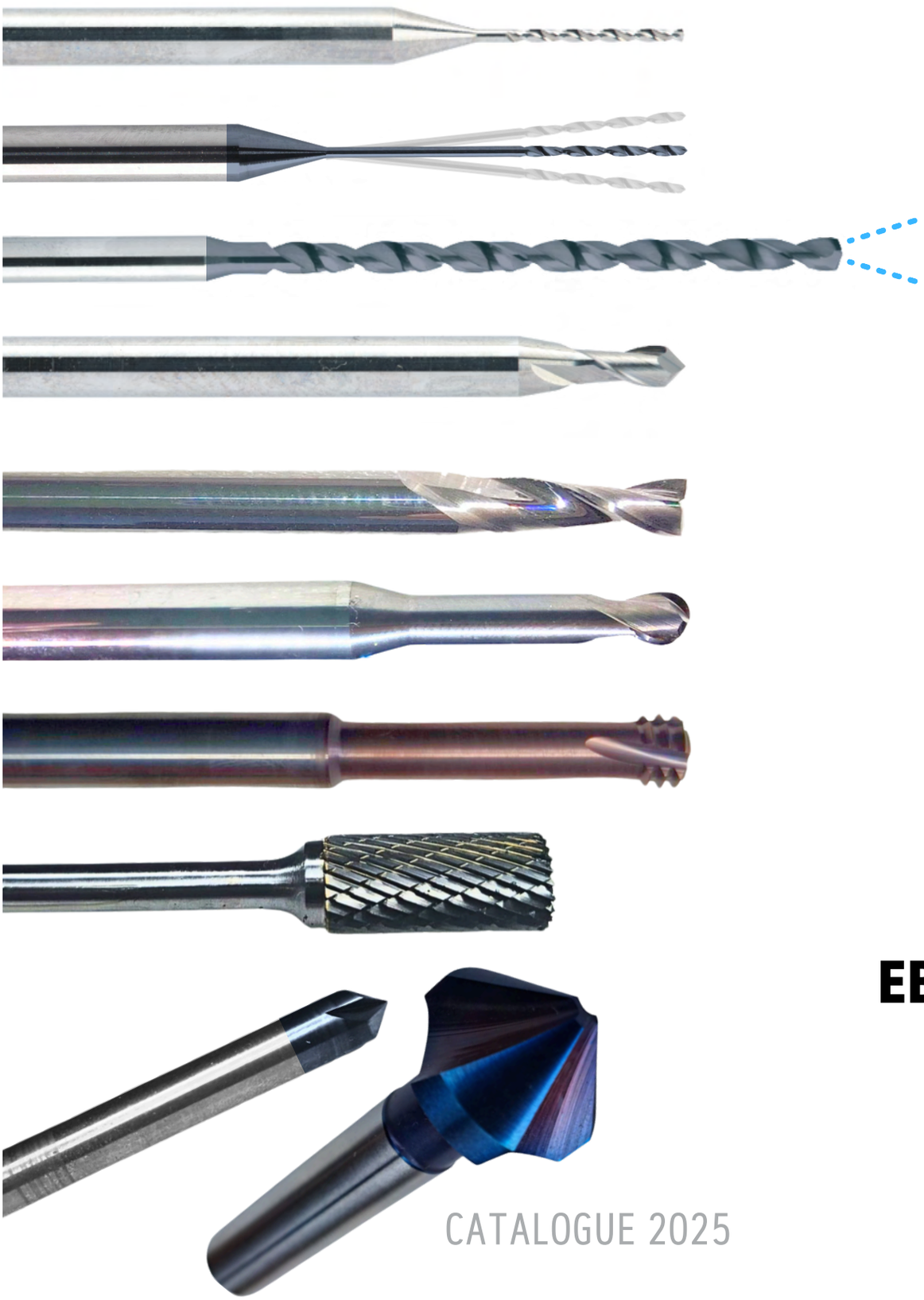
Minimax®



PERÇAGE
DRILLING

FRAISAGE
MILLING

EBAVURAGE
DEBURRING

CATALOGUE 2025

Pourquoi Minimax® ?

La gamme **MINIMAX** a été développée pour répondre aux besoins des clients les plus exigeants à la recherche de l'outil parfaitement adaptés à leurs problématiques d'usinage.

Une gamme de micro-forets en acier rapide 8% Co-M42 et en carbure, de micro-fraises et de solutions d'ébavurage. Pour les micro outils nous avons ciblé le **haut de gamme**, des tolérances serrées et des **états de surface poly-glacés** pour assurer des **usinages ultraprécis en qualité superfinition**.

La gamme **MINIMAX** se compose de trois familles :

Une offre en **micro forets**

- coupe à droite et à gauche en HSS 8% CO M42
- carbure monobloc 4 - 6 - 12 et 40 x Ø
- à trous d'huile dès le Ø0.50, unique au Monde 15-20-30xØ
- les **POLY-MAX** à 90°
- les forets gun
- les forets-aléseurs z3 pour percer et aléser simultanément

Une gamme de **micro fraises** haute performance

- micro courtes finition poly-miroir
- micro dégagées pour accès difficile
- série L et XL pour les moulistes
- fraises à fileter à partir du M1.6

Des **solutions d'ébavurage**

- fraises à chanfreiner HSS-E conventionnelles et à denture inégale
- chanfreineurs 4 dents en carbure
- fraises limes micro et universelles

UNIQUE, nos forets à trous d'huile démarrent au Ø 0.50, même les 30xØ !

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 machining needs.

A range of HSS 8% Co M42 and carbide micro drills, micro end mills and chanferring solutions. For micro tools, we targeted **top of the range**, tight tolerances and **poly-mirror surface** finishes to ensure **ultra-precise machining in superfinish quality**.

The **MINIMAX** range offers three families of products :

A **micro drills** line :

- right- and left-hand cut in HSS 8% Co M42
- integral carbide 4 - 6 - 12 and 40 x Ø
- internal coolant from Ø0.50, unique in the World 15-20-30 x Ø
- 90° **POLY-MAX**
- gun-drills
- z3 reamer-drills for drilling and reaming at the same time

A high-performance **micro end mills** range :

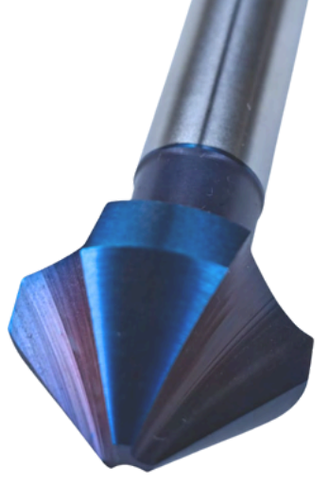
- short series with poly-mirror finish
- long-neck ranges for deep machining
- L and XL series for mould makers
- threading mills from M1.6

Deburring solutions :

- unequal flutes and standard HSS-E countersinks
- 4-flutes carbide countersink
- micro and universal rotary burrs

UNIQUE, our internal coolant drills start from Ø 0.50, even in 30 x Ø !

NOS REVÊTEMENTS
OUR COATINGS



Blue-Max

Dureté / Hardness : 3.200 HV - **Epaisseur** / Thickness : 1-3µ
T° d'utilisation / Machining T° : 1200°C

MM400 Blue-Max p. 35



Gold-Max

Dureté / Hardness : 1.950 HV - **Epaisseur** / Thickness : 2-3µ
T° d'utilisation / Machining T° : 700°C



Pink-Max & Grey-Max

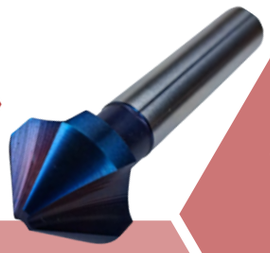
Dureté / Hardness : 3.750 HV - **Epaisseur** / Thickness : 2-3µ
T° d'utilisation / Machining T° : 1100°C

Guide des nuances des matériaux à usiner
Materials grades guide

Retrouvez les conditions de coupes spécifiques à chaque gamme de produit p. 6-24-32
Please find specific cutting conditions for each range of product pp. 6-24-32

P	Aciers de construction - Aciers de décolletage - Aciers d'amélioration Construction steel - Free machining steel - Tempering steel
H	Aciers trempés Hardened steel
K	Fonte et fontes alliées Cast iron and cast iron alloys
N	Métaux non ferreux - Plastiques - Graphite - Laiton - Aluminium Non-ferrous metal - Plastics - Graphite - Brass - Aluminium
M	Aciers inoxydables - Résistants aux acides Stainless steel - Acid-proof steel
S	Alliages spéciaux - Titane - Nickel Special alloys - Titanium - Nickel

NEW 2025



MM400
fraises à chanfreiner
HSS-E 3 dents revêtues
HSS-E 3 flutes coated
countersinks
page 34

MM405
fraises à chanfreiner
denture inégale
inequal flutes
countersinks
page 34



FLEX-MAX
micro foret flexible 40xØ
du Ø 0.30 au Ø 1.00



flexible 40xØ micro drill
from Ø 0.30 to Ø 1.00
page 15

MM420
fraises à fileter
3 filets



threadmills
3 pitches
page 31

MM449
fraises à chanfreiner
carbure Z4 Ø = d
carbide Z4 Ø = d
countersinks
page 35

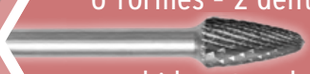


MM120NC
foret à pointer NC
90° HSS-E revêtus TiN



NC spotting drill
90° HSS-E TiN coated
page 10

MM490
fraises limes carbure
6 formes - 2 dentures



carbide rotary burrs
6 shapes - 2 cuts
page 36-37

MM320
Fraises droites
micro, dégagées et Ø=d



Square endmills
micro, long-neck or Ø=d
page 26

MM325
Fraises hémisphériques
micro, dégagées et Ø=d



Radius endmills
micro, long-neck or Ø=d
page 28

Plus de nouveautés
More new ranges

www.mini-max.fr

NOS GAMMES OUR RANGES

PERÇAGE DRILLING **07**
FRAISAGE MILLING **25**
ÉBAVURAGE COUNTERSINKING **33**

FORETS SPÉCIAUX
SPECIAL DRILLS

90% des outils spéciaux sont réalisés en 2 semaines (+1 revêtus)
90% of special tools are made within 2 weeks (+1 coated)



ECOLO-MAX

La plupart des outils spéciaux sont **réalisés en FRANCE** !
Most of special tools are **produced in FRANCE** !

	PERÇAGE DRILLING	Vitesse de coupe Cutting speed Non-revêtu / Uncoated	Vitesse de coupe Cutting speed Revêtu / Coated	Avance Feed mm/tour
P	< 650N N/mm² (< 200 HB)	50 - 60 m/min	70 - 80 m/min	0.010 x Ø
	650 - 950 N/mm² (< 30 HRC)	35 - 50 m/min	50 - 70 m/min	0.010 x Ø
	950 - 1400 N/mm² (< 45 HRC)		30 - 40 m/min	0.008 x Ø
M	Austénitique (< 250 N/mm²)	40 - 50 m/min	60 - 70 m/min	0.007 x Ø
	Ferritique - Martensitique (< 700 n/mm²)		50 - 60 m/min	0.005 x Ø
S	Titane - Titanium		30 - 40 m/min	0.005 x Ø
N	Laiton - Brass	80 - 100 m/min		0.015 x Ø
	Aluminium	80 - 100 m/min	120 m/min	0.015 x Ø

PERÇAGE DRILLING



POLY-MAX 90° 8



FORET NC À POINTER 90° - 130° 10
90° - 130° NC SPOTTING DRILL



PRÉCISION / HAUTE PERFORMANCE 12
PRECISION / HIGH PERFORMANCE
4 X Ø / 6 X Ø / 12 X Ø



FLEX-MAX 15
40 X Ø



FORET À TROUS D'HUILE 16
INTERNAL COOLANT DRILL
15 X Ø/ 20 X Ø / 30 X Ø



FORET ALÉSEUR 20
REAMER DRILL



FORET 1 DENT 21
GUN-DRILL



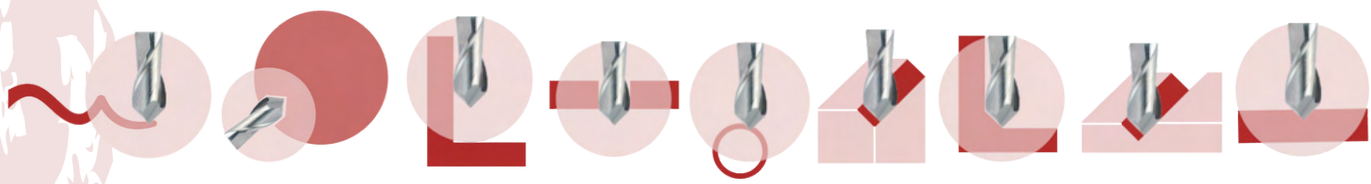
FORET HSS-E 8% 22
HSS-E 8% DRILL

POLY-MAX 90°



POLY-MAX 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 Ø : 0 / +10µ jusqu'au Ø3
- Qualité poly-glacée facilitant l'évacuation des copeaux
- Âme renforcée assurant la rigidité en usinages 2D et 3D
- Unique : dès le Ø 0.10 !

POLY-MAX 90° peut pointer, chanfreiner, graver, fraiser, ébavurer ou simplement percer tous les matériaux !



POLY-MAX 90° has been developed by **MINIMAX** to meet expectations of super-finishing when machining by interpolation with high quality arguments :
- Ultra-precise tolerance of Ø : 0 / +10µ up to Ø3
- Poly-mirror quality facilitating chip removal
- Reinforced core-web ensuring rigidity in 2D and 3D machining process
- Unique : from Ø 0.10 !

POLY-MAX 90° can point, chamfer, engrave, mill, deburr or just drill any material !

POLY-MAX 90°



Precision 10µ*

α 90° | z2 30° | Tol Ø 0/+10µ | Tol d h6

Ref MM22090C

P N M S

	Ø	l	d	L	€	€ Grey-Max
NEW	0.10	0.2	3	38	52.00	56.50
NEW	0.20	0.4	3	38	48.00	52.50
	0.30	0.6	3	38	42.00	46.50
	0.40	0.8	3	38	39.50	44.00
	0.50	1.0	3	38	28.50	33.00
	0.60	1.2	3	38	28.50	33.00
	0.70	1.4	3	38	28.50	33.00
	0.80	1.6	3	38	28.50	33.00
	0.90	1.8	3	38	28.50	33.00
	1.00	2.0	3	38	24.00	28.50
	1.10	2.2	3	38	24.00	28.50
	1.20	2.4	3	38	24.00	28.50
	1.30	2.6	3	38	24.00	28.50
	1.40	2.8	3	38	24.00	28.50
	1.50	3.0	3	38	24.00	28.50
	1.60	3.2	3	38	24.00	28.50
	1.70	3.4	3	38	24.00	28.50
	1.80	3.6	3	38	24.00	28.50
	1.90	3.8	3	38	24.00	28.50
	2.00	4.0	3	38	24.00	28.50
	2.10	4.4	3	38	25.00	29.50
	2.20	4.4	3	38	25.00	29.50
	2.30	4.8	3	38	25.00	29.50
	2.40	4.8	3	38	25.00	29.50
	2.50	5.2	3	38	25.00	29.50
	2.60	5.2	3	38	25.00	29.50
	2.70	5.6	3	38	25.00	29.50
	2.80	5.6	3	38	25.00	29.50
	2.90	6.0	3	38	25.00	29.50
	3.00	6.0	4	50	27.75	32.25
NEW	4.00*	11	6	57	32.50	37.00
NEW	5.00*	12	6	57	37.50	43.50
NEW	6.00*	13	6	57	40.00	46.50
NEW	8.00*	19	8	63	75.00	82.50
NEW	10.00*	22	10	72	90.00	99.00
NEW	12.00*	26	12	83	100.00	111.00

** Ø4~12 : tol e8*

NEW 2025



Grey-Max

900° - 2-3µ - 3750 HV

Reference MM22090CR

HSS-E 5% Co M35

NEW 2025

FORET NC À POINTER 90°

90° NC SPOTTING DRILL



Ref MM120NC90GM

Gold-Max

α 90° | z2 30° | Tol Ø h7 | Tol d h7 | Tol α +/-1°

P M K S

Ø	l mini	d	L	€ Gold-Max
3	10	3	50	**9.00**
4	12	4	52	**10.00**
5	15	5	60	**11.30**
6	20	6	66	**12.10**
8	25	8	79	**15.00**
10	30	10	89	**19.50**
12	35	12	102	**27.50**



Visuel non contractuel

PROMO KIT

Kit A : Ø4-8-12

MM120NC90GMKITA

49.- €

Kit B : Ø4-6-8-10-12

MM120NC90GMKITB

79.- €

NEW 2025

Gold-Max

700° - 2-3µ - 1950 HV

Carbure-Carbide MG 10% Co

MICRO FORET NC À POINTER

MICRO NC SPOTTING DRILL



Precision 6µ

α 90°-130° | z2 30° | Tol Ø 0/-6µ | Tol d h5 | Tol α +/-1°

Ref MM220NC

P N M S

Ø	l	d	L	€	€
α = 90°					Grey-Max
0.10	0.2	3	38	**23.90**	**28.40**
0.15	0.3	3	38	**22.05**	**26.55**
0.20	0.4	3	38	**18.90**	**23.40**
0.25	0.5	3	38	**18.90**	**23.40**
0.30	0.6	3	38	**16.80**	**21.30**
0.40	0.8	3	38	**16.80**	**21.30**
0.50	1.0	3	38	**16.80**	**21.30**
0.80	1.6	3	38	**16.80**	**21.30**
1.00	2.0	3	38	**16.80**	**21.30**
1.50	3.0	3	38	**16.80**	**21.30**
2.00	4.0	3	38	**16.80**	**21.30**
2.50	5.0	3	38	**16.80**	**21.30**
3.00	6.0	3	38	**17.85**	**22.35**

Ø	l	d	L	€	€
α = 130°					Grey-Max
0.10	0.2	3	38	**23.90**	**28.40**
0.15	0.3	3	38	**22.05**	**26.55**
0.20	0.4	3	38	**18.90**	**23.40**
0.25	0.5	3	38	**18.90**	**23.40**
0.30	0.6	3	38	**16.80**	**21.30**
0.40	0.8	3	38	**16.80**	**21.30**
0.50	1.0	3	38	**16.80**	**21.30**
0.80	1.6	3	38	**16.80**	**21.30**
1.00	2.0	3	38	**16.80**	**21.30**
1.50	3.0	3	38	**16.80**	**21.30**
2.00	4.0	3	38	**16.80**	**21.30**
2.50	5.0	3	38	**16.80**	**21.30**
3.00	6.0	3	38	**17.85**	**22.35**

Grey-Max

900° - 2-3µ - 3750 HV

Reference MM220NC90R

α = 90°



Reference MM220NC130R

α = 130°

Carbure-Carbide MG 10% Co

PRÉCISION PAR 0.01 MM

PRECISION BY 0.01 MM



Ref MM220C

4 - 5 x Ø

α 120° | z2 24° | Tol Ø h6 | Tol d h5

P N M S

Ø	l	d	L	€
0.10~0.11	0.6	3	38	**19.00**
0.12~0.13	0.7	3	38	**19.00**
0.14~0.15	0.8	3	38	**19.00**
0.16~0.17	0.9	3	38	**18.50**
0.18~0.19	1.0	3	38	**18.50**
0.20~0.24	1.1	3	38	**15.50**
0.25~0.29	1.3	3	38	**15.50**
0.30~0.38	1.6	3	38	**15.00**
0.39~0.40	2.0	3	38	**15.00**
0.41~0.49	2.0	3	38	**14.75**
0.50~0.53	2.4	3	38	**14.50**
0.54~0.60	2.8	3	38	**14.50**
0.61~0.67	3.3	3	38	**14.50**
0.68~0.75	3.8	3	38	**14.50**
0.76~0.79	4.2	3	38	**14.50**
0.80~0.85	4.4	3	38	**14.50**
0.86~0.99	4.8	3	38	**14.50**
1.00~1.09	4.8	3	38	**14.25**
1.10~1.19	5.4	3	38	**14.25**
1.20~1.29	6.0	3	38	**14.25**
1.30~1.49	6.7	3	38	**14.25**
1.50~1.79	7.2	3	38	**14.25**
1.80~1.99	8.4	3	38	**14.25**
2.00	12.0	3	38	**14.25**

Ø par 0.05 livrables sur stock :
Ø0.10 - 0.15 - 0.20 - 0.25 - ...
Autres Ø : 2 semaines

Ø by 0.05 from stock :
Ø0.10 - 0.15 - 0.20 - 0.25 - ...
Other Ø : 2 weeks



NEW 2025

Grey-Max

900° - 2-3µ - 3750 HV

Reference MM220LR

Carbure-Carbide MG 10% Co

HAUTE PERFORMANCE

HIGH PERFORMANCE



6 - 7 x Ø

Ref MM220L

α 140° | z2 30° | Tol Ø h5 | Tol d h5

P N M S

Ø	l	l2	d	L	€	€ Grey-Max
0.30	2.0	-	3	50	**22.00**	**26.50**
0.35	2.25	-	3	50	**22.00**	
0.40	2.5	-	3	50	**21.50**	**26.00**
0.45	3.0	-	3	50	**21.50**	
0.50	3.5	4.4	3	50	**19.00**	**23.50**
0.55	4.0	5.0	3	50	**19.00**	
0.60	4.5	5.6	3	50	**18.00**	**22.50**
0.65	5.0	6.2	3	50	**18.00**	
0.70	5.0	6.2	3	50	**17.00**	**21.50**
0.75	5.5	6.9	3	50	**17.00**	
0.80	5.6	7.2	3	50	**17.00**	**21.50**
0.85	6.0	7.6	3	50	**17.00**	
0.90	6.5	8.1	3	50	**17.00**	**21.50**
0.95	6.7	8.5	3	50	**17.00**	
1.00	7.0	8.8	3	50	**17.00**	**21.50**
1.05	7.5	9.4	3	50	**16.25**	
1.10	8.0	10.1	3	50	**16.25**	**20.75**
1.15	8.1	10.4	3	50	**16.25**	
1.20	8.5	11.0	3	50	**16.25**	**20.75**
1.25	8.9	11.3	3	50	**16.25**	
1.30	9.2	11.7	3	50	**16.25**	**20.75**
1.35	9.6	12.2	3	50	**16.25**	
1.40	10.0	12.5	3	50	**16.25**	**20.75**
1.45	10.5	13.0	3	50	**16.25**	
1.50	10.5	13.0	3	50	**16.25**	**20.75**
1.55	11.0	13.5	3	50	**16.75**	
1.60	11.5	14.0	3	50	**16.75**	**21.25**
1.65	12.0	15.0	3	50	**16.75**	
1.70	12.0	15.0	3	50	**16.75**	**21.25**
1.75	12.5	15.5	3	50	**16.75**	
1.80	13.0	16.0	3	50	**16.75**	**21.25**
1.85	13.0	16.0	3	50	**16.75**	
1.90	13.5	17.5	3	50	**16.75**	**21.25**
1.95	14.0	18.0	3	50	**16.75**	
2.00	14.0	18.0	3	50	**16.75**	**21.25**
2.05	14.5	18.5	3	50	**17.50**	
2.10	15.0	19.0	3	50	**17.50**	**22.00**
2.15	15.0	19.0	3	50	**17.50**	
2.20	16.0	20.0	3	50	**17.50**	**22.00**
2.25	16.0	20.0	3	50	**17.50**	
2.30	16.5	21.0	3	50	**17.50**	**22.00**
2.35	16.5	21.0	3	50	**17.50**	
2.40	17.0	22.0	3	50	**17.50**	**22.00**
2.45	17.5	22.5	3	50	**17.50**	
2.50	18.0	23.0	3	50	**17.50**	**22.00**
2.55	18.0	23.0	3	50	**18.00**	
2.60	18.5	23.5	3	50	**18.00**	**22.50**
2.65	18.5	23.5	3	50	**18.00**	
2.70	19.0	24.0	3	50	**18.00**	**22.50**
2.75	19.0	24.0	3	50	**18.00**	
2.80	20.0	25.0	3	50	**18.00**	**22.50**
2.85	20.0	25.0	3	50	**18.00**	
2.90	21.0	26.0	3	50	**18.00**	**22.50**
2.95	21.0	26.0	3	50	**18.00**	
3.00	21.0	26.0	3	50	**18.00**	**22.50**

Carbure-Carbide MG 10% Co

HAUTE PERFORMANCE

HIGH PERFORMANCE



Ref MM220XL

12 X Ø

α 140° | z2 30° | Tol Ø h5 | Tol d h5

P N M S

Ø	l	l2	d	L	€	€ Grey-Max
0.30	3.6	-	3	50	**25.25**	**29.75**
0.35	4.2	-	3	50	**25.25**	
0.40	4.8	-	3	50	**24.50**	**29.00**
0.45	5.4	-	3	50	**24.50**	
0.50	6.0	7.2	3	50	**20.50**	**25.00**
0.55	6.6	7.9	3	50	**20.50**	
0.60	7.2	8.6	3	50	**20.25**	**24.75**
0.65	7.8	9.3	3	50	**20.25**	
0.70	8.4	10.1	3	50	**20.00**	**24.50**
0.75	9.0	10.8	3	50	**20.00**	
0.80	9.6	11.5	3	50	**19.75**	**24.25**
0.85	10.2	12.2	3	50	**19.75**	
0.90	10.8	13.0	3	50	**19.75**	**24.25**
0.95	11.4	13.7	3	50	**19.75**	
1.00	12.0	14.4	3	50	**19.75**	**24.25**
1.05	12.6	15.1	3	50	**19.75**	
1.10	13.2	15.8	3	50	**19.75**	**24.25**
1.15	13.8	16.5	3	50	**19.75**	
1.20	14.4	17.3	3	50	**19.75**	**24.25**
1.25	15.0	18.0	3	50	**19.75**	
1.30	15.6	18.7	3	50	**19.75**	**24.25**
1.35	16.2	19.4	3	50	**19.75**	
1.40	16.8	20.1	3	50	**19.75**	**24.25**
1.45	17.4	20.9	3	50	**19.75**	
1.50	18.0	21.6	3	50	**21.00**	**26.50**

Ø	l	l2	d	L	€	€ Grey-Max
1.55	18.6	22.3	3	60	**21.00**	
1.60	19.2	23.0	3	60	**21.00**	**26.50**
1.65	19.8	23.7	3	60	**21.00**	
1.70	20.4	24.5	3	60	**21.00**	**26.50**
1.75	21.0	25.2	3	60	**21.00**	
1.80	21.6	25.9	3	60	**21.00**	**26.50**
1.85	22.2	26.6	3	60	**21.00**	
1.90	22.8	27.3	3	60	**21.00**	**26.50**
1.95	23.4	28.1	3	60	**21.00**	
2.00	24.0	28.8	3	60	**21.00**	**26.50**
NEW **2.50**	30.0	36.0	3	90	**35.00**	**42.00**
NEW **3.00**	36.0	43.2	3	90	**40.00**	**47.00**



NEW 2025

Grey-Max

900° - 2-3µ - 3750 HV

Reference MM220XLR

NEW 2025

Carbure-Carbide MG 10% Co

FLEX-MAX



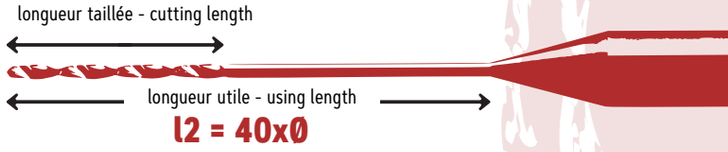
40 x Ø

α 135° | z2 24° | Tol Ø h5 | Tol d h5

Ref MM220FM

P N M S

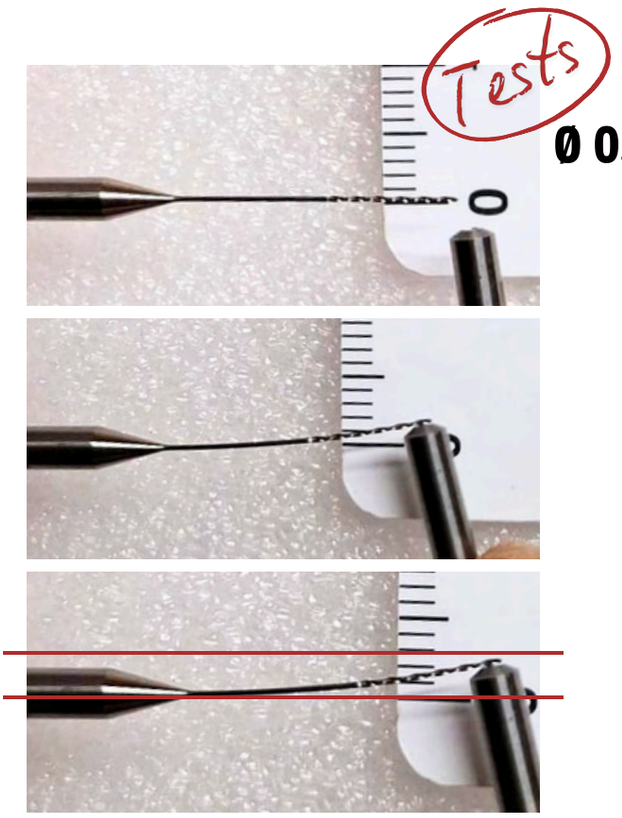
Ø	l	l2	d	L	€ Grey-Max
0.30	3.0	12	3	50	**70.00**
0.40	4.0	16	3	50	**67.50**
0.50	5.0	20	3	50	**65.00**
0.60	6.0	24	3	50	**67.50**
0.70	7.0	28	3	77	**67.50**
0.80	8.0	32	3	77	**67.50**
0.90	9.0	36	3	77	**67.50**
1.00	10.0	40	3	77	**65.00**



SPECIAL

Ø par 0.05 du Ø0.35 au Ø0.95 : disponible sous 3 semaines
Ø by 0.05 from Ø0.35 to Ø0.95 : available within 3 weeks

Ø 1.05~2.05 sur demande / on request



Ø 0.40

Grey-Max
900° - 2-3µ - 3750 HV

Photographies Minimax - MCG - Propriété privée
Toute reproduction même partielle est interdite

TROUS D'HUILE
INTERNAL COOLANT

MM221XL30 Grey-Max
Inox 1.4305 Stainless steel

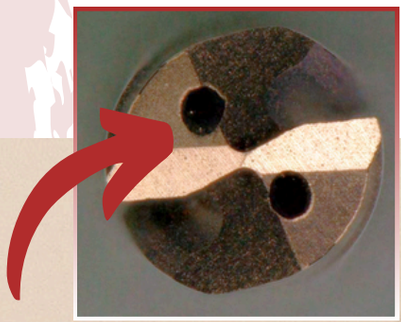
Tests

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

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

MINIMAX propose une gamme de micro-forets à trous d'huile unique au Monde, les seuls disponibles dès Ø0.50 avec lubrification interne à 2 trous.

Face à une technologie telle, nous ne pouvons être garants des résultats qui sont sujets à la qualité des huiles, la microfiltration adaptée, la pression, ou bien d'autres paramètres comme les vibrations ou le process d'usinage.





Ø des trous
Holes Ø

Ø 0.5~0.6 = 0.08
Ø 0.7~0.8 = 0.12
Ø 0.9~1.5 = 0.13
Ø 1.6~2.0 = 0.20
Ø 2.1~2.5 = 0.30
Ø 2.6~3.0 = 0.35

Données indicatives non contractuelles
Non contractual data

MINIMAX offers a range of internal coolant micro-drills unique in the World, the only ones available from Ø0.50, internal coolant with 2 holes.

Due to this advanced technology, we cannot garantee results depending on oils quality, adapted microfiltration, oil's pression, and some other parameters such as vibrations or machining process.

Carbure-Carbide MG 10% Co

TROUS D'HUILE 15xØ

INTERNAL COOLANT 15xØ



α = 140°

Ref MM221XL15

α 140° | z2 30° | Tol Ø h5 | Tol d h5

P N M S

Ø	l	d	L	Trou Hole	€ Grey-Max
0.50	8	3	60	0.08	**275.00**
0.60	10	3	60	0.08	**265.00**
0.70	11.5	3	60	0.12	**255.00**
0.80	13	3	60	0.12	**245.00**
0.90	14.5	3	60	0.13	**240.00**
1.00	17	3	70	0.13	**135.00**
1.10	18	3	70	0.13	**135.00**
1.20	20	3	70	0.13	**135.00**
1.30	21	3	70	0.13	**135.00**
1.40	23	3	70	0.13	**135.00**
1.50	25	3	70	0.13	**135.00**
1.60	26	3	70	0.20	**137.50**
1.70	28	3	70	0.20	**137.50**
1.80	30	3	70	0.20	**137.50**
1.90	31	3	70	0.20	**137.50**
2.00	32	3	70	0.20	**137.50**
2.10	34	3	70	0.30	**140.00**
2.20	36	3	70	0.30	**140.00**
2.30	38	3	70	0.30	**140.00**
2.40	40	3	70	0.30	**140.00**
2.50	42	3	70	0.30	**160.00**
2.60	44	3	90	0.35	**160.00**
2.70	46	3	90	0.35	**160.00**
2.80	48	3	90	0.35	**160.00**
2.90	50	3	90	0.35	**160.00**
3.00	50	3	90	0.35	**160.00**

Grey-Max

900° - 2-3µ - 3750 HV

Carbure-Carbide MG 10% Co

TROUS D'HUILE 20xØ

INTERNAL COOLANT 20xØ



Ref MM221XL20

α = 140°

α 140° | z2 30° | Tol Ø h5 | Tol d h5

P N M S

Ø	l	d	L	Trou Hole	€ Grey-Max
0.50	10	3	60	0.08	**295.00**
0.60	12	3	60	0.08	**285.00**
0.70	14	3	60	0.12	**275.00**
0.80	16	3	60	0.12	**265.00**
0.90	18	3	60	0.13	**260.00**
1.00	20	3	75	0.13	**162.50**
1.10	22	3	75	0.13	**162.50**
1.20	24	3	75	0.13	**162.50**
1.30	26	3	75	0.13	**162.50**
1.40	28	3	75	0.13	**162.50**
1.50	30	3	75	0.13	**162.50**
1.60	32	3	95	0.20	**165.00**
1.70	34	3	95	0.20	**165.00**
1.80	36	3	95	0.20	**165.00**
1.90	38	3	95	0.20	**165.00**
2.00	40	3	95	0.20	**165.00**
2.10	42	3	120	0.30	**167.50**
2.20	44	3	120	0.30	**167.50**
2.30	46	3	120	0.30	**167.50**
2.40	48	3	120	0.30	**167.50**
2.50	50	3	120	0.30	**192.50**
2.60	52	3	140	0.35	**192.50**
2.70	54	3	140	0.35	**192.50**
2.80	56	3	140	0.35	**192.50**
2.90	58	3	140	0.35	**192.50**
3.00	60	3	140	0.35	**192.50**

Grey-Max

900° - 2-3µ - 3750 HV

Carbure-Carbide MG 10% Co

TROUS D'HUILE 30xØ

INTERNAL COOLANT 30xØ



α = 140°

Ref MM221XL30

α 140° | z2 30° | Tol Ø h5 | Tol d h5

P N M S

Ø	l	d	L	Trou Hole	€ Grey-Max
0.50	15	3	70	0.08	**315.00**
0.60	18	3	70	0.08	**305.00**
0.70	21	3	70	0.12	**295.00**
0.80	24	3	70	0.12	**287.50**
0.90	27	3	70	0.13	**282.50**
1.00	30	3	75	0.13	**190.00**
1.10	33	3	75	0.13	**190.00**
1.20	36	3	75	0.13	**190.00**
1.30	39	3	75	0.13	**190.00**
1.40	42	3	75	0.13	**190.00**
1.50	45	3	75	0.13	**190.00**
1.60	48	3	95	0.20	**192.50**
1.70	51	3	95	0.20	**192.50**
1.80	54	3	95	0.20	**192.50**
1.90	57	3	95	0.20	**192.50**
2.00	60	3	95	0.20	**192.50**
2.10	63	3	120	0.30	**195.00**
2.20	66	3	120	0.30	**195.00**
2.30	69	3	120	0.30	**195.00**
2.40	72	3	120	0.30	**195.00**
2.50	75	3	120	0.30	**225.00**
2.60	78	3	140	0.35	**225.00**
2.70	81	3	140	0.35	**225.00**
2.80	84	3	140	0.35	**225.00**
2.90	87	3	140	0.35	**225.00**
3.00	90	3	140	0.35	**225.00**

Grey-Max

900° - 2-3µ - 3750 HV

Carbure-Carbide MG 10% Co

FORET ALÉSEUR

REAMER DRILL



Ref MM230L

α 140° | z3 30° | Tol Ø 0/-4µ | Tol d h5

Precision 4µ

P N M S

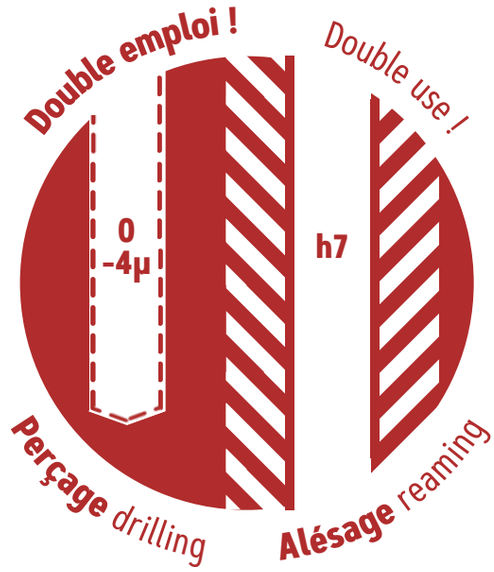
Ø	l	d	L	€
0.50	6.0	3	38	**21.30**
0.60	7.0	3	38	**21.30**
0.70	9.5	3	38	**21.30**
0.80	9.5	3	38	**20.70**
0.90	9.5	3	38	**20.70**
1.00	9.5	3	38	**20.70**
1.10	10.5	3	38	**20.55**
1.20	10.5	3	38	**20.55**
1.30	10.5	3	38	**20.55**
1.40	10.5	3	38	**20.55**
1.50	10.5	3	38	**20.55**
1.60	12.0	3	38	**21.30**
1.70	12.0	3	38	**21.30**
1.80	12.0	3	38	**21.30**
1.90	14.0	3	38	**21.30**
2.00	14.0	3	38	**21.30**

Perçage et alésage simultanés !

Drilling and reaming at the same time !

Les 3 dents et le noyau confèrent une rigidité qui permet de réaliser des trous nets et précis.

The 3 flutes and the core give a rigidity that allow to drill precise holes.



Carbure-Carbide MG 10% Co

FORET 1 DENT
GUN DRILL



Laiton-Alu Alu-Brass

Ref MM210L

α 120° | z1 0° | Tol Ø h5 | Tol d h6

P K N

Ø	l	d	L	€
0.20	2.0	1.5	30	**25.00**
0.30	3.0	1.5	30	**24.50**
0.40	4.0	1.5	30	**24.00**
0.50	5.0	1.5	30	**23.00**
0.60	6.0	1.5	30	**22.00**
0.70	7.0	1.5	30	**21.00**
0.80	8.0	1.5	30	**20.00**
0.90	9.0	1.5	30	**20.00**
1.00	10.0	1.5	30	**19.50**

Ø	l	d	L	€
1.10	11.0	1.5	30	**19.50**
1.20	12.0	1.5	30	**19.50**
1.30	13.0	1.5	30	**19.50**
1.40	14.0	1.5	30	**19.50**
1.50	15.0	1.5	30	**20.00**
1.60	16.0	1.5	30	**20.00**
1.70	17.0	1.5	30	**20.00**
1.80	18.0	1.5	30	**20.00**
1.90	19.0	1.5	30	**20.00**
2.00	20.0	1.5	30	**22.50**



Plus gros Ø : consultez-nous
Bigger Ø : send us an inquiry

HSS-E 8% Co M42

MICRO FORET À DROITE HSS-E 8%

M42 RIGHT HAND CUT MICRO DRILL



Ref MM120L

α 120° | z2 24° | Tol Ø h6 | Tol d h6

Queue renforcée

P K N

Ø	l	d	L	€
0.10	0.7	1	25	**7.40**
0.20	1.8	1	25	**5.25**
0.30	2.2	1	25	**5.05**
0.40	3.2	1	25	**4.70**
0.50	3.6	1	25	**4.50**
0.60	4.5	1.5	25	**4.50**
0.70	5.2	1.5	25	**4.50**
0.80	5.5	1.5	25	**4.50**
0.90	6.0	1.5	25	**4.50**
1.00	6.5	1.5	25	**4.50**
1.10	7.0	1.5	25	**4.50**
1.20	7.5	1.5	25	**4.50**
1.30	7.5	1.5	25	**4.50**
1.40	8.5	1.5	25	**4.50**
1.50	10.0	2	35	**4.65**

Ø	l	d	L	€
1.60	10.0	2	35	**4.65**
1.70	10.0	2	35	**4.65**
1.80	11.0	2	35	**4.65**
1.90	11.0	2	35	**4.65**
2.00	11.0	2	35	**4.65**
2.10	12.0	2.5*	35	**5.10**
2.20	12.0	2.5*	35	**5.10**
2.30	14.0	2.5*	35	**5.10**
2.40	14.0	2.5*	35	**5.10**
2.50	14.0	2.5*	35	**5.10**
2.60	16.0	3	40	**5.85**
2.70	16.0	3	40	**5.85**
2.80	18.0	3	40	**5.85**
2.90	18.0	3	40	**5.85**
3.00	18.0	3	40	**5.85**

Vendu par boite de 10 pièces
Sold in boxes of 10 pieces

* d mini

LE +

HSS-E - M42 8% Co
Haute résilience
Dûreté 66-67HRC

MICRO FORET À GAUCHE HSS-E 8%

M42 LEFT HAND CUT MICRO DRILL



Reinforced shank

Ref MM120GL

α 120° | z2 24° | Tol Ø h6 | Tol d h6

P K N

Ø	l	d	L	€
0.50	3.6	1	25	**4.95**
0.60	4.5	1.5	25	**4.95**
0.70	5.2	1.5	25	**4.95**
0.80	5.5	1.5	25	**4.95**
0.90	6.0	1.5	25	**4.95**
1.00	6.5	1.5	25	**4.95**
1.10	7.0	1.0	25	**4.95**
1.20	7.5	1.5	25	**4.95**
1.30	7.5	1.5	25	**4.95**
1.40	8.5	1.5	25	**4.95**
1.50	10.0	2	35	**5.10**
1.60	10.0	2	35	**5.10**
1.70	10.0	2	35	**5.10**
1.80	11.0	2	35	**5.10**
1.90	11.0	2	35	**5.10**
2.00	11.0	2	35	**5.10**

Ø	l	d	L	€
2.10	12.0	2.5*	35	**5.60**
2.20	12.0	2.5*	35	**5.60**
2.30	14.0	2.5*	35	**5.60**
2.40	14.0	2.5*	35	**5.60**
2.50	14.0	2.5*	35	**5.60**
2.60	16.0	3	40	**6.40**
2.70	16.0	3	40	**6.40**
2.80	18.0	3	40	**6.40**
2.90	18.0	3	40	**6.40**
3.00	18.0	3	40	**6.40**

Vendu par boite de 10 pièces
Sold in boxes of 10 pieces

* d mini

THE +

HSS-E - M42 8% Co
Excellent toughness
Hardness 66-67HRC

FRAISES SPÉCIALES
SPECIAL END MILLS

90% des outils spéciaux sont réalisés en 1 semaine, même revêtus !
90% of special tools are made within 1 week, even coated !

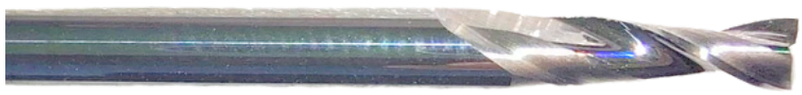


ECOLO-MAX

La plupart des outils spéciaux sont **réalisés en FRANCE** !
Most of special tools are **produced in FRANCE** !

	FRAISAGE MILLING	Vitesse de coupe Cutting speed Revêtu / Coated	Avance / Feed mm/tour Ø1	Ø2	Ø4
P	800 - 1000 N/mm²	50 m/min	0.01 x Ø	0.02 x Ø	0.04 x Ø
	1000 - 1400 N/mm²	40 m/min	0.008 x Ø	0.015 x Ø	0.03 x Ø
M	Inox / Stainless steel	40 m/min	0.01 x Ø	0.02 x Ø	0.04 x Ø
H	Acier traité - Treated steel 45 - 55 HRC	30 m/min	0.005 x Ø	0.01 x Ø	0.02 x Ø
	Acier traité - Treated steel > 55 HRC	15 m/min	0.003 x Ø	0.006 x Ø	0.012 x Ø
S	Super alliages - Super alloys	20 m/min	0.002 x Ø	0.004 x Ø	0.008 x Ø
	Alliages Titane - Titanium alloys	25 m/min	0.004 x Ø	0.008 x Ø	0.016 x Ø
N	Laiton - Brass / Cuivre - Copper / Bronze	120 m/min	0.015 x Ø	0.03 x Ø	0.06 x Ø
	Aluminium	70 m/min	0.015 x Ø	0.03 x Ø	0.06 x Ø

FRAISAGE MILLING



MICRO FRAISE DROITE Z2 26

SQUARE Z2 MICRO END MILL

COURTE ET DÉGAGÉE - SHORT AND LONG-NECK



FRAISE DROITE Z3

SQUARE Z3 END MILL 27

LONGUE ET EXTRA-LONGUE - LONG AND EXTRA-LONG



MICRO FRAISE HÉMISPHÉRIQUE Z2

BALL-NOSE Z2 MICRO END MILL 28

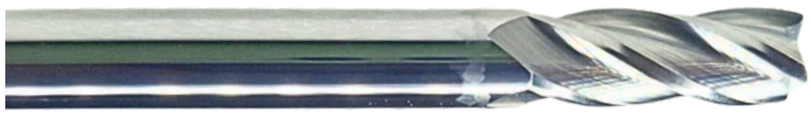
COURTE ET DÉGAGÉE - SHORT AND LONG-NECK



FRAISE HÉMISPHÉRIQUE Z2

BALL-NOSE Z2 END MILL 29

LONGUE - LONG



FRAISE ANGLE VIF Z4 30

Z4 SHARP CORNER END MILL



MINI FRAISE D'ÉBAUCHE 30

MINI ROUGHING END MILL



FRAISE À FILETER 60° 31

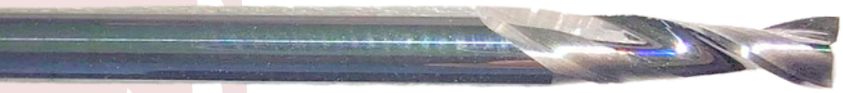
60° THREAD MILL

Carbure-Carbide MG 10% Co

NEW 2025

MICRO FRAISE DROITE Z2

SQUARE Z2 MICRO END MILL



Ref MM320

z2 | Tol Ø 0/-10µ | Tol d h5

Courte - Short

P N M S



Ø	l	d	L	€	€ Grey-Max
0.3	0.6	3	38	**45.00**	**50.00**
0.4	0.8	3	38	**42.25**	**47.25**
0.5	1.0	3	38	**36.75**	**41.75**
0.8	1.6	3	38	**36.75**	**41.75**
1.0	2.0	3	38	**30.00**	**35.00**
1.5	3.0	3	38	**30.00**	**35.00**
2.0	6.0	3	38	**31.00**	**36.00**
2.5*	7.0	3	38	**32.00**	**37.00**

** tolerance Ø = 0/-20µ*



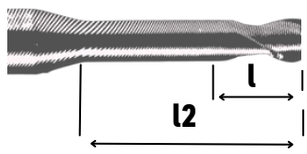
Grey-Max

900° - 2-3µ - 3750 HV

Reference MM320R

Ref MM320

z2 | Tol Ø * | Tol d h5



Dégagée - Long-neck

P N M S

Ø	l	l2	d	L	€	€ Grey-Max
0.4	0.8	1	3	50	**52.50**	**60.00**
0.4	0.8	5	3	50	**57.50**	**65.00**
0.4	0.8	10	3	50	**60.00**	**67.50**
0.5	1.0	1.2	3	50	**52.50**	**60.00**
0.5	1.0	5	3	50	**57.50**	**65.00**
0.5	1.0	10	3	50	**60.00**	**67.50**
0.8	1.6	1.8	3	50	**52.50**	**60.00**
0.8	1.6	5	3	50	**57.50**	**65.00**
0.8	1.6	10	3	50	**60.00**	**67.50**
1.0	2.0	2.2	3	50	**52.50**	**60.00**
1.0	2.0	10	3	50	**57.50**	**65.00**
1.0	2.0	20	3	50	**60.00**	**67.50**

** tolerance Ø = -14µ / -19µ*

Ø	l	l2	d	L	€	€ Grey-Max
1.5	3.0	3.5	3	50	**55.00**	**62.50**
1.5	3.0	10	3	50	**60.00**	**67.50**
1.5	3.0	20	3	50	**62.50**	**70.00**
2.0	4.0	4.5	3	50	**55.00**	**62.50**
2.0	4.0	10	3	50	**60.00**	**67.50**
2.0	4.0	20	3	50	**62.50**	**70.00**
2.5	5.0	5.5	3	50	**55.00**	**62.50**
2.5	5.0	10	3	50	**60.00**	**67.50**
2.5	5.0	20	3	50	**62.50**	**70.00**
3.0	6.0	6.5	3	50	**55.00**	**62.50**
3.0	6.0	10	3	50	**60.00**	**67.50**
3.0	6.0	20	3	50	**62.50**	**70.00**

NEW 2025

Carbure-Carbide MG 10% Co

FRAISE DROITE Z3

SQUARE Z3 END MILL



Longue - Long

z2 | Tol Ø * | Tol d h5

Ref MM330

P N M S

Ø	l	l2	d	L	€	€ Grey-Max
4	10	12	4	40	**57.50**	**65.00**
5	15	20	6	58	**64.25**	**72.25**
6	16	21	6	58	**68.00**	**76.50**
8	21	27	8	63	**78.00**	**87.00**
10	25	32	10	72	**117.50**	**127.50**
12	28	38	12	80	**148.50**	**161.00**

** tolerance Ø = -14µ / -19µ*

Grey-Max

900° - 2-3µ - 3750 HV

Reference MM330R



Extra-longue - Extra-long **~ 5 x Ø**

z2 | Tol Ø * | Tol d h5

Ref MM330L

P N M S

Ø	l	d	L	€	€ Grey-Max
3	16	4	40	**63.50**	**71.00**
4	20	4	50	**68.25**	**75.75**
5	25	6	60	**84.00**	**91.50**
6	30	6	70	**101.50**	**109.00**
8	40	8	80	**120.00**	**127.50**
10	50	10	100	**147.50**	**155.00**
12	55	12	106	**190.00**	**197.50**

** tolerance Ø = -14µ / -19µ*

Grey-Max

900° - 2-3µ - 3750 HV

Reference MM330LR



Carbure-Carbide MG 10% Co

NEW 2025

MICRO FRAISE HÉMISPHÉRIQUE Z2

BALL-NOSE Z2 MICRO END MILL



Ref MM325

z2 | Tol Ø 0/-20µ | Tol d h5

Finition poly-glacée
Poly-mirror finish

Courte - Short

P N M S

Ø	l	R	d	L	€	€
		tol 6µ				Grey-Max
0.3	0.5	0.15	3	38	**72.50**	**77.50**
0.4	0.6	0.20	3	38	**65.00**	**70.00**
0.5	0.8	0.25	3	38	**62.25**	**67.25**
0.8	1.2	0.40	3	38	**56.50**	**65.00**
1.0	1.5	0.50	3	38	**52.50**	**57.50**
1.5	2.3	0.75	3	38	**55.00**	**60.00**
2.0	3.0	1.00	3	38	**55.00**	**60.00**
2.5	4.0	1.25	3	38	**57.50**	**62.50**
3.0	5.0	1.50	3	38	**57.50**	**62.50**

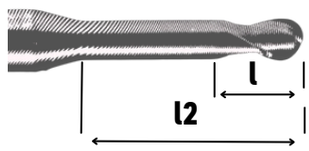
Grey-Max

900° - 2-3µ - 3750 HV

Reference MM325R

Dégagée - Long-neck

Ref MM325



z2 | Tol Ø * | Tol d h5

P N M S

Ø	l	l2	R	d	L	€	€	Ø	l	l2	R	d	L	€	€
							Grey-Max								Grey-Max
0.4	0.8	1	0.20	3	50	**65.00**	**72.50**	**1.5**	3.0	3.5	0.75	3	50	**67.50**	**75.00**
0.4	0.8	5	0.20	3	50	**70.00**	**77.50**	**1.5**	3.0	10	0.75	3	50	**72.50**	**80.00**
0.4	0.8	10	0.20	3	50	**72.50**	**80.00**	**1.5**	3.0	20	0.75	3	50	**75.00**	**82.50**
0.5	1.0	1.2	0.25	3	50	**65.00**	**72.50**	**2.0**	4.0	4.5	1.00	3	50	**67.50**	**75.00**
0.5	1.0	5	0.25	3	50	**70.00**	**77.50**	**2.0**	4.0	10	1.00	3	50	**72.50**	**80.00**
0.5	1.0	10	0.25	3	50	**72.50**	**80.00**	**2.0**	4.0	20	1.00	3	50	**75.00**	**82.50**
0.8	1.6	1.8	0.40	3	50	**65.00**	**72.50**	**2.5**	5.0	5.5	1.25	3	50	**67.50**	**75.00**
0.8	1.6	5	0.40	3	50	**70.00**	**77.50**	**2.5**	5.0	10	1.25	3	50	**72.50**	**80.00**
0.8	1.6	10	0.40	3	50	**72.50**	**80.00**	**2.5**	5.0	20	1.25	3	50	**75.00**	**82.50**
1.0	2.0	2.2	0.50	3	50	**65.00**	**72.50**	**3.0**	6.0	6.5	1.50	3	50	**67.50**	**75.00**
1.0	2.0	10	0.50	3	50	**70.00**	**77.50**	**3.0**	6.0	10	1.50	3	50	**72.50**	**80.00**
1.0	2.0	20	0.50	3	50	**72.50**	**80.00**	**3.0**	6.0	20	1.50	3	50	**75.00**	**82.50**

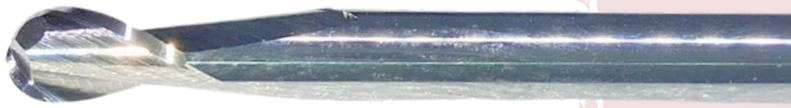
** tolerance Ø = -14µ / -19µ*

NEW 2025

Carbure-Carbide MG 10% Co

FRAISE HÉMISPHÉRIQUE Z2

BALL-NOSE Z2 END MILL



Queue - Shank Ø6

Ref MM325L

z2 | Tol Ø * | Tol d h5

P N M S

Ø	l	l2	R	d	L	€	€ Grey-Max
1	1	3	0.5	6	51	**75.00**	**82.50**
1	1	5	0.5	6	51	**80.00**	**87.50**
2	2	6	1.0	6	51	**77.50**	**85.00**
2	2	10	1.0	6	57	**82.50**	**90.00**
3	3	9	1.5	6	51	**80.00**	**89.00**
3	3	15	1.5	6	57	**85.00**	**94.00**
4	4	12	2.0	6	57	**82.50**	**91.50**
4	4	20	2.0	6	64	**87.50**	**96.50**
5	5	15	2.5	6	57	**85.00**	**94.00**
5	5	25	2.5	6	64	**90.00**	**99.00**
6	6	18	3.0	6	57	**87.50**	**100.00**
6	6	30	3.0	6	76	**95.00**	**107.50**
6	6	42	3.0	6	100	**110.00**	**122.50**

** tolerance Ø = -14µ / -19µ*



Grey-Max

900° - 2-3µ - 3750 HV

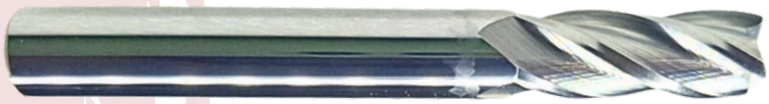
Reference MM325LR

Carbure-Carbide MG 10% Co

NEW 2025

FRAISE ANGLE VIF Z4

Z4 SHARP CORNER END MILL



Ref MM3404

z4 30° | Tol Ø h5 | Tol d h5

ECO-line

P N M S

Ø	l	d	L	Z	€	€ TiAlN
2	7	3	39	4	**10.75**	**12.25**
3	9	3	39	4	**10.75**	**12.25**
4	14	4	51	4	**14.75**	**16.25**
5	16	5	51	4	**16.25**	**18.00**
6	19	6	64	4	**20.00**	**22.00**
8	21	8	64	4	**24.75**	**27.25**
10	25	10	70	4	**38.25**	**41.25**
12	25	12	76	4	**49.50**	**53.50**



TiAlN

900° - 3-4µ - 3300 HV

Reference MM3404R

MINI FRAISE D'ÉBAUCHE

MINI ROUGHING END MILL



Ref MM3400

z3 30° | Tol Ø h5 | Tol d h5

Profil NRF

P N M S

Ø	l	d	L	Z	€ TiAlN
3	10	4	64	4	**35.00**
4	14	6	64	4	**40.00**
5	15	6	64	4	**45.00**

TiAlN

900° - 3-4µ - 3300 HV

NEW 2025

Carbure-Carbide MG 10% Co

FRAISE À FILETER 60°

60° THREAD MILLS



3 x Ø

Ref MM420

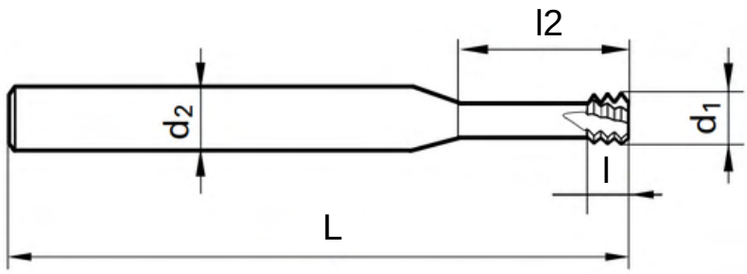
z 30° | Tol Ø 0/+10µ | Tol d h6

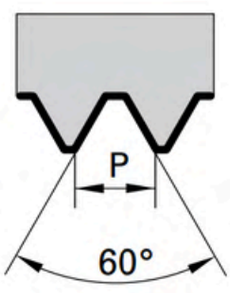
P N M S

Ø	P	d1	d2	L	l	l2	Z	€ Pink-Max
M1.6	0.35	1.20	3	39	1.10	4.8	3	**75.00**
M1.8	0.35	1.40	3	39	1.10	5.4	3	**75.00**
M2.0	0.40	1.55	3	39	1.20	6.0	4	**75.00**
M2.5	0.45	1.95	3	39	1.40	7.5	4	**77.50**
M3.0	0.50	2.4	6	58	1.50	9.5	4	**77.50**
M3.5	0.60	2.8	6	58	1.80	11	4	**80.00**
M4	0.70	3.2	6	58	2.10	12.5	4	**80.00**
M5	0.80	4.0	6	58	2.40	16	4	**82.50**
M6	1.00	4.8	6	58	3.00	20	4	**82.50**
M8	1.25	5.95	6	58	3.80	24	4	**85.00**
M10	1.50	7.8	8	73	4.50	33	4	**100.00**
M12	1.75	9.0	10	84	5.30	38	4	**130.00**
M16	2.00	11.8	10	84	6.00	35	5	**155.00**

Pink-Max

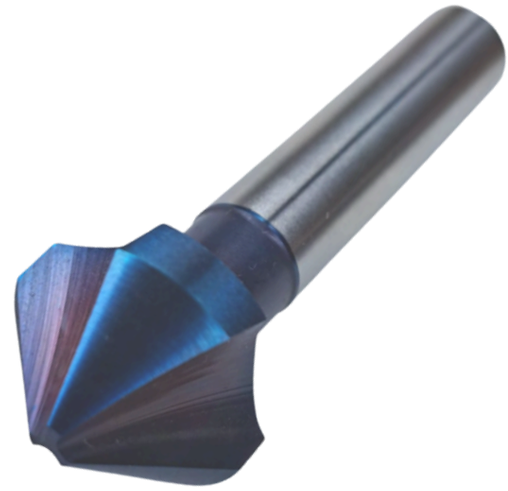
1100° - 2-3µ - 3750 HV





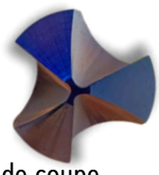
3 filets - 3 pitches

ÉBAVURAGE
COUNTERSINKING



Nous proposons de nombreuses solutions pour usiner les bavures (l'ennemi de la mécanique) : Consultez-nous pour toute demande.

We offer a large range of solutions
to machine burrs (enemies to mechanics) :
Contact us for every inquiry.

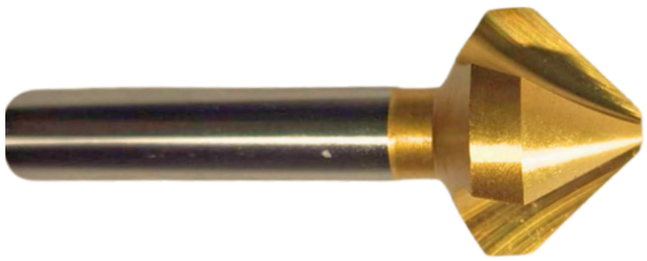






EBAVURAGE COUNTERSINKING		Vitesse de coupe Cutting speed **Blue-Max / Pink-Max**	Avance / Feed mm/tour Ø10-20-30	Vitesse de coupe Cutting speed **Gold-Max**	Avance / Feed mm/tour Ø10-20-30
P	< 500 N/mm²	20 - 35 m/min	120-60-40	17 - 22 m/min	85-45-30
	500 - 800 N/mm²	15 - 20 m/min	80-40-25	10 - 15 m/min	60-30-20
	800 - 1000 N/mm²	12 - 16 m/min	60-30-20	8 - 12 m/min	35-25-15
M	1000 - 1300 N/mm	8 - 12 m/min	40-20-15	6 - 10 m/min	30-15-10
K	Fonte - Cast iron	15 - 25 m/min	100-50-40	15-25 m/min	70-40-30
N	Aluminium	40 - 55 m/min	230-150-130	35 - 45 m/min	200-130-110
	Laiton / Brass	25 - 35 m/min	130-90-80	20 - 30 m/min	120-85-70
	Cuivre / Copper	15 - 25 m/min	110-70-55	15 - 25 m/min	95-60-45

ÉBAVURAGE
COUNTERSINKING



FRAISE À ÉBAVURER 90° 34
90° COUNTERSINK

LE +



Denture décalée
Unequal flutes
p.34



CHANFREINEUR 90° 4 DENTS 35
Z4 90° COUNTERSINK



FRAISE LIME ROTATIVE 36
ROTARY BURR

Acier rapide 5% Cobalt - HSS-E 5% Co M35

NEW 2025

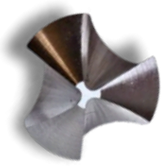
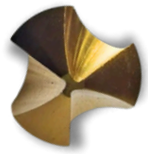
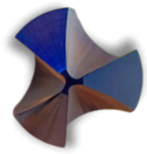
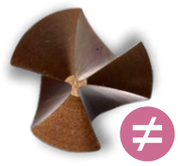
FRAISE À ÉBAVURER 90°

90° COUNTERSINK



DIN 335C

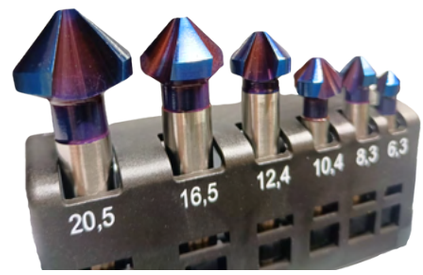
α 90° | z3 | Tol Ø z9 | Tol d h9

P M K N

Ø	d	L	€ MM400	€ Gold-Max MM400GM	€ Blue-Max MM400BM	€ Pink-Max MM405PM
6.3	1.5	45	**12.00**	**12.50**	**16.25**	**17.75**
8.3	2.0	50	**13.50**	**14.00**	**19.25**	**21.00**
10.4	2.5	50	**16.50**	**17.00**	**23.50**	**25.75**
12.4	2.8	56	**18.00**	**18.50**	**26.50**	**29.00**
16.5	3.2	60	**23.00**	**23.75**	**34.50**	**38.00**
20.5	3.5	63	**28.50**	**29.50**	**42.75**	**47.00**
25.0	3.8	67	**39.50**	**41.50**	**57.00**	**62.50**
31.0	1.2	71	**53.50**	**56.25**	**75.00**	**82.50**

Denture inégale
Inequal flutes



Visuel non contractuel

Nos revêtements
Our coatings

Blue-Max

1200° - 1-3µ - 3200 HV

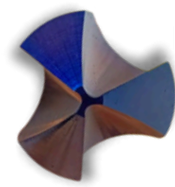
Gold-Max

700° - 2-3µ - 1950 HV

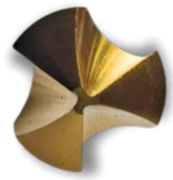
Pink-Max

1100° - 2-3µ - 3750 HV

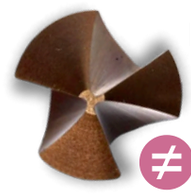
PROMO KITS
Ø 6.3~20.5



MM400BMKITA
169€



MM400GMKITA
119€



MM405PMKITA
189€

NEW 2025

Carbure-Carbide MG 10% Co

CHANFREINEUR 90° 4 DENTS

Z4 90° COUNTERSINK



Queue renforcée - Reinforced shank

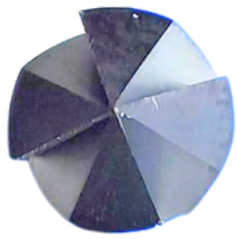
Ref MM449

α 90° | z4 | Tol Ø h6 | Tol d h6

P K M

Ø	l	d	L	€ TIALN
1	3	4	50	**18.00**
2	3	4	50	**20.00**
3	3	4	50	**22.00**

TIALN
900° - 3-4µ - 3300 HV



Ø = d

α 90° | z4 | Tol Ø h6 | Tol d h6

Ø	d	L	€ TIALN
4	4	50	**26.00**
6	6	57	**30.00**
8	8	60	**40.00**
10	10	70	**55.00**
12	12	70	**75.00**

Carbure-Carbide

NEW 2025

FRAISE LIME ROTATIVE
ROTARY BURR



Ref MM490

UNIVERSAL

Tol Ø * | Tol d h10

P N M S

Cylindrique coupe en bout
Cylindrical with end cut

011



Ø	l mini	d	L mini	€ denture - cut A	€ denture - cut B
3	13	3	38	**8.00**	**7.50**
4	13	3	43	**8.00**	**7.50**
5	13	3	43	**8.00**	**7.50**
6	13	3	53	**8.50**	**8.00**
6	16	6	56	**10.50**	**10.00**
8	20	6	60	**16.00**	**15.00**
10	20	6	60	**21.00**	**20.00**
12	25	6	65	**31.00**	**30.00**
12.7	25	6	65	**33.00**	**32.00**

Cylindrique rayonnée
Cylindrical ball-nose

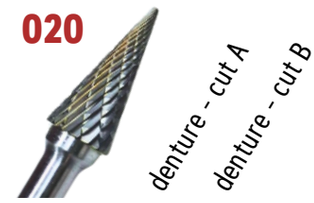
012



l mini	d	L mini	€ denture - cut A	€ denture - cut B
13	3	38	**8.00**	**7.50**
13	3	43	**8.00**	**7.50**
13	3	43	**8.00**	**7.50**
13	3	56	**8.50**	**8.00**
16	6	56	**10.50**	**10.00**
20	6	60	**16.00**	**15.00**
20	6	60	**21.00**	**20.00**
25	6	65	**31.00**	**30.00**
25	6	65	**33.00**	**32.00**

Conique
Conical

020



l mini	d	L mini	€ denture - cut A	€ denture - cut B
11	3	38	**8.00**	**7.50**
13	3	43	**8.00**	**7.50**
13	3	43	**8.00**	**7.50**
13	3	53	**8.50**	**8.00**
18	6	58	**10.50**	**10.00**
17	6	57	**15.50**	**15.00**
20	6	60	**21.00**	**20.00**
25	6	65	**26.00**	**25.00**

* Tolerance : Ø3-10 = +/- 0.2 - 12-12.7 = +/- 0.3

A



Denture croisée
Double cut

B



Denture fine
Single cut

PROMO KITS '6 formes'

	Denture croisée Double cut **A**	Denture fine Single cut **B**
Ø6*	**62€**	**59€**
Ø8	**91€**	**87€**
Ø10	**120€**	**114€**
Ø12	**163.50€**	**157.50€**

*d = 6



Visuel non contractuel

NEW 2025

Carbure-Carbide

FRAISE LIME ROTATIVE
ROTARY BURR



UNIVERSAL

Ref MM490

Tol Ø * | Tol d h10

P N M S

Flamme
Flame



Ovale
Oval



Ronde
Ball



Ø	l mini	d	L mini	€	€	l mini	d	L mini	€	€	l mini	d	L mini	€	€
3	7	3	38	**8.00**	**7.50**	7	3	38	**8.00**	**7.50**	2	3	38	**7.00**	**6.50**
4	13	3	43	**8.00**	**7.50**	7	3	40	**8.00**	**7.50**	3	3	45	**7.00**	**6.50**
5	13	3	43	**8.00**	**7.50**	8	3	40	**8.00**	**7.50**	4	3	44	**7.00**	**6.50**
6	13	3	43	**8.50**	**8.00**	10	3	50	**8.50**	**8.00**	5	3	45	**7.50**	**7.00**
6	18	6	65	**10.50**	**10.00**	10	6	50	**10.50**	**10.00**	5	6	45	**9.50**	**9.00**
8	20	6	65	**15.50**	**15.00**	13	6	53	**15.50**	**15.00**	7	6	47	**12.50**	**12.00**
10	25	6	65	**21.00**	**20.00**	16	6	56	**21.00**	**20.00**	9	6	49	**15.00**	**14.00**
12	32	6	65	**31.00**	**30.00**	20	6	60	**26.00**	**25.00**	11	6	51	**18.50**	**17.50**

* Tolerance Ø : Ø3-10 = +/- 0.2 - Ø12 = +/- 0.3

Codification

MM490 + forme + denture + d + Ø

Exemple :

MM490012A6127 = Fraise lime droite hémisphérique denture croisée queue=6 Ø12.7

MM490060B306 = Fraise lime ronde denture fine queue=3 Ø6

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Langues parlées
Languages spoken

Rapidité Quickness

Standard : réponse dans l'heure / answer within an hour
Special : solution sous 24 heures / solution within 24 hours

ECOLO-MAX

Nous choisissons d'imprimer notre catalogue en petit format
et en un nombre limité d'exemplaires afin de **réduire notre impact écologique**.
Imprimé en France, en local, tout est pensé pour réduire cette empreinte.

We choose to print our catalogue in a small size and in a limited number of copies
in order to **reduce our environmental footprint**.
Printed in France, by a local printer, everything is considered to limit our print.

INDEX

MM120GL	23	MM221XL15	17	MM3404R	30
MM120L	22	MM221XL20	18	MM400	34
MM120NC90GM	10	MM221XL30	19	MM400BM	34
MM210L	21	MM230L	20	MM400GM	34
MM22090C	09	MM320	26	MM405PM	34
MM22090CR	09	MM320R	26	MM420	31
MM220C	12	MM325	28	MM449	35
MM220FM	15	MM325L	29	MM490	36
MM220L	13	MM325LR	29		
MM220LR	13	MM325R	28		
MM220NC90	11	MM330	27	FLEX-MAX	15
MM220NC90R	11	MM330L	27	POLY-MAX	09
MM220NC130	11	MM330LR	27		
MM220NC130R	11	MM330R	27		
MM220XL	14	MM3400	30		
MM220XLR	14	MM3404	30		

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