



LOUIS BELET

Cutting tools

Tools for the machine 701S from Willemin-Macodel



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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 :

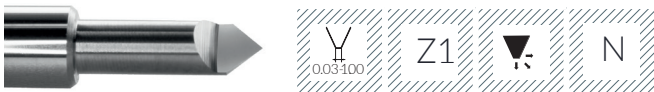
REF. 7010 End mill for 701S machine



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



REF. 7119 Engraving mill for 701S machine



REF. 7111S1 Straight cut end mill Z1 for 701S machine



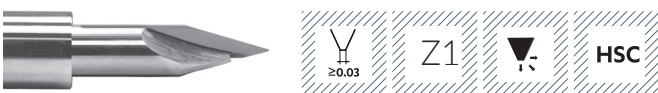
REF. 7339 Twist drill helix 24° for 701S machine



REF. 7111S3 Straight cut end mill Z3 for 701S machine

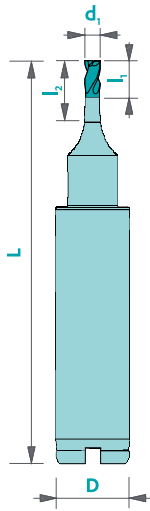
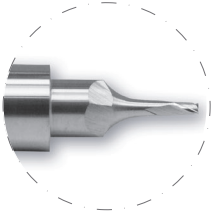


REF. 74119-B Engraving mill in PCD for 701S machine Any other geometry upon request



7010

End mill 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
Superalloy	-	40	-	□	Trio
Titanium	40	60	□	□	Rico/Trio

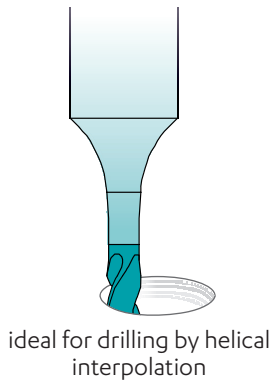
not adapted - adapted □ highly adapted ■

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

$ap=0.24x d_1$

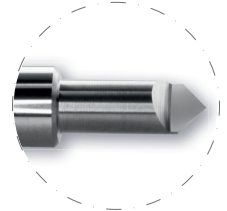
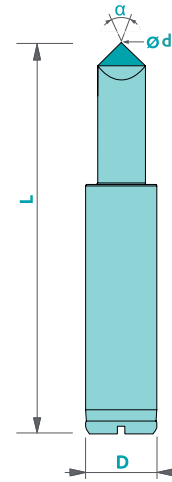
$ae=0.8x d_1$
 $ap=0.3x d_1$

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	25 - 40'000	0.05 - 0.50	□	■	Solo
Gold - Silver	20 - 40'000	0.05 - 0.40	■	□	Solo
Platinum - Palladium	-	-	-	-	-
Superalloy	-	-	□	■	-
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°	0.00	6	33
50°-140°	0.00	6	33
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

Diameter 0.00 means: roughing tool, without precisely set diameter

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

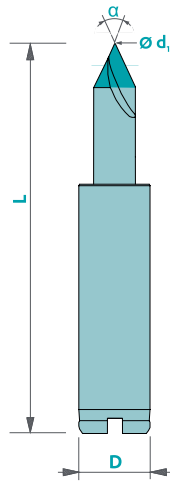


MG10

N

74119-3

Engraving mill in PCD for 701S machine



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	■
Superalloy	-	-	-
Titanium	-	-	-

not adapted - adapted ■ highly adapted ■

Tolerances a: +/- 0.01
D: h5

Z1

≥ 0.02

PCD HSC

Art. n°	α	d ₁	D	L
74119-3a##d#.#	40	0.05	6	33
74119-3a##d#.#	40	0.08	6	33
74119-3a##d#.#	40	0.10	6	33
74119-3a##d#.#	50	0.05	6	33
74119-3a##d#.#	50	0.08	6	33
74119-3a##d#.#	50	0.10	6	33
74119-3a##d#.#	60	0.05	6	33
74119-3a##d#.#	60	0.08	6	33

Art. n°	α	d ₁	D	L
74119-3a##d#.#	60	0.10	6	33
74119-3a##d#.#	70	0.05	6	33
74119-3a##d#.#	70	0.08	6	33
74119-3a##d#.#	70	0.10	6	33
74119-3a##d#.#	90	0.05	6	33
74119-3a##d#.#	90	0.08	6	33
74119-3a##d#.#	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 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

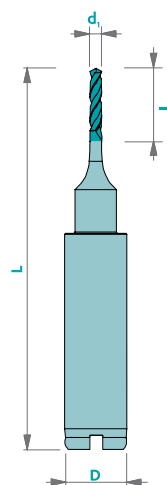
Other dimensions, CVD/CBN available upon request.

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
Superalloy	-	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°

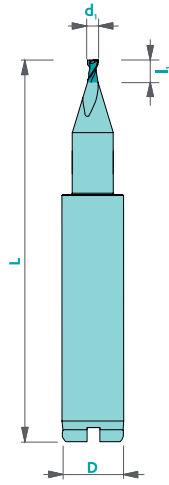
MG10

N

7102

Micro end mill Z2 for 701S machine

WM
WILLEMIN-MACODEL



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

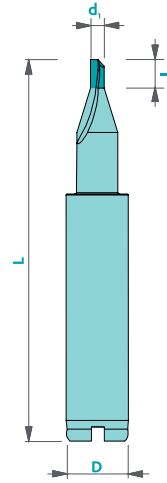
Art. n°	d_1	l_1	D	L
7102d0.10	0.10	0.10	6	33
7102d0.20	0.20	0.30	6	33
7102d0.25	0.25	0.75	6	33
7102d0.32	0.32	0.48	6	33
7102d0.40	0.40	0.80	6	33
7102d0.40	0.40	1.60	6	33
7102d0.50	0.50	0.75	6	33
7102d0.63	0.63	1.89	6	33
7102d0.80	0.80	1.60	6	33
7102d0.80	0.80	3.20	6	33
7102d1.25	1.25	2.50	6	33
7102d1.60	1.60	4.00	6	33
7102d2.00	2.00	2.50	6	33
7102d2.50	2.50	3.00	6	33
7102d3.20	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	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
Superalloy	-	20	-	■	Trio
Titanium	30	40	□	■	Nemo

not adapted - adapted □ highly adapted ■

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

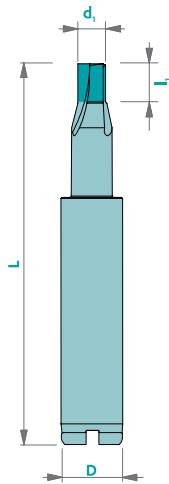
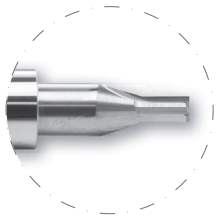


Art. n°	d_1	l_1	D	L
7111-1d0.63	0.63	1.89	6	33
7111-1d0.80	0.80	3.20	6	33
7111-1d1.25	1.25	2.50	6	33
7111-1d1.60	1.60	4.00	6	33
7111-1d2.00	2.00	2.50	6	33
7111-1d2.50	2.50	3.00	6	33
7111-1d3.20	3.20	3.20	6	33

	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	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
Superalloy	-	40	-	□	Trio
Titanium	40	60	□	□	Rico/Trio

not adapted - adapted □ highly adapted ■

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

	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



SUN TOOLS

простые решения

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