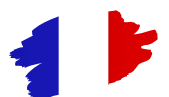


Minimax[®]

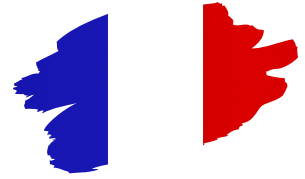


CATALOGUE

2022



Pourquoi **Minimax** ?



La gamme **MINIMAX** a été développée pour répondre aux besoins des clients les plus exigeants à la recherche des outils parfaitement adaptés à leurs problèmes de micro-usinage.

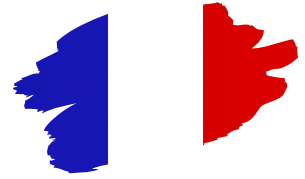
Une gamme complète de micro-forets en acier rapide 8% Co-M42 et en carbure couvrant les \emptyset 0.10 à 3.00. De 2 à 30x \emptyset . **MINIMAX**, spécialiste des micro outils haut de gamme, offre des tolérances serrées et états de surface poly-glacés pour assurer des usinages ultraprécis en qualité super finition.

La gamme **MINIMAX** se compose de quatre familles de micro-forets :

- L'**Hss-E 8%** : performance et flexibilité pour les usinages délicats et matières collantes. En coupe à droite et **à gauche**, dès le \emptyset 0.1 par intervalles de 0.05mm.
- La série **universelle** en carbure qui offre tous les 10 μ en stock dès le \emptyset 0.10, tout en stock pour envoi le jour même.
- Les gammes **Haute Performance** : affûtage dédié matériaux coriaces et les gammes à trous d'huile (jusqu'à 30x \emptyset) sont proposées revêtues.
- Et **les niches** spécifiques :
 - o SPOT DRILL-MILL : affûté à 90° ce foret-fraise travaille par interpolation sur tous les axes d'usinage en simultané. L'essayer c'est l'adopter !
 - o NC à pointer : pour garantir la précision du centrage avec 6 μ de tolérance.
 - o ALU : géométrie haute évacuation de copeaux.
 - o Z1 hélice 0° pour le bronze, les aluminiums et plastiques.

UNIQUE, Les gammes à trous d'huile démarrent au \emptyset 0.50, même les 30x \emptyset !

Why **Minimax**® ?



The **MINIMAX** range has been developed to meet the needs of the most demanding customers looking for the tool that perfectly suits their micro-machining needs.

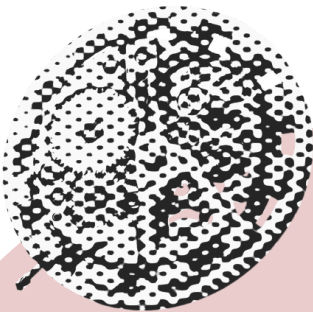
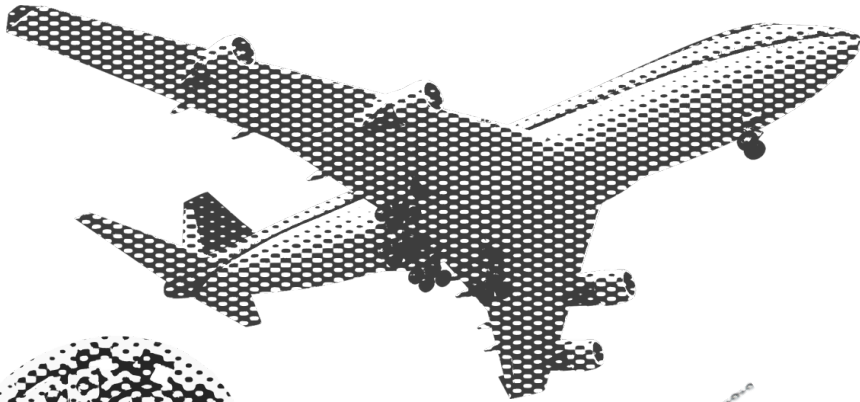
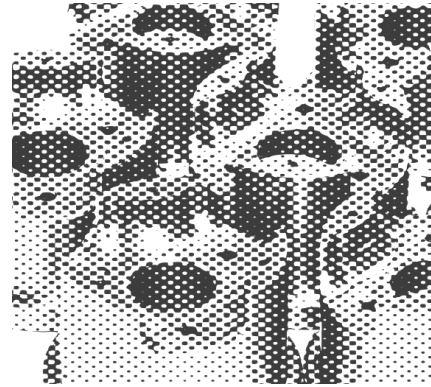
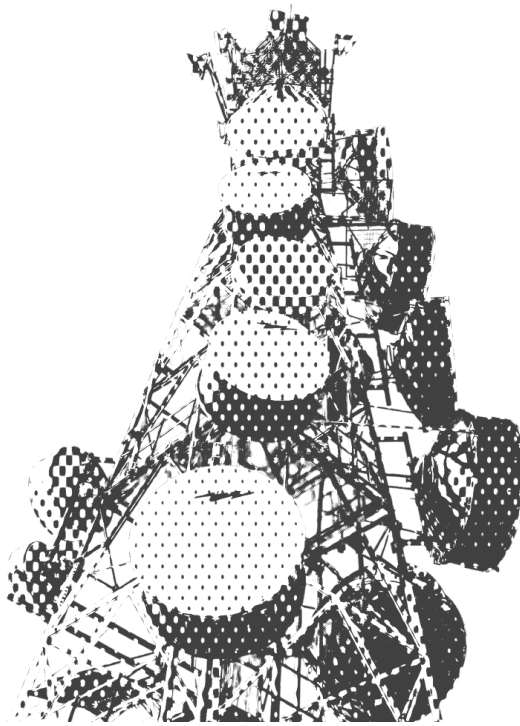
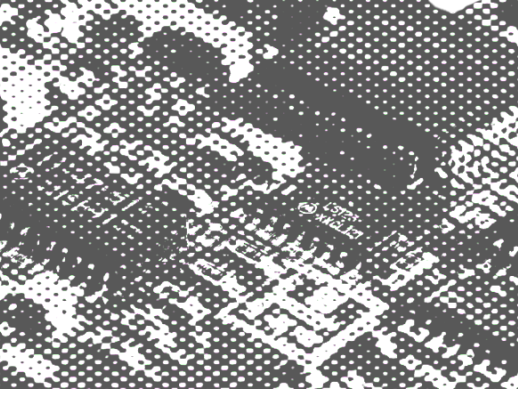
A complete range of micro-drills made from 8% Cobalt-M42 high speed steel and in carbide covering \emptyset 0.10 to 3.00. From 2 to 30x \emptyset .

MINIMAX, high quality micro tools specialist, offers tight tolerances and poly-mirror surface finishes to ensure ultra-precise machining in superfinish quality.

The **MINIMAX** range offers four micro-drills ranges :

- **Hss-E 8%**: performance and flexibility for delicate machining and sticky materials. Right and **left hand cut**, from \emptyset 0.1 in 0.05mm intervals.
- The **universal** carbide series which offers every 10 μ in stock from \emptyset 0.10, everything in stock for dispatch on the same day.
- The **High Performance** ranges: dedicated sharpening of tough materials and internal cooling ranges (up to 30x \emptyset) are offered coated.
- And **specific niches** :
 - o SPOT DRILL-MILL: its 90° point sharpening allows to work by interpolation on all machining axes simultaneously. To try it is to adopt it!
 - o NC Spotting to produce the highest centering point with its 6 μ tolerance.
 - o ALU: high chip evacuation geometry.
 - o Z1 with 0° spiral for bronze, aluminum and plastics.

UNIQUE, internal coolant ranges starts from \emptyset 0.50, even the 30x \emptyset !



MM22090C Ø 1.00
Acier 1000N Steel

Vc = 35 m

F, rev / tours = 0,010mm



MM220C Universal Ø 0.27
Fonte 160HB Cast Iron

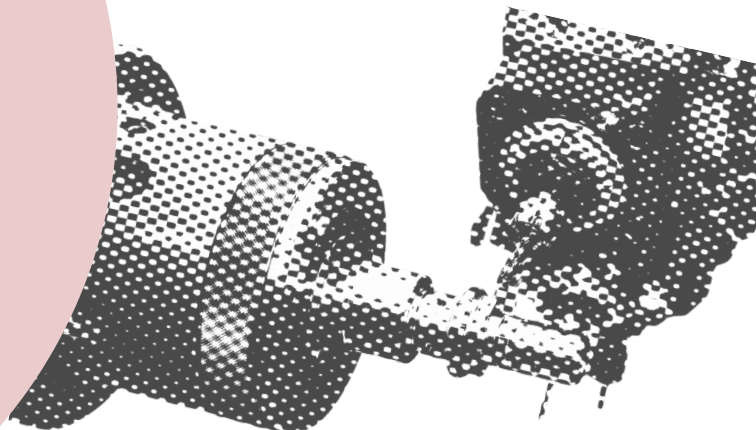
Vc = 70 m

F, rev / tours = 0,006mm

MM221XL30 AlCrN Ø 0.50 / 1.10
Inox 1.4305 Stainless steel

Ø 0.50 Vc = 50 m
F, rev / tours = 0,008mm

Ø 1.10 Vc = 60m
F, rev / tours = 0,014mm





Minimamax[®]



HSS 8% Co Droite/Gauche 5

M-42 8% Co series Right/Left 6



FORET-FRAISEUR 90° 7

90° SPOT DRILL-MILL 8



UNIVERSEL par 0.01 mm 9

UNIVERSAL by 0.01 mm



NC à pointer 90/130° 10

90/130° NC SPOTTING DRILL



HAUTE PERFORMANCE 11

HIGH PERFORMANCE 12



TROUS D'HUILE 13

INTERNAL COOLANT 14

15



ALU Hélice 35° 16

35° Spiral ALU



FORET ALESEUR 17

REAMER DRILL



FORET 1 DENT 18

SPADE DRILL

ACIER RAPIDE 8% Cobalt

M-42 8% Cobalt



Ref. MM120L

Coupe à droite Right hand cut

Ø	l	d	L	€	Ø	l	d	L	€
0.10	0.7	1.00	25		1.50	10	2.00	35	
0.15	1.0	1.00	25		1.55	10	2.00	35	
0.20	1.8	1.00	25		1.60	10	2.00	35	
0.25	2.2	1.00	25		1.65	10	2.00	35	
0.30	2.2	1.00	25		1.70	10	2.00	35	
0.35	2.8	1.00	25		1.75	10	2.00	35	
0.40	3.2	1.00	25		1.80	11	2.00	35	
0.45	3.2	1.00	25		1.85	11	2.00	35	
0.50	3.6	1.00	25		1.90	11	2.00	35	
0.55	4.0	1.50	25		1.95	11	2.00	35	
0.60	4.5	1.50	25		2.00	11	2.00	35	
0.65	4.7	1.50	25		2.10	12	2.50	35	
0.70	5.2	1.50	25		2.20	12	2.50	35	
0.75	5.2	1.50	25		2.30	14	2.50	35	
0.80	5.5	1.50	25		2.40	14	2.50	35	
0.85	5.5	1.50	25		2.50	14	2.50	35	
0.90	6.0	1.50	25		2.60	16	3.00	40	
0.95	6.0	1.50	25		2.70	16	3.00	40	
1.00	6.5	1.50	25		2.80	18	3.00	40	
1.05	6.5	1.50	25		2.90	18	3.00	40	
1.10	7.0	1.50	25		3.00	18	3.00	40	
1.15	7.0	1.50	25						
1.20	7.5	1.50	25						
1.25	7.5	1.50	25						
1.30	7.5	1.50	25						
1.35	8.5	1.50	25						
1.40	8.5	1.50	25						
1.45	8.5	1.50	25						

Pack x 10



α : 120°
 z : 2 - 24°
 Tol Ø : h6
 Tol d : h6
 Hss-E 8% M42

ACIER RAPIDE 8% Cobalt

M-42 8% Cobalt



Coupe à gauche *Left hand cut*

Ref. MM120GL

Ø	l	d	L	€	Ø	l	d	L	€
0.50	3.6	1.00	25		1.50	10	2.00	35	
0.55	4.0	1.50	25		1.55	10	2.00	35	
0.60	4.5	1.50	25		1.60	10	2.00	35	
0.65	4.7	1.50	25		1.65	10	2.00	35	
0.70	5.2	1.50	25		1.70	10	2.00	35	
0.75	5.2	1.50	25		1.75	10	2.00	35	
0.80	5.5	1.50	25		1.80	11	2.00	35	
0.85	5.5	1.50	25		1.85	11	2.00	35	
0.90	6.0	1.50	25		1.90	11	2.00	35	
0.95	6.0	1.50	25		1.95	11	2.00	35	
1.00	6.5	1.50	25		2.00	11	2.00	35	
1.05	6.5	1.50	25		2.10	12	2.50	35	
1.10	7.0	1.50	25		2.20	12	2.50	35	
1.15	7.0	1.50	25		2.30	14	2.50	35	
1.20	7.5	1.50	25		2.40	14	2.50	35	
1.25	7.5	1.50	25		2.50	14	2.50	35	
1.30	7.5	1.50	25		2.60	16	3.00	40	
1.35	8.5	1.50	25		2.70	16	3.00	40	
1.40	8.5	1.50	25		2.80	18	3.00	40	
1.45	8.5	1.50	25		2.90	18	3.00	40	
					3.00	18	3.00	40	

Pack x 10



α : 120°
z : 2 - 24°
Tol Ø : h6
Tol d : h6
Hss-E 8% M42

FORET-FRAISEUR 90°

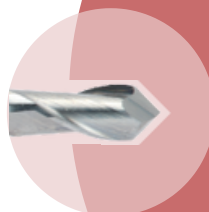
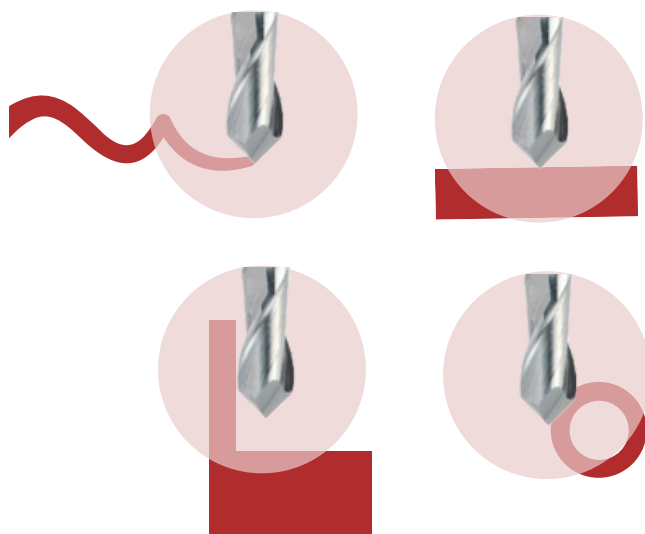
90° SPOT DRILL-MILL



Le FORET-FRAISEUR 90° a été développé par **MINIMAX** pour répondre aux attentes de super finition des usinages par interpolation avec des arguments de choix :

- Tolérance ultraprécise du \emptyset : 0 / +10 μ
- Qualité poly-miroir facilitant l'évacuation des copeaux
- Âme renforcée assurant la rigidité en usinages 2D et 3D
- Unique : tous les 50 μ en stock dès le \emptyset 0.30

Le FORET-FRAISEUR 90° peut pointer, chanfreiner, graver, fraiser, ébavurer ou simplement percer tous les matériaux !



The SPOT DRILL-MILL has been developed by **MINIMAX** to meet expectations of super-finishing when machining by interpolation with high quality arguments :

- Ultra-precise tolerance of \emptyset : 0 / +10 μ
- Poly-mirror quality facilitating chip evacuation
- Reinforced tool core-web ensuring rigidity in 2D and 3D machining process
- Unique: every 50 μ on stock from \emptyset 0.30

90° DRILL-MILL can point, chamfer, engrave, countersink, deburr or just drill any material !

FORET-FRAISEUR 90°

90° SPOT DRILL-MILL



Precision **10μ**

Ref. MM22090C

Ø	l	d	L	€	Ø	l	d	L	€
0.30	0.6	3.00	38		1.50	3.0	3.00	38	
0.35	0.7	3.00	38		1.55	3.2	3.00	38	
0.40	0.8	3.00	38		1.60	3.2	3.00	38	
0.45	0.9	3.00	38		1.65	3.4	3.00	38	
0.50	1.0	3.00	38		1.70	3.4	3.00	38	
0.55	1.2	3.00	38		1.75	3.6	3.00	38	
0.60	1.2	3.00	38		1.80	3.6	3.00	38	
0.65	1.4	3.00	38		1.85	3.8	3.00	38	
0.70	1.4	3.00	38		1.90	3.8	3.00	38	
0.75	1.6	3.00	38		1.95	4.0	3.00	38	
0.80	1.6	3.00	38		2.00	4.0	3.00	38	
0.85	1.8	3.00	38		2.10	4.4	3.00	38	
0.90	1.8	3.00	38		2.20	4.4	3.00	38	
0.95	2.0	3.00	38		2.30	4.8	3.00	38	
1.00	2.0	3.00	38		2.40	4.8	3.00	38	
1.05	2.2	3.00	38		2.50	5.2	3.00	38	
1.10	2.2	3.00	38		2.60	5.2	3.00	38	
1.15	2.4	3.00	38		2.70	5.6	3.00	38	
1.20	2.4	3.00	38		2.80	5.6	3.00	38	
1.25	2.6	3.00	38		2.90	6.0	3.00	38	
1.30	2.6	3.00	38		3.00	6.0	4.00	50	
1.35	2.8	3.00	38						
1.40	2.8	3.00	38						
1.45	3.0	3.00	38						



α : 90°

z : 2 - 30°

Tol Ø : 0 / +0.010

Tol d : h6

Carbure-Carbide MG 10% Co

UNIVERSEL par 0.01 mm

UNIVERSAL by 0.01 mm



Ref. MM220C

4-5 x Ø

Ø	l	d	L	€
0.10-0.11	0.6	3.00	38	
0.12-0.13	0.7	3.00	38	
0.14-0.15	0.8	3.00	38	
0.16-0.17	0.9	3.00	38	
0.18-0.19	1.0	3.00	38	
0.20-0.24	1.1	3.00	38	
0.25-0.29	1.3	3.00	38	
0.30-0.38	1.6	3.00	38	
0.39-0.40	2.0	3.00	38	
0.41-0.49	2.0	3.00	38	
0.50-0.53	2.4	3.00	38	
0.54-0.60	2.8	3.00	38	
0.61-0.67	3.3	3.00	38	
0.68-0.75	3.8	3.00	38	
0.76-0.79	4.2	3.00	38	
0.80-0.85	4.4	3.00	38	
0.86-1.09	4.8	3.00	38	
1.10-1.19	5.4	3.00	38	
1.20-1.29	6.0	3.00	38	
1.30-1.49	6.7	3.00	38	
1.50-1.79	7.2	3.00	38	
1.80-1.99	8.4	3.00	38	
2.00	12.0	3.00	38	

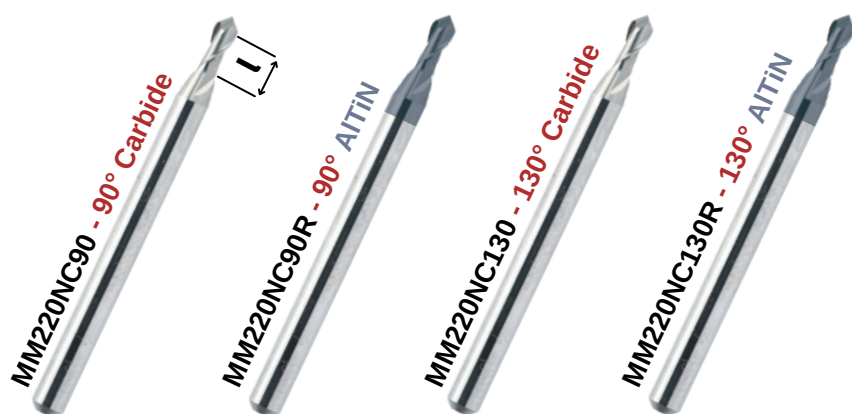


α : 120°
 z : 2 - 24°
 Tol Ø : h5
 Tol d : h6
 Carbure-Carbide MG 10% Co

NC à POINTER 90 / 130°

90 / 130° NC SPOTTING DRILL

Precision **6 μ**



\emptyset	l	€	€	€	€
0.10	0.2				
0.15	0.3				
0.20	0.4				
0.25	0.5				
0.30	0.6				
0.40	0.8				
0.50	1.0				
0.80	1.6				
1.0	2.0				
1.5	3.0				
2.0	4.0				
2.5	5.0				
3.0	6.0				

AlTiN

90°

2-3 μ

3750 HV



α : 90 / 130° +/- 1°

z : 2 - 30°

Tol \emptyset : 0 / -6 μ

Tol queue/shank : 3.00 h5

Carbure-Carbide MG 10% Co

L=38

Minimax

HAUTE PERFORMANCE

HIGH PERFORMANCE



Ref. MM220L

6-7 x Ø

Ø	l	l2	d	L	€	Ø	l	l2	d	L	€
0.30	2.0	-	3.00	50		1.70	12.0	15.0	3.00	50	
0.35	2.25	-	3.00	50		1.75	12.5	15.5	3.00	50	
0.40	2.5	-	3.00	50		1.80	13.0	16.0	3.00	50	
0.45	3.0	-	3.00	50		1.85	13.0	16.0	3.00	50	
0.50	3.5	4.4	3.00	50		1.90	13.5	17.5	3.00	50	
0.55	4.0	5.0	3.00	50		1.95	14.0	18.0	3.00	50	
0.60	4.5	5.6	3.00	50		2.00	14.0	18.0	3.00	50	
0.65	5.0	6.2	3.00	50		2.05	14.5	18.5	3.00	50	
0.70	5.0	6.2	3.00	50		2.10	15.0	19.0	3.00	50	
0.75	5.5	6.9	3.00	50		2.15	15.0	19.0	3.00	50	
0.80	5.6	7.2	3.00	50		2.20	16.0	20.0	3.00	50	
0.85	6.0	7.6	3.00	50		2.25	16.0	20.0	3.00	50	
0.90	6.5	8.1	3.00	50		2.30	16.5	21.0	3.00	50	
0.95	6.7	8.5	3.00	50		2.35	16.5	21.0	3.00	50	
1.00	7.0	8.8	3.00	50		2.40	17.0	22.0	3.00	50	
1.05	7.5	9.4	3.00	50		2.45	17.5	22.5	3.00	50	
1.10	8.0	10.1	3.00	50		2.50	18.0	23.0	3.00	50	
1.15	8.1	10.4	3.00	50		2.55	18.0	23.0	3.00	50	
1.20	8.5	11.0	3.00	50		2.60	18.5	23.5	3.00	50	
1.25	8.9	11.3	3.00	50		2.65	18.5	23.5	3.00	50	
1.30	9.2	11.7	3.00	50		2.70	19.0	24.0	3.00	50	
1.35	9.6	12.2	3.00	50		2.75	19.0	24.0	3.00	50	
1.40	10.0	12.5	3.00	50		2.80	20.0	25.0	3.00	50	
1.45	10.5	13.0	3.00	50		2.85	20.0	25.0	3.00	50	
1.50	10.5	13.0	3.00	50		2.90	21.0	26.0	3.00	50	
1.55	11.0	13.5	3.00	50		2.95	21.0	26.0	3.00	50	
1.60	11.5	14.0	3.00	50		3.00	21.0	26.0	3.00	50	
1.65	12.0	15.0	3.00	50							



α : 140°

z : 2 - 30°

Tol Ø : h5

Tol d : h5

Carbure-Carbide MG 10% Co

HAUTE PERFORMANCE

HIGH PERFORMANCE



12 x Ø

Ref. MM220XL

Ø	l	l2	d	L	€	Ø	l	l2	d	L	€
0.30	3.6	-	3.00	50		1.50	18.0	21.6	3.00	50	
0.35	4.2	-	3.00	50		1.55	18.6	22.3	3.00	60	
0.40	4.8	-	3.00	50		1.60	19.2	23.0	3.00	60	
0.45	5.4	-	3.00	50		1.65	19.8	23.7	3.00	60	
0.50	6.0	7.2	3.00	50		1.70	20.4	24.5	3.00	60	
0.55	6.6	7.9	3.00	50		1.75	21.0	25.2	3.00	60	
0.60	7.2	8.6	3.00	50		1.80	21.6	25.9	3.00	60	
0.65	7.8	9.3	3.00	50		1.85	22.2	26.6	3.00	60	
0.70	8.4	10.1	3.00	50		1.90	22.8	27.3	3.00	60	
0.75	9.0	10.8	3.00	50		1.95	23.4	28.1	3.00	60	
0.80	9.6	11.5	3.00	50		2.00	24.0	28.8	3.00	60	
0.85	10.2	12.2	3.00	50							
0.90	10.8	13.0	3.00	50							
0.95	11.4	13.7	3.00	50							
1.00	12.0	14.4	3.00	50							
1.05	12.6	15.1	3.00	50							
1.10	13.2	15.8	3.00	50							
1.15	13.8	16.5	3.00	50							
1.20	14.4	17.3	3.00	50							
1.25	15.0	18.0	3.00	50							
1.30	15.6	18.7	3.00	50							
1.35	16.2	19.4	3.00	50							
1.40	16.8	20.1	3.00	50							
1.45	17.4	20.9	3.00	50							



$\alpha : 140^\circ$
 $z : 2 - 30^\circ$
 Tol Ø : h5
 Tol d : h5
 Carbure-Carbide MG 10% Co

TROUS D'HUILE 15xØ

INTERNAL COOLANT 15xØ



Ref. MM221XL15 + AlCrN

$\alpha = 140^\circ$

Ø	l	d	L	€
0.50	8	3.00	60	
0.60	10	3.00	60	
0.70	11.5	3.00	60	
0.80	13	3.00	60	
0.90	14.5	3.00	60	
1.00	17	3.00	70	
1.10	18	3.00	70	
1.20	20	3.00	70	
1.30	21	3.00	70	
1.40	23	3.00	70	
1.50	25	3.00	70	
1.60	26	3.00	70	
1.70	28	3.00	70	
1.80	30	3.00	70	
1.90	31	3.00	70	
2.00	32	3.00	70	
2.10	34	3.00	70	
2.20	36	3.00	70	
2.30	38	3.00	70	
2.40	40	3.00	70	
2.50	42	3.00	70	
2.60	44	3.00	90	
2.70	46	3.00	90	
2.80	48	3.00	90	
2.90	50	3.00	90	
3.00	50	3.00	90	

Revêtement **AlCrN** : le plus performant des revêtements utilisable jusqu'à 1.100°C. Permet l'usinage de matériaux durs jusqu'à une dureté de 55HRC.

AlCrN coating : the most performing coating today with a temperature of use up to 1.100°C. This allows to machine up to 55HRC hardness.

Top-Pack



$\alpha : 140^\circ$

z : 2 - 30°

Tol Ø : h5

Tol d : h5

Carbure-Carbide MG 10% Co

TROUS D'HUILE 20xØ

INTERNAL COOLANT 20xØ



$\alpha = 140^\circ$

Ref. **MM221XL20 + AlCrN**

Ø	l	d	L	€
0.50	10	3.00	60	
0.60	12	3.00	60	
0.70	14	3.00	60	
0.80	16	3.00	60	
0.90	18	3.00	60	
1.00	20	3.00	75	
1.10	22	3.00	75	
1.20	24	3.00	75	
1.30	26	3.00	75	
1.40	28	3.00	75	
1.50	30	3.00	75	
1.60	32	3.00	95	
1.70	34	3.00	95	
1.80	36	3.00	95	
1.90	38	3.00	95	
2.00	40	3.00	95	
2.10	42	3.00	120	
2.20	44	3.00	120	
2.30	46	3.00	120	
2.40	48	3.00	120	
2.50	50	3.00	120	
2.60	52	3.00	140	
2.70	54	3.00	140	
2.80	56	3.00	140	
2.90	58	3.00	140	
3.00	60	3.00	140	

Revêtement **AlCrN** : le plus performant des revêtements utilisable jusqu'à 1.100°C. Permet l'usinage de matériaux durs jusqu'à une dureté de 55HRC.

AlCrN coating : the most performing coating today with a temperature of use up to 1.100°C. This allows to machine up to 55HRC hardness.



Top-Pack

$\alpha : 140^\circ$

$z : 2 - 30^\circ$

Tol Ø : h5

Tol d : h5

Carbure-Carbide MG 10% Co

TROUS D'HUILE 30xØ

INTERNAL COOLANT 30xØ



Ref. **MM221XL30 + AlCrN**

$\alpha = 140^\circ$

Ø	l	d	L	€
0.50	15	3.00	70	
0.60	18	3.00	70	
0.70	21	3.00	70	
0.80	24	3.00	70	
0.90	27	3.00	70	
1.00	30	3.00	75	
1.10	33	3.00	75	
1.20	36	3.00	75	
1.30	39	3.00	75	
1.40	42	3.00	75	
1.50	45	3.00	75	
1.60	48	3.00	95	
1.70	51	3.00	95	
1.80	54	3.00	95	
1.90	57	3.00	95	
2.00	60	3.00	95	
2.10	63	3.00	120	
2.20	66	3.00	120	
2.30	69	3.00	120	
2.40	72	3.00	120	
2.50	75	3.00	120	
2.60	78	3.00	140	
2.70	81	3.00	140	
2.80	84	3.00	140	
2.90	87	3.00	140	
3.00	90	3.00	140	

Revêtement **AlCrN** : le plus performant des revêtements utilisable jusqu'à 1.100°C. Permet l'usinage de matériaux durs jusqu'à une dureté de 55HRC.

AlCrN coating : the most performing coating today with a temperature of use up to 1.100°C. This allows to machine up to 55HRC hardness.



Top-Pack

$\alpha : 140^\circ$
 $z : 2 - 30^\circ$
 Tol Ø : h5
 Tol d : h5
 Carbure-Carbide MG 10% Co

ALU Hélice 35°

35° Spiral ALU



4-5 x Ø

Ref. MM220AL

Ø	l	l2	d	L	€	Ø	l	l2	d	L	€
0.30	2.0	-	3.00	38		1.50	10.5	13.0	3.00	38	
0.35	2.25	-	3.00	38		1.55	11.0	13.5	3.00	38	
0.40	2.5	-	3.00	38		1.60	11.5	14.0	3.00	38	
0.45	3.0	-	3.00	38		1.65	12.0	15.0	3.00	38	
0.50	3.5	4.4	3.00	38		1.70	12.0	15.0	3.00	38	
0.55	4.0	5.0	3.00	38		1.75	12.5	15.5	3.00	38	
0.60	4.5	5.6	3.00	38		1.80	13.0	16.0	3.00	38	
0.65	5.0	6.2	3.00	38		1.85	13.0	16.0	3.00	38	
0.70	5.0	6.2	3.00	38		1.90	13.5	17.5	3.00	38	
0.75	5.5	6.9	3.00	38		1.95	14.0	18.0	3.00	38	
0.80	5.6	7.2	3.00	38		2.00	14.0	18.0	3.00	38	
0.85	6.0	7.6	3.00	38							
0.90	6.5	8.1	3.00	38							
0.95	6.7	8.5	3.00	38							
1.00	7.0	8.8	3.00	38							
1.05	7.5	9.4	3.00	38							
1.10	8.0	10.1	3.00	38							
1.15	8.1	10.4	3.00	38							
1.20	8.5	11.0	3.00	38							
1.25	8.9	11.3	3.00	38							
1.30	9.2	11.7	3.00	38							
1.35	9.6	12.2	3.00	38							
1.40	10.0	12.5	3.00	38							
1.45	10.5	13.0	3.00	38							



$\alpha : 120^\circ$
 $z : 2 - 35^\circ$
 Tol Ø : h5
 Tol d : h5
 Carbure-Carbide MG 10% Co

FORET ALESEUR

REAMER DRILL



Ref. MM230L

Precision 4 μ

\emptyset	l	d	L	€	\emptyset	l	d	L	€
0.50	6.0	3.00	38		1.60	12	3.00	38	
0.55	7.0	3.00	38		1.70	12	3.00	38	
0.60	7.0	3.00	38		1.80	12	3.00	38	
0.65	7.0	3.00	38		1.90	14	3.00	38	
0.70	9.5	3.00	38		2.00	14	3.00	38	
0.75	9.5	3.00	38		2.10	14	3.00	38	
0.80	9.5	3.00	38		2.20	14	3.00	38	
0.85	9.5	3.00	38		2.30	14	3.00	38	
0.90	9.5	3.00	38		2.40	14	3.00	38	
0.95	9.5	3.00	38		2.50	14	3.00	38	
1.00	9.5	3.00	38		2.60	16	3.00	38	
1.05	10.5	3.00	38		2.70	16	3.00	38	
1.10	10.5	3.00	38		2.80	16	3.00	38	
1.15	10.5	3.00	38		2.90	16	3.00	38	
1.20	10.5	3.00	38		3.00	16	3.00	38	
1.25	10.5	3.00	38						
1.30	10.5	3.00	38						
1.35	10.5	3.00	38						
1.40	10.5	3.00	38						
1.45	10.5	3.00	38						
1.50	10.5	3.00	38						



α : 140°
 z : 3 - 30°
 Tol \emptyset : 0 / - 4 μ
 Tol d : h5
 Carbure-Carbide MG 10% Co

FORET 1 DENT

GUN DRILL



Laiton-Alu *Alu-Brass*

Ref. MM210L

Ø	l	d	L	€
0.20	2.0	1.50	30	
0.25	2.5	1.50	30	
0.30	3.0	1.50	30	
0.35	3.5	1.50	30	
0.40	4.0	1.50	30	
0.45	4.5	1.50	30	
0.50	5.0	1.50	30	
0.55	5.5	1.50	30	
0.60	6.0	1.50	30	
0.65	6.5	1.50	30	
0.70	7.0	1.50	30	
0.75	7.5	1.50	30	
0.80	8.0	1.50	30	
0.85	8.5	1.50	30	
0.90	9.0	1.50	30	
0.95	9.5	1.50	30	
1.00	10.0	1.50	30	
1.05	10.5	1.50	30	
1.10	11.0	1.50	30	
1.15	11.5	1.50	30	
1.20	12.0	1.50	30	
1.25	12.5	1.50	30	
1.30	13.0	1.50	30	
1.35	13.5	1.50	30	
1.40	14.0	1.50	30	
1.45	14.5	1.50	30	

Ø	l	d	L	€
1.50	15.0	2.00	38	
1.55	15.5	2.00	38	
1.60	16.0	2.00	38	
1.65	16.5	2.00	38	
1.70	17.0	2.00	38	
1.75	17.5	2.00	38	
1.80	18.0	2.00	38	
1.85	18.5	2.00	38	
1.90	19.0	2.00	38	
1.95	19.5	2.00	38	
2.00	20.0	3.00	50	
2.10	21.0	3.00	50	
2.20	22.0	3.00	50	
2.30	23.0	3.00	50	
2.40	24.0	3.00	50	
2.50	25.0	3.00	50	
2.60	26.0	3.00	50	
2.70	27.0	3.00	50	
2.80	28.0	3.00	50	
2.90	29.0	3.00	50	
3.00	30.0	3.00	50	



Pack x 10

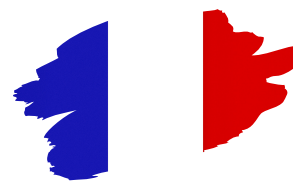
α : 120°

z : 1 - 0°

Tol Ø : h5

Tol d : h6

Carbure-Carbide MG 10% Co



Pour davantage d'informations, contactez votre distributeur

For more information, please contact your distributor



www.mini-max.fr

contact@mini-max.fr