

SNAP

Economic front and back chamfering in one operation,
with most easy blade change.

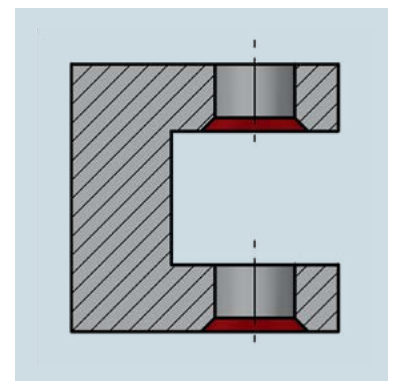
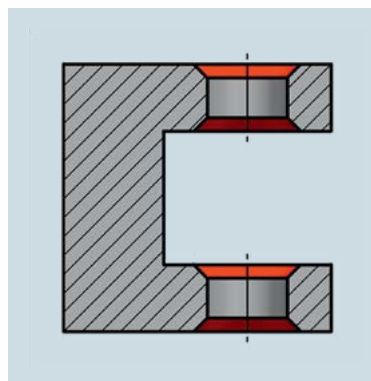
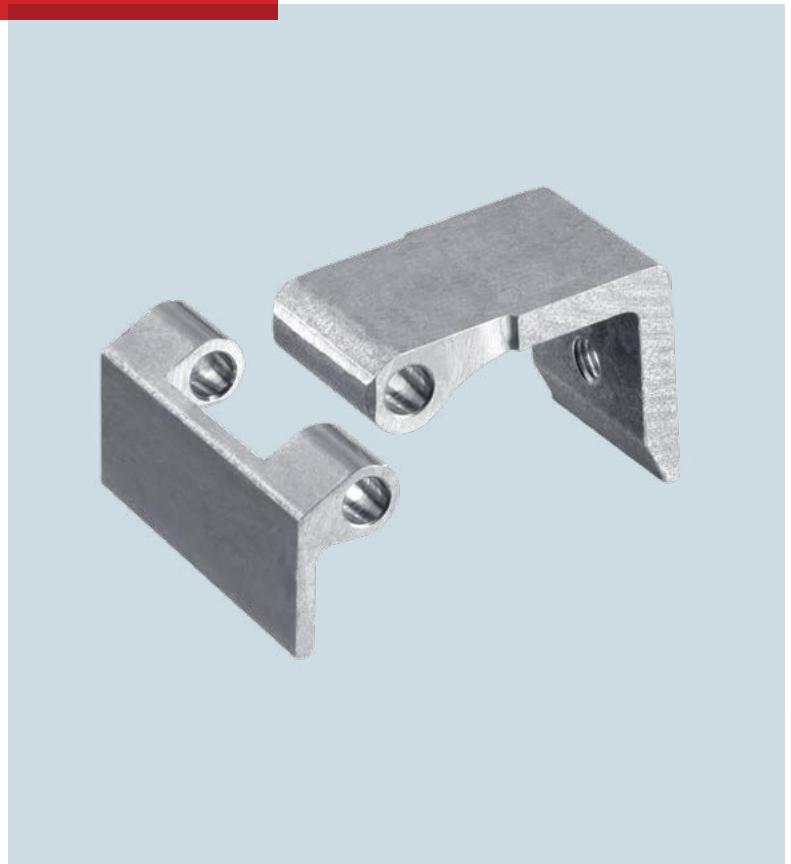
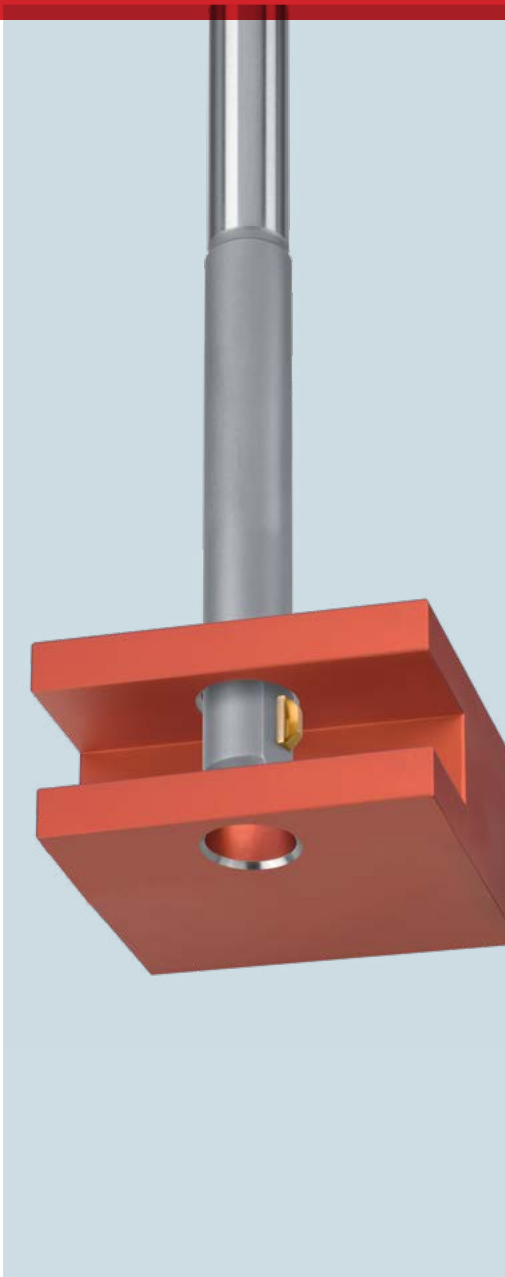


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SNAP - The Economic Chamfering Tool

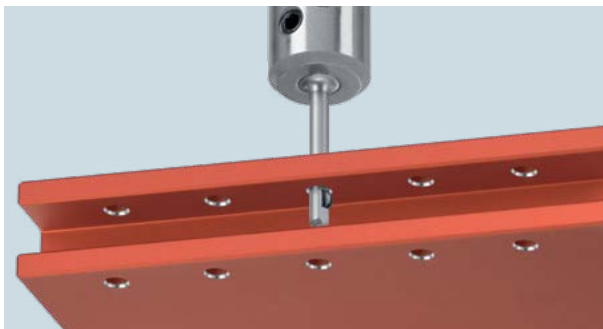


Economic front and back chamfering of bores in One Operation, with very easy blade change.

The SNAP tool is an efficient front and back chamfering tool that is easy to use and which allows quick blade changes, making it a convenient solution for any manufacturing environment. Without any need to turn the work piece or to stop the spindle, it removes the burrs and chamfers the edges.

The SNAP tool has been designed for automatic operation involving large production lots. The tool is characterised by its most simple blade change that is carried out manually and without any specific aids.

Characteristics and Advantages



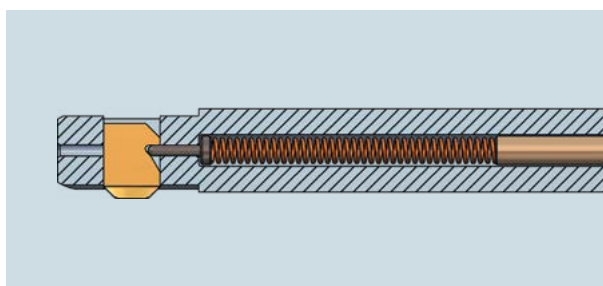
- The SNAP standard tool series ranges from bore diameter Ø2.0 mm to Ø35.0 mm. The cassette system is designed for bore diameters larger than Ø35.0 mm.

- As manufacturer of this tool system, HEULE is able to provide also tailor-made solutions for specific applications.



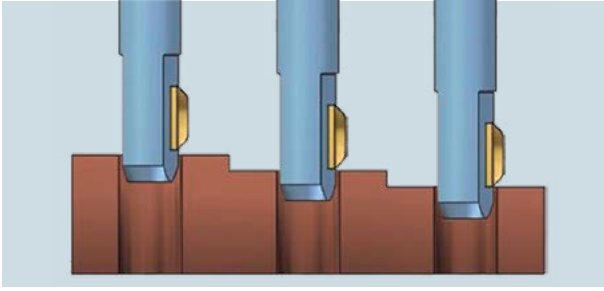
- SNAP produces chamfers and countersinks ranging from 0.2 - 1.5 mm depending on bore diameter and blade.

- Different blades can be used in one tool in order to achieve different chamfer sizes. The blade defines the chamfer size.

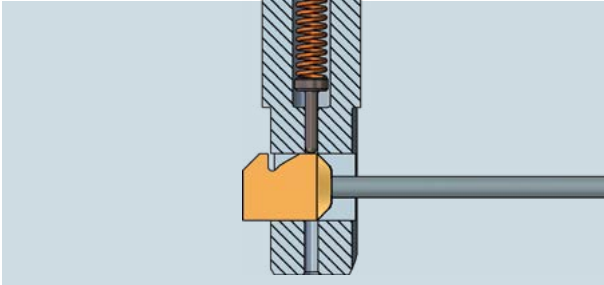


- The combination of the mechanical spring-load controlled function principle with the robust design are responsible for the outspoken reliability.

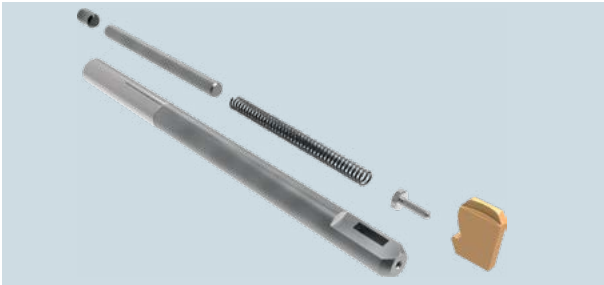
- The application of the tool is very user-friendly. It is ready to use without any preadjustments.



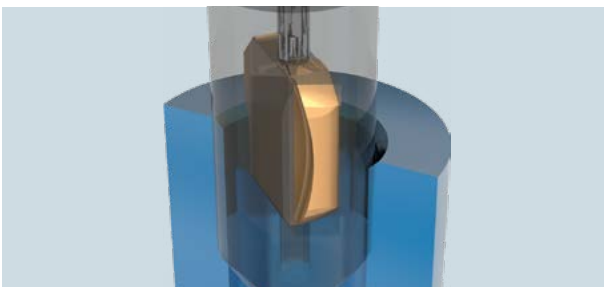
- The blade starts to cut only when it is in touch with the workpiece. This ensures a consistent chamfer capacity no matter where the machining level is. SNAP compensates possible height irregularities of the workpieces to be machined automatically, i.e. such as cast parts.



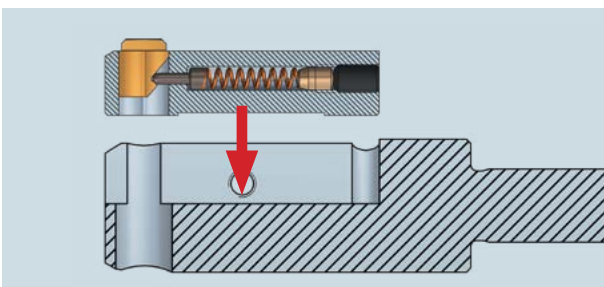
- The easy to exchange carbide blades are carried out with material dependent coatings. Any blunt object or a plastic bolt may serve for pushing out the blade.



- The simple and compact design combined with its fully mechanical function principle guarantee its reliable operation.



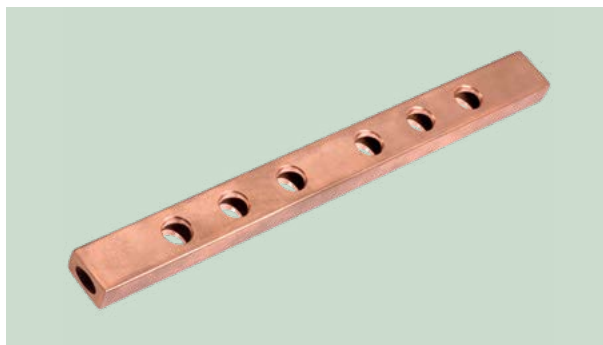
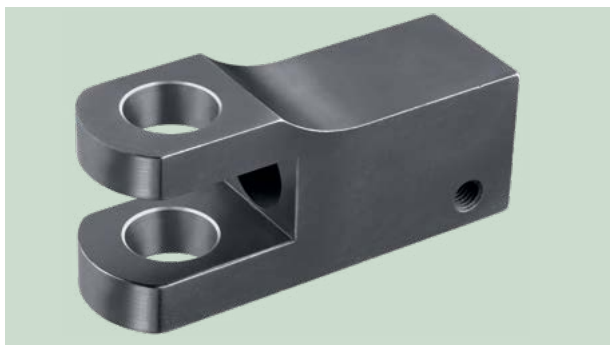
- The penetration of the bore does not injure the bore surface. Thanks to its especially developed sliding section, the blade slides softly and with minimal friction over the bore surface.



- The cassette solution (simple tool holder + cassette tool) expands the maximum diameter of still machinable bore edges without limits.
- The cassette solution allows to integrate the chamfering process into an existing customer tool. By combining two or several processes in one single tool, the cycle time can be reduced considerably.

The SNAP tooling system's simple design makes it suitable ideally for all production processes where high process stability is required. No complicated or time consuming setting is necessary to make the tool ready for operation. The drilled hole diameter determines the size of tool required and the desired chamfer size determines the blade. For instance, if a larger chamfer size is needed, you simply

exchange the existing blade by the next larger blade. For instance, with a given bore-Ø of 4.4 mm the chamfer sizes-Ø 4.8, 5.2 and 5.6 are producible with different blades (see page 14).



Tool Description

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

Designwise, the SNAP tool family consists of 3 types. There is SNAP2, 3 and 4 on one hand, SNAP5 to 20 on the other hand. The third group are the cassette tools.

The design concepts differ because of their sizes. Whereas the tool body of SNAP5 up to SNAP20 is a one-piece construction, it is split up into tool body and blade housing for SNAP2 upto SNAP4. The cassette tools use the identical function principle but are built in a more compact design.



Image: SNAP5 - The so called "B" form of the blade is more complex with regard to production. However, its improved guiding capacities justify this design for this tool size.

The SNAP technology offers a very user-friendly and competitive front and back chamfering system. For instance, the blade can be exchanged easily manually without any need for additional tools. The complete SNAP tool consists of six components only!

The workpiece is machined with a rotating spindle similar to a drill. In one single pass and without changing the direction of the spindle rotation, it is possible to chamfer the front as well as the back of the bore neatly. Once the predefined chamfer size has been reached, the blade moves automatically into the tool body. So, it passes in rapid traverse through the bore. The ball shape of the blade protects the bore surface from being damaged at the contact point.



Image: SNAP2 - The design of the tool body consists of two components for dimension reasons: a tool body and a blade housing.

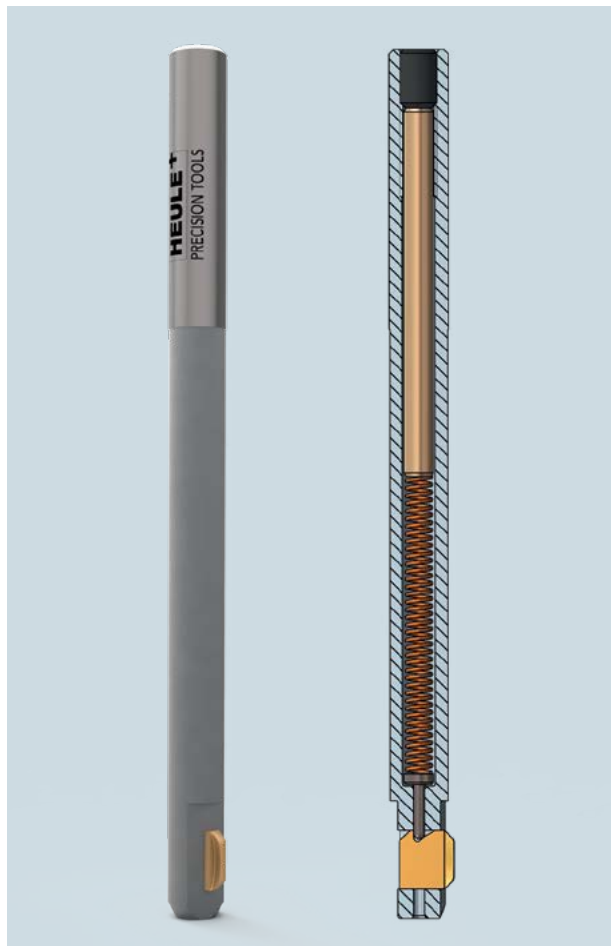
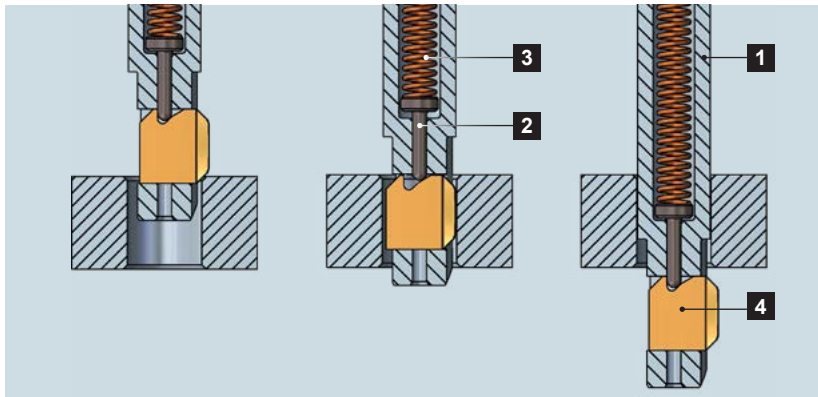


Image: SNAP8 - Unlike the smaller tool types SNAP2 up to 4 this tool has one tool body and 5 other components only.

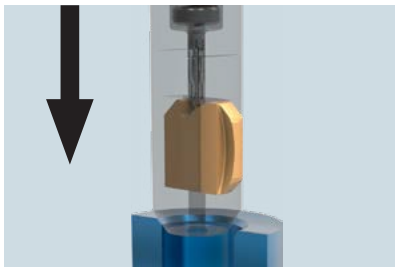


- 1** Tool Body
- 2** Control Bolt
- 3** Spring
- 4** SNAP Chamfer Blade

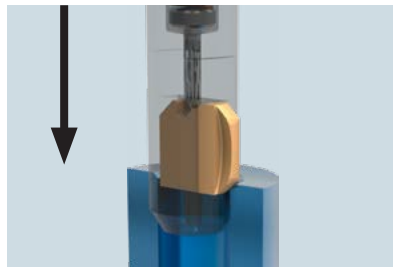
The SNAP deburring blade is kept movable in the tool body via a control bolt held under spring pressure. A specially ground forward and backward cutting only blade produces the required chamfer whilst the tool enters the bore. Once the chamfer size is attained, the deburring blade continuously retracts into the tool body. On a specially designed gliding radii, the blade passes through the hole without damaging it. The deburring

blade has a special recess which the control bolt engages and after exiting the hole brings the blade back into its starting position. A smooth deburring or chamfering operation forwards and backwards is the result of this machining operation. Chamfer size and chamfer angle are predetermined geometrically at the blade and can only be changed by the use of another blade of an adapted design.

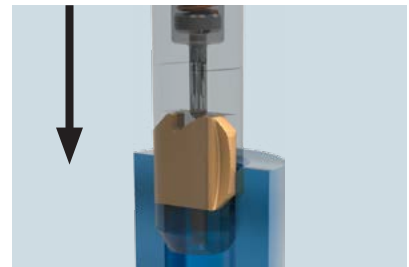
Process Steps Description



The process is very simple. First, rapid traverse of the cutting unit of the tool above the top material surface of hole or burr. Referencing the front edge of the cutting blade.



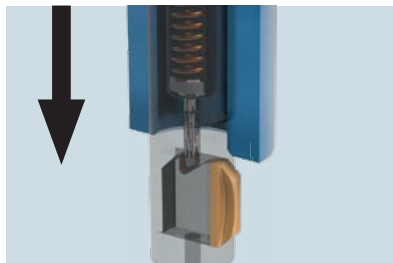
In working feed and working speed, the deburring/chamfering of the upper bore edge is carried out.



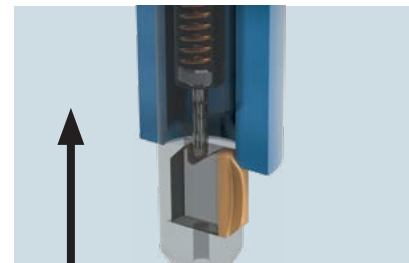
Once the chamfer size is attained, traverse in rapid feed through the hole without stopping the spindle.



Despite the swivel movement of the spindle, the blade passes through the hole without damaging it. Even reamed bores can be passed through without any damage.



Once clear of the back side of the bore, rapid feed is stopped and the SNAP blade returns to its starting position.

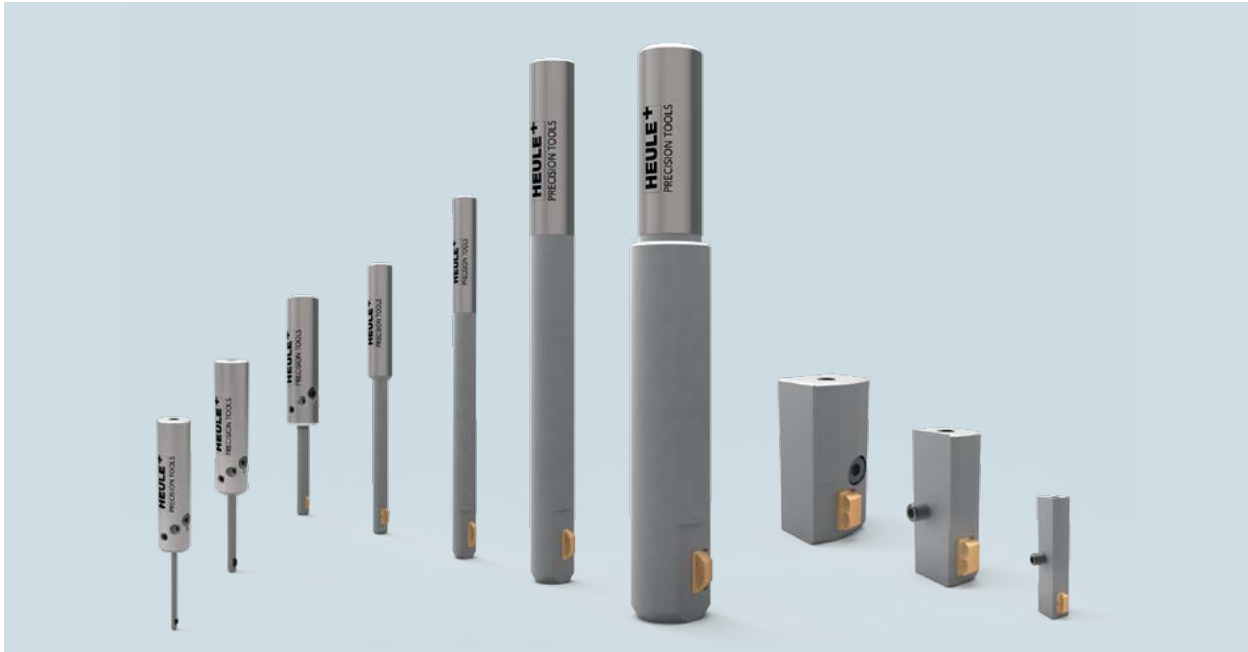


Without stopping the spindle or or change of direction of the spindle, linear feed backward then allows the machining of a suitable back chamfer. Once finished, traverse in rapid speed and without stopping the spindle out of the hole.

Product Range

The tool range comprises of tools for the use in bore diameters ranging from 2 mm to 35 mm. In addition, using cassettes, any size of bore diameter can be chamfered. The chamfering capacity (radially) is 0.1 mm up to 1.5 mm depending on blade selection.

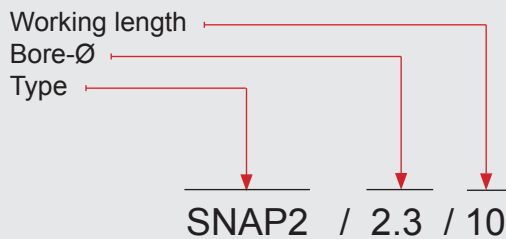
Within one tool type series, there are variants of diameters that cover the range up to next larger tool type series.



Bore	Max. Chamfering Capacity ¹	Tool Type Series
Ø2.0 – Ø2.9 mm	0.2 - 0.3	SNAP2
Ø3.0 – Ø3.9 mm	0.3 - 0.5	SNAP3
Ø4.0 – Ø5.0 mm	0.6 - 0.75	SNAP4
Ø5.0 – Ø8.0 mm	1.0	SNAP5
Ø8.0 – Ø12.0 mm	0.75	SNAP8
Ø12.0 – Ø20.0 mm	1.0	SNAP12
Ø20.0 - Ø35.0 mm	1.5	SNAP20
from Ø12.6 mm	1.5	SNAP5 Cassette
from Ø25.0 mm	1.5	SNAP20 Cassette
from Ø35.0 mm	1.5	SNAP20 Cassette
Thread M2.5 Ø2.05 mm	0.35	SNAP2/M2.5
Thread M3 Ø2.5 mm	0.45	SNAP2/M3
Thread M4 Ø3.3 mm	0.6	SNAP3/M4
Thread M5 Ø4.2 mm	0.7	SNAP4/M5
Thread M6 Ø5.0 mm	0.75	SNAP5/M6
Thread M8 Ø6.8 mm	0.85	SNAP5/M8
Thread M10 Ø8.5 mm	1.0	SNAP5/M10
Thread M12 Ø10.2 mm	1.15	SNAP5/M12
Thread M14 Ø12.0 mm	1.25	SNAP5/M14

¹⁾ The chamfering result varies due to tool dimension, material and cutting data. The precise indications are listed under Product Selection.

Part Number: Tool without blade



Tool type

Within a tool type there are different tool sizes available. The diameter of the tool housing and the working length vary according to the application.

Bore diameter

The tool size is determined by the bore diameter. Tool diameter and possible chamfering resp. deburring capacity are shown in the tables (page 10ff).

Working length

For the tool types SNAP2, SNAP3 and SNAP4 there are different working lengths available. The tool types SNAP5 and larger possess only one working length per type. This is why it is not necessary to mention it on the order.

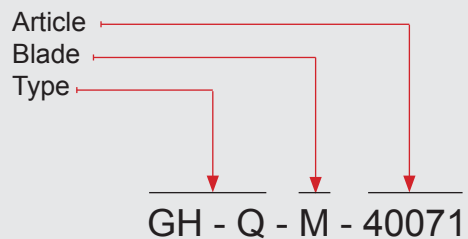
Clamping system

As standard, all tools will be manufactured with a cylindrical shank. Upon request, Weldon, Whistle Notch clamping systems can be ordered for the tool types SNAP5 up to SNAP20 as special versions but these are not available from stock.

-HB = Weldon
-HE = Whistle Notch

Order Example:
SNAP8/9.5-HB

Part Number: Blade



Type

All SNAP blades have the designation GH-Q-M and a consecutive number. These numbers are not based on a system and are therefore without any further information.

Article

Different blades for different chamfer diameters are possible for every tool size (bore-Ø). Hence, the desired chamfer diameter determines the selection of the blade.

Coatings

All blades are made of carbide. The available coatings are:

T = steel, titan, Inconel (standard)
D = for aluminium only
A = increased requirements

An exception from the small tools SNAP2, SNAP3, SNAP4 and SNAP5. Due to the increased requirements the coating A has been defined as standard coating.

Order Example SNAP2, SNAP3, SNAP4

Requirements: *Deburr bore,
Chamfer min. 0.1 mm,
Workpiece thickness 18 mm*

Bore-Ø: 2.6 mm
Material: Cast
Working length: 20 mm
Deburr diameter: 2.8 mm

Selection:

Tool part number: SNAP2/2.6/20
Blade part number: GH-Q-M-40071

Order Example SNAP5 up to SNAP20

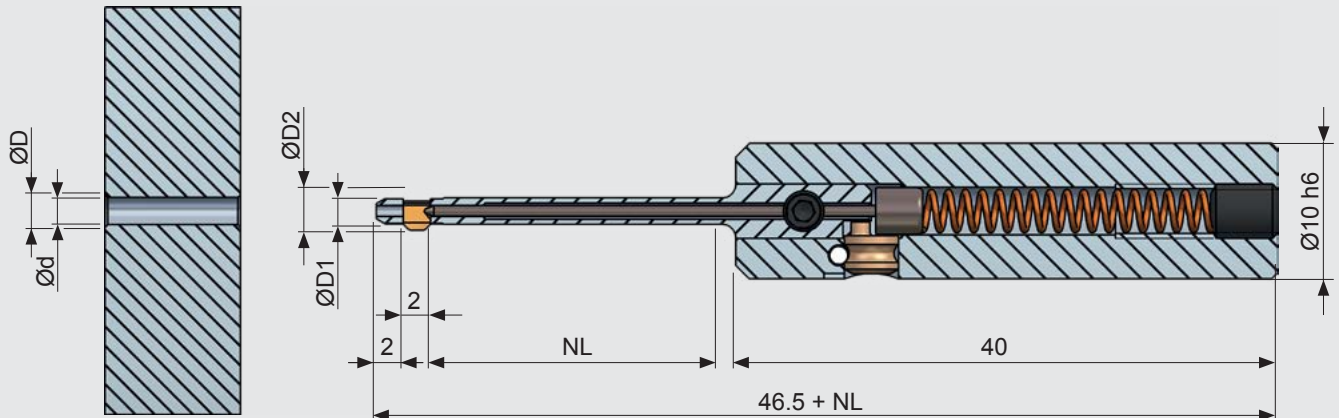
Requirements: *Back bore machining
Chamfer min. 0.5 mm x 45°*

Bore-Ø: 11.3 mm
Defined chamfer-Ø: 12.5 mm
Material: Aluminium

Selection:

Tool part number: SNAP8/11.0
Blade part number: GH-Q-M-05728

SNAP2 Tool Ø2.0 mm to 2.9 mm



Tool Table

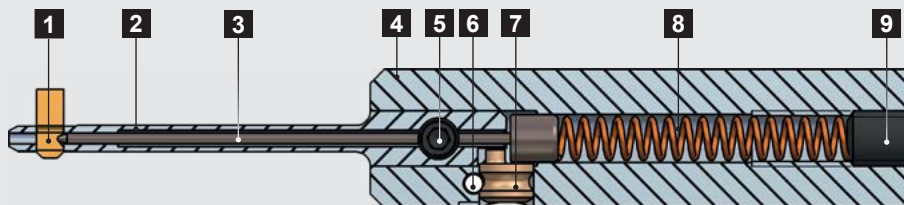
Tool dimensions				Tool without Blade	
Bore- \varnothing $\varnothing d$	Chamfer- \varnothing max ¹ $\varnothing D$	Tool- \varnothing $\varnothing D1$	Maximum- \varnothing ² $\varnothing D2$	Part number Work. length NL 10 mm	Part number Work. length NL 20 mm
2.0	2.4	1.95	$\varnothing D + 0.2$	SNAP2/2.0/10	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

¹⁾ Different chamfer- \varnothing can be achieved per tool size by using different blades. One blade however produces one defined chamfer- \varnothing only. The achievable chamfer capacity varies slightly depending on material, blade force, cutting data or application. The indicated dimension is the theoretically possible maximum.

²⁾ The maximum diameter D2 varies depending on the selected blade. Please calculate value with formula. **Please mind any interfering edges.**

Note:

- The tool types SNAP2, SNAP3 and SNAP4 are available with cylindrical shank only.
- Attention: The tools are **without** blade. The blades for the tool need to be ordered separately (please refer to page 11 for GS geometry).


Spare Parts

Pos.	Description	Part No.
1	Blade	see below
2	Blade housing	see page 41
3	Control bolt	GH-Q-E-0236 (NL: 10mm) GH-Q-E-0237 (NL: 20mm)
4	Tool body SNAP2-4 Ø10.0 h6	GH-Q-G-5024
	Tool body assembly SNAP2-4 Ø10.0 h6 incl. Excenter GH-S-E-0031 incl. Roll pin GH-C-E-0811	GH-Q-G-5025
5	Locking screw M3x3.3	GH-H-S-1075
6	Roll pin SNAP2-4	GH-C-E-0811
7	Excenter SNAP2-4	GH-S-E-0031
8	Spring Ø3.2xØ0.45x23.0	GH-H-F-0047
9	Set screw M4x5 DIN913	GH-H-S-0134
	Wrench SW1.5 to Pos. 9	GH-H-S-2101

Blades GS Geometry 90°

Chamfer-Ø ¹	Part number Blade forward and backward cutting		backward cutting only	
	Coating A	Coating D	Coating A	Coating D
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

^{*)} Standard items / Please enquire about stock or delivery times for all non-standard items.

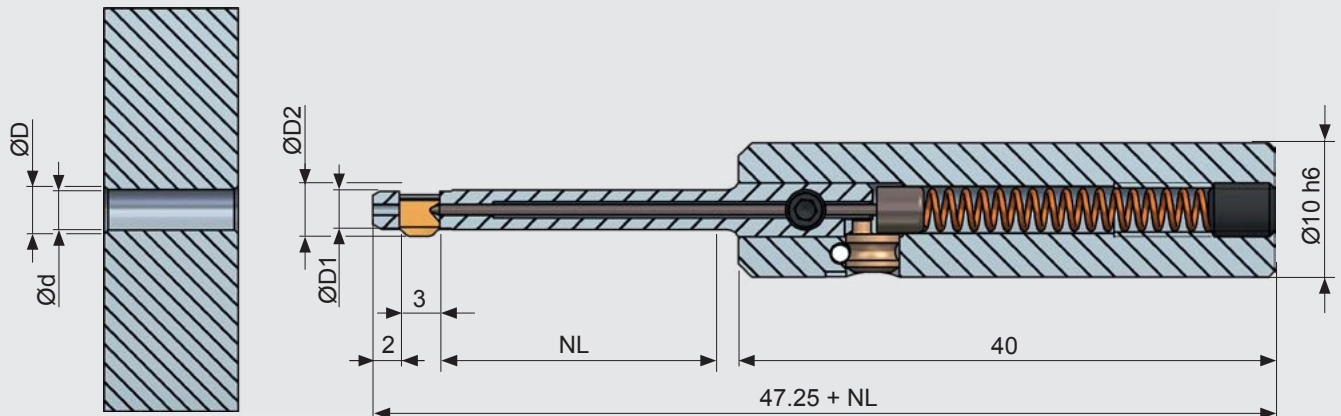
¹⁾ The indicated dimension is the theoretically possible maximum.

Explanations to coatings (see also page 9)

A: Coating for steel, titan, Inconel

D: Coating for aluminium alloys only

SNAP3 Tool Ø3.0 mm to 3.9 mm



Tool Table

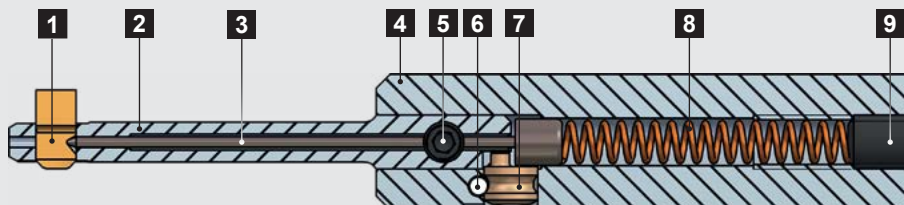
Tool dimensions				Tool without Blade		
Bore- \varnothing $\varnothing d$	Chamf.- \varnothing_{\max}^1 $\varnothing D$	Tool- \varnothing $\varnothing D1$	Max.- \varnothing^2 $\varnothing D2$	Part number Work. length NL 10 mm	Part number Work. length NL 20 mm	Part number Work. length NL 30 mm
3.0	3.3 / 3.6	2.9	$\varnothing D + 0.3$	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

¹⁾ Different chamfer- \varnothing can be achieved per tool size by using different blades. One blade however produces one defined chamfer- \varnothing only. The achievable chamfer capacity varies slightly depending on material, blade force, cutting data or application. The indicated dimension is the theoretically possible maximum.

²⁾ The maximum diameter D2 varies depending on the selected blade. Please calculate value with formula. **Please mind any interfering edges.**

Note:

- The tool types SNAP2, SNAP3 and SNAP4 are available with cylindrical shank only.
- Attention: The tools are **without** blade. The blades for the tool need to be ordered separately (please refer to page 13 for GS geometry).


Spare Parts

Pos.	Description	Part No.
1	Blade	see below
2	Blade housing	see page 41
3	Control bolt	GH-Q-E-0236 (NL: 10 mm) GH-Q-E-0237 (NL: 20 mm) GH-Q-E-0238 (NL: 30 mm)
4	Tool body SNAP2-4 Ø10 h6	GH-Q-G-5024
	Tool body assembly SNAP2-4 Ø10h6 incl. Excenter GH-S-E-0031 incl. Roll pin GH-C-E-0811	GH-Q-G-5025
5	Locking screw M3x3.3	GH-H-S-1075
6	Roll pin SNAP2-4	GH-C-E-0811
7	Excenter SNAP2-4	GH-S-E-0031
8	Spring Ø3.2xØ0.45x23.0	GH-H-F-0047
9	Set screw M4x5 DIN913 Wrench SW1.5 zu Pos. 9	GH-H-S-0134 GH-H-S-2101

Blades GS Geometry 90°

Chamfer-Ø ¹	Part number Blade forward and backward cutting		backward cutting only	
	Coating A	Coating D	Coating A	Coating D
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

^{*)} Standard items / Please enquire about stock or delivery times for all non-standard items.

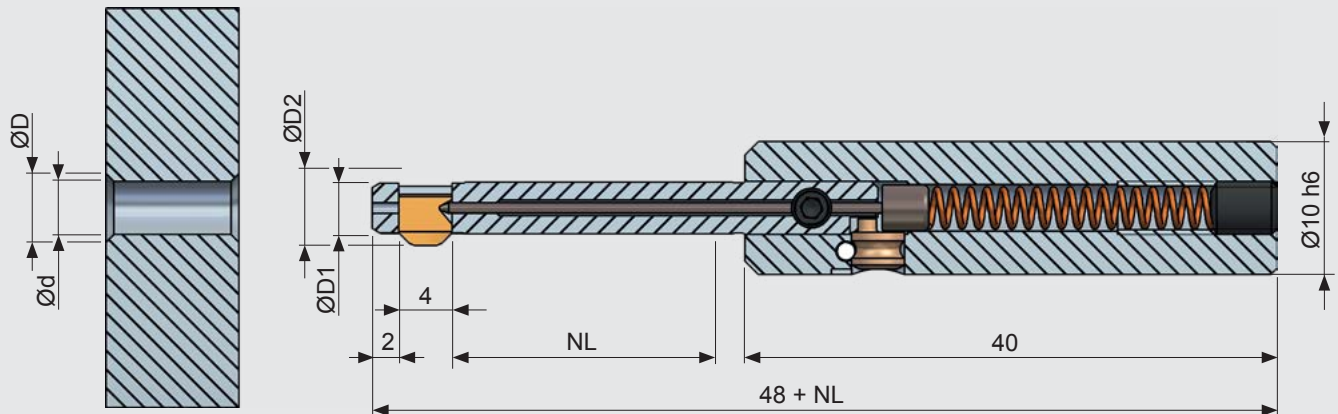
¹⁾ The indicated dimension is the theoretically possible maximum.

Explanations to coatings (see also page 9)

A: Coating for steel, titan, Inconel

D: Coating for aluminium alloys only

SNAP4 Tool Ø4.0 mm to 5.0 mm



Tool Table

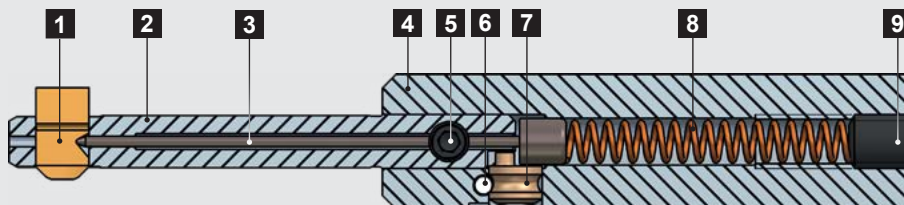
Tool dimensions				Tool without Blade		
Bore- \varnothing $\varnothing d$	Chamf.- \varnothing_{\max}^1 $\varnothing D$	Tool- \varnothing $\varnothing D1$	Max.- \varnothing^2 $\varnothing D2$	Part number Work. length NL 10 mm	Part number Work. length NL 20 mm	Part number Work. length NL 30 mm
4.0	4.4 / 4.8 / 5.2	3.9	$\varnothing D + 0.4$	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	5.2 / 5.6 / 6.4	4.8		SNAP4/4.9/10	SNAP4/4.9/20	SNAP4/4.9/30
5.0	5.2 / 5.6 / 6.4	4.9		SNAP4/5.0/10	SNAP4/5.0/20	SNAP4/5.0/30

¹⁾ Different chamfer- \varnothing can be achieved per tool size by using different blades. One blade however produces one defined chamfer- \varnothing only. The achievable chamfer capacity varies slightly depending on material, blade force, cutting data or application. The indicated dimension is the theoretically possible maximum.

²⁾ The maximum diameter D2 varies depending on the selected blade. Please calculate value with formula. **Please mind any interfering edges.**

Note:

- The tool types SNAP2, SNAP3 and SNAP4 are available with cylindrical shank only.
- Attention: The tools are **without** blade. The blades for the tool need to be ordered separately (please refer to page 15 for GS geometry).


Spare Parts

Pos.	Description	Part No.
1	Blade	see below
2	Blade housing	see page 41
3	Control bolt	GH-Q-E-0236 (NL: 10 mm) GH-Q-E-0237 (NL: 20 mm) GH-Q-E-0238 (NL: 30 mm)
4	Tool body SNAP2-4 Ø10 h6	GH-Q-G-5024
	Tool body assembly SNAP2-4 Ø10 h6 incl. Excenter GH-S-E-0031 incl. Roll pin GH-C-E-0811	GH-Q-G-5025
5	Locking pin M3x3.3	GH-H-S-1075
6	Roll pin SNAP2-4	GH-C-E-0811
7	Excenter SNAP2-4	GH-S-E-0031
8	Spring Ø3.2xØ0.45x23.0	GH-H-F-0047
9	Set screw M4x5 DIN913 Wrench SW1.5 zu Pos. 9	GH-H-S-0134 GH-H-S-2101

Blades GS Geometry 90°

Chamfer-Ø ¹	Part number Blade forward and backward cutting		backward cutting only	
	Coating A	Coating D	Coating A	Coating D
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

^{*)} Standard items / Please enquire about stock or delivery times for all non-standard items.

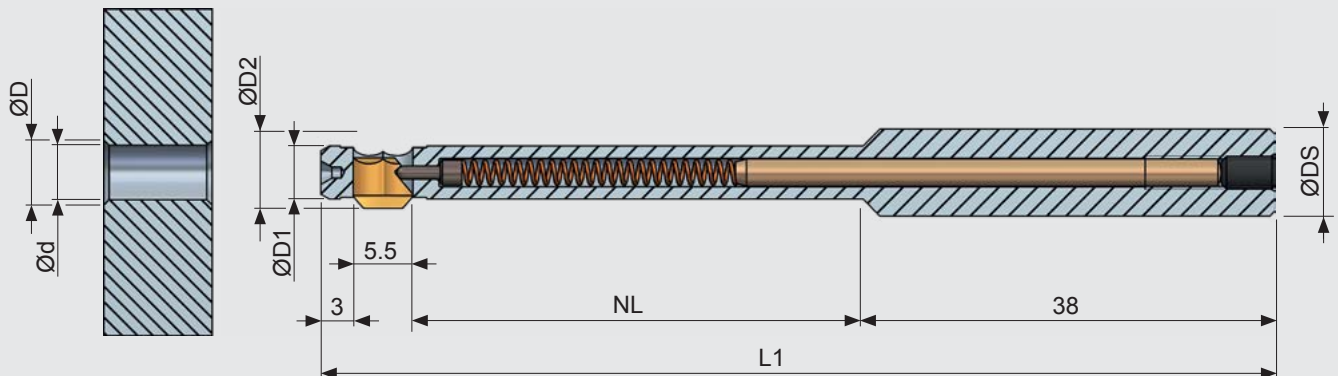
¹⁾ The indicated dimension is the theoretically possible maximum.

Explanations to coatings (see also page 9)

A: Coating for steel, titan, Inconel

D: Coating for aluminium alloys only

SNAP5 Tool Ø5.0 mm to 10.0 mm



Tool Table

Tool dimensions							Tool without Blade
Bore-Ø $\varnothing d$	Chamfer-Ø max. ¹ $\varnothing D$	Tool-Ø $\varnothing D_1$	Max-Ø ² $\varnothing D_2$	Tool length L1	Work. length NL	Shank-Ø $\varnothing DS$	Part number
5.0-5.5	5.5 / 6.0 / 6.5 / 7.0	4.9	$\varnothing D+0.6$	88.0	40.0	8.0 h6	SNAP5/5.0
5.5-6.0	6.0 / 6.5 / 7.0 / 7.5	5.4		88.0	40.0	8.0 h6	SNAP5/5.5
6.0-6.5	6.5 / 7.0 / 7.5 / 8.0	5.9		88.0	40.0	8.0 h6	SNAP5/6.0
6.5-7.0	7.0 / 7.5 / 8.0 / 8.5	6.4		88.0	40.0	8.0 h6	SNAP5/6.5
7.0-7.5	7.5 / 8.0 / 8.5 / 9.0	6.9		88.0	40.0	8.0 h6	SNAP5/7.0
7.5-8.0	8.0 / 8.5 / 9.0 / 9.5	7.4		88.0	40.0	8.0 h6	SNAP5/7.5
8.0-8.5	8.5 / 9.0 / 9.5 / 10.0	7.8		98.0	50.0	10.0 h6	SNAP5/8.0
8.5-9.0	9.0 / 9.5 / 10.0 / 10.5	8.3		98.0	50.0	10.0 h6	SNAP5/8.5
9.0-9.5	9.5 / 10.0 / 10.5 / 11.0	8.8		98.0	50.0	10.0 h6	SNAP5/9.0
9.5-10.0	10.0 / 10.5 / 11.0 / 11.5	9.3		98.0	50.0	10.0 h6	SNAP5/9.5
10.0-10.5	10.5 / 11.0 / 11.5 / 12.0	9.8		107.0	50.0	12.0 h6	SNAP5/10.0

¹⁾ Different chamfer-Ø can be achieved per tool size by using different blades. One blade however produces one defined chamfer-Ø only. The achievable chamfer capacity varies slightly depending on material, blade force, cutting data or application. The indicated dimension is the theoretically possible maximum.

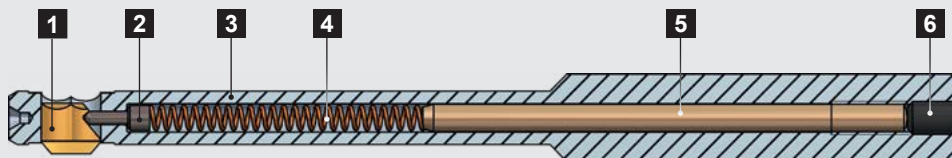
²⁾ The maximum diameter D2 varies depending on the selected blade. Please calculate value with formula. **Please mind any interfering edges.**

Note:

- Standard shank for tool part numbers without any addition = Cylindrical shank
With addition: "-HB" = Weldon shank or "-HE" = Whistle Notch shank (see explanations page 9)
- Attention: The tools are **without** blade. The blades for the tool need to be ordered separately (please refer to page 17 for GS geometry).

Attention:

Blades for SNAP5 tools and blades for Thread tools are **not** interchangeable!


Spare parts

Pos.	Description	Part number
1	Blade	see below
2	Control bolt Ø1.2	GH-Q-E-0008
3	Tool body	see page 42
4	Spring Ø2.35 x Ø0.35 x 30	GH-H-F-0019
5	SNAP Distance pin Ø2.5 x 45	GH-Q-E-0041
	SNAP Distance pin Ø2.5 x 55	GH-Q-E-0068
	SNAP Distance pin Ø2.5 x 65	GH-Q-E-0067
6	Set screw M3 x 5 DIN 913	GH-H-S-0127
	Wrench SW1.5 to Pos. 6 (not included)	GH-H-S-2101

Blades GS Geometry 90°

Chamfer-Ø ¹	Part number Blade forward and backward cutting		backward cutting only	
	Coating A	Coating D	Coating A	Coating D
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

^{*)} Standard items / Please enquire about stock or delivery times for all non-standard items.

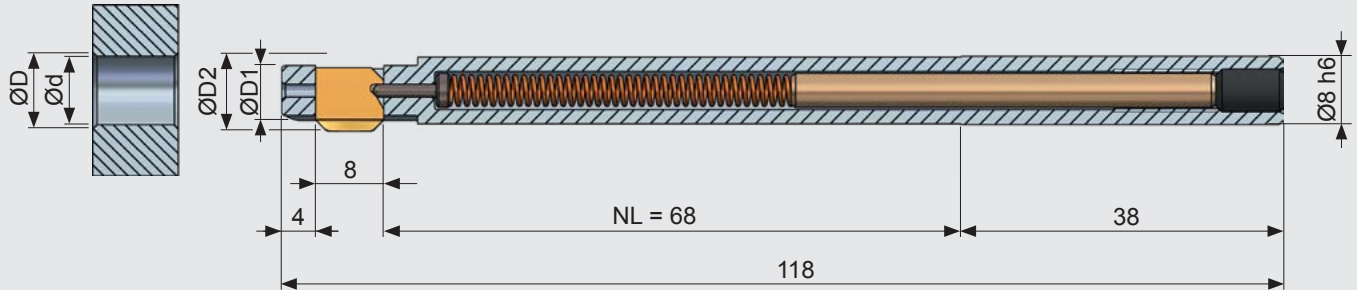
¹⁾ The indicated dimension is the theoretically possible maximum.

Explanations to coatings (see also page 9)

A: Coating for steel, titan, Inconel

D: Coating for aluminium alloys only

SNAP8 Tool Ø8.0 mm to 12.0 mm



Tool Table

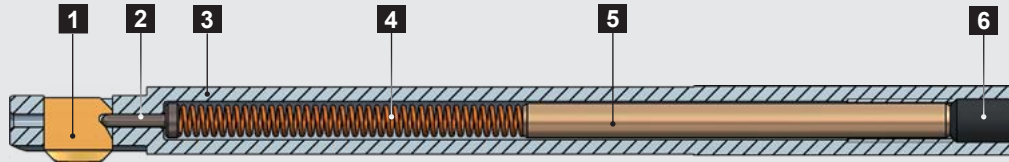
Tool dimensions				Tool without Blade
Bore-Ø Ød	Chamfer-Ø max. ¹ ØD	Tool-Ø ØD1	Max-Ø² ØD2	Part number
8.0 - 9.0	8.5 / 9.0	7.8	ØD + 0.6	SNAP8/8.0
8.5 - 9.5	9.0 / 9.5 / 10.0	8.3		SNAP8/8.5
9.0 - 10.0	9.5 / 10.0 / 10.5	8.8		SNAP8/9.0
9.5 - 10.5	10.0 / 10.5 / 11.0	9.3		SNAP8/9.5
10.0 - 11.0	10.5 / 11.0 / 11.5	9.8		SNAP8/10.0
10.5 - 11.5	11.0 / 11.5 / 12.0	10.3		SNAP8/10.5
11.0 - 12.0	11.5 / 12.0 / 12.5	10.8		SNAP8/11.0
11.5 - 12.5	12.0 / 12.5 / 13.0	11.3		SNAP8/11.5
12.0 - 13.0	12.5 / 13.0 / 13.5	11.8		SNAP8/12.0

¹⁾ Different chamfer-Ø can be achieved per tool size by using different blades. One blade however produces one defined chamfer-Ø only. The achievable chamfer capacity varies slightly depending on material, blade force, cutting data or application. The indicated dimension is the theoretically possible maximum.

²⁾ The maximum diameter D2 varies depending on the selected blade. Please calculate value with formula. **Please mind any interfering edges.**

Note:

- Standard shank for tool part numbers without any addition = Cylindrical shank
With addition: "-HB" = Weldon shank or "-HE" = Whistle Notch shank (see explanations page 9)
- Attention: The tools are **without** blade. The blades for the tool need to be ordered separately (please refer to page 19 for GS geometry and page 33 for DF geometry).


Spare Parts

Pos.	Description	Part No.
1	Blade	see below
2	Control bolt Ø1.5	GH-Q-E-0002
3	Tool body	see page 42
4	Spring Ø3.7 x Ø0.5 x 48	GH-H-F-0007
5	SNAP Distance pin Ø4 x 50	GH-Q-E-0028
6	Set screw M5 x 8 DIN 913 Wrench SW2.5 to Pos. 6 (not included)	GH-H-S-0119 GH-H-S-2100

Blades GS Geometry 90°

Chamfer-Ø ¹	Part number Blade forward and backward cutting		backward cutting only	
	Coating T	Coating A	Coating T	Coating A
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

^{*)} Standard items / Please enquire about stock or delivery times for all non-standard items.

¹⁾ The indicated dimension is the theoretically possible maximum.

Explanations to coating (see also page 9)

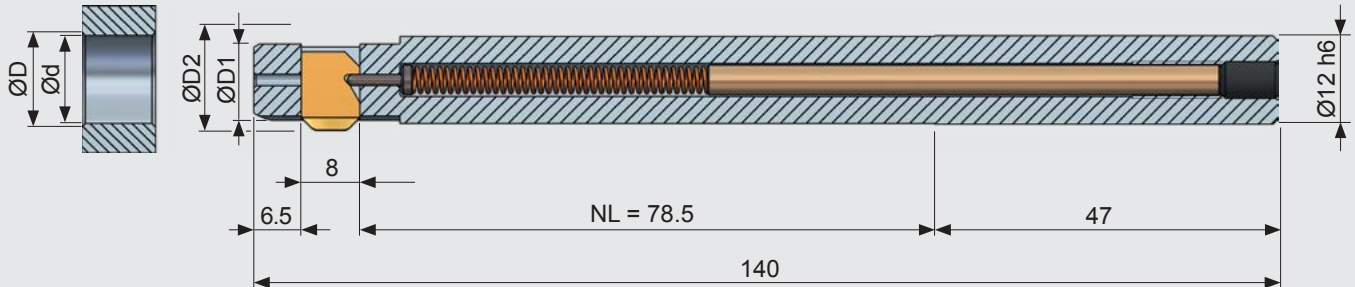
T: Standard coating

A: Coating for increased requirements

Blade range with DF geometry

Please refer to page 33

SNAP12 Tool Ø12.0mm to 20.0 mm



Tool Table

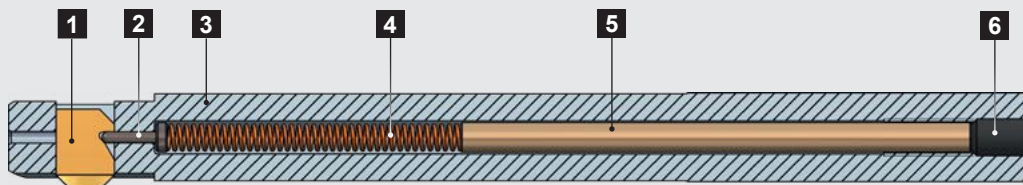
Tool dimensions				Tool without Blade
Bore-Ø Ød	Chamfer-Ø max. ¹ ØD	Tool-Ø ØD1	Max-Ø ² ØD2	Part number
12.0 - 13.5	12.5 / 13.0 / 13.5 / 14.0	11.8	ØD + 0.8	SNAP12/12.0
12.5 - 14.0	13.0 / 13.5 / 14.0 / 14.5	12.3		SNAP12/12.5
13.0 - 14.5	13.5 / 14.0 / 14.5 / 15.0	12.8		SNAP12/13.0
13.5 - 15.0	14.0 / 14.5 / 15.0 / 15.5	13.3		SNAP12/13.5
14.0 - 15.5	14.5 / 15.0 / 15.5 / 16.0	13.8		SNAP12/14.0
14.5 - 16.0	15.0 / 15.5 / 16.0 / 16.5	14.3		SNAP12/14.5
15.0 - 16.5	15.5 / 16.0 / 16.5 / 17.0	14.8		SNAP12/15.0
15.5 - 17.0	16.0 / 16.5 / 17.0 / 17.5	15.3		SNAP12/15.5
16.0 - 17.5	16.5 / 17.0 / 17.5 / 18.0	15.8		SNAP12/16.0
16.5 - 18.0	17.0 / 17.5 / 18.0 / 18.5	16.3		SNAP12/16.5
17.0 - 18.5	17.5 / 18.0 / 18.5 / 19.0	16.8		SNAP12/17.0
17.5 - 19.0	18.0 / 18.5 / 19.0 / 19.5	17.3		SNAP12/17.5
18.0 - 19.5	18.5 / 19.0 / 19.5 / 20.0	17.8		SNAP12/18.0
18.5 - 20.0	19.0 / 19.5 / 20.0 / 20.5	18.3		SNAP12/18.5
19.0 - 20.5	19.5 / 20.0 / 20.5 / 21.0	18.8		SNAP12/19.0
19.5 - 21.0	20.0 / 20.5 / 21.0 / 21.5	19.3		SNAP12/19.5
20.0 - 21.5	20.5 / 21.0 / 21.5 / 22.0	19.8		SNAP12/20.0

¹⁾ Different chamfer-Ø can be achieved per tool size by using different blades. One blade however produces one defined chamfer-Ø only. The achievable chamfer capacity varies slightly depending on material, blade force, cutting data or application. The indicated dimension is the theoretically possible maximum.

²⁾ The maximum diameter D2 varies depending on the selected blade. Please calculate value with formula. **Please mind any interfering edges.**

Note:

- Standard shank for tool part numbers without any addition = Cylindrical shank
With addition: "-HB" = Weldon shank or "-HE" = Whistle Notch shank (see explanations page 9)
- Attention: The tools are **without** blade. The blades for the tool need to be ordered separately (please refer to page 21 for GS geometry and page 33 for DF geometry).


Spare Parts

Pos.	Description	Part No.
1	Blade	see below
2	Control bolt Ø1.5	GH-Q-E-0002
3	Tool body	see page 42
4	Spring Ø3.7 x Ø0.5 x 48	GH-H-F-0007
5	SNAP Distance pin Ø4 x 70	GH-Q-E-0032
6	Set screw M5 x 8 DIN 913	GH-H-S-0119
	Wrench SW2.5 to Pos. 6 (not included)	GH-H-S-2100

Pos.1 Blades GS Geometry 90°

Chamfer-Ø ¹	Part number Blade forward and backward cutting		backward cutting only	
	Coating T	Coating A	Coating T	Coating A
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

^{*)} Standard items / Please enquire about stock or delivery times for all non-standard items.

¹⁾ The indicated dimension is the theoretically possible maximum.

Explanations to coating (see also page 9)

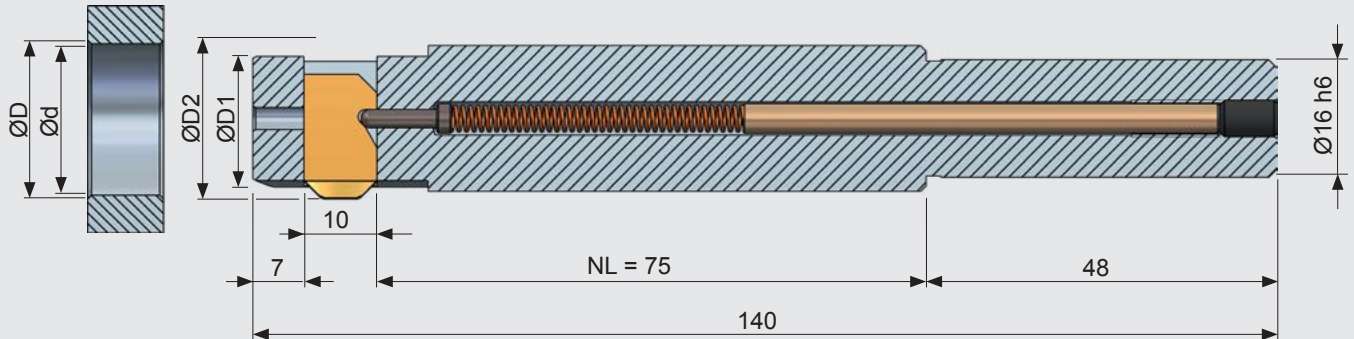
T: Standard coating

A: Coating for increased requirements

Blade range with DF geometry

Please refer to page 33

SNAP20 Tool Ø20.0mm to 35.0 mm



Tool Table

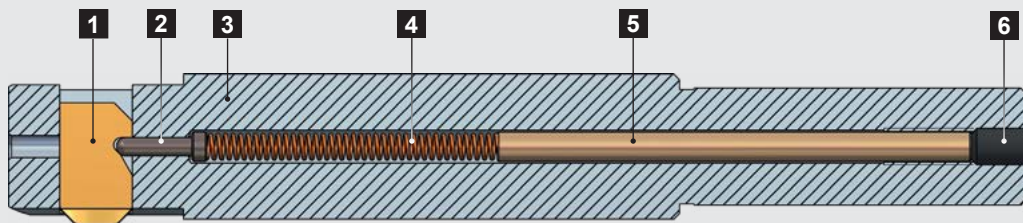
Tool dimensions				Tool without Blade
Bore-Ø Ød	Chamfer-Ø max. ¹ ØD	Tool-Ø ØD1	Max.-Ø ² ØD2	Part number
20.0-22.5	21.0 / 22.0 / 23.0	19.8	ØD + 1.0	SNAP20/20.0
21.0-23.5	22.0 / 23.0 / 24.0	20.8		SNAP20/21.0
22.0-24.5	23.0 / 24.0 / 25.0	21.8		SNAP20/22.0
23.0-25.5	24.0 / 25.0 / 26.0	22.8		SNAP20/23.0
24.0-26.5	25.0 / 26.0 / 27.0	23.8		SNAP20/24.0
25.0-27.5	26.0 / 27.0 / 28.0	24.8		SNAP20/25.0
26.0-28.5	27.0 / 28.0 / 29.0	25.8		SNAP20/26.0
27.0-29.5	28.0 / 29.0 / 30.0	26.8		SNAP20/27.0
28.0-30.5	29.0 / 30.0 / 31.0	27.8		SNAP20/28.0
29.0-31.5	30.0 / 31.0 / 32.0	28.8		SNAP20/29.0
30.0-32.5	31.0 / 32.0 / 33.0	29.8		SNAP20/30.0
31.0-33.5	32.0 / 33.0 / 34.0	30.8		SNAP20/31.0
32.0-34.5	33.0 / 34.0 / 35.0	31.8		SNAP20/32.0
33.0-35.5	34.0 / 35.0 / 36.0	32.8		SNAP20/33.0
34.0-36.5	35.0 / 36.0 / 37.0	33.8		SNAP20/34.0
35.0-37.5	36.0 / 37.0 / 38.0	34.8		SNAP20/35.0

¹⁾ Different chamfer-Ø can be achieved per tool size by using different blades. One blade however produces one defined chamfer-Ø only. The achievable chamfer capacity varies slightly depending on material, blade force, cutting data or application. The indicated dimension is the theoretically possible maximum.

²⁾ The maximum diameter D2 varies depending on the selected blade. Please calculate value with formula. **Please mind any interfering edges.**

Note:

- Standard shank for tool part numbers without any addition = Cylindrical shank
With addition: "-HB" = Weldon shank or "-HE" = Whistle Notch shank (see explanations page 9)
- Attention: The tools are **without** blade. The blades for the tool need to be ordered separately (please refer to page 23 for GS geometry and page 34 for DF geometry).



Spare Parts

Pos.	Description	Part No.
1	Blade	see below
2	Control bolt Ø2.5	GH-Q-E-0003
3	Tool body	see page 42
4	Spring Ø4.3 x Ø0.6 x 52	GH-H-F-0011
5	SNAP Distance pin Ø4 x 65	GH-Q-E-0031
6	Set screw M5 x 8 DIN 913	GH-H-S-0119
	Wrench SW2.5 to Pos. 6 (not included)	GH-H-S-2100

Pos.1 Blades GS Geometry 90°

Chamfer-Ø ¹	Part number Blade forward and backward cutting		backward cutting only	
	Coating T	Coating A	Coating T	Coating A
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) Standard items / Please enquire about stock or delivery times for all non-standard items.

¹⁾ The indicated dimension is the theoretically possible maximum.

Explanations to coating (see also page 9)

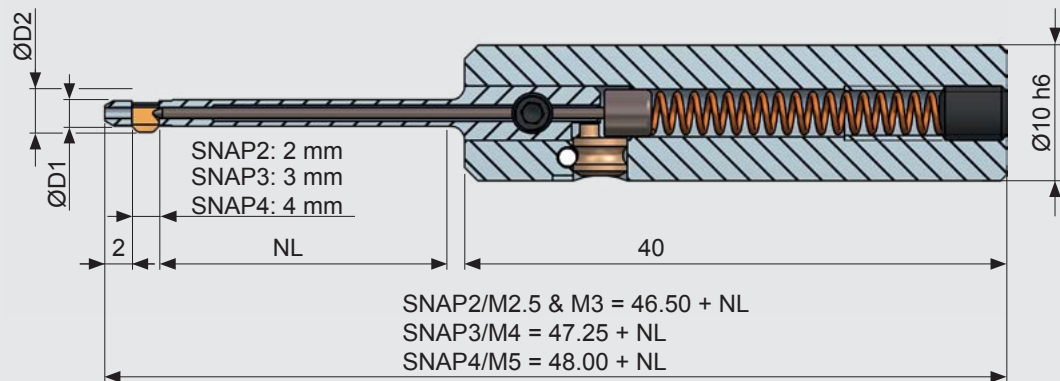
T: Standard coating

A: Coating for increased requirements

Blade range with DF geometry

Please refer to page 34

SNAP Thread Tool M2.5 / M3 / M4 / M5



Tool Table

Tool dimensions					Tool without Blade		
Bore-Ø Ød	Thread ³	Chamf-Ø ¹ ØD	Tool-Ø ØD1	Max.-Ø ² ØD2	Part number Work. length NL 10 mm	Part number Work. length NL 20 mm	Part number Work. length NL 30 mm
Ø2.05	M2.5	2.8	2.0	3.0	SNAP2/M2.5/10	SNAP2/M2.5/20	-
Ø2.5	M3	3.4	2.45	3.6	SNAP2/M3/10	SNAP2/M3/20	-
Ø3.3	M4	4.5	3.2	4.8	SNAP3/M4/10	SNAP3/M4/20	SNAP3/M4/30
Ø4.2	M5	5.6	4.1	6.0	SNAP4/M5/10	SNAP4/M5/20	SNAP4/M5/30

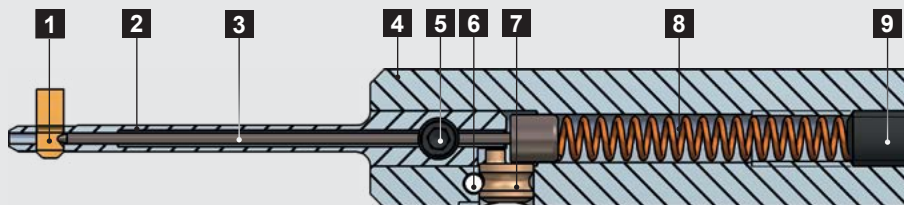
¹⁾ The achievable chamfer capacity varies slightly depending on material, blade force, cutting data or application. The indicated dimension is the theoretically possible maximum.

²⁾ Please mind any interfering edges.

³⁾ The tools for the thread types M6, M8, M10, M12, M14 are listed on page 26f.

Note:

- The tool types SNAP2, SNAP3 and SNAP4 are available with cylindrical shank only.
- Attention: The tools are **without** blade. The blades for the tool need to be ordered separately (please refer to page 25)


Spare Parts

Pos.	Description	Part No.		
		NL 10 mm	NL 20 mm	NL 30 mm
1	Blade	see below	see below	see below
2	Blade housing SNAP2/M2.5/..	GH-Q-N-0015	GH-Q-N-0075	
	Blade housing SNAP2/M3/..	GH-Q-N-0016	GH-Q-N-0076	
	Blade housing SNAP3/M4/..	GH-Q-N-0035	GH-Q-N-0095	GH-Q-N-0155
	Blade housing SNAP4/M5/..	GH-Q-N-0055	GH-Q-N-0115	GH-Q-N-0175
3	Control bolt SNAP2/M2.5/..	GH-Q-E-0254	GH-Q-E-0256	
	Control bolt SNAP2/M3/..	GH-Q-E-0236	GH-Q-E-0237	
	Control bolt SNAP3/M4/..	GH-Q-E-0236	GH-Q-E-0237	GH-Q-E-0238
	Control bolt SNAP4/M5/..	GH-Q-E-0236	GH-Q-E-0237	GH-Q-E-0238
4	Tool body	GH-Q-G-5024	GH-Q-G-5024	GH-Q-G-5024
	Tool body assembly incl. Excenter GH-S-E-0031 incl. Roll pin GH-C-E-0811	GH-Q-G-5025	GH-Q-G-5025	GH-Q-G-5025
5	Locking 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	Excenter SNAP2-4	GH-S-E-0031	GH-S-E-0031	GH-S-E-0031
8	Spring Ø3.2xØ0.45x23.0	GH-H-F-0047	GH-H-F-0047	GH-H-F-0047
9	Set screw M4x5 DIN913	GH-H-S-0134	GH-H-S-0134	GH-H-S-0134
	Wrench SW1.5 to Pos. 9	GH-H-S-2101	GH-H-S-2101	GH-H-S-2101

Pos.1 Blades GS Geometry 90°

Chamfer-Ø ¹	Part number Blade forward and backward cutting		backward cutting only	
	Coating A	Coating D	Coating A	Coating D
Ø2.8	GH-Q-M-41501	GH-Q-M-41502	GH-Q-M-41601	GH-Q-M-41602
Ø3.4	GH-Q-M-41511	GH-Q-M-41512	GH-Q-M-41611	GH-Q-M-41612
Ø4.5	GH-Q-M-41521	GH-Q-M-41522	GH-Q-M-41621	GH-Q-M-41622
Ø5.6	GH-Q-M-41531	GH-Q-M-41532	GH-Q-M-41631	GH-Q-M-41632

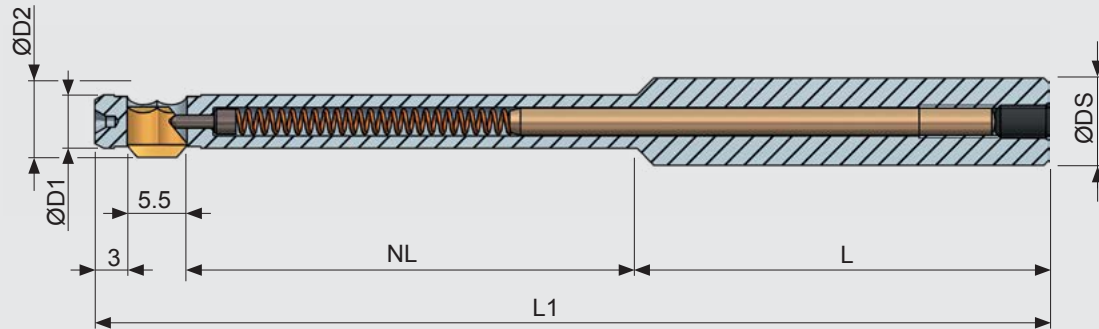
¹⁾ The indicated dimension is the theoretically possible maximum.

Explanations to coatings (see also page 9)

A: Coating for increased requirements

D: Coating for aluminium alloys only - available upon customer request only

SNAP Thread Tools M6 / M8 / M10 / M12 / M14



Tool Table

Tool dimension									Tool without Blade
Bore-Ø Ød	Thread ³	Chamfer-Ø ¹ ØD	Tool-Ø ØD1	Max-Ø ² ØD2	Tool length L1	Work. length NL	Shank L	Shank-Ø ØDS	Part number
5.0	M6	6.5	4.9	7.3	88	40.0	38.0	8.0 h6	SNAP5/M6
6.8	M8	8.5	6.7	9.3	88	40.0	38.0	8.0 h6	SNAP5/M8
8.5	M10	10.5	8.3	11.3	100	50.0	40.0	10.0 h6	SNAP5/M10
10.2	M12	12.5	10.0	13.1	100	50.0	40.0	10.0 h6	SNAP5/M12
12.0	M14	14.5	11.8	15.1	100	50.0	40.0	10.0 h6	SNAP5/M14

¹⁾ The achievable chamfer capacity varies slightly depending on material, blade force, cutting data or application. The indicated dimension is the theoretically possible maximum.

²⁾ Please mind any interfering edges.

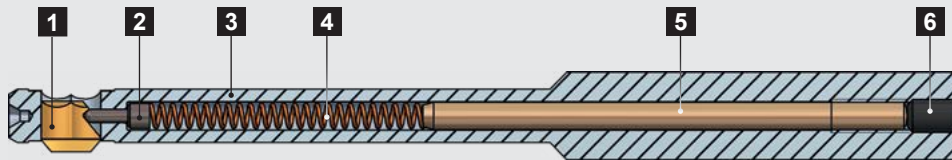
³⁾ The tools for thread types M2.5, M3, M4, M5 are on page 24f.

Note:

- Standard shank for tool part numbers without any addition = Cylindrical shank
With addition: "-HB" = Weldon shank or "-HE" = Whistle Notch shank (see explanations page 9)
- Attention: The tools are **without** blade. The blades for the tool need to be ordered separately (please refer to page 27).

Attention:

The blades of the SNAP5 tools on page 16 and those of the thread tools are **not** interchangeable.



Spare Parts

Pos.	Description	Part No.
1	Blade	see below
2	Control bolt Ø1.5	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	Spring Ø2.35xØ0.35x30.0	GH-H-F-0019
5	Distance pin Ø2.5x36 (M6/M8) Distance pin Ø2.5x50 (M10/M12/M14)	GH-Q-E-0049 GH-Q-E-0042
6	Set screw M3x5 DIN913 Wrench SW1.5 to Pos. 6	GH-H-S-0127 GH-H-S-2101

Pos.1 Blades DRA Geometry 90° for Standard Materials

Chamfer-Ø ¹	Part number Blade forward and backward cutting		backward cutting only	
	Coating A	Coating D	Coating A	Coating D
6.5	GH-Q-M-34032	GH-Q-M-34033	GH-Q-M-34532	GH-Q-M-34533
8.5	GH-Q-M-34072	GH-Q-M-34073	GH-Q-M-34572	GH-Q-M-34573
10.5	GH-Q-M-34112	GH-Q-M-34113	GH-Q-M-34612	GH-Q-M-34613
12.5	GH-Q-M-34152	GH-Q-M-34153	GH-Q-M-34652	GH-Q-M-34653
14.5	GH-Q-M-34192	GH-Q-M-34193	GH-Q-M-34692	GH-Q-M-34693

Pos.1 Blades DRB Geometry 90° for very hard and tough Materials

Chamfer-Ø ¹	Part number Blade forward and backward cutting		backward cutting only
	Coating A		Coating A
6.5	GH-Q-M-34042		GH-Q-M-34542
8.5	GH-Q-M-34082		GH-Q-M-34582
10.5	GH-Q-M-34122		GH-Q-M-34622
12.5	GH-Q-M-34162		GH-Q-M-34662
14.5	GH-Q-M-34202		GH-Q-M-34702

¹⁾ The indicated dimension is the theoretically possible maximum.

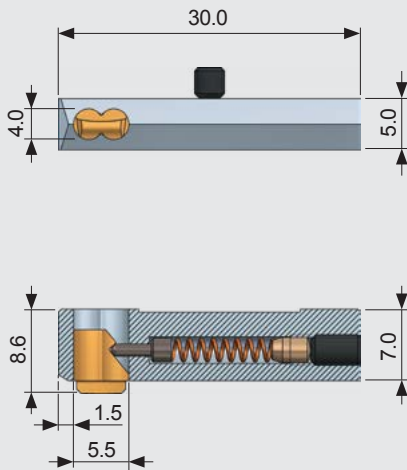
Explanations to coatings (see also page 9)

A: Coating for increased requirements

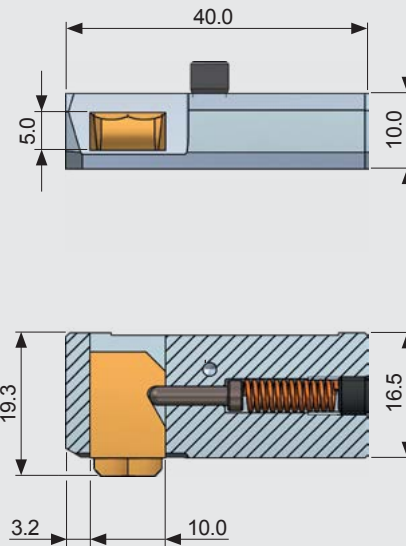
D: Coating for aluminium alloys only - available upon customer request only

SNAP Cassette Systems

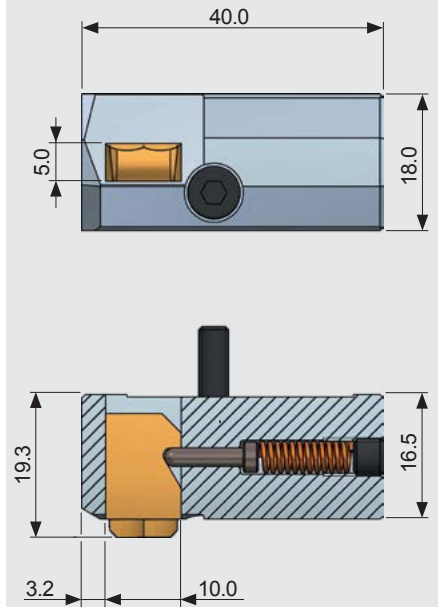
SNAP5 Cassette > Ø12.6 mm



SNAP20 Cassette > Ø25 mm



SNAP20 Cassette > Ø35 mm

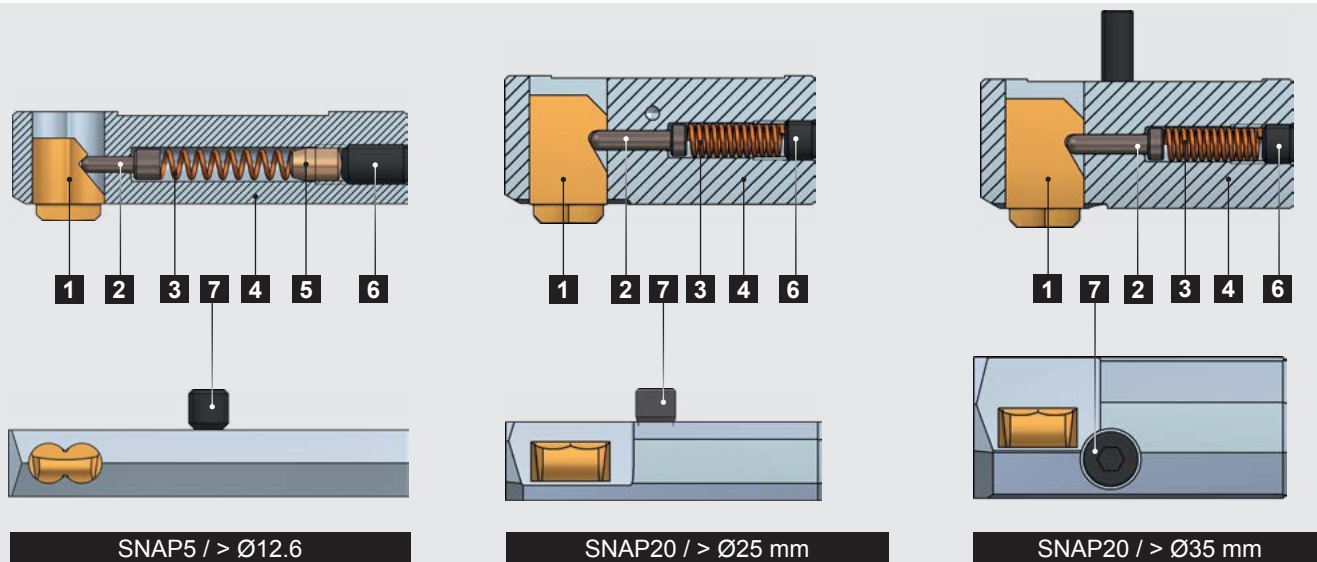


The SNAP Cassette is used for large bore-Ø (larger than Ø35.0 mm). With this cassette the SNAP deburring system is integrated in combi tools and

standard tools. The holder can be ordered from us or the customer can use their own, utilizing the information below.

Tool Table

Tool dimensions			Cassette complete without Blade
Type	from Bore-Ø	Dimensions	Part number
SNAP5/12.6 Cassette	> Ø12.6 mm	see illustration above	GH-Q-O-1430
SNAP20/25 Cassette	> Ø25 mm - Ø35 mm	see illustration above	GH-Q-O-1130
SNAP20/35 Cassette	> Ø35 mm	see illustration above	GH-Q-O-1030


Spare Parts

Pos.	Description	SNAP5/12.6	SNAP20/25	SNAP20/35
1	SNAP blade	see below	see below	see below
2	Control bolt	GH-Q-E-0008	GH-Q-E-0003	GH-Q-E-0003
3	Spring	GH-H-F-0027	GH-H-F-0012	GH-H-F-0012
4	Cassette tool body	GH-Q-G-1382	GH-Q-G-1123	GH-Q-G-1034
5	Distance pin	GH-Q-E-0046	-	-
6	Set screw	GH-H-S-0127	GH-H-S-0120	GH-H-S-0120
7	Set screw	GH-H-S-0355	GH-H-S-0202	GH-H-S-0502
	Wrench to Pos. 7	GH-H-S-2101	GH-H-S-2100	GH-H-S-2100

Pos. 1 Cassette Blades with DF Geometry 90°

		Part number SNAP5 Carbide Blade forward and backward cutting		backward cutting only	
Chamf. ¹	Bore-Ø	Coating A	Coating D	Coating A	Coating D
0.5	20 - 85	GH-Q-M-30780*	GH-Q-M-30980	GH-Q-M-31780	GH-Q-M-31980
1.0	20 - 85	GH-Q-M-30781*	GH-Q-M-30981	GH-Q-M-31781	GH-Q-M-31981
1.5	20 - 85	GH-Q-M-30782*	GH-Q-M-30982	GH-Q-M-31782	GH-Q-M-31982
0.5	90 - 150	GH-Q-M-30783*	GH-Q-M-30983	GH-Q-M-31783	GH-Q-M-31983
1.0	90 - 150	GH-Q-M-30784*	GH-Q-M-30984	GH-Q-M-31784	GH-Q-M-31984
1.5	90 - 150	GH-Q-M-30785*	GH-Q-M-30985	GH-Q-M-31785	GH-Q-M-31985

		Part number SNAP20 Carbide Blade forward and backward cutting		backward cutting only	
Chamf. ¹		Coating A	Coating T	Coating A	Coating T
0.5		GH-Q-M-01902*	GH-Q-M-01901	GH-Q-M-01922	GH-Q-M-01921
1.0		GH-Q-M-01905*	GH-Q-M-01904	GH-Q-M-01925	GH-Q-M-01924
1.5		GH-Q-M-01908*	GH-Q-M-01907	GH-Q-M-01928	GH-Q-M-01927

^{*)} Standard items / Please enquire about stock or delivery times for all non-standard items.

¹⁾ The indicated dimension is the theoretically possible chamfer capacity / depth maximum.

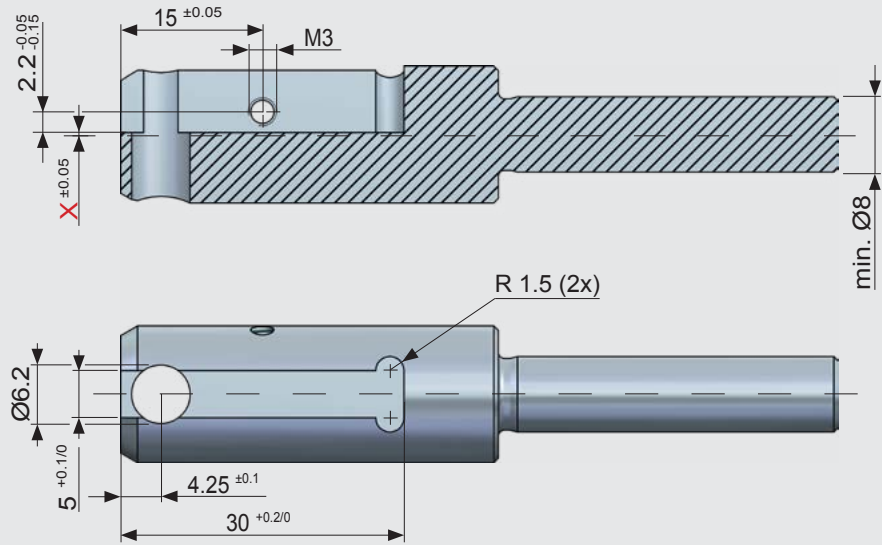
Explanations to coatings (see also page 9)

T: Coating for normal requirements

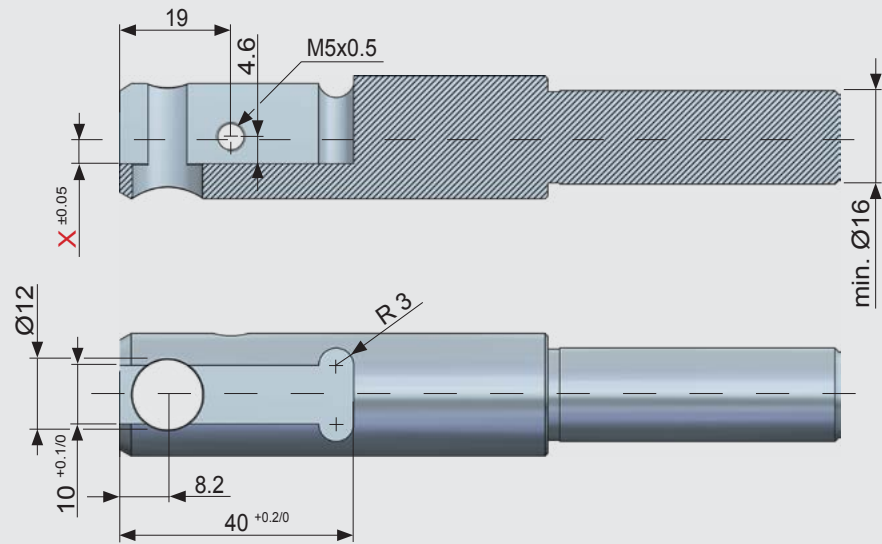
A: Coating for increased requirements

D: Coating for aluminium alloys only

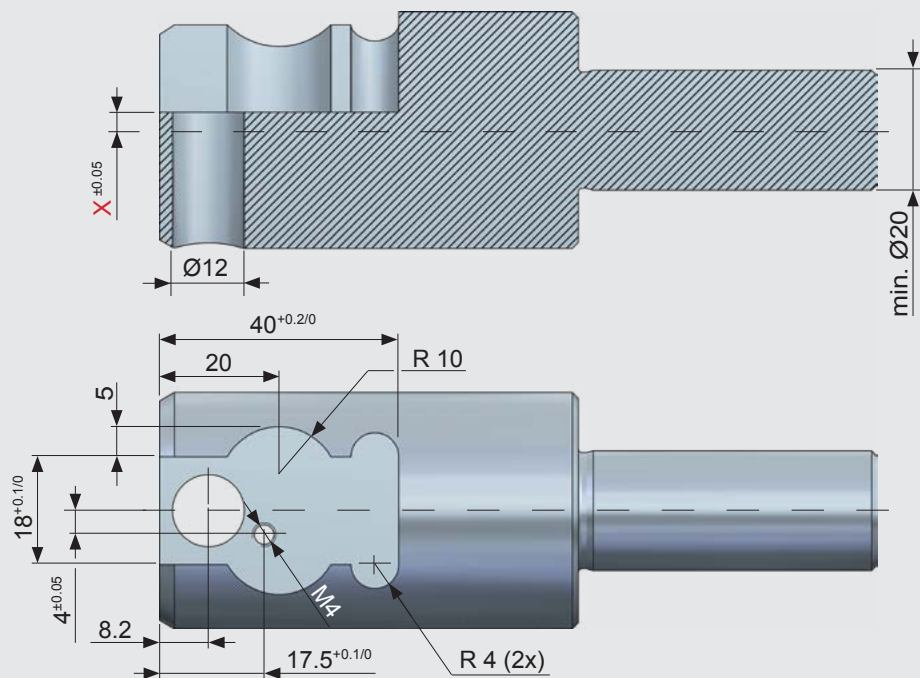
SNAP5 / > Ø12.6



SNAP20 / > Ø25.0



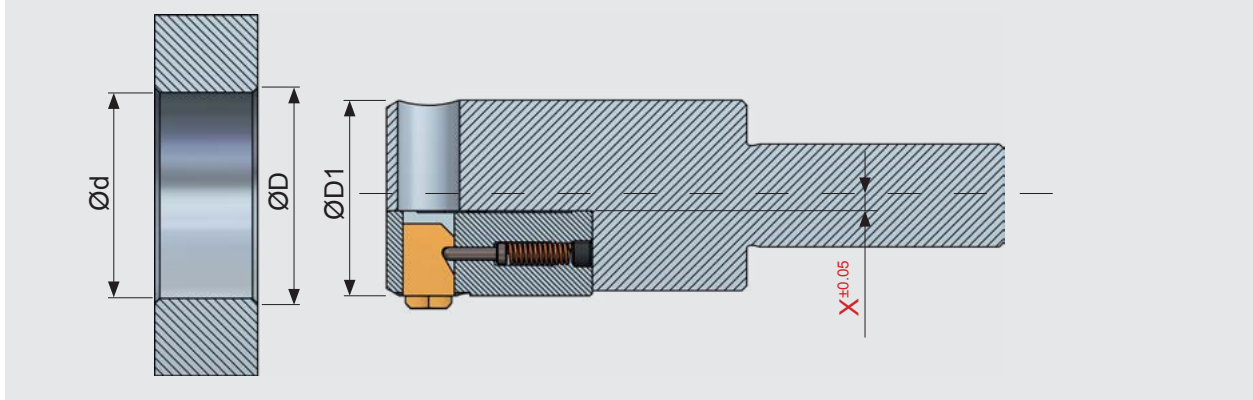
SNAP20 / > Ø 35.0



Limiting values

	SNAP5	SNAP20	SNAP20
Bore-Ø	> Ø12.6	> Ø25	> Ø35
max. ØD	d + 3.0	Ød + 3.0 mm	Ød + 3.0 mm
max. ØD1	Ø - 0.5 mm	Ø - 2.0 mm	Ød - 2.0 mm

Installation Instructions for SNAP Cassettes (continued)



Caption:

Bore diameter	Ød
Chamfer diameter	ØD
Tool diameter	ØD1
Locating dimension	X (Must be calculated for every application individually. See formula below.)

Calculation Locating Dimension X for SNAP5 > Ø12.6

$$\text{SNAP5} > \text{Ø12.6} \quad X = \text{Ød} / 2 - 7.3$$

Calculation Locating Dimension X for SNAP20 > Ø25.0 / 35.0

$$\text{SNAP20/25} \quad X = \text{Ød} / 2 - 17$$

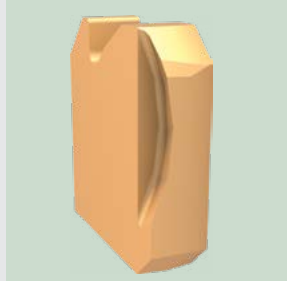
$$\text{SNAP20/35} \quad X = \text{Ød} / 2 - 17$$

Comparison GS / DF – Blade Geometries

Blades with GS Geometry



forward and backward cutting



backward cutting only

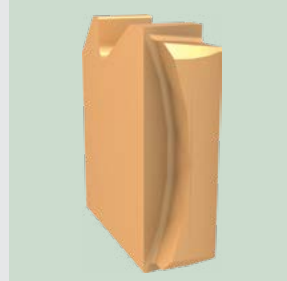
The blade with the GS geometry is the standard blade. As universal blade it is suitable for most deburring and easy chamfering operations. This blade can also be used in applications where there is slight unevenness on the surface of the component.

Front and back chamfering is achieved by linear feed forward and backward. For back cutting only, a front and back cutting blade can be used also by traversing through the hole in rapid feed without causing damage neither to the front edge of the hole nor to the tool.

Only when no deburring or chamfering is required or accepted on the front edge of the hole, it is necessary to use the back cutting only blades.

You will find the GS blades in the front section of the catalogue in the blade tables from page 11 onwards.

Blades with DF Geometry



forward and backward cutting



backward cutting only

This blade with DF geometry is mainly used when a defined, toleranced or consistent chamfer size is required. It is also recommended for use on hard materials or on materials with excessive burr formation.

This blade type is responsive to the condition of the machine such as clamping of workpiece and tool as well as a stable machine spindle etc.

If no front chamfer is required, a **back cutting only blade has to be used.**

The feed rate for blades with DF geometry is from 0.03 mm to 0.1 mm/rev. The upper value should not be exceeded as blade breakage may result.

The range of DF blades is listed on page 33f.

Blade Selection with DF Geometry

SNAP8 Carbide Blades with DF Geometry 90°

Chamfer-Ø ¹	Part number Blade forward and backward cutting		backward cutting only	
	Coating T	Coating A	Coating T	Coating A
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 Carbide Blades with DF Geometry 90°

Chamfer-Ø ¹	Part number Blade forward and backward cutting		backward cutting only	
	Coating T	Coating A	Coating T	Coating A
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

¹⁾ The indicated dimension is the theoretically possible chamfer capacity / depth maximum.

Explanations to coatings (see also page 9)

T: Coating for normal requirements

A: Coating for increased requirements

SNAP20 Carbide Blades with DF Geometry 90°

Chamfer-Ø ¹⁾	Part number Blade forward and backward cutting		back cutting only	
	Coating T	Coating A	Coating T	Coating A
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

¹⁾ The indicated dimension is the theoretically possible chamfer capacity / depth maximum.

Explanations to coatings (see also page 9)

T: Coating for normal requirements

A: Coating for increased requirements

Other sizes, coatings or angles available upon request.

Technical Data and Settings

Cutting Data

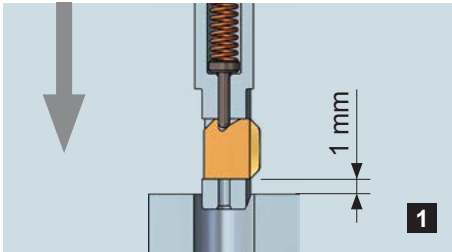
SNAP 2/3/4	Cutting speed	Feed
Material	v (m/min.)	s (mm/rev.)
Unalloyed steel up to 500 N/mm ²	30 - 70	0.02 - 0.1
Low alloyed steel 500 - 950 N/mm ²	30 - 70	0.02 - 0.1
Alloyed steel over 950 N/mm ²	30 - 60	0.02 - 0.08
Stainless steel	20 - 50	0.02 - 0.05
Grey cast	30 - 80	0.02 - 0.1
Aluminium	40 - 80	0.05 - 0.13

SNAP 5-20 with GS Geometry	Cutting speed	Feed
Material	v (m/min.)	s (mm/rev.)
Steel, alloyed steel	45 - 70	0.1 - 0.2
Cast, cast iron materials	45 - 70	0.1 - 0.3
Non ferrous metals	65 - 120	0.1 - 0.3

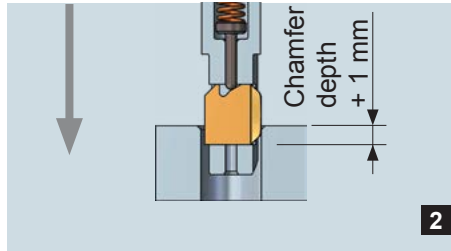
SNAP 5-20 with DF Geometry	Cutting speed	Feed
Material	v (m/min.)	s (mm/rev.)
Steel, alloyed steel	45 - 70	0.03 - 0.1
Cast, Cast iron materials	45 - 70	0.03 - 0.1
Non ferrous metals	65 - 120	0.03 - 0.1

SNAP Thread Tools (DR Geometry)	Cutting speed	Feed
Material	v (m/min.)	s (mm/rev.)
Steel, alloyed steel	45 - 70	0.06- 0.2
Cast, cast iron materials	45 - 70	0.1 - 0.2
Non ferrous metals	65 - 120	0.06 - 0.2

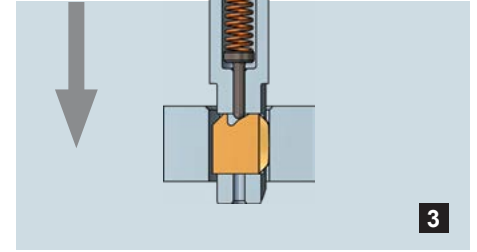
Programming Example



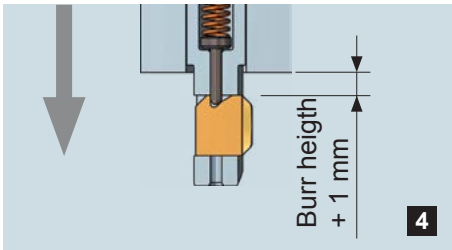
It is not necessary at all to change the sense of rotation or to stop the spindle during the whole process. First, rapid traverse of the tool blade above the top material surface of bore or burr.



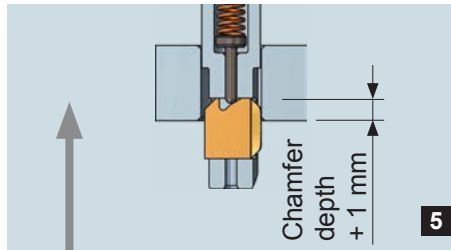
To generate the front chamfer continue in working feed until the blade is completely retracted into the tool.



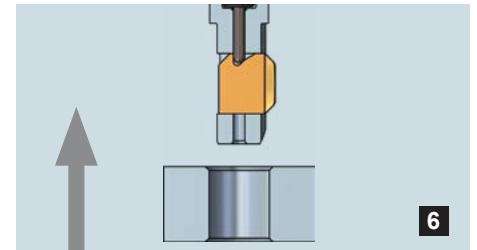
Rapid traverse through the hole. The surface of the hole cannot be damaged.



Go 1 mm beyond the existing burr in order to reach a safe initial position for the back chamfering.



In back working feed the backward chamfering is executed. Proceed with the blade 1 mm farther than the planned chamfering depth.



Then exit in rapid traverse to the next bore.

SNAP blades with GS geometry

In general, the chamfer size is defined by the selected blade (blade length). Each blade produces a defined chamfer size.

The theoretically possible chamfer size maximum can be taken from the column "chamfer-Ø max. D" in the blade tables.

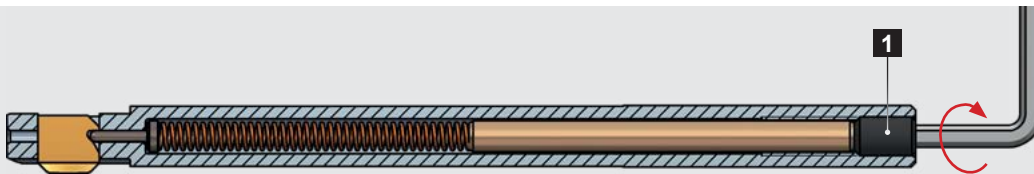
SNAP blades with DF geometry

For SNAP blades with DF or DR geometry (thread tools), the chamfer capacity is defined exclusively by the chamfer-Ø of the blade table. This means that neither the feed rate nor an adjustment of the blade force changes the chamfer size.

The feed rate for this blade type should be between 0.06 und 0.2 mm/rev.

The blade force has to be sufficient to enable the blade to extend outwards in the event of swarf ingress.

Setting the Blade Force



The blade force can be adjusted by the set screw (1) in the rear of the shank. The blade force has to be sufficient to extend the blade to fully after passing the back end of the bore. This ensures that the blade can work with the necessary cutting performance. The tougher the material the tougher the spring should be set. The blade force however does not influence the chamfer size. Working with the correct blade pressure increases the blade life and improves

the chamfer quality. An extremely tough material requires a high spring force. For this purpose, the springs can be exchanged (SNAP5: GH-H-F-0041, SNAP8 und SNAP12: GH-H-F-0011).

Turning the set screw clockwise increases the blade force (tough steel, Inconel, titan).

Turning the set screw anti-clockwise reduces the blade force (aluminium).

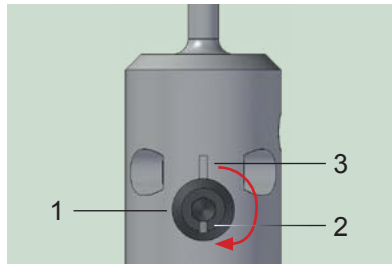
Adjustment Details Blade Force

Tool	Thread size	Screw-in depth (max.)	Revolutions (approx.)
SNAP2/3/4	M3	6 mm	12
SNAP5	M3	6 mm	12
SNAP5 (Thread tools)	M3	14 mm	28
SNAP8	M5	11 mm	13
SNAP12	M5	11 mm	13
SNAP20	M5	11 mm	13

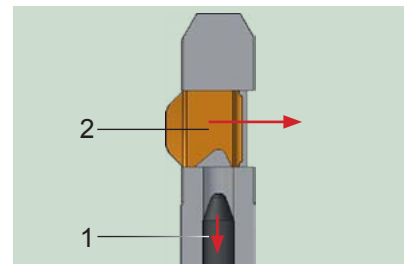
Blade Change SNAP2 / SNAP3 / SNAP4



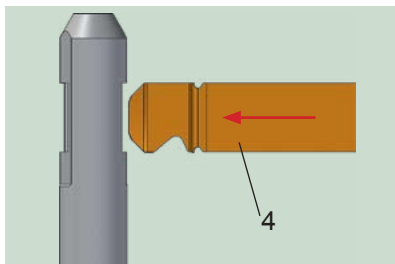
Tool with SNAP2 blade mounted



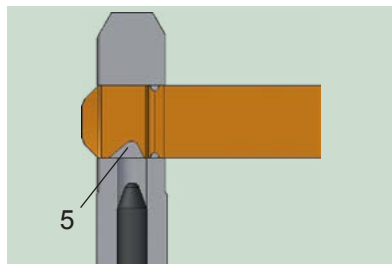
Turn excenter (1) by 180° until the groove of the excenter (2) is 180° opposite to the groove of the tool body (3).



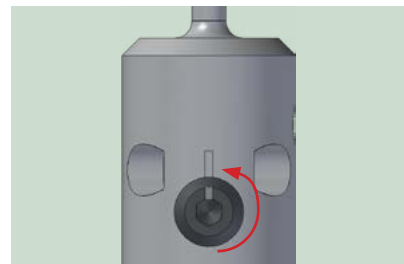
By the movement of the excenter, the control bolt (1) is pulled back out of the blade recess. Then the blade (2) can be easily pushed out in the indicated direction.



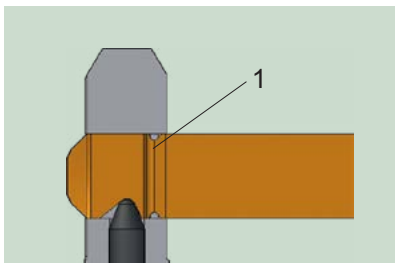
When mounting a new blade with integrated assembly aid (4), please make sure to insert the blade with the cutting geometry first into the blade housing.



Push the blade so far that the control recess of the blade (5) is over the bolt cross bore. As an optical aid, the cutting geometry should be visible to the full extent on the other side of the blade housing.

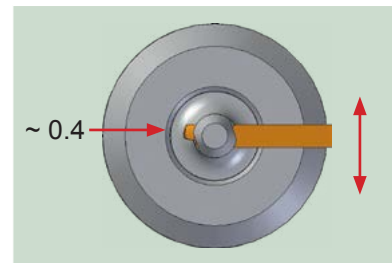


Turn back the excenter by 180° until the groove of the excenter is aligned with the groove in the tool body.

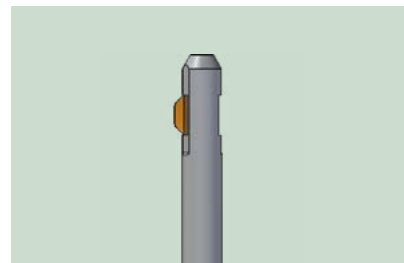


By turning back the excenter, the control bolt moves forward into the control recess of the blade.

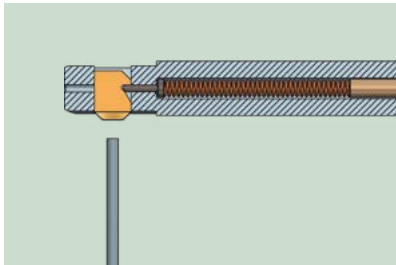
1) Predetermined breaking point



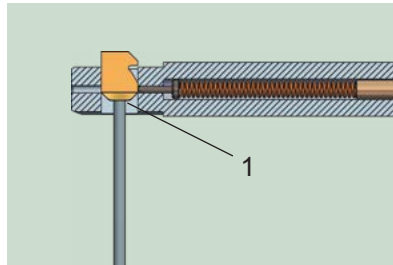
Remove assembly aid of the blade by pushing back the blade by approx. 0.4mm until the predetermined breaking point is in line with the edge of the blade. Then break off assembly aid by using thumb and index.



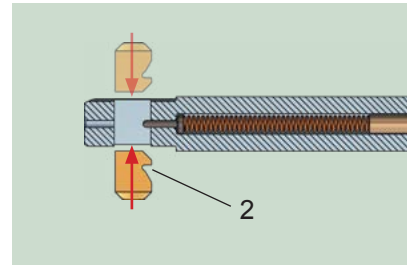
The blade moves back to the starting point as soon as it is released.



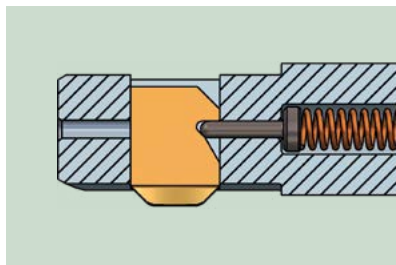
Initial position:
Tool SNAP12 with assembled
blade



The SNAP blade can be pushed
through the tool with an edgeless
object.
Put the aid on at the blade head
(1).



The deburring blade is pushed
with its back first into the
blade window of the tool until it
engages. Please make sure that
it is aligned with the recess (2)
in the direction of the tool shank.
The blade can be inserted into
the tool from both sides.



The control bolt has "snapped"
into the blade recess. The tool is
now ready for operation.

Spare Parts

The following tables comprise all blade housings, tool bodies and control bolts. For all other parts, please refer to the tables under "Product Selection" on pages 11 to 29.

Blade housing Pos. 2				
Tool ref. w/o NL	Tool-Ø	Part Number		
		Working length NL 10 mm	Working length NL 20 mm	Working length NL 30 mm
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

Tool Body Pos. 3

Tool Reference	Tool-Ø	Part Number
SNAP 5		
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

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

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

SNAP20

SNAP20/20.0	19.8	GH-Q-G-0270
SNAP20/21.0	20.8	GH-Q-G-0271
SNAP20/22.0	21.8	GH-Q-G-0272
SNAP20/23.0	22.8	GH-Q-G-0273
SNAP20/24.0	23.8	GH-Q-G-0274
SNAP20/25.0	24.8	GH-Q-G-0275
SNAP20/26.0	25.8	GH-Q-G-0276

Tool Body Pos. 3 (continued)

Tool Reference	Tool-Ø	Part Number
SNAP20/27.0	26.8	GH-Q-G-0277
SNAP20/28.0	27.8	GH-Q-G-0278
SNAP20/29.0	28.8	GH-Q-G-0279
SNAP20/30.0	29.8	GH-Q-G-0280
SNAP20/31.0	30.8	GH-Q-G-0281
SNAP20/32.0	31.8	GH-Q-G-0282
SNAP20/33.0	32.8	GH-Q-G-0283
SNAP20/34.0	33.8	GH-Q-G-0284
SNAP20/35.0	34.8	GH-Q-G-0285

SNAP Thread tool

SNAP2/M2.5/10, SNAP2/M2.5/20	2.0	GH-Q-N-0015, GH-Q-N-0075
SNAP2/M3/10, SNAP2/M3/20	2.45	GH-Q-N-0016, GH-Q-N-0076
SNAP3/M4/10, SNAP3/M4/20, SNAP3/M4/30	3.2	GH-Q-N-0035, GH-Q-N-0095, GH-Q-N-0155
SNAP4/M5/10, SNAP4/M5/20, SNAP4/M5/30	4.1	GH-Q-N-0055, GH-Q-N-0115, GH-Q-N-0175
SNAP5/M6	4.9	GH-Q-G-5003
SNAP5/M8	6.7	GH-Q-G-5018
SNAP5/M10	8.3	GH-Q-G-5010
SNAP5/M12	10.0	GH-Q-G-5019
SNAP5/M14	11.8	GH-Q-G-5017

Control Bolt

Tool type	Part Number			
	other working length	Working length 10 mm	Working length 20 mm	Working length 30 mm
SNAP2	-	GH-Q-E-0236	GH-Q-E-0237	
SNAP3	-	GH-Q-E-0236	GH-Q-E-0237	GH-Q-E-0238
SNAP4	-	GH-Q-E-0236	GH-Q-E-0237	GH-Q-E-0238
SNAP5	GH-Q-E-0008	-	-	-
SNAP8	GH-Q-E-0002	-	-	-
SNAP12	GH-Q-E-0002	-	-	-
SNAP 20	GH-Q-E-0003	-	-	-

SNAP Thread Tool

SNAP2/M2.5	-	GH-Q-E-0254	GH-Q-E-0256	-
SNAP2/M3	-	GH-Q-E-0236	GH-Q-E-0237	-
SNAP3/M4	-	GH-Q-E-0236	GH-Q-E-0237	GH-Q-E-0238
SNAP4/M5	-	GH-Q-E-0236	GH-Q-E-0237	GH-Q-E-0238
SNAP5/M6	GH-Q-E-0015	-	-	-
SNAP5/M8	GH-Q-E-0015	-	-	-
SNAP5/M10	GH-Q-E-0015	-	-	-
SNAP5/M12	GH-Q-E-0015	-	-	-
SNAP5/M14	GH-Q-E-0015	-	-	-

Cassette Tool

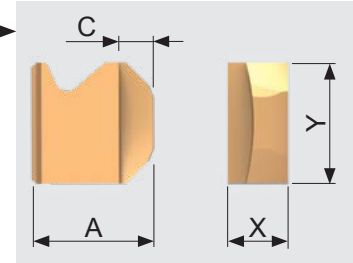
SNAP5/12.6	GH-Q-E-0008	-	-	-
SNAP20/25	GH-Q-E-0003	-	-	-
SNAP20/35	GH-Q-E-0003	-	-	-

Blade Dimensions

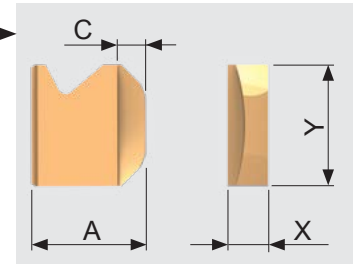
Measure Table

SNAP2 Blades, Geometry GS 90°, forward and backward cutting

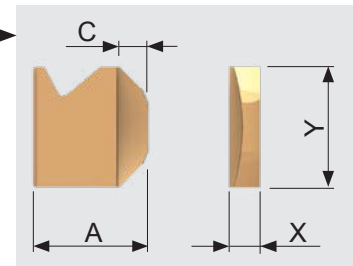
Chamfer-Ø	A	C	X	Y
2.4	1.92	0.525	1.0	2.0
2.6	2.03	0.625	1.0	2.0
2.8	2.12	0.625	1.0	2.0
3.0	2.32	0.625	1.0	2.0
3.2	2.52	0.625	1.0	2.0
3.4	2.72	0.625	1.0	2.0


SNAP3 Blades, Geometry GS 90°, forward and backward cutting

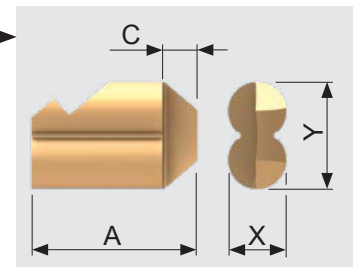
Chamfer-Ø	A	C	X	Y
3.3	2.84	0.55	1.0	3.0
3.6	2.84	0.7	1.0	3.0
3.9	2.84	0.85	1.0	3.0
4.2	3.04	0.9	1.0	3.0
4.5	3.04	0.9	1.0	3.0
4.8	3.04	0.9	1.0	3.0


SNAP4 Blades, Geometry GS, forward and backward cutting

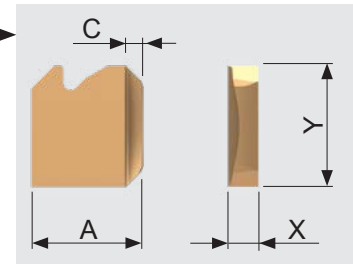
Chamfer-Ø	A	C	X	Y
4.4	3.84	0.65	1.0	4.0
4.8	3.84	0.85	1.0	4.0
5.2	3.84	1.05	1.0	4.0
5.6	3.94	1.2	1.0	4.0
6.0	4.35	1.2	1.0	4.0
6.4	4.75	1.2	1.0	4.0


SNAP5 Blades, Geometry GS, forward and backward cutting

Chamfer-Ø	A	C	X	Y
5.5	4.4	1.0	3.0	5.5
6.0	4.65	1.2	3.0	5.5
6.5	4.8	1.4	3.0	5.5
7.0	4.85	1.6	3.0	5.5
7.5	5.2	1.7	3.0	5.5
8.0	5.7	1.8	3.0	5.5
8.5	5.8	1.8	3.0	5.5
9.0	6.3	1.8	3.0	5.5
9.5	6.8	1.8	3.0	5.5
10.0	7.3	1.8	3.0	5.5


SNAP8 Blades, Geometry GS, forward and backward cutting

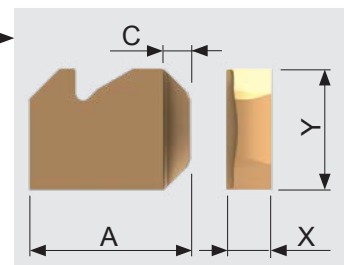
Chamfer-Ø	A	C	X	Y
8.5	7.4	1.2	2.0	8.0
9.0	7.5	1.4	2.0	8.0
9.5	7.9	1.6	2.0	8.0
10.0	8.0	1.6	2.0	8.0
10.5	8.4	1.6	2.0	8.0
11.0	8.5	1.8	2.0	8.0
11.5	8.9	1.8	2.0	8.0
12.0	9.3	1.8	2.0	8.0
12.5	9.7	1.8	2.0	8.0
13.0	10.1	1.8	2.0	8.0
13.5	10.4	1.8	2.0	8.0



Blade Dimensions (continued)

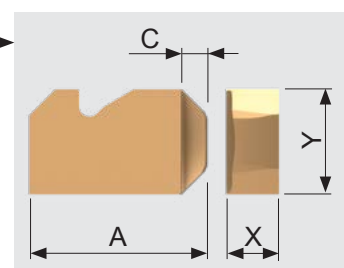
SNAP12 Blades, Geometry GS 90°, forward and backward cutting

Chamfer-Ø	A	C	X	Y
12.5	10.45	1.8	3.0	8.0
13.0	10.65	1.8	3.0	8.0
13.5	10.95	1.8	3.0	8.0
14.0	11.45	1.8	3.0	8.0
14.5	11.95	1.8	3.0	8.0
15.0	12.45	1.8	3.0	8.0
15.5	12.75	1.8	3.0	8.0
16.0	12.95	1.8	3.0	8.0
16.5	13.15	1.8	3.0	8.0
17.0	13.55	1.8	3.0	8.0
17.5	13.95	1.8	3.0	8.0
18.0	14.15	1.8	3.0	8.0
18.5	14.45	1.8	3.0	8.0
19.0	14.75	1.8	3.0	8.0
19.5	14.95	1.8	3.0	8.0
20.0	15.35	1.8	3.0	8.0
20.5	15.55	1.8	3.0	8.0
21.0	15.95	1.8	3.0	8.0
21.5	16.35	1.8	3.0	8.0
22.0	16.55	1.8	3.0	8.0



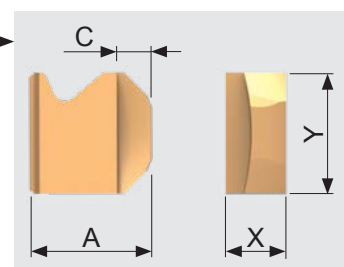
SNAP20 Blades, Geometry GS 90°, forward and backward cutting

Chamfer-Ø	A	C	X	Y
21.0	16.95	2.5	5.0	10.0
22.0	17.45	2.5	5.0	10.0
23.0	17.95	2.5	5.0	10.0
24.0	18.45	2.5	5.0	10.0
25.0	19.95	2.5	5.0	10.0
26.0	20.45	2.5	5.0	10.0
27.0	20.95	2.5	5.0	10.0
28.0	21.45	2.5	5.0	10.0
29.0	21.95	2.5	5.0	10.0
30.0	23.45	2.5	5.0	10.0
31.0	23.95	2.5	5.0	10.0
32.0	24.45	2.5	5.0	10.0
33.0	24.95	2.5	5.0	10.0
34.0	25.45	2.5	5.0	10.0
35.0	26.95	2.5	5.0	10.0
36.0	27.45	2.5	5.0	10.0
37.0	27.95	2.5	5.0	10.0
38.0	28.45	2.5	5.0	10.0



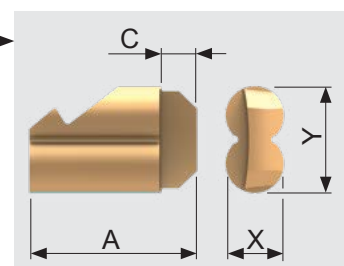
SNAP Thread Blades, Geometry GS 90°, forward and backward cutting

Chamfer-Ø	A	C	X	Y
M2.5 Ø2.8	1.97	0.65	1.0	2.0
M3 Ø3.4	2.42	0.775	1.0	2.0
M4 Ø4.5	3.14	1.05	1.0	3.0
M5 Ø5.6	3.94	1.2	1.0	4.0



SNAP Thread Blades, Geometry DRA 90°, forward and backward cutting

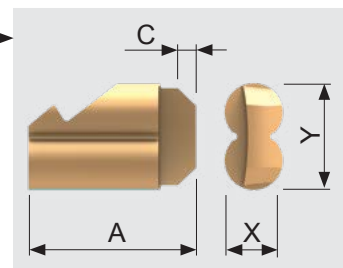
Chamfer-Ø	A	C	X	Y
M6 Ø6.5	4.8	1.5	3.0	5.5
M8 Ø8.5	6.6	1.7	3.0	5.5
M10 Ø10.5	7.2	1.9	3.0	5.5
M12 Ø12.5	8.7	2.1	3.0	5.5
M14 Ø14.5	11.2	2.1	3.0	5.5



Blade Dimensions (continued)

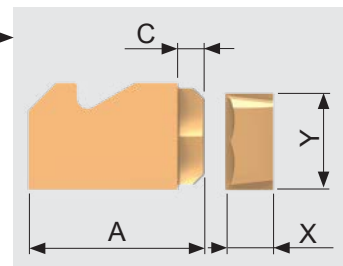
SNAP5 Cassette Blades, Geometry GS, forward and backward cutting

Chamfer-Ø	A	C	X	Y
0.5	6.15	1.25	3.0	5.5
1.0	6.65	1.75	3.0	5.5
1.5	7.10	2.20	3.0	5.5



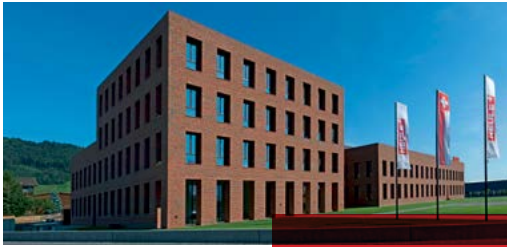
SNAP20 Cassette Blades, Geometry GS, forward and backward cutting

Chamfer-Ø	A	C	X	Y
0.5	15.5	1.8	5.0	10.0
1.0	16.0	2.3	5.0	10.0
1.5	16.5	2.8	5.0	10.0



FAQ

Problem	Reasons	Solution
Burr is not ground away	<ul style="list-style-type: none"> See points below: chamfer too small or no chamfer at all 	⇒ Choose blade for larger chamfer
Chamfer tool small	<ul style="list-style-type: none"> Selected blade too small Feed rate too high 	⇒ Choose blade for larger chamfer ⇒ Reduce feed rate
No chamfer at all	<ul style="list-style-type: none"> Blade force too small 	⇒ Turn set screw clockwise to increase blade force, only possible when using SNAP GS blades
	<ul style="list-style-type: none"> Blade is blunt 	⇒ Put in new blade
	<ul style="list-style-type: none"> Too large burr formation 	⇒ Replace drilling tool
Different chamfer size at the front and the back side	<ul style="list-style-type: none"> Feed rate varies from the front side to the back side Varying burr formation forwards and backwards 	⇒ Select constant feed rate forwards and backwards, only possible when using SNAP GS blades ⇒ Reduce feed rate on the side with the too small chamfer, only possible when using SNAP GS blades ⇒ Increase feed rate on the side with too large chamfer, only possible when using SNAP GS blades
Chamfer with chatter marks	<ul style="list-style-type: none"> Workpiece or tool not secured properly Tool in unstable condition Speed too high 	⇒ Ensure workpiece or tool is properly secured ⇒ Increase feed rate of tool and check blade force ⇒ Reduce speed
No constant chamfer size	<ul style="list-style-type: none"> Varying feed rates Blade force insufficient not allowing blade to extend fully to starting position every time Tool in unstable condition 	⇒ Choose constant feed rate ⇒ Turn set screw clockwise to increase blade force ⇒ Increase blade force and feed rate
Poor blade life	<ul style="list-style-type: none"> Workpiece or tool not secured properly (Vibrations) Insufficient stability of machine (wear of spindle, etc.) Wrong blade coating 	⇒ Ensure workpiece or tool is properly secured ⇒ Recondition/rectify machine faults or guide in hole with special tool ⇒ Choose other coating



One Operation.

HEULE tools for front and back machining of bore edges in one single pass.

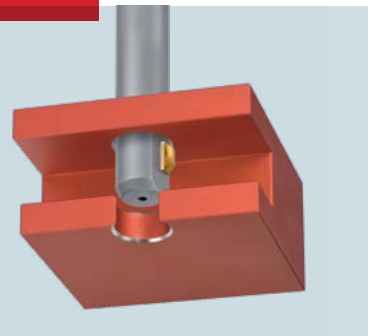
Deburring

- COFA
- SNAP



Chamfering

- SNAP
- GH-S
- DEFA



Countersinking

- BSF
- SOLO
- GH-Z/E
- GH-K



Drilling

- VEX-P
- VEX-S



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