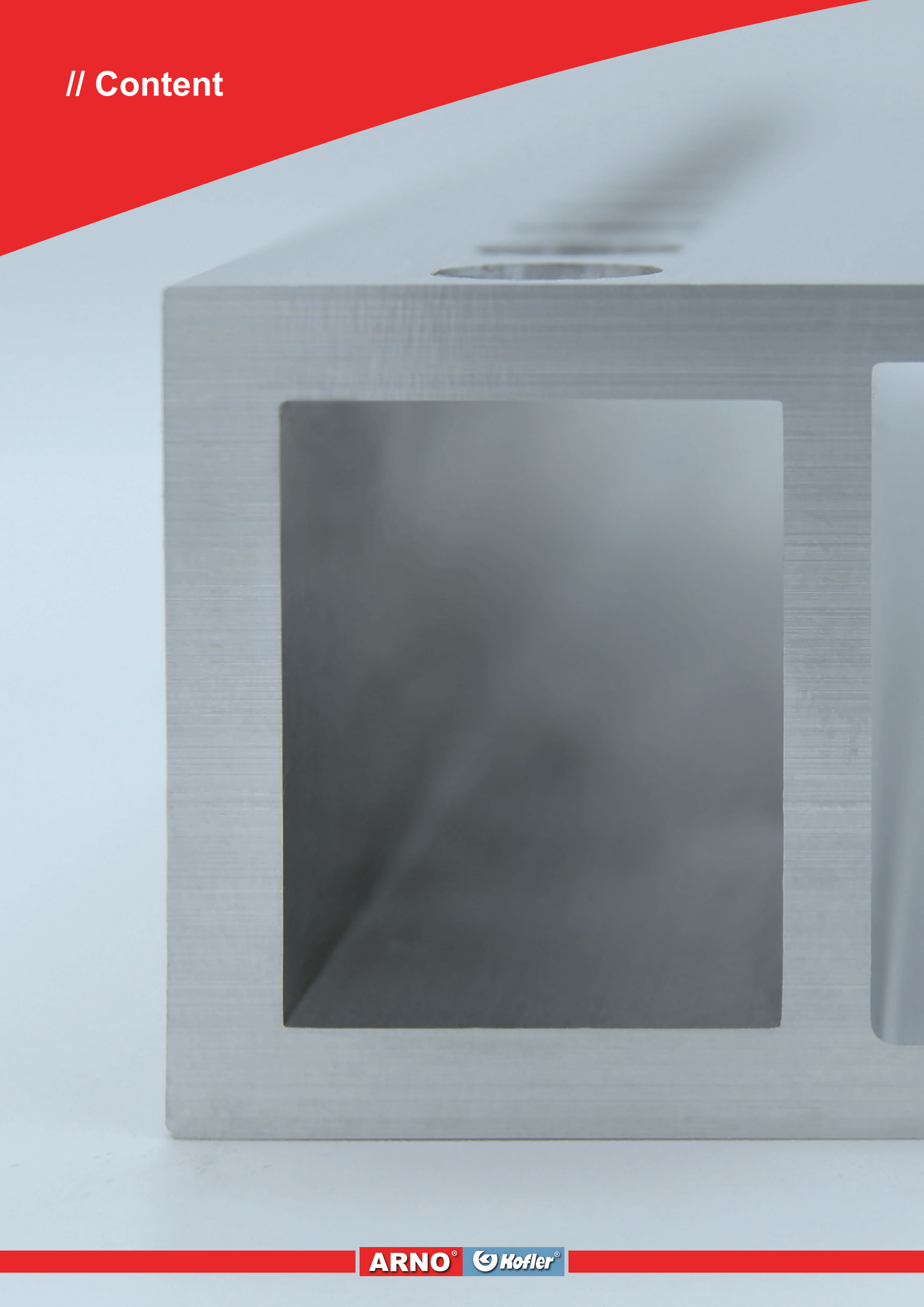
DESERT CUT®

DCUT

DRY MACHINING OF ALUMINUM PROFILES

ARNO® Kofler®

// Content



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// Advantages

Burr-free processing

*With the help of our Desert Cut tools you can significantly improve the surface quality of your machined components. By means of special cutting geometry and a coating optimised for dry machining, components can be processed almost **burr-free**.*

Removal of coolant lubricants

*By using Desert Cut tools and the consequent dry machining, an enormous amount of cooling lubricants can be saved in contrast to wet machining. This results in **considerable cost savings**.*

Up to 5 times longer tool service life

*By using Desert Cut tools, up to **5 times** longer tool service life can be achieved.*

No need to wash the profiles

*In contrast to wet machining, there is no need to wash the profiles after processing. Such optimization is **cost and time saving**. This is particularly relevant before subsequent processing such as coating.*

Dry chips

*The absence of cooling lubricants results in dry chips during machining. This facilitates **handling** enormously and, apart from that, a higher scrap price can be achieved due to better **recyclability**.*

Environmental benefits

*Due to dry machining, a huge amount of cooling lubricants can be saved. Thus, the consumption of high volumes of **drinking water** and environmentally **harmful oils** can be avoided, as well as the resource-consuming processing of old materials. This significantly reduces the environmental impact, which in turn contributes to **environmental protection.***

Employee protection

*Desert Cut tools can vastly improve the **air quality** in your manufacturing facility. By eliminating the **aerosols** and **vapours** released by the use of cooling lubricants, the health impact is getting considerably reduced. This, in turn, has a particularly positive effect on **employee protection**.*

Processing of anodized components

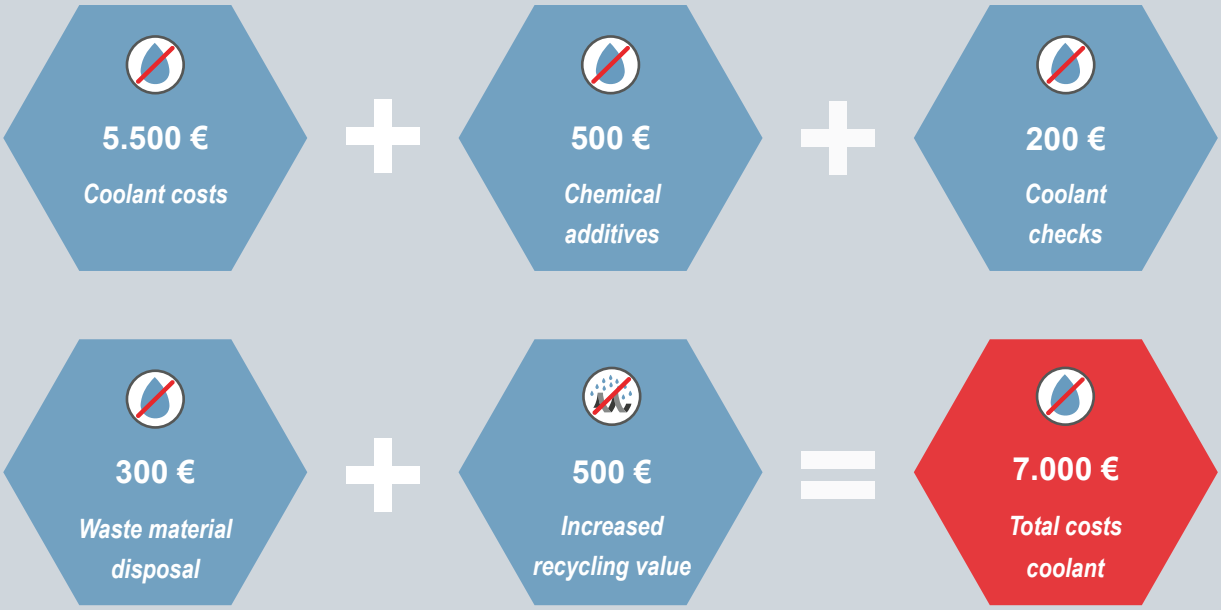
*Desert-Cut tools can be used to process not only bare aluminium profiles but also already **anodized profiles**.*

// Savings potential

Dry machining - Immense cost-saving potential

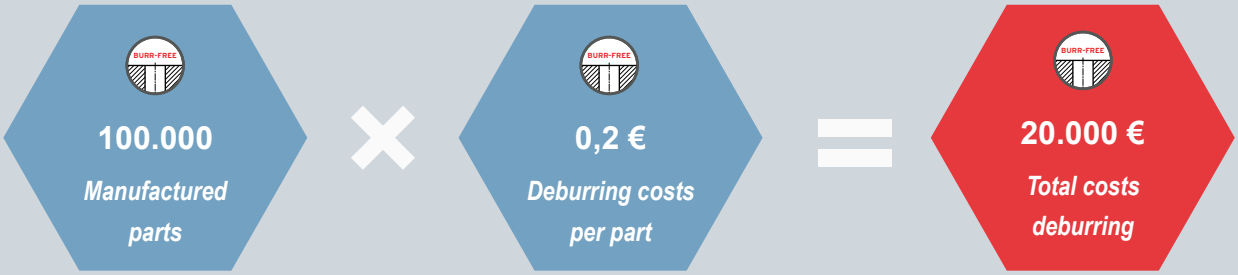
The use of cooling lubricants results in **high costs**, which can be **reduced** by using Desert Cut tools and the resulting dry machining. Additionally, costs can be saved due to **burr-free processing** and **longer tool life**. The following exemplary calculation illustrates the possible savings potential of a machine per year. The example is based on a scenario of serial production with an output of 100,000 pieces per year.

Savings via coolant elimination

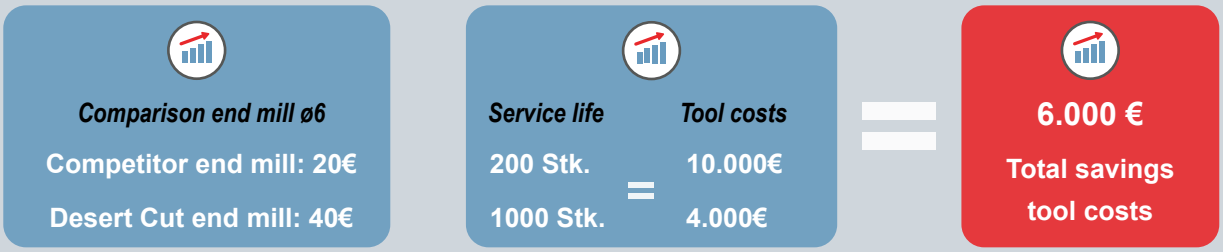


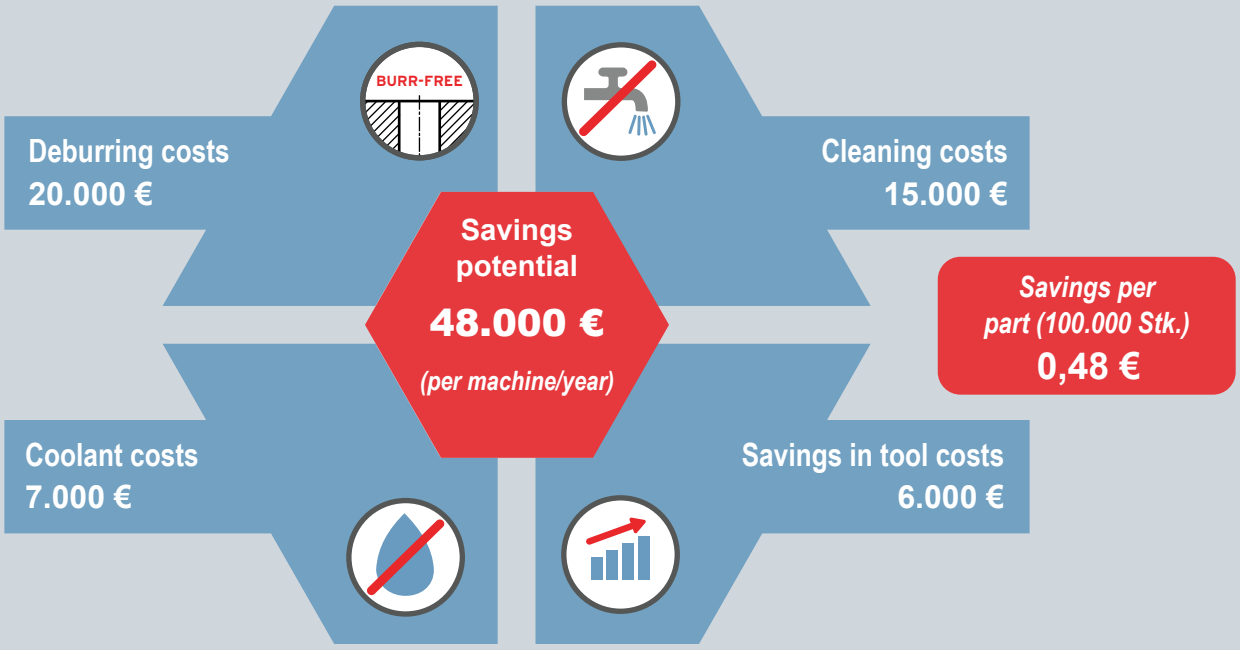
Savings due to omission of cleaning

Savings due to elimination of deburring



Savings due to tool costs



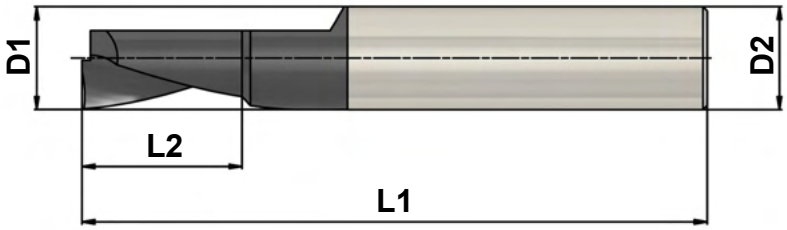


// End mills

Solid carbide end mills - 1,5 x D

For dry cutting of aluminium profiles

From ø 12mm the tools are balanced according to DIN ISO 1960 G6.3



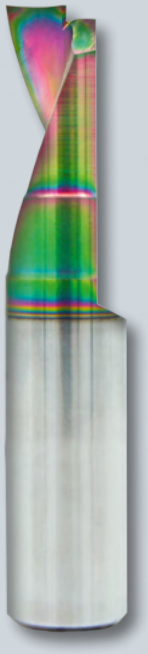
vc (m/min)
Cutting speed
150 - 300

fz (mm)
Feed per tooth
0.07 - 0.25

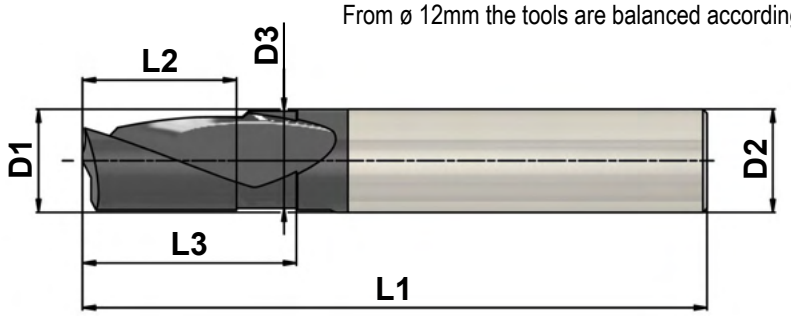
Article Nr.	D1 (mm)	D2 (mm)	L1 (mm)	L2 (mm)	Z
109 020	2	6	50	4	1
109 030	3	6	50	4	1
109 040	4	6	50	6	1
109 050	5	6	50	7.5	1
109 060	6	6	50	9	1
109 070	7	8	50	10.5	1
109 080	8	8	50	12	1
109 090	9	10	60	13.5	1
109 100	10	10	60	15	1
109 110	11	12	73	16.5	1
109 120	12	12	73	18	1
109 130	13	14	75	19.5	1
109 140	14	16	75	21	1
109150	15	16	82	22.5	1
109 160	16	16	82	24	1
109 170	17	18	84	25.5	1
109 180	18	18	84	27	1
106 211	20	20	140	30	1

Solid carbide end mills - reduced neck - 1,5 x D

For dry cutting of aluminium profiles



From ø 12mm the tools are balanced according to DIN ISO 1960 G6.3



vc (m/min)
Cutting speed
150 - 300

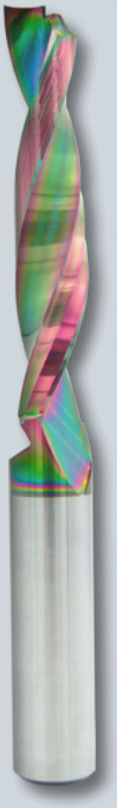
fz (mm)
Feed per tooth
0.07 - 0.25

Article Nr.	D1 (mm)	D3 (mm)	D2 (mm)	L1 (mm)	L2 (mm)	L3 (mm)	Z
109020 UC	2	2	6	50	4	10	1
109030 UC	3	3	6	50	4	10	1
109040 UC	4	4	6	50	6	12	1
109 050 UC	5	5	6	50	7.5	15	1
109 060 UC	6	6	6	50	9	17	1
109 070 UC	7	7	8	50	10.5	18	1
109 080 UC	8	7.5	8	50	12	18	1
109 090 UC	9	8.5	10	60	13.5	20	1
109 100 UC	10	9.5	10	60	15	20	1
109 110 UC	11	10.5	12	73	16.5	25	1
109 120 UC	12	11.5	12	73	18	25	1
109 130 UC	13	12.5	14	75	19.5	28	1
109 140 UC	14	13.5	16	75	21	30	1
109 150 UC	15	14.5	16	82	22.5	35	1
109 160 UC	16	15.5	16	82	24	35	1
109 170 UC	17	16.5	18	84	25.5	37	1
109 180 UC	18	17.5	18	84	27	37	1

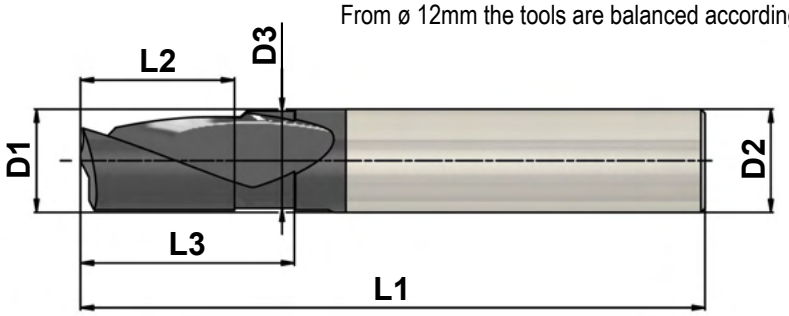
// End mills

Solide carbide end mills - Special lengths

For dry cutting of aluminium profiles



From ø 12mm the tools are balanced according to DIN ISO 1960 G6.3



vc (m/min)
Cutting speed
150 - 300

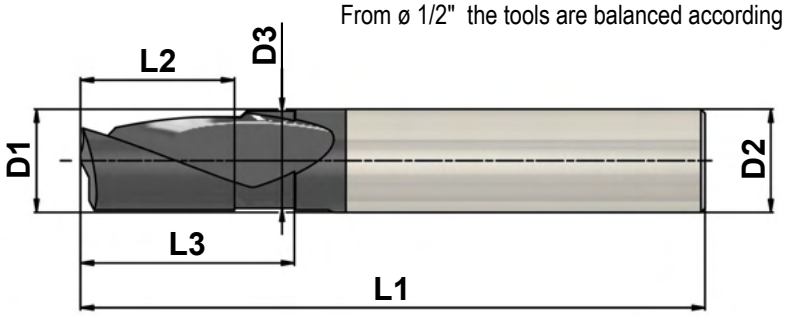
fz (mm)
Feed per tooth
0.07 - 0.25

Article Nr.	D1 (mm)	D3 (mm)	D2 (mm)	L1 (mm)	L2 (mm)	L3 (mm)	Z
106 412	2	2	4	40	7	10.4	1
106 400	3	3	4	50	9	13.9	1
106 413	3	3	3	38	7	11	1
106 401	4	3.8	6	57	11	18	1
106 414	4	4	4	50	8	22	1
106 415	5	4.8	6	57	15	19.4	1
106 402	6	5.7	6	65	18	28	1
106 416	6	6	6	100	25		1
106 403	8	7.7	8	63	19	26	1
106 404-1	8	8	8	75	32	39	1
106 417	10	9.5	10	80	30	38	1
106 418	10	10	10	100	40	60	1
106 419-1	12	11.5	12	83	26	36	1
106 420-1	12	12	12	100	48	55	1
106 421-1	16	15.5	16	108	48	58	1
106 498-1	16	16	16	150	80		1

Solide carbide end mills - Inch diameters

For dry cutting of aluminium profiles

From ø 1/2" the tools are balanced according to DIN ISO 1960 G6.3



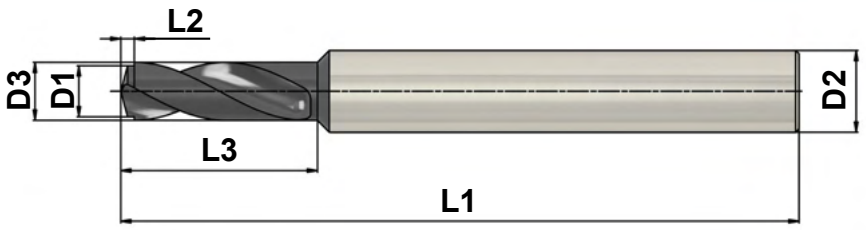
vc (m/min)
Cutting speed
150 - 300

fz (mm)
Feed per tooth
0.07 - 0.25

Article Nr.	D1 (in)	D2 (in)	D3 (mm)	L1 (mm)	L2 (mm)	L3 (mm)	Z
107 340	1/4"	1/4"	6	50	10	18	1
107 291	1/4"	1/4"		50	10		1
107 341	3/8"	3/8"	9.3	60	15	20	1
107 292	3/8"	3/8"		60	15		1
107 342	1/2"	1/2"	12.3	80	19	26	1
107 293	1/2"	1/2"		73	19		1
107 339	5/8"	5/8"	15.5	90	24	34	1
107 343	3/4"	3/4"	19	110	30	45	1
107 344	1"	1"	25.3	120	40	50	1

Solid carbide drills - Burr-free cutting results

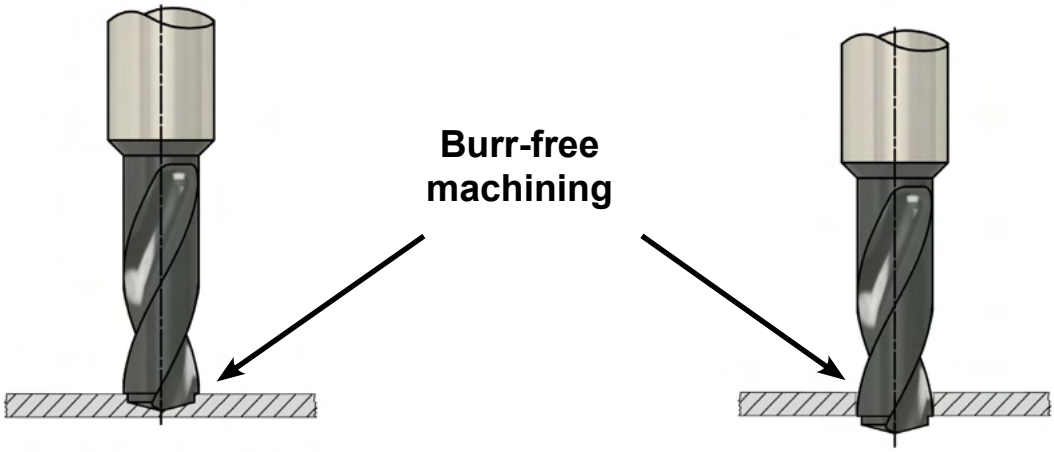
For dry cutting of aluminium profiles



vc (m/min)
Cutting speed
300 - 400

f (mm)
Feed per revolution
0.07 - 0.25

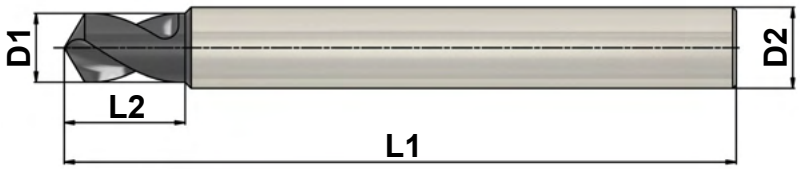
Article Nr.	D1 (mm)	D3 (mm	D2 (mm)	L1 (mm)	L2 (mm)	L3 (mm)
209 020	1	2	6	50	2	10
209 030	2	3	6	50	2	10
209 040	3	4	6	60	2	12
106 526-1	3.85	4.85	6	65	2	15
209 050	4	5	6	70	2	15
106 512-1	4.5	5.5	8	105	2	35
209 060	5	6	6	70	2	17
106 527-1	5.4	6.4	8	55	2	15
106 557-1	5.7	6.7	8	65	2	15
209 070	6	7	8	90	2	18
106 528-1	6.1	7.1	8	55	2	15
106 517-1	6.5	7.5	8	110	2	45
209 080	7	8	8	100	2	18
106 529-1	7.1	8.1	10	55	2	15
107 030	7.5	8.5	12	128	2	62
106 546-1	8.13	9.13	10	75	2	15



Due to the integrated **pre-drilling stage** Desert Cut
drills are designed for **burr-free machining** of aluminium profiles

Solid carbide core drills

For dry cutting of aluminium profiles



vc (m/min)
Cutting speed
300 - 400

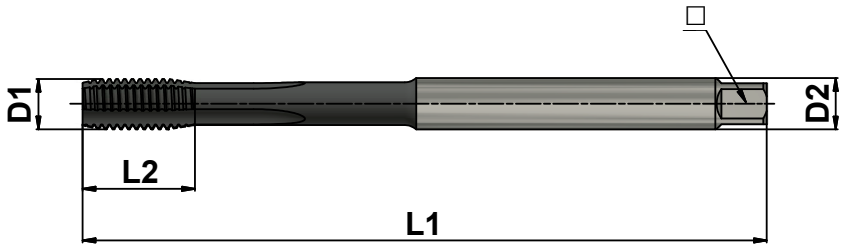
f (mm)
Feed per revolution
0.07 - 0.25

Article Nr.	D1 (mm)	D2 (mm)	L1 (mm)	L2 (mm)	Thread
219 025	2.5	6	50	10	M3
219 033	3.3	6	50	10	M4
219 042	4.2	6	60	12	M5
219 050	5.0	6	70	15	M6
219 068	6.8	8	70	17	M8
219 085	8.5	10	90	18	M10
219 102	10.2	12	100	18	M12

// Machine taps

Machine taps - Clearance holes

For dry cutting of aluminium profiles



vc (m/min)
Cutting speed
30 - 40

Technology

Thread type: Metric ISO thread, DIN 13

Design: Spiral point grinding

Shank: D1 ≤ M10 = DIN 371; D1 ≥ M12 = DIN 376

Gate length: B / 3,5-5 x P

Thread length: 2 x D

Cutting direction: RH

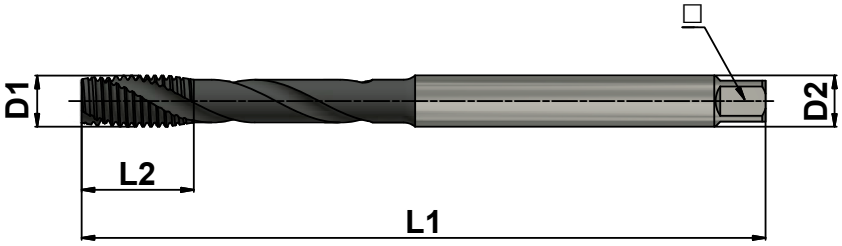
Tolerance: ISO2 (6H)

Execution: HSS-PM

Article Nr.	D1 (mm)	D2 (mm)	Core ø (mm)	L1 (mm)	L2 (mm)	□ (mm)	P_{mm}
309 030	M3	3.5	2.5	56	11	2.7	0.5
309 040	M4	4.5	3.3	63	13	3.4	0.7
309 050	M5	6	4.2	70	15	4.9	0.8
309 060	M6	6	5.0	80	17	4.9	1
309 080	M8	8	6.8	90	20	6.2	1.25
309 100	M10	10	8.5	100	22	8	1.5
309 120	M12	9	10.2	110	24	7	1.75

Machine taps - Blind holes

For dry cutting of aluminium profiles



vc (m/min)
Cutting speed
30 - 40

Technology

Thread type: Metric ISO thread, DIN 13

Thread length: 2 x D

Design: RH spiral flutes 30°

Cutting direction: RH

Shank: D1 ≤ M10 = DIN 371; D1 ≥ M12 = DIN 376

Tolerance: ISO2 (6H)

Gate length: B / 3,5-5 x P

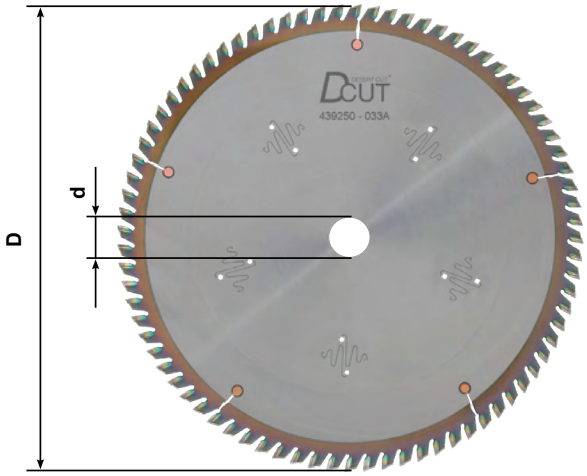
Execution: HSS-PM

Article Nr.	D1 (mm)	D2 (mm)	Core ø (mm)	L1 (mm)	L2 (mm)	□ (mm)	P_{mm}
319 030	M3	3.5	2.5	56	6	2.7	0.5
319 040	M4	4.5	3.3	63	7	3.4	0.7
319 050	M5	6	4.2	70	8	4.9	0.8
319 060	M6	6	5.0	80	10	4.9	1
319 080	M8	8	6.8	90	13	6.2	1.25
319 100	M10	10	8.5	100	15	8	1.5
319 120	M12	9	10.2	110	18	7	1.75

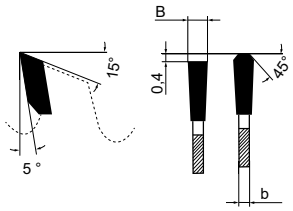
// Saw blades

Solide carbide Desert Cut saw blades

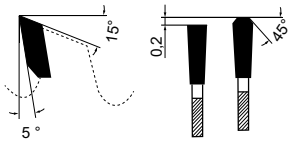
For dry cutting of aluminium profiles



Several times regrindable and recoatable



Tripple-chip flat tooth (FT)
ab Teilung ≤ 20,5



Tripple-chip flat tooth (FT)
ab Teilung ≥ 20,5

Feed rate:

$$Vf = \frac{1000 * fz * Vc}{T}$$

Speed:

$$n = \frac{1000 * Vc}{D * \pi}$$

Vf ... Feed rate (mm/min)

fz ... Forward feed per tooth (mm/z)

Vc ... Cutting speed (m/min)

n ... Speed (min^{-1})

D ... Saw blade diameter (mm)

T ... Tooth pitch (mm)

	Article Nr.	D mm	B mm	b mm	d mm	NL mm	Z
●	439 200 028	200	2.8	2.2	20	2/6/32	72FT
	439 200 033	200	3.3	2.8	30	2/7/42	54FT
	439 250 033	250	3.3	2.8	30	NLK	66FT
●	439 250 033 80	250	3.3	2.8	30	NLK	80FT
●	439 280 032	280	3.2	2.6	30	NLK	96FT
●	439 300 033	300	3.3	2.8	30	NLK	96FT
●	439 300 035 A	300	3.5	3.0	30	NLK	84FT
	439 300 035 B	300	3.5	3.0	32	2/10/63	84FT
	439 300 036	300	3.6	3.0	30	NLK	72FT
	439 320 035	320	3.5	3.0	30	NLK	84FT
	439 350 032	350	3.2	2.6	30	NLK	108FT
●	439 350 035	350	3.5	3.0	30	NLK	90FT
	439 350 036	350	3.6	3.0	30	NLK	84FT
	439 350 042	350	4.2	3.4	30	NLK	54FT

● Available from stock; Remaining positions on request

	Article Nr.	D1 mm	B1 mm	B2 mm	D2 mm	NL mm	Z
	439 350 042 72	350	4.2	3.4	30	NLK	72FT
●	439 400 036	400	3.6	3.0	30	NLK	96FT
	439 400 036 120	400	3.6	3.0	30	NLK	120FT
	439 400 042	400	4.2	3.4	30	NLK	60FT
	439 400 042 72	400	4.2	3.4	30	NLK	72FT
●	439 400 044	400	4.4	3.8	40	2/15/80 + 2/12/64	96FT
●	439 420 035	420	3.5	3.0	30	2/10,5/70	96FT
	439 420 038	420	3.8	3.0	30	2/10,5/70	56FT
●	439 450 044	450	4.4	3.8	30		96FT
	439 450 044 102	450	4.4	3.8	30		102FT
●	439 450 044 120	450	4.4	3.8	30		120FT
	439 450 048	450	4.8	3.8	30		72FT
●	439 500 040	500	4.0	3.4	30		120FT
●	439 500 040 144	500	4.0	3.4	30		144FT
	439 500 044	500	4.4	3.6	30		68FT
	439 500 044 120	500	4.4	3.8	30	2/10,5/70	120FT
●	439 500 048	500	4.8	4.0	30		96FT
	439 500 048 120	500	4.8	4.2	30		120FT
	439 500 050	500	5.0	4.0	30		72FT

Circular saw blades > Ø 500 mm available, but due to technical reasons without coating for dry machining

Application: Sizing and cross cut in profiles, plates, blocks, rods

Design: Desert Cut circular saw blades are designed for dry machining. The circular saw blade has a stable base body and a different number of teeth depending on the field of application. Due to the optimization of the main blade design, very quiet and low-vibration cutting results can be achieved. In addition, the circular saw blades from a diameter of 300 mm are manufactured with noise-reducing and riveted expansion slots.

Material: Aluminium, brass, copper alloy, plastic

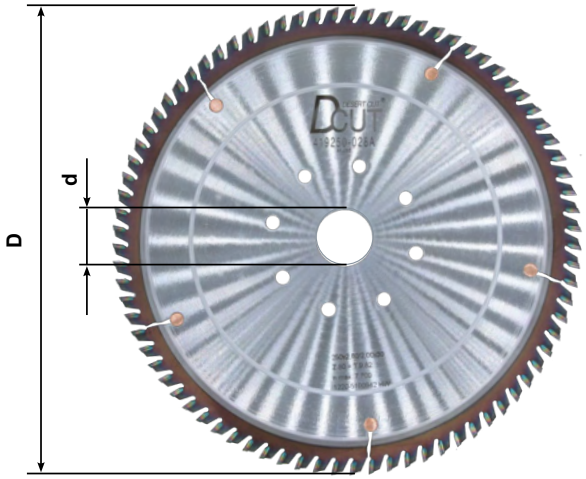
Machine: Double mitre saw, sizing saw, CNC machining center, automatic cross-cut saw

Tooth: Triple-chip flat tooth (FT) positiv, HW

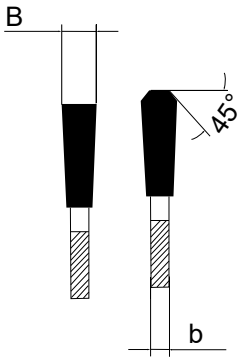
// Saw blades

Solide carbide Desert Cut Pro saw blades

For dry cutting of aluminium profiles



Several times regrindable and recoatable



Triple-chip flat tooth (FT)

Feed rate:

$$Vf = \frac{1000 * fz * Vc}{T}$$

Speed:

$$n = \frac{1000 * Vc}{D * \pi}$$

Vf ... Feed rate (mm/min)

fz ... Forward feed per tooth (mm/z)

Vc ... Cutting speed (m/min)

n ... Speed (min^{-1})

D ... Saw blade diameter (mm)

T ... Tooth pitch (mm)

Article Nr.	D mm	B mm	b mm	d mm	Z
419 250 028	250	2.8	2.0	30	80
419 300 030	300	3.0	2.2	30	96
419 350 036	350	3.6	3.0	30	96
419 400 038	400	3.8	3.0	30	96
419 420 038	420	3.8	3.0	30	96
419 450 040	450	4.0	3.4	30	102
419 500 040	500	4.0	3.4	30	120

Material example (DIN EN 10027)	Cutting speed vc (m/min)	Feed per tooth fz (mm/z)
AlMn (AlMn1Cu) (3003), AlMg (AlMg2) (5251)	2000 - 4800	0.005 - 0.03
AlCuMg (AlZnMg3Cu) (7022)	2000 - 4000	0.005 - 0.03

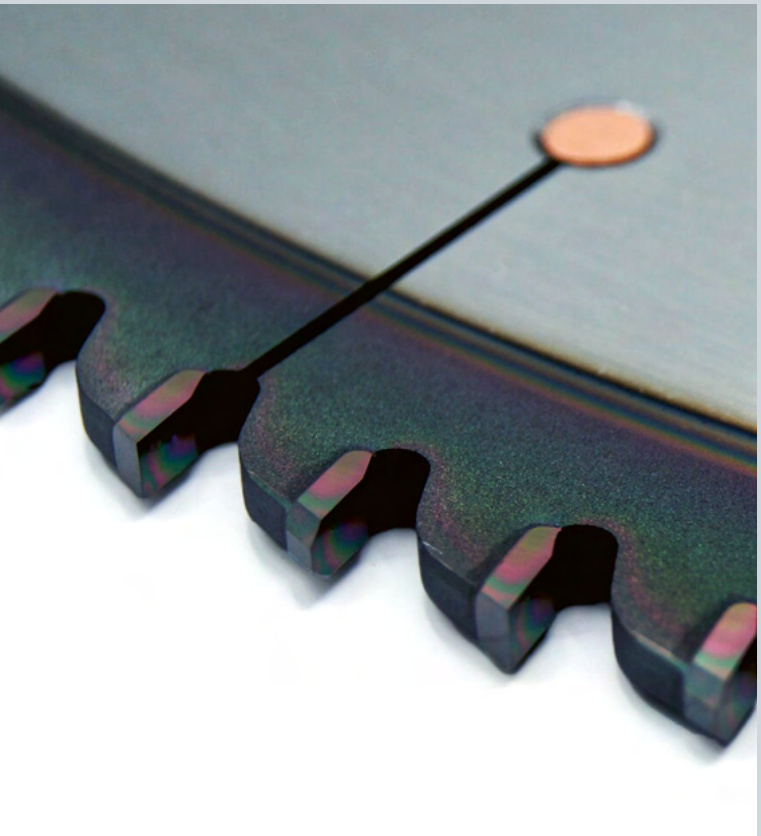
Application: Cross cuts and final processing of aluminium profiles

Design: Desert-Cut saw blades are designed for dry machining. In addition, the riveted construction ensures extremely quiet and vibration-free cutting results. Moreover, the saw blade impresses with bur-free cutting results and excellent cutting quality, which is caused by the particularly grinded cutting edge. As a result, enormous savings concerning post-processing activities and a shortened cycle time can be achieved. Furthermore, the Desert-Cut saw blades are offering a longer lifetime in comparison to conventional saw blades.

Material: Aluminium alloys (anodised), profiles up to 10 mm thickness

Machine: Mechanic cross-cut saws, flush-mounted cross-cut saws, machining centre with sawing aggregate, revolving transfer machine, continuous casting plants

Tooth: Triple-chip flat tooth (FT), HW



// Customised tools

Customised Desert Cut tools

For dry cutting of aluminium profiles

Desert Cut has mastered the art of **coolant-free** processing of aluminium profiles. We provide a full range of standardised solutions – However, depending on the kind of processing, standardised solutions have their limits. We are committed to serve our clients with a high level of quality and service. This is why we supply **semi-standard tools** and **customised solutions**, to meet your unique needs. Be efficient, be coolant-free, use Desert Cut.

In order to find the optimal solution and to check the feasibility, please contact us. For customized solid carbide drills and solid carbide end mills, please feel free to use the inquiry form on page 22. Then we will take all possible steps to develop your **tailor-made Desert Cut tool**.

Roughing cutter

Chamfering tool

Ball nose end mill

Step drill

Centre drill

Drill - customized length

Tap - customized length

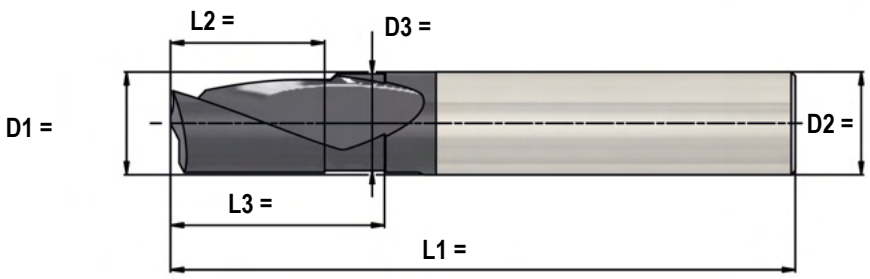
Porcupine cutter

Indexable inserts

// Inquiry form customised
Desert Cut tools

Date	
Company	
Contact person	
E-mail address	
Phone no.	

Customised - Solid carbide end mill

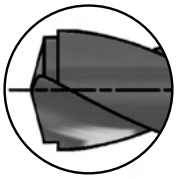


Quantity *	
Graduated Prices	2 pcs. ☐ 5 pcs. ☐ 10 pcs. ☐ ☐

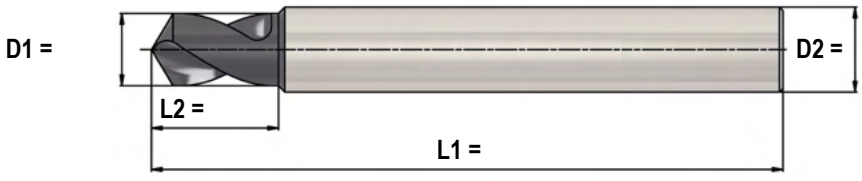
☐ With reduced neck (size D3 & L3) ☐ Without reduced neck (do not size D3 & L3) ☐ Corner radius

Comment

Customised - Solid carbide drill



Detail: Design with pre-drilling stage for burr-free machining



Quantity *	
Graduated Prices	2 pcs. ☐ 5 pcs. ☐ 10 pcs. ☐ ☐

☐ With pre-drilling stage - burr-free machining (dimensions are selected by the manufacturer) ☐ Without pre-drilling stage

Comment

Reset form | Print form | Send form

Please fill out the PDF or print form and send it to office@mkofler.at
You will then receive a quote for a customized Desert Cut tool.

* 2 pcs. minimum order quantity for customized tools

// Inquiry form
Catalogue tools

Date

Company

Contact person

E-mail adress

Phone no.

Link to the website and catalogue products:

www.desert-cut.com

Solid carbide end mills

Quantity

Comment

Solid carbide drills

Quantity

Comment

Machine taps

Quantity

Comment

Desert Cut sawblades

Quantity

Comment

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Please fill out the PDF or print form and send it to office@mkofler.at
You will then receive a quote for the selected Desert Cut tools.

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