LOUIS BELET
Swiss Cutting tools

701S

TOOLS FOR THE MACHINE 701S FROM WILLEMIN-MACODEL

701S Tools for the machine 701S from Willemin-Macodel

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

Z2 | CARB | Page 3

REF. 7119 Engraving mill for 701S

0.02-0.30 | Z1 | CARB | 4

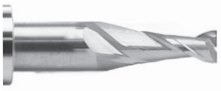
REF. 74119-3 Engraving mill in PCD for 701S

≥ 0.05 | Z1 | CARB | 5

REF. 7339 Twist drill helix 24° for 701S

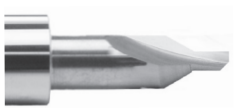
Z2 | 118° | CARB | 6

REF. 7102 Micro end mill Z2 for 701S



Z2 | CARB | 7

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



Z1 | CARB | Page 8

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

Z3 | CARB | 9

REF. 7010C01 Ceramic end mill for 701S

Z2 | C01 | 10

REF. 71820C01 Ceramic end mill EXPERT brass for 701S

Z3 | C01 | 11

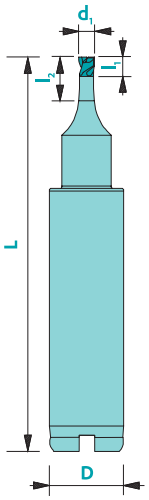
Any other geometry upon request

End mill for 701S machine Willemin-Macodel

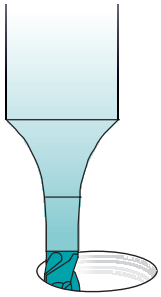
Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating*
Steel < 700 N/mm²	100	130	□	□	Trio (PO)
Steel > 700 N/mm²	80	100	□	□	Trio (PO)
Stainless steel	50	70	□	□	Trio (PO)
Cast iron	60	100	□	□	Trio (PO)
Copper	150	180	□	□	Solo (DA)
Brass - Bronze	150	180	■	■	Solo (DA)
Aluminium	200	350	□	□	Rico(ZB)/Solo(DA)
Gold - Silver	140	180	□	□	Solo (DA)
Platinum - Palladium	-	35	-	□	Solo (DA)
Superalloys	-	40	-	□	Trio (PO)
Titanium	40	60	□	□	Rico(ZB)/Trio(PO)

not adapted - adapted □ highly adapted ■

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

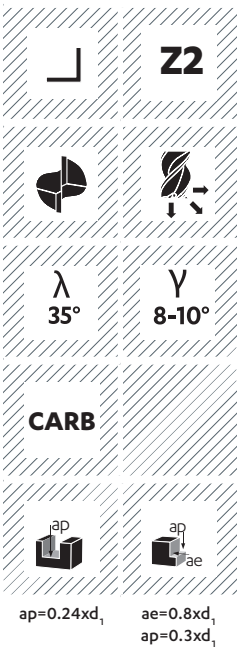


Art. n°	d_1	l_1	l_2	D	L
7010d0.10	**0.10**	**0.05**	0.40	6	33
7010d0.20	**0.20**	**0.10**	0.80	6	33
7010d0.32	**0.32**	**0.16**	1.28	6	33
7010d0.50	**0.50**	**0.25**	2.00	6	33
7010d0.63	**0.63**	**0.32**	2.52	6	33
7010d0.80	**0.80**	**0.40**	3.20	6	33
7010d1.25	**1.25**	**0.63**	5.00	6	33
7010d2.00	**2.00**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



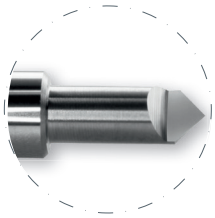
ideal for drilling by helical interpolation

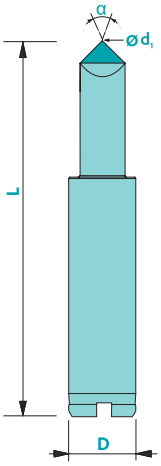
Available uncoated or coated



ap=0.24xd$_1$ ae=0.8xd$_1$
ap=0.3xd$_1$

7119 Engraving mill for 701S machine Willemin-Macodel





Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating*
Steel < 700 N/mm²	25 - 40'000	0.05 -0.40	□	■	Nemo (NO)
Steel > 700 N/mm²	20 - 40'000	0.05 -0.30	-	■	Nemo (NO)
Stainless steel	20 - 30'000	0.05 - 0.30	-	□	Nemo (NO)
Cast iron	25 - 40'000	0.05 - 0.40	□	■	Trio (PO)
Copper	20 - 40'000	0.05 -0.40	□	■	Solo (DA)
Brass - Bronze	25 - 40'000	0.05 -0.40	□	■	Solo (DA)
Aluminium	-	-	□	■	-
Gold - Silver	20 - 40'000	0.05 -0.40	■	□	Solo (DA)
Platinum - Palladium	-	-	-	-	-
Superalloys	-	-	□	■	-
Titanium	25 - 40'000	0.05 - 0.40	□	■	Rico (ZB)

not adapted - adapted □ highly adapted ■

Tolerances d_1: +/- 0.01
D: h5

Available uncoated or coated

0.02-0.30

Z1

λ 0°

CARB

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

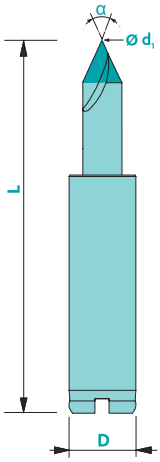
Other dimensions (angle, tip diameter, shank) upon request

Engraving mill in PCD for 701S machine Willemin-Macodel

74119-3

Material	n [rpm]	Ap	Perf.
Steel < 700 N/mm²	-	-	-
Steel > 700 N/mm²	-	-	-
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

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
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

≥ 0.05 | Z1

λ 0°

PCD

☐ **Order** ☐ **Quotation request**

Angle (α):

☐ By default : 60° ☐ 30° ☐ 35° ☐ 45°

☐ Other : _____ ☐ 50° ☐ 55° ☐ 90°

Order No : _____

Machined material : _____

Quantity : _____

d_1 (from 0.02 mm) : _____

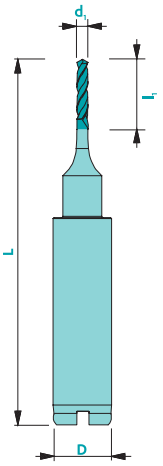
Contact person : _____

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.

7339 Twist drill helix 24° for 701S machine Willemin-Macodel



Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating*
Steel < 700 N/mm²	60	70	□	■	Trio (PO)
Steel > 700 N/mm²	50	60	□	■	Trio (PO)
Stainless steel	40	50	□	■	Trio (PO)
Cast iron	30	40	□	■	Solo (DA)
Copper	50	60	□	■	Solo (DA)
Brass - Bronze	120	130	■	□	Solo (DA)
Aluminium	130	140	□	■	Nemo (NO)
Gold - Silver	80	90	■	□	Solo (DA)
Platinum - Palladium	-	18	-	■	Solo (DA)
Superalloys	-	20	-	■	Trio (PO)
Titanium	30	40	□	■	Nemo (NO)

not adapted - adapted □ highly adapted ■

Tolerances d_1: -0.002/-0.004
D: h5

Available uncoated or coated

118°

Z2

λ 24°

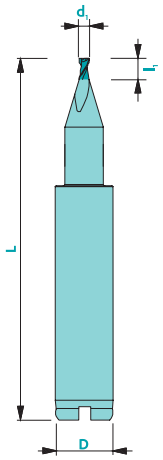
CARB

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

Micro end mill Z2 for 701S machine Willemin-Macodel

Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating*
Steel < 700 N/mm²	100	130	□	□	Trio (PO)
Steel > 700 N/mm²	80	100	□	□	Trio (PO)
Stainless steel	50	70	□	□	Trio (PO)
Cast iron	60	100	□	□	Trio (PO)
Copper	150	180	□	□	Solo (DA)
Brass - Bronze	150	180	■	■	Solo (DA)
Aluminium	200	350	□	□	Rico(ZB)/Solo(DA)
Gold - Silver	140	180	□	□	Solo (DA)
Platinum - Palladium	-	35	-	□	Solo (DA)
Superalloys	-	40	-	□	Trio (PO)
Titanium	40	60	□	□	Rico(ZB)/Trio(PO)

not adapted - adapted □ highly adapted ■



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

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

Available uncoated or coated

Z2

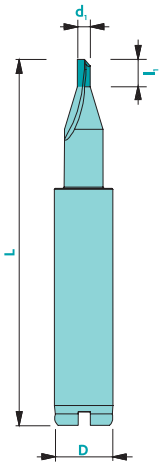
λ 35°

γ 8-10°

CARB

ap=0.25xd$_1$ ae=0.5xd$_1$
ap=0.5xd$_1$

7111-1 Straight cut end mill Z1 for 701S machine Willemin-Macodel



Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating*
Steel < 700 N/mm²	-	60	-	□	Trio (PO)
Steel > 700 N/mm²	-	-	-	-	-
Stainless steel	-	-	-	-	-
Cast iron	-	-	-	-	-
Copper	-	-	-	-	-
Brass - Bronze	80	110	■	□	Solo (DA)
Aluminium	-	-	-	-	-
Gold - Silver	50	60	■	■	Solo (DA)
Platinum - Palladium	-	-	-	-	-
Superalloys	-	-	-	-	-
Titanium	20	30	□	■	Rico (ZB)

not adapted - adapted □ highly adapted ■

Tolerances

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

Available uncoated or coated

Z1

λ 0°

γ 0°

CARB

ap=0.5xd$_1$

ae=0.5xd$_1$
ap=0.5xd$_1$

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

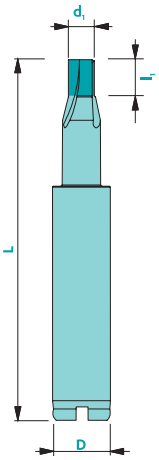
Straight cut end mill Z3 for 701S machine Willemin-Macodel

7111-3

Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating*
Steel < 700 N/mm²	-	60	-	□	Trio (PO)
Steel > 700 N/mm²	-	-	-	-	-
Stainless steel	-	-	-	-	-
Cast iron	-	-	-	-	-
Copper	-	-	-	-	-
Brass - Bronze	80	110	■	□	Solo (DA)
Aluminium	-	-	-	-	-
Gold - Silver	50	60	■	■	Solo (DA)
Platinum - Palladium	-	-	-	-	-
Superalloys	-	-	-	-	-
Titanium	20	30	□	■	Rico (ZB)

not adapted - adapted □ highly adapted ■

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



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

Available uncoated or coated

Z3

λ 0°

γ 0°

CARB

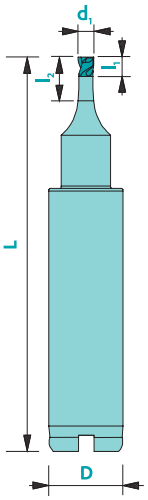
ap

ap
ae

ap=0.25xd$_1$

ae=0.5xd$_1$
ap=0.5xd$_1$

7010C01 Ceramic end mill for 701S machine Willemin-Macodel



Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating*
Steel < 700 N/mm²	-	-	-	-	-
Steel > 700 N/mm²	-	-	-	-	-
Stainless steel	-	-	-	-	-
Cast iron	-	-	-	-	-
Copper	200	-	■	-	-
Brass - Bronze	150-500	-	■	-	-
Aluminium	250	-	■	-	-
Gold - Silver	100-200	-	■	-	-
Platinum - Palladium	-	-	-	-	-
Superalloys	-	-	-	-	-
Titanium	-	-	-	-	-

not adapted - adapted ◘ highly adapted ■

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

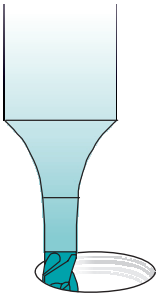
Available uncoated

Z2

C01

ap=0.24xd_1

ae=0.8xd_1
ap=0.3xd_1



ideal for drilling by helical interpolation

Art. n°	d_1	l_1	l_2	D	L
7010C01d0.10	**0.10**	**0.05**	0.40	6	33
7010C01d0.20	**0.20**	**0.10**	0.80	6	33
7010C01d0.32	**0.32**	**0.16**	1.28	6	33
7010C01d0.50	**0.50**	**0.25**	2.00	6	33
7010C01d0.63	**0.63**	**0.32**	2.52	6	33
7010C01d0.80	**0.80**	**0.40**	3.20	6	33
7010C01d1.25	**1.25**	**0.63**	5.00	6	33
7010C01d2.00	**2.00**	**1.00**	-	6	33
7010C01d3.20	**3.20**	**1.60**	-	6	33

Ceramic end mill EXPERT brass for 701S machine Willemin-Macodel

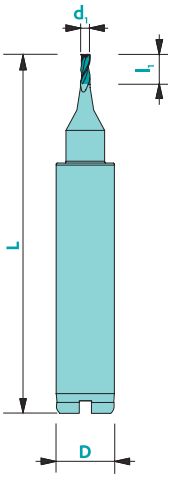
X

71820C01

Material	Vc uncoated	Vc coated	Uncoated	Coated	Rec. Coating*
Composite	-	-	-	-	-
Steel < 700 N/mm²	-	-	-	-	-
Steel > 700 N/mm²	-	-	-	-	-
Stainless steel	-	-	-	-	-
Cast iron	-	-	-	-	-
Copper	-	-	-	-	-
Brass - Bronze	150-500	-	■	-	-
Aluminium	-	-	-	-	-
Gold - Silver	100-200	-	■	-	-
Platinum - Palladium	-	-	-	-	-
Superalloys	-	-	-	-	-
Titanium	-	-	-	-	-

not adapted - adapted □ highly adapted ■

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



Art. n°	d_1	l_1	D	L
71820C01d0.50	0.50	1.00	6	33
71820C01d0.80	0.80	1.60	6	33
71820C01d1.00	1.00	2.00	6	33
71820C01d1.50	1.50	3.00	6	33
71820C01d2.00	2.00	4.00	6	33
71820C01d3.00	3.00	5.00	6	33

Available uncoated

Z3

λ 30°

C01

ap

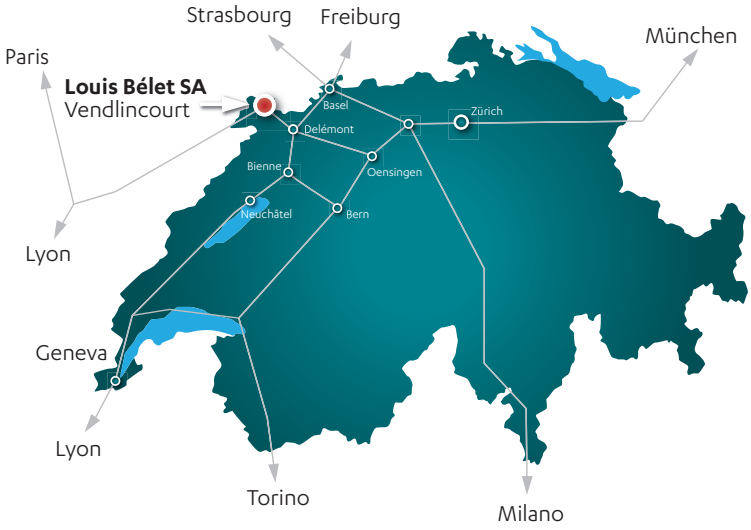
ap
ae

ap=0.35xd_1

ae=0.5xd_1
ap=0.5xd_1

Since 1948

Louis BELET SA is a family business of about 150 employees. The company is run by the two grandchildren of the founder, Mrs Roxane Piquerez and Mr Arnaud Maître.



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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.

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

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