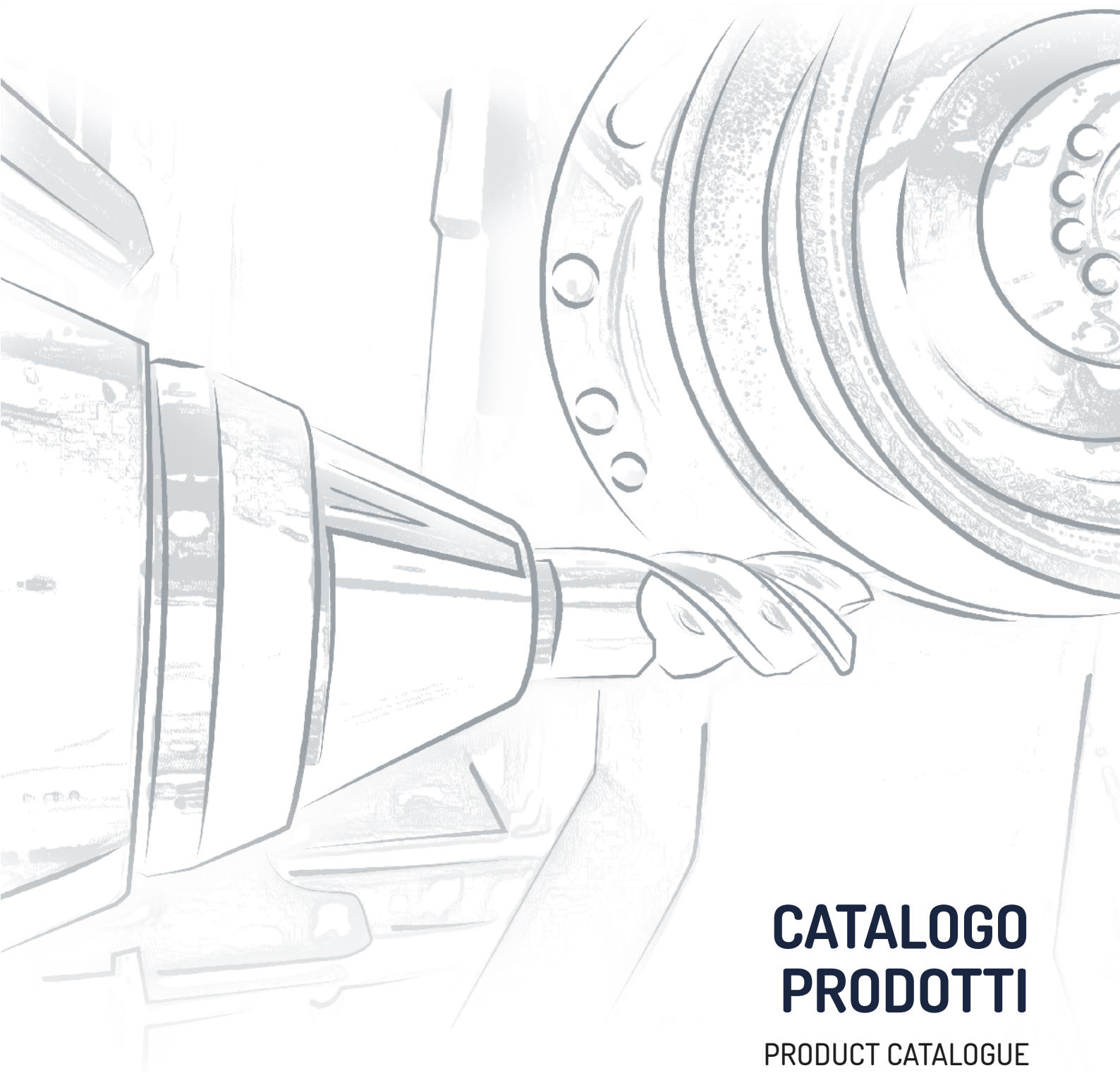




CATALOGO PRODOTTI

PRODUCT CATALOGUE
CATALOGUE DES PRODUITS
PRODUKTKATALOG

1

FRESE PER ALLUMINIO

END MILLS FOR ALUMINIUM | FRAISE POUR ALUMINIUM | FRÄSER FÜR ALUMINIUM

MES-A



FRESA Z1 NON RIVESTITA - Serie Normale / Serie Lunga 10
Z1 SQUARE END MILL | FRAISE CYLINDRIQUE EN BOUT | LANGLOCHFRÄSER | Aluminium
Normal Series / Long Series - Uncoated



FRESA Z2 NON RIVESTITA - Serie Normale / Serie Lunga 12
Z2 SQUARE END MILL | FRAISE CYLINDRIQUE EN BOUT | LANGLOCHFRÄSER | Aluminium
Normal Series / Long Series - Uncoated



FRESA Z2 RIVESTITA - Serie Normale / Serie Lunga 13
Z2 COATED SQUARE END MILL | FRAISE CYLINDRIQUE EN BOUT | LANGLOCHFRÄSER
Aluminium - Normal Series / Long Series - Coated



FRESA Z3 - NON RIVESTITA - Serie Normale / Serie Lunga 15
Z3 SQUARE END MILL | Z2 FRAISE CYLINDRIQUE EN BOUT | Z2 LANGLOCHFRÄSER | OHNE
BESCHICHTUNG | Aluminium - Normal Series / Long Series - Uncoated



FRESA Z3 RIVESTITA - Serie Normale / Serie Lunga 16
Z3 ZRN SQUARE END MILL | FRAISE CYLINDRIQUE EN BOUT | LANGLOCHFRÄSER | Aluminium
Normal Series / Long Series - Coated

MBS-A



FRESA Z2 SEMISFERICA NON RIVESTITA - Serie Normale 18
Z2 BALL NOSE ALUMINIUM END MILL | UNCOATED | Z2 FRAISE CYLINDRIQUE À BOUT
HÉMISPHERIQUE ALUMINIUM | NO REVÊTEMENT | Z2 KUGELFRÄSER Aluminium
Normal Series - Uncoated



FRESA Z2 SEMISFERICA RIVESTITA - Serie Normale / Serie Lunga . . . 19
Z2 ZRN BALL NOSE | FRAISE CYLINDRIQUE À BOUT HÉMISPHERIQUE | KUGELFRÄSER
Aluminium - Normal Series - Coated

MES-A/R



FRESA Z3 TORICA - Serie Lunga 21
Z3 CORNER RADIUS END MILL | FRAISE TORIQUE À BOUT HÉMISPHERIQUE |
TORUSFRÄSER | Aluminium - Long Series - Coated - Uncoated

2

FRESE PIATTE

SQUARE END MILLS | FRAISE CYLINDRIQUE EN BOUT | LANGLOCHFRÄSER

MES-H



FRESA Z2 - Serie Normale 24
Z2 SQUARE END MILL | Z2 FRAISE CYLINDRIQUE EN BOUT | Z2 LANGLOCHFRÄSER
Normal Series



FRESA Z2 - Serie Lunga / Serie Extralunga 25
Z2 SQUARE END MILL | Z2 FRAISE CYLINDRIQUE EN BOUT | Z2 LANGLOCHFRÄSER |
Long Series / Extra Long Series



FRESA Z3 - Serie Normale 27
Z3 SQUARE END MILL | Z3 FRAISE CYLINDRIQUE EN BOUT | Z3 LANGLOCHFRÄSER |
Normal Series



FRESA Z3 - Serie Lunga 28
Z3 SQUARE END MILL | Z3 FRAISE CYLINDRIQUE EN BOUT | Z3 LANGLOCHFRÄSER
Long Series

2

MES-H



FRESA Z4 – Serie Normale 30
Z4 SQUARE END MILL | Z4 FRAISE CYLINDRIQUE EN BOUT | Z4 LANGLOCHFRÄSER | Normal Series



FRESA Z4 – Serie Lunga/Extra Lunga 31
Z4 SQUARE END MILL | Z4 FRAISE CYLINDRIQUE EN BOUT | Z4 LANGLOCHFRÄSER
Long Series / Extra Long Series

MEH-H



FRESA Z6 - Serie Normale / Lunga / Extra Lunga 33
Z6 SQUARE END MILL | Z6 FRAISE CYLINDRIQUE EN BOUT | Z6 LANGLOCHFRÄSER |
Normal / Long / Extra Long Series

MES-BW



FRESA Z3/Z4 A SGROSSARE – Serie Normale / Serie Lunga 36
Z3-Z4 SEMI-ROUGHING END MILL | Z3-Z4 FRAISE CYLINDRIQUE EN BOUT. SEMI-FINITION |
Z3-Z4 SCHRUPPSCHLICHTFRÄSER | Normal / Long Series

MES-H



FRESA Z2 - SCARICO RIBASSATO - Codolo Ø6 38
Z2 END MILLS - SHANK Ø6 | Z2 FRAISE CYLINDRIQUE | Z2 LANGLOCHFRÄSER



FRESA Z4 - SCARICO RIBASSATO - Codolo Ø6 39
Z4 END MILLS - SHANK Ø6 | Z4 FRAISE CYLINDRIQUE | Z4 LANGLOCHFRÄSER

MES-M



MICROFRESA Z2 - Codolo Ø4 41
Z2 MICRO END MILLS | Z2 MICROFRAISE CYLINDRIQUE | Z2 MIKROLANGLOCHFRÄSER

MEM-H



MICROFRESA Z2 - SCARICO RIBASSATO - Codolo Ø4 43
Z2 MICRO END MILLS | Z2 MICROFRAISE CYLINDRIQUE | Z2 MIKROLANGLOCHFRÄSER
Reduced Neck

3

FRESE SEMISFERICHE

BALL NOSE END MILLS | FRAISE CYLINDRIQUE HÉMISPHERIQUE | KUGELFRÄSER

MBS-H



FRESA Z2 SEMISFERICA – Serie Normale 46
Z2 BALL NOSE END MILL | Z2 FRAISE CYLINDRIQUE HÉMISPHERIQUE | Z2 KUGELFRÄSER
Normal series



FRESA Z2 SEMISFERICA – Serie Lunga / Extralunga 47
Z2 BALL NOSE END MILL | Z2 FRAISE CYLINDRIQUE HÉMISPHERIQUE | Z2 KUGELFRÄSER
Long / Extra Long series



FRESA Z4 SEMISFERICA – Serie Normale / Lunga 48
Z4 BALL NOSE END MILL | Z4 FRAISE CYLINDRIQUE HÉMISPHERIQUE | Z4 KUGELFRÄSER
Normal / Long Series



FRESA Z2 SEMISFERICA – Scarico ribassato - Codolo Ø4 50
Z2 BALL NOSE END MILL | Z2 FRAISE CYLINDRIQUE HÉMISPHERIQUE | Z2 KUGELFRÄSER
Reduced neck

MBN-H



FRESA Z2 SEMISFERICA – Scarico ribassato - Codolo Ø6 51
Z2 BALL NOSE END MILL | Z2 FRAISE CYLINDRIQUE HÉMISPHERIQUE | Z2 KUGELFRÄSER
Reduced neck

MBC-H



FRESA Z2 SEMISFERICA CONICA 53
Serie Normale/Lunga/Extra lunga
Z2 BALL NOSE END MILL | Z2 FRAISE CYLINDRIQUE HÉMISPHERIQUE | Z2 KUGELFRÄSER
Conical form



FRESA Z2 SEMISFERICA CONICA 1° 54
Serie Normale/Lunga/Extra lunga
Z2 BALL NOSE END MILL 1° | Z2 FRAISE CYLINDRIQUE HÉMISPHERIQUE 1° | Z2 KUGELFRÄSER 1°

3

FRESE SEMISFERICHE

BALL NOSE END MILLS | FRAISE CYLINDRIQUE HÉMISPHERIQUE | KUGELFRÄSER

MBC-H



FRESA Z2 SEMISFERICA - CONICA 1,5° - Codolo Ø6 55
Z2 BALL NOSE END MILL 1,5° | Z2 FRAISE CYLINDRIQUE HÉMISPHERIQUE 1,5° |
Z2 KUGELFRÄSER 1,5°

MBS-AT



FRESA Z2 SEMISFERICA - Per temprati fino 55 HRC 57
Z2 BALL NOSE END MILL | Z2 FRAISE CYLINDRIQUE HÉMISPHERIQUE | Z2 KUGELFRÄSER
Hardened Steel 55 HRC

MBC-AT



FRESA Z2 SEMISFERICA - CONICA 1° / 1,5° 59
Per temprati fino 55 HRC
Z2 BALL NOSE END MILL TAPER 1° | Z2 FRAISE CYLINDRIQUE HÉMISPHERIQUE Z2
KUGELFRÄSER - Hardened Steel 55 HRC

MBH-H



FRESA Z2 SEMISFERICA - Serie Normale /Serie Lunga 61
Per temprati fino 62 HRC
Z2 BALL NOSE END MILL | HARD CUTTING 62HRC | Z2 FRAISE CYLINDRIQUE HÉMISPHERIQUE |
62HRC | Z2 KUGELFRÄSER | 62HRC | Normal/Long Series - Hardened Steel 62 HRC

MBS-M



MICROFRESA Z2 SEMISFERICA 63
Codolo Ø4/ Scarico ribassato Cod. Ø4 - Serie Normale
Z2 BALL NOSE MICRO END MILL | Z2 MICROFRAISE CYLINDRIQUE HÉMISPHERIQUE |
Z2 MIKROKUGELFRÄSER - Reduced neck - Normal Series Ø4

4

FRESE TORICHE

CORNER RADIUS END MILLS | FRAISE TORIQUE | TORUSFRÄSER END MILL

MES-H/R



FRESA Z2 TORICA - Serie Normale 66
Z2 CORNER RADIUS END MILL | Z2 FRAISE TORIQUE | Z2 TORUSFRÄSER | Normal Series



FRESA Z4 TORICA - Serie Normale 67
Z4 CORNER RADIUS END MIL | Z4 FRAISE TORIQUE | Z4 TORUSFRÄSER | Normal Series



FRESA Z2/Z4 TORICA - Serie Lunga Tagliente Corto 68
Z2/Z4 CORNER RADIUS END MILL | Z2/Z4 FRAISE TORIQUE | Z2/Z4 TORUSFRÄSER |
Long Series - Short Cutting



FRESA Z2 TORICA - Serie Lunga Tagliente Lungo 69
Z2 CORNER RADIUS END MILL | Z2 FRAISE TORIQUE | Z2 TORUSFRÄSER |
Long Series - Long Cutting



FRESA Z4 TORICA - Serie Lunga Tagliente Lungo 70
Z2/Z4 CORNER RADIUS END MILL | Z2/Z4 FRAISE TORIQUE | Z2/Z4 TORUSFRÄSER
Long Series - Long Cutting



FRESA Z2/Z4 TORICA - Serie Extra Lunga 71
Z2/Z4 CORNER RADIUS END MILL | Z2/Z4 FRAISE TORIQUE | Z2/Z4 TORUSFRÄSER
Extralong Series



FRESA Z2 TORICA - Scarico ribassato - Codolo Ø6 72
Z2 CORNER RADIUS END MILL | Z2 FRAISE TORIQUE | Z2 TORUSFRÄSER - Shank d6 -
Reduced Neck



FRESA Z4 TORICA - Scarico ribassato - Codolo Ø6 73
Z4 CORNER RADIUS END MILL | Z4 FRAISE TORIQUE | Z4 TORUSFRÄSER - Shank d6 -
Reduced Neck

4

FRESE TORICHE

CORNER RADIUS END MILLS | FRAISE TORIQUE | TORUSFRÄSER END MILL

MES-H/R



FRESA Z2 TORICA - Serie Lunga 74
Z2 CORNER RADIUS END MILL | Z2 FRAISE TORIQUE | Z2 TORUSFRÄSER
Long Series - Reduced Neck



FRESA Z4 TORICA - Serie Lunga 75
Z4 CORNER RADIUS END MILL | Z4 FRAISE TORIQUE | Z4 TORUSFRÄSER
Long Series - Reduced Neck



FRESA Z4 TORICA - Serie Normale 76
Z4 CORNER RADIUS END MIL | Z4 FRAISE TORIQUE | Z4 TORUSFRÄSER
Normal Series - Reduced Neck

MEC-H



FRESA Z2 TORICA CONICA 1° - Serie Normale 79
Z2 CORNER RADIUS END MILL - 1° TAPER | Z2 FRAISE TORIQUE 1° | Z2 TORUSFRÄSER 1°
Normal Series



FRESA Z4 TORICA CONICA 1° - Serie Normale 80
Z4 CORNER RADIUS END MILL - 1° TAPER | Z4 FRAISE TORIQUE 1° | Z4 TORUSFRÄSER 1°
Normal Series



FRESA Z2 TORICA CONICA 1,5° - Serie Normale 82
Z2 CORNER RADIUS END MILL - 1,5° TAPER | Z2 FRAISE TORIQUE 1,5° | Z2 TORUSFRÄSER 1,5°
Normal Series



FRESA Z4 TORICA CONICA 1,5° - Serie Normale 83
Z4 CORNER RADIUS END MILL - 1,5° TAPER | Z4 FRAISE TORIQUE 1,5° | Z4 TORUSFRÄSER 1,5°
Normal Series

5

FRESE AD ALTO RENDIMENTO

HIGH PERFORMANCE END MILLS | HAUTE PERFORMANCE |
SHOCHLEISTUNGSBEARBEITUNG

STAR-EVO



STAR-EVO: FRESA Z3/Z4 ELICA VARIABLE 35°/38° 86
STAR-EVO Z3 UNEQUAL HELIX ANGLES 35°-38° | STAR-EVO Z3 HÉLICE DIFFÉRENTE 35°-38° |
STAR-EVO Z3 UNGLEICHER DRALLWINKEL 35°-38°



STAR-EVO: FRESA Z4 ELICA VARIABLE 35°/38° 87
STAR-EVO Z4 UNEQUAL HELIX ANGLES 35°-38° | STAR-EVO Z4 HÉLICE DIFFÉRENTE 35°-38°
STAR-EVO Z4 UNGLEICHER DRALLWINKEL 35°-38° | Weldon DIN6535 / Special sizes

STAR-PLUS



STAR-PLUS: FRESA Z4 ELICA VARIABLE 35°/38° 88
STAR-PLUS Z4 UNEQUAL HELIX ANGLES 35°-38° | STAR-PLUS Z4 HÉLICE DIFFÉRENTE 35°-38° |
STAR-PLUS Z4 UNGLEICHER DRALLWINKEL 35°-38° | Reduced neck / Weldon DIN6535

STAR-TOP



STAR-TOP: FRESA Z4 ELICA VARIABLE 35°/38° 89
Z4 STAR-TOP UNEQUAL HELIX ANGLES 35°-38° | Z4 STAR-TOP: HÉLICE DIFFÉRENTE 35°-38°
Z4 STAR-TOP: UNGLEICHER DRALLWINKEL 35°-38° | Reduced neck / Weldon DIN6535

XURY-EVO



XURY-EVO: FRESA Z4 ELICA VARIABLE 43°/45° 90
Alto Rendimento
Z4 XURY-EVO UNEQUAL HELIX ANGLES 43-35° | Z4 XURY-EVO HÉLICE DIFFÉRENTE 43-35° |
Z4 XURY-EVO UNGLEICHER DRALLWINKEL 43-35° | High performance / Weldon



XURY-EVO: FRESA Z4 ELICA VARIABLE 43°/45° 91
Scarico Ribassato
Z4 XURY-EVO UNEQUAL HELIX ANGLES 43-35° | MULTIPURPOSE | Z4 XURY-EVO HÉLICE DIF-
FÉRENTE 43-35° | Z4 XURY-EVO UNGLEICHER DRALLWINKEL 43-35° |
Reduced neck | High performance / Weldon

5

FRESE AD ALTO RENDIMENTO

HIGH PERFORMANCE END MILLS | HAUTE PERFORMANCE |
SHOCHLEISTUNGSBEARBEITUNG

XURY-TITAN



XURY-TITAN: FRESA Z4 ELICA VARIABLE 43°/45° 92

Alto Rendimento

Z4 XURY-TITAN: UNEQUAL HELIX ANGLES 43-35° | Z4 XURY-TITAN: HÉLICE DIFFÉRENTE 43-35° |
Z4 XURY-TITAN: UNGLEICHER DRALLWINKEL 43-35°
High performance / Weldon DIN6535



XURY-TITAN: FRESA Z4 ELICA VARIABLE 43°/45° 93

Alto Rendimento

Z4 XURY-TITAN: UNEQUAL HELIX ANGLES 43-35° | MULTIPURPOSE | Z4 XURY-TITAN: HÉLICE
DIFFÉRENTE 43-35° | Z4 XURY-TITAN: UNGLEICHER DRALLWINKEL 43-35°
Reduced neck | High performance / Weldon

ILEX



ILEX: FRESA Z5 ELICA VARIABLE 43°/45° 94

<55HRC - Scarico Ribassato 1°

Z5 ILEX: UNEQUAL ANGLES 43-35° | Z5 ILEX: HÉLICE DIFFÉRENTE 43-35° | Z5 ILEX:
UNGLEICHER DRALLWINKEL 43-35° | W. DIN6535 | Reduced neck | High performance



ILEX: FRESA Z5 ELICA VARIABLE 43°/45° <65HRC 95

Z5 ILEX: U.H.A. 43-35° | Z5 ILEX: H.D. 43-35° | Z5 ILEX: U.D. 43-35°
Reduced neck 1° | High performance



ILEX: FRESA Z5 ELICA VARIABLE 43°/45° <56HRC 96

Z5 ILEX: UNEQUAL HELIX ANGLES 43-35° | Z5 ILEX: HÉLICE DIFFÉRENTE 43-35° | Z5 ILEX:
UNGLEICHER DRALLWINKEL 43-35° | Reduced neck 1° | Central coolant | High performance



ILEX: FRESA Z5 ELICA VARIABLE 43°/45° <56HRC 97

Z5 ILEX: U.H.A. 43-35° | Z5 ILEX: H.D. 43-35° | Z5 ILEX: U. D. 43-35° |
R. Neck 1° | High performance | Corner radius



ILEX: FRESA Z5 ELICA VARIABLE 43°/45° <65HRC 98

Z5 ILEX: U.H.A. 43-35° - R. NECK 1° | Z5 ILEX H.D. 43-35° | Z5 ILEX: U. D. 43-35° |
High performance | Corner radius



ILEX: FRESA Z5 ELICA VARIABLE 43°/45° <55HRC 99

Z5 ILEX: U.H.A. 43-35° - R. NECK 1° | Z5 ILEX: H. D. 43-35° | Z5 ILEX: U.D. 43-35° |
High performance | Corner radius | Central coolant

XURY-TROCO



XURY-TROCO: FRESA Z5 TROCOIDALE 102

Z5 XURY-TROCO HIGH PERFORMANCE END MILL | Z5 XURY-TROCO FRAISE
DE HAUTE PERFORMANCE | Z5 XURY-TROCO UNGLEICHER DRALLWINKEL
HOCHLEISTUNGSBEARBEITUNG | Reduced neck

BALL-EVO



BALL-EVO: FRESA Z4 ELICA VARIABLE Sferica/Conica 1,5° 104

Z4 BALL-EVO: BALL NOSE END MILL | Z4 BALL-EVO: FRAISE CYLINDRIQUE
HÉMISPHERIQUE | Z4 BALL-EVO: UNGLEICHER DRALLWINKEL | Unequal helix angles

TURBO



TURBO: FRESA PER ALTO AVANZAMENTO 106

Serie Normale / Serie Lunga

Z4 TURBO HIGH FEED END MILL | Z4 TURBO FRAISE CYLINDRIQUE DE HAUTE AVANCE |
Z4 TURBO HOCHVORSCHUBFRÄSER | Normal / Long series

MES-ACH



FRESA A SMUSSARE 60°/90° 108

COUNTERSINKER, 60°/90° | CHAMFREIN, 60°/90° | KEGELSENKER, 60°/90°

6

PUNTE IN METALLO DURO

SOLID CARBIDE DRILL | FORET EN CARBURE MONOBLOC |
VOLLHARTMETALLBOHRER

DR-3XD



PUNTE METALLO DURO 3XD - DIN6537K. 111
3XD SOLID CARBIDE DRILL | 3XD FORET EN CARBURE MONOBLOC |
3XD VOLLHARTMETALLBOHRER

DR-5XD



PUNTE METALLO DURO 5XD - DIN6537L. 113
5XD SOLID CARBIDE DRILL | 5XD FORET EN CARBURE MONOBLOC |
5XD VOLLHARTMETALLBOHRER

DR-5XDCH



PUNTE METALLO DURO 5XD CON REFRIGERAZIONE - DIN6537L. . 116
5XD SOLID CARBIDE DRILL | DIN6537L | 5XD FORET EN CARBURE MONOBLOC | DIN6537L
5XD VOLLHARTMETALLBOHRER | DIN6537L | Internal coolant

DR-8XDCH



PUNTE METALLO DURO 8XD CON REFRIGERAZIONE - DIN6537L. . 119
8XD SOLID CARBIDE DRILL | 8XD FORET EN CARBURE MONOBLOC |
8XD VOLLHARTMETALLBOHRER | DIN6537L | Internal coolant

7

ALESATORI IN METALLO DURO

REAMERS | ALÉSOIRS | REIBAHLEN

ALS



ALESATORI IN METALLO DURO - NON RIVESTITI - H7 123
REAMERS | ALÉSOIRS | REIBAHLEN



01

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

FRESA Z1 NON RIVESTITA – Serie Normale / Serie Lunga

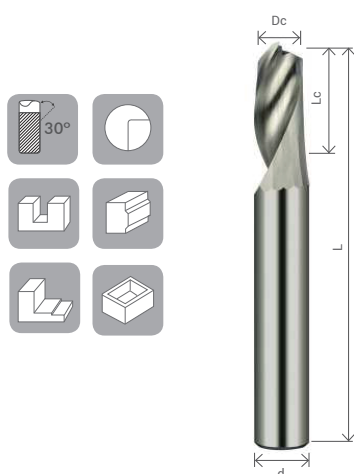
EN Z1 SQUARE END MILL ALUMINIUM | UNCOATED | Normal Series/Long Series

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

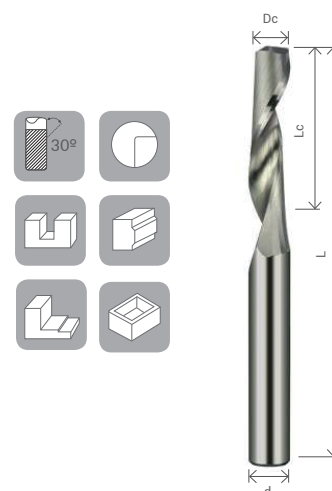
DE Z1 LANGLOCHFRÄSER ALUMINIUM | OHNE BESCHICHTUNG | Normale/Lange Serien

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

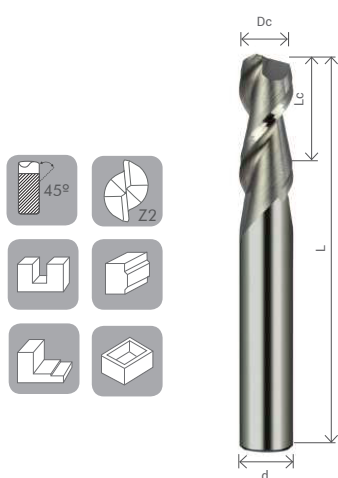
EN Z2 SQUARE END MILL ALUMINIUM | UNCOATED | Normal Series/Long Series

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

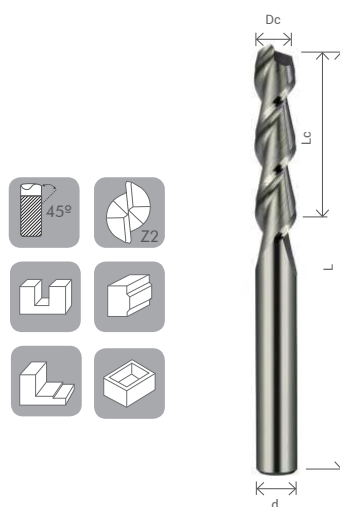
DE Z2 LANGLOCHFRÄSER ALUMINIUM | OHNE BESCHICHTUNG | Normale/Lange Serien

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.

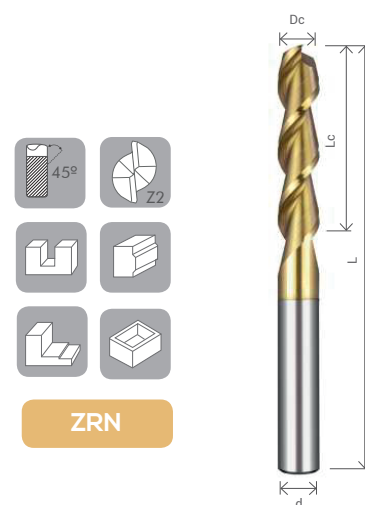
FR Aluminium, cuivre, laiton, bronze et thermoplastiques.

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.
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)			
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

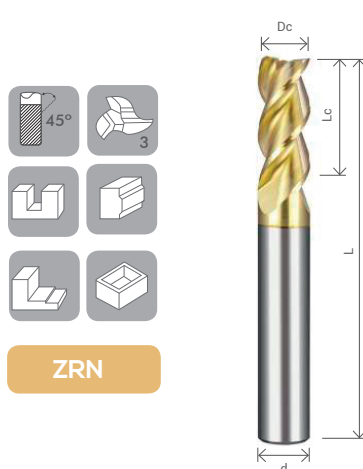
EN Z3 SQUARE END MILL ALUMINIUM | Normal Series/Long Series

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

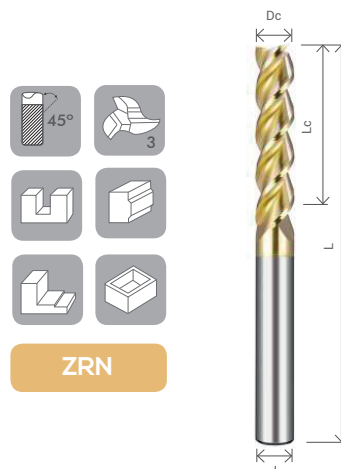
DE Z3 LANGLOCHFRÄSER ALUMINIUM | Normale/Lange Serien

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

Serie Normale



Serie Lunga



SERIE NORMALE - Normal Series

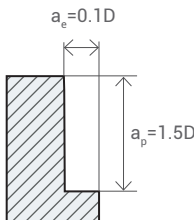
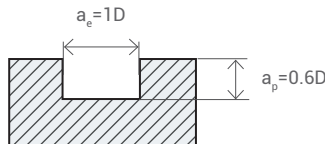
Ref.	Dimensione - Dimension (mm)			
3 Taglienti (Z3)	Dc	d	Lc	L
MES-A3030Z	3	6	8	50
MES-A3040Z	4	6	11	50
MES-A3050Z	5	6	13	50
MES-A3060Z	6	6	16	50
MES-A3080Z	8	8	19	60
MES-A3100Z	10	10	25	72
MES-A3120Z	12	12	30	75
MES-A3140Z	14	14	35	84
MES-A3160Z	16	16	40	92
MES-A3200Z	20	20	45	100

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.

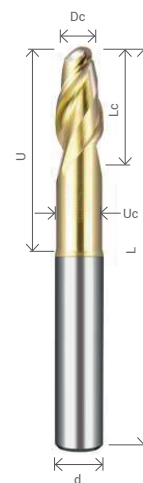
FR Aluminium, cuivre, laiton, bronze et thermoplastiques.

DE Aluminium, kupfer, messing, bronze und kunststoffe.

Serie Normale



Serie Lunga



SERIE NORMALE - Normal Series

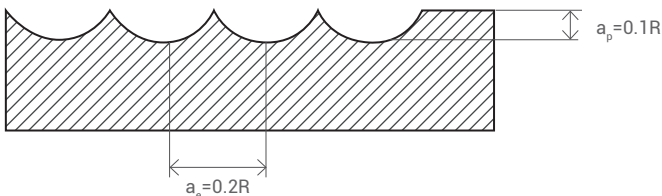
Ref.	Dimensione - Dimension (mm)			
2 Taglienti (Z2)	Dc	d	Lc	L
MBS-A2030Z	3	6	6	50
MBS-A2040Z	4	6	8	50
MBS-A2050Z	5	6	10	50
MBS-A2060Z	6	6	12	50
MBS-A2080Z	8	8	15	60
MBS-A2100Z	10	10	20	72
MBS-A2120Z	12	12	24	75
MBS-A2140Z	14	14	26	83
MBS-A2160Z	16	16	30	92
MBS-A2200Z	20	20	40	100

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.

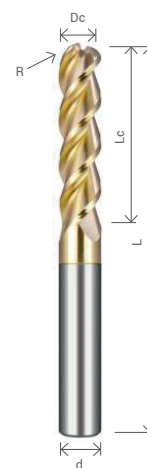
FR Aluminium, cuivre, laiton, bronze et thermoplastiques.

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

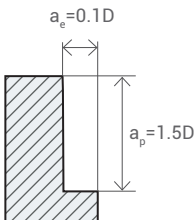
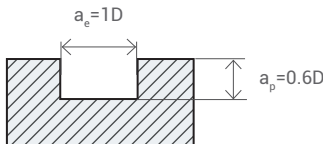
SERIE LUNGA con rivestimento ZIRCONIO

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  				



02

FRESE PIATTE

SQUARE END MILLS

FRAISE CYLINDRIQUE EN BOUT

LANGLOCHFRÄSER

FRESA Z2 – Serie Normale

EN Z2 SQUARE END MILL ALUMINIUM | Normal Series

FR Z2 FRAISE CYLINDRIQUE EN BOUT ALUMINIUM | Serie Normale

DE Z2 LANGLOCHFRÄSER ALUMINIUM | Normale Serien

IT Acciaio, acciaio inossidabile, ghisa, rame, titanio fino a 35-45 HRC.

EN Steel, Stainless Steel, Cast Iron, Copper, Titanium and Hardened Steels up to 35-45 HRC.

FR Acier, Acier Inoxydable, Fonte Grise, Cuivre, Titane et Acier jusqu'à 35-45 HRC.

DE Stahl, Rostfreier Stahl, Gubeisen, Kupfer, Titan, Gehärteter Stahl 35-45 HRC.

Serie Normale



SERIE NORMALE – Normal Series

Ref.	Dimensione - Dimension (mm)			
2 Taglienti (Z2)	Dc	d	Lc	L
MES-H2010-d3	1	3	3	38
MES-H2010-d4	1	4	3	50
MES-H2015-d3	1,5	3	4	38
MES-H2015-d4	1,5	4	4	50
MES-H2020-d3	2	3	6	38
MES-H2020-d4	2	4	6	50
MES-H2025-d3	2,5	3	8	38
MES-H2025-d4	2,5	4	8	50
MES-H2030-d3	3	3	8	38
MES-H2030-d4	3	4	8	50
MES-H2030-d6	3	6	8	50
MES-H2035-d4	3,5	4	11	50
MES-H2040	4	4	11	50
MES-H2040-d6	4	6	11	50
MES-H2045-d6	4,5	6	11	50
MES-H2050	5	5	13	50
MES-H2050-d6	5	6	13	50
MES-H2055	5,5	6	16	50
MES-H2060	6	6	16	50
MES-H2063	6,35	8	19	60
MES-H2065	6,5	8	19	60

SERIE NORMALE – Normal Series

Ref.	Dimensione - Dimension (mm)			
2 Taglienti (Z2)	Dc	d	Lc	L
MES-H2070	7	8	19	60
MES-H2075	7,5	8	19	60
MES-H2080	8	8	19	60
MES-H2085	8,5	10	22	72
MES-H2090	9	10	22	72
MES-H2095	9,5	10	22	72
MES-H2100	10	10	22	72
MES-H2105	10,5	12	26	75
MES-H2110	11	12	26	75
MES-H2120	12	12	26	75
MES-H2125	12,5	14	30	84
MES-H2130	13	14	30	84
MES-H2140	14	14	30	84
MES-H2150	15	16	32	92
MES-H2160	16	16	32	92
MES-H2170	17	18	38	100
MES-H2180	18	18	38	100
MES-H2190	19	20	38	100
MES-H2200	20	20	38	100
MES-H2220	22	22	38	100
MES-H2250	25	25	45	100

FRESA Z2 – Serie Lunga / Serie Extralunga

EN Z2 SQUARE END MILL ALUMINIUM I Long Series/Extra Long Series

FR Z2 FRAISE CYLINDRIQUE EN BOUT ALUMINIUM I Serie Longue/Extra Longue

DE Z2 LANGLOCHFRÄSER ALUMINIUM I Lange/Extra Lange Serien

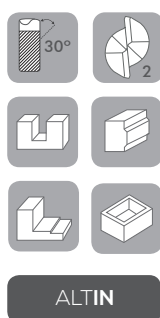
IT Acciaio, acciaio inossidabile, ghisa, rame, titanio fino a 35-45 HRC.

EN Steel, Stainless Steel, Cast Iron, Copper, Titanium and Hardened Steels up to 35-45 HRC.

FR Acier, Acier Inoxydable, Fonte Grise, Cuivre, Titane et Acier jusqu'à 35-45 HRC.

DE Stahl, Rostfreier Stahl, Gubeisen, Kupfer, Titan, Gehärteter Stahl 35-45 HRC.

Serie Lunga



Serie Extralunga



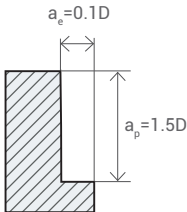
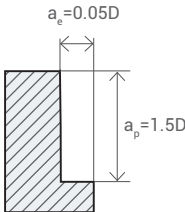
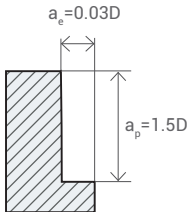
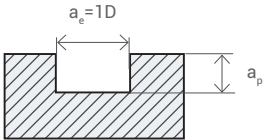
SERIE LUNGA - Long Series

Ref.	Dimensione - Dimension (mm)			
2 Taglienti (Z2)	Dc	d	Lc	L
MES-H2010L	1	3	5	60
MES-H2020L	2	3	10	60
MES-H2030L	3	3	15	60
MES-H2040L	4	4	20	80
MES-H2050L	5	5	25	80
MES-H2060L	6	6	25	80
MES-H2080L	8	8	35	90
MES-H2100L	10	10	45	100
MES-H2120L	12	12	50	100
MES-H2140L	14	14	65	150
MES-H2160L	16	16	65	150
MES-H2200L	20	20	70	150
MES-H2250L	25	25	75	150

SERIE EXTRA LUNGA - Extra Long Series

Ref.	Dimensione - Dimension (mm)			
2 Taglienti (Z2)	Dc	d	Lc	L
MES-H2030LL	3	3	25	75
MES-H2040LL	4	4	25	100
MES-H2050LL	5	5	25	100
MES-H2060LL	6	6	25	100
MES-H2060XL	6	6	40	100
MES-H2060LLL	6	6	25	150
MES-H2060XXL	6	6	40	150
MES-H2080XL	8	8	45	100
MES-H2080LL	8	8	25	150
MES-H2080XXL	8	8	45	150
MES-H2100LL	10	10	38	150
MES-H2100XL	10	10	50	150
MES-H2100XXL	10	10	65	150
MES-H2120LL	12	12	38	150
MES-H2120XL	12	12	50	150
MES-H2120XXL	12	12	75	150
MES-H2120LLL	12	12	38	200

MES-H Z2 - Fresa piatta

Materiale pezzo Workpiece material	Ghisa, Acciaio al carbonio, Acciaio legato -30 HRC Cast iron, Carbon steel, alloy steel -30 HRC		Acciaio inossidabile Stainless steel		Acciaio pretemprato, acciaio bonificato e temprato -40HRC Pre-hardened steel, quenched and tempered steel -40HRC		Acciaio pretemprato, acciaio bonificato e temprato -50HRC Pre-hardened steel, quenched and tempered steel -50HRC		Acciaio rinforzato -56HRC Hardened steel -56HRC														
Diametro Ø mm	Rotante Rotating (minimo -1)	Avanzamento Feed (mm/minuto)	Rotante Rotating (minimo -1)	Avanzamento Feed (mm/minuto)	Rotante Rotating (minimo -1)	Avanzamento Feed (mm/minuto)	Rotante Rotating (minimo -1)	Avanzamento Feed (mm/minuto)	Rotante Rotating (minimo -1)	Avanzamento Feed (mm/minuto)													
1	20000	200	20000	60	20000	165	20000	120	20000	90													
2	15000	320	11150	85	15000	285	13000	180	11140	130													
3	14000	545	7500	120	10600	420	8500	330	7430	240													
4	10800	560	5500	135	8000	425	6500	335	5570	245													
5	8200	585	4500	135	6400	445	5000	355	4460	260													
6	7000	600	3700	140	5300	465	4200	360	3710	260													
8	5200	595	2800	140	4000	455	3200	365	2785	270													
10	4200	585	2200	140	3200	445	2500	350	2230	250													
12	3500	585	1850	140	2650	445	2100	350	1855	250													
14	3000	545	1600	135	2300	420	1800	330	1590	240													
16	2600	545	1400	120	2000	420	1600	330	1390	240													
18	2300	535	1250	120	1800	415	1400	325	1240	235													
20	2050	535	1100	120	1600	415	1250	325	1115	235													
25	1650	425	880	100	1300	345	1000	260	890	185													
Massima profondità di taglio Max. Cutting depth																							
					Fessura di fresatura Milling Slot <table><tr><th>Ø</th><th>Ap</th></tr><tr><td>Ø1≤Ø3</td><td>0.15D</td></tr><tr><td>Ø3≤Ø6</td><td>0.3D</td></tr><tr><td>Ø6≤D<Ø20</td><td>0.5D</td></tr></table>			Ø	Ap	Ø1≤Ø3	0.15D	Ø3≤Ø6	0.3D	Ø6≤D<Ø20	0.5D	Fessura di fresatura Milling Slot <table><tr><th>Ø</th><th>Ap</th></tr><tr><td>Ø1≤D<Ø3</td><td>0.1D</td></tr><tr><td>Ø3≤D</td><td>0.2D</td></tr></table>			Ø	Ap	Ø1≤D<Ø3	0.1D	Ø3≤D
Ø	Ap																						
Ø1≤Ø3	0.15D																						
Ø3≤Ø6	0.3D																						
Ø6≤D<Ø20	0.5D																						
Ø	Ap																						
Ø1≤D<Ø3	0.1D																						
Ø3≤D	0.2D																						

FRESA Z3 – Serie Normale

EN Z3 SQUARE END MILL | Normal Series

FR Z3 FRAISE CYLINDRIQUE EN BOUT | Serie Normale

DE Z3 LANGLOCHFRÄSER | Normale Serien

IT Acciaio, acciaio inossidabile, ghisa, rame, titanio fino a 35-45 HRC.

EN Steel, Stainless Steel, Cast Iron, Copper, Titanium and Hardened Steels up to 35-45 HRC.

FR Acier, Acier Inoxydable, Fonte Grise, Cuivre, Titane et Acier jusqu'à 35-45 HRC.

DE Stahl, Rostfreier Stahl, Gubeisen, Kupfer, Titan, Gehärteter Stahl 35-45 HRC.

Serie Normale



SERIE NORMALE – Normal Series

Ref.	Dimensione - Dimension (mm)			
3 Taglienti (Z3)	Dc	d	Lc	L
MES-H3010-d3	1	3	3	38
MES-H3010-d4	1	4	3	50
MES-H3015-d3	1,5	3	4	38
MES-H3015-d4	1,5	4	4	50
MES-H3020-d3	2	3	6	38
MES-H3020-d4	2	4	6	50
MES-H3025-d3	2,5	3	8	38
MES-H3025-d4	2,5	4	8	50
MES-H3030-d3	3	3	8	38
MES-H3030-d4	3	4	8	50
MES-H3030-d6	3	6	8	50
MES-H3035-d4	3,5	4	8	50
MES-H3040	4	4	11	50
MES-H3040-d6	4	6	11	50
MES-H3045-d6	4,5	6	11	50
MES-H3050	5	5	13	50
MES-H3050-d6	5	6	13	50
MES-H3055	5,5	6	16	50
MES-H3060	6	6	16	50
MES-H3063	6,35	8	19	60
MES-H3065	6,5	8	19	60

SERIE NORMALE – Normal Series

Ref.	Dimensione - Dimension (mm)			
3 Taglienti (Z3)	Dc	d	Lc	L
MES-H3070	7	8	19	60
MES-H3075	7,5	8	19	60
MES-H3080	8	8	19	60
MES-H3085	8,5	10	22	72
MES-H3090	9	10	22	72
MES-H3095	9,5	10	22	72
MES-H3100	10	10	22	72
MES-H3105	10,5	12	26	75
MES-H3110	11	12	26	75
MES-H3120	12	12	26	75
MES-H3125	12,5	14	30	84
MES-H3130	13	14	30	84
MES-H3140	14	14	30	84
MES-H3150	15	16	32	92
MES-H3160	16	16	32	92
MES-H3170	17	18	38	100
MES-H3180	18	18	38	100
MES-H3190	19	20	38	100
MES-H3200	20	20	38	100
MES-H3220	22	22	38	100
MES-H3250	25	25	45	100

FRESA Z3 – Serie Lunga

EN Z3 SQUARE END MILL | Long Series

FR Z3 FRAISE CYLINDRIQUE EN BOUT | Serie Longue

DE Z3 LANGLOCHFRÄSER | Lange Serien

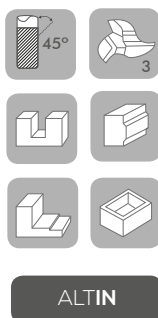
IT Acciaio, acciaio inossidabile, ghisa, rame, titanio fino a 35-45 HRC.

EN Steel, Stainless Steel, Cast Iron, Copper, Titanium and Hardened Steels up to 35-45 HRC.

FR Acier, Acier Inoxydable, Fonte Grise, Cuivre, Titane et Acier jusqu'à 35-45 HRC.

DE Stahl, Rostfreier Stahl, Gubeisen, Kupfer, Titan, Gehärteter Stahl 35-45 HRC.

Serie Lunga

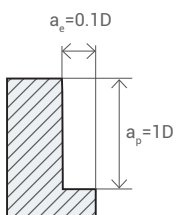
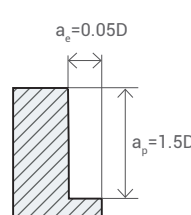
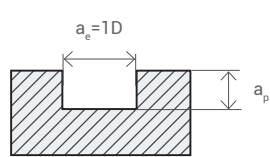
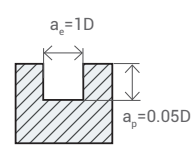


SERIE LUNGA - Long Series

Ref.	Dimensione - Dimension (mm)			
3 Taglienti (Z3)	Dc	d	Lc	L
MES-H3010L	1	3	5	60
MES-H3020L	2	3	10	60
MES-H3030L	3	3	15	60
MES-H3040L	4	4	20	80
MES-H3050L	5	5	25	80
MES-H3060L	6	6	25	80
MES-H3080L	8	8	35	90
MES-H3100L	10	10	45	100
MES-H3120L	12	12	50	100
MES-H3140L	14	14	65	150
MES-H3160L	16	16	65	150
MES-H3200L	20	20	70	150
MES-H3250L	25	25	75	150

MES-H Z3

Fresa piatta

Materiale pezzo Workpiece material	Ghisa, ghisa sferoidale Cast Iron, Nodular cast iron		Acciaio al carbonio, Acciaio legato -750 Nmm² Carbon steel, Alloy steel -750Nmm²		Acciaio al carbonio, Acciaio legato -30 HRC Carbon steel, Alloy steel -30 HRC		Acciaio pretemprato, acciaio bonificato e temprato -40HRC Pre-hardened steel, quenched and tempered steel 40HRC		Acciaio inossidabile Stainless steel		Acciaio pretemprato, acciaio bonificato e temprato -56HRC Pre-Hardened steel, Quenched and tempered steel -56HRC						
Diametro Ø mm	Rotante Rotating (minimo -¹)	Avanzamento Feed (mm/minuto)	Rotante Rotating (minimo -¹)	Avanzamento Feed (mm/minuto)	Rotante Rotating (minimo -¹)	Avanzamento Feed (mm/minuto)	Rotante Rotating (minimo -¹)	Avanzamento Feed (mm/minuto)	Rotante Rotating (minimo -¹)	Avanzamento Feed (mm/minuto)	Rotante Rotating (minimo -¹)	Avanzamento Feed (mm/minuto)					
1	20.000	215	20000	215	20000	175	20000	175	20000	65	20000	130					
2	15.000	345	15000	345	15000	310	15000	305	11150	90	13000	195					
3	14000	590	14000	590	13000	546	10600	455	7500	130	8500	360					
4	10800	600	10800	605	10000	560	8000	460	5500	145	6500	365					
5	8200	630	8200	630	7600	585	6400	480	4500	145	5000	380					
6	7000	650	7000	650	6400	600	5300	500	3700	150	4200	390					
8	5200	645	5200	645	4800	590	4000	495	2800	150	3200	400					
10	4200	630	4200	630	3800	585	3200	480	2200	150	2500	380					
12	3500	630	3500	630	3200	585	2650	480	1850	150	2100	380					
14	3000	590	3000	590	2700	545	2300	455	1600	145	1800	360					
16	2600	590	2600	590	2400	545	2000	455	1400	130	1600	360					
18	2300	580	2300	580	2100	530	1800	450	1250	130	1400	350					
20	2050	580	2050	580	1900	530	1600	450	1100	130	1250	350					
25	1650	465	1650	465	1520	425	1300	370	880	110	1000	280					
Massima profondità di taglio Max. Cutting depth																	
						<table><tr><th>Ø</th><th>Ap</th></tr><tr><td>Ø1 ≤ D < Ø3</td><td>0.15D</td></tr><tr><td>Ø3 ≤ D</td><td>0.3D</td></tr></table>					Ø	Ap	Ø1 ≤ D < Ø3	0.15D	Ø3 ≤ D	0.3D	
Ø	Ap																
Ø1 ≤ D < Ø3	0.15D																
Ø3 ≤ D	0.3D																

FRESA Z4 – Serie Normale

EN Z4 SQUARE END MILL | Normal Series

FR Z4 FRAISE CYLINDRIQUE EN BOUT | Serie Normale

DE Z4 LANGLOCHFRÄSER | Normale Serien

IT Acciaio, acciaio inossidabile, ghisa, rame, titanio fino a 35-45 HRC.

EN Steel, Stainless Steel, Cast Iron, Copper, Titanium and Hardened Steels up to 35-45 HRC.

FR Acier, Acier Inoxydable, Fonte Grise, Cuivre, Titane et Acier jusqu'à 35-45 HRC.

DE Stahl, Rostfreier Stahl, Gubeisen, Kupfer, Titan, Gehärteter Stahl 35-45 HRC.

Serie Normale



SERIE NORMALE – Normal Series

Ref.	Dimensione - Dimension (mm)			
4 Taglienti (Z4)	Dc	d	Lc	L
MES-H4010-d3	1	3	3	38
MES-H4010-d4	1	4	3	50
MES-H4015-d3	1,5	3	4	38
MES-H4015-d4	1,5	4	4	50
MES-H4020-d3	2	3	6	38
MES-H4020-d4	2	4	6	50
MES-H4025-d3	2,5	3	8	38
MES-H4025-d4	2,5	4	8	50
MES-H4030-d3	3	3	8	38
MES-H4030-d4	3	4	8	50
MES-H4030-d6	3	6	8	50
MES-H4035-d4	3,5	4	8	50
MES-H4040	4	4	11	50
MES-H4040-d6	4	6	11	50
MES-H4045-d6	4,5	6	11	50
MES-H4050	5	5	13	50
MES-H4050-d6	5	6	13	50
MES-H4055	5,5	6	16	50
MES-H4060	6	6	16	50
MES-H4060S	6	6	22	58
MES-H4063	6,35	8	19	60
MES-H4065	6,5	8	19	60
MES-H4070	7	8	19	60
MES-H4075	7,5	8	19	60
MES-H3080	8	8	19	60

SERIE NORMALE – Normal Series

Ref.	Dimensione - Dimension (mm)			
4 Taglienti (Z4)	Dc	d	Lc	L
MES-H4085	8,5	10	22	72
MES-H4090	9	10	22	72
MES-H4095	9,5	10	22	72
MES-H4100	10	10	22	72
MES-H4100S	10	10	32	80
MES-H4105	10,5	12	26	75
MES-H4110	11	12	26	75
MES-H4120	12	12	26	75
MES-H4120S	12	12	32	75
MES-H4125	12,5	14	30	84
MES-H4130	13	14	30	84
MES-H4140	14	14	30	84
MES-H4140S	14	14	50	100
MES-H4150	15	16	32	92
MES-H4160	16	16	32	92
MES-H4160S	16	16	50	100
MES-H4170	17	18	38	100
MES-H4180	18	18	38	100
MES-H4180S	18	18	50	100
MES-H4190	19	20	38	100
MES-H4200	20	20	38	100
MES-H4200S	20	20	50	100
MES-H4220	22	22	38	100
MES-H4250	25	25	45	100
MES-H4250S	25	25	55	110

FRESA Z4 – Serie Lunga / Extra Lunga

EN Z4 SQUARE END MILL | Long Series/Extra Long Series

FR Z4 FRAISE CYLINDRIQUE EN BOUT | Serie Longue/Extra Longue

DE Z4 LANGLOCHFRÄSER | Lange/Extra Lange Serien

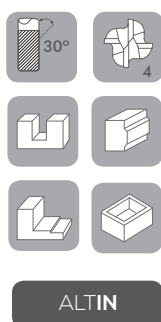
IT Acciaio, acciaio inossidabile, ghisa, rame, titanio fino a 35-45 HRC.

EN Steel, Stainless Steel, Cast Iron, Cooper, Titanium and Hardened Steels up to 35-45 HRC.

FR Acier, Acier Inoxydable, Fonte Grise, Cuivre, Titane et Acier jusqu'à 35-45 HRC.

DE Stahl, Rostfreier Stahl, Gubeisen, Kupfer, Titan, Gehärteter Stahl 35-45 HRC.

Serie Lunga



Serie Extralunga



SERIE LUNGA - Long Series

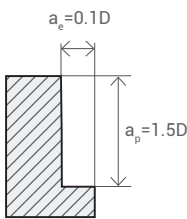
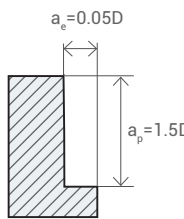
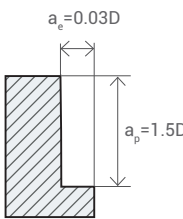
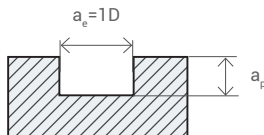
Ref.	Dimensione - Dimension (mm)			
4 Taglienti (Z4)	Dc	d	Lc	L
MES-H4010L	1	3	5	60
MES-H4020L	2	3	10	60
MES-H4030L	3	3	15	60
MES-H4040L	4	4	20	80
MES-H4050L	5	5	25	80
MES-H4060L	6	6	25	80
MES-H4070L	7	8	35	90
MES-H4080L	8	8	35	90
MES-H4090L	9	10	45	100
MES-H4100L	10	10	45	100
MES-H4120L	12	12	50	100
MES-H4140L	14	14	65	150
MES-H4140LL	14	14	90	150
MES-H4160L	16	16	65	150
MES-H4160LL	16	16	90	150
MES-H4180L	18	18	70	150
MES-H4200L	20	20	70	150
MES-H4200LL	20	20	90	150
MES-H4200XL	20	20	100	165
MES-H4200XLL	20	20	110	200
MES-H4250L	25	25	75	150

SERIE EXTRA LUNGA - Extralong Series

Ref.	Dimensione - Dimension (mm)			
3 Taglienti (Z3)	Dc	d	Lc	L
MES-H4030LL	3	3	25	75
MES-H4030XL	3	3	25	100
MES-H4040LL	4	4	25	100
MES-H4050LL	5	5	25	100
MES-H4060LL	6	6	25	100
MES-H4060XL	6	6	40	100
MES-H406LLL	6	6	25	150
MES-H4060XXL	6	6	40	150
MES-H4080XL	8	8	45	100
MES-H4080LL	8	8	25	150
MES-H4080XXL	8	8	45	150
MES-H4100LL	10	10	38	150
MES-H4100XL	10	10	50	150
MES-H4100XXL	10	10	65	150
MES-H4120LL	12	12	38	150
MES-H4120XL	12	12	50	150
MES-H4120XXL	12	12	75	150
MES-H4120LLL	12	12	38	200

MES-H Z4

Fresa piatta

Materiale pezzo Workpiece material	Ghisa, Acciaio al carbonio, Acciaio legato -30 HRC Cast iron, Carbon steel, alloy steel -30 HRC		Acciaio inossidabile Stainless steel		Acciaio pretemprato, acciaio bonificato e temprato -40HRC Pre-hardened steel, quenched and tempered steel -40HRC		Acciaio pretemprato, acciaio bonificato e temprato -50HRC Pre-hardened steel, quenched and tempered steel -50HRC		Acciaio temprato -56HRC Hardened steel -56HRC												
Diametro Ø mm	Rotante Rotating (minimo -1)	Avanzamento Feed (mm/minuto)	Rotante Rotating (minimo -1)	Avanzamento Feed (mm/minuto)	Rotante Rotating (minimo -1)	Avanzamento Feed (mm/minuto)	Rotante Rotating (minimo -1)	Avanzamento Feed (mm/minuto)	Rotante Rotating (minimo -1)	Avanzamento Feed (mm/minuto)											
1	20.000	270	20000	95	20000	215	20000	135	20000	120											
2	15.000	435	11150	110	15000	380	13000	200	11140	175											
3	14000	735	7500	135	10600	565	8500	370	7430	325											
4	10800	755	5500	140	8000	575	6500	380	5570	335											
5	8200	795	4500	140	6400	605	5000	400	4460	350											
6	7000	810	3700	145	5300	620	4200	405	3710	350											
8	5200	800	2800	145	4000	615	3200	415	2785	365											
10	4200	795	2200	145	3200	605	2500	390	2230	340											
12	3500	795	1850	145	2650	605	2100	390	1855	340											
14	3000	735	1600	140	2300	565	1800	370	1590	325											
16	2600	735	1400	135	2000	565	1600	370	1390	325											
18	2300	720	1250	115	1800	555	1400	365	1240	315											
20	2050	720	1100	115	1600	555	1250	365	1115	2050											
25	1650	575	880	95	1300	445	1000	295	900	255											
Massima profondità di taglio Max. Cutting depth																					
					Fessura di fresatura Milling Slot <table><tr><th>Ø</th><th>Ap</th></tr><tr><td>Ø1≤Ø3</td><td>0.15D</td></tr><tr><td>Ø3≤Ø6</td><td>0.3D</td></tr><tr><td>Ø6≤D<Ø20</td><td>0.5D</td></tr></table>		Ø	Ap	Ø1≤Ø3	0.15D	Ø3≤Ø6	0.3D	Ø6≤D<Ø20	0.5D	Fessura di fresatura Milling Slot <table><tr><th>Ø</th><th>Ap</th></tr><tr><td>Ø1≤D<Ø3</td><td>0.1D</td></tr><tr><td>Ø3≤D</td><td>0.2D</td></tr></table>		Ø	Ap	Ø1≤D<Ø3	0.1D	Ø3≤D
Ø	Ap																				
Ø1≤Ø3	0.15D																				
Ø3≤Ø6	0.3D																				
Ø6≤D<Ø20	0.5D																				
Ø	Ap																				
Ø1≤D<Ø3	0.1D																				
Ø3≤D	0.2D																				

FRESA Z6 - Serie Normale / Lunga / Extra Lunga

EN Z6 SQUARE END MILL | Normal/Long /Extra Long Series

FR Z6 FRAISE CYLINDRIQUE EN BOUT | Serie Normale/Longue/Extra Longue

DE Z6 LANGLOCHFRÄSER | Normale/Lange/Extra Lange Serien

IT Acciaio, acciaio inossidabile, ghisa, rame, titanio fino a 35-45 HRC.

EN Steel, Stainless Steel, Cast Iron, Cooper, Titanium and Hardened Steels up to 35-45 HRC.

FR Acier, Acier Inoxydable, Fonte Grise, Cuivre, Titane et Acier jusqu'à 35-45 HRC.

DE Stahl, Rostfreier Stahl, Gubeisen, Kupfer, Titan, Gehärteter Stahl 35-45 HRC.

Serie Normale



Serie Lunga/Extralunga



SERIE NORMALE - Normal Series

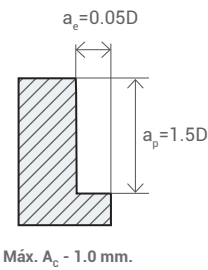
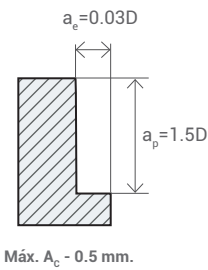
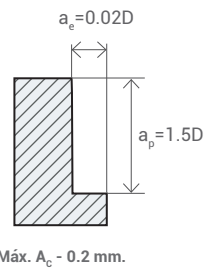
Ref.	Dimensione - Dimension (mm)			
6 Taglienti (Z6)	Dc	d	Lc	L
MEH-H4030-Z4	3.0	3	8	38
MEH-H4040-Z4	4.0	4	11	50
MEH-H4050-Z4	5.0	5	13	50
MEH-H6060	6.0	6	16	50
MEH-H6080	8.0	8	19	60
MEH-H6100	10.0	10	22	75
MEH-H6120	12.0	12	26	75
MEH-H6140	14.0	14	32	90
MEH-H6160	16.0	16	32	100
MEH-H6160S	16.0	16	50	100
MEH-H6180	18.0	18	38	100
MEH-H6200	20.0	20	38	100
MEH-H6200S	20.0	20	50	100
MEH-H6250	25.0	25	38	100

SERIE LUNGA/EXTRA LUNGA - Long/Extra Long Series

Ref.	Dimensione - Dimension (mm)			
6 Taglienti (Z6)	Dc	d	Lc	L
MEH-H4030L-Z4	3.0	3	15	60
MEH-H4040L-Z4	4.0	4	20	80
MEH-H4050L-Z4	5.0	5	25	80
MEH-H6060L	6.0	6	25	80
MEH-H6080L	8.0	8	35	90
MEH-H6100L	10.0	10	45	100
MEH-H6120L	12.0	12	50	100
MEH-H6120LL	12.0	12	70	125
MEH-H6140L	14.0	14	65	150
MEH-H6160L	16.0	16	65	150
MEH-H6160LL	16.0	16	100	165
MEH-H6200L	20.0	20	70	150
MEH-H6200LL	20.0	20	100	165
MEH-H6200LLL	20.0	20	135	200
MEH-H6250L	25.0	25	75	150
MEH-H6250LL	25.0	25	100	165
MEH-H6250LLL	25.0	25	140	200
MEH-H6320LL	32.0	32	100	165
MEH-H6320LLL	32.0	32	150	210

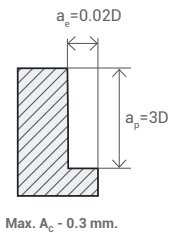
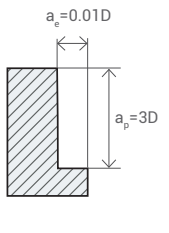
MEH-H Z6

Fresa piatta

Materiale pezzo Workpiece material	Acciaio pretemprato, acciaio bonificato e temprato 40HRC Pre-hardened steel, quenched and tempered steel 40HRC		Acciaio temprato 50-60HRC Hardened steel 50-60HRC		Acciaio temprato 60-65HRC Hardened steel 60-65HRC	
Diametro Ø mm	Rotante Rotating (minimo -1)	Avanzamento Feed (mm/minuto)	Rotante Rotating (minimo -1)	Avanzamento Feed (mm/minuto)	Rotante Rotating (minimo -1)	Avanzamento Feed (mm/minuto)
3	29135	3380	14625	1690	9685	1130
4	22940	2660	11515	1330	7625	890
5	18880	2180	9440	1090	6250	732
6	16000	1850	8000	925	5300	610
8	12000	1850	6000	925	4000	610
10	9600	1850	4800	925	3200	610
12	8000	1920	4000	960	2700	650
14	6800	1600	3400	815	2300	550
16	6000	1440	3000	720	2000	480
18	5300	1270	2700	635	1800	430
20	4800	1150	2400	575	1600	385
25	4250	1025	2120	510	1420	340
Massima profondità di taglio Max. Cutting depth						

MEH-H Z6

Frese piatte lunghe e extralunghe

Materiale pezzo Workpiece material	Acciaio pretemprato, Acciaio temprato 40-50HRC Pre-hardened steel, Hardened steel 40-50HRC		Acciaio temprato 50-60HRC Hardened steel 50-60HRC		Acciaio temprato 60-65HRC Hardened steel 60-65HRC	
Velocità di taglio Cutting Speed	300m/min		150m/min		100m/min	
Diametro Ø mm Diameter Ø mm	Rotante (min ⁻¹) Rotating (min ⁻¹)	Avanzamento (mm/minuto) Feed (mm/minute)	Rotante (min ⁻¹) Rotating (min ⁻¹)	Avanzamento (mm/minuto) Feed (mm/minute)	Rotante (min ⁻¹) Rotating (min ⁻¹)	Avanzamento (mm/minuto) Feed (mm/minute)
3	29135	2380	14625	1190	9685	795
4	22940	1875	11515	935	7625	626
5	18880	1535	9440	770	6250	515
6	16000	1300	8000	650	5300	430
8	12000	1300	6000	650	4000	430
10	9600	1300	4800	650	3200	430
12	8000	1350	4000	670	2700	460
14	6800	1150	3400	570	2300	380
16	6000	1000	3000	500	2000	340
18	5300	890	2700	450	1800	300
20	4800	800	2400	400	1600	270
25	4250	720	2120	360	1420	240
32	3900	680	2000	320	1350	190
Massima profondità di taglio Max. Cutting depth						
						

FRESA Z3/Z4 A SGROSSARE – Serie Normale / Serie Lunga

EN Z3-Z4 SEMI-ROUGHING END MILL | Normal Series /Long Series

FR Z3-Z4 FRAISE CYLINDRIQUE EN BOUT. SEMI-FINITION | Serie Normale/Longue

DE Z3-Z4 SCHRUPPSCHLICHTFRÄSER | Normale/Lange Serien

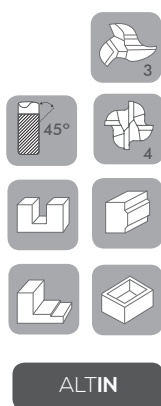
IT Acciaio, acciaio inossidabile, ghisa, rame, titanio fino a 35-45 HRC.

EN Steel, Stainless Steel, Cast Iron, Cooper, Titanium and Hardened Steels up to 35-45 HRC.

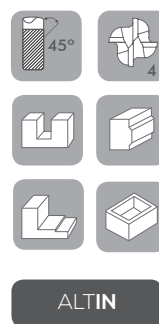
FR Acier, Acier Inoxydable, Fonte Grise, Cuivre, Titane et Acier jusqu'à 35-45 HRC.

DE Stahl, Rostfreier Stahl, Gubeisen, Kupfer, Titan, Gehärteter Stahl 35-45 HRC.

Serie Normale



Serie Lunga



SERIE NORMALE - Normal Series

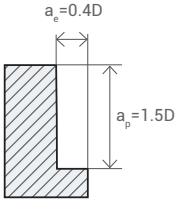
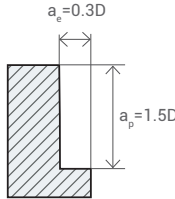
Ref.	Dimensione - Dimension (mm)				
3 Taglienti (Z3)	4 Taglienti (Z4)	Dc	d	Lc	L
MES-BW3060	MES-BW4060	6	6	16	50
MES-BW3080	MES-BW4080	8	8	19	60
	MES-BW4100	10	10	22	75
	MES-BW4120	12	12	26	75
	MES-BW4140	14	14	30	90
	MES-BW4160	16	16	32	100
	MES-BW4200	20	20	38	100

SERIE LUNGA - Long Series

Ref.	Dimensione - Dimension (mm)			
4 Taglienti (Z4)	Dc	d	Lc	L
MES-BW4060L	6	6	25	80
MES-BW4080L	8	8	35	90
MES-BW4100L	10	10	45	100
MES-BW4120L	12	12	50	100
MES-BW4160L	16	16	65	150
MES-BW4200L	20	20	70	150

MES-BW Z3-Z4

Fresa a sgrossare

Materiale pezzo Workpiece material	Ghisa, ghisa sferoidale Cast Iron, Nodular cast iron		Acciaio al carbonio, Acciaio legato -750 Nmm ² Carbon steel, Alloy steel -750Nmm ²		Acciaio al carbonio, Acciaio legato -30 HRC Carbon steel, Alloy steel -30 HRC		Acciaio pretemprato, acciaio bonificato e temprato -40-50HRC Pre-hardened steel, quenched and tempered steel 40-50HRC		Acciaio inossidabile Stainless steel	
Diametro Ø mm	Rotante Rotating (minimo -1)	Avanzamento Feed (mm/minuto)	Rotante Rotating (minimo -1)	Avanzamento Feed (mm/minuto)	Rotante Rotating (minimo -1)	Avanzamento Feed (mm/minuto)	Rotante Rotating (minimo -1)	Avanzamento Feed (mm/minuto)	Rotante Rotating (minimo -1)	Avanzamento Feed (mm/minuto)
6	6350	760	5300	640	4500	360	3450	280	2650	210
8	4750	760	4000	640	3400	410	2650	310	2000	240
10	3800	760	3200	640	2400	430	2050	330	1600	260
12	3200	770	2250	650	1950	470	1500	360	1150	280
14	2800	770	2125	650	1825	470	1400	360	1075	280
16	2400	770	2000	640	1700	480	1300	360	1000	280
20	1900	760	1600	610	1350	470	1050	350	800	260
Massima profondità di taglio Max. Cutting depth	 									

FRESA Z2 - SCARICO RIBASSATO - Codolo Ø6 Serie Normale

EN Z2 END MILLS - SHANK Ø6 | Reduced Neck - Normal Series

FR Z2 FRAISE CYLINDRIQUE | Col réduit - Serie Normale

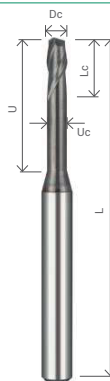
DE Z2 LANGLOCHFRÄSER | Reduzierter Hals - Normale Serien

IT Acciaio, acciaio inossidabile, ghisa, rame, titanio fino a 35-45 HRC.

EN Steel, Stainless Steel, Cast Iron, Cooper, Titanium and Hardened Steels up to 35-45 HRC.

FR Acier, Acier Inoxydable, Fonte Grise, Cuivre, Titane et Acier jusqu'à 35-45 HRC.

DE Stahl, Rostfreier Stahl, Gubeisen, Kupfer, Titan, Gehärteter Stahl 35-45 HRC.



SERIE NORMALE - Normal Series

Ref.	Dimensione - Dimension (mm)					
2 Taglienti (Z2)	Dc	d	U/C	U	Lc	L
MES-H2010-05	1	6	0,95	5	1,5	57
MES-H2010-08	1	6	0,95	8	1,5	57
MES-H2010-10	1	6	0,95	10	1,5	57
MES-H2010-12	1	6	0,95	12	1,5	65
MES-H2010-15	1	6	0,95	15	1,5	65
MES-H2010-20	1	6	0,95	20	1,5	65
MES-H2015-05	1,5	6	1,42	5	2	57
MES-H2015-08	1,5	6	1,42	8	2	57
MES-H2015-10	1,5	6	1,42	10	2	57
MES-H2015-12	1,5	6	1,42	12	2	65
MES-H2015-15	1,5	6	1,42	15	2	65
MES-H2015-20	1,5	6	1,42	20	2	65
MES-H2015-25	1,5	6	1,42	25	2	65
MES-H2020-06	2	6	1,92	6	3	57
MES-H2020-08	2	6	1,92	8	3	57
MES-H2020-10	2	6	1,92	10	3	57
MES-H2020-12	2	6	1,92	12	3	60
MES-H2020-14	2	6	1,92	14	3	65
MES-H2020-16	2	6	1,92	16	3	65
MES-H2020-20	2	6	1,92	20	3	65
MES-H2020-25	2	6	1,92	25	3	65
MES-H2020-30	2	6	1,92	30	3	80
MES-H2020-35	2	6	1,92	35	2	80
MES-H2020-40	2	6	1,92	40	3	80
MES-H2020-50	2	6	1,92	50	3	100
MES-H2025-10	2,5	6	2,4	10	4	57
MES-H2025-16	2,5	6	2,4	16	4	65

SERIE NORMALE - Normal Series

Ref.	Dimensione - Dimension (mm)					
2 Taglienti (Z2)	Dc	d	U/C	U	Lc	L
MES-H2025-20	2,5	6	2,4	20	4	65
MES-H2025-30	2,5	6	2,4	30	4	80
MES-H2025-40	2,5	6	2,4	40	4	80
MES-H2030-09	3	6	2,9	9	5	57
MES-H2030-12	3	6	2,9	12	5	60
MES-H2030-15	3	6	2,9	15	5	65
MES-H2030-20	3	6	2,9	20	5	65
MES-H2030-25	3	6	2,9	25	5	65
MES-H2030-30	3	6	2,9	30	5	80
MES-H2030-35	3	6	2,9	35	5	80
MES-H2030-40	3	6	2,9	40	5	80
MES-H2030-50	3	6	2,9	50	5	100
MES-H2040-10	4	6	3,9	10	6	57
MES-H2040-12	4	6	3,9	12	6	60
MES-H2040-16	4	6	3,9	16	6	65
MES-H2040-20	4	6	3,9	20	6	65
MES-H2040-25	4	6	3,9	25	6	65
MES-H2040-30	4	6	3,9	30	6	80
MES-H2040-35	4	6	3,9	35	6	80
MES-H2040-40	4	6	3,9	40	6	80
MES-H2040-50	4	6	3,9	50	6	100
MES-H2050-12	5	6	4,8	12	7	60
MES-H2050-20	5	6	4,8	20	7	65
MES-H2050-30	5	6	4,8	30	7	80
MES-H2050-40	5	6	4,8	40	7	80
MES-H2050-50	5	6	4,8	50	7	100

FRESA Z4 - SCARICO RIBASSATO - Codolo Ø6 Serie Normale

EN Z4 END MILLS - SHANK Ø6 | Reduced Neck - Normal Series

FR Z4 FRAISE CYLINDRIQUE | Col réduit - Serie Normale

DE Z4 LANGLOCHFRÄSER | Reduzierter Hals - Normale Serien

IT Acciaio, acciaio inossidabile, ghisa, rame, titanio fino a 35-45 HRC.

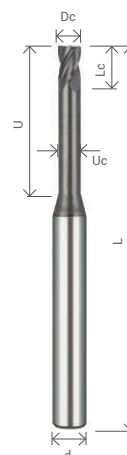
EN Steel, Stainless Steel, Cast Iron, Cooper, Titanium and Hardened Steels up to 35-45 HRC.

FR Acier, Acier Inoxydable, Fonte Grise, Cuivre, Titane et Acier jusqu'à 35-45 HRC.

DE Stahl, Rostfreier Stahl, Gubeisen, Kupfer, Titan, Gehärteter Stahl 35-45 HRC.



MAXIMIZER



SERIE NORMALE - Normal Series

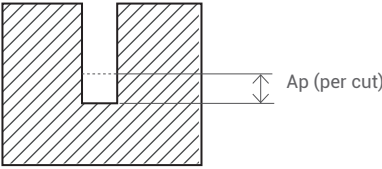
Ref.	Dimensione - Dimension (mm)					
4 Taglienti (Z4)	Dc	d	U/C	U	Lc	L
MES-H4020-06	2	6	1,92	6	3	57
MES-H4020-08	2	6	1,92	8	3	57
MES-H4020-10	2	6	1,92	10	3	57
MES-H4020-12	2	6	1,92	12	3	60
MES-H4020-14	2	6	1,92	14	3	65
MES-H4020-16	2	6	1,92	16	3	65
MES-H4020-20	2	6	1,92	20	3	65
MES-H4020-25	2	6	1,92	25	3	65
MES-H4020-30	2	6	1,92	30	3	80
MES-H4020-35	2	6	1,92	35	2	80
MES-H4020-40	2	6	1,92	40	3	80
MES-H4020-50	2	6	1,92	50	3	100
MES-H4025-10	2,5	6	2,4	10	4	57
MES-H4025-16	2,5	6	2,4	16	4	65
MES-H4025-20	2,5	6	2,4	20	4	65
MES-H4025-30	2,5	6	2,4	30	4	80
MES-H4025-40	2,5	6	2,4	40	4	80
MES-H4030-09	3	6	2,9	9	5	57
MES-H4030-12	3	6	2,9	12	5	60
MES-H4030-15	3	6	2,9	15	5	65

SERIE NORMALE - Normal Series

Ref.	Dimensione - Dimension (mm)					
4 Taglienti (Z4)	Dc	d	U/C	U	Lc	L
MES-H4030-20	3	6	2,9	20	5	65
MES-H4030-25	3	6	2,9	25	5	65
MES-H4030-30	3	6	2,9	30	5	80
MES-H4030-35	3	6	2,9	35	5	80
MES-H4030-40	3	6	2,9	40	5	80
MES-H4030-50	3	6	2,9	50	5	100
MES-H4040-10	4	6	3,9	10	6	57
MES-H4040-12	4	6	3,9	12	6	60
MES-H4040-16	4	6	3,9	16	6	65
MES-H4040-20	4	6	3,9	20	6	65
MES-H4040-25	4	6	3,9	25	6	65
MES-H4040-30	4	6	3,9	30	6	80
MES-H4040-35	4	6	3,9	35	6	80
MES-H4040-40	4	6	3,9	40	6	80
MES-H4040-50	4	6	3,9	50	6	100
MES-H4050-12	5	6	4,8	12	7	60
MES-H4050-20	5	6	4,8	20	7	65
MES-H4050-30	5	6	4,8	30	7	80
MES-H4050-40	5	6	4,8	40	7	80
MES-H4050-50	5	6	4,8	50	7	100

MES-H Ø6

Microfresa piatta

Materiale pezzo Workpiece material		Acciaio pretemprato, Acciaio temprato -40HRC Pre-hardened steel, Hardened steel -40HRC			Acciaio temprato 40-56HRC Hardened steel 40-56HRC		
Diametro Ø mm Diameter Ø mm	Lunghezza effettiva (mm) Effective length(mm)	Avanzamento (mm/minuto) Feed (mm/minute)	Rotante (minimo -1) Rotating (minimum -1)	Ap (mm)	Avanzamento (mm/minuto) Feed (mm/minute)	Rotante (minimo -1) Rotating (minimum -1)	Ap (mm)
1.0	5	17000	400	0.03	12000	100	0.014
	12	12000	150	0.01	10000	50	0.008
1.5	5	12000	400	0.06	8000	200	0.028
	12	10000	300	0.025	7000	100	0.01
2.0	10	7000	300	0.10	6000	200	0.05
	16	7000	200	0.02	6000	100	0.008
3.0	10	7000	400	0.12	5000	300	0.06
	16	6000	300	0.06	5000	200	0.03
4.0	12	4500	400	0.16	4000	300	0.08
	20	4500	300	0.10	4000	300	0.04
Massima profondità di taglio Max. Cutting depth							

MICROFRESA Z2 - Codolo Ø4

EN Z2 MICRO END MILLS | SHANK Ø4 | Normal Series

FR Z2 MICROFRAISE CYLINDRIQUE | Serie Normale

DE Z2 MIKROLANGLOCHFRÄSER | Normale Serien

IT Acciaio, acciaio inossidabile, ghisa, rame, titanio fino a 35-45 HRC.

EN Steel, Stainless Steel, Cast Iron, Cooper, Titanium and Hardened Steels up to 35-45 HRC.

FR Acier, Acier Inoxydable, Fonte Grise, Cuivre, Titane et Acier jusqu'à 35-45 HRC.

DE Stahl, Rostfreier Stahl, Gubeisen, Kupfer, Titan, Gehärteter Stahl 35-45 HRC.

Serie Normale

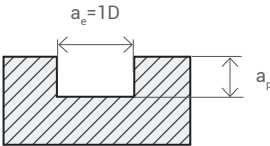
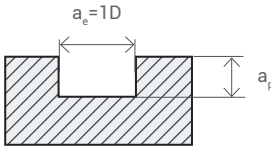


SERIE NORMALE- Normal Series

Ref.	Dimensione - Dimension (mm)			
2 Taglienti (Z2)	Dc	d	Lc	L
MES-M2002	0,2	4	0,4	50
MES-M2003	0,3	4	0,6	50
MES-M2004	0,4	4	0,8	50
MES-M2005	0,5	4	1	50
MES-M2006	0,6	4	1,2	50
MES-M2007	0,7	4	1,4	50
MES-M2008	0,8	4	1,6	50
MES-M2009	0,9	4	1,8	50

MES-M

Microfresa

Materiale pezzo Workpiece material	Acciaio pretemprato, Acciaio temprato -40HRC Pre-hardened steel, Hardened steel -40HRC		Acciaio temprato 40-56HRC Hardened steel 40-56HRC	
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)
0.2	32.000	150	25000	120
0.3	32.000	150	25000	120
0.4	32000	200	25000	160
0.5	21000	400	17000	300
0.6	21000	480	17000	380
0.7	20000	520	14000	360
0.8	20000	560	14000	400
0.9	17000	560	12000	400
Massima profondità di taglio Max. Cutting depth				

MICROFRESA Z2 - Scarico Ribassato Codolo Ø4

EN Z2 MICRO END MILLS | SHANK Ø4 | Reduced neck

FR Z2 MICROFRAISE CYLINDRIQUE | Col réduit

DE Z2 MIKROLANGLOCHFRÄSER | Reduzierter Hals

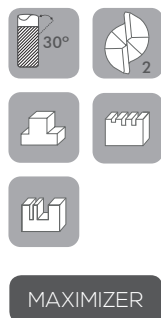
IT Acciaio, acciaio inossidabile, ghisa, rame, titanio fino a 35-45 HRC.

EN Steel, Stainless Steel, Cast Iron, Cooper, Titanium and Hardened Steels up to 35-45 HRC.

FR Acier, Acier Inoxydable, Fonte Grise, Cuivre, Titane et Acier jusqu'à 35-45 HRC.

DE Stahl, Rostfreier Stahl, Gubeisen, Kupfer, Titan, Gehärteter Stahl 35-45 HRC.

Scarico ribassato

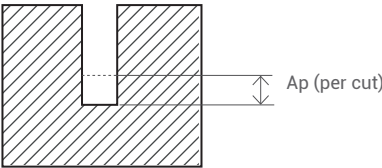


SCARICO RIBASSATO - Reduced Neck

Ref.	Dimensione - Dimension (mm)					
2 Taglienti (Z2)	Dc	d	U/C	U	Lc	L
MEM-H2005-04	0,5	4	0,48	4	0,7	50
MEM-H2005-06	0,5	4	0,48	6	0,7	50
MEM-H2006-04	0,6	4	0,57	4	0,9	50
MEM-H2006-06	0,6	4	0,57	6	0,9	50
MEM-H2006-08	0,6	4	0,57	8	0,9	50
MEM-H2008-06	0,8	4	0,76	6	1,2	50
MEM-H2008-08	0,8	4	0,76	8	1,2	50
MEM-H2008-10	0,8	4	0,76	10	1,2	50
MEM-H2012-06	1,2	4	1,15	6	1,8	50
MEM-H2012-08	1,2	4	1,15	8	1,8	50
MEM-H2012-10	1,2	4	1,15	10	1,8	50

MEM-H

Microfresa piatta

Materiale pezzo Workpiece material		Acciaio pretemprato, Acciaio temprato -40HRC Pre-hardened steel, Hardened steel -40HRC		Acciaio temprato 50-60HRC Hardened steel 50-60HRC	
Diametro Ø mm Diameter Ø mm	Lunghezza effettiva (mm) Effective length(mm)	Avanzamento (mm/minuto) Feed (mm/minute)	Rotante (minimo -1) Rotating (minimum -1)	Avanzamento (mm/minuto) Feed (mm/minute)	Rotante (minimo -1) Rotating (minimum -1)
0.5	4	150	28.000	100	25.000
	6	100	22.000	75	20.000
0.6	4	150	28.000	100	25.000
	6	100	22.000	75	20.000
	8	75	22.000	75	18.000
0.8	6	200	26.000	150	21.000
	8	125	22.000	100	18.000
	10	75	22.000	75	18.000
1.2	6	400	22.000	300	17.000
	8	300	19.000	200	14.000
	10	300	19.000	200	14.000
Massima profondità di taglio Max. Cutting depth					



03

FRESE SEMISFERICHE

BALL NOSE END MILLS

FRAISE CYLINDRIQUE HÉMISPHERIQUE

KUGELFRÄSER

FRESA Z2 SEMISFERICA – Serie Normale

EN Z2 BALL NOSE END MILL | Normal series

FR Z2 FRAISE CYLINDRIQUE HÉMISPHERIQUE | Serie Normale

DE Z2 KUGELFRÄSER | Normale Serien

IT Acciaio, acciaio inossidabile, ghisa, rame, titanio e acciai temprati fino a 35-45 HRC.

EN Steel, stainless steel, cast iron, copper, titanium and hardened steels up to 35-45 HRC.

FR Acier, acier inoxydable, fonte grise, cuivre, titane et acier jusqu'à 35-45 HRC.

DE Stahl, Rostfreier Stahl, Gubeisen, Kupfer, Titan, Gehärteter stahl 35-45 HRC.

Serie Normale



SERIE NORMALE – Normal Series

Ref.	Dimensione - Dimension (mm)			
2 Taglienti (Z2)	Dc	d	Lc	L
MBS-H2010	1	3	2	38
MBS-H2010-d4	1	4	2	50
MBS-H2015	1,5	3	3	38
MBS-H2015-d4	1,5	4	3	50
MBS-H2020	2	3	4	38
MBS-H2020-d4	2	4	4	50
MBS-H2025	2,5	3	5	38
MBS-H2030	3	3	6	38
MBS-H2030-d4	3	4	6	50
MBS-H2040	4	4	8	50
MBS-H2050	5	5	10	50
MBS-H2060	6	6	12	50
MBS-H2070	7	8	15	60
MBS-H2080	8	8	15	60
MBS-H2100	10	10	20	75
MBS-H2120	12	12	20	75
MBS-H2140	14	14	25	90
MBS-H2160	16	16	25	100
MBS-H2180	18	18	30	100
MBS-H2200	20	20	30	100

FRESA Z2 SEMISFERICA – Serie Lunga / Extralunga

EN Z2 BALL NOSE END MILL | Long/Extra Long series

FR Z2 FRAISE CYLINDRIQUE HÉMISPHERIQUE | Serie Longue/Extra Longue

DE Z2 KUGELFRÄSER | Lange/Extra Lange Serie

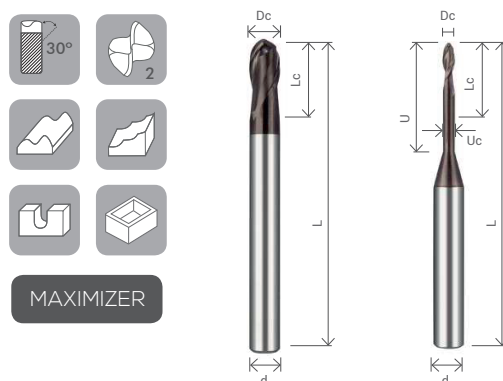
IT Acciaio, acciaio inossidabile, ghisa, rame, titanio e acciai temprati fino a 35-45 HRC.

EN Steel, stainless steel, cast iron, copper, titanium and hardened steels up to 35-45 HRC.

FR Acier, acier inoxydable, fonte grise, cuivre, titane et acier jusqu'à 35-45 HRC.

DE Stahl, Rostfreier Stahl, Gubeisen, Kupfer, Titan, Gehärteter stahl 35-45 HRC.

Serie Lunga



Serie Extra Lunga



SERIE LUNGA - Long Series

Ref.	Dimensione - Dimension (mm)					
2 Taglienti (Z2)	Dc	d	U/C	U	Lc	L
MBS-H2010L	1	3	0,9	6	2	60
MBS-H2150L	1,5	3	1,4	8	3	60
MBS-H2020L	2	3	1,9	8	3	60
MBS-H2025L	2,5	3	2,4	12	3	60
MBS-H2030L	3	3	—	—	4	60
MBS-H2040L	4	4	—	—	5	80
MBS-H2050L	5	5	—	—	6	80
MBS-H2060L	6	6	—	—	8	80
MBS-H2080L	8	8	—	—	12	100
MBS-H2100L	10	10	—	—	15	100
MBS-H2120L	12	12	—	—	15	100
MBS-H2140L	14	14	—	—	20	150
MBS-H2160L	16	16	—	—	20	150
MBS-H2180L	18	18	—	—	25	150
MBS-H2200L	20	20	—	—	25	150

SERIE EXTRA LUNGA - Extra Long Series

Ref.	Dimensione - Dimension (mm)			
2 Taglienti (Z2)	Dc	d	Lc	L
MBS-H2030LL	3	3	6	75
MBS-H2030XL	3	3	6	100
MBS-H2040LL	4	4	6	100
MBS-H2050LL	5	5	6	100
MBS-H2060LL	6	6	15	100
MBS-H2060LLL	6	6	15	150
MBS-H2060LLLL	6	6	30	200
MBS-H2080LL	8	8	25	150
MBS-H2080LLL	8	8	50	200
MBS-H2100LL	10	10	25	150
MBS-H2100LLL	10	10	50	200
MBS-H2120LL	12	12	25	150
MBS-H2120LLL	12	12	25	200
MBS-H2140LL	14	14	50	200
MBS-H2160LL	16	16	50	200

FRESA Z4 SEMISFERICA – Serie Normale / Lunga

EN Z4 BALL NOSE END MILL | Normal/LONG Series

FR Z4 FRAISE CYLINDRIQUE HÉMISPHERIQUE | Serie Normale/Longue

DE Z4 KUGELFRÄSER | Normale/Lange Serien

IT Acciaio, acciaio inossidabile, ghisa, rame, titanio e acciai temprati fino a 35-45 HRC.

EN Steel, stainless steel, cast iron, copper, titanium and hardened steels up to 35-45 HRC.

FR Acier, acier inoxydable, fonte grise, cuivre, titane et acier jusqu'à 35-45 HRC.

DE Stahl, Rostfreier Stahl, Gubeisen, Kupfer, Titan, Gehärteter stahl 35-45 HRC.

Serie Normale



Serie Lunga



SERIE NORMALE - Normal Series

Ref.	Dimensione - Dimension (mm)			
4 Taglienti (Z4)	Dc	d	Lc	L
MBS-H4030	3	3	6	38
MBS-H4040	4	4	8	50
MBS-H4050	5	5	10	50
MBS-H4060	6	6	12	50
MBS-H4080	8	8	15	60
MBS-H4100	10	10	20	75
MBS-H4120	12	12	20	75
MBS-H4140	14	14	25	90
MBS-H4160	16	16	25	100
MBS-H4180	18	18	30	100
MBS-H4200	20	20	30	100

SERIE LUNGA - Long Series

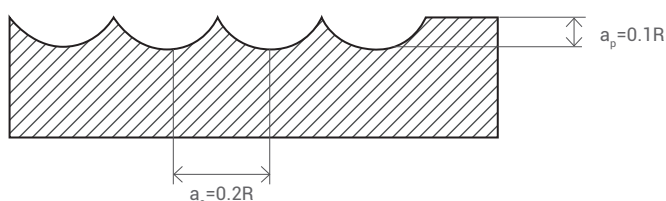
Ref.	Dimensione - Dimension (mm)			
4 Taglienti (Z4)	Dc	d	Lc	L
MBS-H4030L	3	3	4	60
MBS-H4040L	4	4	5	80
MBS-H4050L	5	5	6	80
MBS-H4060L	6	6	8	80
MBS-H4080L	8	8	12	100
MBS-H4100L	10	10	15	100
MBS-H4120L	12	12	15	100
MBS-H4160L	16	16	20	150
MBS-H4200L	20	20	25	150

MBS-H

Fresa Semisferica

Materiale pezzo Workpiece material	Cast iron, Carbon steel, Alloy steel -30 HRC		Stainless steel		Pre-hardened steel, Quenched and tempered steel -40HRC		Pre-hardened steel, Quenched and tempered steel -50HRC		Hardened steel 56- 62HRC	
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)	Rotante (minimo -1) Rotating (minimum -1)	Avanzamento (mm/minuto) Feed (mm/ minute)	Rotante (minimo -1) Rotating (minimum -1)	Avanzamento (mm/minuto) Feed (mm/ minute)	Rotante (minimo -1) Rotating (minimum -1)	Avanzamento (mm/minuto) Feed (mm/ minute)
1.0	40000	960	22300	240	32000	385	25000	330	22280	295
1.5	32000	1020	16500	255	24000	435	19000	330	16700	295
2.0	24000	1080	11150	275	16000	480	13000	330	11140	295
2.5	15500	1150	5550	445	8000	665	6500	450	5570	385
3.0	15500	1150	5550	445	8000	665	6500	450	5570	385
4.0	11500	1150	5550	445	8000	665	6500	450	5570	385
5.0	9500	1270	4450	445	6400	665	5000	455	4455	405
6.0	8000	1270	3700	470	5300	700	4200	470	3715	420
8.0	6000	1575	2750	550	4000	850	3200	535	2785	465
10	4800	1455	2200	520	3200	785	2500	535	2230	465
12	4000	1330	1850	520	2650	740	2100	505	1855	450
14	3500	1300	1550	500	2400	730	1800	475	1670	425
16	3000	1270	1350	455	2000	725	1600	455	1395	395
18	2700	1200	1250	455	1800	700	1400	425	1275	375
20	2400	1150	1100	445	1600	675	1250	400	1115	360

Massima
profondità di
taglio
Max. Cutting
depth



FRESA Z2 SEMISFERICA – Scarico ribassato – Codolo Ø4

EN Z2 BALL NOSE END MILL | SHANK Ø4 | Reduced neck

FR Z2 FRAISE CYLINDRIQUE HÉMISPHERIQUE | Col réduit

DE Z2 KUGELFRÄSER | Lange/Reduzierter Hals

IT Acciaio, acciaio inossidabile, ghisa, rame, titanio e acciai temprati fino a 35-45 HRC.

EN Steel, stainless steel, cast iron, copper, titanium and hardened steels up to 35-45 HRC.

FR Acier, acier inoxydable, fonte grise, cuivre, titane et acier jusqu'à 35-45 HRC.

DE Stahl, Rostfreier Stahl, Gubeisen, Kupfer, Titan, Gehärteter stahl 35-45 HRC.

Scarico ribassato



CODOLO D4 – Shank d4

Ref.	Dimensione - Dimension (mm)					
2 Taglienti (Z2)	Dc	d	U/C	U	Lc	L
MBN-H2010-04-d4	1	4	0,95	4	1,5	50
MBN-H2010-06-d4	1	4	0,95	6	1,5	50
MBN-H2010-08-d4	1	4	0,95	8	1,5	50
MBN-H2010-10-d4	1	4	0,95	10	1,5	50
MBN-H2010-12-d4	1	4	0,95	12	1,5	60
MBN-H2010-16-d4	1	4	0,95	16	1,5	60
MBN-H2010-20-d4	1	4	0,95	20	1,5	60
MBN-H2015-04-d4	1,5	4	1,42	4	2	50
MBN-H2015-06-d4	1,5	4	1,42	6	2	50
MBN-H2015-08-d4	1,5	4	1,42	8	2	50
MBN-H2015-10-d4	1,5	4	1,42	10	2	50
MBN-H2015-12-d4	1,5	4	1,42	12	2	60
MBN-H2015-16-d4	1,5	4	1,42	16	2	60
MBN-H2015-20-d4	1,5	4	1,42	20	2	60
MBN-H2015-25-d4	1,5	4	1,42	25	2	60
MBN-H2020-06-d4	2	4	1,92	6	3	50
MBN-H2020-08-d4	2	4	1,92	8	3	50

CODOLO D4 – Shank d4

Ref.	Dimensione - Dimension (mm)					
2 Taglienti (Z2)	Dc	d	U/C	U	Lc	L
MBN-H2020-10-d4	2	4	1,92	10	3	50
MBN-H2020-12-d4	2	4	1,92	12	3	60
MBN-H2020-16-d4	2	4	1,92	16	3	60
MBN-H2020-20-d4	2	4	1,92	20	3	60
MBN-H2020-25-d4	2	4	1,92	25	3	80
MBN-H2020-30-d4	2	4	1,92	30	3	80
MBN-H2020-35-d4	2	4	1,92	35	3	80
MBN-H2020-40-d4	2	4	1,92	40	3	80
MBN-H2030-08-d4	3	4	2,9	8	5	50
MBN-H2030-10-d4	3	4	2,9	10	5	50
MBN-H2030-12-d4	3	4	2,9	12	5	60
MBN-H2030-16-d4	3	4	2,9	16	5	60
MBN-H2030-20-d4	3	4	2,9	20	5	60
MBN-H2030-25-d4	3	4	2,9	25	5	80
MBN-H2030-30-d4	3	4	2,9	30	5	80
MBN-H2030-35-d4	3	4	2,9	35	5	80
MBN-H2030-40-d4	3	4	2,9	40	5	80

FRESA Z2 SEMISFERICA – Scarico ribassato – Codolo Ø6

EN Z2 BALL NOSE END MILL | SHANK Ø6 | Reduced neck

FR Z2 FRAISE CYLINDRIQUE HÉMISPHERIQUE | Col réduit

DE Z2 KUGELFRÄSER | Lange/Reduzierter Hals

IT Acciaio, acciaio inossidabile, ghisa, rame, titanio e acciai temprati fino a 35-45 HRC.

EN Steel, stainless steel, cast iron, copper, titanium and hardened steels up to 35-45 HRC.

FR Acier, acier inoxydable, fonte grise, cuivre, titane et acier jusqu'à 35-45 HRC.

DE Stahl, Rostfreier Stahl, Gubeisen, Kupfer, Titan, Gehärteter stahl 35-45 HRC.

Scarico Ribassato



MAXIMIZER



CODOLO D6 – Shank d6

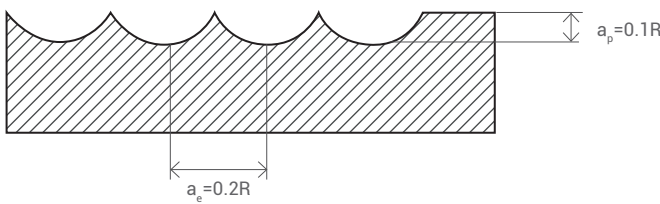
Ref.	Dimensione - Dimension (mm)					
2 Taglienti (Z2)	Dc	d	U/C	U	Lc	L
MBN-H2010-U05	1	6	0,95	5	1,5	55
MBN-H2010-U08	1	6	0,95	8	1,5	57
MBN-H2010-U10	1	6	0,95	10	1,5	57
MBN-H2010-U12	1	6	0,95	12	1,5	65
MBN-H2010-U15	1	6	0,95	15	1,5	65
MBN-H2010-U20	1	6	0,95	20	1,5	65
MBN-H2015-U05	1,5	6	1,42	5	2	57
MBN-H2015-U08	1,5	6	1,42	8	2	57
MBN-H2015-U10	1,5	6	1,42	10	2	57
MBN-H2015-U12	1,5	6	1,42	12	2	65
MBN-H2015-U15	1,5	6	1,42	15	2	65
MBN-H2015-U20	1,5	6	1,42	20	2	65
MBN-H2020-U06	2	6	1,92	6	3	57
MBN-H2020-U08	2	6	1,92	8	3	57
MBN-H2020-U10	2	6	1,92	10	3	57
MBN-H2020-U12	2	6	1,92	12	3	57
MBN-H2020-U14	2	6	1,92	14	3	57
MBN-H2020-U16	2	6	1,92	16	3	60
MBN-H2020-U20	2	6	1,92	20	3	60
MBN-H2020-U25	2	6	1,92	25	3	60
MBN-H2020-U30	2	6	1,92	30	3	75
MBN-H2020-U35	2	6	1,92	35	2	75
MBN-H2020-U40	2	6	1,92	40	3	80
MBN-H2020-U50	2	6	1,92	50	3	100
MBN-H2025-U20	2,5	6	2,4	20	4	60

CODOLO D6 – Shank d6

Ref.	Dimensione - Dimension (mm)					
2 Taglienti (Z2)	Dc	d	U/C	U	Lc	L
MBN-H2025-U30	2,5	6	2,4	30	4	80
MBN-H2025-U40	2,5	6	2,4	40	4	80
MBN-H2030-U09	3	6	2,9	9	5	60
MBN-H2030-U12	3	6	2,9	12	5	60
MBN-H2030-U15	3	6	2,9	15	5	60
MBN-H2030-U20	3	6	2,9	20	5	60
MBN-H2030-U25	3	6	2,9	25	5	65
MBN-H2030-U30	3	6	2,9	30	5	80
MBN-H2030-U35	3	6	2,9	35	5	80
MBN-H2030-U40	3	6	2,9	40	5	80
MBN-H2030-U50	3	6	2,9	50	5	100
MBN-H2040-U10	4	6	3,9	10	6	57
MBN-H2040-U12	4	6	3,9	12	6	60
MBN-H2040-U16	4	6	3,9	16	6	60
MBN-H2040-U20	4	6	3,9	20	6	60
MBN-H2040-U25	4	6	3,9	25	6	65
MBN-H2040-U30	4	6	3,9	30	6	80
MBN-H2040-U35	4	6	3,9	35	6	80
MBN-H2040-U40	4	6	3,9	40	6	80
MBN-H2040-U50	4	6	3,9	50	6	100
MBN-H2050-U20	5	6	4,8	20	7	60
MBN-H2050-U30	5	6	4,8	30	7	80
MBN-H2050-U40	5	6	4,8	40	7	80
MBN-H2050-U50	5	6	4,8	50	7	100

MBN-H

Fresa semisferica con scarico ribassato

Materiale pezzo Workpiece material		Acciaio pretemprato, Acciaio temprato 40-50HRC Pre-hardened steel, Hardened steel 40-50HRC				Acciaio temprato 50-62HRC Hardened steel 50-62HRC			
Diametro Ø mm Diameter Ø mm	Lunghezza Effettiva Effective length(mm)	Rotante (minimo -1) Rotating (minimum -1)	Avanzamento (mm/minuto) Feed (mm/minute)	Ap (mm)	Ae (mm)	Rotante (minimo -1) Rotating (minimum -1)	Avanzamento (mm/minuto) Feed (mm/minute)	Ap (mm)	Ae (mm)
1	5	16000	200	0.05	0.10	11500	150	0.05	0.10
	12	14000	135	0.01	0.03	9800	75	0.01	0.03
2	10	10000	275	0.08	0.16	5500	175	0.08	0.16
	14	10000	275	0.06	0.16	5500	175	0.06	0.16
	16	10000	250	0.02	0.10	5500	150	0.02	0.10
	35	8000	175	0.02	0.05	5500	125	0.01	0.05
2.5	20	5500	175	0.02	0.05	5000	125	0.01	0.05
3	9	7500	400	0.15	0.30	4000	200	0.15	0.30
	15	6500	250	0.05	0.20	3000	150	0.05	0.20
	20	6500	250	0.02	0.10	3000	150	0.02	0.05
	40	5000	200	0.02	0.1	2500	100	0.02	0.05
4	12	6000	400	0.20	0.40	3000	200	0.20	0.40
	20	5000	250	0.10	0.20	2500	100	0.10	0.20
5	20	4000	250	0.25	0.50	3000	100	0.20	0.2
Massima profondità di taglio Max. Cutting depth									
									

FRESA Z2 SEMISFERICA CONICA

Serie Normale/Lunga/Extra lunga

EN Z2 BALL NOSE END MILL | Conical form | Normal/Long/Extra Long Series

FR Z2 FRAISE CYLINDRIQUE HÉMISPHERIQUE | Serie Normale/Longues/Extra Longues

DE Z2 KUGELFRÄSER | Normale/Lange/Extra Lange Serien

IT Acciaio, acciaio inossidabile, ghisa, rame, titanio e acciai temprati fino a 35-45 HRC.

EN Steel, stainless steel, cast iron, copper, titanium and hardened steels up to 35-45 HRC.

FR Acier, acier inoxydable, fonte grise, cuivre, titane et acier jusqu'à 35-45 HRC.

DE Stahl, Rostfreier Stahl, Gubeisen, Kupfer, Titan, Gehärteter stahl 35-45 HRC.

Serie Normale/Lunga/Extra lunga



CONICA - Conical

Ref.	Dimensione - Dimension (mm)				
2 Taglienti (Z2)	Dc	d	C	Lc	L
MBC-H2010-20	1	6	20	1,5	60
MBC-H2010-30	1	6	30	1,5	65
MBC-H2010L-40	1	6	40	1,5	80
MBC-H2010L-50	1	6	50	1,5	100
MBC-H2010XL-60	1	6	60	1,5	108
MBC-H2010XL-70	1	6	70	1,5	108
MBC-H2015-20	1,5	6	20	2	60
MBC-H2015-30	1,5	6	30	2	65
MBC-H2015L-40	1,5	6	40	2	80
MBC-H2015XL-50	1,5	6	50	2	100
MBC-H2015XL-60	1,5	6	60	2	108
MBC-H2015XL-70	1,5	6	70	2	108
MBC-H2020-20	2	6	20	3	60
MBC-H2020-25	2	6	25	6	60
MBC-H2020-30	2	6	30	6	65
MBC-H2020L-40	2	6	40	3	80
MBC-H2020XL-50	2	6	50	3	100
MBC-H2020XL-60	2	6	60	3	108
MBC-H2020XL-70	2	6	70	3	108
MBC-H2030-20	3	6	20	7	60
MBC-H2030-30	3	6	30	7	65

CONICA - Conical

Ref.	Dimensione - Dimension (mm)				
2 Taglienti (Z2)	Dc	d	C	Lc	L
MBC-H2030L-40	3	6	40	5	80
MBC-H2030L-50	3	6	50	5	100
MBC-H2030XL-60	3	6	60	5	108
MBC-H2030XL-70	3	6	70	5	108
MBC-H2040-20	4	6	20	8	60
MBC-H2040-25	4	6	25	8	60
MBC-H2040-30	4	6	30	8	65
MBC-H2040L-40	4	6	40	6	80
MBC-H2040L-50	4	6	50	6	100
MBC-H2040XL-60	4	6	60	6	108
MBC-H2040XL-70	4	6	70	6	108
MBC-H2040-50	4	8	50	8	100
MBC-H2050L-50	5	6	50	7	100
MBC-H2050-41	5	8	41	12	90
MBC-H2050-60	5	8	60	12	90
MBC-H2060-33	6	8	33	14	90
MBC-H2060L-50	6	8	50	9	100
MBC-H2060-50	6	10	50	12	100
MBC-H2100-60	10	16	60	20	150
MBC-H2120-60	12	16	60	20	150

FRESA Z2 SEMISFERICA CONICA 1°

Serie Normale/Lunga/Extra lunga

EN Z2 BALL NOSE END MILL 1° | Conical form | Normal/Long/Extra Long Series

FR Z2 FRAISE CYLINDRIQUE HÉMISPHERIQUE 1° | Serie Normale/Longues/Extra Longues

DE Z2 KUGELFRÄSER 1° | Normale/Lange/Extra Lange Serien

IT Acciaio, acciaio inossidabile, ghisa, rame, titanio e acciai temprati fino a 35-45 HRC.

EN Steel, stainless steel, cast iron, copper, titanium and hardened steels up to 35-45 HRC.

FR Acier, acier inoxydable, fonte grise, cuivre, titane et acier jusqu'à 35-45 HRC.

DE Stahl, Rostfreier Stahl, Gubeisen, Kupfer, Titan, Gehärteter stahl 35-45 HRC.

CONICA 1° - Serie Normale/Lunga/Extra lunga



CONICA 1° - Serie Normale/Lunga/Extra lunga

CONICAL 1° - Normal/Long/Extra long Series

Ref.	Dimensione - Dimension (mm)				
2 Taglienti (Z2)	Dc	d	C	Lc	L
MBC-H2010-C20x1°	1	6	20	1,5	60
MBC-H2010-C30x1°	1	6	30	1,5	65
MBC-H2010L-C40x1°	1	6	40	1,5	80
MBC-H2010XL-C50x1°	1	6	50	1,5	100
MBC-H2010XL-C60x1°	1	6	60	1,5	108
MBC-H2010XL-C70x1°	1	6	70	1,5	108
MBC-H2015-C20x1°	1,5	6	20	2	60
MBC-H2015-C30x1°	1,5	6	30	2	65
MBC-H2015XL-C30x1°	1,5	6	30	2	108
MBC-H2015L-C40x1°	1,5	6	40	2	80
MBC-H2015L-C43x1°	1,5	6	43	2	108
MBC-H2015XL-C50x1°	1,5	6	50	2	100
MBC-H2015XL-C53x1°	1,5	6	53	2	108
MBC-H2015XL-C63x1°	1,5	6	63	2	108
MBC-H2015XL-C70x1°	1,5	6	70	2	108
MBC-H2015XL-C85x1°	1,5	6	85	2	150
MBC-H2020-C20x1°	2	6	20	3	60
MBC-H2020-C30x1°	2	6	30	3	65
MBC-H2020L-C30x1°	2	6	30	3	80
MBC-H2020XL-C30x1°	2	6	30	3	108
MBC-H2020L-C40x1°	2	6	40	3	80
MBC-H2020XL-C43x1°	2	6	43	3	108
MBC-H2020XL-C50x1°	2	6	50	3	100

CONICA 1° - Serie Normale/Lunga/Extra lunga

CONICAL 1° - Normal/Long/Extra long Series

Ref.	Dimensione - Dimension (mm)				
2 Taglienti (Z2)	Dc	d	C	Lc	L
MBC-H2020XL-C53x1°	2	6	53	3	108
MBC-H2020XL-C63x1°	2	6	63	3	108
MBC-H2020XL-C70x1°	2	6	70	3	108
MBC-H2020XL-C85x1°	2	6	85	3	150
MBC-H2030-C20x1°	3	6	20	5	60
MBC-H2030-C30x1°	3	6	30	5	65
MBC-H2030XL-C35x1°	3	6	35	5	108
MBC-H2030L-C40x1°	3	6	40	5	80
MBC-H2030XL-C44x1°	3	6	44	5	108
MBC-H2030XL-C50x1°	3	6	50	5	100
MBC-H2030XL-C55x1°	3	6	55	5	108
MBC-H2030XL-C65x1°	3	6	65	5	108
MBC-H2030XL-C75x1°	3	6	75	5	108
MBC-H2030XL-C85x1°	3	6	85	5	150
MBC-H2040-C20x1°	4	6	20	6	60
MBC-H2040-C30x1°	4	6	30	6	65
MBC-H2040XL-C35x1°	4	6	35	6	108
MBC-H2040L-C40x1°	4	6	40	6	80
MBC-H2040XL-C45x1°	4	6	45	6	108
MBC-H2040XL-C50x1°	4	6	50	6	100
MBC-H2040XL-C55x1°	4	6	55	6	108
MBC-H2040XL-C65x1°	4	6	65	6	108
MBC-H2040XL-C70x1°	4	6	70	6	150

FRESA Z2 SEMISFERICA CONICA 1,5°

Serie Normale/Lunga/Extra lunga

EN Z2 BALL NOSE END MILL 1,5° | Conical form | Normal/Long/Extra Long Series

FR Z2 FRAISE CYLINDRIQUE HÉMISPHERIQUE 1,5° | Serie Normale/Longues/Extra Longues

DE Z2 KUGELFRÄSER 1,5° | Normale/Lange/Extra Lange Serien

IT Acciaio, acciaio inossidabile, ghisa, rame, titanio e acciai temprati fino a 35-45 HRC.

EN Steel, stainless steel, cast iron, copper, titanium and hardened steels up to 35-45 HRC.

FR Acier, acier inoxydable, fonte grise, cuivre, titane et acier jusqu'à 35-45 HRC.

DE Stahl, Rostfreier Stahl, Gubeisen, Kupfer, Titan, Gehärteter stahl 35-45 HRC.

CONICA 1,5° -Serie Normale/Lunga/Extra lunga



CONICA 1,5° - Serie Normale/Lunga/Extra lunga

CONICAL 1,5° - Normal/Long/Extra long Series

Ref.	Dimensione - Dimension (mm)				
2 Taglienti (Z2)	Dc	d	C	Lc	L
MBC-H2010-C20x1,5°	1	6	20	1,5	60
MBC-H2010-C30x1,5°	1	6	30	1,5	65
MBC-H2010L-C40x1,5°	1	6	40	1,5	80
MBC-H2010XL-C50x1,5°	1	6	50	1,5	100
MBC-H2010XL-C60x1,5°	1	6	60	1,5	108
MBC-H2010XL-C70x1,5°	1	6	70	1,5	108
MBC-H2015-C20x1,5°	1,5	6	20	2	60
MBC-H2015-C30x1,5°	1,5	6	30	2	65
MBC-H2015XL-C30x1,5°	1,5	6	30	2	108
MBC-H2015L-C40x1,5°	1,5	6	40	2	80
MBC-H2015L-C43x1,5°	1,5	6	43	2	108
MBC-H2015XL-C50x1,5°	1,5	6	50	2	100
MBC-H2015XL-C53x1,5°	1,5	6	53	2	108
MBC-H2015XL-C63x1,5°	1,5	6	63	2	108
MBC-H2015XL-C70x1,5°	1,5	6	70	2	108
MBC-H2015XL-C85x1,5°	1,5	6	85	2	150
MBC-H2020-C20x1,5°	2	6	20	3	60
MBC-H2020-C30x1,5°	2	6	30	3	65
MBC-H2020L-C30x1,5°	2	6	30	3	80
MBC-H2020XL-C30x1,5°	2	6	30	3	108
MBC-H2020L-C40x1,5°	2	6	40	3	80

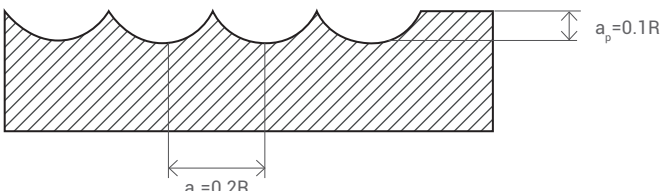
CONICA 1,5° - Serie Normale/Lunga/Extra lunga

CONICAL 1,5° - Normal/Long/Extra long Series

Ref.	Dimensione - Dimension (mm)				
2 Taglienti (Z2)	Dc	d	C	Lc	L
MBC-H2020XL-C40x1,5°	2	6	40	3	108
MBC-H2020XL-C50x1,5°	2	6	50	3	100
MBC-H2020XL-C53x1,5°	2	6	53	3	108
MBC-H2020XL-C63x1,5°	2	6	63	3	108
MBC-H2020XL-C70x1,5°	2	6	70	3	108
MBC-H2020XL-C84x1,5°	2	6	84	3	150
MBC-H2030-C20x1,5°	3	6	20	5	60
MBC-H2030-C30x1,5°	3	6	30	5	65
MBC-H2030XL-C35x1,5°	3	6	35	5	108
MBC-H2030L-C40x1,5°	3	6	40	5	80
MBC-H2030XL-C44x1,5°	3	6	44	5	108
MBC-H2030XL-C50x1,5°	3	6	50	5	100
MBC-H2030XL-C55x1,5°	3	6	55	5	108
MBC-H2030XL-C65x1,5°	3	6	65	5	108
MBC-H2030XLL-C65x1,5°	3	6	65	5	150
MBC-H2040-C20x1,5°	4	6	20	6	60
MBC-H2040-C30x1,5°	4	6	30	6	65
MBC-H2040-C35x1,5°	4	6	35	6	108
MBC-H2040L-C40x1,5°	4	6	40	6	80
MBC-H2040XL-C45x1,5°	4	6	45	6	108

MBC-H

Fresa semisferica conica 1° e 1,5°

Materiale pezzo Workpiece material		Acciaio pretemprato, Acciaio temprato 40-50HRC Pre-hardened steel, Hardened steel 40-50HRC				Acciaio temprato 50-62HRC Hardened steel 50-62HRC			
Diametro Ø mm Diameter Ø mm	Lunghezza Effettiva Effective length(mm)	Rotante (minimo -1) Rotating (minimum -1)	Avanzamento (mm/minuto) Feed (mm/minute)	Ap (mm)	Ae (mm)	Rotante (minimo -1) Rotating (minimum -1)	Avanzamento (mm/minuto) Feed (mm/minute)	Ap (mm)	Ae (mm)
1	20	22000	450	0.02	0.1	22000	345	0.02	0.1
1.5	20	20000	750	0.03	0.15	20000	700	0.03	0.15
2	20	18000	1000	0.05	0.2	18000	800	0.05	0.2
	40	18000	750	0.03	0.2	18000	600	0.05	0.2
3	30	16000	1200	0.1	0.3	16000	960	0.1	0.3
	50	16000	850	0.03	0.3	16000	680	0.03	0.3
4	30	14000	1400	0.15	0.4	14000	1120	0.15	0.4
	60	14000	1100	0.1	0.4	14000	880	0.1	0.4
5	60	11700	1400	0.25	0.5	11700	880	0.25	0.5
Massima profondità di taglio Max. Cutting depth									

FRESA Z2 SEMISFERICA - Per temprati fino 55 HRC

Serie Normale/Lunga/Extra lunga

EN Z2 BALL NOSE END MILL | for Hard Cutting 55 HRC | Normal/Long/Extra Long Series

FR Z2 FRAISE CYLINDRIQUE HÉMISPHERIQUE | Serie Normale/Longues/Extra Longues

DE Z2 KUGELFRÄSER | Normale/Lange/Extra Lange Serien

IT Acciaio, acciaio inossidabile, ghisa, rame, titanio e acciai temprati fino a 52-55 HRC.

EN Steel, stainless steel, cast iron, copper, titanium and hardened steels up to 52-55 HRC.

FR Acier, acier inoxydable, fonte grise, cuivre, titane et acier jusqu'à 52-55 HRC.

DE Stahl, Rostfreier Stahl, Gubeisen, Kupfer, Titan, Gehärteter stahl 52-55 HRC.

Serie Normale/Lunga/Extra lunga



SERIE NORMALE/LUNGA/EXTRA LUNGA

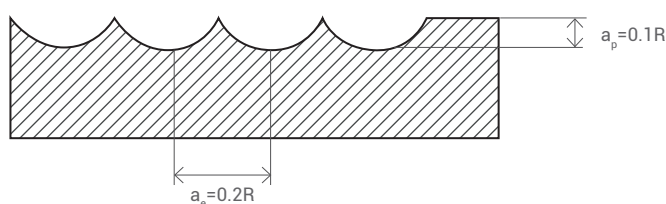
Normal/Long/Extra long Series

Ref.	Dimensione - Dimension (mm)			
2 Taglienti (Z2)	Dc	d	Lc	L
MBS-AT2060	6	6	12	50
MBS-AT2060L	6	6	8	80
MBS-AT2060LLL	6	6	15	100
MBS-AT2080	8	8	15	60
MBS-AT2080L	8	8	12	100
MBS-AT2100	10	10	20	72
MBS-AT2100L	10	10	15	100
MBS-AT2120	12	12	20	75
MBS-AT2120L	12	12	15	100

MBS-AT

Materiale pezzo Workpiece material	Cast iron, Carbon steel, Alloy steel -30 HRC		Stainless steel		Pre-hardened steel, Quenched and tempered steel -40HRC		Pre-hardened steel, Quenched and tempered steel -50HRC		Hardened steel 56-62HRC	
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)	Rotante (minimo -1) Rotating (minimum -1)	Avanzamento (mm/minuto) Feed (mm/ minute)	Rotante (minimo -1) Rotating (minimum -1)	Avanzamento (mm/minuto) Feed (mm/ minute)	Rotante (minimo -1) Rotating (minimum -1)	Avanzamento (mm/minuto) Feed (mm/ minute)
1.0	40000	960	22300	240	32000	385	25000	330	22280	295
1.5	32000	1020	16500	255	24000	435	19000	330	16700	295
2.0	24000	1080	11150	275	16000	480	13000	330	11140	295
2.5	15500	1150	5550	445	8000	665	6500	450	5570	385
3.0	15500	1150	5550	445	8000	665	6500	450	5570	385
4.0	11500	1150	5550	445	8000	665	6500	450	5570	385
5.0	9500	1270	4450	445	6400	665	5000	455	4455	405
6.0	8000	1270	3700	470	5300	700	4200	470	3715	420
8.0	6000	1575	2750	550	4000	850	3200	535	2785	465
10	4800	1455	2200	520	3200	785	2500	535	2230	465
12	4000	1330	1850	520	2650	740	2100	505	1855	450
14	3500	1300	1550	500	2400	730	1800	475	1670	425
16	3000	1270	1350	455	2000	725	1600	455	1395	395
18	2700	1200	1250	455	1800	700	1400	425	1275	375
20	2400	1150	1100	445	1600	675	1250	400	1115	360

Massima
profondità
di taglio
Max. Cutting
depth



FRESA Z2 SEMISFERICA CONICA 1° / 1,5°

Per temprati fino 55 HRC

- EN** Z2 BALL NOSE END MILL | TAPER 1° | for Hard Cutting 55 HRC | Conical form | Normal/Long/Extra Long Series
- FR** Z2 FRAISE CYLINDRIQUE HÉMISPHERIQUE | Serie Normale/Longues/Extra Longues
- DE** Z2 KUGELFRÄSER | Normale/Lange/Extra Lange Serien

IT Acciaio, acciaio inossidabile, ghisa, rame, titanio e acciai temprati fino a 52-55 HRC.

EN Steel, stainless steel, cast iron, copper, titanium and hardened steels up to 52-55 HRC.

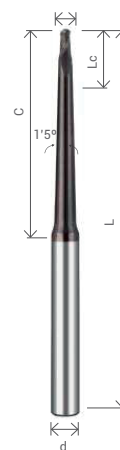
FR Acier, acier inoxydable, fonte grise, cuivre, titane et acier jusqu'à 52-55 HRC.

DE Stahl, Rostfreier Stahl, Gubeisen, Kupfer, Titan, Gehärteter stahl 52-55 HRC.

Conica 1°



Conica 1,5°



CONICA 1° - Serie Normale/Lunga/Extra lunga

CONICAL 1° - Normal/Long/Extra long series

Ref.	Dimensione - Dimension (mm)				
2 Taglienti (Z2)	Dc	d	C	Lc	L
MBC-AT2060XL-C35x1°	6	8	35	9	108
MBC-AT2060XL-C48x1°	6	8	48	9	108
MBC-AT2060XL-C55x1°	6	8	55	9	108
MBC-AT2060XL-C70x1°	6	8	70	9	108
MBC-AT2060XL-C73x1°	6	8	73	9	150
MBC-AT2080XL-C48x1°	8	10	48	10	108
MBC-AT2080XL-C55x1°	8	10	55	10	108
MBC-AT2080XL-C70x1°	8	10	70	10	108
MBC-AT2080XXL-C70x1°	8	10	70	10	150

CONICA 1,5° - Serie Lunga/Extra lunga

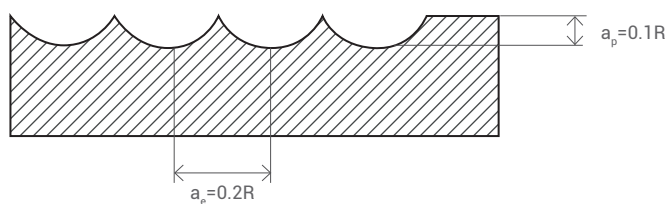
CONICAL 1,5° - Long/Extra long series

Ref.	Dimensione - Dimension (mm)				
2 Taglienti (Z2)	Dc	d	C	Lc	L
MBC-AT2060XL-C35x1,5°	6	8	35	9	108
MBC-AT2060XL-C48x1,5°	6	8	48	9	108
MBC-AT2060XXL-C48x1,5°	6	8	48	9	150
MBC-AT2080XL-C48x1,5°	8	10	48	10	108
MBC-AT2080XXL-C48x1,5°	8	10	48	10	150

MBC-AT
Fresa Semisferica

Materiale pezzo Workpiece material	Cast iron, Carbon steel, Alloy steel -30 HRC		Stainless steel		Pre-hardened steel, Quenched and tempered steel -40HRC		Pre-hardened steel, Quenched and tempered steel -50HRC		Hardened steel 56-62HRC	
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)	Rotante (minimo -1) Rotating (minimum -1)	Avanzamento (mm/minuto) Feed (mm/ minute)	Rotante (minimo -1) Rotating (minimum -1)	Avanzamento (mm/minuto) Feed (mm/ minute)	Rotante (minimo -1) Rotating (minimum -1)	Avanzamento (mm/minuto) Feed (mm/ minute)
1.0	40000	960	22300	240	32000	385	25000	330	22280	295
1.5	32000	1020	16500	255	24000	435	19000	330	16700	295
2.0	24000	1080	11150	275	16000	480	13000	330	11140	295
2.5	15500	1150	5550	445	8000	665	6500	450	5570	385
3.0	15500	1150	5550	445	8000	665	6500	450	5570	385
4.0	11500	1150	5550	445	8000	665	6500	450	5570	385
5.0	9500	1270	4450	445	6400	665	5000	455	4455	405
6.0	8000	1270	3700	470	5300	700	4200	470	3715	420
8.0	6000	1575	2750	550	4000	850	3200	535	2785	465
10	4800	1455	2200	520	3200	785	2500	535	2230	465
12	4000	1330	1850	520	2650	740	2100	505	1855	450
14	3500	1300	1550	500	2400	730	1800	475	1670	425
16	3000	1270	1350	455	2000	725	1600	455	1395	395
18	2700	1200	1250	455	1800	700	1400	425	1275	375
20	2400	1150	1100	445	1600	675	1250	400	1115	360

Massima
profondità di
taglio
Max. Cutting
depth



FRESA Z2 SEMISFERICA - Serie Normale / Serie Lunga

Per temprati fino 62 HRC

EN Z2 BALL NOSE END MILL | for HARD CUTTING 62 HRC | Normal/Long Series

FR Z2 FRAISE CYLINDRIQUE HÉMISPHERIQUE | 62 HRC | Serie Normale/Longue

DE Z2 KUGELFRÄSER | 62 HRC | Normale/Lange Serien

	Serie Normale	Serie Lunga
IT Acciaio, acciaio inossidabile, ghisa, rame, titanio e acciai temprati fino a 62 HRC. EN Steel, stainless steel, cast iron, copper, titanium and hardened steels up to 62 HRC. FR Acier, acier inoxydable, fonte grise, cuivre, titane et acier jusqu'à 62 HRC. DE Stahl, Rostfreier Stahl, Gubeisen, Kupfer, Titan, Gehärteter stahl 62 HRC.		

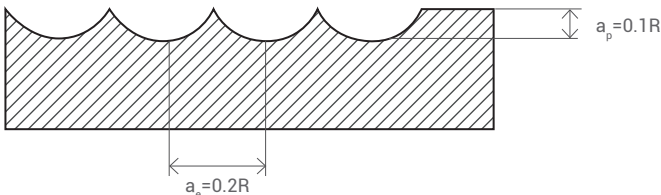
SERIE NORMALE - Normal series

Ref.	Dimensione - Dimension (mm)						
2 Taglienti (Z2)	Dc	d	U/C	C	U	Lc	L
MBH-H2020	2	6	-	20	-	3	60
MBH-H2030	3	6	-	20	-	5	60
MBH-H2040	4	6	-	20	-	6	60
MBH-H2050	5	6	4,8	-	20	10	60
MBH-H2060	6	6	5,8	-	20	12	60
MBH-H2080	8	8	7,8	-	20	12	80
MBH-H2100	10	10	9,8	-	22	10	75
MBH-H2120	12	12	11,8	-	24	12	75
MBH-H2160	16	16	15,8	-	40	20	92

SERIE LUNGA - Long series

Ref.	Dimensione - Dimension (mm)						
2 Taglienti (Z2)	Dc	d	U/C	C	U	Lc	L
MBH-H2020L	2	6	-	40	-	3	80
MBH-H2030L	3	6	-	40	-	5	80
MBH-H2040L	4	6	-	40	-	6	80
MBH-H2050L	5	6	4,8	-	20	10	80
MBH-H2060L	6	6	5,8	-	20	12	80
MBH-H2080L	8	8	7,8	-	20	12	100
MBH-H2100L	10	10	9,8	-	22	10	100
MBH-H2120L	12	12	11,8	-	24	12	100
MBH-H2160L	16	16	15,8	-	40	20	150

MBH-H

Materiale pezzo Workpiece material	Cast iron, Carbon steel, Alloy steel -30 HRC		Stainless steel		Pre-hardened steel, Quenched and tempered steel -40HRC		Pre-hardened steel, Quenched and tempered steel -50HRC		Hardened steel 56-62HRC	
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)	Rotante (minimo -1) Rotating (minimum -1)	Avanzamento (mm/minuto) Feed (mm/minute)	Rotante (minimo -1) Rotating (minimum -1)	Avanzamento (mm/minuto) Feed (mm/minute)	Rotante (minimo -1) Rotating (minimum -1)	Avanzamento (mm/minuto) Feed (mm/minute)
1.0	40000	960	22300	240	32000	385	25000	330	22280	295
1.5	32000	1020	16500	255	24000	435	19000	330	16700	295
2.0	24000	1080	11150	275	16000	480	13000	330	11140	295
2.5	15500	1150	5550	445	8000	665	6500	450	5570	385
3.0	15500	1150	5550	445	8000	665	6500	450	5570	385
4.0	11500	1150	5550	445	8000	665	6500	450	5570	385
5.0	9500	1270	4450	445	6400	665	5000	455	4455	405
6.0	8000	1270	3700	470	5300	700	4200	470	3715	420
8.0	6000	1575	2750	550	4000	850	3200	535	2785	465
10	4800	1455	2200	520	3200	785	2500	535	2230	465
12	4000	1330	1850	520	2650	740	2100	505	1855	450
14	3500	1300	1550	500	2400	730	1800	475	1670	425
16	3000	1270	1350	455	2000	725	1600	455	1395	395
18	2700	1200	1250	455	1800	700	1400	425	1275	375
20	2400	1150	1100	445	1600	675	1250	400	1115	360
Massima profondità di taglio Max. Cutting depth										

MICROFRESA Z2 SEMISFERICA - Serie Normale

Scarico ribassato Codolo Ø4

EN Z2 BALL NOSE MICRO END MILL | SHANK Ø4 | Reduced neck - Normal Series

FR Z2 MICROFRAISE CYLINDRIQUE HÉMISPHERIQUE | Col réduit - Serie Normale

DE Z2 MIKROKUGELFRÄSER | Reduzierter Hals - Normale Serien

IT Acciaio, acciaio inossidabile, ghisa, rame, titanio e acciai temprati fino a 35-45 HRC.

EN Steel, stainless steel, cast iron, copper, titanium and hardened steels up to 35-45 HRC.

FR Acier, acier inoxydable, fonte grise, cuivre, titane et acier jusqu'à 35-45 HRC.

DE Stahl, Rostfreier Stahl, Gubeisen, Kupfer, Titan, Gehärteter stahl 35-45 HRC.

Serie Normale



Scarico Ribassato



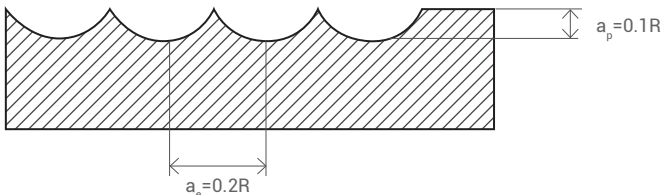
SERIE NORMALE - Normal Series

Ref.	Dimensione - Dimension (mm)			
2 Taglienti (Z2)	Dc	d	Lc	L
MBS-M2002	0,2	4	0,4	50
MBS-M2003	0,3	4	0,6	50
MBS-M2004	0,4	4	0,8	50
MBS-M2005	0,5	4	1	50
MBS-M2006	0,6	4	1,2	50
MBS-M2007	0,7	4	1,4	50
MBS-M2008	0,8	4	1,6	50
MBS-M2009	0,9	4	1,8	50

SCARICO RIBASSATO - Reduced neck

Ref.	Dimensione - Dimension (mm)					
2 Taglienti (Z2)	Dc	d	Uc	U	Lc	L
MBS-M2005-04	0,5	4	0,48	4	0,7	50
MBS-M2005-06	0,5	4	0,48	6	0,7	50
MBS-M2006-04	0,6	4	0,57	4	0,9	50
MBS-M2006-06	0,6	4	0,57	6	0,9	50
MBS-M2006-08	0,6	4	0,57	8	0,9	50
MBS-M2008-06	0,8	4	0,76	6	1,2	50
MBS-M2008-08	0,8	4	0,76	8	1,2	50
MBS-M2008-10	0,8	4	0,76	10	1,2	50
MBS-M2012-06	1,2	4	1,15	6	1,8	50
MBS-M2012-08	1,2	4	1,15	8	1,8	50
MBS-M2012-10	1,2	4	1,15	10	1,8	50

MBS-M

Materiale pezzo Workpiece material	Cast iron, Carbon steel, Alloy steel -30 HRC		Stainless steel		Pre-hardened steel, Quenched and tempered steel -40HRC		Pre-hardened steel, Quenched and tempered steel -50HRC		Hardened steel 56-62HRC	
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)	Rotante (minimo -1) Rotating (minimum -1)	Avanzamento (mm/minuto) Feed (mm/ minute)	Rotante (minimo -1) Rotating (minimum -1)	Avanzamento (mm/minuto) Feed (mm/ minute)	Rotante (minimo -1) Rotating (minimum -1)	Avanzamento (mm/minuto) Feed (mm/ minute)
1.0	40000	960	22300	240	32000	385	25000	330	22280	295
1.5	32000	1020	16500	255	24000	435	19000	330	16700	295
2.0	24000	1080	11150	275	16000	480	13000	330	11140	295
2.5	15500	1150	5550	445	8000	665	6500	450	5570	385
3.0	15500	1150	5550	445	8000	665	6500	450	5570	385
4.0	11500	1150	5550	445	8000	665	6500	450	5570	385
5.0	9500	1270	4450	445	6400	665	5000	455	4455	405
6.0	8000	1270	3700	470	5300	700	4200	470	3715	420
8.0	6000	1575	2750	550	4000	850	3200	535	2785	465
10	4800	1455	2200	520	3200	785	2500	535	2230	465
12	4000	1330	1850	520	2650	740	2100	505	1855	450
14	3500	1300	1550	500	2400	730	1800	475	1670	425
16	3000	1270	1350	455	2000	725	1600	455	1395	395
18	2700	1200	1250	455	1800	700	1400	425	1275	375
20	2400	1150	1100	445	1600	675	1250	400	1115	360
Massima profondità di taglio Max. Cutting depth										



04

FRESE TORICHE
CORNER RADIUS END MILLS
FRAISE TORIQUE
TORUSFRÄSER END MILL

FRESA Z2 TORICA – Serie Normale

EN Z2 CORNER RADIUS END MILL | Normal Series

FR Z2 FRAISE TORIQUE | Serie Normale

DE Z2 TORUSFRÄSER | Normale Serien

IT Acciaio, acciaio inossidabile, ghisa, rame, titanio e acciai temprati fino a 35-45 HRC.

EN Steel, stainless steel, cast iron, copper, titanium and hardened steels up to 35-45 HRC.

FR Acier, acier inoxydable, fonte grise, cuivre, titane et acier jusqu'à 35-45 HRC.

DE Stahl, Rostfreier Stahl, Gubeisen, Kupfer, Titan, Gehärteter stahl 35-45 HRC.

Serie Normale



MAXIMIZER



SERIE NORMALE – Normal Series

Ref.	Dimensione - Dimension (mm)				
2 Taglienti (Z2)	Dc	d	R	Lc	L
MES-H2020S-r0,2	2	6	0,2	6	50
MES-H2020S-r0,5	2	6	0,5	6	50
MES-H2030S-r0,2	3	6	0,2	8	50
MES-H2030S-r0,5	3	6	0,5	8	50
MES-H2040S-r0,2	4	6	0,2	11	50
MES-H2040S-r0,5	4	6	0,5	11	50
MES-H2040S-r1,0	4	6	1	11	50
MES-H2050S-r0,2	5	6	0,2	12	50
MES-H2050S-r0,5	5	6	0,5	12	50
MES-H2050S-r1,0	5	6	1	12	50
MES-H2060S-r0,2	6	6	0,2	12	50
MES-H2060S-r0,5	6	6	0,5	13	50
MES-H2060S-r1,0	6	6	1	13	50
MES-H2060S-r1,5	6	6	1,5	13	50
MES-H2060S-r2,0	6	6	2	13	50
MES-H2080S-r0,2	8	8	0,2	15	60
MES-H2080S-r0,5	8	8	0,5	15	60
MES-H2080S-r1,0	8	8	1	15	60

SERIE NORMALE – Normal Series

Ref.	Dimensione - Dimension (mm)				
2 Taglienti (Z2)	Dc	d	R	Lc	L
MES-H2080S-r1,5	8	8	1,5	15	60
MES-H2080S-r2,0	8	8	2	15	60
MES-H2100S-r0,5	10	10	0,5	20	72
MES-H2100S-r1,0	10	10	1	20	72
MES-H2100S-r1,5	10	10	1,5	20	72
MES-H2100S-r2,0	10	10	2	20	72
MES-H2100S-r3,0	10	10	3	20	72
MES-H2120S-r0,5	12	12	0,5	24	75
MES-H2120S-r1,0	12	12	1	24	75
MES-H2120S-r1,5	12	12	1,5	24	75
MES-H2120S-r2,0	12	12	2	24	75
MES-H2120S-r3,0	12	12	3	24	75
MES-H2160S-r0,5	16	16	0,5	30	92
MES-H2160S-r1,0	16	16	1	30	92
MES-H2160S-r2,0	16	16	2	30	92
MES-H2160S-r3,0	16	16	3	30	92
MES-H2160S-r4,0	16	16	4	30	92

FRESA Z4 TORICA - Serie Normale

EN Z4 CORNER RADIUS END MIL | Normal Series

FR Z4 FRAISE TORIQUE | Serie Normale

DE Z4 TORUSFRÄSER | Normale Serien

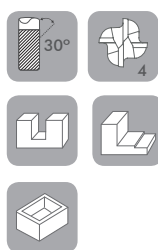
IT Acciaio, acciaio inossidabile, ghisa, rame, titanio e acciai temprati fino a 35-45 HRC.

EN Steel, stainless steel, cast iron, copper, titanium and hardened steels up to 35-45 HRC.

FR Acier, acier inoxydable, fonte grise, cuivre, titane et acier jusqu'à 35-45 HRC.

DE Stahl, Rostfreier Stahl, Gubeisen, Kupfer, Titan, Gehärteter stahl 35-45 HRC.

Serie Normale



MAXIMIZER



SERIE NORMALE - Normal Series

Ref.	Dimensione - Dimension (mm)				
4 Taglienti (Z4)	Dc	d	R	Lc	L
MES-H4020S-r0,2	2	6	0,2	6	50
MES-H4020S-r0,5	2	6	0,5	6	50
MES-H4030S-r0,2	3	6	0,2	8	50
MES-H4030S-r0,5	3	6	0,5	8	50
MES-H4040S-r0,2	4	6	0,2	11	50
MES-H4040S-r0,5	4	6	0,5	11	50
MES-H4040S-r1,0	4	6	1	11	50
MES-H4050S-r0,2	5	6	0,2	12	50
MES-H4050S-r0,5	5	6	0,5	12	50
MES-H4050S-r1,0	5	6	1	12	50
MES-H4060S-r0,2	6	6	0,2	12	50
MES-H4060S-r0,5	6	6	0,5	13	50
MES-H4060S-r1,0	6	6	1	13	50
MES-H4060S-r1,5	6	6	1,5	13	50
MES-H4060S-r2,0	6	6	2	13	50
MES-H4080S-r0,2	8	8	0,2	15	60
MES-H4080S-r0,5	8	8	0,5	15	60
MES-H4080S-r1,0	8	8	1	15	60
MES-H4080S-r1,5	8	8	1,5	15	60

SERIE NORMALE - Normal Series

Ref.	Dimensione - Dimension (mm)				
4 Taglienti (Z4)	Dc	d	R	Lc	L
MES-H4080S-r2,0	8	8	2	15	60
MES-H4100S-r0,5	10	10	0,5	20	72
MES-H4100S-r1,0	10	10	1	20	72
MES-H4100S-r1,5	10	10	1,5	20	72
MES-H4100S-r2,0	10	10	2	20	72
MES-H4100S-r3,0	10	10	3	20	72
MES-H4120S-r0,5	12	12	0,5	24	75
MES-H4120S-r1,0	12	12	1	24	75
MES-H4120S-r1,5	12	12	1,5	24	75
MES-H4120S-r2,0	12	12	2	24	75
MES-H4120S-r3,0	12	12	3	24	75
MES-H4160S-r0,5	16	16	0,5	30	92
MES-H4160S-r1,0	16	16	1	30	92
MES-H4160S-r2,0	16	16	2	30	92
MES-H4160S-r3,0	16	16	3	30	92
MES-H4160S-r4,0	16	16	4	30	92

FRESA Z2/Z4 TORICA - Serie Lunga - Tagliente Corto

EN Z2/Z4 CORNER RADIUS END MILL | Short Cutting - Long Series

FR Z2/Z4 FRAISE TORIQUE | Coupe Courte - Serie Longue

DE Z2/Z4 TORUSFRÄSER | Kurzes Schneiden - Lange Serien

IT Acciaio, acciaio inossidabile, ghisa, rame, titanio e acciai temprati fino a 35-45 HRC.

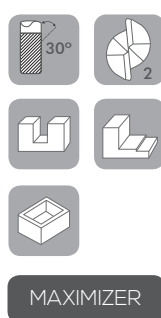
EN Steel, stainless steel, cast iron, copper, titanium and hardened steels up to 35-45 HRC.

FR Acier, acier inoxydable, fonte grise, cuivre, titane et acier jusqu'à 35-45 HRC.

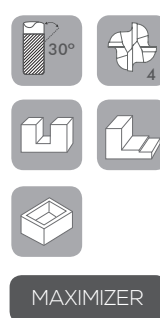
DE Stahl, Rostfreier Stahl, Gubeisen, Kupfer, Titan, Gehärteter stahl 35-45 HRC.

Serie Lunga - Tagliente Corto

Z2



Z4



SERIE LUNGA - Long Series

TAGLIENTE CORTO - Short Cutting

Ref.	Dimensione - Dimension (mm)				
2 Taglienti (Z2)	Dc	d	R	Lc	L
MES-H2060X-r0,2	6	6	0,2	13	80
MES-H2060X-r0,5	6	6	0,5	13	80
MES-H2060X-r1,0	6	6	1	13	80
MES-H2060X-r1,5	6	6	1,5	13	80
MES-H2060X-r2,0	6	6	2	13	80
MES-H2080X-r0,5	8	8	0,5	19	90
MES-H2080X-r1,0	8	8	1	19	90
MES-H2080X-r1,5	8	8	1,5	19	90
MES-H2080X-r2,0	8	8	2	19	90
MES-H2100X-r0,5	10	10	0,5	22	100
MES-H2100X-r1,0	10	10	1	22	100
MES-H2100X-r1,5	10	10	1,5	22	100
MES-H2100X-r2,0	10	10	2	22	100
MES-H2100X-r3,0	10	10	3	22	100
MES-H2120X-r0,5	12	12	0,5	26	100
MES-H2120X-r1,0	12	12	1	26	100
MES-H2120X-r1,5	12	12	1,5	26	100
MES-H2120X-r2,0	12	12	2	26	100
MES-H2120X-r3,0	12	12	3	26	100

SERIE LUNGA - Long Series

TAGLIENTE CORTO - Short Cutting

Ref.	Dimensione - Dimension (mm)				
4 Taglienti (Z4)	Dc	d	R	Lc	L
MES-H4060X-r0,2	6	6	0,2	13	80
MES-H4060X-r0,5	6	6	0,5	13	80
MES-H4060X-r1,0	6	6	1	13	80
MES-H4060X-r1,5	6	6	1,5	13	80
MES-H4060X-r2,0	6	6	2	13	80
MES-H4080X-r0,5	8	8	0,5	19	90
MES-H4080X-r1,0	8	8	1	19	90
MES-H4080X-r1,5	8	8	1,5	19	90
MES-H4080X-r2,0	8	8	2	19	90
MES-H4100X-r0,5	10	10	0,5	22	100
MES-H4100X-r1,0	10	10	1	22	100
MES-H4100X-r1,5	10	10	1,5	22	100
MES-H4100X-r2,0	10	10	2	22	100
MES-H4100X-r3,0	10	10	3	22	100
MES-H4120X-r0,5	12	12	0,5	26	100
MES-H4120X-r1,0	12	12	1	26	100
MES-H4120X-r1,5	12	12	1,5	26	100
MES-H4120X-r2,0	12	12	2	26	100
MES-H4120X-r3,0	12	12	3	26	100

FRESA Z2 TORICA - Serie Lunga - Tagliente Lungo

EN Z2 CORNER RADIUS END MILL | Long Cutting - Long Series

FR Z2 FRAISE TORIQUE | Longue Coupe - Serie Longue

DE Z2 TORUSFRÄSER | Langer Schnitt - Lange Serien

IT Acciaio, acciaio inossidabile, ghisa, rame, titanio e acciai temprati fino a 35-45 HRC.

EN Steel, stainless steel, cast iron, copper, titanium and hardened steels up to 35-45 HRC.

FR Acier, acier inoxydable, fonte grise, cuivre, titane et acier jusqu'à 35-45 HRC.

DE Stahl, Rostfreier Stahl, Gubeisen, Kupfer, Titan, Gehärteter stahl 35-45 HRC.

Serie Lunga - Tagliente Lungo Z2



SERIE LUNGA - Long Series TAGLIENTE LUNGO - Long Cutting

Ref.	Dimensione - Dimension (mm)				
2 Taglienti (Z2)	Dc	d	R	Lc	L
MES-H2020L-R0,2	2	6	0,2	10	80
MES-H2020L-R0,5	2	6	0,5	10	80
MES-H2030L-R0,2	3	6	0,2	15	80
MES-H2030L-R0,5	3	6	0,5	15	80
MES-H2040L-R0,2	4	6	0,2	20	80
MES-H2040L-R0,5	4	6	0,5	20	80
MES-H4040L-R1,0	4	6	1	20	80
MES-H2050L-R0,2	5	6	0,2	25	80
MES-H2050L-R0,5	5	6	0,5	25	80
MES-H2050L-R1,0	5	6	1	25	80
MES-H2060L-r0,2	6	6	0,2	25	80
MES-H2060L-r0,5	6	6	0,5	25	80
MES-H2060L-r1,0	6	6	1	25	80

SERIE LUNGA - Long Series TAGLIENTE LUNGO - Long Cutting

Ref.	Dimensione - Dimension (mm)				
2 Taglienti (Z2)	Dc	d	R	Lc	L
MES-H2060L-r2,0	6	6	2	25	80
MES-H2080L-r0,5	8	8	0,5	35	90
MES-H2080L-r1,0	8	8	1	35	90
MES-H2080L-r2,0	8	8	2	35	90
MES-H2100L-r0,5	10	10	0,5	45	100
MES-H2100L-r1,0	10	10	1	45	100
MES-H2100L-r2,0	10	10	2	45	100
MES-H2100L-r3,0	10	10	3	45	100
MES-H2120L-r0,5	12	12	0,5	50	100
MES-H2120L-r1,0	12	12	1	50	100
MES-H2120L-r2,0	12	12	2	50	100
MES-H2120L-r3,0	12	12	3	50	100

FRESA Z4 TORICA - Serie Lunga - Tagliente Lungo

EN Z4 CORNER RADIUS END MILL | Long Cutting - Long Series

FR Z4 FRAISE TORIQUE | Longue Coupe - Serie Longue

DE Z4 TORUSFRÄSER | Langer Schnitt - Lange Serien

IT Acciaio, acciaio inossidabile, ghisa, rame, titanio e acciai temprati fino a 35-45 HRC.

EN Steel, stainless steel, cast iron, copper, titanium and hardened steels up to 35-45 HRC.

FR Acier, acier inoxydable, fonte grise, cuivre, titane et acier jusqu'à 35-45 HRC.

DE Stahl, Rostfreier Stahl, Gubeisen, Kupfer, Titan, Gehärteter stahl 35-45 HRC.

Serie Lunga - Tagliente Lungo

Z4



SERIE LUNGA - Long Series TAGLIENTE LUNGO - Long Cutting

Ref.	Dimensione - Dimension (mm)				
4 Taglienti (Z4)	Dc	d	R	Lc	L
MES-H4020L-R0,5	2	6	0,5	10	80
MES-H4020L-R0,2	2	6	0,2	10	80
MES-H4030L-R0,5	3	6	0,5	15	80
MES-H4040L-R0,2	4	6	0,2	20	80
MES-H4040L-R0,5	4	6	0,5	20	80
MES-H4040L-R1,0	4	6	1	20	80
MES-H4050L-R0,2	5	6	0,2	25	80
MES-H4050L-R0,5	5	6	0,5	25	80
MES-H4050L-R1,0	5	6	1	25	80
MES-H4060L-r0,2	6	6	0,2	25	80
MES-H4060L-r0,5	6	6	0,5	25	80
MES-H4060L-r1,0	6	6	1	25	80
MES-H4060L-r2,0	6	6	2	25	80
MES-H4080L-r0,5	8	8	0,5	35	90
MES-H4080L-r1,0	8	8	1	35	90
MES-H4080L-r2,0	8	8	2	35	90

SERIE LUNGA - Long Series TAGLIENTE LUNGO - Long Cutting

Ref.	Dimensione - Dimension (mm)				
4 Taglienti (Z4)	Dc	d	R	Lc	L
MES-H4100L-r0,5	10	10	0,5	45	100
MES-H4100L-r1,0	10	10	1	45	100
MES-H4100L-r2,0	10	10	2	45	100
MES-H4100L-r3,0	10	10	3	45	100
MES-H4120L-r0,5	12	12	0,5	50	100
MES-H4120L-r1,0	12	12	1	50	100
MES-H4120L-r2,0	12	12	2	50	100
MES-H4120L-r3,0	12	12	3	50	100

FRESA Z2/Z4 TORICA - Extra Lunga

EN Z2/Z4 CORNER RADIUS END MILL | Extra Long Series

FR Z2/Z4 FRAISE TORIQUE | Serie Extra Longue

DE Z2/Z4 TORUSFRÄSER | Extra Langer Serien

IT Acciaio, acciaio inossidabile, ghisa, rame, titanio e acciai temprati fino a 35-45 HRC.

EN Steel, stainless steel, cast iron, copper, titanium and hardened steels up to 35-45 HRC.

FR Acier, acier inoxydable, fonte grise, cuivre, titane et acier jusqu'à 35-45 HRC.

DE Stahl, Rostfreier Stahl, Gubeisen, Kupfer, Titan, Gehärteter stahl 35-45 HRC.

Serie Extra Lunga

Z2

Z4



SERIE EXTRA LUNGA - Extra Long Series

Ref.	Dimensione - Dimension (mm)				
2 Taglienti (Z2)	Dc	d	R	Lc	L
MES-H2060XL-r0,5	6	6	0,5	13	150
MES-H2060XL-r1,0	6	6	1	13	150
MES-H2060XL-r1,5	6	6	1,5	13	150
MES-H2060XL-r2,0	6	6	2	13	150
MES-H2080XL-r0,5	8	8	0,5	19	150
MES-H2080XL-r1,0	8	8	1	19	150
MES-H2080XL-r1,5	8	8	1,5	19	150
MES-H2080XL-r2,0	8	8	2	19	150
MES-H2100XL-r0,5	10	10	0,5	22	150
MES-H2100XL-r1,0	10	10	1	22	150
MES-H2100XL-r2,0	10	10	2	22	150
MES-H2100XL-r3,0	10	10	3	22	150
MES-H2120XL-r0,5	12	12	0,5	26	150
MES-H2120XL-r1,0	12	12	1	26	150
MES-H2120XL-r2,0	12	12	2	26	150
MES-H2120XL-r3,0	12	12	3	26	150

SERIE EXTRA LUNGA - Extra Long Series

Ref.	Dimensione - Dimension (mm)				
4 Taglienti (Z4)	Dc	d	R	Lc	L
MES-H4060XL-r0,5	6	6	0,5	13	150
MES-H4060XL-r1,0	6	6	1	13	150
MES-H4060XL-r1,5	6	6	1,5	13	150
MES-H4060XL-r2,0	6	6	2	13	150
MES-H4080XL-r0,5	8	8	0,5	19	150
MES-H4080XL-r1,0	8	8	1	19	150
MES-H4080XL-r1,5	8	8	1,5	19	150
MES-H4080XL-r2,0	8	8	2	19	150
MES-H4100XL-r0,5	10	10	0,5	22	150
MES-H4100XL-r1,0	10	10	1	22	150
MES-H4100XL-r2,0	10	10	2	22	150
MES-H4100XL-r3,0	10	10	3	22	150
MES-H4120XL-r0,5	12	12	0,5	26	150
MES-H4120XL-r1,0	12	12	1	26	150
MES-H4120XL-r2,0	12	12	2	26	150
MES-H4120XL-r3,0	12	12	3	26	150

FRESA Z2 TORICA - Scarico Ribassato - Codolo Ø6

EN Z2 CORNER RADIUS END MILL | SHANK D6 | Reduced Neck

FR Z2 FRAISE TORIQUE | Col réduit

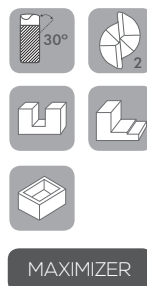
DE Z2 TORUSFRÄSER | Reduzierter Hals

IT Acciaio, acciaio inossidabile, ghisa, rame, titanio e acciai temprati fino a 35-45 HRC.

EN Steel, stainless steel, cast iron, copper, titanium and hardened steels up to 35-45 HRC.

FR Acier, acier inoxydable, fonte grise, cuivre, titane et acier jusqu'à 35-45 HRC.

DE Stahl, Rostfreier Stahl, Gubeisen, Kupfer, Titan, Gehärteter stahl 35-45 HRC.



SCARICO RIBASSATO - Reduced Neck

Ref.	Dimensione - Dimension (mm)					
2 Taglienti (Z2)	Dc	d	R	Lc	U	L
MES-H2010X-r0,1-U5	1	6	0,1	1,5	5	57
MES-H2010X-r0,1-U12	1	6	0,1	1,5	12	65
MES-H2010X-r0,1-U20	1	6	0,1	1,5	20	65
MES-H2010X-r0,25-U5	1	6	0,25	1,5	5	57
MES-H2010X-r0,25-U12	1	6	0,25	1,5	12	65
MES-H2010X-r0,25-U20	1	6	0,25	1,5	20	65
MES-H2015X-r0,1-U5	1,5	6	0,1	2	5	57
MES-H2015X-r0,1-U12	1,5	6	0,1	2	12	65
MES-H2015X-r0,1-U20	1,5	6	0,1	2	20	65
MES-H2015X-r0,1-U25	1,5	6	0,1	2	25	65
MES-H2015X-r0,3-U5	1,5	6	0,3	2	5	57
MES-H2015X-r0,3-U12	1,5	6	0,3	2	12	65
MES-H2015X-r0,3-U20	1,5	6	0,3	2	20	65
MES-H2015X-r0,3-U25	1,5	6	0,3	2	25	65
MES-H2020X-r0,2-U10	2	6	0,2	3	10	80
MES-H2020X-r0,2-U15	2	6	0,2	3	15	80
MES-H2020X-r0,2-U20	2	6	0,2	3	20	80
MES-H2020X-r0,2-U25	2	6	0,2	3	25	80
MES-H2020X-r0,2-U30	2	6	0,2	3	30	80
MES-H2020X-r0,2-U40	2	6	0,2	3	40	80
MES-H2020X-r0,5-U10	2	6	0,5	3	10	80
MES-H2020X-r0,5-U15	2	6	0,5	3	15	80
MES-H2020X-r0,5-U20	2	6	0,5	3	20	80
MES-H2020X-r0,5-U25	2	6	0,5	3	25	80
MES-H2020X-r0,5-U30	2	6	0,5	3	30	80
MES-H2020X-r0,5-U40	2	6	0,5	3	40	80
MES-H2030X-r0,2-U15	3	6	0,2	5	15	80

SCARICO RIBASSATO - Reduced Neck

Ref.	Dimensione - Dimension (mm)					
2 Taglienti (Z2)	Dc	d	R	Lc	U	L
MES-H2030X-r0,2-U20	3	6	0,2	5	20	80
MES-H2030X-r0,2-U25	3	6	0,2	5	25	80
MES-H2030X-r0,2-U30	3	6	0,2	5	30	80
MES-H2030X-r0,2-U40	3	6	0,2	5	40	80
MES-H2030X-r0,5-U15	3	6	0,5	5	15	80
MES-H2030X-r0,5-U20	3	6	0,5	5	20	80
MES-H2030X-r0,5-U25	3	6	0,5	5	25	80
MES-H2030X-r0,5-U30	3	6	0,5	5	30	80
MES-H2030X-r0,5-U40	3	6	0,5	5	40	80
MES-H2040X-r0,2-U20	4	6	0,2	6	20	80
MES-H2040X-r0,2-U30	4	6	0,2	6	30	80
MES-H2040X-r0,2-U40	4	6	0,2	6	40	80
MES-H2040X-r0,5-U20	4	6	0,5	6	20	80
MES-H2040X-r0,5-U30	4	6	0,5	6	30	80
MES-H2040X-r0,5-U40	4	6	0,5	6	40	80
MES-H2040X-r1,0-U20	4	6	1	6	20	80
MES-H2040X-r1,0-U30	4	6	1	6	30	80
MES-H2040X-r1,0-U40	4	6	1	6	40	80
MES-H2050X-r0,2-U25	5	6	0,2	7	25	80
MES-H2050X-r0,2-U30	5	6	0,2	7	30	80
MES-H2050X-r0,2-U40	5	6	0,2	7	40	80
MES-H2050X-r0,5-U25	5	6	0,5	7	25	80
MES-H2050X-r0,5-U30	5	6	0,5	7	30	80
MES-H2050X-r0,5-U40	5	6	0,5	7	40	80
MES-H2050X-r1,0-U25	5	6	1	7	25	80
MES-H2050X-r1,0-U30	5	6	1	7	30	80
MES-H2050X-r1,0-U40	5	6	1	7	40	80

FRESA Z4 TORICA - Scarico Ribassato - Codolo Ø6

EN Z4 CORNER RADIUS END MILL | SHANK D6 | Reduced Neck

FR Z4 FRAISE TORIQUE | Col réduit

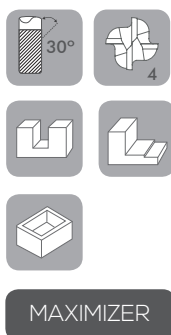
DE Z4 TORUSFRÄSER | Reduzierter Hals

IT Acciaio, acciaio inossidabile, ghisa, rame, titanio e acciai temprati fino a 35-45 HRC.

EN Steel, stainless steel, cast iron, copper, titanium and hardened steels up to 35-45 HRC.

FR Acier, acier inoxydable, fonte grise, cuivre, titane et acier jusqu'à 35-45 HRC.

DE Stahl, Rostfreier Stahl, Gubeisen, Kupfer, Titan, Gehärteter stahl 35-45 HRC.



SCARICO RIBASSATO - Reduced Neck

Ref.	Dimensione - Dimension (mm)					
4 Taglienti (Z4)	Dc	d	R	Lc	U	L
MES-H4020X-0,2-U10	2	6	0,2	3	10	80
MES-H4020X-0,2-U15	2	6	0,2	3	15	80
MES-H4020X-0,2-U20	2	6	0,2	3	20	80
MES-H4020X-0,2-U25	2	6	0,2	3	25	80
MES-H4020X-0,2-U30	2	6	0,2	3	30	80
MES-H4020X-0,2-U40	2	6	0,2	3	40	80
MES-H4020X-0,5-U10	2	6	0,5	3	10	80
MES-H4020X-0,5-U15	2	6	0,5	3	15	80
MES-H4020X-0,5-U20	2	6	0,5	3	20	80
MES-H4020X-0,5-U25	2	6	0,5	3	25	80
MES-H4020X-0,5-U30	2	6	0,5	3	30	80
MES-H4020X-0,5-U40	2	6	0,5	3	40	80
MES-H4030X-0,2-U15	3	6	0,2	5	15	80
MES-H4030X-0,2-U20	3	6	0,2	5	20	80
MES-H4030X-0,2-U25	3	6	0,2	5	25	80
MES-H4030X-0,2-U30	3	6	0,2	5	30	80
MES-H4030X-0,2-U40	3	6	0,2	5	40	80
MES-H4030X-0,5-U15	3	6	0,5	5	15	80
MES-H4030X-0,5-U20	3	6	0,5	5	20	80
MES-H4030X-0,5-U25	3	6	0,5	5	25	80

SCARICO RIBASSATO - Reduced Neck

Ref.	Dimensione - Dimension (mm)					
4 Taglienti (Z4)	Dc	d	R	Lc	U	L
MES-H4030X-0,5-U30	3	6	0,5	5	30	80
MES-H4030X-0,5-U40	3	6	0,5	5	40	80
MES-H4040X-0,2-U20	4	6	0,2	6	20	80
MES-H4040X-0,2-U30	4	6	0,2	6	30	80
MES-H4040X-0,2-U40	4	6	0,2	6	40	80
MES-H4040X-0,5-U20	4	6	0,5	6	20	80
MES-H4040X-0,5-U30	4	6	0,5	6	30	80
MES-H4040X-0,5-U40	4	6	0,5	6	40	80
MES-H4040X-1,0-U20	4	6	1	6	20	80
MES-H4040X-1,0-U30	4	6	1	6	30	80
MES-H4040X-1,0-U40	4	6	1	6	40	80
MES-H4050X-0,2-U25	5	6	0,2	7	25	80
MES-H4050X-0,2-U30	5	6	0,2	7	30	80
MES-H4050X-0,2-U40	5	6	0,2	7	40	80
MES-H4050X-0,5-U25	5	6	0,5	7	25	80
MES-H4050X-0,5-U30	5	6	0,5	7	30	80
MES-H4050X-0,5-U40	5	6	0,5	7	40	80
MES-H4050X-1,0-U25	5	6	1	7	25	80
MES-H4050X-r1,0-U30	5	6	1	7	30	80
MES-H4050X-r1,0-U40	5	6	1	7	40	80

FRESA Z2 TORICA - Serie Lunga

EN Z2 CORNER RADIUS END MILL | Long Series

FR Z2 FRAISE TORIQUE | Serie Longue

DE Z2 TORUSFRÄSE | Lange Serien

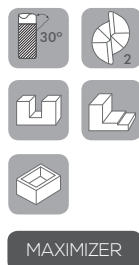
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FR Acier, acier inoxydable, fonte grise, cuivre, titane et acier jusqu'à 35-45 HRC.

DE Stahl, Rostfreier Stahl, Gubeisen, Kupfer, Titan, Gehärteter stahl 35-45 HRC.

Serie Lunga



SERIE LUNGA - Long Series

Ref.	Dimensione - Dimension (mm)					
2 Taglienti (Z2)	Dc	d	R	Lc	U	L
MES-H2060X-0,2-U20	6	6	0,2	7	20	80
MES-H2060X-0,2-U30	6	6	0,2	7	30	80
MES-H2060X-0,2-U45	6	6	0,2	7	45	80
MES-H2060X-0,5-U20	6	6	0,5	7	20	80
MES-H2060X-0,5-U30	6	6	0,5	7	30	80
MES-H2060X-0,5-U45	6	6	0,5	7	45	80
MES-H2060X-1,0-U20	6	6	1	7	20	80
MES-H2060X-1,0-U30	6	6	1	7	30	80
MES-H2060X-1,0-U45	6	6	1	7	45	80
MES-H2060X-1,5-U20	6	6	1,5	7	20	80
MES-H2060X-1,5-U30	6	6	1,5	7	30	80
MES-H2060X-1,5-U45	6	6	1,5	7	45	80
MES-H2060X-2,0-U20	6	6	2	7	20	80
MES-H2060X-2,0-U30	6	6	2	7	30	80
MES-H2060X-2,0-U45	6	6	2	7	45	80
MES-H2080X-0,5-U25	8	8	0,5	9	25	90
MES-H2080X-0,5-U40	8	8	0,5	9	40	90
MES-H2080X-0,5-U55	8	8	0,5	9	55	90
MES-H2080X-1,0-U25	8	8	1	9	25	90
MES-H2080X-1,0-U40	8	8	1	9	40	90
MES-H2080X-1,0-U55	8	8	1	9	55	90
MES-H2080X-1,5-U25	8	8	1,5	9	25	90
MES-H2080X-1,5-U40	8	8	1,5	9	40	90
MES-H2080X-1,5-U55	8	8	1,5	9	55	90
MES-H2080X-2,0-U25	8	8	2	9	25	90
MES-H2080X-2,0-U40	8	8	2	9	40	90
MES-H2080X-2,0-U55	8	8	2	9	55	90
MES-H2100X-0,5-U30	10	10	0,5	11	30	100

SERIE LUNGA - Long Series

Ref.	Dimensione - Dimension (mm)					
2 Taglienti (Z2)	Dc	d	R	Lc	U	L
MES-H2100X-0,5-U45	10	10	0,5	11	45	100
MES-H2100X-0,5-U60	10	10	0,5	11	60	100
MES-H2100X-1,0-U30	10	10	1	11	30	100
MES-H2100X-1,0-U45	10	10	1	11	45	100
MES-H2100X-1,0-U60	10	10	1	11	60	100
MES-H2100X-2,0-U30	10	10	2	11	30	100
MES-H2100X-2,0-U45	10	10	2	11	45	100
MES-H2100X-2,0-U60	10	10	2	11	60	100
MES-H2100X-3,0-U30	10	10	3	11	30	100
MES-H2100X-3,0-U45	10	10	3	11	45	100
MES-H2100X-3,0-U60	10	10	3	11	60	100
MES-H2120X-0,5-U30	12	12	0,5	13	30	100
MES-H2120X-0,5-U45	12	12	0,5	13	45	100
MES-H2120X-0,5-U60	12	12	0,5	13	60	100
MES-H2120X-1,0-U30	12	12	1	13	30	100
MES-H2120X-1,0-U45	12	12	1	13	45	100
MES-H2120X-1,0-U60	12	12	1	13	60	100
MES-H2120X-2,0-U30	12	12	2	13	30	100
MES-H2120X-2,0-U45	12	12	2	13	45	100
MES-H2120X-2,0-U60	12	12	2	13	60	100
MES-H2120X-3,0-U30	12	12	3	13	30	100
MES-H2120X-3,0-U45	12	12	3	13	45	100
MES-H2120X-3,0-U60	12	12	3	13	60	100
MES-H2160X-0,5-U75	16	16	0,5	20	75	150
MES-H2160X-1,0-U75	16	16	1	20	75	150
MES-H2160X-2,0-U75	16	16	2	20	75	150
MES-H2160X-3,0-U75	16	16	2	20	75	150
MES-H2160X-4,0-U75	16	16	4	20	75	150

FRESA Z4 TORICA - Serie Lunga

EN Z4 CORNER RADIUS END MILL | Long Series

FR Z4 FRAISE TORIQUE | Serie Longue

DE Z4 TORUSFRÄSER | Lange Serien

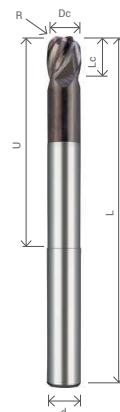
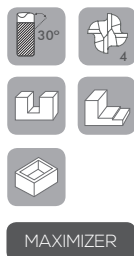
IT Acciaio, acciaio inossidabile, ghisa, rame, titanio e acciai temprati fino a 35-45 HRC.

EN Steel, stainless steel, cast iron, copper, titanium and hardened steels up to 35-45 HRC.

FR Acier, acier inoxydable, fonte grise, cuivre, titane et acier jusqu'à 35-45 HRC.

DE Stahl, Rostfreier Stahl, Gubeisen, Kupfer, Titan, Gehärteter stahl 35-45 HRC.

Serie Lunga



SERIE LUNGA - Long Series

Ref.	Dimensione - Dimension (mm)					
4 Taglienti (Z4)	Dc	d	R	Lc	U	L
MES-H4060X-r0,2-U20	6	6	0,2	7	20	80
MES-H4060X-r0,2-U30	6	6	0,2	7	30	80
MES-H4060X-r0,2-U45	6	6	0,2	7	45	80
MES-H4060X-r0,5-U20	6	6	0,5	7	20	80
MES-H4060X-r0,5-U30	6	6	0,5	7	30	80
MES-H4060X-r0,5-U45	6	6	0,5	7	45	80
MES-H4060X-r1,0-U20	6	6	1	7	20	80
MES-H4060X-r1,0-U30	6	6	1	7	30	80
MES-H4060X-r1,0-U45	6	6	1	7	45	80
MES-H4060X-r1,5-U20	6	6	1,5	7	20	80
MES-H4060X-r1,5-U30	6	6	1,5	7	30	80
MES-H4060X-r1,5-U45	6	6	1,5	7	45	80
MES-H4060X-r2,0-U20	6	6	2	7	20	80
MES-H4060X-r2,0-U30	6	6	2	7	30	80
MES-H4060X-r2,0-U45	6	6	2	7	45	80
MES-H4080X-r0,5-U25	8	8	0,5	9	25	90
MES-H4080X-r0,5-U40	8	8	0,5	9	40	90
MES-H4080X-r0,5-U55	8	8	0,5	9	55	90
MES-H4080X-r1,0-U25	8	8	1	9	25	90
MES-H4080X-r1,0-U40	8	8	1	9	40	90
MES-H4080X-r1,0-U55	8	8	1	9	55	90
MES-H4080X-r1,5-U25	8	8	1,5	9	25	90
MES-H4080X-r1,5-U40	8	8	1,5	9	40	90
MES-H4080X-r1,5-U55	8	8	1,5	9	55	90
MES-H4080X-r2,0-U25	8	8	2	9	25	90
MES-H4080X-r2,0-U40	8	8	2	9	40	90
MES-H4080X-r2,0-U55	8	8	2	9	55	90
MES-H4100X-r0,5-U30	10	10	0,5	11	30	100

SERIE LUNGA - Long Series

Ref.	Dimensione - Dimension (mm)					
4 Taglienti (Z4)	Dc	d	R	Lc	U	L
MES-H4100X-r0,5-U45	10	10	0,5	11	45	100
MES-H4100X-r0,5-U60	10	10	0,5	11	60	100
MES-H4100X-r1,0-U30	10	10	1	11	30	100
MES-H4100X-r1,0-U45	10	10	1	11	45	100
MES-H4100X-r1,0-U60	10	10	1	11	60	100
MES-H4100X-r2,0-U30	10	10	2	11	30	100
MES-H4100X-r2,0-U45	10	10	2	11	45	100
MES-H4100X-r2,0-U60	10	10	2	11	60	100
MES-H4100X-r3,0-U30	10	10	3	11	30	100
MES-H4100X-r3,0-U45	10	10	3	11	45	100
MES-H4100X-r3,0-U60	10	10	3	11	60	100
MES-H4120X-r0,5-U30	12	12	0,5	13	30	100
MES-H4120X-r0,5-U45	12	12	0,5	13	45	100
MES-H4120X-r0,5-U60	12	12	0,5	13	60	100
MES-H4120X-r1,0-U30	12	12	1	13	30	100
MES-H4120X-r1,0-U45	12	12	1	13	45	100
MES-H4120X-r1,0-U60	12	12	1	13	60	100
MES-H4120X-r2,0-U30	12	12	2	13	30	100
MES-H4120X-r2,0-U45	12	12	2	13	45	100
MES-H4120X-r2,0-U60	12	12	2	13	60	100
MES-H4120X-r3,0-U30	12	12	3	13	30	100
MES-H4120X-r3,0-U45	12	12	3	13	45	100
MES-H4120X-r3,0-U60	12	12	3	13	60	100
MES-H4160X-r0,5-U75	16	16	0,5	20	75	150
MES-H4160X-r1,0-U75	16	16	1	20	75	150
MES-H4160X-r2,0-U75	16	16	2	20	75	150
MES-H4160X-r3,0-U75	16	16	2	20	75	150
MES-H4160X-r4,0-U75	16	16	4	20	75	150

FRESA Z4 TORICA - Serie Normale

EN Z4 CORNER RADIUS END MILL | Normal Series

FR Z4 FRAISE TORIQUE | Serie Normale

DE Z4 TORUSFRÄSER | Normale Serien

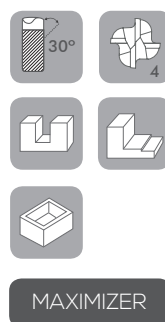
IT Acciaio, acciaio inossidabile, ghisa, rame, titanio e acciai temprati fino a 35-45 HRC.

EN Steel, stainless steel, cast iron, copper, titanium and hardened steels up to 35-45 HRC.

FR Acier, acier inoxydable, fonte grise, cuivre, titane et acier jusqu'à 35-45 HRC.

DE Stahl, Rostfreier Stahl, Gubeisen, Kupfer, Titan, Gehärteter stahl 35-45 HRC.

Serie Normale



SERIE NORMALE - Normal Series

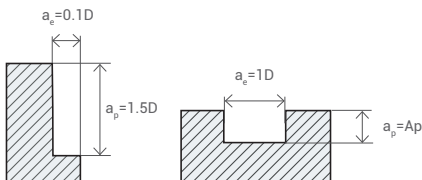
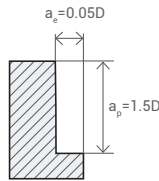
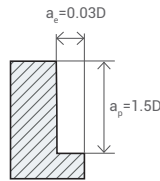
Ref.	Dimensione - Dimension (mm)					
2 Taglienti (Z2)	Dc	d	R	Lc	U	L
MES-H4020S-0,2-U21	2	6	0,2	3	21	57
MES-H4020S-0,5-U21	2	6	0,5	3	21	57
MES-H4030S-0,2-U21	3	6	0,2	5	21	57
MES-H4030S-0,5-U21	3	6	0,5	5	21	57
MES-H4040S-0,5-U21	4	6	0,5	6	21	57
MES-H4040S-1,0-U21	4	6	1	6	21	57
MES-H4050S-0,5-U21	5	6	0,5	7	21	57
MES-H4050S-1,0-U21	5	6	1	7	21	57
MES-H4060S-0,5-U21	6	6	0,5	7	21	57
MES-H4060S-1,0-U21	6	6	1	7	21	57
MES-H4060S-1,5-U21	6	6	1,5	7	21	57
MES-H4060S-2,0-U21	6	6	2	7	21	57
MES-H4080S-0,5-U27	8	8	0,5	9	27	63
MES-H4080S-1,0-U27	8	8	1	9	27	63
MES-H4080S-1,5-U27	8	8	1,5	9	27	63
MES-H4080S-2,0-U27	8	8	2	9	27	63
MES-H4100S-0,5-U32	10	10	0,5	11	32	72

SERIE NORMALE - Normal Series

Ref.	Dimensione - Dimension (mm)					
2 Taglienti (Z2)	Dc	d	R	Lc	U	L
MES-H4100S-1,0-U32	10	10	1	11	32	72
MES-H4100S-1,5-U32	10	10	1,5	11	32	72
MES-H4100S-2,0-U32	10	10	2	11	32	72
MES-H4120S-0,5-U38	12	12	0,5	13	38	83
MES-H4120S-1,0-U38	12	12	1	13	38	83
MES-H4120S-1,5-U38	12	12	1,5	13	38	83
MES-H4120S-2,0-U38	12	12	2	13	38	83
MES-H4120S-3,0-U38	12	12	3	13	38	83
MES-H4160S-0,5-U44	16	16	0,5	17	44	92
MES-H4160S-1,0-U44	16	16	1	17	44	92
MES-H4160S-2,0-U44	16	16	2	17	44	92
MES-H4160S-3,0-U44	16	16	3	17	44	92
MES-H4160S-4,0-U44	16	16	4	17	44	92

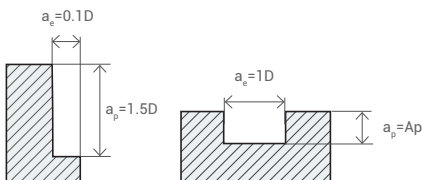
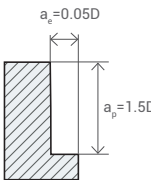
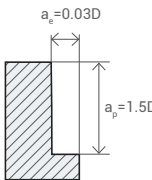
MES-H-R Z2

Frese toriche

Materiale pezzo Workpiece material	Ghisa, Acciaio al carbonio, Acciaio legato -30 HRC Cast iron, Carbon steel, Alloy steel -30 HRC		Acciaio inossidabile Stainless steel		Acciaio pretemprato, Acciaio temprato -40HRC Pre-hardened steel, Quenched and tempered steel -40HRC		Acciaio pretemprato, Acciaio temprato -50HRC Pre-hardened steel, Quenched and tempered steel -50HRC		Acciaio temprato 56-62HRC Hardened steel 56-62HRC	
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)	Rotante (minimo -1) Rotating (minimum -1)	Avanzamento (mm/minuto) Feed (mm/minute)	Rotante (minimo -1) Rotating (minimum -1)	Avanzamento (mm/minuto) Feed (mm/minute)	Rotante (minimo -1) Rotating (minimum -1)	Avanzamento (mm/minuto) Feed (mm/minute)
1	20000	240	20000	75	20000	195	20000	145	20000	95
1.5	17000	300	15500	90	17000	260	16000	180	15500	110
2	15000	385	11150	100	15000	335	13000	215	11140	130
3	14000	655	7500	145	10600	505	8500	395	7430	245
4	10800	675	5500	155	8000	515	6500	405	5570	245
5	8200	695	4500	155	6400	540	5000	425	4460	260
6	7000	720	3700	170	5300	555	4200	435	3710	260
8	5200	720	2800	170	4000	555	3200	440	2785	275
10	4200	695	2200	170	3200	535	2500	420	2230	255
12	3500	695	1850	170	2650	535	2100	420	1855	255
Massima profondità di taglio Max. Cutting depth										

MES H-R Z4

Frese toriche

Materiale pezzo Workpiece material	Ghisa, Acciaio al carbonio, Acciaio legato -30 HRC Cast iron, Carbon steel, Alloy steel -30 HRC		Acciaio inossidabile Stainless steel		Acciaio pretemprato, Acciaio temprato -40HRC Pre-hardened steel, Quenched and tempered steel -40HRC		Acciaio pretemprato, Acciaio temprato -50HRC Pre-hardened steel, Quenched and tempered steel -50HRC		Acciaio temprato 56-62HRC Hardened steel 56-62HRC	
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)	Rotante (minimo -1) Rotating (minimum -1)	Avanzamento (mm/minuto) Feed (mm/minute)	Rotante (minimo -1) Rotating (minimum -1)	Avanzamento (mm/minuto) Feed (mm/minute)	Rotante (minimo -1) Rotating (minimum -1)	Avanzamento (mm/minuto) Feed (mm/minute)
2	15000	950	9500	175	15000	720	13000	550	9500	400
3	14000	985	7500	175	10600	755	8500	590	7430	435
4	10800	1010	5500	175	8000	770	6500	600	5570	445
5	8200	1055	4500	175	6400	805	5000	640	4460	470
6	7000	1080	3700	195	5300	830	4200	650	3710	470
8	5200	1070	2800	195	4000	815	3200	660	2785	485
10	4200	1055	2200	195	3200	805	2500	625	2230	450
12	3500	1055	1850	195	2650	805	2100	625	1855	450
Massima profondità di taglio Max. Cutting depth										

FRESA Z2 TORICA CONICA 1° - Serie Normale

EN Z2 CORNER RADIUS END MILL | 1° TAPER - Normal Series

FR Z2 FRAISE TORIQUE | 1° - Serie Normale

DE Z2 TORUSFRÄSER | 1° - Normale Serien

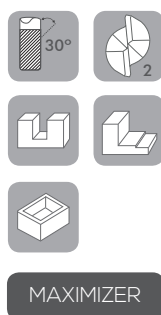
IT Acciaio, acciaio inossidabile, ghisa, rame, titanio e acciai temprati fino a 35-45 HRC.

EN Steel, stainless steel, cast iron, copper, titanium and hardened steels up to 35-45 HRC.

FR Acier, acier inoxydable, fonte grise, cuivre, titane et acier jusqu'à 35-45 HRC.

DE Stahl, Rostfreier Stahl, Gubeisen, Kupfer, Titan, Gehärteter stahl 35-45 HRC.

Serie Normale - 1°



SERIE NORMALE - Normal Series

Ref.	Dimensione - Dimension (mm)					
2 Taglienti (Z2)	Dc	d	R	Lc	C	L
MEC-H2015XL-r0,3-C43x1°	1,5	6	0,3	2	43	109
MEC-H2015XL-r0,3-C53x1°	1,5	6	0,3	2	53	109
MEC-H2015XL-r0,3-C63x1°	1,5	6	0,3	2	63	109
MEC-H2020XL-r0,5-C43x1°	2	6	0,5	3	43	109
MEC-H2020XL-r0,5-C53x1°	2	6	0,5	3	53	109
MEC-H2020XL-r0,5-C63x1°	2	6	0,5	3	63	109
MEC-H2030XL-r0,5-C44x1°	3	6	0,5	5	44	109
MEC-H2030XL-r0,5-C55x1°	3	6	0,5	5	55	109
MEC-H2030XL-r0,5-C65x1°	3	6	0,5	5	65	109
MEC-H2040XL-r0,5-C45x1°	4	6	0,5	6	45	109
MEC-H2040XL-r0,5-C55x1°	4	6	0,5	6	55	109
MEC-H2040XL-r0,5-C65x1°	4	6	0,5	6	65	109
MEC-H2040XL-r1,0-C45x1°	4	6	1	6	45	109
MEC-H2040XL-r1,0-C55x1°	4	6	1	6	55	109
MEC-H2040XL-r1,0-C65x1°	4	6	1	6	65	109
MEC-H2050XL-r0,5-C45x1°	5	8	0,5	7	45	109
MEC-H2050XL-r0,5-C55x1°	5	8	0,5	7	55	109
MEC-H2050XL-r0,5-C70x1°	5	8	0,5	7	70	109
MEC-H2050XL-r1,0-C45x1°	5	8	1	7	45	109
MEC-H2050XL-r1,0-C55x1°	5	8	1	7	55	109
MEC-H2050XL-r1,0-C70x1°	5	8	1	7	70	109

SERIE NORMALE - Normal Series

Ref.	Dimensione - Dimension (mm)					
2 Taglienti (Z2)	Dc	d	R	Lc	C	L
MEC-H2060XL-r0,5-C48x1°	6	8	0,5	9	48	109
MEC-H2060XL-r0,5-C55x1°	6	8	0,5	9	55	109
MEC-H2060XL-r0,5-C70x1°	6	8	0,5	9	70	109
MEC-H2060XL-r1,0-C48x1°	6	8	1	9	48	109
MEC-H2060XL-r1,0-C55x1°	6	8	1	9	55	109
MEC-H2060XL-r1,0-C70x1°	6	8	1	9	70	109
MEC-H2060XL-r1,5-C48x1°	6	8	1,5	9	48	109
MEC-H2060XL-r1,5-C55x1°	6	8	1,5	9	55	109
MEC-H2060XL-r1,5-C70x1°	6	8	1,5	9	70	109
MEC-H2080XL-r0,5-C48x1°	8	10	0,5	10	48	109
MEC-H2080XL-r0,5-C55x1°	8	10	0,5	10	55	109
MEC-H2080XL-r0,5-C70x1°	8	10	0,5	10	70	109
MEC-H2080XL-r1,0-C48x1°	8	10	1	10	48	109
MEC-H2080XL-r1,0-C55x1°	8	10	1	10	55	109
MEC-H2080XL-r1,0-C70x1°	8	10	1	10	70	109
MEC-H2080XL-r1,5-C48x1°	8	10	1,5	10	48	109
MEC-H2080XL-r1,5-C55x1°	8	10	1,5	10	55	109
MEC-H2080XL-r1,5-C70x1°	8	10	1,5	10	70	109
MEC-H2080XL-r2,0-C48x1°	8	10	2	10	48	109
H-CEM4080XL-r2,0-C55x1°	8	10	2	10	55	109
H-CEM4080XL-r2,0-C70x1°	8	10	2	10	70	109

FRESA Z2 TORICA CONICA 1,5° - Serie Normale

EN Z2 CORNER RADIUS END MILL | 1,5° TAPER - Normal Series

FR Z2 FRAISE TORIQUE | 1,5° - Serie Normale

DE Z2 TORUSFRÄSER | 1,5° - Normale Serien

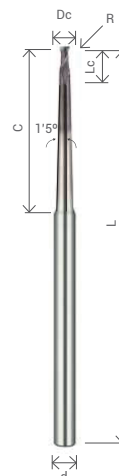
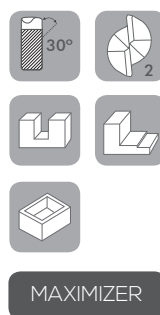
IT Acciaio, acciaio inossidabile, ghisa, rame, titanio e acciai temprati fino a 35-45 HRC.

EN Steel, stainless steel, cast iron, copper, titanium and hardened steels up to 35-45 HRC.

FR Acier, acier inoxydable, fonte grise, cuivre, titane et acier jusqu'à 35-45 HRC.

DE Stahl, Rostfreier Stahl, Gubeisen, Kupfer, Titan, Gehärteter stahl 35-45 HRC.

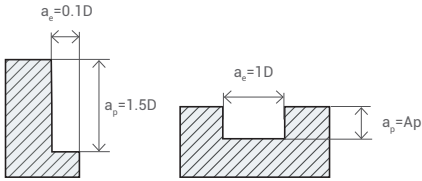
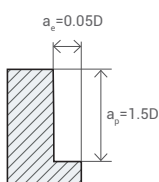
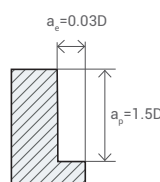
Serie Normale 1,5°



SERIE NORMALE Z2 - Normal Series Z2

Ref.	Dimensione - Dimension (mm)					
2 Taglienti (Z2)	Dc	d	R	Lc	C	L
MEC-H2015XL-r0,3-C43x1,5°	1,5	6	0,3	2	43	109
MEC-H2015XL-r0,3-C53x1,5°	1,5	6	0,3	2	53	109
MEC-H2015XL-r0,3-C63x1,5°	1,5	6	0,3	2	63	109
MEC-H2020XL-r0,5-C43x1,5°	2	6	0,5	3	43	109
MEC-H2020XL-r0,5-C53x1,5°	2	6	0,5	3	53	109
MEC-H2020XL-r0,5-C63x1,5°	2	6	0,5	3	63	109
MEC-H2030XL-r0,5-C44x1,5°	3	6	0,5	5	44	109
MEC-H2030XL-r0,5-C55x1,5°	3	6	0,5	5	55	109
MEC-H2030XL-r0,5-C65x1,5°	3	6	0,5	5	65	109
MEC-H2040XL-r0,5-C45x1,5°	4	6	0,5	6	45	109
MEC-H2040XL-r1,0-C45x1,5°	4	6	1	6	45	109
MEC-H2050XL-r0,5-C45x1,5°	5	8	0,5	7	45	109
MEC-H2050XL-r0,5-C55x1,5°	5	8	0,5	7	55	109
MEC-H2050XL-r1,0-C45x1,5°	5	8	1	7	45	109
MEC-H2050XL-r1,0-C55x1,5°	5	8	1	7	55	109
MEC-H2060XL-r0,5-C48x1,5°	6	8	0,5	9	48	109
MEC-H2060XL-r1,0-C48x1,5°	6	8	1	9	48	109
MEC-H2060XL-r1,5-C48x1,5°	6	8	1,5	9	48	109
MEC-H2080XL-r0,5-C48x1,5°	8	10	0,5	10	48	109
MEC-H2080XL-r1,0-C48x1,5°	8	10	1	10	48	109
MEC-H2080XL-r1,5-C48x1,5°	8	10	1,5	10	48	109
MEC-H2080XL-r2,0-C48x1,5°	8	10	2	10	48	109

MEC-H Z2

Materiale pezzo Workpiece material	Ghisa, Acciaio al carbonio, Acciaio legato -30 HRC Cast iron, Carbon steel, Alloy steel -30 HRC		Acciaio inossidabile Stainless steel		Acciaio pretemprato, Acciaio temprato -40HRC Pre-hardened steel, Quenched and tempered steel -40HRC		Acciaio pretemprato, Acciaio temprato -50HRC Pre-hardened steel, Quenched and tempered steel -50HRC		Acciaio temprato 56-62HRC Hardened steel 56-62HRC	
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)	Rotante (minimo -1) Rotating (minimum -1)	Avanzamento (mm/minuto) Feed (mm/minute)	Rotante (minimo -1) Rotating (minimum -1)	Avanzamento (mm/minuto) Feed (mm/minute)	Rotante (minimo -1) Rotating (minimum -1)	Avanzamento (mm/minuto) Feed (mm/minute)
2	15000	385	11500	100	15000	335	13000	215	11140	130
3	14000	655	7500	145	10600	505	8500	395	7430	245
4	10800	675	5500	155	8000	515	6500	405	5570	245
5	8200	695	4500	155	6400	540	5000	425	4460	260
6	7000	720	3700	170	5300	555	4200	435	3710	260
8	5200	720	2800	170	4000	555	3200	440	2785	275
Massima profondità di taglio Max. Cutting depth										

FRESA Z4 TORICA CONICA 1° - Serie Normale

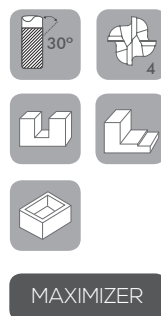
EN Z4 CORNER RADIUS END MILL 1° TAPER - Normal Series

FR Z4 FRAISE TORIQUE 1° - Serie Normale

DE Z4 TORUSFRÄSER 1° - Normale Serien

- IT** Acciaio, acciaio inossidabile, ghisa, rame, titanio e acciai temprati fino a 35-45 HRC.
- EN** Steel, stainless steel, cast iron, copper, titanium and hardened steels up to 35-45 HRC.
- FR** Acier, acier inoxydable, fonte grise, cuivre, titane et acier jusqu'à 35-45 HRC.
- DE** Stahl, Rostfreier Stahl, Gubeisen, Kupfer, Titan, Gehärteter stahl 35-45 HRC.

Serie Normale 1°



SERIE NORMALE - Normal Series

Ref.	Dimensione - Dimension (mm)					
4 Taglienti (Z4)	Dc	d	R	Lc	C	L
MEC-H4020XL-r0,5-C43x1°	2	6	0,5	3	43	109
MEC-H4020XL-r0,5-C53x1°	2	6	0,5	3	53	109
MEC-H4020XL-r0,5-C63x1°	2	6	0,5	3	63	109
MEC-H4030XL-r0,5-C44x1°	3	6	0,5	5	44	109
MEC-H4030XL-r0,5-C55x1°	3	6	0,5	5	55	109
MEC-H4030XL-r0,5-C65x1°	3	6	0,5	5	65	109
MEC-H4040XL-r0,5-C45x1°	4	6	0,5	6	45	109
MEC-H4040XL-r0,5-C55x1°	4	6	0,5	6	55	109
MEC-H4040XL-r0,5-C65x1°	4	6	0,5	6	65	109
MEC-H4040XL-r1,0-C45x1°	4	6	1	6	45	109
MEC-H4040XL-r1,0-C55x1°	4	6	1	6	55	109
MEC-H4040XL-r1,0-C65x1°	4	6	1	6	65	109
MEC-H4050XL-r0,5-C45x1°	5	8	0,5	7	45	109
MEC-H4050XL-r0,5-C55x1°	5	8	0,5	7	55	109
MEC-H4050XL-r0,5-C70x1°	5	8	0,5	7	70	109
MEC-H4050XL-r1,0-C45x1°	5	8	1	7	45	109
MEC-H4050XL-r1,0-C55x1°	5	8	1	7	55	109
MEC-H4050XL-r1,0-C70x1°	5	8	1	7	70	109
MEC-H4060XL-r0,5-C48x1°	6	8	0,5	9	48	109
MEC-H4060XL-r0,5-C55x1°	6	8	0,5	9	55	109
MEC-H4060XL-r0,5-C70x1°	6	8	0,5	9	70	109
MEC-H4060XL-r1,0-C48x1°	6	8	1	9	48	109

SERIE NORMALE - Normal Series

Ref.	Dimensione - Dimension (mm)					
4 Taglienti (Z4)	Dc	d	R	Lc	C	L
MEC-H4060XL-r1,0-C55x1°	6	8	1	9	55	109
MEC-H4060XL-r1,0-C70x1°	6	8	1	9	70	109
MEC-H4060XL-r1,5-C48x1°	6	8	1,5	9	48	109
MEC-H4060XL-r1,5-C55x1°	6	8	1,5	9	55	109
MEC-H4060XL-r1,5-C70x1°	6	8	1,5	9	70	109
MEC-H4080XL-r0,5-C48x1°	8	10	0,5	10	48	109
MEC-H4080XL-r0,5-C55x1°	8	10	0,5	10	55	109
MEC-H4080XL-r0,5-C70x1°	8	10	0,5	10	70	109
MEC-H4080XL-r1,0-C48x1°	8	10	1	10	48	109
MEC-H4080XL-r1,0-C55x1°	8	10	1	10	55	109
MEC-H4080XL-r1,0-C70x1°	8	10	1	10	70	109
MEC-H4080XL-r1,5-C48x1°	8	10	1,5	10	48	109
MEC-H4080XL-r1,5-C55x1°	8	10	1,5	10	55	109
MEC-H4080XL-r1,5-C70x1°	8	10	1,5	10	70	109
MEC-H4080XL-r2,0-C48x1°	8	10	2	10	48	109
MEC-H4080XL-r2,0-C55x1°	8	10	2	10	55	109
MEC-H4080XL-r2,0-C70x1°	8	10	2	10	70	109

FRESA Z4 TORICA CONICA 1,5° - Serie Normale

EN Z4 CORNER RADIUS END MILL | 1,5° TAPER - Normal Series

FR Z4 FRAISE TORIQUE | 1,5° - Serie Normale

DE Z4 TORUSFRÄSER | 1,5° - Normale Serien

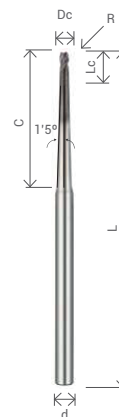
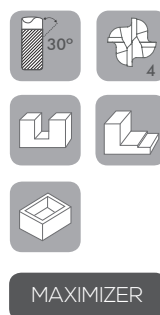
IT Acciaio, acciaio inossidabile, ghisa, rame, titanio e acciai temprati fino a 35-45 HRC.

EN Steel, stainless steel, cast iron, copper, titanium and hardened steels up to 35-45 HRC.

FR Acier, acier inoxydable, fonte grise, cuivre, titane et acier jusqu'à 35-45 HRC.

DE Stahl, Rostfreier Stahl, Gubeisen, Kupfer, Titan, Gehärteter stahl 35-45 HRC.

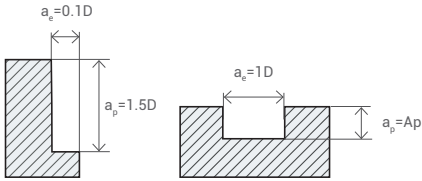
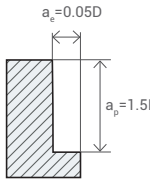
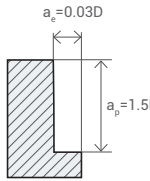
Serie Normale 1,5°



SERIE NORMALE - Normal Series

Ref.	Dimensione - Dimension (mm)					
4 Taglienti (Z4)	Dc	d	R	Lc	C	L
MEC-H4020XL-r0,5-C43x1,5°	2	6	0,5	3	43	109
MEC-H4020XL-r0,5-C53x1,5°	2	6	0,5	3	53	109
MEC-H4020XL-r0,5-C63x1,5°	2	6	0,5	3	63	109
MEC-H4030XL-r0,5-C44x1,5°	3	6	0,5	5	44	109
MEC-H4030XL-r0,5-C55x1,5°	3	6	0,5	5	55	109
MEC-H4030XL-r0,5-C65x1,5°	3	6	0,5	5	65	109
MEC-H4040XL-r0,5-C45x1,5°	4	6	0,5	6	45	109
MEC-H4040XL-r1,0-C45x1,5°	4	6	1	6	45	109
MEC-H4050XL-r0,5-C45x1,5°	5	8	0,5	7	45	109
MEC-H4050XL-r0,5-C55x1,5°	5	8	0,5	7	55	109
MEC-H4050XL-r1,0-C45x1,5°	5	8	1	7	45	109
MEC-H4050XL-r1,0-C55x1,5°	5	8	1	7	55	109
MEC-H4060XL-r0,5-C48x1,5°	6	8	0,5	9	48	109
MEC-H4060XL-r1,0-C48x1,5°	6	8	1	9	48	109
MEC-H4060XL-r1,5-C48x1,5°	6	8	1,5	9	48	109
MEC-H4080XL-r0,5-C48x1,5°	8	10	0,5	10	48	109
MEC-H4080XL-r1,0-C48x1,5°	8	10	1	10	48	109
MEC-H4080XL-r1,5-C48x1,5°	8	10	1,5	10	48	109
MEC-H4080XL-r2,0-C48x1,5°	8	10	2	10	48	109

MEC-H Z4

Materiale pezzo Workpiece material	Ghisa, Acciaio al carbonio, Acciaio legato -30 HRC Cast iron, Carbon steel, Alloy steel -30 HRC		Acciaio inossidabile Stainless steel		Acciaio pretemprato, Acciaio temprato -40HRC Pre-hardened steel, Quenched and tempered steel -40HRC		Acciaio pretemprato, Acciaio temprato -50HRC Pre-hardened steel, Quenched and tempered steel -50HRC		Acciaio temprato 56-62HRC Hardened steel 56-62HRC	
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)	Rotante (minimo -1) Rotating (minimum -1)	Avanzamento (mm/minuto) Feed (mm/minute)	Rotante (minimo -1) Rotating (minimum -1)	Avanzamento (mm/minuto) Feed (mm/minute)	Rotante (minimo -1) Rotating (minimum -1)	Avanzamento (mm/minuto) Feed (mm/minute)
2	15000	950	9500	175	15000	720	13000	550	9500	400
3	14000	985	7500	175	10600	755	8500	590	7430	435
4	10800	1010	5500	175	8000	770	6500	600	5570	445
5	8200	1055	4500	175	6400	805	5000	640	4460	470
6	7000	1080	3700	195	5300	830	4200	650	3710	470
8	5200	1070	2800	195	4000	815	3200	660	2785	485
Massima profondità di taglio Max. Cutting depth										



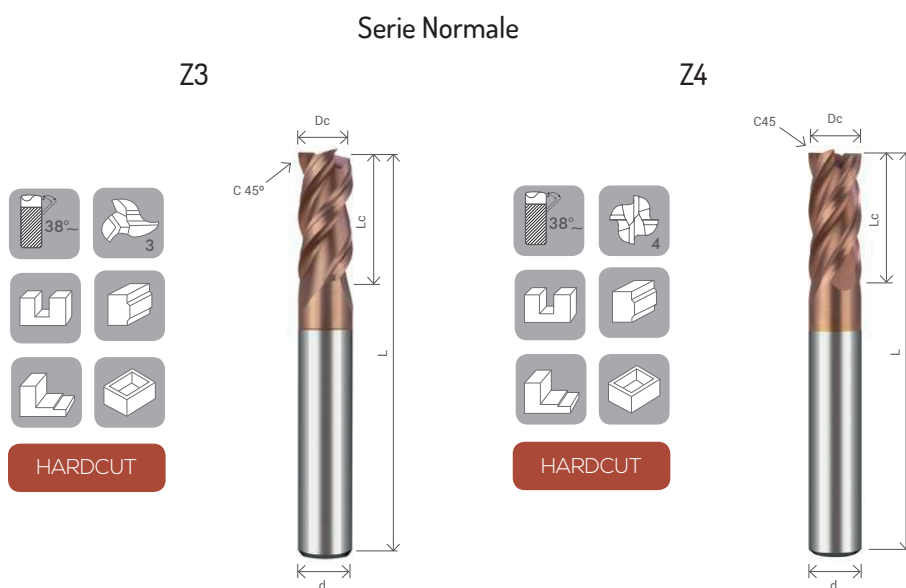
05

FRESE AD ALTO RENDIMENTO
HIGH PERFORMANCE END MILLS
HAUTE PERFORMANCE
SHOCHLEISTUNGSBEARBEITUNG

STAR-EVO: FRESA Z3/Z4 ELICA VARIABLE 35°/38° Serie Normale

- EN** Z3/Z4 STAR-EVO. UNEQUAL HELIX ANGLES 35°-38° - Normal Series
FR Z3/Z4 STAR-EVO. HÉLICE DIFFÉRENTE 35°-38° - Serie Normale
DE Z3/Z4 STAR-EVO. UNGLEICHER DRALLWINKEL 35°-38° - Normale Serien

- IT** Acciaio, acciaio inossidabile, ghisa, rame, titanio, leghe resistenti al calore e acciaio temprato 56 HRC.
- EN** Steel, stainless steel, cast iron, copper, titanium, heat resistance alloys and hardened steels up to 56 HRC.
- FR** Acier, acier inoxydable, fonte grise, cuivre, titane, alliages de résistance à la chaleur et acier jusqu'à 56 hrc
- DE** Stahl, rostfreier stahl, gubeisen, kupfer, titan, warmfeste legierungen und gehärteter stahl 56 HRC.



SERIE NORMALE - Normal Series

Ref.	Dimensione - Dimension (mm)				
3 Taglienti (Z3)	Dc	d	Lc	C-45°	L
STAR-EV03030R	3	6	8	0,05	50
STAR-EV03040R	4	6	11	0,05	50
STAR-EV03050R	5	6	13	0,07	50
STAR-EV03060R	6	6	16	0,10	50
STAR-EV03080R	8	8	19	0,15	60
STAR-EV03100R	10	10	22	0,15	73
STAR-EV03120R	12	12	26	0,25	75
STAR-EV03140R	14	14	30	0,30	85
STAR-EV03160R	16	16	32	0,35	92
STAR-EV03200R	20	20	38	0,35	100

SERIE NORMALE - Normal Series

Ref.	Dimensione - Dimension (mm)				
4 Taglienti (Z4)	Dc	d	Lc	C-45°	L
STAR-EV04030R	3	6	8	0,05	50
STAR-EV04040R	4	6	11	0,05	50
STAR-EV04050R	5	6	13	0,07	50
STAR-EV04060R	6	6	16	0,10	50
STAR-EV04080R	8	8	19	0,15	60
STAR-EV04100R	10	10	22	0,15	73
STAR-EV04120R	12	12	26	0,25	75
STAR-EV04140R	14	14	30	0,30	85
STAR-EV04160R	16	16	32	0,35	92
STAR-EV04200R	20	20	38	0,35	100

STAR-EVO: FRESA Z4 ELICA VARIABLE 35°/38°

Weldon DIN6535 / Misure Speciali

- EN** Z4 STAR-EVO: UNEQUAL HELIX ANGLES 35°-38° | WELDON DIN6535 / Special Sizes
FR Z4 STAR-EVO: HÉLICE DIFFÉRENTE 35°-38° | WELDON DIN6535 / Tailles spéciales
DE Z4 STAR-EVO: UNGLEICHER DRALLWINKEL 35°-38° | WELDON DIN6535 / Sondergrößen

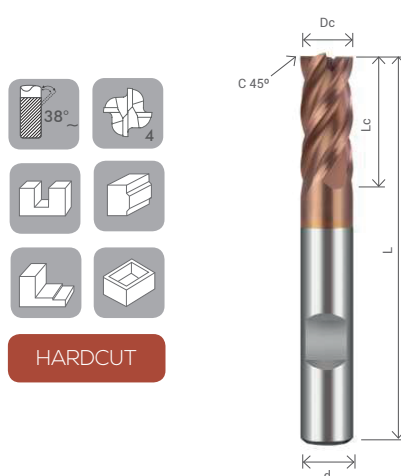
IT Acciaio, acciaio inossidabile, ghisa, rame, titanio, leghe resistenti al calore e acciaio temprato 56 HRC.

EN Steel, stainless steel, cast iron, copper, titanium, heat resistance alloys and hardened steels up to 56 HRC.

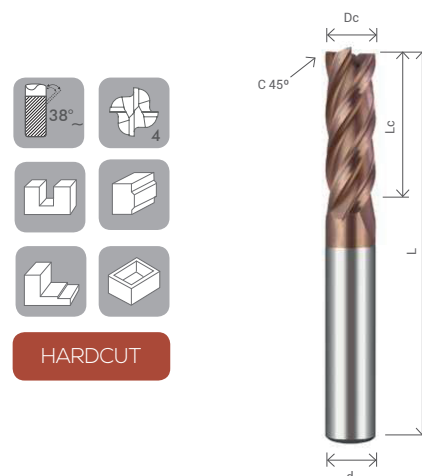
FR Acier, acier inoxydable, fonte grise, cuivre, titane, alliages de résistance à la chaleur et acier jusqu'à 56 hrc

DE Stahl, rostfreier stahl, gubeisen, kupfer, titan, warmfeste legierungen und gehärteter stahl 56 HRC.

Weldon



Misure Speciali



WELDON

Ref.	Dimensione - Dimension (mm)				
4 Taglienti (Z4)	Dc	d	Lc	C-45°	L
STAR-EVO4030RW	3	6	8	0,05	57
STAR-EVO4040RW	4	6	11	0,05	57
STAR-EVO4050RW	5	6	13	0,07	57
STAR-EVO4060RW	6	6	16	0,10	57
STAR-EVO4080RW	8	8	19	0,15	63
STAR-EVO4100RW	10	10	22	0,15	73
STAR-EVO4120RW	12	12	26	0,25	84
STAR-EVO4140RW	14	14	30	0,30	85
STAR-EVO4160RW	16	16	32	0,35	92
STAR-EVO4200RW	20	20	38	0,35	104

MISURE SPECIALI - Special Sizes

Ref.	Dimensione - Dimension (mm)				
4 Taglienti (Z4)	Dc	d	Lc	C-45°	L
STAR-EVO4100-25R	10	10	25	0,15	73
STAR-EVO4120L-35R	12	12	35	0,25	83
STAR-EVO4160-45R	16	16	45	0,35	100
STAR-EVO4160-52R	16	16	52	0,35	100
STAR-EVO4160-65R	16	16	65	0,35	150
STAR-EVO4200-55R	20	20	55	0,35	104
STAR-EVO4200-70R	20	20	70	0,35	150

STAR-PLUS: FRESA Z4 ELICA VARIABLE 35°/38°

Scarico Ribassato / Weldon DIN6535

EN Z4 STAR-PLUS. UNEQUAL HELIX ANGLES 35°-38° | REDUCED NECK / WELDON DIN6535

FR Z4 STAR-PLUS. HÉLICE DIFFÉRENTE 35°-38° / WELDON DIN6535

DE Z4 STAR-PLUS. UNGLEICHER DRALLWINKEL 35°-38° / WELDON DIN6535

IT Acciaio, acciaio inossidabile, ghisa, rame, titanio e acciaio temprato 56 HRC.

EN Steel, stainless steel, cast iron, copper, titanium, and hardened steels up to 56 HRC.

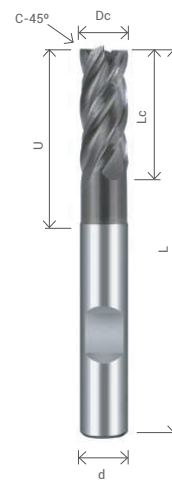
FR Acier, acier inoxydable, fonte grise, cuivre, titane et acier jusqu'à 56 HRC.

DE Stahl, rostfreier stahl, gubeisen, kupfer, titan und gehärteter stahl 56 HRC.

Scarico Ribassato



Weldon



SCARICO RIBASSATO

Reduced Neck

Ref.	Dimensione - Dimension (mm)					
4 Taglienti (Z4)	Dc	d	Lc	U	C-45°	L
STAR-PLUS4030U20H	3	6	8	20	0,05	57
STAR-PLUS4040U20H	4	6	11	20	0,05	57
STAR-PLUS4050U21H	5	6	13	21	0,07	57
STAR-PLUS4060U21H	6	6	13	21	0,10	57
STAR-PLUS4080U27H	8	8	19	27	0,15	63
STAR-PLUS4100U32H	10	10	22	32	0,15	73
STAR-PLUS4120U38H	12	12	26	38	0,25	83
STAR-PLUS4140U40H	14	14	30	40	0,30	84
STAR-PLUS4160U44H	16	16	32	44	0,35	92
STAR-PLUS4200U55H	20	20	38	55	0,35	104

SCARICO RIBASSATO CON WELDON

Reduced neck with Weldon

Ref.	Dimensione - Dimension (mm)					
4 Taglienti (Z4)	Dc	d	Lc	U	C-45°	L
STAR-PLUS4030U20HW	3	6	8	20	0,05	57
STAR-PLUS4040U20HW	4	6	11	20	0,05	57
STAR-PLUS4050U21HW	5	6	13	21	0,07	57
STAR-PLUS4060U21HW	6	6	13	21	0,10	57
STAR-PLUS4080U27HW	8	8	19	27	0,15	63
STAR-PLUS4100U32HW	10	10	22	32	0,15	73
STAR-PLUS4120U38HW	12	12	26	38	0,25	83
STAR-PLUS4140U40HW	14	14	30	40	0,30	84
STAR-PLUS4160U44HW	16	16	32	44	0,35	92
STAR-PLUS4200U55HW	20	20	38	55	0,35	104

STAR-TOP: FRESA Z4 ELICA VARIABLE 35°/38°

Scarico Ribassato / Weldon DIN6535

EN Z4 STAR-TOP UNEQUAL HELIX ANGLES 35°-38° | REDUCED NECK / WELDON DIN6535

FR Z4 STAR-TOP HÉLICE DIFFÉRENTE 35°-38° / WELDON DIN6535

DE Z4 STAR-TOP UNGLEICHER DRALLWINKEL 35°-38° / WELDON DIN6535

IT Acciaio, acciaio inossidabile, ghisa, rame, titanio, leghe resistenti al calore e acciaio temprato 56 HRC.

EN Steel, stainless steel, cast iron, copper, titanium, heat resistance alloys and hardened steels up to 56 HRC.

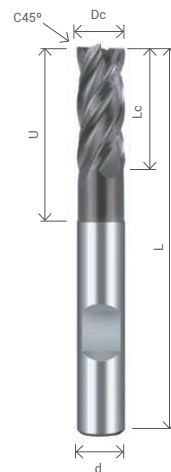
FR Acier, acier inoxydable, fonte grise, cuivre, titane, alliages de résistance à la chaleur et acier jusqu'à 56 hrc

DE Stahl, rostfreier stahl, gubeisen, kupfer, titan, warmfeste legierungen und gehärteter stahl 56 HRC.

Scarico Ribassato



Weldon



SCARICO RIBASSATO

Reduced Neck

Ref.	Dimensione - Dimension (mm)					
4 Taglienti (Z4)	Dc	d	Lc	U	C-45°	L
STAR-TOP4030U20PB	3	6	8	20	0,05	57
STAR-TOP4040U20PB	4	6	11	20	0,05	57
STAR-TOP4050U21PB	5	6	13	21	0,07	57
STAR-TOP4060U21PB	6	6	13	21	0,10	57
STAR-TOP4080U27PB	8	8	19	27	0,15	63
STAR-TOP4100U32PB	10	10	22	32	0,15	73
STAR-TOP4120U38PB	12	12	26	38	0,25	83
STAR-TOP4140U40PB	14	14	30	40	0,30	84
STAR-TOP4160U44PB	16	16	32	44	0,35	92
STAR-TOP4200U55PB	20	20	38	55	0,35	104

SCARICO RIBASSATO CON WELDON

Reduced neck with Weldon

Ref.	Dimensione - Dimension (mm)					
4 Taglienti (Z4)	Dc	d	Lc	U	C-45°	L
STAR-TOP4030U20PBW	3	6	8	20	0,05	57
STAR-TOP4040U20PBW	4	6	11	20	0,05	57
STAR-TOP4050U21PBW	5	6	13	21	0,07	57
STAR-TOP4060U21PBW	6	6	13	21	0,10	57
STAR-TOP4080U27PBW	8	8	19	27	0,15	63
STAR-TOP4100U32PBW	10	10	22	32	0,15	73
STAR-TOP4120U38PBW	12	12	26	38	0,25	83
STAR-TOP4140U40PBW	14	14	30	40	0,30	84
STAR-TOP4160U44PBW	16	16	32	44	0,35	92
STAR-TOP4200U55PBW	20	20	38	55	0,35	104

XURY-EVO: FRESA Z4 ELICA VARIABLE 43°/45°

Serie Normale / Weldon DIN6535

- EN** Z4 XURY-EVO UNEQUAL HELIX ANGLES 43-35° | REDUCED NECK | WELDON DIN6535 - Normal Series
- FR** Z4 XURY-EVO HÉLICE DIFFÉRENTE 43-35° | COL RÉDUIT | WELDON DIN6535 - Serie Normale
- DE** Z4 XURY-EVO UNGLEICHER DRALLWINKEL 43-35° | REDUZIRTER HALS | WELDON DIN6535 - Normale Serien

- IT** Acciaio, acciaio inossidabile, ghisa, rame, titanio, leghe resistenti al calore e acciaio temprato 56 HRC.
- EN** Steel, stainless steel, cast iron, cooper, titanium, heat resistance alloys and hardened steels up to 56 HRC.
- FR** Acier, acier inoxydable, fonte grise, cuivre, titane, alliages de résistance à la chaleur et acier jusqu'à 56 hrc
- DE** Stahl, rostfreier stahl, gubeisen, kupfer, titan, warmfeste legierungen und gehärteter stahl 56 HRC.

Serie Normale



Weldon



SERIE NORMALE

Normal Series

Ref.	Dimensione - Dimension (mm)				
4 Taglienti (Z4)	Dc	d	Lc	C-45°	L
XURY-EV04060B	6	6	13	0,2	57
XURY-EV04080B	8	8	19	0,25	63
XURY-EV04100B	10	10	22	0,35	73
XURY-EV04120B	12	12	26	0,35	83
XURY-EV04140B	14	14	30	0,4	84
XURY-EV04160B	16	16	32	0,5	92
XURY-EV04200B	20	20	38	0,5	104

SERIE NORMALE CON WELDON

Normal Series with Weldon

Ref.	Dimensione - Dimension (mm)				
4 Taglienti (Z4)	Dc	d	Lc	C-45°	L
XURY-EV04060BW	6	6	13	0,2	57
XURY-EV04080BW	8	8	19	0,25	63
XURY-EV04100BW	10	10	22	0,35	73
XURY-EV04120BW	12	12	26	0,35	83
XURY-EV04140BW	14	14	30	0,4	84
XURY-EV04160BW	16	16	32	0,5	92
XURY-EV04200BW	20	20	38	0,5	104

XURY-EVO: FRESA Z4 ELICA VARIABLE 43°/45°

Scarico Ribassato / Weldon DIN6535

EN Z4 XURY-EVO UNEQUAL HELIX ANGLES 43-35° | REDUCED NECK | WELDON DIN6535

FR Z4 XURY-EVO HÉLICE DIFFÉRENTE 43-35° | COL RÉDUIT | WELDON DIN6535

DE Z4 XURY-EVO UNGLEICHER DRALLWINKEL 43-35° | REDUZIERTER HALS | WELDON DIN6535

IT Acciaio, acciaio inossidabile, ghisa, rame, titanio, leghe resistenti al calore e acciaio temprato 56 HRC.

EN Steel, stainless steel, cast iron, copper, titanium, heat resistance alloys and hardened steels up to 56 HRC.

FR Acier, acier inoxydable, fonte grise, cuivre, titane, alliages de résistance à la chaleur et acier jusqu'à 56 hrc

DE Stahl, rostfreier stahl, gubeisen, kupfer, titan, warmfeste legierungen und gehärteter stahl 56 HRC.

Scarico Ribassato



Weldon



SCARICO RIBASSATO

Reduced Neck

Ref.	Dimensione - Dimension (mm)					
4 Taglienti (Z4)	Dc	d	Lc	U	C-45°	L
XURY-EV04030U11B	3	6	8	11	0,07	57
XURY-EV04030U20B	3	6	8	20	0,07	57
XURY-EV04040U14B	4	6	11	14	0,09	57
XURY-EV04040U20B	4	6	11	20	0,09	57
XURY-EV04050U16B	5	6	13	16	0,12	57
XURY-EV04050U21B	5	6	13	21	0,12	57
XURY-EV04060U21B	6	6	13	21	0,2	57
XURY-EV04080U27B	8	8	19	27	0,25	63
XURY-EV04100U32B	10	10	22	32	0,35	73
XURY-EV04120U38B	12	12	26	38	0,35	83
XURY-EV04140U40B	14	14	30	40	0,4	84
XURY-EV04160U44B	16	16	32	44	0,5	92
XURY-EV04200U55B	20	20	38	55	0,5	104

SCARICO RIBASSATO CON WELDON

Reduced neck with Weldon

Ref.	Dimensione - Dimension (mm)					
4 Taglienti (Z4)	Dc	d	Lc	U	C-45°	L
XURY-EV04030U11BW	3	6	8	11	0,07	57
XURY-EV04030U20BW	3	6	8	20	0,07	57
XURY-EV04040U14BW	4	6	11	14	0,09	57
XURY-EV04040U20BW	4	6	11	20	0,09	57
XURY-EV04050U16BW	5	6	13	16	0,12	57
XURY-EV04050U21BW	5	6	13	21	0,12	57
XURY-EV04060U21BW	6	6	13	21	0,2	57
XURY-EV04080U27BW	8	8	19	27	0,25	63
XURY-EV04100U32BW	10	10	22	32	0,35	73
XURY-EV04120U38BW	12	12	26	38	0,35	83
XURY-EV04140U40BW	14	14	30	40	0,4	84
XURY-EV04160U44BW	16	16	32	44	0,5	92
XURY-EV04200U55BW	20	20	38	55	0,5	104

XURY-TITAN: FRESA Z4 ELICA VARIABLE 43°/45°

Serie Normale / Weldon DIN6535

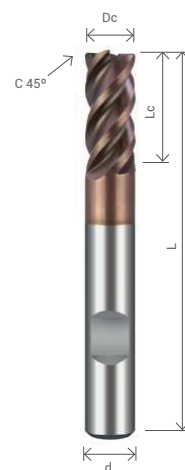
- EN** Z4 XURY-TITAN UNEQUAL HELIX ANGLES 43-35° | WELDON DIN6535 - Normal Series
- FR** Z4 XURY-TITAN HÉLICE DIFFÉRENTE 43-35° | WELDON DIN6535 - Serie Normale
- DE** Z4 XURY-TITAN UNGLEICHER DRALLWINKEL 43-35° | WELDON DIN6535 - Normale Serien

- IT** Acciaio inossidabile, titanio, leghe di titanio e leghe resistenti al calore.
- EN** Stainless steel, titanium, titanium alloys and heat resistance alloys.
- Acier inoxydable, alliages de titanie, titane, alliages de et résistance à la chaleur.
- FR**
- Rostfreier stahl, titan, warmfeste und legierungen.
- DE**

Serie Normale



Weldon



SERIE NORMALE

Normal Series

Ref.	Dimensione - Dimension (mm)				
4 Taglienti (Z4)	Dc	d	Lc	C-45°	L
XURY-TITAN4060R	6	6	13	0,2	57
XURY-TITAN4080R	8	8	19	0,25	63
XURY-TITAN4100R	10	10	22	0,35	73
XURY-TITAN4120R	12	12	26	0,35	83
XURY-TITAN4140R	14	14	30	0,4	84
XURY-TITAN4160R	16	16	32	0,5	92
XURY-TITAN4200R	20	20	38	0,5	104

SERIE NORMALE CON WELDON

Normal Series with Weldon

Ref.	Dimensione - Dimension (mm)				
4 Taglienti (Z4)	Dc	d	Lc	C-45°	L
XURY-TITAN4060RW	6	6	13	0,2	57
XURY-TITAN4080RW	8	8	19	0,25	63
XURY-TITAN4100RW	10	10	22	0,35	73
XURY-TITAN4120RW	12	12	26	0,35	83
XURY-TITAN4140RW	14	14	30	0,4	84
XURY-TITAN4160RW	16	16	32	0,5	92
XURY-TITAN4200RW	20	20	38	0,5	104

XURY-TITAN: FRESA Z4 ELICA VARIABLE 43°/45°

Serie Normale / Weldon DIN6535 / Scarico Ribassato

EN Z4 XURY-TITAN UNEQUAL HELIX ANGLES 43-35° | REDUCED NECK | WELDON DIN6535 - Normal Series

FR Z4 XURY-TITAN HÉLICE DIFFÉRENTE 43-35° | WELDON DIN6535 - Serie Normale

DE Z4 XURY-TITAN UNGLEICHER DRALLWINKEL 43-35° | WELDON DIN6535 - Normale Serien

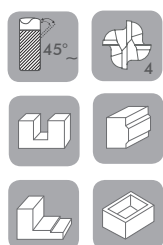
IT Acciaio inossidabile, titanio, leghe di titanio e leghe resistenti al calore.

EN Stainless steel, titanium, titanium alloys and heat resistance alloys.

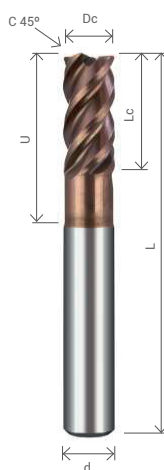
FR Acier inoxydable, alliages de titane, titane, alliages de et résistance à la chaleur.

DE Rostfreier stahl, titan, warmfeste und legierungen.

Serie Normale



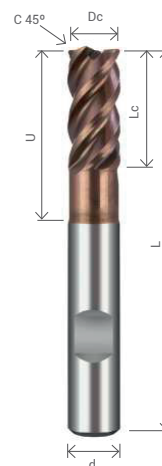
HARDCUT



Weldon



HARDCUT



SERIE NORMALE - SCARICO RIBASSATO

Normal Series - Reduced neck

Ref.	Dimensione - Dimension (mm)					
4 Taglienti (Z4)	Dc	d	Lc	U	C-45°	L
XURY-TITAN4030U11R	3	6	8	11	0,07	57
XURY-TITAN4030U20R	3	6	8	20	0,07	57
XURY-TITAN4040U14R	4	6	11	14	0,09	57
XURY-TITAN4040U20R	4	6	11	20	0,09	57
XURY-TITAN4050U16R	5	6	13	16	0,12	57
XURY-TITAN4050U21R	5	6	13	21	0,12	57
XURY-TITAN4060U21R	6	6	13	21	0,2	57
XURY-TITAN4080U27R	8	8	19	27	0,25	63
XURY-TITAN4100U32R	10	10	22	32	0,35	73
XURY-TITAN4120U38R	12	12	26	38	0,35	83
XURY-TITAN4140U40R	14	14	30	40	0,4	84
XURY-TITAN4160U44R	16	16	32	44	0,5	92
XURY-TITAN4200U55R	20	20	38	55	0,5	104

SCARICO RIBASSATO CON WELDON

Reduced neck with Weldon

Ref.	Dimensione - Dimension (mm)					
4 Taglienti (Z4)	Dc	d	Lc	U	C-45°	L
XURY-TITAN4030U11RW	3	6	8	11	0,07	57
XURY-TITAN4030U20RW	3	6	8	20	0,07	57
XURY-TITAN4040U14RW	4	6	11	14	0,09	57
XURY-TITAN4040U20RW	4	6	11	20	0,09	57
XURY-TITAN4050U16RW	5	6	13	16	0,12	57
XURY-TITAN4050U21RW	5	6	13	21	0,12	57
XURY-TITAN4060U21RW	6	6	13	21	0,2	57
XURY-TITAN4080U27RW	8	8	19	27	0,25	63
XURY-TITAN4100U32RW	10	10	22	32	0,35	73
XURY-TITAN4120U38RW	12	12	26	38	0,35	83
XURY-TITAN4140U40RW	14	14	30	40	0,4	84
XURY-TITAN4160U44RW	16	16	32	44	0,5	92
XURY-TITAN4200U55RW	20	20	38	55	0,5	104

ILEX: FRESA Z5 ELICA VARIABLE 43°/45° <55HRC

Scarico Rastremato 1° - Serie Normale

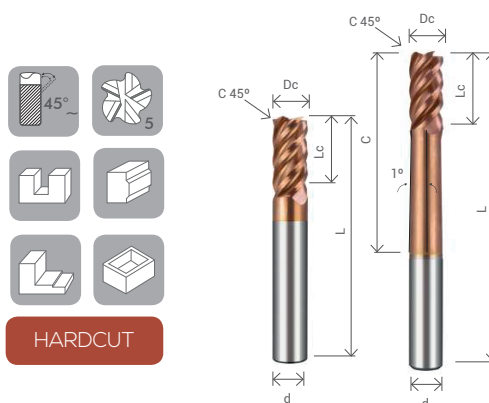
EN Z5 ILEX UNEQUAL HELIX ANGLES 43-35° | REDUCED NECK 1° | WELDON DIN6535 - Normal Series

FR Z5 ILEX HÉLICE DIFFÉRENTE 43-35° | COL RÉDUIT - Serie Normale

DE Z5 ILEX UNGLEICHER DRALLWINKEL 43-35° | REDUZIERTER HALS - Normale Serien

- IT** Acciaio, acciaio inossidabile, ghisa, rame, titanio, leghe resistenti al calore e acciaio temprato 56 HRC.
- EN** Steel, stainless steel, cast iron, cooper, titanium, heat resistance alloys and hardened steels up to 56 HRC.
- FR** Acier, acier inoxydable, fonte grise, cuivre, titane, alliages de résistance à la chaleur et acier jusqu'à 56 hrc
- DE** Stahl, rostfreier stahl, gubeisen, kupfer, titan, warmfeste legierungen und gehärteter stahl 56 HRC.

Z5 Scarico Rastremato 1°



SERIE NORMALE - SCARICO RASTREMATO 1°

Normal Series - Reduced Neck 1°

Ref.	Dimensione - Dimension (mm)					
5 Taglienti (Z5)	Dc	d	Lc	C	C-45°	L
ILEX-06K01-C	6	6	14	—	0,1	53
ILEX-06K01-M	6	6	14	32	0,1	65
ILEX-06K01-L	6	6	14	42	0,1	75
ILEX-06K01-LL	6	6	14	51	0,1	81
ILEX-08K01-C	8	8	18	—	0,1	60
ILEX-08K01-M	8	8	18	42	0,1	75
ILEX-08K01-L	8	8	18	58	0,1	90
ILEX-08K01-LL	8	8	18	71	0,1	109
ILEX-10K015-C	10	10	22	—	0,15	65
ILEX-10K015-M	10	10	22	51	0,15	81
ILEX-10K015-L	10	10	22	71	0,15	109
ILEX-10K015-LL	10	10	22	82	0,15	109

SERIE NORMALE - SCARICO RASTREMATO 1°

Normal Series - Reduced Neck 1°

Ref.	Dimensione - Dimension (mm)					
5 Taglienti (Z5)	Dc	d	Lc	C	C-45°	L
ILEX-12K02-C	12	12	26	—	0,2	81
ILEX-12K02-M	12	12	26	51	0,2	81
ILEX-12K02-L	12	12	26	71	0,2	109
ILEX-12K02-LL	12	12	26	86	0,2	117
ILEX-16K02-C	16	16	38	—	0,2	81
ILEX-16K02-M	16	16	38	61	0,2	109
ILEX-16K02-L	16	16	38	76	0,2	109
ILEX-16K02-LL	16	16	38	101	0,2	150
ILEX-20K02-C	20	20	45	—	0,2	100
ILEX-20K02-M	20	20	45	71	0,2	109
ILEX-20K02-L	20	20	45	86	0,2	130
ILEX-20K02-LL	20	20	45	101	0,2	150

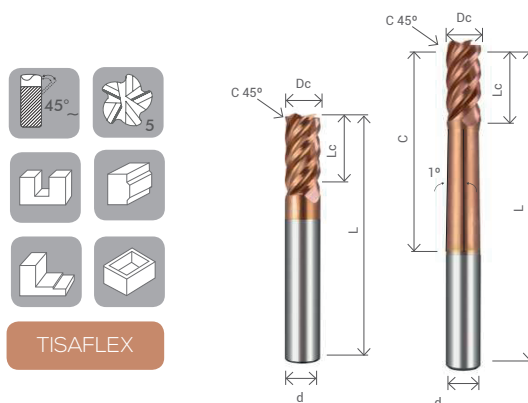
ILEX: FRESA Z5 ELICA VARIABLE 43°/45° <65HRC

Scarico Rastremato 1° - Serie Normale

- EN** Z5 ILEX U.H.A. 43-35° | REDUCED NECK 1° - Normal Series
- FR** Z5 ILEX H.D. 43-35° | DE HAUTE PERFORMANCE - Serie Normale
- DE** Z5 ILEX U.D. 43-35° | HOCHLEISTUNGSBEARBEITUNG - Normale Serien

- IT** Acciaio, acciaio inossidabile, ghisa, rame, titanio, leghe resistenti al calore e acciaio temprato 65 HRC.
- EN** Steel, stainless steel, cast iron, copper, titanium, heat resistance alloys and hardened steels up to 65 HRC.
- FR** Acier, acier inoxydable, fonte grise, cuivre, titane, alliages de résistance à la chaleur et acier jusqu'à 65 HRC.
- DE** Stahl, rostfreier stahl, gubeisen, kupfer, titan, warmfeste legierungen und gehärteter stahl 65 HRC.

Z5 Scarico Rastremato 1°



SERIE NORMALE - SCARICO RASTREMATO 1°

Normal Series - Reduced Neck 1°

Ref.	Dimensione - Dimension (mm)					
5 Taglienti (Z5)	Dc	d	Lc	C	C-45°	L
S-ILEX-06K01-C	6	6	14	—	0,1	53
S-ILEX-06K01-M	6	6	14	32	0,1	65
S-ILEX-06K01-L	6	6	14	42	0,1	75
S-ILEX-06K01-LL	6	6	14	51	0,1	81
S-ILEX-08K01-C	8	8	18	—	0,1	60
S-ILEX-08K01-M	8	8	18	42	0,1	75
S-ILEX-08K01-L	8	8	18	58	0,1	90
S-ILEX-08K01-LL	8	8	18	71	0,1	109
S-ILEX-10K015-C	10	10	22	—	0,15	65
S-ILEX-10K015-M	10	10	22	51	0,15	81
S-ILEX-10K015-L	10	10	22	71	0,15	109
S-ILEX-10K015-LL	10	10	22	82	0,15	109

SERIE NORMALE - SCARICO RASTREMATO 1°

Normal Series - Reduced Neck 1°

Ref.	Dimensione - Dimension (mm)					
5 Taglienti (Z5)	Dc	d	Lc	C	C-45°	L
S-ILEX-12K02-C	12	12	26	—	0,2	81
S-ILEX-12K02-M	12	12	26	51	0,2	81
S-ILEX-12K02-L	12	12	26	71	0,2	109
S-ILEX-12K02-LL	12	12	26	86	0,2	117
S-ILEX-16K02-C	16	16	38	—	0,2	81
S-ILEX-16K02-M	16	16	38	61	0,2	109
S-ILEX-16K02-L	16	16	38	76	0,2	109
S-ILEX-16K02-LL	16	16	38	101	0,2	150
S-ILEX-20K02-C	20	20	45	—	0,2	100
S-ILEX-20K02-M	20	20	45	71	0,2	109
S-ILEX-20K02-L	20	20	45	86	0,2	130
S-ILEX-20K02-LL	20	20	45	101	0,2	150

ILEX: FRESA Z5 ELICA VARIABLE 43°/45° <56HRC

Refrigerazione centrale / Scarico Rastremato 1° / Alto Rendimento

EN Z5 ILEX UNEQUAL HELIX ANGLES 43-35° | REDUCED NECK 1° | CENTRAL COOLANT - Normal Series

FR Z5 ILEX HÉLICE DIFFÉRENTE 43-35° | COL RÉDUIT 1° - Serie Normale

DE Z5 ILEX UNGLEICHER DRALLWINKEL 43-35° | REDUZIERTER HALS 1° - Normale Serien

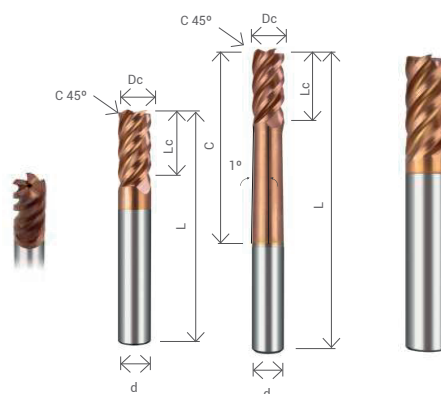
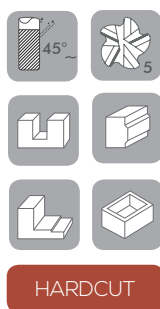
IT Acciaio, acciaio inossidabile, ghisa, rame, titanio, leghe resistenti al calore e acciaio temprato 56 HRC.

EN Steel, stainless steel, cast iron, copper, titanium, heat resistance alloys and hardened steels up to 56 HRC.

FR Acier, acier inoxydable, fonte grise, cuivre, titane, alliages de résistance à la chaleur et acier jusqu'à 56 hrc

DE Stahl, rostfreier Stahl, Gussstahl, Kupfer, Titan, wärmebeständige Legierungen und gehärteter Stahl 56 HRC.

Z5 Scarico Rastremato 1°



SERIE NORMALE - SCARICO RASTREMATO 1°

Normal Series - Reduced Neck 1°

Ref.	Dimensione - Dimension (mm)					
5 Taglienti (Z5)	Dc	d	Lc	C	C-45°	L
ILEX-06K01-C-0	6	6	14	—	0,1	53
ILEX-06K01-M-0	6	6	14	32	0,1	65
ILEX-06K01-L-0	6	6	14	42	0,1	75
ILEX-06K01-LL-0	6	6	14	51	0,1	81
ILEX-08K01-C-0	8	8	18	—	0,1	60
ILEX-08K01-M-0	8	8	18	42	0,1	75
ILEX-08K01-L-0	8	8	18	58	0,1	90
ILEX-08K01-LL-0	8	8	18	71	0,1	109
ILEX-10K015-C-0	10	10	22	—	0,15	65
ILEX-10K015-M-0	10	10	22	51	0,15	81
ILEX-10K015-L-0	10	10	22	71	0,15	109
ILEX-10K015-LL-0	10	10	22	82	0,15	109

SERIE NORMALE - SCARICO RASTREMATO 1°

Normal Series - Reduced Neck 1°

Ref.	Dimensione - Dimension (mm)					
5 Taglienti (Z5)	Dc	d	Lc	C	C-45°	L
ILEX-12K02-C-0	12	12	26	—	0,2	81
ILEX-12K02-M-0	12	12	26	51	0,2	81
ILEX-12K02-L-0	12	12	26	71	0,2	109
ILEX-12K02-LL-0	12	12	26	86	0,2	117
ILEX-16K02-C-0	16	16	38	—	0,2	81
ILEX-16K02-M-0	16	16	38	61	0,2	109
ILEX-16K02-L-0	16	16	38	76	0,2	109
ILEX-16K02-LL-0	16	16	38	101	0,2	150
ILEX-20K02-C-0	20	20	45	—	0,2	100
ILEX-20K02-M-0	20	20	45	71	0,2	109
ILEX-20K02-L-0	20	20	45	86	0,2	130
ILEX-20K02-LL-0	20	20	45	101	0,2	150

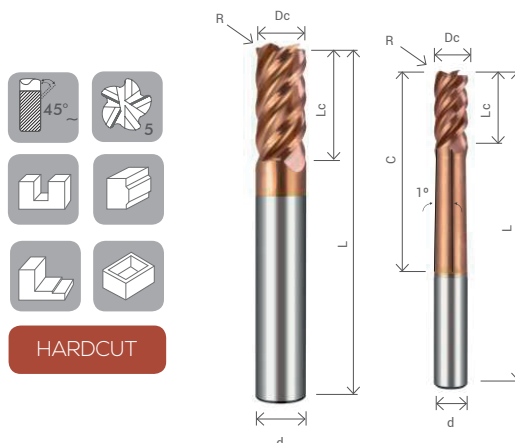
ILEX: FRESA Z5 ELICA VARIABLE 43°/45° <56HRC

Scarico Rastremato 1° - Serie Normale

- EN** Z5 ILEX U.H.A. 43-35° | REDUCED NECK 1° - Normal Series
- FR** Z5 ILEX H.D. 43-35° | COL RÉDUIT 1° - Serie Normale
- DE** Z5 ILEX U. D. 43-35° | REDUZIERTER HALS 1° - Normale Serien

- IT** Acciaio, acciaio inossidabile, ghisa, rame, titanio, leghe resistenti al calore e acciaio temprato 56 HRC.
- EN** Steel, stainless steel, cast iron, copper, titanium, heat resistance alloys and hardened steels up to 56 HRC.
- FR** Acier, acier inoxydable, fonte grise, cuivre, titane, alliages de résistance à la chaleur et acier jusqu'à 56 hrc
- DE** Stahl, rostfreier stahl, gubeisen, kupfer, titan, warmfeste legierungen und gehärteter stahl 56 HRC.

Z5 Scarico Rastremato 1°



SERIE NORMALE - SCARICO RASTREMATO 1°

Normal Series - Reduced Neck 1°

Ref.	Dimensione - Dimension (mm)					
5 Taglienti (Z5)	Dc	d	Lc	C	R	L
ILEX-06R05-C	6	6	14	—	0,5	53
ILEX-06R05-M	6	6	14	32	0,5	65
ILEX-06R05-L	6	6	14	42	0,5	75
ILEX-06R05-LL	6	6	14	51	0,5	81
ILEX-08R05-C	8	8	18	—	0,5	60
ILEX-08R05-M	8	8	18	42	0,5	75
ILEX-08R05-L	8	8	18	58	0,5	90
ILEX-08R05-LL	8	8	18	71	0,5	109
ILEX-10R05-C	10	10	22	—	0,5	65
ILEX-10R05-M	10	10	22	51	0,5	81
ILEX-10R05-L	10	10	22	71	0,5	109
ILEX-10R05-LL	10	10	22	82	0,5	109

SERIE NORMALE - SCARICO RASTREMATO 1°

Normal Series - Reduced Neck 1°

Ref.	Dimensione - Dimension (mm)					
5 Taglienti (Z5)	Dc	d	Lc	C	R	L
ILEX-12R1-C	12	12	26	—	1	81
ILEX-12R1-M	12	12	26	51	1	81
ILEX-12R1-L	12	12	26	71	1	109
ILEX-12R1-LL	12	12	26	86	1	117
ILEX-16R2-C	16	16	38	—	2	81
ILEX-16R2-M	16	16	38	61	2	109
ILEX-16R2-L	16	16	38	76	2	109
ILEX-16R2-LL	16	16	38	101	2	150
ILEX-20R2-C	20	20	45	—	2	100
ILEX-20R2-M	20	20	45	71	2	109
ILEX-20R2-L	20	20	45	86	2	130
ILEX-20R2-LL	20	20	45	101	2	150

ILEX: FRESA Z5 ELICA VARIABLE 43°/45° <65HRC

Refrigerazione centrale / Scarico Rastremato 1° - Serie Normale

EN Z5 ILEX U.H. A. 43-35° | REDUCED NECK 1° - Normal Series

FR Z5 ILEX H.D. 43-35° | COL RÉDUIT - Serie Normale

DE Z5 ILEX U. D. 43-35° | REDUZIERTER HALS - Normale Serien

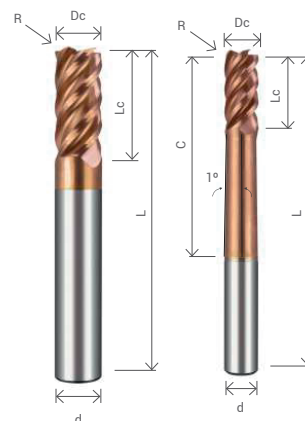
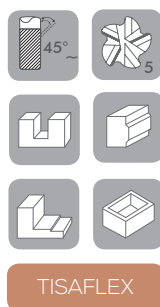
IT Acciaio, acciaio inossidabile, ghisa, rame, titanio, leghe resistenti al calore e acciaio temprato 65 HRC.

EN Steel, stainless steel, cast iron, copper, titanium, heat resistance alloys and hardened steels up to 65 HRC.

FR Acier, acier inoxydable, fonte grise, cuivre, titane, alliages de résistance à la chaleur et acier jusqu'à 65 HRC.

DE Stahl, rostfreier stahl, gubeisen, kupfer, titan, warmfeste legierungen und gehärteter stahl 65 HRC.

Z5 Scarico Rastremato 1°



SERIE NORMALE - SCARICO RASTREMATO 1°

Normal Series - Reduced Neck 1°

Ref.	Dimensione - Dimension (mm)					
5 Taglienti (Z5)	Dc	d	Lc	C	R	L
S-ILEX-06R05-C	6	6	14	—	0,5	53
S-ILEX-06R05-M	6	6	14	32	0,5	65
S-ILEX-06R05-L	6	6	14	42	0,5	75
S-ILEX-06R05-LL	6	6	14	51	0,5	81
S-ILEX-08R05-C	8	8	18	—	0,5	60
S-ILEX-08R05-M	8	8	18	42	0,5	75
S-ILEX-08R05-L	8	8	18	58	0,5	90
S-ILEX-08R05-LL	8	8	18	71	0,5	109
S-ILEX-10R05-C	10	10	22	—	0,5	65
S-ILEX-10R05-M	10	10	22	51	0,5	81
S-ILEX-10R05-L	10	10	22	71	0,5	109
S-ILEX-10R05-LL	10	10	22	82	0,5	109
S-ILEX-12R1-C	12	12	26	—	1	81
S-ILEX-12R1-M	12	12	26	51	1	81

SERIE NORMALE - SCARICO RASTREMATO 1°

Normal Series - Reduced Neck 1°

Ref.	Dimensione - Dimension (mm)					
5 Taglienti (Z5)	Dc	d	Lc	C	R	L
S-ILEX-12R1-L	12	12	26	71	1	109
S-ILEX-12R1-LL	12	12	26	86	1	117
S-ILEX-16R2-C	16	16	38	—	2	81
S-ILEX-16R2-M	16	16	38	61	2	109
S-ILEX-16R2-L	16	16	38	76	2	109
S-ILEX-16R2-LL	16	16	38	101	2	150
S-ILEX-20R2-C	20	20	45	—	2	100
S-ILEX-20R2-M	20	20	45	71	2	109
S-ILEX-20R2-L	20	20	45	86	2	130
S-ILEX-20R2-LL	20	20	45	101	2	150
ILEX-20R2-LL	20	20	45	101	2	150

ILEX: FRESA Z5 ELICA VARIABLE 43°/45° <55HRC

Refrigerazione centrale / Scarico Rastremato 1° - Serie Normale

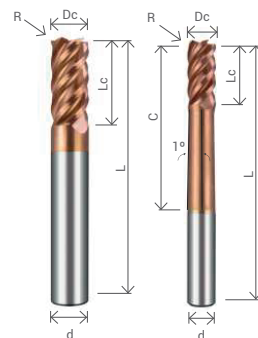
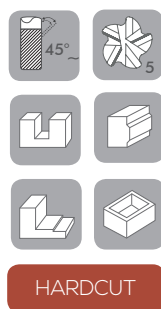
EN Z5 ILEX U.H.A. 43-35° | REDUCED NECK 1° | CENTRAL COOLANT - Normal Series

FR Z5 ILEX H. D. 43-35° | COL RÉDUIT - Serie Normale

DE Z5 ILEX U.D. 43-35° | REDUZIERTER HALS - Normale Serien

- IT** Acciaio, acciaio inossidabile, ghisa, rame, titanio, leghe resistenti al calore e acciaio temprato 56 HRC.
- EN** Steel, stainless steel, cast iron, copper, titanium, heat resistance alloys and hardened steels up to 56 HRC.
- FR** Acier, acier inoxydable, fonte grise, cuivre, titane, alliages de résistance à la chaleur et acier jusqu'à 56 hrc
- DE** Stahl, rostfreier stahl, gubeisen, kupfer, titan, warmfeste legierungen und gehärteter stahl 56 HRC.

Z5 Scarico Rastremato 1°



SERIE NORMALE - SCARICO RASTREMATO 1°

Normal Series - Reduced Neck 1°

Ref.	Dimensione - Dimension (mm)					
5 Taglienti (Z5)	Dc	d	Lc	C	R	L
ILEX-06R05-C-0	6	6	14	—	0,5	53
ILEX-06R05-M-0	6	6	14	32	0,5	65
ILEX-06R05-L-0	6	6	14	42	0,5	75
ILEX-06R05-LL-0	6	6	14	51	0,5	81
ILEX-08R05-C-0	8	8	18	—	0,5	60
ILEX-08R05-M-0	8	8	18	42	0,5	75
ILEX-08R05-L-0	8	8	18	58	0,5	90
ILEX-08R05-LL-0	8	8	18	71	0,5	109
ILEX-10R05-C-0	10	10	22	—	0,5	65
ILEX-10R05-M-0	10	10	22	51	0,5	81
ILEX-10R05-L-0	10	10	22	71	0,5	109
ILEX-10R05-LL-0	10	10	22	82	0,5	109
ILEX-12R1-C-0	12	12	26	—	1	81

SERIE NORMALE - SCARICO RASTREMATO 1°

Normal Series - Reduced Neck 1°

Ref.	Dimensione - Dimension (mm)					
5 Taglienti (Z5)	Dc	d	Lc	C	R	L
ILEX-12R1-M-0	12	12	26	51	1	81
ILEX-12R1-L-0	12	12	26	71	1	109
ILEX-12R1-LL-0	12	12	26	86	1	117
ILEX-16R2-C-0	16	16	38	—	2	81
ILEX-16R2-M-0	16	16	38	61	2	109
ILEX-16R2-L-0	16	16	38	76	2	109
ILEX-16R2-LL-0	16	16	38	101	2	150
ILEX-20R2-C-0	20	20	45	—	2	100
ILEX-20R2-M-0	20	20	45	71	2	109
ILEX-20R2-L-0	20	20	45	86	2	130
ILEX-20R2-LL-0	20	20	45	101	2	150

XURY-EVO / XURY-TITAN / ILEX / STAR-EVO / STAR-TOP

										
		Contornatura A e B, Scanalatura C Side milling A and B, Grooving C								
		A		B		C	Velocità di taglio vc / <i>Cutting speed</i> vc m/min			
		ap	ae	ap	ae	ap	min	max	mm	
P	1	2XD	0,1-0,2xD	1,5xD	0,5xD	1xD	150	220	fz	
	2	2XD	0,1-0,2xD	1,5xD	0,5xD	1xD	150	200	fz	
	3	2XD	0,1-0,2xD	1,5xD	0,5xD	1xD	120	170	fz	
	4	2XD	0,1-0,2xD	1,5xD	0,5xD	1xD	110	160	fz	
	5	2XD	0,1-0,2xD	1,5xD	0,5xD	1xD	70	90	fz	
M	1	2XD	0,1-0,2xD	1,5xD	0,5xD	1xD	90	115	fz	
	2	2XD	0,1-0,2xD	1,5xD	0,5xD	1xD	80	100	fz	
	3	2XD	0,1-0,2xD	1,5xD	0,5xD	1xD	95	125	fz	
K	1	2XD	0,1-0,2xD	1,5xD	0,5xD	1xD	180	220	fz	
	2	2XD	0,1-0,2xD	1,5xD	0,5xD	1xD	150	180	fz	
	3	2XD	0,1-0,2xD	1,5xD	0,5xD	1xD	120	150	fz	
S	1	2XD	0,1xD	1,5xD	0,5xD	1xD	60	100	fz	
	2	2XD	0,1xD	1,5xD	0,5xD	1xD	50	80	fz	
	3	2XD	0,1xD	0,3xD	0,3xD	1xD	30	50	fz	
	4	2XD	0,1xD	0,3xD	0,3xD	1xD	25	40	fz	
H	1	2XD	0,1xD	0,3xD	0,75xD	1xD	80	110	fz	

- P1 ACCIAIO NON LEGATO <700 N/mm²
 P2 ACCIAIO BASSO LEGATO <24 HRC 700-1000 N/mm²
 P3 ACCIAIO ALTO LEGATO <30 HRC <700 N-mm²
 P4 ACCIAIO TEMPRATO 30-38 HRC
 P5 ACCIAIO TEMPRATO 38-48 HRC
 N1 ACCIAIO INOX AUSTENITICO 500-950 N-mm²
 N2 ACCIAIO INOX FERRITICO E MARTENSITICO 500-950 N/mm²
 N3 ACCIAIO INOX MARTENSITICO 800-1000 N/mm²
 K1 GHISA GRIGIA 100-400 N/mm²
 K2 GHISA GRIGIA NODULARE 200-800 N/mm²
 K3 GHISA GRIGIA MALLEABILE 350-700 N/mm²
 S1 LEGHE TITANIO MEDIA RESISTENZA 950 N/mm²
 S2 LEGHE TITANIO ALTA RESISTENZA 900-1400 N/mm²
 S3 LEGHE BASE NICHEL MEDIA RESISTENZA 950 N/mm²
 S4 LEGHE BASE NICHEL ALTA RESISTENZA 900/1400 N/mm²
 H1 ACCIAIO TEMPRATO 48-56 HRC

XURY-EVO / XURY-TITAN / ILEX / STAR-EVO / STAR-TOP

Avanzamento per dente consigliato (fz=mm/dente) per la contornatura (A) e (B), Per la scanalatura a C, ridurre il valore fz del 20%,
Recommended feed per tooth (fz=mm/tooth) for contouring (A) and (B), For C-slot, reduce the fz-value by 20%,

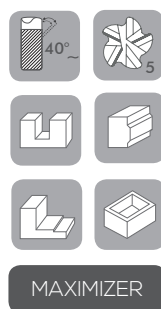
		D1 / Diametro / Diameter										
		mm	3,0	4,0	5,0	6,0	8,0	10,0	12,0	14,0	16,0	20,0
P	1	fz	0,022	0,028	0,035	0,045	0,06	0,07	0,08	0,09	0,1	0,11
	2	fz	0,022	0,028	0,035	0,045	0,06	0,07	0,08	0,09	0,1	0,11
	3	fz	0,022	0,028	0,035	0,045	0,06	0,07	0,08	0,09	0,1	0,11
	4	fz	0,018	0,023	0,030	0,035	0,050	0,060	0,070	0,080	0,09	0,10
	5	fz	0,015	0,017	0,025	0,030	0,040	0,050	0,055	0,065	0,07	0,08
M	1	fz	0,018	0,023	0,030	0,035	0,050	0,060	0,070	0,080	0,09	0,10
	2	fz	0,022	0,028	0,035	0,045	0,06	0,07	0,08	0,09	0,1	0,11
	3	fz	0,020	0,025	0,030	0,035	0,045	0,07	0,075	0,09	0,095	0,105
K	1	fz	0,022	0,028	0,035	0,045	0,06	0,07	0,08	0,09	0,1	0,11
	2	fz	0,018	0,023	0,030	0,035	0,050	0,060	0,070	0,080	0,09	0,10
	3	fz	0,018	0,023	0,030	0,035	0,050	0,060	0,070	0,080	0,09	0,10
S	1	fz	0,022	0,028	0,035	0,035	0,05	0,06	0,06	0,1	0,1	0,11
	2	fz	0,015	0,020	0,025	0,025	0,04	0,040	0,040	0,06	0,06	0,07
	3	fz	0,022	0,028	0,035	0,035	0,05	0,06	0,06	0,1	0,1	0,11
	4	fz	0,015	0,020	0,025	0,025	0,04	0,040	0,040	0,06	0,06	0,07
H	1	fz	0,018	0,023	0,030	0,035	0,050	0,060	0,070	0,080	0,09	0,10

- P1 NON ALLOYED STEEL <700 N/mm²
P2 LOW ALLOYED STEEL <24HRC 700-1000 N/mm²
P3 HIGH ALLOYED STEEL <30HRC <700 N/mm²
P4 HARDENED STEEL 30-38HRC
P5 HARDENED STEEL 38-48HRC
M1 STAINLESS STEEL, AUSTENIC 500-950 N/mm²
M2 STAINLESS STEEL, FERRITIC, MARTENSITIC 500-950 N/mm²
M3 STAINLESS STEEL, MARTENSITIC 800-1000 N/mm²
K1 GREY CAST IRON 100-400 N/mm²
K2 ALLOYED GREY-NODULAR CAST IRON 200-800 N/mm²
K3 MALLEABLE CAST IRON 350-700 N/mm²
S1 TITANIUM ALLOYS, MEDIUM STRENGTH 950 N/mm²
S2 TITANIUM ALLOYS, HIGH STRENGTH 900-1400 N/mm²
S3 NICKEL BASED ALLOYS, MEDIUM STRENGTH 950 N/mm²
S4 HEAT RESISTANT NICKEL BASED ALLOYS, HIGH STRENGTH 900-1400 N/mm²
H1 HARDENED STEEL 48-56HRC

XURY-TROCO: FRESA Z5 TROCOIDALE – Scarico Ribassato

- EN** Z5 XURY-TROCO | REDUCED NECK
- FR** Z5 XURY-TROCO | COL RÉDUIT
- DE** Z5 XURY-TROCO | REDUZIERTER HALS

- IT** Acciaio, acciaio inossidabile, ghisa, rame, titanio, leghe resistenti al calore e acciaio temprato 56 HRC.
- EN** Steel, stainless steel, cast iron, copper, titanium, heat resistance alloys and hardened steels up to 56 HRC.
- FR** Acier, acier inoxydable, fonte grise, cuivre, titane, alliages de résistance à la chaleur et acier jusqu'à 56 hrc
- DE** Stahl, rostfreier stahl, gubeisen, kupfer, titan, warmfeste legierungen und gehärteter stahl 56 HRC.

Z5


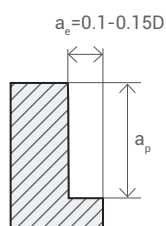
SCARICO RIBASSATO

Reduced neck

Ref.	Dimensione - Dimension (mm)					
5 Taglienti(Z5)	Dc	d	Lc	U	C-45°	L
XURY-TROCO5060U25H	6	6	18	25	0,1	62
XURY-TROCO5080U30H	8	8	24	30	0,15	70
XURY-TROCO5100U35H	10	10	30	35	0,2	80
XURY-TROCO5120U45H	12	12	36	45	0,2	94
XURY-TROCO5160U55H	16	16	48	55	0,4	110
XURY-TROCO5200U70H	20	20	60	70	0,4	126

XURY-TROCO Z5

Materiale pezzo Workpiece material	Ghisa, Acciaio al carbonio, Acciaio legato -30 HRC Cast iron, Carbon steel, Alloy steel -30 HRC		Acciaio inossidabile Stainless steel		Acciaio pretemprato, Acciaio temprato 30-40HRC Pre-hardened steel, Quenched and tempered steel 30-40HRC		Acciaio pretemprato, Acciaio temprato 45-55HRC Pre-hardened steel, Quenched and tempered steel 45-55HRC	
6	250-350	0,065	150-220	0,055	150-230	0,055	55-75	0,050
8	250-350	0,075	150-220	0,065	150-230	0,065	55-75	0,060
10	250-350	0,100	150-220	0,080	150-230	0,080	55-75	0,070
12	250-350	0,120	150-220	0,100	150-230	0,100	55-75	0,090
16	250-350	0,150	150-220	0,130	150-230	0,130	55-75	0,110
20	250-350	0,200	150-220	0,170	150-230	0,170	55-75	0,130

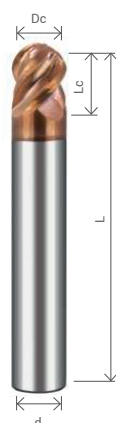
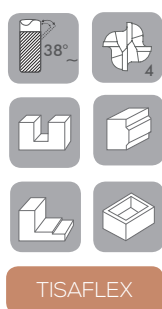


BALL-EVO: FRESA Z4 ELICA VARIABLE SFERICA / CONICA 1,5°

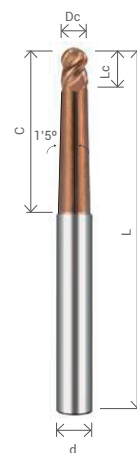
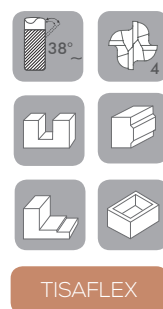
- EN** Z4 BALL-EVO BALL NOSE END MILL I UNEQUAL HELIX ANGLES
FR Z4 BALL-EVO FRAISE CYLINDRIQUE HÉMISPHERIQUE I HÉLICE DIFFÉRENTE
DE Z4 BALL-EVO UNGLEICHER DRALLWINKEL I KUGELFRÄSER

- IT** Acciaio, acciaio inossidabile, ghisa, rame, titanio, leghe resistenti al calore e acciaio temprato 65 HRC.
EN Steel, stainless steel, cast iron, copper, titanium, heat resistance alloys and hardened steels up to 65 HRC.
FR Acier, acier inoxydable, fonte grise, cuivre, titane, alliages de résistance à la chaleur et acier jusqu'à 65 HRC.
DE Stahl, rostfreier stahl, gubeisen, kupfer, titan, warmfeste legierungen und gehärteter stahl 65 HRC.

Z4 Sferica



Z4 Conica



SFERICA - Spherical

Ref.	Dimensione - Dimension (mm)			
4 Taglienti (Z4)	Dc	d	Lc	L
BALL-EVO-4060	6	6	8	50
BALL-EVO-4060L	6	6	8	80
BALL-EVO-4060XL	6	6	8	100
BALL-EVO-4060XXL	6	6	8	150
BALL-EVO-4080	8	8	10	60
BALL-EVO-4080L	8	8	10	100
BALL-EVO-4080XL	8	8	10	150
BALL-EVO-4100	10	10	13	72
BALL-EVO-4100L	10	10	13	100
BALL-EVO-4100XL	10	10	13	150
BALL-EVO-4100XXL	10	10	13	200
BALL-EVO-4120	12	12	15	75
BALL-EVO-4120L	12	12	15	100
BALL-EVO-4120XL	12	12	15	150
BALL-EVO-4120XXL	12	12	15	200

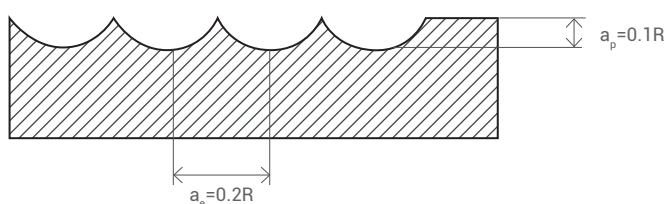
CONICA 1,5° - Conical 1,5°

Ref.	Dimensione - Dimension (mm)				
4 Taglienti (Z4)	Dc	d	Lc	C	L
BALL-EVO-CON4060	6	8	8	32	80
BALL-EVO-CON4060L	6	8	8	45	108
BALL-EVO-CON4080	8	10	10	32	80
BALL-EVO-CON4080L	8	10	10	48	108

BALL-EVO Z4

Materiale pezzo Workpiece material	Cast iron, Carbon steel, Alloy steel -30 HRC		Stainless steel		Pre-hardened steel, Quenched and tempered steel -40HRC		Pre-hardened steel, Quenched and tempered steel -50HRC		Hardened steel 56-62HRC	
	Rotante (minimo -1) Rotating (minimum -1)	Avanzamento (mm/minuto) Feed (mm/minute)	Rotante (minimo -1) Rotating (minimum -1)	Avanzamento (mm/minuto) Feed (mm/minute)	Rotante (minimo -1) Rotating (minimum -1)	Avanzamento (mm/minuto) Feed (mm/minute)	Rotante (minimo -1) Rotating (minimum -1)	Avanzamento (mm/minuto) Feed (mm/minute)	Rotante (minimo -1) Rotating (minimum -1)	Avanzamento (mm/minuto) Feed (mm/minute)
1.0	40000	960	22300	240	32000	385	25000	330	22280	295
1.5	32000	1020	16500	255	24000	435	19000	330	16700	295
2.0	24000	1080	11150	275	16000	480	13000	330	11140	295
2.5	15500	1150	5550	445	8000	665	6500	450	5570	385
3.0	15500	1150	5550	445	8000	665	6500	450	5570	385
4.0	11500	1150	5550	445	8000	665	6500	450	5570	385
5.0	9500	1270	4450	445	6400	665	5000	455	4455	405
6.0	8000	1270	3700	470	5300	700	4200	470	3715	420
8.0	6000	1575	2750	550	4000	850	3200	535	2785	465
10	4800	1455	2200	520	3200	785	2500	535	2230	465
12	4000	1330	1850	520	2650	740	2100	505	1855	450
14	3500	1300	1550	500	2400	730	1800	475	1670	425
16	3000	1270	1350	455	2000	725	1600	455	1395	395
18	2700	1200	1250	455	1800	700	1400	425	1275	375
20	2400	1150	1100	445	1600	675	1250	400	1115	360

Massima profondità di taglio
Max. Cutting depth



TURBO: FRESA PER ALTO AVANZAMENTO - Serie Normale / Serie Lunga

EN Z4 TURBO HIGH FEED END MILL | Normal and Long Series

FR Z4 TURBO FRAISE CYLINDRIQUE DE HAUTE AVANCE | Normale et Longue Series

DE Z4 TURBO HOCHVORSCHUBFRÄSER | Normale und Lange Series

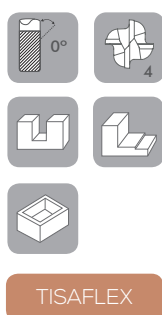
IT Acciaio, acciaio inossidabile, ghisa, rame, titanio, leghe resistenti al calore e acciaio temprato 65 HRC.

EN Steel, stainless steel, cast iron, copper, titanium, heat resistance alloys and hardened steels up to 65 HRC.

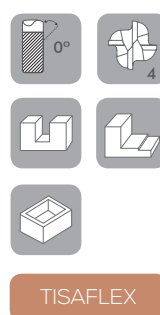
FR Acier, acier inoxydable, fonte grise, cuivre, titane, alliages de résistance à la chaleur et acier jusqu'à 65 HRC.

DE Stahl, rostfreier stahl, gubeisen, kupfer, titan, warmfeste legierungen und gehärteter stahl 65 HRC.

Z4 Serie Normale



Z4 Serie Lunga



SERIE NORMALE - Normal Series

Ref.	Dimensione - Dimension (mm)					
4 Taglienti (Z4)	Dc	d	R	Lc	U	L
TURBO4030X-R0,5	3	6	0,5	1,5	12	60
TURBO4040X-R0,5	4	6	0,5	2	12	60
TURBO4060X-R1.0	6	6	1	3	14	60
TURBO4080X-R2.0	8	8	2	4	18	60
TURBO4100X-R2.0	10	10	2	5	20	72
TURBO4120X-R2.0	12	12	2	6	22	83

SERIE LUNGA - Long Series

Ref.	Dimensione - Dimension (mm)					
4 Taglienti (Z4)	Dc	d	R	Lc	U	L
TURBO4030XL-R0,5	3	6	0,5	1,5	20	80
TURBO4040XL-R0,5	4	6	0,5	2	20	80
TURBO4060XL-R1.0	6	6	1	3	30	80
TURBO4080XL-R2.0	8	8	2	4	40	80
TURBO4100XL-R2.0	10	10	2	5	50	100
TURBO4120XL-R2.0	12	12	2	6	50	110

TURBO Z4

Materiale pezzo Workpiece material	Ghisa, Acciaio al carbonio, Acciaio legato -30 HRC Cast iron, Carbon steel, Alloy steel -30 HRC		Acciaio pretemprato, Acciaio temprato -40HRC Pre-hardened steel, Quenched and tempered steel -40HRC		Acciaio pretemprato, Acciaio temprato -45HRC Pre-hardened steel, Quenched and tempered steel -45HRC		Acciaio pretemprato, Acciaio temprato -50HRC Pre-hardened steel, Quenched and tempered steel -50HRC		Acciaio temprato 55-62HRC Hardened steel 55-62HRC	
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)	Rotante (minimo -1) Rotating (minimum -1)	Avanzamento (mm/minuto) Feed (mm/minute)	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	10500	6250	8500	4500	7450	3900	5300	2600	3200	995
4	7950	6600	6350	4800	5550	4200	4000	2750	2400	1050
6	5300	7000	4250	5100	3700	4450	2650	2850	1600	1150
8	4550	7000	3200	5100	2800	4450	2000	2850	1200	1150
10	3200	7000	2550	5100	2250	4450	1600	2850	955	1150
12	2650	7000	2100	5100	1850	4450	1350	2850	795	1150
	max Ap: 0,5mm Ae: 0,5D Ap: 0,2R		max Ap: 0,5mm Ae: 0,5D Ap: 0,2R		max Ap: 0,5mm Ae: 0,5D Ap: 0,2R		max Ap: 0,5mm Ae: 0,5D Ap: 0,2R		max Ap: 0,5mm Ae: 0,5D Ap: 0,2R	

FRESA A SMUSSARE 60°/90°

EN Z4/Z6 COUNTERSINKER, 60°/90°

FR Z4/Z6 CHAMFREIN, 60°/90°

DE Z4/Z6 KEGELSENKER, 60°/90°

IT Acciaio, acciaio inossidabile, ghisa, rame, titanio, leghe resistenti al calore e acciaio temprato 65 HRC.

EN Steel, stainless steel, cast iron, copper, titanium, heat resistance alloys and hardened steels up to 65 HRC.

FR Acier, acier inoxydable, fonte grise, cuivre, titane, alliages de résistance à la chaleur et acier jusqu'à 65 HRC.

DE Stahl, rostfreier stahl, gubeisen, kupfer, titan, warmfeste legierungen und gehärteter stahl 65 HRC.

Z4/Z6 60°



Z4/Z6 90°



FRESE A SMUSSARE Z4/Z6 60°

Z4/Z6 COUNTERSINKER 60°

Ref.	Dimensione - Dimension (mm)			
	Dc	d	Z	L
MES-ACH60-4040	4	4	4	50
MES-ACH60-4060	6	6	4	50
MES-ACH60-4080	8	8	4	60
MES-ACH60-4100	10	10	4	72
MES-ACH60-6100	10	10	6	72
MES-ACH60-4120	12	12	4	75
MES-ACH60-6120	12	12	6	75

FRESE A SMUSSARE Z4/Z6 90°

Z4/Z6 COUNTERSINKER 90°

Ref.	Dimensione - Dimension (mm)			
	Dc	d	Z	L
MES-ACH90-4040	4	4	4	50
MES-ACH90-4060	6	6	4	50
MES-ACH90-4080	8	8	4	60
MES-ACH90-6080	8	8	6	60
MES-ACH90-4100	10	10	4	72
MES-ACH90-6100	10	10	6	72
MES-ACH90-4120	12	12	4	75
MES-ACH90-6120	12	12	6	75
MES-ACH90-4160	16	16	4	92
MES-ACH90-6160	16	16	6	92

MES-ACH 60°/90° Z4/Z6

Materiale pezzo Workpiece material	Ghisa, Acciaio al carbonio, Acciaio legato -30 HRC Cast iron, Carbon steel, Alloy steel -30 HRC		Acciaio inossidabile Stainless steel		Acciaio pretemprato, Acciaio temprato -40-55HRC Pre-hardened steel, Quenched and tempered steel -40-55HRC		Materiali non ferritici Non ferrite materials	
Diametro Ø (mm) Diameter Ø (mm)	Vc (m/min)	fz (mm/z)	Vc (m/min)	fz (mm/z)	Vc (m/min)	fz (mm/z)	Vc (m/min)	fz (mm/z)
4	90	0,02	60-90	0,02	70-120	0,02	200-280	0,02
6	90	0,03	60-90	0,03	70-120	0,03	200-280	0,03
8	90	0,04	60-90	0,04	70-120	0,04	200-280	0,04
10	90	0,05	60-90	0,05	70-120	0,05	200-280	0,05
12	90	0,06	60-90	0,06	70-120	0,06	200-280	0,06
16	90	0,08	60-90	0,08	70-120	0,08	200-280	0,08



06

PUNTE IN METALLO DURO
SOLID CARBIDE DRILLS
FORET EN CARBURE MONOBLOC
VOLLHARTMETALLBOHRER

PUNTE METALLO DURO 3XD - DIN6537K

EN 3XD SOLID CARBIDE DRILL | DIN6537K

FR 3XD FORET EN CARBURE MONOBLOC | DIN6537K

DE 3XD VOLLHARTMETALLBOHRER | DIN6537K

IT Acciaio, acciaio inossidabile, ghisa, rame, titanio, leghe resistenti al calore e acciaio temprato 56 HRC.

EN Steel, stainless steel, cast iron, copper, titanium, heat resistance alloys and hardened steels up to 56 HRC.

FR Acier, acier inoxydable, fonte grise, cuivre, titane, alliages de résistance à la chaleur et acier jusqu'à 56 hrc

DE Stahl, rostfreier stahl, gubeisen, kupfer, titan, warmfeste legierungen und gehärteter stahl 56 HRC.



ALTIN



Dc = tolleranza h8
d = tolleranza h6

PUNTE MD 3XD - DIN6537K

3XD SOLID CARBIDE DRILL - DIN6537K

Ref.	Dimensione - Dimension (mm)				
	Dc	d	U	Lc	L
PN0300D3	3	6	20	14	62
PN0310D3	3,1	6	20	14	62
PN0320D3	3,2	6	20	14	62
PN0330D3	3,3	6	20	14	62
PN0340D3	3,4	6	20	14	62
PN0350D3	3,5	6	20	14	62
PN0360D3	3,6	6	20	14	62
PN0370D3	3,7	6	20	14	62
PN0380D3	3,8	6	24	17	66
PN0390D3	3,9	6	24	17	66
PN0400D3	4	6	24	17	66
PN0410D3	4,1	6	24	17	66
PN0420D3	4,2	6	24	17	66
PN0430D3	4,3	6	24	17	66
PN0440D3	4,4	6	24	17	66
PN0450D3	4,5	6	24	17	66
PN0460D3	4,6	6	24	17	66

PUNTE MD 3XD - DIN6537K

3XD SOLID CARBIDE DRILL - DIN6537K

Ref.	Dimensione - Dimension (mm)				
	Dc	d	U	Lc	L
PN0470D3	4,7	6	24	17	66
PN0480D3	4,8	6	28	20	66
PN0490D3	4,9	6	28	20	66
PN0500D3	5	6	28	20	66
PN0510D3	5,1	6	28	20	66
PN0520D3	5,2	6	28	20	66
PN0530D3	5,3	6	28	20	66
PN0540D3	5,4	6	28	20	66
PN0550D3	5,5	6	28	20	66
PN0560D3	5,6	6	28	20	66
PN0570D3	5,7	6	28	20	66
PN0580D3	5,8	6	28	20	66
PN0590D3	5,9	6	28	20	66
PN0600D3	6	6	28	20	66
PN0610D3	6,1	8	34	24	79
PN0620D3	6,2	8	34	24	79
PN0630D3	6,3	8	34	24	79

PUNTE METALLO DURO 3XD - DIN6537K

PUNTE MD 3XD - DIN6537K

3XD SOLID CARBIDE DRILL - DIN6537K

Ref.	Dimensione - Dimension (mm)				
	Dc	d	U	Lc	L
PN0640D3	6,4	8	34	24	79
PN0650D3	6,5	8	34	24	79
PN0660D3	6,6	8	34	24	79
PN0670D3	6,7	8	34	24	79
PN0680D3	6,8	8	34	24	79
PN0690D3	6,9	8	34	24	79
PN0700D3	7	8	34	24	79
PN0710D3	7,1	8	41	29	79
PN0720D3	7,2	8	41	29	79
PN0730D3	7,3	8	41	29	79
PN0740D3	7,4	8	41	29	79
PN0750D3	7,5	8	41	29	79
PN0760D3	7,6	8	41	29	79
PN0770D3	7,7	8	41	29	79
PN0780D3	7,8	8	41	29	79
PN0790D3	7,9	8	41	29	79
PN0800D3	8	8	41	29	79
PN0810D3	8,1	10	47	35	89
PN0820D3	8,2	10	47	35	89
PN0830D3	8,3	10	47	35	89
PN0840D3	8,4	10	47	35	89
PN0850D3	8,5	10	47	35	89
PN0860D3	8,6	10	47	35	89
PN0870D3	8,7	10	47	35	89
PN0880D3	8,8	10	47	35	89
PN0890D3	8,9	10	47	35	89
PN0900D3	9	10	47	35	89
PN0910D3	9,1	10	47	35	89
PN0920D3	9,2	10	47	35	89
PN0930D3	9,3	10	47	35	89
PN0940D3	9,4	10	47	35	89
PN0950D3	9,5	10	47	35	89
PN0960D3	9,6	10	47	35	89
PN0970D3	9,7	10	47	35	89
PN0980D3	9,8	10	47	35	89
PN0990D3	9,9	10	47	35	89
PN1000D3	10	10	47	35	89
PN1010D3	10,1	12	55	40	102
PN1020D3	10,2	12	55	40	102
PN1030D3	10,3	12	55	40	102

PUNTE MD 3XD - DIN6537K

3XD SOLID CARBIDE DRILL - DIN6537K

Ref.	Dimensione - Dimension (mm)				
	Dc	d	U	Lc	L
PN1040D3	10,4	12	55	40	102
PN1050D3	10,5	12	55	40	102
PN1060D3	10,6	12	55	40	102
PN1070D3	10,7	12	55	40	102
PN1080D3	10,8	12	55	40	102
PN1090D3	10,9	12	55	40	102
PN1100D3	11	12	55	40	102
PN1110D3	11,1	12	55	40	102
PN1120D3	11,2	12	55	40	102
PN1130D3	11,3	12	55	40	102
PN1140D3	11,4	12	55	40	102
PN1150D3	11,5	12	55	40	102
PN1160D3	11,6	12	55	40	102
PN1170D3	11,7	12	55	40	102
PN1180D3	11,8	12	55	40	102
PN1190D3	11,9	12	55	40	102
PN1200D3	12	12	55	40	102
PN1220D3	12,2	14	60	43	107
PN1250D3	12,5	14	60	43	107
PN1270D3	12,7	14	60	43	107
PN1280D3	12,8	14	60	43	107
PN1300D3	13	14	60	43	107
PN1310D3	13,1	14	60	43	107
PN1350D3	13,5	14	60	43	107
PN1380D3	13,8	14	60	43	107
PN1400D3	14	14	60	43	107
PN1450D3	14,5	16	65	45	115
PN1480D3	14,8	16	65	45	115
PN1500D3	15	16	65	45	115
PN1550D3	15,5	16	65	45	115
PN1600D3	16	16	65	45	115
PN1650D3	16,5	18	73	51	123
PN1700D3	17	18	73	51	123
PN1750D3	17,5	18	73	51	123
PN1800D3	18	18	73	51	123
PN1850D3	18,5	20	79	55	131
PN1900D3	19	20	79	55	131
PN1950D3	19,5	20	79	55	131
PN2000D3	20	20	79	55	131

PUNTE METALLO DURO 5XD - DIN6537L

EN 5xD SOLID CARBIDE DRILL | DIN6537L

FR 5xD FORET EN CARBURE MONOBLOC | DIN6537L

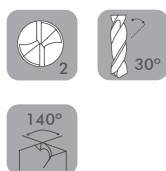
DE 5xD VOLLHARTMETALLBOHRER | DIN6537L

IT Acciaio, acciaio inossidabile, ghisa, rame, titanio, leghe resistenti al calore e acciaio temprato 56 HRC.

EN Steel, stainless steel, cast iron, copper, titanium, heat resistance alloys and hardened steels up to 56 HRC.

FR Acier, acier inoxydable, fonte grise, cuivre, titane, alliages de résistance à la chaleur et acier jusqu'à 56 hrc

DE Stahl, rostfreier stahl, gubeisen, kupfer, titan, warmfeste legierungen und gehärteter stahl 56 HRC.



ALTIN



Dc = tolleranza h8
d = tolleranza h6

PUNTE MD 5XD - DIN6537L

5XD SOLID CARBIDE DRILL - DIN6537L

Ref.	Dimensiones				
	Dc	d	U	Lc	L
PN0300D5	3	6	28	23	66
PN0310D5	3,1	6	28	23	66
PN0320D5	3,2	6	28	23	66
PN0330D5	3,3	6	28	23	66
PN0340D5	3,4	6	28	23	66
PN0350D5	3,5	6	28	23	66
PN0360D5	3,6	6	28	23	66
PN0370D5	3,7	6	28	23	66
PN0380D5	3,8	6	36	29	74
PN0390D5	3,9	6	36	29	74
PN0400D5	4	6	36	29	74
PN0410D5	4,1	6	36	29	74
PN0420D5	4,2	6	36	29	74
PN0430D5	4,3	6	36	29	74
PN0440D5	4,4	6	36	29	74
PN0450D5	4,5	6	36	29	74
PN0460D5	4,6	6	36	29	74

PUNTE MD 5XD - DIN6537L

5XD SOLID CARBIDE DRILL - DIN6537L

Ref.	Dimensiones				
	Dc	d	U	Lc	L
PN0470D5	4,7	6	36	29	74
PN0480D5	4,8	6	44	35	82
PN0490D5	4,9	6	44	35	82
PN0500D5	5	6	44	35	82
PN0510D5	5,1	6	44	35	82
PN0520D5	5,2	6	44	35	82
PN0530D5	5,3	6	44	35	82
PN0540D5	5,4	6	44	35	82
PN0550D5	5,5	6	44	35	82
PN0560D5	5,6	6	44	35	82
PN0570D5	5,7	6	44	35	82
PN0580D5	5,8	6	44	35	82
PN0590D5	5,9	6	44	35	82
PN0600D5	6	6	44	35	82
PN0610D5	6,1	8	53	43	91
PN0620D5	6,2	8	53	43	91
PN0630D5	6,3	8	53	43	91

PUNTE METALLO DURO 5XD - DIN6537L

PUNTE MD 5XD - DIN6537L 5XD SOLID CARBIDE DRILL - DIN6537L

Ref.	Dimensiones				
	Dc	d	U	Lc	L
PN0640D5	6,4	8	53	43	91
PN0650D5	6,5	8	53	43	91
PN0660D5	6,6	8	53	43	91
PN0670D5	6,7	8	53	43	91
PN0680D5	6,8	8	53	43	91
PN0690D5	6,9	8	53	43	91
PN0700D5	7	8	53	43	91
PN0710D5	7,1	8	53	43	91
PN0720D5	7,2	8	53	43	91
PN0730D5	7,3	8	53	43	91
PN0740D5	7,4	8	53	43	91
PN0750D5	7,5	8	53	43	91
PN0760D5	7,6	8	53	43	91
PN0770D5	7,7	8	53	43	91
PN0780D5	7,8	8	53	43	91
PN0790D5	7,9	8	53	43	91
PN0800D5	8	8	53	43	91
PN0810D5	8,1	10	61	49	103
PN0820D5	8,2	10	61	49	103
PN0830D5	8,3	10	61	49	103
PN0840D5	8,4	10	61	49	103
PN0850D5	8,5	10	61	49	103
PN0860D5	8,6	10	61	49	103
PN0870D5	8,7	10	61	49	103
PN0880D5	8,8	10	61	49	103
PN0890D5	8,9	10	61	49	103
PN0900D5	9	10	61	49	103
PN0910D5	9,1	10	61	49	103
PN0920D5	9,2	10	61	49	103
PN0930D5	9,3	10	61	49	103
PN0940D5	9,4	10	61	49	103
PN0950D5	9,5	10	61	49	103
PN0960D5	9,6	10	61	49	103
PN0970D5	9,7	10	61	49	103
PN0980D5	9,8	10	61	49	103
PN0990D5	9,9	10	61	49	103
PN1000D5	10	10	61	49	103
PN1010D5	10,1	12	71	56	118
PN1020D5	10,2	12	71	56	118
PN1030D5	10,3	12	71	56	118

PUNTE MD 5XD - DIN6537L 5XD SOLID CARBIDE DRILL - DIN6537L

Ref.	Dimensiones				
	Dc	d	U	Lc	L
PN1040D5	10,4	12	71	56	118
PN1050D5	10,5	12	71	56	118
PN1060D5	10,6	12	71	56	118
PN1070D5	10,7	12	71	56	118
PN1080D5	10,8	12	71	56	118
PN1090D5	10,9	12	71	56	118
PN1100D5	11	12	71	56	118
PN1110D5	11,1	12	71	56	118
PN1120D5	11,2	12	71	56	118
PN1130D5	11,3	12	71	56	118
PN1140D5	11,4	12	71	56	118
PN1150D5	11,5	12	71	56	118
PN1160D5	11,6	12	71	56	118
PN1170D5	11,7	12	71	56	118
PN1180D5	11,8	12	71	56	118
PN1190D5	11,9	12	71	56	118
PN1200D5	12	12	71	56	118
PN1220D5	12,2	14	77	60	124
PN1250D5	12,5	14	77	60	124
PN1270D5	12,7	14	77	60	124
PN1280D5	12,8	14	77	60	124
PN1300D5	13	14	77	60	124
PN1310D5	13,1	14	77	60	124
PN1350D5	13,5	14	77	60	124
PN1380D5	13,8	14	77	60	124
PN1400D5	14	14	77	60	124
PN1450D5	14,5	16	83	63	133
PN1480D5	14,8	16	83	63	133
PN1500D5	15	16	83	63	133
PN1550D5	15,5	16	83	63	133
PN1600D5	16	16	83	63	133
PN1650D5	16,5	18	93	71	143
PN1700D5	17	18	93	71	143
PN1750D5	17,5	18	93	71	143
PN1800D5	18	18	93	71	143
PN1850D5	18,5	20	101	77	153
PN1900D5	19	20	101	77	153
PN1950D5	19,5	20	101	77	153
PN2000D5	20	20	101	77	153

PUNTA 3XD/5XD

Materiale pezzo Workpiece material	Acciaio dolce HB≤180 Mild steel HB≤180		Acciaio al carbonio, Acciaio legato -30 HRC Carbon steel, Alloy steel -30 HRC		Acciaio pretemprato, 40-50HRC Pre-hardened steel, 40-50HRC		Acciaio inossidabile Stainless steel		Ghisa Cash iron		Ghisa nodulare GGG Nodular Cash iron GGG		Lega di alluminio Aluminum alloy		Lega resistente al calore Heat resistant alloy	
Vc	60-120 m/min		60-120 m/min		40-70 m/min		25-40 m/min		60-120 m/min		50-100 m/min		60-140 m/min		12-25 m/min	
Ø (mm)	n (min ⁻¹)		f (mm/r)		n (min ⁻¹)		f (mm/r)		n (min ⁻¹)		f (mm/r)		n (min ⁻¹)		f (mm/r)	
3	9500	0,09-0,12	9500	0,09-0,12	6300	0,09-0,12	3700	0,03-0,07	9500	0,09-0,12	7400	0,09-0,12	10600	0,09-0,12	2100	0,03-0,06
4	7000	0,10-0,15	7000	0,10-0,15	4700	0,10-0,15	2700	0,04-0,08	7000	0,10-0,15	5600	0,10-0,15	8000	0,10-0,15	1600	0,04-0,07
5	5700	0,12-0,18	5700	0,12-0,18	3800	0,12-0,18	2200	0,05-0,10	5700	0,12-0,18	4500	0,12-0,18	6400	0,12-0,18	1250	0,05-0,09
6	4700	0,14-0,20	4700	0,14-0,20	3100	0,14-0,20	1850	0,06-0,12	4700	0,14-0,20	3700	0,14-0,20	5300	0,14-0,20	1050	0,06-0,11
8	3600	0,16-0,24	3600	0,16-0,24	2400	0,16-0,24	1400	0,08-0,16	3600	0,16-0,24	2800	0,16-0,24	4000	0,16-0,24	800	0,08-0,14
10	2800	0,18-0,27	2800	0,18-0,27	1900	0,18-0,27	1100	0,10-0,18	2800	0,18-0,27	2200	0,16-0,27	3200	0,18-0,27	600	0,10-0,16
12	2400	0,20-0,30	2400	0,20-0,30	1600	0,20-0,30	930	0,12-0,20	2400	0,20-0,30	1900	0,20-0,30	2700	0,20-0,30	500	0,12-0,18
14	2100	0,22-0,35	2100	0,22-0,35	1400	0,22-0,35	800	0,13-0,22	2100	0,22-0,35	1600	0,22-0,35	2300	0,22-0,35	450	0,13-0,20
16	1800	0,25-0,36	1800	0,25-0,36	1200	0,25-0,36	700	0,14-0,25	1800	0,25-0,36	1400	0,25-0,36	2000	0,25-0,36	400	0,14-0,25
18	1600	0,28-0,38	1600	0,28-0,38	1100	0,28-0,38	620	0,15-0,28	1600	0,28-0,38	1200	0,28-0,38	1800	0,28-0,38	350	0,15-0,25
20	1400	0,30-0,40	1400	0,30-0,40	950	0,30-0,40	550	0,16-0,30	1400	0,30-0,40	1100	0,30-0,40	1600	0,30-0,40	320	0,16-0,20

PUNTE METALLO DURO 5XD CON REFRIGERAZIONE DIN6537L

EN 5XD SOLID CARBIDE DRILL | DIN6537L | INTERNAL COOLANT

FR 5XD FORET EN CARBURE MONOBLOC | DIN6537L | AVEC TROUS DE LUBRIFICATION

DE 5XD VOLLHARTMETALLBOHRER | DIN6537L | INTEME KÜHLUNG

IT Acciaio, acciaio inossidabile, ghisa, rame, titanio, leghe resistenti al calore e acciaio temprato 56 HRC.

EN Steel, stainless steel, cast iron, copper, titanium, heat resistance alloys and hardened steels up to 56 HRC.

FR Acier, acier inoxydable, fonte grise, cuivre, titane, alliages de résistance à la chaleur et acier jusqu'à 56 hrc

DE Stahl, rostfreier stahl, gubeisen, kupfer, titan, warmfeste legierungen und gehärteter stahl 56 HRC.



ALTIN



Dc = tolleranza h8
d = tolleranza h6

PUNTE MD 5XD CH - DIN6537L

5XD CH SOLID CARBIDE DRILL - DIN6537L

Ref.	Dimensione - Dimension (mm)				
	Dc	d	U	Lc	L
PN0300D5CH	3	6	28	23	66
PN0310D5CH	3,1	6	28	23	66
PN0320D5CH	3,2	6	28	23	66
PN0330D5CH	3,3	6	28	23	66
PN0340D5CH	3,4	6	28	23	66
PN0350D5CH	3,5	6	28	23	66
PN0360D5CH	3,6	6	28	23	66
PN0370D5CH	3,7	6	28	23	66
PN0380D5CH	3,8	6	36	29	74
PN0390D5CH	3,9	6	36	29	74
PN0400D5CH	4	6	36	29	74
PN0410D5CH	4,1	6	36	29	74
PN0420D5CH	4,2	6	36	29	74
PN0430D5CH	4,3	6	36	29	74
PN0440D5CH	4,4	6	36	29	74
PN0450D5CH	4,5	6	36	29	74
PN0460D5CH	4,6	6	36	29	74
PN0470D5CH	4,7	6	36	29	74

PUNTE MD 5XD CH - DIN6537L

5XD CH SOLID CARBIDE DRILL - DIN6537L

Ref.	Dimensione - Dimension (mm)				
	Dc	d	U	Lc	L
PN0480D5CH	4,8	6	44	35	82
PN0490D5CH	4,9	6	44	35	82
PN0500D5CH	5	6	44	35	82
PN0510D5CH	5,1	6	44	35	82
PN0520D5CH	5,2	6	44	35	82
PN0530D5CH	5,3	6	44	35	82
PN0540D5CH	5,4	6	44	35	82
PN0550D5CH	5,5	6	44	35	82
PN0560D5CH	5,6	6	44	35	82
PN0570D5CH	5,7	6	44	35	82
PN0580D5CH	5,8	6	44	35	82
PN0590D5CH	5,9	6	44	35	82
PN0600D5CH	6	6	44	35	82
PN0610D5CH	6,1	8	53	43	91
PN0620D5CH	6,2	8	53	43	91
PN0630D5CH	6,3	8	53	43	91
PN0640D5CH	6,4	8	53	43	91
PN0650D5CH	6,5	8	53	43	91

PUNTE METALLO DURO 5XD CON REFRIGERAZIONE - DIN6537L

PUNTE MD 5XD CH - DIN6537L

5XD CH SOLID CARBIDE DRILL - DIN6537L

Ref.	Dimensione - Dimension (mm)				
	Dc	d	U	Lc	L
PN0660D5CH	6,6	8	53	43	91
PN0670D5CH	6,7	8	53	43	91
PN0680D5CH	6,8	8	53	43	91
PN0690D5CH	6,9	8	53	43	91
PN0700D5CH	7	8	53	43	91
PN0710D5CH	7,1	8	53	43	91
PN0720D5CH	7,2	8	53	43	91
PN0730D5CH	7,3	8	53	43	91
PN0740D5CH	7,4	8	53	43	91
PN0750D5CH	7,5	8	53	43	91
PN0760D5CH	7,6	8	53	43	91
PN0770D5CH	7,7	8	53	43	91
PN0780D5CH	7,8	8	53	43	91
PN0790D5CH	7,9	8	53	43	91
PN0800D5CH	8	8	53	43	91
PN0810D5CH	8,1	10	61	49	103
PN0820D5CH	8,2	10	61	49	103
PN0830D5CH	8,3	10	61	49	103
PN0840D5CH	8,4	10	61	49	103
PN0850D5CH	8,5	10	61	49	103
PN0860D5CH	8,6	10	61	49	103
PN0870D5CH	8,7	10	61	49	103
PN0880D5CH	8,8	10	61	49	103
PN0890D5CH	8,9	10	61	49	103
PN0900D5CH	9	10	61	49	103
PN0910D5CH	9,1	10	61	49	103
PN0920D5CH	9,2	10	61	49	103
PN0930D5CH	9,3	10	61	49	103
PN0940D5CH	9,4	10	61	49	103
PN0950D5CH	9,5	10	61	49	103
PN0960D5CH	9,6	10	61	49	103
PN0970D5CH	9,7	10	61	49	103
PN0980D5CH	9,8	10	61	49	103
PN0990D5CH	9,9	10	61	49	103
PN1000D5CH	10	10	61	49	103
PN1010D5CH	10,1	12	71	56	118
PN1020D5CH	10,2	12	71	56	118
PN1030D5CH	10,3	12	71	56	118
PN1040D5CH	10,4	12	71	56	118

PUNTE MD 5XD CH - DIN6537L

5XD CH SOLID CARBIDE DRILL - DIN6537L

Ref.	Dimensione - Dimension (mm)				
	Dc	d	U	Lc	L
PN1050D5CH	10,5	12	71	56	118
PN1060D5CH	10,6	12	71	56	118
PN1070D5CH	10,7	12	71	56	118
PN1080D5CH	10,8	12	71	56	118
PN1090D5CH	10,9	12	71	56	118
PN1100D5CH	11	12	71	56	118
PN1110D5CH	11,1	12	71	56	118
PN1120D5CH	11,2	12	71	56	118
PN1130D5CH	11,3	12	71	56	118
PN1140D5CH	11,4	12	71	56	118
PN1150D5CH	11,5	12	71	56	118
PN1160D5CH	11,6	12	71	56	118
PN1170D5CH	11,7	12	71	56	118
PN1180D5CH	11,8	12	71	56	118
PN1190D5CH	11,9	12	71	56	118
PN1200D5CH	12	12	71	56	118
PN1220D5CH	12,2	14	77	60	124
PN1250D5CH	12,5	14	77	60	124
PN1270D5CH	12,7	14	77	60	124
PN1280D5CH	12,8	14	77	60	124
PN1300D5CH	13	14	77	60	124
PN1310D5CH	13,1	14	77	60	124
PN1350D5CH	13,5	14	77	60	124
PN1380D5CH	13,8	14	77	60	124
PN1400D5CH	14	14	77	60	124
PN1450D5CH	14,5	16	83	63	133
PN1480D5CH	14,8	16	83	63	133
PN1500D5CH	15	16	83	63	133
PN1550D5CH	15,5	16	83	63	133
PN1600D5CH	16	16	83	63	133
PN1650D5CH	16,5	18	93	71	143
PN1700D5CH	17	18	93	71	143
PN1750D5CH	17,5	18	93	71	143
PN1800D5CH	18	18	93	71	143
PN1850D5CH	18,5	20	101	77	153
PN1900D5CH	19	20	101	77	153
PN1950D5CH	19,5	20	101	77	153
PN2000D5CH	20	20	101	77	153

PUNTA 5XD CON FORI DI REFRIGERAZIONE

Materiale pezzo Workpiece material	Acciaio dolce HB≤180 Mild steel HB≤180		Acciaio al carbonio, Acciaio legato -30 HRC Carbon steel, Alloy steel -30 HRC		Acciaio pretemprato, 40-50HRC Pre-hardened steel, 40-50HRC		Acciaio inossidabile Stainless steel		Ghisa Cast iron		Ghisa nodulare GGG Nodular Cast iron GGG		Lega di alluminio Aluminum alloy		Lega resistente al calore Heat resistant alloy	
Vc	80-150 0m/min		80-150 0m/min		50-80 m/min		50-80 m/min		80-150 m/min		60-120 m/min		100-120 m/min		12-25 m/min	
Ø (mm)	n (min ⁻¹)		f (mm/r)		n (min ⁻¹)		f (mm/r)		n (min ⁻¹)		f (mm/r)		n (min ⁻¹)		f (mm/r)	
3	12700	0,09-0,12	12700	0,09-0,12	7400	0,09-0,12	6300	0,03-0,07	12700	0,09-0,12	9500	0,09-0,12	15000	0,09-0,12	2100	0,03-0,06
4	9600	0,10-0,15	9600	0,10-0,15	5600	0,10-0,15	4700	0,04-0,08	9600	0,10-0,15	7000	0,10-0,15	11100	0,10-0,15	1600	0,04-0,07
5	7600	0,12-0,18	7600	0,12-0,18	4500	0,12-0,18	3800	0,05-0,10	7600	0,12-0,18	5700	0,12-0,18	9000	0,12-0,18	1250	0,05-0,09
6	6400	0,14-0,20	6400	0,14-0,20	3700	0,14-0,20	3200	0,06-0,12	5400	0,14-0,20	4700	0,14-0,20	7400	0,14-0,20	1050	0,06-0,11
8	4800	0,16-0,24	4800	0,16-0,24	2800	0,16-0,24	2400	0,08-0,16	4800	0,16-0,24	3600	0,16-0,24	5600	0,16-0,24	800	0,08-0,14
10	3800	0,18-0,27	3800	0,18-0,27	2200	0,18-0,27	1900	0,10-0,18	3800	0,18-0,27	2800	0,16-0,27	4500	0,18-0,27	600	0,10-0,16
12	3200	0,20-0,30	3200	0,20-0,30	1900	0,20-0,30	1600	0,12-0,20	3200	0,20-0,30	2400	0,20-0,30	3700	0,20-0,30	500	0,12-0,18
14	2700	0,22-0,35	2700	0,22-0,35	1600	0,22-0,35	1350	0,13-0,22	2700	0,22-0,35	2100	0,22-0,35	3200	0,22-0,35	450	0,13-0,20
16	2400	0,25-0,36	2400	0,25-0,36	1400	0,25-0,36	1200	0,14-0,25	2400	0,25-0,36	1800	0,25-0,36	2800	0,25-0,36	400	0,14-0,25
18	2100	0,28-0,38	2100	0,28-0,38	1200	0,28-0,38	1050	0,15-0,28	2100	0,28-0,38	1600	0,28-0,38	2500	0,28-0,38	350	0,15-0,25
20	1900	0,30-0,40	1900	0,30-0,40	1100	0,30-0,40	950	0,16-0,30	1900	0,30-0,40	1400	0,30-0,40	2300	0,30-0,40	320	0,16-0,20

PUNTE METALLO DURO 8XD CON REFRIGERAZIONE - DIN6537L

EN 8XD SOLID CARBIDE DRILL I DIN6537L I INTERNAL COOLANT

FR 8XD FORET EN CARBURE MONOBLOC I DIN6537L I AVEC TROUS DE LUBRIFICATION

DE 8XD VOLLHARTMETALLBOHRER I DIN6537L I INTEME KÜHLUNG

IT Acciaio, acciaio inossidabile, ghisa, rame, titanio, leghe resistenti al calore e acciaio temprato 56 HRC.

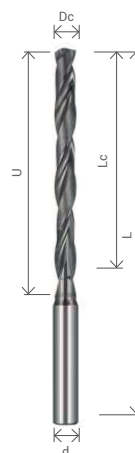
EN Steel, stainless steel, cast iron, copper, titanium, heat resistance alloys and hardened steels up to 56 HRC.

FR Acier, acier inoxydable, fonte grise, cuivre, titane, alliages de résistance à la chaleur et acier jusqu'à 56 hrc

DE Stahl, rostfreier stahl, gubeisen, kupfer, titan, warmfeste legierungen und gehärteter stahl 56 HRC.



ALTIN



Dc = tolleranza h8
d = tolleranza h6

PUNTE MD 8XD CH - DIN6537L

8XD CH SOLID CARBIDE DRILL - DIN6537L

Ref.	Dimensione - Dimension (mm)				
	Dc	d	U	Lc	L
PN0300D8CH	Ø3	6	34	29	72
PN0310D8CH	Ø3,1	6	34	29	72
PN0320D8CH	Ø3,2	6	34	29	72
PN0330D8CH	Ø3,3	6	34	29	72
PN0340D8CH	Ø3,4	6	34	29	72
PN0350D8CH	Ø3,5	6	34	29	72
PN0360D8CH	Ø3,6	6	34	29	72
PN0370D8CH	Ø3,7	6	34	29	72
PN0380D8CH	Ø3,8	6	43	36	81
PN0390D8CH	Ø3,9	6	43	36	81
PN0400D8CH	Ø4	6	43	36	81
PN0410D8CH	Ø4,1	6	43	36	81
PN0420D8CH	Ø4,2	6	43	36	81
PN0430D8CH	Ø4,3	6	43	36	81
PN0440D8CH	Ø4,4	6	43	36	81
PN0450D8CH	Ø4,5	6	43	36	81

PUNTE MD 8XD CH - DIN6537L

8XD CH SOLID CARBIDE DRILL - DIN6537L

Ref.	Dimensione - Dimension (mm)				
	Dc	d	U	Lc	L
PN0460D8CH	Ø4,6	6	43	36	81
PN0470D8CH	Ø4,7	6	43	36	81
PN0480D8CH	Ø4,8	6	57	48	95
PN0490D8CH	Ø4,9	6	57	48	95
PN0500D8CH	Ø5	6	57	48	95
PN0510D8CH	Ø5,1	6	57	48	95
PN0520D8CH	Ø5,2	6	57	48	95
PN0530D8CH	Ø5,3	6	57	48	95
PN0540D8CH	Ø5,4	6	57	48	95
PN0550D8CH	Ø5,5	6	57	48	95
PN0560D8CH	Ø5,6	6	57	48	95
PN0570D8CH	Ø5,7	6	57	48	95
PN0580D8CH	Ø5,8	6	57	48	95
PN0590D8CH	Ø5,9	6	57	48	95
PN0600D8CH	Ø6	6	57	48	95
PN0610D8CH	Ø6,1	8	76	66	114

PUNTE METALLO DURO 8XD CON REFRIGERAZIONE - DIN6537L

PUNTE MD 8XD CH - DIN6537L

8XD CH SOLID CARBIDE DRILL - DIN6537L

Ref.	Dimensione - Dimension (mm)				
	Dc	d	U	Lc	L
PN0620D8CH	Ø6,2	8	76	66	114
PN0630DCH	Ø6,3	8	76	66	114
PN0640D8CH	Ø6,4	8	76	66	114
PN0650D8CH	Ø6,5	8	76	66	114
PN0660D8CH	Ø6,6	8	76	66	114
PN0670D8CH	Ø6,7	8	76	66	114
PN0680D8CH	Ø6,8	8	76	66	114
PN0690D8CH	Ø6,9	8	76	66	114
PN0700D8CH	Ø7	8	76	66	114
PN0710D8CH	Ø7,1	8	76	66	114
PN0720D8CH	Ø7,2	8	76	66	114
PN0730D8CH	Ø7,3	8	76	66	114
PN0740D8CH	Ø7,4	8	76	66	114
PN0750D8CH	Ø7,5	8	76	66	114
PN0760D8CH	Ø7,6	8	76	66	114
PN0770D8CH	Ø7,7	8	76	66	114
PN0780D8CH	Ø7,8	8	76	66	114
PN0790D8CH	Ø7,9	8	76	66	114
PN0800D8CH	Ø8	8	76	66	114
PN0810D8CH	Ø8,1	10	95	83	142
PN0820D8CH	Ø8,2	10	95	83	142
PN0830D8CH	Ø8,3	10	95	83	142
PN0840D8CH	Ø8,4	10	95	83	142
PN0850D8CH	Ø8,5	10	95	83	142
PN0860D8CH	Ø8,6	10	95	83	142
PN0870D8CH	Ø8,7	10	95	83	142
PN0880D8CH	Ø8,8	10	95	83	142
PN0890D8CH	Ø8,9	10	95	83	142
PN0900D8CH	Ø9	10	95	83	142
PN0910D8CH	Ø9,1	10	95	83	142
PN0920D8CH	Ø9,2	10	95	83	142
PN0930D8CH	Ø9,3	10	95	83	142
PN0940D8CH	Ø9,4	10	95	83	142
PN0950D8CH	Ø9,5	10	95	83	142
PN0960D8CH	Ø9,6	10	95	83	142
PN0970D8CH	Ø9,7	10	95	83	142
PN0980D8CH	Ø9,8	10	95	83	142

PUNTE MD 8XD CH - DIN6537L

8XD CH SOLID CARBIDE DRILL - DIN6537L

Ref.	Dimensione - Dimension (mm)				
	Dc	d	U	Lc	L
PN0990D8CH	Ø9,9	10	95	83	142
PN1000D8CH	Ø10	10	95	83	142
PN1020D8CH	Ø10,2	12	114	99	162
PN1040D8CH	Ø10,4	12	114	99	162
PN1050D8CH	Ø10,5	12	114	99	162
PN1080D8CH	Ø10,8	12	114	99	162
PN1100D8CH	Ø11	12	114	99	162
PN1150D8CH	Ø11,5	12	114	99	162
PN1180D8CH	Ø11,8	12	114	99	162
PN1200D8CH	Ø12	12	114	99	162
PN1250D8CH	Ø12,5	14	133	116	178
PN1300D8CH	Ø13	14	133	116	178
PN1350D8CH	Ø13,5	14	133	116	178
PN1380D8CH	Ø13,8	14	133	116	178
PN1400D8CH	Ø14	14	133	116	178
PN1450D8CH	Ø14,5	16	152	132	203
PN1500D8CH	Ø15	16	152	132	203
PN1550D8CH	Ø15,5	16	152	132	203
PN1600D8CH	Ø16	16	152	132	203
PN1650D8CH	Ø16,5	18	171	149	222
PN1700D8CH	Ø17	18	171	149	222
PN1750D8CH	Ø17,5	18	171	149	222
PN1800D8CH	Ø18	18	171	149	222
PN1850D8CH	Ø18,5	20	190	170	243
PN1900D8CH	Ø19	20	190	170	243
PN1950D8CH	Ø19,5	20	190	170	243
PN2000D8CH	Ø20	20	190	170	243

PUNTA 8XD CON FORI DI REFRIGERAZIONE

Materiale pezzo Workpiece material	Acciaio dolce HB≤180 Mild steel HB≤180		Acciaio al carbonio, Acciaio legato -30 HRC Carbon steel, Alloy steel -30 HRC		Acciaio pretemprato, 40-50HRC Pre-hardened steel, 40-50HRC		Acciaio inossidabile Stainless steel		Ghisa xxxx Cast iron		Ghisa nodulare GGG Nodular Cast iron GGG		Lega di alluminio Aluminum alloy		Lega resistente al calore Heat resistant alloy	
Vc	80-150 m/min		60-120 m/min		40-70 m/min		25-40 m/min		60-120 m/min		50-100 m/min		60-140 m/min		12-25 m/min	
Ø (mm)	n (min ⁻¹)		f (mm/r)		n (min ⁻¹)		f (mm/r)		n (min ⁻¹)		f (mm/r)		n (min ⁻¹)		f (mm/r)	
3	12700	0,06-0,10	12700	0,06-0,10	7400	0,09-0,12	5300	0,03-0,07	12700	0,09-0,12	9500	0,09-0,12	15000	0,09-0,12	2100	0,03-0,06
4	9600	0,08-0,12	9600	0,08-0,12	5600	0,08-0,12	4000	0,04-0,08	9600	0,08-0,12	7000	0,08-0,12	11100	0,10-0,15	1600	0,04-0,07
5	7600	0,10-0,14	7600	0,10-0,14	4500	0,10-0,14	3200	0,05-0,10	7600	0,10-0,14	5700	0,10-0,14	9000	0,10-0,14	1250	0,05-0,09
6	6400	0,11-0,16	6400	0,11-0,16	3700	0,11-0,16	2700	0,06-0,12	6400	0,11-0,16	4700	0,11-0,16	7400	0,11-0,16	1050	0,06-0,11
8	4800	0,13-0,19	4800	0,13-0,19	2800	0,13-0,19	2000	0,08-0,16	4800	0,13-0,19	3600	0,13-0,19	5600	0,13-0,19	800	0,08-0,14
10	3800	0,14-0,22	3800	0,14-0,22	2200	0,14-0,22	1600	0,10-0,18	3800	0,14-0,22	2800	0,14-0,22	4500	0,14-0,22	600	0,10-0,16
12	3200	0,16-0,24	3200	0,16-0,24	1900	0,16-0,24	1300	0,12-0,20	3200	0,16-0,24	2400	0,16-0,24	3700	0,16-0,24	500	0,12-0,18
14	2700	0,18-0,28	2700	0,18-0,28	1600	0,18-0,28	1100	0,13-0,22	2700	0,18-0,28	2100	0,18-0,28	3200	0,18-0,28	450	0,13-0,20
16	2400	0,20-0,29	2400	0,20-0,29	1400	0,20-0,29	1000	0,14-0,25	2400	0,20-0,29	1800	0,25-0,36	2800	0,20-0,29	400	0,14-0,25
18	2100	0,24-0,32	2100	0,28-0,38	1200	0,24-0,32	880	0,15-0,28	2100	0,24-0,32	1600	0,24-0,32	2500	0,24-0,32	350	0,15-0,25



07

ALESATORI
REAMERS
ALÉSOIRS
REIBAHLEN

ALESATORI IN METALLO DURO - NON RIVESTITI - H7

EN REAMERS | H7

FR ALÉSIRS | H7

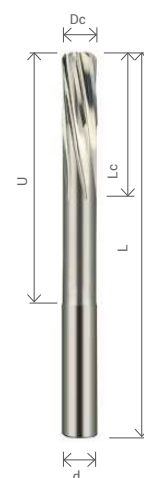
DE REIBAHLEN | H7

IT Acciaio, acciaio inossidabile, ghisa, rame, titanio, leghe resistenti al calore e acciaio temprato 56 HRC.

EN Steel, stainless steel, cast iron, copper, titanium, heat resistance alloys and hardened steels up to 56 HRC.

FR Acier, acier inoxydable, fonte grise, cuivre, titane, alliages de résistance à la chaleur et acier jusqu'à 56 hrc

DE Stahl, rostfreier stahl, gubeisen, kupfer, titan, warmfeste legierungen und gehärteter stahl 56 HRC.



ALESATORI H7 - REAMERS H7

ALSf.	Dimensione - Dimension (mm)					
	D	d	L	Lc	U	Z
ALS100298	2,98	3	61	12	36	4
ALS100299	2,99	3	61	12	36	4
ALS100300	3,00	3	61	12	36	4
ALS100301	3,01	3	61	12	36	4
ALS100302	3,02	3	61	12	36	4
ALS100350	3,50	4	70	12	40	4
ALS100398	3,98	4	75	12	45	4
ALS100399	3,99	4	75	12	45	4
ALS100400	4,00	4	75	12	45	4
ALS100400L	4,00	4	105	16	80	4
ALS100401	4,01	4	75	12	45	4
ALS100402	4,02	4	75	12	45	4
ALS100450	4,50	5	80	12	52	4
ALS100498	4,98	5	86	16	56	4
ALS100499	4,99	5	86	16	56	4

ALESATORI H7 - REAMERS H7

ALSf.	Dimensione - Dimension (mm)					
	D	d	L	Lc	U	Z
ALS100500	5,00	5	86	16	56	4
ALS100500L	5,00	5	115	30	90	4
ALS100501	5,01	5	86	16	56	4
ALS100502	5,02	5	86	16	56	4
ALS100510	5,10	5	86	16	56	4
ALS100520	5,20	6	86	16	56	4
ALS100530	5,30	6	86	16	56	4
ALS100550	5,50	6	86	16	56	4
ALS100598	5,98	6	86	16	56	4
ALS100599	5,99	6	86	16	56	4
ALS100600	6,00	6	86	16	56	4
ALS100600L	6,00	6	130	30	100	4
ALS100601	6,01	6	86	16	56	4
ALS100602	6,02	6	86	16	56	4
ALS100610	6,10	6	86	16	56	4

ALESATORI IN METALLO DURO - NON RIVESTITI - H7

ALESATORI H7 - REAMERS H7

ALSf.	Dimensione - Dimension (mm)					
	D	d	L	Lc	U	Z
ALS100620	6,20	6	86	16	56	4
ALS100630	6,30	6	86	16	56	4
ALS100640	6,40	6	86	16	56	6
ALS100650	6,50	8	86	16	56	6
ALS100700	7,00	8	86	16	56	6
ALS100700L	7,00	8	140	30	110	6
ALS100750	7,50	8	86	16	56	6
ALS100798	7,98	8	86	16	56	6
ALS100799	7,99	8	86	16	56	6
ALS100800	8,00	8	86	16	56	6
ALS100800L	8,00	8	117	33	84	6
ALS100800LL	8,00	8	160	30	130	6
ALS100801	8,01	8	86	16	56	6
ALS100801L	8,01	8	117	33	84	6
ALS100802	8,02	8	86	16	56	6
ALS100802L	8,02	8	117	33	84	6
ALS100810L	8,10	8	117	33	84	6
ALS100820L	8,20	8	117	33	84	6
ALS100830L	8,30	8	117	33	84	6
ALS100850	8,50	8	90	20	60	6
ALS100850L	8,50	8	117	33	84	6
ALS100898	8,98	10	90	20	60	6
ALS100899	8,99	10	90	20	60	6
ALS100900	9,00	10	90	20	60	6
ALS100900L	9,00	10	125	36	88	6
ALS100900LL	9,00	10	160	30	130	6
ALS100950	9,50	10	90	20	60	6
ALS100950L	9,50	10	125	36	88	6
ALS100998	9,98	10	90	20	60	6
ALS100999	9,99	10	90	20	60	6
ALS1001000	10,00	10	90	20	60	6
ALS1001000L	10,00	10	133	38	97	6
ALS1001000LL	10,00	10	190	30	150	6
ALS1001001	10,01	10	90	20	60	6
ALS1001001L	10,01	10	133	38	97	6
ALS1001002	10,02	10	90	20	60	6
ALS1001002L	10,02	10	133	38	97	6
ALS1001010L	10,10	10	133	38	97	6

ALESATORI H7 - REAMERS H7

ALSf.	Dimensione - Dimension (mm)					
	D	d	L	Lc	U	Z
ALS1001020L	10,20	10	133	38	97	6
ALS1001030L	10,30	10	133	38	97	6
ALS1001050	10,50	10	90	20	60	6
ALS1001050L	10,50	10	133	38	97	6
ALS1001100	11,00	12	90	20	60	6
ALS1001100L	11,00	12	151	44	110	6
ALS1001150	11,50	12	90	20	60	6
ALS1001150L	11,50	12	151	44	110	6
ALS1001198	11,98	12	90	20	60	6
ALS1001199	11,99	12	90	20	60	6
ALS1001200	12,00	12	90	20	60	6
ALS1001200L	12,00	12	151	44	110	6
ALS1001200LL	12,00	12	220	35	170	6
ALS1001201	12,01	12	90	20	60	6
ALS1001201L	12,01	12	151	44	110	6
ALS1001202	12,02	12	90	20	60	6
ALS1001202L	12,02	12	151	44	110	6
ALS1001250L	12,50	12	151	44	110	6
ALS1001300	13,00	12	151	44	110	6
ALS1001300L	13,00	12	220	35	170	6
ALS1001301L	13,01	12	151	44	110	6
ALS1001302L	13,02	12	151	44	110	6
ALS1001400L	14,00	14	160	47	110	6
ALS1001400LL	14,00	14	220	35	170	6
ALS1001401L	14,01	14	160	47	110	6
ALS1001402L	14,02	14	160	47	110	6
ALS1001500L	15,00	14	162	50	112	6
ALS1001500LL	15,00	16	220	35	170	6
ALS1001501L	15,01	14	162	50	112	6
ALS1001502L	15,02	14	162	50	112	6
ALS1001600L	16,00	16	170	52	117	6
ALS1001600LL	16,00	16	230	40	180	6
ALS1001601L	16,01	16	170	52	117	6
ALS1001602L	16,02	16	170	52	117	6
ALS1001800L	18,00	18	182	56	129	6
ALS1001800LL	18,00	18	230	40	180	6
ALS1002000L	20,00	20	195	60	142	6
ALS1002000LL	20,00	20	230	40	180	6

ALESATORI

Materiale pezzo Workpiece material	Acciaio <1000 N/mm ² , Ghisa, Modulare Steel <1000 N/mm ² , Cast Iron, Modular			Lega di rame Copper alloy			Lega di alluminio Aluminium alloy		
Vc	8-16 m/min			10-25 m/min			15-30 m/min		
Ø (mm)	n (min ⁻¹)	f (mm/r)	Tolerance (mm)	n (min ⁻¹)	f (mm/r)	Tolerance (mm)	n (min ⁻¹)	f (mm/r)	Tolerance (mm)
3	1150	0,03-0,05	0,1-0,2	1900	0,03-0,05	0,1-0,2	2400	0,03-0,05	0,1-0,2
4	950	0,04-0,06	0,1-0,2	1600	0,04-0,06	0,1-0,2	2000	0,04-0,06	0,1-0,2
5	760	0,05-0,09	0,1-0,2	1300	0,05-0,09	0,1-0,2	1600	0,05-0,09	0,1-0,2
6	640	0,06-0,12	0,1-0,2	1050	0,06-0,12	0,1-0,2	1300	0,06-0,12	0,1-0,2
7	550	0,07-0,14	0,1-0,2	910	0,07-0,14	0,1-0,2	1150	0,07-0,14	0,1-0,2
8	480	0,08-0,16	0,1-0,2	800	0,08-0,16	0,1-0,2	1000	0,08-0,16	0,1-0,2
9	430	0,09-0,18	0,1-0,2	710	0,09-0,18	0,1-0,2	890	0,09-0,18	0,1-0,2
10	380	0,10-0,20	0,1-0,2	640	0,10-0,20	0,1-0,2	800	0,10-0,20	0,1-0,2
11	350	0,11-0,22	0,1-0,2	580	0,11-0,22	0,1-0,2	720	0,11-0,22	0,1-0,2
12	320	0,12-0,24	0,1-0,2	530	0,12-0,24	0,1-0,2	660	0,12-0,24	0,1-0,2
13	290	0,13-0,26	0,1-0,2	490	0,13-0,26	0,1-0,2	610	0,13-0,26	0,1-0,2
14	270	0,14-0,28	0,1-0,2	460	0,14-0,28	0,1-0,2	570	0,14-0,28	0,1-0,2
15	250	0,15-0,30	0,1-0,2	430	0,15-0,30	0,1-0,2	530	0,15-0,30	0,1-0,2
16	240	0,16-0,32	0,1-0,2	400	0,16-0,32	0,1-0,2	500	0,16-0,32	0,1-0,2
17	225	0,18-0,34	0,1-0,2	380	0,18-0,34	0,1-0,2	470	0,18-0,34	0,1-0,2
18	210	0,20-0,36	0,1-0,2	350	0,20-0,36	0,1-0,2	440	0,20-0,36	0,1-0,2
19	200	0,22-0,34	0,1-0,2	340	0,22-0,34	0,1-0,2	420	0,22-0,34	0,1-0,2
20	190	0,24-0,40	0,1-0,2	320	0,24-0,40	0,1-0,2	400	0,24-0,40	0,1-0,2

NOTE - Notes

