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1. General information



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Practical information

Local contact

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www.louisbelet.ch
info@louisbelet.ch

Working hours

Monday to Friday

7:00 AM to 12:00 noon / 1:00 PM to 5:30 PM (UTC +1)

Availability & time schedules

The majority of the articles listed in the catalogue are available in stock. Depending on the coating desired, there may be a time delay of 3-4 days.

Ordering

Delivery of articles in stock (next working day)

For orders until:

Monday - Thursday : 5:00 PM

Friday : 4:00 PM

Pick-up from the warehouse Preparation time 30 minutes

Warehouse with remote control

We supply a small cabinet with a range of tools free of charge and this can be discussed in detail and coordinated to meet your needs. You may use these tools depending on your needs without being charged for doing so. If a tool of this stock gets worn out or used up, we shall provide a replacement against payment.

The great advantage of this system is that you have the desired tool directly on-site where you need it. We apply the customary volume discount on orders depending on the stock transactions.

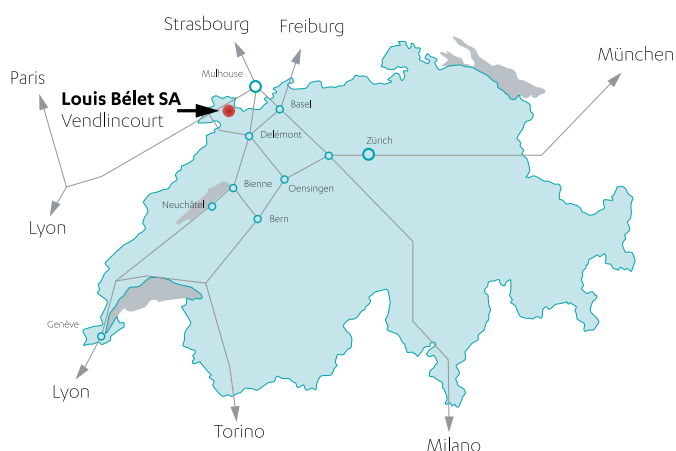
If one of the two parties would like to reverse this stock for any reason, we shall accept is free of charge provided that it contains the initial stock of tools

SKYLIGHT > www.louisbelet.ch/skylight

Please visit our on-line inventory!

Skylight is a web portal that enables you to search the stocks of standard and special tools of Louis Belet SA and its associated stock. You can search based on the type of tool and dimensions or reference dimensions and diameter.

Situation



Hobs for milling gears

You may send a request for a quotation for hob cutters via our on-line form. Our technical office shall analyse your requirements and can recommend the suitable hob cutter for your application

> www.goo.gl/AVQHQ6

Order on demand by the customer

You place an order for a large quantity of tools so that you can benefit from the attractive conditions. The tools are kept in stock with Louis Belet. We shall supply small quantities to you on call and we shall also raise invoices for the same respectively. The discounts shall be granted depending on the article and quantity. Such an order may run for 1 to 2 years (based on mutual consultation).

Discount

Volume discount on the catalogue products:

10-19 pieces : **5%**
20-49 pieces : **10%**
50-99 pieces : **15%**
100-149 pieces : **20%**
≥ 150 pieces : **25%**

> www.louisbelet.ch to get the latest information about resellers



**SUNRION PRECISION
MACHINERY CO. LTD.**

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AFFOLTER CHINA CO., LTD. OFFICE

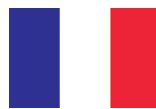
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Watchmaking & jewellery



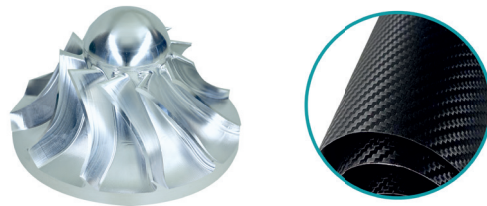
Louis BELET excels in manufacturing customised end mills for the high end watchmaking market. Our tool quality and high reactivity enabled us to become a benchmark for the leading watchmaking brands.

Medical technologies



Because of our know how and experience over more than half a century in customised tools, Louis BELET has become an essential partner for the leading names in the medical industry.

Aeronautic industry

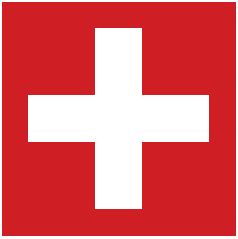


Bélet offers several tools designed for machining aluminium, titanium, inconel and alloyed steels. In addition, a specific set of tools has been developed for machining composite materials.

Telephony / Electronics



Bélet's standard and custom end mills are used by leading companies in this sector. Thanks to our high end CNC machines, we are able to produce these tools in large quantities.



Quality : Swiss made

We do not compromise when it comes to the quality of our products. All our tools offer the same quality regardless of whether they are of standard or special design.

Inspection

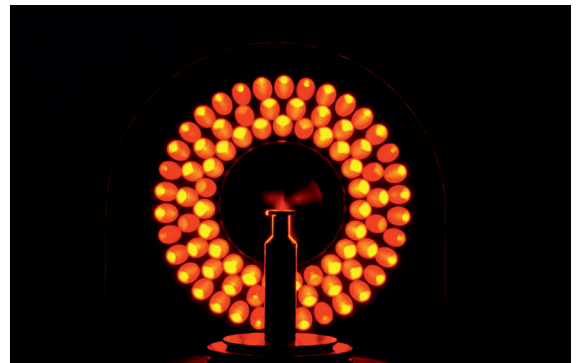
Louis Belet AG has the latest technical means and resources for testing the tools.

We are in a position to prepare test certificates in accordance with DIN EN 10204: 2005-01.



Digital Optical Systems

Digital measurement and profile comparisons directly from the CAD file



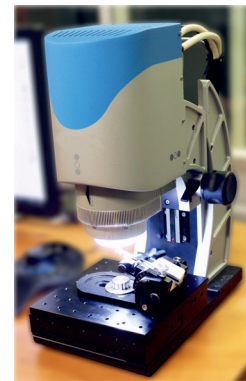
Automatic computer-aided controller

This equipment can generate test reports on request



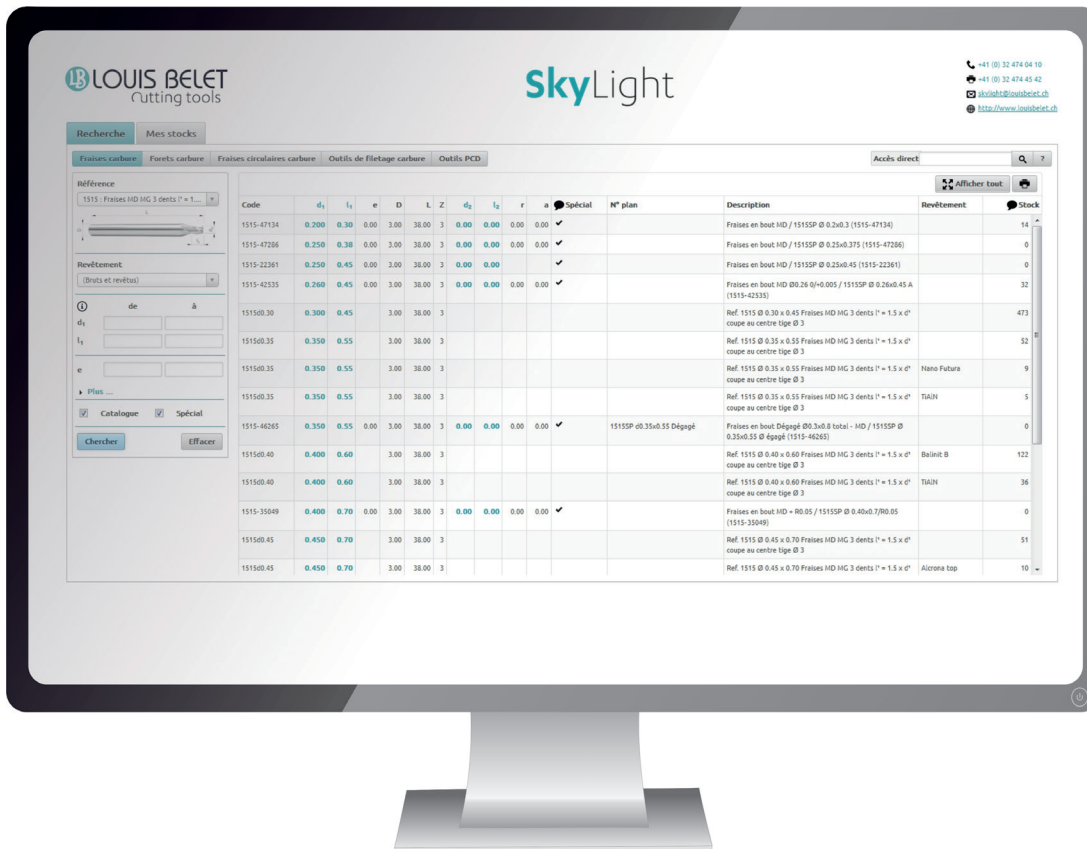
Diameter with the help of laser measurement

Dimensions in micrometres (μm) of milling and drilling before and after machining



3D measuring instruments

Optical measurement system optimised for 3D measurements



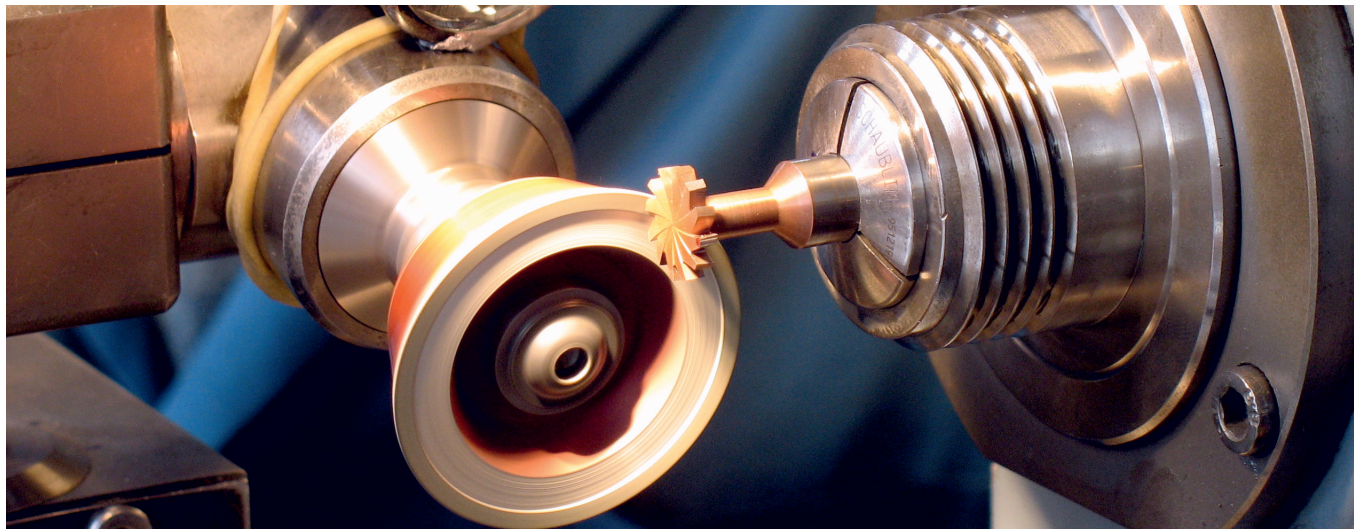
SKYLIGHT : Give a look at our inventory !

The skylight module enables you to look at the stock (Bélet's one or yours dedicated stock) of standard and special tools. You can search by tool type and size or by reference and diameter.

For any price request, please contact us indicating the item code of the tools. For more information about the use of Skylight: info@louisbelet.ch

Access Skylight :

<http://www.louisbelet.ch/skylight>



Bélet tools are made to last!

Most tools can be reconditioned, either if manufactured by Bélet or by our competitors. For instance :

- ▶ End mills in solid carbide or HSS, from \varnothing 6 mm
- ▶ Drills in solid carbide or HSS
- ▶ Circular cutters in carbide or HSS
- ▶ Cutting tools in PCD: mills, drills, circular saws, etc...
- ▶ Inserts and turning tools in carbide or PCD
- ▶ Form cutters in solid carbide, PCD or HSS

Reconditioning allows the renewal of your tool at low cost and within a short timeframe. Depending on the dimensions of the tools, of the cost of a new tool or on the condition of the used tools, it may happen that reconditioning is not possible or judicious. In this case, our specialists will contact you to propose an alternative. Reconditioned tools can also be coated again.

Reprofiling

Profiled tools with constant or logarithmic relief can also be reconditioned on our specialized machines. Form tools with a logarithmic profile have the advantage that they can be resharpen while keeping their exact original profile.

The company



Mr. Louis Bélet has founded the company in 1948. Since then we have gained a solid know-how in manufacturing cutting tools. Nowadays, the company is run by the two grandchildren of the founder, Mrs Roxane Piquerez and Mr Arnaud Maître.

The quest of excellence

Bélet's spirit relies on the quest of excellence. In all our activities, we constantly focus on finding the best solutions, for our customers and our employees. This applies to the following areas :

Quality

- ▶ No compromise is tolerated on the quality of our products. All of our tools, either standard or special, have the same quality level.

Service

- ▶ The customer first! We focus on delivering the best service to any customer
- ▶ Reactivity is a key point for us: our goal is to give a prompt and accurate feedback to any request we get from our customers.

Practices

- ▶ We apply an employee loyalty program. This is a key point to keep and develop our know-how.
- ▶ We make sure that our production processes are environment friendly. This is followed through our ISO 14001 certification.

Economical performance

- ▶ Healthy finance is obviously a key point. We focus on being independant of any backers. All our machines and equipment are financed by our own equity.

Quality and environmental management are testified by our ISO 9001:2008 and ISO 14001:2004 certifications.



General terms & conditions

Prices

The prices are per piece and for delivery ex works Vendlincourt, Switzerland, without packaging, postage, taxes (VAT), custom fees nor insurance. Price modifications are reserved. Minimum amount by order: CHF 50.-

Special tools

The tools manufactured according to special requests are invoiced on the basis of a quotation or, unless otherwise stated in the order confirmation, on the basis of the result. Louis Bélet SA reserves the right to deliver up to $\pm 10\%$ of the number of ordered parts, but at least one part. Invoicing of such over-/under-quantities is based on the agreed price in the original order.

Deliveries

Ex-works Vendlincourt, Switzerland, with all the risks being passed to the ordering party upon dispatch of the relevant goods. The postage and packaging costs are invoiced.

The delivery deadlines are given without engagement. They are evaluated as accurately as possible and are respected as well as possible. For the standard tools of the catalogue, the deliveries of pieces in stock are carried out the day of order, as far as possible. The delivery deadlines for special tools are communicated upon request. Unforeseeable delays do not authorize the customer to cancel the order. In the case of a delay, the purchaser is not entitled to compensation or other benefits.

Control certificates

Certificates for quality controls may be provided upon request and will be invoiced.

Payment terms

The invoices are payable as a net amount within 30 days, as from the date of the invoice, in Swiss francs, except another convention. The terms of payment and delivery stipulated on the orders of our customers and not corresponding to ours are recognized by us only through a specific written confirmation.

The goods delivered shall remain the property of Louis Bélet SA until they have been paid for in full.

Machining parameters

The cutting parameters and technical informations provided in this catalogue are indicative and do not engage us. These parameters are to be adapted according to the type of work, to the part to be manufactured, to the machine, the attachments, the layings and the lubricant.

Complaints

The complaints must reach us in writing within 8 days after reception of the goods. Any part presenting a defect will be replaced or credited as soon as possible. This guarantee covers only the replacement of the tool. No other compensation could be required. The tools defective following a normal or an excessive usage will not be replaced for free.

Liability for defects

The purchaser shall only be entitled to the replacement or repair of defective goods. The purchaser is not entitled to further claims, especially for compensation for damage or consequential damage. In no case can claims be considered by the purchaser for compensation for damage which is not caused to the object itself, e.g. loss of production, inability to use the goods, loss of contracts, loss of profit and other direct or indirect damage.

Special terms

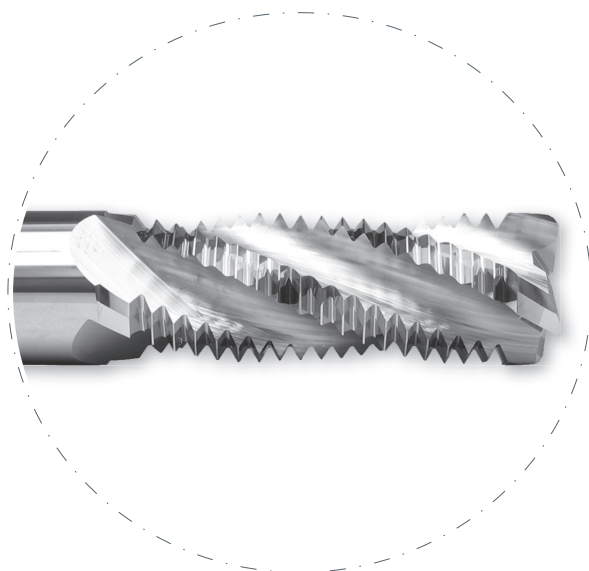
The standard tools are manufactured according to drawings designed by Louis Bélet SA. The illustrations as well as the technical data appearing in the present catalogue do not engage us. Modifications in the geometries of the cutting zones, in the quality of the raw material like in any other technical data may happen without prior notice. For special tools, we manufacture according to a customer's drawing or to a drawing designed by Louis Bélet SA but validated by the customer. The tool production is launched based on the latest drawing in our possession. Any subsequent modification of the drawing is subject to be charged to the customer.

Jurisdiction

The Swiss law shall apply. Place of jurisdiction: CH - 2900 Porrentruy (Jura).

The French text of the above general terms and conditions is used as reference

2. Special tools



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2. Special tools



701S tools
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**Turning tool with
profiled insert**
page 30



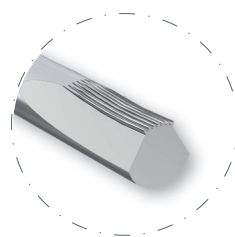
**Special T-slot cutters and
end mills**
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**Offset whirl thread
cutters**
page 31



Step drills
page 26



Punch tools
page 32



**Form Cutters in PCD /
CVD / CBN**
page 28



Snailing tools
page 33

Tools for the machine 701S from Willemin-Macodel

SPECIAL

Louis Bélet has developed an assortment of tools for the machine 701S from Willemin-Macodel.

These mills and drills have been specifically designed to take advantage of the potentials of this machine.

They allow a precise and fast machining, with an excellent surface quality



Tools tested and validated on the 701S machine :

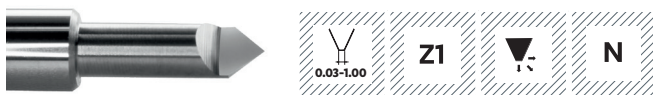
REF. 7010 End mill for 701S machine



REF. 7102 Micro end mill 2 teeth for 701S machine



REF. 7119 Engraving mill for 701S machine



REF. 7111-1 Straight cut end mill Z1 for 701S machine



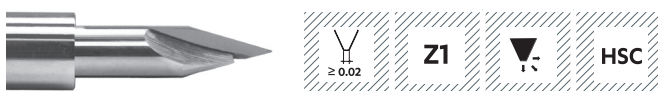
REF. 7339 Twist drill helix 24° for 701S machine



REF. 7111-3 Straight cut end mill Z3 for 701S machine

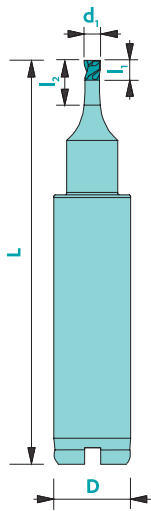


REF. 74119-3 Engraving mill in PCD for 701S machine



Any other geometry upon request





Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	100	130	☐	☐	Trio
Steel > 700 N/mm ²	80	100	☐	☐	Trio
Stainless steel	50	70	☐	☐	Trio
Cast iron	60	100	☐	☐	Trio
Copper	150	180	☐	☐	Solo
Brass - Bronze	150	180	■	■	Solo
Aluminium	200	350	☐	☐	Rico/Solo
Gold - Silver	140	180	☐	☐	Solo
Platinum - Palladium	-	35	-	☐	Solo
Superalloys	-	40	-	☐	Trio
Titanium	40	60	☐	☐	Rico/Trio

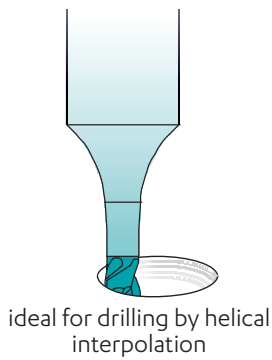
not adapted - adapted ☐ highly adapted ■

Tolerances $d_1 \leq 1 \text{ mm: } +0/-0.01$ $D: h5$
 $d_1 > 1 \text{ mm: } +0/-0.02$

Z2

MG10

N



Art. n°	d_1	l_1	l_2	D	L
7010d0.10	0.10	0.05	0.40	6	33
7010d0.20	0.20	0.10	0.80	6	33
7010d0.32	0.32	0.16	1.28	6	33
7010d0.50	0.50	0.25	2.00	6	33
7010d0.63	0.63	0.32	2.52	6	33
7010d0.80	0.80	0.40	3.20	6	33
7010d1.25	1.25	0.63	5.00	6	33
7010d2.00	2.00	1.00	-	6	33
7010d3.20	3.20	1.60	-	6	33

$ap=0.24x d_1$

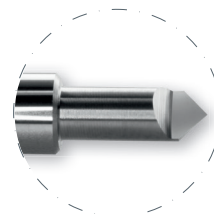
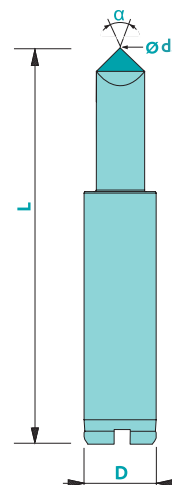
$ae=0.8x d_1$
 $ap=0.3x d_1$

Engraving mill for 701S machine

Material	n [rpm]	Ap	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	25 - 40'000	0.05 - 0.40	☐	■	Nemo
Steel > 700 N/mm ²	20 - 40'000	0.05 - 0.30	-	■	Nemo
Stainless steel	20 - 30'000	0.05 - 0.30	-	☐	Nemo
Cast iron	25 - 40'000	0.05 - 0.40	☐	■	Trio
Copper	20 - 40'000	0.05 - 0.40	☐	■	Solo
Brass - Bronze	25 - 40'000	0.05 - 0.40	☐	■	Solo
Aluminium	-	-	☐	■	-
Gold - Silver	20 - 40'000	0.05 - 0.40	■	☐	Solo
Platinum - Palladium	-	-	-	-	-
Superalloys	-	-	☐	■	-
Titanium	25 - 40'000	0.05 - 0.40	☐	■	Rico

not adapted - adapted ☐ highly adapted ■

Tolerances a: +/- 0.01
D: h5



Article number: 7119a##d#.#

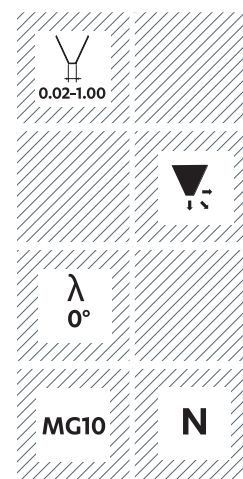
Example: End mill ref. 7119 with 25° angle and tip diameter 0.05 mm: 7119a25d0.05

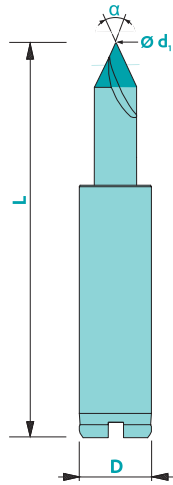
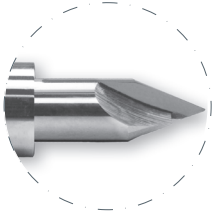
α^*	d_1^{**}	D	L
15°-45°	0.02-0.09	6	33
15°-45°	0.10-0.30	6	33
50°-140°	0.02-0.09	6	33
50°-140°	0.10-0.30	6	33

* Available angles: every 5° between 15° and 45°; every 10° between 50° and 140°

** Available diameters: every 0.01 mm between 0.02 and 0.09 mm; every 0.05 mm between 0.10 and 0.30 mm

Other dimensions (angle, tip diameter, shank) upon request





Material	n [rpm]	Ap	Perf.
Steel < 700 N/mm ²	-	-	-
Steel > 700 N/mm ²	-	-	-
Stainless steel	-	-	-
Cast iron	-	-	-
Copper	≥ 40'000	0.05 - 0.40	□
Brass - Bronze	≥ 40'000	0.05 - 0.40	□
Aluminium	≥ 40'000	0.05 - 0.40	■
Gold - Silver	≥ 40'000	0.05 - 0.40	■
Platinum - Palladium	≥ 40'000	0.05 - 0.40	■
Superalloys	-	-	-
Titanium	-	-	-

not adapted - adapted □ highly adapted ■

Tolerances d_1 : +/- 0.01
D: h5

Z1

$\lambda \geq 0.02$

PCD HSC

Art. n°	α	d_1	D	L
74119-3a40d0.05	40	0.05	6	33
74119-3a40d0.08	40	0.08	6	33
74119-3a40d0.10	40	0.10	6	33
74119-3a50d0.05	50	0.05	6	33
74119-3a50d0.08	50	0.08	6	33
74119-3a50d0.10	50	0.10	6	33
74119-3a60d0.05	60	0.05	6	33
74119-3a60d0.08	60	0.08	6	33

Art. n°	α	d_1	D	L
74119-3a60d0.10	60	0.10	6	33
74119-3a70d0.05	70	0.05	6	33
74119-3a70d0.08	70	0.08	6	33
74119-3a70d0.10	70	0.10	6	33
74119-3a90d0.05	90	0.05	6	33
74119-3a90d0.08	90	0.08	6	33
74119-3a90d0.10	90	0.10	6	33

Order Quotation request

Angle (α): <input type="checkbox"/> By default : 60° <input type="checkbox"/> 30° <input type="checkbox"/> 35° <input type="checkbox"/> 45° <input type="checkbox"/> Other : _____ <input type="checkbox"/> 50° <input type="checkbox"/> 55° <input type="checkbox"/> 90°		Shank \emptyset : <input type="checkbox"/> By default : D=3 <input type="checkbox"/> Other : D= _____		Order No : _____	
Machined material : _____		Quantity : _____		d_1 (from 0.02 mm) : _____	
Contact person : _____			Company's stamp & date : _____		

Standard dimensions of the bars : \emptyset 3x L 38, \emptyset 4x L 38, \emptyset 6x L 38, \emptyset 6x L 51, \emptyset 8x L 61, \emptyset 10x L 72, \emptyset 12x L 83, \emptyset 16x L 92, \emptyset 20x L 104

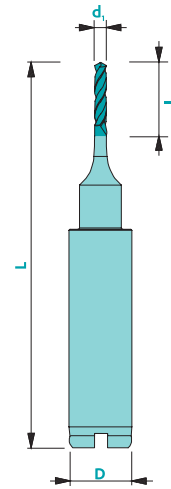
Other dimensions, CVD/CBN available upon request.

Twist drill helix 24° for 701S machine

Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	60	70	□	■	Trio
Steel > 700 N/mm ²	50	60	□	■	Trio
Stainless steel	40	50	□	■	Trio
Cast iron	30	40	□	■	Solo
Copper	50	60	□	■	Solo
Brass - Bronze	120	130	■	□	Solo
Aluminium	130	140	□	■	Nemo
Gold - Silver	80	90	■	□	Solo
Platinum - Palladium	-	18	-	■	Solo
Superalloys	-	20	-	■	Trio
Titanium	30	40	□	■	Nemo

not adapted - adapted □ highly adapted ■

Tolerances d_1 : -0.002/-0.004
D: h5



Art. n°	d_1	l_1	D	L
7339d0.230	0.230	1.0	6	33
7339d0.275	0.275	1.0	6	33
7339d0.320	0.320	1.5	6	33
7339d0.400	0.400	2.0	6	33
7339d0.480	0.480	3.0	6	33
7339d0.560	0.560	4.0	6	33
7339d0.640	0.640	4.0	6	33
7339d0.720	0.720	4.0	6	33
7339d0.800	0.800	4.0	6	33
7339d1.000	1.000	4.0	6	33
7339d1.150	1.150	4.0	6	33



118°

Z2



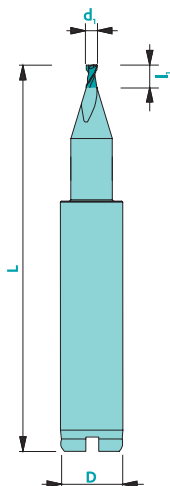
λ
24°

MG10

N

7102

Micro end mill Z2 for 701S machine



Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	100	130	□	□	Trio
Steel > 700 N/mm ²	80	100	□	□	Trio
Stainless steel	50	70	□	□	Trio
Cast iron	60	100	□	□	Trio
Copper	150	180	□	□	Solo
Brass - Bronze	150	180	■	■	Solo
Aluminium	200	350	□	□	Rico/Solo
Gold - Silver	140	180	□	□	Solo
Platinum - Palladium	-	35	-	□	Solo
Superalloys	-	40	-	□	Trio
Titanium	40	60	□	□	Rico/Trio

not adapted - adapted □ highly adapted ■

Tolerances $d_1 \leq 1 \text{ mm: } +0/-0.01$ $D: h5$
 $d_1 > 1 \text{ mm: } +0/-0.02$

	Z2
λ 35°	γ 8-10°
MG10	N
$ap=0.25x d_1$	$ae=0.5x d_1$ $ap=0.5x d_1$

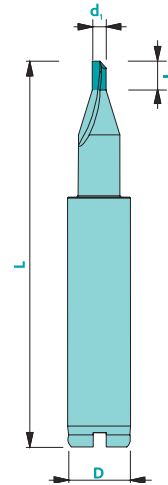
Art. n°	d_1	l_1	D	L
7102d0.10l0.10	0.10	0.10	6	33
7102d0.20l0.30	0.20	0.30	6	33
7102d0.25l0.75	0.25	0.75	6	33
7102d0.32l0.48	0.32	0.48	6	33
7102d0.40l0.80	0.40	0.80	6	33
7102d0.40l1.60	0.40	1.60	6	33
7102d0.50l0.75	0.50	0.75	6	33
7102d0.63l1.89	0.63	1.89	6	33
7102d0.80l1.60	0.80	1.60	6	33
7102d0.80l3.20	0.80	3.20	6	33
7102d1.25l2.50	1.25	2.50	6	33
7102d1.60l4.00	1.60	4.00	6	33
7102d2.00l2.50	2.00	2.50	6	33
7102d2.50l3.00	2.50	3.00	6	33
7102d3.20l3.20	3.20	3.20	6	33

Straight cut end mill Z1 for 701S machine

Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	-	60	-	□	Trio
Steel > 700 N/mm ²	-	-	-	-	-
Stainless steel	-	-	-	-	-
Cast iron	-	-	-	-	-
Copper	-	-	-	-	-
Brass - Bronze	80	110	■	□	Solo
Aluminium	-	-	-	-	-
Gold - Silver	50	60	■	■	Solo
Platinum - Palladium	-	-	-	-	-
Superalloys	-	-	-	-	-
Titanium	20	30	□	■	Rico

not adapted - adapted □ highly adapted ■

Tolerances $d_1 \leq 1 \text{ mm}$: $+0/-0.01$ D : h5
 $d_1 > 1 \text{ mm}$: $+0/-0.02$

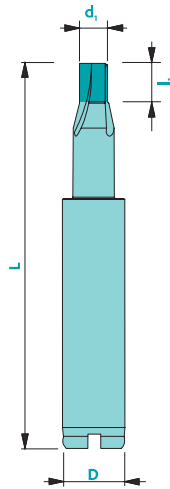


Art. n°	d_1	l_1	D	L
7111-1d0.63	0.63	1.89	6	33
7111-1d0.80	0.80	3.20	6	33
7111-1d1.25	1.25	2.50	6	33
7111-1d1.60	1.60	4.00	6	33
7111-1d2.00	2.00	2.50	6	33
7111-1d2.50	2.50	3.00	6	33
7111-1d3.20	3.20	3.20	6	33

	Z1
λ 0°	γ 0°
MG10	N
$ap=0.5d_1$	$ae=0.5d_1$ $ap=0.5d_1$

7111-3

Straight cut end mill Z3 for 701S machine



Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	-	60	-	□	Trio
Steel > 700 N/mm ²	-	-	-	-	-
Stainless steel	-	-	-	-	-
Cast iron	-	-	-	-	-
Copper	-	-	-	-	-
Brass - Bronze	80	110	■	□	Solo
Aluminium	-	-	-	-	-
Gold - Silver	50	60	■	■	Solo
Platinum - Palladium	-	-	-	-	-
Superalloys	-	-	-	-	-
Titanium	20	30	□	■	Rico

not adapted - adapted □ highly adapted ■

Tolerances $d_1 \leq 1 \text{ mm: } +0/-0.01$ $D: h5$
 $d_1 > 1 \text{ mm: } +0/-0.02$

	Z3
λ 0°	γ 0°
MG10	N

$ap=0.25d_1$

$ae=0.5d_1$
 $ap=0.5d_1$

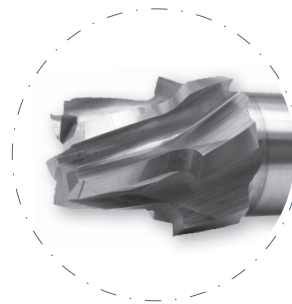
Art. n°	d_1	l_1	D	L
7111-3d0.63	0.63	1.89	6	33
7111-3d0.80	0.80	3.20	6	33
7111-3d1.25	1.25	2.50	6	33
7111-3d1.60	1.60	4.00	6	33
7111-3d2.00	2.00	2.50	6	33
7111-3d2.50	2.50	3.00	6	33
7111-3d3.20	3.20	3.20	6	33

- ▶ Form cutters in tungsten carbide
- ▶ Manufactured according to specific tool drawing or finished product drawing
- ▶ Regrinding possible
- ▶ Choice of external diameter and teeth number upon request
- ▶ Straight, spiral or staggered teeth
- ▶ Logarithmical relief upon request

Finishing end mill with "hedgehog profile"



Helicoid multi-function end mill



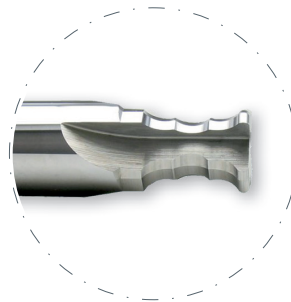
Thread mill



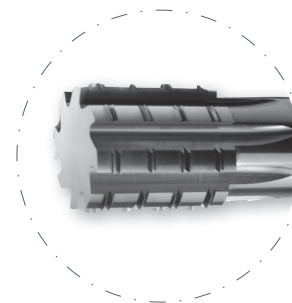
Profiled T-slot end mill with staggered teeth for medical piece



Straight cut end mill for jewellery parts



Milling cutter with logarithmical relief



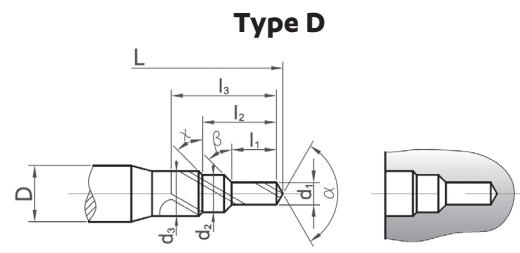
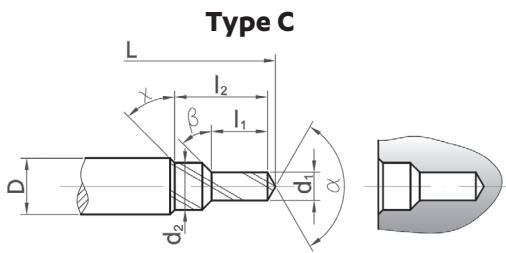
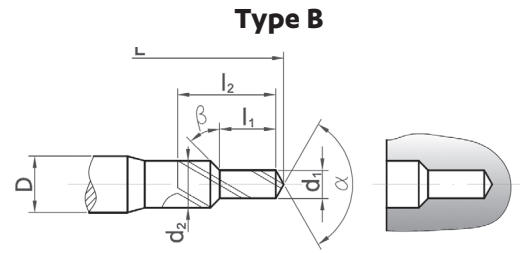
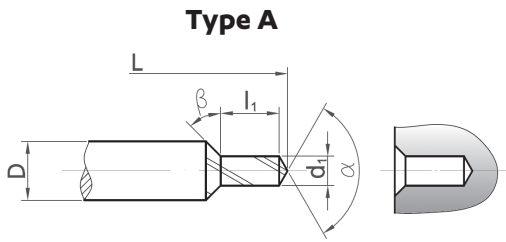
Step drills - Ref. 335



- ▶ Step drills in tungsten carbide
- ▶ Helix angle according to the machined material
- ▶ Right or left cut
- ▶ Four types of standard step drills are available (A, B, C and D type).
Other types upon request
- ▶ Custom drills made to order
- ▶ With or without coolant holes

Step drills - Ref. 335

SPECIAL



Order Quotation request

<input type="checkbox"/> Type A	<input type="checkbox"/> Type B	<input type="checkbox"/> Type C	<input type="checkbox"/> Type D
Dimensions : D : _____ L : _____ α : _____ d ₁ : _____ l ₁ : _____ β : _____ d ₂ : _____ l ₂ : _____ χ : _____ d ₃ : _____ l ₃ : _____ Z : <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3		Helix angle : <input type="checkbox"/> 24° for brass <input type="checkbox"/> 34° for stainless steel Coating : <input type="checkbox"/> Coated * : _____ <input type="checkbox"/> Uncoated	
		With coolant holes ? <input type="checkbox"/> No <input type="checkbox"/> Yes	
		Quantity : _____	
Machined material : _____		Order No : _____	
Company's stamp & date : _____		Contact person : _____	

Standard dimensions of the bars : \emptyset 3x L 38, \emptyset 4x L 38, \emptyset 6x L 38, \emptyset 6x L 51, \emptyset 8x L 61, \emptyset 10x L 72, \emptyset 12x L 83, \emptyset 16x L 92, \emptyset 20x L 104

* Without information, the most suitable Coating will be applied.

Form cutters in PCD/CVD/CBN Laser machining

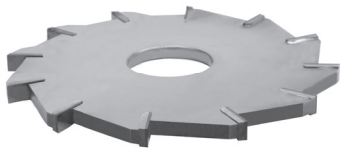
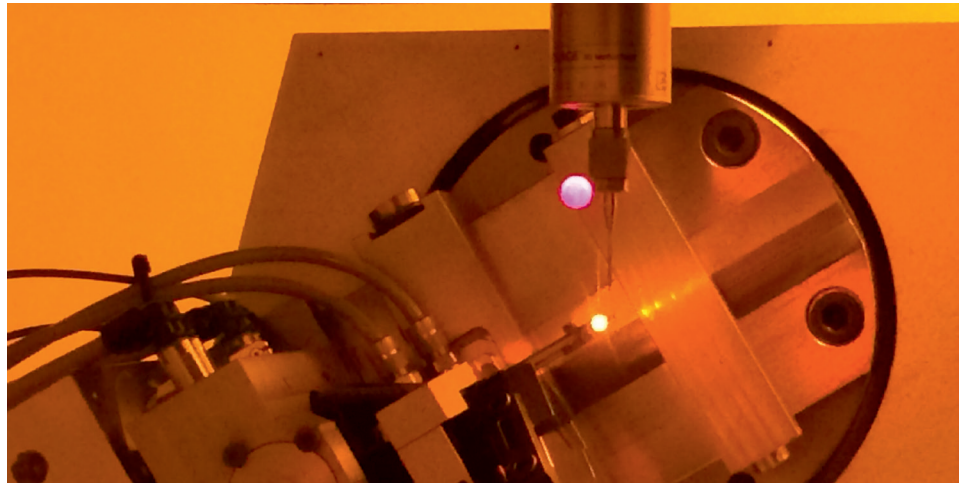


**Profiled
cutters**



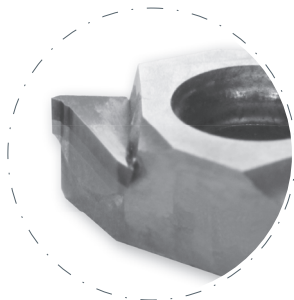
Form cutters

The production of PCD cutting tools by laser machining is highly complex, requiring ultra-precise and sophisticated machines.



Slitting saws

Laser sharpening generating no efforts on the tool, the mass and the kinetic of the machine have been developed specifically to ensure very fast and precise movements.

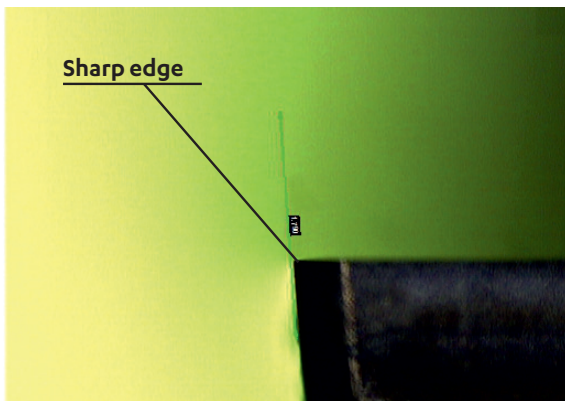


**Turning tool with
profiled insert**

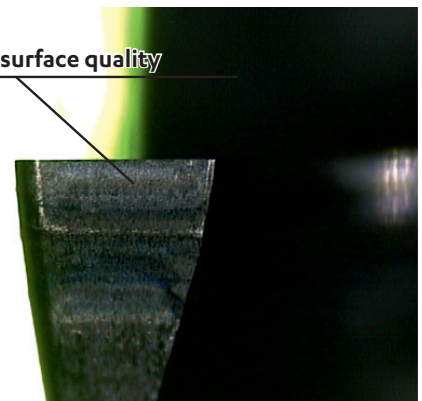
The 3 advantages of laser machining of cutting tools :

1°

Very sharp cutting edges can be achieved. The laser cuts the synthetic diamond.



Excellent surface quality

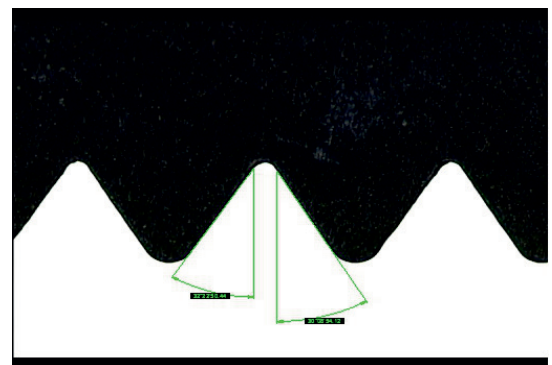


2°

Very long tool life

3°

Allows the production of highly complex shapes from a dxf file provided by the customer.



Turning tools with profiled inserts

- ▶ Turning tool with reversible solid tungsten carbide insert
- ▶ Change of insert without adjustment
- ▶ High precision of the insert's position
- ▶ Reduction of the machining time: only one adjustment!
- ▶ Manufactured according to specific tool drawing or finished product drawing
- ▶ Long lifetime due to the coating



Multi function turning tool with profiled insert



Turning tool with profiled insert

Offset whirl thread cutter

Segments: Automotive and medical equipment

SPECIAL



Offset whirl thread cutter for machining deep threads

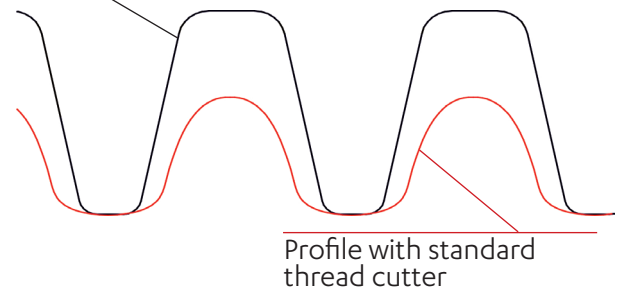
Internal thread whirling is a know and popular method for machining metric ISO threads and for threads with a relatively large opening angle.

For other types of threading operations (e.g. deep trapezoid-shaped) or special threads, internal thread whirling causes problems!

The problem

By milling the thread keeping the tool parallel to the part axis, interferences develop and the shape of the thread is not transferred correctly.

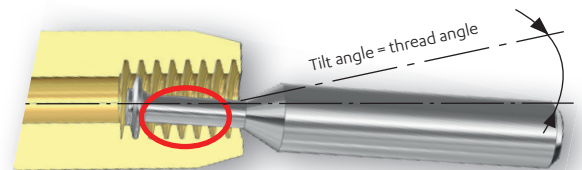
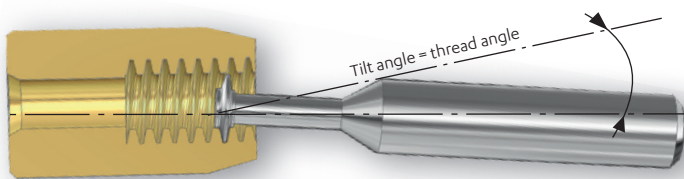
Theoretical profile



Standard solution

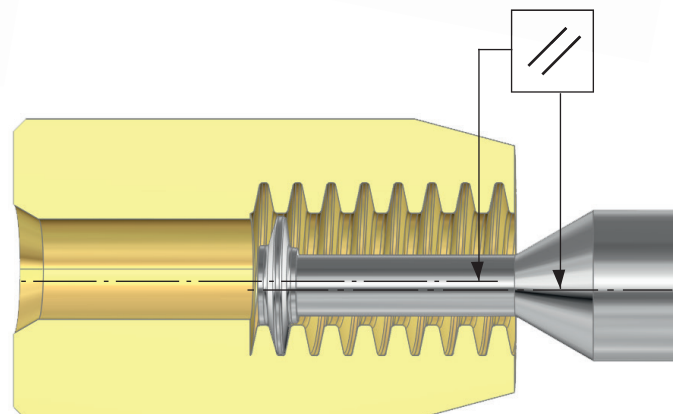
One solution is to tilt the tool in accordance with the helix angle. This solution is effective for short threads, but the spindle must be tilted while interpolating with the whirling cycle.

If the thread is deep, the tool touches the work-piece.



New solution!

With a specific modification to the shape of the thread cutter, the work-piece can be machined while the tool is kept parallel to the work-piece axis, which means that the correct shape is ensured.

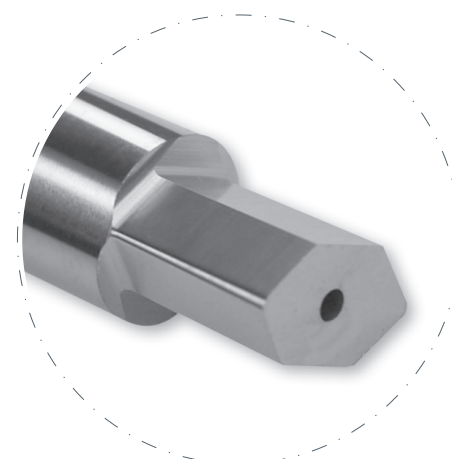


Machining an internal profile using a special punch tool

Louis Bélet manufactures also profiled punch tools for the machining of internal NIHS profiles (DIN or ISO). Tight tolerances are applied to these punches, as on all our profiled tools. Rotating punch tools are also available.

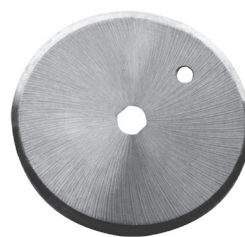


The punch tool may have a partially profiled shape, or a full one

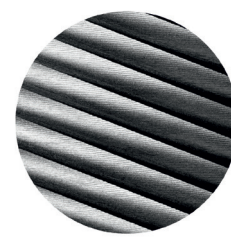


Mills for snailing in solid carbide and PCD

Snailing mills are used to decorate timepieces by means of curved eccentric lines. They advantageously replace the conventional methods ensuring a constant aspect of the first to the last workpiece.



Snailing

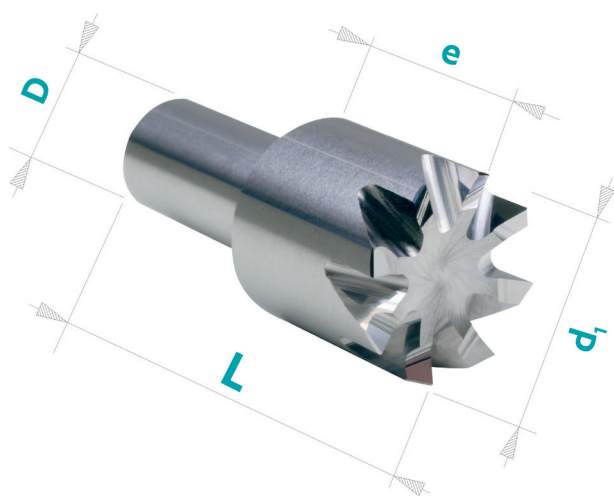


Côte de Genève

Dimensions T-slot cutter

$\varnothing d_1$	e	D	L	Z
10	10	6	22	8
20	10	10	30	20
30	12	10	30	30
40	12	10	39	30
45	12	10	39	55

Snailing mills are available either right handed or left handed. The number of teeth may also be chosen for customized patterns on the workpiece. Available as circular mill or T shape.



End mill for snailing

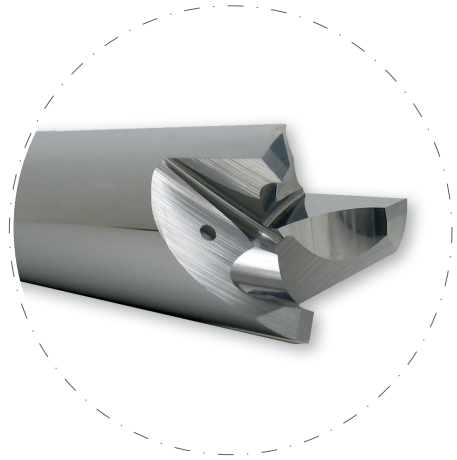


Circular mill for snailing

Tools with coolant holes



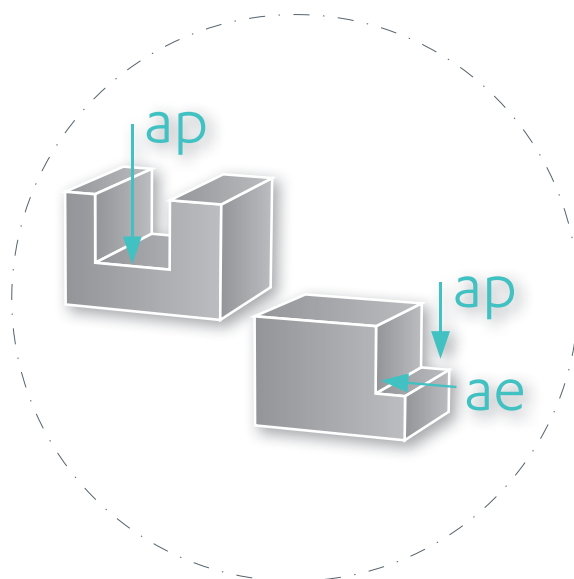
Step drills with
coolant holes



Special end mill with
coolant holes

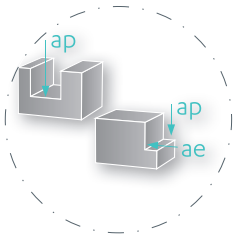
Special tools et step drills can be manufactured with coolant holes. This allows a better chip removal and heat dissipation. Moreover, an increased tool life is generally observed.

3. Machining recommendation and technical infos



Index - Machining recommendation and technical infos

	Page
3. Machining recom. & technical infos	35
Coatings	61
Symbols	62
Formulas	63



Machining recommendation per material
page 39



Coatings
page 61

$$n = \frac{V_c \cdot 1000}{\pi \cdot d_1}$$

Symbols
page 62



Formulas
page 63

Coatings

The coatings proposed by Louis Bélet come from leading suppliers on the market. We are able to provide many different coatings and we can recommend the most appropriate layer depending on your application.

Thanks to the high volume of coated tools, our **prices** are very **competitive**. **Delivery times** are **short** since our suppliers use dedicated shuttles to deliver the coated tools every day in our factory.

We have an **important stock** of coated tools with the most used coatings.

For standard applications, we have defined some reference coatings, that have been **tested**, and which we recommend :

Recommended coatings for standard applications

Material	1°	2°
Steel < 700 N/mm ²	Trio (PO)	Nemo (NO)
Steel > 700 N/mm ²	Nemo (NO)	Trio (PO)
Stainless steel	Nemo (NO)	Trio (PO)
Cast iron	Trio (PO)	Nemo (NO)
Copper	Solo (DA)	-
Brass - Bronze	-	Solo (DA)
Aluminium	Solo (DA)	-
Gold - Silver	Solo (DA)	-
Platinum - Palladium	Solo (DA)	-
Superalloys	Trio (PO)	-
Titanium	Rico (ZB)	-
Composite materials	Neo (FC)	-

These propositions of coatings apply to the majority of standard usages. They may not be adequate for particular materials, alloys or machining techniques. Don't hesitate to ask us for more specific advice !

Ordering coated tools

When ordering a standard tool, you can add a two letter suffix to the article code in order to identify the desired coating. This code is indicated in brackets in the above table.

For example, if you wish to order a coated tool REF 1510 diameter 1.0 mm :

The base article code (uncoated tool), visible on the product page, is the following : 1510 d1.00

The NEMO coated version of this tool has the code 1510d1.00**NO**

In case you want a specific coating not mentioned on the above table, just write it on your order. We can provide **any coating** available on the market !

Symbols



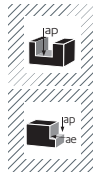
Helix angle



Rake angle



Staggered teeth



Slot milling



Contour milling



General machining



General machining & High Speed Cutting



High speed cutting



Micro-grain carbide Co 10%



Ultra-micro-grain carbide



Polycrystalline diamond



Radial machining



Radial and diagonal machining



Radial, diagonal and axial machining



2 teeth center cutting



3 teeth center cutting



4 teeth center cutting



Multiflutes



Tips sharpened



Coarse pitch



Fine pitch



Extra-fine pitch



Point angle 60°



Conical, small Ø in front



Conical, large Ø in front



Slitting saws 1 cut



Slitting saws 3 cuts



Biconical cutters



Angular cutters 1 cut



Angular cutters 2 cuts



Sharp corners



Beveled edge



Corner radius (toric)



End mills with ball end



Roughing profile



2 flutes, sharpening with facets



2 flutes progressive relief



2 flutes, progressive relief, left hand



3 flutes, sharpening with facets



Centering tip



Gundrills tip



Flat tip for engraving mills



Radius for engraving mills



Number of teeth

Formulas

V_c
[m/min] Cutting speed

n Spindle speed

ap
[mm] Axial depth of cut

V_f
[mm/min] Feed speed

Z Number of teeth

ae
[mm] Radial depth of cut

f_z
[mm] Feed per tooth

d_1
[mm] Tool diameter

f
[mm] Feed per rotation

$$n = \frac{V_c \cdot 1000}{\pi \cdot d_1}$$

$$V_c = \frac{\pi \cdot d_1 \cdot n}{1000}$$

$$f_z = \frac{V_f}{Z \cdot n}$$

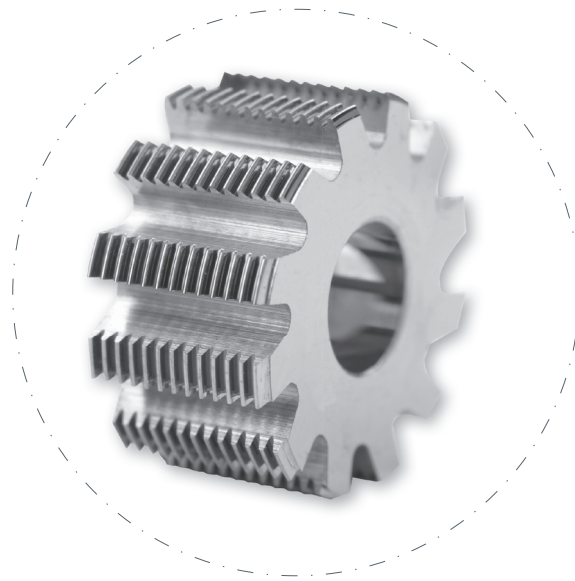
$$f = f_z \cdot Z$$

$$V_f = f_z \cdot Z \cdot n$$

Tolerances table

Ø [mm]	[µm]			
	h5	e8	f8	k8
0-3	0	-14	-6	+14
	-4	-28	-20	0
3-6	0	-20	-10	+18
	-5	-38	-28	0
6-10	0	-25	-13	+22
	-6	-47	-35	0
10-18	0	-32	-16	+27
	-8	-59	-43	0
18-30	0	-40	-20	+33
	-9	-73	-53	0
30-40	0	-50	-25	+39
	-11	-89	-64	0

4. Hob cutters



Hob cutters for gears

Gear cutting is a very high precision operation. It can be performed in multiple ways. The best one is the most efficient in terms of time and cost, depending on :

- ▶ The quantity of pieces to be cut
- ▶ The type of pieces
- ▶ The shape of the tooth profile
- ▶ The machine
- ▶ The habits and the know-how

For many years, Louis Bélet manufactures all kinds of gear cutting hobs. All have been tested and approved by our reference customers to their whole satisfaction.

Request a quotation

You may send a request for a quotation for hob cutters via our on-line form. Our technical office shall analyse your requirements and can recommend the suitable hob cutter for your application

> www.goo.gl/AVQHQ6

Tool

Machined part

Z² - Tooth by tooth gear cutters

Easy to set up, Perfect shape

Tooth by tooth gear cutting is a simple process, fast and economical for prototyping and small scale productions. This process allows cutting of all types of toothing, including deep teeth and asymmetrical profiles. Louis Bélet produces tooth by tooth gear cutters as circular mills or T-slot end mills, the dimensions being customized according to customer's needs. A perfect profile is guaranteed on the tool.



REVOLUTION - Hobs for asymmetrical gears

Fast cutting, Positioning drawing

Our « Revolution » hobs allows the cutting of gears which have a special profile: non symmetrical, too deep or simply not feasible using a classical gear cutting hob. The hob is delivered with the positioning drawing.



Hob cutters for gears

Tool

Machined part

E₂F - Hobs for frontal gear cutting

Easy to set up, Perfect shape, Short cycles, Burrs avoided

Frontal gear cutting creates sometimes a burr problem. The «E₂F» hobs from Bélet decrease drastically these burrs by integrating roughing and finishing teeth, while guaranteeing a perfect final shape of the desired profile.



TRINITY - Hobs for conical gears

Positioning drawing, All kinds of profiles possible

Cutting conical pinions or gears is also a specialty from Louis Bélet. Our Trinity tool allows cutting of all kinds of conical gears, whatever the tooth shape and the module are. These hobs can be used on any gear cutting machine.



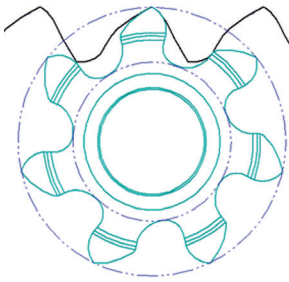
ORIGIN - Hobs for epicyclic and Involute teeth

Fast cutting, Clean cutting

The « Origin » hobs are characterized by the high precision of the profile as well as the geometry of the whole tool. The bore tolerance (H3), the perpendicularity and the parallelism of the sides of the mill are essential features. Louis Bélet goes further than just producing high quality tools. Listening carefully to the needs of our customers, we help them solving the troubles they may have in gear cutting. «Origin» hobs distinguish themselves from module 0.02 up to module 2.00 in the watch gears and mechanical profiles.



Hob cutters for gears



Customized profile

Bélet is able to design hobs according to any conceivable profile in a very short timeframe. Prototypes can then be produced with the final profile of the teeth.

We calculate in house the profiles of the hobs thanks to a special software bundle developed by our means. Thus, there is no intermediate, ensuring a high reactivity and an optimisation of the profiles starting from the prototyping step.

NIHS Profiles

One special feature associated with the NIHS norms is a sharp tip of the tooth. Bélet's hobs allows the cutting of pointed teeth without any modification of the standard machining settings.



Gears of less than 12 teeth

The cutting of small gears with a low number of teeth is often linked with an issue regarding the deepness of the tothing. Unless accepting a not deep enough tooth bottom, it is often necessary to use a hob for asymmetric cutting, which then increases the cost of production.

Bélet solved this issue by designing hobs allowing the cutting of deep teeth. Grooves may also appear on the bottom of the teeth. In that case, we apply a correction to reduce these grooves without modifying the tooth profile.



Non symmetrical profiles

The flexibility of our profiling process allows the creation of the most various gear cutting hobs. Non symmetrical tothing have been tested. The advantage is to be able to use a hob cutter instead of a special « setting hob ». The lifespan of the tool is much longer and the setting the machine is easier.

It's not possible to cut all profiles with this technique, so a study is performed at the stage of the quotation.

Standard dimensions of gear cutting hobs

Ø External	Thickness	Ø Bore	Z
6	4	3.5	12
6	5	3.5	12
6	6	3.5	12
8	4	3.5	12 / 15
8	5	3.5	12 / 15
8	6	3.5	12 / 15
8	8	3.5	12 / 15
10	4	3.5	12 / 15
10	5	3.5	12 / 15
10	6	3.5	12 / 15
10	5	4.5	12 / 15
10	6	4.5	12 / 15
12	6	3.5	12 / 15
12	5	4.5	12 / 15
12	6	4.5	12 / 15
12	8	4.5	12 / 15
12	10	4.5	12 / 15
12	6	5	12 / 15
12	8	5	12 / 15
12	6	6	12 / 15
12	8	6	12 / 15
16	4	8	15
16	6	8	15
16	8	8	15
16	10	8	15
18	6	6	15
18	6	8	15
18	8	8	15
18	10	8	15
18	12	8	15
24	6	8	15
24	8	8	15
24	10	8	15
24	12	8	15
24	15	8	15

Other dimensions (Ø max: 100 mm) or teeth number available upon customer's request

5. PCD/CVD/CBN tools















Index - PCD/CVD/CBN cutting tools

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5. PCD/CVD/CBN tools	71
4010 PCD end mill $l_1=1x d_1$	75
4015 PCD end mill $l_1=1.5x d_1$	76
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4100 T-slot cutter in PCD	78
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4500 PCD twist drill - 2 teeth	82
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PCD/CVD/CBN cutting tools





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PCD End mills (CVD & CBN upon request)





REF. 4010					Z1-2	λ 0°	Page 75
		Ø 0.5 - Ø20.0	Ø 6 - Ø 20				
REF. 4015					Z1-2	λ 0°	Page 76
		Ø 1.0 - Ø12.0	Ø 6 - Ø 12				
REF. 4020					Z1-2	λ 0°	Page 77
		Ø 2.0 - Ø8.0	Ø 6 - Ø 8				

PCD End mills with ball end





(CVD & CBN upon request)

REF. 4200					Z1-2	λ 0°	Page 81
		Ø 1.0 - Ø12.0	Ø 6 - Ø 12				

PCD T-slot cutters (CVD & CBN upon request)







REF. 4100					Z1-2	λ 0°	Page 78
		Ø 3.0 - Ø16.0	Ø 4 - Ø 10				

PCD twist drills (CVD & CBN upon request)





REF. 4500					Z2	λ 30°	Page 82
		Ø 0.48 - Ø2.50	Ø 3				

Engraving mills / Countersink in PCD

(CVD & CBN upon request)

REF. 4119-3				Z1	λ 0°	Page 79
		Ø 3	≥ 0.03			
REF. 4120				Z1	λ 0°	Page 80
		Ø 3 - Ø 6	0.1			

PCD thread mill (CVD & CBN upon request)

REF. 45200					Z1-2	λ 0°	Page 84
		M2.0 - M8.0	Ø 3 - Ø 6				

► Special tools in PCD/CBN/CVD upon request.
See examples page 28.

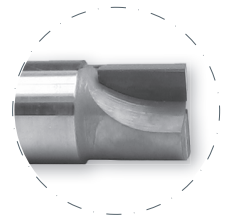
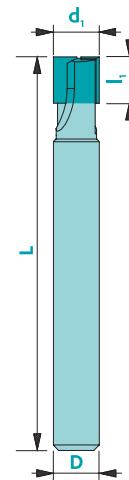
PCD end mill $l_1=1xd_1$

4010

Material	Vc	Uncoated
Steel < 700 N/mm ²	-	-
Steel > 700 N/mm ²	-	-
Stainless steel	-	-
Cast iron	-	-
Copper	350	■
Brass - Bronze	500	■
Aluminium	1000	■
Gold - Silver	300	■
Platinum - Palladium	130	■
Superalloys	-	-
Titanium	120	■

not adapted - adapted □ highly adapted ■

Tolerances $d_1 < 1\text{mm}$ ▶ +0/-0.01 l_1 : +0.2/-0
 $d_1 > 1\text{mm}$ ▶ +0/-0.02 D:h5



Art. n°	d_1	l_1	D	L	Z
4010d0.50L38Z1	0.5	0.5	6	38	1
4010d1.00L38Z1	1.0	1.0	6	38	1
4010d1.50L38Z1	1.5	1.5	6	38	1
4010d2.00L38Z1	2.0	2.0	6	38	1
4010d2.50L38Z1	2.5	2.5	6	38	1
4010d3.00L38Z1	3.0	3.0	6	38	1
4010d3.50L38Z1	3.5	3.5	6	38	1
4010d4.00L51Z1	4.0	4.0	6	51	1
4010d4.00L51Z2	4.0	4.0	6	51	2
4010d5.00L51Z2	5.0	5.0	6	51	2
4010d6.00L51Z2	6.0	6.0	6	51	2
4010d7.00L61Z2	7.0	7.0	8	61	2
4010d8.00L61Z2	8.0	8.0	8	61	2
4010d8.00L120Z2	8.0	8.0	8	120	2
4010d10.00L72Z2	10.0	10.0	10	72	2
4010d10.00L120Z2	10.0	10.0	10	120	2
4010d12.00L83Z2	12.0	12.0	12	83	2
4010d12.00L150Z2	12.0	12.0	12	150	2
4010d14.00L83Z2	14.0	14.0	14	83	2
4010d14.00L150Z2	14.0	14.0	14	150	2
4010d16.00L92Z2	16.0	16.0	16	92	2
4010d16.00L180Z2	16.0	16.0	16	180	2
4010d20.00L104Z2	20.0	20.0	20	104	2
4010d20.00L180Z2	20.0	20.0	20	180	2

	Z1-2
λ 0°	γ 0°
PCD	HSC
$ap=0.15xd_1$	$ae=0.03xd_1$ $ap=1xd_1$

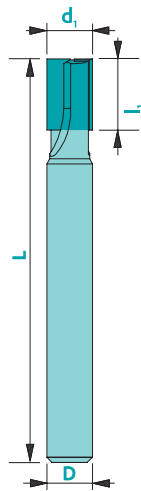
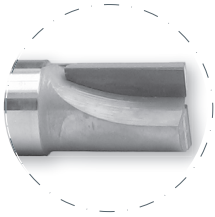
Upon request

45° 0.03-0.20	 0.05-2.00
------------------	---------------

Other dimensions, CVD/CBN available upon request.

4015

PCD end mill $l_1=1.5xd_1$



Material

	Vc	Uncoated
Steel < 700 N/mm ²	-	-
Steel > 700 N/mm ²	-	-
Stainless steel	-	-
Cast iron	-	-
Copper	350	■
Brass - Bronze	500	■
Aluminium	1000	■
Gold - Silver	300	■
Platinum - Palladium	130	■
Superalloys	-	-
Titanium	120	■

not adapted - adapted highly adapted

Tolerances

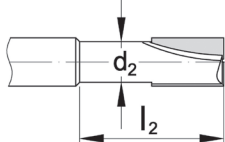
$d_1 < 1\text{mm}$ ▶ +0/-0.01 D: h5
 $d_1 > 1\text{mm}$ ▶ +0/-0.02

	Z1-2
λ 0°	γ 0°
PCD	HSC

$ap=0.1xd_1$

$ae=0.03xd_1$
 $ap=1.5xd_1$

Upon request



45° 0.03-0.20	 r 0.05-2.00
-------------------------	---------------------------

Art. n°	d_1	l_1	D	L	Z
4015d1.00L38Z1	1.0	1.5	6	38	1
4015d1.50L38Z1	1.5	2.5	6	38	1
4015d2.00L38Z1	2.0	3.0	6	38	1
4015d2.50L38Z1	2.5	3.5	6	38	1
4015d3.00L38Z1	3.0	4.5	6	38	1
4015d3.50L38Z1	3.5	5.0	6	38	1
4015d4.00L51Z1	4.0	6.0	6	51	1
4015d4.00L51Z2	4.0	6.0	6	51	2
4015d5.00L51Z2	5.0	7.5	6	51	2
4015d6.00L51Z2	6.0	9.0	6	51	2
4015d7.00L61Z2	7.0	10.5	8	61	2
4015d8.00L61Z2	8.0	12.0	8	61	2
4015d8.00L120Z2	8.0	12.0	8	120	2
4015d10.00L72Z2	10.0	15.0	10	72	2
4015d10.00L120Z2	10.0	15.0	10	120	2
4015d12.00L83Z2	12.0	18.0	12	83	2
4015d12.00L150Z2	12.0	18.0	12	150	2

Other dimensions, CVD/CBN available upon request.

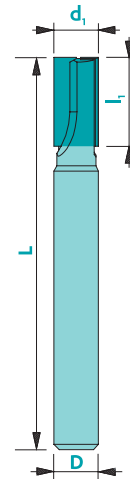
PCD end mill $l_1=2xd_1$

4020

Material	Vc	Uncoated
Steel < 700 N/mm ²	-	-
Steel > 700 N/mm ²	-	-
Stainless steel	-	-
Cast iron	-	-
Copper	350	■
Brass - Bronze	500	■
Aluminium	1000	■
Gold - Silver	300	■
Platinum - Palladium	130	■
Superalloys	-	-
Titanium	120	■

not adapted - adapted ■ highly adapted ■

Tolerances $d_1 < 1\text{mm}$ ▶ +0/-0.01 D: h5
 $d_1 > 1\text{mm}$ ▶ +0/-0.02



Art. n°	d_1	l_1	D	L	Z
4020d2.00L38Z1	2.0	4.0	6	38	1
4020d2.50L38Z1	2.5	5.0	6	38	1
4020d3.00L38Z1	3.0	6.0	6	38	1
4020d3.50L38Z1	3.5	7.0	6	38	1
4020d4.00L38Z1	4.0	8.0	6	38	1
4020d5.00L51Z2	5.0	10.0	6	51	2
4020d6.00L51Z2	6.0	12.0	6	51	2
4020d8.00L61Z2	8.0	16.0	8	61	2
4020d8.00L120Z2	8.0	16.0	8	120	2



Z1-2



λ
0°

γ
0°

PCD

HSC

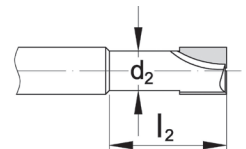


$ap=0.15xd_1$



$ae=0.03xd_1$
 $ap=1xd_1$

Upon request

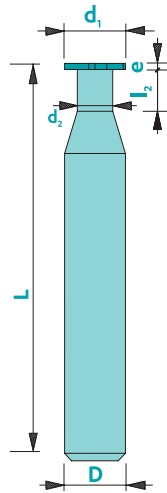
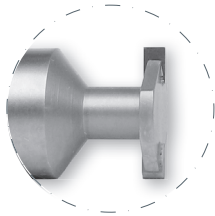


45°
0.03-0.20

r
0.05-2.00

Other dimensions, CVD/CBN available upon request.

T-slot cutter in PCD



Material

	Vc	Uncoated
Steel < 700 N/mm ²	-	-
Steel > 700 N/mm ²	-	-
Stainless steel	-	-
Cast iron	-	-
Copper	350	■
Brass - Bronze	500	■
Aluminium	1000	■
Gold - Silver	300	■
Platinum - Palladium	130	■
Superalloys	-	-
Titanium	120	■

not adapted - adapted highly adapted

Tolerances

$d_1 < 1\text{mm}$ ▶ +0/-0.01 e : +0.01/-0.01 l_2 : +0.2/-0
 $d_1 > 1\text{mm}$ ▶ +0/-0.02 d_2 : +0/-0.5 D : h5

	Z1-2
	Y
λ 0°	0°
PCD	HSC

Art. n°	d_1	e	d_2	l_2	D	L	Z
4100d3.00e###Z1	3	0.6 - 1.5	1.5	2	4	38	1
4100d4.00e###Z1	4	0.6 - 1.5	2.5	3	4	38	1
4100d4.00e###Z2	4	0.6 - 1.5	2.5	3	4	38	2
4100d5.00e###Z1	5	0.6 - 1.5	3.0	3	5	38	1
4100d5.00e###Z2	5	0.6 - 1.5	3.0	3	5	38	2
4100d6.00e###Z2	6	0.6 - 2.0	3.5	4	6	38	2
4100d8.00e###Z2	8	0.6 - 3.0	4.0	5	8	51	2
4100d10.00e###Z2	10	0.6 - 3.0	5.0	5	10	51	2
4100d12.00e###Z2	12	0.6 - 4.0	6.0	6	10	51	2
4100d15.00e###Z2	15	0.6 - 5.0	8.0	8	10	61	2
4100d16.00e###Z2	16	0.6 - 2.9	8.0	8	10	61	2
4100d16.00e###Z2	16	3.0 - 6.0	8.0	8	10	61	2

Order Quotation request

Dimensions : d_1 : _____ e : _____ d_2 : _____ D : _____ L : _____ l_2 : _____		Machined material : _____ _____
Quantity : _____	Order No : _____	
Company's stamp & date : _____ _____		

Standard dimensions of the bars : $\emptyset 3 \times L 38$, $\emptyset 4 \times L 38$, $\emptyset 6 \times L 38$, $\emptyset 6 \times L 51$, $\emptyset 8 \times L 61$, $\emptyset 10 \times L 72$, $\emptyset 12 \times L 83$, $\emptyset 16 \times L 92$, $\emptyset 20 \times L 104$

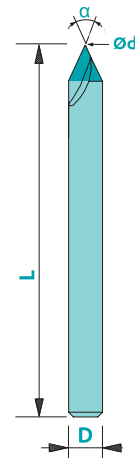
Other dimensions, CVD/CBN available upon request.

Engraving mill in PCD - 3/4 - flat tip

4119-3

Material	n [rpm]	Ap	Uncoated
Steel < 700 N/mm ²	-	-	-
Steel > 700 N/mm ²	-	-	-
Stainless steel	-	-	-
Cast iron	-	-	-
Copper	20 - 40'000	0.05 - 0.40	■
Brass - Bronze	25 - 40'000	0.05 - 0.40	■
Aluminium	25 - 40'000	0.05 - 0.50	■
Gold - Silver	20 - 40'000	0.05 - 0.40	■
Platinum - Palladium	25 - 40'000	0.05 - 0.40	■
Superalloys	-	-	-
Titanium	25 - 40'000	0.05 - 0.40	□

not adapted - adapted □ highly adapted ■



Tolerances d₁: +/- 0.01
D: h5

Art. n°	α	d ₁	D	L	Art. n°	α	d ₁	D	L
4119-3a40d0.05	40°	0.05	3	33	4119-3a60d0.10	60°	0.10	3	33
4119-3a40d0.08	40°	0.08	3	33	4119-3a70d0.05	70°	0.05	3	33
4119-3a40d0.10	40°	0.10	3	33	4119-3a70d0.08	70°	0.08	3	33
4119-3a50d0.05	50°	0.05	3	33	4119-3a70d0.10	70°	0.10	3	33
4119-3a50d0.08	50°	0.08	3	33	4119-3a90d0.05	90°	0.05	3	33
4119-3a50d0.10	50°	0.10	3	33	4119-3a90d0.08	90°	0.08	3	33
4119-3a60d0.05	60°	0.05	3	33	4119-3a90d0.10	90°	0.10	3	33
4119-3a60d0.08	60°	0.08	3	33					



Z1



λ
0°

PCD

HSC

Order Quotation request

Angle (α): <input type="checkbox"/> By default : 60° <input type="checkbox"/> 30° <input type="checkbox"/> 35° <input type="checkbox"/> 45° <input type="checkbox"/> Other : _____ <input type="checkbox"/> 50° <input type="checkbox"/> 55° <input type="checkbox"/> 90°		Shank Ø : <input type="checkbox"/> By default : D=3 <input type="checkbox"/> Other : D= _____		Order No : _____	
Machined material : _____		Quantity : _____		d₁ (from 0.02 mm) : _____	
Contact person : _____			Company's stamp & date : _____		

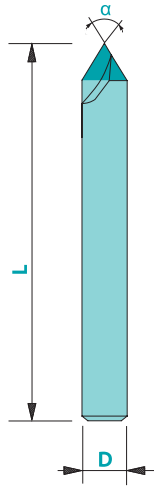
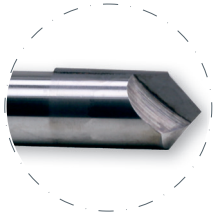
Standard dimensions of the bars :

Ø 3x L 38, Ø 4x L 38, Ø 6x L 38, Ø 6x L 51, Ø 8x L 61, Ø 10x L 72, Ø 12x L 83, Ø 16x L 92, Ø 20x L 104

Other dimensions, CVD/CBN available upon request.

4120

Countersink in PCD 90°



Material	Vc	Uncoated
Steel < 700 N/mm ²	-	-
Steel > 700 N/mm ²	-	-
Stainless steel	-	-
Cast iron	-	-
Copper	300	■
Brass - Bronze	400	■
Aluminium	800	■
Gold - Silver	220	■
Platinum - Palladium	110	■
Superalloys	-	-
Titanium	100	■

not adapted - adapted highly adapted

Tolerances $d_1: +/- 0.01$
D: h5

	Z1-2
	λ 0°
PCD	HSC

Art. n°	α	D	L	Z
4120D3.00	90°	3	38	1
4120D4.00	90°	4	50	1
4120D6.00	90°	6	50	2

Other dimensions, CVD/CBN available upon request.

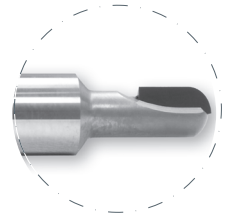
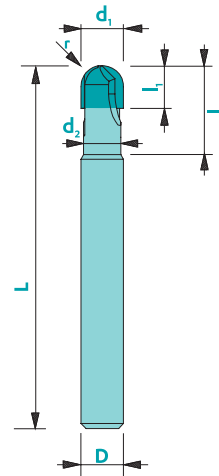
PCD end mill with ball end

4200

Material	Vc	Uncoated
Steel < 700 N/mm ²	-	-
Steel > 700 N/mm ²	-	-
Stainless steel	-	-
Cast iron	-	-
Copper	300	■
Brass - Bronze	400	■
Aluminium	800	■
Gold - Silver	220	■
Platinum - Palladium	110	■
Superalloys	-	-
Titanium	100	■

not adapted - adapted ■ highly adapted ■

Tolerances $d_1 < 1\text{mm}$ ▶ +0/-0.01
 $d_1 > 1\text{mm}$ ▶ +0/-0.02 r +0/-0.01
 D : h5



Art. n°	d_1	l_1	r	d_2	l_2	D	L	Z
4200d1.0L38Z1	1.00	1.00	0.50	-	-	6	38	1
4200d1.5L38Z1	1.50	1.50	0.75	-	-	6	38	1
4200d2.0L38Z1	2.00	2.00	1.00	1.75	6.50	6	38	1
4200d2.5L38Z1	2.50	2.50	1.25	2.20	7.50	6	38	1
4200d2.5L38Z2	2.50	2.50	1.25	2.20	7.50	6	38	2
4200d3.0L38Z1	3.00	3.00	1.50	2.60	8.00	6	38	1
4200d3.0L38Z2	3.00	3.00	1.50	2.60	8.00	6	38	2
4200d3.5L38Z1	3.50	3.50	1.75	3.00	9.00	6	38	1
4200d3.5L38Z2	3.50	3.50	1.75	3.00	9.00	6	38	2
4200d4.0L51Z1	4.00	4.00	2.00	3.50	10.00	6	51	1
4200d4.0L51Z2	4.00	4.00	2.00	3.50	10.00	6	51	2
4200d5.0L51Z2	5.00	5.00	2.50	4.40	11.00	6	51	2
4200d6.0L51Z2	6.00	6.00	3.00	5.25	12.50	6	51	2
4200d8.0L61Z2	8.00	8.00	4.00	7.00	15.00	8	61	2
4200d8.0L120Z2	8.00	8.00	4.00	7.00	15.00	8	120	2
4200d10.0L72Z2	10.00	10.00	5.00	8.75	17.00	10	72	2
4200d10.0L120Z2	10.00	10.00	5.00	8.75	17.00	10	120	2
4200d12.0L83Z2	12.00	12.00	6.00	10.50	20.00	12	83	2
4200d12.0L150Z2	12.00	12.00	6.00	10.50	20.00	12	150	2



Z1-2



λ
0°

γ
0°

PCD

HSC

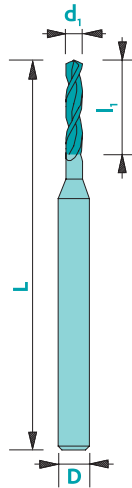


$ae=0.1xd_1$
 $ap=0.1xd_1$

Other dimensions, CVD/CBN available upon request.

4500

PCD twist drill - 2 teeth



Material

Steel < 700 N/mm ²
Steel > 700 N/mm ²
Stainless steel
Cast iron
Copper
Brass - Bronze
Aluminium
Gold - Silver
Platinum - Palladium
Superalloys
Titanium

Vc Uncoated

not adapted - adapted highly adapted

Tolerances $d_1 = +0/-0.13$
D: h6

118°

Z2

λ

30°

PCD **HSC**

Art. n°	d ₁	l ₁	D	L
4500d0.48	0.48	4.0	3	38
4500d0.49	0.49	4.0	3	38
4500d0.50	0.50	4.0	3	38
4500d0.51	0.51	4.0	3	38
4500d0.52	0.52	4.0	3	38
4500d0.53	0.53	4.0	3	38
4500d0.54	0.54	4.0	3	38
4500d0.55	0.55	4.0	3	38
4500d0.56	0.56	4.0	3	38
4500d0.57	0.57	4.0	3	38
4500d0.58	0.58	4.0	3	38
4500d0.59	0.59	4.0	3	38
4500d0.60	0.60	5.0	3	38
4500d0.61	0.61	5.0	3	38
4500d0.62	0.62	5.0	3	38
4500d0.63	0.63	5.0	3	38
4500d0.64	0.64	5.0	3	38
4500d0.65	0.65	5.0	3	38
4500d0.66	0.66	5.0	3	38
4500d0.67	0.67	5.0	3	38
4500d0.68	0.68	5.0	3	38
4500d0.69	0.69	5.0	3	38
4500d0.70	0.70	5.0	3	38
4500d0.71	0.71	5.0	3	38
4500d0.72	0.72	5.0	3	38
4500d0.73	0.73	5.0	3	38
4500d0.74	0.74	5.0	3	38
4500d0.75	0.75	5.0	3	38
4500d0.76	0.76	5.0	3	38

Art. n°	d ₁	l ₁	D	L
4500d0.77	0.77	5.0	3	38
4500d0.78	0.78	5.0	3	38
4500d0.79	0.79	5.0	3	38
4500d0.80	0.80	6.0	3	38
4500d0.81	0.81	6.0	3	38
4500d0.82	0.82	6.0	3	38
4500d0.83	0.83	6.0	3	38
4500d0.84	0.84	6.0	3	38
4500d0.85	0.85	6.0	3	38
4500d0.86	0.86	6.0	3	38
4500d0.87	0.87	6.0	3	38
4500d0.88	0.88	6.0	3	38
4500d0.89	0.89	6.0	3	38
4500d0.90	0.90	7.0	3	38
4500d0.91	0.91	7.0	3	38
4500d0.92	0.92	7.0	3	38
4500d0.93	0.93	7.0	3	38
4500d0.94	0.94	7.0	3	38
4500d0.95	0.95	7.0	3	38
4500d0.96	0.96	7.0	3	38
4500d0.97	0.97	7.0	3	38
4500d0.98	0.98	7.0	3	38
4500d0.99	0.99	7.0	3	38
4500d1.00	1.00	8.0	3	38
4500d1.01	1.01	8.0	3	38
4500d1.02	1.02	8.0	3	38
4500d1.03	1.03	8.0	3	38
4500d1.04	1.04	8.0	3	38
4500d1.05	1.05	8.0	3	38



PCD twist drill - 2 teeth

4500

Continuation

Art. n°	d ₁	l ₁	D	L	Art. n°	d ₁	l ₁	D	L
4500d1.06	1.06	8.0	3	38	4500d1.55	1.55	9.0	3	38
4500d1.07	1.07	8.0	3	38	4500d1.60	1.60	9.0	3	38
4500d1.08	1.08	8.0	3	38	4500d1.65	1.65	9.0	3	38
4500d1.09	1.09	8.0	3	38	4500d1.70	1.70	9.0	3	38
4500d1.10	1.10	9.0	3	38	4500d1.75	1.75	9.0	3	38
4500d1.11	1.11	9.0	3	38	4500d1.80	1.80	9.0	3	38
4500d1.12	1.12	9.0	3	38	4500d1.85	1.85	9.0	3	38
4500d1.13	1.13	9.0	3	38	4500d1.90	1.90	9.0	3	38
4500d1.14	1.14	9.0	3	38	4500d1.95	1.95	9.0	3	38
4500d1.15	1.15	9.0	3	38	4500d2.00	2.00	9.0	3	38
4500d1.16	1.16	9.0	3	38	4500d2.05	2.05	9.0	3	38
4500d1.17	1.17	9.0	3	38	4500d2.10	2.10	9.0	3	38
4500d1.18	1.18	9.0	3	38	4500d2.15	2.15	9.0	3	38
4500d1.19	1.19	9.0	3	38	4500d2.20	2.20	9.0	3	38
4500d1.20	1.20	9.0	3	38	4500d2.25	2.25	9.0	3	38
4500d1.21	1.21	9.0	3	38	4500d2.29	2.29	9.0	3	38
4500d1.22	1.22	9.0	3	38	4500d2.30	2.30	9.0	3	38
4500d1.23	1.23	9.0	3	38	4500d2.40	2.40	9.0	3	38
4500d1.24	1.24	9.0	3	38	4500d2.50	2.50	9.0	3	38
4500d1.25	1.25	9.0	3	38					
4500d1.26	1.26	9.0	3	38					
4500d1.27	1.27	9.0	3	38					
4500d1.28	1.28	9.0	3	38					
4500d1.29	1.29	9.0	3	38					
4500d1.30	1.30	9.0	3	38					
4500d1.31	1.31	9.0	3	38					
4500d1.32	1.32	9.0	3	38					
4500d1.33	1.33	9.0	3	38					
4500d1.34	1.34	9.0	3	38					
4500d1.35	1.35	9.0	3	38					
4500d1.36	1.36	9.0	3	38					
4500d1.37	1.37	9.0	3	38					
4500d1.38	1.38	9.0	3	38					
4500d1.39	1.39	9.0	3	38					
4500d1.40	1.40	9.0	3	38					
4500d1.41	1.41	9.0	3	38					
4500d1.42	1.42	9.0	3	38					
4500d1.43	1.43	9.0	3	38					
4500d1.44	1.44	9.0	3	38					
4500d1.45	1.45	9.0	3	38					
4500d1.46	1.46	9.0	3	38					
4500d1.47	1.47	9.0	3	38					
4500d1.48	1.48	9.0	3	38					
4500d1.49	1.49	9.0	3	38					
4500d1.50	1.50	9.0	3	38					



118°

Z2



λ
30°

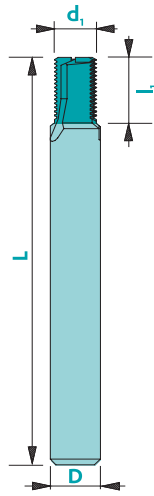
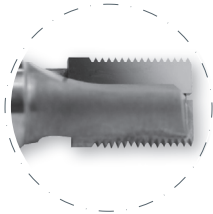
PCD

HSC

Other dimensions, CVD/CBN available upon request.

45200

PCD thread mill Internal and external threading



Material

	Vc	Uncoated
Steel < 700 N/mm ²	-	-
Steel > 700 N/mm ²	-	-
Stainless steel	-	-
Cast iron	-	-
Copper	150	■
Brass - Bronze	140	■
Aluminium	200	■
Gold - Silver	140	■
Platinum - Palladium	80	■
Superalloys	-	-
Titanium	40	□

not adapted - adapted □ highly adapted ■

Tolerances $d_1 = +0/-0.1$
D: h5

Z1-2



λ
0°

PCD



γ
0°

HSC

Art. n°	Ø nominal	Pitch	d_1	l_1	D	L	Z
45200M2.00	M2.00	0.40	1.40	4.0	3	38	1
45200M2.50	M2.50	0.45	1.80	5.0	6	57	1
45200M3.00	M3.00	0.50	2.30	6.0	6	57	1
45200M4.00	M4.00	0.70	3.00	8.0	6	57	2
45200M5.00	M5.00	0.80	3.80	10.0	6	57	2
45200M6.00	M6.00	1.00	4.50	12.0	6	57	2
45200M8.00	M8.00	1.25	5.00	16.0	6	57	2

Other dimensions, CVD/CBN available upon request.

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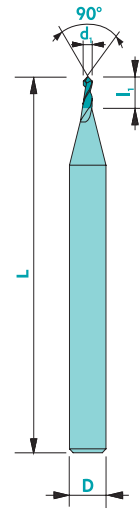
Multi-uses end mill

1120

Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	100	130	□	■	Trio
Steel > 700 N/mm ²	80	100	-	■	Trio
Stainless steel	50	70	□	■	Trio
Cast iron	60	100	□	■	Nemo
Copper	130	160	□	■	Solo
Brass - Bronze	140	190	■	□	Solo
Aluminium	200	350	□	■	Solo
Gold - Silver	140	180	■	■	Solo
Platinum - Palladium	-	35	-	□	Solo
Superalloys	-	40	-	■	Trio
Titanium	40	60	■	■	Rico

not adapted - adapted □ highly adapted ■

Tolerances $d_1 \leq 1 \text{ mm}$ ▶ +0/-0.01 D: h5
 $d_1 > 1 \text{ mm}$ ▶ +0/-0.02
 $d_1 = D$ ▶ $d_1: e8$



Available uncoated or coated (see page 61)

Art. n°	d_1	l_1	D	L
1120d0.50	0.50	1.0	3	38
1120d0.60	0.60	1.2	3	38
1120d0.70	0.70	1.4	3	38
1120d0.80	0.80	1.6	3	38
1120d0.90	0.90	1.8	3	38
1120d1.00	1.00	2.0	3	38
1120d1.50	1.50	3.0	3	38
1120d2.00	2.00	4.0	3	38
1120d3.00	3.00	6.0	6	51
1120d4.00	4.00	8.0	6	51
1120d6.00	6.00	12.0	6	51



Z2



λ
35°

γ
8-10°

MG10

N



$ap=0.25xd_1$



$ae=0.5xd_1$
 $ap=0.5xd_1$

Upon request

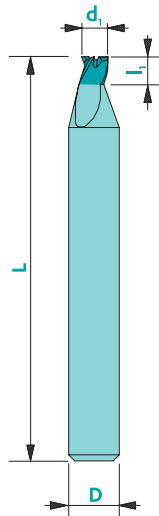
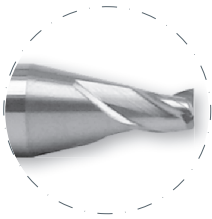


120°



60°

End mill Z3 $l_1=1xd_1$



Available uncoated or coated (see page 61)

Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	100	130	□	■	Trio
Steel > 700 N/mm ²	80	100	-	■	Trio
Stainless steel	50	70	□	■	Trio
Cast iron	60	100	□	■	Nemo
Copper	130	160	□	■	Solo
Brass - Bronze	140	190	■	□	Solo
Aluminium	200	350	□	■	Solo
Gold - Silver	140	180	■	■	Solo
Platinum - Palladium	-	35	-	□	Solo
Superalloys	-	40	-	■	Trio
Titanium	40	60	■	■	Rico

not adapted - adapted □ highly adapted ■

Tolerances $d_1 \leq 1 \text{ mm} \rightarrow +0/-0.01$ $D: h5$
 $d_1 > 1 \text{ mm} \rightarrow +0/-0.02$
 $d_1 = D \rightarrow d_1: e8$

Z3

MG10

λ 30°

γ 8-10°

$ap=0.25xd_1$

$ae=0.5xd_1$
 $ap=0.5xd_1$

Art. n°	d_1	l_1	D	L
1510d0.30	0.30	0.30	3	38
1510d0.35	0.35	0.35	3	38
1510d0.40	0.40	0.40	3	38
1510d0.45	0.45	0.45	3	38
1510d0.50	0.50	0.50	3	38
1510d0.55	0.55	0.55	3	38
1510d0.60	0.60	0.60	3	38
1510d0.65	0.65	0.65	3	38
1510d0.70	0.70	0.70	3	38
1510d0.75	0.75	0.75	3	38
1510d0.80	0.80	0.80	3	38
1510d0.85	0.85	0.85	3	38
1510d0.90	0.90	0.90	3	38
1510d0.95	0.95	0.95	3	38
1510d1.00	1.00	1.00	3	38
1510d1.05	1.05	1.05	3	38
1510d1.10	1.10	1.10	3	38
1510d1.15	1.15	1.15	3	38
1510d1.20	1.20	1.20	3	38
1510d1.25	1.25	1.25	3	38
1510d1.30	1.30	1.30	3	38
1510d1.35	1.35	1.35	3	38
1510d1.40	1.40	1.40	3	38
1510d1.45	1.45	1.45	3	38
1510d1.50	1.50	1.50	3	38
1510d1.55	1.55	1.55	3	38
1510d1.60	1.60	1.60	3	38
1510d1.65	1.65	1.65	3	38
1510d1.70	1.70	1.70	3	38
1510d1.75	1.75	1.75	3	38

Art. n°	d_1	l_1	D	L
1510d1.80	1.80	1.80	3	38
1510d1.85	1.85	1.85	3	38
1510d1.90	1.90	1.90	3	38
1510d1.95	1.95	1.95	3	38
1510d2.00	2.00	2.00	3	38
1510d2.05	2.05	2.05	3	38
1510d2.10	2.10	2.10	3	38
1510d2.15	2.15	2.15	3	38
1510d2.20	2.20	2.20	3	38
1510d2.25	2.25	2.25	3	38
1510d2.30	2.30	2.30	3	38
1510d2.35	2.35	2.35	3	38
1510d2.40	2.40	2.40	3	38
1510d2.45	2.45	2.45	3	38
1510d2.50	2.50	2.50	3	38
1510d2.55	2.55	2.55	3	38
1510d2.60	2.60	2.60	3	38
1510d2.65	2.65	2.65	3	38
1510d2.70	2.70	2.70	3	38
1510d2.75	2.75	2.75	3	38
1510d2.80	2.80	2.80	3	38
1510d2.85	2.85	2.85	3	38
1510d2.90	2.90	2.90	3	38
1510d2.95	2.95	2.95	3	38
1510d3.00	3.00	3.00	6	51
1510d3.10	3.10	3.10	6	51
1510d3.20	3.20	3.20	6	51
1510d3.30	3.30	3.30	6	51
1510d3.40	3.40	3.40	6	51



End mill Z3 $l_1=1xd_1$

1510

Continuation

Art. n°	d_1	l_1	D	L
1510d3.50	3.50	3.50	6	51
1510d3.60	3.60	3.60	6	51
1510d3.70	3.70	3.70	6	51
1510d3.80	3.80	3.80	6	51
1510d3.90	3.90	3.90	6	51
1510d4.00	4.00	4.00	6	51
1510d4.10	4.10	4.10	6	51
1510d4.20	4.20	4.20	6	51
1510d4.30	4.30	4.30	6	51
1510d4.40	4.40	4.40	6	51
1510d4.50	4.50	4.50	6	51
1510d4.60	4.60	4.60	6	51
1510d4.70	4.70	4.70	6	51
1510d4.80	4.80	4.80	6	51
1510d4.90	4.90	4.90	6	51
1510d5.00	5.00	5.00	6	51
1510d5.10	5.10	5.10	6	51
1510d5.20	5.20	5.20	6	51
1510d5.30	5.30	5.30	6	51
1510d5.40	5.40	5.40	6	51
1510d5.50	5.50	5.50	6	51
1510d5.60	5.60	5.60	6	51
1510d5.70	5.70	5.70	6	51
1510d5.80	5.80	5.80	6	51
1510d5.90	5.90	5.90	6	51
1510d6.00	6.00	6.00	6	51
1510d6.50	6.50	6.50	8	61
1510d7.00	7.00	7.00	8	61
1510d7.50	7.50	7.50	8	61
1510d8.00	8.00	8.00	8	61
1510d8.50	8.50	8.50	10	72
1510d9.00	9.00	9.00	10	72
1510d9.50	9.50	9.50	10	72
1510d10.00	10.00	10.00	10	72
1510d11.00	11.00	11.00	11	83
1510d12.00	12.00	12.00	12	83
1510d13.00	13.00	13.00	13	83
1510d14.00	14.00	14.00	14	83
1510d15.00	15.00	15.00	15	83
1510d16.00	16.00	16.00	16	92



Available
uncoated or coated
(see page 61)



Z3



λ
30°

γ
8-10°

MG10

N

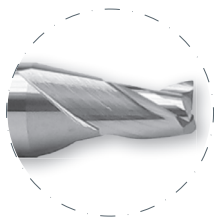


$ap=0.25xd_1$

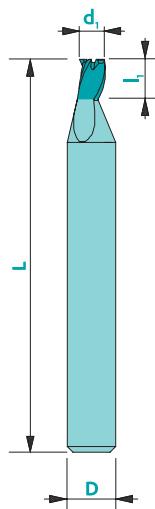


$ae=0.5xd_1$
 $ap=0.5xd_1$

End mill Z3 $l_1=1.5d_1$



Available uncoated or coated (see page 61)



Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	100	130	□	■	Trio
Steel > 700 N/mm ²	80	100	-	■	Trio
Stainless steel	50	70	□	■	Trio
Cast iron	60	100	□	■	Nemo
Copper	130	160	□	■	Solo
Brass - Bronze	140	190	■	□	Solo
Aluminium	200	350	□	■	Solo
Gold - Silver	140	180	■	■	Solo
Platinum - Palladium	-	35	-	□	Solo
Superalloys	-	40	-	■	Trio
Titanium	40	60	■	■	Rico

not adapted - adapted □ highly adapted ■

Tolerances $d_1 \leq 1 \text{ mm} \rightarrow +0/-0.01$ $D: h5$
 $d_1 > 1 \text{ mm} \rightarrow +0/-0.02$
 $d_1 = D \rightarrow d_1: e8$



Z3



λ
30°

γ
8-10°

MG10

N



$ap=0.25d_1$



$ae=0.5d_1$
 $ap=0.5d_1$

Art. n°	d_1	l_1	D	L
1515d0.30	0.30	0.45	3	38
1515d0.35	0.35	0.55	3	38
1515d0.40	0.40	0.60	3	38
1515d0.45	0.45	0.70	3	38
1515d0.50	0.50	0.75	3	38
1515d0.55	0.55	0.85	3	38
1515d0.60	0.60	0.90	3	38
1515d0.65	0.65	1.00	3	38
1515d0.70	0.70	1.05	3	38
1515d0.75	0.75	1.15	3	38
1515d0.80	0.80	1.20	3	38
1515d0.85	0.85	1.30	3	38
1515d0.90	0.90	1.35	3	38
1515d0.95	0.95	1.45	3	38
1515d1.00	1.00	1.50	3	38
1515d1.05	1.05	1.60	3	38
1515d1.10	1.10	1.65	3	38
1515d1.15	1.15	1.70	3	38
1515d1.20	1.20	1.80	3	38
1515d1.25	1.25	1.90	3	38
1515d1.30	1.30	1.95	3	38
1515d1.35	1.35	2.05	3	38
1515d1.40	1.40	2.10	3	38
1515d1.45	1.45	2.15	3	38
1515d1.50	1.50	2.25	3	38
1515d1.55	1.55	2.35	3	38
1515d1.60	1.60	2.40	3	38
1515d1.65	1.65	2.45	3	38
1515d1.70	1.70	2.55	3	38
1515d1.75	1.75	2.65	3	38

Art. n°	d_1	l_1	D	L
1515d1.80	1.80	2.70	3	38
1515d1.85	1.85	2.80	3	38
1515d1.90	1.90	2.85	3	38
1515d1.95	1.95	2.90	3	38
1515d2.00	2.00	3.00	3	38
1515d2.05	2.05	3.05	3	38
1515d2.10	2.10	3.15	3	38
1515d2.15	2.15	3.20	3	38
1515d2.20	2.20	3.30	3	38
1515d2.25	2.25	3.40	3	38
1515d2.30	2.30	3.45	3	38
1515d2.35	2.35	3.55	3	38
1515d2.40	2.40	3.60	3	38
1515d2.45	2.45	3.70	3	38
1515d2.50	2.50	3.75	3	38
1515d2.55	2.55	3.80	3	38
1515d2.60	2.60	3.90	3	38
1515d2.65	2.65	3.95	3	38
1515d2.70	2.70	4.05	3	38
1515d2.75	2.75	4.15	3	38
1515d2.80	2.80	4.20	3	38
1515d2.85	2.85	4.30	3	38
1515d2.90	2.90	4.35	3	38
1515d2.95	2.95	4.45	3	38
1515d3.00	3.00	4.50	6	51
1515d3.10	3.10	4.65	6	51
1515d3.20	3.20	4.80	6	51
1515d3.30	3.30	4.95	6	51
1515d3.40	3.40	5.10	6	51

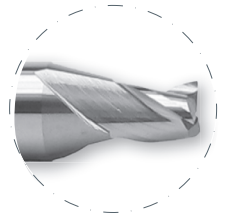


End mill Z3 $l_1=1.5xd_1$

1515

Continuation

Art. n°	d_1	l_1	D	L
1515d3.50	3.50	5.25	6	51
1515d3.60	3.60	5.40	6	51
1515d3.70	3.70	5.55	6	51
1515d3.80	3.80	5.70	6	51
1515d3.90	3.90	5.85	6	51
1515d4.00	4.00	6.00	6	51
1515d4.10	4.10	6.15	6	51
1515d4.20	4.20	6.30	6	51
1515d4.30	4.30	6.45	6	51
1515d4.40	4.40	6.60	6	51
1515d4.50	4.50	6.75	6	51
1515d4.60	4.60	6.90	6	51
1515d4.70	4.70	7.05	6	51
1515d4.80	4.80	7.20	6	51
1515d4.90	4.90	7.35	6	51
1515d5.00	5.00	7.50	6	51
1515d5.10	5.10	7.65	6	51
1515d5.20	5.20	7.80	6	51
1515d5.30	5.30	7.95	6	51
1515d5.40	5.40	8.10	6	51
1515d5.50	5.50	8.25	6	51
1515d5.60	5.60	8.40	6	51
1515d5.70	5.70	8.55	6	51
1515d5.80	5.80	8.70	6	51
1515d5.90	5.90	8.85	6	51
1515d6.00	6.00	9.00	6	51
1515d6.50	6.50	9.75	8	61
1515d7.00	7.00	10.50	8	61
1515d7.50	7.50	11.25	8	61
1515d8.00	8.00	12.00	8	61
1515d8.50	8.50	12.75	10	72
1515d9.00	9.00	13.50	10	72
1515d9.50	9.50	14.25	10	72
1515d10.00	10.00	15.00	10	72
1515d11.00	11.00	16.50	11	83
1515d12.00	12.00	18.00	12	83
1515d13.00	13.00	19.50	13	83
1515d14.00	14.00	21.00	14	83
1515d15.00	15.00	22.50	15	83
1515d16.00	16.00	24.00	16	92



Available
uncoated or coated
(see page 61)



Z3



λ
30°

γ
8-10°

MG10

N



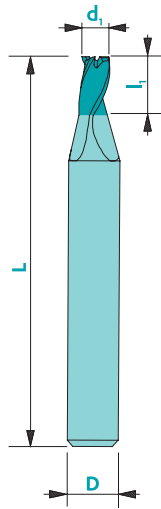
$ap=0.25xd_1$



$ae=0.5xd_1$
 $ap=0.5xd_1$

1520

End mill Z3 $l_1=2xd_1$



Available uncoated or coated (see page 61)

Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	100	130	□	■	Trio
Steel > 700 N/mm ²	80	100	-	■	Trio
Stainless steel	50	70	□	■	Trio
Cast iron	60	100	□	■	Nemo
Copper	130	160	□	■	Solo
Brass - Bronze	140	190	■	□	Solo
Aluminium	200	350	□	■	Solo
Gold - Silver	140	180	■	■	Solo
Platinum - Palladium	-	35	-	□	Solo
Superalloys	-	40	-	■	Trio
Titanium	40	60	■	■	Rico

not adapted - adapted □ highly adapted ■

Tolerances $d_1 \leq 1 \text{ mm}$ ▶ +0/-0.01 $D; h5$
 $d_1 > 1 \text{ mm}$ ▶ +0/-0.02
 $d_1 = D$ ▶ $d_1; e8$

Z3

Y
30°

N
8-10°

MG10

$ap=0.25xd_1$ $ae=0.5xd_1$
 $ap=0.5xd_1$

Art. n°	d_1	l_1	D	L
1520d0.30	0.30	0.60	3	38
1520d0.35	0.35	0.70	3	38
1520d0.40	0.40	0.80	3	38
1520d0.45	0.45	0.90	3	38
1520d0.50	0.50	1.00	3	38
1520d0.55	0.55	1.10	3	38
1520d0.60	0.60	1.20	3	38
1520d0.65	0.65	1.30	3	38
1520d0.70	0.70	1.40	3	38
1520d0.75	0.75	1.50	3	38
1520d0.80	0.80	1.60	3	38
1520d0.85	0.85	1.70	3	38
1520d0.90	0.90	1.80	3	38
1520d0.95	0.95	1.90	3	38
1520d1.00	1.00	2.00	3	38
1520d1.05	1.05	2.10	3	38
1520d1.10	1.10	2.20	3	38
1520d1.15	1.15	2.30	3	38
1520d1.20	1.20	2.40	3	38
1520d1.25	1.25	2.50	3	38
1520d1.30	1.30	2.60	3	38
1520d1.35	1.35	2.70	3	38
1520d1.40	1.40	2.80	3	38
1520d1.45	1.45	2.90	3	38
1520d1.50	1.50	3.00	3	38
1520d1.55	1.55	3.10	3	38
1520d1.60	1.60	3.20	3	38
1520d1.65	1.65	3.30	3	38
1520d1.70	1.70	3.40	3	38
1520d1.75	1.75	3.50	3	38

Art. n°	d_1	l_1	D	L
1520d1.80	1.80	3.60	3	38
1520d1.85	1.85	3.70	3	38
1520d1.90	1.90	3.80	3	38
1520d1.95	1.95	3.90	3	38
1520d2.00	2.00	4.00	3	38
1520d2.05	2.05	4.10	3	38
1520d2.10	2.10	4.20	3	38
1520d2.15	2.15	4.30	3	38
1520d2.20	2.20	4.40	3	38
1520d2.25	2.25	4.50	3	38
1520d2.30	2.30	4.60	3	38
1520d2.35	2.35	4.70	3	38
1520d2.40	2.40	4.80	3	38
1520d2.45	2.45	4.90	3	38
1520d2.50	2.50	5.00	3	38
1520d2.55	2.55	5.10	3	38
1520d2.60	2.60	5.20	3	38
1520d2.65	2.65	5.30	3	38
1520d2.70	2.70	5.40	3	38
1520d2.75	2.75	5.50	3	38
1520d2.80	2.80	5.60	3	38
1520d2.85	2.85	5.70	3	38
1520d2.90	2.90	5.80	3	38
1520d2.95	2.95	5.90	3	38
1520d3.00	3.00	6.00	6	51
1520d3.10	3.10	6.20	6	51
1520d3.20	3.20	6.40	6	51
1520d3.30	3.30	6.60	6	51
1520d3.40	3.40	6.80	6	51



End mill Z3 $l_1=2xd_1$

1520

Continuation

Art. n°	d_1	l_1	D	L
1520d3.50	3.50	7.00	6	51
1520d3.60	3.60	7.20	6	51
1520d3.70	3.70	7.40	6	51
1520d3.80	3.80	7.60	6	51
1520d3.90	3.90	7.80	6	51
1520d4.00	4.00	8.00	6	51
1520d4.10	4.10	8.20	6	51
1520d4.20	4.20	8.40	6	51
1520d4.30	4.30	8.60	6	51
1520d4.40	4.40	8.80	6	51
1520d4.50	4.50	9.00	6	51
1520d4.60	4.60	9.20	6	51
1520d4.70	4.70	9.40	6	51
1520d4.80	4.80	9.60	6	51
1520d4.90	4.90	9.80	6	51
1520d5.00	5.00	10.00	6	51
1520d5.10	5.10	10.20	6	51
1520d5.20	5.20	10.40	6	51
1520d5.30	5.30	10.60	6	51
1520d5.40	5.40	10.80	6	51
1520d5.50	5.50	11.00	6	51
1520d5.60	5.60	11.20	6	51
1520d5.70	5.70	11.40	6	51
1520d5.80	5.80	11.60	6	51
1520d5.90	5.90	11.80	6	51
1520d6.00	6.00	12.00	6	51
1520d6.50	6.50	13.00	8	51
1520d7.00	7.00	14.00	8	61
1520d7.50	7.50	15.00	8	61
1520d8.00	8.00	16.00	8	61
1520d8.50	8.50	17.00	10	72
1520d9.00	9.00	18.00	10	72
1520d9.50	9.50	19.00	10	72
1520d10.00	10.00	20.00	10	72
1520d11.00	11.00	22.00	11	83
1520d12.00	12.00	24.00	12	83
1520d13.00	13.00	26.00	13	83
1520d14.00	14.00	28.00	14	83
1520d15.00	15.00	30.00	15	83
1520d16.00	16.00	32.00	16	92



Available
uncoated or coated
(see page 61)

Z3



λ
30°

γ
8-10°

MG10

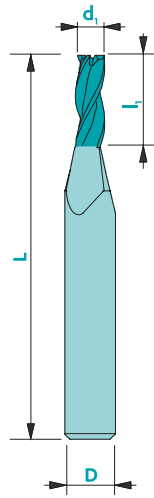
N



$ap=0.25x d_1$

$ae=0.5x d_1$
 $ap=0.5x d_1$

End mill Z3 $l_1=3xd_1$



Available uncoated or coated (see page 61)

Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	100	130	□	■	Trio
Steel > 700 N/mm ²	80	100	-	■	Trio
Stainless steel	50	70	□	■	Trio
Cast iron	60	100	□	■	Nemo
Copper	130	160	□	■	Solo
Brass - Bronze	140	190	■	□	Solo
Aluminium	200	350	□	■	Solo
Gold - Silver	140	180	■	■	Solo
Platinum - Palladium	-	35	-	□	Solo
Superalloys	-	40	-	■	Trio
Titanium	40	60	■	■	Rico

not adapted - adapted □ highly adapted ■

Tolerances $d_1 \leq 1 \text{ mm}$ ▶ +0/-0.01 $D: h5$
 $d_1 > 1 \text{ mm}$ ▶ +0/-0.02
 $d_1 = D$ ▶ $d_1: e8$

Z3

MG10

N

λ 30°

γ 8-10°

$ap=0.25xd_1$

$ae=0.5xd_1$
 $ap=0.5xd_1$

Art. n°	d_1	l_1	D	L
1530d0.50	0.50	1.50	3	38
1530d0.55	0.55	1.65	3	38
1530d0.60	0.60	1.80	3	38
1530d0.65	0.65	1.95	3	38
1530d0.70	0.70	2.10	3	38
1530d0.75	0.75	2.25	3	38
1530d0.80	0.80	2.40	3	38
1530d0.85	0.85	2.55	3	38
1530d0.90	0.90	2.70	3	38
1530d0.95	0.95	2.85	3	38
1530d1.00	1.00	3.00	3	38
1530d1.05	1.05	3.15	3	38
1530d1.10	1.10	3.30	3	38
1530d1.15	1.15	3.45	3	38
1530d1.20	1.20	3.60	3	38
1530d1.25	1.25	3.75	3	38
1530d1.30	1.30	3.90	3	38
1530d1.35	1.35	4.05	3	38
1530d1.40	1.40	4.20	3	38
1530d1.45	1.45	4.35	3	38
1530d1.50	1.50	4.50	3	38
1530d1.55	1.55	4.65	3	38
1530d1.60	1.60	4.80	3	38
1530d1.65	1.65	4.95	3	38
1530d1.70	1.70	5.10	3	38
1530d1.75	1.75	5.25	3	38
1530d1.80	1.80	5.40	3	38
1530d1.85	1.85	5.55	3	38
1530d1.90	1.90	5.70	3	38
1530d1.95	1.95	5.85	3	38

Art. n°	d_1	l_1	D	L
1530d2.00	2.00	6.00	3	38
1530d2.05	2.05	6.15	3	38
1530d2.10	2.10	6.30	3	38
1530d2.15	2.15	6.45	3	38
1530d2.20	2.20	6.60	3	38
1530d2.25	2.25	6.75	3	38
1530d2.30	2.30	6.90	3	38
1530d2.35	2.35	7.05	3	38
1530d2.40	2.40	7.20	3	38
1530d2.45	2.45	7.35	3	38
1530d2.50	2.50	7.50	3	38
1530d2.55	2.55	7.65	3	38
1530d2.60	2.60	7.80	3	38
1530d2.65	2.65	7.95	3	38
1530d2.70	2.70	8.10	3	38
1530d2.75	2.75	8.25	3	38
1530d2.80	2.80	8.40	3	38
1530d2.85	2.85	8.55	3	38
1530d2.90	2.90	8.70	3	38
1530d2.95	2.95	8.85	3	38
1530d3.00	3.00	9.00	6	51
1530d3.10	3.10	9.30	6	51
1530d3.20	3.20	9.60	6	51
1530d3.30	3.30	9.90	6	51
1530d3.40	3.40	10.20	6	51
1530d3.50	3.50	10.50	6	51
1530d3.60	3.60	10.80	6	51
1530d3.70	3.70	11.10	6	51
1530d3.80	3.80	11.40	6	51



End mill Z3 $l_1=3xd_1$

1530

Continuation

Art. n°	d_1	l_1	D	L
1530d3.90	3.90	11.70	6	51
1530d4.00	4.00	12.00	6	51
1530d4.10	4.10	12.30	6	51
1530d4.20	4.20	12.60	6	51
1530d4.30	4.30	12.90	6	51
1530d4.40	4.40	13.20	6	51
1530d4.50	4.50	13.50	6	51
1530d4.60	4.60	13.80	6	51
1530d4.70	4.70	14.10	6	51
1530d4.80	4.80	14.40	6	51
1530d4.90	4.90	14.70	6	51
1530d5.00	5.00	15.00	6	51
1530d5.10	5.10	15.30	6	51
1530d5.20	5.20	15.60	6	51
1530d5.30	5.30	15.90	6	51
1530d5.40	5.40	16.20	6	51
1530d5.50	5.50	16.50	6	51
1530d5.60	5.60	16.80	6	51
1530d5.70	5.70	17.10	6	51
1530d5.80	5.80	17.40	6	51
1530d5.90	5.90	17.70	6	51
1530d6.00	6.00	18.00	6	51
1530d6.50	6.50	19.50	8	51
1530d7.00	7.00	21.00	8	61
1530d7.50	7.50	22.50	8	61
1530d8.00	8.00	24.00	8	61
1530d8.50	8.50	25.50	10	72
1530d9.00	9.00	27.00	10	72
1530d9.50	9.50	28.50	10	72
1530d10.00	10.00	30.00	10	72
1530d11.00	11.00	33.00	11	83
1530d12.00	12.00	36.00	12	83
1530d13.00	13.00	39.00	13	83
1530d14.00	14.00	42.00	14	92
1530d15.00	15.00	45.00	15	92
1530d16.00	16.00	48.00	16	104



Available
uncoated or coated
(see page 61)



Z3



λ
30°

γ
8-10°

MG10

N

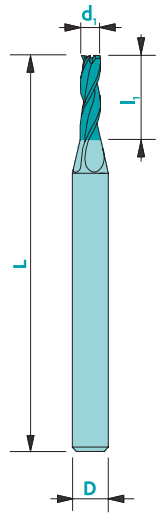


$ap=0.25xd_1$



$ae=0.5xd_1$
 $ap=0.5xd_1$

End mill Z3 $l_1=4xd_1$



Available uncoated or coated (see page 61)

Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	100	130	□	■	Trio
Steel > 700 N/mm ²	80	100	-	■	Trio
Stainless steel	50	70	□	■	Trio
Cast iron	60	100	□	■	Nemo
Copper	130	160	□	■	Solo
Brass - Bronze	140	190	■	□	Solo
Aluminium	200	350	□	■	Solo
Gold - Silver	140	180	■	■	Solo
Platinum - Palladium	-	35	-	□	Solo
Superalloys	-	40	-	■	Trio
Titanium	40	60	■	■	Rico

not adapted - adapted □ highly adapted ■

Tolerances $d_1 \leq 1 \text{ mm}$ ▶ +0/-0.01 $D; h5$
 $d_1 > 1 \text{ mm}$ ▶ +0/-0.02
 $d_1 = D$ ▶ $d_1; e8$

Z3

MG10 N

λ 30° γ 8-10°

$ap=0.25xd_1$ $ae=0.5xd_1$
 $ap=0.5xd_1$

Art. n°	d_1	l_1	D	L
1540d0.50	0.50	2.0	3	51
1540d0.55	0.55	2.2	3	51
1540d0.60	0.60	2.4	3	51
1540d0.65	0.65	2.6	3	51
1540d0.70	0.70	2.8	3	51
1540d0.75	0.75	3.0	3	51
1540d0.80	0.80	3.2	3	51
1540d0.85	0.85	3.4	3	51
1540d0.90	0.90	3.6	3	51
1540d0.95	0.95	3.8	3	51
1540d1.00	1.00	4.0	3	51
1540d1.05	1.05	4.2	3	51
1540d1.10	1.10	4.4	3	51
1540d1.15	1.15	4.6	3	51
1540d1.20	1.20	4.8	3	51
1540d1.25	1.25	5.0	3	51
1540d1.30	1.30	5.2	3	51
1540d1.35	1.35	5.4	3	51
1540d1.40	1.40	5.6	3	51
1540d1.45	1.45	5.8	3	51
1540d1.50	1.50	6.0	3	51
1540d1.55	1.55	6.2	3	51
1540d1.60	1.60	6.4	3	51
1540d1.65	1.65	6.6	3	51
1540d1.70	1.70	6.8	3	51
1540d1.75	1.75	7.0	3	51
1540d1.80	1.80	7.2	3	51
1540d1.85	1.85	7.4	3	51
1540d1.90	1.90	7.6	3	51
1540d1.95	1.95	7.8	3	51

Art. n°	d_1	l_1	D	L
1540d2.00	2.00	8.0	3	51
1540d2.05	2.05	8.2	3	51
1540d2.10	2.10	8.4	3	51
1540d2.15	2.15	8.6	3	51
1540d2.20	2.20	8.8	3	51
1540d2.25	2.25	9.0	3	51
1540d2.30	2.30	9.2	3	51
1540d2.35	2.35	9.4	3	51
1540d2.40	2.40	9.6	3	51
1540d2.45	2.45	9.8	3	51
1540d2.50	2.50	10.0	3	51
1540d2.55	2.55	10.2	3	51
1540d2.60	2.60	10.4	3	51
1540d2.65	2.65	10.6	3	51
1540d2.70	2.70	10.8	3	51
1540d2.75	2.75	11.0	3	51
1540d2.80	2.80	11.2	3	51
1540d2.85	2.85	11.4	3	51
1540d2.90	2.90	11.6	3	51
1540d2.95	2.95	11.8	3	51
1540d3.00	3.00	12.0	6	51
1540d3.10	3.10	12.4	6	51
1540d3.20	3.20	12.8	6	51
1540d3.30	3.30	13.2	6	51
1540d3.40	3.40	13.6	6	51
1540d3.50	3.50	14.0	6	51
1540d3.60	3.60	14.4	6	51
1540d3.70	3.70	14.8	6	51
1540d3.80	3.80	15.2	6	51



End mill Z3 $l_1=4xd_1$

1540

Continuation

Art. n°	d_1	l_1	D	L
1540d3.90	3.90	15.6	6	51
1540d4.00	4.00	16.0	6	51
1540d4.10	4.10	16.4	6	51
1540d4.20	4.20	16.8	6	51
1540d4.30	4.30	17.2	6	51
1540d4.40	4.40	17.6	6	51
1540d4.50	4.50	18.0	6	51
1540d4.60	4.60	18.4	6	51
1540d4.70	4.70	18.8	6	51
1540d4.80	4.80	19.2	6	51
1540d4.90	4.90	19.6	6	51
1540d5.00	5.00	20.0	6	57
1540d5.10	5.10	20.4	6	57
1540d5.20	5.20	20.8	6	57
1540d5.30	5.30	21.2	6	57
1540d5.40	5.40	21.6	6	57
1540d5.50	5.50	22.0	6	57
1540d5.60	5.60	22.4	6	57
1540d5.70	5.70	22.8	6	57
1540d5.80	5.80	23.2	6	57
1540d5.90	5.90	23.6	6	57
1540d6.00	6.00	24.0	6	57
1540d6.50	6.50	26.0	8	72
1540d7.00	7.00	28.0	8	72
1540d7.50	7.50	30.0	8	72
1540d8.00	8.00	32.0	8	72
1540d8.50	8.50	34.0	10	92
1540d9.00	9.00	36.0	10	92
1540d9.50	9.50	38.0	10	92
1540d10.00	10.00	40.0	10	92
1540d11.00	11.00	44.0	11	92
1540d12.00	12.00	48.0	12	104
1540d13.00	13.00	52.0	13	104
1540d14.00	14.00	56.0	14	120
1540d15.00	15.00	60.0	15	130
1540d16.00	16.00	64.0	16	130



Available
uncoated or coated
(see page 61)



Z3



λ
30°

γ
8-10°

MG10

N

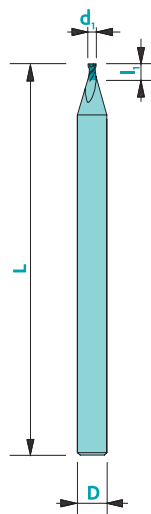


$ap=0.25xd_1$



$ae=0.5xd_1$
 $ap=0.5xd_1$

Micro end mill Z2 $l_1=1xd_1$



Available uncoated or coated (see page 61)

Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	100	130	□	■	Trio
Steel > 700 N/mm ²	80	100	-	■	Trio
Stainless steel	50	70	□	■	Trio
Cast iron	60	100	□	■	Nemo
Copper	130	160	□	■	Solo
Brass - Bronze	140	190	■	□	Solo
Aluminium	200	350	□	■	Solo
Gold - Silver	140	180	■	■	Solo
Platinum - Palladium	-	35	-	□	Solo
Superalloys	-	40	-	■	Trio
Titanium	40	60	■	■	Rico

not adapted - adapted □ highly adapted ■

Tolerances $d_1 \leq 1 \text{ mm}$ ▶ +0/-0.01 $D: h5$
 $d_1 > 1 \text{ mm}$ ▶ +0/-0.02

Z2

λ 35°

γ 8-10°

MG10

N

$ap=0.25xd_1$ $ae=0.5xd_1$
 $ap=0.5xd_1$

Art. n°	d_1	l_1	D	L
1210d0.08	0.08	0.08	3	38
1210d0.09	0.09	0.09	3	38
1210d0.10	0.10	0.10	3	38
1210d0.12	0.12	0.12	3	38
1210d0.15	0.15	0.15	3	38
1210d0.20	0.20	0.20	3	38
1210d0.25	0.25	0.25	3	38
1210d0.30	0.30	0.30	3	38
1210d0.35	0.35	0.35	3	38
1210d0.40	0.40	0.40	3	38
1210d0.45	0.45	0.45	3	38
1210d0.50	0.50	0.50	3	38
1210d0.55	0.55	0.55	3	38
1210d0.60	0.60	0.60	3	38
1210d0.65	0.65	0.65	3	38
1210d0.70	0.70	0.70	3	38
1210d0.75	0.75	0.75	3	38
1210d0.80	0.80	0.80	3	38
1210d0.85	0.85	0.85	3	38
1210d0.90	0.90	0.90	3	38
1210d0.95	0.95	0.95	3	38
1210d1.00	1.00	1.00	3	38
1210d1.05	1.05	1.05	3	38
1210d1.10	1.10	1.10	3	38
1210d1.15	1.15	1.15	3	38
1210d1.20	1.20	1.20	3	38
1210d1.25	1.25	1.25	3	38
1210d1.30	1.30	1.30	3	38
1210d1.35	1.35	1.35	3	38
1210d1.40	1.40	1.40	3	38

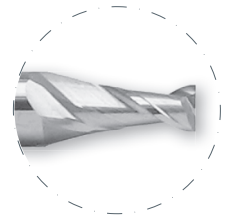
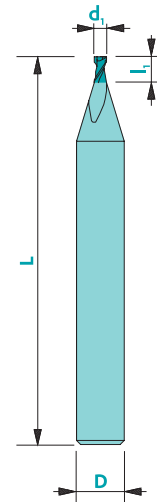
Art. n°	d_1	l_1	D	L
1210d1.45	1.45	1.45	3	38
1210d1.50	1.50	1.50	3	38
1210d1.55	1.55	1.55	3	38
1210d1.60	1.60	1.60	3	38
1210d1.65	1.65	1.65	3	38
1210d1.70	1.70	1.70	3	38
1210d1.75	1.75	1.75	3	38
1210d1.80	1.80	1.80	3	38
1210d1.85	1.85	1.85	3	38
1210d1.90	1.90	1.90	3	38
1210d1.95	1.95	1.95	3	38
1210d2.00	2.00	2.00	3	38
1210d2.10	2.10	2.10	3	38
1210d2.20	2.20	2.20	3	38
1210d2.30	2.30	2.30	3	38
1210d2.40	2.40	2.40	3	38
1210d2.50	2.50	2.50	3	38
1210d2.60	2.60	2.60	3	38
1210d2.70	2.70	2.70	3	38
1210d2.80	2.80	2.80	3	38
1210d2.90	2.90	2.90	3	38

Micro end mill Z2

Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	100	130	□	■	Trio
Steel > 700 N/mm ²	80	100	-	■	Trio
Stainless steel	50	70	□	■	Trio
Cast iron	60	100	□	■	Nemo
Copper	130	160	□	■	Solo
Brass - Bronze	140	190	■	□	Solo
Aluminium	200	350	□	■	Solo
Gold - Silver	140	180	■	■	Solo
Platinum - Palladium	-	35	-	□	Solo
Superalloys	-	40	-	■	Trio
Titanium	40	60	■	■	Rico

not adapted - adapted □ highly adapted ■

Tolerances $d_1 \leq 1 \text{ mm} \rightarrow +0/-0.01$ $D: h5$
 $d_1 > 1 \text{ mm} \rightarrow +0/-0.02$



Available uncoated or coated (see page 61)

Art. n°	d_1	l_1	D	L
102d0.08	0.08	0.16	3	38
102d0.10	0.10	0.20	3	38
102d0.11	0.11	0.20	3	38
102d0.12	0.12	0.20	3	38
102d0.13	0.13	0.30	3	38
102d0.14	0.14	0.30	3	38
102d0.15	0.15	0.30	3	38
102d0.16	0.16	0.30	3	38
102d0.17	0.17	0.30	3	38
102d0.18	0.18	0.40	3	38
102d0.19	0.19	0.40	3	38
102d0.20	0.20	0.40	3	38
102d0.21	0.21	0.40	3	38
102d0.22	0.22	0.40	3	38
102d0.23	0.23	0.50	3	38
102d0.24	0.24	0.50	3	38
102d0.25	0.25	0.60	3	38
102d0.26	0.26	0.60	3	38
102d0.27	0.27	0.60	3	38
102d0.28	0.28	0.60	3	38
102d0.29	0.29	0.60	3	38
102d0.30	0.30	0.60	3	38
102d0.35	0.35	0.80	3	38
102d0.40	0.40	0.80	3	38
102d0.45	0.45	1.00	3	38
102d0.50	0.50	1.00	3	38
102d0.55	0.55	1.20	3	38
102d0.60	0.60	1.20	3	38
102d0.65	0.65	1.40	3	38
102d0.70	0.70	1.40	3	38

Art. n°	d_1	l_1	D	L
102d0.75	0.75	1.60	3	38
102d0.80	0.80	1.60	3	38
102d0.85	0.85	1.80	3	38
102d0.90	0.90	1.80	3	38
102d0.95	0.95	2.00	3	38
102d1.00	1.00	2.00	3	38
102d1.05	1.05	2.20	3	38
102d1.10	1.10	2.20	3	38
102d1.15	1.15	2.40	3	38
102d1.20	1.20	2.40	3	38
102d1.25	1.25	2.60	3	38
102d1.30	1.30	2.60	3	38
102d1.35	1.35	2.80	3	38
102d1.40	1.40	2.80	3	38
102d1.45	1.45	3.00	3	38
102d1.50	1.50	3.00	3	38
102d1.55	1.55	3.20	3	38
102d1.60	1.60	3.20	3	38
102d1.65	1.65	3.40	3	38
102d1.70	1.70	3.40	3	38
102d1.75	1.75	3.60	3	38
102d1.80	1.80	3.60	3	38
102d1.85	1.85	4.00	3	38
102d1.90	1.90	4.00	3	38
102d1.95	1.95	6.00	3	38
102d2.00	2.00	6.00	3	38
102d2.05	2.05	7.00	3	38
102d2.10	2.10	7.00	3	38
102d2.15	2.15	7.00	3	38



Z2



λ
35°

γ
8-10°

MG10

N



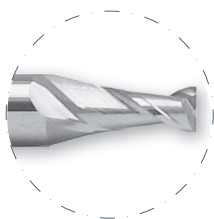
$ap=0.25xd_1$



$ae=0.5xd_1$
 $ap=0.5xd_1$



Micro end mill Z2



Available
uncoated or coated
(see page 61)

Art. n°	d_1	l_1	D	L
102d2.20	2.20	7.00	3	38
102d2.25	2.25	7.00	3	38
102d2.30	2.30	7.00	3	38
102d2.35	2.35	7.00	3	38
102d2.40	2.40	7.00	3	38
102d2.45	2.45	7.00	3	38
102d2.50	2.50	7.00	3	38
102d2.60	2.60	7.00	3	38
102d2.70	2.70	7.00	3	38
102d2.80	2.80	7.00	3	38
102d2.90	2.90	7.00	3	38



Z2


 λ
35°

 γ
8-10°

MG10

N


 $ap=0.25d_1$

 $ae=0.5d_1$
 $ap=0.5d_1$

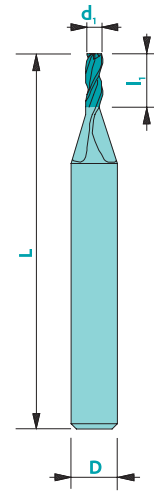
Micro end mill Z3

102-1

Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	100	130	□	■	Trio
Steel > 700 N/mm ²	80	100	-	■	Trio
Stainless steel	50	70	□	■	Trio
Cast iron	60	100	□	■	Nemo
Copper	130	160	□	■	Solo
Brass - Bronze	140	190	■	□	Solo
Aluminium	200	350	□	■	Solo
Gold - Silver	140	180	■	■	Solo
Platinum - Palladium	-	35	-	□	Solo
Superalloys	-	40	-	■	Trio
Titanium	40	60	■	■	Rico

not adapted - adapted □ highly adapted ■

Tolerances $d_1 \leq 1 \text{ mm} \rightarrow +0/-0.01$ D: h5
 $d_1 > 1 \text{ mm} \rightarrow +0/-0.02$
 $d_1 = D \rightarrow d_1: e8$



Available uncoated or coated (see page 61)

Art. n°	d_1	l_1	D	L
102-1d0.20	0.20	0.50	3	38
102-1d0.30	0.30	0.80	3	38
102-1d0.40	0.40	1.00	3	38
102-1d0.50	0.50	1.50	3	38
102-1d0.60	0.60	2.50	3	38
102-1d0.70	0.70	2.50	3	38
102-1d0.80	0.80	2.50	3	38
102-1d0.90	0.90	4.00	3	38
102-1d1.00	1.00	4.00	3	38
102-1d1.10	1.10	4.00	3	38
102-1d1.20	1.20	4.00	3	38
102-1d1.30	1.30	4.00	3	38
102-1d1.40	1.40	4.00	3	38
102-1d1.50	1.50	6.00	3	38
102-1d1.60	1.60	6.00	3	38
102-1d1.70	1.70	6.00	3	38
102-1d1.80	1.80	6.00	3	38
102-1d1.90	1.90	6.00	3	38
102-1d2.00	2.00	6.00	3	38
102-1d2.10	2.10	6.00	3	38
102-1d2.20	2.20	6.00	3	38
102-1d2.30	2.30	6.00	3	38
102-1d2.40	2.40	6.00	3	38
102-1d2.50	2.50	6.00	3	38
102-1d2.60	2.60	6.00	3	38
102-1d2.70	2.70	6.00	3	38
102-1d2.80	2.80	6.00	3	38
102-1d2.90	2.90	6.00	3	38
102-1d3.00	3.00	6.00	3	38

Z3



λ 30° γ 8-10°

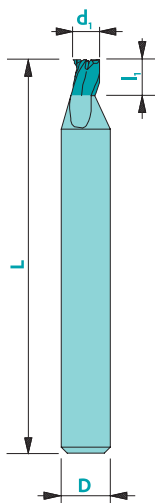
MG10 N



$ap=0.25xd_1$

$ae=0.5xd_1$
 $ap=0.5xd_1$

Short end mill Z3



Available uncoated or coated (see page 61)

Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	100	130	□	■	Trio
Steel > 700 N/mm ²	80	100	-	■	Trio
Stainless steel	50	70	□	■	Trio
Cast iron	60	100	□	■	Nemo
Copper	130	160	□	■	Solo
Brass - Bronze	140	190	■	□	Solo
Aluminium	200	350	□	■	Solo
Gold - Silver	140	180	■	■	Solo
Platinum - Palladium	-	35	-	□	Solo
Superalloys	-	40	-	■	Trio
Titanium	40	60	■	■	Rico

not adapted - adapted □ highly adapted ■

Tolerances $d_1 \leq 1 \text{ mm} \rightarrow +0/-0.01$ $D: h5$
 $d_1 > 1 \text{ mm} \rightarrow +0/-0.02$
 $d_1 = D \rightarrow d_1: e8$

Z3

Y
30°

8-10°

MG10

N

$ap = 0.25d_1$

$ae = 0.5d_1$
 $ap = 0.5d_1$

Art. n°	d_1	l_1	D	L
103-0d1.00	1.00	2.0	4	38
103-0d1.05	1.05	2.0	4	38
103-0d1.10	1.10	2.0	4	38
103-0d1.15	1.15	3.0	4	38
103-0d1.20	1.20	3.0	4	38
103-0d1.25	1.25	3.0	4	38
103-0d1.30	1.30	3.0	4	38
103-0d1.35	1.35	3.0	4	38
103-0d1.40	1.40	3.0	4	38
103-0d1.45	1.45	3.0	4	38
103-0d1.50	1.50	3.0	4	38
103-0d1.55	1.55	3.0	4	38
103-0d1.60	1.60	3.0	4	38
103-0d1.65	1.65	3.0	4	38
103-0d1.70	1.70	3.0	4	38
103-0d1.75	1.75	3.0	4	38
103-0d1.80	1.80	3.0	4	38
103-0d1.85	1.85	3.0	4	38
103-0d1.90	1.90	3.0	4	38
103-0d1.95	1.95	3.0	4	38
103-0d2.00	2.00	3.0	4	38
103-0d2.05	2.05	3.0	4	38
103-0d2.10	2.10	3.0	4	38
103-0d2.15	2.15	3.0	4	38
103-0d2.20	2.20	3.0	4	38
103-0d2.25	2.25	3.0	4	38
103-0d2.30	2.30	3.0	4	38
103-0d2.35	2.35	3.0	4	38
103-0d2.40	2.40	3.0	4	38

Art. n°	d_1	l_1	D	L
103-0d2.45	2.45	3.0	4	38
103-0d2.50	2.50	3.0	4	38
103-0d2.55	2.55	4.0	4	38
103-0d2.60	2.60	4.0	4	38
103-0d2.65	2.65	4.0	4	38
103-0d2.70	2.70	4.0	4	38
103-0d2.75	2.75	4.0	4	38
103-0d2.80	2.80	4.0	4	38
103-0d2.85	2.85	4.0	4	38
103-0d2.90	2.90	4.0	4	38
103-0d2.95	2.95	4.0	4	38
103-0d3.00	3.00	4.0	4	38
103-0d3.50	3.50	4.0	4	38
103-0d4.00	4.00	4.0	6	51
103-0d4.50	4.50	4.0	6	51
103-0d5.00	5.00	6.0	6	51
103-0d5.50	5.50	6.0	6	51
103-0d6.00	6.00	8.0	6	51
103-0d7.00	7.00	8.0	7	61
103-0d8.00	8.00	10.0	8	61
103-0d9.00	9.00	12.0	9	61
103-0d10.00	10.00	15.0	10	72

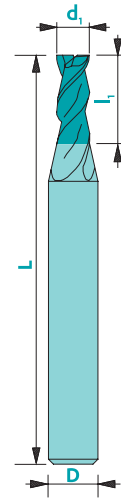
Finishing end mill Z2

104

Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	100	130	□	■	Trio
Steel > 700 N/mm ²	80	100	-	■	Trio
Stainless steel	50	70	□	■	Trio
Cast iron	60	100	□	■	Nemo
Copper	130	160	□	■	Solo
Brass - Bronze	140	190	■	□	Solo
Aluminium	200	350	□	■	Solo
Gold - Silver	140	180	■	■	Solo
Platinum - Palladium	-	35	-	□	Solo
Superalloys	-	40	-	■	Trio
Titanium	40	60	■	■	Rico

not adapted - adapted □ highly adapted ■

Tolerances $d_1 \leq 1 \text{ mm} \rightarrow +0/-0.01$ D: h5
 $d_1 > 1 \text{ mm} \rightarrow +0/-0.02$
 $d_1 = D \rightarrow d_1: e8$



Available uncoated or coated (see page 61)

Art. n°	d_1	l_1	D	L
104d0.30	0.30	1.0	3	38
104d0.35	0.35	1.0	3	38
104d0.40	0.40	1.5	3	38
104d0.45	0.45	1.5	3	38
104d0.50	0.50	2.0	3	38
104d0.55	0.55	2.0	3	38
104d0.60	0.60	2.0	3	38
104d0.65	0.65	2.0	3	38
104d0.70	0.70	3.0	3	38
104d0.75	0.75	3.0	3	38
104d0.80	0.80	3.0	3	38
104d0.85	0.85	3.0	3	38
104d0.90	0.90	3.0	3	38
104d0.95	0.95	3.0	3	38
104d1.00	1.00	3.0	3	38
104d1.10	1.10	4.0	3	38
104d1.20	1.20	4.0	3	38
104d1.30	1.30	4.0	3	38
104d1.40	1.40	5.0	3	38
104d1.50	1.50	5.0	3	38
104d1.60	1.60	5.0	3	38
104d1.70	1.70	6.0	3	38
104d1.80	1.80	6.0	3	38
104d1.90	1.90	6.0	3	38
104d2.00	2.00	6.0	3	38
104d2.50	2.50	8.0	3	38
104d3.00	3.00	8.0	3	38
104d3.50	3.50	8.0	6	51
104d4.00	4.00	12.0	6	51
104d4.50	4.50	12.0	6	51

Art. n°	d_1	l_1	D	L
104d5.00	5.00	15.0	6	51
104d5.50	5.50	15.0	6	51
104d6.00	6.00	18.0	6	51
104d7.00	7.00	20.0	8	61
104d8.00	8.00	20.0	8	61
104d9.00	9.00	20.0	10	72
104d10.00	10.00	22.0	10	72



Z2



λ
45°

γ
8-10°

MG10

N

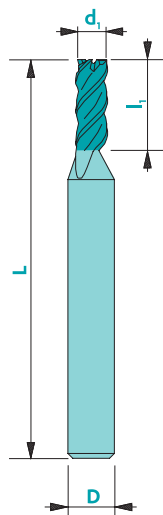


$ap=0.25xd_1$



$ae=0.5xd_1$
 $ap=0.5xd_1$

Finishing end mill Z3



Available uncoated or coated (see page 61)

Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	100	130	□	■	Trio
Steel > 700 N/mm ²	80	100	-	■	Trio
Stainless steel	50	70	□	■	Trio
Cast iron	60	100	□	■	Nemo
Copper	130	160	□	■	Solo
Brass - Bronze	140	190	■	□	Solo
Aluminium	200	350	□	■	Solo
Gold - Silver	140	180	■	■	Solo
Platinum - Palladium	-	35	-	□	Solo
Superalloys	-	40	-	■	Trio
Titanium	40	60	■	■	Rico

not adapted - adapted □ highly adapted ■

Tolerances $d_1 \leq 1 \text{ mm} \rightarrow +0/-0.01$ $D: h5$
 $d_1 > 1 \text{ mm} \rightarrow +0/-0.02$
 $d_1 = D \rightarrow d_1: e8$

Z3

Y
8-10°

MG10 **N**

$ap=0.25d_1$

$ae=0.5d_1$
 $ap=0.5d_1$

Art. n°	d_1	l_1	D	L
104-0d0.30	0.30	1.5	3	38
104-0d0.35	0.35	1.5	3	38
104-0d0.40	0.40	2.0	3	38
104-0d0.45	0.45	2.0	3	38
104-0d0.50	0.50	2.0	3	38
104-0d0.55	0.55	2.0	3	38
104-0d0.60	0.60	2.0	3	38
104-0d0.65	0.65	2.0	3	38
104-0d0.70	0.70	2.0	3	38
104-0d0.75	0.75	2.0	3	38
104-0d0.80	0.80	3.0	3	38
104-0d0.85	0.85	3.0	3	38
104-0d0.90	0.90	3.0	3	38
104-0d0.95	0.95	3.0	3	38
104-0d1.00	1.00	3.0	3	38
104-0d1.10	1.10	4.0	3	38
104-0d1.20	1.20	5.0	3	38
104-0d1.30	1.30	5.0	3	38
104-0d1.40	1.40	5.0	3	38
104-0d1.50	1.50	5.0	3	38
104-0d1.60	1.60	5.0	3	38
104-0d1.70	1.70	5.0	3	38
104-0d1.80	1.80	6.0	3	38
104-0d1.90	1.90	6.0	3	38
104-0d2.00	2.00	6.0	3	38
104-0d2.50	2.50	6.0	3	38
104-0d3.00	3.00	9.0	3	38

Art. n°	d_1	l_1	D	L
104-0d3.50	3.50	9.0	6	51
104-0d4.00	4.00	12.0	6	51
104-0d4.50	4.50	12.0	6	51
104-0d5.00	5.00	15.0	6	51
104-0d5.50	5.50	15.0	6	51
104-0d6.00	6.00	18.0	6	51
104-0d7.00	7.00	20.0	8	61
104-0d8.00	8.00	20.0	8	61
104-0d9.00	9.00	20.0	10	72
104-0d10.00	10.00	22.0	10	72
104-0d12.00	12.00	22.0	12	83

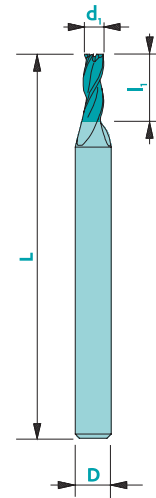
End mill Z3 - shank Ø 6.0

105

Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	100	130	□	■	Trio
Steel > 700 N/mm ²	80	100	-	■	Trio
Stainless steel	50	70	□	■	Trio
Cast iron	60	100	□	■	Nemo
Copper	130	160	□	■	Solo
Brass - Bronze	140	190	■	□	Solo
Aluminium	200	350	□	■	Solo
Gold - Silver	140	180	■	■	Solo
Platinum - Palladium	-	35	-	□	Solo
Superalloys	-	40	-	■	Trio
Titanium	40	60	■	■	Rico

not adapted - adapted □ highly adapted ■

Tolerances $d_1 \leq 1 \text{ mm} \rightarrow +0/-0.01$ D: h5
 $d_1 > 1 \text{ mm} \rightarrow +0/-0.02$
 $d_1 = D \rightarrow d_1: e8$



Available uncoated or coated (see page 61)

Art. n°	d_1	l_1	D	L	Art. n°	d_1	l_1	D	L
105d1.00	1.0	3	6	51	105d4.00	4.0	10	6	51
105d1.10	1.1	3	6	51	105d4.10	4.1	10	6	51
105d1.20	1.2	3	6	51	105d4.20	4.2	10	6	51
105d1.30	1.3	4	6	51	105d4.30	4.3	10	6	51
105d1.40	1.4	4	6	51	105d4.40	4.4	10	6	51
105d1.50	1.5	6	6	51	105d4.50	4.5	10	6	51
105d1.60	1.6	6	6	51	105d4.60	4.6	10	6	51
105d1.70	1.7	6	6	51	105d4.70	4.7	10	6	51
105d1.80	1.8	6	6	51	105d4.80	4.8	10	6	51
105d1.90	1.9	6	6	51	105d4.90	4.9	10	6	51
105d2.00	2.0	8	6	51	105d5.00	5.0	10	6	51
105d2.10	2.1	8	6	51	105d5.10	5.1	10	6	51
105d2.20	2.2	8	6	51	105d5.20	5.2	10	6	51
105d2.30	2.3	8	6	51	105d5.30	5.3	10	6	51
105d2.40	2.4	8	6	51	105d5.40	5.4	10	6	51
105d2.50	2.5	10	6	51	105d5.50	5.5	10	6	51
105d2.60	2.6	10	6	51	105d5.60	5.6	10	6	51
105d2.70	2.7	10	6	51	105d5.70	5.7	10	6	51
105d2.80	2.8	10	6	51	105d5.80	5.8	10	6	51
105d2.90	2.9	10	6	51	105d5.90	5.9	10	6	51
105d3.00	3.0	10	6	51	105d6.00	6.0	10	6	51
105d3.10	3.1	10	6	51					
105d3.20	3.2	10	6	51					
105d3.30	3.3	10	6	51					
105d3.40	3.4	10	6	51					
105d3.50	3.5	10	6	51					
105d3.60	3.6	10	6	51					
105d3.70	3.7	10	6	51					
105d3.80	3.8	10	6	51					
105d3.90	3.9	10	6	51					

Z3



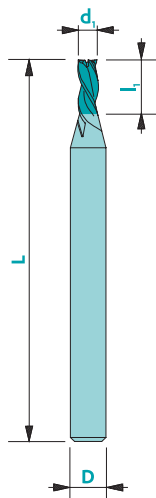
λ 30° γ 8-10°

MG10 N



$ap=0.25x d_1$ $ae=0.5x d_1$
 $ap=0.5x d_1$

End mill Z3 - left hand helix & left cut



Available uncoated or coated (see page 61)

Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	100	130	□	■	Trio
Steel > 700 N/mm ²	80	100	-	■	Trio
Stainless steel	50	70	□	■	Trio
Cast iron	60	100	□	■	Nemo
Copper	130	160	□	■	Solo
Brass - Bronze	140	190	■	□	Solo
Aluminium	200	350	□	■	Solo
Gold - Silver	140	180	■	■	Solo
Platinum - Palladium	-	35	-	□	Solo
Superalloys	-	40	-	■	Trio
Titanium	40	60	■	■	Rico

not adapted - adapted □ highly adapted ■

Tolerances $d_1 < D$ ▶ +0/-0.02 $D: h5$
 $d_1 = D$ ▶ $d_1: e8$

Z3

Y
8-10°

MG10 **N**

λ 30°

$ap=0.25xd_1$ $ae=0.5xd_1$
 $ap=0.5xd_1$

Art. n°	d_1	l_1	D	L
105-Gd1.50	1.5	5	6	51
105-Gd1.60	1.6	5	6	51
105-Gd1.70	1.7	5	6	51
105-Gd1.80	1.8	5	6	51
105-Gd1.90	1.9	5	6	51
105-Gd2.00	2.0	8	6	51
105-Gd2.10	2.1	8	6	51
105-Gd2.20	2.2	8	6	51
105-Gd2.30	2.3	8	6	51
105-Gd2.40	2.4	8	6	51
105-Gd2.50	2.5	10	6	51
105-Gd2.60	2.6	10	6	51
105-Gd2.70	2.7	10	6	51
105-Gd2.80	2.8	10	6	51
105-Gd2.90	2.9	10	6	51
105-Gd3.00	3.0	10	6	51
105-Gd3.10	3.1	10	6	51
105-Gd3.20	3.2	10	6	51
105-Gd3.30	3.3	10	6	51
105-Gd3.40	3.4	10	6	51
105-Gd3.50	3.5	10	6	51
105-Gd3.60	3.6	10	6	51
105-Gd3.70	3.7	10	6	51
105-Gd3.80	3.8	10	6	51
105-Gd3.90	3.9	10	6	51
105-Gd4.00	4.0	10	6	51
105-Gd4.10	4.1	10	6	51
105-Gd4.20	4.2	10	6	51
105-Gd4.30	4.3	10	6	51
105-Gd4.40	4.4	10	6	51

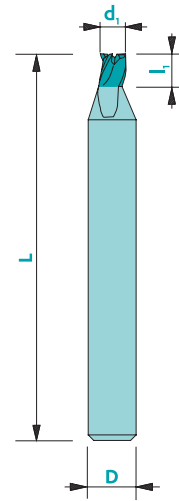
Art. n°	d_1	l_1	D	L
105-Gd4.50	4.5	10	6	51
105-Gd5.00	5.0	10	6	51
105-Gd5.50	5.5	10	6	51
105-Gd6.00	6.0	10	6	51
105-Gd7.00	7.0	15	7	61
105-Gd8.00	8.0	16	8	61
105-Gd9.00	9.0	18	10	72
105-Gd10.00	10.0	20	10	72
105-Gd11.00	11.0	25	12	83
105-Gd12.00	12.0	25	12	83

Short end mill Z3

Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	100	130	□	■	Trio
Steel > 700 N/mm ²	80	100	-	■	Trio
Stainless steel	50	70	□	■	Trio
Cast iron	60	100	□	■	Nemo
Copper	130	160	□	■	Solo
Brass - Bronze	140	190	■	□	Solo
Aluminium	200	350	□	■	Solo
Gold - Silver	140	180	■	■	Solo
Platinum - Palladium	-	35	-	□	Solo
Superalloys	-	40	-	■	Trio
Titanium	40	60	■	■	Rico

not adapted - adapted □ highly adapted ■

Tolerances $d_1 < D$ ▶ $d_1: +0/-0.02$ D: h5
 $d_1 = D$ ▶ $d_1: e8$



Available uncoated or coated (see page 61)

Art. n°	d_1	l_1	D	L
109d1.50	1.5	3	6	51
109d2.00	2.0	3	6	51
109d2.50	2.5	3	6	51
109d3.00	3.0	4	6	51
109d3.50	3.5	4	6	51
109d4.00	4.0	5	6	51
109d4.50	4.5	5	6	51
109d5.00	5.0	6	6	51
109d5.50	5.5	7	6	51
109d6.00	6.0	7	6	51
109d7.00	7.0	8	8	61
109d8.00	8.0	9	8	61
109d9.00	9.0	10	10	72
109d10.00	10.0	11	10	72
109d12.00	12.0	12	12	83

Z3



λ 30° γ 8-10°

MG10 N

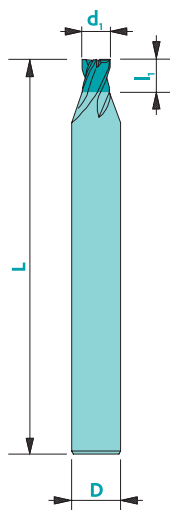
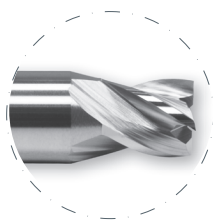


$ap = 0.25 \times d_1$



$ae = 0.5 \times d_1$
 $ap = 0.5 \times d_1$

Short end mill Z4



Available uncoated or coated (see page 61)

Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	100	130	□	■	Trio
Steel > 700 N/mm ²	80	100	-	■	Trio
Stainless steel	50	70	□	■	Trio
Cast iron	60	100	□	■	Nemo
Copper	130	160	□	■	Solo
Brass - Bronze	140	190	■	□	Solo
Aluminium	200	350	□	■	Solo
Gold - Silver	140	180	■	■	Solo
Platinum - Palladium	-	35	-	□	Solo
Superalloys	-	40	-	■	Trio
Titanium	40	60	■	■	Rico

not adapted - adapted □ highly adapted ■

Tolerances $d_1 < D$ ▶ $d_1: +0/-0.02$ $D: h5$
 $d_1 = D$ ▶ $d_1: e8$

Art. n°	d_1	l_1	D	L
110-1d2.00	2.0	3	6	51
110-1d2.50	2.5	3	6	51
110-1d3.00	3.0	4	6	51
110-1d3.50	3.5	4	6	51
110-1d4.00	4.0	5	6	51
110-1d4.50	4.5	5	6	51
110-1d5.00	5.0	6	6	51
110-1d5.50	5.5	7	6	51
110-1d6.00	6.0	7	6	51
110-1d7.00	7.0	8	8	61
110-1d8.00	8.0	9	8	61
110-1d9.00	9.0	10	10	72
110-1d10.00	10.0	11	10	72
110-1d12.00	12.0	12	12	83
110-1d14.00	14.0	14	14	83
110-1d16.00	16.0	16	16	92
110-1d18.00	18.0	18	18	92
110-1d20.00	20.0	20	20	104



Z4



λ
30°

γ
8-10°

MG10

N



$ae=0.5xd_1$
 $ap=0.5xd_1$

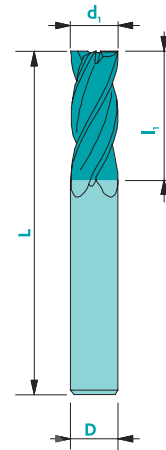
End mill Z4 - variable helix & pitch

1620

Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	100	130	□	■	Trio
Steel > 700 N/mm ²	80	100	-	■	Trio
Stainless steel	50	70	□	■	Trio
Cast iron	60	100	□	■	Nemo
Copper	130	160	□	■	Solo
Brass - Bronze	140	190	■	□	Solo
Aluminium	200	350	□	■	Solo
Gold - Silver	140	180	■	■	Solo
Platinum - Palladium	-	35	-	□	Solo
Superalloys	-	40	-	■	Trio
Titanium	40	60	■	■	Rico

not adapted - adapted □ highly adapted ■

Tolerances $d_1 \leq 1 \text{ mm} \rightarrow +0/-0.01$
 $d_1 > 1 \text{ mm} \rightarrow +0/-0.02$
 $d_1 = D \rightarrow d_1 : e8$ D: h5



Available uncoated or coated (see page 61)

Art. n°	d_1	l_1	λ	D	L
1620d1.00	1.0	2	0.02	6	51
1620d1.50	1.5	3	0.02	6	51
1620d2.00	2.0	4	0.02	6	51
1620d2.50	2.5	5	0.02	6	51
1620d3.00	3.0	6	0.02	6	51
1620d3.50	3.5	7	0.03	6	51
1620d4.00	4.0	8	0.03	6	51
1620d5.00	5.0	10	0.04	6	51
1620d6.00	6.0	12	0.05	6	51
1620d8.00	8.0	16	0.05	8	61
1620d10.00	10.0	20	0.05	10	72
1620d12.00	12.0	24	0.05	12	83
1620d14.00	14.0	28	0.06	14	83
1620d16.00	16.0	32	0.06	16	92

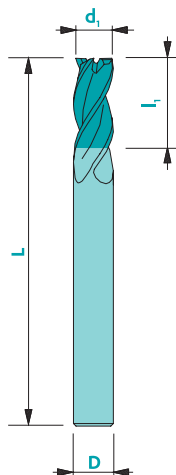
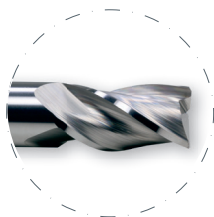
	Z4
λ 35-45°	γ 8°
SUB-CARFINE	N
ap=1xd ₁	ae=1xd ₁ ap=2.0xd ₁

Option: Weldon flat



Upon request : Z6

End mill Z3 - variable helix & pitch



Available uncoated or coated (see page 61)

Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	100	130	□	■	Trio
Steel > 700 N/mm ²	80	100	-	■	Trio
Stainless steel	50	70	□	■	Trio
Cast iron	60	100	□	■	Nemo
Copper	130	160	□	■	Solo
Brass - Bronze	140	190	■	□	Solo
Aluminium	200	350	□	■	Solo
Gold - Silver	140	180	■	■	Solo
Platinum - Palladium	-	35	-	□	Solo
Superalloys	-	40	-	■	Trio
Titanium	40	60	■	■	Rico

not adapted - adapted □ highly adapted ■

Tolerances $d_1 \leq 1 \text{ mm} \rightarrow +0/-0.01$ $D: h5$
 $d_1 > 1 \text{ mm} \rightarrow +0/-0.02$
 $d_1 = D \rightarrow d_1: e8$

Z3

λ
35-45°

γ
8°

SUB-CARFINE

N

$ap = 1 \times d_1$ $ae = 1 \times d_1$
 $ap = 2.0 \times d_1$

Art. n°	d_1	l_1	λ	D	L
1621d1.00	1.0	2	0.02	6	51
1621d1.50	1.5	3	0.02	6	51
1621d2.00	2.0	4	0.02	6	51
1621d2.50	2.5	5	0.02	6	51
1621d3.00	3.0	6	0.02	6	51
1621d3.50	3.5	7	0.03	6	51
1621d4.00	4.0	8	0.03	6	51
1621d5.00	5.0	10	0.04	6	51
1621d6.00	6.0	12	0.05	6	51
1621d8.00	8.0	16	0.05	8	61
1621d10.00	10.0	20	0.05	10	72
1621d12.00	12.0	24	0.05	12	83
1621d14.00	14.0	28	0.06	14	83
1621d16.00	16.0	32	0.06	16	92

Option: Weldon flat



EXPERT end mill for brass - spiral toothing

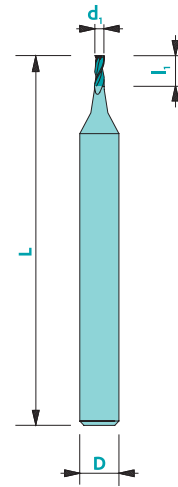


1820

Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	-	-	-	-	-
Steel > 700 N/mm ²	-	-	-	-	-
Stainless steel	-	-	-	-	-
Cast iron	-	-	-	-	-
Copper	-	-	-	-	-
Brass - Bronze	140	190	■	□	Solo
Aluminium	-	-	-	-	-
Gold - Silver	-	-	-	-	-
Platinum - Palladium	-	-	-	-	-
Superalloys	-	-	-	-	-
Titanium	-	-	-	-	-

not adapted - adapted □ highly adapted ■

Tolerance $d_1 \leq 1 \text{ mm}$ ▶ +0/-0.01 $D: h5$
 $d_1 > 1 \text{ mm}$ ▶ +0/-0.02



Available uncoated or coated (see page 61)

Art. n°	d_1	l_1	D	L
1820d0.50	0.50	1.00	4	38
1820d0.80	0.80	1.60	4	38
1820d1.00	1.00	2.00	4	38
1820d1.50	1.50	3.00	4	38
1820d2.00	2.00	4.00	4	38
1820d3.00	3.00	5.00	4	38

Other dimensions available upon request

Z3



λ
30°

MG10

N

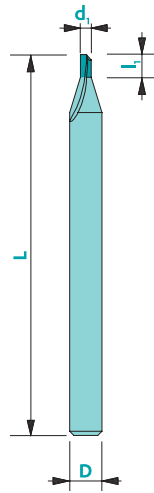
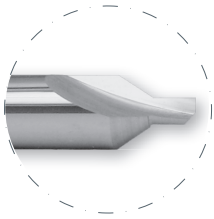


$ap=0.35d_1$



$ae=0.5d_1$
 $ap=0.5d_1$

Straight cut end mill Z1 - reinforced



Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	-	60	-	□	Trio
Steel > 700 N/mm ²	-	-	-	-	-
Stainless steel	-	-	-	-	-
Cast iron	-	-	-	-	-
Copper	-	-	-	-	-
Brass - Bronze	80	110	■	□	Solo
Aluminium	-	-	-	-	-
Gold - Silver	50	60	■	■	Solo
Platinum - Palladium	-	-	-	-	-
Superalloys	-	-	-	-	-
Titanium	20	30	□	■	Rico

not adapted - adapted □ highly adapted ■

Tolerances $d_1 \leq 1 \text{ mm} \rightarrow +0/-0.01$ $D: h5$
 $d_1 > 1 \text{ mm} \rightarrow +0/-0.02$
 $d_1 = D \rightarrow d_1: e8$

Available uncoated or coated (see page 61)

Z1

MG10

N

$\lambda 0^\circ$

$\gamma 0^\circ$

$ap=0.5xd_1$

$ae=0.5xd_1$
 $ap=0.5xd_1$

Art. n°	d_1	l_1	D	L
111-1d0.20	0.2	0.9	3.0	38
111-1d0.30	0.3	1.5	3.0	38
111-1d0.40	0.4	1.5	3.0	38
111-1d0.50	0.5	1.5	3.0	38
111-1d0.60	0.6	1.5	3.0	38
111-1d0.70	0.7	1.5	3.0	38
111-1d0.80	0.8	1.5	3.0	38
111-1d0.90	0.9	1.5	3.0	38
111-1d1.00	1.0	2.0	3.0	38
111-1d1.10	1.1	2.0	3.0	38
111-1d1.20	1.2	2.0	3.0	38
111-1d1.30	1.3	2.0	3.0	38
111-1d1.40	1.4	2.0	3.0	38
111-1d1.50	1.5	2.0	3.0	38
111-1d1.60	1.6	2.5	3.0	38
111-1d1.70	1.7	2.5	3.0	38
111-1d1.80	1.8	2.5	3.0	38
111-1d1.90	1.9	2.5	3.0	38
111-1d2.00	2.0	2.5	3.0	38
111-1d2.10	2.1	3.0	3.0	38
111-1d2.20	2.2	3.0	3.0	38
111-1d2.30	2.3	3.0	3.0	38
111-1d2.40	2.4	3.0	3.0	38
111-1d2.50	2.5	3.5	3.0	38
111-1d2.60	2.6	3.5	3.0	38
111-1d2.70	2.7	3.5	3.0	38
111-1d2.80	2.8	3.5	3.0	38
111-1d2.90	2.9	3.5	3.0	38
111-1d3.00	3.0	4.0	3.0	38
111-1d3.50	3.5	4.0	4.0	38

Art. n°	d_1	l_1	D	L
111-1d4.00	4.0	5.0	4.0	38
111-1d4.50	4.5	5.0	6.0	51
111-1d5.00	5.0	6.0	6.0	51
111-1d5.50	5.5	6.0	6.0	51
111-1d6.00	6.0	7.0	6.0	51
111-1d6.50	6.5	7.0	6.5	51
111-1d7.00	7.0	8.0	7.0	51
111-1d8.00	8.0	9.0	8.0	51

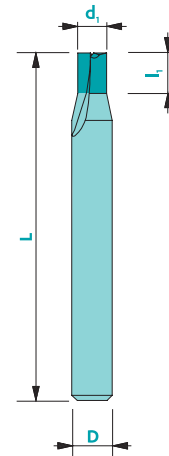
Straight cut end mill Z2 - reinforced

111-2

Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	-	60	-	□	Trio
Steel > 700 N/mm ²	-	-	-	-	-
Stainless steel	-	-	-	-	-
Cast iron	-	-	-	-	-
Copper	-	-	-	-	-
Brass - Bronze	80	110	■	□	Solo
Aluminium	-	-	-	-	-
Gold - Silver	50	60	■	■	Solo
Platinum - Palladium	-	-	-	-	-
Superalloys	-	-	-	-	-
Titanium	20	30	□	■	Rico

not adapted - adapted □ highly adapted ■

Tolerances $d_1 \leq 1 \text{ mm} \rightarrow +0/-0.01$ D: h5
 $d_1 > 1 \text{ mm} \rightarrow +0/-0.02$
 $d_1 = D \rightarrow d_1: e8$



Available uncoated or coated (see page 61)

Art. n°	d_1	l_1	D	L
111-2d0.80	0.8	3.0	3	38
111-2d0.90	0.9	3.0	3	38
111-2d1.00	1.0	3.0	3	38
111-2d1.10	1.1	3.0	3	38
111-2d1.20	1.2	3.0	3	38
111-2d1.30	1.3	3.0	3	38
111-2d1.40	1.4	3.0	3	38
111-2d1.50	1.5	4.0	3	38
111-2d1.60	1.6	4.0	3	38
111-2d1.70	1.7	4.0	3	38
111-2d1.80	1.8	4.0	3	38
111-2d1.90	1.9	4.0	3	38
111-2d2.00	2.0	5.0	3	38
111-2d2.10	2.1	5.0	3	38
111-2d2.20	2.2	5.0	3	38
111-2d2.30	2.3	5.0	3	38
111-2d2.40	2.4	5.0	3	38
111-2d2.50	2.5	6.0	3	38
111-2d2.60	2.6	6.0	3	38
111-2d2.70	2.7	6.0	3	38
111-2d2.80	2.8	6.0	3	38
111-2d2.90	2.9	6.0	3	38
111-2d3.00	3.0	6.0	3	38
111-2d3.10	3.1	6.0	4	38
111-2d3.20	3.2	6.0	4	38
111-2d3.30	3.3	6.0	4	38
111-2d3.40	3.4	6.0	4	38

Art. n°	d_1	l_1	D	L
111-2d3.50	3.5	6.0	4	38
111-2d3.60	3.6	6.0	4	38
111-2d3.70	3.7	6.0	4	38
111-2d3.80	3.8	6.0	4	38
111-2d3.90	3.9	6.0	4	38
111-2d4.00	4.0	6.0	4	38
111-2d5.00	5.0	8.0	6	51
111-2d6.00	6.0	8.0	6	51
111-2d7.00	7.0	9.0	7	51
111-2d8.00	8.0	9.0	8	51
111-2d9.00	9.0	12.0	10	51
111-2d10.00	10.0	12.0	10	51



Z2



λ
0°

γ
0°

MG10

N

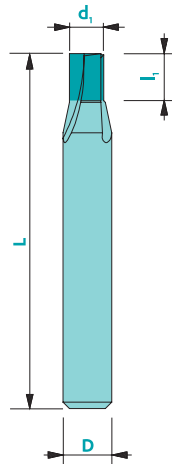


$ap=0.5d_1$



$ae=0.5d_1$
 $ap=0.5d_1$

Straight cut end mill Z3 - reinforced



Available uncoated or coated (see page 61)

Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	-	60	-	□	Trio
Steel > 700 N/mm ²	-	-	-	-	-
Stainless steel	-	-	-	-	-
Cast iron	-	-	-	-	-
Copper	-	-	-	-	-
Brass - Bronze	80	110	■	□	Solo
Aluminium	-	-	-	-	-
Gold - Silver	50	60	■	■	Solo
Platinum - Palladium	-	-	-	-	-
Superalloys	-	-	-	-	-
Titanium	20	30	□	■	Rico

not adapted - adapted □ highly adapted ■

Tolerances $d_1 \leq 1 \text{ mm} \rightarrow +0/-0.01$ $D: h5$
 $d_1 > 1 \text{ mm} \rightarrow +0/-0.02$
 $d_1 = D \rightarrow d_1: e8$

Z3

MG10

N

λ
0°

γ
0°

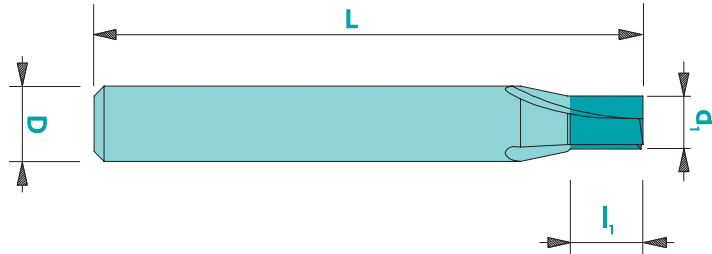
$ap=0.25d_1$ $ae=0.5d_1$
 $ap=0.5d_1$

Art. n°	d_1	l_1	D	L
111-3d1.00	1.0	3	3	38
111-3d1.10	1.1	3	3	38
111-3d1.20	1.2	3	3	38
111-3d1.30	1.3	3	3	38
111-3d1.40	1.4	3	3	38
111-3d1.50	1.5	4	3	38
111-3d1.60	1.6	4	3	38
111-3d1.70	1.7	4	3	38
111-3d1.80	1.8	4	3	38
111-3d1.90	1.9	4	3	38
111-3d2.00	2.0	5	3	38
111-3d2.10	2.1	5	3	38
111-3d2.20	2.2	5	3	38
111-3d2.30	2.3	5	3	38
111-3d2.40	2.4	5	3	38
111-3d2.50	2.5	6	3	38
111-3d2.60	2.6	6	3	38
111-3d2.70	2.7	6	3	38
111-3d2.80	2.8	6	3	38
111-3d2.90	2.9	6	3	38
111-3d3.00	3.0	6	4	38
111-3d3.10	3.1	6	4	38
111-3d3.20	3.2	6	4	38
111-3d3.30	3.3	6	4	38
111-3d3.40	3.4	6	4	38
111-3d3.50	3.5	6	4	38
111-3d3.60	3.6	6	4	38
111-3d3.70	3.7	6	4	38
111-3d3.80	3.8	6	4	38
111-3d3.90	3.9	6	4	38

Art. n°	d_1	l_1	D	L
111-3d4.00	4.0	6	4	38
111-3d5.00	5.0	8	6	51
111-3d6.00	6.0	8	6	51
111-3d7.00	7.0	9	7	51
111-3d8.00	8.0	9	8	51
111-3d9.00	9.0	12	10	51
111-3d10.00	10.0	12	10	51

Straight cut end mill Z1-3 - reinforced

111-1/2/3



Order

Quotation request

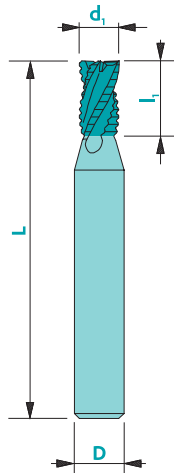
<p>Dimensions :</p> <p>d_1: _____ l_1: _____ D: _____</p> <p>Tolerances d_1: _____ L: _____ Z: _____</p> <p>Coating :</p> <p><input type="checkbox"/> Coated * : _____ <input type="checkbox"/> Uncoated</p> <p>Company's stamp & date :</p> <p>_____</p>	<p>Order No :</p> <p>_____</p> <p>Quantity :</p> <p>_____</p> <p>Contact person :</p> <p>_____</p>
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	Z1-3
λ 0°	γ 0°
MG10	N
$ap=0.25d_1$	$ae=0.5d_1$ $ap=0.5d_1$

Standard dimensions of the bars : $\emptyset 3 \times L 38$, $\emptyset 4 \times L 38$, $\emptyset 6 \times L 38$, $\emptyset 6 \times L 51$, $\emptyset 8 \times L 61$, $\emptyset 10 \times L 72$, $\emptyset 12 \times L 83$, $\emptyset 16 \times L 92$, $\emptyset 20 \times L 104$

* Without information, the most suitable coating will be applied.

Roughing end mill - medium pitch



Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	100	130	□	■	Trio
Steel > 700 N/mm ²	80	100	-	■	Trio
Stainless steel	50	70	□	■	Trio
Cast iron	60	100	□	■	Nemo
Copper	130	160	□	■	Solo
Brass - Bronze	140	190	■	□	Solo
Aluminium	200	350	□	■	Solo
Gold - Silver	140	180	■	■	Solo
Platinum - Palladium	-	35	-	□	Solo
Superalloys	-	40	-	■	Trio
Titanium	40	60	■	■	Rico

not adapted - adapted □ highly adapted ■

Tolerances d₁: +0/-0.1
D: h5

Available uncoated or coated (see page 61)

Art. n°	d ₁	l ₁	D	L	Z
115d6.00	6.0	13	6	51	3
115d7.00	7.0	16	8	61	3
115d8.00	8.0	16	10	72	4
115d10.00	10.0	22	10	72	4
115d12.00	12.0	25	12	83	4
115d14.00	14.0	28	14	83	4
115d16.00	16.0	36	16	92	4

Z3-4

λ
30°

γ
8-10°

MG10

N

ap=1.5xd₁

ae=0.5xd₁
ap=2xd₁

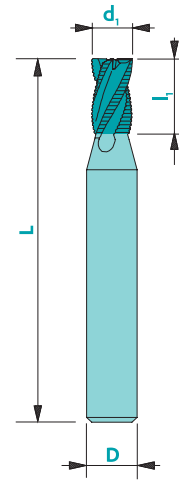
Roughing end mill - fine pitch

115-1

Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	100	130	□	■	Trio
Steel > 700 N/mm ²	80	100	-	■	Trio
Stainless steel	50	70	□	■	Trio
Cast iron	60	100	□	■	Nemo
Copper	130	160	□	■	Solo
Brass - Bronze	140	190	■	□	Solo
Aluminium	200	350	□	■	Solo
Gold - Silver	140	180	■	■	Solo
Platinum - Palladium	-	35	-	□	Solo
Superalloys	-	40	-	■	Trio
Titanium	40	60	■	■	Rico

not adapted - adapted □ highly adapted ■

Tolerances d₁: +0/-0.1
D: h5



Available uncoated or coated (see page 61)

Art. n°	d ₁	l ₁	D	L	Z
115-1d1.50	1.5	3	6	51	2
115-1d2.00	2.0	4	6	51	2
115-1d2.50	2.5	5	6	51	2
115-1d3.00	3.0	6	6	51	3
115-1d3.50	3.5	7	6	51	3
115-1d4.00	4.0	8	6	51	3
115-1d4.50	4.5	9	6	51	3
115-1d5.00	5.0	10	6	51	3
115-1d5.50	5.5	11	6	51	3
115-1d6.00	6.0	12	6	51	3
115-1d7.00	7.0	14	8	61	3
115-1d8.00	8.0	16	10	72	4
115-1d9.00	9.0	18	10	72	4
115-1d10.00	10.0	20	10	72	4
115-1d12.00	12.0	24	12	83	4
115-1d14.00	14.0	28	14	83	4
115-1d16.00	16.0	32	16	92	4
115-1d20.00	20.0	40	20	104	4



Z2-4



λ 30°

γ 8-10°

MG10

N

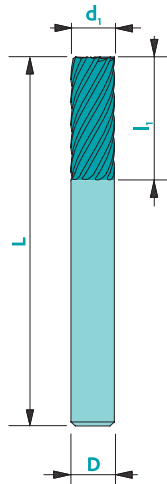


ap=0.25xd₁



ae=0.5xd₁
ap=0.5xd₁

Finishing end mill multiflutes - helix angle 30°



Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	100	130	□	■	Trio
Steel > 700 N/mm ²	80	100	-	■	Trio
Stainless steel	50	70	□	■	Trio
Cast iron	60	100	□	■	Nemo
Copper	130	160	□	■	Solo
Brass - Bronze	140	190	■	□	Solo
Aluminium	200	350	□	■	Solo
Gold - Silver	140	180	■	■	Solo
Platinum - Palladium	-	35	-	□	Solo
Superalloys	-	40	-	■	Trio
Titanium	40	60	■	■	Rico

not adapted - adapted □ highly adapted ■

Tolerances $d_1 < D_1$ mm ▶ +0/-0.02
 $d_1 = D$ ▶ d_1 : e8
 D: h5

Available uncoated or coated (see page 61)

Art. n°	d_1	l_1	D	L	Z
113d2.00	2.0	8	6	51	6
113d2.50	2.5	8	6	51	6
113d3.00	3.0	12	6	51	6
113d3.50	3.5	12	6	51	6
113d4.00	4.0	12	6	51	6
113d4.50	4.5	14	6	51	6
113d5.00	5.0	14	6	51	6
113d5.50	5.5	16	6	51	6
113d6.00	6.0	16	6	51	8
113d7.00	7.0	20	7	61	8
113d8.00	8.0	20	8	61	8
113d10.00	10.0	22	10	72	8
113d12.00	12.0	22	12	83	10
113d14.00	14.0	25	14	83	10
113d16.00	16.0	25	16	92	12

Z6-12

MG10

λ 30°

γ 8°

N

ap ae

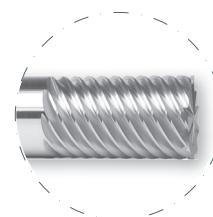
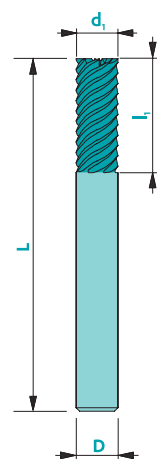
$ae = 0.05 \times d_1$
 $ap = 1 \times d_1$

Finishing end mill - helix angle 60°

Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	100	130	□	■	Trio
Steel > 700 N/mm ²	80	100	-	■	Trio
Stainless steel	50	70	□	■	Trio
Cast iron	60	100	□	■	Nemo
Copper	130	160	□	■	Solo
Brass - Bronze	140	190	■	□	Solo
Aluminium	200	350	□	■	Solo
Gold - Silver	140	180	■	■	Solo
Platinum - Palladium	-	35	-	□	Solo
Superalloys	-	40	-	■	Trio
Titanium	40	60	■	■	Rico

not adapted - adapted □ highly adapted ■

Tolerances $d_1 < D$ ▶ $+0/-0.02$ D: h5
 $d_1 = D$ ▶ $d_1: e8$



Available uncoated or coated (see page 61)

Art. n°	d_1	l_1	D	L	Z
113-0d2.00	2.0	8	6	51	5
113-0d2.50	2.5	8	6	51	5
113-0d3.00	3.0	12	6	51	5
113-0d3.50	3.5	12	6	51	5
113-0d4.00	4.0	12	6	51	6
113-0d4.50	4.5	14	6	51	6
113-0d5.00	5.0	14	6	51	6
113-0d5.50	5.5	16	6	51	6
113-0d6.00	6.0	16	6	51	8
113-0d7.00	7.0	20	7	61	8
113-0d8.00	8.0	20	8	61	8
113-0d10.00	10.0	22	10	72	8
113-0d12.00	12.0	22	12	83	10
113-0d14.00	14.0	25	14	83	10
113-0d16.00	16.0	25	16	92	12



Z5-12



λ
60°

γ
8°

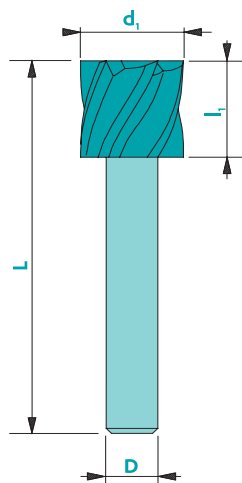
MG10

N



$ae=0.05xd_1$
 $ap=1xd_1$

Facemill - 2 cuts



Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	100	130	□	■	Trio
Steel > 700 N/mm ²	80	100	-	■	Trio
Stainless steel	50	70	□	■	Trio
Cast iron	60	100	□	■	Nemo
Copper	130	160	□	■	Solo
Brass - Bronze	140	190	■	□	Solo
Aluminium	200	350	□	■	Solo
Gold - Silver	140	180	■	■	Solo
Platinum - Palladium	-	35	-	□	Solo
Superalloys	-	40	-	■	Trio
Titanium	40	60	■	■	Rico

not adapted - adapted □ highly adapted ■

Tolerances d_1 : +/-0.02 D: h5

Available uncoated or coated (see page 61)

Art. n°	d_1	l_1	D	L	Z
113-1d15.00	15	15	10	61	6
113-1d16.00	16	15	10	61	6
113-1d18.00	18	15	10	61	6
113-1d20.00	20	20	10	61	6
113-1d25.00	25	25	10	61	8
113-1d28.00	28	25	10	61	8
113-1d30.00	30	30	10	61	8



Z6-8



λ
30°

γ
8-10°

MG10

N



$ap=0.05xd_1$



$ae=0.05xd_1$
 $ap=1xd_1$

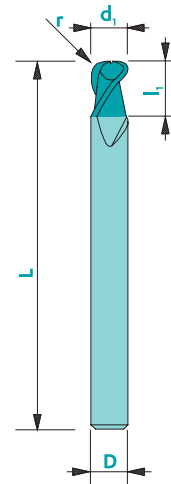
End mill with ball end Z2

114-2

Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	100	130	□	■	Trio
Steel > 700 N/mm ²	80	100	-	■	Trio
Stainless steel	50	70	□	■	Trio
Cast iron	60	100	□	■	Nemo
Copper	130	160	□	■	Solo
Brass - Bronze	140	190	■	□	Solo
Aluminium	200	350	□	■	Solo
Gold - Silver	140	180	■	■	Solo
Platinum - Palladium	-	35	-	□	Solo
Superalloys	-	40	-	■	Trio
Titanium	40	60	■	■	Rico

not adapted - adapted □ highly adapted ■

Tolerances $d_1 \leq 1 \text{ mm}$ ▶ +0/-0.01
 $d_1 > 1 \text{ mm}$ ▶ +0/-0.02
 d_1 : e8
 C +0/-0.01
D: h5



Available uncoated or coated (see page 61)

Art. n°	d_1	l_1	D	L	r
114-2d0.10	0.10	0.20	3	38	0.050
114-2d0.15	0.15	0.30	3	38	0.075
114-2d0.20	0.20	0.40	3	38	0.100
114-2d0.25	0.25	0.50	3	38	0.120
114-2d0.30	0.30	0.60	3	38	0.150
114-2d0.40	0.40	0.80	3	38	0.200
114-2d0.50	0.50	1.00	3	38	0.250
114-2d0.60	0.60	1.20	3	38	0.300
114-2d0.70	0.70	1.40	3	38	0.350
114-2d0.80	0.80	1.60	3	38	0.400
114-2d0.90	0.90	1.80	3	38	0.450
114-2d1.00	1.00	2.00	3	38	0.500
114-2d1.10	1.10	2.10	3	38	0.550
114-2d1.20	1.20	2.20	3	38	0.600
114-2d1.30	1.30	2.30	3	38	0.650
114-2d1.40	1.40	2.40	3	38	0.700
114-2d1.50	1.50	2.50	3	38	0.750
114-2d1.60	1.60	2.50	3	38	0.800
114-2d1.70	1.70	2.60	3	38	0.850
114-2d1.80	1.80	2.60	3	38	0.900
114-2d1.90	1.90	3.00	3	38	0.950
114-2d2.00	2.00	3.00	3	38	1.000
114-2d2.10	2.10	3.00	3	38	1.050
114-2d2.20	2.20	3.50	3	38	1.100
114-2d2.30	2.30	3.50	3	38	1.150
114-2d2.40	2.40	3.50	3	38	1.200
114-2d2.50	2.50	4.00	3	38	1.250
114-2d3.00	3.00	4.50	3	38	1.500
114-2d3.50	3.50	5.00	6	51	1.750
114-2d4.00	4.00	6.00	6	51	2.000

Art. n°	d_1	l_1	D	L	r
114-2d4.50	4.50	7.00	6	51	2.250
114-2d5.00	5.00	8.00	6	51	2.500
114-2d5.50	5.50	8.00	6	51	2.750
114-2d6.00	6.00	9.00	6	51	3.000
114-2d6.50	6.50	10.00	8	61	3.250
114-2d7.00	7.00	10.00	8	61	3.500
114-2d7.50	7.50	12.00	8	61	3.750
114-2d8.00	8.00	12.00	8	61	4.000
114-2d8.50	8.50	13.00	10	72	4.250
114-2d9.00	9.00	13.00	10	72	4.500
114-2d10.00	10.00	15.00	10	72	5.000
114-2d12.00	12.00	18.00	12	83	6.000
114-2d14.00	14.00	21.00	14	83	7.000
114-2d16.00	16.00	24.00	16	92	8.000

U **Z2**



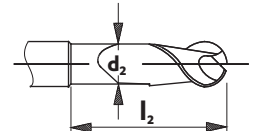
λ 35° γ 8-10°

MG10 N

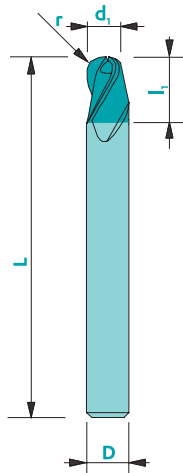


$ae=0.06xd_1$
 $ap=0.03xd_1$

Upon request



End mill with ball end Z3



Available uncoated or coated (see page 61)

Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	100	130	□	■	Trio
Steel > 700 N/mm ²	80	100	-	■	Trio
Stainless steel	50	70	□	■	Trio
Cast iron	60	100	□	■	Nemo
Copper	130	160	□	■	Solo
Brass - Bronze	140	190	■	□	Solo
Aluminium	200	350	□	■	Solo
Gold - Silver	140	180	■	■	Solo
Platinum - Palladium	-	35	-	□	Solo
Superalloys	-	40	-	■	Trio
Titanium	40	60	■	■	Rico

not adapted - adapted □ highly adapted ■

Tolerances $d_1 \leq 1 \text{ mm}$ ▶ +0/-0.01
 $d_1 \leq 1 \text{ mm}$ ▶ +0/-0.02
 $d_1 = D$ ▶ $d_1: e8$
 D: h5
 +0/-0.01

Z3

MG10

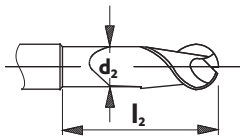
λ
30°

γ
8-10°

N

$ae=0.06 \times d_1$
 $ap=0.03 \times d_1$

Upon request



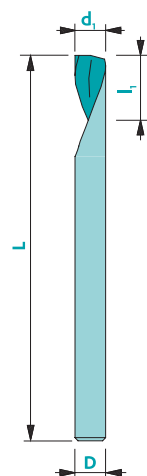
Art. n°	d_1	l_1	D	L	r
114-3d1.00	1.0	2.0	3	38	0.50
114-3d1.50	1.5	2.5	3	38	0.75
114-3d2.00	2.0	3.0	3	38	1.00
114-3d2.50	2.5	4.0	3	38	1.25
114-3d3.00	3.0	4.5	3	38	1.50
114-3d3.50	3.5	5.0	6	51	1.75
114-3d4.00	4.0	6.0	6	51	2.00
114-3d4.50	4.5	7.0	6	51	2.25
114-3d5.00	5.0	8.0	6	51	2.50
114-3d5.50	5.5	8.0	6	51	2.75
114-3d6.00	6.0	9.0	6	51	3.00
114-3d6.50	6.5	10.0	8	61	3.25
114-3d7.00	7.0	10.0	8	61	3.50
114-3d7.50	7.5	12.0	8	61	3.75
114-3d8.00	8.0	12.0	8	61	4.00
114-3d8.50	8.5	13.0	10	72	4.25
114-3d9.00	9.0	13.0	10	72	4.50
114-3d10.00	10.0	15.0	10	72	5.00
114-3d11.00	11.0	16.0	12	83	5.50
114-3d12.00	12.0	18.0	12	83	6.00
114-3d14.00	14.0	21.0	14	83	7.00
114-3d16.00	16.0	24.0	16	92	8.00
114-3d18.00	18.0	27.0	18	92	9.00
114-3d20.00	20.0	30.0	20	104	10.00

Universal end mill Z1

Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	-	-	-	-	-
Steel > 700 N/mm ²	-	-	-	-	-
Stainless steel	-	-	-	-	-
Cast iron	-	-	-	-	-
Copper	150	180	□	■	Solo
Brass - Bronze	140	190	■	□	Solo
Aluminium	200	350	□	■	Rico/Solo
Gold - Silver	140	180	■	□	Solo
Platinum - Palladium	-	35	-	□	Solo
Superalloys	-	-	-	-	-
Titanium	-	-	-	-	-
Composite	200	250	■	■	Solo

not adapted - adapted □ highly adapted ■

Tolerances $d_1 < D \rightarrow +0/-0.02$ $D: h5$
 $d_1 = D \rightarrow d_1: e8$



Available uncoated or coated (see page 61)

Art. n°	d_1	l_1	D	L
107-1d1.50	1.5	5	3.0	38
107-1d2.00	2.0	6	3.0	38
107-1d3.00	3.0	9	3.0	38
107-1d4.00	4.0	12	4.0	51
107-1d5.00	5.0	15	6.0	51
107-1d6.00	6.0	18	6.0	51
107-1d8.00	8.0	24	8.0	61
107-1d10.00	10.0	30	10.0	72



Z1



λ
30°

γ
8-10°

MG10

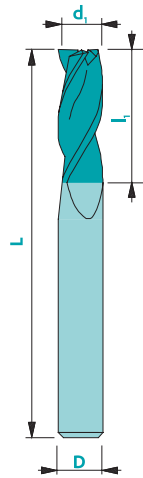
N



$ap=0.25xd_1$



$ae=0.5xd_1$
 $ap=0.5xd_1$



Available uncoated or coated (see page 61)

Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	100	130	□	■	Trio
Steel > 700 N/mm ²	80	100	-	■	Trio
Stainless steel	50	70	□	■	Trio
Cast iron	60	100	□	■	Nemo
Copper	130	160	□	■	Solo
Brass - Bronze	140	190	■	□	Solo
Aluminium	200	350	□	■	Solo
Gold - Silver	140	180	■	■	Solo
Platinum - Palladium	-	35	-	□	Solo
Superalloys	-	40	-	■	Trio
Titanium	40	60	■	■	Rico

not adapted - adapted □ highly adapted ■

Tolerances d₁: e8
D: h5

Art. n°	d ₁	l ₁	D	L
107-3d2.00	2.0	10	2.0	38
107-3d2.50	2.5	10	2.5	38
107-3d3.00	3.0	15	3.0	38
107-3d3.50	3.5	15	3.5	38
107-3d4.00	4.0	18	4.0	51
107-3d4.50	4.5	18	4.5	51
107-3d5.00	5.0	18	5.0	51
107-3d5.50	5.5	18	5.5	51
107-3d6.00	6.0	18	6.0	51
107-3d6.50	6.5	22	6.5	51
107-3d7.00	7.0	22	7.0	61
107-3d7.50	7.5	22	7.5	61
107-3d8.00	8.0	22	8.0	61
107-3d8.50	8.5	22	8.5	61
107-3d9.00	9.0	25	9.0	61
107-3d9.50	9.5	25	9.5	61
107-3d10.00	10.0	25	10.0	72
107-3d10.50	10.5	25	10.5	72
107-3d11.00	11.0	30	11.0	72
107-3d11.50	11.5	30	11.5	72
107-3d12.00	12.0	30	12.0	83
107-3d12.50	12.5	30	12.5	83
107-3d13.00	13.0	35	13.0	83
107-3d14.00	14.0	35	14.0	83
107-3d15.00	15.0	35	15.0	83
107-3d16.00	16.0	35	16.0	92
107-3d18.00	18.0	45	18.0	92
107-3d20.00	20.0	45	20.0	104

λ
30°

Z3

MG10

N

ap=0.25xd₁

ae=0.5xd₁
ap=0.5xd₁

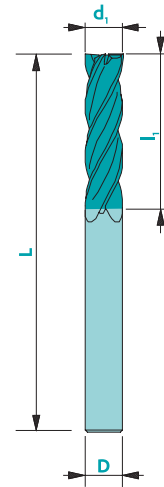
Universal end mill Z4

107-4

Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	100	130	□	■	Trio
Steel > 700 N/mm ²	80	100	-	■	Trio
Stainless steel	50	70	□	■	Trio
Cast iron	60	100	□	■	Nemo
Copper	130	160	□	■	Solo
Brass - Bronze	140	190	■	□	Solo
Aluminium	200	350	□	■	Solo
Gold - Silver	140	180	■	■	Solo
Platinum - Palladium	-	35	-	□	Solo
Superalloys	-	40	-	■	Trio
Titanium	40	60	■	■	Rico

not adapted - adapted □ highly adapted ■

Tolerances
d₁: e8
D: h5



Available
uncoated or coated
(see page 61)

Art. n°	d ₁	l ₁	D	L
107-4d2.00	2.0	10	2.0	38
107-4d2.50	2.5	10	2.5	38
107-4d3.00	3.0	15	3.0	38
107-4d3.50	3.5	15	3.5	38
107-4d4.00	4.0	18	4.0	51
107-4d4.50	4.5	18	4.5	51
107-4d5.00	5.0	18	5.0	51
107-4d5.50	5.5	18	5.5	51
107-4d6.00	6.0	18	6.0	51
107-4d6.50	6.5	22	6.5	51
107-4d7.00	7.0	22	7.0	61
107-4d7.50	7.5	22	7.5	61
107-4d8.00	8.0	22	8.0	61
107-4d8.50	8.5	22	8.5	61
107-4d9.00	9.0	25	9.0	61
107-4d9.50	9.5	25	9.5	61
107-4d10.00	10.0	25	10.0	72
107-4d10.50	10.5	25	10.5	72
107-4d11.00	11.0	30	11.0	72
107-4d11.50	11.5	30	11.5	72
107-4d12.00	12.0	30	12.0	83
107-4d12.50	12.5	30	12.5	83
107-4d13.00	13.0	35	13.0	83
107-4d14.00	14.0	35	14.0	83
107-4d15.00	15.0	35	15.0	83
107-4d16.00	16.0	35	16.0	92
107-4d18.00	18.0	45	18.0	92
107-4d20.00	20.0	45	20.0	104

Z4



λ 30° γ 8-10°

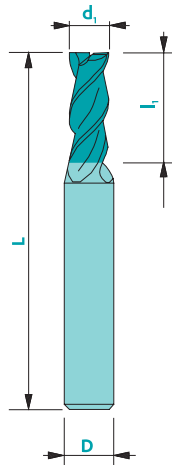
MG10 N



ae=0.5xd₁
ap=0.5xd₁

3000

HSC end mill for stainless steel - sharp edge



Available uncoated or coated (see page 61)

Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	-	-	-	-	-
Steel > 700 N/mm ²	-	-	-	-	-
Stainless steel	50	70	□	■	Trio
Cast iron	-	-	-	-	-
Copper	-	-	-	-	-
Brass - Bronze	-	-	-	-	-
Aluminium	-	-	-	-	-
Gold - Silver	-	-	-	-	-
Platinum - Palladium	-	-	-	-	-
Superalloys	-	-	-	-	-
Titanium	-	-	-	-	-

not adapted - adapted □ highly adapted ■

Tolerances $d_1 \leq 1 \text{ mm}$ ▶ +0/-0.01 $D: h5$
 $d_1 > 1 \text{ mm}$ ▶ +0/-0.02
 $d_1 = D$ ▶ $d_1: e8$

Z2-3

42°

14°

SUB-CARFINE

N HSC

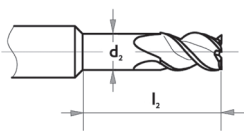
$ap = 0.8 \times d_1$

$ae = 0.04 \times d_1$
 $ap = 1 \times d_1$

Art. n°	d_1	L_1	D	L	Z
3000d0.30	0.3	0.6	6	57	2
3000d0.40	0.4	0.8	6	57	2
3000d0.50	0.5	1.0	6	57	2
3000d0.60	0.6	1.2	6	57	2
3000d0.70	0.7	1.4	6	57	2
3000d0.80	0.8	1.6	6	57	2
3000d0.90	0.9	1.8	6	57	2
3000d1.00	1.0	2.0	6	57	2
3000d1.10	1.1	2.2	6	57	2
3000d1.20	1.2	2.4	6	57	2
3000d1.30	1.3	2.6	6	57	2
3000d1.40	1.4	2.8	6	57	2
3000d1.50	1.5	3.0	6	57	2
3000d1.60	1.6	3.2	6	57	2
3000d1.70	1.7	3.4	6	57	2
3000d1.80	1.8	3.6	6	57	2
3000d1.90	1.9	3.8	6	57	2
3000d2.00	2.0	4.0	6	57	3
3000d2.10	2.1	4.2	6	57	3
3000d2.20	2.2	4.4	6	57	3
3000d2.30	2.3	4.6	6	57	3
3000d2.40	2.4	4.8	6	57	3
3000d2.50	2.5	5.0	6	57	3
3000d3.00	3.0	6.0	6	57	3
3000d3.50	3.5	7.0	6	57	3
3000d4.00	4.0	8.0	6	57	3

Art. n°	d_1	L_1	D	L	Z
3000d5.00	5.0	10.0	6	57	3
3000d6.00	6.0	12.0	8	63	3
3000d8.00	8.0	16.0	10	72	3
3000d10.00	10.0	20.0	10	72	3

Upon request



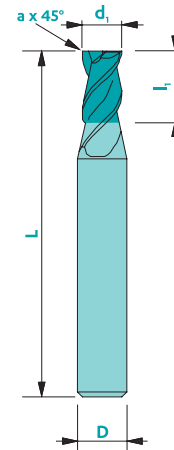
HSC end mill for stainless steel - corner angle

3010

Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	-	-	-	-	-
Steel > 700 N/mm ²	-	-	-	-	-
Stainless steel	50	70	□	■	Trio
Cast iron	-	-	-	-	-
Copper	-	-	-	-	-
Brass - Bronze	-	-	-	-	-
Aluminium	-	-	-	-	-
Gold - Silver	-	-	-	-	-
Platinum - Palladium	-	-	-	-	-
Superalloys	-	-	-	-	-
Titanium	-	-	-	-	-

not adapted - adapted □ highly adapted ■

Tolerances $d_1 \leq 1 \text{ mm}$ ▶ +0/-0.01 $D: h5$
 $d_1 > 1 \text{ mm}$ ▶ +0/-0.02
 $d_1 = D$ ▶ $d_1: e8$



Available uncoated or coated (see page 61)

Art. n°	d_1	l_1	D	L	a	Z
3010d0.50	0.5	0.75	6	57	0.02	2
3010d0.60	0.6	0.90	6	57	0.02	2
3010d0.70	0.7	1.05	6	57	0.02	2
3010d0.80	0.8	1.20	6	57	0.03	2
3010d0.90	0.9	1.35	6	57	0.03	2
3010d1.00	1.0	1.50	6	57	0.03	2
3010d1.50	1.5	2.30	6	57	0.03	2
3010d2.00	2.0	3.00	6	57	0.03	3
3010d2.50	2.5	3.80	6	57	0.05	3
3010d3.00	3.0	4.50	6	57	0.06	3
3010d4.00	4.0	6.00	6	57	0.06	3
3010d5.00	5.0	8.00	6	57	0.08	3
3010d6.00	6.0	9.00	8	63	0.08	3
3010d8.00	8.0	12.00	10	72	0.10	3
3010d10.00	10.0	15.00	10	72	0.10	4
3010d12.00	12.0	18.00	12	83	0.15	4

45°
0.02-0.15

Z2-4



λ
42°

γ
14°

SUB-CARFINE

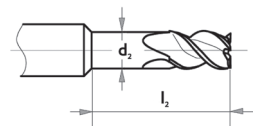
N HSC



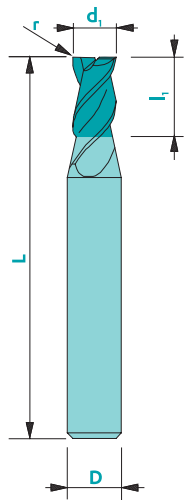
$a_p = 0.8 \times d_1$

$a_e = 0.04 \times d_1$
 $a_p = 1 \times d_1$

Upon request



HSC end mill for stainless steel - toric



Available uncoated or coated (see page 61)

Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	-	-	-	-	-
Steel > 700 N/mm ²	-	-	-	-	-
Stainless steel	50	70	□	■	Trio
Cast iron	-	-	-	-	-
Copper	-	-	-	-	-
Brass - Bronze	-	-	-	-	-
Aluminium	-	-	-	-	-
Gold - Silver	-	-	-	-	-
Platinum - Palladium	-	-	-	-	-
Superalloys	-	-	-	-	-
Titanium	-	-	-	-	-

not adapted - adapted □ highly adapted ■

Tolerances $d_1 \leq 1 \text{ mm} \rightarrow +0/-0.01$ $D: h5$
 $d_1 > 1 \text{ mm} \rightarrow +0/-0.02$ $\text{C} \rightarrow +0/-0.01$
 $d_1 = D \rightarrow d_1: e8$

Art. n°	d_1	l_1	D	L	r	Z
3020d1.00	1.0	1.5	6	57	0.10	3
3020d1.50	1.5	2.3	6	57	0.10	3
3020d2.00	2.0	3.0	6	57	0.15	3
3020d2.50	2.5	3.8	6	57	0.15	3
3020d2.80	2.8	4.2	6	57	0.15	3
3020d3.00	3.0	4.5	6	57	0.15	3
3020d3.50	3.5	5.3	6	57	0.20	3
3020d4.00	4.0	6.0	6	57	0.20	3
3020d4.50	4.5	7.0	6	57	0.20	3
3020d5.00	5.0	8.0	6	57	0.20	3
3020d6.00	6.0	9.0	8	63	0.20	3
3020d8.00	8.0	12.0	10	72	0.30	3
3020d10.00	10.0	15.0	10	72	0.30	4
3020d12.00	12.0	18.0	12	83	0.30	4
3020d16.00	16.0	24.0	16	92	0.30	5

0.10-0.30

Z3-5

λ

42°

γ

14°

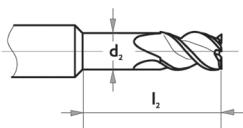
SUB-CARFINE

N HSC

$ap=0.8 \times d_1$

$ae=0.04 \times d_1$
 $ap=1 \times d_1$

Upon request



HSC EXPERT end mill titanium

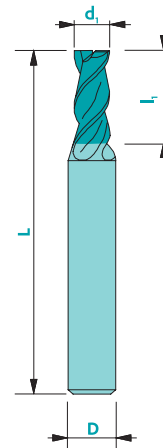


3100

Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	-	-	-	-	-
Steel > 700 N/mm ²	-	-	-	-	-
Stainless steel	-	-	-	-	-
Cast iron	-	-	-	-	-
Copper	-	-	-	-	-
Brass - Bronze	-	-	-	-	-
Aluminium	-	-	-	-	-
Gold - Silver	-	-	-	-	-
Platinum - Palladium	-	-	-	-	-
Superalloys	-	-	-	-	-
Titanium	40	60	■	■	Rico

not adapted - adapted □ highly adapted ■

Tolerances $d_1 \leq 1 \text{ mm}$ ▶ +0/-0.01 $D: h5$
 $d_1 > 1 \text{ mm}$ ▶ +0/-0.02
 $d_1 = D$ ▶ $d_1: e8$



Available uncoated or coated (see page 61)

Art. n°	d_1	l_1	D	L	Z
3100d0.50	0.5	1.0	6	57	3
3100d0.60	0.6	1.2	6	57	3
3100d0.70	0.7	1.4	6	57	3
3100d0.80	0.8	1.6	6	57	3
3100d0.90	0.9	1.8	6	57	3
3100d1.00	1.0	2.0	6	57	3
3100d1.10	1.1	2.2	6	57	3
3100d1.20	1.2	2.4	6	57	3
3100d1.30	1.3	2.6	6	57	3
3100d1.40	1.4	2.8	6	57	3
3100d1.50	1.5	3.0	6	57	3
3100d1.60	1.6	3.2	6	57	3
3100d1.70	1.7	3.4	6	57	3
3100d1.80	1.8	3.6	6	57	3
3100d1.90	1.9	3.8	6	57	3
3100d2.00	2.0	4.0	6	57	3
3100d2.10	2.1	4.2	6	57	3
3100d2.20	2.2	4.4	6	57	3
3100d2.30	2.3	4.6	6	57	3
3100d2.40	2.4	4.8	6	57	3
3100d2.50	2.5	5.0	6	57	3
3100d2.60	2.6	5.2	6	57	3
3100d2.70	2.7	5.4	6	57	3
3100d2.80	2.8	5.6	6	57	3
3100d2.90	2.9	5.8	6	57	3
3100d3.00	3.0	6.0	6	57	3

Art. n°	d_1	l_1	D	L	Z
3100d3.50	3.5	7.0	6	57	3
3100d4.00	4.0	8.0	6	57	3
3100d5.00	5.0	10.0	6	57	3
3100d6.00	6.0	12.0	8	63	3
3100d8.00	8.0	16.0	8	63	3
3100d10.00	10.0	20.0	10	72	4
3100d12.00	12.0	24.0	12	83	4

Z3-4



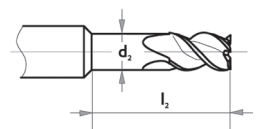
λ 45° γ 8°

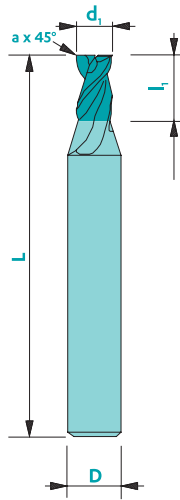
SUB-CARFINE N HSC



$ap=1x d_1$ $ae=0.10x d_1$
 $ap=1x d_1$

Upon request





Available uncoated or coated (see page 61)

Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	-	-	-	-	-
Steel > 700 N/mm ²	-	-	-	-	-
Stainless steel	-	-	-	-	-
Cast iron	-	-	-	-	-
Copper	170	500	□	■	Solo
Brass - Bronze	160	500	□	■	Solo
Aluminium	280	600	□	■	Solo
Gold - Silver	160	300	□	■	Solo
Platinum - Palladium	-	-	-	-	-
Superalloys	300	800	□	■	Trio
Titanium	-	-	-	-	-

not adapted - adapted □ highly adapted ■

Tolerances $d_1 \leq 1 \text{ mm} \rightarrow +0/-0.01$ D: h5
 $d_1 > 1 \text{ mm} \rightarrow +0/-0.02$
 $d_1 = D \rightarrow d_1: e8$

Z2
0.03-0.15

λ 40°

Y 25°

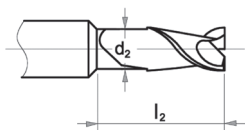
SUB-CARFINE

N HSC

$ap=0.5d_1$ $ae=0.15d_1$
 $ap=1.5d_1$

Art. n°	d_1	l_1	D	L	a
3200d0.50	0.5	1.0	6	57	0.03
3200d1.00	1.0	2.0	6	57	0.03
3200d1.50	1.5	3.0	6	57	0.04
3200d2.00	2.0	4.0	6	57	0.04
3200d2.50	2.5	5.0	6	57	0.04
3200d3.00	3.0	6.0	6	57	0.04
3200d3.50	3.5	7.0	6	57	0.05
3200d4.00	4.0	8.0	6	57	0.05
3200d5.00	5.0	10.0	6	57	0.05
3200d6.00	6.0	12.0	6	57	0.07
3200d8.00	8.0	16.0	8	63	0.07
3200d10.00	10.0	20.0	10	72	0.10
3200d12.00	12.0	24.0	12	83	0.15

Upon request



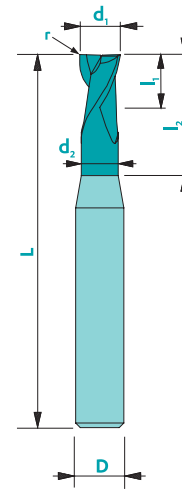
HSC end mill for copper, alloys and precious metals - toric

3210

Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	-	-	-	-	-
Steel > 700 N/mm ²	-	-	-	-	-
Stainless steel	-	-	-	-	-
Cast iron	-	-	-	-	-
Copper	170	500	☐	■	Solo
Brass - Bronze	160	500	☐	■	Solo
Aluminium	280	600	☐	■	Solo
Gold - Silver	160	300	☐	■	Solo
Platinum - Palladium	-	-	-	-	-
Superalloys	300	800	☐	■	Trio
Titanium	-	-	-	-	-

not adapted - adapted ☐ highly adapted ■

Tolerances $d_1 \leq 1 \text{ mm}$ ▶ +0/-0.01
 $d_1 > 1 \text{ mm}$ ▶ +0/-0.02
 $d_1 = D$ ▶ $d_1: e8$
 $d_2: +0/-0.2$
 $l_2: +/- 0.2$
 D: h5
 0.01



Available uncoated or coated (see page 61)

Art. n°	d_1	l_1	d_2	l_2	D	L	r
3210d1.00	1.0	1.0	0.95	3.0	6	57	0.20
3210d1.50	1.5	1.5	1.45	5.0	6	57	0.25
3210d2.00	2.0	3.0	1.95	6.0	6	57	0.30
3210d2.50	2.5	3.0	2.45	7.0	6	57	0.30
3210d3.00	3.0	4.0	2.80	9.0	6	57	0.50
3210d3.50	3.5	4.0	3.30	12.0	6	57	0.50
3210d4.00	4.0	5.0	3.70	13.5	6	57	0.50
3210d5.00	5.0	6.0	4.60	15.0	6	57	0.50
3210d6.00	6.0	7.0	5.50	20.0	6	57	1.00
3210d8.00	8.0	9.0	7.40	26.0	8	63	1.00
3210d10.00	10.0	11.0	9.20	31.0	10	72	1.50
3210d12.00	12.0	13.0	11.00	37.0	12	83	1.50



Z2



λ 30°



γ 15°

SUB-CARFINE

N HSC

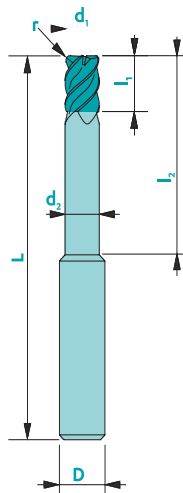


$ap=0.2xd_1$



$ae=0.02xd_1$
 $ap=1xd_1$

HSC end mill for steel ≤ 65 HRC - toric



Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	-	-	-	-	-
Steel > 700 N/mm ²	-	-	-	-	-
Stainless steel	-	-	-	-	-
Cast iron	50	170	□	■	Trio
Tempered steel	50	170	□	■	Sumo
Copper	-	-	-	-	-
Brass - Bronze	-	-	-	-	-
Aluminium	-	-	-	-	-
Gold - Silver	-	-	-	-	-
Platinum - Palladium	-	-	-	-	-
Superalloys	-	-	-	-	-
Titanium	-	-	-	-	-

not adapted - adapted □ highly adapted ■

Tolerances $d_1 \leq 1 \text{ mm} \rightarrow +0/-0.01$ $D: h5$
 $d_1 > 1 \text{ mm} \rightarrow +0/-0.02$ $\text{C} \text{ } 0.01$
 $d_1 = D \rightarrow d_1: e8$

Available uncoated or coated (see page 61)



Z4

0.10-3.00



λ
50°

γ
-10°

SUB-CARFINE

N HSC



$ap=0.2x d_1$

$ae=0.2x d_1$
 $ap=1x d_1$

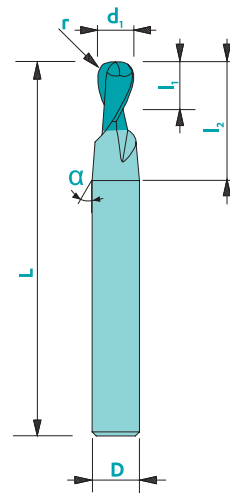
Art. n°	d_1	l_1	d_2	l_2	D	L	r
3310d1.00r0.10	1.0	1.5	0.95	6.0	6	57	0.10
3310d1.50r0.10	1.5	2.2	1.45	8.0	6	57	0.10
3310d2.00r0.10	2.0	3.0	1.95	10.0	6	57	0.10
3310d3.00r0.15	3.0	4.5	2.90	16.0	6	57	0.15
3310d3.50r0.15	3.5	5.2	3.30	18.0	6	57	0.15
3310d4.00r0.25	4.0	6.0	3.70	20.0	6	57	0.25
3310d4.50r0.25	4.5	6.7	4.20	20.0	6	57	0.25
3310d5.00r0.25	5.0	7.5	4.60	26.0	6	57	0.25
3310d6.00r0.50	6.0	9.0	5.50	32.0	8	63	0.50
3310d6.00r0.80	6.0	9.0	5.50	32.0	8	63	0.80
3310d6.00r1.00	6.0	9.0	5.50	32.0	8	63	1.00
3310d6.00r1.50	6.0	9.0	5.50	32.0	8	63	1.50
3310d8.00r0.50	8.0	12.0	7.40	32.0	8	63	0.50
3310d8.00r1.00	8.0	12.0	7.40	32.0	8	63	1.00
3310d8.00r1.50	8.0	12.0	7.40	32.0	8	63	1.50
3310d8.00r2.00	8.0	12.0	7.40	32.0	8	63	2.00
3310d10.00r1.00	10.0	15.0	9.20	40.0	10	72	1.00
3310d10.00r1.50	10.0	15.0	9.20	40.0	10	72	1.50
3310d10.00r2.00	10.0	15.0	9.20	40.0	10	72	2.00
3310d10.00r2.50	10.0	15.0	9.20	40.0	10	72	2.50
3310d12.00r1.00	12.0	18.0	11.00	40.0	12	83	1.00
3310d12.00r1.50	12.0	18.0	11.00	40.0	12	83	1.50
3310d12.00r2.00	12.0	18.0	11.00	40.0	12	83	2.00
3310d12.00r3.00	12.0	18.0	11.00	40.0	12	83	3.00

HSC end mill for structural steel with ball end

3320

Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	140	200	☐	■	Trio
Steel > 700 N/mm ²	120	190	☐	■	Trio
Stainless steel	-	-	-	-	-
Cast iron	50	170	☐	■	Trio
Copper	-	-	-	-	-
Brass - Bronze	-	-	-	-	-
Aluminium	-	-	-	-	-
Gold - Silver	-	-	-	-	-
Platinum - Palladium	-	-	-	-	-
Superalloys	-	-	-	-	-
Titanium	-	-	-	-	-

Tolerances $d_1 \leq 1 \text{ mm}$ ▶ +0/-0.01 $D: h5$
 $d_1 > 1 \text{ mm}$ ▶ +0/-0.02 $\text{C} 0.01$
 $d_1 = D$ ▶ $d_1: e8$
 not adapted - adapted ☐ highly adapted ■



Available uncoated or coated (see page 61)

Art. n°	d_1	l_1	l_2	D	L	r	α
3320d1.00	1.0	1.5	6.0	6	57	0.50	13°
3320d1.50	1.5	2.2	6.0	6	57	0.75	13°
3320d2.00	2.0	3.0	6.5	6	57	1.00	13°
3320d2.50	2.5	3.7	6.5	6	57	1.25	13°
3320d3.00	3.0	4.5	7.0	6	57	1.50	13°
3320d3.50	3.5	5.2	10.5	6	57	1.75	13°
3320d4.00	4.0	6.0	10.5	6	57	2.00	13°
3320d4.50	4.5	6.7	14.0	6	57	2.25	13°
3320d5.00	5.0	7.5	14.0	6	57	2.50	13°
3320d6.00	6.0	9.0	20.0	8	63	3.00	5°
3320d8.00	8.0	12.0	-	8	63	4.00	-
3320d10.00	10.0	15.0	-	10	72	5.00	-
3320d12.00	12.0	18.0	-	12	83	6.00	-



Z2



λ
30°

γ
5°

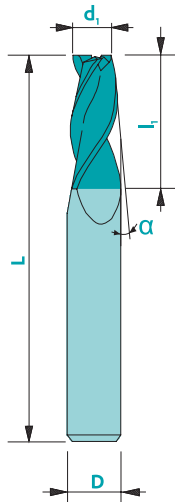
SUB-CARFINE

N
HSC



$ae=0.3xd_1$
 $ap=0.1xd_1$

Conical end mill



Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	100	130	□	■	Trio
Steel > 700 N/mm ²	80	100	-	■	Trio
Stainless steel	50	70	□	■	Trio
Cast iron	60	100	□	■	Nemo
Copper	130	160	□	■	Solo
Brass - Bronze	140	190	■	□	Solo
Aluminium	200	350	□	■	Solo
Gold - Silver	140	180	■	■	Solo
Platinum - Palladium	-	35	-	□	Solo
Superalloys	-	40	-	■	Trio
Titanium	40	60	■	■	Rico

not adapted - adapted □ highly adapted ■

Tolerances d_1 : +/-0.01
D: h5

Available uncoated or coated (see page 61)

Z3-4

MG10

N

Art. n°	d_1 min	l_1 max	D	L
112d6.00Z#	5.0	18.0	6	51
112d8.00Z#	6.0	22.0	8	61
112d10.00Z#	8.0	25.0	10	72
112d12.00Z#	10.0	30.0	12	83
112d14.00Z#	11.0	30.0	14	83
112d15.00Z#	12.0	35.0	15	83
112d16.00Z#	13.0	35.0	16	92

$ap=0.25x d_1$ $ae=0.5x d_1$
 $ap=0.5x d_1$

Order Quotation request

Dimensions : d_1 : _____ D: _____ l_1 : _____ L: _____	Angle (α) : <input type="checkbox"/> 1/2° <input type="checkbox"/> 1° <input type="checkbox"/> 2° <input type="checkbox"/> 5° <input type="checkbox"/> Others: _____	Cut : <input type="checkbox"/> right cut <input type="checkbox"/> left cut	Coating : <input type="checkbox"/> Uncoated <input type="checkbox"/> Coated*: _____
Machined material : _____		Quantity : _____	Order No : _____
Company's stamp & date : _____			Contact person : _____

Standard dimensions of the bars : \emptyset 3x L 38, \emptyset 4x L 38, \emptyset 6x L 38, \emptyset 6x L 51, \emptyset 8x L 61, \emptyset 10x L 72, \emptyset 12x L 83, \emptyset 16x L 92, \emptyset 20x L 104

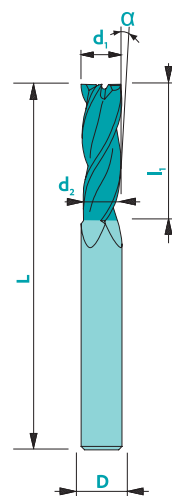
* Without information, the most suitable Coating will be applied.

Conical end mill

Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	100	130	☐	■	Trio
Steel > 700 N/mm ²	80	100	-	■	Trio
Stainless steel	50	70	☐	■	Trio
Cast iron	60	100	☐	■	Nemo
Copper	130	160	☐	■	Solo
Brass - Bronze	140	190	■	☐	Solo
Aluminium	200	350	☐	■	Solo
Gold - Silver	140	180	■	■	Solo
Platinum - Palladium	-	35	-	☐	Solo
Superalloys	-	40	-	■	Trio
Titanium	40	60	■	■	Rico

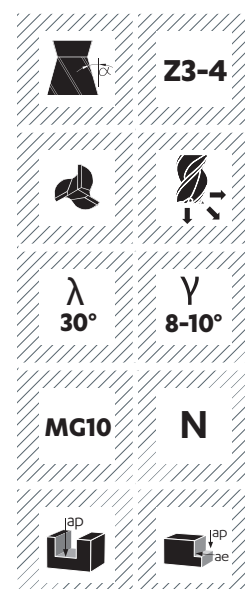
not adapted - adapted ☐ highly adapted ■

Tolerances d_1 : -0.05/-0.10
D: h5



Available uncoated or coated (see page 61)

Art. n°	d_1	l_{1max}	d_{2min}	D	L
112-1d6.00Z#	6.0	18.0	5.0	6	51
112-1d8.00Z#	8.0	22.0	6.0	8	61
112-1d10.00Z#	10.0	25.0	8.0	10	72
112-1d12.00Z#	12.0	30.0	10.0	12	83
112-1d14.00Z#	14.0	30.0	11.0	14	83
112-1d16.00Z#	16.0	35.0	13.0	16	92



$ap=0.25xd_1$

$ae=0.5xd_1$
 $ap=0.5xd_1$

Order Quotation request

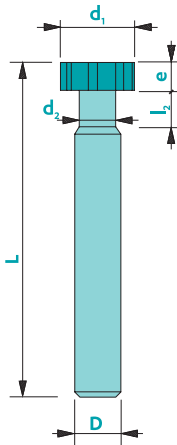
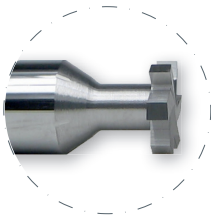
Dimensions : d_1 : _____ D: _____ l_1 : _____ L: _____		Angle (α): <input type="checkbox"/> 1/2° <input type="checkbox"/> 1° <input type="checkbox"/> 2° <input type="checkbox"/> 5° <input type="checkbox"/> Others: _____		Cut : <input type="checkbox"/> right cut <input type="checkbox"/> left cut		Coating : <input type="checkbox"/> Uncoated <input type="checkbox"/> Coated*: _____	
Machined material : _____			Quantity : _____		Order No : _____		
Company's stamp & date : _____					Contact person : _____		

Standard dimensions of the bars :

Ø 3x L 38, Ø 4x L 38, Ø 6x L 38, Ø 6x L 51, Ø 8x L 61, Ø 10x L 72, Ø 12x L 83, Ø 16x L 92, Ø 20x L 104

* Without information, the most suitable Coating will be applied.

T-slot cutters straight toothing - 2 cuts



Available uncoated or coated (see page 61)

Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	100	130	□	■	Trio
Steel > 700 N/mm ²	80	100	-	■	Trio
Stainless steel	50	70	□	■	Trio
Cast iron	60	100	□	■	Nemo
Copper	130	160	□	■	Solo
Brass - Bronze	140	190	■	□	Solo
Aluminium	200	350	□	■	Solo
Gold - Silver	140	180	■	■	Solo
Platinum - Palladium	-	35	-	□	Solo
Superalloys	-	40	-	■	Trio
Titanium	40	60	■	■	Rico

not adapted - adapted □ highly adapted ■

Tolerances $d_1 < D \triangleright d_1: +0/-0.02$ $l_2: +0.2/-0$ $D: h5$
 $d_1 > D \triangleright d_1: +0/-0.02$ $d_2: +0/-0.5$
 $d_1 = D \triangleright d_1: e8$ $e: +0.01/-0.01$

Z3-36

MG10 **N**

λ **0°** γ **6-15°**

Art. n°	d ₁	e*	d ₂	l ₂	D	L	Z gold	Z stainless	Z brass
117d1.00e#.#Z#	1.0	0.2-0.6	0.5	1	3	38	3	5	5
117d2.00e#.#Z#	2.0	0.2-1.0	1.0	2	4	38	3	5	6
117d3.00e#.#Z#	3.0	0.2-1.5	1.5	2	4	38	3	5	6
117d4.00e#.#Z#	4.0	0.2-1.5	2.5	3	4	38	3	5	6
117d5.00e#.#Z#	5.0	0.5-1.5	3.0	3	5	38	3	5	6
117d6.00e#.#Z#	6.0	0.5-2.5	3.5	4	6	38	4	6	8
117d8.00e#.#Z#	8.0	0.5-3.0	4.0	5	8	51	4-5	8	10
117d10.00e#.#Z#	10.0	0.5-4.0	5.0	5	10	51	4-5	10	12
117d12.00e#.#Z#	12.0	0.5-4.0	6.0	6	10	51	5-6	12-14	16
117d15.00e#.#Z#	15.0	0.5-5.0	8.0	8	10	61	5-8	14-16	18
117d16.00e#.#Z#	16.0	0.5-2.9	8.0	8	10	61	5-8	16-18	20
117d16.00e#.#Z#	16.0	3.0-6.0	8.0	8	10	61	5-8	16-18	20
117d18.00e#.#Z#	18.0	0.5-2.9	8.0	8	10	61	6-10	18-20	24
117d18.00e#.#Z#	18.0	3.0-6.0	8.0	8	10	61	6-10	18-20	24
117d20.00e#.#Z#	20.0	0.5-2.9	8.0	8	10	61	6-12	20-22	24
117d20.00e#.#Z#	20.0	3.0-6.0	8.0	8	10	61	6-12	20-22	24
117d25.00e#.#Z#	25.0	0.5-3.9	8.0	8	10	61	8-16	24-28	32
117d25.00e#.#Z#	25.0	4.0-8.0	8.0	8	10	61	8-16	24-28	32
117d30.00e#.#Z#	30.0	0.5-3.9	8.0	8	10	61	10-20	30-34	36
117d30.00e#.#Z#	30.0	4.0-8.0	8.0	8	10	61	10-20	30-34	36

* e : available thickness: every 0.1 mm
 ** Z : even number only

T-slot cutters straight toothing - 2 cuts

117

Continuation

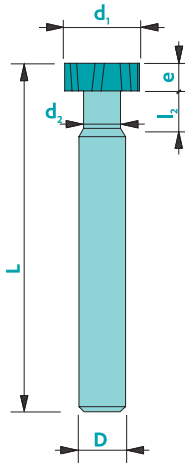
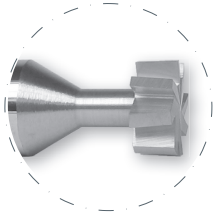


<input type="checkbox"/> Order		<input type="checkbox"/> Quotation request	
Dimensions : d ₁ : _____ e : _____ d ₂ : _____ l ₂ : _____ D : _____ L : _____ Z : _____		Coating : <input type="checkbox"/> Uncoated <input type="checkbox"/> Coated* : _____	
Cut : <input type="checkbox"/> right cut <input type="checkbox"/> left cut	Machined material : _____	Quantity : _____	Order No. : _____
Company's stamp & date : _____		Contact person : _____	

	Z3-36
λ 0°	γ 6-15°
MG10	N

* Without information, the most suitable coating will be applied.

T-slot cutters staggered teeth - 2 cuts



Available uncoated or coated (see page 61)

Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	100	130	□	■	Trio
Steel > 700 N/mm ²	80	100	-	■	Trio
Stainless steel	50	70	□	■	Trio
Cast iron	60	100	□	■	Nemo
Copper	130	160	□	■	Solo
Brass - Bronze	140	190	■	□	Solo
Aluminium	200	350	□	■	Solo
Gold - Silver	140	180	■	■	Solo
Platinum - Palladium	-	35	-	□	Solo
Superalloys	-	40	-	■	Trio
Titanium	40	60	■	■	Rico

not adapted - adapted □ highly adapted ■

Tolerances $d_1 < D \triangleright d_1: +0/-0.02$ $l_2: +0.2/-0$ $D: h5$
 $d_1 > D \triangleright d_1: +0/-0.02$ $d_2: +0/-0.5$
 $d_1 = D \triangleright d_1: e8$ $e: +0.01/-0.01$

Z4-28

ALT

MG10

Y
6-15°

N

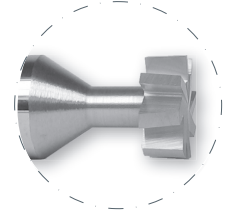
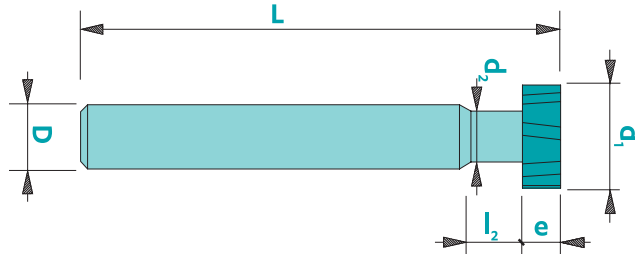
Art. n°	d ₁	e*	d ₂	l ₂	D	L	Z** gold	Z** stainless	Z** Brass
117-1d2.00e#.#Z#	2.0	0.2 - 1.0	1.0	2.0	3	38	4	4	4
117-1d3.00e#.#Z#	3.0	0.2 - 2.0	1.5	3.0	3	38	4	6	6/8
117-1d3.50e#.#Z#	3.5	0.2 - 2.0	1.5	3.0	3	38	4	6	6/8
117-1d4.00e#.#Z#	4.0	0.5 - 3.0	2.5	3.0	4	38	4	6	6/8
117-1d4.50e#.#Z#	4.5	0.5 - 3.0	2.5	3.0	5	38	4	6	6/8
117-1d5.00e#.#Z#	5.0	0.5 - 3.0	3.0	3.0	5	38	4	6	6/8
117-1d6.00e#.#Z#	6.0	0.5 - 3.0	3.5	4.0	6	38	4	6	6/8
117-1d8.00e#.#Z#	8.0	1.0 - 4.0	4.0	5.0	8	51	4	6/8	8/10
117-1d10.00e#.#Z#	10.0	1.0 - 4.0	5.0	5.0	10	51	4/6	8/10	10/12
117-1d12.00e#.#Z#	12.0	1.0 - 5.0	6.0	6.0	10	51	4/6	8/10	12
117-1d15.00e#.#Z#	15.0	1.5 - 6.0	8.0	8.0	10	61	6/8	12/14	16
117-1d16.00e#.#Z#	16.0	1.5 - 3.9	8.0	8.0	10	61	6/8	12/14	16
117-1d16.00e#.#Z#	16.0	4.0 - 6.0	8.0	8.0	10	61	6/8	12/14	16
117-1d18.00e#.#Z#	18.0	1.5 - 3.9	8.0	8.0	10	61	6/8/10	14/16	18
117-1d18.00e#.#Z#	18.0	4.0 - 6.0	8.0	8.0	10	61	6/8/10	14/16	18
117-1d20.00e#.#Z#	20.0	1.5 - 3.9	8.0	8.0	10	61	6/8/10/12	16/18/20	22
117-1d20.00e#.#Z#	20.0	4.0 - 6.0	8.0	8.0	10	61	6/8/10/12	16/18/20	22
117-1d25.00e#.#Z#	25.0	1.5 - 4.9	8.0	8.0	10	61	8/10/12/14	20/22/24	28
117-1d25.00e#.#Z#	25.0	5.0 - 10.0	8.0	8.0	10	61	8/10/12/14	20/22/24	28

* e : available thickness: every 0.1 mm
 ** Z: even number only

T-slot cutters staggered teeth - 2 cuts

117-1

Continuation

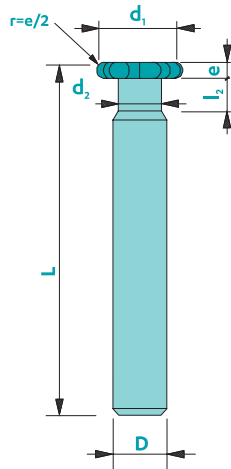
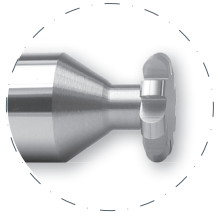


<input type="checkbox"/> Order		<input type="checkbox"/> Quotation request	
Dimensions : d ₁ : _____ e: _____ d ₂ : _____ l ₂ : _____ D: _____ L: _____ Z: _____		Coating : <input type="checkbox"/> Uncoated <input type="checkbox"/> Coated*: _____	
Cut : <input type="checkbox"/> right cut <input type="checkbox"/> left cut	Machined material : _____	Quantity : _____	Order No. : _____
Company's stamp & date : _____		Contact person : _____	

	Z4-32
λ ALT	Y 6-15°
MG10	N

* Without information, the most suitable coating will be applied.

T-slot cutter with convex radius



Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	100	130	□	■	Trio
Steel > 700 N/mm ²	80	100	-	■	Trio
Stainless steel	50	70	□	■	Trio
Cast iron	60	100	□	■	Nemo
Copper	130	160	□	■	Solo
Brass - Bronze	140	190	■	□	Solo
Aluminium	200	350	□	■	Solo
Gold - Silver	140	180	■	■	Solo
Platinum - Palladium	-	35	-	□	Solo
Superalloys	-	40	-	■	Trio
Titanium	40	60	■	■	Rico

not adapted - adapted □ highly adapted ■

Tolerances
 $d_1 < D \triangleright d_1: +0/-0.03$
 $d_1 = D \triangleright d_1: -0.05/-0.10$
 $l_2: +0.2/-0$
 $d_2: +0/-0.5$

$e: \pm 0.01$
 $\curvearrowright: +0.01/-0.01$
 $D: h5$

Available uncoated or coated (see page 61)

Z4-12

MG10

N

λ
0°

γ
6-15°

Art. n°	d ₁	r*	e**	d ₂	l ₂	D	L	Z
117-2d4.00e###	4.0	0.20 - 0.75	0.4 - 1.5	1.5	3.0	4	38	4
117-2d6.00e###	6.0	0.25 - 1.00	0.5 - 2.0	3.0	3.5	6	38	6
117-2d8.00e###	8.0	0.50 - 1.50	1.0 - 3.0	4.0	4.0	8	51	6
117-2d10.00e###	10.0	0.50 - 2.00	1.0 - 4.0	5.0	5.0	10	51	8
117-2d12.00e###	12.0	0.50 - 2.50	1.0 - 5.0	6.0	5.0	10	51	8
117-2d16.00e###	16.0	0.50 - 3.00	1.0 - 6.0	8.0	6.0	10	61	12

** e : available thickness: every 0.1 mm
 * r : available radius : every 0.05 mm

Order Quotation request

Dimensions : d ₁ : _____ e: _____ d ₂ : _____ l ₂ : _____ D: _____ L: _____ Z: _____ r: _____		Coating : <input type="checkbox"/> Uncoated <input type="checkbox"/> Coated* : _____	
Cut : <input type="checkbox"/> right cut <input type="checkbox"/> left cut	Machined material : _____	Quantity : _____	Order No : _____
Company's stamp & date : _____		Contact person : _____	

* Without information, the most suitable coating will be applied.

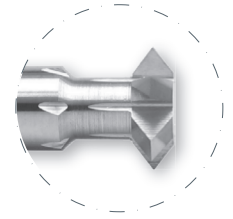
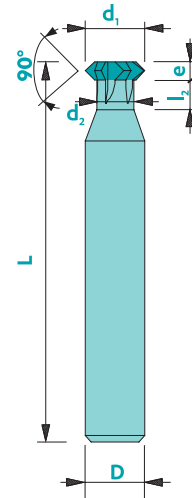
Double angle cutter 90° - T shape

117-3

Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	100	130	□	■	Trio
Steel > 700 N/mm ²	80	100	-	■	Trio
Stainless steel	50	70	□	■	Trio
Cast iron	60	100	□	■	Nemo
Copper	130	160	□	■	Solo
Brass - Bronze	140	190	■	□	Solo
Aluminium	200	350	□	■	Solo
Gold - Silver	140	180	■	■	Solo
Platinum - Palladium	-	35	-	□	Solo
Superalloys	-	40	-	■	Trio
Titanium	40	60	■	■	Rico

not adapted - adapted □ highly adapted ■

Tolerances $d_1 = D \triangleright 0.05/-0.10$ $d_2 \triangleright +0/-0.5$ $D: h5$
 $d_1 > D \triangleright +0/-0.02$ $e \triangleright +0.01/-0.01$
 $l_2: +0.2/-0$



Available uncoated or coated (see page 61)

Art. n°	d_1	e^*	d_2	l_2	D	L	Z
117-3d3.00e#.#	3.0	0.5 - 1.0	1.5	3	3	38	5
117-3d4.00e#.#	4.0	0.5 - 1.2	2.5	3	4	38	5
117-3d5.00e#.#	5.0	0.5 - 1.4	3.5	3	5	38	5
117-3d6.00e#.#	6.0	1.0 - 1.9	4.0	3	6	38	6
117-3d8.00e#.#	8.0	1.5 - 2.4	5.5	4	8	51	6
117-3d10.00e#.#	10.0	2.0 - 3.9	6.5	4	10	51	8
117-3d12.00e#.#	12.0	2.5 - 4.0	8.0	4	10	51	10
117-3d16.00e#.#	16.0	3.0 - 5.0	-	-	10	61	12

* e : available thickness: every 0.1 mm

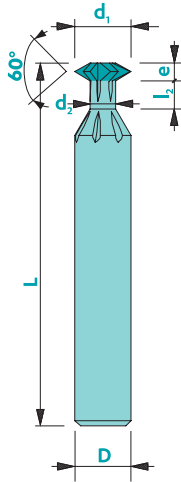
Z5-12
Y
λ 0°
6-15°
MG10 **N**

Order Quotation request

Dimensions : d_1 : _____ e : _____ d_2 : _____ l_2 : _____ D : _____ L : _____ Z : _____		Angle : <input type="checkbox"/> 90° <input type="checkbox"/> Others: _____		Coating : <input type="checkbox"/> Uncoated <input type="checkbox"/> Coated* : _____	
Cut : <input type="checkbox"/> right cut <input type="checkbox"/> left cut		Machined material : _____		Quantity : _____	
Company's stamp & date : _____				Contact person : _____	

* Without information, the most suitable coating will be applied.

Double angle cutter 60° - T shape



Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	100	130	□	■	Trio
Steel > 700 N/mm ²	80	100	-	■	Trio
Stainless steel	50	70	□	■	Trio
Cast iron	60	100	□	■	Nemo
Copper	130	160	□	■	Solo
Brass - Bronze	140	190	■	□	Solo
Aluminium	200	350	□	■	Solo
Gold - Silver	140	180	■	■	Solo
Platinum - Palladium	-	35	-	□	Solo
Superalloys	-	40	-	■	Trio
Titanium	40	60	■	■	Rico

not adapted - adapted □ highly adapted ■

Tolerances $d_1 = D \triangleright 0.05/-0.10$ $d_2 \quad +0/-0.5$ $D: h5$
 $d_1 > D \triangleright +0/-0.02$ $e \quad +0.01/-0.01$
 $l_2 \triangleright +0.2/-0$

Available uncoated or coated (see page 61)

Z5-12



λ
0°

γ
6-15°

MG10

N

Art. n°	d_1	e^*	d_2	l_2	D	L	Z
117-4d5.00e###	5.0	0.5 - 1.4	2.1	3	5	38	5
117-4d6.00e###	6.0	1.0 - 1.9	2.5	3	6	38	6
117-4d8.00e###	8.0	1.5 - 2.4	3.6	4	8	51	6
117-4d10.00e###	10.0	2.0 - 3.4	4.0	4	10	51	6
117-4d12.00e###	12.0	2.5 - 3.9	4.7	4	10	51	8
117-4d16.00e###	16.0	3.0 - 5.0	7.0	4	10	61	12

*e: available thickness: every 0.1 mm

Order Quotation request

Dimensions : d_1 : _____ e : _____ d_2 : _____ l_2 : _____ D : _____ L : _____ Z : _____		Coating : <input type="checkbox"/> Uncoated <input type="checkbox"/> Coated* : _____	
Cut : <input type="checkbox"/> right cut <input type="checkbox"/> left cut	Machined material : _____	Quantity : _____	Order No. : _____
Company's stamp & date : _____		Contact person : _____	

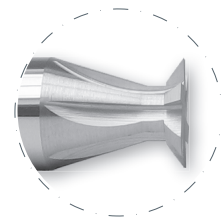
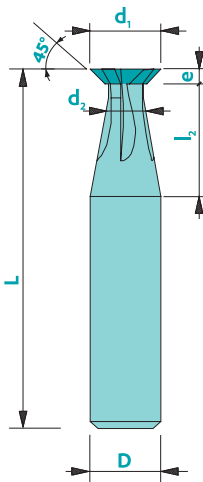
*Without information, the most suitable coating will be applied.

Dovetail cutter 45°

Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	100	130	☐	■	Trio
Steel > 700 N/mm ²	80	100	-	■	Trio
Stainless steel	50	70	☐	■	Trio
Cast iron	60	100	☐	■	Nemo
Copper	130	160	☐	■	Solo
Brass - Bronze	140	190	■	☐	Solo
Aluminium	200	350	☐	■	Solo
Gold - Silver	140	180	■	■	Solo
Platinum - Palladium	-	35	-	☐	Solo
Superalloys	-	40	-	■	Trio
Titanium	40	60	■	■	Rico

not adapted - adapted ☐ highly adapted ■

Tolerances $d_1 = D$ ▶ $d_1: -0.05/-0.10$ $D: h5$
 $d_1 <> D$ ▶ $d_1: +/- 0.03$



Available uncoated or coated (see page 61)

Art. n°	d_1	e^*	D	L	Z
118-1d1.00e###	1.0	0.15-0.30	3	38	3
118-1d1.50e###	1.5	0.25-0.40	3	38	3
118-1d2.00e###	2.0	0.30-0.50	3	38	5
118-1d3.00e###	3.0	0.50-0.75	3	38	5
118-1d4.00e###	4.0	0.75-1.25	4	38	5
118-1d5.00e###	5.0	1.00-1.50	5	38	5
118-1d6.00e###	6.0	1.00-2.00	6	38	5
118-1d8.00e###	8.0	1.50-2.50	8	51	5
118-1d10.00e###	10.0	2.00-3.50	10	51	5
118-1d12.00e###	12.0	2.50-4.00	12	51	5
118-1d15.00e###	15.0	3.00-5.00	10	61	5
118-1d20.00e###	20.0	4.00-7.00	10	61	6

* e : available thickness: every 0.05 mm

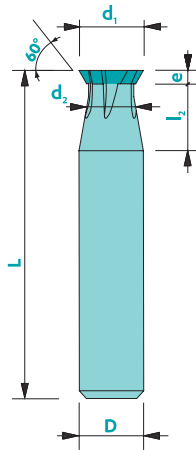
	Z3-6
λ 0°	
MG10	N

Order Quotation request

Dimensions : d_1 : _____ e : _____ D : _____ d_2 : _____ l_2 : _____ L : _____ Z : _____		Angle : <input type="checkbox"/> 45° <input type="checkbox"/> Other : _____	Coating : <input type="checkbox"/> Uncoated <input type="checkbox"/> Coated* : _____
Machined material : _____		Quantity : _____	Cut : <input type="checkbox"/> right cut <input type="checkbox"/> left cut
Company's stamp & date : _____			Order No : _____
			Contact person : _____

* Without information, the most suitable coating will be applied.

Dovetail cutter 60°



Available uncoated or coated (see page 61)

Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	100	130	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Trio
Steel > 700 N/mm ²	80	100	-	<input checked="" type="checkbox"/>	Trio
Stainless steel	50	70	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Trio
Cast iron	60	100	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Nemo
Copper	130	160	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Solo
Brass - Bronze	140	190	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Solo
Aluminium	200	350	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Solo
Gold - Silver	140	180	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Solo
Platinum - Palladium	-	35	-	<input type="checkbox"/>	Solo
Superalloys	-	40	-	<input checked="" type="checkbox"/>	Trio
Titanium	40	60	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Rico

not adapted - adapted highly adapted

Tolerances $d_1 = D$ ▶ $d_1: -0.05/-0.10$ $D: h5$
 $d_1 <> D$ ▶ $d_1: +/- 0.03$

Art. n°	d_1	e^*	D	L	Z
118-2d1.00e#.#	1.0	0.10-0.30	3	38	3
118-2d1.50e#.#	1.5	0.15-0.50	3	38	3
118-2d2.00e#.#	2.0	0.40-0.75	3	38	5
118-2d3.00e#.#	3.0	0.50-1.00	3	38	5
118-2d4.00e#.#	4.0	0.75-2.00	4	38	5
118-2d5.00e#.#	5.0	1.00-2.50	5	38	5
118-2d6.00e#.#	6.0	1.00-3.00	6	38	5
118-2d8.00e#.#	8.0	1.50-4.00	8	51	5
118-2d10.00e#.#	10.0	2.00-5.00	10	51	5
118-2d12.00e#.#	12.0	2.50-6.00	12	51	5
118-2d15.00e#.#	15.0	3.00-7.00	10	61	5
118-2d20.00e#.#	20.0	4.00-8.00	10	61	6

* e : available thickness: every 0.05 mm

Z3-6

MG10

N

Order Quotation request

Dimensions : d_1 : _____ e : _____ D : _____ d_2 : _____ l_2 : _____ L : _____ Z : _____	Angle : <input type="checkbox"/> 60° <input type="checkbox"/> Other : _____	Coating : <input type="checkbox"/> Uncoated <input type="checkbox"/> Coated* : _____
Machined material : _____	Quantity : _____	Cut : <input type="checkbox"/> right cut <input type="checkbox"/> left cut
Company's stamp & date : _____		Order No : _____
		Contact person : _____

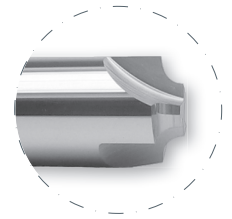
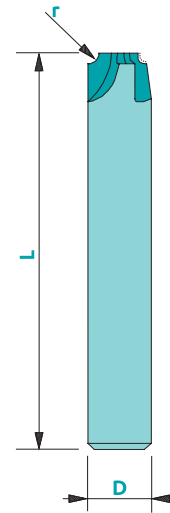
* Without information, the most suitable coating will be applied.

Quarter circle cutter concave radius

Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	100	130	□	■	Trio
Steel > 700 N/mm ²	80	100	-	■	Trio
Stainless steel	50	70	□	■	Trio
Cast iron	60	100	□	■	Nemo
Copper	130	160	□	■	Solo
Brass - Bronze	140	190	■	□	Solo
Aluminium	200	350	□	■	Solo
Gold - Silver	140	180	■	■	Solo
Platinum - Palladium	-	35	-	□	Solo
Superalloys	-	40	-	■	Trio
Titanium	40	60	■	■	Rico

not adapted - adapted □ highly adapted ■

Tolerances $d_1 \ll D \rightarrow +0/-0.02$ $D: h5$
 $d_1 = D \rightarrow d_1: e8$ $\curvearrowright +0.01/-0.01$

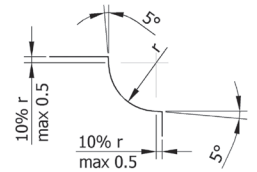


Available uncoated or coated (see page 61)

Art. n°	r*	D	L	Z
118d2.00r#.##Z#	0.10-0.30	2	33	3/4/5
118d3.00r#.##Z#	0.10-0.50	3	38	3/4/5
118d4.00r#.##Z#	0.20-1.00	4	38	3/4/5
118d5.00r#.##Z#	0.50-1.50	5	38	3/4/5
118d6.00r#.##Z#	0.75-2.00	6	38	3/4/5
118d8.00r#.##Z#	1.00-2.50	8	51	3/4/5
118d10.00r#.##Z#	1.50-3.50	10	51	3/4/5
118d12.00r#.##Z#	2.00-4.50	12	51	3/4/5
118d14.00r#.##Z#	3.00-5.50	14	61	3/4/5
118d16.00r#.##Z#	4.00-6.00	16	61	3/4/5

* r : available radius: every 0.05 mm

	Z3-5
	MG10
	N

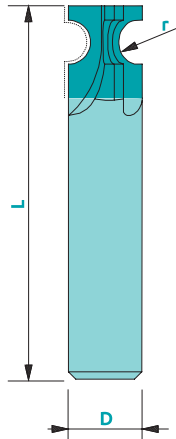
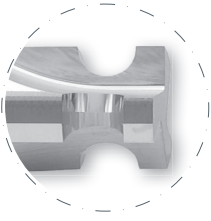


Order Quotation request

<input type="checkbox"/> With exit angle 	Dimensions : D: _____ r: _____ L: _____ Z: _____	Coating : <input type="checkbox"/> Uncoated <input type="checkbox"/> Coated* : _____	
	Machined material : _____	Cut: <input type="checkbox"/> right cut <input type="checkbox"/> left cut	Quantity : _____
<input type="checkbox"/> Without exit angle 	Order No.: _____	Contact person : _____	
Company's stamp & date : _____			

Standard dimensions of the bars : $\emptyset 3x L 38, \emptyset 4x L 38, \emptyset 6x L 38, \emptyset 6x L 51, \emptyset 8x L 61, \emptyset 10x L 72, \emptyset 12x L 83, \emptyset 16x L 92, \emptyset 20x L 104$
 * Without information, the most suitable coating will be applied.

Form cutter with concave radius



Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	100	130	□	■	Trio
Steel > 700 N/mm ²	80	100	-	■	Trio
Stainless steel	50	70	□	■	Trio
Cast iron	60	100	□	■	Nemo
Copper	130	160	□	■	Solo
Brass - Bronze	140	190	■	□	Solo
Aluminium	200	350	□	■	Solo
Gold - Silver	140	180	■	■	Solo
Platinum - Palladium	-	35	-	□	Solo
Superalloys	-	40	-	■	Trio
Titanium	40	60	■	■	Rico

not adapted - adapted □ highly adapted ■

Tolerances d_1 : e8
D: h5 $\pm 0.01/-0.01$

Available uncoated or coated (see page 61)

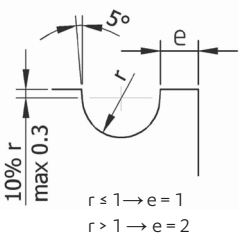
Art. n°	D	L	r*	Z
118-0d4.00r#.##Z#	4	38	0.50-0.75	3/4/5
118-0d6.00r#.##Z#	6	38	0.75-1.25	3/4/5
118-0d8.00r#.##Z#	8	51	1.00-2.00	3/4/5
118-0d10.00r#.##Z#	10	51	2.00-3.00	3/4/5
118-0d12.00r#.##Z#	12	51	2.50-3.50	3/4/5
118-0d14.00r#.##Z#	14	61	3.00-4.50	3/4/5

* r : available radius: every 0.05 mm

Z3-5

MG10 N

λ
0°



Order Quotation request

<input type="checkbox"/> With exit angle $r \leq 1 \rightarrow e = 1$ $r > 1 \rightarrow e = 2$	Dimensions : D: _____ r: _____ L: _____ Z: _____		Coating : <input type="checkbox"/> Uncoated <input type="checkbox"/> Coated* : _____	
	Machined material : _____		Cut: <input type="checkbox"/> right cut <input type="checkbox"/> left cut	Quantity : _____
<input type="checkbox"/> Without exit angle e	Order No : _____		Contact person : _____	
Company's stamp & date : _____				

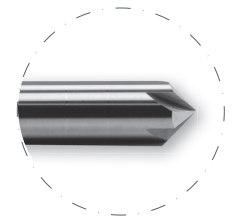
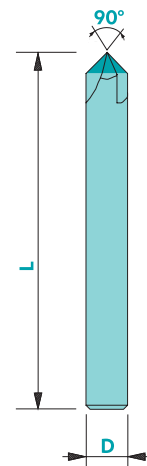
Standard dimensions of the bars : $\emptyset 3 \times L 38, \emptyset 4 \times L 38, \emptyset 6 \times L 38, \emptyset 6 \times L 51, \emptyset 8 \times L 61, \emptyset 10 \times L 72, \emptyset 12 \times L 83, \emptyset 16 \times L 92, \emptyset 20 \times L 104$
 * Without information, the most suitable coating will be applied.

Countersink 90°

Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	100	130	□	■	Trio
Steel > 700 N/mm ²	80	100	-	■	Trio
Stainless steel	50	70	□	■	Trio
Cast iron	60	100	□	■	Nemo
Copper	130	160	□	■	Solo
Brass - Bronze	140	190	■	□	Solo
Aluminium	200	350	□	■	Solo
Gold - Silver	140	180	■	■	Solo
Platinum - Palladium	-	35	-	□	Solo
Superalloys	-	40	-	■	Trio
Titanium	40	60	■	■	Rico

not adapted - adapted □ highly adapted ■

Tolerances D: h5

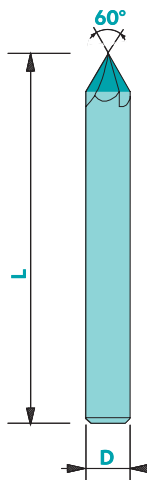


Available uncoated or coated (see page 61)

Art. n°	D	L	Z
120d1.50Z3	1.5	38	3
120d1.50Z5	1.5	38	5
120d2.00Z3	2.0	38	3
120d2.00Z5	2.0	38	5
120d3.00Z3	3.0	38	3
120d3.00Z5	3.0	38	5
120d4.00Z3	4.0	51	3
120d4.00Z5	4.0	51	5
120d5.00Z3	5.0	51	3
120d5.00Z5	5.0	51	5
120d6.00Z3	6.0	51	3
120d6.00Z5	6.0	51	5
120d8.00Z3	8.0	61	3
120d8.00Z5	8.0	61	5
120d10.00Z3	10.0	72	3
120d10.00Z5	10.0	72	5
120d12.00Z3	12.0	83	3
120d12.00Z5	12.0	83	5
120d14.00Z3	14.0	83	3
120d14.00Z5	14.0	83	5
120d15.00Z3	15.0	83	3
120d15.00Z5	15.0	83	5
120d16.00Z3	16.0	92	3
120d16.00Z5	16.0	92	5

	Z3-5
MG10	N

Countersink 60°



Available uncoated or coated (see page 61)

Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	100	130	□	■	Trio
Steel > 700 N/mm ²	80	100	-	■	Trio
Stainless steel	50	70	□	■	Trio
Cast iron	60	100	□	■	Nemo
Copper	130	160	□	■	Solo
Brass - Bronze	140	190	■	□	Solo
Aluminium	200	350	□	■	Solo
Gold - Silver	140	180	■	■	Solo
Platinum - Palladium	-	35	-	□	Solo
Superalloys	-	40	-	■	Trio
Titanium	40	60	■	■	Rico

not adapted - adapted □ highly adapted ■

Tolerances D: h5

	Z3-5
λ 0°	
MG10	N

Art. n°	D	L	Z
120-1d1.50Z3	1.5	38	3
120-1d1.50Z5	1.5	38	5
120-1d2.00Z3	2.0	38	3
120-1d2.00Z5	2.0	38	5
120-1d3.00Z3	3.0	38	3
120-1d3.00Z5	3.0	38	5
120-1d4.00Z3	4.0	50	3
120-1d4.00Z5	4.0	50	5
120-1d5.00Z3	5.0	50	3
120-1d5.00Z5	5.0	50	5
120-1d6.00Z3	6.0	50	3
120-1d6.00Z5	6.0	50	5
120-1d8.00Z3	8.0	61	3
120-1d8.00Z5	8.0	61	5
120-1d10.00Z3	10.0	72	3
120-1d10.00Z5	10.0	72	5
120-1d12.00Z3	12.0	83	3
120-1d12.00Z5	12.0	83	5
120-1d14.00Z3	14.0	83	3
120-1d14.00Z5	14.0	83	5
120-1d15.00Z3	15.0	83	3
120-1d15.00Z5	15.0	83	5
120-1d16.00Z3	16.0	92	3
120-1d16.00Z5	16.0	92	5

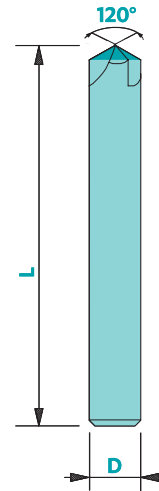
Countersink 120°

120-2

Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	100	130	□	■	Trio
Steel > 700 N/mm ²	80	100	-	■	Trio
Stainless steel	50	70	□	■	Trio
Cast iron	60	100	□	■	Nemo
Copper	130	160	□	■	Solo
Brass - Bronze	140	190	■	□	Solo
Aluminium	200	350	□	■	Solo
Gold - Silver	140	180	■	■	Solo
Platinum - Palladium	-	35	-	□	Solo
Superalloys	-	40	-	■	Trio
Titanium	40	60	■	■	Rico

not adapted - adapted □ highly adapted ■

Tolerances D: h5



Available uncoated or coated (see page 61)

Art. n°	D	L	Z
120-2d1.50Z3	1.5	38	3
120-2d1.50Z5	1.5	38	5
120-2d2.00Z3	2.0	38	3
120-2d2.00Z5	2.0	38	5
120-2d3.00Z3	3.0	38	3
120-2d3.00Z5	3.0	38	5
120-2d4.00Z3	4.0	50	3
120-2d4.00Z5	4.0	50	5
120-2d5.00Z3	5.0	50	3
120-2d5.00Z5	5.0	50	5
120-2d6.00Z3	6.0	50	3
120-2d6.00Z5	6.0	50	5
120-2d8.00Z3	8.0	61	3
120-2d8.00Z5	8.0	61	5
120-2d10.00Z3	10.0	72	3
120-2d10.00Z5	10.0	72	5
120-2d12.00Z3	12.0	83	3
120-2d12.00Z5	12.0	83	5
120-2d14.00Z3	14.0	83	3
120-2d14.00Z5	14.0	83	5
120-2d15.00Z3	15.0	83	3
120-2d15.00Z5	15.0	83	5
120-2d16.00Z3	16.0	92	3
120-2d16.00Z5	16.0	92	5



120°

Z3-5

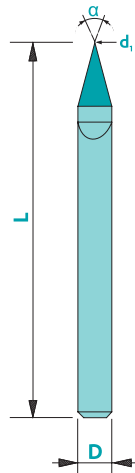


λ
0°

MG10

N

Engraving mill V-shape - flat tip



Available uncoated or coated (see page 61)

Material	n [tr/min]	Ap	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	25 - 40'000	0.05 - 0.40	☐	■	Nemo
Steel > 700 N/mm ²	20 - 40'000	0.05 - 0.30	-	■	Nemo
Stainless steel	20 - 30'000	0.05 - 0.30	-	☐	Nemo
Cast iron	25 - 40'000	0.05 - 0.40	☐	■	Trio
Copper	20 - 40'000	0.05 - 0.40	☐	■	Solo
Brass - Bronze	25 - 40'000	0.05 - 0.40	☐	■	Solo
Aluminium	-	-	☐	■	-
Gold - Silver	20 - 40'000	0.05 - 0.40	■	☐	Solo
Platinum - Palladium	-	-	-	-	-
Superalloys	-	-	☐	■	-
Titanium	25 - 40'000	0.05 - 0.40	☐	■	Rico

not adapted - adapted ☐ highly adapted ■

Tolerances d_1 : +/- 0.01
D: h5

Article number: 119a##d#.#

Example: End mill ref. 119 with 25° angle and tip diameter 0.05 mm: 119a25d0.05

α^*	d_1^{**}	D	L
15-45°	0.02-0.09	3	33
15-45°	0.10-0.30	3	33
50-140°	0.02-0.09	3	33
50-140°	0.10-0.30	3	33

* Available angles: every 5° between 15° and 45°; every 10° between 50° and 140°

** Available diameters: every 0.01 mm between 0.02 and 0.09 mm; every 0.05 mm between 0.10 and 0.30 mm

Other dimensions (angle, tip diameter, shank) upon request



0.02-0.30



λ
0°

SUB-CARFINE

N

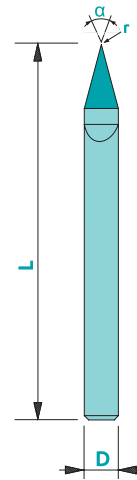
Engraving mill V-shape - radius on tip

119-R

Material	n [tr/min]	Ap	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	25 - 40'000	0.05 - 0.40	□	■	Nemo
Steel > 700 N/mm ²	20 - 40'000	0.05 - 0.30	-	■	Nemo
Stainless steel	20 - 30'000	0.05 - 0.30	-	□	Nemo
Cast iron	25 - 40'000	0.05 - 0.40	□	■	Trio
Copper	20 - 40'000	0.05 - 0.40	□	■	Solo
Brass - Bronze	25 - 40'000	0.05 - 0.40	□	■	Solo
Aluminium	25 - 40'000	0.05 - 0.50	□	■	Solo
Gold - Silver	20 - 40'000	0.05 - 0.40	■	□	Solo
Platinum - Palladium	-	-	-	-	-
Superalloys	-	-	□	■	-
Titanium	25 - 40'000	0.05 - 0.40	□	■	Rico

not adapted - adapted □ highly adapted ■

Tolerances
r: +/- 0.005
D: h5



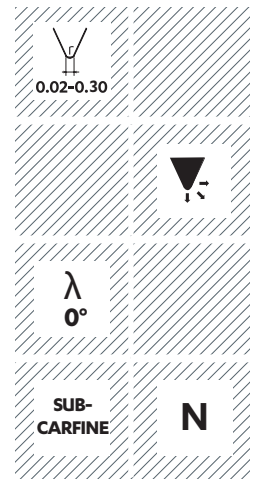
Available
uncoated or coated
(see page 61)

Article number : 119-Ra##r#.##
Example: End mill ref. 119-R with 25° angle and radius 0.05 mm: 119-Ra25r0.05

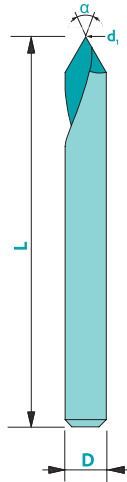
α^*	r^{**}	D	L
15-45°	0.02-0.09	3	33
15-45°	0.10-0.30	3	33
50-140°	0.02-0.09	3	33
50-140°	0.10-0.30	3	33

*Available angles: every 5° between 15° and 45°; every 10° between 50° and 140°
**Available radius: every 0.01 mm between 0.02 and 0.09 mm; every 0.05 mm between 0.10 and 0.30 mm

Other dimensions (angle, radius, shank) upon request



Helical engraving mill - flat tip



Material	n [tr/min]	Ap	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	25 - 40'000	0.05 - 0.40	☐	■	Nemo
Steel > 700 N/mm ²	20 - 40'000	0.05 - 0.30	-	■	Nemo
Stainless steel	20 - 30'000	0.05 - 0.30	-	☐	Nemo
Cast iron	25 - 40'000	0.05 - 0.40	☐	■	Trio
Copper	20 - 40'000	0.05 - 0.40	☐	■	Solo
Brass - Bronze	25 - 40'000	0.05 - 0.40	☐	■	Solo
Aluminium	25 - 40'000	0.05 - 0.50	☐	■	Solo
Gold - Silver	20 - 40'000	0.05 - 0.40	■	☐	Solo
Platinum - Palladium	-	-	-	-	-
Superalloys	-	-	☐	■	-
Titanium	25 - 40'000	0.05 - 0.40	☐	■	Rico

not adapted - adapted ☐ highly adapted ■

Tolerances d_1 : +/- 0.01
D: h5

Available uncoated or coated (see page 61)

Article number : 119-2a##d#.##

Example: End mill ref. 119-2 with 25° angle and tip diameter 0.05 mm: 119-2a25d0.05

α^*	d_1^{**}	D	L
15-45°	0.02-0.09	3	33
15-45°	0.10-0.30	3	33
50-140°	0.02-0.09	3	33
50-140°	0.10-0.30	3	33

* Available angles: every 5° between 15° and 45°; every 10° between 50° and 140°

** Available diameters: every 0.01 mm between 0.02 and 0.09 mm; every 0.05 mm between 0.10 and 0.30 mm

Other dimensions (angle, tip diameter, shank) upon request



0.02-0.30



λ
24°

SUB-CARFINE

N

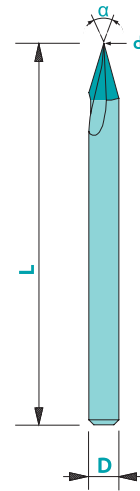
Engraving mill- 3/4 - flat tip

119-3

Material	n [tr/min]	Ap	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	25 - 40'000	0.05 - 0.40	□	■	Nemo
Steel > 700 N/mm ²	20 - 40'000	0.05 - 0.30	-	■	Nemo
Stainless steel	20 - 30'000	0.05 - 0.30	-	□	Nemo
Cast iron	25 - 40'000	0.05 - 0.40	□	■	Trio
Copper	20 - 40'000	0.05 - 0.40	□	■	Solo
Brass - Bronze	25 - 40'000	0.05 - 0.40	□	■	Solo
Aluminium	25 - 40'000	0.05 - 0.50	□	■	Solo
Gold - Silver	20 - 40'000	0.05 - 0.40	■	□	Solo
Platinum - Palladium	-	-	-	-	-
Superalloys	-	-	□	■	-
Titanium	25 - 40'000	0.05 - 0.40	□	■	Rico

not adapted - adapted □ highly adapted ■

Tolerances d_t: +/- 0.01
D: h5



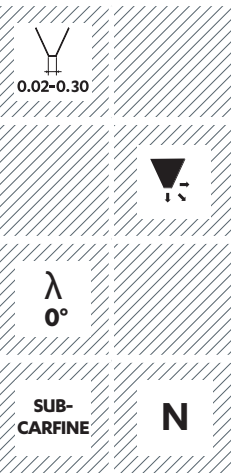
Available uncoated or coated (see page 61)

Article number : 119-3a##d#.##
Example: End mill ref. 119-3 with 25° angle and tip diameter 0.05 mm: 119-3a25d0.05

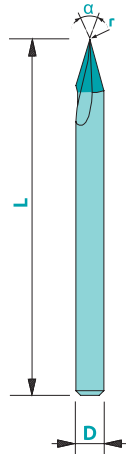
α**	d _t **	D	L
15-45°	0.02-0.09	3	33
15-45°	0.10-0.30	3	33
50-140°	0.02-0.09	3	33
50-140°	0.10-0.30	3	33

* Available angles: every 5° between 15° and 45°; every 10° between 50° and 140°
** Available diameters: every 0.01 mm between 0.02 and 0.09 mm; every 0.05 mm between 0.10 and 0.30 mm

Other dimensions (angle, tip diameter, shank) upon request



Engraving mill - $\frac{3}{4}$ - radius on tip



Available uncoated or coated (see page 61)

Material	n [tr/min]	Ap	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	25 - 40'000	0.05 - 0.40	□	■	Nemo
Steel > 700 N/mm ²	20 - 40'000	0.05 - 0.30	-	■	Nemo
Stainless steel	20 - 30'000	0.05 - 0.30	-	□	Nemo
Cast iron	25 - 40'000	0.05 - 0.40	□	■	Trio
Copper	20 - 40'000	0.05 - 0.40	□	■	Solo
Brass - Bronze	25 - 40'000	0.05 - 0.40	□	■	Solo
Aluminium	25 - 40'000	0.05 - 0.50	□	■	Solo
Gold - Silver	20 - 40'000	0.05 - 0.40	■	□	Solo
Platinum - Palladium	-	-	-	-	-
Superalloys	-	-	□	■	-
Titanium	25 - 40'000	0.05 - 0.40	□	■	Rico

not adapted - adapted □ highly adapted ■

Tolerances r: +/- 0.005 $\overline{\curvearrowright}$ +0.01/-0.01
D: h5

Article number : 119-3Ra##r#.##

Example: End mill ref. 119-3R with 25° angle and radius 0.05 mm: 119-3Ra25r0.05

α^*	r**	D	L
15-45°	0.02-0.09	3	33
15-45°	0.10-0.30	3	33
50-140°	0.02-0.09	3	33
50-140°	0.10-0.30	3	33

* Available angles: every 5° between 15° and 45°; every 10° between 50° and 140°

** Available radius: every 0.01 mm between 0.02 and 0.09 mm; every 0.05 mm between 0.10 and 0.30 mm

Other dimensions (angle, radius, shank) upon request



0.02-0.30



λ
0°

SUB-CARFINE

N

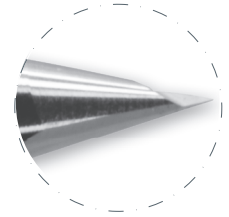
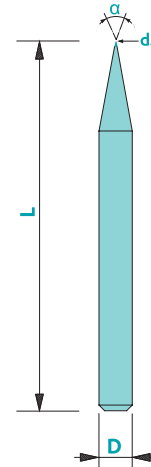
Engraving mill V-shape - reinforced

119-4

Material	n [tr/min]	Ap	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	25 - 40'000	0.05 - 0.40	□	■	Nemo
Steel > 700 N/mm ²	20 - 40'000	0.05 - 0.30	-	■	Nemo
Stainless steel	20 - 30'000	0.05 - 0.30	-	□	Nemo
Cast iron	25 - 40'000	0.05 - 0.40	□	■	Trio
Copper	20 - 40'000	0.05 - 0.40	□	■	Solo
Brass - Bronze	25 - 40'000	0.05 - 0.40	□	■	Solo
Aluminium	25 - 40'000	0.05 - 0.50	□	■	Solo
Gold - Silver	20 - 40'000	0.05 - 0.40	■	□	Solo
Platinum - Palladium	-	-	-	-	-
Superalloys	-	-	□	■	-
Titanium	25 - 40'000	0.05 - 0.40	□	■	Rico

not adapted - adapted □ highly adapted ■

Tolerances
 d_1 : +/- 0.01
 D: h5



Available
 uncoated or coated
 (see page 61)

Article number : 119-4a##d#.#

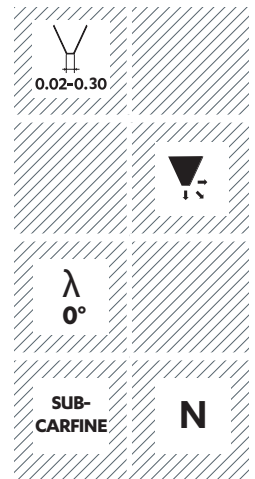
Example: End mill ref. 119-4 with 25° angle and tip diameter 0.05 mm: 119-4a25d0.05

α^*	d_1^{**}	D	L
15-45°	0.02-0.09	3	33
15-45°	0.10-0.30	3	33
50-140°	0.02-0.09	3	33
50-140°	0.10-0.30	3	33

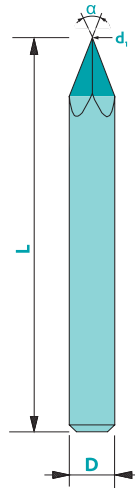
* Available angles: every 5° between 15° and 45°; every 10° between 50° and 140°

** Available diameters: every 0.01 mm between 0.02 and 0.09 mm; every 0.05 mm between 0.10 and 0.30 mm

Other dimensions (angle, tip diameter, shank) upon request



Engraving mill 4 facets - with flat tip



Available uncoated or coated (see page 61)

Material	n [tr/min]	Ap	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	25 - 40'000	0.05 - 0.40	☐	■	Nemo
Steel > 700 N/mm ²	20 - 40'000	0.05 - 0.30	-	■	Nemo
Stainless steel	20 - 30'000	0.05 - 0.30	-	☐	Nemo
Cast iron	25 - 40'000	0.05 - 0.40	☐	■	Trio
Copper	20 - 40'000	0.05 - 0.40	☐	■	Solo
Brass - Bronze	25 - 40'000	0.05 - 0.40	☐	■	Solo
Aluminium	-	-	☐	■	-
Gold - Silver	20 - 40'000	0.05 - 0.40	■	☐	Solo
Platinum - Palladium	-	-	-	-	-
Superalloys	-	-	☐	■	-
Titanium	25 - 40'000	0.05 - 0.40	☐	■	Rico

not adapted - adapted ☐ highly adapted ■

Tolerances d_1 : +/- 0.01
D: h5

Article number : 119-5a##d#.##

Example: End mill ref. 119-5 with 25° angle and tip diameter 0.05 mm: 119-5a25d0.05

α^*	d_1^{**}	D	L
30-50°	0.04-0.09	3	33
30-50°	0.10-0.30	3	33
60-140°	0.02-0.09	3	33
60-140°	0.10-0.30	3	33

* Available angles: every 5° between 30° and 50°; every 10° between 60° and 140°

** Available diameters: every 0.01 mm between 0.02 and 0.09 mm; every 0.05 mm between 0.10 and 0.30 mm

Other dimensions (angle, tip diameter, shank) upon request

0.02-0.30

λ
0°

SUB-CARFINE

N

Engraving mill 4 facets - radius on tip

119-5R

Material	n [tr/min]	Ap	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	25 - 40'000	0.05 - 0.40	☐	■	Nemo
Steel > 700 N/mm ²	20 - 40'000	0.05 - 0.30	-	■	Nemo
Stainless steel	20 - 30'000	0.05 - 0.30	-	☐	Nemo
Cast iron	25 - 40'000	0.05 - 0.40	☐	■	Trio
Copper	20 - 40'000	0.05 - 0.40	☐	■	Solo
Brass - Bronze	25 - 40'000	0.05 - 0.40	☐	■	Solo
Aluminium	25 - 40'000	0.05 - 0.50	☐	■	Solo
Gold - Silver	20 - 40'000	0.05 - 0.40	■	☐	Solo
Platinum - Palladium	-	-	-	-	-
Superalloys	-	-	☐	■	-
Titanium	25 - 40'000	0.05 - 0.40	☐	■	Rico

not adapted - adapted ☐ highly adapted ■

Tolerances r: +/- 0.005
D: h5



Available uncoated or coated (see page 61)

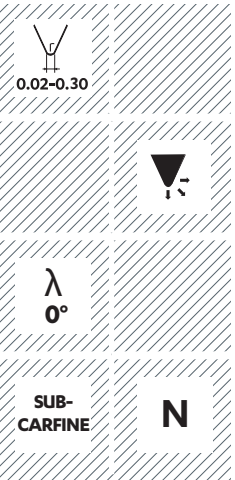
Article number : 119-5Ra##r##.##
Example: End mill ref. 119-5R with 25° angle and radius 0.05 mm: 119-5Ra25d0.05

α^*	r^{**}	D	L
30-50°	0.05-0.09	3	33
30-50°	0.10-0.30	3	33
60-140°	0.02-0.09	3	33
60-140°	0.10-0.30	3	33

* Available angles: every 5° between 30° and 50°; every 10° between 60° and 140°

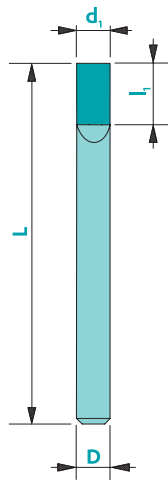
** Available radius: every 0.01 mm between 0.02 and 0.09 mm; every 0.05 mm between 0.10 and 0.30 mm

Other dimensions (angle, radius, shank) upon request



119E

Engraving mill 180° - rough version



Material	n [tr/min]	Ap	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	-	-	-	-	-
Steel > 700 N/mm ²	-	-	-	-	-
Stainless steel	-	-	-	-	-
Cast iron	-	-	-	-	-
Copper	-	-	-	-	-
Brass - Bronze	-	-	-	-	-
Aluminium	-	-	-	-	-
Gold - Silver	-	-	-	-	-
Platinum - Palladium	-	-	-	-	-
Superalloys	-	-	-	-	-
Titanium	-	-	-	-	-

not adapted - adapted highly adapted

Tolerances d₁: +/- 0.01
D: h5

Available uncoated only

Art. n°	d ₁	l ₁	D	L
119Ed3.0	3.0	2.5	3	38
119Ed4.0	4.0	2.5	4	38
119Ed5.0	5.0	6.0	5	38
119Ed6.0	6.0	6.0	6	51
119Ed7.0	7.0	8.0	7	51
119Ed8.0	8.0	9.0	8	51
119Ed9.0	9.0	9.0	9	51
119Ed10.0	10.0	9.0	10	51

λ
0°

SUB-CARFINE

N

Index - Drills

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342 Micro twist drill - helix 34° - shank Ø3	177
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344 Twist drill with coolant holes	209
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353 Twist drill Z3 - shank Ø3	195
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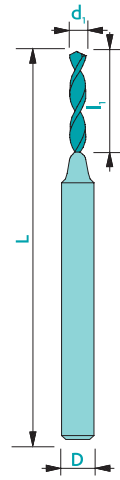
EXPERT drill for composite materials



300

Material	Vc [m/min]
Composite materials	200
Steel < 700 N/mm ²	-
Steel > 700 N/mm ²	-
Stainless steel	-
Cast iron	-
Copper	-
Brass - Bronze	-
Aluminium	-
Gold - Silver	-
Platinum - Palladium	-
Superalloys	-
Titanium	-

Tolerances d_1 : +0/-0.004
D : h5



Available coated only

Art. n°	d ₁	l ₁	D	L
300 d0.5x8FC	0.50	8	3	38
300 d1x10FC	1.00	10	3	38
300 d1.5x10FC	1.50	10	3	38
300 d2x10FC	2.00	10	3	38
300 d3x12FC	3.00	12	3	38
300 d6x18FC	6.00	18	6	51

Other dimensions available upon request



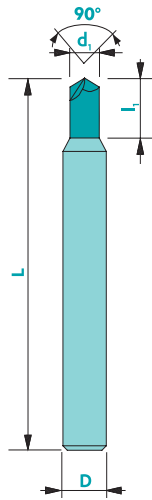
Z2



MG

**N
HSC**

Centering & Chamfering tool 90°



Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	70	80	□	■	Trio
Steel > 700 N/mm ²	60	70	□	■	Trio
Stainless steel	20	40	□	■	Nemo
Cast iron	60	70	□	■	Nemo
Copper	100	130	□	■	Solo
Brass - Bronze	80	120	■	■	Solo
Aluminium	100	120	□	■	Solo
Gold - Silver	80	100	■	■	Solo
Platinum - Palladium	-	20	-	□	Solo
Superalloys	-	25	-	■	Trio
Titanium	40	60	□	■	Rico

not adapted - adapted □ highly adapted ■

Tolerances $d_1 \pm 3 \rightarrow +/-.01$
 $d_1 = 3 \rightarrow h5$

$L_1: +0.2/-0$
 $D: h5$

Available uncoated or coated (see page 61)



Z2



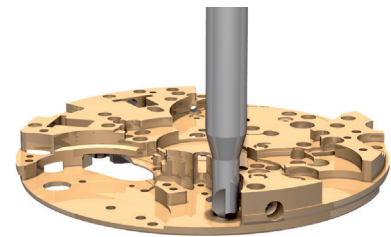
Y

0°

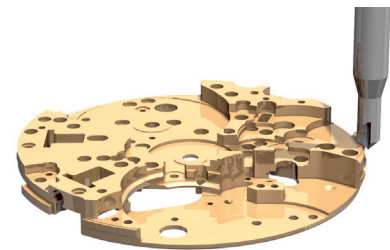
MG10

N

Art. n°	d_1	L_1	D	L
330-90d0.40	0.40	2.0	3.0	38
330-90d0.50	0.50	2.0	3.0	38
330-90d0.60	0.60	2.0	3.0	38
330-90d0.70	0.70	2.0	3.0	38
330-90d0.80	0.80	2.0	3.0	38
330-90d0.90	0.90	2.0	3.0	38
330-90d1.00	1.00	2.0	3.0	38
330-90d1.10	1.10	2.0	3.0	38
330-90d1.20	1.20	2.0	3.0	38
330-90d1.30	1.30	2.5	3.0	38
330-90d1.40	1.40	2.5	3.0	38
330-90d1.50	1.50	3.0	3.0	38
330-90d1.60	1.60	3.0	3.0	38
330-90d1.70	1.70	3.0	3.0	38
330-90d1.80	1.80	3.0	3.0	38
330-90d1.90	1.90	3.0	3.0	38
330-90d2.00	2.00	4.0	3.0	38
330-90d2.50	2.50	4.5	3.0	38
330-90d3.00	3.00	-	3.0	38



Centering



Chamfering

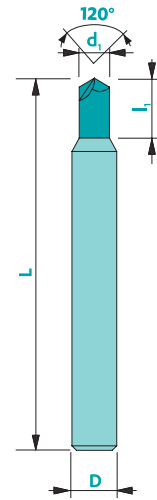
Centering & Chamfering tool 120°

330-120

Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	70	80	□	■	Trio
Steel > 700 N/mm ²	60	70	□	■	Trio
Stainless steel	20	40	□	■	Nemo
Cast iron	60	70	□	■	Nemo
Copper	100	130	□	■	Solo
Brass - Bronze	80	120	■	■	Solo
Aluminium	100	120	□	■	Solo
Gold - Silver	80	100	■	■	Solo
Platinum - Palladium	-	20	-	□	Solo
Superalloys	-	25	-	■	Trio
Titanium	40	60	□	■	Rico

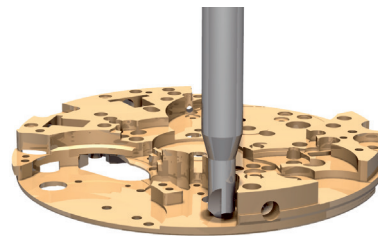
not adapted - adapted □ highly adapted ■

Tolerances $d_1 \pm 3 \rightarrow +/ - 0.01$ $l_1: +0.2/-0$
 $d_1 = 3 \rightarrow h5$ $D: h5$

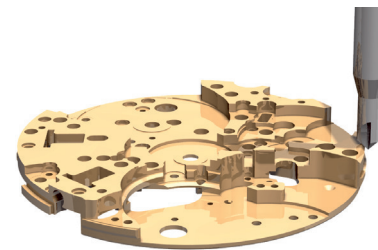


Available uncoated or coated (see page 61)

Art. n°	d_1	l_1	D	L
330-120d0.60	0.60	2.0	3.0	38
330-120d0.70	0.70	2.0	3.0	38
330-120d0.80	0.80	2.0	3.0	38
330-120d0.90	0.90	2.0	3.0	38
330-120d1.00	1.00	2.0	3.0	38
330-120d1.10	1.10	2.0	3.0	38
330-120d1.20	1.20	2.0	3.0	38
330-120d1.30	1.30	2.5	3.0	38
330-120d1.40	1.40	2.5	3.0	38
330-120d1.50	1.50	3.0	3.0	38
330-120d1.60	1.60	3.0	3.0	38
330-120d1.70	1.70	3.0	3.0	38
330-120d1.80	1.80	3.0	3.0	38
330-120d1.90	1.90	3.0	3.0	38
330-120d2.00	2.00	4.0	3.0	38
330-120d2.50	2.50	4.5	3.0	38
330-120d3.00	3.00	-	3.0	38



Centering



Chamfering



120°

Z2

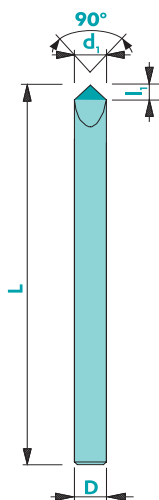


Y
0°

MG10

N

Pyramid center drill



Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	-	-	-	-	-
Steel > 700 N/mm ²	-	-	-	-	-
Stainless steel	60	70	□	■	Nemo
Cast iron	30	35	□	■	Nemo
Copper	-	-	-	-	-
Brass - Bronze	80	120	■	■	Solo
Aluminium	-	-	-	-	-
Gold - Silver	-	-	-	-	-
Platinum - Palladium	-	-	-	-	-
Superalloys	-	25	-	■	Trio
Titanium	-	-	-	-	-

not adapted - adapted □ highly adapted ■

Tolerances $d_1 \leq 3 \rightarrow \pm 0.01$ $l_1: +0.2/-0$
 $d_1 = 3 \rightarrow h5$ $D: h5$

Available uncoated or coated (see page 61)

Art. n°	d_1	l_1	D	L
331-90d0.40	0.40	2.0	3.0	38
331-90d0.50	0.50	2.0	3.0	38
331-90d0.60	0.60	2.0	3.0	38
331-90d0.70	0.70	2.0	3.0	38
331-90d0.80	0.80	2.0	3.0	38
331-90d0.90	0.90	2.0	3.0	38
331-90d1.00	1.00	2.0	3.0	38
331-90d1.10	1.10	2.0	3.0	38
331-90d1.20	1.20	2.0	3.0	38
331-90d1.30	1.30	2.5	3.0	38
331-90d1.40	1.40	2.5	3.0	38
331-90d1.50	1.50	3.0	3.0	38
331-90d1.60	1.60	3.0	3.0	38
331-90d1.70	1.70	3.0	3.0	38
331-90d1.80	1.80	3.0	3.0	38
331-90d1.90	1.90	3.0	3.0	38
331-90d2.00	2.00	4.0	3.0	38
331-90d2.50	2.50	4.5	3.0	38
331-90d3.00	3.00	-	3.0	38

Z2

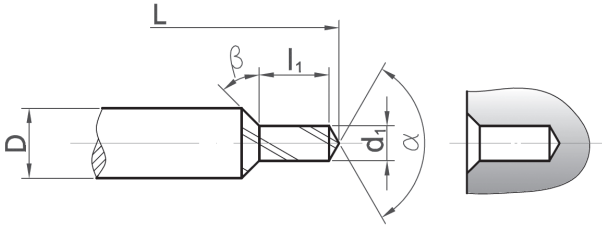


Y 0°

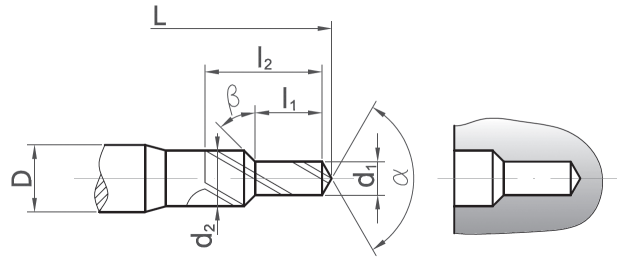
MG10 N

Step drill in solid carbide

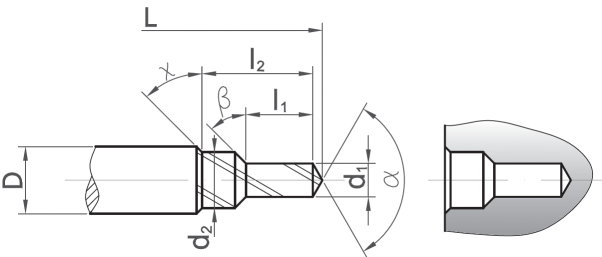
Type A



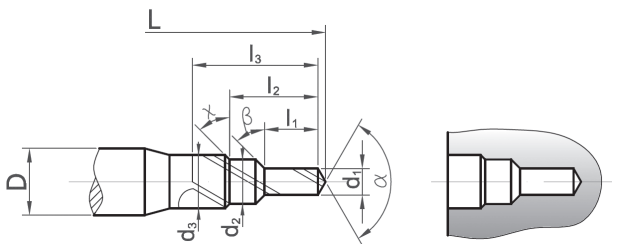
Type B



Type C



Type D



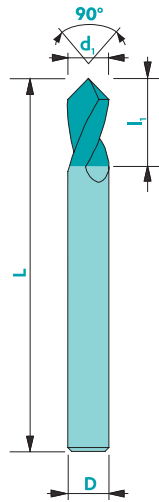
Order Quotation request

<input type="checkbox"/> Type A		<input type="checkbox"/> Type B		<input type="checkbox"/> Type C		<input type="checkbox"/> Type D	
Dimensions :			Helix angle :			Quantity :	
D : _____ L : _____ α : _____			<input type="checkbox"/> 24° for brass and steel <input type="checkbox"/> 34° for stainless steel, synthetic and aluminium			_____	
d ₁ : _____ l ₁ : _____ β : _____			Coolant holes ?		Coating :		
d ₂ : _____ l ₂ : _____ X : _____			<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Uncoated <input type="checkbox"/> Coated * : _____		
d ₃ : _____ l ₃ : _____ Z : <input type="checkbox"/> 1 <input type="checkbox"/> 2							
			<input type="checkbox"/> 3				
Machined material :				Order No :			
_____				_____			
Company's stamp & date :				Contact person :			
_____				_____			

Standard dimensions of the bars : \emptyset 3x L 38, \emptyset 4x L 38, \emptyset 6x L 38, \emptyset 6x L 51, \emptyset 8x L 61, \emptyset 10x L 72, \emptyset 12x L 83, \emptyset 16x L 92, \emptyset 20x L 104

* Without information, the most suitable Coating will be applied.

NC Center drill 90°



Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	70	80	□	■	Trio
Steel > 700 N/mm ²	60	70	□	■	Trio
Stainless steel	20	40	□	■	Nemo
Cast iron	60	70	□	■	Nemo
Copper	100	130	□	■	Solo
Brass - Bronze	80	120	■	■	Solo
Aluminium	100	120	□	■	Solo
Gold - Silver	80	100	■	■	Solo
Platinum - Palladium	-	20	-	□	Solo
Superalloys	-	25	-	■	Trio
Titanium	40	60	□	■	Rico

not adapted - adapted □ highly adapted ■

Tolerances $d_1 \leq 1 \text{ mm} \rightarrow +0/-0.01$ $D: h5$
 $d_1 > 1 \text{ mm} \rightarrow +0/-0.02$
 $d_1 = D \rightarrow d_1: e8$

Available uncoated or coated (see page 61)

90° **Z2**

24°

MG10 **N**

Art. n°	d ₁	l ₁	D	L
337d0.40	0.40	2.0	2.0	38
337d0.50	0.50	2.0	2.0	38
337d0.55	0.55	2.0	2.0	38
337d0.60	0.60	2.0	2.0	38
337d0.65	0.65	2.0	2.0	38
337d0.70	0.70	2.0	2.0	38
337d0.75	0.75	2.0	2.0	38
337d0.80	0.80	3.0	2.0	38
337d0.85	0.85	3.0	2.0	38
337d0.90	0.90	3.0	2.0	38
337d0.95	0.95	3.0	2.0	38
337d1.00	1.00	3.0	2.0	38
337d1.05	1.05	3.0	2.0	38
337d1.10	1.10	3.0	2.0	38
337d1.15	1.15	3.0	2.0	38
337d1.20	1.20	3.0	2.0	38
337d1.25	1.25	3.0	2.0	38
337d1.30	1.30	3.0	2.0	38
337d1.35	1.35	3.0	2.0	38
337d1.40	1.40	3.0	2.0	38
337d1.45	1.45	3.0	2.0	38
337d1.50	1.50	5.0	2.0	38
337d1.60	1.60	5.0	2.0	38
337d1.70	1.70	5.0	2.0	38
337d1.80	1.80	5.0	2.0	38
337d1.90	1.90	5.0	2.0	38
337d2.00	2.00	8.0	2.0	38

Art. n°	d ₁	l ₁	D	L
337d2.50	2.50	8.0	2.5	38
337d3.00	3.00	10.0	3.0	44
337d4.00	4.00	12.0	4.0	50
337d5.00	5.00	12.0	5.0	50
337d6.00	6.00	15.0	6.0	61
337d8.00	8.00	20.0	8.0	72
337d10.00	10.00	20.0	10.0	72
337d12.00	12.00	25.0	12.0	83
337d16.00	16.00	25.0	16.0	83
337d20.00	20.00	35.0	20.0	104

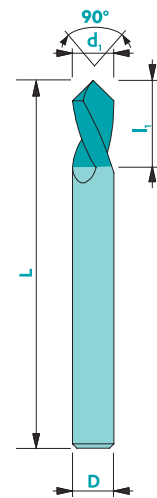
NC Center drill 90° - left-hand cut

337-1

Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	70	80	□	■	Trio
Steel > 700 N/mm ²	60	70	□	■	Trio
Stainless steel	20	40	□	■	Nemo
Cast iron	60	70	□	■	Nemo
Copper	100	130	□	■	Solo
Brass - Bronze	80	120	■	■	Solo
Aluminium	100	120	□	■	Solo
Gold - Silver	80	100	■	■	Solo
Platinum - Palladium	-	20	-	□	Solo
Superalloys	-	25	-	■	Trio
Titanium	40	60	□	■	Rico

not adapted - adapted □ highly adapted ■

Tolerances $d_1 \leq 1 \text{ mm} \rightarrow +0/-0.01$ D: h5
 $d_1 > 1 \text{ mm} \rightarrow +0/-0.02$
 $d_1 = D \rightarrow d_1: e8$



Available uncoated or coated (see page 61)

Art. n°	d_1	l_1	D	L
337-1d0.80	0.80	3.0	2.0	38
337-1d0.90	0.90	3.0	2.0	38
337-1d1.00	1.00	3.0	2.0	38
337-1d1.10	1.10	3.0	2.0	38
337-1d1.20	1.20	3.0	2.0	38
337-1d1.30	1.30	3.0	2.0	38
337-1d1.40	1.40	3.0	2.0	38
337-1d1.50	1.50	5.0	2.0	38
337-1d1.60	1.60	5.0	2.0	38
337-1d1.70	1.70	5.0	2.0	38
337-1d1.80	1.80	5.0	2.0	38
337-1d1.90	1.90	5.0	2.0	38
337-1d2.00	2.00	8.0	2.0	38
337-1d2.50	2.50	8.0	2.5	38
337-1d3.00	3.00	10.0	3.0	44
337-1d4.00	4.00	12.0	4.0	50
337-1d5.00	5.00	12.0	5.0	50
337-1d6.00	6.00	15.0	6.0	61
337-1d8.00	8.00	20.0	8.0	72
337-1d10.00	10.00	20.0	10.0	72



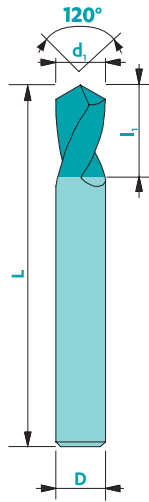
Z2



MG10

N

NC Center drill 120°



Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	70	80	□	■	Trio
Steel > 700 N/mm ²	60	70	□	■	Trio
Stainless steel	20	40	□	■	Nemo
Cast iron	60	70	□	■	Nemo
Copper	100	130	□	■	Solo
Brass - Bronze	80	120	■	■	Solo
Aluminium	100	120	□	■	Solo
Gold - Silver	80	100	■	■	Solo
Platinum - Palladium	-	20	-	□	Solo
Superalloys	-	25	-	■	Trio
Titanium	40	60	□	■	Rico

not adapted - adapted □ highly adapted ■

Tolerances $d_1 \leq 1 \text{ mm} \rightarrow +0/-0.01$ $D: h5$
 $d_1 > 1 \text{ mm} \rightarrow +0/-0.02$
 $d_1 = D \rightarrow d_1: e8$

Available uncoated or coated (see page 61)

	Z2
λ 24°	
MG10	N

Art. n°	d ₁	L ₁	D	L
337-2d0.50	0.50	2.0	2.0	38
337-2d0.55	0.55	2.0	2.0	38
337-2d0.60	0.60	2.0	2.0	38
337-2d0.65	0.65	2.0	2.0	38
337-2d0.70	0.70	2.0	2.0	38
337-2d0.75	0.75	2.0	2.0	38
337-2d0.80	0.80	3.0	2.0	38
337-2d0.85	0.85	3.0	2.0	38
337-2d0.90	0.90	3.0	2.0	38
337-2d0.95	0.95	3.0	2.0	38
337-2d1.00	1.00	3.0	2.0	38
337-2d1.05	1.05	3.0	2.0	38
337-2d1.10	1.10	3.0	2.0	38
337-2d1.15	1.15	3.0	2.0	38
337-2d1.20	1.20	3.0	2.0	38
337-2d1.25	1.25	3.0	2.0	38
337-2d1.30	1.30	3.0	2.0	38
337-2d1.35	1.35	3.0	2.0	38
337-2d1.40	1.40	3.0	2.0	38
337-2d1.45	1.45	3.0	2.0	38
337-2d1.50	1.50	5.0	2.0	38
337-2d1.60	1.60	5.0	2.0	38
337-2d1.70	1.70	5.0	2.0	38
337-2d1.80	1.80	5.0	2.0	38
337-2d1.90	1.90	5.0	2.0	38
337-2d2.00	2.00	8.0	2.0	38
337-2d2.50	2.50	8.0	2.5	38

Art. n°	d ₁	L ₁	D	L
337-2d3.00	3.00	10.0	3.0	44
337-2d4.00	4.00	12.0	4.0	50
337-2d5.00	5.00	12.0	5.0	50
337-2d6.00	6.00	15.0	6.0	61
337-2d8.00	8.00	20.0	8.0	72
337-2d10.00	10.00	20.0	10.0	72
337-2d12.00	12.00	25.0	12.0	83
337-2d16.00	16.00	25.0	16.0	83
337-2d20.00	20.00	35.0	20.0	104

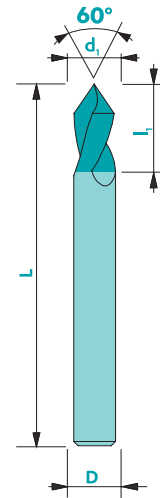
NC Center drill 60°

337-3

Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	70	80	□	■	Trio
Steel > 700 N/mm ²	60	70	□	■	Trio
Stainless steel	20	40	□	■	Nemo
Cast iron	60	70	□	■	Nemo
Copper	100	130	□	■	Solo
Brass - Bronze	80	120	■	■	Solo
Aluminium	100	120	□	■	Solo
Gold - Silver	80	100	■	■	Solo
Platinum - Palladium	-	20	-	□	Solo
Superalloys	-	25	-	■	Trio
Titanium	40	60	□	■	Rico

not adapted - adapted □ highly adapted ■

Tolerances $d_1 \leq 1 \text{ mm} \rightarrow +0/-0.01$ D: h5
 $d_1 > 1 \text{ mm} \rightarrow +0/-0.02$
 $d_1 = D \rightarrow d_1: e8$

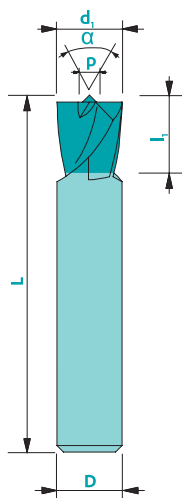
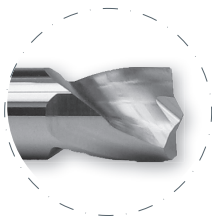


Available uncoated or coated (see page 61)

Art. n°	d_1	l_1	D	L
337-3d0.50	0.50	3.0	2.0	38
337-3d0.60	0.60	3.0	2.0	38
337-3d0.70	0.70	3.0	2.0	38
337-3d0.80	0.80	3.0	2.0	38
337-3d0.90	0.90	3.0	2.0	38
337-3d1.00	1.00	3.0	2.0	38
337-3d1.10	1.10	3.0	2.0	38
337-3d1.20	1.20	3.0	2.0	38
337-3d1.30	1.30	3.0	2.0	38
337-3d1.40	1.40	3.0	2.0	38
337-3d1.50	1.50	5.0	2.0	38
337-3d1.60	1.60	5.0	2.0	38
337-3d1.70	1.70	5.0	2.0	38
337-3d1.80	1.80	5.0	2.0	38
337-3d1.90	1.90	5.0	2.0	38
337-3d2.00	2.00	8.0	2.0	38
337-3d2.50	2.50	8.0	2.5	38
337-3d3.00	3.00	10.0	3.0	44
337-3d4.00	4.00	12.0	4.0	50
337-3d5.00	5.00	12.0	5.0	50
337-3d6.00	6.00	15.0	6.0	61
337-3d8.00	8.00	20.0	8.0	72
337-3d10.00	10.00	20.0	10.0	72
337-3d12.00	12.00	25.0	12.0	83
337-3d16.00	16.00	25.0	16.0	83
337-3d20.00	20.00	35.0	20.0	104

	Z2
λ 24°	
MG10	N

Twist drill with centering tip



Available uncoated or coated (see page 61)

Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	70	80	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Trio
Steel > 700 N/mm ²	60	70	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Trio
Stainless steel	20	40	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Nemo
Cast iron	60	70	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Nemo
Copper	100	130	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Solo
Brass - Bronze	80	120	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Solo
Aluminium	100	120	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Solo
Gold - Silver	80	100	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Solo
Platinum - Palladium	-	20	-	<input type="checkbox"/>	Solo
Superalloys	-	25	-	<input checked="" type="checkbox"/>	Trio
Titanium	40	60	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Rico

not adapted - adapted highly adapted

Tolerances $d_1 \leq 1 \text{ mm} \rightarrow +0/-0.01$ $D: h5$
 $d_1 > 1 \text{ mm} \rightarrow +0/-0.02$
 $d_1 = D \rightarrow d_1: e8$

Z2

24°

MG10 N

Art. n°	d ₁	l ₁	D	L
338d2.00	2.00	8.0	3	33
338d2.10	2.10	8.0	3	33
338d2.20	2.20	8.0	3	33
338d2.30	2.30	8.0	3	33
338d2.40	2.40	8.0	3	33
338d2.50	2.50	8.0	3	33
338d2.60	2.60	8.0	3	33
338d2.70	2.70	8.0	3	33
338d2.80	2.80	8.0	3	33
338d2.90	2.90	8.0	3	33
338d3.00	3.00	8.0	3	33
338d3.10	3.10	8.0	4	33
338d3.20	3.20	8.0	4	33
338d3.30	3.30	8.0	4	33
338d3.40	3.40	8.0	4	33
338d3.50	3.50	8.0	4	33
338d3.60	3.60	8.0	4	33
338d3.70	3.70	8.0	4	33
338d3.80	3.80	8.0	4	33
338d3.90	3.90	8.0	4	33
338d4.00	4.00	8.0	4	33
338d4.10	4.10	8.0	5	33
338d4.20	4.20	8.0	5	33
338d4.30	4.30	8.0	5	33
338d4.40	4.40	8.0	5	33
338d4.50	4.50	8.0	5	33
338d4.60	4.60	8.0	5	33
338d4.70	4.70	8.0	5	33
338d4.80	4.80	8.0	5	33

Art. n°	d ₁	l ₁	D	L
338d4.90	4.90	8.0	5	33
338d5.00	5.00	8.0	5	33
338d5.10	5.10	8.0	6	33
338d5.20	5.20	8.0	6	33
338d5.30	5.30	8.0	6	33
338d5.40	5.40	8.0	6	33
338d5.50	5.50	8.0	6	33
338d5.60	5.60	8.0	6	33
338d5.70	5.70	8.0	6	33
338d5.80	5.80	8.0	6	33
338d5.90	5.90	8.0	6	33
338d6.00	6.00	8.0	6	33
338d6.50	6.50	8.0	7	33
338d7.00	7.00	8.0	7	33
338d7.50	7.50	8.0	8	33
338d8.00	8.00	8.0	8	33

Centering tip diameter*:

Ø P: _____

Centering tip angle (α)*:

90° 120° Other: _____

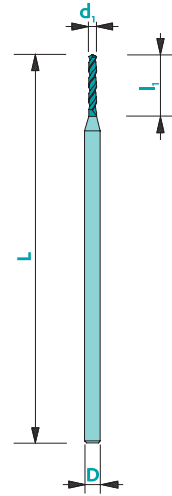
* Unless you specify otherwise, the diameter of the centering tip will be 1/3 of d₁ and the point angle will be 120°

Micro twist drill - helix 24°

Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	70	80	□	■	Trio
Steel > 700 N/mm ²	60	70	□	■	Trio
Stainless steel	20	40	□	□	Nemo
Cast iron	60	70	□	■	Nemo
Copper	100	130	□	□	Solo
Brass - Bronze	80	120	■	■	Solo
Aluminium	100	120	□	■	Solo
Gold - Silver	80	100	■	■	Solo
Platinum - Palladium	-	20	-	□	Solo
Superalloys	-	25	-	■	Trio
Titanium	40	60	□	□	Rico

not adapted - adapted □ highly adapted ■

Tolerances d₁: -0.002/-0.004
D: h5



Available uncoated or coated (see page 61)

Art. n°	d ₁	l ₁	D	L
339d0.05	0.05	0.35	1	30
339d0.06	0.06	0.40	1	30
339d0.07	0.07	0.50	1	30
339d0.08	0.08	0.60	1	30
339d0.09	0.09	0.65	1	30
339d0.10	0.10	0.70	1	30
339d0.11	0.11	0.70	1	30
339d0.12	0.12	0.70	1	30
339d0.13	0.13	0.70	1	30
339d0.14	0.14	0.70	1	30
339d0.15	0.15	1.00	1	30
339d0.16	0.16	1.00	1	30
339d0.17	0.17	1.00	1	30
339d0.18	0.18	1.00	1	30
339d0.19	0.19	1.00	1	30
339d0.20	0.20	1.00	1	30
339d0.21	0.21	1.00	1	30
339d0.22	0.22	1.00	1	30
339d0.23	0.23	1.00	1	30
339d0.24	0.24	1.00	1	30
339d0.25	0.25	1.00	1	30
339d0.26	0.26	1.00	1	30
339d0.27	0.27	1.00	1	30
339d0.28	0.28	1.00	1	30
339d0.29	0.29	1.00	1	30
339d0.30	0.30	1.50	1	30

Art. n°	d ₁	l ₁	D	L
339d0.31	0.31	1.50	1	30
339d0.32	0.32	1.50	1	30
339d0.33	0.33	1.50	1	30
339d0.34	0.34	1.50	1	30
339d0.35	0.35	1.50	1	30
339d0.36	0.36	1.50	1	30
339d0.37	0.37	1.50	1	30
339d0.38	0.38	1.50	1	30
339d0.39	0.39	1.50	1	30
339d0.40	0.40	2.00	1	30
339d0.41	0.41	2.00	1	30
339d0.42	0.42	2.00	1	30
339d0.43	0.43	2.00	1	30
339d0.44	0.44	2.00	1	30
339d0.45	0.45	3.50	1	30
339d0.46	0.46	3.50	1	30
339d0.47	0.47	3.50	1	30
339d0.48	0.48	3.50	1	30
339d0.49	0.49	4.00	1	30
339d0.50	0.50	4.00	1	30



118°

Z2

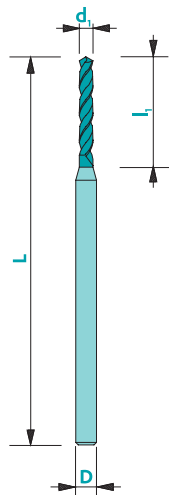


λ
24°

MG10

N

Micro twist drill - helix 34°



Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm²	70	80	□	□	Trio
Steel > 700 N/mm²	60	70	□	■	Trio
Stainless steel	20	40	□	■	Nemo
Cast iron	60	70	□	■	Nemo
Copper	100	130	□	■	Solo
Brass - Bronze	80	120	■	■	Solo
Aluminium	100	120	■	■	Solo
Gold - Silver	80	100	□	□	Solo
Platinum - Palladium	-	20	-	□	Solo
Superalloys	-	25	-	□	Trio
Titanium	40	60	□	□	Rico

not adapted - adapted □ highly adapted ■

Tolerances d₁: -0.002/-0.004
D: h5

Available uncoated or coated (see page 61)

118°

Z2

34°

MG10

N

Art. n°	d ₁	l ₁	D	L
340d0.50	0.50	4.0	1.5	30
340d0.51	0.51	4.0	1.5	30
340d0.52	0.52	4.0	1.5	30
340d0.53	0.53	4.0	1.5	30
340d0.54	0.54	4.0	1.5	30
340d0.55	0.55	4.0	1.5	30
340d0.56	0.56	4.0	1.5	30
340d0.57	0.57	4.0	1.5	30
340d0.58	0.58	4.0	1.5	30
340d0.59	0.59	4.0	1.5	30
340d0.60	0.60	5.0	1.5	30
340d0.61	0.61	5.0	1.5	30
340d0.62	0.62	5.0	1.5	30
340d0.63	0.63	5.0	1.5	30
340d0.64	0.64	5.0	1.5	30
340d0.65	0.65	5.0	1.5	30
340d0.66	0.66	5.0	1.5	30
340d0.67	0.67	5.0	1.5	30
340d0.68	0.68	5.0	1.5	30
340d0.69	0.69	5.0	1.5	30
340d0.70	0.70	5.0	1.5	30
340d0.71	0.71	5.0	1.5	30
340d0.72	0.72	5.0	1.5	30
340d0.73	0.73	5.0	1.5	30
340d0.74	0.74	5.0	1.5	30
340d0.75	0.75	5.0	1.5	30
340d0.76	0.76	5.0	1.5	30
340d0.77	0.77	5.0	1.5	30
340d0.78	0.78	5.0	1.5	30
340d0.79	0.79	5.0	1.5	30
340d0.80	0.80	6.0	1.5	30

Art. n°	d ₁	l ₁	D	L
340d0.81	0.81	6.0	1.5	30
340d0.82	0.82	6.0	1.5	30
340d0.83	0.83	6.0	1.5	30
340d0.84	0.84	6.0	1.5	30
340d0.85	0.85	6.0	1.5	30
340d0.86	0.86	6.0	1.5	30
340d0.87	0.87	6.0	1.5	30
340d0.88	0.88	6.0	1.5	30
340d0.89	0.89	6.0	1.5	30
340d0.90	0.90	7.0	1.5	30
340d0.91	0.91	7.0	1.5	30
340d0.92	0.92	7.0	1.5	30
340d0.93	0.93	7.0	1.5	30
340d0.94	0.94	7.0	1.5	30
340d0.95	0.95	7.0	1.5	30
340d0.96	0.96	7.0	1.5	30
340d0.97	0.97	7.0	1.5	30
340d0.98	0.98	7.0	1.5	30
340d0.99	0.99	7.0	1.5	30
340d1.00	1.00	8.0	1.5	30
340d1.01	1.01	8.0	1.5	30
340d1.02	1.02	8.0	1.5	30
340d1.03	1.03	8.0	1.5	30
340d1.04	1.04	8.0	1.5	30
340d1.05	1.05	8.0	1.5	30
340d1.06	1.06	8.0	1.5	30
340d1.07	1.07	8.0	1.5	30
340d1.08	1.08	8.0	1.5	30



Micro twist drill - helix 34°

340

Continuation

Art. n°	d ₁	l ₁	D	L
340d1.09	1.09	8.0	1.5	30
340d1.10	1.10	9.0	1.5	30
340d1.11	1.11	9.0	1.5	30
340d1.12	1.12	9.0	1.5	30
340d1.13	1.13	9.0	1.5	30
340d1.14	1.14	9.0	1.5	30
340d1.15	1.15	9.0	1.5	30
340d1.16	1.16	9.0	1.5	30
340d1.17	1.17	9.0	1.5	30
340d1.18	1.18	9.0	1.5	30
340d1.19	1.19	9.0	1.5	30
340d1.20	1.20	10.0	1.5	30
340d1.21	1.21	10.0	1.5	30
340d1.22	1.22	10.0	1.5	30
340d1.23	1.23	10.0	1.5	30
340d1.24	1.24	10.0	1.5	30
340d1.25	1.25	10.0	1.5	30
340d1.26	1.26	10.0	1.5	30
340d1.27	1.27	10.0	1.5	30
340d1.28	1.28	10.0	1.5	30
340d1.29	1.29	10.0	1.5	30
340d1.30	1.30	10.0	1.5	30
340d1.31	1.31	10.0	1.5	30
340d1.32	1.32	10.0	1.5	30
340d1.33	1.33	10.0	1.5	30
340d1.34	1.34	10.0	1.5	30
340d1.35	1.35	11.0	1.5	30
340d1.36	1.36	11.0	1.5	30
340d1.37	1.37	11.0	1.5	30
340d1.38	1.38	11.0	1.5	30
340d1.39	1.39	11.0	1.5	30
340d1.40	1.40	11.0	1.5	30
340d1.41	1.41	11.0	1.5	30
340d1.42	1.42	11.0	1.5	30
340d1.43	1.43	11.0	1.5	30
340d1.44	1.44	11.0	1.5	30
340d1.45	1.45	11.0	1.5	30
340d1.46	1.46	11.0	1.5	30
340d1.47	1.47	11.0	1.5	30
340d1.48	1.48	11.0	1.5	30
340d1.49	1.49	11.0	1.5	30



Available
uncoated or coated
(see page 61)



118°

Z2

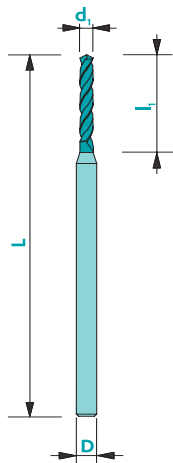


λ
34°

MC10

N

Twist drill - helix 24°



Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	70	80	□	■	Trio
Steel > 700 N/mm ²	60	70	□	■	Trio
Stainless steel	20	40	□	□	Nemo
Cast iron	60	70	□	■	Nemo
Copper	100	130	□	□	Solo
Brass - Bronze	80	120	■	■	Solo
Aluminium	100	120	□	■	Solo
Gold - Silver	80	100	■	■	Solo
Platinum - Palladium	-	20	-	□	Solo
Superalloys	-	25	-	■	Trio
Titanium	40	60	□	□	Rico

not adapted - adapted □ highly adapted ■

Tolerances d₁: -0.002/-0.004
D: h5

Available uncoated or coated (see page 61)

118° **Z2**

24°

MG10 **N**

Art. n°	d ₁	l ₁	D	L
340-1d0.40	0.40	3.0	1.5	30
340-1d0.41	0.41	3.0	1.5	30
340-1d0.42	0.42	3.0	1.5	30
340-1d0.43	0.43	3.0	1.5	30
340-1d0.44	0.44	3.0	1.5	30
340-1d0.45	0.45	3.0	1.5	30
340-1d0.46	0.46	3.0	1.5	30
340-1d0.47	0.47	3.0	1.5	30
340-1d0.48	0.48	3.0	1.5	30
340-1d0.49	0.49	3.0	1.5	30
340-1d0.50	0.50	4.0	1.5	30
340-1d0.51	0.51	4.0	1.5	30
340-1d0.52	0.52	4.0	1.5	30
340-1d0.53	0.53	4.0	1.5	30
340-1d0.54	0.54	4.0	1.5	30
340-1d0.55	0.55	4.0	1.5	30
340-1d0.56	0.56	4.0	1.5	30
340-1d0.57	0.57	4.0	1.5	30
340-1d0.58	0.58	4.0	1.5	30
340-1d0.59	0.59	4.0	1.5	30
340-1d0.60	0.60	5.0	1.5	30
340-1d0.61	0.61	5.0	1.5	30
340-1d0.62	0.62	5.0	1.5	30
340-1d0.63	0.63	5.0	1.5	30
340-1d0.64	0.64	5.0	1.5	30
340-1d0.65	0.65	5.0	1.5	30
340-1d0.66	0.66	5.0	1.5	30
340-1d0.67	0.67	5.0	1.5	30
340-1d0.68	0.68	5.0	1.5	30
340-1d0.69	0.69	5.0	1.5	30
340-1d0.70	0.70	5.0	1.5	30

Art. n°	d ₁	l ₁	D	L
340-1d0.71	0.71	5.0	1.5	30
340-1d0.72	0.72	5.0	1.5	30
340-1d0.73	0.73	5.0	1.5	30
340-1d0.74	0.74	5.0	1.5	30
340-1d0.75	0.75	5.0	1.5	30
340-1d0.76	0.76	5.0	1.5	30
340-1d0.77	0.77	5.0	1.5	30
340-1d0.78	0.78	5.0	1.5	30
340-1d0.79	0.79	5.0	1.5	30
340-1d0.80	0.80	6.0	1.5	30
340-1d0.81	0.81	6.0	1.5	30
340-1d0.82	0.82	6.0	1.5	30
340-1d0.83	0.83	6.0	1.5	30
340-1d0.84	0.84	6.0	1.5	30
340-1d0.85	0.85	6.0	1.5	30
340-1d0.86	0.86	6.0	1.5	30
340-1d0.87	0.87	6.0	1.5	30
340-1d0.88	0.88	6.0	1.5	30
340-1d0.89	0.89	6.0	1.5	30
340-1d0.90	0.90	7.0	1.5	30
340-1d0.91	0.91	7.0	1.5	30
340-1d0.92	0.92	7.0	1.5	30
340-1d0.93	0.93	7.0	1.5	30
340-1d0.94	0.94	7.0	1.5	30
340-1d0.95	0.95	7.0	1.5	30
340-1d0.96	0.96	7.0	1.5	30
340-1d0.97	0.97	7.0	1.5	30
340-1d0.98	0.98	7.0	1.5	30
340-1d0.99	0.99	7.0	1.5	30



Twist drill - helix 24°

340-1

Continuation

Art. n°	d ₁	l ₁	D	L	Art. n°	d ₁	l ₁	D	L
340-1d1.00	1.00	8.0	1.5	30	340-1d1.44	1.44	11.0	1.5	30
340-1d1.01	1.01	8.0	1.5	30	340-1d1.45	1.45	11.0	1.5	30
340-1d1.02	1.02	8.0	1.5	30	340-1d1.46	1.46	11.0	1.5	30
340-1d1.03	1.03	8.0	1.5	30	340-1d1.47	1.47	11.0	1.5	30
340-1d1.04	1.04	8.0	1.5	30	340-1d1.48	1.48	11.0	1.5	30
340-1d1.05	1.05	8.0	1.5	30	340-1d1.49	1.49	11.0	1.5	30
340-1d1.06	1.06	8.0	1.5	30	340-1d1.50	1.50	12.0	2.0	38
340-1d1.07	1.07	8.0	1.5	30	340-1d1.51	1.51	12.0	2.0	38
340-1d1.08	1.08	8.0	1.5	30	340-1d1.52	1.52	12.0	2.0	38
340-1d1.09	1.09	8.0	1.5	30	340-1d1.53	1.53	12.0	2.0	38
340-1d1.10	1.10	9.0	1.5	30	340-1d1.54	1.54	12.0	2.0	38
340-1d1.11	1.11	9.0	1.5	30	340-1d1.55	1.55	12.0	2.0	38
340-1d1.12	1.12	9.0	1.5	30	340-1d1.56	1.56	12.0	2.0	38
340-1d1.13	1.13	9.0	1.5	30	340-1d1.57	1.57	12.0	2.0	38
340-1d1.14	1.14	9.0	1.5	30	340-1d1.58	1.58	12.0	2.0	38
340-1d1.15	1.15	9.0	1.5	30	340-1d1.59	1.59	12.0	2.0	38
340-1d1.16	1.16	9.0	1.5	30	340-1d1.60	1.60	12.0	2.0	38
340-1d1.17	1.17	9.0	1.5	30	340-1d1.61	1.61	12.0	2.0	38
340-1d1.18	1.18	9.0	1.5	30	340-1d1.62	1.62	12.0	2.0	38
340-1d1.19	1.19	9.0	1.5	30	340-1d1.63	1.63	12.0	2.0	38
340-1d1.20	1.20	10.0	1.5	30	340-1d1.64	1.64	12.0	2.0	38
340-1d1.21	1.21	10.0	1.5	30	340-1d1.65	1.65	12.0	2.0	38
340-1d1.22	1.22	10.0	1.5	30	340-1d1.66	1.66	12.0	2.0	38
340-1d1.23	1.23	10.0	1.5	30	340-1d1.67	1.67	12.0	2.0	38
340-1d1.24	1.24	10.0	1.5	30	340-1d1.68	1.68	12.0	2.0	38
340-1d1.25	1.25	10.0	1.5	30	340-1d1.69	1.69	12.0	2.0	38
340-1d1.26	1.26	10.0	1.5	30	340-1d1.70	1.70	12.0	2.0	38
340-1d1.27	1.27	10.0	1.5	30	340-1d1.71	1.71	12.0	2.0	38
340-1d1.28	1.28	10.0	1.5	30	340-1d1.72	1.72	12.0	2.0	38
340-1d1.29	1.29	10.0	1.5	30	340-1d1.73	1.73	12.0	2.0	38
340-1d1.30	1.30	10.0	1.5	30	340-1d1.74	1.74	12.0	2.0	38
340-1d1.31	1.31	10.0	1.5	30	340-1d1.75	1.75	12.0	2.0	38
340-1d1.32	1.32	10.0	1.5	30	340-1d1.76	1.76	12.0	2.0	38
340-1d1.33	1.33	10.0	1.5	30	340-1d1.77	1.77	12.0	2.0	38
340-1d1.34	1.34	10.0	1.5	30	340-1d1.78	1.78	12.0	2.0	38
340-1d1.35	1.35	11.0	1.5	30	340-1d1.79	1.79	12.0	2.0	38
340-1d1.36	1.36	11.0	1.5	30	340-1d1.80	1.80	12.0	2.0	38
340-1d1.37	1.37	11.0	1.5	30	340-1d1.81	1.81	12.0	2.0	38
340-1d1.38	1.38	11.0	1.5	30	340-1d1.82	1.82	12.0	2.0	38
340-1d1.39	1.39	11.0	1.5	30	340-1d1.83	1.83	12.0	2.0	38
340-1d1.40	1.40	11.0	1.5	30	340-1d1.84	1.84	12.0	2.0	38
340-1d1.41	1.41	11.0	1.5	30	340-1d1.85	1.85	12.0	2.0	38
340-1d1.42	1.42	11.0	1.5	30	340-1d1.86	1.86	12.0	2.0	38
340-1d1.43	1.43	11.0	1.5	30	340-1d1.87	1.87	12.0	2.0	38



Available uncoated or coated (see page 61)



118°

Z2



λ
24°

MC10

N



340-1

Continuation

Twist drill - helix 24°



Available
uncoated or coated
(see page 61)



118°

Z2



λ
24°

MG10

N

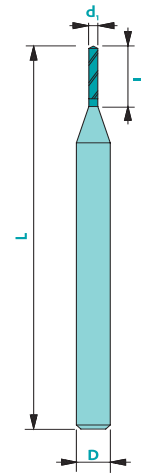
Art. n°	d ₁	l ₁	D	L
340-1d1.88	1.88	12.0	2.0	38
340-1d1.89	1.89	12.0	2.0	38
340-1d1.90	1.90	12.0	2.0	38
340-1d1.91	1.91	12.0	2.0	38
340-1d1.92	1.92	12.0	2.0	38
340-1d1.93	1.93	12.0	2.0	38
340-1d1.94	1.94	12.0	2.0	38
340-1d1.95	1.95	12.0	2.0	38
340-1d1.96	1.96	12.0	2.0	38
340-1d1.97	1.97	12.0	2.0	38
340-1d1.98	1.98	12.0	2.0	38
340-1d1.99	1.99	12.0	2.0	38

Micro twist drill - helix 34° - shank Ø3

342

Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	70	80	□	□	Trio
Steel > 700 N/mm ²	60	70	□	■	Trio
Stainless steel	20	40	□	■	Nemo
Cast iron	60	70	□	■	Nemo
Copper	100	130	□	■	Solo
Brass - Bronze	80	120	■	■	Solo
Aluminium	100	120	■	■	Solo
Gold - Silver	80	100	□	□	Solo
Platinum - Palladium	-	20	-	□	Solo
Superalloys	-	25	-	□	Trio
Titanium	40	60	□	□	Rico

not adapted - adapted □ highly adapted ■



Tolerances d₁: -0.002/-0.004
D: h5

Available uncoated or coated (see page 61)

Art. n°	d ₁	l ₁	D	L
342d0.05	0.05	0.30	3	38
342d0.06	0.06	0.40	3	38
342d0.07	0.07	0.40	3	38
342d0.08	0.08	0.50	3	38
342d0.09	0.09	0.50	3	38
342d0.10	0.10	0.50	3	38
342d0.11	0.11	0.50	3	38
342d0.12	0.12	0.50	3	38
342d0.13	0.13	0.50	3	38
342d0.14	0.14	0.50	3	38
342d0.15	0.15	0.80	3	38
342d0.16	0.16	0.80	3	38
342d0.17	0.17	0.80	3	38
342d0.18	0.18	0.80	3	38
342d0.19	0.19	0.80	3	38
342d0.20	0.20	0.80	3	38
342d0.21	0.21	1.00	3	38
342d0.22	0.22	1.00	3	38
342d0.23	0.23	1.00	3	38
342d0.24	0.24	1.00	3	38
342d0.25	0.25	1.00	3	38
342d0.26	0.26	1.50	3	38
342d0.27	0.27	1.50	3	38
342d0.28	0.28	1.50	3	38
342d0.29	0.29	1.50	3	38
342d0.30	0.30	1.50	3	38
342d0.31	0.31	2.00	3	38
342d0.32	0.32	2.00	3	38
342d0.33	0.33	2.00	3	38

Art. n°	d ₁	l ₁	D	L
342d0.34	0.34	2.00	3	38
342d0.35	0.35	2.00	3	38
342d0.36	0.36	3.00	3	38
342d0.37	0.37	3.00	3	38
342d0.38	0.38	3.00	3	38
342d0.39	0.39	3.00	3	38
342d0.40	0.40	3.00	3	38
342d0.41	0.41	3.00	3	38
342d0.42	0.42	3.00	3	38
342d0.43	0.43	3.00	3	38
342d0.44	0.44	3.00	3	38
342d0.45	0.45	3.00	3	38
342d0.46	0.46	3.00	3	38
342d0.47	0.47	4.00	3	38
342d0.48	0.48	4.00	3	38
342d0.49	0.49	4.00	3	38
342d0.50	0.50	4.00	3	38
342d0.51	0.51	4.00	3	38
342d0.52	0.52	4.00	3	38
342d0.53	0.53	4.00	3	38
342d0.54	0.54	4.00	3	38
342d0.55	0.55	4.00	3	38
342d0.56	0.56	4.00	3	38
342d0.57	0.57	4.00	3	38
342d0.58	0.58	4.00	3	38
342d0.59	0.59	4.00	3	38
342d0.60	0.60	4.00	3	38
342d0.61	0.61	5.00	3	38
342d0.62	0.62	5.00	3	38



Z2



λ
34°

MG10

N



Micro twist drill - helix 34° - shank Ø3



Available
uncoated or coated
(see page 61)



118°

Z2

λ
34°

MG10

N

Art. n°	d ₁	l ₁	D	L
342d0.63	0.63	5.00	3	38
342d0.64	0.64	5.00	3	38
342d0.65	0.65	5.00	3	38
342d0.66	0.66	5.00	3	38
342d0.67	0.67	5.00	3	38
342d0.68	0.68	5.00	3	38
342d0.69	0.69	5.00	3	38
342d0.70	0.70	5.00	3	38
342d0.71	0.71	5.00	3	38
342d0.72	0.72	5.00	3	38
342d0.73	0.73	5.00	3	38
342d0.74	0.74	5.00	3	38
342d0.75	0.75	5.00	3	38
342d0.76	0.76	5.00	3	38
342d0.77	0.77	5.00	3	38
342d0.78	0.78	5.00	3	38
342d0.79	0.79	5.00	3	38
342d0.80	0.80	5.00	3	38
342d0.81	0.81	6.00	3	38
342d0.82	0.82	6.00	3	38
342d0.83	0.83	6.00	3	38
342d0.84	0.84	6.00	3	38
342d0.85	0.85	6.00	3	38
342d0.86	0.86	6.00	3	38
342d0.87	0.87	6.00	3	38
342d0.88	0.88	6.00	3	38
342d0.89	0.89	6.00	3	38
342d0.90	0.90	6.00	3	38
342d0.91	0.91	6.00	3	38
342d0.92	0.92	6.00	3	38
342d0.93	0.93	6.00	3	38
342d0.94	0.94	6.00	3	38
342d0.95	0.95	6.00	3	38
342d0.96	0.96	6.00	3	38
342d0.97	0.97	6.00	3	38
342d0.98	0.98	6.00	3	38
342d0.99	0.99	6.00	3	38
342d1.00	1.00	6.00	3	38
342d1.01	1.01	6.00	3	38
342d1.02	1.02	6.00	3	38
342d1.03	1.03	6.00	3	38
342d1.04	1.04	6.00	3	38
342d1.05	1.05	6.00	3	38

Art. n°	d ₁	l ₁	D	L
342d1.06	1.06	6.00	3	38
342d1.07	1.07	6.00	3	38
342d1.08	1.08	6.00	3	38
342d1.09	1.09	6.00	3	38
342d1.10	1.10	6.00	3	38
342d1.12	1.12	6.00	3	38
342d1.13	1.13	6.00	3	38
342d1.14	1.14	6.00	3	38
342d1.15	1.15	6.00	3	38
342d1.16	1.16	6.00	3	38
342d1.17	1.17	6.00	3	38
342d1.18	1.18	6.00	3	38
342d1.19	1.19	6.00	3	38
342d1.20	1.20	6.00	3	38
342d1.21	1.21	8.00	3	38
342d1.22	1.22	8.00	3	38
342d1.23	1.23	8.00	3	38
342d1.24	1.24	8.00	3	38
342d1.25	1.25	8.00	3	38
342d1.26	1.26	8.00	3	38
342d1.27	1.27	8.00	3	38
342d1.28	1.28	8.00	3	38
342d1.29	1.29	8.00	3	38
342d1.30	1.30	8.00	3	38
342d1.31	1.31	8.00	3	38
342d1.32	1.32	8.00	3	38
342d1.33	1.33	8.00	3	38
342d1.34	1.34	8.00	3	38
342d1.35	1.35	8.00	3	38
342d1.36	1.36	8.00	3	38
342d1.37	1.37	8.00	3	38
342d1.38	1.38	8.00	3	38
342d1.39	1.39	8.00	3	38
342d1.40	1.40	8.00	3	38
342d1.41	1.41	8.00	3	38
342d1.42	1.42	8.00	3	38
342d1.43	1.43	8.00	3	38
342d1.44	1.44	8.00	3	38
342d1.45	1.45	8.00	3	38
342d1.46	1.46	8.00	3	38
342d1.47	1.47	8.00	3	38
342d1.48	1.48	8.00	3	38
342d1.49	1.49	8.00	3	38

Micro twist drill - helix 34° - shank Ø3

342

Continuation

Art. n°	d ₁	l ₁	D	L	Art. n°	d ₁	l ₁	D	L
342d1.50	1.50	8.00	3	38	342d1.95	1.95	12.00	3	38
342d1.51	1.51	8.00	3	38	342d1.96	1.96	12.00	3	38
342d1.52	1.52	8.00	3	38	342d1.97	1.97	12.00	3	38
342d1.53	1.53	8.00	3	38	342d1.98	1.98	12.00	3	38
342d1.54	1.54	8.00	3	38	342d1.99	1.99	12.00	3	38
342d1.55	1.55	8.00	3	38	342d2.00	2.00	12.00	3	38
342d1.56	1.56	8.00	3	38	342d2.05	2.05	12.00	3	38
342d1.57	1.57	8.00	3	38	342d2.10	2.10	12.00	3	38
342d1.58	1.58	8.00	3	38	342d2.15	2.15	12.00	3	38
342d1.59	1.59	8.00	3	38	342d2.20	2.20	12.00	3	38
342d1.60	1.60	8.00	3	38	342d2.25	2.25	12.00	3	38
342d1.61	1.61	8.00	3	38	342d2.30	2.30	12.00	3	38
342d1.62	1.62	8.00	3	38	342d2.35	2.35	12.00	3	38
342d1.63	1.63	8.00	3	38	342d2.40	2.40	12.00	3	38
342d1.64	1.64	8.00	3	38	342d2.45	2.45	12.00	3	38
342d1.65	1.65	8.00	3	38	342d2.50	2.50	12.00	3	38
342d1.66	1.66	8.00	3	38					
342d1.67	1.67	8.00	3	38					
342d1.68	1.68	8.00	3	38					
342d1.69	1.69	8.00	3	38					
342d1.70	1.70	8.00	3	38					
342d1.71	1.71	12.00	3	38					
342d1.72	1.72	12.00	3	38					
342d1.73	1.73	12.00	3	38					
342d1.74	1.74	12.00	3	38					
342d1.75	1.75	12.00	3	38					
342d1.76	1.76	12.00	3	38					
342d1.77	1.77	12.00	3	38					
342d1.78	1.78	12.00	3	38					
342d1.79	1.79	12.00	3	38					
342d1.80	1.80	12.00	3	38					
342d1.81	1.81	12.00	3	38					
342d1.82	1.82	12.00	3	38					
342d1.83	1.83	12.00	3	38					
342d1.84	1.84	12.00	3	38					
342d1.85	1.85	12.00	3	38					
342d1.86	1.86	12.00	3	38					
342d1.87	1.87	12.00	3	38					
342d1.88	1.88	12.00	3	38					
342d1.89	1.89	12.00	3	38					
342d1.90	1.90	12.00	3	38					
342d1.91	1.91	12.00	3	38					
342d1.92	1.92	12.00	3	38					
342d1.93	1.93	12.00	3	38					
342d1.94	1.94	12.00	3	38					



Available
uncoated or coated
(see page 61)



118°

Z2

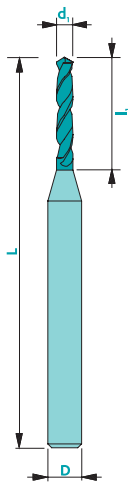


λ
34°

MG10

N

Drill - helix 34° - $l_1=6$ mm



Available uncoated or coated (see page 61)

Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	70	80	□	□	Trio
Steel > 700 N/mm ²	60	70	□	■	Trio
Stainless steel	20	40	□	■	Nemo
Cast iron	60	70	□	■	Nemo
Copper	100	130	□	■	Solo
Brass - Bronze	80	120	■	■	Solo
Aluminium	100	120	■	■	Solo
Gold - Silver	80	100	□	□	Solo
Platinum - Palladium	-	20	-	□	Solo
Superalloys	-	25	-	□	Trio
Titanium	40	60	□	□	Rico

not adapted - adapted □ highly adapted ■

Tolerances d_1 : -0.002/-0.004
D: h5

118°

Z2

λ 34°

MG10 N

Art. n°	d_1	l_1	D	L
343-6d0.60	0.60	6.0	2.0	38
343-6d0.61	0.61	6.0	2.0	38
343-6d0.62	0.62	6.0	2.0	38
343-6d0.63	0.63	6.0	2.0	38
343-6d0.64	0.64	6.0	2.0	38
343-6d0.65	0.65	6.0	2.0	38
343-6d0.66	0.66	6.0	2.0	38
343-6d0.67	0.67	6.0	2.0	38
343-6d0.68	0.68	6.0	2.0	38
343-6d0.69	0.69	6.0	2.0	38
343-6d0.70	0.70	6.0	2.0	38
343-6d0.71	0.71	6.0	2.0	38
343-6d0.72	0.72	6.0	2.0	38
343-6d0.73	0.73	6.0	2.0	38
343-6d0.74	0.74	6.0	2.0	38
343-6d0.75	0.75	6.0	2.0	38
343-6d0.76	0.76	6.0	2.0	38
343-6d0.77	0.77	6.0	2.0	38
343-6d0.78	0.78	6.0	2.0	38
343-6d0.79	0.79	6.0	2.0	38
343-6d0.80	0.80	6.0	2.0	38
343-6d0.81	0.81	6.0	2.0	38
343-6d0.82	0.82	6.0	2.0	38
343-6d0.83	0.83	6.0	2.0	38
343-6d0.84	0.84	6.0	2.0	38
343-6d0.85	0.85	6.0	2.0	38
343-6d0.86	0.86	6.0	2.0	38
343-6d0.87	0.87	6.0	2.0	38
343-6d0.88	0.88	6.0	2.0	38

Art. n°	d_1	l_1	D	L
343-6d0.89	0.89	6.0	2.0	38
343-6d0.90	0.90	6.0	2.0	38
343-6d0.91	0.91	6.0	2.0	38
343-6d0.92	0.92	6.0	2.0	38
343-6d0.93	0.93	6.0	2.0	38
343-6d0.94	0.94	6.0	2.0	38
343-6d0.95	0.95	6.0	2.0	38
343-6d0.96	0.96	6.0	2.0	38
343-6d0.97	0.97	6.0	2.0	38
343-6d0.98	0.98	6.0	2.0	38
343-6d0.99	0.99	6.0	2.0	38
343-6d1.00	1.00	6.0	2.0	38
343-6d1.01	1.01	6.0	2.0	38
343-6d1.02	1.02	6.0	2.0	38
343-6d1.03	1.03	6.0	2.0	38
343-6d1.04	1.04	6.0	2.0	38
343-6d1.05	1.05	6.0	2.0	38
343-6d1.06	1.06	6.0	2.0	38
343-6d1.07	1.07	6.0	2.0	38
343-6d1.08	1.08	6.0	2.0	38
343-6d1.09	1.09	6.0	2.0	38
343-6d1.09	1.09	6.0	2.0	38
343-6d1.10	1.10	6.0	2.0	38
343-6d1.11	1.11	6.0	2.0	38
343-6d1.12	1.12	6.0	2.0	38
343-6d1.13	1.13	6.0	2.0	38
343-6d1.14	1.14	6.0	2.0	38
343-6d1.15	1.15	6.0	2.0	38
343-6d1.16	1.16	6.0	2.0	38



Drill - helix 34° - l₁=6 mm

343-6

Continuation

Art. n°	d ₁	l ₁	D	L	Art. n°	d ₁	l ₁	D	L
343-6d1.17	1.17	6.0	2.0	38	343-6d1.62	1.62	6.0	2.0	38
343-6d1.18	1.18	6.0	2.0	38	343-6d1.63	1.63	6.0	2.0	38
343-6d1.19	1.19	6.0	2.0	38	343-6d1.64	1.64	6.0	2.0	38
343-6d1.20	1.20	6.0	2.0	38	343-6d1.65	1.65	6.0	2.0	38
343-6d1.21	1.21	6.0	2.0	38	343-6d1.66	1.66	6.0	2.0	38
343-6d1.22	1.22	6.0	2.0	38	343-6d1.67	1.67	6.0	2.0	38
343-6d1.23	1.23	6.0	2.0	38	343-6d1.68	1.68	6.0	2.0	38
343-6d1.24	1.24	6.0	2.0	38	343-6d1.69	1.69	6.0	2.0	38
343-6d1.25	1.25	6.0	2.0	38	343-6d1.70	1.70	6.0	2.0	38
343-6d1.26	1.26	6.0	2.0	38	343-6d1.71	1.71	6.0	2.0	38
343-6d1.27	1.27	6.0	2.0	38	343-6d1.72	1.72	6.0	2.0	38
343-6d1.28	1.28	6.0	2.0	38	343-6d1.73	1.73	6.0	2.0	38
343-6d1.29	1.29	6.0	2.0	38	343-6d1.74	1.74	6.0	2.0	38
343-6d1.30	1.30	6.0	2.0	38	343-6d1.75	1.75	6.0	2.0	38
343-6d1.31	1.31	6.0	2.0	38	343-6d1.76	1.76	6.0	2.0	38
343-6d1.32	1.32	6.0	2.0	38	343-6d1.77	1.77	6.0	2.0	38
343-6d1.33	1.33	6.0	2.0	38	343-6d1.78	1.78	6.0	2.0	38
343-6d1.34	1.34	6.0	2.0	38	343-6d1.79	1.79	6.0	2.0	38
343-6d1.35	1.35	6.0	2.0	38	343-6d1.80	1.80	6.0	2.0	38
343-6d1.36	1.36	6.0	2.0	38	343-6d1.81	1.81	6.0	2.0	38
343-6d1.37	1.37	6.0	2.0	38	343-6d1.82	1.82	6.0	2.0	38
343-6d1.38	1.38	6.0	2.0	38	343-6d1.83	1.83	6.0	2.0	38
343-6d1.39	1.39	6.0	2.0	38	343-6d1.84	1.84	6.0	2.0	38
343-6d1.40	1.40	6.0	2.0	38	343-6d1.85	1.85	6.0	2.0	38
343-6d1.41	1.41	6.0	2.0	38	343-6d1.86	1.86	6.0	2.0	38
343-6d1.42	1.42	6.0	2.0	38	343-6d1.87	1.87	6.0	2.0	38
343-6d1.43	1.43	6.0	2.0	38	343-6d1.88	1.88	6.0	2.0	38
343-6d1.44	1.44	6.0	2.0	38	343-6d1.89	1.89	6.0	2.0	38
343-6d1.45	1.45	6.0	2.0	38	343-6d1.90	1.90	6.0	2.0	38
343-6d1.46	1.46	6.0	2.0	38	343-6d1.91	1.91	6.0	2.0	38
343-6d1.47	1.47	6.0	2.0	38	343-6d1.92	1.92	6.0	2.0	38
343-6d1.48	1.48	6.0	2.0	38	343-6d1.93	1.93	6.0	2.0	38
343-6d1.49	1.49	6.0	2.0	38	343-6d1.94	1.94	6.0	2.0	38
343-6d1.50	1.50	6.0	2.0	38	343-6d1.95	1.95	6.0	2.0	38
343-6d1.51	1.51	6.0	2.0	38	343-6d1.96	1.96	6.0	2.0	38
343-6d1.52	1.52	6.0	2.0	38	343-6d1.97	1.97	6.0	2.0	38
343-6d1.53	1.53	6.0	2.0	38	343-6d1.98	1.98	6.0	2.0	38
343-6d1.54	1.54	6.0	2.0	38	343-6d1.99	1.99	6.0	2.0	38
343-6d1.55	1.55	6.0	2.0	38	343-6d2.00	2.00	6.0	2.0	38
343-6d1.56	1.56	6.0	2.0	38					
343-6d1.57	1.57	6.0	2.0	38					
343-6d1.58	1.58	6.0	2.0	38					
343-6d1.59	1.59	6.0	2.0	38					
343-6d1.60	1.60	6.0	2.0	38					
343-6d1.61	1.61	6.0	2.0	38					



Available
uncoated or coated
(see page 61)



118°

Z2

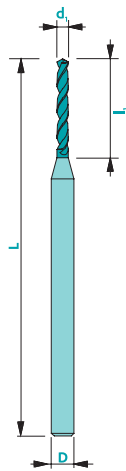


λ
34°

MG10

N

Drill - helix 34° - $l_1=8$ mm



Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	70	80	□	□	Trio
Steel > 700 N/mm ²	60	70	□	■	Trio
Stainless steel	20	40	□	■	Nemo
Cast iron	60	70	□	■	Nemo
Copper	100	130	□	■	Solo
Brass - Bronze	80	120	■	■	Solo
Aluminium	100	120	■	■	Solo
Gold - Silver	80	100	□	□	Solo
Platinum - Palladium	-	20	-	□	Solo
Superalloys	-	25	-	□	Trio
Titanium	40	60	□	□	Rico

not adapted - adapted □ highly adapted ■

Tolerances d_1 : -0.002/-0.004
D: h5

Available uncoated or coated (see page 61)

118°

Z2

λ 34°

MG10 N

Art. n°	d_1	l_1	D	L	Art. n°	d_1	l_1	D	L
343-8d0.80	0.80	8.0	2.0	38	343-8d1.10	1.10	8.0	2.0	38
343-8d0.81	0.81	8.0	2.0	38	343-8d1.11	1.11	8.0	2.0	38
343-8d0.82	0.82	8.0	2.0	38	343-8d1.12	1.12	8.0	2.0	38
343-8d0.83	0.83	8.0	2.0	38	343-8d1.13	1.13	8.0	2.0	38
343-8d0.84	0.84	8.0	2.0	38	343-8d1.14	1.14	8.0	2.0	38
343-8d0.85	0.85	8.0	2.0	38	343-8d1.15	1.15	8.0	2.0	38
343-8d0.86	0.86	8.0	2.0	38	343-8d1.16	1.16	8.0	2.0	38
343-8d0.87	0.87	8.0	2.0	38	343-8d1.17	1.17	8.0	2.0	38
343-8d0.88	0.88	8.0	2.0	38	343-8d1.18	1.18	8.0	2.0	38
343-8d0.89	0.89	8.0	2.0	38	343-8d1.19	1.19	8.0	2.0	38
343-8d0.90	0.90	8.0	2.0	38	343-8d1.20	1.20	8.0	2.0	38
343-8d0.91	0.91	8.0	2.0	38	343-8d1.21	1.21	8.0	2.0	38
343-8d0.92	0.92	8.0	2.0	38	343-8d1.22	1.22	8.0	2.0	38
343-8d0.93	0.93	8.0	2.0	38	343-8d1.23	1.23	8.0	2.0	38
343-8d0.94	0.94	8.0	2.0	38	343-8d1.24	1.24	8.0	2.0	38
343-8d0.95	0.95	8.0	2.0	38	343-8d1.25	1.25	8.0	2.0	38
343-8d0.96	0.96	8.0	2.0	38	343-8d1.26	1.26	8.0	2.0	38
343-8d0.97	0.97	8.0	2.0	38	343-8d1.27	1.27	8.0	2.0	38
343-8d0.98	0.98	8.0	2.0	38	343-8d1.28	1.28	8.0	2.0	38
343-8d0.99	0.99	8.0	2.0	38	343-8d1.29	1.29	8.0	2.0	38
343-8d1.00	1.00	8.0	2.0	38	343-8d1.30	1.30	8.0	2.0	38
343-8d1.01	1.01	8.0	2.0	38	343-8d1.31	1.31	8.0	2.0	38
343-8d1.02	1.02	8.0	2.0	38	343-8d1.32	1.32	8.0	2.0	38
343-8d1.03	1.03	8.0	2.0	38	343-8d1.33	1.33	8.0	2.0	38
343-8d1.04	1.04	8.0	2.0	38	343-8d1.34	1.34	8.0	2.0	38
343-8d1.05	1.05	8.0	2.0	38	343-8d1.35	1.35	8.0	2.0	38
343-8d1.06	1.06	8.0	2.0	38	343-8d1.36	1.36	8.0	2.0	38
343-8d1.07	1.07	8.0	2.0	38	343-8d1.37	1.37	8.0	2.0	38
343-8d1.08	1.08	8.0	2.0	38	343-8d1.38	1.38	8.0	2.0	38
343-8d1.09	1.09	8.0	2.0	38	343-8d1.39	1.39	8.0	2.0	38



Drill - helix 34° - l₁=8 mm

343-8

Continuation

Art. n°	d ₁	l ₁	D	L	Art. n°	d ₁	l ₁	D	L
343-8d1.40	1.40	8.0	2.0	38	343-8d1.85	1.85	8.0	2.0	38
343-8d1.41	1.41	8.0	2.0	38	343-8d1.86	1.86	8.0	2.0	38
343-8d1.42	1.42	8.0	2.0	38	343-8d1.87	1.87	8.0	2.0	38
343-8d1.43	1.43	8.0	2.0	38	343-8d1.88	1.88	8.0	2.0	38
343-8d1.44	1.44	8.0	2.0	38	343-8d1.89	1.89	8.0	2.0	38
343-8d1.45	1.45	8.0	2.0	38	343-8d1.90	1.90	8.0	2.0	38
343-8d1.46	1.46	8.0	2.0	38	343-8d1.91	1.91	8.0	2.0	38
343-8d1.47	1.47	8.0	2.0	38	343-8d1.92	1.92	8.0	2.0	38
343-8d1.48	1.48	8.0	2.0	38	343-8d1.93	1.93	8.0	2.0	38
343-8d1.49	1.49	8.0	2.0	38	343-8d1.94	1.94	8.0	2.0	38
343-8d1.50	1.50	8.0	2.0	38	343-8d1.95	1.95	8.0	2.0	38
343-8d1.51	1.51	8.0	2.0	38	343-8d1.96	1.96	8.0	2.0	38
343-8d1.52	1.52	8.0	2.0	38	343-8d1.97	1.97	8.0	2.0	38
343-8d1.53	1.53	8.0	2.0	38	343-8d1.98	1.98	8.0	2.0	38
343-8d1.54	1.54	8.0	2.0	38	343-8d1.99	1.99	8.0	2.0	38
343-8d1.55	1.55	8.0	2.0	38	343-8d2.00	2.00	8.0	2.0	38
343-8d1.56	1.56	8.0	2.0	38	343-8d2.01	2.01	8.0	3.0	38
343-8d1.57	1.57	8.0	2.0	38	343-8d2.02	2.02	8.0	3.0	38
343-8d1.58	1.58	8.0	2.0	38	343-8d2.03	2.03	8.0	3.0	38
343-8d1.59	1.59	8.0	2.0	38	343-8d2.04	2.04	8.0	3.0	38
343-8d1.60	1.60	8.0	2.0	38	343-8d2.05	2.05	8.0	3.0	38
343-8d1.61	1.61	8.0	2.0	38	343-8d2.06	2.06	8.0	3.0	38
343-8d1.62	1.62	8.0	2.0	38	343-8d2.07	2.07	8.0	3.0	38
343-8d1.63	1.63	8.0	2.0	38	343-8d2.08	2.08	8.0	3.0	38
343-8d1.64	1.64	8.0	2.0	38	343-8d2.09	2.09	8.0	3.0	38
343-8d1.65	1.65	8.0	2.0	38	343-8d2.10	2.10	8.0	3.0	38
343-8d1.66	1.66	8.0	2.0	38	343-8d2.11	2.11	8.0	3.0	38
343-8d1.67	1.67	8.0	2.0	38	343-8d2.12	2.12	8.0	3.0	38
343-8d1.68	1.68	8.0	2.0	38	343-8d2.13	2.13	8.0	3.0	38
343-8d1.69	1.69	8.0	2.0	38	343-8d2.14	2.14	8.0	3.0	38
343-8d1.70	1.70	8.0	2.0	38	343-8d2.15	2.15	8.0	3.0	38
343-8d1.71	1.71	8.0	2.0	38	343-8d2.16	2.16	8.0	3.0	38
343-8d1.72	1.72	8.0	2.0	38	343-8d2.17	2.17	8.0	3.0	38
343-8d1.73	1.73	8.0	2.0	38	343-8d2.18	2.18	8.0	3.0	38
343-8d1.74	1.74	8.0	2.0	38	343-8d2.19	2.19	8.0	3.0	38
343-8d1.75	1.75	8.0	2.0	38	343-8d2.20	2.20	8.0	3.0	38
343-8d1.76	1.76	8.0	2.0	38	343-8d2.21	2.21	8.0	3.0	38
343-8d1.77	1.77	8.0	2.0	38	343-8d2.22	2.22	8.0	3.0	38
343-8d1.78	1.78	8.0	2.0	38	343-8d2.23	2.23	8.0	3.0	38
343-8d1.79	1.79	8.0	2.0	38	343-8d2.24	2.24	8.0	3.0	38
343-8d1.80	1.80	8.0	2.0	38	343-8d2.25	2.25	8.0	3.0	38
343-8d1.81	1.81	8.0	2.0	38	343-8d2.26	2.26	8.0	3.0	38
343-8d1.82	1.82	8.0	2.0	38	343-8d2.27	2.27	8.0	3.0	38
343-8d1.83	1.83	8.0	2.0	38	343-8d2.28	2.28	8.0	3.0	38
343-8d1.84	1.84	8.0	2.0	38	343-8d2.29	2.29	8.0	3.0	38



Available
uncoated or coated
(see page 61)



118°

Z2



λ
34°

MG10

N



Drill - helix 34° - $l_1=8$ mm



Available uncoated or coated (see page 61)



118°

Z2



λ
34°

MG10

N

Art. n°	d_1	l_1	D	L
343-8d2.30	2.30	8.0	3.0	38
343-8d2.31	2.31	8.0	3.0	38
343-8d2.32	2.32	8.0	3.0	38
343-8d2.33	2.33	8.0	3.0	38
343-8d2.34	2.34	8.0	3.0	38
343-8d2.35	2.35	8.0	3.0	38
343-8d2.36	2.36	8.0	3.0	38
343-8d2.37	2.37	8.0	3.0	38
343-8d2.38	2.38	8.0	3.0	38
343-8d2.39	2.39	8.0	3.0	38
343-8d2.40	2.40	8.0	3.0	38
343-8d2.41	2.41	8.0	3.0	38
343-8d2.42	2.42	8.0	3.0	38
343-8d2.43	2.43	8.0	3.0	38
343-8d2.44	2.44	8.0	3.0	38
343-8d2.45	2.45	8.0	3.0	38
343-8d2.46	2.46	8.0	3.0	38
343-8d2.47	2.47	8.0	3.0	38
343-8d2.48	2.48	8.0	3.0	38
343-8d2.49	2.49	8.0	3.0	38
343-8d2.50	2.50	8.0	3.0	38
343-8d2.51	2.51	8.0	3.0	38
343-8d2.52	2.52	8.0	3.0	38
343-8d2.53	2.53	8.0	3.0	38
343-8d2.54	2.54	8.0	3.0	38
343-8d2.55	2.55	8.0	3.0	38
343-8d2.56	2.56	8.0	3.0	38
343-8d2.57	2.57	8.0	3.0	38
343-8d2.58	2.58	8.0	3.0	38
343-8d2.59	2.59	8.0	3.0	38
343-8d2.60	2.60	8.0	3.0	38
343-8d2.61	2.61	8.0	3.0	38
343-8d2.62	2.62	8.0	3.0	38
343-8d2.63	2.63	8.0	3.0	38
343-8d2.64	2.64	8.0	3.0	38
343-8d2.65	2.65	8.0	3.0	38
343-8d2.66	2.66	8.0	3.0	38
343-8d2.67	2.67	8.0	3.0	38
343-8d2.68	2.68	8.0	3.0	38
343-8d2.69	2.69	8.0	3.0	38
343-8d2.70	2.70	8.0	3.0	38
343-8d2.71	2.71	8.0	3.0	38
343-8d2.72	2.72	8.0	3.0	38
343-8d2.73	2.73	8.0	3.0	38
343-8d2.74	2.74	8.0	3.0	38

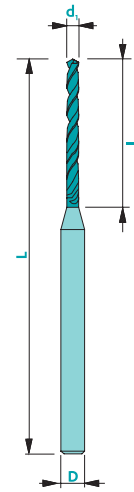
Art. n°	d_1	l_1	D	L
343-8d2.75	2.75	8.0	3.0	38
343-8d2.76	2.76	8.0	3.0	38
343-8d2.77	2.77	8.0	3.0	38
343-8d2.78	2.78	8.0	3.0	38
343-8d2.79	2.79	8.0	3.0	38
343-8d2.80	2.80	8.0	3.0	38
343-8d2.81	2.81	8.0	3.0	38
343-8d2.82	2.82	8.0	3.0	38
343-8d2.83	2.83	8.0	3.0	38
343-8d2.84	2.84	8.0	3.0	38
343-8d2.85	2.85	8.0	3.0	38
343-8d2.86	2.86	8.0	3.0	38
343-8d2.87	2.87	8.0	3.0	38
343-8d2.88	2.88	8.0	3.0	38
343-8d2.89	2.89	8.0	3.0	38
343-8d2.90	2.90	8.0	3.0	38
343-8d2.91	2.91	8.0	3.0	38
343-8d2.92	2.92	8.0	3.0	38
343-8d2.93	2.93	8.0	3.0	38
343-8d2.94	2.94	8.0	3.0	38
343-8d2.95	2.95	8.0	3.0	38
343-8d2.96	2.96	8.0	3.0	38
343-8d2.97	2.97	8.0	3.0	38
343-8d2.98	2.98	8.0	3.0	38
343-8d2.99	2.99	8.0	3.0	38
343-8d3.00	3.00	8.0	3.0	38
343-8d3.10	3.10	8.0	4.0	38
343-8d3.20	3.20	8.0	4.0	38
343-8d3.30	3.30	8.0	4.0	38
343-8d3.40	3.40	8.0	4.0	38
343-8d3.50	3.50	8.0	4.0	38
343-8d3.60	3.60	8.0	4.0	38
343-8d3.70	3.70	8.0	4.0	38
343-8d3.80	3.80	8.0	4.0	38
343-8d3.90	3.90	8.0	4.0	38
343-8d4.00	4.00	8.0	4.0	38
343-8d4.10	4.10	8.0	4.5	38
343-8d4.20	4.20	8.0	4.5	38
343-8d4.30	4.30	8.0	4.5	38
343-8d4.40	4.40	8.0	4.5	38
343-8d4.50	4.50	8.0	4.5	38
343-8d5.00	5.00	8.0	5.0	38
343-8d5.50	5.50	8.0	5.5	38
343-8d6.00	6.00	8.0	6.0	38

Drill - helix 34° - l₁=12 mm

Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	70	80	□	□	Trio
Steel > 700 N/mm ²	60	70	□	■	Trio
Stainless steel	20	40	□	■	Nemo
Cast iron	60	70	□	■	Nemo
Copper	100	130	□	■	Solo
Brass - Bronze	80	120	■	■	Solo
Aluminium	100	120	■	■	Solo
Gold - Silver	80	100	□	□	Solo
Platinum - Palladium	-	20	-	□	Solo
Superalloys	-	25	-	□	Trio
Titanium	40	60	□	□	Rico

not adapted - adapted □ highly adapted ■

Tolerances d₁: -0.002/-0.004
D: h5



Available uncoated or coated (see page 61)

Art. n°	d ₁	l ₁	D	L
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343-12d0.80	0.80	12.0	2.0	38
343-12d0.81	0.81	12.0	2.0	38
343-12d0.82	0.82	12.0	2.0	38
343-12d0.83	0.83	12.0	2.0	38
343-12d0.84	0.84	12.0	2.0	38
343-12d0.85	0.85	12.0	2.0	38
343-12d0.86	0.86	12.0	2.0	38
343-12d0.87	0.87	12.0	2.0	38
343-12d0.88	0.88	12.0	2.0	38
343-12d0.89	0.89	12.0	2.0	38
343-12d0.90	0.90	12.0	2.0	38
343-12d0.91	0.91	12.0	2.0	38
343-12d0.92	0.92	12.0	2.0	38
343-12d0.93	0.93	12.0	2.0	38
343-12d0.94	0.94	12.0	2.0	38
343-12d0.95	0.95	12.0	2.0	38
343-12d0.96	0.96	12.0	2.0	38
343-12d0.97	0.97	12.0	2.0	38
343-12d0.98	0.98	12.0	2.0	38
343-12d0.99	0.99	12.0	2.0	38
343-12d1.00	1.00	12.0	2.0	38
343-12d1.01	1.01	12.0	2.0	38
343-12d1.02	1.02	12.0	2.0	38
343-12d1.03	1.03	12.0	2.0	38
343-12d1.04	1.04	12.0	2.0	38
343-12d1.05	1.05	12.0	2.0	38
343-12d1.06	1.06	12.0	2.0	38
343-12d1.07	1.07	12.0	2.0	38

Art. n°	d ₁	l ₁	D	L
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343-12d1.08	1.08	12.0	2.0	38
343-12d1.09	1.09	12.0	2.0	38
343-12d1.10	1.10	12.0	2.0	38
343-12d1.11	1.11	12.0	2.0	38
343-12d1.12	1.12	12.0	2.0	38
343-12d1.13	1.13	12.0	2.0	38
343-12d1.14	1.14	12.0	2.0	38
343-12d1.15	1.15	12.0	2.0	38
343-12d1.16	1.16	12.0	2.0	38
343-12d1.17	1.17	12.0	2.0	38
343-12d1.18	1.18	12.0	2.0	38
343-12d1.19	1.19	12.0	2.0	38
343-12d1.20	1.20	12.0	2.0	38
343-12d1.21	1.21	12.0	2.0	38
343-12d1.22	1.22	12.0	2.0	38
343-12d1.23	1.23	12.0	2.0	38
343-12d1.24	1.24	12.0	2.0	38
343-12d1.25	1.25	12.0	2.0	38
343-12d1.26	1.26	12.0	2.0	38
343-12d1.27	1.27	12.0	2.0	38
343-12d1.28	1.28	12.0	2.0	38
343-12d1.29	1.29	12.0	2.0	38
343-12d1.30	1.30	12.0	2.0	38
343-12d1.31	1.31	12.0	2.0	38
343-12d1.32	1.32	12.0	2.0	38
343-12d1.33	1.33	12.0	2.0	38
343-12d1.34	1.34	12.0	2.0	38
343-12d1.35	1.35	12.0	2.0	38



118°

Z2



λ
34°

MG10

N

Drill - helix 34° - l₁=12 mm



Available
uncoated or coated
(see page 61)

Z2

118°



λ
34°

MG10

N

Art. n°	d ₁	l ₁	D	L
343-12d1.36	1.36	12.0	2.0	38
343-12d1.37	1.37	12.0	2.0	38
343-12d1.38	1.38	12.0	2.0	38
343-12d1.39	1.39	12.0	2.0	38
343-12d1.40	1.40	12.0	2.0	38
343-12d1.41	1.41	12.0	2.0	38
343-12d1.42	1.42	12.0	2.0	38
343-12d1.43	1.43	12.0	2.0	38
343-12d1.44	1.44	12.0	2.0	38
343-12d1.45	1.45	12.0	2.0	38
343-12d1.46	1.46	12.0	2.0	38
343-12d1.47	1.47	12.0	2.0	38
343-12d1.48	1.48	12.0	2.0	38
343-12d1.49	1.49	12.0	2.0	38
343-12d1.50	1.50	12.0	2.0	38
343-12d1.51	1.51	12.0	2.0	38
343-12d1.52	1.52	12.0	2.0	38
343-12d1.53	1.53	12.0	2.0	38
343-12d1.54	1.54	12.0	2.0	38
343-12d1.55	1.55	12.0	2.0	38
343-12d1.56	1.56	12.0	2.0	38
343-12d1.57	1.57	12.0	2.0	38
343-12d1.58	1.58	12.0	2.0	38
343-12d1.59	1.59	12.0	2.0	38
343-12d1.60	1.60	12.0	2.0	38
343-12d1.61	1.61	12.0	2.0	38
343-12d1.62	1.62	12.0	2.0	38
343-12d1.63	1.63	12.0	2.0	38
343-12d1.64	1.64	12.0	2.0	38
343-12d1.65	1.65	12.0	2.0	38
343-12d1.66	1.66	12.0	2.0	38
343-12d1.67	1.67	12.0	2.0	38
343-12d1.68	1.68	12.0	2.0	38
343-12d1.69	1.69	12.0	2.0	38
343-12d1.70	1.70	12.0	2.0	38
343-12d1.71	1.71	12.0	2.0	38
343-12d1.72	1.72	12.0	2.0	38
343-12d1.73	1.73	12.0	2.0	38
343-12d1.74	1.74	12.0	2.0	38
343-12d1.75	1.75	12.0	2.0	38
343-12d1.76	1.76	12.0	2.0	38
343-12d1.77	1.77	12.0	2.0	38
343-12d1.78	1.78	12.0	2.0	38
343-12d1.79	1.79	12.0	2.0	38

Art. n°	d ₁	l ₁	D	L
343-12d1.80	1.80	12.0	2.0	38
343-12d1.81	1.81	12.0	2.0	38
343-12d1.82	1.82	12.0	2.0	38
343-12d1.83	1.83	12.0	2.0	38
343-12d1.84	1.84	12.0	2.0	38
343-12d1.85	1.85	12.0	2.0	38
343-12d1.86	1.86	12.0	2.0	38
343-12d1.87	1.87	12.0	2.0	38
343-12d1.88	1.88	12.0	2.0	38
343-12d1.89	1.89	12.0	2.0	38
343-12d1.90	1.90	12.0	2.0	38
343-12d1.91	1.91	12.0	2.0	38
343-12d1.92	1.92	12.0	2.0	38
343-12d1.93	1.93	12.0	2.0	38
343-12d1.94	1.94	12.0	2.0	38
343-12d1.95	1.95	12.0	2.0	38
343-12d1.96	1.96	12.0	2.0	38
343-12d1.97	1.97	12.0	2.0	38
343-12d1.98	1.98	12.0	2.0	38
343-12d1.99	1.99	12.0	2.0	38
343-12d2.00	2.00	12.0	2.0	38
343-12d2.05	2.05	12.0	3.0	38
343-12d2.10	2.10	12.0	3.0	38
343-12d2.15	2.15	12.0	3.0	38
343-12d2.17	2.17	12.0	3.0	38
343-12d2.18	2.18	12.0	3.0	38
343-12d2.20	2.20	12.0	3.0	38
343-12d2.25	2.25	12.0	3.0	38
343-12d2.27	2.27	12.0	3.0	38
343-12d2.28	2.28	12.0	3.0	38
343-12d2.30	2.30	12.0	3.0	38
343-12d2.35	2.35	12.0	3.0	38
343-12d2.37	2.37	12.0	3.0	38
343-12d2.38	2.38	12.0	3.0	38
343-12d2.40	2.40	12.0	3.0	38
343-12d2.45	2.45	12.0	3.0	38
343-12d2.50	2.50	12.0	3.0	38
343-12d2.55	2.55	12.0	3.0	38
343-12d2.60	2.60	12.0	3.0	38
343-12d2.65	2.65	12.0	3.0	38
343-12d2.70	2.70	12.0	3.0	38
343-12d2.80	2.80	12.0	3.0	38
343-12d2.90	2.90	12.0	3.0	38
343-12d2.95	2.95	12.0	3.0	38



Drill - helix 34° - $l_1=12$ mm

343-12

Continuation

Art. n°	d_1	l_1	D	L
343-12d3.00	3.00	12.0	3.0	38
343-12d3.10	3.10	12.0	4.0	38
343-12d3.20	3.20	12.0	4.0	38
343-12d3.30	3.30	12.0	4.0	38
343-12d3.40	3.40	12.0	4.0	38
343-12d3.50	3.50	12.0	4.0	38
343-12d3.60	3.60	12.0	4.0	38
343-12d3.70	3.70	12.0	4.0	38
343-12d3.80	3.80	12.0	4.0	38
343-12d3.90	3.90	12.0	4.0	38
343-12d4.00	4.00	12.0	4.0	38
343-12d4.10	4.10	12.0	4.5	38
343-12d4.20	4.20	12.0	4.5	38
343-12d4.30	4.30	12.0	4.5	38
343-12d4.40	4.40	12.0	4.5	38
343-12d4.50	4.50	12.0	4.5	38
343-12d5.00	5.00	12.0	5.0	38
343-12d5.50	5.50	12.0	5.5	38
343-12d6.00	6.00	12.0	6.0	38



Available
uncoated or coated
(see page 61)



118°

Z2

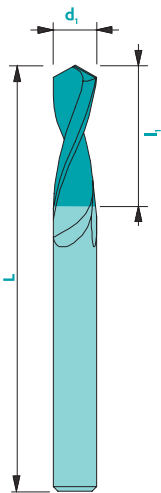


λ
34°

MG10

N

Twist drill - helix 24°



Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	70	80	□	■	Trio
Steel > 700 N/mm ²	60	70	□	■	Trio
Stainless steel	20	40	□	□	Nemo
Cast iron	60	70	□	■	Nemo
Copper	100	130	□	□	Solo
Brass - Bronze	80	120	■	■	Solo
Aluminium	100	120	□	■	Solo
Gold - Silver	80	100	■	■	Solo
Platinum - Palladium	-	20	-	□	Solo
Superalloys	-	25	-	■	Trio
Titanium	40	60	□	□	Rico

not adapted - adapted □ highly adapted ■

Tolerances d₁: h5

Available uncoated or coated (see page 61)

118° **Z2**

λ **24°**

MG10 **N**

Art. n°	d ₁	l ₁	L
348d0.30	0.30	5.0	30
348d0.35	0.35	5.0	30
348d0.40	0.40	6.0	30
348d0.45	0.45	6.0	30
348d0.50	0.50	6.0	30
348d0.55	0.55	6.0	30
348d0.60	0.60	6.0	30
348d0.65	0.65	6.0	30
348d0.70	0.70	6.0	30
348d0.75	0.75	6.0	30
348d0.80	0.80	7.0	30
348d0.85	0.85	7.0	30
348d0.90	0.90	7.0	30
348d0.95	0.95	7.0	30
348d1.00	1.00	7.0	30
348d1.05	1.05	8.0	30
348d1.10	1.10	8.0	30
348d1.15	1.15	8.0	30
348d1.20	1.20	8.0	30
348d1.25	1.25	8.0	30
348d1.30	1.30	8.0	30
348d1.35	1.35	8.0	30
348d1.40	1.40	8.0	30
348d1.45	1.45	8.0	30
348d1.50	1.50	8.0	30
348d1.55	1.55	9.0	38
348d1.60	1.60	9.0	38
348d1.65	1.65	9.0	38
348d1.70	1.70	9.0	38
348d1.75	1.75	9.0	38

Art. n°	d ₁	l ₁	L
348d1.80	1.80	9.0	38
348d1.85	1.85	9.0	38
348d1.90	1.90	9.0	38
348d1.95	1.95	9.0	38
348d2.00	2.00	9.0	38
348d2.05	2.05	9.0	38
348d2.10	2.10	9.0	38
348d2.15	2.15	10.0	40
348d2.20	2.20	10.0	40
348d2.25	2.25	10.0	40
348d2.30	2.30	10.0	40
348d2.35	2.35	10.0	40
348d2.40	2.40	11.0	43
348d2.45	2.45	11.0	43
348d2.50	2.50	11.0	43
348d2.55	2.55	11.0	43
348d2.60	2.60	11.0	43
348d2.65	2.65	11.0	43
348d2.70	2.70	12.0	46
348d2.75	2.75	12.0	46
348d2.80	2.80	12.0	46
348d2.85	2.85	12.0	46
348d2.90	2.90	12.0	46
348d2.95	2.95	12.0	46
348d3.00	3.00	12.0	46
348d3.05	3.05	14.0	49
348d3.10	3.10	14.0	49
348d3.15	3.15	14.0	49
348d3.20	3.20	14.0	49



Twist drill - helix 24°

348

Continuation

Art. n°	d ₁	l ₁	L	Art. n°	d ₁	l ₁	L
348d3.25	3.25	14.0	49	348d6.00	6.00	21.0	66
348d3.30	3.30	14.0	49	348d6.10	6.10	23.0	70
348d3.35	3.35	14.0	49	348d6.20	6.20	23.0	70
348d3.40	3.40	15.0	52	348d6.30	6.30	23.0	70
348d3.45	3.45	15.0	52	348d6.40	6.40	23.0	70
348d3.50	3.50	15.0	52	348d6.50	6.50	23.0	70
348d3.55	3.55	15.0	52	348d6.60	6.60	23.0	70
348d3.60	3.60	15.0	52	348d6.70	6.70	23.0	70
348d3.65	3.65	15.0	52	348d6.80	6.80	25.0	74
348d3.70	3.70	15.0	52	348d6.90	6.90	25.0	74
348d3.75	3.75	15.0	52	348d7.00	7.00	25.0	74
348d3.80	3.80	17.0	52	348d7.10	7.10	25.0	74
348d3.85	3.85	17.0	50	348d7.20	7.20	25.0	74
348d3.90	3.90	17.0	55	348d7.30	7.30	25.0	74
348d3.95	3.95	17.0	55	348d7.40	7.40	25.0	74
348d4.00	4.00	17.0	55	348d7.50	7.50	25.0	74
348d4.05	4.05	17.0	55	348d7.60	7.60	27.0	79
348d4.10	4.10	17.0	55	348d7.70	7.70	27.0	79
348d4.15	4.15	17.0	55	348d7.80	7.80	27.0	79
348d4.20	4.20	17.0	55	348d7.90	7.90	27.0	79
348d4.25	4.25	17.0	55	348d8.00	8.00	27.0	79
348d4.30	4.30	18.0	58	348d8.10	8.10	27.0	79
348d4.35	4.35	18.0	58	348d8.20	8.20	27.0	79
348d4.40	4.40	18.0	58	348d8.30	8.30	27.0	79
348d4.45	4.45	18.0	58	348d8.40	8.40	27.0	79
348d4.50	4.50	18.0	58	348d8.50	8.50	27.0	79
348d4.55	4.55	18.0	58	348d8.80	8.80	29.0	84
348d4.60	4.60	18.0	58	348d9.00	9.00	29.0	84
348d4.65	4.65	18.0	58	348d9.20	9.20	29.0	84
348d4.70	4.70	18.0	58	348d9.50	9.50	29.0	84
348d4.75	4.75	18.0	58	348d9.80	9.80	31.0	89
348d4.80	4.80	20.0	62	348d10.00	10.00	31.0	89
348d4.85	4.85	20.0	62	348d10.20	10.20	31.0	89
348d4.90	4.90	20.0	62	348d10.50	10.50	31.0	89
348d4.95	4.95	20.0	62	348d11.00	11.00	33.0	95
348d5.00	5.00	20.0	62	348d11.50	11.50	33.0	95
348d5.10	5.10	20.0	62	348d12.00	12.00	35.0	102
348d5.20	5.20	20.0	62	348d12.50	12.50	35.0	102
348d5.30	5.30	20.0	62	348d13.00	13.00	35.0	102
348d5.40	5.40	21.0	66	348d13.50	13.50	37.0	107
348d5.50	5.50	21.0	66	348d14.00	14.00	37.0	107
348d5.60	5.60	21.0	66	348d16.00	16.00	38.0	115
348d5.70	5.70	21.0	66				
348d5.80	5.80	21.0	66				
348d5.90	5.90	21.0	66				



Available
uncoated or coated
(see page 61)



118°

Z2

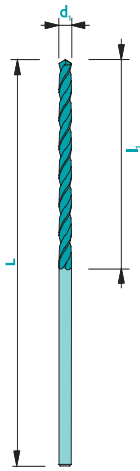


λ
24°

MG10

N

Long twist drill - helix 34°



Available uncoated or coated (see page 61)

Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	70	80	□	□	Trio
Steel > 700 N/mm ²	60	70	□	■	Trio
Stainless steel	20	40	□	■	Nemo
Cast iron	60	70	□	■	Nemo
Copper	100	130	□	■	Solo
Brass - Bronze	80	120	■	■	Solo
Aluminium	100	120	■	■	Solo
Gold - Silver	80	100	□	□	Solo
Platinum - Palladium	-	20	-	□	Solo
Superalloys	-	25	-	□	Trio
Titanium	40	60	□	□	Rico

not adapted - adapted □ highly adapted ■

Tolerances d₁: h5

118°

Z2

λ 34°

MG10 N

Art. n°	d ₁	l ₁	L
352d0.300	0.300	3.7	38
352d0.350	0.350	3.7	38
352d0.400	0.400	4.7	38
352d0.450	0.450	4.7	38
352d0.500	0.500	5.7	38
352d0.550	0.550	5.7	38
352d0.600	0.600	7.7	38
352d0.650	0.650	7.7	38
352d0.700	0.700	9.7	38
352d0.750	0.750	9.7	38
352d0.800	0.800	11.7	38
352d0.850	0.850	11.7	38
352d0.900	0.900	14.7	38
352d0.950	0.950	14.7	38
352d1.000	1.000	14.7	38
352d1.050	1.050	14.7	38
352d1.100	1.100	14.7	38
352d1.150	1.150	14.7	38
352d1.200	1.200	14.7	38
352d1.250	1.250	14.7	38
352d1.300	1.300	14.7	38
352d1.350	1.350	14.7	38
352d1.400	1.400	14.7	38
352d1.450	1.450	14.7	38
352d1.500	1.500	14.7	38
352d1.550	1.550	14.7	38
352d1.600	1.600	14.7	38
352d1.650	1.650	14.7	38
352d1.700	1.700	14.7	38
352d1.750	1.750	14.7	38
352d1.800	1.800	14.7	38
352d1.850	1.850	14.7	38

Art. n°	d ₁	l ₁	L
352d1.900	1.900	14.7	38
352d1.950	1.950	14.7	38
352d2.000	2.000	14.7	38
352d2.050	2.050	14.7	38
352d2.100	2.100	14.7	38
352d2.150	2.150	14.7	38
352d2.200	2.200	14.7	38
352d2.250	2.250	14.7	38
352d2.300	2.300	14.7	38
352d2.350	2.350	14.7	38
352d2.400	2.400	14.7	38
352d2.450	2.450	14.7	38
352d2.500	2.500	14.7	38
352d2.550	2.550	14.7	38
352d2.600	2.600	14.7	38
352d2.650	2.650	14.7	38
352d2.700	2.700	14.7	38
352d2.750	2.750	14.7	38
352d2.800	2.800	14.7	38
352d2.850	2.850	14.7	38
352d2.900	2.900	14.7	38
352d2.950	2.950	14.7	38
352d3.000	3.000	14.7	38
352d3.050	3.050	14.7	38
352d3.100	3.100	14.7	38
352d3.150	3.150	14.7	38
352d3.175	3.175	14.7	38
352d3.200	3.200	19.7	50
352d3.300	3.300	19.7	50
352d3.400	3.400	19.7	50
352d3.500	3.500	19.7	50
352d3.600	3.600	19.7	50



Long twist drill - helix 34°

352

Continuation

Art. n°	d ₁	l ₁	L	Art. n°	d ₁	l ₁	L
352d3.700	3.700	19.7	50	352d8.500	8.500	36.0	79
352d3.800	3.800	19.7	50	352d8.600	8.600	39.0	84
352d3.900	3.900	19.7	50	352d8.700	8.700	39.0	84
352d4.000	4.000	19.7	50	352d8.800	8.800	39.0	84
352d4.100	4.100	24.7	50	352d8.900	8.900	39.0	84
352d4.200	4.200	24.7	50	352d9.000	9.000	39.0	84
352d4.300	4.300	24.7	50	352d9.100	9.100	39.0	84
352d4.400	4.400	24.7	50	352d9.200	9.200	39.0	84
352d4.500	4.500	24.7	50	352d9.300	9.300	39.0	84
352d4.600	4.600	24.7	50	352d9.400	9.400	39.0	84
352d4.700	4.700	24.7	50	352d9.500	9.500	39.0	84
352d4.800	4.800	24.7	50	352d9.600	9.600	41.0	89
352d4.900	4.900	24.7	50	352d9.700	9.700	41.0	89
352d5.000	5.000	24.7	50	352d9.800	9.800	41.0	89
352d5.100	5.100	24.7	50	352d9.900	9.900	41.0	89
352d5.200	5.200	24.7	50	352d10.000	10.000	41.0	89
352d5.300	5.300	24.7	50	352d10.200	10.200	41.0	89
352d5.400	5.400	24.7	50	352d10.500	10.500	41.0	89
352d5.500	5.500	24.7	50	352d11.000	11.000	45.0	95
352d5.600	5.600	24.7	50	352d11.500	11.500	45.0	95
352d5.700	5.700	24.7	50	352d12.000	12.000	49.0	102
352d5.800	5.800	24.7	50	352d12.500	12.500	49.0	102
352d5.900	5.900	24.7	50	352d13.000	13.000	49.0	102
352d6.000	6.000	24.7	50	352d13.500	13.500	52.0	107
352d6.100	6.100	30.0	70	352d14.000	14.000	52.0	107
352d6.200	6.200	30.0	70	352d15.000	15.000	54.0	111
352d6.300	6.300	30.0	70	352d16.000	16.000	56.0	115
352d6.400	6.400	30.0	70	352d17.000	17.000	58.0	119
352d6.500	6.500	30.0	70	352d18.000	18.000	60.0	123
352d6.600	6.600	30.0	70	352d19.000	19.000	62.0	127
352d6.700	6.700	30.0	70	352d20.000	20.000	64.0	131
352d6.800	6.800	33.0	74				
352d6.900	6.900	33.0	74				
352d7.000	7.000	33.0	74				
352d7.100	7.100	33.0	74				
352d7.200	7.200	33.0	74				
352d7.300	7.300	33.0	74				
352d7.400	7.400	33.0	74				
352d7.500	7.500	33.0	74				
352d7.600	7.600	36.0	79				
352d7.700	7.700	36.0	79				
352d7.800	7.800	36.0	79				
352d7.900	7.900	36.0	79				
352d8.000	8.000	36.0	79				
352d8.100	8.100	36.0	79				
352d8.200	8.200	36.0	79				
352d8.300	8.300	36.0	79				
352d8.400	8.400	36.0	79				



Available uncoated or coated (see page 61)



118°

Z2

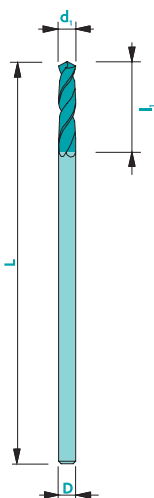


λ
34°

MG10

N

Short twist drill - helix 34°



Available uncoated or coated (see page 61)

Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	70	80	□	□	Trio
Steel > 700 N/mm ²	60	70	□	■	Trio
Stainless steel	20	40	□	■	Nemo
Cast iron	60	70	□	■	Nemo
Copper	100	130	□	■	Solo
Brass - Bronze	80	120	■	■	Solo
Aluminium	100	120	■	■	Solo
Gold - Silver	80	100	□	□	Solo
Platinum - Palladium	-	20	-	□	Solo
Superalloys	-	25	-	□	Trio
Titanium	40	60	□	□	Rico

not adapted - adapted □ highly adapted ■

Tolerances d₁: h5

	Z2
	118°
	34°
MG10	N

Art. n°	d ₁	l ₁	L
352-1d0.30	0.30	1.5	30
352-1d0.40	0.40	2.3	30
352-1d0.50	0.50	2.8	30
352-1d0.60	0.60	3.3	30
352-1d0.70	0.70	4.3	30
352-1d0.80	0.80	4.8	30
352-1d0.90	0.90	5.3	30
352-1d1.00	1.00	5.7	30
352-1d1.10	1.10	6.7	30
352-1d1.20	1.20	7.7	30
352-1d1.30	1.30	7.7	30
352-1d1.40	1.40	8.8	32
352-1d1.50	1.50	8.8	32
352-1d1.60	1.60	9.7	34
352-1d1.70	1.70	9.7	34
352-1d1.80	1.80	10.7	36
352-1d1.90	1.90	10.7	36
352-1d2.00	2.00	11.5	38

EXPERT drill - stainless steel

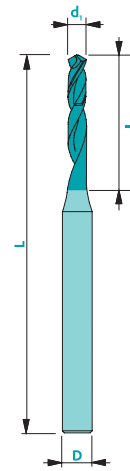


370

Ø drill	f [mm/rotation]	Vc [m/min]	Pecking
Ø 0.50 - Ø 0.70	0.01 / 0.015	25	1/3xØ
Ø 0.71 - Ø 0.99	0.015 / 0.02	25	1/3xØ
Ø 1.00 - Ø 1.50	0.02 / 0.03	30	1/3xØ
Ø 1.50 - Ø 2.00	0.03 / 0.04	30	1/3xØ
Ø 2.00 - Ø 3.00	0.045 / 0.055	30	1/3xØ

Pre-centering with center drill ref. 337-2 recommended for diameters < 1.00 mm

Tolerances d_i: -0.002/-0.004
D: h5



Nemo coated
(see page 61)

Art. n°	d _i	l _i	D	L	Art. n°	d _i	l _i	D	L
370d0.50NM	0.50	4	3	38	370d0.79NM	0.79	5	3	38
370d0.51NM	0.51	4	3	38	370d0.80NM	0.80	6	3	38
370d0.52NM	0.52	4	3	38	370d0.81NM	0.81	6	3	38
370d0.53NM	0.53	4	3	38	370d0.82NM	0.82	6	3	38
370d0.54NM	0.54	4	3	38	370d0.83NM	0.83	6	3	38
370d0.55NM	0.55	4	3	38	370d0.84NM	0.84	6	3	38
370d0.56NM	0.56	4	3	38	370d0.85NM	0.85	6	3	38
370d0.57NM	0.57	4	3	38	370d0.86NM	0.86	6	3	38
370d0.58NM	0.58	4	3	38	370d0.87NM	0.87	6	3	38
370d0.59NM	0.59	4	3	38	370d0.88NM	0.88	6	3	38
370d0.60NM	0.60	5	3	38	370d0.89NM	0.89	6	3	38
370d0.61NM	0.61	5	3	38	370d0.90NM	0.90	6	3	38
370d0.62NM	0.62	5	3	38	370d0.91NM	0.91	8	3	38
370d0.63NM	0.63	5	3	38	370d0.92NM	0.92	8	3	38
370d0.64NM	0.64	5	3	38	370d0.93NM	0.93	8	3	38
370d0.65NM	0.65	5	3	38	370d0.94NM	0.94	8	3	38
370d0.66NM	0.66	5	3	38	370d0.95NM	0.95	8	3	38
370d0.67NM	0.67	5	3	38	370d0.96NM	0.96	8	3	38
370d0.68NM	0.68	5	3	38	370d0.97NM	0.97	8	3	38
370d0.69NM	0.69	5	3	38	370d0.98NM	0.98	8	3	38
370d0.70NM	0.70	5	3	38	370d0.99NM	0.99	8	3	38
370d0.71NM	0.71	5	3	38	370d1.00NM	1.00	8	3	38
370d0.72NM	0.72	5	3	38	370d1.01NM	1.01	8	3	38
370d0.73NM	0.73	5	3	38	370d1.02NM	1.02	8	3	38
370d0.74NM	0.74	5	3	38	370d1.03NM	1.03	8	3	38
370d0.75NM	0.75	5	3	38	370d1.04NM	1.04	8	3	38
370d0.76NM	0.76	5	3	38	370d1.05NM	1.05	8	3	38
370d0.77NM	0.77	5	3	38	370d1.06NM	1.06	8	3	38
370d0.78NM	0.78	5	3	38	370d1.07NM	1.07	8	3	38



135°

Z2



λ
Variable

MG10

N





Nemo coated
(see page 61)



135°

Z2
 λ
Variable
MG10**N**

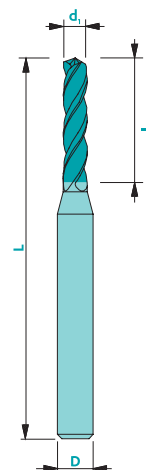
Art. n°	d ₁	l ₁	D	L	Art. n°	d ₁	l ₁	D	L
370d1.08NM	1.08	8	3	38	370d1.65NM	1.65	10	3	38
370d1.09NM	1.09	8	3	38	370d1.70NM	1.70	12	3	38
370d1.10NM	1.10	8	3	38	370d1.75NM	1.75	12	3	38
370d1.11NM	1.11	8	3	38	370d1.80NM	1.80	12	3	38
370d1.12NM	1.12	8	3	38	370d1.85NM	1.85	12	3	38
370d1.13NM	1.13	8	3	38	370d1.90NM	1.90	12	3	38
370d1.14NM	1.14	8	3	38	370d1.95NM	1.95	12	3	38
370d1.15NM	1.15	8	3	38	370d2.00NM	2.00	12	3	38
370d1.16NM	1.16	8	3	38	370d2.05NM	2.05	12	3	38
370d1.17NM	1.17	8	3	38	370d2.10NM	2.10	12	3	38
370d1.18NM	1.18	8	3	38	370d2.15NM	2.15	12	3	38
370d1.19NM	1.19	8	3	38	370d2.20NM	2.20	12	3	38
370d1.20NM	1.20	8	3	38	370d2.25NM	2.25	12	3	38
370d1.21NM	1.21	8	3	38	370d2.30NM	2.30	12	3	38
370d1.22NM	1.22	8	3	38	370d2.35NM	2.35	12	3	38
370d1.23NM	1.23	8	3	38	370d2.40NM	2.40	12	3	38
370d1.24NM	1.24	8	3	38	370d2.45NM	2.45	12	3	38
370d1.25NM	1.25	8	3	38	370d2.50NM	2.50	12	3	38
370d1.26NM	1.26	8	3	38	370d2.60NM	2.60	12	3	38
370d1.27NM	1.27	8	3	38	370d2.70NM	2.70	12	3	38
370d1.28NM	1.28	8	3	38	370d2.80NM	2.80	12	3	38
370d1.29NM	1.29	8	3	38	370d2.90NM	2.90	12	3	38
370d1.30NM	1.30	8	3	38	370d3.00NM	3.00	12	3	38
370d1.31NM	1.31	8	3	38					
370d1.32NM	1.32	8	3	38					
370d1.33NM	1.33	8	3	38					
370d1.34NM	1.34	8	3	38					
370d1.35NM	1.35	8	3	38					
370d1.36NM	1.36	8	3	38					
370d1.37NM	1.37	8	3	38					
370d1.38NM	1.38	8	3	38					
370d1.39NM	1.39	8	3	38					
370d1.40NM	1.40	8	3	38					
370d1.41NM	1.41	8	3	38					
370d1.42NM	1.42	8	3	38					
370d1.43NM	1.43	8	3	38					
370d1.44NM	1.44	8	3	38					
370d1.45NM	1.45	8	3	38					
370d1.46NM	1.46	8	3	38					
370d1.47NM	1.47	8	3	38					
370d1.48NM	1.48	8	3	38					
370d1.49NM	1.49	8	3	38					
370d1.50NM	1.50	10	3	38					
370d1.55NM	1.55	10	3	38					
370d1.60NM	1.60	10	3	38					

Twist drill Z3 - shank Ø3

Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	70	80	□	□	Trio
Steel > 700 N/mm ²	60	70	□	□	Trio
Stainless steel	20	40	□	□	Nemo
Cast iron	60	70	□	□	Nemo
Copper	100	130	□	□	Solo
Brass - Bronze	80	120	■	■	Solo
Aluminium	100	120	□	□	Solo
Gold - Silver	80	100	■	■	Solo
Platinum - Palladium	-	20	-	□	Solo
Superalloys	-	25	-	■	Trio
Titanium	40	60	■	■	Rico

not adapted - adapted □ highly adapted ■

Tolerances d₁: -0.002/-0.004
D: h5



Available uncoated or coated (see page 61)

Art. n°	d ₁	l ₁	D	L
353d0.15	0.15	2.0	3.0	38
353d0.18	0.18	2.0	3.0	38
353d0.20	0.20	3.0	3.0	38
353d0.21	0.21	3.0	3.0	38
353d0.22	0.22	3.0	3.0	38
353d0.23	0.23	3.0	3.0	38
353d0.24	0.24	3.0	3.0	38
353d0.25	0.25	3.5	3.0	38
353d0.26	0.26	3.5	3.0	38
353d0.27	0.27	3.5	3.0	38
353d0.28	0.28	3.5	3.0	38
353d0.29	0.29	3.5	3.0	38
353d0.30	0.30	5.0	3.0	38
353d0.31	0.31	5.0	3.0	38
353d0.32	0.32	5.0	3.0	38
353d0.33	0.33	5.0	3.0	38
353d0.34	0.34	5.0	3.0	38
353d0.35	0.35	5.0	3.0	38
353d0.36	0.36	5.0	3.0	38
353d0.37	0.37	5.0	3.0	38
353d0.38	0.38	5.0	3.0	38
353d0.39	0.39	5.0	3.0	38
353d0.40	0.40	6.0	3.0	38
353d0.41	0.41	6.0	3.0	38
353d0.42	0.42	6.0	3.0	38
353d0.43	0.43	6.0	3.0	38
353d0.44	0.44	6.0	3.0	38
353d0.45	0.45	6.0	3.0	38
353d0.46	0.46	6.0	3.0	38

Art. n°	d ₁	l ₁	D	L
353d0.47	0.47	6.0	3.0	38
353d0.48	0.48	6.0	3.0	38
353d0.49	0.49	6.0	3.0	38
353d0.50	0.50	6.0	3.0	38
353d0.51	0.51	6.0	3.0	38
353d0.52	0.52	6.0	3.0	38
353d0.53	0.53	6.0	3.0	38
353d0.54	0.54	6.0	3.0	38
353d0.55	0.55	7.0	3.0	38
353d0.56	0.56	7.0	3.0	38
353d0.57	0.57	7.0	3.0	38
353d0.58	0.58	7.0	3.0	38
353d0.59	0.59	7.0	3.0	38
353d0.60	0.60	7.0	3.0	38
353d0.61	0.61	7.0	3.0	38
353d0.62	0.62	7.0	3.0	38
353d0.63	0.63	7.0	3.0	38
353d0.64	0.64	7.0	3.0	38
353d0.65	0.65	7.0	3.0	38
353d0.66	0.66	7.0	3.0	38
353d0.67	0.67	7.0	3.0	38
353d0.68	0.68	7.0	3.0	38
353d0.69	0.69	7.0	3.0	38
353d0.70	0.70	9.5	3.0	38
353d0.71	0.71	9.5	3.0	38
353d0.72	0.72	9.5	3.0	38
353d0.73	0.73	9.5	3.0	38
353d0.74	0.74	9.5	3.0	38
353d0.75	0.75	9.5	3.0	38



Z3



λ
34°

MG10

N



Twist drill Z3 - shank Ø3



Available
uncoated or coated
(see page 61)



140°

Z3

λ
34°

MG10

N

Art. n°	d ₁	l ₁	D	L
353d0.76	0.76	9.5	3.0	38
353d0.77	0.77	9.5	3.0	38
353d0.78	0.78	9.5	3.0	38
353d0.79	0.79	9.5	3.0	38
353d0.80	0.80	9.5	3.0	38
353d0.81	0.81	9.5	3.0	38
353d0.82	0.82	9.5	3.0	38
353d0.83	0.83	9.5	3.0	38
353d0.84	0.84	9.5	3.0	38
353d0.85	0.85	9.5	3.0	38
353d0.86	0.86	9.5	3.0	38
353d0.87	0.87	9.5	3.0	38
353d0.88	0.88	9.5	3.0	38
353d0.89	0.89	9.5	3.0	38
353d0.90	0.90	9.5	3.0	38
353d0.91	0.91	9.5	3.0	38
353d0.92	0.92	9.5	3.0	38
353d0.93	0.93	9.5	3.0	38
353d0.94	0.94	9.5	3.0	38
353d0.95	0.95	9.5	3.0	38
353d0.96	0.96	9.5	3.0	38
353d0.97	0.97	9.5	3.0	38
353d0.98	0.98	9.5	3.0	38
353d0.99	0.99	9.5	3.0	38
353d1.00	1.00	9.5	3.0	38
353d1.01	1.01	9.5	3.0	38
353d1.02	1.02	9.5	3.0	38
353d1.03	1.03	9.5	3.0	38
353d1.04	1.04	9.5	3.0	38
353d1.05	1.05	10.5	3.0	38
353d1.06	1.06	10.5	3.0	38
353d1.07	1.07	10.5	3.0	38
353d1.08	1.08	10.5	3.0	38
353d1.09	1.09	10.5	3.0	38
353d1.10	1.10	10.5	3.0	38
353d1.11	1.11	10.5	3.0	38
353d1.12	1.12	10.5	3.0	38
353d1.13	1.13	10.5	3.0	38
353d1.14	1.14	10.5	3.0	38
353d1.15	1.15	10.5	3.0	38
353d1.16	1.16	10.5	3.0	38
353d1.17	1.17	10.5	3.0	38
353d1.18	1.18	10.5	3.0	38
353d1.19	1.19	10.5	3.0	38

Art. n°	d ₁	l ₁	D	L
353d1.20	1.20	10.5	3.0	38
353d1.21	1.21	10.5	3.0	38
353d1.22	1.22	10.5	3.0	38
353d1.23	1.23	10.5	3.0	38
353d1.24	1.24	10.5	3.0	38
353d1.25	1.25	10.5	3.0	38
353d1.26	1.26	10.5	3.0	38
353d1.27	1.27	10.5	3.0	38
353d1.28	1.28	10.5	3.0	38
353d1.29	1.29	10.5	3.0	38
353d1.30	1.30	10.5	3.0	38
353d1.31	1.31	10.5	3.0	38
353d1.32	1.32	10.5	3.0	38
353d1.33	1.33	10.5	3.0	38
353d1.34	1.34	10.5	3.0	38
353d1.35	1.35	10.5	3.0	38
353d1.36	1.36	10.5	3.0	38
353d1.37	1.37	10.5	3.0	38
353d1.38	1.38	10.5	3.0	38
353d1.39	1.39	10.5	3.0	38
353d1.40	1.40	10.5	3.0	38
353d1.41	1.41	10.5	3.0	38
353d1.42	1.42	10.5	3.0	38
353d1.43	1.43	10.5	3.0	38
353d1.44	1.44	10.5	3.0	38
353d1.45	1.45	10.5	3.0	38
353d1.46	1.46	10.5	3.0	38
353d1.47	1.47	10.5	3.0	38
353d1.48	1.48	10.5	3.0	38
353d1.49	1.49	10.5	3.0	38
353d1.50	1.50	10.5	3.0	38
353d1.51	1.51	10.5	3.0	38
353d1.52	1.52	10.5	3.0	38
353d1.53	1.53	10.5	3.0	38
353d1.54	1.54	10.5	3.0	38
353d1.55	1.55	10.5	3.0	38
353d1.56	1.56	10.5	3.0	38
353d1.57	1.57	10.5	3.0	38
353d1.58	1.58	10.5	3.0	38
353d1.59	1.59	10.5	3.0	38
353d1.60	1.60	10.5	3.0	38
353d1.61	1.61	10.5	3.0	38
353d1.62	1.62	10.5	3.0	38



Twist drill Z3 - shank Ø3

Art. n°	d ₁	l ₁	D	L	Art. n°	d ₁	l ₁	D	L
353d1.63	1.63	10.5	3.0	38	353d2.30	2.30	10.5	3.0	38
353d1.64	1.64	10.5	3.0	38	353d2.35	2.35	10.5	3.0	38
353d1.65	1.65	10.5	3.0	38	353d2.40	2.40	10.5	3.0	38
353d1.66	1.66	10.5	3.0	38	353d2.45	2.45	10.5	3.0	38
353d1.67	1.67	10.5	3.0	38	353d2.50	2.50	10.5	3.0	38
353d1.68	1.68	10.5	3.0	38	353d2.55	2.55	10.5	3.0	38
353d1.69	1.69	10.5	3.0	38	353d2.60	2.60	10.5	3.0	38
353d1.70	1.70	10.5	3.0	38	353d2.65	2.65	10.5	3.0	38
353d1.71	1.71	10.5	3.0	38	353d2.70	2.70	10.5	3.0	38
353d1.72	1.72	10.5	3.0	38	353d2.75	2.75	10.5	3.0	38
353d1.73	1.73	10.5	3.0	38	353d2.80	2.80	10.5	3.0	38
353d1.74	1.74	10.5	3.0	38	353d2.85	2.85	10.5	3.0	38
353d1.75	1.75	10.5	3.0	38	353d2.90	2.90	10.5	3.0	38
353d1.76	1.76	10.5	3.0	38	353d2.95	2.95	10.5	3.0	38
353d1.77	1.77	10.5	3.0	38	353d3.00	3.00	10.5	3.0	38
353d1.78	1.78	10.5	3.0	38					
353d1.79	1.79	10.5	3.0	38					
353d1.80	1.80	10.5	3.0	38					
353d1.81	1.81	10.5	3.0	38					
353d1.82	1.82	10.5	3.0	38					
353d1.83	1.83	10.5	3.0	38					
353d1.84	1.84	10.5	3.0	38					
353d1.85	1.85	10.5	3.0	38					
353d1.86	1.86	10.5	3.0	38					
353d1.87	1.87	10.5	3.0	38					
353d1.88	1.88	10.5	3.0	38					
353d1.89	1.89	10.5	3.0	38					
353d1.90	1.90	10.5	3.0	38					
353d1.91	1.91	10.5	3.0	38					
353d1.92	1.92	10.5	3.0	38					
353d1.93	1.93	10.5	3.0	38					
353d1.94	1.94	10.5	3.0	38					
353d1.95	1.95	10.5	3.0	38					
353d1.96	1.96	10.5	3.0	38					
353d1.97	1.97	10.5	3.0	38					
353d1.98	1.98	10.5	3.0	38					
353d1.99	1.99	10.5	3.0	38					
353d2.00	2.00	10.5	3.0	38					
353d2.05	2.05	10.5	3.0	38					
353d2.10	2.10	10.5	3.0	38					
353d2.15	2.15	10.5	3.0	38					
353d2.20	2.20	10.5	3.0	38					
353d2.25	2.25	10.5	3.0	38					



Available
uncoated or coated
(see page 61)



140°

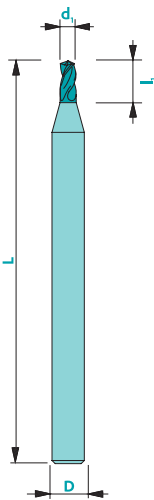
Z3

λ
34°

MG10

N

Twist drill Z3 - shank Ø3 - short



Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	70	80	□	□	Trio
Steel > 700 N/mm ²	60	70	□	□	Trio
Stainless steel	20	40	□	□	Nemo
Cast iron	60	70	□	□	Nemo
Copper	100	130	□	□	Solo
Brass - Bronze	80	120	■	■	Solo
Aluminium	100	120	□	□	Solo
Gold - Silver	80	100	■	■	Solo
Platinum - Palladium	-	20	-	□	Solo
Superalloys	-	25	-	■	Trio
Titanium	40	60	■	■	Rico

not adapted - adapted □ highly adapted ■

Tolerances d_1 : -0.002/-0.004
D: h5

Available uncoated or coated (see page 61)

140° **Z3**

34°

MG10 **N**

Art. n°	d_1	l_1	D	L
353-0d0.10	0.10	1.0	3.0	38
353-0d0.13	0.13	1.5	3.0	38
353-0d0.15	0.15	1.5	3.0	38
353-0d0.20	0.20	2.0	3.0	38
353-0d0.21	0.21	2.0	3.0	38
353-0d0.22	0.22	2.0	3.0	38
353-0d0.23	0.23	2.0	3.0	38
353-0d0.24	0.24	2.0	3.0	38
353-0d0.25	0.25	2.0	3.0	38
353-0d0.26	0.26	2.0	3.0	38
353-0d0.27	0.27	2.0	3.0	38
353-0d0.28	0.28	2.0	3.0	38
353-0d0.29	0.29	2.0	3.0	38
353-0d0.30	0.30	2.0	3.0	38
353-0d0.31	0.31	2.0	3.0	38
353-0d0.32	0.32	2.0	3.0	38
353-0d0.33	0.33	2.0	3.0	38
353-0d0.34	0.34	2.0	3.0	38
353-0d0.35	0.35	2.0	3.0	38
353-0d0.36	0.36	2.0	3.0	38
353-0d0.37	0.37	2.0	3.0	38
353-0d0.38	0.38	2.0	3.0	38
353-0d0.39	0.39	2.0	3.0	38
353-0d0.40	0.40	2.0	3.0	38
353-0d0.41	0.41	2.0	3.0	38
353-0d0.42	0.42	2.0	3.0	38
353-0d0.43	0.43	2.0	3.0	38
353-0d0.44	0.44	2.0	3.0	38
353-0d0.45	0.45	2.0	3.0	38
353-0d0.46	0.46	2.0	3.0	38

Art. n°	d_1	l_1	D	L
353-0d0.47	0.47	2.0	3.0	38
353-0d0.48	0.48	2.0	3.0	38
353-0d0.49	0.49	2.0	3.0	38
353-0d0.50	0.50	3.0	3.0	38
353-0d0.51	0.51	3.0	3.0	38
353-0d0.52	0.52	3.0	3.0	38
353-0d0.53	0.53	3.0	3.0	38
353-0d0.54	0.54	3.0	3.0	38
353-0d0.55	0.55	3.0	3.0	38
353-0d0.56	0.56	3.0	3.0	38
353-0d0.57	0.57	3.0	3.0	38
353-0d0.58	0.58	3.0	3.0	38
353-0d0.59	0.59	3.0	3.0	38
353-0d0.60	0.60	3.0	3.0	38
353-0d0.61	0.61	3.0	3.0	38
353-0d0.62	0.62	3.0	3.0	38
353-0d0.63	0.63	3.0	3.0	38
353-0d0.64	0.64	3.0	3.0	38
353-0d0.65	0.65	3.0	3.0	38
353-0d0.66	0.66	3.0	3.0	38
353-0d0.67	0.67	3.0	3.0	38
353-0d0.68	0.68	3.0	3.0	38
353-0d0.69	0.69	3.0	3.0	38
353-0d0.70	0.70	3.0	3.0	38
353-0d0.71	0.71	3.0	3.0	38
353-0d0.72	0.72	3.0	3.0	38
353-0d0.73	0.73	3.0	3.0	38
353-0d0.74	0.74	3.0	3.0	38
353-0d0.75	0.75	3.0	3.0	38



Twist drill Z3 - shank Ø3 - short

353-0

Continuation

Art. n°	d ₁	l ₁	D	L	Art. n°	d ₁	l ₁	D	L
353-0d0.76	0.76	3.0	3.0	38	353-0d1.20	1.20	3.5	3.0	38
353-0d0.77	0.77	3.0	3.0	38	353-0d1.21	1.21	3.5	3.0	38
353-0d0.78	0.78	3.0	3.0	38	353-0d1.22	1.22	3.5	3.0	38
353-0d0.79	0.79	3.0	3.0	38	353-0d1.23	1.23	3.5	3.0	38
353-0d0.80	0.80	3.0	3.0	38	353-0d1.24	1.24	3.5	3.0	38
353-0d0.81	0.81	3.0	3.0	38	353-0d1.25	1.25	3.5	3.0	38
353-0d0.82	0.82	3.0	3.0	38	353-0d1.26	1.26	3.5	3.0	38
353-0d0.83	0.83	3.0	3.0	38	353-0d1.27	1.27	3.5	3.0	38
353-0d0.84	0.84	3.0	3.0	38	353-0d1.28	1.28	3.5	3.0	38
353-0d0.85	0.85	3.0	3.0	38	353-0d1.29	1.29	3.5	3.0	38
353-0d0.86	0.86	3.0	3.0	38	353-0d1.30	1.30	3.5	3.0	38
353-0d0.87	0.87	3.0	3.0	38	353-0d1.31	1.31	3.5	3.0	38
353-0d0.88	0.88	3.0	3.0	38	353-0d1.32	1.32	3.5	3.0	38
353-0d0.89	0.89	3.0	3.0	38	353-0d1.33	1.33	3.5	3.0	38
353-0d0.90	0.90	3.0	3.0	38	353-0d1.34	1.34	3.5	3.0	38
353-0d0.91	0.91	3.0	3.0	38	353-0d1.35	1.35	3.5	3.0	38
353-0d0.92	0.92	3.0	3.0	38	353-0d1.36	1.36	3.5	3.0	38
353-0d0.93	0.93	3.0	3.0	38	353-0d1.37	1.37	3.5	3.0	38
353-0d0.94	0.94	3.0	3.0	38	353-0d1.38	1.38	3.5	3.0	38
353-0d0.95	0.95	3.0	3.0	38	353-0d1.39	1.39	3.5	3.0	38
353-0d0.96	0.96	3.0	3.0	38	353-0d1.40	1.40	3.5	3.0	38
353-0d0.97	0.97	3.0	3.0	38	353-0d1.41	1.41	3.5	3.0	38
353-0d0.98	0.98	3.0	3.0	38	353-0d1.42	1.42	3.5	3.0	38
353-0d0.99	0.99	3.0	3.0	38	353-0d1.43	1.43	3.5	3.0	38
353-0d1.00	1.00	3.5	3.0	38	353-0d1.44	1.44	3.5	3.0	38
353-0d1.01	1.01	3.5	3.0	38	353-0d1.45	1.45	3.5	3.0	38
353-0d1.02	1.02	3.5	3.0	38	353-0d1.46	1.46	3.5	3.0	38
353-0d1.03	1.03	3.5	3.0	38	353-0d1.47	1.47	3.5	3.0	38
353-0d1.04	1.04	3.5	3.0	38	353-0d1.48	1.48	3.5	3.0	38
353-0d1.05	1.05	3.5	3.0	38	353-0d1.49	1.49	3.5	3.0	38
353-0d1.06	1.06	3.5	3.0	38	353-0d1.50	1.50	3.5	3.0	38
353-0d1.07	1.07	3.5	3.0	38					
353-0d1.08	1.08	3.5	3.0	38					
353-0d1.09	1.09	3.5	3.0	38					
353-0d1.10	1.10	3.5	3.0	38					
353-0d1.11	1.11	3.5	3.0	38					
353-0d1.12	1.12	3.5	3.0	38					
353-0d1.13	1.13	3.5	3.0	38					
353-0d1.14	1.14	3.5	3.0	38					
353-0d1.15	1.15	3.5	3.0	38					
353-0d1.16	1.16	3.5	3.0	38					
353-0d1.17	1.17	3.5	3.0	38					
353-0d1.18	1.18	3.5	3.0	38					
353-0d1.19	1.19	3.5	3.0	38					



Available
uncoated or coated
(see page 61)



140°

Z3

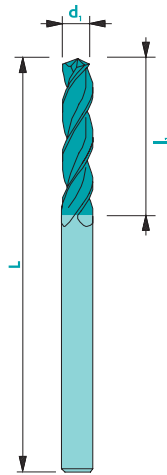


λ
34°

MG10

N

Twist drill Z3



Available uncoated or coated (see page 61)

Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	70	80	□	□	Trio
Steel > 700 N/mm ²	60	70	□	□	Trio
Stainless steel	20	40	□	□	Nemo
Cast iron	60	70	□	□	Nemo
Copper	100	130	□	□	Solo
Brass - Bronze	80	120	■	■	Solo
Aluminium	100	120	□	□	Solo
Gold - Silver	80	100	■	■	Solo
Platinum - Palladium	-	20	-	□	Solo
Superalloys	-	25	-	■	Trio
Titanium	40	60	■	■	Rico

not adapted - adapted □ highly adapted ■

Tolerances d_1 ; h5

140° **Z3**

34°

MG10 **N**

Art. n°	d_1	l_1	L
353-1d1.00	1.00	6.0	38
353-1d1.10	1.10	6.5	38
353-1d1.20	1.20	7.5	38
353-1d1.30	1.30	7.5	38
353-1d1.40	1.40	8.5	38
353-1d1.50	1.50	8.5	38
353-1d1.60	1.60	9.5	38
353-1d1.70	1.70	9.5	38
353-1d1.80	1.80	10.5	38
353-1d1.90	1.90	10.5	38
353-1d2.00	2.00	11.5	38
353-1d2.10	2.10	11.5	38
353-1d2.20	2.20	12.5	40
353-1d2.30	2.30	12.5	40
353-1d2.40	2.40	13.5	43
353-1d2.50	2.50	13.5	43
353-1d2.60	2.60	13.5	43
353-1d2.70	2.70	15.5	46
353-1d2.80	2.80	15.5	46
353-1d2.90	2.90	15.5	46
353-1d3.00	3.00	15.5	46
353-1d3.10	3.10	17.0	49
353-1d3.20	3.20	17.0	49
353-1d3.30	3.30	17.0	49
353-1d3.40	3.40	19.0	52
353-1d3.50	3.50	19.0	52
353-1d3.60	3.60	19.0	52
353-1d3.70	3.70	19.0	52
353-1d3.80	3.80	21.0	55
353-1d3.90	3.90	21.0	55
353-1d4.00	4.00	21.0	55

Art. n°	d_1	l_1	L
353-1d4.10	4.10	21.0	55
353-1d4.20	4.20	21.0	55
353-1d4.30	4.30	22.5	58
353-1d4.40	4.40	22.5	58
353-1d4.50	4.50	22.5	58
353-1d4.60	4.60	22.5	58
353-1d4.70	4.70	22.5	58
353-1d4.80	4.80	24.5	62
353-1d4.90	4.90	24.5	62
353-1d5.00	5.00	24.5	62
353-1d5.10	5.10	24.5	62
353-1d5.20	5.20	24.5	62
353-1d5.30	5.30	24.5	62
353-1d5.40	5.40	26.0	66
353-1d5.50	5.50	26.0	66
353-1d5.60	5.60	26.0	66
353-1d5.70	5.70	26.0	66
353-1d5.80	5.80	26.0	66
353-1d5.90	5.90	26.0	66
353-1d6.00	6.00	26.0	66
353-1d6.10	6.10	28.5	70
353-1d6.20	6.20	28.5	70
353-1d6.30	6.30	28.5	70
353-1d6.40	6.40	28.5	70
353-1d6.50	6.50	28.5	70
353-1d6.60	6.60	28.5	70
353-1d6.70	6.70	28.5	70
353-1d6.80	6.80	31.0	74
353-1d6.90	6.90	31.0	74



Twist drill Z3

353-1

Continuation

Art. n°	d ₁	l ₁	L
353-1d7.00	7.00	31.0	74
353-1d7.10	7.10	31.0	74
353-1d7.20	7.20	31.0	74
353-1d7.30	7.30	31.0	74
353-1d7.40	7.40	31.0	74
353-1d7.50	7.50	31.0	74
353-1d7.60	7.60	34.0	79
353-1d7.70	7.70	34.0	79
353-1d7.80	7.80	34.0	79
353-1d7.90	7.90	34.0	79
353-1d8.00	8.00	34.0	79
353-1d8.10	8.10	34.0	79
353-1d8.20	8.20	34.0	79
353-1d8.30	8.30	34.0	79
353-1d8.40	8.40	34.0	79
353-1d8.50	8.50	34.0	79
353-1d8.60	8.60	36.5	84
353-1d8.70	8.70	36.5	84
353-1d8.80	8.80	36.5	84
353-1d8.90	8.90	36.5	84
353-1d9.00	9.00	36.5	84
353-1d9.10	9.10	36.5	84
353-1d9.20	9.20	36.5	84
353-1d9.30	9.30	36.5	84
353-1d9.40	9.40	36.5	84
353-1d9.50	9.50	36.5	84
353-1d9.60	9.60	39.0	89
353-1d9.70	9.70	39.0	89
353-1d9.80	9.80	39.0	89
353-1d9.90	9.90	39.0	89
353-1d10.00	10.00	39.0	89
353-1d10.20	10.20	39.0	89
353-1d10.50	10.50	39.0	89
353-1d11.00	11.00	43.0	95
353-1d11.50	11.50	43.0	95
353-1d12.00	12.00	47.0	102



Available
uncoated or coated
(see page 61)



140°

Z3

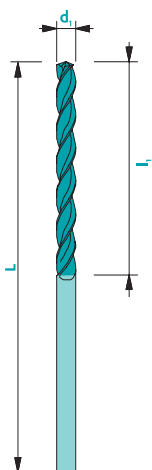


λ
34°

MG10

N

Twist drill Z3 - long serie



Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	70	80	□	□	Trio
Steel > 700 N/mm ²	60	70	□	□	Trio
Stainless steel	20	40	□	□	Nemo
Cast iron	60	70	□	□	Nemo
Copper	100	130	□	□	Solo
Brass - Bronze	80	120	■	■	Solo
Aluminium	100	120	□	□	Solo
Gold - Silver	80	100	■	■	Solo
Platinum - Palladium	-	20	-	□	Solo
Superalloys	-	25	-	■	Trio
Titanium	40	60	■	■	Rico

not adapted - adapted □ highly adapted ■

Tolerances d₁; h5

Available uncoated or coated (see page 61)

140°

Z3

34°

MG10 **N**

Art. n°	d ₁	l ₁	L
353-2d1.00	1.00	11.5	38
353-2d1.10	1.10	13.0	38
353-2d1.20	1.20	15.0	38
353-2d1.30	1.30	15.0	38
353-2d1.40	1.40	17.0	40
353-2d1.50	1.50	17.0	40
353-2d1.60	1.60	19.0	43
353-2d1.70	1.70	19.0	43
353-2d1.80	1.80	21.0	46
353-2d1.90	1.90	21.0	46
353-2d2.00	2.00	22.0	49
353-2d2.10	2.10	22.0	49
353-2d2.20	2.20	25.0	53
353-2d2.30	2.30	25.0	53
353-2d2.40	2.40	28.0	57
353-2d2.50	2.50	28.0	57
353-2d2.60	2.60	28.0	57
353-2d2.70	2.70	31.0	61
353-2d2.80	2.80	31.0	61
353-2d2.90	2.90	31.0	61
353-2d3.00	3.00	31.0	61
353-2d3.10	3.10	34.0	65
353-2d3.20	3.20	34.0	65
353-2d3.30	3.30	34.0	65
353-2d3.40	3.40	37.0	70
353-2d3.50	3.50	37.0	70
353-2d3.60	3.60	37.0	70
353-2d3.70	3.70	37.0	70
353-2d3.80	3.80	41.0	75
353-2d3.90	3.90	41.0	75
353-2d4.00	4.00	41.0	75

Art. n°	d ₁	l ₁	L
353-2d4.10	4.10	41.0	75
353-2d4.20	4.20	41.0	75
353-2d4.30	4.30	45.0	80
353-2d4.40	4.40	45.0	80
353-2d4.50	4.50	45.0	80
353-2d4.60	4.60	45.0	80
353-2d4.70	4.70	45.0	80
353-2d4.80	4.80	50.0	86
353-2d4.90	4.90	50.0	86
353-2d5.00	5.00	50.0	86
353-2d5.10	5.10	50.0	86
353-2d5.20	5.20	50.0	86
353-2d5.30	5.30	50.0	86
353-2d5.40	5.40	55.0	93
353-2d5.50	5.50	55.0	93
353-2d5.60	5.60	55.0	93
353-2d5.70	5.70	55.0	93
353-2d5.80	5.80	55.0	93
353-2d5.90	5.90	55.0	93
353-2d6.00	6.00	55.0	93
353-2d6.10	6.10	60.0	101
353-2d6.20	6.20	60.0	101
353-2d6.30	6.30	60.0	101
353-2d6.40	6.40	60.0	101
353-2d6.50	6.50	60.0	101
353-2d6.60	6.60	60.0	101
353-2d6.70	6.70	60.0	101
353-2d6.80	6.80	66.0	109
353-2d6.90	6.90	66.0	109



Twist drill Z3 - long serie

353-2

Continuation

Art. n°	d ₁	l ₁	L
353-2d7.00	7.00	66.0	109
353-2d7.10	7.10	66.0	109
353-2d7.20	7.20	66.0	109
353-2d7.30	7.30	66.0	109
353-2d7.40	7.40	66.0	109
353-2d7.50	7.50	66.0	109
353-2d7.60	7.60	72.0	117
353-2d7.70	7.70	72.0	117
353-2d7.80	7.80	72.0	117
353-2d7.90	7.90	72.0	117
353-2d8.00	8.00	72.0	117
353-2d8.10	8.10	72.0	117
353-2d8.20	8.20	72.0	117
353-2d8.30	8.30	72.0	117
353-2d8.40	8.40	72.0	117
353-2d8.50	8.50	72.0	117
353-2d8.60	8.60	78.0	125
353-2d8.70	8.70	78.0	125
353-2d8.80	8.80	78.0	125
353-2d8.90	8.90	78.0	125
353-2d9.00	9.00	78.0	125
353-2d9.10	9.10	78.0	125
353-2d9.20	9.20	78.0	125
353-2d9.30	9.30	78.0	125
353-2d9.40	9.40	78.0	125
353-2d9.50	9.50	78.0	125
353-2d9.60	9.60	84.0	133
353-2d9.70	9.70	84.0	133
353-2d9.80	9.80	84.0	133
353-2d9.90	9.90	84.0	133
353-2d10.00	10.00	84.0	133
353-2d10.20	10.20	84.0	133
353-2d10.50	10.50	84.0	133
353-2d11.00	11.00	91.0	142
353-2d11.50	11.50	91.0	142
353-2d12.00	12.00	98.0	151
353-2d12.50	12.50	98.0	151
353-2d13.00	13.00	98.0	151
353-2d13.50	13.50	105.0	160
353-2d14.00	14.00	105.0	160



Available
uncoated or coated
(see page 61)



140°

Z3

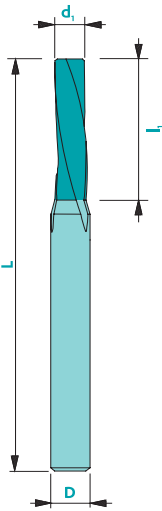
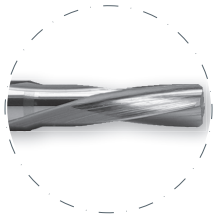


λ
34°

MG10

N

Reamer for watchmakers



Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	15	20	□	■	Trio
Steel > 700 N/mm ²	10	15	□	■	Trio
Stainless steel	10	15	□	■	Trio
Cast iron	10	15	□	■	Trio
Copper	15	40	□	■	Solo
Brass - Bronze	20	40	□	■	Solo
Aluminium	10	35	■	□	Solo
Gold - Silver	20	40	□	■	Solo
Platinum - Palladium	-	10	-	□	Solo
Superalloys	-	10	-	□	Trio
Titanium	15	-	■	-	-

not adapted - adapted □ highly adapted ■

Tolerances $d_1 \leq 1 \text{ mm}$ ▶ -0.002/-0.004 $D: h5$
 $d_1 = D$ ▶ $d_1: e8$

Available uncoated or coated (see page 61)

Z3-4

λ
10°

MG10

N

Left helix
Right cut

Art. n°	d_1	l_1	D	L	Z	Art. n°	d_1	l_1	D	L	Z
361d0.50Z3	0.50	5.0	3.0	33	3	361d0.78Z3	0.78	6.0	3.0	33	3
361d0.51Z3	0.51	5.0	3.0	33	3	361d0.79Z3	0.79	6.0	3.0	33	3
361d0.52Z3	0.52	5.0	3.0	33	3	361d0.80Z3	0.80	6.0	3.0	33	3
361d0.53Z3	0.53	5.0	3.0	33	3	361d0.81Z3	0.81	6.0	3.0	33	3
361d0.54Z3	0.54	5.0	3.0	33	3	361d0.82Z3	0.82	6.0	3.0	33	3
361d0.55Z3	0.55	5.0	3.0	33	3	361d0.83Z3	0.83	6.0	3.0	33	3
361d0.56Z3	0.56	5.0	3.0	33	3	361d0.84Z3	0.84	6.0	3.0	33	3
361d0.57Z3	0.57	5.0	3.0	33	3	361d0.85Z3	0.85	6.0	3.0	33	3
361d0.58Z3	0.58	5.0	3.0	33	3	361d0.86Z3	0.86	6.0	3.0	33	3
361d0.59Z3	0.59	5.0	3.0	33	3	361d0.87Z3	0.87	6.0	3.0	33	3
361d0.60Z3	0.60	5.0	3.0	33	3	361d0.88Z3	0.88	6.0	3.0	33	3
361d0.61Z3	0.61	5.0	3.0	33	3	361d0.89Z3	0.89	6.0	3.0	33	3
361d0.62Z3	0.62	5.0	3.0	33	3	361d0.90Z3	0.90	6.0	3.0	33	3
361d0.63Z3	0.63	5.0	3.0	33	3	361d0.91Z3	0.91	6.0	3.0	33	3
361d0.64Z3	0.64	5.0	3.0	33	3	361d0.92Z3	0.92	6.0	3.0	33	3
361d0.65Z3	0.65	5.0	3.0	33	3	361d0.93Z3	0.93	6.0	3.0	33	3
361d0.66Z3	0.66	5.0	3.0	33	3	361d0.94Z3	0.94	6.0	3.0	33	3
361d0.67Z3	0.67	5.0	3.0	33	3	361d0.95Z3	0.95	6.0	3.0	33	3
361d0.68Z3	0.68	5.0	3.0	33	3	361d0.96Z3	0.96	6.0	3.0	33	3
361d0.69Z3	0.69	5.0	3.0	33	3	361d0.97Z3	0.97	6.0	3.0	33	3
361d0.70Z3	0.70	6.0	3.0	33	3	361d0.98Z3	0.98	6.0	3.0	33	3
361d0.71Z3	0.71	6.0	3.0	33	3	361d0.99Z3	0.99	6.0	3.0	33	3
361d0.72Z3	0.72	6.0	3.0	33	3	361d1.00Z3	1.00	8.0	3.0	33	3
361d0.73Z3	0.73	6.0	3.0	33	3	361d1.01Z3	1.01	8.0	3.0	33	3
361d0.74Z3	0.74	6.0	3.0	33	3	361d1.02Z3	1.02	8.0	3.0	33	3
361d0.75Z3	0.75	6.0	3.0	33	3	361d1.03Z3	1.03	8.0	3.0	33	3
361d0.76Z3	0.76	6.0	3.0	33	3	361d1.04Z3	1.04	8.0	3.0	33	3
361d0.77Z3	0.77	6.0	3.0	33	3	361d1.05Z3	1.05	8.0	3.0	33	3

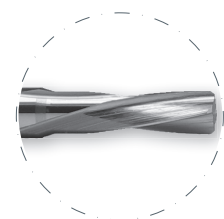


Reamer for watchmakers

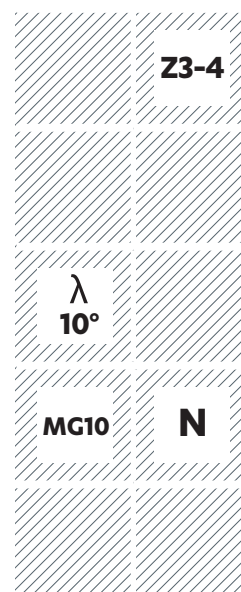
361

Continuation

Art. n°	d ₁	l ₁	D	L	Z	Art. n°	d ₁	l ₁	D	L	Z
361d1.06Z3	1.06	8.0	3.0	33	3	361d1.50Z#	1.50	10.0	3.0	33	3-4
361d1.07Z3	1.07	8.0	3.0	33	3	361d1.51Z#	1.51	10.0	3.0	33	3-4
361d1.08Z3	1.08	8.0	3.0	33	3	361d1.52Z#	1.52	10.0	3.0	33	3-4
361d1.09Z3	1.09	8.0	3.0	33	3	361d1.53Z#	1.53	10.0	3.0	33	3-4
361d1.10Z3	1.10	8.0	3.0	33	3	361d1.54Z#	1.54	10.0	3.0	33	3-4
361d1.11Z3	1.11	8.0	3.0	33	3	361d1.55Z#	1.55	10.0	3.0	33	3-4
361d1.12Z3	1.12	8.0	3.0	33	3	361d1.56Z#	1.56	10.0	3.0	33	3-4
361d1.13Z3	1.13	8.0	3.0	33	3	361d1.57Z#	1.57	10.0	3.0	33	3-4
361d1.14Z3	1.14	8.0	3.0	33	3	361d1.58Z#	1.58	10.0	3.0	33	3-4
361d1.15Z3	1.15	8.0	3.0	33	3	361d1.59Z#	1.59	10.0	3.0	33	3-4
361d1.16Z3	1.16	8.0	3.0	33	3	361d1.60Z#	1.60	10.0	3.0	33	3-4
361d1.17Z3	1.17	8.0	3.0	33	3	361d1.61Z#	1.61	10.0	3.0	33	3-4
361d1.18Z3	1.18	8.0	3.0	33	3	361d1.62Z#	1.62	10.0	3.0	33	3-4
361d1.19Z3	1.19	8.0	3.0	33	3	361d1.63Z#	1.63	10.0	3.0	33	3-4
361d1.20Z3	1.20	8.0	3.0	33	3	361d1.64Z#	1.64	10.0	3.0	33	3-4
361d1.21Z3	1.21	8.0	3.0	33	3	361d1.65Z#	1.65	10.0	3.0	33	3-4
361d1.22Z3	1.22	8.0	3.0	33	3	361d1.66Z#	1.66	10.0	3.0	33	3-4
361d1.23Z3	1.23	8.0	3.0	33	3	361d1.67Z#	1.67	10.0	3.0	33	3-4
361d1.24Z3	1.24	8.0	3.0	33	3	361d1.68Z#	1.68	10.0	3.0	33	3-4
361d1.25Z3	1.25	8.0	3.0	33	3	361d1.69Z#	1.69	10.0	3.0	33	3-4
361d1.26Z3	1.26	8.0	3.0	33	3	361d1.70Z#	1.70	10.0	3.0	33	3-4
361d1.27Z3	1.27	8.0	3.0	33	3	361d1.71Z#	1.71	10.0	3.0	33	3-4
361d1.28Z3	1.28	8.0	3.0	33	3	361d1.72Z#	1.72	10.0	3.0	33	3-4
361d1.29Z3	1.29	8.0	3.0	33	3	361d1.73Z#	1.73	10.0	3.0	33	3-4
361d1.30Z3	1.30	8.0	3.0	33	3	361d1.74Z#	1.74	10.0	3.0	33	3-4
361d1.31Z3	1.31	8.0	3.0	33	3	361d1.75Z#	1.75	10.0	3.0	33	3-4
361d1.32Z3	1.32	8.0	3.0	33	3	361d1.76Z#	1.76	10.0	3.0	33	3-4
361d1.33Z3	1.33	8.0	3.0	33	3	361d1.77Z#	1.77	10.0	3.0	33	3-4
361d1.34Z3	1.34	8.0	3.0	33	3	361d1.78Z#	1.78	10.0	3.0	33	3-4
361d1.35Z3	1.35	8.0	3.0	33	3	361d1.79Z#	1.79	10.0	3.0	33	3-4
361d1.36Z3	1.36	8.0	3.0	33	3	361d1.80Z#	1.80	10.0	3.0	33	3-4
361d1.37Z3	1.37	8.0	3.0	33	3	361d1.81Z#	1.81	10.0	3.0	33	3-4
361d1.38Z3	1.38	8.0	3.0	33	3	361d1.82Z#	1.82	10.0	3.0	33	3-4
361d1.39Z3	1.39	8.0	3.0	33	3	361d1.83Z#	1.83	10.0	3.0	33	3-4
361d1.40Z3	1.40	8.0	3.0	33	3	361d1.84Z#	1.84	10.0	3.0	33	3-4
361d1.41Z3	1.41	8.0	3.0	33	3	361d1.85Z#	1.85	10.0	3.0	33	3-4
361d1.42Z3	1.42	8.0	3.0	33	3	361d1.86Z#	1.86	10.0	3.0	33	3-4
361d1.43Z3	1.43	8.0	3.0	33	3	361d1.87Z#	1.87	10.0	3.0	33	3-4
361d1.44Z3	1.44	8.0	3.0	33	3	361d1.88Z#	1.88	10.0	3.0	33	3-4
361d1.45Z3	1.45	8.0	3.0	33	3	361d1.89Z#	1.89	10.0	3.0	33	3-4
361d1.46Z3	1.46	8.0	3.0	33	3	361d1.90Z#	1.90	10.0	3.0	33	3-4
361d1.47Z3	1.47	8.0	3.0	33	3	361d1.91Z#	1.91	10.0	3.0	33	3-4
361d1.48Z3	1.48	8.0	3.0	33	3	361d1.92Z#	1.92	10.0	3.0	33	3-4
361d1.49Z3	1.49	8.0	3.0	33	3	361d1.93Z#	1.93	10.0	3.0	33	3-4



Available uncoated or coated (see page 61)

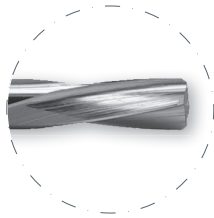


Left helix
Right cut



Reamer for watchmakers

Continuation



Available uncoated or coated (see page 61)

Z3-4

λ
10°

MG10

N

Left helix
Right cut

Art. n°	d ₁	l ₁	D	L	Z	Art. n°	d ₁	l ₁	D	L	Z
361d1.94Z#	1.94	10.0	3.0	33	3-4	361d2.38Z#	2.38	10.0	3.0	33	3-4
361d1.95Z#	1.95	10.0	3.0	33	3-4	361d2.39Z#	2.39	10.0	3.0	33	3-4
361d1.96Z#	1.96	10.0	3.0	33	3-4	361d2.40Z#	2.40	10.0	3.0	33	3-4
361d1.97Z#	1.97	10.0	3.0	33	3-4	361d2.41Z#	2.41	10.0	3.0	33	3-4
361d1.98Z#	1.98	10.0	3.0	33	3-4	361d2.42Z#	2.42	10.0	3.0	33	3-4
361d1.99Z#	1.99	10.0	3.0	33	3-4	361d2.43Z#	2.43	10.0	3.0	33	3-4
361d2.00Z#	2.00	10.0	3.0	33	3-4	361d2.44Z#	2.44	10.0	3.0	33	3-4
361d2.01Z#	2.01	10.0	3.0	33	3-4	361d2.45Z#	2.45	10.0	3.0	33	3-4
361d2.02Z#	2.02	10.0	3.0	33	3-4	361d2.46Z#	2.46	10.0	3.0	33	3-4
361d2.03Z#	2.03	10.0	3.0	33	3-4	361d2.47Z#	2.47	10.0	3.0	33	3-4
361d2.04Z#	2.04	10.0	3.0	33	3-4	361d2.48Z#	2.48	10.0	3.0	33	3-4
361d2.05Z#	2.05	10.0	3.0	33	3-4	361d2.49Z#	2.49	10.0	3.0	33	3-4
361d2.06Z#	2.06	10.0	3.0	33	3-4	361d2.50Z#	2.50	10.0	3.0	33	3-4
361d2.07Z#	2.07	10.0	3.0	33	3-4	361d2.51Z#	2.51	10.0	3.0	33	3-4
361d2.08Z#	2.08	10.0	3.0	33	3-4	361d2.52Z#	2.52	10.0	3.0	33	3-4
361d2.09Z#	2.09	10.0	3.0	33	3-4	361d2.53Z#	2.53	10.0	3.0	33	3-4
361d2.10Z#	2.10	10.0	3.0	33	3-4	361d2.54Z#	2.54	10.0	3.0	33	3-4
361d2.11Z#	2.11	10.0	3.0	33	3-4	361d2.55Z#	2.55	10.0	3.0	33	3-4
361d2.12Z#	2.12	10.0	3.0	33	3-4	361d2.56Z#	2.56	10.0	3.0	33	3-4
361d2.13Z#	2.13	10.0	3.0	33	3-4	361d2.57Z#	2.57	10.0	3.0	33	3-4
361d2.14Z#	2.14	10.0	3.0	33	3-4	361d2.58Z#	2.58	10.0	3.0	33	3-4
361d2.15Z#	2.15	10.0	3.0	33	3-4	361d2.59Z#	2.59	10.0	3.0	33	3-4
361d2.16Z#	2.16	10.0	3.0	33	3-4	361d2.60Z#	2.60	10.0	3.0	33	3-4
361d2.17Z#	2.17	10.0	3.0	33	3-4	361d2.61Z#	2.61	10.0	3.0	33	3-4
361d2.18Z#	2.18	10.0	3.0	33	3-4	361d2.62Z#	2.62	10.0	3.0	33	3-4
361d2.19Z#	2.19	10.0	3.0	33	3-4	361d2.63Z#	2.63	10.0	3.0	33	3-4
361d2.20Z#	2.20	10.0	3.0	33	3-4	361d2.64Z#	2.64	10.0	3.0	33	3-4
361d2.21Z#	2.21	10.0	3.0	33	3-4	361d2.65Z#	2.65	10.0	3.0	33	3-4
361d2.22Z#	2.22	10.0	3.0	33	3-4	361d2.66Z#	2.66	10.0	3.0	33	3-4
361d2.23Z#	2.23	10.0	3.0	33	3-4	361d2.67Z#	2.67	10.0	3.0	33	3-4
361d2.24Z#	2.24	10.0	3.0	33	3-4	361d2.68Z#	2.68	10.0	3.0	33	3-4
361d2.25Z#	2.25	10.0	3.0	33	3-4	361d2.69Z#	2.69	10.0	3.0	33	3-4
361d2.26Z#	2.26	10.0	3.0	33	3-4	361d2.70Z#	2.70	10.0	3.0	33	3-4
361d2.27Z#	2.27	10.0	3.0	33	3-4	361d2.71Z#	2.71	10.0	3.0	33	3-4
361d2.28Z#	2.28	10.0	3.0	33	3-4	361d2.72Z#	2.72	10.0	3.0	33	3-4
361d2.29Z#	2.29	10.0	3.0	33	3-4	361d2.73Z#	2.73	10.0	3.0	33	3-4
361d2.30Z#	2.30	10.0	3.0	33	3-4	361d2.74Z#	2.74	10.0	3.0	33	3-4
361d2.31Z#	2.31	10.0	3.0	33	3-4	361d2.75Z#	2.75	10.0	3.0	33	3-4
361d2.32Z#	2.32	10.0	3.0	33	3-4	361d2.76Z#	2.76	10.0	3.0	33	3-4
361d2.33Z#	2.33	10.0	3.0	33	3-4	361d2.77Z#	2.77	10.0	3.0	33	3-4
361d2.34Z#	2.34	10.0	3.0	33	3-4	361d2.78Z#	2.78	10.0	3.0	33	3-4
361d2.35Z#	2.35	10.0	3.0	33	3-4	361d2.79Z#	2.79	10.0	3.0	33	3-4
361d2.36Z#	2.36	10.0	3.0	33	3-4	361d2.80Z#	2.80	10.0	3.0	33	3-4
361d2.37Z#	2.37	10.0	3.0	33	3-4	361d2.81Z#	2.81	10.0	3.0	33	3-4



Reamer for watchmakers

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Continuation

Art. n°	d ₁	l ₁	D	L	Z
361d2.82Z#	2.82	10.0	3.0	33	3-4
361d2.83Z#	2.83	10.0	3.0	33	3-4
361d2.84Z#	2.84	10.0	3.0	33	3-4
361d2.85Z#	2.85	10.0	3.0	33	3-4
361d2.86Z#	2.86	10.0	3.0	33	3-4
361d2.87Z#	2.87	10.0	3.0	33	3-4
361d2.88Z#	2.88	10.0	3.0	33	3-4
361d2.89Z#	2.89	10.0	3.0	33	3-4
361d2.90Z#	2.90	10.0	3.0	33	3-4
361d2.91Z#	2.91	10.0	3.0	33	3-4
361d2.92Z#	2.92	10.0	3.0	33	3-4
361d2.93Z#	2.93	10.0	3.0	33	3-4
361d2.94Z#	2.94	10.0	3.0	33	3-4
361d2.95Z#	2.95	10.0	3.0	33	3-4
361d2.96Z#	2.96	10.0	3.0	33	3-4
361d2.97Z#	2.97	10.0	3.0	33	3-4
361d2.98Z#	2.98	10.0	3.0	33	3-4
361d2.99Z#	2.99	10.0	3.0	33	3-4
361d3.00Z#	3.00	10.0	3.0	33	3-4



Available
uncoated or coated
(see page 61)

Z3-4

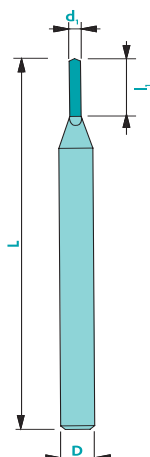
λ
10°

MG10

N

Left helix
Right cut

Gundrill - right cut



Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	15	20	□	■	Trio
Steel > 700 N/mm ²	10	15	-	-	Trio
Stainless steel	10	15	-	-	Trio
Cast iron	15	20	-	-	Solo
Copper	20	25	□	■	Solo
Brass - Bronze	20	30	■	□	Solo
Aluminium	25	30	-	-	Nemo
Gold - Silver	25	30	■	□	Solo
Platinum - Palladium	-	-	-	-	-
Superalloys	-	-	-	-	-
Titanium	10	15	-	-	Nemo

not adapted - adapted □ highly adapted ■

Tolerances d_1 : -0.002/-0.004 D : h5
 l_1 : 0.02/-0

Available uncoated or coated (see page 61)

Art. n°	d_1	l_1	D	L
---------	-------	-------	---	---

363d#.#x#.#	0.20-0.49	Upon request	3.0	38
363d#.#x#.#	0.50-0.99	Upon request	3.0	38
363d#.#x#.#	1.00-1.49	Upon request	3.0	38
363d#.#x#.#	1.50-3.00	Upon request	3.0	38



120°

Z1



λ
0°

MG10

N

Order

Quotation request

Dimensions : d_1 : _____ l_1 : _____ D: _____ L: _____ Tolerances d_1 : _____		Coating : <input type="checkbox"/> Coated* : _____ <input type="checkbox"/> Uncoated	
Machined material : _____		Quantity : _____	
		Order No : _____	
Company's stamp & date : _____		Contact person : _____	

Standard dimensions of the bars : \varnothing 3x L 38, \varnothing 4x L 38, \varnothing 6x L 38, \varnothing 6x L 51, \varnothing 8x L 61, \varnothing 10x L 72, \varnothing 12x L 83, \varnothing 16x L 92, \varnothing 20x L 104

* Without information, the most suitable Coating will be applied.

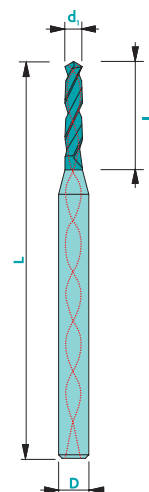
Twist drill with coolant holes

Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	70	80	☐	■	Trio
Steel > 700 N/mm ²	60	70	☐	■	Trio
Stainless steel	20	40	☐	■	Nemo
Cast iron	60	70	☐	■	Nemo
Copper	100	130	☐	■	Solo
Brass - Bronze	80	120	■	■	Solo
Aluminium	100	120	☐	■	Solo
Gold - Silver	80	100	■	■	Solo
Platinum - Palladium	-	20	-	☐	Solo
Superalloys	-	25	-	■	Trio
Titanium	40	60	☐	■	Rico

not adapted - adapted ☐ highly adapted ■

Tolerances

d_1 : -0.002/-0.004
D: h5



Available uncoated or coated (see page 61)

Art. n°	d_1	L_1	D	L
---------	-------	-------	---	---

344d0.70	0.70	6.0	3	38
344d0.75	0.75	6.0	3	38
344d0.80	0.80	6.0	3	38
344d0.85	0.85	6.0	3	38
344d0.90	0.90	6.0	3	38
344d0.95	0.95	6.0	3	38
344d1.00	1.00	8.0	3	38
344d1.10	1.10	8.0	3	38
344d1.20	1.20	8.0	3	38
344d1.25	1.25	8.0	3	38
344d1.30	1.30	8.0	3	38
344d1.40	1.40	8.0	3	38
344d1.50	1.50	12.0	3	38
344d1.60	1.60	12.0	3	38
344d1.70	1.70	12.0	3	38
344d1.75	1.75	12.0	3	38
344d1.80	1.80	12.0	3	38
344d1.90	1.90	12.0	3	38
344d2.00	2.00	12.0	3	38
344d2.10	2.10	12.0	3	38
344d2.20	2.20	12.0	3	38
344d2.30	2.30	12.0	3	38
344d2.40	2.40	12.0	3	38
344d2.50	2.50	12.0	3	38
344d2.60	2.60	12.0	3	38
344d2.70	2.70	12.0	3	38
344d2.80	2.80	12.0	3	38
344d2.90	2.90	12.0	3	38
344d3.00	3.00	12.0	3	38



118°

Z2



MG10

N

8. Circular saws



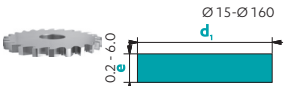

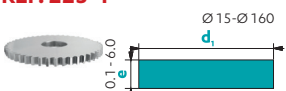



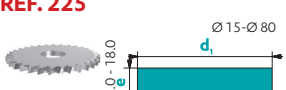

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223-2	Slitting saw extra fine pitch	227
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228-3	Angle cutter 30° - 1 cut	241
228-4	Angle cutter 45° - 1 cut	242
228-5	Angle cutter 60° - 1 cut	243
229-1	Bioconical cutter 60°	244
229-2	Bioconical cutter 90°	245
229-3	Bioconical cutter 120°	246
232	Radius cutter convex	247
234	Radius cutter concave	250

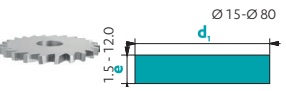

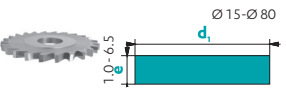

Slitting saws & circular cutters

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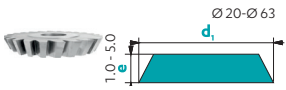





Saws and mills

REF. 223			Z 20-80	λ 0°	Page 215
REF. 223-1			Z 24-160	λ 0°	Page 221
REF. 223-2			Z 48-160	λ 0°	Page 227
REF. 225			Z 48-160	λ 20°	Page 232

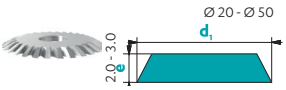

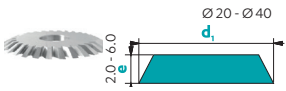

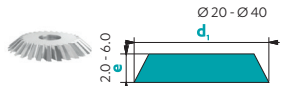

Slitting saws with staggered teeth

REF. 226			Z 12-36	λ ALT	Page 234
REF. 227			Z 12-36	λ ALT	Page 236

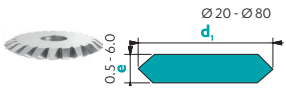

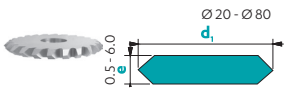

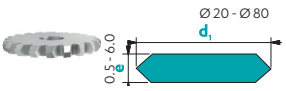

Angular cutters - 2 cuts

REF. 228			Z 20-40	λ 0°	Page 238
REF. 228-1			Z 20-40	λ 0°	Page 239
REF. 228-2			Z 20-40	λ 0°	Page 240

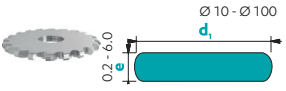

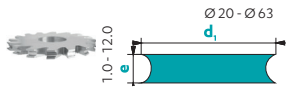

Angular cutters - 1 cuts

REF. 228-3			Z 20-50	λ 0°	Page 241
REF. 228-4			Z 20-50	λ 0°	Page 242
REF. 228-5			Z 20-50	λ 0°	Page 243

Biconical cutters

REF. 229-1			Z 20-48	λ 0°	Page 244
REF. 229-2			Z 20-48	λ 0°	Page 245
REF. 229-3			Z 20-48	λ 0°	Page 246

Radius cutters

REF. 232			Z 8-60	λ 0°	Page 247
REF. 234			Z 8-26	λ 0°	Page 250

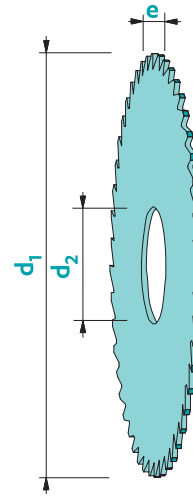
Slitting saw DIN 1838 coarse pitch

223

Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	80	120	□	■	Trio
Steel > 700 N/mm ²	60	100	□	■	Trio
Stainless steel	60	100	□	■	Trio
Cast iron	50	90	□	■	Nemo
Copper	200	300	□	■	Solo
Brass - Bronze	200	300	■	□	Solo
Aluminium	250	400	□	■	Solo
Gold - Silver	150	300	□	■	Solo
Platinum - Palladium	-	-	-	-	-
Superalloys	20	40	□	■	Trio
Titanium	40	60	■	■	Rico

not adapted - adapted □ highly adapted ■

Tolerance e: +/-0.01
d₂: H5



Available uncoated or coated (see page 61)

Art. n°	d ₁	e	d ₂	Z
223d15e0.20a5Z20	15	0.20	5	20
223d15e0.25a5Z20	15	0.25	5	20
223d15e0.30a5Z20	15	0.30	5	20
223d15e0.35a5Z20	15	0.35	5	20
223d15e0.40a5Z20	15	0.40	5	20
223d15e0.45a5Z20	15	0.45	5	20
223d15e0.50a5Z20	15	0.50	5	20
223d15e0.60a5Z20	15	0.60	5	20
223d15e0.70a5Z20	15	0.70	5	20
223d15e0.80a5Z20	15	0.80	5	20
223d15e0.90a5Z20	15	0.90	5	20
223d15e1.00a5Z20	15	1.00	5	20
223d15e1.10a5Z20	15	1.10	5	20
223d15e1.20a5Z20	15	1.20	5	20
223d15e1.30a5Z20	15	1.30	5	20
223d15e1.40a5Z20	15	1.40	5	20
223d15e1.50a5Z20	15	1.50	5	20
223d15e1.60a5Z20	15	1.60	5	20
223d15e1.70a5Z20	15	1.70	5	20
223d15e1.80a5Z20	15	1.80	5	20
223d15e1.90a5Z20	15	1.90	5	20
223d15e2.00a5Z20	15	2.00	5	20
223d15e2.10a5Z20	15	2.10	5	20
223d15e2.20a5Z20	15	2.20	5	20
223d15e2.30a5Z20	15	2.30	5	20
223d15e2.40a5Z20	15	2.40	5	20
223d15e2.50a5Z20	15	2.50	5	20
223d15e2.60a5Z20	15	2.60	5	20
223d15e2.70a5Z20	15	2.70	5	20
223d15e2.80a5Z20	15	2.80	5	20

Art. n°	d ₁	e	d ₂	Z
223d15e2.90a5Z20	15	2.90	5	20
223d15e3.00a5Z20	15	3.00	5	20
223d15e3.10a5Z20	15	3.10	5	20
223d15e3.20a5Z20	15	3.20	5	20
223d15e3.30a5Z20	15	3.30	5	20
223d15e3.40a5Z20	15	3.40	5	20
223d15e3.50a5Z20	15	3.50	5	20
223d15e3.60a5Z20	15	3.60	5	20
223d15e3.70a5Z20	15	3.70	5	20
223d15e3.80a5Z20	15	3.80	5	20
223d15e3.90a5Z20	15	3.90	5	20
223d15e4.00a5Z20	15	4.00	5	20
223d15e4.50a5Z20	15	4.50	5	20
223d15e5.00a5Z20	15	5.00	5	20
223d15e5.50a5Z20	15	5.50	5	20
223d15e6.00a5Z20	15	6.00	5	20
223d20e0.20a5Z20	20	0.20	5	20
223d20e0.25a5Z20	20	0.25	5	20
223d20e0.30a5Z20	20	0.30	5	20
223d20e0.35a5Z20	20	0.35	5	20
223d20e0.40a5Z20	20	0.40	5	20
223d20e0.45a5Z20	20	0.45	5	20
223d20e0.50a5Z20	20	0.50	5	20
223d20e0.60a5Z20	20	0.60	5	20
223d20e0.70a5Z20	20	0.70	5	20
223d20e0.80a5Z20	20	0.80	5	20
223d20e0.90a5Z20	20	0.90	5	20
223d20e1.00a5Z20	20	1.00	5	20
223d20e1.10a5Z20	20	1.10	5	20
223d20e1.20a5Z20	20	1.20	5	20



Z
20-80



λ
0°

γ
8°

MG6

N

Slitting saw DIN 1838 coarse pitch



Available
uncoated or coated
(see page 61)



Z
20-80

λ
0°

γ
8°

MG6

N

Art. n°	d ₁	e	d ₂	Z
223d20e1.30a5Z20	20	1.30	5	20
223d20e1.40a5Z20	20	1.40	5	20
223d20e1.50a5Z20	20	1.50	5	20
223d20e1.60a5Z20	20	1.60	5	20
223d20e1.70a5Z20	20	1.70	5	20
223d20e1.80a5Z20	20	1.80	5	20
223d20e1.90a5Z20	20	1.90	5	20
223d20e2.00a5Z20	20	2.00	5	20
223d20e2.10a5Z20	20	2.10	5	20
223d20e2.20a5Z20	20	2.20	5	20
223d20e2.30a5Z20	20	2.30	5	20
223d20e2.40a5Z20	20	2.40	5	20
223d20e2.50a5Z20	20	2.50	5	20
223d20e2.60a5Z20	20	2.60	5	20
223d20e2.70a5Z20	20	2.70	5	20
223d20e2.80a5Z20	20	2.80	5	20
223d20e2.90a5Z20	20	2.90	5	20
223d20e3.00a5Z20	20	3.00	5	20
223d20e3.10a5Z20	20	3.10	5	20
223d20e3.20a5Z20	20	3.20	5	20
223d20e3.30a5Z20	20	3.30	5	20
223d20e3.40a5Z20	20	3.40	5	20
223d20e3.50a5Z20	20	3.50	5	20
223d20e3.60a5Z20	20	3.60	5	20
223d20e3.70a5Z20	20	3.70	5	20
223d20e3.80a5Z20	20	3.80	5	20
223d20e3.90a5Z20	20	3.90	5	20
223d20e4.00a5Z20	20	4.00	5	20
223d20e4.50a5Z20	20	4.50	5	20
223d20e5.00a5Z20	20	5.00	5	20
223d20e5.50a5Z20	20	5.50	5	20
223d20e6.00a5Z20	20	6.00	5	20
223d25e0.20a8Z20	25	0.20	8	20
223d25e0.25a8Z20	25	0.25	8	20
223d25e0.30a8Z20	25	0.30	8	20
223d25e0.35a8Z20	25	0.35	8	20
223d25e0.40a8Z20	25	0.40	8	20
223d25e0.45a8Z20	25	0.45	8	20
223d25e0.50a8Z20	25	0.50	8	20
223d25e0.60a8Z20	25	0.60	8	20
223d25e0.70a8Z20	25	0.70	8	20
223d25e0.80a8Z20	25	0.80	8	20
223d25e0.90a8Z20	25	0.90	8	20
223d25e1.00a8Z20	25	1.00	8	20
223d25e1.10a8Z20	25	1.10	8	20

Art. n°	d ₁	e	d ₂	Z
223d25e1.20a8Z20	25	1.20	8	20
223d25e1.30a8Z20	25	1.30	8	20
223d25e1.40a8Z20	25	1.40	8	20
223d25e1.50a8Z20	25	1.50	8	20
223d25e1.60a8Z20	25	1.60	8	20
223d25e1.70a8Z20	25	1.70	8	20
223d25e1.80a8Z20	25	1.80	8	20
223d25e1.90a8Z20	25	1.90	8	20
223d25e2.00a8Z20	25	2.00	8	20
223d25e2.10a8Z20	25	2.10	8	20
223d25e2.20a8Z20	25	2.20	8	20
223d25e2.30a8Z20	25	2.30	8	20
223d25e2.40a8Z20	25	2.40	8	20
223d25e2.50a8Z20	25	2.50	8	20
223d25e2.60a8Z20	25	2.60	8	20
223d25e2.70a8Z20	25	2.70	8	20
223d25e2.80a8Z20	25	2.80	8	20
223d25e2.90a8Z20	25	2.90	8	20
223d25e3.00a8Z20	25	3.00	8	20
223d25e3.10a8Z20	25	3.10	8	20
223d25e3.20a8Z20	25	3.20	8	20
223d25e3.30a8Z20	25	3.30	8	20
223d25e3.40a8Z20	25	3.40	8	20
223d25e3.50a8Z20	25	3.50	8	20
223d25e3.60a8Z20	25	3.60	8	20
223d25e3.70a8Z20	25	3.70	8	20
223d25e3.80a8Z20	25	3.80	8	20
223d25e3.90a8Z20	25	3.90	8	20
223d25e4.00a8Z20	25	4.00	8	20
223d25e4.50a8Z20	25	4.50	8	20
223d25e5.00a8Z20	25	5.00	8	20
223d25e5.50a8Z20	25	5.50	8	20
223d25e6.00a8Z20	25	6.00	8	20
223d30e0.20a8Z30	30	0.20	8	30
223d30e0.25a8Z30	30	0.25	8	30
223d30e0.30a8Z30	30	0.30	8	30
223d30e0.35a8Z30	30	0.35	8	30
223d30e0.40a8Z30	30	0.40	8	30
223d30e0.45a8Z30	30	0.45	8	30
223d30e0.50a8Z30	30	0.50	8	30
223d30e0.60a8Z30	30	0.60	8	30
223d30e0.70a8Z30	30	0.70	8	30
223d30e0.80a8Z24	30	0.80	8	24
223d30e0.90a8Z24	30	0.90	8	24
223d30e1.00a8Z24	30	1.00	8	24

Slitting saw DIN 1838 coarse pitch

223

Continuation

Art. n°	d ₁	e	d ₂	Z	Art. n°	d ₁	e	d ₂	Z
223d30e1.10a8Z24	30	1.10	8	24	223d40e1.00a10Z32	40	1.00	10	32
223d30e1.20a8Z24	30	1.20	8	24	223d40e1.10a10Z32	40	1.10	10	32
223d30e1.30a8Z24	30	1.30	8	24	223d40e1.20a10Z32	40	1.20	10	32
223d30e1.40a8Z24	30	1.40	8	24	223d40e1.30a10Z32	40	1.30	10	32
223d30e1.50a8Z24	30	1.50	8	24	223d40e1.40a10Z32	40	1.40	10	32
223d30e1.60a8Z24	30	1.60	8	24	223d40e1.50a10Z32	40	1.50	10	32
223d30e1.70a8Z24	30	1.70	8	24	223d40e1.60a10Z32	40	1.60	10	32
223d30e1.80a8Z24	30	1.80	8	24	223d40e1.70a10Z24	40	1.70	10	24
223d30e1.90a8Z24	30	1.90	8	24	223d40e1.80a10Z24	40	1.80	10	24
223d30e2.00a8Z24	30	2.00	8	24	223d40e1.90a10Z24	40	1.90	10	24
223d30e2.10a8Z24	30	2.10	8	24	223d40e2.00a10Z24	40	2.00	10	24
223d30e2.20a8Z24	30	2.20	8	24	223d40e2.10a10Z24	40	2.10	10	24
223d30e2.30a8Z24	30	2.30	8	24	223d40e2.20a10Z24	40	2.20	10	24
223d30e2.40a8Z24	30	2.40	8	24	223d40e2.30a10Z24	40	2.30	10	24
223d30e2.50a8Z24	30	2.50	8	24	223d40e2.40a10Z24	40	2.40	10	24
223d30e2.60a8Z24	30	2.60	8	24	223d40e2.50a10Z24	40	2.50	10	24
223d30e2.70a8Z24	30	2.70	8	24	223d40e2.60a10Z24	40	2.60	10	24
223d30e2.80a8Z24	30	2.80	8	24	223d40e2.70a10Z24	40	2.70	10	24
223d30e2.90a8Z24	30	2.90	8	24	223d40e2.80a10Z24	40	2.80	10	24
223d30e3.00a8Z24	30	3.00	8	24	223d40e2.90a10Z24	40	2.90	10	24
223d30e3.10a8Z24	30	3.10	8	24	223d40e3.00a10Z24	40	3.00	10	24
223d30e3.20a8Z24	30	3.20	8	24	223d40e3.10a10Z20	40	3.10	10	20
223d30e3.30a8Z24	30	3.30	8	24	223d40e3.20a10Z20	40	3.20	10	20
223d30e3.40a8Z24	30	3.40	8	24	223d40e3.30a10Z20	40	3.30	10	20
223d30e3.50a8Z24	30	3.50	8	24	223d40e3.40a10Z20	40	3.40	10	20
223d30e3.60a8Z24	30	3.60	8	24	223d40e3.50a10Z20	40	3.50	10	20
223d30e3.70a8Z24	30	3.70	8	24	223d40e3.60a10Z20	40	3.60	10	20
223d30e3.80a8Z24	30	3.80	8	24	223d40e3.70a10Z20	40	3.70	10	20
223d30e3.90a8Z24	30	3.90	8	24	223d40e3.80a10Z20	40	3.80	10	20
223d30e4.00a8Z24	30	4.00	8	24	223d40e3.90a10Z20	40	3.90	10	20
223d30e4.50a8Z24	30	4.50	8	24	223d40e4.00a10Z20	40	4.00	10	20
223d30e5.00a8Z24	30	5.00	8	24	223d40e4.50a10Z20	40	4.50	10	20
223d30e5.50a8Z24	30	5.50	8	24	223d40e5.00a10Z20	40	5.00	10	20
223d30e6.00a8Z24	30	6.00	8	24	223d40e5.50a10Z20	40	5.50	10	20
223d40e0.20a10Z40	40	0.20	10	40	223d40e6.00a10Z20	40	6.00	10	20
223d40e0.25a10Z40	40	0.25	10	40	223d50e0.40a13Z48	50	0.40	13	48
223d40e0.30a10Z40	40	0.30	10	40	223d50e0.45a13Z48	50	0.45	13	48
223d40e0.35a10Z40	40	0.35	10	40	223d50e0.50a13Z48	50	0.50	13	48
223d40e0.40a10Z40	40	0.40	10	40	223d50e0.60a13Z40	50	0.60	13	40
223d40e0.45a10Z40	40	0.45	10	40	223d50e0.70a13Z40	50	0.70	13	40
223d40e0.50a10Z40	40	0.50	10	40	223d50e0.80a13Z40	50	0.80	13	40
223d40e0.60a10Z40	40	0.60	10	40	223d50e0.90a13Z40	50	0.90	13	40
223d40e0.70a10Z40	40	0.70	10	40	223d50e1.00a13Z40	50	1.00	13	40
223d40e0.80a10Z32	40	0.80	10	32	223d50e1.10a13Z40	50	1.10	13	40
223d40e0.90a10Z32	40	0.90	10	32	223d50e1.20a13Z40	50	1.20	13	40



Available uncoated or coated (see page 61)



Z
20-80



λ
0°

γ
8°

MG6

N

Slitting saw DIN 1838 coarse pitch



Available
uncoated or coated
(see page 61)



Z
20-80

λ
0°

γ
8°

MG6

N

Art. n°	d ₁	e	d ₂	Z
223d50e1.30a13Z32	50	1.30	13	32
223d50e1.40a13Z32	50	1.40	13	32
223d50e1.50a13Z32	50	1.50	13	32
223d50e1.60a13Z32	50	1.60	13	32
223d50e1.70a13Z32	50	1.70	13	32
223d50e1.80a13Z32	50	1.80	13	32
223d50e1.90a13Z32	50	1.90	13	32
223d50e2.00a13Z32	50	2.00	13	32
223d50e2.10a13Z32	50	2.10	13	32
223d50e2.20a13Z32	50	2.20	13	32
223d50e2.30a13Z32	50	2.30	13	32
223d50e2.40a13Z32	50	2.40	13	32
223d50e2.50a13Z32	50	2.50	13	32
223d50e2.60a13Z24	50	2.60	13	24
223d50e2.70a13Z24	50	2.70	13	24
223d50e2.80a13Z24	50	2.80	13	24
223d50e2.90a13Z24	50	2.90	13	24
223d50e3.00a13Z24	50	3.00	13	24
223d50e3.10a13Z24	50	3.10	13	24
223d50e3.20a13Z24	50	3.20	13	24
223d50e3.30a13Z24	50	3.30	13	24
223d50e3.40a13Z24	50	3.40	13	24
223d50e3.50a13Z24	50	3.50	13	24
223d50e3.60a13Z24	50	3.60	13	24
223d50e3.70a13Z24	50	3.70	13	24
223d50e3.80a13Z24	50	3.80	13	24
223d50e3.90a13Z24	50	3.90	13	24
223d50e4.00a13Z24	50	4.00	13	24
223d50e4.50a13Z24	50	4.50	13	24
223d50e5.00a13Z24	50	5.00	13	24
223d50e5.50a13Z20	50	5.50	13	20
223d50e6.00a13Z20	50	6.00	13	20
223d63e0.40a16Z64	63	0.40	16	64
223d63e0.45a16Z64	63	0.45	16	64
223d63e0.50a16Z64	63	0.50	16	64
223d63e0.60a16Z48	63	0.60	16	48
223d63e0.70a16Z48	63	0.70	16	48
223d63e0.80a16Z48	63	0.80	16	48
223d63e0.90a16Z48	63	0.90	16	48
223d63e1.00a16Z40	63	1.00	16	40
223d63e1.10a16Z40	63	1.10	16	40
223d63e1.20a16Z40	63	1.20	16	40
223d63e1.30a16Z40	63	1.30	16	40
223d63e1.40a16Z40	63	1.40	16	40
223d63e1.50a16Z40	63	1.50	16	40

Art. n°	d ₁	e	d ₂	Z
223d63e1.60a16Z40	63	1.60	16	40
223d63e1.70a16Z40	63	1.70	16	40
223d63e1.80a16Z40	63	1.80	16	40
223d63e1.90a16Z40	63	1.90	16	40
223d63e2.00a16Z40	63	2.00	16	40
223d63e2.10a16Z32	63	2.10	16	32
223d63e2.20a16Z32	63	2.20	16	32
223d63e2.30a16Z32	63	2.30	16	32
223d63e2.40a16Z32	63	2.40	16	32
223d63e2.50a16Z32	63	2.50	16	32
223d63e2.60a16Z32	63	2.60	16	32
223d63e2.70a16Z32	63	2.70	16	32
223d63e2.80a16Z32	63	2.80	16	32
223d63e2.90a16Z32	63	2.90	16	32
223d63e3.00a16Z32	63	3.00	16	32
223d63e3.10a16Z32	63	3.10	16	32
223d63e3.20a16Z32	63	3.20	16	32
223d63e3.30a16Z32	63	3.30	16	32
223d63e3.40a16Z32	63	3.40	16	32
223d63e3.50a16Z32	63	3.50	16	32
223d63e3.60a16Z32	63	3.60	16	32
223d63e3.70a16Z32	63	3.70	16	32
223d63e3.80a16Z32	63	3.80	16	32
223d63e3.90a16Z32	63	3.90	16	32
223d63e4.00a16Z32	63	4.00	16	32
223d63e4.50a16Z24	63	4.50	16	24
223d63e5.00a16Z24	63	5.00	16	24
223d63e5.50a16Z24	63	5.50	16	24
223d63e6.00a16Z24	63	6.00	16	24
223d80e0.60a22Z64	80	0.60	22	64
223d80e0.70a22Z64	80	0.70	22	64
223d80e0.80a22Z64	80	0.80	22	64
223d80e0.90a22Z48	80	0.90	22	48
223d80e1.00a22Z48	80	1.00	22	48
223d80e1.10a22Z48	80	1.10	22	48
223d80e1.20a22Z48	80	1.20	22	48
223d80e1.30a22Z48	80	1.30	22	48
223d80e1.40a22Z48	80	1.40	22	48
223d80e1.50a22Z48	80	1.50	22	48
223d80e1.60a22Z48	80	1.60	22	48
223d80e1.70a22Z40	80	1.70	22	40
223d80e1.80a22Z40	80	1.80	22	40
223d80e1.90a22Z40	80	1.90	22	40
223d80e2.00a22Z40	80	2.00	22	40
223d80e2.10a22Z40	80	2.10	22	40

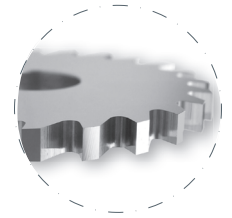


Slitting saw DIN 1838 coarse pitch

223

Continuation

Art. n°	d ₁	e	d ₂	Z	Art. n°	d ₁	e	d ₂	Z
223d80e2.20a22Z40	80	2.20	22	40	223d100e2.80a22Z40	100	2.80	22	40
223d80e2.30a22Z40	80	2.30	22	40	223d100e2.90a22Z40	100	2.90	22	40
223d80e2.40a22Z40	80	2.40	22	40	223d100e3.00a22Z40	100	3.00	22	40
223d80e2.50a22Z40	80	2.50	22	40	223d100e3.10a22Z40	100	3.10	22	40
223d80e2.60a22Z40	80	2.60	22	40	223d100e3.20a22Z40	100	3.20	22	40
223d80e2.70a22Z40	80	2.70	22	40	223d100e3.30a22Z40	100	3.30	22	40
223d80e2.80a22Z40	80	2.80	22	40	223d100e3.40a22Z40	100	3.40	22	40
223d80e2.90a22Z40	80	2.90	22	40	223d100e3.50a22Z40	100	3.50	22	40
223d80e3.00a22Z40	80	3.00	22	40	223d100e3.60a22Z40	100	3.60	22	40
223d80e3.10a22Z32	80	3.10	22	32	223d100e3.70a22Z40	100	3.70	22	40
223d80e3.20a22Z32	80	3.20	22	32	223d100e3.80a22Z40	100	3.80	22	40
223d80e3.30a22Z32	80	3.30	22	32	223d100e3.90a22Z40	100	3.90	22	40
223d80e3.40a22Z32	80	3.40	22	32	223d100e4.00a22Z40	100	4.00	22	40
223d80e3.50a22Z32	80	3.50	22	32	223d100e4.50a22Z40	100	4.50	22	40
223d80e3.60a22Z32	80	3.60	22	32	223d100e5.00a22Z40	100	5.00	22	40
223d80e3.70a22Z32	80	3.70	22	32	223d100e5.50a22Z32	100	5.50	22	32
223d80e3.80a22Z32	80	3.80	22	32	223d100e6.00a22Z32	100	6.00	22	32
223d80e3.90a22Z32	80	3.90	22	32	223d125e0.80a22Z80	125	0.80	22	80
223d80e4.00a22Z32	80	4.00	22	32	223d125e0.90a22Z80	125	0.90	22	80
223d80e4.50a22Z32	80	4.50	22	32	223d125e1.00a22Z80	125	1.00	22	80
223d80e5.00a22Z32	80	5.00	22	32	223d125e1.10a22Z64	125	1.10	22	64
223d80e5.50a22Z32	80	5.50	22	32	223d125e1.20a22Z64	125	1.20	22	64
223d80e6.00a22Z32	80	6.00	22	32	223d125e1.30a22Z64	125	1.30	22	64
223d100e0.60a22Z80	100	0.60	22	80	223d125e1.40a22Z64	125	1.40	22	64
223d100e0.70a22Z64	100	0.70	22	64	223d125e1.50a22Z64	125	1.50	22	64
223d100e0.80a22Z64	100	0.80	22	64	223d125e1.60a22Z64	125	1.60	22	64
223d100e0.90a22Z64	100	0.90	22	64	223d125e1.70a22Z64	125	1.70	22	64
223d100e1.00a22Z64	100	1.00	22	64	223d125e1.80a22Z64	125	1.80	22	64
223d100e1.10a22Z64	100	1.10	22	64	223d125e1.90a22Z64	125	1.90	22	64
223d100e1.20a22Z64	100	1.20	22	64	223d125e2.00a22Z64	125	2.00	22	64
223d100e1.30a22Z48	100	1.30	22	48	223d125e2.10a22Z48	125	2.10	22	48
223d100e1.40a22Z48	100	1.40	22	48	223d125e2.20a22Z48	125	2.20	22	48
223d100e1.50a22Z48	100	1.50	22	48	223d125e2.30a22Z48	125	2.30	22	48
223d100e1.60a22Z48	100	1.60	22	48	223d125e2.40a22Z48	125	2.40	22	48
223d100e1.70a22Z48	100	1.70	22	48	223d125e2.50a22Z48	125	2.50	22	48
223d100e1.80a22Z48	100	1.80	22	48	223d125e2.60a22Z48	125	2.60	22	48
223d100e1.90a22Z48	100	1.90	22	48	223d125e2.70a22Z48	125	2.70	22	48
223d100e2.00a22Z48	100	2.00	22	48	223d125e2.80a22Z48	125	2.80	22	48
223d100e2.10a22Z48	100	2.10	22	48	223d125e2.90a22Z48	125	2.90	22	48
223d100e2.20a22Z48	100	2.20	22	48	223d125e3.00a22Z48	125	3.00	22	48
223d100e2.30a22Z48	100	2.30	22	48	223d125e3.10a22Z48	125	3.10	22	48
223d100e2.40a22Z48	100	2.40	22	48	223d125e3.20a22Z48	125	3.20	22	48
223d100e2.50a22Z48	100	2.50	22	48	223d125e3.30a22Z48	125	3.30	22	48
223d100e2.60a22Z40	100	2.60	22	40	223d125e3.40a22Z48	125	3.40	22	48
223d100e2.70a22Z40	100	2.70	22	40	223d125e3.50a22Z48	125	3.50	22	48



Available uncoated or coated (see page 61)



Z
20-80



λ
0°

γ
8°

MG6

N

Slitting saw DIN 1838 coarse pitch



Available
uncoated or coated
(see page 61)



Z
20-80

λ
0°

γ
8°

MG6

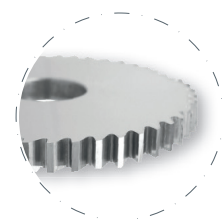
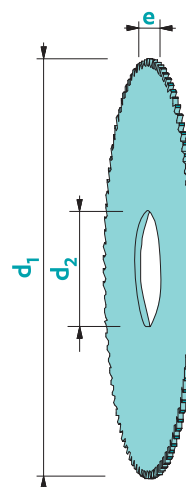
N

Art. n°	d ₁	e	d ₂	Z
223d125e3.60a22Z48	125	3.60	22	48
223d125e3.70a22Z48	125	3.70	22	48
223d125e3.80a22Z48	125	3.80	22	48
223d125e3.90a22Z48	125	3.90	22	48
223d125e4.00a22Z48	125	4.00	22	48
223d125e4.50a22Z40	125	4.50	22	40
223d125e5.00a22Z40	125	5.00	22	40
223d125e5.50a22Z40	125	5.50	22	40
223d125e6.00a22Z40	125	6.00	22	40
223d160e1.00a32Z80	160	1.00	32	80
223d160e1.20a32Z80	160	1.20	32	80
223d160e1.50a32Z80	160	1.50	32	80
223d160e2.00a32Z80	160	2.00	32	80
223d160e2.50a32Z80	160	2.50	32	80
223d160e3.00a32Z64	160	3.00	32	64

Slitting saw DIN 1837 fine pitch

Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	80	120	□	■	Trio
Steel > 700 N/mm ²	60	100	□	■	Trio
Stainless steel	60	100	□	■	Trio
Cast iron	50	90	□	■	Nemo
Copper	200	300	□	■	Solo
Brass - Bronze	200	300	□	■	Solo
Aluminium	250	400	□	■	Solo
Gold - Silver	150	300	■	-	Solo
Platinum - Palladium	-	-	-	-	-
Superalloys	20	40	□	■	Trio
Titanium	40	60	□	■	Rico


not adapted - adapted □ highly adapted ■




Available uncoated or coated (see page 61)

Tolerance e: +/-0.01
d₂: H5

Art. n°	d ₁	e	d ₂	Z	Art. n°	d ₁	e	d ₂	Z
223-1d15e0.10A5Z64	15	0.10	5	64	223-1d15e2.70A5Z40	15	2.70	5	40
223-1d15e0.15A5Z64	15	0.15	5	64	223-1d15e2.80A5Z40	15	2.80	5	40
223-1d15e0.20A5Z64	15	0.20	5	64	223-1d15e2.90A5Z40	15	2.90	5	40
223-1d15e0.25A5Z64	15	0.25	5	64	223-1d15e3.00A5Z40	15	3.00	5	40
223-1d15e0.30A5Z64	15	0.30	5	64	223-1d15e3.10A5Z24	15	3.10	5	24
223-1d15e0.35A5Z64	15	0.35	5	64	223-1d15e3.20A5Z24	15	3.20	5	24
223-1d15e0.40A5Z64	15	0.40	5	64	223-1d15e3.30A5Z24	15	3.30	5	24
223-1d15e0.45A5Z48	15	0.45	5	48	223-1d15e3.40A5Z24	15	3.40	5	24
223-1d15e0.50A5Z48	15	0.50	5	48	223-1d15e3.50A5Z24	15	3.50	5	24
223-1d15e0.60A5Z48	15	0.60	5	48	223-1d15e3.60A5Z24	15	3.60	5	24
223-1d15e0.70A5Z48	15	0.70	5	48	223-1d15e3.70A5Z24	15	3.70	5	24
223-1d15e0.80A5Z40	15	0.80	5	40	223-1d15e3.80A5Z24	15	3.80	5	24
223-1d15e0.90A5Z40	15	0.90	5	40	223-1d15e3.90A5Z24	15	3.90	5	24
223-1d15e1.00A5Z40	15	1.00	5	40	223-1d15e4.00A5Z24	15	4.00	5	24
223-1d15e1.10A5Z40	15	1.10	5	40	223-1d15e4.50A5Z24	15	4.50	5	24
223-1d15e1.20A5Z40	15	1.20	5	40	223-1d15e5.00A5Z24	15	5.00	5	24
223-1d15e1.30A5Z40	15	1.30	5	40	223-1d15e5.50A5Z24	15	5.50	5	24
223-1d15e1.40A5Z40	15	1.40	5	40	223-1d15e6.00A5Z24	15	6.00	5	24
223-1d15e1.50A5Z40	15	1.50	5	40	223-1d20e0.10A5Z80	20	0.10	5	80
223-1d15e1.60A5Z40	15	1.60	5	40	223-1d20e0.15A5Z80	20	0.15	5	80
223-1d15e1.70A5Z40	15	1.70	5	40	223-1d20e0.20A5Z80	20	0.20	5	80
223-1d15e1.80A5Z40	15	1.80	5	40	223-1d20e0.25A5Z64	20	0.25	5	64
223-1d15e1.90A5Z40	15	1.90	5	40	223-1d20e0.30A5Z64	20	0.30	5	64
223-1d15e2.00A5Z40	15	2.00	5	40	223-1d20e0.35A5Z64	20	0.35	5	64
223-1d15e2.10A5Z40	15	2.10	5	40	223-1d20e0.40A5Z64	20	0.40	5	64
223-1d15e2.20A5Z40	15	2.20	5	40	223-1d20e0.45A5Z48	20	0.45	5	48
223-1d15e2.30A5Z40	15	2.30	5	40	223-1d20e0.50A5Z48	20	0.50	5	48
223-1d15e2.40A5Z40	15	2.40	5	40	223-1d20e0.60A5Z48	20	0.60	5	48
223-1d15e2.50A5Z40	15	2.50	5	40	223-1d20e0.70A5Z48	20	0.70	5	48
223-1d15e2.60A5Z40	15	2.60	5	40	223-1d20e0.80A5Z40	20	0.80	5	40


Z
24-160



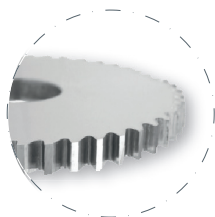
λ
0°

γ
8°

MG6

N

Slitting saw DIN 1837 fine pitch



Available
uncoated or coated
(see page 61)

Z
24-160



λ
0° **γ**
8°

MG6 **N**

Art. n°	d ₁	e	d ₂	Z	Art. n°	d ₁	e	d ₂	Z
223-1d20e0.90A5Z40	20	0.90	5	40	223-1d25e0.60A8Z64	25	0.60	8	64
223-1d20e1.00A5Z40	20	1.00	5	40	223-1d25e0.70A8Z48	25	0.70	8	48
223-1d20e1.10A5Z40	20	1.10	5	40	223-1d25e0.80A8Z48	25	0.80	8	48
223-1d20e1.20A5Z40	20	1.20	5	40	223-1d25e0.90A8Z48	25	0.90	8	48
223-1d20e1.30A5Z40	20	1.30	5	40	223-1d25e1.00A8Z48	25	1.00	8	48
223-1d20e1.40A5Z40	20	1.40	5	40	223-1d25e1.10A8Z48	25	1.10	8	48
223-1d20e1.50A5Z40	20	1.50	5	40	223-1d25e1.20A8Z48	25	1.20	8	48
223-1d20e1.60A5Z40	20	1.60	5	40	223-1d25e1.30A8Z40	25	1.30	8	40
223-1d20e1.70A5Z32	20	1.70	5	32	223-1d25e1.40A8Z40	25	1.40	8	40
223-1d20e1.80A5Z32	20	1.80	5	32	223-1d25e1.50A8Z40	25	1.50	8	40
223-1d20e1.90A5Z32	20	1.90	5	32	223-1d25e1.60A8Z40	25	1.60	8	40
223-1d20e2.00A5Z32	20	2.00	5	32	223-1d25e1.70A8Z40	25	1.70	8	40
223-1d20e2.10A5Z32	20	2.10	5	32	223-1d25e1.80A8Z40	25	1.80	8	40
223-1d20e2.20A5Z32	20	2.20	5	32	223-1d25e1.90A8Z40	25	1.90	8	40
223-1d20e2.30A5Z32	20	2.30	5	32	223-1d25e2.00A8Z40	25	2.00	8	40
223-1d20e2.40A5Z32	20	2.40	5	32	223-1d25e2.10A8Z40	25	2.10	8	40
223-1d20e2.50A5Z32	20	2.50	5	32	223-1d25e2.20A8Z40	25	2.20	8	40
223-1d20e2.60A5Z32	20	2.60	5	32	223-1d25e2.30A8Z40	25	2.30	8	40
223-1d20e2.70A5Z32	20	2.70	5	32	223-1d25e2.40A8Z40	25	2.40	8	40
223-1d20e2.80A5Z32	20	2.80	5	32	223-1d25e2.50A8Z40	25	2.50	8	40
223-1d20e2.90A5Z32	20	2.90	5	32	223-1d25e2.60A8Z32	25	2.60	8	32
223-1d20e3.00A5Z32	20	3.00	5	32	223-1d25e2.70A8Z32	25	2.70	8	32
223-1d20e3.10A5Z24	20	3.10	5	24	223-1d25e2.80A8Z32	25	2.80	8	32
223-1d20e3.20A5Z24	20	3.20	5	24	223-1d25e2.90A8Z32	25	2.90	8	32
223-1d20e3.30A5Z24	20	3.30	5	24	223-1d25e3.00A8Z32	25	3.00	8	32
223-1d20e3.40A5Z24	20	3.40	5	24	223-1d25e3.10A8Z32	25	3.10	8	32
223-1d20e3.50A5Z24	20	3.50	5	24	223-1d25e3.20A8Z32	25	3.20	8	32
223-1d20e3.60A5Z24	20	3.60	5	24	223-1d25e3.30A8Z32	25	3.30	8	32
223-1d20e3.70A5Z24	20	3.70	5	24	223-1d25e3.40A8Z32	25	3.40	8	32
223-1d20e3.80A5Z24	20	3.80	5	24	223-1d25e3.50A8Z32	25	3.50	8	32
223-1d20e3.90A5Z24	20	3.90	5	24	223-1d25e3.60A8Z32	25	3.60	8	32
223-1d20e4.00A5Z24	20	4.00	5	24	223-1d25e3.70A8Z32	25	3.70	8	32
223-1d20e4.50A5Z24	20	4.50	5	24	223-1d25e3.80A8Z32	25	3.80	8	32
223-1d20e5.00A5Z24	20	5.00	5	24	223-1d25e3.90A8Z32	25	3.90	8	32
223-1d20e5.50A5Z24	20	5.50	5	24	223-1d25e4.00A8Z32	25	4.00	8	32
223-1d20e6.00A5Z24	20	6.00	5	24	223-1d25e4.50A8Z32	25	4.50	8	32
223-1d25e0.10A8Z80	25	0.10	8	80	223-1d25e5.00A8Z32	25	5.00	8	32
223-1d25e0.15A8Z80	25	0.15	8	80	223-1d25e5.50A8Z24	25	5.50	8	24
223-1d25e0.20A8Z80	25	0.20	8	80	223-1d25e6.00A8Z24	25	6.00	8	24
223-1d25e0.25A8Z80	25	0.25	8	80	--> Ref. 223-2	30	0.10	8	100
223-1d25e0.30A8Z80	25	0.30	8	80	--> Ref. 223-2	30	0.15	8	100
223-1d25e0.35A8Z64	25	0.35	8	64	--> Ref. 223-2	30	0.20	8	100
223-1d25e0.40A8Z64	25	0.40	8	64	--> Ref. 223-2	30	0.25	8	100
223-1d25e0.45A8Z64	25	0.45	8	64	223-1d30e0.30A8Z80	30	0.30	8	80
223-1d25e0.50A8Z64	25	0.50	8	64	223-1d30e0.35A8Z80	30	0.35	8	80



Slitting saw DIN 1837 fine pitch

223-1

Continuation

Art. n°	d ₁	e	d ₂	Z	Art. n°	d ₁	e	d ₂	Z
223-1d30e0.40A8Z80	30	0.40	8	80	--> Ref. 223-2	40	0.25	10	100
223-1d30e0.45A8Z80	30	0.45	8	80	--> Ref. 223-2	40	0.30	10	100
223-1d30e0.50A8Z80	30	0.50	8	80	--> Ref. 223-2	40	0.35	10	100
223-1d30e0.60A8Z64	30	0.60	8	64	--> Ref. 223-2	40	0.40	10	100
223-1d30e0.70A8Z64	30	0.70	8	64	223-1d40e0.45A10Z80	40	0.45	10	80
223-1d30e0.80A8Z64	30	0.80	8	64	223-1d40e0.50A10Z80	40	0.50	10	80
223-1d30e0.90A8Z64	30	0.90	8	64	223-1d40e0.60A10Z80	40	0.60	10	80
223-1d30e1.00A8Z64	30	1.00	8	64	223-1d40e0.70A10Z80	40	0.70	10	80
223-1d30e1.10A8Z48	30	1.10	8	48	223-1d40e0.80A10Z80	40	0.80	10	80
223-1d30e1.20A8Z48	30	1.20	8	48	223-1d40e0.90A10Z64	40	0.90	10	64
223-1d30e1.30A8Z48	30	1.30	8	48	223-1d40e1.00A10Z64	40	1.00	10	64
223-1d30e1.40A8Z48	30	1.40	8	48	223-1d40e1.10A10Z64	40	1.10	10	64
223-1d30e1.50A8Z48	30	1.50	8	48	223-1d40e1.20A10Z64	40	1.20	10	64
223-1d30e1.60A8Z48	30	1.60	8	48	223-1d40e1.30A10Z64	40	1.30	10	64
223-1d30e1.70A8Z48	30	1.70	8	48	223-1d40e1.40A10Z64	40	1.40	10	64
223-1d30e1.80A8Z48	30	1.80	8	48	223-1d40e1.50A10Z64	40	1.50	10	64
223-1d30e1.90A8Z48	30	1.90	8	48	223-1d40e1.60A10Z64	40	1.60	10	64
223-1d30e2.00A8Z48	30	2.00	8	48	223-1d40e1.70A10Z48	40	1.70	10	48
223-1d30e2.10A8Z40	30	2.10	8	40	223-1d40e1.80A10Z48	40	1.80	10	48
223-1d30e2.20A8Z40	30	2.20	8	40	223-1d40e1.90A10Z48	40	1.90	10	48
223-1d30e2.30A8Z40	30	2.30	8	40	223-1d40e2.00A10Z48	40	2.00	10	48
223-1d30e2.40A8Z40	30	2.40	8	40	223-1d40e2.10A10Z48	40	2.10	10	48
223-1d30e2.50A8Z40	30	2.50	8	40	223-1d40e2.20A10Z48	40	2.20	10	48
223-1d30e2.60A8Z40	30	2.60	8	40	223-1d40e2.30A10Z48	40	2.30	10	48
223-1d30e2.70A8Z40	30	2.70	8	40	223-1d40e2.40A10Z48	40	2.40	10	48
223-1d30e2.80A8Z40	30	2.80	8	40	223-1d40e2.50A10Z48	40	2.50	10	48
223-1d30e2.90A8Z40	30	2.90	8	40	223-1d40e2.60A10Z48	40	2.60	10	48
223-1d30e3.00A8Z40	30	3.00	8	40	223-1d40e2.70A10Z48	40	2.70	10	48
223-1d30e3.10A8Z40	30	3.10	8	40	223-1d40e2.80A10Z48	40	2.80	10	48
223-1d30e3.20A8Z40	30	3.20	8	40	223-1d40e2.90A10Z48	40	2.90	10	48
223-1d30e3.30A8Z40	30	3.30	8	40	223-1d40e3.00A10Z48	40	3.00	10	48
223-1d30e3.40A8Z40	30	3.40	8	40	223-1d40e3.10A10Z40	40	3.10	10	40
223-1d30e3.50A8Z40	30	3.50	8	40	223-1d40e3.20A10Z40	40	3.20	10	40
223-1d30e3.60A8Z40	30	3.60	8	40	223-1d40e3.30A10Z40	40	3.30	10	40
223-1d30e3.70A8Z40	30	3.70	8	40	223-1d40e3.40A10Z40	40	3.40	10	40
223-1d30e3.80A8Z40	30	3.80	8	40	223-1d40e3.50A10Z40	40	3.50	10	40
223-1d30e3.90A8Z40	30	3.90	8	40	223-1d40e3.60A10Z40	40	3.60	10	40
223-1d30e4.00A8Z40	30	4.00	8	40	223-1d40e3.70A10Z40	40	3.70	10	40
223-1d30e4.50A8Z32	30	4.50	8	32	223-1d40e3.80A10Z40	40	3.80	10	40
223-1d30e5.00A8Z32	30	5.00	8	32	223-1d40e3.90A10Z40	40	3.90	10	40
223-1d30e5.50A8Z32	30	5.50	8	32	223-1d40e4.00A10Z40	40	4.00	10	40
223-1d30e6.00A8Z32	30	6.00	8	32	223-1d40e4.50A10Z40	40	4.50	10	40
223-1d40e0.10A10Z128	40	0.10	10	128	223-1d40e5.00A10Z40	40	5.00	10	40
223-1d40e0.15A10Z128	40	0.15	10	128	223-1d40e5.50A10Z40	40	5.50	10	40
223-1d40e0.20A10Z128	40	0.20	10	128	223-1d40e6.00A10Z40	40	6.00	10	40



Available uncoated or coated (see page 61)



Z
24-160



λ
0°

γ
8°

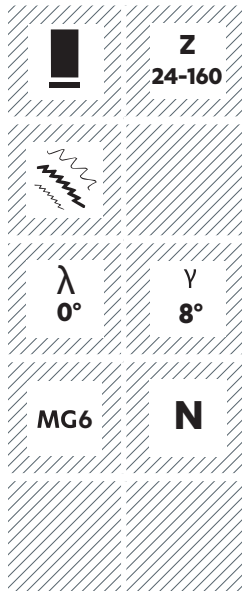
MG6

N

Slitting saw DIN 1837 fine pitch



Available uncoated or coated (see page 61)



Art. n°	d ₁	e	d ₂	Z	Art. n°	d ₁	e	d ₂	Z
223-1d50e0.20A13Z128	50	0.20	13	128	223-1d50e6.00A13Z40	50	6.00	13	40
223-1d50e0.25A13Z128	50	0.25	13	128	223-1d63e0.20A16Z160	63	0.20	16	160
223-1d50e0.30A13Z128	50	0.30	13	128	223-1d63e0.25A16Z128	63	0.25	16	128
223-1d50e0.35A13Z100	50	0.35	13	100	223-1d63e0.30A16Z128	63	0.30	16	128
223-1d50e0.40A13Z100	50	0.40	13	100	223-1d63e0.35A16Z128	63	0.35	16	128
223-1d50e0.45A13Z100	50	0.45	13	100	223-1d63e0.40A16Z128	63	0.40	16	128
223-1d50e0.50A13Z100	50	0.50	13	100	223-1d63e0.45A16Z128	63	0.45	16	128
223-1d50e0.60A13Z100	50	0.60	13	100	223-1d63e0.50A16Z128	63	0.50	16	128
223-1d50e0.70A13Z80	50	0.70	13	80	223-1d63e0.60A16Z100	63	0.60	16	100
223-1d50e0.80A13Z80	50	0.80	13	80	223-1d63e0.70A16Z100	63	0.70	16	100
223-1d50e0.90A13Z80	50	0.90	13	80	223-1d63e0.80A16Z100	63	0.80	16	100
223-1d50e1.00A13Z80	50	1.00	13	80	223-1d63e0.90A16Z100	63	0.90	16	100
223-1d50e1.10A13Z80	50	1.10	13	80	223-1d63e1.00A16Z100	63	1.00	16	100
223-1d50e1.20A13Z80	50	1.20	13	80	223-1d63e1.10A16Z80	63	1.10	16	80
223-1d50e1.30A13Z64	50	1.30	13	64	223-1d63e1.20A16Z80	63	1.20	16	80
223-1d50e1.40A13Z64	50	1.40	13	64	223-1d63e1.30A16Z80	63	1.30	16	80
223-1d50e1.50A13Z64	50	1.50	13	64	223-1d63e1.40A16Z80	63	1.40	16	80
223-1d50e1.60A13Z64	50	1.60	13	64	223-1d63e1.50A16Z80	63	1.50	16	80
223-1d50e1.70A13Z64	50	1.70	13	64	223-1d63e1.60A16Z80	63	1.60	16	80
223-1d50e1.80A13Z64	50	1.80	13	64	223-1d63e1.70A16Z80	63	1.70	16	80
223-1d50e1.90A13Z64	50	1.90	13	64	223-1d63e1.80A16Z80	63	1.80	16	80
223-1d50e2.00A13Z64	50	2.00	13	64	223-1d63e1.90A16Z80	63	1.90	16	80
223-1d50e2.10A13Z64	50	2.10	13	64	223-1d63e2.00A16Z80	63	2.00	16	80
223-1d50e2.20A13Z64	50	2.20	13	64	223-1d63e2.10A16Z64	63	2.10	16	64
223-1d50e2.30A13Z64	50	2.30	13	64	223-1d63e2.20A16Z64	63	2.20	16	64
223-1d50e2.40A13Z64	50	2.40	13	64	223-1d63e2.30A16Z64	63	2.30	16	64
223-1d50e2.50A13Z64	50	2.50	13	64	223-1d63e2.40A16Z64	63	2.40	16	64
223-1d50e2.60A13Z48	50	2.60	13	48	223-1d63e2.50A16Z64	63	2.50	16	64
223-1d50e2.70A13Z48	50	2.70	13	48	223-1d63e2.60A16Z64	63	2.60	16	64
223-1d50e2.80A13Z48	50	2.80	13	48	223-1d63e2.70A16Z64	63	2.70	16	64
223-1d50e2.90A13Z48	50	2.90	13	48	223-1d63e2.80A16Z64	63	2.80	16	64
223-1d50e3.00A13Z48	50	3.00	13	48	223-1d63e2.90A16Z64	63	2.90	16	64
223-1d50e3.10A13Z48	50	3.10	13	48	223-1d63e3.00A16Z64	63	3.00	16	64
223-1d50e3.20A13Z48	50	3.20	13	48	223-1d63e3.10A16Z64	63	3.10	16	64
223-1d50e3.30A13Z48	50	3.30	13	48	223-1d63e3.20A16Z64	63	3.20	16	64
223-1d50e3.40A13Z48	50	3.40	13	48	223-1d63e3.30A16Z64	63	3.30	16	64
223-1d50e3.50A13Z48	50	3.50	13	48	223-1d63e3.40A16Z64	63	3.40	16	64
223-1d50e3.60A13Z48	50	3.60	13	48	223-1d63e3.50A16Z64	63	3.50	16	64
223-1d50e3.70A13Z48	50	3.70	13	48	223-1d63e3.60A16Z64	63	3.60	16	64
223-1d50e3.80A13Z48	50	3.80	13	48	223-1d63e3.70A16Z64	63	3.70	16	64
223-1d50e3.90A13Z48	50	3.90	13	48	223-1d63e3.80A16Z64	63	3.80	16	64
223-1d50e4.00A13Z48	50	4.00	13	48	223-1d63e3.90A16Z64	63	3.90	16	64
223-1d50e4.50A13Z48	50	4.50	13	48	223-1d63e4.00A16Z64	63	4.00	16	64
223-1d50e5.00A13Z48	50	5.00	13	48	223-1d63e4.50A16Z48	63	4.50	16	48
223-1d50e5.50A13Z40	50	5.50	13	40	223-1d63e5.00A16Z48	63	5.00	16	48



Slitting saw DIN 1837 fine pitch

223-1

Continuation

Art. n°	d ₁	e	d ₂	Z	Art. n°	d ₁	e	d ₂	Z
223-1d63e5.50A16Z48	63	5.50	16	48	223-1d80e5.50A22Z64	80	5.50	22	64
223-1d63e6.00A16Z48	63	6.00	16	48	223-1d80e6.00A22Z64	80	6.00	22	64
223-1d80e0.25A22Z160	80	0.25	22	160	223-1d100e0.50A22Z160	100	0.50	22	160
223-1d80e0.30A22Z160	80	0.30	22	160	223-1d100e0.60A22Z160	100	0.60	22	160
223-1d80e0.35A22Z160	80	0.35	22	160	223-1d100e0.70A22Z128	100	0.70	22	128
223-1d80e0.40A22Z160	80	0.40	22	160	223-1d100e0.80A22Z128	100	0.80	22	128
223-1d80e0.45A22Z128	80	0.45	22	128	223-1d100e0.90A22Z128	100	0.90	22	128
223-1d80e0.50A22Z128	80	0.50	22	128	223-1d100e1.00A22Z128	100	1.00	22	128
223-1d80e0.60A22Z128	80	0.60	22	128	223-1d100e1.10A22Z128	100	1.10	22	128
223-1d80e0.70A22Z128	80	0.70	22	128	223-1d100e1.20A22Z128	100	1.20	22	128
223-1d80e0.80A22Z128	80	0.80	22	128	223-1d100e1.30A22Z100	100	1.30	22	100
223-1d80e0.90A22Z100	80	0.90	22	100	223-1d100e1.40A22Z100	100	1.40	22	100
223-1d80e1.00A22Z100	80	1.00	22	100	223-1d100e1.50A22Z100	100	1.50	22	100
223-1d80e1.10A22Z100	80	1.10	22	100	223-1d100e1.60A22Z100	100	1.60	22	100
223-1d80e1.20A22Z100	80	1.20	22	100	223-1d100e1.70A22Z100	100	1.70	22	100
223-1d80e1.30A22Z100	80	1.30	22	100	223-1d100e1.80A22Z100	100	1.80	22	100
223-1d80e1.40A22Z100	80	1.40	22	100	223-1d100e1.90A22Z100	100	1.90	22	100
223-1d80e1.50A22Z100	80	1.50	22	100	223-1d100e2.00A22Z100	100	2.00	22	100
223-1d80e1.60A22Z100	80	1.60	22	100	223-1d100e2.10A22Z100	100	2.10	22	100
223-1d80e1.70A22Z80	80	1.70	22	80	223-1d100e2.20A22Z100	100	2.20	22	100
223-1d80e1.80A22Z80	80	1.80	22	80	223-1d100e2.30A22Z100	100	2.30	22	100
223-1d80e1.90A22Z80	80	1.90	22	80	223-1d100e2.40A22Z100	100	2.40	22	100
223-1d80e2.00A22Z80	80	2.00	22	80	223-1d100e2.50A22Z100	100	2.50	22	100
223-1d80e2.10A22Z80	80	2.10	22	80	223-1d100e2.60A22Z80	100	2.60	22	80
223-1d80e2.20A22Z80	80	2.20	22	80	223-1d100e2.70A22Z80	100	2.70	22	80
223-1d80e2.30A22Z80	80	2.30	22	80	223-1d100e2.80A22Z80	100	2.80	22	80
223-1d80e2.40A22Z80	80	2.40	22	80	223-1d100e2.90A22Z80	100	2.90	22	80
223-1d80e2.50A22Z80	80	2.50	22	80	223-1d100e3.00A22Z80	100	3.00	22	80
223-1d80e2.60A22Z80	80	2.60	22	80	223-1d100e3.10A22Z80	100	3.10	22	80
223-1d80e2.70A22Z80	80	2.70	22	80	223-1d100e3.20A22Z80	100	3.20	22	80
223-1d80e2.80A22Z80	80	2.80	22	80	223-1d100e3.30A22Z80	100	3.30	22	80
223-1d80e2.90A22Z80	80	2.90	22	80	223-1d100e3.40A22Z80	100	3.40	22	80
223-1d80e3.00A22Z80	80	3.00	22	80	223-1d100e3.50A22Z80	100	3.50	22	80
223-1d80e3.10A22Z64	80	3.10	22	64	223-1d100e3.60A22Z80	100	3.60	22	80
223-1d80e3.20A22Z64	80	3.20	22	64	223-1d100e3.70A22Z80	100	3.70	22	80
223-1d80e3.30A22Z64	80	3.30	22	64	223-1d100e3.80A22Z80	100	3.80	22	80
223-1d80e3.40A22Z64	80	3.40	22	64	223-1d100e3.90A22Z80	100	3.90	22	80
223-1d80e3.50A22Z64	80	3.50	22	64	223-1d100e4.00A22Z80	100	4.00	22	80
223-1d80e3.60A22Z64	80	3.60	22	64	223-1d100e4.50A22Z80	100	4.50	22	80
223-1d80e3.70A22Z64	80	3.70	22	64	223-1d100e5.00A22Z80	100	5.00	22	80
223-1d80e3.80A22Z64	80	3.80	22	64	223-1d100e5.50A22Z64	100	5.50	22	64
223-1d80e3.90A22Z64	80	3.90	22	64	223-1d100e6.00A22Z64	100	6.00	22	64
223-1d80e4.00A22Z64	80	4.00	22	64	223-1d125e0.60A22Z160	125	0.60	22	160
223-1d80e4.50A22Z64	80	4.50	22	64	223-1d125e0.70A22Z160	125	0.70	22	160
223-1d80e5.00A22Z64	80	5.00	22	64	223-1d125e0.80A22Z160	125	0.80	22	160



Available uncoated or coated (see page 61)



Z
24-160



λ
0°

γ
8°

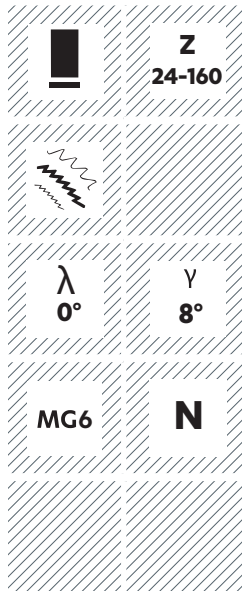
MG6

N

Slitting saw DIN 1837 fine pitch



Available
uncoated or coated
(see page 61)



Art. n°	d ₁	e	d ₂	Z
223-1d125e0.90A22Z160	125	0.90	22	160
223-1d125e1.00A22Z160	125	1.00	22	160
223-1d125e1.10A22Z128	125	1.10	22	128
223-1d125e1.20A22Z128	125	1.20	22	128
223-1d125e1.30A22Z128	125	1.30	22	128
223-1d125e1.40A22Z128	125	1.40	22	128
223-1d125e1.50A22Z128	125	1.50	22	128
223-1d125e1.60A22Z128	125	1.60	22	128
223-1d125e1.70A22Z128	125	1.70	22	128
223-1d125e1.80A22Z128	125	1.80	22	128
223-1d125e1.90A22Z128	125	1.90	22	128
223-1d125e2.00A22Z128	125	2.00	22	128
223-1d125e2.10A22Z100	125	2.10	22	100
223-1d125e2.20A22Z100	125	2.20	22	100
223-1d125e2.30A22Z100	125	2.30	22	100
223-1d125e2.40A22Z100	125	2.40	22	100
223-1d125e2.50A22Z100	125	2.50	22	100
223-1d125e2.60A22Z100	125	2.60	22	100
223-1d125e2.70A22Z100	125	2.70	22	100
223-1d125e2.80A22Z100	125	2.80	22	100
223-1d125e2.90A22Z100	125	2.90	22	100
223-1d125e3.00A22Z100	125	3.00	22	100
223-1d125e3.10A22Z100	125	3.10	22	100
223-1d125e3.20A22Z100	125	3.20	22	100
223-1d125e3.30A22Z100	125	3.30	22	100
223-1d125e3.40A22Z100	125	3.40	22	100
223-1d125e3.50A22Z100	125	3.50	22	100
223-1d125e3.60A22Z100	125	3.60	22	100
223-1d125e3.70A22Z100	125	3.70	22	100
223-1d125e3.80A22Z100	125	3.80	22	100
223-1d125e3.90A22Z100	125	3.90	22	100
223-1d125e4.00A22Z100	125	4.00	22	100
223-1d125e4.50A22Z100	125	4.50	22	100
223-1d125e5.00A22Z100	125	5.00	22	100
223-1d125e5.50A22Z100	125	5.50	22	100
223-1d125e6.00A22Z100	125	6.00	22	100
223-1d160e1.00A32Z160	160	1.00	32	160
223-1d160e1.20A32Z160	160	1.20	32	160
223-1d160e1.50A32Z160	160	1.50	32	160
223-1d160e1.60A32Z160	160	1.60	32	160
223-1d160e1.80A32Z128	160	1.80	32	128
223-1d160e2.00A32Z128	160	2.00	32	128
223-1d160e2.50A32Z128	160	2.50	32	128
223-1d160e3.00A32Z128	160	3.00	32	128

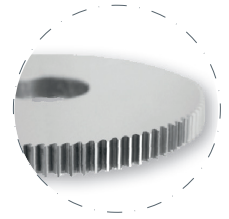
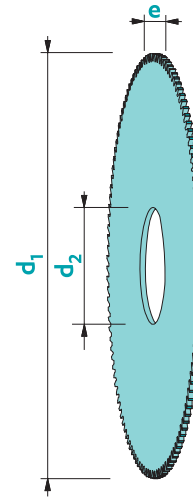
Slitting saw extra fine pitch

223-2

Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	80	120	□	■	Trio
Steel > 700 N/mm ²	60	100	□	■	Trio
Stainless steel	60	100	□	■	Trio
Cast iron	50	90	□	■	Nemo
Copper	200	300	□	■	Solo
Brass - Bronze	200	300	□	■	Solo
Aluminium	250	400	□	■	Solo
Gold - Silver	150	300	■	-	Solo
Platinum - Palladium	-	-	-	-	-
Superalloys	20	40	□	■	Trio
Titanium	40	60	□	■	Rico

not adapted - adapted □ highly adapted ■

Tolerance e: +/-0.01
d₂: H5



Available uncoated or coated (see page 61)

Art. n°	d ₁	e	d ₂	Z	Art. n°	d ₁	e	d ₂	Z
223-2d8e0.10A3Z48	8	0.10	3	48	223-2d12e0.30A5Z64	12	0.30	5	64
223-2d8e0.15A3Z48	8	0.15	3	48	223-2d12e0.35A5Z64	12	0.35	5	64
223-2d8e0.20A3Z48	8	0.20	3	48	223-2d12e0.40A5Z64	12	0.40	5	64
223-2d8e0.25A3Z48	8	0.25	3	48	223-2d12e0.50A5Z64	12	0.50	5	64
223-2d8e0.30A3Z48	8	0.30	3	48	223-2d12e0.60A5Z64	12	0.60	5	64
223-2d8e0.35A3Z48	8	0.35	3	48	223-2d12e0.70A5Z64	12	0.70	5	64
223-2d8e0.40A3Z48	8	0.40	3	48	223-2d12e0.80A5Z64	12	0.80	5	64
223-2d8e0.50A3Z48	8	0.50	3	48	223-2d12e0.90A5Z64	12	0.90	5	64
223-2d8e0.60A3Z48	8	0.60	3	48	223-2d15e0.10A5Z80	15	0.10	5	80
223-2d8e0.70A3Z48	8	0.70	3	48	223-2d15e0.15A5Z80	15	0.15	5	80
223-2d8e0.80A3Z48	8	0.80	3	48	223-2d15e0.20A5Z80	15	0.20	5	80
223-2d8e0.90A3Z48	8	0.90	3	48	223-2d15e0.25A5Z80	15	0.25	5	80
223-2d8e1.00A3Z48	8	1.00	3	48	223-2d15e0.30A5Z80	15	0.30	5	80
223-2d10e0.10A3Z64	10	0.10	3	64	223-2d15e0.35A5Z80	15	0.35	5	80
223-2d10e0.15A3Z64	10	0.15	3	64	223-2d15e0.40A5Z80	15	0.40	5	80
223-2d10e0.20A3Z64	10	0.20	3	64	223-2d15e0.50A5Z80	15	0.50	5	80
223-2d10e0.25A3Z64	10	0.25	3	64	223-2d15e0.60A5Z80	15	0.60	5	80
223-2d10e0.30A3Z64	10	0.30	3	64	223-2d15e0.70A5Z80	15	0.70	5	80
223-2d10e0.35A3Z64	10	0.35	3	64	223-2d15e0.80A5Z80	15	0.80	5	80
223-2d10e0.40A3Z64	10	0.40	3	64	223-2d15e0.90A5Z80	15	0.90	5	80
223-2d10e0.50A3Z64	10	0.50	3	64	223-2d15e1.00A5Z80	15	1.00	5	80
223-2d10e0.60A3Z64	10	0.60	3	64	223-2d15e1.10A5Z80	15	1.10	5	80
223-2d10e0.70A3Z64	10	0.70	3	64	223-2d15e1.20A5Z80	15	1.20	5	80
223-2d10e0.80A3Z64	10	0.80	3	64	223-2d15e1.30A5Z80	15	1.30	5	80
223-2d10e0.90A3Z64	10	0.90	3	64	223-2d15e1.40A5Z80	15	1.40	5	80
223-2d10e1.00A3Z64	10	1.00	3	64	223-2d15e1.50A5Z80	15	1.50	5	80
223-2d12e0.10A5Z64	12	0.10	5	64	223-2d15e2.00A5Z80	15	2.00	5	80
223-2d12e0.15A5Z64	12	0.15	5	64	223-2d15e2.50A5Z80	15	2.50	5	80
223-2d12e0.20A5Z64	12	0.20	5	64	223-2d15e3.00A5Z80	15	3.00	5	80
223-2d12e0.25A5Z64	12	0.25	5	64					



Z
48-160



λ
0°

γ
6°

MG6

N

Slitting saw extra fine pitch



Available uncoated or coated (see page 61)

Z
48-160

λ
0°

γ
6°

MG6

N

Art. n°	d ₁	e	d ₂	Z
223-2d20e0.10A5Z100	20	0.10	5	100
223-2d20e0.10A6Z80	20	0.10	6	80
223-2d20e0.15A5Z100	20	0.15	5	100
223-2d20e0.15A6Z80	20	0.15	6	80
223-2d20e0.20A5Z100	20	0.20	5	100
223-2d20e0.20A6Z80	20	0.20	6	80
223-2d20e0.25A5Z80	20	0.25	5	80
223-2d20e0.25A5Z100	20	0.25	5	100
223-2d20e0.25A6Z80	20	0.25	6	80
223-2d20e0.30A5Z80	20	0.30	5	80
223-2d20e0.30A5Z100	20	0.30	5	100
223-2d20e0.30A6Z80	20	0.30	6	80
223-2d20e0.35A5Z80	20	0.35	5	80
223-2d20e0.35A5Z100	20	0.35	5	100
223-2d20e0.35A6Z80	20	0.35	6	80
223-2d20e0.40A5Z80	20	0.40	5	80
223-2d20e0.40A5Z100	20	0.40	5	100
223-2d20e0.40A6Z80	20	0.40	6	80
223-2d20e0.50A5Z80	20	0.50	5	80
223-2d20e0.50A5Z100	20	0.50	5	100
223-2d20e0.50A6Z80	20	0.50	6	80
223-2d20e0.60A5Z80	20	0.60	5	80
223-2d20e0.60A6Z80	20	0.60	6	80
223-2d20e0.70A5Z80	20	0.70	5	80
223-2d20e0.70A6Z80	20	0.70	6	80
223-2d20e0.80A5Z80	20	0.80	5	80
223-2d20e0.80A6Z80	20	0.80	6	80
223-2d20e0.90A5Z80	20	0.90	5	80
223-2d20e0.90A6Z80	20	0.90	6	80
223-2d20e1.00A5Z80	20	1.00	5	80
223-2d20e1.00A6Z80	20	1.00	6	80
223-2d20e1.10A5Z80	20	1.10	5	80
223-2d20e1.10A6Z80	20	1.10	6	80
223-2d20e1.20A5Z80	20	1.20	5	80
223-2d20e1.20A6Z80	20	1.20	6	80
223-2d20e1.30A5Z80	20	1.30	5	80
223-2d20e1.30A6Z80	20	1.30	6	80
223-2d20e1.40A5Z80	20	1.40	5	80
223-2d20e1.40A6Z80	20	1.40	6	80
223-2d20e1.50A5Z80	20	1.50	5	80
223-2d20e1.50A6Z80	20	1.50	6	80
223-2d20e2.00A5Z80	20	2.00	5	80
223-2d20e2.00A6Z80	20	2.00	6	80
223-2d20e2.50A5Z80	20	2.50	5	80
223-2d20e2.50A6Z80	20	2.50	6	80

Art. n°	d ₁	e	d ₂	Z
223-2d20e3.00A5Z80	20	3.00	5	80
223-2d20e3.00A6Z80	20	3.00	6	80
223-2d25e0.10A5Z80	25	0.10	5	80
223-2d25e0.15A5Z80	25	0.15	5	80
223-2d25e0.15A6Z100	25	0.15	6	100
223-2d25e0.15A8Z100	25	0.15	8	100
223-2d25e0.20A5Z80	25	0.20	5	80
223-2d25e0.20A6Z100	25	0.20	6	100
223-2d25e0.20A8Z100	25	0.20	8	100
223-2d25e0.25A5Z80	25	0.25	5	80
223-2d25e0.25A6Z100	25	0.25	6	100
223-2d25e0.25A8Z100	25	0.25	8	100
223-2d25e0.30A5Z80	25	0.30	5	80
223-2d25e0.30A6Z100	25	0.30	6	100
223-2d25e0.30A8Z100	25	0.30	8	100
223-2d25e0.35A5Z80	25	0.35	5	80
223-2d25e0.35A6Z100	25	0.35	6	100
223-2d25e0.35A8Z100	25	0.35	8	100
223-2d25e0.40A5Z80	25	0.40	5	80
223-2d25e0.40A6Z100	25	0.40	6	100
223-2d25e0.40A8Z100	25	0.40	8	100
223-2d25e0.50A5Z80	25	0.50	5	80
223-2d25e0.50A6Z100	25	0.50	6	100
223-2d25e0.50A8Z100	25	0.50	8	100
223-2d25e0.60A5Z80	25	0.60	5	80
223-2d25e0.60A6Z100	25	0.60	6	100
223-2d25e0.60A8Z100	25	0.60	8	100
223-2d25e0.70A5Z80	25	0.70	5	80
223-2d25e0.70A6Z100	25	0.70	6	100
223-2d25e0.70A8Z100	25	0.70	8	100
223-2d25e0.80A5Z80	25	0.80	5	80
223-2d25e0.80A6Z100	25	0.80	6	100
223-2d25e0.80A8Z100	25	0.80	8	100
223-2d25e0.90A5Z80	25	0.90	5	80
223-2d25e0.90A6Z100	25	0.90	6	100
223-2d25e0.90A8Z100	25	0.90	8	100
223-2d25e1.00A5Z80	25	1.00	5	80
223-2d25e1.00A6Z100	25	1.00	6	100
223-2d25e1.00A8Z100	25	1.00	8	100
223-2d25e1.10A5Z80	25	1.10	5	80
223-2d25e1.10A6Z100	25	1.10	6	100
223-2d25e1.10A8Z100	25	1.10	8	100
223-2d25e1.20A5Z80	25	1.20	5	80
223-2d25e1.20A6Z100	25	1.20	6	100
223-2d25e1.20A8Z100	25	1.20	8	100

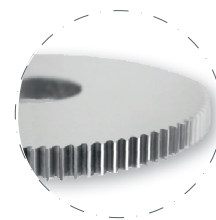


Slitting saw extra fine pitch

223-2

Continuation

Art. n°	d ₁	e	d ₂	Z	Art. n°	d ₁	e	d ₂	Z
223-2d25e1.30A5Z80	25	1.30	5	80	223-2d32e0.50A8Z80	32	0.50	8	80
223-2d25e1.30A6Z100	25	1.30	6	100	223-2d32e0.60A8Z80	32	0.60	8	80
223-2d25e1.30A8Z100	25	1.30	8	100	223-2d32e0.70A8Z80	32	0.70	8	80
223-2d25e1.40A5Z80	25	1.40	5	80	223-2d32e0.80A8Z80	32	0.80	8	80
223-2d25e1.40A6Z100	25	1.40	6	100	223-2d32e0.90A8Z80	32	0.90	8	80
223-2d25e1.40A8Z100	25	1.40	8	100	223-2d32e1.00A8Z80	32	1.00	8	80
223-2d25e1.50A5Z80	25	1.50	5	80	223-2d32e1.10A8Z80	32	1.10	8	80
223-2d25e1.50A6Z100	25	1.50	6	100	223-2d32e1.20A8Z80	32	1.20	8	80
223-2d25e1.50A8Z100	25	1.50	8	100	223-2d32e1.30A8Z80	32	1.30	8	80
223-2d25e2.00A5Z80	25	2.00	5	80	223-2d32e1.40A8Z80	32	1.40	8	80
223-2d25e2.00A6Z100	25	2.00	6	100	223-2d32e1.50A8Z80	32	1.50	8	80
223-2d25e2.00A8Z100	25	2.00	8	100	223-2d32e2.00A8Z80	32	2.00	8	80
223-2d25e2.50A5Z80	25	2.50	5	80	223-2d32e2.50A8Z80	32	2.50	8	80
223-2d25e2.50A6Z100	25	2.50	6	100	223-2d32e3.00A8Z80	32	3.00	8	80
223-2d25e2.50A8Z100	25	2.50	8	100	223-2d35e0.15A8Z96	35	0.15	8	96
223-2d25e3.00A5Z80	25	3.00	5	80	223-2d35e0.20A8Z96	35	0.20	8	96
223-2d25e3.00A6Z100	25	3.00	6	100	223-2d35e0.25A8Z96	35	0.25	8	96
223-2d25e3.00A8Z100	25	3.00	8	100	223-2d35e0.30A8Z96	35	0.30	8	96
223-2d30e0.10A8Z100	30	0.10	8	100	223-2d35e0.35A8Z96	35	0.35	8	96
223-2d30e0.15A8Z100	30	0.15	8	100	223-2d35e0.40A8Z96	35	0.40	8	96
223-2d30e0.20A8Z100	30	0.20	8	100	223-2d35e0.50A8Z96	35	0.50	8	96
223-2d30e0.25A8Z100	30	0.25	8	100	223-2d35e0.60A8Z96	35	0.60	8	96
223-2d30e0.30A8Z100	30	0.30	8	100	223-2d35e0.70A8Z96	35	0.70	8	96
223-2d30e0.35A8Z100	30	0.35	8	100	223-2d35e0.80A8Z96	35	0.80	8	96
223-2d30e0.40A8Z100	30	0.40	8	100	223-2d35e0.90A8Z96	35	0.90	8	96
223-2d30e0.50A8Z100	30	0.50	8	100	223-2d35e1.00A8Z96	35	1.00	8	96
223-2d30e0.60A8Z100	30	0.60	8	100	223-2d35e1.10A8Z96	35	1.10	8	96
223-2d30e0.70A8Z100	30	0.70	8	100	223-2d35e1.20A8Z96	35	1.20	8	96
223-2d30e0.80A8Z100	30	0.80	8	100	223-2d35e1.30A8Z96	35	1.30	8	96
223-2d30e0.90A8Z100	30	0.90	8	100	223-2d35e1.40A8Z96	35	1.40	8	96
223-2d30e1.00A8Z100	30	1.00	8	100	223-2d35e1.50A8Z96	35	1.50	8	96
223-2d30e1.10A8Z100	30	1.10	8	100	223-2d35e2.00A8Z96	35	2.00	8	96
223-2d30e1.20A8Z100	30	1.20	8	100	223-2d35e2.50A8Z96	35	2.50	8	96
223-2d30e1.30A8Z100	30	1.30	8	100	223-2d35e3.00A8Z96	35	3.00	8	96
223-2d30e1.40A8Z100	30	1.40	8	100	223-2d40e0.15A8Z100	40	0.15	8	100
223-2d30e1.50A8Z100	30	1.50	8	100	223-2d40e0.15A8Z160	40	0.15	8	160
223-2d30e2.00A8Z100	30	2.00	8	100	223-2d40e0.15A10Z100	40	0.15	10	100
223-2d30e2.50A8Z100	30	2.50	8	100	223-2d40e0.15A10Z160	40	0.15	10	160
223-2d30e3.00A8Z100	30	3.00	8	100	223-2d40e0.20A8Z100	40	0.20	8	100
223-2d32e0.15A8Z80	32	0.15	8	80	223-2d40e0.20A8Z160	40	0.20	8	160
223-2d32e0.20A8Z80	32	0.20	8	80	223-2d40e0.20A10Z100	40	0.20	10	100
223-2d32e0.25A8Z80	32	0.25	8	80	223-2d40e0.20A10Z160	40	0.20	10	160
223-2d32e0.30A8Z80	32	0.30	8	80	223-2d40e0.25A8Z100	40	0.25	8	100
223-2d32e0.35A8Z80	32	0.35	8	80	223-2d40e0.25A8Z160	40	0.25	8	160
223-2d32e0.40A8Z80	32	0.40	8	80	223-2d40e0.25A10Z100	40	0.25	10	100



Available
uncoated or coated
(see page 61)



Z
48-160

λ
0°

γ
6°

MG6

N

Slitting saw extra fine pitch



Available uncoated or coated (see page 61)

Z
48-160

λ
0°

γ
6°

MG6 **N**

Art. n°	d ₁	e	d ₂	Z	Art. n°	d ₁	e	d ₂	Z
223-2d40e0.25A10Z160	40	0.25	10	160	223-2d40e1.30A8Z100	40	1.30	8	100
223-2d40e0.30A8Z100	40	0.30	8	100	223-2d40e1.30A8Z160	40	1.30	8	160
223-2d40e0.30A8Z160	40	0.30	8	160	223-2d40e1.30A10Z100	40	1.30	10	100
223-2d40e0.30A10Z100	40	0.30	10	100	223-2d40e1.30A10Z160	40	1.30	10	160
223-2d40e0.30A10Z160	40	0.30	10	160	223-2d40e1.40A8Z100	40	1.40	8	100
223-2d40e0.35A8Z100	40	0.35	8	100	223-2d40e1.40A8Z160	40	1.40	8	160
223-2d40e0.35A8Z160	40	0.35	8	160	223-2d40e1.40A10Z100	40	1.40	10	100
223-2d40e0.35A10Z100	40	0.35	10	100	223-2d40e1.40A10Z160	40	1.40	10	160
223-2d40e0.35A10Z160	40	0.35	10	160	223-2d40e1.50A8Z100	40	1.50	8	100
223-2d40e0.40A8Z100	40	0.40	8	100	223-2d40e1.50A8Z160	40	1.50	8	160
223-2d40e0.40A8Z160	40	0.40	8	160	223-2d40e1.50A10Z100	40	1.50	10	100
223-2d40e0.40A10Z100	40	0.40	10	100	223-2d40e1.50A10Z160	40	1.50	10	160
223-2d40e0.40A10Z160	40	0.40	10	160	223-2d40e2.00A8Z100	40	2.00	8	100
223-2d40e0.50A8Z100	40	0.50	8	100	223-2d40e2.00A8Z160	40	2.00	8	160
223-2d40e0.50A8Z160	40	0.50	8	160	223-2d40e2.00A10Z100	40	2.00	10	100
223-2d40e0.50A10Z100	40	0.50	10	100	223-2d40e2.00A10Z160	40	2.00	10	160
223-2d40e0.50A10Z160	40	0.50	10	160	223-2d40e2.50A8Z100	40	2.50	8	100
223-2d40e0.60A8Z100	40	0.60	8	100	223-2d40e2.50A8Z160	40	2.50	8	160
223-2d40e0.60A8Z160	40	0.60	8	160	223-2d40e2.50A10Z100	40	2.50	10	100
223-2d40e0.60A10Z100	40	0.60	10	100	223-2d40e2.50A10Z160	40	2.50	10	160
223-2d40e0.60A10Z160	40	0.60	10	160	223-2d40e3.00A8Z100	40	3.00	8	100
223-2d40e0.70A8Z100	40	0.70	8	100	223-2d40e3.00A8Z160	40	3.00	8	160
223-2d40e0.70A8Z160	40	0.70	8	160	223-2d40e3.00A10Z100	40	3.00	10	100
223-2d40e0.70A10Z100	40	0.70	10	100	223-2d40e3.00A10Z160	40	3.00	10	160
223-2d40e0.70A10Z160	40	0.70	10	160	223-2d45e0.15A8Z100	45	0.15	8	100
223-2d40e0.80A8Z100	40	0.80	8	100	223-2d45e0.15A8Z160	45	0.15	8	160
223-2d40e0.80A8Z160	40	0.80	8	160	223-2d45e0.20A8Z100	45	0.20	8	100
223-2d40e0.80A10Z100	40	0.80	10	100	223-2d45e0.20A8Z160	45	0.20	8	160
223-2d40e0.80A10Z160	40	0.80	10	160	223-2d45e0.25A8Z100	45	0.25	8	100
223-2d40e0.90A8Z100	40	0.90	8	100	223-2d45e0.25A8Z160	45	0.25	8	160
223-2d40e0.90A8Z160	40	0.90	8	160	223-2d45e0.30A8Z100	45	0.30	8	100
223-2d40e0.90A10Z100	40	0.90	10	100	223-2d45e0.30A8Z160	45	0.30	8	160
223-2d40e0.90A10Z160	40	0.90	10	160	223-2d45e0.35A8Z100	45	0.35	8	100
223-2d40e1.00A8Z100	40	1.00	8	100	223-2d45e0.35A8Z160	45	0.35	8	160
223-2d40e1.00A8Z160	40	1.00	8	160	223-2d45e0.40A8Z100	45	0.40	8	100
223-2d40e1.00A10Z100	40	1.00	10	100	223-2d45e0.40A8Z160	45	0.40	8	160
223-2d40e1.00A10Z160	40	1.00	10	160	223-2d45e0.50A8Z100	45	0.50	8	100
223-2d40e1.10A8Z100	40	1.10	8	100	223-2d45e0.50A8Z160	45	0.50	8	160
223-2d40e1.10A8Z160	40	1.10	8	160	223-2d45e0.60A8Z100	45	0.60	8	100
223-2d40e1.10A10Z100	40	1.10	10	100	223-2d45e0.60A8Z160	45	0.60	8	160
223-2d40e1.10A10Z160	40	1.10	10	160	223-2d45e0.70A8Z100	45	0.70	8	100
223-2d40e1.20A8Z100	40	1.20	8	100	223-2d45e0.70A8Z160	45	0.70	8	160
223-2d40e1.20A8Z160	40	1.20	8	160	223-2d45e0.80A8Z100	45	0.80	8	100
223-2d40e1.20A10Z100	40	1.20	10	100	223-2d45e0.80A8Z160	45	0.80	8	160
223-2d40e1.20A10Z160	40	1.20	10	160	223-2d45e0.90A8Z100	45	0.90	8	100

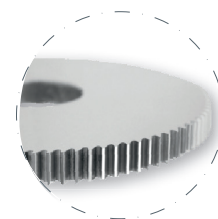


Slitting saw extra fine pitch

223-2

Continuation

Art. n°	d ₁	e	d ₂	Z	Art. n°	d ₁	e	d ₂	Z
223-2d45e0.90A8Z160	45	0.90	8	160	223-2d50e1.30A13Z120	50	1.30	13	120
223-2d45e1.00A8Z100	45	1.00	8	100	223-2d50e1.40A10Z100	50	1.40	10	100
223-2d45e1.00A8Z160	45	1.00	8	160	223-2d50e1.40A13Z120	50	1.40	13	120
223-2d45e1.10A8Z100	45	1.10	8	100	223-2d50e1.50A10Z100	50	1.50	10	100
223-2d45e1.10A8Z160	45	1.10	8	160	223-2d50e1.50A13Z120	50	1.50	13	120
223-2d45e1.20A8Z100	45	1.20	8	100	223-2d50e2.00A10Z100	50	2.00	10	100
223-2d45e1.20A8Z160	45	1.20	8	160	223-2d50e2.00A13Z120	50	2.00	13	120
223-2d45e1.30A8Z100	45	1.30	8	100	223-2d50e2.50A10Z100	50	2.50	10	100
223-2d45e1.30A8Z160	45	1.30	8	160	223-2d50e2.50A13Z120	50	2.50	13	120
223-2d45e1.40A8Z100	45	1.40	8	100	223-2d50e3.00A10Z100	50	3.00	10	100
223-2d45e1.40A8Z160	45	1.40	8	160	223-2d50e3.00A13Z120	50	3.00	13	120
223-2d45e1.50A8Z100	45	1.50	8	100	223-2d63e0.25A16Z120	63	0.25	16	120
223-2d45e1.50A8Z160	45	1.50	8	160	223-2d63e0.30A16Z120	63	0.30	16	120
223-2d45e2.00A8Z100	45	2.00	8	100	223-2d63e0.35A16Z120	63	0.35	16	120
223-2d45e2.00A8Z160	45	2.00	8	160	223-2d63e0.40A16Z120	63	0.40	16	120
223-2d45e2.50A8Z100	45	2.50	8	100	223-2d63e0.50A16Z120	63	0.50	16	120
223-2d45e2.50A8Z160	45	2.50	8	160	223-2d63e0.60A16Z120	63	0.60	16	120
223-2d45e3.00A8Z100	45	3.00	8	100	223-2d63e0.70A16Z120	63	0.70	16	120
223-2d45e3.00A8Z160	45	3.00	8	160	223-2d63e0.80A16Z120	63	0.80	16	120
223-2d50e0.20A10Z100	50	0.20	10	100	223-2d63e0.90A16Z120	63	0.90	16	120
223-2d50e0.25A10Z100	50	0.25	10	100	223-2d63e1.00A16Z120	63	1.00	16	120
223-2d50e0.25A13Z120	50	0.25	13	120	223-2d63e1.10A16Z120	63	1.10	16	120
223-2d50e0.30A10Z100	50	0.30	10	100	223-2d63e1.20A16Z120	63	1.20	16	120
223-2d50e0.30A13Z120	50	0.30	13	120	223-2d63e1.30A16Z120	63	1.30	16	120
223-2d50e0.35A10Z100	50	0.35	10	100	223-2d63e1.40A16Z120	63	1.40	16	120
223-2d50e0.35A13Z120	50	0.35	13	120	223-2d63e1.50A16Z120	63	1.50	16	120
223-2d50e0.40A10Z100	50	0.40	10	100	223-2d63e2.00A16Z120	63	2.00	16	120
223-2d50e0.40A13Z120	50	0.40	13	120	223-2d63e2.50A16Z120	63	2.50	16	120
223-2d50e0.50A10Z100	50	0.50	10	100	223-2d63e3.00A16Z120	63	3.00	16	120
223-2d50e0.50A13Z120	50	0.50	13	120	223-2d80e0.50A16Z128	80	0.50	16	128
223-2d50e0.60A10Z100	50	0.60	10	100	223-2d80e0.60A16Z128	80	0.60	16	128
223-2d50e0.60A13Z120	50	0.60	13	120	223-2d80e0.70A16Z128	80	0.70	16	128
223-2d50e0.70A10Z100	50	0.70	10	100	223-2d80e0.80A16Z128	80	0.80	16	128
223-2d50e0.70A13Z120	50	0.70	13	120	223-2d80e0.90A16Z128	80	0.90	16	128
223-2d50e0.80A10Z100	50	0.80	10	100	223-2d80e1.00A16Z128	80	1.00	16	128
223-2d50e0.80A13Z120	50	0.80	13	120	223-2d80e1.10A16Z128	80	1.10	16	128
223-2d50e0.90A10Z100	50	0.90	10	100	223-2d80e1.20A16Z128	80	1.20	16	128
223-2d50e0.90A13Z120	50	0.90	13	120	223-2d80e1.30A16Z128	80	1.30	16	128
223-2d50e1.00A10Z100	50	1.00	10	100	223-2d80e1.40A16Z128	80	1.40	16	128
223-2d50e1.00A13Z120	50	1.00	13	120	223-2d80e1.50A16Z128	80	1.50	16	128
223-2d50e1.10A10Z100	50	1.10	10	100	223-2d80e2.00A16Z128	80	2.00	16	128
223-2d50e1.10A13Z120	50	1.10	13	120	223-2d80e2.50A16Z128	80	2.50	16	128
223-2d50e1.20A10Z100	50	1.20	10	100	223-2d80e3.00A16Z128	80	3.00	16	128
223-2d50e1.20A13Z120	50	1.20	13	120					
223-2d50e1.30A10Z100	50	1.30	10	100					



Available
uncoated or coated
(see page 61)



Z
48-160



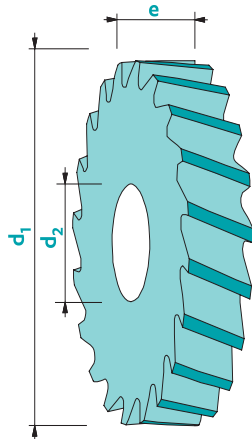
λ
0°

γ
6°

MG6

N

Slitting saw spiral tooting



Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	80	120	□	■	Trio
Steel > 700 N/mm ²	60	100	□	■	Trio
Stainless steel	60	100	□	■	Trio
Cast iron	50	90	□	■	Nemo
Copper	200	300	□	■	Solo
Brass - Bronze	200	300	■	□	Solo
Aluminium	250	400	□	■	Solo
Gold - Silver	150	300	□	■	Solo
Platinum - Palladium	-	-	-	-	-
Superalloys	20	40	□	■	Trio
Titanium	40	60	■	■	Rico

not adapted - adapted □ highly adapted ■

Tolerance e: +/-0.01
d₂: H5

Available uncoated or coated (see page 61)

Z
20-100

λ
20°

Y
8°

MG6 **N**

Art. n°	d ₁	e	d ₂	Z	Art. n°	d ₁	e	d ₂	Z
225d15e1.0A5Z##	15	1.0	5	20 - 24	225d25e5.0A8Z##	25	5.0	8	32 - 48
225d15e1.5A5Z##	15	1.5	5	20 - 24	225d25e5.5A8Z##	25	5.5	8	32 - 48
225d15e2.0A5Z##	15	2.0	5	20 - 24	225d25e6.0A8Z##	25	6.0	8	32 - 48
225d15e2.5A5Z##	15	2.5	5	20 - 24	225d25e7.0A8Z##	25	7.0	8	32 - 48
225d15e3.0A5Z##	15	3.0	5	20 - 24	225d25e8.0A8Z##	25	8.0	8	32 - 48
225d15e3.5A5Z##	15	3.5	5	20 - 24	225d25e9.0A8Z##	25	9.0	8	32 - 48
225d15e4.0A5Z##	15	4.0	5	20 - 24	225d25e10.0A8Z##	25	10.0	8	32 - 48
225d15e4.5A5Z##	15	4.5	5	20 - 24	225d30e1.0A8Z##	30	1.0	8	32 - 48
225d15e5.0A5Z##	15	5.0	5	20 - 24	225d30e1.5A8Z##	30	1.5	8	32 - 48
225d15e5.5A5Z##	15	5.5	5	20 - 24	225d30e2.0A8Z##	30	2.0	8	32 - 48
225d15e6.0A5Z##	15	6.0	5	20 - 24	225d30e2.5A8Z##	30	2.5	8	32 - 48
225d20e1.0A5Z##	20	1.0	5	24 - 32	225d30e3.0A8Z##	30	3.0	8	32 - 48
225d20e1.5A5Z##	20	1.5	5	24 - 32	225d30e3.5A8Z##	30	3.5	8	32 - 48
225d20e2.0A5Z##	20	2.0	5	24 - 32	225d30e4.0A8Z##	30	4.0	8	32 - 48
225d20e2.5A5Z##	20	2.5	5	24 - 32	225d30e4.5A8Z##	30	4.5	8	32 - 48
225d20e3.0A5Z##	20	3.0	5	24 - 32	225d30e5.0A8Z##	30	5.0	8	32 - 48
225d20e3.5A5Z##	20	3.5	5	24 - 32	225d30e5.5A8Z##	30	5.5	8	32 - 48
225d20e4.0A5Z##	20	4.0	5	24 - 32	225d30e6.0A8Z##	30	6.0	8	32 - 48
225d20e4.5A5Z##	20	4.5	5	24 - 32	225d30e7.0A8Z##	30	7.0	8	32 - 48
225d20e5.0A5Z##	20	5.0	5	24 - 32	225d30e8.0A8Z##	30	8.0	8	32 - 48
225d20e5.5A5Z##	20	5.5	5	24 - 32	225d30e9.0A8Z##	30	9.0	8	32 - 48
225d20e6.0A5Z##	20	6.0	5	24 - 32	225d30e10.0A8Z##	30	10.0	8	32 - 48
225d25e1.0A8Z##	25	1.0	8	24 - 32	225d30e11.0A8Z##	30	11.0	8	32 - 48
225d25e1.5A8Z##	25	1.5	8	32 - 48	225d30e12.0A8Z##	30	12.0	8	32 - 48
225d25e2.0A8Z##	25	2.0	8	32 - 48	225d30e13.0A8Z##	30	13.0	8	32 - 48
225d25e2.5A8Z##	25	2.5	8	32 - 48	225d30e14.0A8Z##	30	14.0	8	32 - 48
225d25e3.0A8Z##	25	3.0	8	32 - 48	225d30e15.0A8Z##	30	15.0	8	32 - 48
225d25e3.5A8Z##	25	3.5	8	32 - 48	225d30e16.0A8Z##	30	16.0	8	32 - 48
225d25e4.0A8Z##	25	4.0	8	32 - 48	225d40e1.0A10Z##	40	1.0	10	48 - 60
225d25e4.5A8Z##	25	4.5	8	32 - 48	225d40e1.5A10Z##	40	1.5	10	48 - 60

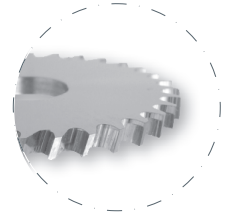


Slitting saw spiral toothing

225

Continuation

Art. n°	d ₁	e	d ₂	Z	Art. n°	d ₁	e	d ₂	Z
225d40e2.0A10Z##	40	2.0	10	48 - 60	225d63e1.5A16Z##	63	1.5	16	60 - 80
225d40e2.5A10Z##	40	2.5	10	48 - 60	225d63e2.0A16Z##	63	2.0	16	60 - 80
225d40e3.0A10Z##	40	3.0	10	48 - 60	225d63e2.5A16Z##	63	2.5	16	60 - 80
225d40e3.5A10Z##	40	3.5	10	48 - 60	225d63e3.0A16Z##	63	3.0	16	60 - 80
225d40e4.0A10Z##	40	4.0	10	48 - 60	225d63e3.5A16Z##	63	3.5	16	60 - 80
225d40e4.5A10Z##	40	4.5	10	48 - 60	225d63e4.0A16Z##	63	4.0	16	60 - 80
225d40e5.0A10Z##	40	5.0	10	48 - 60	225d63e4.5A16Z##	63	4.5	16	60 - 80
225d40e5.5A10Z##	40	5.5	10	48 - 60	225d63e5.0A16Z##	63	5.0	16	60 - 80
225d40e6.0A10Z##	40	6.0	10	48 - 60	225d63e5.5A16Z##	63	5.5	16	60 - 80
225d40e7.0A10Z##	40	7.0	10	48 - 60	225d63e6.0A16Z##	63	6.0	16	60 - 80
225d40e8.0A10Z##	40	8.0	10	48 - 60	225d63e7.0A16Z##	63	7.0	16	60 - 80
225d40e9.0A10Z##	40	9.0	10	48 - 60	225d63e8.0A16Z##	63	8.0	16	60 - 80
225d40e10.0A10Z##	40	10.0	10	48 - 60	225d63e9.0A16Z##	63	9.0	16	60 - 80
225d40e11.0A10Z##	40	11.0	10	48 - 60	225d63e10.0A16Z##	63	10.0	16	60 - 80
225d40e12.0A10Z##	40	12.0	10	48 - 60	225d63e11.0A16Z##	63	11.0	16	60 - 80
225d40e13.0A10Z##	40	13.0	10	48 - 60	225d63e12.0A16Z##	63	12.0	16	60 - 80
225d40e14.0A10Z##	40	14.0	10	48 - 60	225d63e13.0A16Z##	63	13.0	16	60 - 80
225d40e15.0A10Z##	40	15.0	10	48 - 60	225d63e14.0A16Z##	63	14.0	16	60 - 80
225d40e16.0A10Z##	40	16.0	10	48 - 60	225d63e15.0A16Z##	63	15.0	16	60 - 80
225d40e17.0A10Z##	40	17.0	10	48 - 60	225d63e16.0A16Z##	63	16.0	16	60 - 80
225d40e18.0A10Z##	40	18.0	10	48 - 60	225d63e17.0A16Z##	63	17.0	16	60 - 80
225d50e1.0A13Z##	50	1.0	13	48 - 60	225d63e18.0A16Z##	63	18.0	16	60 - 80
225d50e1.5A13Z##	50	1.5	13	48 - 60	225d80e1.0A22Z##	80	1.0	22	80 - 100
225d50e2.0A13Z##	50	2.0	13	48 - 60	225d80e1.5A22Z##	80	1.5	22	80 - 100
225d50e2.5A13Z##	50	2.5	13	48 - 60	225d80e2.0A22Z##	80	2.0	22	80 - 100
225d50e3.0A13Z##	50	3.0	13	48 - 60	225d80e2.5A22Z##	80	2.5	22	80 - 100
225d50e3.5A13Z##	50	3.5	13	48 - 60	225d80e3.0A22Z##	80	3.0	22	80 - 100
225d50e4.0A13Z##	50	4.0	13	48 - 60	225d80e3.5A22Z##	80	3.5	22	80 - 100
225d50e4.5A13Z##	50	4.5	13	48 - 60	225d80e4.0A22Z##	80	4.0	22	80 - 100
225d50e5.0A13Z##	50	5.0	13	48 - 60	225d80e4.5A22Z##	80	4.5	22	80 - 100
225d50e5.5A13Z##	50	5.5	13	48 - 60	225d80e5.0A22Z##	80	5.0	22	80 - 100
225d50e6.0A13Z##	50	6.0	13	48 - 60	225d80e5.5A22Z##	80	5.5	22	80 - 100
225d50e7.0A13Z##	50	7.0	13	48 - 60	225d80e6.0A22Z##	80	6.0	22	80 - 100
225d50e8.0A13Z##	50	8.0	13	48 - 60	225d80e7.0A22Z##	80	7.0	22	80 - 100
225d50e9.0A13Z##	50	9.0	13	48 - 60	225d80e8.0A22Z##	80	8.0	22	80 - 100
225d50e10.0A13Z##	50	10.0	13	48 - 60	225d80e9.0A22Z##	80	9.0	22	80 - 100
225d50e11.0A13Z##	50	11.0	13	48 - 60	225d80e10.0A22Z##	80	10.0	22	80 - 100
225d50e12.0A13Z##	50	12.0	13	48 - 60	225d80e11.0A22Z##	80	11.0	22	80 - 100
225d50e13.0A13Z##	50	13.0	13	48 - 60	225d80e12.0A22Z##	80	12.0	22	80 - 100
225d50e14.0A13Z##	50	14.0	13	48 - 60	225d80e13.0A22Z##	80	13.0	22	80 - 100
225d50e15.0A13Z##	50	15.0	13	48 - 60	225d80e14.0A22Z##	80	14.0	22	80 - 100
225d50e16.0A13Z##	50	16.0	13	48 - 60	225d80e15.0A22Z##	80	15.0	22	80 - 100
225d50e17.0A13Z##	50	17.0	13	48 - 60	225d80e16.0A22Z##	80	16.0	22	80 - 100
225d50e18.0A13Z##	50	18.0	13	48 - 60	225d80e17.0A22Z##	80	17.0	22	80 - 100
225d63e1.0A16Z##	63	1.0	16	60 - 80	225d80e18.0A22Z##	80	18.0	22	80 - 100



Available
uncoated or coated
(see page 61)



Z
20-100



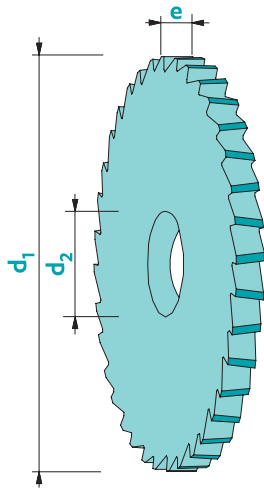
λ
20°

γ
8°

MG6

N

Slitting saw staggered teeth



Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	80	120	□	■	Trio
Steel > 700 N/mm ²	60	100	□	■	Trio
Stainless steel	60	100	□	■	Trio
Cast iron	50	90	□	■	Nemo
Copper	200	300	□	■	Solo
Brass - Bronze	200	300	■	□	Solo
Aluminium	250	400	□	■	Solo
Gold - Silver	150	300	□	■	Solo
Platinum - Palladium	-	-	-	-	-
Superalloys	20	40	□	■	Trio
Titanium	40	60	■	■	Rico

not adapted - adapted □ highly adapted ■

Tolerance e: +/-0.01
d₂: H5

Available uncoated or coated (see page 61)

Z
12-36

λ
ALT

γ
8°

MG6 **N**

Art. n°	d ₁	e	d ₂	Z	Art. n°	d ₁	e	d ₂	Z
226d15e1.5a5Z##	15	1.5	5	12 - 18	226d25e6.0a8Z##	25	6.0	8	24 - 28
226d15e2.0a5Z##	15	2.0	5	12 - 18	226d25e6.5a8Z##	25	6.5	8	24 - 28
226d15e2.5a5Z##	15	2.5	5	12 - 18	226d25e7.0a8Z##	25	7.0	8	24 - 28
226d15e3.0a5Z##	15	3.0	5	12 - 18	226d25e7.5a8Z##	25	7.5	8	24 - 28
226d15e3.5a5Z##	15	3.5	5	12 - 18	226d25e8.0a8Z##	25	8.0	8	24 - 28
226d15e4.0a5Z##	15	4.0	5	12 - 18	226d30e1.5a8Z##	30	1.5	8	24 - 28
226d15e4.5a5Z##	15	4.5	5	12 - 18	226d30e2.0a8Z##	30	2.0	8	24 - 28
226d15e5.0a5Z##	15	5.0	5	12 - 18	226d30e2.5a8Z##	30	2.5	8	24 - 28
226d15e5.5a5Z##	15	5.5	5	12 - 18	226d30e3.0a8Z##	30	3.0	8	24 - 28
226d15e6.0a5Z##	15	6.0	5	12 - 18	226d30e3.5a8Z##	30	3.5	8	24 - 28
226d20e1.5a5Z##	20	1.5	5	20 - 24	226d30e4.0a8Z##	30	4.0	8	24 - 28
226d20e2.0a5Z##	20	2.0	5	20 - 24	226d30e4.5a8Z##	30	4.5	8	24 - 28
226d20e2.5a5Z##	20	2.5	5	20 - 24	226d30e5.0a8Z##	30	5.0	8	24 - 28
226d20e3.0a5Z##	20	3.0	5	20 - 24	226d30e5.5a8Z##	30	5.5	8	24 - 28
226d20e3.5a5Z##	20	3.5	5	20 - 24	226d30e6.0a8Z##	30	6.0	8	24 - 28
226d20e4.0a5Z##	20	4.0	5	20 - 24	226d30e6.5a8Z##	30	6.5	8	24 - 28
226d20e4.5a5Z##	20	4.5	5	20 - 24	226d30e7.0a8Z##	30	7.0	8	24 - 28
226d20e5.0a5Z##	20	5.0	5	20 - 24	226d30e7.5a8Z##	30	7.5	8	24 - 28
226d20e5.5a5Z##	20	5.5	5	20 - 24	226d30e8.0a8Z##	30	8.0	8	24 - 28
226d20e6.0a5Z##	20	6.0	5	20 - 24	226d30e8.5a8Z##	30	8.5	8	24 - 28
226d25e1.5a8Z##	25	1.5	8	24 - 28	226d30e9.0a8Z##	30	9.0	8	24 - 28
226d25e2.0a8Z##	25	2.0	8	24 - 28	226d30e9.5a8Z##	30	9.5	8	24 - 28
226d25e2.5a8Z##	25	2.5	8	24 - 28	226d30e10.0a8Z##	30	10.0	8	24 - 28
226d25e3.0a8Z##	25	3.0	8	24 - 28	226d40e2.0a10Z##	40	2.0	10	28 - 32
226d25e3.5a8Z##	25	3.5	8	24 - 28	226d40e2.5a10Z##	40	2.5	10	28 - 32
226d25e4.0a8Z##	25	4.0	8	24 - 28	226d40e3.0a10Z##	40	3.0	10	28 - 32
226d25e4.5a8Z##	25	4.5	8	24 - 28	226d40e3.5a10Z##	40	3.5	10	28 - 32
226d25e5.0a8Z##	25	5.0	8	24 - 28	226d40e4.0a10Z##	40	4.0	10	28 - 32
226d25e5.5a8Z##	25	5.5	8	24 - 28	226d40e4.5a10Z##	40	4.5	10	28 - 32



Slitting saw staggered teeth

226

Continuation

Art. n°	d ₁	e	d ₂	Z	Art. n°	d ₁	e	d ₂	Z
226d40e5.0a10Z##	40	5.0	10	28 - 32	226d63e8.0a16Z##	63	8.0	16	28 - 36
226d40e5.5a10Z##	40	5.5	10	28 - 32	226d63e8.5a16Z##	63	8.5	16	28 - 36
226d40e6.0a10Z##	40	6.0	10	28 - 32	226d63e9.0a16Z##	63	9.0	16	28 - 36
226d40e6.5a10Z##	40	6.5	10	28 - 32	226d63e10.0a16Z##	63	10.0	16	28 - 36
226d40e7.0a10Z##	40	7.0	10	28 - 32	226d80e2.0a22Z##	80	2.0	22	28 - 36
226d40e7.5a10Z##	40	7.5	10	28 - 32	226d80e2.5a22Z##	80	2.5	22	28 - 36
226d40e8.0a10Z##	40	8.0	10	28 - 32	226d80e3.0a22Z##	80	3.0	22	28 - 36
226d40e8.5a10Z##	40	8.5	10	28 - 32	226d80e3.5a22Z##	80	3.5	22	28 - 36
226d40e9.0a10Z##	40	9.0	10	28 - 32	226d80e4.0a22Z##	80	4.0	22	28 - 36
226d40e9.5a10Z##	40	9.5	10	28 - 32	226d80e4.5a22Z##	80	4.5	22	28 - 36
226d40e10.0a10Z##	40	10.0	10	28 - 32	226d80e5.0a22Z##	80	5.0	22	28 - 36
226d40e11.0a10Z##	40	11.0	10	28 - 32	226d80e5.5a22Z##	80	5.5	22	28 - 36
226d40e12.0a10Z##	40	12.0	10	28 - 32	226d80e6.0a22Z##	80	6.0	22	28 - 36
226d50e2.0a13Z##	50	2.0	13	28 - 32	226d80e6.5a22Z##	80	6.5	22	28 - 36
226d50e2.5a13Z##	50	2.5	13	28 - 32	226d80e7.0a22Z##	80	7.0	22	28 - 36
226d50e3.0a13Z##	50	3.0	13	28 - 32	226d80e7.5a22Z##	80	7.5	22	28 - 36
226d50e3.5a13Z##	50	3.5	13	28 - 32	226d80e8.0a22Z##	80	8.0	22	28 - 36
226d50e4.0a13Z##	50	4.0	13	28 - 32	226d80e8.5a22Z##	80	8.5	22	28 - 36
226d50e4.5a13Z##	50	4.5	13	28 - 32	226d80e9.0a22Z##	80	9.0	22	28 - 36
226d50e5.0a13Z##	50	5.0	13	28 - 32	226d80e9.5a22Z##	80	9.5	22	28 - 36
226d50e5.5a13Z##	50	5.5	13	28 - 32	226d80e10.0a22Z##	80	10.0	22	28 - 36
226d50e6.0a13Z##	50	6.0	13	28 - 32	226d80e11.0a22Z##	80	11.0	22	28 - 36
226d50e6.5a13Z##	50	6.5	13	28 - 32	226d80e12.0a22Z##	80	12.0	22	28 - 36
226d50e7.0a13Z##	50	7.0	13	28 - 32					
226d50e7.5a13Z##	50	7.5	13	28 - 32					
226d50e8.0a13Z##	50	8.0	13	28 - 32					
226d50e8.5a13Z##	50	8.5	13	28 - 32					
226d50e9.0a13Z##	50	9.0	13	28 - 32					
226d50e9.5a13Z##	50	9.5	13	28 - 32					
226d50e10.0a13Z##	50	10.0	13	28 - 32					
226d50e11.0a13Z##	50	11.0	13	28 - 32					
226d50e12.0a13Z##	50	12.0	13	28 - 32					
226d63e2.0a16Z##	63	2.0	16	28 - 36					
226d63e2.5a16Z##	63	2.5	16	28 - 36					
226d63e3.0a16Z##	63	3.0	16	28 - 36					
226d63e3.5a16Z##	63	3.5	16	28 - 36					
226d63e4.0a16Z##	63	4.0	16	28 - 36					
226d63e4.5a16Z##	63	4.5	16	28 - 36					
226d63e5.0a16Z##	63	5.0	16	28 - 36					
226d63e5.5a16Z##	63	5.5	16	28 - 36					
226d63e6.0a16Z##	63	6.0	16	28 - 36					
226d63e6.5a16Z##	63	6.5	16	28 - 36					
226d63e7.0a16Z##	63	7.0	16	28 - 36					
226d63e7.5a16Z##	63	7.5	16	28 - 36					



Available uncoated or coated (see page 61)



Z
12-36



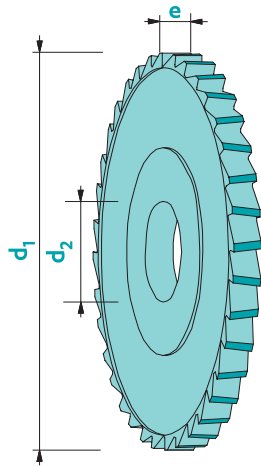
λ
ALT

γ
8°

MG6

N

Slitting saw - staggered teeth - 3 cuts



Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	80	120	□	■	Trio
Steel > 700 N/mm ²	60	100	□	■	Trio
Stainless steel	60	100	□	■	Trio
Cast iron	50	90	□	■	Nemo
Copper	200	300	□	■	Solo
Brass - Bronze	200	300	■	□	Solo
Aluminium	250	400	□	■	Solo
Gold - Silver	150	300	□	■	Solo
Platinum - Palladium	-	-	-	-	-
Superalloys	20	40	□	■	Trio
Titanium	40	60	■	■	Rico

not adapted - adapted □ highly adapted ■

Tolerance e: +/-0.01
d₂: H5

Available uncoated or coated (see page 61)

Z
12-36

λ
ALT

γ
6°

MG6

N

Art. n°	d ₁	e	d ₂	Z	Art. n°	d ₁	e	d ₂	Z
227d15e1.0A5Z##	15	1.0	5	12 - 18	227d25e5.0A8Z##	25	5.0	8	24 - 28
227d15e1.5A5Z##	15	1.5	5	12 - 18	227d25e5.5A8Z##	25	5.5	8	24 - 28
227d15e2.0A5Z##	15	2.0	5	12 - 18	227d25e6.0A8Z##	25	6.0	8	24 - 28
227d15e2.5A5Z##	15	2.5	5	12 - 18	227d25e6.5A8Z##	25	6.5	8	24 - 28
227d15e3.0A5Z##	15	3.0	5	12 - 18	227d25e7.0A8Z##	25	7.0	8	24 - 28
227d15e3.5A5Z##	15	3.5	5	12 - 18	227d25e7.5A8Z##	25	7.5	8	24 - 28
227d15e4.0A5Z##	15	4.0	5	12 - 18	227d25e8.0A8Z##	25	8.0	8	24 - 28
227d15e4.5A5Z##	15	4.5	5	12 - 18	227d30e1.0A8Z##	30	1.0	8	24 - 28
227d15e5.0A5Z##	15	5.0	5	12 - 18	227d30e1.5A8Z##	30	1.5	8	24 - 28
227d15e5.5A5Z##	15	5.5	5	12 - 18	227d30e2.0A8Z##	30	2.0	8	24 - 28
227d15e6.0A5Z##	15	6.0	5	12 - 18	227d30e2.5A8Z##	30	2.5	8	24 - 28
227d20e1.0A5Z##	20	1.0	5	20 - 24	227d30e3.0A8Z##	30	3.0	8	24 - 28
227d20e1.5A5Z##	20	1.5	5	20 - 24	227d30e3.5A8Z##	30	3.5	8	24 - 28
227d20e2.0A5Z##	20	2.0	5	20 - 24	227d30e4.0A8Z##	30	4.0	8	24 - 28
227d20e2.5A5Z##	20	2.5	5	20 - 24	227d30e4.5A8Z##	30	4.5	8	24 - 28
227d20e3.0A5Z##	20	3.0	5	20 - 24	227d30e5.0A8Z##	30	5.0	8	24 - 28
227d20e3.5A5Z##	20	3.5	5	20 - 24	227d30e5.5A8Z##	30	5.5	8	24 - 28
227d20e4.0A5Z##	20	4.0	5	20 - 24	227d30e6.0A8Z##	30	6.0	8	24 - 28
227d20e4.5A5Z##	20	4.5	5	20 - 24	227d30e6.5A8Z##	30	6.5	8	24 - 28
227d20e5.0A5Z##	20	5.0	5	20 - 24	227d30e7.0A8Z##	30	7.0	8	24 - 28
227d20e5.5A5Z##	20	5.5	5	20 - 24	227d30e7.5A8Z##	30	7.5	8	24 - 28
227d20e6.0A5Z##	20	6.0	5	20 - 24	227d30e8.0A8Z##	30	8.0	8	24 - 28
227d25e1.0A8Z##	25	1.0	8	24 - 28	227d30e8.5A8Z##	30	8.5	8	24 - 28
227d25e1.5A8Z##	25	1.5	8	24 - 28	227d30e9.0A8Z##	30	9.0	8	24 - 28
227d25e2.0A8Z##	25	2.0	8	24 - 28	227d30e9.5A8Z##	30	9.5	8	24 - 28
227d25e2.5A8Z##	25	2.5	8	24 - 28	227d30e10.0A8Z##	30	10.0	8	24 - 28
227d25e3.0A8Z##	25	3.0	8	24 - 28	227d30e12.0A8Z##	30	12.0	8	24 - 28
227d25e3.5A8Z##	25	3.5	8	24 - 28	227d40e1.0A10Z##	40	1.0	10	28 - 32
227d25e4.0A8Z##	25	4.0	8	24 - 28	227d40e1.5A10Z##	40	1.5	10	28 - 32
227d25e4.5A8Z##	25	4.5	8	24 - 28	227d40e2.0A10Z##	40	2.0	10	28 - 32



Slitting saw - staggered teeth - 3 cuts

227

Continuation

Art. n°	d ₁	e	d ₂	Z	Art. n°	d ₁	e	d ₂	Z
227d40e2.5A10Z##	40	2.5	10	28 - 32	227d63e5.5A16Z##	63	5.5	16	28 - 36
227d40e3.0A10Z##	40	3.0	10	28 - 32	227d63e6.0A16Z##	63	6.0	16	28 - 36
227d40e3.5A10Z##	40	3.5	10	28 - 32	227d63e6.5A16Z##	63	6.5	16	28 - 36
227d40e4.0A10Z##	40	4.0	10	28 - 32	227d63e7.0A16Z##	63	7.0	16	28 - 36
227d40e4.5A10Z##	40	4.5	10	28 - 32	227d63e7.5A16Z##	63	7.5	16	28 - 36
227d40e5.0A10Z##	40	5.0	10	28 - 32	227d63e8.0A16Z##	63	8.0	16	28 - 36
227d40e5.5A10Z##	40	5.5	10	28 - 32	227d63e8.5A16Z##	63	8.5	16	28 - 36
227d40e6.0A10Z##	40	6.0	10	28 - 32	227d63e9.0A16Z##	63	9.0	16	28 - 36
227d40e6.5A10Z##	40	6.5	10	28 - 32	227d63e9.5A16Z##	63	9.5	16	28 - 36
227d40e7.0A10Z##	40	7.0	10	28 - 32	227d63e10.0A16Z##	63	10.0	16	28 - 36
227d40e7.5A10Z##	40	7.5	10	28 - 32	227d63e12.0A16Z##	63	12.0	16	28 - 36
227d40e8.0A10Z##	40	8.0	10	28 - 32	227d80e4.0A22Z##	80	4.0	22	28 - 36
227d40e8.5A10Z##	40	8.5	10	28 - 32	227d80e4.5A22Z##	80	4.5	22	28 - 36
227d40e9.0A10Z##	40	9.0	10	28 - 32	227d80e5.0A22Z##	80	5.0	22	28 - 36
227d40e9.5A10Z##	40	9.5	10	28 - 32	227d80e5.5A22Z##	80	5.5	22	28 - 36
227d40e10.0A10Z##	40	10.0	10	28 - 32	227d80e6.0A22Z##	80	6.0	22	28 - 36
227d40e12.0A10Z##	40	12.0	10	28 - 32	227d80e6.5A22Z##	80	6.5	22	28 - 36
227d50e1.5A13Z##	50	1.5	13	28 - 32					
227d50e2.0A13Z##	50	2.0	13	28 - 32					
227d50e2.5A13Z##	50	2.5	13	28 - 32					
227d50e3.0A13Z##	50	3.0	13	28 - 32					
227d50e3.5A13Z##	50	3.5	13	28 - 32					
227d50e4.0A13Z##	50	4.0	13	28 - 32					
227d50e4.5A13Z##	50	4.5	13	28 - 32					
227d50e5.0A13Z##	50	5.0	13	28 - 32					
227d50e5.5A13Z##	50	5.5	13	28 - 32					
227d50e6.0A13Z##	50	6.0	13	28 - 32					
227d50e6.5A13Z##	50	6.5	13	28 - 32					
227d50e7.0A13Z##	50	7.0	13	28 - 32					
227d50e7.5A13Z##	50	7.5	13	28 - 32					
227d50e8.0A13Z##	50	8.0	13	28 - 32					
227d50e8.5A13Z##	50	8.5	13	28 - 32					
227d50e9.0A13Z##	50	9.0	13	28 - 32					
227d50e9.5A13Z##	50	9.5	13	28 - 32					
227d50e10.0A13Z##	50	10.0	13	28 - 32					
227d50e12.0A13Z##	50	12.0	13	28 - 32					
227d63e1.5A16Z##	63	1.5	16	28 - 36					
227d63e2.0A16Z##	63	2.0	16	28 - 36					
227d63e2.5A16Z##	63	2.5	16	28 - 36					
227d63e3.0A16Z##	63	3.0	16	28 - 36					
227d63e3.5A16Z##	63	3.5	16	28 - 36					
227d63e4.0A16Z##	63	4.0	16	28 - 36					
227d63e4.5A16Z##	63	4.5	16	28 - 36					
227d63e5.0A16Z##	63	5.0	16	28 - 36					



Available uncoated or coated (see page 61)



Z
12-36



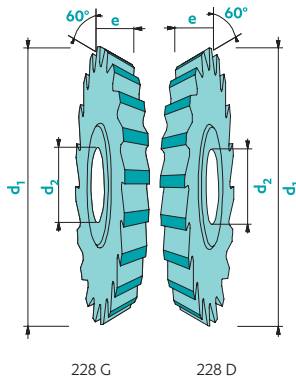
λ
ALT

γ
6°

MG6

N

Angle cutter 60° - 2 cuts



Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	64	96	□	■	Trio
Steel > 700 N/mm ²	48	80	□	■	Trio
Stainless steel	48	80	□	■	Trio
Cast iron	40	72	□	■	Nemo
Copper	160	240	□	■	Solo
Brass - Bronze	160	240	■	□	Solo
Aluminium	200	320	□	■	Solo
Gold - Silver	120	240	□	■	Solo
Platinum - Palladium	-	-	-	-	-
Superalloys	16	32	□	■	Trio
Titanium	32	48	■	■	Rico

not adapted - adapted □ highly adapted ■

Tolerance e: +/-0.01
d₂: H5

Right cut: 228D / Left cut: 228G

Art. n°	d ₁	e	d ₂	Z
228Dd20e1.0 / 228Gd20e1.0	20	1.0	5	20
228Dd20e1.2 / 228Gd20e1.2	20	1.2	5	20
228Dd20e1.5 / 228Gd20e1.5	20	1.5	5	20
228Dd20e2.0 / 228Gd20e2.0	20	2.0	5	20
228Dd25e1.0 / 228Gd25e1.0	25	1.0	8	20
228Dd25e1.5 / 228Gd25e1.5	25	1.5	8	20
228Dd25e2.0 / 228Gd25e2.0	25	2.0	8	20
228Dd30e1.0 / 228Gd30e1.0	30	1.0	8	30
228Dd30e2.0 / 228Gd30e2.0	30	2.0	8	24
228Dd30e2.5 / 228Gd30e2.5	30	2.5	8	24
228Dd30e3.0 / 228Gd30e3.0	30	3.0	8	24
228Dd30e4.0 / 228Gd30e4.0	30	4.0	8	24
228Dd30e5.0 / 228Gd30e5.0	30	5.0	8	24
228Dd40e2.0 / 228Gd40e2.0	40	2.0	10	32
228Dd40e3.0 / 228Gd40e3.0	40	3.0	10	32
228Dd40e4.0 / 228Gd40e4.0	40	4.0	10	32
228Dd40e6.0 / 228Gd40e6.0	40	6.0	10	32
228Dd50e3.0 / 228Gd50e3.0	50	3.0	13	32
228Dd50e4.0 / 228Gd50e4.0	50	4.0	13	32
228Dd63e4.0 / 228Gd63e4.0	63	4.0	16	40
228Dd63e5.0 / 228Gd63e5.0	63	5.0	16	40

Available uncoated or coated (see page 61)

Z
20-40

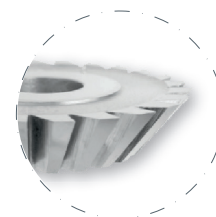
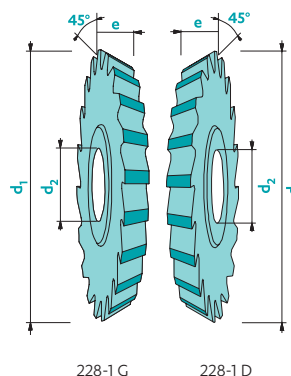
λ
0°

MG6 **N**

Angle cutter 45° - 2 cuts

Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	64	96	□	■	Trio
Steel > 700 N/mm ²	48	80	□	■	Trio
Stainless steel	48	80	□	■	Trio
Cast iron	40	72	□	■	Nemo
Copper	160	240	□	■	Solo
Brass - Bronze	160	240	■	□	Solo
Aluminium	200	320	□	■	Solo
Gold - Silver	120	240	□	■	Solo
Platinum - Palladium	-	-	-	-	-
Superalloys	16	32	□	■	Trio
Titanium	32	48	■	■	Rico

not adapted - adapted □ highly adapted ■



Tolerance e: +/-0.01
d₂: H5

Right cut: 228-1D / Left cut: 228-1G

Art. n°	d ₁	e	d ₂	Z
228-1Dd20e1.0 / 228-1Gd20e1.0	20	1.0	5	20
228-1Dd20e1.2 / 228-1Gd20e1.2	20	1.2	5	20
228-1Dd20e1.5 / 228-1Gd20e1.5	20	1.5	5	20
228-1Dd20e2.0 / 228-1Gd20e2.0	20	2.0	5	20
228-1Dd25e1.0 / 228-1Gd25e1.0	25	1.0	8	20
228-1Dd25e1.5 / 228-1Gd25e1.5	25	1.5	8	20
228-1Dd25e2.0 / 228-1Gd25e2.0	25	2.0	8	20
228-1Dd30e1.0 / 228-1Gd30e1.0	30	1.0	8	30
228-1Dd30e2.0 / 228-1Gd30e2.0	30	2.0	8	24
228-1Dd30e2.5 / 228-1Gd30e2.5	30	2.5	8	24
228-1Dd30e3.0 / 228-1Gd30e3.0	30	3.0	8	24
228-1Dd30e4.0 / 228-1Gd30e4.0	30	4.0	8	24
228-1Dd30e5.0 / 228-1Gd30e5.0	30	5.0	8	24
228-1Dd40e2.0 / 228-1Gd40e2.0	40	2.0	10	32
228-1Dd40e3.0 / 228-1Gd40e3.0	40	3.0	10	32
228-1Dd40e4.0 / 228-1Gd40e4.0	40	4.0	10	32
228-1Dd40e6.0 / 228-1Gd40e6.0	40	6.0	10	32
228-1Dd50e3.0 / 228-1Gd50e3.0	50	3.0	13	32
228-1Dd50e4.0 / 228-1Gd50e4.0	50	4.0	13	32
228-1Dd63e4.0 / 228-1Gd63e4.0	63	4.0	16	40
228-1Dd63e5.0 / 228-1Gd63e5.0	63	5.0	16	40

Available uncoated or coated (see page 61)



Z
20-40

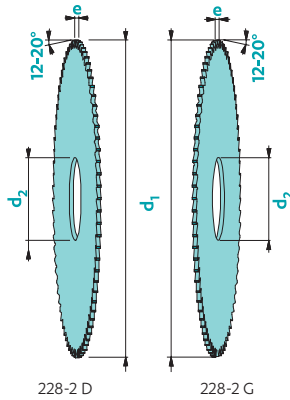
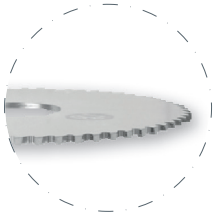
λ
0°

γ
8°

MG6

N

Angle cutter 12° to 20°



Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	80	120	□	■	Trio
Steel > 700 N/mm ²	60	100	□	■	Trio
Stainless steel	60	100	□	■	Trio
Cast iron	50	90	□	■	Nemo
Copper	200	300	□	■	Solo
Brass - Bronze	200	300	■	□	Solo
Aluminium	250	400	□	■	Solo
Gold - Silver	150	300	□	■	Solo
Platinum - Palladium	-	-	-	-	-
Superalloys	20	40	□	■	Trio
Titanium	40	60	■	■	Rico

not adapted - adapted □ highly adapted ■

Tolerance e: +/-0.01
d₂: H5

Available uncoated or coated (see page 61)

Right cut: 228-2 D / Left cut: 228-2 G

Z
64-128

λ
0°

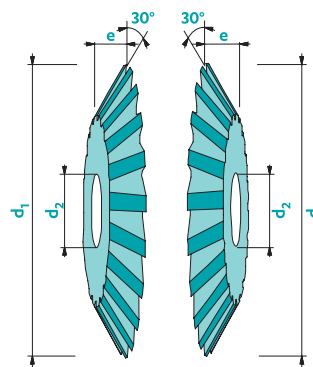
MG6 **N**

Art. n°	d ₁	e	d ₂	Z	a
228-2Dd30e0.5a##° / 228-2Gd30e0.5a##°	30	0.5	8	64	12-20°
228-2Dd30e0.7a##° / 228-2Gd30e0.7a##°	30	0.7	8	64	12-20°
228-2Dd30e0.8a##° / 228-2Gd30e0.8a##°	30	0.8	8	64	12-20°
228-2Dd30e1.0a##° / 228-2Gd30e1.0a##°	30	1.0	8	64	12-20°
228-2Dd30e1.5a##° / 228-2Gd30e1.5a##°	30	1.5	8	48	12-20°
228-2Dd40e0.5a##° / 228-2Gd40e0.5a##°	40	0.5	10	80	12-20°
228-2Dd40e0.8a##° / 228-2Gd40e0.8a##°	40	0.8	10	64	12-20°
228-2Dd40e1.0a##° / 228-2Gd40e1.0a##°	40	1.0	10	64	12-20°
228-2Dd50e0.5a##° / 228-2Gd50e0.5a##°	50	0.5	13	100	12-20°
228-2Dd50e0.8a##° / 228-2Gd50e0.8a##°	50	0.8	13	100	12-20°
228-2Dd50e1.0a##° / 228-2Gd50e1.0a##°	50	1.0	13	100	12-20°
228-2Dd63e0.5a##° / 228-2Gd63e0.5a##°	63	0.5	16	100	12-20°
228-2Dd63e0.7a##° / 228-2Gd63e0.7a##°	63	0.7	16	100	12-20°
228-2Dd63e0.8a##° / 228-2Gd63e0.8a##°	63	0.8	16	100	12-20°
228-2Dd63e1.0a##° / 228-2Gd63e1.0a##°	63	1.0	16	100	12-20°
228-2Dd80e0.5a##° / 228-2Gd80e0.5a##°	80	0.5	22	128	12-20°
228-2Dd80e0.8a##° / 228-2Gd80e0.8a##°	80	0.8	22	128	12-20°
228-2Dd80e1.0a##° / 228-2Gd80e1.0a##°	80	1.0	22	100	12-20°
228-2Dd100e0.6a##° / 228-2Gd100e0.6a##°	100	0.6	22	128	12-20°
228-2Dd100e0.7a##° / 228-2Gd100e0.7a##°	100	0.7	22	128	12-20°
228-2Dd100e0.8a##° / 228-2Gd100e0.8a##°	100	0.8	22	128	12-20°
228-2Dd100e1.0a##° / 228-2Gd100e1.0a##°	100	1.0	22	128	12-20°

Angle cutter 30° - 1 cut

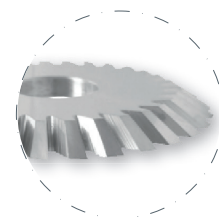
Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	64	96	□	■	Irio
Steel > 700 N/mm ²	48	80	□	■	Trio
Stainless steel	48	80	□	■	Trio
Cast iron	40	72	□	■	Nemo
Copper	160	240	□	■	Solo
Brass - Bronze	160	240	■	□	Solo
Aluminium	200	320	□	■	Solo
Gold - Silver	120	240	□	■	Solo
Platinum - Palladium	-	-	-	-	-
Superalloys	16	32	□	■	Trio
Titanium	32	48	■	■	Rico

not adapted - adapted □ highly adapted ■



228-3 D

228-3 G



Tolerance e: +/-0.01
d₂: H5

Available uncoated or coated (see page 61)

Right cut: 228-3D / Left cut: 228-3G

Art. n°	d ₁	e	d ₂	Z
228-3Dd20e2.0 / 228-3Gd20e2.0	20	2.0	5	20
228-3Dd20e2.5 / 228-3Gd20e2.5	20	2.5	5	20
228-3Dd20e3.0 / 228-3Gd20e3.0	20	3.0	5	20
228-3Dd30e2.0 / 228-3Gd30e2.0	30	2.0	8	30
228-3Dd30e2.5 / 228-3Gd30e2.5	30	2.5	8	30
228-3Dd30e3.0 / 228-3Gd30e3.0	30	3.0	8	30
228-3Dd40e2.0 / 228-3Gd40e2.0	40	2.0	10	40
228-3Dd40e2.5 / 228-3Gd40e2.5	40	2.5	10	40
228-3Dd40e3.0 / 228-3Gd40e3.0	40	3.0	10	40
228-3Dd50e2.0 / 228-3Gd50e2.0	50	2.0	13	50
228-3Dd50e2.5 / 228-3Gd50e2.5	50	2.5	13	50
228-3Dd50e3.0 / 228-3Gd50e3.0	50	3.0	13	50



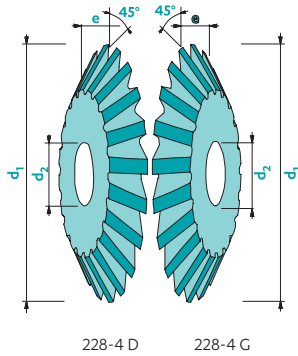
Z
20-50

λ
0°

MG6

N

Angle cutter 45° - 1 cut



Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	64	96	□	■	Trio
Steel > 700 N/mm ²	48	80	□	■	Trio
Stainless steel	48	80	□	■	Trio
Cast iron	40	72	□	■	Nemo
Copper	160	240	□	■	Solo
Brass - Bronze	160	240	■	□	Solo
Aluminium	200	320	□	■	Solo
Gold - Silver	120	240	□	■	Solo
Platinum - Palladium	-	-	-	-	-
Superalloys	16	32	□	■	Trio
Titanium	32	48	■	■	Rico

not adapted - adapted □ highly adapted ■

Available uncoated or coated (see page 61)

Tolerance e: +/-0.01
d₂: H5

Right cut: 228-4D / Left cut: 228-4G

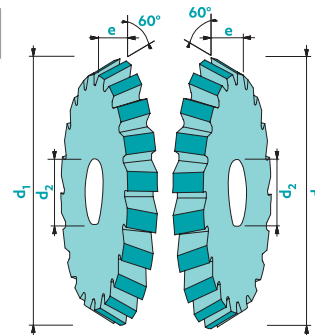
	Z 20-50
λ 0°	
MG6	N

Art. n°	d ₁	e	d ₂	Z
228-4Dd20e2.0Z## / 228-4Gd20e2.0Z##	20	2.0	5	20-30
228-4Dd20e2.5Z## / 228-4Gd20e2.5Z##	20	2.5	5	20-30
228-4Dd20e3.0Z## / 228-4Gd20e3.0Z##	20	3.0	5	20-30
228-4Dd30e2.0Z## / 228-4Gd30e2.0Z##	30	2.0	8	30-40
228-4Dd30e2.5Z## / 228-4Gd30e2.5Z##	30	2.5	8	30-40
228-4Dd30e3.0Z## / 228-4Gd30e3.0Z##	30	3.0	8	30-40
228-4Dd30e4.0Z## / 228-4Gd30e4.0Z##	30	4.0	8	30-40
228-4Dd30e5.0Z## / 228-4Gd30e5.0Z##	30	5.0	8	30-40
228-4Dd30e6.0Z## / 228-4Gd30e6.0Z##	30	6.0	8	30-40
228-4Dd40e2.0Z## / 228-4Gd40e2.0Z##	40	2.0	10	40-50
228-4Dd40e3.0Z## / 228-4Gd40e3.0Z##	40	3.0	10	40-50
228-4Dd40e4.0Z## / 228-4Gd40e4.0Z##	40	4.0	10	40-50
228-4Dd40e5.0Z## / 228-4Gd40e5.0Z##	40	5.0	10	40-50
228-4Dd40e6.0Z## / 228-4Gd40e6.0Z##	40	6.0	10	30-40

Angle cutter 60° - 1 cut

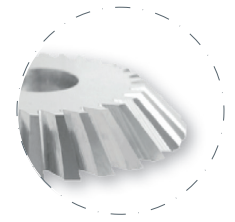
Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	64	96	□	■	Trio
Steel > 700 N/mm ²	48	80	□	■	Trio
Stainless steel	48	80	□	■	Trio
Cast iron	40	72	□	■	Nemo
Copper	160	240	□	■	Solo
Brass - Bronze	160	240	■	□	Solo
Aluminium	200	320	□	■	Solo
Gold - Silver	120	240	□	■	Solo
Platinum - Palladium	-	-	-	-	-
Superalloys	16	32	□	■	Trio
Titanium	32	48	■	■	Rico

not adapted - adapted □ highly adapted ■



228-5 D

228-5 G



Tolerance e: +/-0.01
d₂: H5

Available uncoated or coated (see page 61)

Right cut: 228-5D / Left cut: 228-5G

Art. n°	d ₁	e	d ₂	Z
228-5Dd20e2.0Z## / 228-5Gd20e2.0Z##	20	2.0	5	20-30
228-5Dd20e2.5Z## / 228-5Gd20e2.5Z##	20	2.5	5	20-30
228-5Dd20e3.0Z## / 228-5Gd20e3.0Z##	20	3.0	5	20-30
228-5Dd30e2.0Z## / 228-5Gd30e2.0Z##	30	2.0	8	30-40
228-5Dd30e2.5Z## / 228-5Gd30e2.5Z##	30	2.5	8	30-40
228-5Dd30e3.0Z## / 228-5Gd30e3.0Z##	30	3.0	8	30-40
228-5Dd30e4.0Z## / 228-5Gd30e4.0Z##	30	4.0	8	30-40
228-5Dd30e5.0Z## / 228-5Gd30e5.0Z##	30	5.0	8	30-40
228-5Dd30e6.0Z## / 228-5Gd30e6.0Z##	30	6.0	8	30-40
228-5Dd40e2.0Z## / 228-5Gd40e2.0Z##	40	2.0	10	40-50
228-5Dd40e3.0Z## / 228-5Gd40e3.0Z##	40	3.0	10	40-50
228-5Dd40e4.0Z## / 228-5Gd40e4.0Z##	40	4.0	10	40-50
228-5Dd40e5.0Z## / 228-5Gd40e5.0Z##	40	5.0	10	40-50
228-5Dd40e6.0Z## / 228-5Gd40e6.0Z##	40	6.0	10	30-40



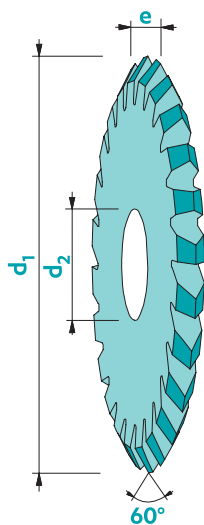
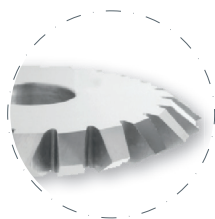
Z
20-50

λ
0°

MG6

N

Bioconical cutter 60°



Available uncoated or coated (see page 61)

Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	64	96	□	■	Trio
Steel > 700 N/mm ²	48	80	□	■	Trio
Stainless steel	48	80	□	■	Trio
Cast iron	40	72	□	■	Nemo
Copper	160	240	□	■	Solo
Brass - Bronze	160	240	■	□	Solo
Aluminium	200	320	□	■	Solo
Gold - Silver	120	240	□	■	Solo
Platinum - Palladium	-	-	-	-	-
Superalloys	16	32	□	■	Trio
Titanium	32	48	■	■	Rico

not adapted - adapted □ highly adapted ■

Tolerance e: +/-0.01
d₂: H5

Art. n°	d ₁	e	d ₂	Z
229-1d20e0.5	20	0.5	5	20
229-1d20e1.0	20	1.0	5	20
229-1d20e1.5	20	1.5	5	20
229-1d20e2.0	20	2.0	5	20
229-1d25e1.0	25	1.0	8	20
229-1d25e1.5	25	1.5	8	20
229-1d25e2.0	25	2.0	8	20
229-1d30e2.0	30	2.0	8	24
229-1d30e2.5	30	2.5	8	24
229-1d30e3.0	30	3.0	8	24
229-1d30e4.0	30	4.0	8	24
229-1d30e5.0	30	5.0	8	24
229-1d40e2.0	40	2.0	10	32
229-1d40e3.0	40	3.0	10	32
229-1d40e4.0	40	4.0	10	32
229-1d40e5.0	40	5.0	10	32
229-1d50e2.0	50	2.0	13	32
229-1d50e3.0	50	3.0	13	32
229-1d50e4.0	50	4.0	13	32
229-1d50e5.0	50	5.0	13	32
229-1d50e6.0	50	6.0	13	32
229-1d63e2.0	63	2.0	16	40
229-1d63e3.0	63	3.0	16	40
229-1d63e4.0	63	4.0	16	40
229-1d63e5.0	63	5.0	16	40
229-1d63e6.0	63	6.0	16	40
229-1d80e2.0	80	2.0	22	48
229-1d80e3.0	80	3.0	22	48
229-1d80e4.0	80	4.0	22	48
229-1d80e5.0	80	5.0	22	48
229-1d80e6.0	80	6.0	22	48

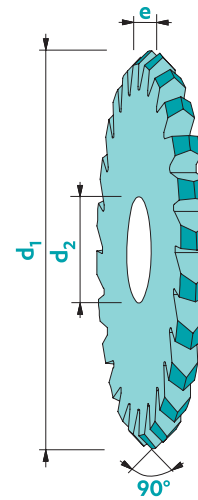
Z 20-48
 λ 0°
 MG6 N

Bioconical cutter 90°

229-2

Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	64	96	□	■	Trio
Steel > 700 N/mm ²	48	80	□	■	Trio
Stainless steel	48	80	□	■	Trio
Cast iron	40	72	□	■	Nemo
Copper	160	240	□	■	Solo
Brass - Bronze	160	240	■	□	Solo
Aluminium	200	320	□	■	Solo
Gold - Silver	120	240	□	■	Solo
Platinum - Palladium	-	-	-	-	-
Superalloys	16	32	□	■	Trio
Titanium	32	48	■	■	Rico

not adapted - adapted □ highly adapted ■



Available uncoated or coated (see page 61)

Tolerance e: +/-0.01
d₂: H5

Art. n°	d ₁	e	d ₂	Z
229-2d20e0.5	20	0.5	5	20
229-2d20e1.0	20	1.0	5	20
229-2d20e1.5	20	1.5	5	20
229-2d20e2.0	20	2.0	5	20
229-2d25e1.0	25	1.0	8	20
229-2d25e1.5	25	1.5	8	20
229-2d25e2.0	25	2.0	8	20
229-2d30e2.0	30	2.0	8	24
229-2d30e2.5	30	2.5	8	24
229-2d30e3.0	30	3.0	8	24
229-2d30e4.0	30	4.0	8	24
229-2d30e5.0	30	5.0	8	24
229-2d40e2.0	40	2.0	10	32
229-2d40e3.0	40	3.0	10	32
229-2d40e4.0	40	4.0	10	32
229-2d40e5.0	40	5.0	10	32
229-2d50e2.0	50	2.0	13	32
229-2d50e3.0	50	3.0	13	32
229-2d50e4.0	50	4.0	13	32
229-2d50e5.0	50	5.0	13	32
229-2d50e6.0	50	6.0	13	32
229-2d63e2.0	63	2.0	16	40
229-2d63e3.0	63	3.0	16	40
229-2d63e4.0	63	4.0	16	40
229-2d63e5.0	63	5.0	16	40
229-2d63e6.0	63	6.0	16	40
229-2d80e2.0	80	2.0	22	48
229-2d80e3.0	80	3.0	22	48
229-2d80e4.0	80	4.0	22	48

Art. n°	d ₁	e	d ₂	Z
229-2d80e5.0	80	5.0	22	48
229-2d80e6.0	80	6.0	22	48



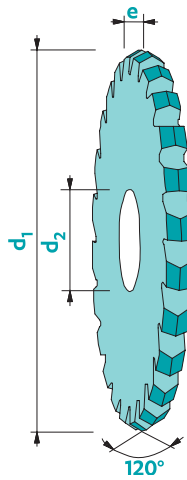
Z
20-48

λ
0°

MG6

N

Bioconical cutter 120°



Available uncoated or coated (see page 61)

Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	64	96	□	■	Trio
Steel > 700 N/mm ²	48	80	□	■	Trio
Stainless steel	48	80	□	■	Trio
Cast iron	40	72	□	■	Nemo
Copper	160	240	□	■	Solo
Brass - Bronze	160	240	■	□	Solo
Aluminium	200	320	□	■	Solo
Gold - Silver	120	240	□	■	Solo
Platinum - Palladium	-	-	-	-	-
Superalloys	16	32	□	■	Trio
Titanium	32	48	■	■	Rico

not adapted - adapted □ highly adapted ■

Tolerance e: +/-0.01
d₂: H5



Z
20-48

λ
0°

MG6

N

Art. n°	d ₁	e	d ₂	Z
229-3d20e0.5	20	0.5	5	20
229-3d20e1.0	20	1.0	5	20
229-3d20e1.5	20	1.5	5	20
229-3d20e2.0	20	2.0	5	20
229-3d25e1.0	25	1.0	8	20
229-3d25e1.5	25	1.5	8	20
229-3d25e2.0	25	2.0	8	20
229-3d30e2.0	30	2.0	8	24
229-3d30e2.5	30	2.5	8	24
229-3d30e3.0	30	3.0	8	24
229-3d30e4.0	30	4.0	8	24
229-3d30e5.0	30	5.0	8	24
229-3d40e2.0	40	2.0	10	32
229-3d40e3.0	40	3.0	10	32
229-3d40e4.0	40	4.0	10	32
229-3d40e5.0	40	5.0	10	32
229-3d50e2.0	50	2.0	13	32
229-3d50e3.0	50	3.0	13	32
229-3d50e4.0	50	4.0	13	32
229-3d50e5.0	50	5.0	13	32
229-3d50e6.0	50	6.0	13	32
229-3d63e2.0	63	2.0	16	40
229-3d63e3.0	63	3.0	16	40
229-3d63e4.0	63	4.0	16	40
229-3d63e5.0	63	5.0	16	40
229-3d63e6.0	63	6.0	16	40
229-3d80e2.0	80	2.0	22	48
229-3d80e3.0	80	3.0	22	48

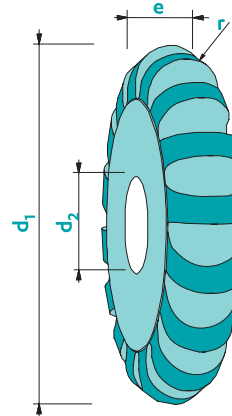
Art. n°	d ₁	e	d ₂	Z
229-3d80e4.0	80	4.0	22	48
229-3d80e5.0	80	5.0	22	48
229-3d80e6.0	80	6.0	22	48

Radius cutter convex

Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	64	96	□	■	Trio
Steel > 700 N/mm ²	48	80	□	■	Trio
Stainless steel	48	80	□	■	Trio
Cast iron	40	72	□	■	Nemo
Copper	160	240	□	■	Solo
Brass - Bronze	160	240	■	□	Solo
Aluminium	200	320	□	■	Solo
Gold - Silver	120	240	□	■	Solo
Platinum - Palladium	-	-	-	-	-
Superalloys	16	32	□	■	Trio
Titanium	32	48	■	■	Rico

not adapted - adapted □ highly adapted ■

Tolerance e: +/-0.01
d₂: H5



Available uncoated or coated (see page 61)

Art. n°	d ₁	e	d ₂	r	Z	Art. n°	d ₁	e	d ₂	r	Z
232d10r0.10Z##	10	0.2	3	0.10	15	232d20r0.75Z##	20	1.5	5	0.75	16 - 20
232d10r0.25Z##	10	0.5	3	0.25	15	232d20r0.80Z##	20	1.6	5	0.80	16 - 20
232d10r0.50Z##	10	1.0	3	0.50	15	232d20r0.85Z##	20	1.7	5	0.85	16 - 20
232d10r0.75Z##	10	1.5	3	0.75	15	232d20r0.90Z##	20	1.8	5	0.90	16 - 20
232d10r1.00Z##	10	2.0	3	1.00	8	232d20r0.95Z##	20	1.9	5	0.95	16 - 20
232d10r1.50Z##	10	3.0	3	1.50	8	232d20r1.00Z##	20	2.0	5	1.00	16 - 20
232d10r2.00Z##	10	4.0	3	2.00	8	232d20r1.05Z##	20	2.1	5	1.05	16
232d15r0.10Z##	15	0.2	5	0.10	20	232d20r1.10Z##	20	2.2	5	1.10	16
232d15r0.25Z##	15	0.5	5	0.25	20	232d20r1.15Z##	20	2.3	5	1.15	16
232d15r0.50Z##	15	1.0	5	0.50	20	232d20r1.20Z##	20	2.4	5	1.20	16
232d15r0.75Z##	15	1.5	5	0.75	12	232d20r1.25Z##	20	2.5	5	1.25	16
232d15r1.00Z##	15	2.0	5	1.00	12 - 16	232d20r1.30Z##	20	2.6	5	1.30	16
232d15r1.50Z##	15	3.0	5	1.50	10	232d20r1.35Z##	20	2.7	5	1.35	16
232d15r1.75Z##	15	3.5	5	1.75	10	232d20r1.40Z##	20	2.8	5	1.40	16
232d15r2.00Z##	15	4.0	5	2.00	10	232d20r1.45Z##	20	2.9	5	1.45	16
232d15r2.50Z##	15	5.0	5	2.50	10	232d20r1.50Z##	20	3.0	5	1.50	16
232d20r0.10Z##	20	0.2	5	0.10	20 - 24	232d20r1.75Z##	20	3.5	5	1.75	16
232d20r0.15Z##	20	0.3	5	0.15	20 - 24	232d20r2.00Z##	20	4.0	5	2.00	16
232d20r0.20Z##	20	0.4	5	0.20	20 - 24	232d20r2.25Z##	20	4.5	5	2.25	16
232d20r0.25Z##	20	0.5	5	0.25	18 - 20	232d20r2.50Z##	20	5.0	5	2.50	12 - 16
232d20r0.30Z##	20	0.6	5	0.30	18 - 20	232d20r3.00Z##	20	6.0	5	3.00	12 - 16
232d20r0.35Z##	20	0.7	5	0.35	18 - 20	232d25r0.10Z##	25	0.2	8	0.10	30
232d20r0.40Z##	20	0.8	5	0.40	18 - 20	232d25r0.15Z##	25	0.3	8	0.15	30
232d20r0.45Z##	20	0.9	5	0.45	18 - 20	232d25r0.20Z##	25	0.4	8	0.20	30
232d20r0.50Z##	20	1.0	5	0.50	20 - 24	232d25r0.25Z##	25	0.5	8	0.25	20 - 30
232d20r0.55Z##	20	1.1	5	0.55	20 - 24	232d25r0.30Z##	25	0.6	8	0.30	20 - 30
232d20r0.60Z##	20	1.2	5	0.60	16 - 20	232d25r0.35Z##	25	0.7	8	0.35	20 - 30
232d20r0.65Z##	20	1.3	5	0.65	16 - 20	232d25r0.40Z##	25	0.8	8	0.40	20 - 30
232d20r0.70Z##	20	1.4	5	0.70	16 - 20	232d25r0.45Z##	25	0.9	8	0.45	20 - 30



Z
8-80

λ
0°

MG6

N



Radius cutter convex



Available
uncoated or coated
(see page 61)



Z
8-80

λ
0°

MG6

N

Art. n°	d ₁	e	D	L	Z	Art. n°	d ₁	e	D	L	Z
232d25r0.50Z##	25	1.0	8	0.50	20 - 30	232d30r1.35Z##	30	2.7	8	1.35	20 - 24
232d25r0.55Z##	25	1.1	8	0.55	20 - 30	232d30r1.40Z##	30	2.8	8	1.40	20 - 24
232d25r0.60Z##	25	1.2	8	0.60	20 - 30	232d30r1.45Z##	30	2.9	8	1.45	20 - 24
232d25r0.65Z##	25	1.3	8	0.65	20 - 30	232d30r1.50Z##	30	3.0	8	1.50	15 - 20
232d25r0.70Z##	25	1.4	8	0.70	20 - 30	232d30r1.75Z##	30	3.5	8	1.75	15 - 20
232d25r0.75Z##	25	1.5	8	0.75	16 - 20	232d30r2.00Z##	30	4.0	8	2.00	15 - 20
232d25r0.80Z##	25	1.6	8	0.80	16 - 20	232d30r2.25Z##	30	4.5	8	2.25	15 - 20
232d25r0.85Z##	25	1.7	8	0.85	16 - 20	232d30r2.50Z##	30	5.0	8	2.50	15 - 20
232d25r0.90Z##	25	1.8	8	0.90	16 - 20	232d30r3.00Z##	30	6.0	8	3.00	15 - 20
232d25r0.95Z##	25	1.9	8	0.95	16 - 20	232d30r3.05Z##	30	6.1	8	3.05	15 - 20
232d25r1.00Z##	25	2.0	8	1.00	20 - 24	232d40r0.10Z##	40	0.2	10	0.10	40
232d25r1.05Z##	25	2.1	8	1.05	20 - 24	232d40r0.25Z##	40	0.5	10	0.25	40
232d25r1.10Z##	25	2.2	8	1.10	20 - 24	232d40r0.30Z##	40	0.6	10	0.30	40
232d25r1.15Z##	25	2.3	8	1.15	20 - 24	232d40r0.35Z##	40	0.7	10	0.35	40
232d25r1.20Z##	25	2.4	8	1.20	20 - 24	232d40r0.40Z##	40	0.8	10	0.40	40
232d25r1.25Z##	25	2.5	8	1.25	20 - 24	232d40r0.45Z##	40	0.9	10	0.45	40
232d25r1.30Z##	25	2.6	8	1.30	20 - 24	232d40r0.50Z##	40	1.0	10	0.50	28 - 40
232d25r1.35Z##	25	2.7	8	1.35	20 - 24	232d40r0.55Z##	40	1.1	10	0.55	24 - 30
232d25r1.40Z##	25	2.8	8	1.40	20 - 24	232d40r0.60Z##	40	1.2	10	0.60	24 - 30
232d25r1.45Z##	25	2.9	8	1.45	20 - 24	232d40r0.65Z##	40	1.3	10	0.65	24 - 30
232d25r1.50Z##	25	3.0	8	1.50	16	232d40r0.70Z##	40	1.4	10	0.70	24 - 30
232d25r1.75Z##	25	3.5	8	1.75	16	232d40r0.75Z##	40	1.5	10	0.75	24 - 30
232d25r2.00Z##	25	4.0	8	2.00	16	232d40r0.80Z##	40	1.6	10	0.80	24 - 30
232d25r2.25Z##	25	4.5	8	2.25	16	232d40r0.85Z##	40	1.7	10	0.85	24 - 30
232d25r2.50Z##	25	5.0	8	2.50	16	232d40r0.90Z##	40	1.8	10	0.90	24 - 30
232d25r3.00Z##	25	6.0	8	3.00	16	232d40r0.95Z##	40	1.9	10	0.95	24 - 30
232d30r0.10Z##	30	0.2	8	0.10	30	232d40r1.00Z##	40	2.0	10	1.00	24 - 30
232d30r0.25Z##	30	0.5	8	0.25	24 - 30	232d40r1.05Z##	40	2.1	10	1.05	24 - 30
232d30r0.50Z##	30	1.0	8	0.50	24 - 30	232d40r1.10Z##	40	2.2	10	1.10	24 - 30
232d30r0.55Z##	30	1.1	8	0.55	20 - 24	232d40r1.15Z##	40	2.3	10	1.15	24 - 30
232d30r0.60Z##	30	1.2	8	0.60	20 - 24	232d40r1.20Z##	40	2.4	10	1.20	24 - 30
232d30r0.65Z##	30	1.3	8	0.65	20 - 24	232d40r1.25Z##	40	2.5	10	1.25	24 - 30
232d30r0.70Z##	30	1.4	8	0.70	20 - 24	232d40r1.30Z##	40	2.6	10	1.30	24 - 30
232d30r0.75Z##	30	1.5	8	0.75	20 - 24	232d40r1.35Z##	40	2.7	10	1.35	24 - 30
232d30r0.80Z##	30	1.6	8	0.80	20 - 24	232d40r1.40Z##	40	2.8	10	1.40	24 - 30
232d30r0.85Z##	30	1.7	8	0.85	20 - 24	232d40r1.45Z##	40	2.9	10	1.45	24 - 30
232d30r0.90Z##	30	1.8	8	0.90	20 - 24	232d40r1.50Z##	40	3.0	10	1.50	24
232d30r0.95Z##	30	1.9	8	0.95	20 - 24	232d40r1.75Z##	40	3.5	10	1.75	24
232d30r1.00Z##	30	2.0	8	1.00	20 - 24	232d40r2.00Z##	40	4.0	10	2.00	24
232d30r1.05Z##	30	2.1	8	1.05	20 - 24	232d40r2.25Z##	40	4.5	10	2.25	24
232d30r1.10Z##	30	2.2	8	1.10	20 - 24	232d40r2.50Z##	40	5.0	10	2.50	24
232d30r1.15Z##	30	2.3	8	1.15	20 - 24	232d40r3.00Z##	40	6.0	10	3.00	24
232d30r1.20Z##	30	2.4	8	1.20	20 - 24	232d50r0.10Z##	50	0.2	13	0.10	50
232d30r1.25Z##	30	2.5	8	1.25	20 - 24	232d50r0.25Z##	50	0.5	13	0.25	50
232d30r1.30Z##	30	2.6	8	1.30	20 - 24	232d50r0.30Z##	50	0.6	13	0.30	50



Radius cutter convex

232

Continuation

Art. n°	d ₁	e	d ₂	r	Z	Art. n°	d ₁	e	d ₂	r	Z
232d50r0.35Z##	50	0.7	13	0.35	50	232d80r1.50Z##	80	3.0	22	1.50	40
232d50r0.40Z##	50	0.8	13	0.40	50	232d80r1.75Z##	80	3.5	22	1.75	40
232d50r0.45Z##	50	0.9	13	0.45	50	232d80r2.00Z##	80	4.0	22	2.00	40
232d50r0.50Z##	50	1.0	13	0.50	50	232d80r2.25Z##	80	4.5	22	2.25	40
232d50r0.55Z##	50	1.1	13	0.55	40	232d80r2.50Z##	80	5.0	22	2.50	40
232d50r0.60Z##	50	1.2	13	0.60	40	232d80r3.00Z##	80	6.0	22	3.00	40
232d50r0.65Z##	50	1.3	13	0.65	40	232d100r0.25Z##	100	0.5	22	0.25	80
232d50r0.70Z##	50	1.4	13	0.70	40	232d100r0.50Z##	100	1.0	22	0.50	80
232d50r0.75Z##	50	1.5	13	0.75	40	232d100r0.75Z##	100	1.5	22	0.75	80
232d50r0.80Z##	50	1.6	13	0.80	40	232d100r1.00Z##	100	2.0	22	1.00	60
232d50r0.85Z##	50	1.7	13	0.85	40	232d100r1.50Z##	100	3.0	22	1.50	60
232d50r0.90Z##	50	1.8	13	0.90	40	232d100r1.75Z##	100	3.5	22	1.75	60
232d50r0.95Z##	50	1.9	13	0.95	40	232d100r2.00Z##	100	4.0	22	2.00	50
232d50r1.00Z##	50	2.0	13	1.00	40	232d100r2.25Z##	100	4.5	22	2.25	50
232d50r1.05Z##	50	2.1	13	1.05	40	232d100r2.50Z##	100	5.0	22	2.50	50
232d50r1.10Z##	50	2.2	13	1.10	40	232d100r3.00Z##	100	6.0	22	3.00	50
232d50r1.15Z##	50	2.3	13	1.15	40						
232d50r1.20Z##	50	2.4	13	1.20	40						
232d50r1.25Z##	50	2.5	13	1.25	40						
232d50r1.30Z##	50	2.6	13	1.30	40						
232d50r1.35Z##	50	2.7	13	1.35	40						
232d50r1.40Z##	50	2.8	13	1.40	40						
232d50r1.45Z##	50	2.9	13	1.45	40						
232d50r1.50Z##	50	3.0	13	1.50	30						
232d50r1.75Z##	50	3.5	13	1.75	30						
232d50r2.00Z##	50	4.0	13	2.00	30						
232d50r2.25Z##	50	4.5	13	2.25	30						
232d50r2.50Z##	50	5.0	13	2.50	30						
232d50r3.00Z##	50	6.0	13	3.00	30						
232d63r0.25Z##	63	0.5	16	0.25	60						
232d63r0.50Z##	63	1.0	16	0.50	60						
232d63r0.75Z##	63	1.5	16	0.75	40						
232d63r1.00Z##	63	2.0	16	1.00	40						
232d63r1.25Z##	63	2.5	16	1.25	40						
232d63r1.50Z##	63	3.0	16	1.50	40						
232d63r1.75Z##	63	3.5	16	1.75	40						
232d63r2.00Z##	63	4.0	16	2.00	30						
232d63r2.25Z##	63	4.5	16	2.25	30						
232d63r2.50Z##	63	5.0	16	2.50	30						
232d63r3.00Z##	63	6.0	16	3.00	30						
232d80r0.25Z##	80	0.5	22	0.25	80						
232d80r0.50Z##	80	1.0	22	0.50	80						
232d80r0.75Z##	80	1.5	22	0.75	60						
232d80r1.00Z##	80	2.0	22	1.00	60						
232d80r1.25Z##	80	2.5	22	1.25	60						



Available
uncoated or coated
(see page 61)



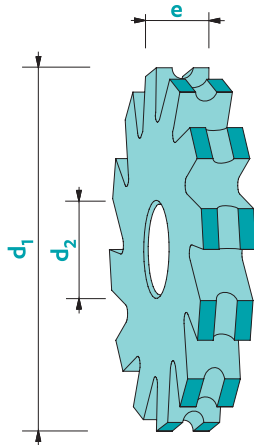
Z
8-80

MG6

MG10

N

Radius cutter concave



Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	64	96	□	■	Trio
Steel > 700 N/mm ²	48	80	□	■	Trio
Stainless steel	48	80	□	■	Trio
Cast iron	40	72	□	■	Nemo
Copper	160	240	□	■	Solo
Brass - Bronze	160	240	■	□	Solo
Aluminium	200	320	□	■	Solo
Gold - Silver	120	240	□	■	Solo
Platinum - Palladium	-	-	-	-	-
Superalloys	16	32	□	■	Trio
Titanium	32	48	■	■	Rico

not adapted - adapted □ highly adapted ■

Tolerance e: +/-0.01
d₂: H5

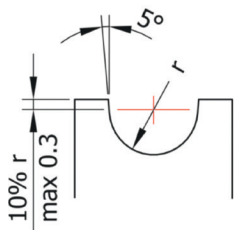
Available uncoated or coated (see page 61)

Z
8-26

λ
0°

MG6 **N**

Art. n°	d ₁	e	d ₂	r	Z
234d20e1.0r#.##Z##	20	1.0	5	0.10 - 0.20	12 - 14
234d20e1.5r#.##Z##	20	1.5	5	0.30 - 0.40	12 - 14
234d20e2.0r#.##Z##	20	2.0	5	0.50 - 0.60	12 - 14
234d20e3.0r#.##Z##	20	3.0	5	0.70 - 1.00	10 - 12
234d20e4.0r#.##Z##	20	4.0	5	1.10 - 1.50	10 - 12
234d20e5.0r#.##Z##	20	5.0	5	1.60 - 1.80	10 - 12
234d20e6.0r#.##Z##	20	6.0	5	1.90 - 2.30	8 - 10
234d25e1.0r#.##Z##	25	1.0	8	0.10 - 0.20	15 - 16
234d25e1.5r#.##Z##	25	1.5	8	0.30 - 0.40	15 - 16
234d25e2.0r#.##Z##	25	2.0	8	0.50 - 0.60	14 - 16
234d25e3.0r#.##Z##	25	3.0	8	0.70 - 1.00	14 - 16
234d25e4.0r#.##Z##	25	4.0	8	1.10 - 1.50	12 - 14
234d25e5.0r#.##Z##	25	5.0	8	1.60 - 1.80	12 - 14
234d25e6.0r#.##Z##	25	6.0	8	1.90 - 2.30	12 - 14
234d25e7.0r#.##Z##	25	7.0	8	2.40 - 2.80	12 - 14
234d25e8.0r#.##Z##	25	8.0	8	2.90 - 3.30	10 - 12
234d25e9.0r#.##Z##	25	9.0	8	3.40 - 3.50	10 - 12
234d30e1.0r#.##Z##	30	1.0	8	0.10 - 0.30	16 - 18
234d30e1.5r#.##Z##	30	1.5	8	0.30 - 0.40	16 - 18
234d30e2.0r#.##Z##	30	2.0	8	0.50 - 0.60	16 - 18
234d30e3.0r#.##Z##	30	3.0	8	0.70 - 1.00	16 - 18
234d30e4.0r#.##Z##	30	4.0	8	1.10 - 1.50	15 - 16
234d30e5.0r#.##Z##	30	5.0	8	1.60 - 1.80	15 - 16
234d30e6.0r#.##Z##	30	6.0	8	1.90 - 2.30	14 - 16
234d30e7.0r#.##Z##	30	7.0	8	2.40 - 2.80	12 - 14
234d30e8.0r#.##Z##	30	8.0	8	2.90 - 3.30	12 - 14
234d30e9.0r#.##Z##	30	9.0	8	3.40 - 3.50	12 - 14
234d30e10.0r#.##Z##	30	10.0	8	3.60 - 4.00	12 - 14
234d40e1.0r#.##Z##	40	1.0	10	0.10 - 0.20	18 - 20



Radius cutter concave

234

Continuation

Art. n°	d ₁	e	d ₂	r	Z
234d40e1.5r#.##Z##	40	1.5	10	0.30 - 0.40	18 - 20
234d40e2.0r#.##Z##	40	2.0	10	0.50 - 0.60	18 - 20
234d40e3.0r#.##Z##	40	3.0	10	0.70 - 1.00	18 - 20
234d40e4.0r#.##Z##	40	4.0	10	1.10 - 1.50	16 - 18
234d40e5.0r#.##Z##	40	5.0	10	1.60 - 1.80	16 - 18
234d40e6.0r#.##Z##	40	6.0	10	1.90 - 2.30	16 - 18
234d40e7.0r#.##Z##	40	7.0	10	2.40 - 2.80	16 - 18
234d40e8.0r#.##Z##	40	8.0	10	2.90 - 3.30	16 - 18
234d40e9.0r#.##Z##	40	9.0	10	3.40 - 3.50	15 - 16
234d40e10.0r#.##Z##	40	10.0	10	3.60 - 4.00	15 - 16
234d40e11.0r#.##Z##	40	11.0	10	4.10 - 4.50	14 - 16
234d40e12.0r#.##Z##	40	12.0	10	4.60 - 5.00	12
234d50e1.5r#.##Z##	50	1.5	13	0.30 - 0.40	22
234d50e2.0r#.##Z##	50	2.0	13	0.50 - 0.60	22
234d50e3.0r#.##Z##	50	3.0	13	0.70 - 1.00	22
234d50e4.0r#.##Z##	50	4.0	13	1.10 - 1.50	22
234d50e5.0r#.##Z##	50	5.0	13	1.60 - 1.80	22
234d50e6.0r#.##Z##	50	6.0	13	1.90 - 2.30	20
234d50e8.0r#.##Z##	50	8.0	13	2.40 - 3.30	20
234d50e10.0r#.##Z##	50	10.0	13	3.40 - 4.00	20
234d50e12.0r#.##Z##	50	12.0	13	4.10 - 5.00	18
234d63e1.5r#.##Z##	63	1.5	16	0.30 - 0.40	26
234d63e2.0r#.##Z##	63	2.0	16	0.50 - 0.60	24
234d63e3.0r#.##Z##	63	3.0	16	0.70 - 1.00	24
234d63e4.0r#.##Z##	63	4.0	16	1.10 - 1.50	24
234d63e5.0r#.##Z##	63	5.0	16	1.60 - 1.80	24
234d63e6.0r#.##Z##	63	6.0	16	1.90 - 2.30	24
234d63e8.0r#.##Z##	63	8.0	16	2.40 - 3.30	22
234d63e10.0r#.##Z##	63	10.0	16	3.40 - 4.00	22
234d63e12.0r#.##Z##	63	12.0	16	4.10 - 5.00	22



Available
uncoated or coated
(see page 61)



Z
8-26

λ
0°

MG6

N

9. Thread tools



Index - Thread tools

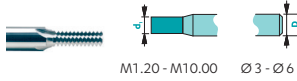
9. Thread tools		page
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5500	Whirling tools Z1	261
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Thread tools

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Thread tools in solid carbide

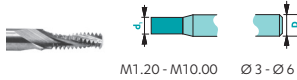
REF. 5200



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REF. 5300

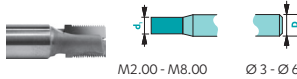


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PCD thread mill

REF. 45200

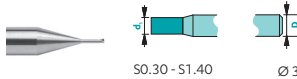


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Whirling tools

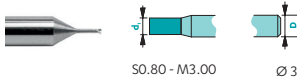
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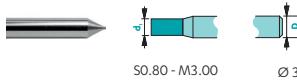
261

REF. 5600



262

REF. 5700



263

Thread mill - ISO 60°

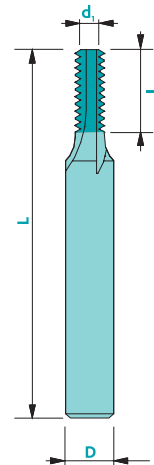
Internal and external threading

5200

Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	80	100	□	■	Trio
Steel > 700 N/mm ²	60	80	□	■	Trio
Stainless steel	40	60	□	■	Trio
Cast iron	70	50	□	■	Trio
Copper	150	180	□	■	Solo
Brass - Bronze	140	190	■	□	Solo
Aluminium	200	250	□	■	Solo
Gold - Silver	140	180	■	□	Solo
Platinum - Palladium	-	-	-	-	-
Superalloys	-	-	□	■	Trio
Titanium	40	-	■	-	Rico

not adapted - adapted □ highly adapted ■

Tolerances $d_1 \leq 1\text{mm}$ ▶ +0/-0.01 $D: h5$
 $d_1 > 1\text{mm}$ ▶ +0/-0.02
 $d_1 = D$ ▶ $d_1: e8$



Available uncoated or coated (see page 61)

Art. n°	Ø nominal	Pitch	d_1	l_1	D	L	Z
5200M1.20	M1.20	0.25	0.85	2.4	3	38	2
5200M1.40	M1.40	0.30	1.00	2.8	3	38	3
5200M1.60/1.80	M1.60/1.80	0.35	1.10	3.6	3	38	3
5200M2.00	M2.00	0.40	1.40	4.0	3	38	3
5200M2.50	M2.50	0.45	1.80	5.0	3	38	3
5200M3.00	M3.00	0.50	2.30	6.0	3	38	3
5200M4.00	M4.00	0.70	3.00	8.0	6	57	3
5200M5.00	M5.00	0.80	3.80	10.0	6	57	4
5200M6.00	M6.00	1.00	4.50	12.0	6	57	4
5200M8.00	M8.00	1.25	5.00	16.0	6	57	4
5200M10.00	M10.00	1.50	6.00	20.0	6	57	5

Z2-5



λ
0°

γ
8°

MG10

N

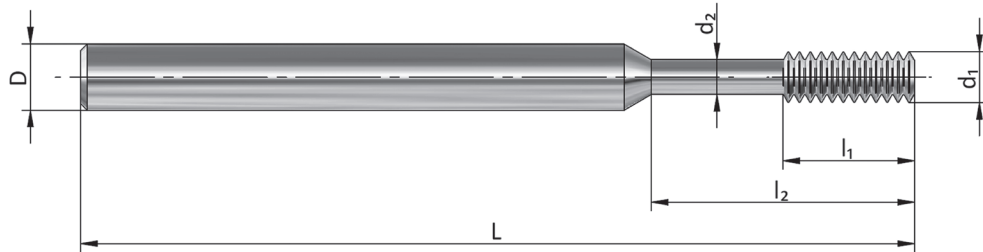
5200

Thread mill - ISO 60°

Internal and external threading

Continuation

Upon request



Available uncoated or coated (see page 61)

Z2-5



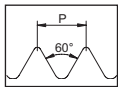
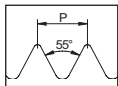
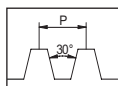
λ
0°

γ
8°

MG10

N

Order Quotation request

Norm : <input type="checkbox"/>  ISO 60° <input type="checkbox"/>  ISO 55° <input type="checkbox"/>  ISO trapezoidale <input type="checkbox"/> Other : _____	Dimensions : d_1 : _____ l_1 : _____ d_2 : _____ l_2 : _____ D^* : _____ L^* : _____		Coating : <input type="checkbox"/> Coated** : _____ <input type="checkbox"/> Uncoated
	Machined material : _____		Order No. : _____
	Quantity : _____		Contact person : _____
Company's stamp & date : _____			

*Standard dimensions of the bars : $\varnothing 3x L 38$, $\varnothing 4x L 38$, $\varnothing 6x L 38$, $\varnothing 6x L 51$, $\varnothing 8x L 61$, $\varnothing 10x L 72$, $\varnothing 12x L 83$, $\varnothing 16x L 92$, $\varnothing 20x L 104$

** Without information, the most suitable coating will be applied.

Helical thread mill - ISO 60°

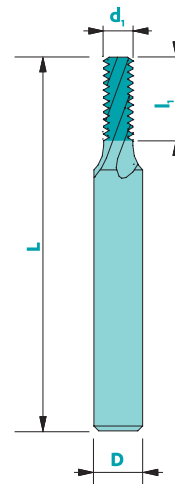
Internal and external threading

5300

Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	80	100	□	■	Trio
Steel > 700 N/mm ²	60	80	□	■	Trio
Stainless steel	40	60	□	■	Trio
Cast iron	70	50	□	■	Trio
Copper	150	180	□	■	Solo
Brass - Bronze	140	190	■	□	Solo
Aluminium	200	250	□	■	Solo
Gold - Silver	140	180	■	□	Solo
Platinum - Palladium	-	-	-	-	-
Superalloys	-	-	□	■	Trio
Titanium	40	-	■	-	Rico

not adapted - adapted □ highly adapted ■

Tolerances $d_1 \leq 1\text{mm}$ ▶ +0/-0.01 D: h5
 $d_1 > 1\text{mm}$ ▶ +0/-0.02
 $d_1 = D$ ▶ $d_1 : e8$



Available uncoated or coated (see page 61)

Art. n°	Ø nominal	Pitch	d_1	l_1	D	L	Z
5300M1.20	M1.20	0.25	0.85	2.4	3	38	2
5300M1.40	M1.40	0.30	1.00	2.8	3	38	3
5300M1.60/1.80	M1.60/1.80	0.35	1.10	3.6	3	38	3
5300M2.00	M2.00	0.40	1.40	4.0	3	38	3
5300M2.50	M2.50	0.45	1.80	5.0	3	38	3
5300M3.00	M3.00	0.50	2.30	6.0	3	38	3
5300M4.00	M4.00	0.70	3.00	8.0	6	57	3
5300M5.00	M5.00	0.80	3.80	10.0	6	57	4
5300M6.00	M6.00	1.00	4.50	12.0	6	57	4
5300M8.00	M8.00	1.25	5.00	16.0	6	57	4
5300M10.00	M10.00	1.50	6.00	20.0	6	57	5

Z2-5



λ
20°

γ
8°

MG10

N

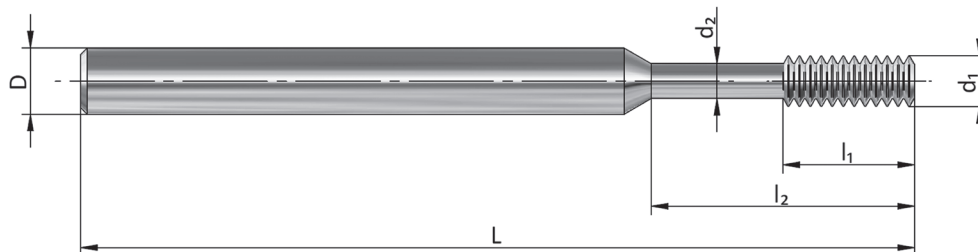
5300

Continuation

Helical thread mill - ISO 60°

Internal and external threading

Upon request



Available uncoated or coated (see page 61)

Z2-5



λ
20°

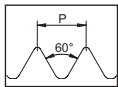
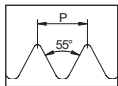
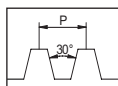
γ
8°

MG10

N

Order

Quotation request

Norm : <input type="checkbox"/>  ISO 60° <input type="checkbox"/>  ISO 55° <input type="checkbox"/>  ISO trapézoïdal <input type="checkbox"/> Other : _____	Dimensions : d_1 : _____ l_1 : _____ d_2 : _____ l_2 : _____ D^* : _____ L^* : _____		Coating : <input type="checkbox"/> Coated** : _____ <input type="checkbox"/> Uncoated
	Machined material : _____		Order No. : _____
	Quantity : _____		Contact person : _____
Company's stamp & date : _____			

*Standard dimensions of the bars : Ø 3x L 38, Ø 4x L 38, Ø 6x L 38, Ø 6x L 51, Ø 8x L 61, Ø 10x L 72, Ø 12x L 83, Ø 16x L 92, Ø 20x L 104

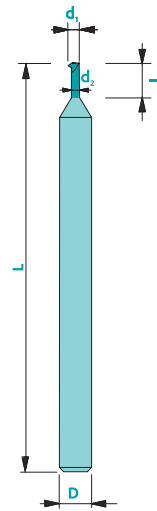
** Without information, the most suitable Coating will be applied.

Whirling tools Z1 - NIHS norm 06-02

5500

Material	Vc	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	Max spindle speed	☐	■	Nemo
Steel > 700 N/mm ²	Max spindle speed	☐	■	Nemo
Stainless steel	Max spindle speed	☐	■	Nemo
Cast iron	Max spindle speed	☐	■	Nemo
Copper	Max spindle speed	☐	■	Solo
Brass - Bronze	Max spindle speed	■	☐	Solo
Aluminium	Max spindle speed	■	■	Solo
Gold - Silver	Max spindle speed	☐	☐	Solo
Platinum - Palladium	Max spindle speed	-	☐	Solo
Superalloys	Max spindle speed	-	■	Nemo
Titanium	Max spindle speed	■	☐	Rico

not adapted - adapted ☐ highly adapted ■



Available
uncoated or coated
(see page 61)

Tolerances D:h5

Art. n°	Ø nominal	Pitch	d ₁	l ₁	d ₂	D	L
5500S0.30	S0.30	0.080	0.21	0.80	0.12	3	38
5500S0.35	S0.35	0.090	0.25	0.90	0.15	3	38
5500S0.40	S0.40	0.100	0.30	1.00	0.19	3	38
5500S0.50	S0.50	0.125	0.38	1.25	0.24	3	38
5500S0.60	S0.60	0.150	0.46	1.50	0.29	3	38
5500S0.70	S0.70	0.175	0.54	1.75	0.34	3	38
5500S0.80	S0.80	0.200	0.60	2.00	0.37	3	38
5500S0.90	S0.90	0.225	0.68	2.25	0.43	3	38
5500S1.00	S1.00	0.250	0.76	2.50	0.48	3	38
5500S1.20	S1.20	0.250	0.94	2.50	0.66	3	38
5500S1.40	S1.40	0.300	1.10	3.00	0.76	3	38

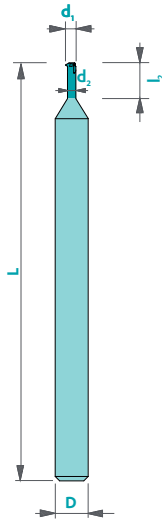
Z1

SUB-CARFINE

N

5600

Whirling tools Z3 - NIHS norm 06-02 & 06-03



Material	Vc	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	Max spindle speed	□	■	Nemo
Steel > 700 N/mm ²	Max spindle speed	□	■	Nemo
Stainless steel	Max spindle speed	□	■	Nemo
Cast iron	Max spindle speed	□	■	Nemo
Copper	Max spindle speed	□	■	Solo
Brass - Bronze	Max spindle speed	■	□	Solo
Aluminium	Max spindle speed	■	■	Solo
Gold - Silver	Max spindle speed	□	□	Solo
Platinum - Palladium	Max spindle speed	-	□	Solo
Superalloys	Max spindle speed	-	■	Nemo
Titanium	Max spindle speed	■	□	Rico

not adapted - adapted □ highly adapted ■

Tolerances D:h5

Available uncoated or coated (see page 61)

Z3

Art. n°	Ø nominal	Pitch	d ₁	l ₁	d ₂	D	L
5600S0.80	S0.80	0.200	0.60	2.00	0.38	3	38
5600S0.90	S0.90	0.225	0.68	2.25	0.43	3	38
5600S1.00	S1.00	0.250	0.76	2.50	0.48	3	38
5600S1.20	S1.20	0.250	0.94	2.50	0.66	3	38
5600S1.40	S1.40	0.300	1.10	3.00	0.76	3	38
5600M1.00	M1.00	0.250	0.76	2.50	0.48	3	38
5600M1.20	M1.20	0.250	0.94	2.50	0.66	3	38
5600M1.40	M1.40	0.300	1.10	3.00	0.76	3	38
5600M1.60	M1.60	0.350	1.25	3.50	0.85	3	38
5600M1.80	M1.80	0.350	1.45	3.50	1.05	3	38
5600M2.20	M2.20	0.450	1.70	4.50	1.19	3	38
5600M2.50	M2.50	0.450	2.00	5.00	1.49	3	38
5600M3.00	M3.00	0.500	2.40	4.50	1.84	3	38

SUB-CARFINE

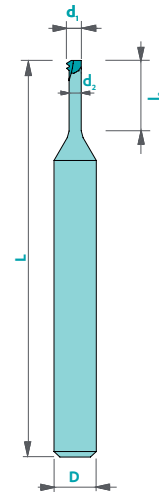
N

Double profile whirling tool NIHS norm 06-02 et 06-03

5700

Material	Vc	Uncoated	Coated	Rec. Coating
Steel < 700 N/mm ²	Max spindle speed	□	■	Nemo
Steel > 700 N/mm ²	Max spindle speed	□	■	Nemo
Stainless steel	Max spindle speed	□	■	Nemo
Cast iron	Max spindle speed	□	■	Nemo
Copper	Max spindle speed	□	■	Solo
Brass - Bronze	Max spindle speed	■	□	Solo
Aluminium	Max spindle speed	■	■	Solo
Gold - Silver	Max spindle speed	□	□	Solo
Platinum - Palladium	Max spindle speed	-	□	Solo
Superalloys	Max spindle speed	-	■	Nemo
Titanium	Max spindle speed	■	□	Rico

not adapted - adapted □ highly adapted ■



Available
uncoated or coated
(see page 61)

Tolerances D:h5

Art. n°	Ø nominal	Pitch	d ₁	l ₂	d ₂	D	L
5700S0.80	S0.80	0.200	0.60	2.00	0.38	3	38
5700S0.90	S0.90	0.225	0.68	2.25	0.43	3	38
5700S1.00	S1.00	0.250	0.76	2.50	0.48	3	38
5700S1.20	S1.20	0.250	0.94	2.50	0.66	3	38
5700S1.40	S1.40	0.300	1.10	3.00	0.76	3	38
5700M1.00	M1.00	0.250	0.76	2.50	0.48	3	38
5700M1.20	M1.20	0.250	0.94	2.50	0.66	3	38
5700M1.40	M1.40	0.300	1.10	3.00	0.76	3	38
5700M1.60	M1.60	0.350	1.25	3.50	0.85	3	38
5700M1.80	M1.80	0.350	1.45	3.50	1.05	3	38
5700M2.20	M2.20	0.450	1.70	4.50	1.19	3	38
5700M2.50	M2.50	0.450	2.00	5.00	1.49	3	38
5700M3.00	M3.00	0.500	2.40	4.50	1.84	3	38

Z3

SUB-CARFINE

N