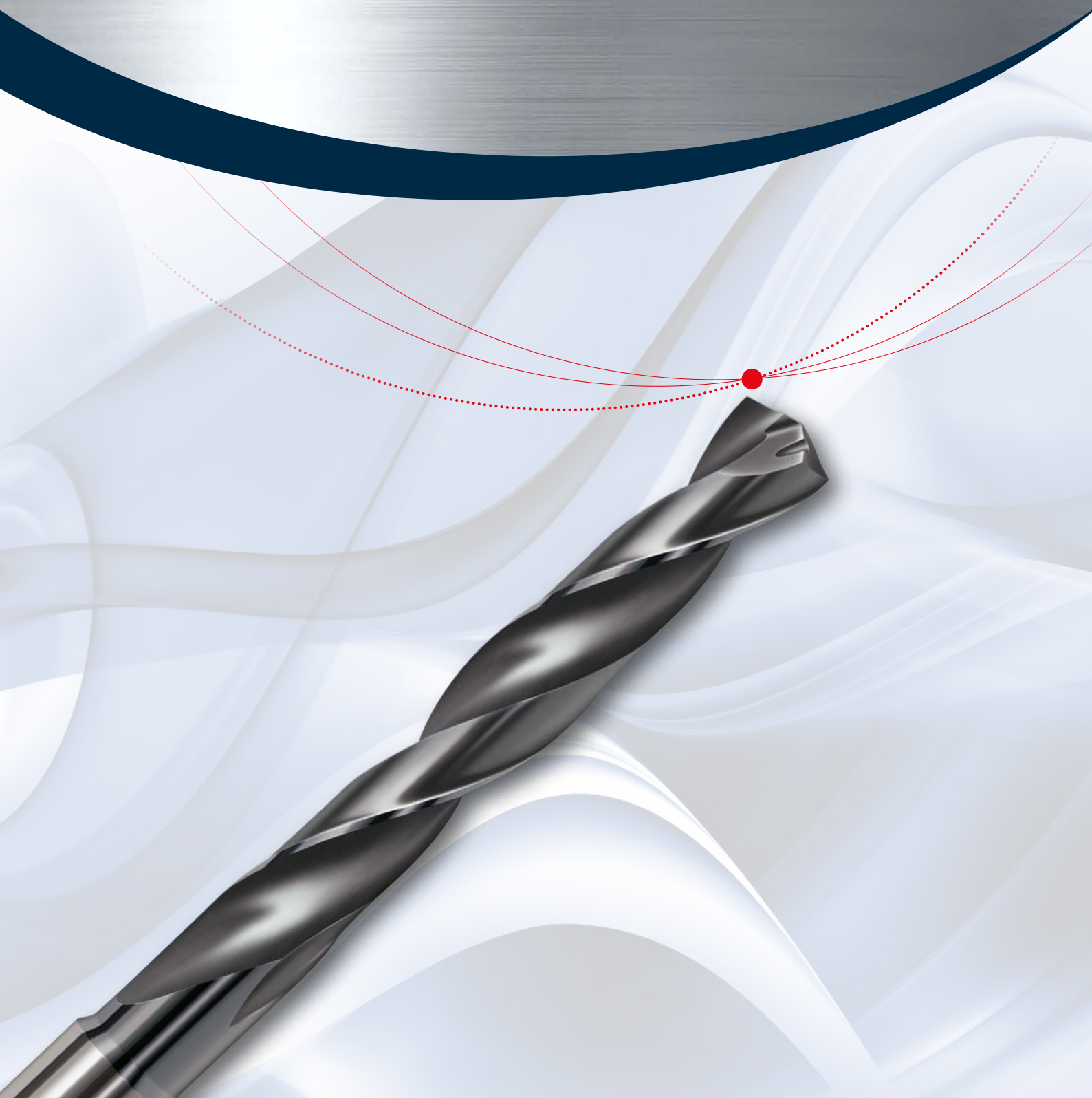


passion
for precision



Spiral flute drills **Supradrill® U**



Spiral flute drills Supradrill® U for drilling steels

Spiral flute drills of the **Supradrill® U** type are solid carbide drills, which have been designed especially for the universal drilling of steel materials.

With the introduction of **Supradrill® U**, FRAISA establishes a new performance benchmark for reliable drilling of steels.

Longer tool life due to the specially developed coating concept Nano-U² and an increase of the cutting data contribute significantly to the cost reduction of the drilling process.

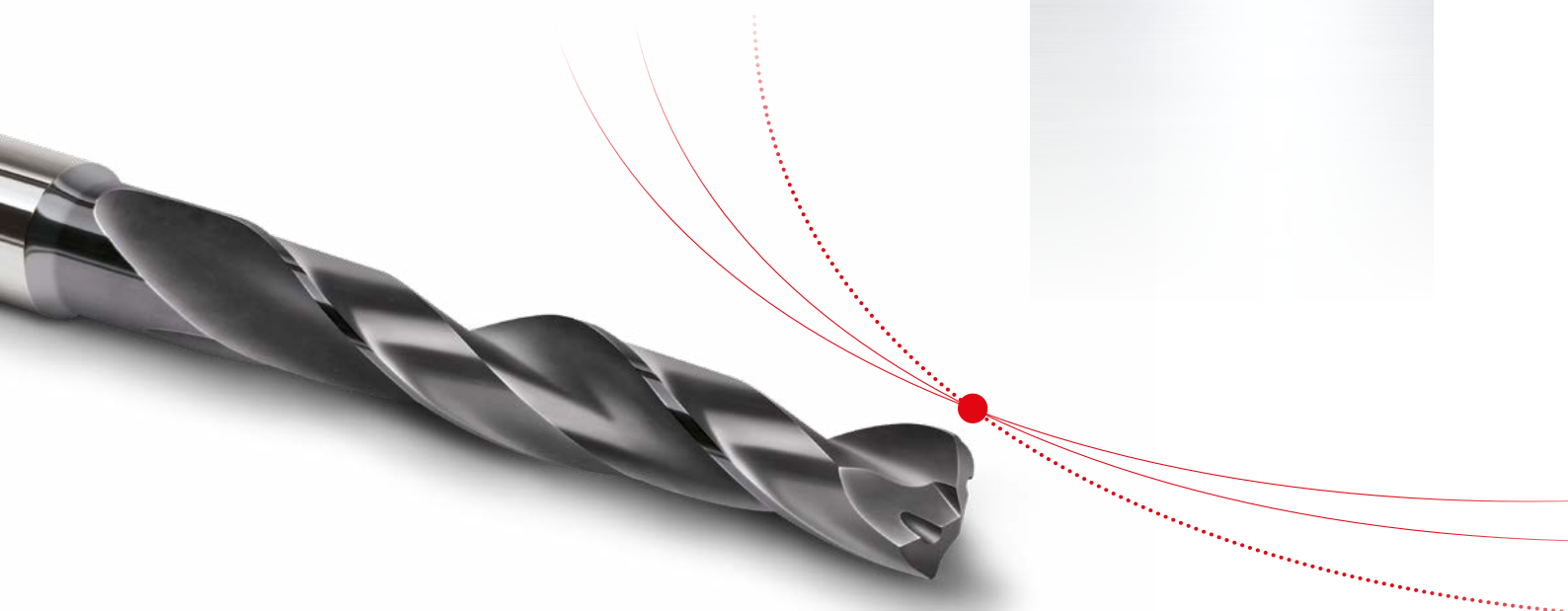
Thanks to the overall innovative concept of the new **Supradrill® U** drill, outstanding results can be achieved with regard to process reliability, productivity and tool life.

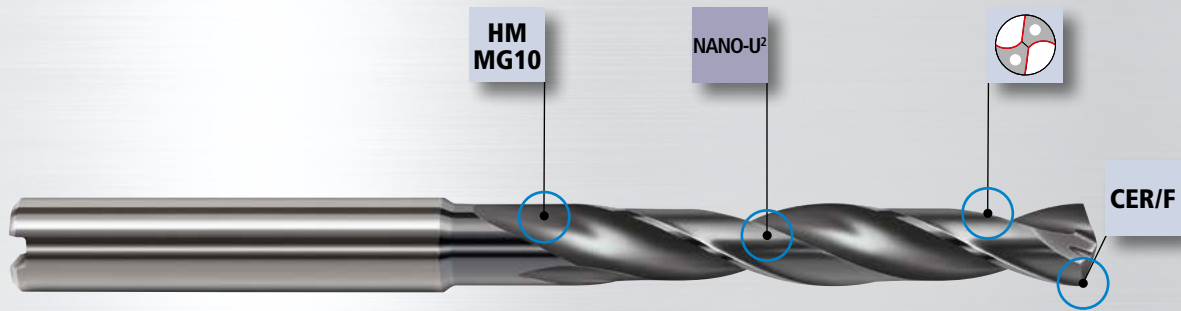
The standard range 3xD with internal cooling and 5xD with internal cooling as well as the 5xD version without internal cooling offer outstanding potential and optimisation possibilities. The extensive range guarantees a wide spectrum of applications.

Geometry, carbide and coating – all elements of the **Supradrill® U** have been optimised for high-performance!

The advantages:

- **Higher process safety** due to dimension-specific cutting edge conditioning
- **Longer tool life** thanks to specially developed coating concept
- **Reduction of the production costs** by increasing the cutting data
- **Universality:** **Supradrill® U** is excellent for drilling steel and stainless steel
- **Extensive range:** for a wide spectrum of components and applications





HM MG10

Carbide HM MG10

- Outstanding combination of hardness and toughness – thus highest performance
- Fine grain carbide with particularly homogenous structure – thus more performance and security



Spiral flute smoothing

- Reliable extraction of the chips
- Reduction of the friction
- Higher performance due to increasing the cutting speed

NANO-U²

High-performance coating Nano-U²

- Wide range of applications in various materials, particular steel materials
- High thermal and mechanical resistance – thus high process security
- Outstanding coating adhesion – thus longer tool life and higher performance

CER/F

Cutting edge rounding CER/F

- More cutting edge stability due to rounded and strengthened main cutting edge
- Increased mechanical and thermal load capacity on the cutting edge
- Higher performance due to increasing the feed rate per revolution
- Longer tool life and greater process reliability

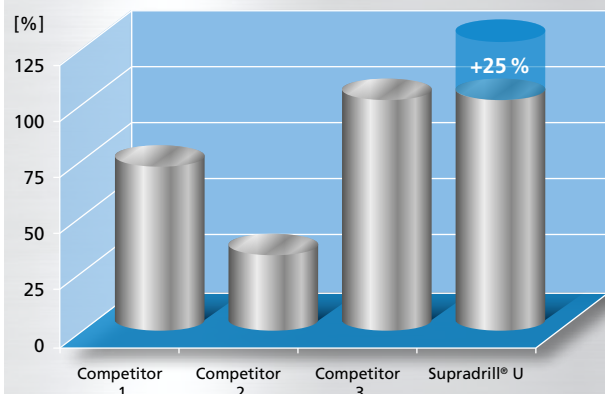
[3]

Longer tool life due to process reliability and greater wear resistance

The newly developed coating concept with the ideal and geometrically defined cutting edge design prevents a premature uncontrolled wear increase. This is clearly shown in the application example of a drilled blind hole in tool steel:

Supradrill® U	5xD IKZ
Material	40CrNiMnMo8-6-4
Cutting speed v_c	100 m/min
Feed rate f	0.15 mm
Cooling lubricant	Emulsion 8 %
Number of holes	2500

Increase of tool life

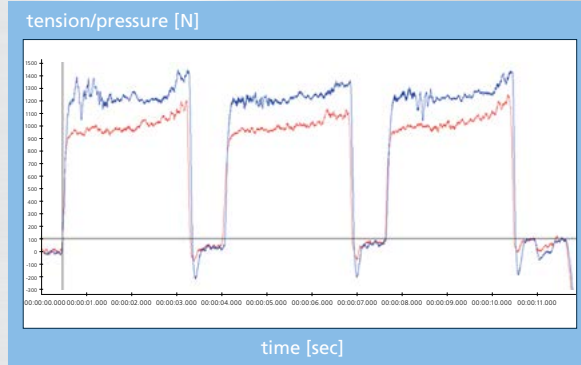


FRAISA Nano-U² – The highest-performing coating for universal drilling in steel

During the development, drills with up-to-date coatings for drilling steel and stainless steel were tested on a variety of materials. The high-performance coating Nano-U² has been verified as the highest-performing and most universal coating for steel materials. A special post-treatment of the coating in the flutes improves the performance and thereby increases the productivity of the coating by a further 25%. Thanks to the new Nano-U² coating concept, superior results can be achieved in terms of productivity, process reliability and tool life.

The specially developed smoothing of the spiral flutes enabled FRAISA to significantly reduce the axial force (feed rate force during the drilling process). The reliable chip extraction resulting thereby makes it possible to increase the cutting data. **Supradrill® U** makes drilling more productive and lowers the costs.

Axial force in the drilling process



Red curve = Nano-U' with treated spiral flute
Blue curve = Nano-U' without treated spiral flute

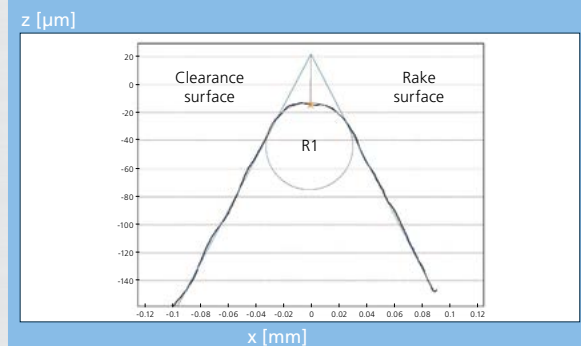
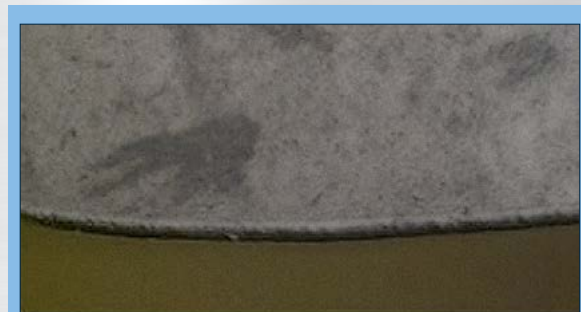
Cutting edge rounding CER/F – Process reliability in a new dimension

Only a stable cutting edge can provide process reliability. Even small deviations from the given cutting edge condition – but also from the material and environment – may trigger edge chipping or tool breakage.

The CER/F increases process reliability and reproducibility:

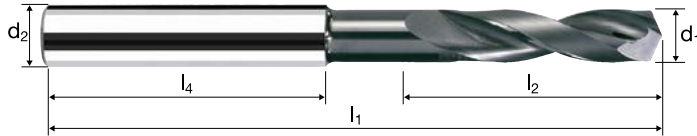
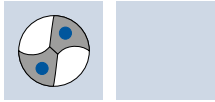
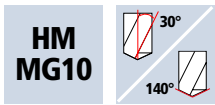
- Robust cutting edge with sufficient reserve for process deviations
- Continuous wear development even during unfavorable conditions
- Rounding for cutting wedge reinforcement
- Smoothing of the cutting edge and thus better coating adhesion
- Hard and tough carbide substrate for maximum edge stability

Cutting edge rounding CER/F Supradrill® U



Spiral flute drills Supradrill® U

3xd



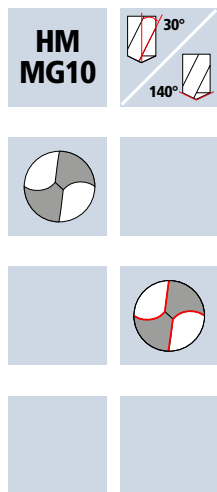
Rm < 850	Rm 850-1100	Rm 1100-1300	Rm 1300-1500				Inox Stainless		GG(G) Aluminium
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ø Code	d1 m7	d2 h5	l1	l2	l4	L _{max}	NANO-U ²	
							B62011	B63011
0300	3.0	6	62	20	36	16.2		●
0330	3.3	6	62	20	36	16.0		●
0340	3.4	6	62	20	36	15.8		●
0350	3.5	6	62	20	36	15.8		●
0370	3.7	6	62	20	36	15.6		●
0380	3.8	6	66	24	36	19.4		●
0400	4.0	6	66	24	36	18.9		●
0420	4.2	6	66	24	36	18.8		●
0450	4.5	6	66	24	36	18.6		●
0480	4.8	6	66	28	36	18.4		●
0500	5.0	6	66	28	36	18.8		●
0550	5.5	6	66	28	36	18.5		●
0580	5.8	6	66	28	36	18.4		●
0600	6.0	6	66	28	36	18.6		●
0650	6.5	8	79	34	36	29.1		●
0680	6.8	8	79	34	36	28.9		●
0700	7.0	8	79	34	36	28.8		●
0750	7.5	8	79	41	36	28.5		●
0780	7.8	8	79	41	36	28.4		●
0800	8.0	8	79	41	36	28.5		●
0850	8.5	10	89	47	40	32.1		●
0880	8.8	10	89	47	40	31.9		●
0900	9.0	10	89	47	40	31.7		●

Other versions can be found in the FRAISA catalogue "Carbide drills | Thread cutting tools 2021".

Spiral flute drills Supradrill® U

5xd



Rm < 850	Rm 850-1100	Rm 1100-1300	Rm 1300-1500						GG(G) Aluminium
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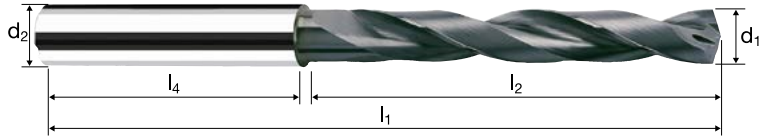
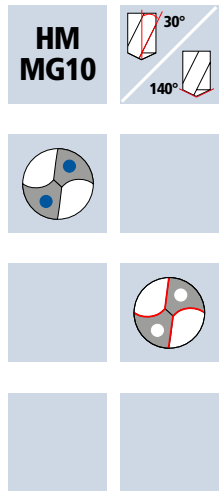
[6]

Example: Order-N°.		Article-N°.		ø-Code					NANO-U ²
		B62014		0250					B62014
									B63014
ø Code	d1 m7	d2 h5	l1	l2	l4	L _{max}			
0250	2.50	6	66	28	36	20.8			●
0255	2.55	6	66	28	36	20.7			●
0260	2.60	6	66	28	36	20.6			●
0265	2.65	6	66	28	36	20.6			●
0270	2.70	6	66	28	36	20.6			●
0280	2.80	6	66	28	36	20.4			●
0285	2.85	6	66	28	36	20.4			●
0290	2.90	6	66	28	36	20.4			●
0295	2.95	6	66	28	36	20.3			●
0300	3.00	6	66	28	36	20.2			●
0310	3.10	6	66	28	36	20.2			●
0320	3.20	6	66	28	36	20.0			●
0330	3.30	6	66	28	36	20.0			●
0340	3.40	6	66	28	36	19.8			●
0350	3.50	6	66	28	36	19.8			●
0360	3.60	6	66	28	36	19.6			●
0370	3.70	6	66	28	36	19.6			●
0380	3.80	6	74	36	36	27.4			●
0390	3.90	6	74	36	36	27.4			●
0400	4.00	6	74	36	36	26.9			●
0410	4.10	6	74	36	36	26.9			●
0420	4.20	6	74	36	36	26.8			●
0430	4.30	6	74	36	36	26.8			●

Other versions can be found in the FRAISA catalogue "Carbide drills | Thread cutting tools 2021".

Spiral flute drills Supradrill® U

5xd



Rm < 850	Rm 850-1100	Rm 1100-1300	Rm 1300-1500				Inox Stainless		GG(G) Aluminium
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Example: Order-N°.		Article-N°.		ø-Code						NANO-U ²	
		B62015		0250						B62015	
										B63015	
ø Code	d1 m7	d2 h5	l1	l2	l4	L _{max}					
0250*	2.50	6	66	28	36	20.8					●
0255*	2.55	6	66	28	36	20.7					●
0260*	2.60	6	66	28	36	20.6					●
0265*	2.65	6	66	28	36	20.6					●
0270*	2.70	6	66	28	36	20.6					●
0280*	2.80	6	66	28	36	20.4					●
0285*	2.85	6	66	28	36	20.4					●
0290*	2.90	6	66	28	36	20.4					●
0295*	2.95	6	66	28	36	20.3					●
0300	3.00	6	66	28	36	20.2					●
0305	3.05	6	66	28	36	20.2					●
0310	3.10	6	66	28	36	20.2					●
0315	3.15	6	66	28	36	20.1					●
0320	3.20	6	66	28	36	20.0					●
0330	3.30	6	66	28	36	20.0					●
0340	3.40	6	66	28	36	19.8					●
0350	3.50	6	66	28	36	19.8					●
0360	3.60	6	66	28	36	19.6					●
0370	3.70	6	66	28	36	19.6					●
0375	3.75	6	66	28	36	19.5					●
0380	3.80	6	74	36	36	27.4					●
0385	3.85	6	74	36	36	27.3					●
* without internal cooling											

[7]

Other versions can be found in the FRAISA catalogue "Carbide drills | Thread cutting tools 2021".



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