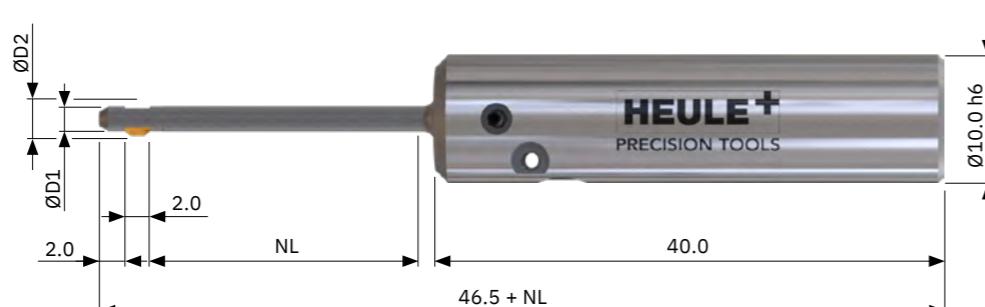
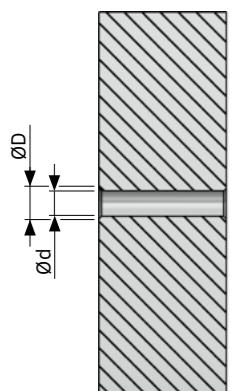
Select the appropriate tool for the bore diameter from the tool table. Note the different working lengths for SNAP2 to SNAP4.

2. Select blade



Select the appropriate blade for the required chamfer diameter from the blade table. Please refer to the cutting data table on page 69 for the correct blade coating.

SNAP2 Ø2.0 mm to 2.9 mm



Tool

Standard tool **without** blade

- The blades must always be ordered separately.
- Different blade options are available for each bore diameter, thus offering various chamfer diameters. However, a blade is only designed for a defined chamfer diameter. The achievable chamfer diameter may vary slightly depending on the material, blade force, cutting parameters and application.
- With cylindrical shank

Bore Ø d	Chamfer Ø D	Tool Ø D1	Max. Ø D2	Part no. NL = 10.0 mm	Part no. NL = 20.0 mm
2.0	2.4	1.95		SNAP2/2.0/10	SNAP2/2.0/20
2.1	2.4 / 2.6	2.05		SNAP2/2.1/10	SNAP2/2.1/20
2.2	2.4 / 2.6 / 2.8	2.15		SNAP2/2.2/10	SNAP2/2.2/20
2.3	2.6 / 2.8	2.25		SNAP2/2.3/10	SNAP2/2.3/20
2.4	2.6 / 2.8 / 3.0	2.35		SNAP2/2.4/10	SNAP2/2.4/20
2.5	2.8 / 3.0	2.45		SNAP2/2.5/10	SNAP2/2.5/20
2.6	2.8 / 3.0 / 3.2	2.55		SNAP2/2.6/10	SNAP2/2.6/20
2.7	3.0 / 3.2	2.65		SNAP2/2.7/10	SNAP2/2.7/20
2.8	3.0 / 3.2 / 3.4	2.75		SNAP2/2.8/10	SNAP2/2.8/20
2.9	3.2 / 3.4	2.85		SNAP2/2.9/10	SNAP2/2.9/20

Beware of the possible interference!



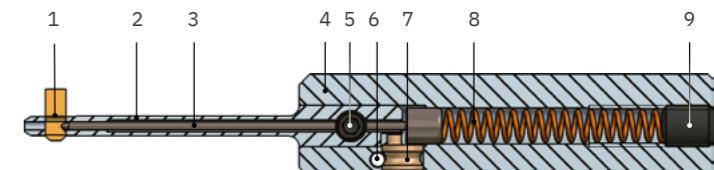
Parts in stock highlighted in green

SNAP2 Ø2.0 mm to 2.9 mm

Blade GS geometry 90°

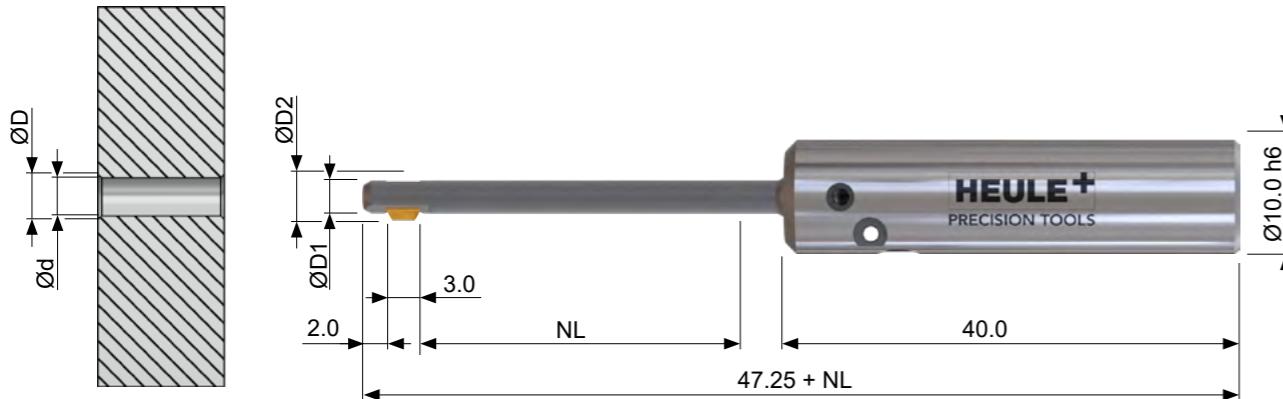
max. chamfer Ø	Part no. forward and backward cutting		Part no. backward cutting only	
	Coating A for steel, titanium, Inconel	Coating D for aluminium	Coating A for steel, titanium, Inconel	Coating D for aluminium
2.4	GH-Q-M-40031	GH-Q-M-40032	GH-Q-M-40631	GH-Q-M-40632
2.6	GH-Q-M-40051	GH-Q-M-40052	GH-Q-M-40651	GH-Q-M-40652
2.8	GH-Q-M-40071	GH-Q-M-40072	GH-Q-M-40671	GH-Q-M-40672
3.0	GH-Q-M-40091	GH-Q-M-40092	GH-Q-M-40691	GH-Q-M-40692
3.2	GH-Q-M-40111	GH-Q-M-40112	GH-Q-M-40711	GH-Q-M-40712
3.4	GH-Q-M-40131	GH-Q-M-40132	GH-Q-M-40731	GH-Q-M-40732

Spare parts



Item	Description	Part no.
1	Blade	see above
2	Blade housing	see page 98
3	Control bolt	GH-Q-E-0236 (NL: 10.0 mm) GH-Q-E-0237 (NL: 20.0 mm)
4	Tool body SNAP2-4 diameter 10.0 h6	GH-Q-G-5024
	Tool body assembly SNAP2-4 diameter 10.0 h6 incl. eccentric GH-S-E-0031 incl. roll pin GH-C-E-0811	GH-Q-G-5025
5	Clamping screw M3x3.3	GH-H-S-1075
6	Roll pin SNAP2-4	GH-C-E-0811
7	Eccentric SNAP2-4	GH-S-E-0031
8	Pressure spring Ø3.2xØ0.45x23.0	GH-H-F-0047
9	Set screw M4x5.0 DIN913 Allen key SW1.5 for item 9	GH-H-S-0134 GH-H-S-2101

SNAP3 Ø3.0 mm to 3.9 mm



Tool

Standard tool **without** blade

- The blades must always be ordered separately.
- Different blade options are available for each bore diameter, thus offering various chamfer diameters. However, a blade is only designed for a defined chamfer diameter. The achievable chamfer diameter may vary slightly depending on the material, blade force, cutting parameters and application.
- With cylindrical shank

Bore Ø d	Chamfer Ø D	Tool Ø D1	Max. Ø D2	Part no. NL = 10.0 mm	Part no. NL = 20.0 mm	Part no. NL = 30.0 mm
3.0	3.3 / 3.6	2.9		SNAP3/3.0/10	SNAP3/3.0/20	SNAP3/3.0/30
3.1	3.6 / 3.9	3.0		SNAP3/3.1/10	SNAP3/3.1/20	SNAP3/3.1/30
3.2	3.6 / 3.9/4.2	3.1		SNAP3/3.2/10	SNAP3/3.2/20	SNAP3/3.2/30
3.3	3.9 / 4.2	3.2		SNAP3/3.3/10	SNAP3/3.3/20	SNAP3/3.3/30
3.4	3.9 / 4.2	3.3		SNAP3/3.4/10	SNAP3/3.4/20	SNAP3/3.4/30
3.5	3.9 / 4.2/4.5	3.4		SNAP3/3.5/10	SNAP3/3.5/20	SNAP3/3.5/30
3.6	4.2 / 4.5	3.5		SNAP3/3.6/10	SNAP3/3.6/20	SNAP3/3.6/30
3.7	4.2 / 4.5	3.6		SNAP3/3.7/10	SNAP3/3.7/20	SNAP3/3.7/30
3.8	4.2 / 4.5 4.8	3.7		SNAP3/3.8/10	SNAP3/3.8/20	SNAP3/3.8/30
3.9	4.5 / 4.8	3.8		SNAP3/3.9/10	SNAP3/3.9/20	SNAP3/3.9/30

Beware of the possible interference!

ØD + 0.3



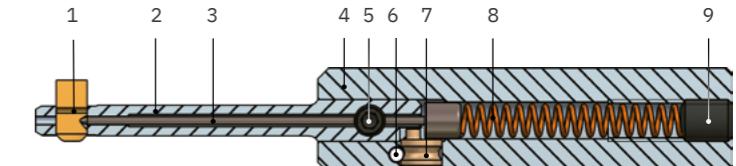
Parts in stock highlighted in green

SNAP3 Ø3.0 mm to 3.9 mm

Blade GS geometry 90°

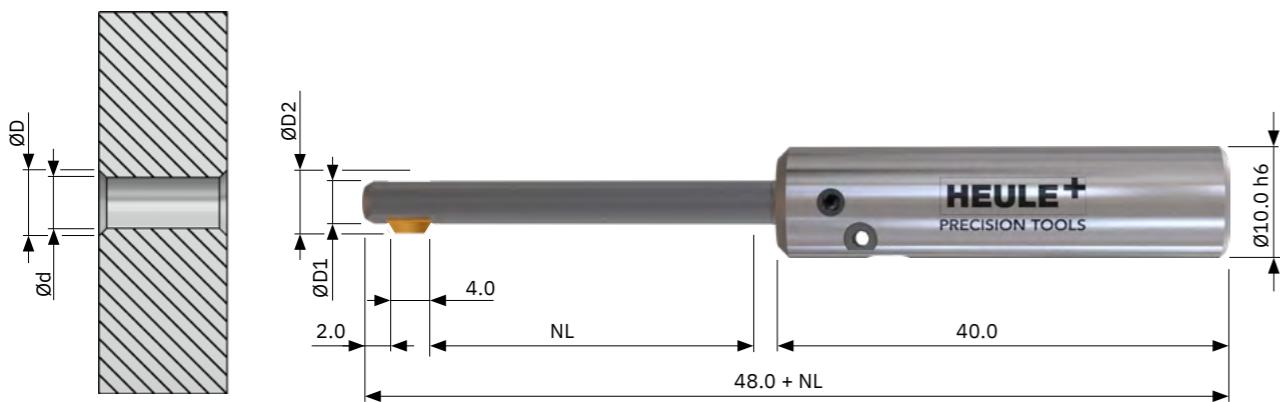
max. chamfer Ø	Part no. forward and backward cutting		Part no. backward cutting only	
	Coating A for steel, titanium, Inconel	Coating D for aluminium	Coating A for steel, titanium, Inconel	Coating D for aluminium
3.3	GH-Q-M-40171	GH-Q-M-40172	GH-Q-M-40771	GH-Q-M-40772
3.6	GH-Q-M-40201	GH-Q-M-40202	GH-Q-M-40801	GH-Q-M-40802
3.9	GH-Q-M-40231	GH-Q-M-40232	GH-Q-M-40831	GH-Q-M-40832
4.2	GH-Q-M-40261	GH-Q-M-40262	GH-Q-M-40861	GH-Q-M-40862
4.5	GH-Q-M-40291	GH-Q-M-40292	GH-Q-M-40891	GH-Q-M-40892
4.8	GH-Q-M-40321	GH-Q-M-40322	GH-Q-M-40921	GH-Q-M-40922

Spare parts



Item	Description	Part no.
1	Blade	see above
2	Blade housing	see page 98
3	Control bolt	GH-Q-E-0236 (NL: 10.0 mm) GH-Q-E-0237 (NL: 20.0 mm) GH-Q-E-0238 (NL: 30.0 mm)
4	Tool body SNAP2-4 diameter 10.0 h6	GH-Q-G-5024
	Tool body assembly SNAP2-4 diameter 10.0 h6 incl. eccentric GH-S-E-0031 incl. roll pin GH-C-E-0811	GH-Q-G-5025
5	Clamping screw M3x3.3	GH-H-S-1075
6	Roll pin SNAP2-4	GH-C-E-0811
7	Eccentric SNAP2-4	GH-S-E-0031
8	Pressure spring Ø3.2xØ0.45x23.0	GH-H-F-0047
9	Set screw M4x5.0 DIN913 Allen key SW1.5 for item 9	GH-H-S-0134 GH-H-S-2101

SNAP4 Ø4.0 mm to 5.0 mm



Tool

Standard tool **without** blade

- The blades must always be ordered separately.
- Different blade options are available for each bore diameter, thus offering various chamfer diameters. However, a blade is only designed for a defined chamfer diameter. The achievable chamfer diameter may vary slightly depending on the material, blade force, cutting parameters and application.
- With cylindrical shank

Bore Ø d	Chamfer Ø D	Tool Ø D1	Max. Ø D2	Part no. NL = 10.0 mm	Part no. NL = 20.0 mm	Part no. NL = 30.0 mm
4.0	4.4 / 4.8 / 5.2	3.9		SNAP4/4.0/10	SNAP4/4.0/20	SNAP4/4.0/30
4.1	4.8 / 5.2 / 5.6	4.0		SNAP4/4.1/10	SNAP4/4.1/20	SNAP4/4.1/30
4.2	4.8 / 5.2 / 5.6	4.1		SNAP4/4.2/10	SNAP4/4.2/20	SNAP4/4.2/30
4.3	4.8 / 5.2 / 5.6	4.2		SNAP4/4.3/10	SNAP4/4.3/20	SNAP4/4.3/30
4.4	4.8 / 5.2 / 5.6	4.3		SNAP4/4.4/10	SNAP4/4.4/20	SNAP4/4.4/30
4.5	5.2 / 5.6 / 6.0	4.4		SNAP4/4.5/10	SNAP4/4.5/20	SNAP4/4.5/30
4.6	5.2 / 5.6 / 6.0	4.5		SNAP4/4.6/10	SNAP4/4.6/20	SNAP4/4.6/30
4.7	5.2 / 5.6 / 6.0	4.6		SNAP4/4.7/10	SNAP4/4.7/20	SNAP4/4.7/30
4.8	5.2 / 5.6 / 6.0	4.7		SNAP4/4.8/10	SNAP4/4.8/20	SNAP4/4.8/30
4.9	5.6 / 6.0 / 6.4	4.8		SNAP4/4.9/10	SNAP4/4.9/20	SNAP4/4.9/30
5.0	5.6 / 6.0 / 6.4	4.9		SNAP4/5.0/10	SNAP4/5.0/20	SNAP4/5.0/30

ØD + 0.4
Beware of the possible interference!

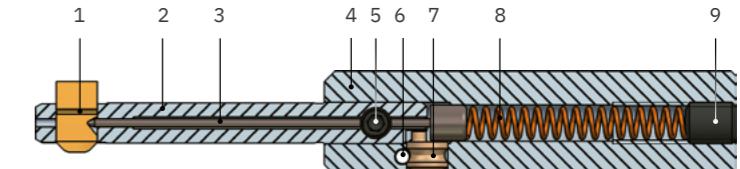
Parts in stock highlighted in green

SNAP4 Ø4.0 mm to 5.0 mm

Blade GS geometry 90°

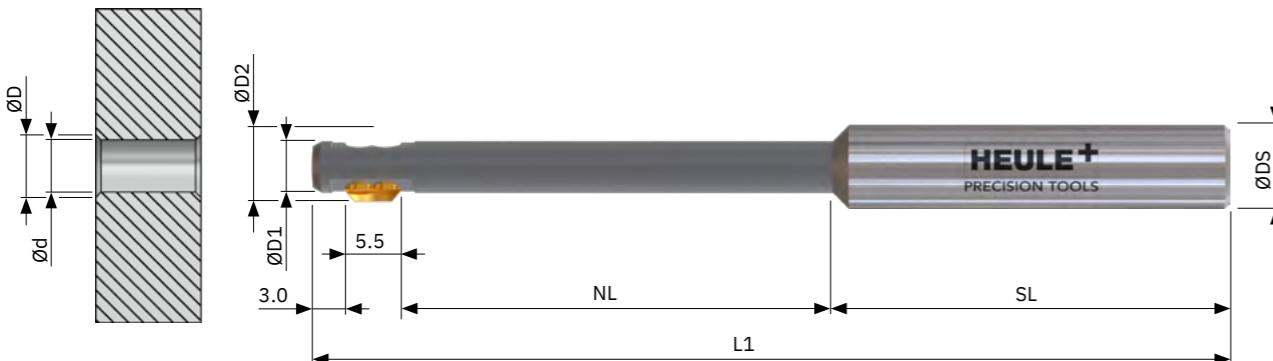
max. chamfer Ø	Part no. forward and backward cutting		Part no. backward cutting only	
	Coating A for steel, titanium, Inconel	Coating D for aluminium	Coating A for steel, titanium, Inconel	Coating D for aluminium
4.4	GH-Q-M-40381	GH-Q-M-40382	GH-Q-M-40981	GH-Q-M-40982
4.8	GH-Q-M-40421	GH-Q-M-40422	GH-Q-M-41021	GH-Q-M-41022
5.2	GH-Q-M-40461	GH-Q-M-40462	GH-Q-M-41061	GH-Q-M-41062
5.6	GH-Q-M-40501	GH-Q-M-40502	GH-Q-M-41101	GH-Q-M-41102
6.0	GH-Q-M-40541	GH-Q-M-40542	GH-Q-M-41141	GH-Q-M-41142
6.4	GH-Q-M-40581	GH-Q-M-40582	GH-Q-M-41181	GH-Q-M-41182

Spare parts



Item	Description	Part no.
1	Blade	see above
2	Blade housing	see page 98
3	Control bolt	GH-Q-E-0236 (NL: 10.0 mm) GH-Q-E-0237 (NL: 20.0 mm) GH-Q-E-0238 (NL: 30.0 mm)
4	Tool body SNAP2-4 diameter 10.0 h6	GH-Q-G-5024
	Tool body assembly SNAP2-4 diameter 10.0 h6 incl. eccentric GH-S-E-0031 incl. roll pin GH-C-E-0811	GH-Q-G-5025
5	Clamping screw M3x3.3	GH-H-S-1075
6	Roll pin SNAP2-4	GH-C-E-0811
7	Eccentric SNAP2-4	GH-S-E-0031
8	Pressure spring Ø3.2xØ0.45x23.0	GH-H-F-0047
9	Set screw M4x5.0 DIN913 Allen key SW1.5 for item 9	GH-H-S-0134 GH-H-S-2101

SNAP5 Ø5.0 mm to 10.0 mm



Tool

Standard tool **without** blade

- The blades must always be ordered separately.
- Different blade options are available for each bore diameter, thus offering various chamfer diameters. However, a blade is only designed for a defined chamfer diameter. The achievable chamfer diameter may vary slightly depending on the material, blade force, cutting parameters and application.
- With cylindrical shank. Optional, but not from stock: Weldon > suffix "-HB", Whistle Notch > suffix "-HE"

Bore Ø d	Chamfer Ø D	Tool Ø D1	Max. Ø D2	Tool length NL	Working L. NL	Shank L. SL	Shank Ø DS	Part no. w/o blade
5.0–5.5	5.5 / 6.0 / 6.5 / 7.0	4.9		88.0	40.0	38.0	8.0 h6	SNAP5/5.0
5.5–6.0	6.0 / 6.5 / 7.0 / 7.5	5.4		88.0	40.0	38.0	8.0 h6	SNAP5/5.5
6.0–6.5	6.5 / 7.0 / 7.5 / 8.0	5.9		88.0	40.0	38.0	8.0 h6	SNAP5/6.0
6.5–7.0	7.0 / 7.5 / 8.0 / 8.5	6.4		88.0	40.0	38.0	8.0 h6	SNAP5/6.5
7.0–7.5	7.5 / 8.0 / 8.5 / 9.0	6.9		88.0	40.0	38.0	8.0 h6	SNAP5/7.0
7.5–8.0	8.0 / 8.5 / 9.0 / 9.5	7.4		88.0	40.0	38.0	8.0 h6	SNAP5/7.5
8.0–8.5	8.5 / 9.0 / 9.5 / 10.0	7.8		98.0	50.0	38.0	10.0 h6	SNAP5/8.0
8.5–9.0	9.0 / 9.5 / 10.0 / 10.5	8.3		98.0	50.0	38.0	10.0 h6	SNAP5/8.5
9.0–9.5	9.5 / 10.0 / 10.5 / 11.0	8.8		98.0	50.0	38.0	10.0 h6	SNAP5/9.0
9.5–10.0	10.0 / 10.5 / 11.0 / 11.5	9.3		98.0	50.0	38.0	10.0 h6	SNAP5/9.5
10.0–10.5	10.5 / 11.0 / 11.5 / 12.0	9.8		107.0	50.0	47.0	12.0 h6	SNAP5/10.0

Beware of the possible interference!



Parts in stock highlighted in green

SNAP5 Ø5.0 mm to 10.0 mm

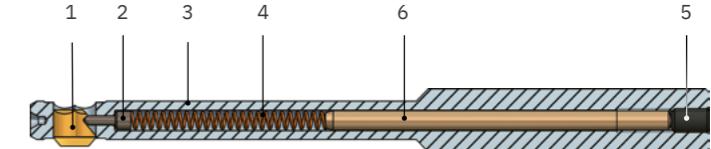
Blade GS geometry 90°

max. chamfer Ø	forward and backward cutting		backward cutting only	
	Coating A for steel, titanium, Inconel	Coating D for aluminium	Coating A for steel, titanium, Inconel	Coating D for aluminium
5.5	GH-Q-M-30204	GH-Q-M-30404	GH-Q-M-31204	GH-Q-M-31404
6.0	GH-Q-M-30205	GH-Q-M-30405	GH-Q-M-31205	GH-Q-M-31405
6.5	GH-Q-M-30206	GH-Q-M-30406	GH-Q-M-31206	GH-Q-M-31406
7.0	GH-Q-M-30207	GH-Q-M-30407	GH-Q-M-31207	GH-Q-M-31407
7.5	GH-Q-M-30208	GH-Q-M-30408	GH-Q-M-31208	GH-Q-M-31408
8.0	GH-Q-M-30209	GH-Q-M-30409	GH-Q-M-31209	GH-Q-M-31409
8.5	GH-Q-M-30210	GH-Q-M-30410	GH-Q-M-31210	GH-Q-M-31410
9.0	GH-Q-M-30211	GH-Q-M-30411	GH-Q-M-31211	GH-Q-M-31411
9.5	GH-Q-M-30212	GH-Q-M-30412	GH-Q-M-31212	GH-Q-M-31412
10.0	GH-Q-M-30213	GH-Q-M-30413	GH-Q-M-31213	GH-Q-M-31413
10.5	GH-Q-M-30214	GH-Q-M-30414	GH-Q-M-31214	GH-Q-M-31414
11.0	GH-Q-M-30215	GH-Q-M-30415	GH-Q-M-31215	GH-Q-M-31415
11.5	GH-Q-M-30216	GH-Q-M-30416	GH-Q-M-31216	GH-Q-M-31416
12.0	GH-Q-M-30217	GH-Q-M-30417	GH-Q-M-31217	GH-Q-M-31417

The blades on the SNAP5 tools and the thread series tools are not interchangeable!

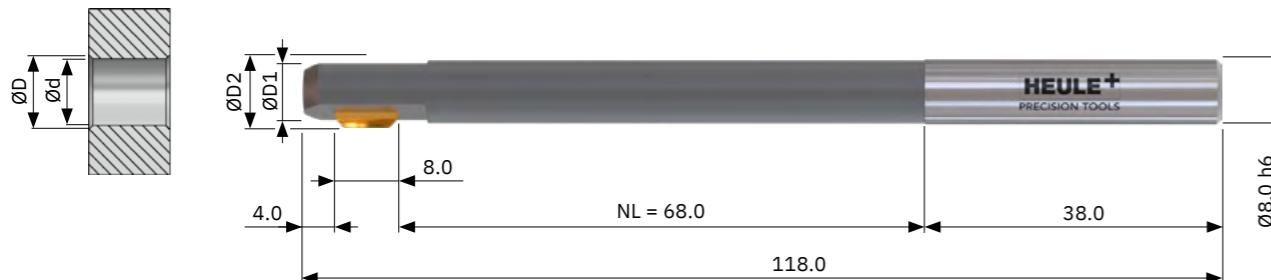


Spare parts



Item	Description	Part no.
1	Blade	see above
2	Control bolt diameter 1.2	GH-Q-E-0008
3	Tool body	see page 99
4	Pressure spring Ø0.235 x Ø0.35 x 30.0 Hard pressure spring Ø2.5 x Ø0.5 x 32.0	Not included as standard, please order separately. See page 71 for more information on spring force. GH-H-F-0019 GH-H-F-0041
5	Set screw M3x5.0 DIN913 Allen key SW1.5	GH-H-S-0127 GH-H-S-2101
6	SNAP distance pin diameter 2.5 x 45.0 SNAP distance pin diameter 2.5 x 55.0 SNAP distance pin diameter 2.5 x 65.0	GH-Q-E-0041 GH-Q-E-0068 GH-Q-E-0067

SNAP8 Ø8.0 mm to 12.0 mm



Tool

Standard tool **without** blade

- The blades must always be ordered separately.
- Different blade options are available for each bore diameter, thus offering various chamfer diameters. However, a blade is only designed for a defined chamfer diameter. The achievable chamfer diameter may vary slightly depending on the material, blade force, cutting parameters and application.
- With cylindrical shank. Optional, but not from stock: Weldon > suffix "-HB", Whistle Notch > suffix "-HE"

Bore Ø d	Chamfer Ø D	Tool Ø D1	Max. Ø D2	Tool length	Working L. NL	Part no. without blade
8.0–8.5	8.5 / 9.0	7.8	ØD + 0.6 <i>Beware of the possible interference!</i>	118.0	68.0	SNAP8/8.0
8.5–9.0	9.0 / 9.5 / 10.0	8.3		118.0	68.0	SNAP8/8.5
9.0–9.5	9.5 / 10.0 / 10.5	8.8		118.0	68.0	SNAP8/9.0
9.5–10.0	10.0 / 10.5 / 11.0	9.3		118.0	68.0	SNAP8/9.5
10.0–10.5	10.5 / 11.0 / 11.5	9.8		118.0	68.0	SNAP8/10.0
10.5–11.0	11.0 / 11.5 / 12.0	10.3		118.0	68.0	SNAP8/10.5
11.0–11.5	11.5 / 12.0 / 12.5	10.8		118.0	68.0	SNAP8/11.0
11.5–12.0	12.0 / 12.5 / 13.0	11.3		118.0	68.0	SNAP8/11.5
12.0–12.5	12.5 / 13.0 / 13.5	11.8		118.0	68.0	SNAP8/12.0



Parts in stock highlighted in green

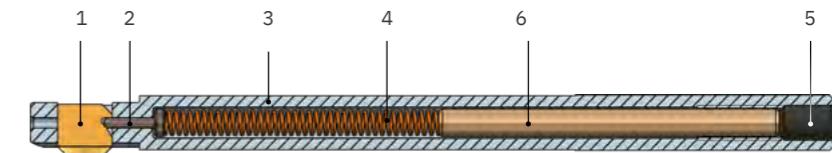
SNAP8 Ø8.0 mm to 12.0 mm

Blade GS¹⁾ geometry 90°

max. chamfer Ø	Part no. forward and backward cutting		Part no. backward cutting only	
	Coating T standard coating	Coating A for higher requirements	Coating T standard coating	Coating A for higher requirements
8.5	GH-Q-M-03720	GH-Q-M-03820	GH-Q-M-05720	GH-Q-M-05820
9.0	GH-Q-M-03721	GH-Q-M-03821	GH-Q-M-05721	GH-Q-M-05821
9.5	GH-Q-M-03722	GH-Q-M-03822	GH-Q-M-05722	GH-Q-M-05822
10.0	GH-Q-M-03723	GH-Q-M-03823	GH-Q-M-05723	GH-Q-M-05823
10.5	GH-Q-M-03724	GH-Q-M-03824	GH-Q-M-05724	GH-Q-M-05824
11.0	GH-Q-M-03725	GH-Q-M-03825	GH-Q-M-05725	GH-Q-M-05825
11.5	GH-Q-M-03726	GH-Q-M-03826	GH-Q-M-05726	GH-Q-M-05826
12.0	GH-Q-M-03727	GH-Q-M-03827	GH-Q-M-05727	GH-Q-M-05827
12.5	GH-Q-M-03728	GH-Q-M-03828	GH-Q-M-05728	GH-Q-M-05828
13.0	GH-Q-M-03729	GH-Q-M-03829	GH-Q-M-05729	GH-Q-M-05829
13.5	GH-Q-M-03730	GH-Q-M-03830	GH-Q-M-05730	GH-Q-M-05830

¹⁾ For blade selection with DF geometry, see page 88

Spare parts



Item	Description	Part no.
1	Blade	see above
2	Control bolt diameter 1.5	GH-Q-E-0002
3	Tool body	see page 99
4	Pressure spring Ø3.7 x Ø0.5 x 48.0 Hard pressure spring Ø4.3 x Ø0.6 x 52.0	GH-H-F-0007 GH-H-F-0011
5	Set screw M5 x 8.0 DIN913 Allen key SW2.5	GH-H-S-0119 GH-H-S-2100
6	SNAP distance pin diameter 4 x 50.0	GH-Q-E-0028

SNAP12 Ø12.0 mm to 20.0 mm



Tool

Standard tool **without** blade

- The blades must always be ordered separately.
- Different blade options are available for each bore diameter, thus offering various diameters. However, a blade is only designed for a defined chamfer diameter. The achievable chamfer diameter may vary slightly depending on the material, blade force, cutting parameters and application.
- With cylindrical shank. Optional, but not from stock: Weldon > suffix "-HB", Whistle Notch > suffix "-HE"

Bore Ø d	Chamfer Ø D	Tool Ø D1	Max. Ø D2	Tool length	Working L. NL	Part no. without blade
12.0-13.5	12.5 / 13.0 / 13.5 / 14.0	11.8		140.0	78.5	SNAP12/12.0
12.5-14.0	13.0 / 13.5 / 14.0 / 14.5	12.3		140.0	78.5	SNAP12/12.5
13.0-14.5	13.5 / 14.0 / 14.5 / 15.0	12.8		140.0	78.5	SNAP12/13.0
13.5-15.0	14.0 / 14.5 / 15.0 / 15.5	13.3		140.0	78.5	SNAP12/13.5
14.0-15.5	14.5 / 15.0 / 15.5 / 16.0	13.8		140.0	78.5	SNAP12/14.0
14.5-16.0	15.0 / 15.5 / 16.0 / 16.5	14.3		140.0	78.5	SNAP12/14.5
15.0-16.5	15.5 / 16.0 / 16.5 / 17.0	14.8		140.0	78.5	SNAP12/15.0
15.5-17.0	16.0 / 16.5 / 17.0 / 17.5	15.3		140.0	78.5	SNAP12/15.5
16.0-17.5	16.5 / 17.0 / 17.5 / 18.0	15.8		140.0	78.5	SNAP12/16.0
16.5-18.0	17.0 / 17.5 / 18.0 / 18.5	16.3		140.0	78.5	SNAP12/16.5
17.0-18.5	17.5 / 18.0 / 18.5 / 19.0	16.8		140.0	78.5	SNAP12/17.0
17.5-19.0	18.0 / 18.5 / 19.0 / 19.5	17.3		140.0	78.5	SNAP12/17.5
18.0-19.5	18.5 / 19.0 / 19.5 / 20.0	17.8		140.0	78.5	SNAP12/18.0
18.5-20.0	19.0 / 19.5 / 20.0 / 20.5	18.3		140.0	78.5	SNAP12/18.5
19.0-20.5	19.5 / 20.0 / 20.5 / 21.0	18.8		140.0	78.5	SNAP12/19.0
19.5-21.0	20.0 / 20.5 / 21.0 / 21.5	19.3		140.0	78.5	SNAP12/19.5
20.0-21.5	20.5 / 21.0 / 21.5 / 22.0	19.8		140.0	78.5	SNAP12/20.0

Beware of the possible interference!



Parts in stock highlighted in green



Programming
Page 69



Cutting data
Page 69



Tool Selector –
Product selection made easy
heule.com/en/tool-selector/snap

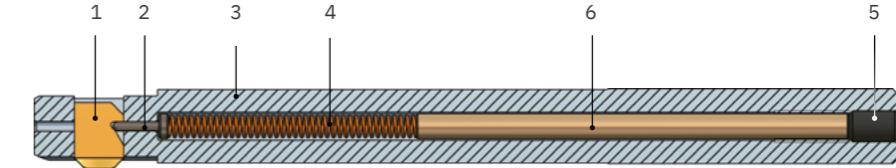
SNAP12 Ø12.0 mm to 20.0 mm

Blade GS¹⁾ geometry 90°

max. chamfer Ø	Part no. forward and backward cutting		Part no. backward cutting only	
	Coating T standard coating	Coating A for higher requirements	Coating T standard coating	Coating A for higher requirements
12.5	GH-Q-M-03740	GH-Q-M-03840	GH-Q-M-05740	GH-Q-M-05840
13.0	GH-Q-M-03741	GH-Q-M-03841	GH-Q-M-05741	GH-Q-M-05841
13.5	GH-Q-M-03742	GH-Q-M-03842	GH-Q-M-05742	GH-Q-M-05842
14.0	GH-Q-M-03743	GH-Q-M-03843	GH-Q-M-05743	GH-Q-M-05843
14.5	GH-Q-M-03744	GH-Q-M-03844	GH-Q-M-05744	GH-Q-M-05844
15.0	GH-Q-M-03745	GH-Q-M-03845	GH-Q-M-05745	GH-Q-M-05845
15.5	GH-Q-M-03746	GH-Q-M-03846	GH-Q-M-05746	GH-Q-M-05846
16.0	GH-Q-M-03747	GH-Q-M-03847	GH-Q-M-05747	GH-Q-M-05847
16.5	GH-Q-M-03748	GH-Q-M-03848	GH-Q-M-05748	GH-Q-M-05848
17.0	GH-Q-M-03749	GH-Q-M-03849	GH-Q-M-05749	GH-Q-M-05849
17.5	GH-Q-M-03750	GH-Q-M-03850	GH-Q-M-05750	GH-Q-M-05850
18.0	GH-Q-M-03751	GH-Q-M-03851	GH-Q-M-05751	GH-Q-M-05851
18.5	GH-Q-M-03752	GH-Q-M-03852	GH-Q-M-05752	GH-Q-M-05852
19.0	GH-Q-M-03753	GH-Q-M-03853	GH-Q-M-05753	GH-Q-M-05853
19.5	GH-Q-M-03754	GH-Q-M-03854	GH-Q-M-05754	GH-Q-M-05854
20.0	GH-Q-M-03755	GH-Q-M-03855	GH-Q-M-05755	GH-Q-M-05855
20.5	GH-Q-M-03756	GH-Q-M-03856	GH-Q-M-05756	GH-Q-M-05856
21.0	GH-Q-M-03757	GH-Q-M-03857	GH-Q-M-05757	GH-Q-M-05857
21.5	GH-Q-M-03758	GH-Q-M-03858	GH-Q-M-05758	GH-Q-M-05858
22.0	GH-Q-M-03759	GH-Q-M-03859	GH-Q-M-05759	GH-Q-M-05859

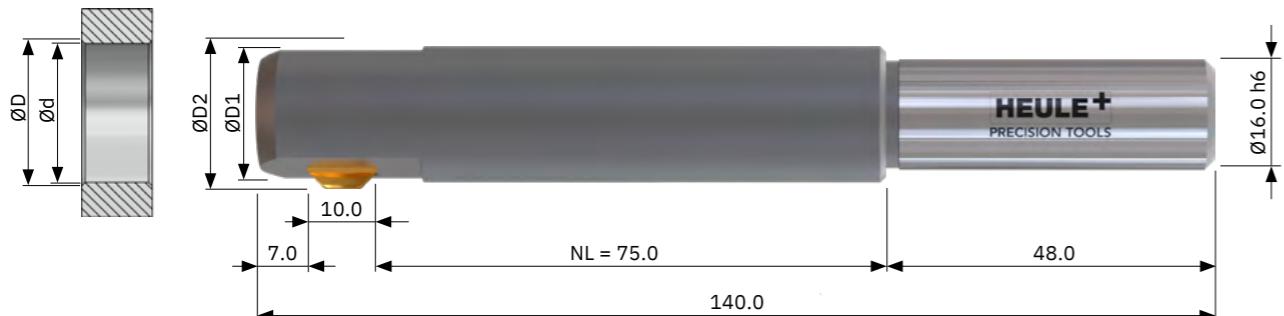
¹⁾ For blade selection with DF geometry, see page 88

Spare parts



Item	Description	Part no.
1	Blade	see above
2	Control bolt diameter 1.5	GH-Q-E-0002
3	Tool body	see page 99
4	Pressure spring Ø3.7 x Ø0.5 x 48.0 Hard pressure spring Ø4.3 x Ø0.6 x 52.0	Not included as standard, please order separately. See page 71 for more information on spring force. GH-H-F-0007 GH-H-F-0011
5	Set screw M5 x 8.0 DIN913 Allen key SW2.5	GH-H-S-0119 GH-H-S-2100
6	SNAP distance pin diameter 4 x 70.0	GH-Q-E-0032

SNAP20 Ø20.0 mm to 35.0 mm



Tool

Standard tool **without** blade

- The blades must always be ordered separately.
- Different blade options are available for each bore diameter, thus offering various chamfer diameters. However, a blade is only designed for a defined chamfer diameter. The achievable chamfer diameter may vary slightly depending on the material, blade force, cutting parameters and application.
- With cylindrical shank. Optional, but not from stock: Weldon > suffix "-HB", Whistle Notch > suffix "-HE"

Bore Ø d	Chamfer Ø D	Tool Ø D1	Max. Ø D2	Tool length	Working L. NL	Part no. without blade
20.0-22.5	21.0 / 22.0 / 23.0	19.8		140.0	75.0	SNAP20/20.0
21.0-23.5	22.0 / 23.0 / 24.0	20.8		140.0	75.0	SNAP20/21.0
22.0-24.5	23.0 / 24.0 / 25.0	21.8		140.0	75.0	SNAP20/22.0
23.0-25.5	24.0 / 25.0 / 26.0	22.8		140.0	75.0	SNAP20/23.0
24.0-26.5	25.0 / 26.0 / 27.0	23.8		140.0	75.0	SNAP20/24.0
25.0-27.5	26.0 / 27.0 / 28.0	24.8		140.0	75.0	SNAP20/25.0
26.0-28.5	27.0 / 28.0 / 29.0	25.8		140.0	75.0	SNAP20/26.0
27.0-29.5	28.0 / 29.0 / 30.0	26.8		140.0	75.0	SNAP20/27.0
28.0-30.5	29.0 / 30.0 / 31.0	27.8		140.0	75.0	SNAP20/28.0
29.0-31.5	30.0 / 31.0 / 32.0	28.8		140.0	75.0	SNAP20/29.0
30.0-32.5	31.0 / 32.0 / 33.0	29.8		140.0	75.0	SNAP20/30.0
31.0-33.5	32.0 / 33.0 / 34.0	30.8		140.0	75.0	SNAP20/31.0
32.0-34.5	33.0 / 34.0 / 35.0	31.8		140.0	75.0	SNAP20/32.0
33.0-35.5	34.0 / 35.0 / 36.0	32.8		140.0	75.0	SNAP20/33.0
34.0-36.5	35.0 / 36.0 / 37.0	33.8		140.0	75.0	SNAP20/34.0
35.0-37.5	36.0 / 37.0 / 38.0	34.8		140.0	75.0	SNAP20/35.0

Beware of the possible interference!

ØD + 1.0



Parts in stock highlighted in green



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Tool Selector –
Product selection made easy
heule.com/en/tool-selector/snap

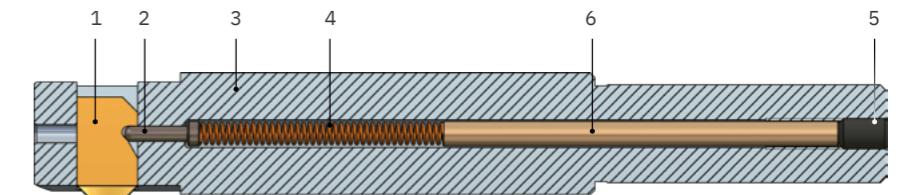
SNAP20 Ø20.0 mm to 35.0 mm

Blade GS¹⁾ geometry 90°

max. chamfer Ø	Part no. forward and backward cutting		Part no. backward cutting only	
	Coating T standard coating	Coating A for higher requirements	Coating T standard coating	Coating A for higher requirements
21.0	GH-Q-M-03770	GH-Q-M-03870	GH-Q-M-05770	GH-Q-M-05870
22.0	GH-Q-M-03771	GH-Q-M-03871	GH-Q-M-05771	GH-Q-M-05871
23.0	GH-Q-M-03772	GH-Q-M-03872	GH-Q-M-05772	GH-Q-M-05872
24.0	GH-Q-M-03773	GH-Q-M-03873	GH-Q-M-05773	GH-Q-M-05873
25.0	GH-Q-M-03774	GH-Q-M-03874	GH-Q-M-05774	GH-Q-M-05874
26.0	GH-Q-M-03775	GH-Q-M-03875	GH-Q-M-05775	GH-Q-M-05875
27.0	GH-Q-M-03776	GH-Q-M-03876	GH-Q-M-05776	GH-Q-M-05876
28.0	GH-Q-M-03777	GH-Q-M-03877	GH-Q-M-05777	GH-Q-M-05877
29.0	GH-Q-M-03778	GH-Q-M-03878	GH-Q-M-05778	GH-Q-M-05878
30.0	GH-Q-M-03779	GH-Q-M-03879	GH-Q-M-05779	GH-Q-M-05879
31.0	GH-Q-M-03780	GH-Q-M-03880	GH-Q-M-05780	GH-Q-M-05880
32.0	GH-Q-M-03781	GH-Q-M-03881	GH-Q-M-05781	GH-Q-M-05881
33.0	GH-Q-M-03782	GH-Q-M-03882	GH-Q-M-05782	GH-Q-M-05882
34.0	GH-Q-M-03783	GH-Q-M-03883	GH-Q-M-05783	GH-Q-M-05883
35.0	GH-Q-M-03784	GH-Q-M-03884	GH-Q-M-05784	GH-Q-M-05884
36.0	GH-Q-M-03785	GH-Q-M-03885	GH-Q-M-05785	GH-Q-M-05885
37.0	GH-Q-M-03786	GH-Q-M-03886	GH-Q-M-05786	GH-Q-M-05886
38.0	GH-Q-M-03787	GH-Q-M-03887	GH-Q-M-05787	GH-Q-M-05887

¹⁾ For blade selection with DF geometry, see page 88.

Spare parts



Item	Description	Part no.
1	Blade	see above
2	Control bolt diameter 2.5	GH-Q-E-0003
3	Tool body	see page 99
4	Pressure spring Ø4.3 x Ø0.6 x 52.0	GH-H-F-0011
5	Set screw M5 x 8.0 DIN913 Allen key SW2.5	GH-H-S-0119 GH-H-S-2100
6	SNAP distance pin diameter 4 x 65.0	GH-Q-E-0031

SNAP

blades with DF geometry

FOR DEFINED CHAMFERS

Operating conditions

- Use with hard materials or materials with large burr formation.
- Higher machine requirements: stable machine spindle and rigid workpiece setup
- If no chamfer is required on the front edge, it is essential to use a blade that only cuts backwards.
- The recommended maximum values for the working feed rate with the DF blade must not be exceeded.
- The chamfer diameters listed are the maximum values theoretically achievable.

SNAP8 blade DF geometry 90°

chamfer Ø max. / mm	Part no. forward and backward cutting		Part no. backward cutting only	
	Coating T standard coating	Coating A for higher requirements	Coating T standard coating	Coating A for higher requirements
8.5	GH-Q-M-03120	GH-Q-M-03220	GH-Q-M-05120	GH-Q-M-05220
9.0	GH-Q-M-03121	GH-Q-M-03221	GH-Q-M-05121	GH-Q-M-05221
9.5	GH-Q-M-03122	GH-Q-M-03222	GH-Q-M-05122	GH-Q-M-05222
10.0	GH-Q-M-03123	GH-Q-M-03223	GH-Q-M-05123	GH-Q-M-05223
10.5	GH-Q-M-03124	GH-Q-M-03224	GH-Q-M-05124	GH-Q-M-05224
11.0	GH-Q-M-03125	GH-Q-M-03225	GH-Q-M-05125	GH-Q-M-05225
11.5	GH-Q-M-03126	GH-Q-M-03226	GH-Q-M-05126	GH-Q-M-05226
12.0	GH-Q-M-03127	GH-Q-M-03227	GH-Q-M-05127	GH-Q-M-05227
12.5	GH-Q-M-03128	GH-Q-M-03228	GH-Q-M-05128	GH-Q-M-05228
13.0	GH-Q-M-03129	GH-Q-M-03229	GH-Q-M-05129	GH-Q-M-05229
13.5	GH-Q-M-03130	GH-Q-M-03230	GH-Q-M-05130	GH-Q-M-05230

SNAP12 blade DF geometry 90°

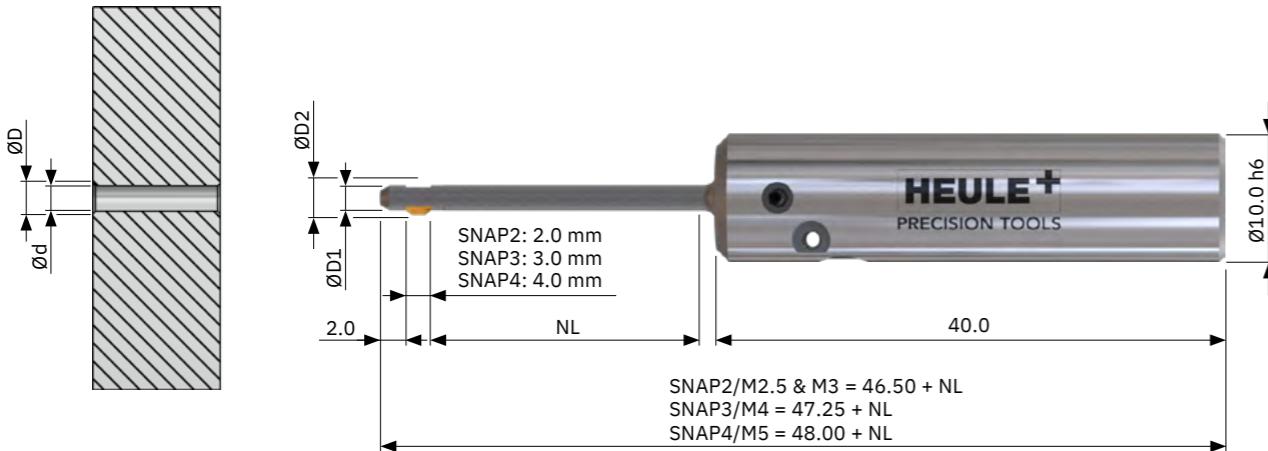
chamfer Ø max. / mm	Part no. forward and backward cutting		Part no. backward cutting only	
	Coating T standard coating	Coating A for higher requirements	Coating T standard coating	Coating A for higher requirements
12.5	GH-Q-M-03140	GH-Q-M-03240	GH-Q-M-05140	GH-Q-M-05240
13.0	GH-Q-M-03141	GH-Q-M-03241	GH-Q-M-05141	GH-Q-M-05241
13.5	GH-Q-M-03142	GH-Q-M-03242	GH-Q-M-05142	GH-Q-M-05242
14.0	GH-Q-M-03143	GH-Q-M-03243	GH-Q-M-05143	GH-Q-M-05243
14.5	GH-Q-M-03144	GH-Q-M-03244	GH-Q-M-05144	GH-Q-M-05244
15.0	GH-Q-M-03145	GH-Q-M-03245	GH-Q-M-05145	GH-Q-M-05245
15.5	GH-Q-M-03146	GH-Q-M-03246	GH-Q-M-05146	GH-Q-M-05246
16.0	GH-Q-M-03147	GH-Q-M-03247	GH-Q-M-05147	GH-Q-M-05247
16.5	GH-Q-M-03148	GH-Q-M-03248	GH-Q-M-05148	GH-Q-M-05248
17.0	GH-Q-M-03149	GH-Q-M-03249	GH-Q-M-05149	GH-Q-M-05249
17.5	GH-Q-M-03150	GH-Q-M-03250	GH-Q-M-05150	GH-Q-M-05250
18.0	GH-Q-M-03151	GH-Q-M-03251	GH-Q-M-05151	GH-Q-M-05251
18.5	GH-Q-M-03152	GH-Q-M-03252	GH-Q-M-05152	GH-Q-M-05252
19.0	GH-Q-M-03153	GH-Q-M-03253	GH-Q-M-05153	GH-Q-M-05253
19.5	GH-Q-M-03154	GH-Q-M-03254	GH-Q-M-05154	GH-Q-M-05254
20.0	GH-Q-M-03155	GH-Q-M-03255	GH-Q-M-05155	GH-Q-M-05255
20.5	GH-Q-M-03156	GH-Q-M-03256	GH-Q-M-05156	GH-Q-M-05256
21.0	GH-Q-M-03157	GH-Q-M-03257	GH-Q-M-05157	GH-Q-M-05257
21.5	GH-Q-M-03158	GH-Q-M-03258	GH-Q-M-05158	GH-Q-M-05258
22.0	GH-Q-M-03159	GH-Q-M-03259	GH-Q-M-05159	GH-Q-M-05259

SNAP20 blade DF geometry 90°

21.0	GH-Q-M-03170	GH-Q-M-03270	GH-Q-M-05170	GH-Q-M-05270
22.0	GH-Q-M-03171	GH-Q-M-03271	GH-Q-M-05171	GH-Q-M-05271
23.0	GH-Q-M-03172	GH-Q-M-03272	GH-Q-M-05172	GH-Q-M-05272
24.0	GH-Q-M-03173	GH-Q-M-03273	GH-Q-M-05173	GH-Q-M-05273
25.0	GH-Q-M-03174	GH-Q-M-03274	GH-Q-M-05174	GH-Q-M-05274
26.0	GH-Q-M-03175	GH-Q-M-03275	GH-Q-M-05175	GH-Q-M-05275
27.0	GH-Q-M-03176	GH-Q-M-03276	GH-Q-M-05176	GH-Q-M-05276
28.0	GH-Q-M-03177	GH-Q-M-03277	GH-Q-M-05177	GH-Q-M-05277
29.0	GH-Q-M-03178	GH-Q-M-03278	GH-Q-M-05178	GH-Q-M-05278
30.0	GH-Q-M-03179	GH-Q-M-03279	GH-Q-M-05179	GH-Q-M-05279
31.0	GH-Q-M-03180	GH-Q-M-03280	GH-Q-M-05180	GH-Q-M-05280
32.0	GH-Q-M-03181	GH-Q-M-03281	GH-Q-M-05181	GH-Q-M-05281
33.0	GH-Q-M-03182	GH-Q-M-03282	GH-Q-M-05182	GH-Q-M-05282
34.0	GH-Q-M-03183	GH-Q-M-03283	GH-Q-M-05183	GH-Q-M-05283
35.0	GH-Q-M-03184	GH-Q-M-03284	GH-Q-M-05184	GH-Q-M-05284
36.0	GH-Q-M-03185	GH-Q-M-03285	GH-Q-M-05185	GH-Q-M-05285
37.0	GH-Q-M-03186	GH-Q-M-03286	GH-Q-M-05186	GH-Q-M-05286
38.0	GH-Q-M-03187	GH-Q-M-03287	GH-Q-M-05187	GH-Q-M-05287

SNAP

thread series tool M2.5 / M3 / M4 / M5



Tool

Standard tool **without** blade

- The blades must always be ordered separately.
- Different blade options are available for each bore diameter thus offering various chamfer diameters. However, a blade is only designed for a defined chamfer diameter. The achievable chamfer diameter may vary slightly depending on the material, blade force, cutting parameters and application.

Bore Ø d mm	Thread	max. chamfer ØD	Tool Ø D1	Max. Ø D2	Part no. NL = 10.0 mm	Part no. NL = 20.0 mm	Part no. NL = 30.0 mm
2.05	M2.5	2.8	2.0	3.0	SNAP2/M2.5/10	SNAP2/M2.5/20	—
2.5	M3	3.4	2.45	3.6	SNAP2/M3/10	SNAP2/M3/20	—
3.3	M4	4.5	3.2	4.8	SNAP3/M4/10	SNAP3/M4/20	SNAP3/M4/30
4.2	M5	5.6	4.1	6.0	SNAP4/M5/10	SNAP4/M5/20	SNAP4/M5/30



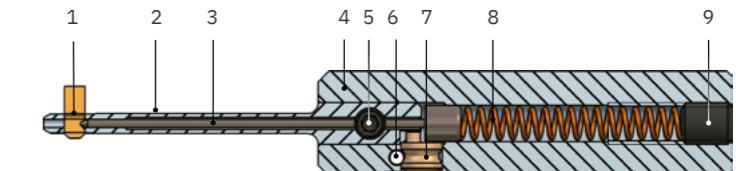
Parts in stock highlighted in green

SNAP

thread series tool M2.5 / M3 / M4 / M5

Blade GS geometry 90°

max. chamfer Ø	Part no. forward and backward cutting		Part no. backward cutting only	
	Coating A for steel, titanium, Inconel	Coating D for aluminium	Coating A for steel, titanium, Inconel	Coating D for aluminium
2.8	GH-Q-M-41501	GH-Q-M-41502	GH-Q-M-41601	GH-Q-M-41602
3.4	GH-Q-M-41511	GH-Q-M-41512	GH-Q-M-41611	GH-Q-M-41612
4.5	GH-Q-M-41521	GH-Q-M-41522	GH-Q-M-41621	GH-Q-M-41622
5.6	GH-Q-M-41531	GH-Q-M-41532	GH-Q-M-41631	GH-Q-M-41632

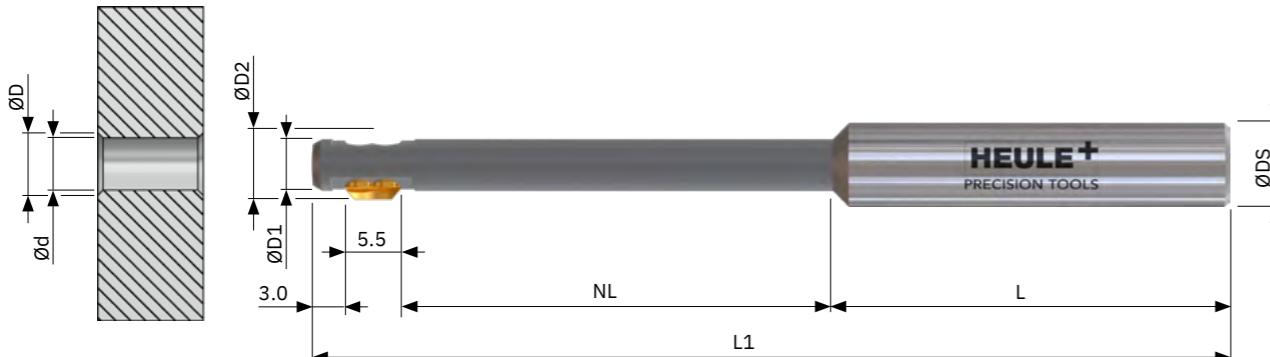


Spare parts

Item	Description	Part no. NL 10.0	Part no. NL 20.0	Part no. NL 30.0
1	Blade	see above		
2	Blade housing SNAP2/M2.5/etc. Blade housing SNAP2/M3/etc. Blade housing SNAP3/M4/etc. Blade housing SNAP4/M5/etc.	GH-Q-N-0015 GH-Q-N-0016 GH-Q-N-0035 GH-Q-N-0055	GH-Q-N-0075 GH-Q-N-0076 GH-Q-N-0095 GH-Q-N-0115	GH-Q-N-0155 GH-Q-N-0175
3	Control bolt SNAP2/M2.5/etc. Control bolt SNAP2/M3/etc. Control bolt SNAP3/M4/etc. Control bolt SNAP4/M5/etc.	GH-Q-E-0254 GH-Q-E-0236 GH-Q-E-0236 GH-Q-E-0236	GH-Q-E-0256 GH-Q-E-0237 GH-Q-E-0237 GH-Q-E-0237	GH-Q-E-0238 GH-Q-E-0238
4	Tool body Tool body assembly SNAP2–4 diameter 10.0 h6 incl. eccentric GH-S-E-0031 incl. roll pin GH-C-E-0811	GH-Q-G-5024 GH-Q-G-5025	GH-Q-G-5024 GH-Q-G-5025	GH-Q-G-5024 GH-Q-G-5025
5	Clamping screw M3x3.3	GH-H-S-1075	GH-H-S-1075	GH-H-S-1075
6	Roll pin SNAP2–4	GH-C-E-0811	GH-C-E-0811	GH-C-E-0811
7	Eccentric SNAP2–4	GH-S-E-0031	GH-S-E-0031	GH-S-E-0031
8	Pressure spring Ø3.2xØ0.45x23.0	GH-H-F-0047	GH-H-F-0047	GH-H-F-0047
9	Set screw M4x5.0 DIN913 Allen key SW1.5	GH-H-S-0134 GH-H-S-2101	GH-H-S-0134 GH-H-S-2101	GH-H-S-0134 GH-H-S-2101

SNAP

thread series tool M6 / M8 / M10 / M12 / M14



Tool

Standard tool **without** blade

- The blades must always be ordered separately.
- Different blade options are available, thus offering various chamfer diameters. However, a blade is only designed for a defined chamfer diameter. The achievable chamfer diameter may vary slightly depending on the material, blade force, cutting parameters and application.
- With cylindrical shank. Optional, but not from stock: Weldon > suffix "-HB", Whistle Notch > suffix "-HE"

Bore Ø d / mm	Thread	max. chamfer ØD	Tool Ø D1	Max. Ø D2	Tool L. L1	Working L. NL	Shank L. L	Shank Ø DS	Part no.
5.0	M6	6.5	4.9	7.3	88.0	40.0	38.0	8.0 h6	SNAP5/M6
6.8	M8	8.5	6.7	9.3	88.0	40.0	38.0	8.0 h6	SNAP5/M8
8.5	M10	10.5	8.3	11.3	100.0	50.0	40.0	10.0 h6	SNAP5/M10
10.2	M12	12.5	10.0	13.1	100.0	50.0	40.0	10.0 h6	SNAP5/M12
12.0	M14	14.5	11.8	15.1	100.0	50.0	40.0	10.0 h6	SNAP5/M14



Parts in stock highlighted in green

The blades on the thread series tools and the SNAP5 tools are not interchangeable!



Programming
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SNAP

thread series tool M6 / M8 / M10 / M12 / M14

Blade DRA geometry 90°

Geometry for soft materials e.g. aluminium, brass, low-alloy steels

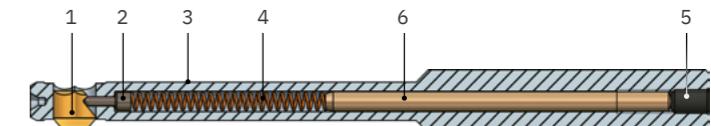
max. chamfer Ø	Part no. forward and backward cutting		Part no. backward cutting only	
	Coating A for standard materials	Coating D for aluminium	Coating A for standard materials	Coating D for aluminium
6.5 mm	GH-Q-M-34032	GH-Q-M-34033	GH-Q-M-34532	GH-Q-M-34533
8.5 mm	GH-Q-M-34072	GH-Q-M-34073	GH-Q-M-34572	GH-Q-M-34573
10.5 mm	GH-Q-M-34112	GH-Q-M-34113	GH-Q-M-34612	GH-Q-M-34613
12.5 mm	GH-Q-M-34152	GH-Q-M-34153	GH-Q-M-34652	GH-Q-M-34653
14.5 mm	GH-Q-M-34192	GH-Q-M-34193	GH-Q-M-34692	GH-Q-M-34693

Blade DRB geometry 90°

Geometry for high-strength alloys, e.g. high-alloy steels

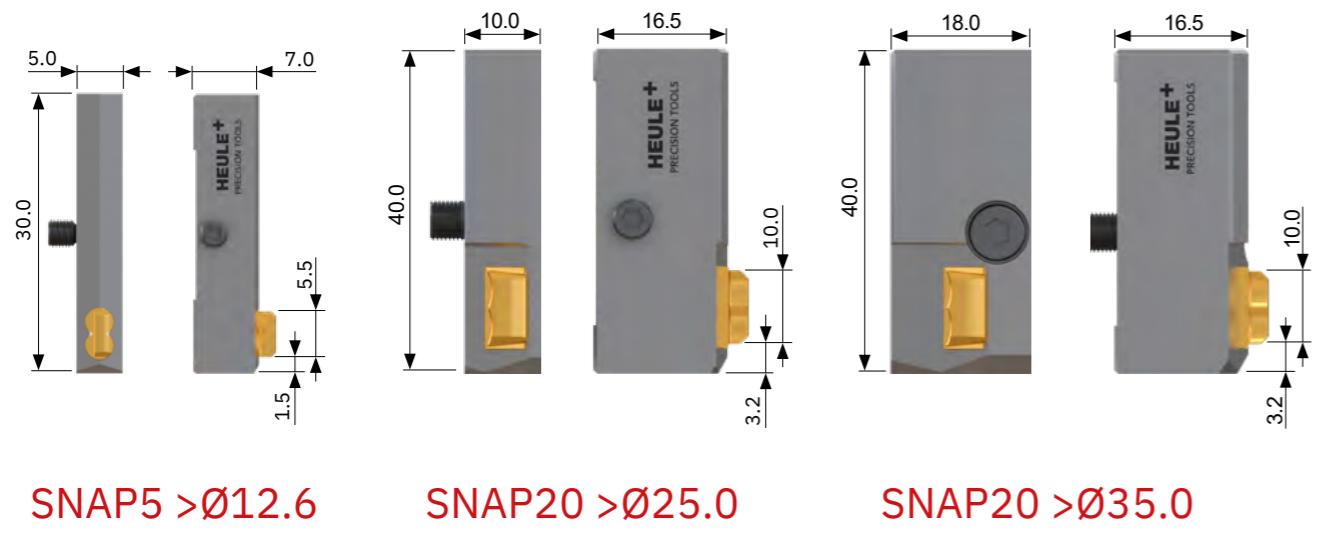
max. chamfer Ø	Part no. forward and backward cutting		Part no. backward cutting only	
	Coating A for very hard and tough materials	Coating A for very hard and tough materials	Coating A for very hard and tough materials	Coating A for very hard and tough materials
6.5 mm		GH-Q-M-34042		GH-Q-M-34542
8.5 mm		GH-Q-M-34082		GH-Q-M-34582
10.5 mm		GH-Q-M-34122		GH-Q-M-34622
12.5 mm		GH-Q-M-34162		GH-Q-M-34662
14.5 mm		GH-Q-M-34202		GH-Q-M-34702

Spare parts



Item	Description	Part no.
1	Blade	see above
2	Control bolt diameter 1.5	GH-Q-E-0015
3	Tool body SNAP5/M6 Tool body SNAP5/M8 Tool body SNAP5/M10 Tool body SNAP5/M12 Tool body SNAP5/M14	GH-Q-G-5003 GH-Q-G-5018 GH-Q-G-5010 GH-Q-G-5019 GH-Q-G-5017
4	Pressure spring Ø2.35xØ0.35x30.0	GH-H-F-0019
5	Set screw M3x5.0 DIN913 Allen key SW1.5	GH-H-S-0127 GH-H-S-2101
6	Distance pin Ø 2.5x36.0 (M6/M8) Distance pin Ø 2.5x50.0 (M10/M12/M14)	GH-Q-E-0049 GH-Q-E-0042

SNAP cassette systems



Tool

The SNAP cassette is used for installation in combination tools and tools for large bore diameters. The required cassette holder can be ordered from HEULE or manufactured by the customer according to the specifications on the following pages.

Standard tool **without** blade

- The blades must always be ordered separately.

Bore diameter range d	Cassette type	Part no.
> \varnothing 12.6 mm	SNAP5/12.6	GH-Q-O-1430
> \varnothing 25.0 mm	SNAP20/25.0	GH-Q-O-1130
> \varnothing 35.0 mm	SNAP20/35.0	GH-Q-O-1030



Parts in stock highlighted in green

SNAP cassette systems

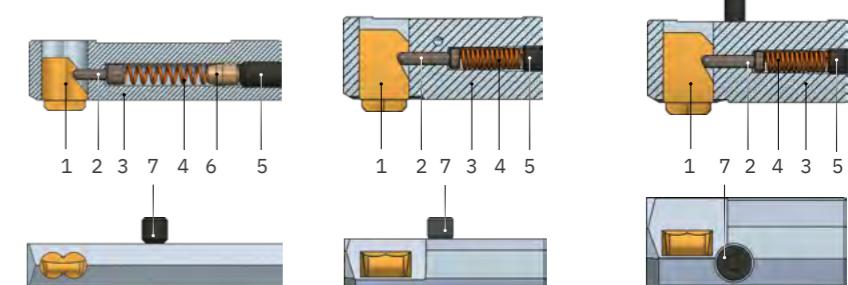
SNAP5 cassette blade with DF geometry 90°

Chamfering capacity	Bore Ø mm	Part no. forward and backward cutting		Part no. backward cutting only	
		Coating A for steel, titanium, Inconel	Coating for aluminium	Coating A for steel, titanium, Inconel	Coating for aluminium
	12.6–19.9	by request	by request	by request	by request
0.5 mm	20.0–90.0	GH-Q-M-30780	GH-Q-M-30980	GH-Q-M-31780	GH-Q-M-31980
1.0 mm		GH-Q-M-30781	GH-Q-M-30981	GH-Q-M-31781	GH-Q-M-31981
1.5 mm		GH-Q-M-30782	GH-Q-M-30982	GH-Q-M-31782	GH-Q-M-31982
0.5 mm	90.0–150.0	GH-Q-M-30783	GH-Q-M-30983	GH-Q-M-31783	GH-Q-M-31983
1.0 mm		GH-Q-M-30784	GH-Q-M-30984	GH-Q-M-31784	GH-Q-M-31984
1.5 mm		GH-Q-M-30785	GH-Q-M-30985	GH-Q-M-31785	GH-Q-M-31985

SNAP20 cassette blade with DF geometry 90°

Chamfering capacity	Bore Ø mm	Part no. forward and backward cutting		Part no. backward cutting only	
		Coating A higher requirements	Coating T standard coating	Coating A higher requirements	Coating T standard coating
0.5 mm		GH-Q-M-01902	GH-Q-M-01901	GH-Q-M-01922	GH-Q-M-01921
1.0 mm	>20.0	GH-Q-M-01905	GH-Q-M-01904	GH-Q-M-01925	GH-Q-M-01924
1.5 mm		GH-Q-M-01908	GH-Q-M-01907	GH-Q-M-01928	GH-Q-M-01927

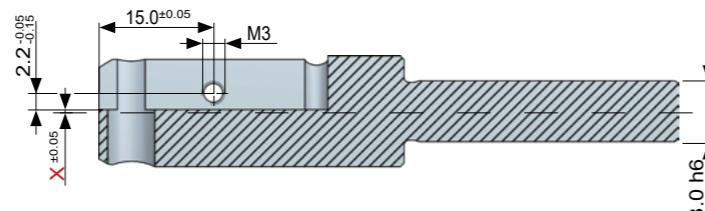
Spare parts



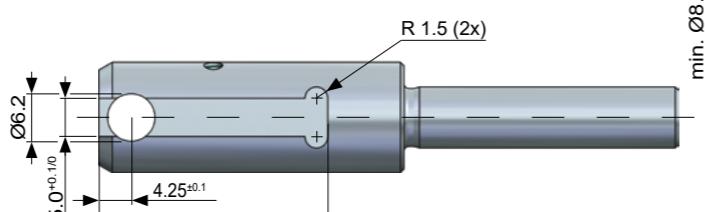
Item	Description	SNAP5/12.6	SNAP20/20.0	SNAP20/35
1	SNAP blade	see above	see above	see above
2	Control bolt	GH-Q-E-0008	GH-Q-E-0003	GH-Q-E-0003
3	Cassette tool body	GH-Q-G-1382	GH-Q-G-1123	GH-Q-G-1034
4	Pressure spring	GH-H-F-0027	GH-H-F-0012	GH-H-F-0012
5	Set screw	GH-H-S-0127	GH-H-S-0120	GH-H-S-0120
6	Distance pin	GH-Q-E-0046	-	-
7	Set screw	GH-H-S-0355	GH-H-S-0202	GH-H-S-0502
	Allen key	GH-H-S-2101	GH-H-S-2100	GH-H-S-2100

INSTALLATION INSTRUCTIONS

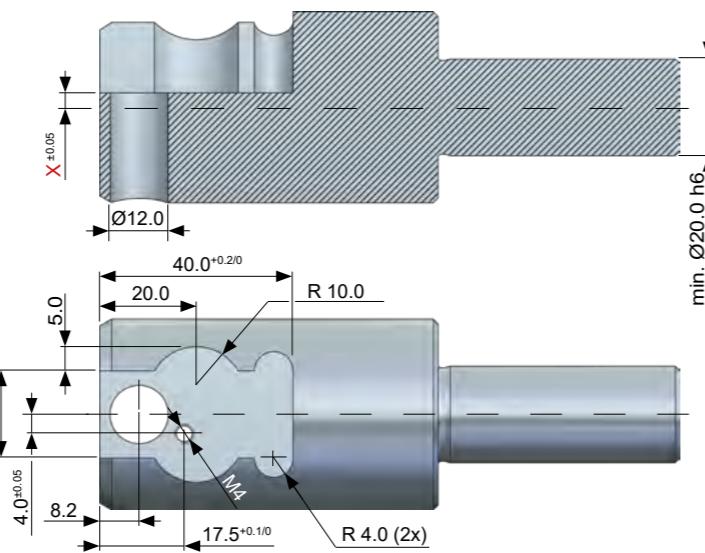
SNAP5 cassette
for diameter >12.6 mm



SNAP20 cassette
for diameter > 25.0 mm



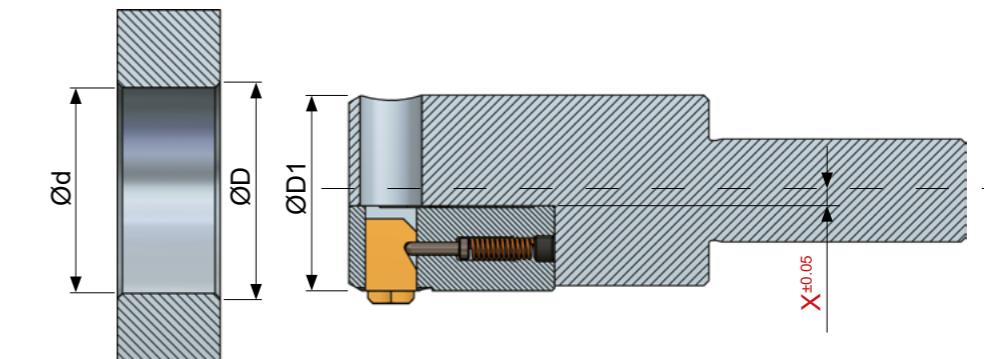
SNAP20 cassette
for diameter >35.0 mm



Limits

	SNAP5	SNAP20	SNAP20
bore Ø	>Ø12.6 mm	>Ø25.0 mm	>Ø35.0 mm
max. ØD	Ød + 3.0 mm	Ød + 3.0 mm	Ød + 3.0 mm
max. ØD1	Ød - 1.0 mm	Ød - 2.0 mm	Ød - 4.0 mm

Calculating dimension X



Formula for calculating dimension X

$$\text{SNAP5} > 12.6: \quad X = (\varnothing d / 2) - 7.3 + \text{correction}^*$$

$$\text{SNAP20} > 25.0: \quad X = (\varnothing d / 2) - 17.0 + \text{correction}^*$$

$$\text{SNAP20} > 35.0: \quad X = (\varnothing d / 2) - 17.0 + \text{correction}^*$$

*) Correction for desired chamfering size: Blade TARGET minus ACTUAL

Calculation example for SNAP5 cassette

Given:

Bore Ø: 23.0 mm / chamfer diameter D: 24.5 mm

→ required chamfer. capacity $(24.5-23.0)/2 = 0.75 \text{ mm} (= \text{TARGET})$

→ Blade chamfering capacity: 1.0 mm (= ACTUAL)

Desired dimension X

$$X = \varnothing d / 2 - 7.3 + (\text{correction for blade chamfering size})$$

$$X = (23.0 \text{ mm} / 2) - 7.3 \text{ mm} + (0.75 \text{ mm} - 1.0 \text{ mm})$$

$$X = 11.5 \text{ mm} - 7.3 \text{ mm} + (-0.25 \text{ mm})$$

$$X = 3.95 \text{ mm}$$

SNAP

spare parts

In the tables below you will find the blade housings and tool bodies that are not listed in the tables under the product itself. For all other items, please refer to the tables next to the product.

BLADE HOUSING

Tool	Tool ØD1	Part no. Working length NL 10.0	Part no. Working length NL 20.0	Part no. Working length NL 30.0
SNAP2/2.0/...	1.95	GH-Q-N-0001	GH-Q-N-0061	-
SNAP2/2.1/...	2.05	GH-Q-N-0002	GH-Q-N-0062	-
SNAP2/2.2/...	2.15	GH-Q-N-0003	GH-Q-N-0063	-
SNAP2/2.3/...	2.25	GH-Q-N-0004	GH-Q-N-0064	-
SNAP2/2.4/...	2.35	GH-Q-N-0005	GH-Q-N-0065	-
SNAP2/2.5/...	2.45	GH-Q-N-0006	GH-Q-N-0066	-
SNAP2/2.6/...	2.55	GH-Q-N-0007	GH-Q-N-0067	-
SNAP2/2.7/...	2.65	GH-Q-N-0008	GH-Q-N-0068	-
SNAP2/2.8/...	2.75	GH-Q-N-0009	GH-Q-N-0069	-
SNAP2/2.9/...	2.85	GH-Q-N-0010	GH-Q-N-0070	-
SNAP3/3.0/...	2.9	GH-Q-N-0021	GH-Q-N-0081	GH-Q-N-0141
SNAP3/3.1/...	3.0	GH-Q-N-0022	GH-Q-N-0082	GH-Q-N-0142
SNAP3/3.2/...	3.1	GH-Q-N-0023	GH-Q-N-0083	GH-Q-N-0143
SNAP3/3.3/...	3.2	GH-Q-N-0024	GH-Q-N-0084	GH-Q-N-0144
SNAP3/3.4/...	3.3	GH-Q-N-0025	GH-Q-N-0085	GH-Q-N-0145
SNAP3/3.5/...	3.4	GH-Q-N-0026	GH-Q-N-0086	GH-Q-N-0146
SNAP3/3.6/...	3.5	GH-Q-N-0027	GH-Q-N-0087	GH-Q-N-0147
SNAP3/3.7/...	3.6	GH-Q-N-0028	GH-Q-N-0088	GH-Q-N-0148
SNAP3/3.8/...	3.7	GH-Q-N-0029	GH-Q-N-0089	GH-Q-N-0149
SNAP3/3.9/...	3.8	GH-Q-N-0030	GH-Q-N-0090	GH-Q-N-0150
SNAP4/4.0/...	3.9	GH-Q-N-0041	GH-Q-N-0101	GH-Q-N-0161
SNAP4/4.1/...	4.0	GH-Q-N-0042	GH-Q-N-0102	GH-Q-N-0162
SNAP4/4.2/...	4.1	GH-Q-N-0043	GH-Q-N-0103	GH-Q-N-0163
SNAP4/4.3/...	4.2	GH-Q-N-0044	GH-Q-N-0104	GH-Q-N-0164
SNAP4/4.4/...	4.3	GH-Q-N-0045	GH-Q-N-0105	GH-Q-N-0165
SNAP4/4.5/...	4.4	GH-Q-N-0046	GH-Q-N-0106	GH-Q-N-0166
SNAP4/4.6/...	4.5	GH-Q-N-0047	GH-Q-N-0107	GH-Q-N-0167
SNAP4/4.7/...	4.6	GH-Q-N-0048	GH-Q-N-0108	GH-Q-N-0168
SNAP4/4.8/...	4.7	GH-Q-N-0049	GH-Q-N-0109	GH-Q-N-0169
SNAP4/4.9/...	4.8	GH-Q-N-0050	GH-Q-N-0110	GH-Q-N-0170
SNAP4/5.0/...	4.9	GH-Q-N-0051	GH-Q-N-0111	GH-Q-N-0171

SNAP

spare parts (continued)

TOOL BODY

Tool	Tool ØD1	Part no.
SNAP5/5.0	4.9	GH-Q-G-1271
SNAP5/5.5	5.4	GH-Q-G-1272
SNAP5/6.0	5.9	GH-Q-G-1273
SNAP5/6.5	6.4	GH-Q-G-1274
SNAP5/7.0	6.9	GH-Q-G-1275
SNAP5/7.5	7.4	GH-Q-G-1276
SNAP5/8.0	7.8	GH-Q-G-1277
SNAP5/8.5	8.3	GH-Q-G-1389
SNAP5/9.0	8.8	GH-Q-G-1384
SNAP5/9.5	9.3	GH-Q-G-1485
SNAP5/10.0	9.8	GH-Q-G-1486
SNAP8/8.0	7.8	GH-Q-G-0220
SNAP8/8.5	8.3	GH-Q-G-0221
SNAP8/9.0	8.8	GH-Q-G-0222
SNAP8/9.5	9.3	GH-Q-G-0223
SNAP8/10.0	9.8	GH-Q-G-0224
SNAP8/10.5	10.3	GH-Q-G-0225
SNAP8/11.0	10.8	GH-Q-G-0226
SNAP8/11.5	11.3	GH-Q-G-0227
SNAP8/12.0	11.8	GH-Q-G-0228
SNAP12/12.0	11.8	GH-Q-G-0240
SNAP12/12.5	12.3	GH-Q-G-0241
SNAP12/13.0	12.8	GH-Q-G-0242
SNAP12/13.5	13.3	GH-Q-G-0243
SNAP12/14.0	13.8	GH-Q-G-0244
SNAP12/14.5	14.3	GH-Q-G-0245
SNAP12/15.0	14.8	GH-Q-G-0246
SNAP12/15.5	15.3	GH-Q-G-0247
SNAP12/16.0	15.8	GH-Q-G-0248
SNAP12/16.5	16.3	GH-Q-G-0249
SNAP12/17.0	16.8	GH-Q-G-0250
SNAP12/17.5	17.3	GH-Q-G-0251
SNAP12/18.0	17.8	GH-Q-G-0252
SNAP12/18.5	18.3	GH-Q-G-0253
SNAP12/19.0	18.8	GH-Q-G-0254
SNAP12/19.5	19.3	GH-Q-G-0255
SNAP12/20.0	19.8	GH-Q-G-0256

SNAP FAQ

Question	Causes	Remedy
Burr is not cut away cleanly or chamfer too small	<ul style="list-style-type: none"> • Blade selected too small • Working feed rate too high 	<ul style="list-style-type: none"> • Select blade for larger chamfer • Reduce working feed rate
No chamfer	• Blade force too low	<ul style="list-style-type: none"> • Turn the set screw clockwise to increase the blade pressure (only possible with SNAP blades with GS geometry)
	• Blade worn, worn out	<ul style="list-style-type: none"> • Insert new blade
	• Excessive burr formation	<ul style="list-style-type: none"> • Replace or sharpen the drill tool
	• Blade jams, no longer extends out of blade housing	<ul style="list-style-type: none"> • Cast materials should always be processed with coolant. This removes the dust from the blade window.
Forward and backward chamfer size not the same	• Working feed rate forwards and backwards different	<ul style="list-style-type: none"> • Select the same working feed rate forwards and backwards if possible (only for blades with GS geometry)
	• Different burr formation front and back	<ul style="list-style-type: none"> • On the side with the chamfer that is too small: reduce working feed rate, only possible for blades with GS geometry. • On the side with the chamfer that is too large: increase working feed rate, only possible for blades with GS geometry
Chamfer with chatter marks	• Poorly set workpiece or tool	<ul style="list-style-type: none"> • Ensure that workpiece and tool are firmly clamped
	• Tool in unstable condition	<ul style="list-style-type: none"> • Increase tool feed rate, and possibly blade force
	• Cutting speed too high	<ul style="list-style-type: none"> • Reduce cutting speed
Inconsistent chamfer size	• Different working feed rate	<ul style="list-style-type: none"> • Select consistent working feed rate
	• Blade force so weak that the blade does not return to the neutral position every time	<ul style="list-style-type: none"> • Turn the set screw clockwise to increase the blade pressure
	• Tool in unstable condition	<ul style="list-style-type: none"> • Increase blade force and working feed rate
Poor service life	• Poorly clamped workpiece or tool (vibration)	<ul style="list-style-type: none"> • Ensure that workpiece and tool are more firmly clamped
	• Inadequate machine stability (spindle play, etc.)	<ul style="list-style-type: none"> • Improve machine stability or guide with special tool in the bore
	• Incorrect blade coating	<ul style="list-style-type: none"> • Select another coating