

ARROW DIAMOND TOOLING

07979253263

arrowtooling@icloud.com

<https://g01.co.uk>

ENGINEERING

EXTENDED RANGE CARBIDE DRILLS



SOLID CARBIDE TOOLS

UTENSILI IN METALLO DURO



Catalog 1 / 2022

Catalogo 1 / 2022



SOLID CARBIDE TOOLS

UTENSILI IN METALLO DURO

CRUING WORLDWIDE

CRUING IN TUTTO IL MONDO

Thanks to its 50 year's worth of experience as a leader in the tooling industry, Cruing is able to provide a wide range of Solid Carbide tools tailored to specific customer needs.

We can fulfil various applications for the automotive, aerospace, mould line, graphite and medical Industry.

Production plants and R&D facilities in Europe and North America enable Cruing to supply tested and award winning products worldwide.

Grazie a un'esperienza di oltre 50 anni nella produzione di utensili da taglio, Cruing è in grado di fornire soluzioni in metallo duro in versione standard e speciale.

Siamo in grado di soddisfare vari tipi di applicazioni nel settore della meccanica, aerospaziale, stampi, grafite e medicale.



COATING DIVISION

COATING DIVISION

Cruing offers the possibility to enhance the performance of HSS and HM tools by applying different types of coatings: Omicron S-TiN, Omicron TiCN, Omicron AlTiN, Omicron ZrN, Omicron T-CroNAL.

Cruing offre la possibilità di migliorare le prestazioni di utensili in HSS e HM applicando vari tipi di rivestimenti: Omicron S-TiN, Omicron TiCN, Omicron AlTiN, Omicron ZrN, Omicron T-CroNAL.





PRODUCTION PLANTS AND R&D FACILITIES IN EUROPE AND NORTH AMERICA

CRUING IN TUTTO IL MONDO



JEC Europe



JEC Americas

CHALLENGERS



WINNER 2008

EXPERIENCE
COMPOSITES
INNOVATION AWARDS
2016



Institut für
Werkzeugmaschinen



Universität Stuttgart



Fraunhofer IPA



HBG
Holz-Berufsgenossenschaft



DGUV Test



HO 082004



HO 082007



HO 122002



Sicherheit geprüft
tested safety

Sicherheit geprüft
tested safety

Sicherheit geprüft
tested safety

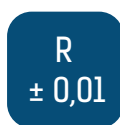


COMPANY WITH
QUALITY SYSTEM
CERTIFIED BY DNV GL
= ISO 9001 =

SYMBOL LEGENDA



MILLING TOOL WITH SCALED SLOT
FRESA CON CAVA A GRADINI



CORNER RADIUS TOLERANCE
TOLLERANZA RAGGIO D'ANGOLO



LAPPED
LUCIDATURA

COATING • RIVESTIMENTI



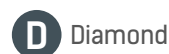
S-TIN



T-DLC



TiCN-B



Diamond



AlTiSiN



PVD-PRO



TiCN-GR



ZrN



PVD



T2C Plus

MATERIALS • MATERIALI



NON-ALLOYED STEEL
ACCIAI NON LEGATI



TITANS ALLOYS
LEGHE DI TITANIO



STAINLESS STEEL
ACCIAI INOSSIDABILI



COMPOSITE MATERIALS
CARBON FIBRE • CFRP
MATERIALI COMPOSITI
FIBRA DI CARBONIO • CFRP



IRON • GRAY IRON
MALLEABLE IRON
GHISA • GHISA GRIGIA
GHISA MALLEABILE COST



OTHER MATERIALS
ALTRI MATERIALI



ALLUMINIUM • ALLOYS •
COPPER BRASS • BRONZE
ALLUMINIO • LEGHE •
RAME OTTONE • BRONZO

COATING RIVESTIMENTI

	COATING • RIVESTIMENTI	Micro hardness HV 0.05	Thickness	Friction coefficient	Max usage temp (C°)	Deposition temp	Colour
S →	Omicron S-Tin	2.300	1-5	0.4	600°	480°	yellow gold
G →	Omicron TiCN-GR	3.000	1-4	0.2	400°	480°	grey
B →	Omicron TiCN-B	3.000	1-5	0.2	400°	480°	bronze
T →	Omicron AlTiSiN	3.600	1-5	0.7	850°	480°	dark grey
A →	Omicron PVD	3.300	1-4	0.6	1000°	480°	grey violet
P →	Omicron PVD-Pro	3.500	1-4	0.6	1100°	480°	grey violet
	Omicron TXO	4.400	1-4	0.35	900°	480°	bronze
D →	Omicron Diamond	8.000 10.000	0.009 0.01	0.02 0.10		900	dark grey
L →	Omicron T-DLC	1.800 2.600	2-4	0.1	350°	180°	black
Z →	Omicron ZrN	2.200	1-3	0.4	550°	480°	yellow
	Omicron CrN high temperature 380°	2.200	1-5	0.5	700°	380°	light grey
	Omicron CrN low temperature 150°	1.750	1-5	0.5	700°	150°	light grey
	Omicron TBM Red Supreme	3.400 3.600	1-5	0.4	600°	450°	purple red

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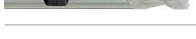
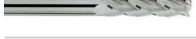
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DRILLS • PUNTE	PAG	MATERIALS • MATERIALI	COATING • RIVESTIMENTI
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 MID 116	15	P M O	S
 MID 124	17	P M O	S
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 MID 140	22	P M N	
 MID 148	27	P M N	T
 MID 156	28	P M K N	T
 MID 164	29	P M K N	T
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 MID 208	35	P M K S N	C
 MID 216	37	P M K S N	C
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	MID 248	51	P M K S N	C
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 MIM 240	101	P S	P
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END MILLS HPC • FRESE HPC	PAG	MATERIALS • MATERIALI	COATING • RIVESTIMENTI
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	MIM 536	116	O	D
	MIM 554	117	O	D
	MIM 572	118	O	D
REAMERS • ALESATORI		PAG	MATERIALS • MATERIALI	COATING • RIVESTIMENTI
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	MIR 640	121	P M K S N O	G
	MIR 660	124	P M K S N O	G
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	MIC 730	127	P M K S N	T
	MIC 745	128	P K N O	
	MIC 760	129	P K N O	T
	MIC 775	130	P K N O	T
LIP CUTTER • BULINI		PAG	MATERIALS • MATERIALI	COATING • RIVESTIMENTI
	MIC 815	131	P N O	

MIM 103

STRAIGHT FLUTED END MILL 2 FLUTES CENTER CUTTING

FRESA A DENTI DRITTI 2 TAGLIENTI TAGLIO
AL CENTRO

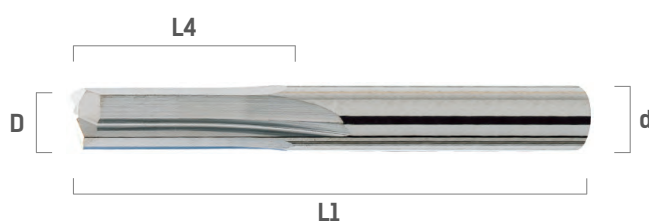


Solid carbide grades: 10% Co Micro grain

Application groups: groups: milling of cast iron, brass, bronze

Metallo duro: 10% Co micrograna

Applicazioni: Fresature di ghisa, ottone, bronzo



D h9	d h6	L1	L4	UNCOATED
2.00	2.00	38	8	MIM 1030010
2.50	2.50	38	8	MIM 1030020
3.00	3.00	38	12	MIM 1030030
3.50	3.50	40	12	MIM 1030040
4.00	4.00	40	12	MIM 1030050
4.50	4.50	50	14	MIM 1030060
5.00	5.00	50	14	MIM 1030070
5.50	5.50	50	16	MIM 1030080
6.00	6.00	50	16	MIM 1030090
6.50	6.50	50	16	MIM 1030100
7.00	7.00	60	20	MIM 1030110
7.50	7.50	60	20	MIM 1030120
8.00	8.00	60	20	MIM 1030130
8.50	8.50	60	20	MIM 1030140
9.00	9.00	60	20	MIM 1030150
9.50	9.50	70	22	MIM 1030160
10.00	10.00	70	22	MIM 1030170
12.00	12.00	70	22	MIM 1030180

On request: out of range • other sizes • coating

Su richiesta: esecuzione speciale • diametri intermedi • ricoperture

Application groups • Applicazioni



MIM 106

SINGLE FLUTE END MILL, FLAT NOSE CENTER CUTTING

FRESA INTEGRALE MONO TAGLIENTE CON TESTA PIANA
TAGLIO FRONTALE AL CENTRO

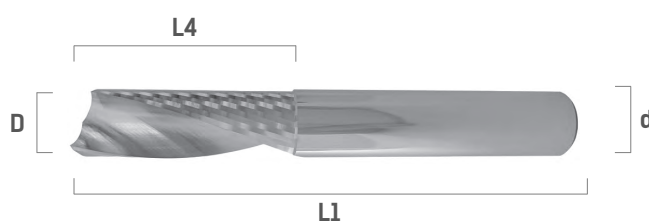


Solid carbide grades: 10% Co Micro grain

Application groups: engraving and copying-milling with pantographs and CNC machines. Suitable for milling of non-ferrous metals, long chipping materials and light alloys

Metallo duro: 10% Co micrograna

Applicazioni: Foratura e contornatura con centri di lavoro e pantografo per leghe leggere e materiali non ferrosi a truciolo lungo



D h10	d h6	L1	L4	UNCOATED
3.00	3.00	40	12	MIM 1060010
4.00	4.00	40	14	MIM 1060020
5.00	5.00	50	16	MIM 1060030
6.00	6.00	58	20	MIM 1060040
8.00	8.00	64	22	MIM 1060050
10.00	10.00	73	25	MIM 1060060
12.00	12.00	84	35	MIM 1060070

On request: out of range • other sizes • coating

Su richiesta: esecuzione speciale • diametri intermedi • ricoperture

Application groups • Applicazioni

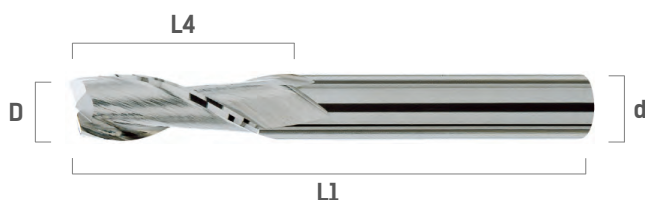


MIM 109

TWIST END MILL 2 FLUTES CENTER CUTTING

FRESA ELICOIDALE 2 TAGLIENTI, TAGLIO AL CENTRO

T AlTiSiN **B** TiCN-B



Solid carbide grades: 10% Co Micro grain

Application groups: for general purpose milling of most materials and non-ferrous materials

Metallo duro: 10% Co micrograna

Applicazioni: Fresature universali, anche per materiali non ferrosi

D h9	d h6	L1	L4	UNCOATED	AlTiSiN	TiCN-BR
2.00	2.00	38	8	MIM 1090010	MIM 1090010 T	MIM 1090010 B
2.50	2.50	38	8	MIM 1090020	MIM 1090020 T	MIM 1090020 B
3.00	3.00	38	12	MIM 1090030	MIM 1090030 T	MIM 1090030 B
3.50	3.50	40	12	MIM 1090040	MIM 1090040 T	MIM 1090040 B
4.00	4.00	40	12	MIM 1090050	MIM 1090050 T	MIM 1090050 B
4.50	4.50	50	14	MIM 1090060	MIM 1090060 T	MIM 1090060 B
5.00	5.00	50	14	MIM 1090070	MIM 1090070 T	MIM 1090070 B
5.50	5.50	50	16	MIM 1090080	MIM 1090080 T	MIM 1090080 B
6.00	6.00	50	16	MIM 1090090	MIM 1090090 T	MIM 1090090 B
6.50	6.50	50	16	MIM 1090100	MIM 1090100 T	MIM 1090100 B
7.00	7.00	60	20	MIM 1090110	MIM 1090110 T	MIM 1090110 B
7.50	7.50	60	20	MIM 1090120	MIM 1090120 T	MIM 1090120 B
8.00	8.00	60	20	MIM 1090130	MIM 1090130 T	MIM 1090130 B
8.50	8.50	60	20	MIM 1090140	MIM 1090140 T	MIM 1090140 B
9.00	9.00	60	20	MIM 1090150	MIM 1090150 T	MIM 1090150 B
9.50	9.50	70	82	MIM 1090160	MIM 1090160 T	MIM 1090160 B
10.00	10.00	70	22	MIM 1090170	MIM 1090170 T	MIM 1090170 B
11.00	11.00	70	22	MIM 1090180	MIM 1090180 T	MIM 1090180 B
12.00	12.00	75	22	MIM 1090190	MIM 1090190 T	MIM 1090190 B
13.00	13.00	75	25	MIM 1090200	MIM 1090200 T	MIM 1090200 B
14.00	14.00	75	25	MIM 1090210	MIM 1090210 T	MIM 1090210 B
15.00	15.00	75	25	MIM 1090220	MIM 1090220 T	MIM 1090220 B
16.00	16.00	75	25	MIM 1090230	MIM 1090230 T	MIM 1090230 B
18.00	18.00	100	25	MIM 1090240	MIM 1090240 T	MIM 1090240 B
20.00	20.00	100	25	MIM 1090250	MIM 1090250 T	MIM 1090250 B

On request: out of range, other sizes - DIN 6535 HB

Su richiesta: esecuzione speciale, diametri intermedi DIN 6535 HB

Application groups • Applicazioni

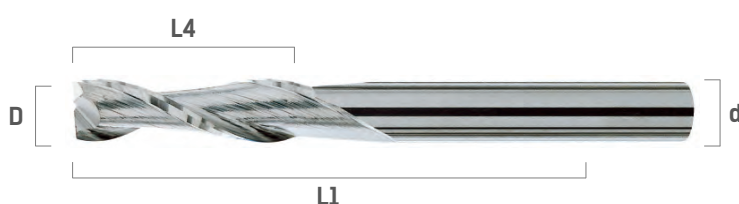


MIM 112

TWIST END MILL 2 FLUTES CENTER CUTTING

FRESA ELICOIDALE 2 TAGLIENTI, TAGLIO AL CENTRO

T AlTiSiN **B** TiCN-B



Solid carbide grades: 10% Co Micro grain

Application groups: for general purpose milling of most materials and non-ferrous-materials

Metallo duro: 10% Co micrograna

Applicazioni: Fresature universali, anche per materiali non ferrosi

D h9	d h6	L1	L4	UNCOATED	AlTiSiN	TiCN-BR
3.00	3.00	55	20	MIM 1120010	MIM 1120010 T	MIM 1120010 B
4.00	4.00	60	20	MIM 1120020	MIM 1120020 T	MIM 1120020 B
5.00	5.00	60	20	MIM 1120030	MIM 1120030 T	MIM 1120030 B
6.00	6.00	65	24	MIM 1120040	MIM 1120040 T	MIM 1120040 B
8.00	8.00	80	32	MIM 1120050	MIM 1120050 T	MIM 1120050 B
10.00	10.00	80	32	MIM 1120060	MIM 1120060 T	MIM 1120060 B
12.00	12.00	100	50	MIM 1120070	MIM 1120070 T	MIM 1120070 B
14.00	14.00	100	50	MIM 1120080	MIM 1120080 T	MIM 1120080 B
16.00	16.00	100	50	MIM 1120090	MIM 1120090 T	MIM 1120090 B
20.00	20.00	100	50	MIM 1120100	MIM 1120100 T	MIM 1120100 B

On request: out of range • other sizes • coating

Su richiesta: esecuzione speciale • diametri intermedi • ricoperture

Application groups • Applicazioni



MIM 115

TWIST END MILL 2 FLUTES CENTER CUTTING

FRESA ELICOIDALE 2 TAGLIENTI, TAGLIO AL CENTRO



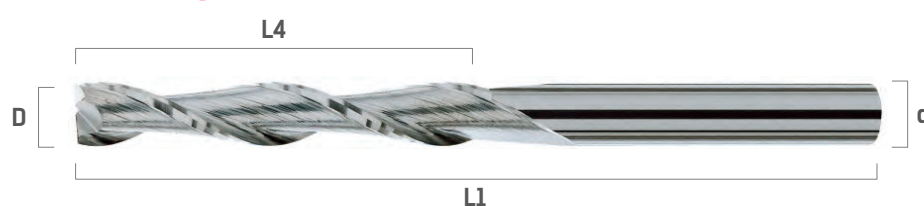
Solid carbide grades: 10% Co Micro grain

Application groups: for general purpose milling of most materials and non-ferrous-materials

Metallo duro: 10% Co micrograna

Applicazioni: Fresature universali, anche per materiali non ferrosi

T ALTiSiN **B** TiCN-B



D h9	d h6	L1	L4	UNCOATED	ALTiSiN	TiCN-BR
3.00	3.00	70	30	MIM 1150010	MIM 1150010 T	MIM 1150010 B
4.00	4.00	75	40	MIM 1150020	MIM 1150020 T	MIM 1150020 B
5.00	5.00	80	40	MIM 1150030	MIM 1150030 T	MIM 1150030 B
6.00	6.00	80	45	MIM 1150040	MIM 1150040 T	MIM 1150040 B
8.00	8.00	100	50	MIM 1150050	MIM 1150050 T	MIM 1150050 B
10.00	10.00	100	50	MIM 1150060	MIM 1150060 T	MIM 1150060 B
12.00	12.00	150	70	MIM 1150070	MIM 1150070 T	MIM 1150070 B
14.00	14.00	150	75	MIM 1150080	MIM 1150080 T	MIM 1150080 B
16.00	16.00	150	75	MIM 1150090	MIM 1150090 T	MIM 1150090 B
18.00	18.00	150	75	MIM 1150100	MIM 1150100 T	MIM 1150100 B
20.00	20.00	150	75	MIM 1150110	MIM 1150110 T	MIM 1150110 B

On request: out of range • other sizes • coating

Su richiesta: esecuzione speciale • diametri intermedi • ricoperture

Application groups • Applicazioni

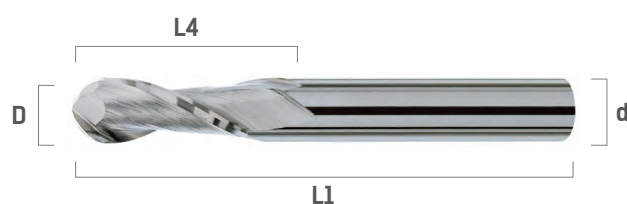


MIM 118

BALL NOSE END MILL 2 FLUTES CENTER CUTTING

FRESA ELICOIDALE A TESTA RAGGIATA 2 TAGLIENTI
TAGLIO AL CENTRO

T ALTiSiN **B** TiCN-B



Solid carbide grades: 10% Co Micro grain

Application groups: for general purpose milling of most materials and non-ferrous materials

Metallo duro: 10% Co micrograna

Applicazioni: Fresature universali, anche per materiali non ferrosi

D h9	d h6	L1	L4	UNCOATED	ALTiSiN	TiCN-BR
2.00	2.00	38	8	MIM 1180010	MIM 1180010 T	MIM 1180010 B
2.50	2.50	38	8	MIM 1180020	MIM 1180020 T	MIM 1180020 B
3.00	3.00	38	12	MIM 1180030	MIM 1180030 T	MIM 1180030 B
3.50	3.50	40	12	MIM 1180040	MIM 1180040 T	MIM 1180040 B
4.00	4.00	40	12	MIM 1180050	MIM 1180050 T	MIM 1180050 B
4.50	4.50	50	14	MIM 1180060	MIM 1180060 T	MIM 1180060 B
5.00	5.00	50	14	MIM 1180070	MIM 1180070 T	MIM 1180070 B
5.50	5.50	50	16	MIM 1180080	MIM 1180080 T	MIM 1180080 B
6.00	6.00	50	16	MIM 1180090	MIM 1180090 T	MIM 1180090 B
6.50	6.50	50	16	MIM 1180100	MIM 1180100 T	MIM 1180100 B
7.00	7.00	60	20	MIM 1180110	MIM 1180110 T	MIM 1180110 B
7.50	7.50	60	20	MIM 1180120	MIM 1180120 T	MIM 1180120 B
8.00	8.00	60	20	MIM 1180130	MIM 1180130 T	MIM 1180130 B
8.50	8.50	60	20	MIM 1180140	MIM 1180140 T	MIM 1180140 B
9.00	9.00	60	20	MIM 1180150	MIM 1180150 T	MIM 1180150 B
9.50	9.50	70	82	MIM 1180160	MIM 1180160 T	MIM 1180160 B
10.00	10.00	70	22	MIM 1180170	MIM 1180170 T	MIM 1180170 B
11.00	11.00	70	22	MIM 1180180	MIM 1180180 T	MIM 1180180 B
12.00	12.00	75	22	MIM 1180190	MIM 1180190 T	MIM 1180190 B
13.00	13.00	75	25	MIM 1180200	MIM 1180200 T	MIM 1180200 B
14.00	14.00	75	25	MIM 1180210	MIM 1180210 T	MIM 1180210 B
15.00	15.00	75	25	MIM 1180220	MIM 1180220 T	MIM 1180220 B
16.00	16.00	75	25	MIM 1180230	MIM 1180230 T	MIM 1180230 B
18.00	18.00	100	32	MIM 1180240	MIM 1180240 T	MIM 1180240 B
20.00	20.00	100	32	MIM 1180250	MIM 1180250 T	MIM 1180250 B

On request: out of range • other sizes • 3 flutes • DIN 6535 HB

Su richiesta: esecuzione speciale • diametri intermedi 3 taglienti • DIN 6535 HB

Application groups • Applicazioni



MIM 121

BALL NOSE END MILL 2 FLUTES CENTER CUTTING • LONG SERIES

FRESA ELICOIDALE A TESTA RAGGIATA

2 TAGLIENTI TAGLIO AL CENTRO • SERIE LUNGA



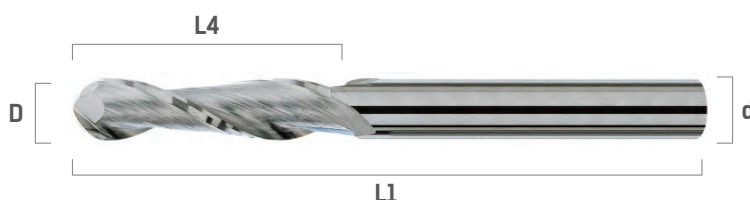
Solid carbide grades: 10% Co Micro grain

Application groups: for general purpose milling of most materials and non-ferrous-materials

Metallo duro: 10% Co micrograna

Applicazioni: Fresature universali, anche per materiali non ferrosi

T AlTiSiN **B** TiCN-B



D h9	d h6	L1	L4	UNCOATED	AlTiSiN	TiCN-BR
3.00	3.00	55	20	MIM 1210010	MIM 1210010 T	MIM 1210010 B
4.00	4.00	60	20	MIM 1210020	MIM 1210020 T	MIM 1210020 B
5.00	5.00	60	20	MIM 1210030	MIM 1210030 T	MIM 1210030 B
6.00	6.00	65	24	MIM 1210040	MIM 1210040 T	MIM 1210040 B
8.00	8.00	80	32	MIM 1210050	MIM 1210050 T	MIM 1210050 B
10.00	10.00	80	32	MIM 1210060	MIM 1210060 T	MIM 1210060 B
20.00	20.00	100	50	MIM 1210070	MIM 1210070 T	MIM 1210070 B

On request: out of range • other sizes • coating

Su richiesta: esecuzione speciale • diametri intermedi • ricoperture

Application groups • Applicazioni



MIM 124

BALL NOSE END MILL 2 FLUTES CENTER CUTTING • EXTRA LONG SERIES

FRESA ELICOIDALE A TESTA RAGGIATA 2 TAGLIENTI
TAGLIO AL CENTRO Z • SERIE EXTRA LUNGA

T AlTiSiN **B** TiCN-B

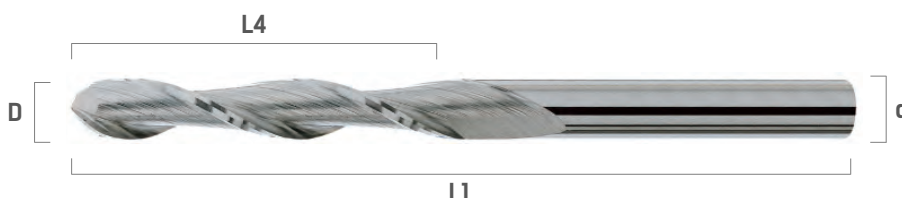


Solid carbide grades: 10% Co Micro grain

Application groups: for general purpose milling of most materials and non-ferrous-materials

Metallo duro: 10% Co micrograna

Applicazioni: Fresature universali, anche per materiali non ferrosi



D h9	d h6	L1	L4	UNCOATED	AlTiSiN	TiCN-BR
3.00	3.00	70	30	MIM 1240010	MIM 1240010 T	MIM 1240010 B
4.00	4.00	75	40	MIM 1240020	MIM 1240020 T	MIM 1240020 B
5.00	5.00	80	40	MIM 1240030	MIM 1240030 T	MIM 1240030 B
6.00	6.00	80	45	MIM 12140040	MIM 1240040 T	MIM 1240040 B
8.00	8.00	100	80	MIM 1240050	MIM 1240050 T	MIM 1240050 B
10.00	10.00	100	50	MIM 1240060	MIM 1240060 T	MIM 1240060 B
12.00	12.00	150	70	MIM 1240070	MIM 1240070 T	MIM 1240070 B

On request: out of range • other sizes 3 flutes • DIN 6535 HB

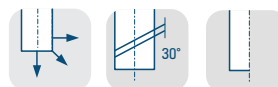
Su richiesta: esecuzione speciale • diametri intermedi 3 taglienti • DIN 6535 HB

Application groups • Applicazioni



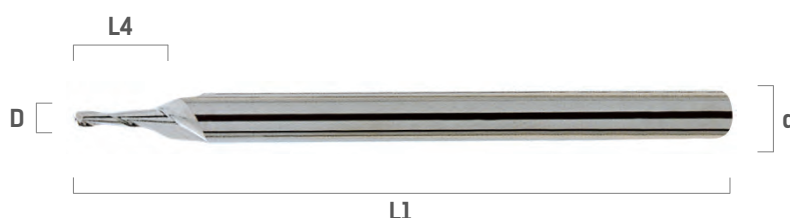
MIM 127

MICRO END MILL 2 FLUTES 30°
MICRO FRESA 2 TAGLI 30°



Solid carbide grades: Ultrafine Micro grain
< 0,5 μ **Application groups:** for fine milling in
steel, Al-Si-alloys, non-ferrous-materials

Metallo duro: 1 Micrograna ultrafine < 0,5 μ
Applicazioni: Micro fresature su acciai, leghe leggere,
materiali non ferrosi



D h6	d h6	L1	L4	UNCOATED
0.40	3.00	38.1	1.00	MIM 1270010
0.50	3.00	38.1	1.50	MIM 1270020
0.60	3.00	38.1	1.50	MIM 1270030
0.70	3.00	38.1	2.00	MIM 1270040
0.80	3.00	38.1	2.00	MIM 1270050
0.90	3.00	38.1	2.00	MIM 1270060
1.00	3.00	38.1	2.50	MIM 1270070
1.10	3.00	38.1	2.50	MIM 1270080
1.20	3.00	38.1	3.50	MIM 1270090
1.30	3.00	38.1	4.00	MIM 1270100
1.40	3.00	38.1	4.00	MIM 1270110
1.50	3.00	38.1	4.50	MIM 1270120
1.60	3.00	38.1	4.50	MIM 1270130
1.70	3.00	38.1	5.00	MIM 1270140
1.80	3.00	38.1	5.00	MIM 1270150
1.90	3.00	38.1	5.00	MIM 1270160
2.00	3.00	38.1	5.00	MIM 1270170
2.50	3.00	38.1	5.00	MIM 1270180

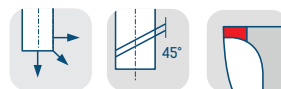
On request: out of range • other sizes
Su richiesta: esecuzione speciale • diametri intermedi

Application groups • Applicazioni



MIM 130

MICRO END MILL 2 FLUTES 45°
MICRO FRESA 2 TAGLI 45°

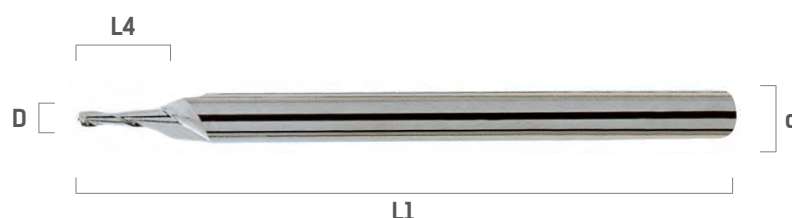


Solid carbide grades: Ultrafine Micro grain < 0,5 µ

Application groups: fmicromilling of precious metals (silver, gold) milling of aluminium, brass, non ferrous materials

Metallo duro: 1 Micrograna ultrafine < 0,5 µ

Applicazioni: Microfresatura su materiali pregiati (argento, oro), fresatura su alluminio, ottone, materiali non ferros



D h6	d h6	L1	L4	UNCOATED
0.40	3.00	38.1	1.00	MIM 1300010
0.50	3.00	38.1	1.50	MIM 1300020
0.60	3.00	38.1	1.50	MIM 1300030
0.70	3.00	38.1	2.00	MIM 1300040
0.80	3.00	38.1	2.00	MIM 1300050
0.90	3.00	38.1	2.00	MIM 1300060
1.00	3.00	38.1	2.50	MIM 1300070
1.10	3.00	38.1	2.50	MIM 1300080
1.20	3.00	38.1	3.50	MIM 1300090
1.30	3.00	38.1	4.00	MIM 1300100
1.40	3.00	38.1	4.00	MIM 1300110
1.50	3.00	38.1	4.50	MIM 1300120
1.60	3.00	38.1	4.50	MIM 1300130
1.70	3.00	38.1	5.00	MIM 1300140
1.80	3.00	38.1	5.00	MIM 1300150
1.90	3.00	38.1	5.00	MIM 1300160
2.00	3.00	38.1	5.00	MIM 1300170
2.50	3.00	38.1	5.00	MIM 1300180

On request: out of range • other sizes

Su richiesta: esecuzione speciale • diametri intermedi

Application groups • Applicazioni



MIM 133

HIGH SPEED BALL NOSE TWIST END MILL 2 FLUTES CENTER CUTTING

FRESA ELICOIDALE RAGGIATA AD ALTE PRESTAZIONI
2 TAGLIENTI TAGLIO AL CENTRO

T AlTiSiN **B** TiCN-B



Solid carbide grades: 10% Co Micro grain

Application groups: suitable for general purpose milling of most materials, steels, non-ferrous-materials

Metallo duro: 10% Co micrograna

Applicazioni: Universale, per acciai e materiali non ferrosi



D h9	d h6	L1	L4	UNCOATED	AlTiSiN	TiCN-BR
2.00	6.00	50	4	MIM 1300010	MIM 1300010 T	MIM 1300010 B
2.50	6.00	50	4	MIM 1300020	MIM 1300020 T	MIM 1300020 B
3.00	6.00	50	5	MIM 1300030	MIM 1300030 T	MIM 1300030 B
3.50	6.00	50	5	MIM 1300040	MIM 1300040 T	MIM 1300040 B
4.00	6.00	54	6	MIM 1300050	MIM 1300050 T	MIM 1300050 B
4.50	6.00	54	6	MIM 1300060	MIM 1300060 T	MIM 1300060 B
5.00	6.00	54	7	MIM 1300070	MIM 1300070 T	MIM 1300070 B
6.00	6.00	54	9	MIM 1300080	MIM 1300080 T	MIM 1300080 B
8.00	8.00	58	12	MIM 1300090	MIM 1300090 T	MIM 1300090 B
10.00	10.00	66	14	MIM 1300100	MIM 1300100 T	MIM 1300100 B

On request: out of range • other sizes
Su richiesta: esecuzione speciale • diametri intermedi

Application groups • Applicazioni



MIM 136

HIGH SPEED TWIST END MILL 2 FLUTES CENTER CUTTING

FRESA ELICOIDALE AD ALTE PRESTAZIONI
2 TAGLIENTI TAGLIO AL CENTRO

T AlTiSiN **B** TiCN-B



Solid carbide grades: 10% Co Micro grain

Application groups: suitable for general purpose milling of most materials, steels, non-ferrous-materials

Metallo duro: 10% Co micrograna

Applicazioni: Universale, per acciai e materiali non ferrosi



D h9	d h6	L1	L4	UNCOATED	AlTiSiN	TiCN-BR
2.00	6.00	50	4	MIM 1360010	MIM 1360010 T	MIM 1360010 B
2.50	6.00	50	4	MIM 1360020	MIM 1360020 T	MIM 1360020 B
3.00	6.00	50	5	MIM 1360030	MIM 1360030 T	MIM 1360030 B
3.50	6.00	50	5	MIM 1360040	MIM 1360040 T	MIM 1360040 B
4.00	6.00	54	6	MIM 1360050	MIM 1360050 T	MIM 1360050 B
4.50	6.00	54	6	MIM 1360060	MIM 1360060 T	MIM 1360060 B
5.00	6.00	54	7	MIM 1360070	MIM 1360070 T	MIM 1360070 B
6.00	6.00	54	9	MIM 1360080	MIM 1360080 T	MIM 1360080 B
8.00	8.00	58	12	MIM 1360090	MIM 1360090 T	MIM 1360090 B
10.00	10.00	66	14	MIM 1360100	MIM 1360100 T	MIM 1360100 B

On request: out of range • other sizes
Su richiesta: esecuzione speciale • diametri intermedi

Application groups • Applicazioni

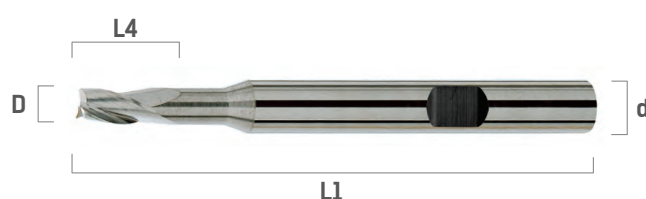


MIM 139

HIGH SPEED TWIST END MILL 3 FLUTES CENTER CUTTING

FRESA ELICOIDALE AD ALTE PRESTAZIONI
3 TAGLIENTI TAGLIO AL CENTRO

T AlTiSiN **B** TiCN-B



Solid carbide grades: 10% Co Micro grain

Application groups: suitable for general purpose milling of most materials, steels, non-ferrous-materials

Metallo duro: 10% Co micrograna

Applicazioni: Universale, per acciai e materiali non ferros

D h9	d h6	L1	L4	UNCOATED	AlTiSiN	TiCN-BR
2.00	6.00	50	4	MIM 1390010	MIM 1390010 T	MIM 1390010 B
2.50	6.00	50	4	MIM 1390020	MIM 1390020 T	MIM 1390020 B
3.00	6.00	50	5	MIM 1390030	MIM 1390030 T	MIM 1390030 B
3.50	6.00	50	5	MIM 1390040	MIM 1390040 T	MIM 1390040 B
4.00	6.00	54	6	MIM 1390050	MIM 1390050 T	MIM 1390050 B
4.50	6.00	54	6	MIM 1390060	MIM 1390060 T	MIM 1390060 B
5.00	6.00	54	7	MIM 1390070	MIM 1390070 T	MIM 1390070 B
6.00	6.00	54	9	MIM 1390080	MIM 1390080 T	MIM 1390080 B
8.00	8.00	58	12	MIM 1390090	MIM 1390090 T	MIM 1390090 B
10.00	10.00	66	14	MIM 1390100	MIM 1390100 T	MIM 1390100 B
12.00	12.00	73	14	MIM 1390110	MIM 1390110 T	MIM 1390110 B
14.00	14.00	75	16	MIM 1390120	MIM 1390120 T	MIM 1390120 B

On request: out of range • other sizes

Su richiesta: esecuzione speciale • diametri intermedi

Application groups • Applicazioni



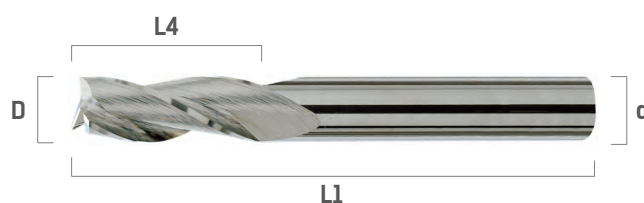
MIM 142



TWIST END MILL 3 FLUTES CENTER CUTTING

FRESA ELICOIDALE 3 TAGLIENTI TAGLIO AL CENTRO

T AlTiSiN **B** TiCN-B



Solid carbide grades: 10% Co Micro grain

Application groups: suitable for general purpose milling of most materials, steels, non-ferrous-materials

Metallo duro: 10% Co micrograna

Applicazioni: Universale, per acciai e materiali non ferrosi

D h9	d h6	L1	L4	UNCOATED	AlTiSiN	TiCN-BR
2.00	2.00	38	8	MIM 1420010	MIM 1420010 T	MIM 1420010 B
2.50	2.50	38	8	MIM 1420020	MIM 1420020 T	MIM 1420020 B
3.00	3.00	38	12	MIM 1420030	MIM 1420030 T	MIM 1420030 B
3.50	3.50	40	12	MIM 1420040	MIM 1420040 T	MIM 1420040 B
4.00	4.00	40	12	MIM 1420050	MIM 1420050 T	MIM 1420050 B
4.50	4.50	50	14	MIM 1420060	MIM 1420060 T	MIM 1420060 B
5.00	5.00	50	14	MIM 1420070	MIM 1420070 T	MIM 1420070 B
5.50	5.50	50	16	MIM 1420080	MIM 1420080 T	MIM 1420080 B
6.00	6.00	50	16	MIM 1420090	MIM 1420090 T	MIM 1420090 B
6.50	6.50	50	16	MIM 1420100	MIM 1420100 T	MIM 1420100 B
7.00	7.00	60	20	MIM 1420110	MIM 1420110 T	MIM 1420110 B
7.50	7.50	60	20	MIM 1420120	MIM 1420120 T	MIM 1420120 B
8.00	8.00	60	20	MIM 1420130	MIM 1420130 T	MIM 1420130 B
8.50	8.50	60	20	MIM 1420140	MIM 1420140 T	MIM 1420140 B
9.00	9.00	60	20	MIM 1420150	MIM 1420150 T	MIM 1420150 B
9.50	9.50	70	22	MIM 1420160	MIM 1420160 T	MIM 1420160 B
10.00	10.00	70	22	MIM 1420170	MIM 1420170 T	MIM 1420170 B
11.00	11.00	70	22	MIM 1420180	MIM 1420180 T	MIM 1420180 B
12.00	12.00	70	22	MIM 1420190	MIM 1420190 T	MIM 1420190 B
13.00	13.00	75	25	MIM 1420200	MIM 1420200 T	MIM 1420200 B
14.00	14.00	75	25	MIM 1420210	MIM 1420210 T	MIM 1420210 B
15.00	15.00	75	25	MIM 1420220	MIM 1420220 T	MIM 1420220 B
16.00	16.00	75	25	MIM 1420230	MIM 1420230 T	MIM 1420230 B
18.00	18.00	100	32	MIM 1420240	MIM 1420240 T	MIM 1420240 B
20.00	20.00	100	32	MIM 1420250	MIM 1420250 T	MIM 1420250 B

On request: out of range • other sizes

Su richiesta: esecuzione speciale • diametri intermedi

Application groups • Applicazioni

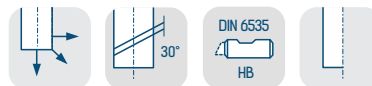


MIM 145

TWIST END MILL 3 FLUTES CENTER CUTTING • LONG SERIES

FRESA ELICOIDALE 3 TAGLIENTI TAGLIO AL CENTRO • SERIE LUNGA

T AlTiSiN **B** TiCN-B

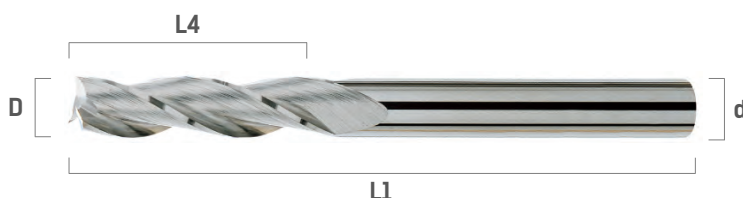


Solid carbide grades: 10% Co Micro grain

Application groups: suitable for general purpose milling of most materials, steels, non-ferrous-materials

Metallo duro: 10% Co micrograna

Applicazioni: Universale, per acciai e materiali non ferrosi



D h9	d h6	L1	L4	UNCOATED	AlTiSiN	TiCN-BR
3.00	3.00	55	20	MIM 1450010	MIM 1450010 T	MIM 1450010 B
4.00	4.00	60	20	MIM 1450020	MIM 1450020 T	MIM 1450020 B
5.00	5.00	60	20	MIM 1450030	MIM 1450030 T	MIM 1450030 B
6.00	6.00	65	24	MIM 1450040	MIM 1450040 T	MIM 1450040 B
8.00	8.00	80	32	MIM 1450050	MIM 1450050 T	MIM 1450050 B
10.00	10.00	80	32	MIM 1450060	MIM 1450060 T	MIM 1450060 B
12.00	12.00	100	50	MIM 1450070	MIM 1450070 T	MIM 1450070 B
14.00	14.00	100	50	MIM 1450080	MIM 1450080 T	MIM 1450080 B
16.00	16.00	100	50	MIM 1450090	MIM 1450090 T	MIM 1450090 B
18.00	18.00	100	50	MIM 1450100	MIM 1450100 T	MIM 1450100 B
20.00	20.00	100	50	MIM 1450110	MIM 1450110 T	MIM 1450110 B

On request: out of range • other sizes • DIN 6535 HB

Su richiesta: esecuzione speciale • diametri intermedi • DIN 6535 HB

Application groups • Applicazioni

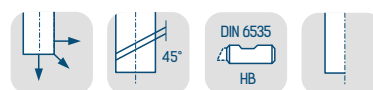


MIM 151

TWIST END MILL 3 FLUTES CENTER CUTTING

FRESA ELICOIDALE 3 TAGLIENTI TAGLIO AL CENTRO

T ALTiSiN **B** TiCN-B

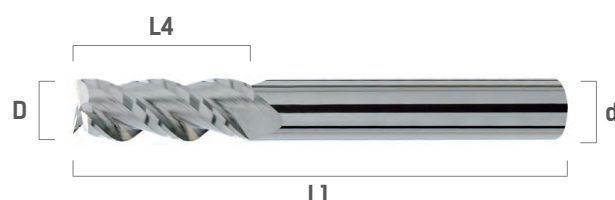


Solid carbide grades: 10% Co Micro grain

Application groups: steels, steel-alloys, Co Ni-alloys, aluminium, ferrous-materials. The deep flute geometry allows a good chip load and an excellent surface can be achieved

Metallo duro: 10% Co micrograna

Applicazioni: Acciai, acciai legati, leghe al Co Ni, alluminio e materiali non ferrosi, l'azione raschiante della torsione produce un truciolo corto diminuendo la pressione specifica di taglio, buona finitura



D h9	d h6	L1	L4	UNCOATED	ALTiSiN	TiCN-BR
4.00	4.00	55	12	MIM 1510010	MIM 1510010 T	MIM 1510010 B
5.00	5.00	60	14	MIM 1510020	MIM 1510020 T	MIM 1510020 B
6.00	6.00	60	16	MIM 1510030	MIM 1510030 T	MIM 1510030 B
8.00	8.00	65	20	MIM 1510040	MIM 1510040 T	MIM 1510040 B
10.00	10.00	80	22	MIM 1510050	MIM 1510050 T	MIM 1510050 B
12.00	12.00	80	22	MIM 1510060	MIM 1510060 T	MIM 1510060 B
14.00	14.00	100	25	MIM 1510070	MIM 1510070 T	MIM 1510070 B
16.00	16.00	100	25	MIM 1510080	MIM 1510080 T	MIM 1510080 B
18.00	18.00	100	30	MIM 1510090	MIM 1510090 T	MIM 1510090 B
20.00	20.00	100	30	MIM 1510100	MIM 1510100 T	MIM 1510100 B

On request: out of range • other sizes
Su richiesta: esecuzione speciale • diametri intermedi

Application groups • Applicazioni



MIM 148

TWIST END MILL 3 FLUTES CENTER CUTTING • EXTRA LONG SERIES

FRESA ELICOIDALE 3 TAGLIENTI TAGLIO AL CENTRO • SERIE EXTRA LUNGA

T AlTiSiN **B** TiCN-B

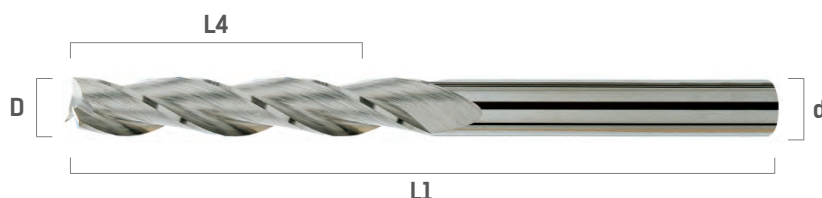


Solid carbide grades: 10% Co Micro grain

Application groups: suitable for general purpose milling of most materials, steels, non-ferrous-materials

Metallo duro: 10% Co micrograna

Applicazioni: Universale, per acciai e materiali non ferrosi



D h9	d h6	L1	L4	UNCOATED	AlTiSiN	TiCN-BR
3.00	3.00	70	30	MIM 1480010	MIM 1480010 T	MIM 1480010 B
4.00	4.00	75	40	MIM 1480020	MIM 1480020 T	MIM 1480020 B
5.00	5.00	80	40	MIM 1480030	MIM 1480030 T	MIM 1480030 B
6.00	6.00	80	45	MIM 1480040	MIM 1480040 T	MIM 1480040 B
8.00	8.00	100	50	MIM 1480050	MIM 1480050 T	MIM 1480050 B
10.00	10.00	100	50	MIM 1480060	MIM 1480060 T	MIM 1480060 B
12.00	12.00	150	70	MIM 1480070	MIM 1480070 T	MIM 1480070 B
14.00	14.00	150	75	MIM 1480080	MIM 1480080 T	MIM 1480080 B
16.00	16.00	150	75	MIM 1480090	MIM 1480090 T	MIM 1480090 B
18.00	18.00	150	75	MIM 1480100	MIM 1480100 T	MIM 1480100 B
20.00	20.00	150	75	MIM 1480110	MIM 1480110 T	MIM 1480110 B

On request: out of range • other sizes • DIN 6535 HB

Su richiesta: esecuzione speciale • diametri intermedi • DIN 6535 HB

Application groups • Applicazioni



MIM 154

**TWIST END MILL 2 FLUTES CENTER
CUTTING FOR HIGH SPEED**

FRESA ELICOIDALE 2 TAGLIENTI TAGLIO AL CENTRO
ALTA VELOCITÀ

T AlTiSiN **B** TiCN-B



Solid carbide grades: 10% Co Micro grain

Application groups: teels, steel-alloys, Co Ni-alloys, aluminium, ferrous-materials. The deep flute geometry allows a good chip load and an excellent surface can be achieved

Metallo duro: 10% Co micrograna

Applicazioni: Universale, consigliata per acciai temperati (riv. T-Cronal) alluminio e materiali non ferrosi

D h9	d h6	L1	L4	UNCOATED	AlTiSiN	TiCN-BR
4.00	4.00	57	8	MIM 1540010	MIM 1540010 T	MIM 1540010 B
6.00	6.00	57	10	MIM 1540020	MIM 1540020 T	MIM 1540020 B
8.00	8.00	63	16	MIM 1540030	MIM 1540030 T	MIM 1540030 B
10.00	10.00	72	19	MIM 1540040	MIM 1540040 T	MIM 1540040 B
12.00	12.00	82	22	MIM 1540050	MIM 1540050 T	MIM 1540050 B
16.00	16.00	92	25	MIM 1540060	MIM 1540060 T	MIM 1540060 B

On request: out of range • other sizes
Su richiesta: esecuzione speciale • diametri intermedi

Application groups • Applicazioni



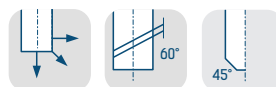
MIM 157

TWIST END MILL 2 FLUTES CENTER CUTTING FOR HIGH SPEED

FRESA ELICOIDALE 3 TAGLIENTI FORTE TORSIONE
TAGLIO AL CENTRO

T AlTiSiN

B TiCN-B

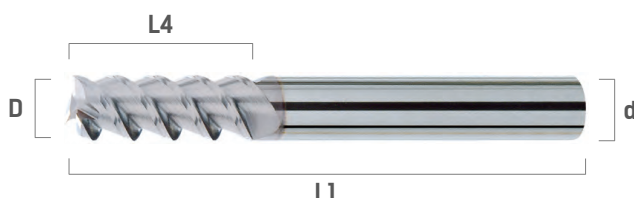


Solid carbide grades: 10% Co Micro grain

Application groups: for finishing milling of all short chipping materials, steels and hard milling. The 60° flute geometry reduces cutting load variations. Especially suited for surface milling

Metallo duro: 10% Co micrograna

Applicazioni: fresatura di tutti i materiali duri e a truciolo corto. La forte torsione diminuisce la pressione specifica di taglio. Idonee dove occorre poca esportazione e buona finitura



D h9	d h6	L1	L4	UNCOATED	AlTiSiN	TiCN-BR
4.00	4.00	50	12	MIM 1570010	MIM 1570010 T	MIM 1570010 B
5.00	5.00	50	14	MIM 1570020	MIM 1570020 T	MIM 1570020 B
6.00	6.00	50	16	MIM 1570030	MIM 1570030 T	MIM 1570030 B
8.00	8.00	60	20	MIM 1570040	MIM 1570040 T	MIM 1570040 B
10.00	10.00	70	22	MIM 1570050	MIM 1570050 T	MIM 1570050 B
12.00	12.00	70	22	MIM 1570060	MIM 1570060 T	MIM 1570060 B
14.00	14.00	75	25	MIM 1570070	MIM 1570070 T	MIM 1570070 B
16.00	16.00	75	25	MIM 1570080	MIM 1570080 T	MIM 1570080 B
18.00	18.00	100	30	MIM 1570090	MIM 1570090 T	MIM 1570090 B
20.00	20.00	100	30	MIM 1570100	MIM 1570100 T	MIM 157 0100 B

On request: out of range • other sizes • DIN 6535 HB

Su richiesta: esecuzione speciale • diametri intermedi DIN 6535 HB

Application groups • Applicazioni



MIM 160

**TWIST END MILL 4 FLUTES 45° HELIX
ANGLE 2 TEETH CUTTING TO CENTER**
FRESA ELICOIDALE 45° 4 TAGLIENTI TAGLIO AL
CENTRO

T AlTiSiN **B** TiCN-B **Z** ZrN

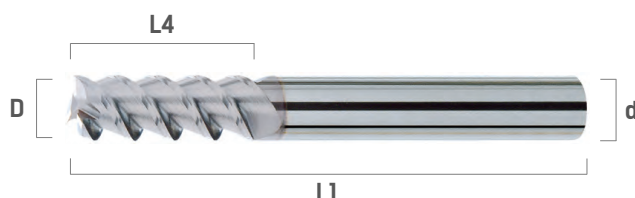


Solid carbide grades: 10% Co Micro grain

Application groups: for general purpose
milling of most materials, especially suitable for
aluminium, non-ferrous materials

Metallo duro: 10% Co micrograna

Applicazioni: Fresatura universale, specifica per Alluminio e
materiali non ferrosi



D h9	d h6	L1	L4	UNCOATED	AlTiSiN	TiCN-BR	ZrN
6.00	6.00	57	16	MIM 1600010	MIM 1600010 T	MIM 1600010 B	MIM 1600010 Z
8.00	8.00	63	19	MIM 1600020	MIM 1600020 T	MIM 1600020 B	MIM 1600020 Z
10.00	10.00	75	25	MIM 1600030	MIM 1600030 T	MIM 1600030 B	MIM 1600030 Z
12.00	12.00	83	28	MIM 1600040	MIM 1600040 T	MIM 1600040 B	MIM 1600040 Z
14.00	14.00	83	30	MIM 1600050	MIM 1600050 T	MIM 1600050 B	MIM 1600050 Z
16.00	16.00	92	35	MIM 1600060	MIM 1600060 T	MIM 1600060 B	MIM 1600060 Z
18.00	18.00	92	35	MIM 1600070	MIM 1600070 T	MIM 1600070 B	MIM 1600070 Z
20.00	20.00	104	40	MIM 1600080	MIM 1600080 T	MIM 1600080 B	MIM 1600080 Z

On request: out of range • other sizes • DIN 6535 HB

Su richiesta: esecuzione speciale • diametri intermedi DIN 6535 HB

Application groups • Applicazioni

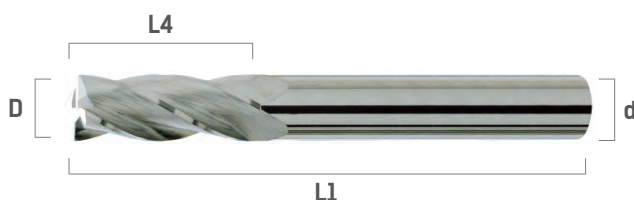


MIM 163

TWIST END MILL 4 FLUTES CENTER CUTTING

FRESA ELICOIDALE 4 TAGLIENTI TAGLIO AL CENTRO

T AlTiSiN **B** TiCN-B



Solid carbide grades: 10% Co Micro grain

Application groups: suitable for general purpose milling of most materials, steels, non-ferrous-materials

Metallo duro: 10% Co micrograna

Applicazioni: Universale, per acciai e materiali non ferrosi

D h9	d h6	L1	L4	UNCOATED	AlTiSiN	TiCN-BR
2.00	2.00	38	8	MIM 1630010	MIM 1630010 T	MIM 1630010 B
2.50	2.50	38	8	MIM 1630020	MIM 1630020 T	MIM 1630020 B
3.00	3.00	38	12	MIM 1630030	MIM 1630030 T	MIM 1630030 B
3.50	3.50	40	12	MIM 1630040	MIM 1630040 T	MIM 1630040 B
4.00	4.00	40	12	MIM 1630050	MIM 1630050 T	MIM 1630050 B
4.50	4.50	50	14	MIM 1630060	MIM 1630060 T	MIM 1630060 B
5.00	5.00	50	14	MIM 1630070	MIM 1630070 T	MIM 1630070 B
5.50	5.50	50	16	MIM 1630080	MIM 1630080 T	MIM 1630080 B
6.00	6.00	50	16	MIM 1630090	MIM 1630090 T	MIM 1630090 B
6.50	6.50	50	16	MIM 1630100	MIM 1630100 T	MIM 1630100 B
7.00	7.00	60	20	MIM 1630110	MIM 1630110 T	MIM 1630110 B
7.50	7.50	60	20	MIM 1630120	MIM 1630120 T	MIM 1630120 B
8.00	8.00	60	20	MIM 1630130	MIM 1630130 T	MIM 1630130 B
8.50	8.50	60	20	MIM 1630140	MIM 1630140 T	MIM 1630140 B
9.00	9.00	60	20	MIM 1630150	MIM 1630150 T	MIM 1630150 B
9.50	9.50	70	22	MIM 1630160	MIM 1630160 T	MIM 1630160 B
10.00	10.00	70	22	MIM 1630170	MIM 1630170 T	MIM 1630170 B
11.00	11.00	70	22	MIM 1630180	MIM 1630180 T	MIM 1630180 B
12.00	12.00	70	22	MIM 1630190	MIM 1630190 T	MIM 1630190 B
13.00	13.00	75	25	MIM 1630200	MIM 1630200 T	MIM 1630200 B
14.00	14.00	75	25	MIM 1630210	MIM 1630210 T	MIM 1630210 B
15.00	15.00	75	25	MIM 1630220	MIM 1630220 T	MIM 1630220 B
16.00	16.00	75	25	MIM 1630230	MIM 1630230 T	MIM 1630230 B
18.00	18.00	100	32	MIM 1630240	MIM 1630240 T	MIM 1630240 B
20.00	20.00	100	32	MIM 1630250	MIM 1630250 T	MIM 1630250 B

On request: out of range • other sizes • DIN 6535 HB

Su richiesta: esecuzione speciale • diametri intermedi DIN 6535 HB

Application groups • Applicazioni

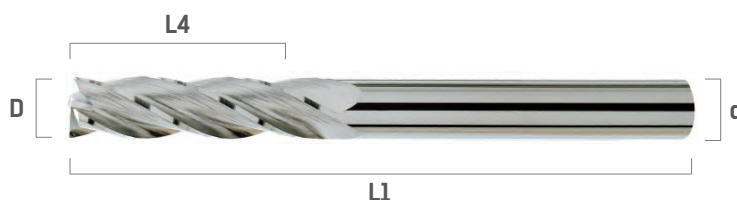


MIM 166

TWIST END MILL 4 FLUTES CENTER CUTTING LONG SERIES

FRESA ELICOIDALE 4 TAGLIENTI TAGLIO AL CENTRO
SERIE LUNGA

T AlTiSiN **B** TiCN-B



Solid carbide grades: 10% Co Micro grain

Application groups: suitable for general purpose milling of most materials, steels, non-ferrous-materials

Metallo duro: 10% Co micrograna

Applicazioni: Universale, per acciai e materiali non ferrosi

D h9	d h6	L1	L4	UNCOATED	AlTiSiN	TiCN-BR
3.00	3.00	55	20	MIM 1660010	MIM 1660010 T	MIM 1660010 B
4.00	4.00	60	20	MIM 1660020	MIM 1660020 T	MIM 1660020 B
5.00	5.00	60	20	MIM 1660030	MIM 1660030 T	MIM 1660030 B
6.00	6.00	65	24	MIM 1660040	MIM 1660040 T	MIM 1660040 B
8.00	8.00	80	32	MIM 1660050	MIM 1660050 T	MIM 1660050 B
10.00	10.00	80	32	MIM 1660060	MIM 1660060 T	MIM 1660060 B
12.00	12.00	100	50	MIM 1660070	MIM 1660070 T	MIM 1660070 B
14.00	14.00	100	50	MIM 1660080	MIM 1660080 T	MIM 1660080 B
16.00	16.00	100	50	MIM 1660090	MIM 1660090 T	MIM 1660090 B
18.00	18.00	100	50	MIM 1660100	MIM 1660100 T	MIM 1660100 B
20.00	20.00	100	50	MIM 1660110	MIM 1660110 T	MIM 1660110 B

On request: out of range • other sizes • DIN 6535 HB • T-Cronal coating
Su richiesta: esecuzione speciale • diametri intermedi DIN 6535 HB •
rivestimento T-Cronal

Application groups • Applicazioni



MIM 169

TWIST END MILL 4 FLUTES CENTER CUTTING • LONG SERIES

FRESA ELICOIDALE 4 TAGLIENTI

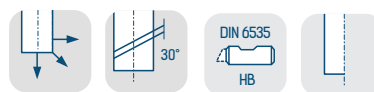
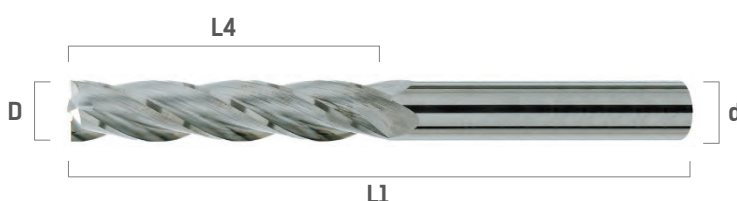
TAGLIO AL CENTRO • SERIE EXTRA LUNGA



AlTiSiN



TiCN-B

**Solid carbide grades:** 10% Co Micro grain**Application groups:** suitable for general purpose milling of most materials, steels, non-ferrous-materials**Metallo duro:** 10% Co micrograna**Applicazioni:** Universale, per acciai e materiali non ferrosi

D h9	d h6	L1	L4	UNCOATED	AlTiSiN	TiCN-BR
3.00	3.00	70	30	MIM 1690010	MIM 1690010 T	MIM 1690010 B
4.00	4.00	75	40	MIM 1690020	MIM 1690020 T	MIM 1690020 B
5.00	5.00	80	40	MIM 1690030	MIM 1690030 T	MIM 1690030 B
6.00	6.00	80	45	MIM 1690040	MIM 1690040 T	MIM 1690040 B
8.00	8.00	100	50	MIM 1690050	MIM 1690050 T	MIM 1690050 B
10.00	10.00	100	50	MIM 1690060	MIM 1690060 T	MIM 1690060 B
12.00	12.00	150	70	MIM 1690070	MIM 1690070 T	MIM 1690070 B
14.00	14.00	150	75	MIM 1690080	MIM 1690080 T	MIM 1690080 B
16.00	16.00	150	75	MIM 1690090	MIM 1690090 T	MIM 1690090 B
18.00	18.00	150	75	MIM 1690100	MIM 1690100 T	MIM 1690100 B
20.00	20.00	150	75	MIM 1690110	MIM 1690110 T	MIM 1690110 B

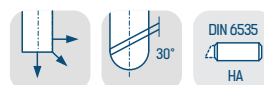
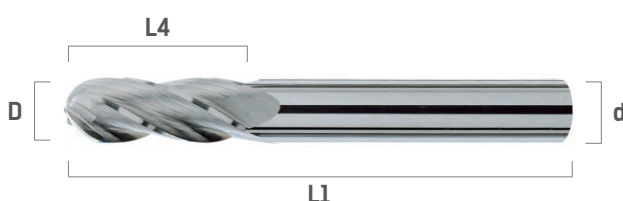
On request: out of range • other sizes • DIN 6535 HB • T-Cronal coating**Su richiesta:** esecuzione speciale • diametri intermedi DIN 6535 HB • rivestimento T-Cronal**Application groups • Applicazioni**

MIM 172

BALL NOSE TWIST END MILL 4 FLUTES CENTER CUTTING

FRESA ELICOIDALE A TESTA RAGGIATA
4 TAGLIENTI TAGLIO AL CENTRO

T AlTiSiN **B** TiCN-B



Solid carbide grades: 10% Co Micro grain

Application groups: for general purpose milling
of most materials, steels, non-ferrous materials

Metallo duro: 10% Co micrograna

Applicazioni: Fresature universale, anche per materiali non
ferrosi

D h9	d h6	L1	L4	UNCOATED	AlTiSiN	TiCN-BR
2.00	2.00	38	8	MIM 1720010	MIM 1720010 T	MIM 1720010 B
2.50	2.50	38	8	MIM 1720020	MIM 1720020 T	MIM 1720020 B
3.00	3.00	38	12	MIM 1720030	MIM 1720030 T	MIM 1720030 B
3.50	3.50	40	12	MIM 1720040	MIM 1720040 T	MIM 1720040 B
4.00	4.00	40	12	MIM 1720050	MIM 1720050 T	MIM 1720050 B
4.50	4.50	50	14	MIM 1720060	MIM 1720060 T	MIM 1720060 B
5.00	5.00	50	14	MIM 1720070	MIM 1720070 T	MIM 1720070 B
5.50	5.50	50	16	MIM 1720080	MIM 1720080 T	MIM 1720080 B
6.00	6.00	50	16	MIM 1720090	MIM 1720090 T	MIM 1720090 B
7.00	7.00	60	20	MIM 1720100	MIM 1720100 T	MIM 1720100 B
8.00	8.00	60	20	MIM 1720110	MIM 1720110 T	MIM 1720110 B
8.50	8.50	60	20	MIM 1720120	MIM 1720120 T	MIM 1720120 B
10.00	10.00	70	22	MIM 1720130	MIM 1720130 T	MIM 1720130 B
12.00	12.00	70	22	MIM 1720140	MIM 1720140 T	MIM 1720140 B
14.00	14.00	75	25	MIM 1720150	MIM 1720150 T	MIM 1720150 B
16.00	16.00	75	25	MIM 1720160	MIM 1720160 T	MIM 1720160 B

On request: out of range • other sizes • DIN 6535 HB

Su richiesta: esecuzione speciale • diametri intermedi DIN 6535 HB

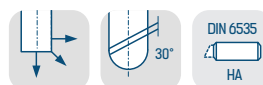
Application groups • Applicazioni



MIM 175

**BALL NOSE TWIST END MILL 4 FLUTES
CENTER CUTTING LONG SERIES**
FRESA ELICOIDALE A TESTA RAGGIATA 4 TAGLIENTI
TAGLIO AL CENTRO • SERIE LUNGA

T AlTiSiN **B** TiCN-B

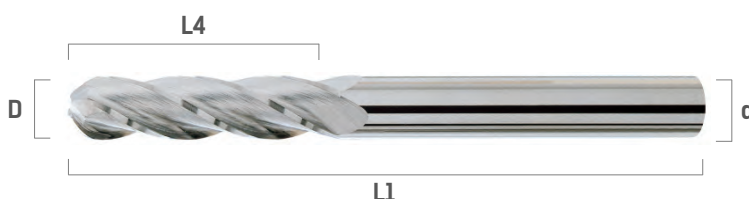


Solid carbide grades: 10% Co Micro grain

Application groups: for general purpose milling of most materials, steels, non-ferrous materials

Metallo duro: 10% Co micrograna

Applicazioni: Fresatura universale, anche per materiali non ferrosi



D h9	d h6	L1	L4	UNCOATED	AlTiSiN	TiCN-BR
3.00	3.00	55	20	MIM 1750010	MIM 1750010 T	MIM 1750010 B
4.00	4.00	60	20	MIM 1750020	MIM 1750020 T	MIM 1750020 B
5.00	5.00	60	20	MIM 1750030	MIM 1750030 T	MIM 1750030 B
6.00	6.00	65	24	MIM 1750040	MIM 1750040 T	MIM 1750040 B
8.00	8.00	80	32	MIM 1750050	MIM 1750050 T	MIM 1750050 B
10.00	10.00	80	32	MIM 1750060	MIM 1750060 T	MIM 1750060 B
12.00	12.00	100	50	MIM 1750070	MIM 1750070 T	MIM 1750070 B

On request: out of range • other sizes • DIN 6535 HB

Su richiesta: esecuzione speciale • diametri intermedi DIN 6535 HB •

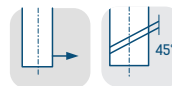
Application groups • Applicazioni



MIM 178

TWIST END MILL MULTI-CUT
FRESA ELICOIDALE MULTIDENTI

T AlTiSiN **B** TiCN-B

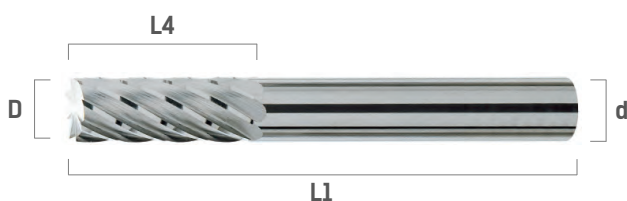


Solid carbide grades: 10% Co Micro grain

Application groups: for finishing milling of steel, non-ferrous materials, cast iron

Metallo duro: 10% Co micrograna

Applicazioni: Consigliata per fresature con ottime finiture della superficie, applicazione universale per acciaio, ghisa e metalli non ferrosi



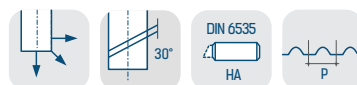
D h9	d h6	L1	L4	Z	UNCOATED	AlTiSiN	TiCN-BR
3.00	3.00	38	12	6	MIM 1780010	MIM 1780010 T	MIM 1780010 B
4.00	4.00	40	12	6	MIM 1780020	MIM 1780020 T	MIM 1780020 B
5.00	5.00	50	14	6	MIM 1780030	MIM 1780030 T	MIM 1780030 B
6.00	6.00	50	16	8	MIM 1780040	MIM 1780040 T	MIM 1780040 B
7.00	7.00	60	20	8	MIM 1780050	MIM 1780050 T	MIM 1780050 B
8.00	8.00	60	20	8	MIM 1780060	MIM 1780060 T	MIM 1780060 B
10.00	10.00	70	22	8	MIM 1780070	MIM 1780070 T	MIM 1780070 B
12.00	12.00	70	22	10	MIM 1780080	MIM 1780080 T	MIM 1780080 B

Su richiesta: esecuzione speciale • diametri intermedi
On request: out of range • other sizes

Application groups • Applicazioni



MIM 181



ROUGHING END MILL FINE PROFILE

FRESA CON ROMPITRUCIOLO
DENTATURA FINE

T AlTiSiN **B** TiCN-B

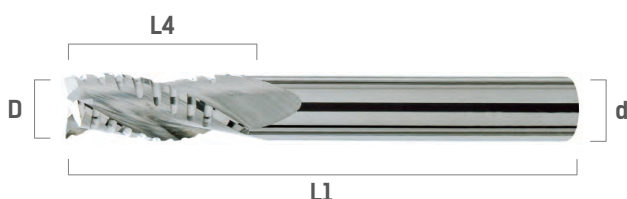
Solid carbide grades: 10% Co Micro grain

Application groups: for finishing milling of steel, steel-alloys, non-ferrous materials.

Very high chip removal through the roughing profile

Metallo duro: 10% Co micrograna

Applicazioni: Alta asportazione di truciolo. Acciai, acciai legati e materiali non ferrosi



D h9	d h6	L1	L4	Z	P	UNCOATED	AlTiSiN	TiCN-BR
6.00	6.00	50	14	3	1.5	MIM 1810010	MIM 1810010 T	MIM 1810010 B
8.00	8.00	60	19	3	2	MIM 1810020	MIM 1810020 T	MIM 1810020 B
10.00	10.00	70	22	4	2.5	MIM 1810030	MIM 1810030 T	MIM 1810030 B
12.00	12.00	74	26	4	2.5	MIM 1810040	MIM 1810040 T	MIM 1810040 B
14.00	14.00	76	28	4	3	MIM 1810050	MIM 1810050 T	MIM 1810050 B
16.00	16.00	83	32	4	3	MIM 1810060	MIM 1810060 T	MIM 1810060 B
18.00	18.00	85	32	4	3	MIM 1810070	MIM 1810070 T	MIM 1810070 B
20.00	20.00	93	35	4	3	MIM 1810080	MIM 1810080 T	MIM 1810080 B

On request: out of range • other sizes

Su richiesta: esecuzione speciale • diametri intermedi

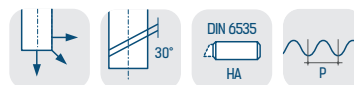
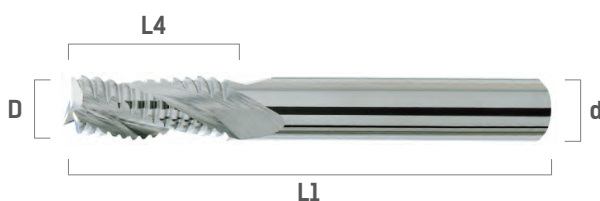
Application groups • Applicazioni



MIM 184

ROUGHING END MILL COARSE PROFILE
FRESA CON ROMPITRUCIOLO DENTATURA GROSSA

T AlTiSiN **B** TiCN-B



Solid carbide grades: 10% Co Micro grain

Application groups: for finishing milling of steel, steel-alloys, non-ferrous materials.

Very high chip removal through the roughing profile

Metallo duro: 10% Co micrograna

Applicazioni: Alta asportazione di truciolo. Acciai, acciai legati e materiali non ferrosi

D h9	d h6	L1	L4	Z	P	UNCOATED	AlTiSiN	TiCN-BR
6.00	6.00	50	14	3	1	MIM 1840010	MIM 1840010 T	MIM 1840010 B
8.00	8.00	60	19	3	1.5	MIM 1840020	MIM 1840020 T	MIM 1840020 B
10.00	10.00	70	22	4	1.5	MIM 1840030	MIM 1840030 T	MIM 1840030 B
12.00	12.00	74	26	4	2	MIM 1840040	MIM 1840040 T	MIM 1840040 B
14.00	14.00	76	28	4	2	MIM 1840050	MIM 1840050 T	MIM 1840050 B
16.00	16.00	83	32	4	2.5	MIM 1840060	MIM 1840060 T	MIM 1840060 B
18.00	18.00	85	32	4	2.5	MIM 1840070	MIM 1840070 T	MIM 1840070 B
20.00	20.00	93	35	4	2.5	MIM 1840080	MIM 1840080 T	MIM 1840080 B

On request: out of range Shank DIN 6535 HB
Su richiesta: diametri intermedi DIN 6535 HB

Application groups • Applicazioni

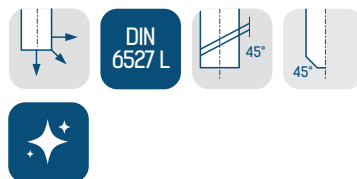
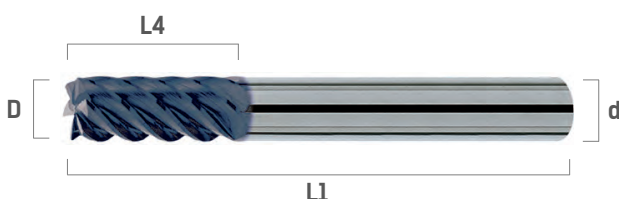


MIM 204

HIGH SPEED CUTTING END MILL FOR
FINISHING MILLING MULTI-CUT, POSITIVE
FRONT RAKE ANGLE

FRESA CILINDRICA MULTIDENTI POSITIVA PER
FINITURE AD ALTA VELOCITÀ

P PVD-PRO



Solid carbide grades: 12% Co Micro grain < 0,4μ

Specification: positive front rake angle

Application groups: for dry milling of most materials, steel, hardened steel, non-ferrous materials, cast iron

Metallo duro: 12% Co micrograna < 0,4 μ

Caratteristiche: Angolo di spoglia positivo

Applicazioni: Fresature universali per acciaio, acciaio temperato, ghisa e metalli ferrosi. Idonea per fresature a secco

D h9	d h6	L1	L4	Z	PVD-PRO
6.00	6.00	57	13	6	MIM 2040010 P
8.00	8.00	63	19	6	MIM 2040020 P
10.00	10.00	72	22	6	MIM 2040030 P
12.00	12.00	83	26	6	MIM 2040040 P
14.00	14.00	83	26	6	MIM 2040050 P
16.00	16.00	92	22	8	MIM 2040060 P
20.00	20.00	104	38	8	MIM 2040070 P

On request: out of range
Su richiesta: diametri intermedi

Application groups • Applicazioni

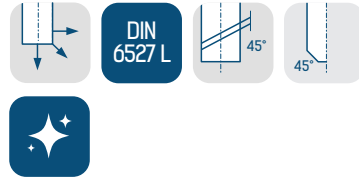
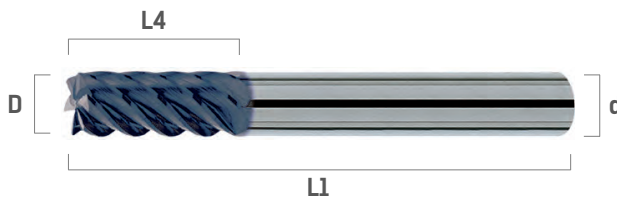


MIM 208

HIGH SPEED CUTTING END MILL FOR
FINISHING MILLING MULTI-CUT, POSITIVE
FRONT RAKE ANGLE

FRESA CILINDRICA MULTIDENTI POSITIVA PER
FINITURE AD ALTA VELOCITÀ

P PVD-PRO



Solid carbide grades: 12% Co Micro grain < 0,4 µ

Specification: positive front rake angle

Application groups: for dry milling of
most materials, steel, hardened steel,
non-ferrous materials, cast iron

Metallo duro: 12% Co micrograna < 0,4 µ

Caratteristiche: Angolo di spoglia positivo

Applicazioni: Fresature universali per acciaio, acciaio
temperato, ghisa e metalli ferrosi. Idonea per fresature a
secco

D h9	d h6	L1	L4	Z	PVD-PRO
6.00	6.00	65	20	6	MIM 2080010 P
8.00	8.00	70	25	6	MIM 2080020 P
10.00	10.00	80	30	6	MIM 2080030 P
12.00	12.00	95	35	6	MIM 2080040 P
16.00	16.00	110	50	8	MIM 2080050 P
20.00	20.00	135	65	8	MIM 2080060 P

On request: out of range
Su richiesta: diametri intermedi

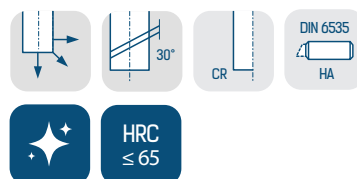
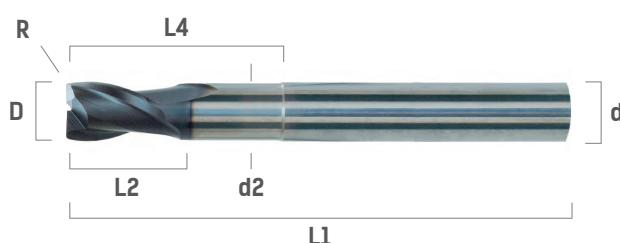
Application groups · Applicazioni



MIM 212

TORODIAL END MILL LONG SERIES FRESE TORICA LUNGA

P PVD-PRO



Solid carbide grades: 12% Co Micro grain < 0,4 μ

Application groups: especially suitable for milling in steel up to HRC 65 in molds and dies, high temperature steel, graphite. Furthermore designed for turbine-and aeroplane-maker. Suitable for dry milling HSC < 50 HRC. HHC < 65 HRC

Metallo duro: 12% Co micrograna < 0,4 μ

Applicazioni: Produzione di stampi e matrici, turbine e per il settore aeronautico, materiali temprati fino a 65 HRC e resistenti al calore, grafite, idonea anche per fresature a secco HSC < 50 HRC. HHC < 65 HRC

D h7	d h6	d2	R	L1	L4	L2	PVD-PRO
3.00	3.00	2.9	0.5	50	20	5	MIM 2120010 P
4.00	4.00	3.8	0.5	50	20	6	MIM 2120020 P
5.00	5.00	4.8	0.5	50	20	7	MIM 2120030 P
6.00	6.00	5.8	0.5	60	25	9	MIM 2120040 P
6.00	6.00	5.8	1	60	25	9	MIM 2120050 P
8.00	8.00	7.8	0.5	78	35	11	MIM 2120060 P
8.00	8.00	7.8	1	78	35	11	MIM 2120070 P
8.00	8.00	7.8	1.5	78	35	11	MIM 2120080 P
10.00	10.00	9.6	0.5	78	35	13	MIM 2120090 P
10.00	10.00	9.6	1	78	35	13	MIM 2120100 P
10.00	10.00	9.6	1.5	78	35	13	MIM 2120110 P
12.00	12.00	11.5	1	100	40	15	MIM 2120120 P
12.00	12.00	11.5	1.5	100	40	15	MIM 2120130 P
12.00	12.00	11.5	2	100	40	15	MIM 2120140 P

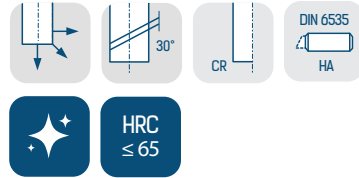
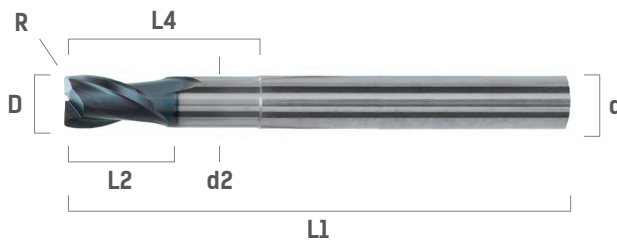
Application groups • Applicazioni



MIM 216

TORODIAL END MILL • EXTRA LONG SERIES
FRESA TORICA • EXTRA LUNGA

P PVD-PRO



Solid carbide grades: 12% Co Micro grain < 0,4 μ

Application groups: especially suitable for milling in steel up to HRC 65 in molds and dies, high temperature steel, graphite. Furthermore designed for turbine- and aeroplane-maker. Suitable for dry milling HSC < 50 HRC. HHC < 65 HRC

Metallo duro: 12% Co micrograna < 0,4 μ

Applicazioni: Produzione di stampi e matrici, turbine e per il settore aeronautico, materiali temprati fino a 65 HRC e resistenti al calore, grafite, idonea anche per fresature a secco HSC < 50 HRC. HHC < 65 HRC

D h7	d h6	d2	R	L1	L4	L2	PVD-PRO
3.00	3.00	2.9	0.5	78	25	5	MIM 2160010 P
4.00	4.00	3.8	0.5	78	30	6	MIM 2160020 P
5.00	5.00	4.8	0.5	78	35	7	MIM 2160030 P
6.00	6.00	5.8	0.5	120	50	9	MIM 2160040 P
6.00	6.00	5.8	1	120	50	9	MIM 2160050 P
8.00	8.00	7.8	0.5	120	55	11	MIM 2160060 P
8.00	8.00	7.8	1	120	55	11	MIM 2160070 P
8.00	8.00	7.8	1.5	120	55	11	MIM 2160080 P
10.00	10.00	9.6	0.5	150	65	13	MIM 216090 P
10.00	10.00	9.6	1	150	65	13	MIM 2160100 P
10.00	10.00	9.6	1.5	150	65	13	MIM 2160110 P
12.00	12.00	11.5	1	150	70	15	MIM 2160120 P
12.00	12.00	11.5	1.5	150	70	15	MIM 2160130 P
12.00	12.00	11.5	2	150	70	15	MIM 2160140 P

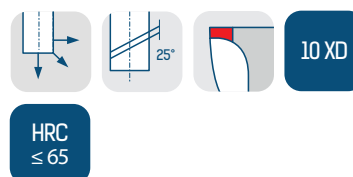
Application groups • Applicazioni



MIM 220

MICRO END MILL 2 FLUTES 10 X D
MICRO FRESA 2 TAGLI 10 X D

P PVD-PRO



Solid carbide grades: Micro grain 0,6 μ

Application groups: Milling of moulds and dies, steel, stainless steel, titanium alloys

Metallo duro: Micrograna 0,6 μ

Applicazioni: Fresatura stampi e matrici, acciai, acciai inox, leghe di titanio



D h7	d h6	d2	s	L1	L4	L2	PVD-PRO
0.50	0.50	0.45		40	5	0.60	MIM 2200010 P
0.60	0.60	0.55		40	6	0.72	MIM 2200020 P
0.80	0.80	0.75		40	8	0.96	MIM 2200030 P
1.00	1.00	0.95	0.07	50	10	1.20	MIM 2200040 P
1.20	1.20	1.10	0.07	50	12	1.44	MIM 2200050 P
1.50	1.50	1.40	0.07	60	15	1.80	MIM 2200060 P
2.00	2.00	1.90	0.10	60	20	2.40	MIM 2200070 P
2.50	2.50	2.30	0.10	60	25	3.00	MIM 2200080 P
3.00	3.00	2.80	0.10	60	30	3.60	MIM 2200090 P

On request: out of range • other sizes

Su richiesta: esecuzione speciale • diametri intermedi

Application groups • Applicazioni

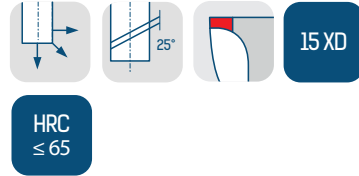


MIM 224

MICRO END MILL 2 FLUTES 15 X D

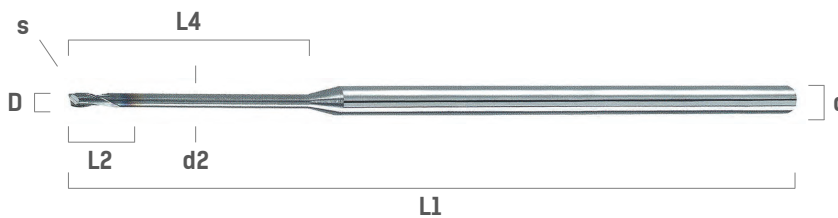
MICRO FRESA 2 TAGLI 15 X D

P PVD-PRO



Solid carbide grades: Micro grain 0,6 μ
Application groups: Milling of moulds and dies, steel, stainless steel, titanium alloys

Metallo duro: Micrograna 0,6 μ
Applicazioni: Fresatura stampi e matrici, acciai, acciai inox, leghe di titanio



D h7	d h6	d2	s	L1	L4	L2	PVD-PRO
1.00	3.00	0.95	0.07	60	15	1.20	MIM 2240010 P
1.20	3.00	1.10	0.07	60	18	1.44	MIM 2240020 P
1.50	3.00	1.40	0.07	70	22.5	1.80	MIM 2240030 P
2.00	3.00	1.90	0.10	70	30	2.40	MIM 2240040 P
2.50	3.00	2.30	0.10	70	37.5	3.00	MIM 2240050 P
3.00	3.00	2.80	0.10	80	45	3.60	MIM 2240060 P

On request: out of range · other sizes
Su richiesta: esecuzione speciale · diametri intermedi

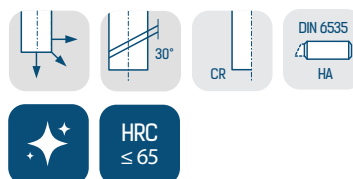
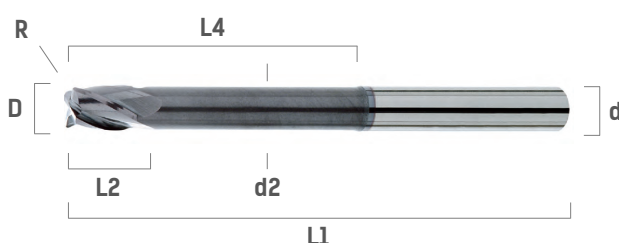
Application groups · Applicazioni



MIM 228

TORODIAL END MILL • LONG SERIES
FRESE TORICA • LUNGA

P PVD-PRO



Solid carbide grades: 12% Co Micro grain < 0,4 μ

Application groups: especially suitable for milling in steel up to HRC 65 in molds and dies, high temperature steel, graphite. Furthermore designed for turbine- and aeroplane-maker. Suitable for dry milling HSC < 50 HRC. HHC < 65 HRC

Metallo duro: 12% Co micrograna < 0,4 μ

Applicazioni: Produzione di stampi e matrici, turbine e per il settore aeronautico, materiali temprati fino a 65 HRC e resistenti al calore, grafite, idonea anche per fresature a secco HSC < 50 HRC. HHC < 65 HRC

D h10	d h6	d2	R	L1	L4	L2	PVD-PRO
3.00	3.00	2.9	0.3	57	14	4	MIM 2280010 P
4.00	4.00	3.8	0.4	57	16	5	MIM 2280020 P
5.00	5.00	4.8	0.5	57	21	6	MIM 2280030 P
6.00	6.00	5.5	0.5	57	21	7	MIM 2280040 P
6.00	6.00	5.5	1	57	21	7	MIM 2280050 P
8.00	8.00	7.5	0.5	63	27	10	MIM 2280060 P
8.00	8.00	7.5	1	63	27	10	MIM 2280070 P
8.00	8.00	7.5	1.5	63	27	10	MIM 2280080 P
8.00	8.00	7.5	2	63	27	10	MIM 2280090 P
10.00	10.00	9.5	0.5	72	32	12	MIM 2280100 P
10.00	10.00	9.5	1	72	32	12	MIM 2280110 P
10.00	10.00	9.5	1.5	72	32	12	MIM 2280120 P
10.00	10.00	9.5	2	72	32	12	MIM 2280130 P
12.00	12.00	11.5	0.5	83	38	15	MIM 2280140 P
12.00	12.00	11.5	1	83	38	15	MIM 2280150 P
12.00	12.00	11.5	1.5	83	38	15	MIM 2280160 P
12.00	12.00	11.5	2	83	38	15	MIM 2280170 P

Application groups • Applicazioni

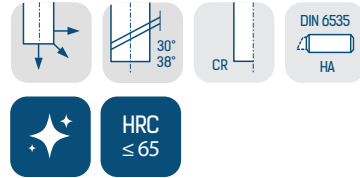
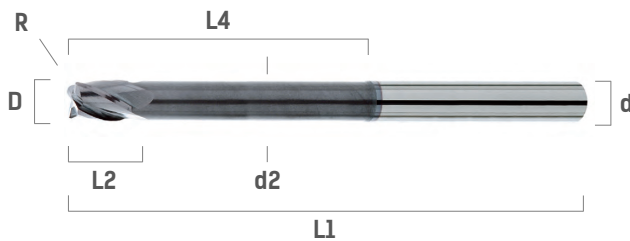


MIM 232

TOROIDAL END MILL HPC 35°/38° EXTRA LONG SERIES

FRESA TORICA HPC 35°/38° · EXTRA LUNGA

P PVD-PRO



Solid carbide grades: 12% Co Micro grain < 0,4 µ

Application groups: especially suitable for milling in steel up to HRC 65 in molds and dies, high temperature steel, graphite. Furthermore designed for turbine-and aeroplane-maker. Suitable for dry milling No vibrations. Corner radius. Unequal division HSC < 50 HRC. HHC < 65 HRC

Metallo duro: 12% Co micrograna < 0,4 µ

Applicazioni: Produzione di stampi e matrici, turbine e per il settore aeronautico, materiali temprati fino a 65 HRC e resistenti al calore, grafite, ideonea anche per fresature a secco. Assenza di vibrazione. Raggio d'angolo. Divisione irregolare HSC < 50 HRC. HHC < 65 HRC

D h10	d h6	d2	R	L1	L4	L2	PVD-PRO
6.00	6.00	5.5	0.5	80	45	8	MIM 2320010 P
6.00	6.00	5.5	1	80	45	8	MIM 2320020 P
8.00	8.00	7.5	0.5	100	60	11	MIM 2320030 P
8.00	8.00	7.5	1	100	60	11	MIM 2320040 P
8.00	8.00	7.5	1.5	100	60	11	MIM 2320050 P
8.00	8.00	7.5	2	100	60	11	MIM 2320060 P
10.00	10.00	9.5	0.5	100	60	13	MIM 2320070 P
10.00	10.00	9.5	1	100	60	13	MIM 2320080 P
10.00	10.00	9.5	1.5	100	60	13	MIM 2320090 P
10.00	10.00	9.5	2	100	60	13	MIM 2320100 P
12.00	12.00	11.5	0.5	120	75	16	MIM 2320110 P
12.00	12.00	11.5	1	120	75	16	MIM 2320120 P
12.00	12.00	11.5	1.5	120	75	16	MIM 2320130 P
12.00	12.00	11.5	2	120	75	16	MIM 2320140 P

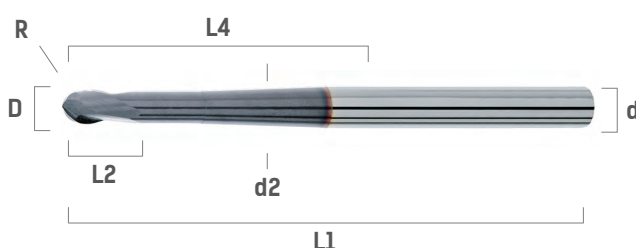
Application groups · Applicazioni



MIM 236

BALL NOSE END MILL • EXTRA LONG SERIES
FRESA RAGGIATA • EXTRA LUNGA

P PVD-PRO



HRC
≤ 65

Solid carbide grades: 12% Co Micro grain < 0,4 μ

Application groups: especially suitable for milling in steel in molds and dies, high temperature steel. Furthermore designed for turbine- and aeroplane-maker. Suitable for dry milling

Metallo duro: 12% Co micrograna < 0,4 μ

Applicazioni: Produzione di stampi e matrici, turbine e per il settore aeronautico, materiali temprati e resistenti al calore, idonea per fresature a secco

D h10	d h6	d2	R	L1	L4	L2	PVD-PRO
4.00	4.00	3.7	2	100	40	6	MIM 2360010 P
6.00	6.00	5.7	3	100	45	7	MIM 2360020 P
8.00	8.00	7.7	4	120	60	8	MIM 2360030 P
10.00	10.00	9.7	5	120	80	10	MIM 2360040 P

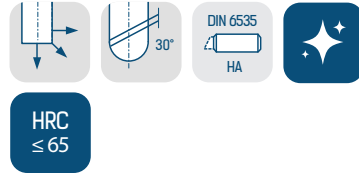
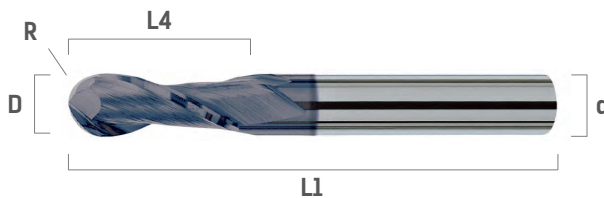
Application groups • Applicazioni



MIM 240

**BALL NOSE END MILL ESPECIALLY FOR
MOULD-MILLING 2 FLUTES CENTER CUTTING**
FRESA ELICOIDALE A TESTA RAGGIATA PER STAMPI
2 TAGLIENTI TAGLIO AL CENTRO

P PVD-PRO



Solid carbide grades: 12% Co Micro grain < 0,4 µ

Application groups: steel alloys,
hardened steel, milling in molds

Metallo duro: 12% Co micrograna < 0,4 µ

Applicazioni: Per acciai legati, temprati, stampi

D h9	d h6	R	L1	L4	PVD-PRO
3.00	3.00	1.5	50	5	MIM 2400010 P
4.00	4.00	2	54	6	MIM 2400020 P
5.00	5.00	2.5	54	8	MIM 2400030 P
6.00	6.00	3	54	9	MIM 2400040 P
8.00	8.00	4	58	12	MIM 2400050 P
10.00	10.00	5	66	15	MIM 2400060 P
12.00	12.00	6	73	18	MIM 2400070 P
16.00	16.00	8	82	25	MIM 2400080 P
20.00	20.00	10	92	30	MIM 2400090 P

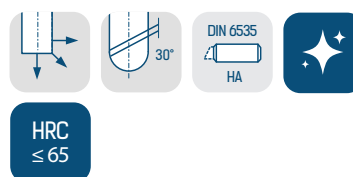
Application groups · Applicazioni



MIM 244

**BALL NOSE END MILL ESPECIALLY FOR
MOULD-MILLING 2 FLUTES CENTER CUTTING**
FRESA ELICOIDALE A TESTA RAGGIATA PER STAMPI
2 TAGLIENTI TAGLIO AL CENTRO

P PVD-PRO

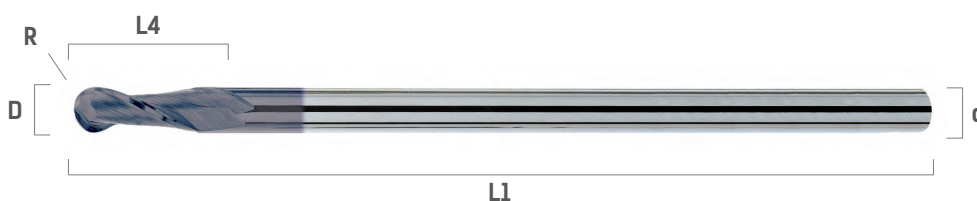


Solid carbide grades: 12% Co Micro grain < 0,4 µ

Application groups: steel alloys,
hardened steel, milling in molds

Metallo duro: 12% Co micrograna < 0,4 µ

Applicazioni: Per acciai legati, temprati, stampi



D h9	d h6	R	L1	L4	PVD-PRO
6.00	6.00	3	100	15	MIM 2440010 P
6.00	6.00	3	150	20	MIM 2440020 P
8.00	8.00	4	150	20	MIM 2440030 P
8.00	8.00	4	200	20	MIM 2440040 P
10.00	10.00	5	150	25	MIM 2440050 P
10.00	10.00	5	200	25	MIM 2440060 P
12.00	12.00	6	150	25	MIM 2440070 P
12.00	12.00	6	200	25	MIM 2440080 P

Application groups · Applicazioni

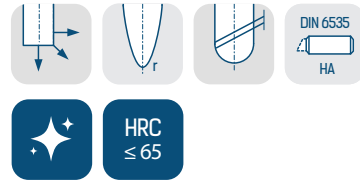


MIM 248

BARREL MILLING CUTTER, TANGENTIAL
FORM Z=4

FRESA TANGENZIALE A SEGMENTO CURVO Z=4

P PVD-PRO

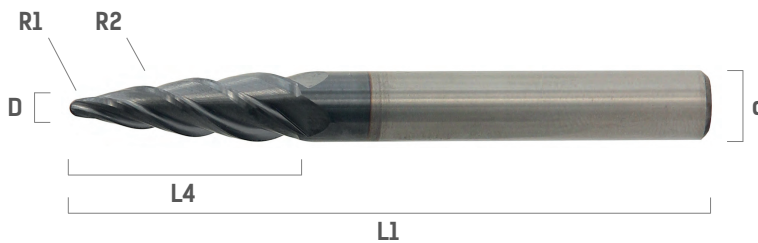


Solid carbide grades: Micro grain 0,5 μ

Application groups: steel, hardened steel up to 60 HRC, stainless steel, iron, aluminium alloys

Metallo duro: Micrograna 0,5 μ

Applicazioni: Acciai, acciai temprati fino a 60 HRC, inox, ghisa e leghe di alluminio



D h10	d h6	R1	R2	L1	L4	PVD-PRO
2.00	2.00	1	95	70	24	MIM 2480010 P
2.00	4.00	2	90	82	28	MIM 2480020 P
6.00	6.00	3	105	105	30	MIM 2480030 P

Application groups · Applicazioni

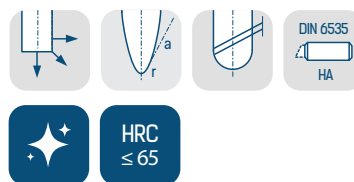


MIM 252

BARREL MILLING CUTTER, CONICAL FORM Z=4

FRESA CONICA A SEGMENTO CURVO Z=4

P PVD-PRO



Solid carbide grades: Micro grain 0,5 μ

Application groups: steel, hardened steel up to 60 HRC, stainless steel, iron, aluminium alloys

Metallo duro: Micrograna 0,5 μ

Applicazioni: Acciai, acciai temprati fino a 60 HRC, inox, ghisa e leghe di alluminio



D h10	d h6	ha	R1	R2	R3	L1	L4	PVD-PRO
2.00	8.00	18°	1	300	1	75	10	MIM 2520010 P
4.00	12.00	18°	2	450	2	100	14	MIM 2520020 P
6.00	16.00	18°	3	1200	3	120	18	MIM 2520030 P
6.00	16.00	28°	3	800	3	120	12	MIM 2520040 P
8.00	16.00	18°	4	1200	4	120	16	MIM 2520050 P
8.00	16.00	28°	4	800	4	120	11	MIM 2520060 P

Application groups • Applicazioni



MIM 256

MINIATUR BALL NOSE END MILL
SHANK Ø 6,0 MM
MICRO FRESE RAGGiate GAMBO Ø 6,0 MM

P PVD-PRO

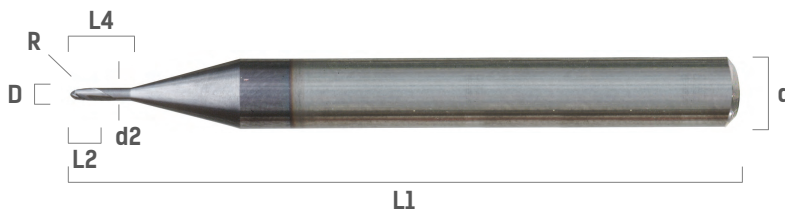


Solid carbide grades: 12% Co Micro grain < 0,4 µ

Application groups: for milling of most materials, steel until 60 HRC, non ferrous materials

Metallo duro: 12% Co micrograna < 0,4 µ

Applicazioni: Universali, materiali temprati fino a 60 HRC, materiali non ferrosi



D h9	d h6	d2	R	L1	L4	L2	PVD-PRO
0.60	6.00	0.55	0.3	55	3	1.20	MIM 2560010 A
0.80	6.00	0.75	0.4	55	4	1.20	MIM 2560020 A
1.00	6.00	0.95	0.5	55	5	1.50	MIM 2560030 A
1.20	6.00	1.15	0.6	55	5	1.60	MIM 2560040 A
1.50	6.00	1.44	0.75	55	5	1.80	MIM 2560050 A
2.00	6.00	1.92	1	55	6	2.00	MIM 2560060 A

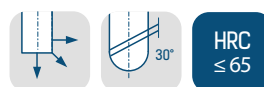
Application groups · Applicazioni



MIM 260

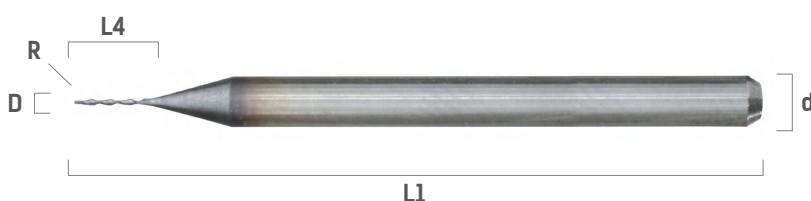
MINIATUR BALL NOSE END MILL LONG
SERIES SHANK Ø 3,0 MM
MICRO FRESE RAGGiate SERIE LUNGA GAMBO Ø 3,0 MM

P PVD-PRO



Solid carbide grades: 12% Co Micro grain < 0,4 µ
Application groups: general purpose milling, especially suitable for copy-milling and milling of non ferrous materials.

Metallo duro: 12% Co micrograna < 0,4 µ
Applicazioni: Universali, lavorazione per stampi e materiali non ferrosi



D h9	d h6	R	L1	L4	PVD-PRO
0.40	3.00	0.2	38	1.0	MIM 2600010 A
0.60	3.00	0.3	38	1.5	MIM 2600020 A
0.80	3.00	0.4	38	2.0	MIM 2600030 A
1.00	3.00	0.5	38	2.5	MIM 2600040 A
1.50	3.00	0.75	38	4.5	MIM 2600050 A

Application groups • Applicazioni

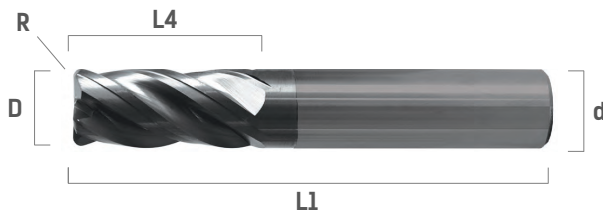


MIM 327

HIGH PERFORMANCE SOLID CARBIDE AND
MILLS 35°/38° FOR STEEL UP TO 65HRC

FRESA AD ELEVATA PRESTAZIONE 35°/38° FINO
A 65HRC

P PVD-PRO



HRC
≤ 65

Solid carbide grades: K10 micro grain < 0,5μ

Application groups: materials up to 65 HRC.
High tempered steel, cast iron and non ferrous
metals . No vibrations. Corner radius.
Unequal division On

Metallo duro: K10 micrograna < 0,5μ

Applicazioni: metalli fino a 65 HRC. Acciai altamente
temprati, ghisa e metalli non ferrosi. Assenza di vibrazione.
Raggio d'angolo. Divisione irregolare

D h8	d h6	R	L1	L4	PVD-PRO
4.00	6.00	0.5	57	11	MIM 3270010 P
4.00	6.00	1	57	11	MIM 3270020 P
5.00	6.00	0.5	57	13	MIM 3270030 P
5.00	6.00	1	57	13	MIM 3270040 P
6.00	6.00	0.5	57	13	MIM 3270050 P
6.00	6.00	1	57	13	MIM 3270060 P
8.00	8.00	0.5	63	19	MIM 3270070 P
8.00	8.00	1	63	19	MIM 3270080 P
10.00	10.00	0.5	72	22	MIM 3270090 P
10.00	10.00	1	72	22	MIM 3270100 P
12.00	12.00	0.5	83	26	MIM 3270110 P
12.00	12.00	1	83	26	MIM 3270120 P
16.00	16.00	1	92	32	MIM 3270130 P
16.00	16.00	2	92	32	MIM 3270140 P
20.00	20.00	1	104	38	MIM 3270150 P
20.00	20.00	2	104	38	MIM 3270160 P

On request: DIN 6535 HB
Su richiesta: DIN 6535 HB

Application groups • Applicazioni

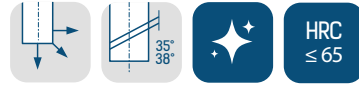
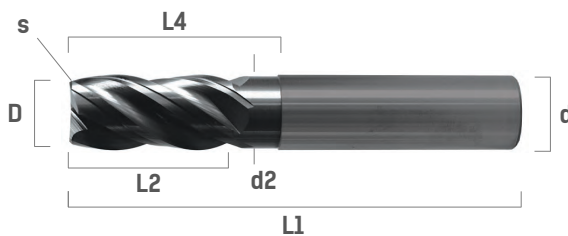


MIM 309

HIGH PERFORMANCE SOLID CARBIDE AND
MILLS 35°/38° FOR STEEL UP TO 65HRC

FRESA AD ELEVATA PRESTAZIONE 35°/38° FINO
A 65HRC

P PVD-PRO



Solid carbide grades: K10 micro grain < 0,5μ

Application groups: materials up to 65 HRC.
High tempered steel, cast iron and non ferrous
metals No vibrations. Chamfer.
Unequal division On

Metallo duro: K10 micrograna < 0,5μ

Applicazioni: metalli fino a 65 HRC. Acciai altamente
temprati, ghisa e metalli non ferrosi. Assenza di vibrazione
Smusso d'angolo. Divisione irregolare

D h8	d h6	d2	s	L1	L4	L2	PVD-PRO
3.00	6.00	2.80	0.1	57	15	8	MIM 3090010 P
4.00	6.00	3.50	0.1	57	17	11	MIM 3090020 P
5.00	6.00	4.50	0.2	57	19	13	MIM 3090030 P
6.00	6.00	5.50	0.2	57	21	13	MIM 3090040 P
8.00	8.00	7.50	0.2	63	26	19	MIM 3090050 P
10.00	10.00	9.50	0.25	72	30	22	MIM 3090060 P
12.00	12.00	11.50	0.3	83	37	26	MIM 3090070 P
16.00	16.00	15.50	0.4	92	42	32	MIM 3090080 P
20.00	20.00	19.50	0.5	104	50	38	MIM 3090090 P

Application groups · Applicazioni

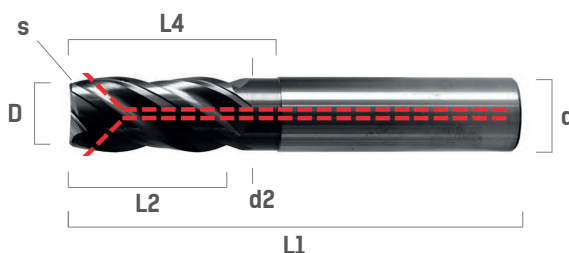


MIM 345

HIGH PERFORMANCE SOLID CARBIDE AND
MILLS 35°/38° FOR STEEL UP TO 65HRC
WITH SIDE COOLANT HOLES

FRESA AD ELEVATA PRESTAZIONE 35°/38° FINO A 65HRC
CON FORI INTERNI DI LUBRIFICAZIONE SULLE GOLE

P PVD-PRO



Solid carbide grades: K10 micro grain < 0,5μ

Application groups: materials up to 65 HRC.
High tempered steel, cast iron and non ferrous
metals

No vibrations. Chamfer. Unequal division On

Metallo duro: K10 micrograna < 0,5μ

Applicazioni: metalli fino a 65 HRC. Acciai altamente
temprati, ghisa e metalli non ferrosi. Assenza di vibrazione.
Smusso d'angolo. Divisione irregolare

D h8	d h6	d2	s	L1	L4	L2	PVD-PRO
6.00	6.00	5.50	0.2	57	21	13	MIM 3450010 P
8.00	8.00	7.50	0.2	63	26	19	MIM 3450020 P
10.00	10.00	9.50	0.25	72	30	22	MIM 3450030 P
12.00	12.00	11.50	0.3	83	37	26	MIM 3450040 P
16.00	16.00	15.50	0.4	92	42	32	MIM 3450050 P
20.00	20.00	19.50	0.5	104	50	38	MIM 3450060 P

On request: DIN 6535 HB
Su richiesta: DIN 6535 HB

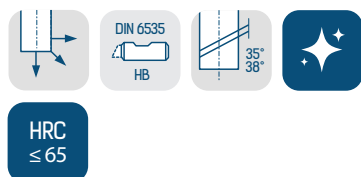
Application groups • Applicazioni



MIM 318

END MILL HPC SUPER-TOP UP TO 65HRC,
NO VIBRATION, CHAMFER, RELIEVED

FRESA HPC SUPER-TOP FINO A 65 HRC,
ASSENZA DI VIBRAZIONE, CON SMUSSO E RIBASSATE



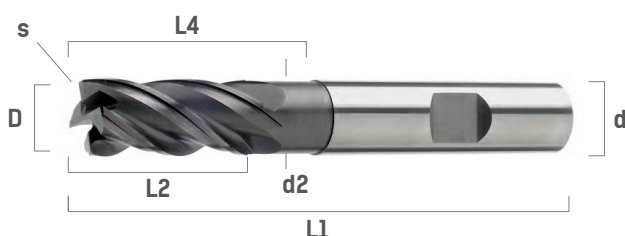
Solid carbide grades: Micro grain $0,2\pm 0,5\mu$

Application groups: materials up to 65 HRC, heat treatable steels, cast iron and non ferrous metals. No vibrations. Chamfer. Unequal division

Metallo duro: Micrograna ultrafine $0,2\pm 0,5\mu$

Applicazioni: metalli fino a 65 HRC. Acciai altamente temprati, ghisa e metalli non ferrosi. Assenza di vibrazione. Smusso d'angolo. Divisione irregolare

P PVD-PRO



D h9	d h6	d2	s	L1	L4	L2	PVD-PRO
3.00	6.00	2.80	0.1	57	18	8	MIM 3180010 P
4.00	6.00	3.50	0.1	57	21	11	MIM 3180020 P
5.00	6.00	4.50	0.2	57	21	13	MIM 3180030 P
6.00	6.00	5.50	0.2	57	21	13	MIM 3180040 P
8.00	8.00	7.50	0.2	63	27	19	MIM 3180050 P
10.00	10.00	9.50	0.25	72	32	22	MIM 3180060 P
12.00	12.00	11.50	0.3	83	38	26	MIM 3180070 P
16.00	16.00	15.50	0.4	92	44	32	MIM 3180080 P
20.00	20.00	19.50	0.5	104	54	38	MIM 3180090 P

Application groups • Applicazioni



MIM 336

HIGH PERFORMANCE SOLID CARBIDE AND
MILLS 35°/38° FOR STEEL UP TO 65HRC

FRESA AD ELEVATA PRESTAZIONE 35°/38° FINO
A 65HRC

P PVD-PRO



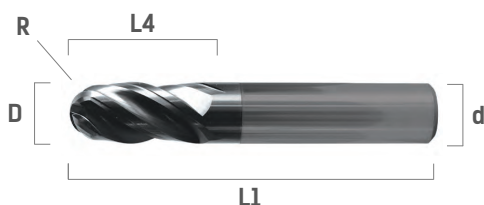
Solid carbide grades: K10 micro grain < 0,5μ

Application groups: materials up to 65 HRC.
High tempered steel, cast iron and non ferrous
metals

No vibrations. Radius. Unequal division On

Metallo duro: K10 micrograna < 0,5μ

Applicazioni: metalli fino a 65 HRC. Acciai altamente
temprati, ghisa e metalli non ferrosi. Assenza di vibrazione
Raggio pieno. Divisione irregolare



D h8	d h6	R	L1	L4	PVD-PRO
3.00	6.00	1.5	57	8	MIM 3360010 P
4.00	6.00	2	57	10	MIM 3360020 P
5.00	6.00	2.5	57	13	MIM 3360030 P
6.00	6.00	3	57	13	MIM 3360040 P
8.00	8.00	4	63	16	MIM 3360050 P
10.00	10.00	5	72	22	MIM 3360060 P
12.00	12.00	6	83	26	MIM 3360070 P
16.00	16.00	0.4	92	32	MIM 3360080 P
20.00	20.00	0.5	104	32	MIM 3360090 P

On request: DIN 6535 HB
Su richiesta: DIN 6535 HB

Application groups • Applicazioni

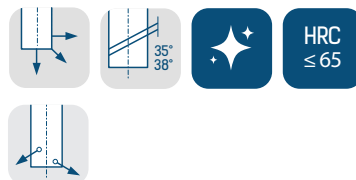
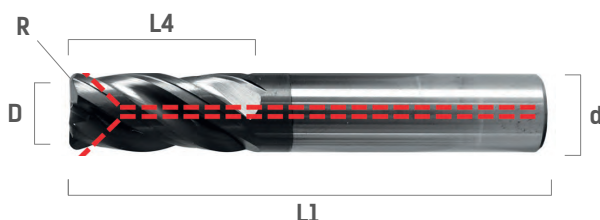


MIM 354

HIGH PERFORMANCE SOLID CARBIDE AND
MILLS 35°/38° FOR STEEL UP TO 65HRC
WITH SIDE COOLANT HOLES

FRESA AD ELEVATA PRESTAZIONE 35°/38° FINO A 65HRC
CON FORI INTERNI DI LUBRIFICAZIONE SULLE GOLE

P PVD-PRO



Solid carbide grades: K10 micro grain < 0,5μ
Application groups: materials up to 65 HRC.
High tempered steel, cast iron and non ferrous
metals No vibrations. Corner radius.
Unequal division On.

Metallo duro: K10 micrograna < 0,5μ
Applicazioni: metalli fino a 65 HRC.
Acciai altamente temprati, ghisa e metalli non ferrosi.
Assenza di vibrazione.
Raggio d'angolo. Divisione irregolare

D h8	d h6	R	L1	L4	PVD-PRO
6.00	6.00	0.5	57	13	MIM 3540010 P
6.00	6.00	1	57	13	MIM 3540020 P
8.00	8.00	0.5	63	19	MIM 3540030 P
8.00	8.00	1	63	19	MIM 3540040 P
10.00	10.00	0.5	72	22	MIM 3540050 P
10.00	10.00	1	72	22	MIM 3540060 P
12.00	12.00	0.5	83	26	MIM 3540070 P
12.00	12.00	1	83	26	MIM 3540080 P
16.00	16.00	1	92	32	MIM 3540090 P
16.00	16.00	2	92	32	MIM 3540100 P
20.00	20.00	1	104	38	MIM 3540110 P
20.00	20.00	2	104	38	MIM 3540120 P

On request: DIN 6535 HB
Su richiesta: DIN 6535 HB

Application groups • Applicazioni



MIM 420

TROCHOIDAL MILLING CUTTER FOR STEEL MACHINING UP TO 55HRC

FRESE PER LA LAVORAZIONE IN TROCOIDALE
SU ACCIAI FINO A 55HRC

P PVD-PRO

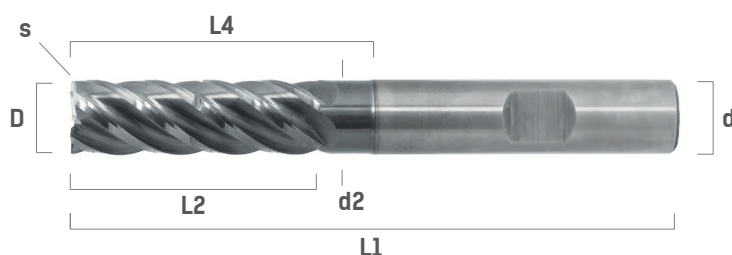


Solid carbide grades: Micro grain 0,5μ h10 - h20

Application groups: steel, steel alloys

Metallo duro: Micrograna 0,5μ h10 - h20

Applicazioni: acciai, acciai legati



D h8	d h6	d2	s	L1	L4	L2	PVD-PRO
6.00	6.00	5.80	0.1	62	25	18	MIM 4200010 P
8.00	8.00	7.80	0.15	68	30	24	MIM 4200020 P
10.00	10.00	9.80	0.2	80	35	30	MIM 4200030 P
12.00	12.00	11.80	0.2	93	45	36	MIM 4200040 P
16.00	16.00	15.80	0.3	108	55	48	MIM 4200050 P
20.00	20.00	19.80	0.4	126	70	60	MIM 4200060 P

Application groups · Applicazioni

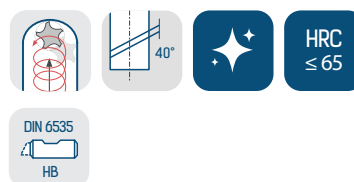


MIM 460

TROCHOIDAL MILLING CUTTER FOR TITANIUM AND TITANIUM ALLOYS

FRESE PER LA LAVORAZIONE IN TROCOIDALE SU TITANIO E LEGHE

P PVD-PRO

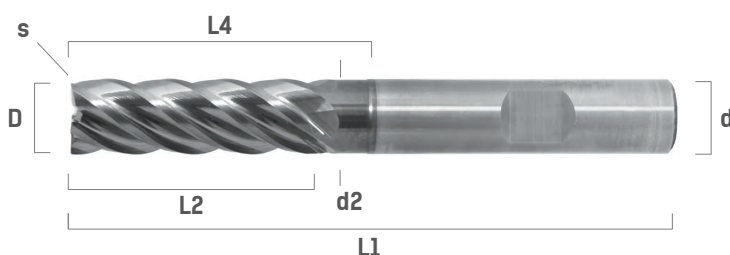


Solid carbide grades: Micro grain 0,5μ h10 - h20

Application groups: titanium and titanium alloys

Metallo duro: Micrograna 0,5μ h10 - h20

Applicazioni: titanio, leghe di titanio, inconel



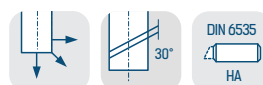
D h9	d h6	d2	s	L1	L4	L2	PVD-PRO
6.00	6.00	5.80	0.1	62	25	18	MIM 4600010 P
8.00	8.00	7.80	0.15	68	30	24	MIM 4600020 P
10.00	10.00	9.80	0.2	80	35	30	MIM 4600030 P
12.00	12.00	11.80	0.2	93	45	36	MIM 4600040 P
16.00	16.00	15.80	0.3	108	55	48	MIM 4600050 P
20.00	20.00	19.80	0.4	126	70	60	MIM 4600060 P

Application groups • Applicazioni



MIM 518

TROCHOIDAL MILLING CUTTER FOR
TITANIUM AND TITANIUM ALLOYS
FRESE PER GRAFITE A TESTA PIANA



Solid carbide grades: Micro grain
Application groups: graphite

Metallo duro: Micrograna
Applicazioni: grafite

D Diamond



D h7	d h6	L1	L4	Z	Diamond
1.00	1.00	38	3	2	MIM 5180010 D
1.50	1.50	38	4	2	MIM 5180020 D
2.00	2.00	40	7	2	MIM 5180030 D
3.00	3.00	40	10	3	MIM 5180040 D
4.00	4.00	40	11	3	MIM 5180050 D
5.00	5.00	50	13	3	MIM 5180060 D
6.00	6.00	50	16	3	MIM 5180070 D
8.00	8.00	63	20	3	MIM 5180080 D
10.00	10.00	72	22	4	MIM 5180090 D
12.00	12.00	83	26	4	MIM 5180100 D

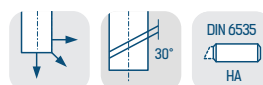
Application groups • Applicazioni



MIM 536

TROCHOIDAL MILLING CUTTER
FOR TITANIUM AND TITANIUM ALLOYS
FRESE PER GRAFITE A TESTA PIANA

D Diamond

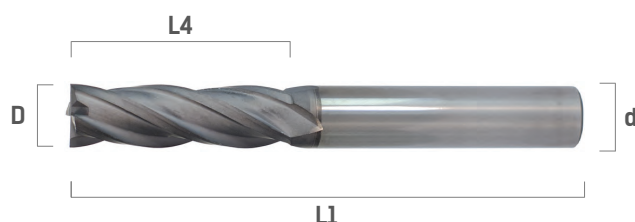


Solid carbide grades: Micro grain

Application groups: graphite

Metallo duro: Micrograna

Applicazioni: grafite



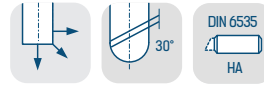
D h7	d h6	L1	L4	Z	Diamond
3.00	3.00	55	20	3	MIM 5360010 D
4.00	4.00	60	20	3	MIM 5360020 D
5.00	5.00	60	20	3	MIM 5360030 D
6.00	6.00	65	25	3	MIM 5360040 D
8.00	8.00	80	32	3	MIM 5360050 D
10.00	10.00	80	32	4	MIM 5360060 D
12.00	12.00	100	50	4	MIM 5360070 D

Application groups • Applicazioni



MIM 554

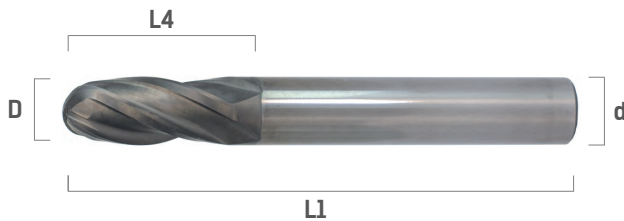
TROCHOIDAL MILLING CUTTER
FOR TITANIUM AND TITANIUM ALLOYS
FRESE PER GRAFITE A TESTA PIANA



Solid carbide grades: Micro grain
Application groups: graphite

Metallo duro: Micrograna
Applicazioni: grafite

D Diamond



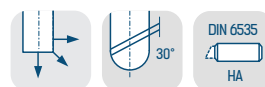
D h7	d h6	L1	L4	Z	Diamond
1.00	1.00	38	3	2	MIM 5540010 D
1.50	1.50	38	4	2	MIM 5540020 D
2.00	2.00	40	7	2	MIM 5540030 D
3.00	3.00	40	10	3	MIM 5540040 D
4.00	4.00	40	11	3	MIM 5540050 D
5.00	5.00	50	13	3	MIM 5540060 D
6.00	6.00	50	16	3	MIM 5540070 D
8.00	8.00	63	20	3	MIM 5540080 D
10.00	10.00	72	22	4	MIM 5540090 D
12.00	12.00	83	26	4	MIM 5540100 D

Application groups • Applicazioni



MIM 572

TROCHOIDAL MILLING CUTTER
FOR TITANIUM AND TITANIUM ALLOYS
FRESE PER GRAFITE A TESTA PIANA



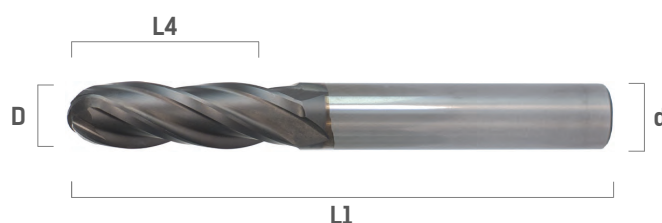
Solid carbide grades: Micro grain

Application groups: graphite

Metallo duro: Micrograna

Applicazioni: grafite

D Diamond



D h7	d h6	L1	L4	Z	Diamond
3.00	3.00	55	20	3	MIM 5720010 D
4.00	4.00	60	20	3	MIM 5720020 D
5.00	5.00	60	20	3	MIM 5720030 D
6.00	6.00	65	25	3	MIM 5720040 D
8.00	8.00	80	32	3	MIM 5720050 D
10.00	10.00	80	32	4	MIM 5720060 D
12.00	12.00	100	50	4	MIM 5720070 D

Application groups • Applicazioni

