

DIXI
COOL+

DIXI 7453 COOL+

IMPROVE
YOUR PRODUCTIVITY!

New corner radius end mills with oriented and accelerated lubrication

AN EFFECTIVE CONCEPT !

The use of oriented and accelerated lubrication drastically reduces the heat generated by the cutting of materials with low thermal conductivity (stainless steel, titanium, nickel alloys)

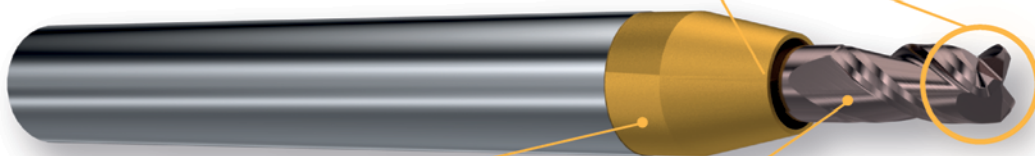


C-TOP COATING

- New generation of dropless coating
- High wear and oxidation resistance

SYMMETRICAL FRONT GRINDING

- High efficiency in plunging
- Perfect balance



PATENTED CONCEPT OF ORIENTED AND ACCELERATED DIXI COOL+® LUBRICATION

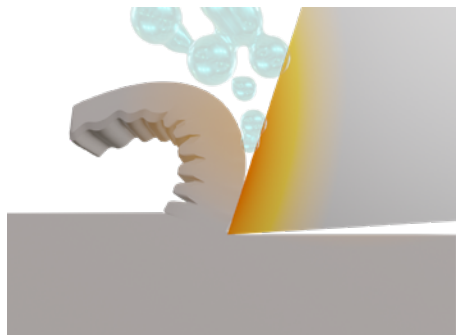
- Optimal lubrication
- High performance cooling

GEOMETRY

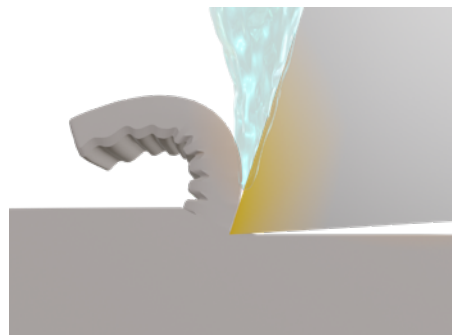
- Large cross-section for maximum rigidity
- Flute developed for optimal chip evacuation

DIXI COOL+® CONCEPT, THE LUBRICANT IS ORIENTED AND ACCELERATED !

THERMAL ENERGY DISTRIBUTION DUE TO CUTTING IN MATERIALS WITH LOW THERMAL CONDUCTIVITY



External coolant



DIXI COOL+® coolant system

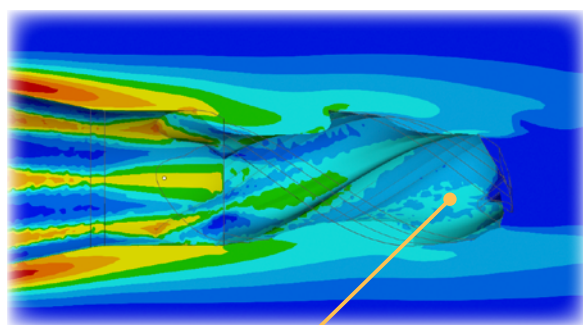
- High machining temperature on the cutting face
- ✓ High friction of the chips on the cutting face

- Moderate machining temperature on the cutting face
- ✓ Limited friction on the cutting face

INFLUENCE OF THE CHAMBER RING - PRESSURE 20 BAR



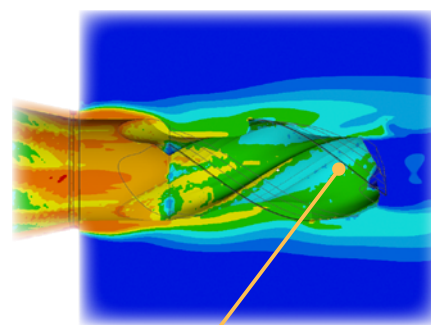
Without ring



Fluid velocity = 8 m/s



With ring



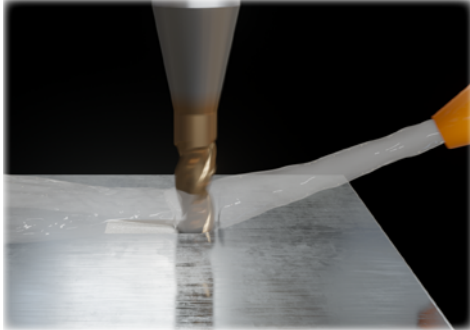
Fluid velocity = 18 m/s
More efficient lubrication with DIXI COOL+®

DIXI COOL+® CONCEPT, THE LUBRICANT IS ORIENTED AND ACCELERATED !

APPLICATION EXAMPLE

- Machining of key ways

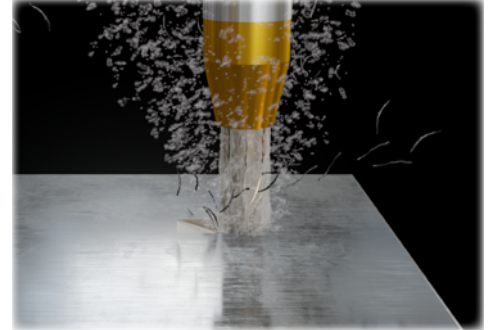
External coolant



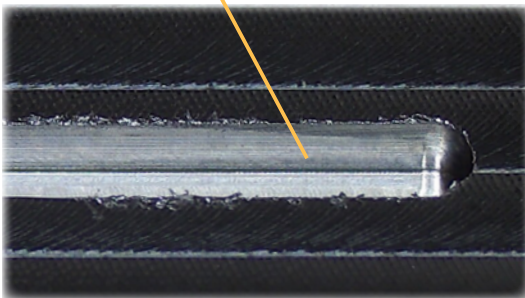
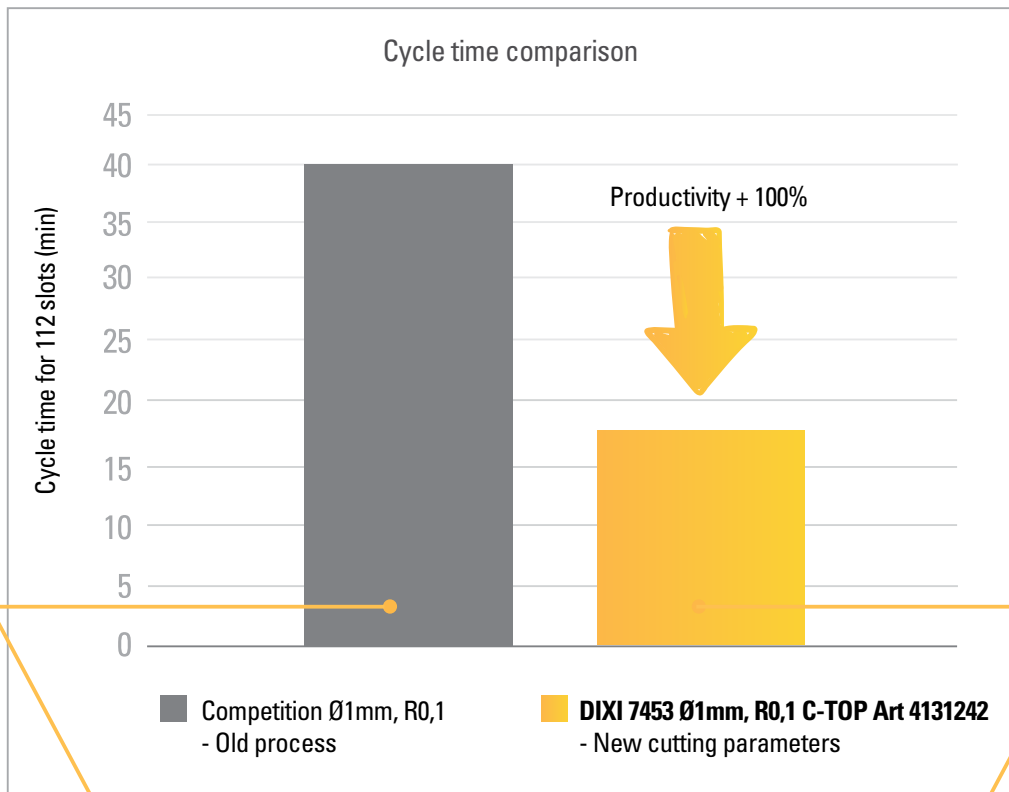
$n = 15'000 \text{ rpm}$ ($V_c = 47 \text{ m/min}$)
Depth of the pocket = 1,2 mm
Material = 1.4441
(medical stainless steel)

Feed speed (VF) = 170 mm/min
ramp angle (α) = 5°

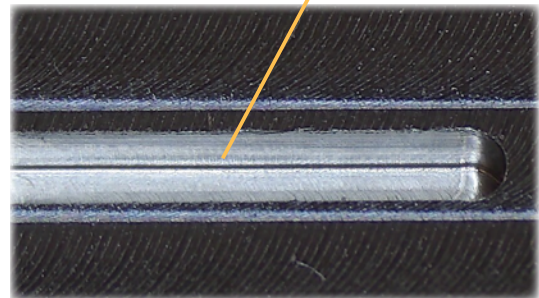
DIXI COOL+® coolant system



Feed speed (VF) = 240 mm/min
ramp angle (α) = 20°



Lot of burrs



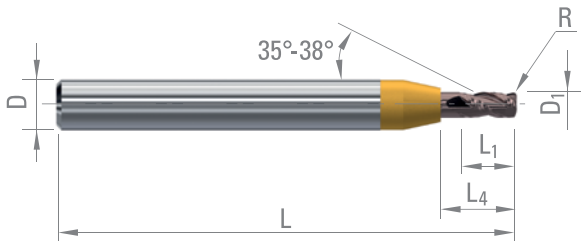
Fewer burrs

DIXI 7453 COOL+®

Z = 3



CORNER RADIUS END MILLS WITH ACCELERATED LUBRICATION



Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Cast iron	Refractory alloy
Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine	Gold	Silver

D ₁	L ₁	L ₄	D _{h5}	L	R	C-TOP
∅ > 0.40 - 0/-0.01					R ≤ 0.10 ± 0.01	
∅ < 2.00 - 0/-0.02					R < 0.30 ± 0.015	
∅ < 6.00 - e8					R ≥ 0.30 ± 0.02	

0.40	0.90	1.90	4	38	0.05 0.10	413162 413163
0.50	1.10	2.80	4	38	0.05 0.10	413164 413165
0.60	1.40	2.80	4	38	0.05 0.10	413166 413167
0.70	1.60	2.90	4	38	0.05 0.10	413168 413169
0.80	1.80	2.97	4	38	0.05 0.10	413170 413171
0.90	2.00	3.03	4	38	0.05 0.10	413172 413173
1.00	2.20	3.10	4	38	0.10 0.20	413174 413175
1.50	3.20	4.50	4	38	0.10 0.20	413176 413177
2.00	4.50	6.70	6	55	0.20 0.30	413179 413180
2.50	5.50	7.10	6	55	0.20 0.30	413181 413182

D ₁	L ₁	L ₄	D _{h5}	L	R	C-TOP
∅ > 0.40 - 0/-0.01					R ≤ 0.10 ± 0.01	
∅ < 2.00 - 0/-0.02					R < 0.30 ± 0.015	
∅ < 6.00 - e8					R ≥ 0.30 ± 0.02	

3.00	6.50	9.20	6	55	0.20 0.30 0.50	413183 413184 413185
4.00	8.50	12.00	8	55	0.30 0.50 1.00	425017 425018 425019
4.00	8.50	12.00	8	64	0.30 0.50 1.00	413186 413187 413188
5.00	10.60	15.10	8	55	0.30 0.50 1.00	425020 425021 425022
5.00	10.60	15.10	8	64	0.30 0.50 1.00	413189 413190 413191
6.00	13.30	16.90	8	60	0.30 0.50 1.00 1.50	425664 425665 425666 425667
8.00	18.30	21.90	10	70	0.50 1.00 1.50 2.00	425668 425669 425670 425671
10.00	22.50	26.90	12	798	0.50 1.00 1.50 2.00	425672 425673 425674 425675

APPLICATION EXAMPLE

- Determination of the maximum ramp angle (α) in diving

DIXI 7453 Ø5.0 R1.00 COOL+ C-TOP

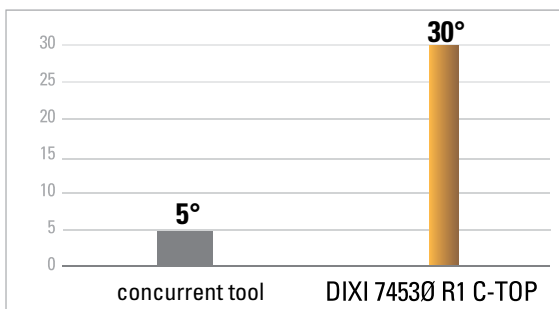
n = 6'000 rpm (Vc = 94m/min)

Vf = 280 mm/min (fz = 0.015mm)

Ramp depth: 5mm

material: 1.4441 (medical stainless steel)

Lubrication: Emulsion



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