



01

FRESE PER ALLUMINIO
END MILLS FOR ALUMINIUM
FRAISE POUR ALUMINIUM
FRÄSER FÜR ALUMINIUM

FRESA Z1 NON RIVESTITA – Serie Normale / Serie Lunga

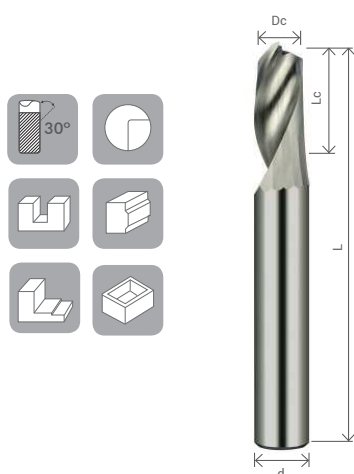
EN Z1 SQUARE END MILL ALUMINIUM | UNCOATED | Normal Series/Long Series

FR Z1 FRAISE CYLINDRIQUE EN BOUT ALUMINIUM | NO REVÊTEMENT | Serie Normale/Longue

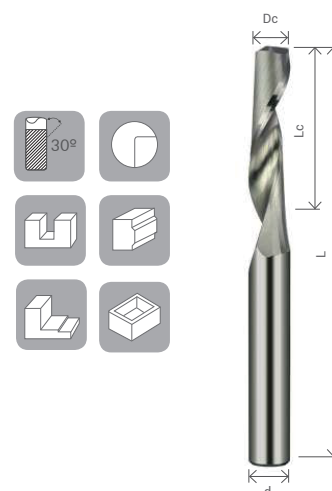
DE Z1 LANGLOCHFRÄSER ALUMINIUM | OHNE BESCHICHTUNG | Normale/Lange Serien

IT Alluminio, rame, ottone, bronzo e termoplastici.
EN Aluminium, copper, brass, bronze and thermoplastics.
FR Aluminium, cuivre, laiton, bronze et thermoplastiques.
DE Aluminium, kupfer, messing, bronze und kunststoffe.

Serie Normale



Serie Lunga



SERIE NORMALE - Normal Series

Ref.	Dimensione - Dimension (mm)			
1 Taglienti (Z1)	Dc	d	Lc	L
MES-A1030	3	3	8	38
MES-A1040	4	4	11	50
MES-A1050	5	5	13	50
MES-A1060	6	6	16	50
MES-A1080	8	8	19	60
MES-A1100	10	10	22	75
MES-A1120	12	12	26	75

SERIE LUNGA - Long Series

Ref.	Dimensione - Dimension (mm)			
1 Taglienti (Z1)	Dc	d	Lc	L
MES-A1060L	6	6	25	80
MES-A1080L	8	8	35	90
MES-A1100L	10	10	45	100
MES-A1120L	12	12	50	100

MES-A Z1

Fresa piatta alluminio

Materiale pezzo Workpiece material	Leghe di Alluminio, <6% Si Aluminum Alloys, <6% Si		Leghe di alluminio, <6-12% Si Aluminum Alloys, <6-12% Si	
Velocità di taglio Cutting Speed	300m/min		150m/min	
Diametro Ø mm Diameter Ø mm	Rotante (minimo -1) Rotating (minimum -1)	Avanzamento/Feed (mm/minuto)	Rotante (minimo -1) Rotating (minimum -1)	Avanzamento/Feed (mm/minuto)
3	32.000	480	21000	200
4	24.000	600	16000	290
5	19100	580	12700	300
6	16000	560	10600	300
8	12000	540	8000	280
10	9500	525	6400	255
12	8000	560	5300	265

Profondità di taglio: e: 1xD Ap.: 0,5xD
Depth of cut: e: 1xD Ap.: 0,5xD

FRESA Z2 NON RIVESTITA – Serie Normale / Serie Lunga

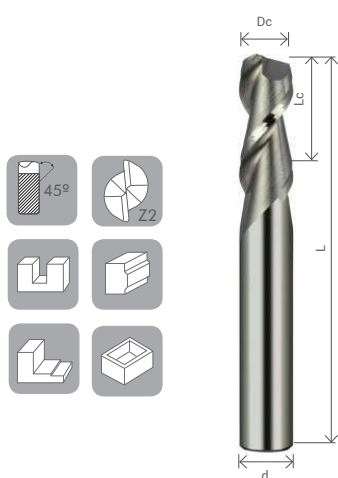
EN Z2 SQUARE END MILL ALUMINIUM | UNCOATED | Normal Series/Long Series

FR Z2 FRAISE CYLINDRIQUE EN BOUT ALUMINIUM | NO REVÊTEMENT | Serie Normale/Longue

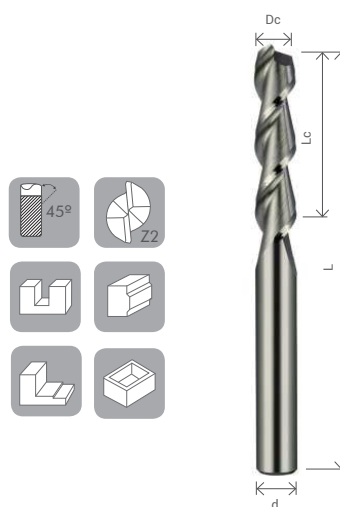
DE Z2 LANGLOCHFRÄSER ALUMINIUM | OHNE BESCHICHTUNG | Normale/Lange Serien

IT Alluminio, rame, ottone, bronzo e termoplastici.
EN Aluminium, copper, brass, bronze and thermoplastics.
FR Aluminium, cuivre, laiton, bronze et thermoplastiques.
DE Aluminium, kupfer, messing, bronze und kunststoffe.

Serie Normale



Serie Lunga



SERIE NORMALE – Normal Series

Ref.	Dimensione - Dimension (mm)			
2 Taglienti (Z2)	Dc	d	Lc	L
MES-A2030	3	6	8	50
MES-A2040	4	6	11	50
MES-A2050	5	6	13	50
MES-A2060	6	6	16	50
MES-A2080	8	8	19	60
MES-A2100	10	10	25	72
MES-A2120	12	12	30	75
MES-A2140	14	14	35	84
MES-A2160	16	16	40	92
MES-A2200	20	20	45	100

SERIE LUNGA – Long Series

Ref.	Dimensione - Dimension (mm)			
2 Taglienti (Z2)	Dc	d	Lc	L
MES-A2060L	6	6	25	80
MES-A2080L	8	8	35	90
MES-A2100L	10	10	45	100
MES-A2120L	12	12	50	100
MES-A2140L	14	14	65	165
MES-A2160L	16	16	75	150
MES-A2200L	20	20	80	150

FRESA Z2 – Serie Normale / Serie Lunga

EN Z2 SQUARE END MILL ALUMINIUM | Normal Series/Long Series

FR Z2 FRAISE CYLINDRIQUE EN BOUT ALUMINIUM | Serie Normale/Longue

DE Z2 LANGLOCHFRÄSER ALUMINIUM | Normale/Lange Serien

IT Alluminio, rame, ottone, bronzo e termoplastici.

EN Aluminium, copper, brass, bronze and thermoplastics.

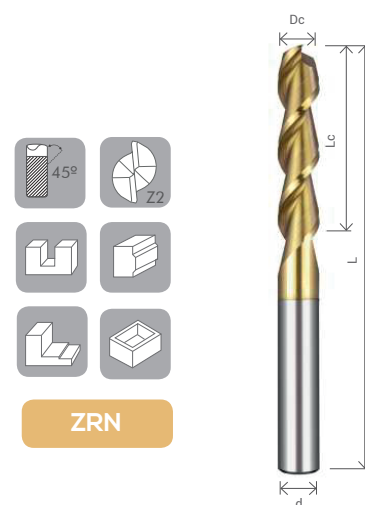
FR Aluminium, cuivre, laiton, bronze et thermoplastiques.

DE Aluminium, kupfer, messing, bronze und kunststoffe.

Serie Normale



Serie Lunga



SERIE NORMALE – Normal Series

Ref.	Dimensione - Dimension (mm)			
2 Taglienti (Z2)	Dc	d	Lc	L
MES-A2030Z	3	6	8	50
MES-A2040Z	4	6	11	50
MES-A2050Z	5	6	13	50
MES-A2060Z	6	6	16	50
MES-A2080Z	8	8	19	60
MES-A2100Z	10	10	25	72
MES-A2120Z	12	12	30	75
MES-A2140Z	14	14	35	84
MES-A2160Z	16	16	40	92
MES-A2200Z	20	20	45	100

SERIE LUNGA – Long Series

Ref.	Dimensione - Dimension (mm)			
2 Taglienti (Z2)	Dc	d	Lc	L
MES-A2060LZ	6	6	25	80
MES-A2080LZ	8	8	35	90
MES-A2100LZ	10	10	45	100
MES-A2120LZ	12	12	50	100
MES-A2140LZ	14	14	65	165
MES-A2160LZ	16	16	75	150
MES-A2200LZ	20	20	80	150

MES-A Z2

Frese piatte per alluminio

Materiale pezzo Workpiece material	Leghe di Alluminio Aluminum Alloys		Lega di alluminio al silicio Si≤10% Silicon aluminum alloy Si≤10%	
	Rotante (minimo -1) Rotating (minimum -1)	Avanzamento (mm/minuto) Feed (mm/minute)	Rotante (minimo -1) Rotating (minimum -1)	Avanzamento (mm/minuto) Feed (mm/minute)
3	26500	1500	21000	1100
4	20000	1600	16000	1250
5	16000	1500	13000	1100
6	13000	1250	10600	1000
8	10000	1400	8000	1100
10	8000	1600	6500	1250
12	6600	1650	5300	1300
14	5700	1700	4600	1350
16	5000	1700	4000	1350
20	4000	1700	3200	1350
Massima profondità di taglio Max. Cutting depth				

FRESA Z3 NON RIVESTITA – Serie Normale / Serie Lunga

EN Z3 SQUARE END MILL ALUMINIUM | UNCOATED | Normal Series/Long Series

FR Z3 FRAISE CYLINDRIQUE EN BOUT ALUMINIUM | NO REVÊTEMENT | Serie Normale/Longue

DE Z3 LANGLOCHFRÄSER ALUMINIUM | OHNE BESCHICHTUNG | Normale/Lange Serien

IT Alluminio, rame, ottone, bronzo e termoplastici.
EN Aluminium, copper, brass, bronze and thermoplastics.
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Serie Normale



Serie Lunga



SERIE NORMALE - Normal Series

Ref.	Dimensione - Dimension (mm)			
3 Taglienti (Z3)	Dc	d	Lc	L
MES-A3030	3	6	8	50
MES-A3040	4	6	11	50
MES-A3050	5	6	13	50
MES-A3060	6	6	16	50
MES-A3080	8	8	19	60
MES-A3100	10	10	25	72
MES-A3120	12	12	30	75
MES-A3140	14	14	35	84
MES-A3160	16	16	40	92
MES-A3200	20	20	45	100

SERIE LUNGA - Long Series

Ref.	Dimensione - Dimension (mm)			
3 Taglienti (Z3)	Dc	d	Lc	L
MES-A3060L	6	6	25	80
MES-A3080L	8	8	35	90
MES-A3100L	10	10	45	100
MES-A3120L	12	12	50	100
MES-A3140L	14	14	65	165
MES-A3160L	16	16	75	150
MES-A3200L	20	20	80	150

FRESA Z3 – Serie Normale / Serie Lunga

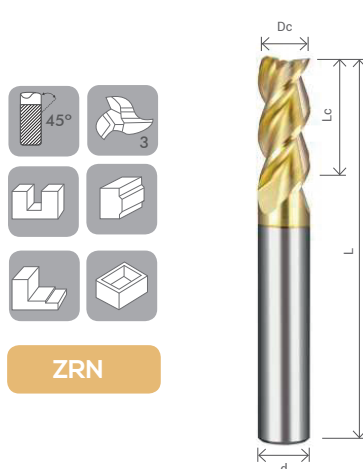
EN Z3 SQUARE END MILL ALUMINIUM | Normal Series/Long Series

FR Z3 FRAISE CYLINDRIQUE EN BOUT ALUMINIUM | Serie Normale/Longue

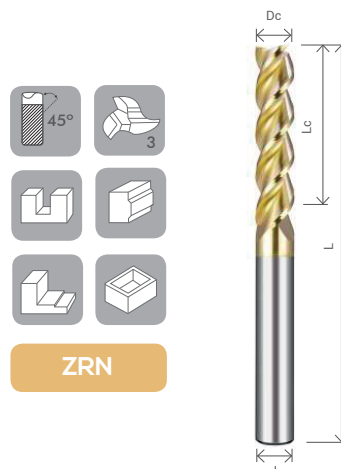
DE Z3 LANGLOCHFRÄSER ALUMINIUM | Normale/Lange Serien

IT Alluminio, rame, ottone, bronzo e termoplastici.
EN Aluminium, copper, brass, bronze and thermoplastics.
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Serie Normale



Serie Lunga



SERIE NORMALE – Normal Series

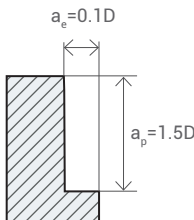
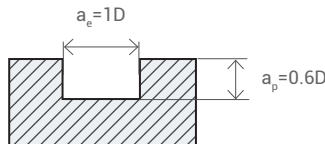
Ref.	Dimensione - Dimension (mm)			
3 Taglienti (Z3)	Dc	d	Lc	L
MES-A3030Z	3	6	8	50
MES-A3040Z	4	6	11	50
MES-A3050Z	5	6	13	50
MES-A3060Z	6	6	16	50
MES-A3080Z	8	8	19	60
MES-A3100Z	10	10	25	72
MES-A3120Z	12	12	30	75
MES-A3140Z	14	14	35	84
MES-A3160Z	16	16	40	92
MES-A3200Z	20	20	45	100

SERIE LUNGA – Long Series

Ref.	Dimensione - Dimension (mm)			
3 Taglienti (Z3)	Dc	d	Lc	L
MES-A3060LZ	6	6	25	80
MES-A3080LZ	8	8	35	90
MES-A3100LZ	10	10	45	100
MES-A3120LZ	12	12	50	100
MES-A3140LZ	14	14	65	165
MES-A3160LZ	16	16	75	150
MES-A3200LZ	20	20	80	150

MES-A Z3

Frese piatte per alluminio

Materiale pezzo Workpiece material	Leghe di Alluminio Aluminum Alloys		Lega di alluminio al silicio Si≤10% Silicon aluminum alloy Si≤10%	
Diametro Ø mm Diameter Ø mm	Rotante (minimo -1) Rotating (minimum -1)	Avanzamento (mm/minuto) Feed (mm/minute)	Rotante (minimo -1) Rotating (minimum -1)	Avanzamento (mm/minuto) Feed (mm/minute)
3	26500	1800	21000	1300
4	20000	2000	16000	1500
5	16000	1750	13000	1300
6	13000	1500	10600	1200
8	10000	1650	8000	1300
10	8000	1900	6500	1500
12	6600	1950	5300	1550
14	5700	2000	4600	1600
16	5000	2000	4000	1600
20	4000	2000	3200	1600
Massima profondità di taglio Max. Cutting depth  				

FRESA Z2 SEMISFERICA NON RIVESTITA – Serie Normale / Serie Lunga

EN Z2 BALL NOSE ALUMINIUM END MILL | UNCOATED | Normal Series/Long Series

FR Z2 FRAISE CYLINDRIQUE À BOUT HÉMISPHERIQUE ALUMINIUM | NO REVÊTEMENT | Serie Normale/Longue

DE Z2 KUGELFRÄSER ALUMINIUM | OHNE BESCHICHTUNG | Normale/Lange Serien

IT Alluminio, rame, ottone, bronzo e termoplastici.
EN Aluminium, copper, brass, bronze and thermoplastics.
FR Aluminium, cuivre, laiton, bronze et thermoplastiques.
DE Aluminium, kupfer, messing, bronze und kunststoffe.

Serie Normale



Serie Lunga



SERIE NORMALE - Normal Series

Ref.	Dimensione - Dimension (mm)			
2 Taglienti (Z2)	Dc	d	Lc	L
MBS-A2030	3	6	6	50
MBS-A2040	4	6	8	50
MBS-A2050	5	6	10	50
MBS-A2060	6	6	12	50
MBS-A2080	8	8	15	60
MBS-A2100	10	10	20	72
MBS-A2120	12	12	24	75
MBS-A2140	14	14	26	83
MBS-A2160	16	16	30	92
MBS-A2200	20	20	40	100

SERIE LUNGA - Long Series

Ref.	Dimensione - Dimension (mm)					
2 Taglienti (Z2)	Dc	d	U/C	U	Lc	L
MBS-A2060L	6	6	5,5	35	12	80
MBS-A2080L	8	8	7,5	35	15	90
MBS-A2100L	10	10	9,5	45	20	100
MBS-A2120L	12	12	11,5	50	24	100
MBS-A2160L	16	16	15,5	92	30	150
MBS-A2200L	20	20	19,5	92	40	150

FRESA Z2 SEMISFERICA – Serie Normale / Serie Lunga

EN Z2 BALL NOSE ALUMINIUM END MILL | Normal Series/Long Series

FR Z2 FRAISE CYLINDRIQUE À BOUT HÉMISPHERIQUE ALUMINIUM | Serie Normale/Longue

DE Z2 KUGELFRÄSER ALUMINIUM | Normale/Lange Serien

IT Alluminio, rame, ottone, bronzo e termoplastici.

EN Aluminium, copper, brass, bronze and thermoplastics.

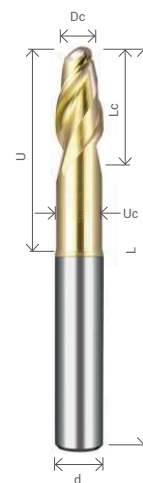
FR Aluminium, cuivre, laiton, bronze et thermoplastiques.

DE Aluminium, kupfer, messing, bronze und kunststoffe.

Serie Normale



Serie Lunga



SERIE NORMALE - Normal Series

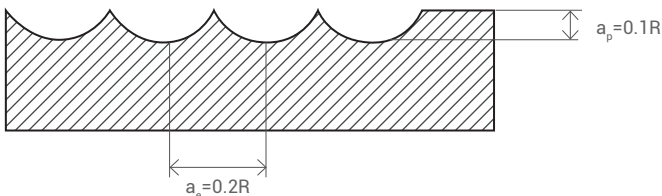
Ref.	Dimensione - Dimension (mm)			
2 Taglienti (Z2)	Dc	d	Lc	L
MBS-A2030Z	3	6	6	50
MBS-A2040Z	4	6	8	50
MBS-A2050Z	5	6	10	50
MBS-A2060Z	6	6	12	50
MBS-A2080Z	8	8	15	60
MBS-A2100Z	10	10	20	72
MBS-A2120Z	12	12	24	75
MBS-A2140Z	14	14	26	83
MBS-A2160Z	16	16	30	92
MBS-A2200Z	20	20	40	100

SERIE LUNGA - Long Series

Ref.	Dimensione - Dimension (mm)					
2 Taglienti (Z2)	Dc	d	U/C	U	Lc	L
MBS-A2060LZ	6	6	5,5	35	12	80
MBS-A2080LZ	8	8	7,5	35	15	90
MBS-A2100LZ	10	10	9,5	45	20	100
MBS-A2120LZ	12	12	11,5	50	24	100
MBS-A2160LZ	16	16	15,5	92	30	150
MBS-A2200LZ	20	20	19,5	92	40	150

MBS-A Z2

Frese semisferiche per alluminio

Materiale pezzo Workpiece material	Leghe di Alluminio Aluminum Alloys		Lega di alluminio al silicio Si≤10% Silicon aluminum alloy Si≤10%	
Diametro Ø mm Diameter Ø mm	Rotante (minimo -1) Rotating (minimum -1)	Avanzamento (mm/minuto) Feed (mm/minute)	Rotante (minimo -1) Rotating (minimum -1)	Avanzamento (mm/minuto) Feed (mm/minute)
3	26500	1950	21000	1550
4	20000	1950	16000	1550
5	16000	1950	13000	1550
6	13000	2000	10600	1600
8	10000	2450	8000	2000
10	8000	2200	6500	1750
12	6600	2050	5300	1650
14	5700	2000	4600	1600
16	5000	1950	4000	1550
20	4000	1900	3200	1520
Massima profondità di taglio Max. Cutting depth				

FRESA Z3 TORICA – Serie Lunga

EN Z3 BALL NOSE ALUMINIUM END MILL | Long Series

FR Z3 FRAISE CYLINDRIQUE À BOUT HÉMISPHERIQUE ALUMINIUM | Serie Longue

DE Z3 KUGELFRÄSER ALUMINIUM | Lange Serien

IT Alluminio, rame, ottone, bronzo e termoplastici.

EN Aluminium, copper, brass, bronze and thermoplastics.

FR Aluminium, cuivre, laiton, bronze et thermoplastiques.

DE Aluminium, kupfer, messing, bronze und kunststoffe.

Serie Lunga
Non rivestita



Serie Lunga
Rivestita Zirconio



SERIE LUNGA senza rivestimento

Long Series uncoated

Ref.	Dimensione - Dimension (mm)				
3 Taglienti (Z3)	Dc	d	R	Lc	L
MES-A3060L-R0,5	6	6	0,5	25	80
MES-A3060L-R1	6	6	1	25	80
MES-A3080L-R0,5	8	8	0,5	35	90
MES-A3080L-R1	8	8	1	35	90
MES-A3100L-R0,5	10	10	0,5	45	100
MES-A3100L-R1	10	10	1	45	100
MES-A3100L-R2	10	10	2	45	100
MES-A3100L-R3	10	10	3	45	100
MES-A3120L-R0,5	12	12	0,5	50	110
MES-A3120L-R1	12	12	1	50	110
MES-A3120L-R2,5	12	12	2,5	50	110
MES-A3120L-R4	12	12	4	50	110
MES-A3160L-R1	16	16	1	50	110
MES-A3160L-R2,5	16	16	2,5	50	110
MES-A3160L-R4	16	16	4	50	110
MES-A3200L-R2,5	20	20	2,5	50	130
MES-A3200L-R4	20	20	4	50	130

SERIE LUNGA con rivestimento ZIRCONIO

Long Series ZRN coated

Ref.	Dimensione - Dimension (mm)				
3 Taglienti (Z3)	Dc	d	R	Lc	L
MES-A3060L-R0,5_Z	6	6	0,5	25	80
MES-A3060L-R1_Z	6	6	1	25	80
MES-A3080L-R0,5_Z	8	8	0,5	35	90
MES-A3080L-R1_Z	8	8	1	35	90
MES-A3100L-R0,5_Z	10	10	0,5	45	100
MES-A3100L-R1_Z	10	10	1	45	100
MES-A3100L-R2_Z	10	10	2	45	100
MES-A3100L-R3_Z	10	10	3	45	100
MES-A3120L-R0,5_Z	12	12	0,5	50	110
MES-A3120L-R1_Z	12	12	1	50	110
MES-A3120L-R2,5_Z	12	12	2,5	50	110
MES-A3120L-R4_Z	12	12	4	50	110
MES-A3160L-R1_Z	16	16	1	50	110
MES-A3160L-R2,5_Z	16	16	2,5	50	110
MES-A3160L-R4_Z	16	16	4	50	110
MES-A3200L-R2,5_Z	20	20	2,5	50	130
MES-A3200L-R4_Z	20	20	4	50	130

MES-A/R

Frese toriche per alluminio

Materiale pezzo Workpiece material	Leghe di Alluminio Aluminum Alloys		Lega di alluminio al silicio Si≤10% Silicon aluminum alloy Si≤10%	
Diametro Ø mm Diameter Ø mm	Rotante (minimo -1) Rotating (minimum -1)	Avanzamento (mm/minuto) Feed (mm/minute)	Rotante (minimo -1) Rotating (minimum -1)	Avanzamento (mm/minuto) Feed (mm/minute)
3	26500	1800	21000	1300
4	20000	2000	16000	1500
5	16000	1750	13000	1300
6	13000	1500	10600	1200
8	10000	1650	8000	1300
10	8000	1900	6500	1500
12	6600	1950	5300	1550
14	5700	2000	4600	1600
16	5000	2000	4000	1600
20	4000	2000	3200	1600
Massima profondità di taglio Max. Cutting depth 