

# PROGRAMMA DI FRESATURA

in metallo duro integrale



SOLID CARBIDE END MILLS



VHM FRÄSER



FRAISES CARBURE MONOBLOC



FRESAS EN METAL DURO



2015

**Talicarb**



# Talicarb



Angelo Ghezzi & C SpA

# Talicarb

# TALICARB - La nostra storia

OUR HISTORY  
UNSERE GESCHICHTE  
NOTRE HISTOIRE  
NUESTRA HISTORIA

 **TALICARB**, società appartenente dal 1990 al gruppo Angleo Ghezzi & C. S.p.A., è specializzata nella progettazione e realizzazione di utensili in metallo duro saldobrasato ed integrale. Produce dal 1962 frese per cave, frese per sgrossatura e finitura, alesatori, utensili monotaglianti secondo le normative ISO e ha intensificato in questi ultimi anni il suo programma di prodotti per stampisti ad alto rendimento e di utensili speciali a disegno. A seguito di continui investimenti in nuove tecnologie, ha ulteriormente arricchito il proprio assortimento di frese "POWER" con l'aumento della gamma di diametri e di molte nuove tipologie di utensili particolarmente adatti al settore stampista e per l'alta velocità. Sono utensili realizzati dopo un'accurata ricerca e uno studio particolare, finalizzati a proporre all'utilizzatore finale una scelta tecnicamente idonea al tipo di lavorazione da eseguire e alle caratteristiche del materiale da lavorare. La Talicarb, infatti, da sempre si impegna ad indirizzare il proprio consumatore verso la giusta scelta dell'utensile. Per lavorazioni particolari ricordiamo la presenza nel catalogo delle sezioni relative alle frese Power Graphite con rivestimento Diamond e frese Power PKD - PCD con riporto in policristallino.

 **TALICARB**, which is part of Angleo Ghezzi & C. S.p.A. group since 1990, is specialized in designing and manufacturing of solid carbide and carbide tipped tools. Since 1962 the company has been producing slot milling cutters, roughing and finishing end mills, reamers and turning tools in accordance with ISO standards. During the last few years, Talicarb has intensified its range of products in diesinking field and special tools according to drawing. After constant investments in new technologies, Talicarb has increased its range of POWER end mills with more diameters and lots of new types of tools that are especially suitable in diesinking and high speed fields. Thanks to a careful research and study, these tools are meant to be the best technical choice for the kind of machining and material the customer

has to work: Talicarb has always been leading its customer to the correct choice of the tool. For less ordinary machinings we point out the section of Power Graphite end mills with Diamond coating and Power PKD - PCD with polycrystalline diamond.

 Die Firma **TALICARB**, die seit 1990 zur Gruppe Angleo Ghezzi & C. S.p.A. gehört, ist auf die Entwicklung und Herstellung von Werkzeugen in Vollhartmetall sowie Hartmetall-bestückt spezialisiert. Seit 1962 stellt sie Nutenfräser, Schrupp- und Schlichtfräser, Reibahlen, einschneidige Werkzeuge nach ISO Normen her und hat in den letzten Jahren ihre Palette von Hochleistungsformenfräser sowie Sonderwerkzeuge nach Zeichnung ziemlich verbreitet. Infolge ständiger Investitionen in neuen Technologien hat Talicarb ihre Palette von „POWER“ Fräser mit weiteren Durchmessern sowie mit vielen neuen Werkzeugen verbreitet, die besonders geeignet für den Formenbereich und für die Hochgeschwindigkeitsbearbeitungen sind. Diese Werkzeuge werden nach einer sorgfältigen und vertieften Forschung hergestellt so dass der Endbenutzer die geeignetsten Werkzeuge für seine Bearbeitung und für das entsprechende Material zur Verfügung hat. Talicarb verpflichtet sich seit immer dem Benutzer das passende Werkzeug zu empfehlen. Für besondere Bearbeitungen bitte schauen Sie in den Kapiteln über Graphite Powerfräser mit Diamond Beschichtung und PKD Powerfräser mit Polykristallinauflage nach



# TALICARB - La nostra storia

OUR HISTORY  
UNSERE GESCHICHTE  
NOTRE HISTOIRE  
NUESTRA HISTORIA

 **TALICARB**, société qui fait partie depuis le 1990 du group Angleo Ghezzi & C. S.p.A., est spécialisée dans le projet et réalisation d'outils en carbure monobloc, carbure brasé. Talicarb produise depuis le 1962 fraises à rainurer, fraises à ébaucher et à finir, alesiors, outils monocoupes suivant les normatives ISO et elle a augmenté dans ces derniers années sa gamme de produits pour moulistes à haute performance et d'outils spéciaux sur plan. Grâce à l'engagement soutenu dans les nouvelles technologies, Talicarb a de plus en plus enrichi sa gamme de fraises "POWER" avec l'introduction d'autres diamètres et de nouvelles typologies d'outils particulièrement indiqués dans le secteur mouleur et pour l'haute vitesse.

Ils sont des outils réalisés, après une recherche soignée et un étude particulier, finalisés à proposer à l'utilisateur final un choix techniquement approprié au type d'usinage à réaliser et aux caractéristiques de la matière à travailler.

En effet Talicarb depuis toujours s'engage à adresser ses consommateurs pour un bon choix de l'outil. Pour usinages particuliers nous vous rappelons la présence dans le catalogue des sessions qui correspondent aux fraises Power Graphite avec revêtement Diamond et fraises Power PKD - PCD avec rechargement en polycristallin.

 **TALICARB**, empresa del grupo Angleo Ghezzi y C. S.p. A. desde 1990, está especializada en el diseño y la fabricación de herramientas en metal duro soldado e integral. Desde 1962 la compañía de produce fresas de ranurado, desbaste y acabado, escariadores y herramientas de torno conformes a normas ISO. Durante los últimos años Talicarb ha intensificado su gama de productos para moldes de alto rendimiento y herramientas especiales según plano. A través de constantes inversiones en investigación y nuevas tecnologías, Talicarb ha llegado aumentar su gama de fresado POWER con más diámetros y muchas nuevas tipologías de fresas particularmente adaptadas al sector del molde de alta velocidad.

Después de una investigación cuidadosa y los estudios realizados, proponemos al cliente final estas herramientas como la opción técnica más conveniente para el tipo de trabajo a realizar y el material a trabajar: Talicarb siempre guía a su cliente cerca de la elección correcta de la herramienta. Para trabajos particulares subrayamos de las secciones del catálogo relativas a las fresas Power Grafito con recubrimiento de diamante y las fresas Power PKD - PCD en polycristalino.



# INDICE DEI NUMERI DI CODICE

CODE INDEX  
ARTIKELNUMMERN-VERZEICHNIS  
TABLEAU DE CODES  
ÍNDICE DE CÓDIGOS

<b>CODICE</b> Item No. - Kat.Nr Réf. - Códigos	<b>PAGINA</b> Page - Seite Page - Página
<b>012RTF</b>	50
<b>013RTF</b>	53
<b>014RTF</b>	56
<b>032RTF</b>	52
<b>033RTF</b>	55
<b>034RTF</b>	58
<b>042RTF</b>	52
<b>043RTF</b>	55
<b>044RTF</b>	58
<b>1011</b>	78
<b>1011CR</b>	78
<b>1012</b>	36
<b>1012R</b>	50
<b>1012TF</b>	36
<b>1013</b>	39
<b>1013R</b>	53
<b>1013TF</b>	39
<b>1014</b>	44
<b>1014R</b>	56
<b>1014TF</b>	44
<b>1032</b>	38
<b>1032R</b>	52
<b>1032TF</b>	38
<b>1033</b>	41
<b>1033R</b>	55
<b>1033TF</b>	41
<b>1034</b>	46
<b>1034R</b>	58
<b>1034TF</b>	46
<b>1042</b>	38
<b>1042R</b>	52
<b>1042TF</b>	38
<b>1043</b>	41
<b>1043R</b>	55
<b>1043TF</b>	41
<b>1044</b>	46
<b>1044R</b>	58
<b>1044TF</b>	46

<b>CODICE</b> Item No. - Kat.Nr Réf. - Códigos	<b>PAGINA</b> Page - Seite Page - Página
<b>1053</b>	43
<b>1053TF</b>	43
<b>1060</b>	94
<b>1060TF</b>	94
<b>1061TF</b>	95
<b>1062TF</b>	95
<b>1085</b>	234
<b>1086</b>	235
<b>1092</b>	207
<b>1098</b>	236
<b>1099</b>	202
<b>1100</b>	198
<b>1100TF</b>	198
<b>1100TN</b>	198
<b>1101</b>	200
<b>1101TF</b>	200
<b>1101TN</b>	200
<b>1212TF</b>	37
<b>1213TF</b>	40
<b>1214TF</b>	45
<b>1263</b>	80
<b>1263TF</b>	80
<b>1265</b>	81
<b>1266</b>	82
<b>1273</b>	42
<b>1273TF</b>	42
<b>1282</b>	79
<b>130RXT</b>	133
<b>1314R</b>	92
<b>1318TF</b>	86
<b>1320TF</b>	87
<b>1321TF</b>	88
<b>1330TF</b>	101
<b>1331TF</b>	102
<b>1340XT</b>	103
<b>1341XT</b>	104
<b>1350XT</b>	107
<b>1351XT</b>	105

<b>CODICE</b> Item No. - Kat.Nr Réf. - Códigos	<b>PAGINA</b> Page - Seite Page - Página
<b>1352XT</b>	106
<b>1360XT</b>	108
<b>1374</b>	90
<b>1376</b>	91
<b>1410XT</b>	150
<b>1411XT</b>	162
<b>1412XT</b>	114
<b>1414XT</b>	118
<b>1415XT</b>	162
<b>1417XT</b>	114
<b>1420RD</b>	177
<b>1421RD</b>	178
<b>1422XT</b>	117
<b>1424XT</b>	121
<b>1425RD</b>	179
<b>1430XT</b>	151
<b>1431XT</b>	153
<b>1432XT</b>	115
<b>1433XT</b>	159
<b>1434RD</b>	184
<b>1434XT</b>	119
<b>1436D</b>	176
<b>1437D</b>	180
<b>1450XT</b>	142
<b>1451XT</b>	124
<b>1452XT</b>	122
<b>1460XT</b>	143
<b>1505</b>	62
<b>1505R</b>	70
<b>1510</b>	62
<b>1510R</b>	70
<b>1515</b>	63
<b>1515R</b>	71
<b>1520</b>	63
<b>1520R</b>	71
<b>1530</b>	64
<b>1530R</b>	72

# INDICE DEI NUMERI DI CODICE

CODE INDEX  
ARTIKELNUMMERN-VERZEICHNIS  
TABLEAU DE CODES  
ÍNDICE DE CÓDIGOS

<b>CODICE</b> Item No. - Kat.Nr Réf. - Códigos	<b>PAGINA</b> Page - Seite Page - Página
<b>1540</b>	64
<b>1540R</b>	72
<b>1550</b>	65
<b>1550R</b>	73
<b>1601DT</b>	190
<b>1602DT</b>	191
<b>2001</b>	210
<b>2001F</b>	210
<b>2002</b>	210
<b>2002F</b>	210
<b>2003</b>	210
<b>2003F</b>	210
<b>2004</b>	210
<b>2005</b>	210
<b>2006</b>	210
<b>2011</b>	211
<b>2012</b>	211
<b>2013</b>	211
<b>2014</b>	211
<b>2015</b>	211
<b>2016</b>	211
<b>2021</b>	212
<b>2022</b>	212
<b>2023</b>	212
<b>2024</b>	212
<b>2025</b>	212
<b>2026</b>	212
<b>2031</b>	213
<b>2032</b>	213
<b>2033</b>	213
<b>2034</b>	213
<b>2035</b>	213
<b>2036</b>	213
<b>2041</b>	214
<b>2042</b>	214
<b>2043</b>	214
<b>2044</b>	214
<b>2045</b>	214

<b>CODICE</b> Item No. - Kat.Nr Réf. - Códigos	<b>PAGINA</b> Page - Seite Page - Página
<b>2046</b>	214
<b>2051</b>	215
<b>2052</b>	215
<b>2053</b>	215
<b>2054</b>	215
<b>2055</b>	215
<b>2056</b>	215
<b>2061</b>	216
<b>2062</b>	216
<b>2063</b>	216
<b>2064</b>	216
<b>2065</b>	216
<b>2066</b>	216
<b>2071</b>	217
<b>2072</b>	217
<b>2073</b>	217
<b>2074</b>	217
<b>2075</b>	217
<b>2076</b>	217
<b>2081</b>	219
<b>2081F</b>	219
<b>2082</b>	219
<b>2082F</b>	219
<b>2083</b>	219
<b>2084</b>	219
<b>2085</b>	219
<b>2086</b>	219
<b>2091</b>	220
<b>2092</b>	220
<b>2093</b>	220
<b>2094</b>	220
<b>2095</b>	220
<b>2096</b>	220
<b>2101</b>	223
<b>2101F</b>	223
<b>2111</b>	224
<b>2121</b>	225
<b>2121RTF</b>	51

<b>CODICE</b> Item No. - Kat.Nr Réf. - Códigos	<b>PAGINA</b> Page - Seite Page - Página
<b>2131</b>	226
<b>2131RTF</b>	54
<b>2141</b>	227
<b>2141RTF</b>	57
<b>2151</b>	228
<b>2161</b>	229
<b>2191</b>	230
<b>2201</b>	223
<b>2201F</b>	223
<b>2211</b>	224
<b>2221</b>	225
<b>2231</b>	226
<b>2241</b>	227
<b>2251</b>	228
<b>2261</b>	229
<b>2291</b>	230
<b>2300</b>	221
<b>2310</b>	221
<b>2320</b>	221
<b>2330</b>	222
<b>2340</b>	222
<b>2350</b>	222
<b>2400</b>	208
<b>2401</b>	208
<b>2402</b>	209
<b>2403</b>	209
<b>2501</b>	218
<b>2503</b>	218
<b>2511</b>	218
<b>2513</b>	218
<b>302RXT</b>	134
<b>402RXT</b>	130
<b>412RXT</b>	128
<b>413RXT</b>	171
<b>414RXT</b>	136
<b>416RXT</b>	132
<b>417RXT</b>	128
<b>419RXT</b>	163



# PROGRAMMA DI PRODUZIONE

PRODUCTION PROGRAMME  
HERSTELLUNGS PROGRAMM  
PROGRAMME DE PRODUCTION  
PROGRAMMA DE PRODUCCIÓN

## FRESE A CANDELA PER IMPIEGHI GENERICI

General purpose end mills - Universellen schaftfräser für allgemeine anwendungen - Fraise à queue universels - Fresas de mango cilíndrico para empleos generales



35

## FRESE A CANDELA CON TESTA SEMISFERICA

Ball nose copy end mills - Radiuskopier fräser - Fraise hémisphérique pour copiage - Fresas esféricas de copiado



49

## FRESE CONICHE CON TESTA PIANA

Taper mills - Kegelige gesenkfräser - Fraises coniques - Fresas cónicas



61

## FRESE CONICHE CON TESTA RAGGIATA

Taper mills with ball nose - Kegelige gesenkfräser mit radius - Fraises coniques bout hémisphérique - Fresas cónicas de cabeza esférica



69

## FRESE A CANDELA SPECIFICHE PER ALLUMINIO

End mills for aluminium - Fräser für aluminium - Fraises pour l'usinage de l'aluminium - Fresas para aluminio



77

# PROGRAMMA DI PRODUZIONE

PRODUCTION PROGRAMME  
HERSTELLUNGS PROGRAMM  
PROGRAMME DE PRODUCTION  
PROGRAMMA DE PRODUCCIÓN

## FRESE A CANDELA CON TESTA PIANA E TORICHE

End mills for special applications, flat head or with radius - Fräser für spezielle anwendungen mit flacher stirnschneide oder mit radius - Fraises pour applications spécifiques à bout plat ou avec rayon hémisphérique - Fresas para aplicaciones específicas de cabeza llana o tóricas



99

## FRESE A CANDELA POWER CON TESTA PIANA E TORICHE

Power end mills with flat head or toric - Power fräser mit flacher stirnschneide oder torus - Fraises power à bout plat ou toriques - Fresas power de cabeza llana o tóricas



113

## FRESE POWER SEMISFERICHE

Power ball nose end mills - Power radiusfräser - Fraises power hémisphériques - Fresas power esféricas



127

## FRESE POWER TORICHE

Power toric multi-flutes end mills - Power torusfräser mehrschneiden - Fraises power toriques multicoupes - Fresas power tóricas multilabio



141

## MICRO POWER HPM-HCM

Micro power hpm-hcm - Micro power hpm-hcm - Fraises micro power hpm-hcm - Fresas power micro hpm-hcm



149

# PROGRAMMA DI PRODUZIONE

PRODUCTION PROGRAMME  
HERSTELLUNGS PROGRAMM  
PROGRAMME DE PRODUCTION  
PROGRAMMA DE PRODUCCIÓN

## FRESE POWER GRAPHITE

Power graphite end mills - Power graphit fräser - Fraises power graphite - Fresas power grafito



175

## FRESE POWER BRASATE IN PCD

Pcd brazed power end mills - Pkd bestückte power Fräser - Fraises power pcd brasées - Fresas power de pcd soldado



189

## PUNTE ELICOIDALI TIPO N IN METALLO DURO INTEGRALE

Solid carbide twist drills - type n - Hartmetall spiralbohrer - typ n - Forets hélicoïdaux en carbure monobloc - type n - Brocas helicoidales de metal duro integral - tipologia n



197

## LIME ROTATIVE IN METALLO DURO INTEGRALE

Carbide burrs - Hartmetall-Rotierfräser - Fraises rotatives en carbure - Limas rotativas de metal duro integral



205

## BARRETTE RETTIFICATE / BULINO IN METALLO DURO INTEGRALE

Solid carbide rods / engraving cutter - Vhm - werkzeuge / gravierstichel - Outils en carbure monobloc / fraises à graver - Herramientas de metal duro integral / fresas de gravar



233

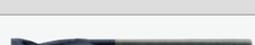
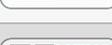
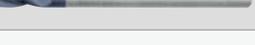
## INFORMAZIONI TECNICHE

Technical instructions - Technische Hinweise - Instructions techniques - Informaciones técnicas

239

# INDICE ILLUSTRATO

ILLUSTRATED CONTENTS  
ILLUSTRIERT VERZEICHNIS  
INDEX ILLUSTRÉ  
ÍNDICE ILUSTRADO

	<b>CODICE</b> Item no.	<b>SERIE</b> Series	<b>GAMMA</b> <b>DIAMETRI</b> Diameter Range	<b>NUMERO</b> <b>ELICHE</b> Flute Number	<b>ANGOLO</b> <b>ELICA</b> Flute Angle	<b>RIVESTI- MENTI</b> Coatings
	<b>1012</b>	Talicarb Norm.	3-25	2	35°	
	<b>1212TF</b>	Normale Normal	1,5-20	2	35°	
	<b>1032</b>	Lunga Long	3-20	2	35°	
	<b>1042</b>	Extralunga Extra-Long	3-20	2	35°	
	<b>1013</b>	Talicarb Norm.	3-25	3	35°	
	<b>1213TF</b>	Normale Normal	1,5-20	3	45°	
	<b>1033</b>	Lunga Long	3-20	3	35°	
	<b>1043</b>	Extralunga Extra-Long	3-20	3	35°	
	<b>1273</b>	Normale Normal	3-20	3	45°	
	<b>1053</b>	Talicarb Norm.	3-20	3	60°	
	<b>1014</b>	Talicarb Norm.	3-25	4	35°	
	<b>1214TF</b>	Normale Normal	1,5-20	4	35°	
	<b>1034</b>	Lunga Long	3-20	4	35°	
	<b>1044</b>	Extralunga Extra-Long	3-20	4	35°	
	<b>1012R</b>	Talicarb Norm.	3-20	2	35°	
	<b>212RTF</b>	Normale Normal	1.5-20	2	35°	
	<b>1032R</b>	Lunga Long	3-20	2	35°	
	<b>1042R</b>	Extralunga Extra-Long	3-20	2	35°	
	<b>1013R</b>	Talicarb Norm.	3-20	3	30°	
	<b>213RTF</b>	Talicarb Norm.	1.5-20	3	35°	

# INDICE ILLUSTRATO

ILLUSTRATED CONTENTS  
ILLUSTRIERT VERZEICHNIS  
INDEX ILLUSTRÉ  
ÍNDICE ILUSTRADO



PAGINA  
Page

	■	■	■			●	○	●	○			36
	■	■	■			●	○	●	○			37
	■	■	■			●	○	●	○			38
	■	■	■			●	○	●	○			38
	■	■	■			●	○	●	○			39
	■	■	■			●	○	●	○			40
	■	■	■			●	○	●	○			41
	■	■	■			●	○	●	○			41
	■	■	■			●	○	●	○			42
	■	■	■			●	○	●	○			43
	■	■				●	○	●	○			44
	■	■				●	○	●	○			45
	■	■				●	○	●	○			46
	■	■				●	○	●	○			46
			■	■		●	○	●	○			50
			■	■		●	○	●	○			51
			■	■		●	○	●	○			52
			■	■		●	○	●	○			52
			■	■		●	○	●	○			53
			■	■		●	○	●	○			54

RACCOMANDATO - Suggested - Empfohlen - Conseillé - Aconsejado: ●  
POSSIBILE - Possible - Möglich - Possible - Possible: ○

# INDICE ILLUSTRATO

ILLUSTRATED CONTENTS  
ILLUSTRIERT VERZEICHNIS  
INDEX ILLUSTRÉ  
ÍNDICE ILUSTRADO

	<b>CODICE</b> Item no.	<b>SERIE</b> Series	<b>GAMMA</b> <b>DIAMETRI</b> Diameter Range	<b>NUMERO</b> <b>ELICHE</b> Flute Number	<b>ANGOLO</b> <b>ELICA</b> Flute Angle	<b>RIVESTI-</b> <b>MENTI</b> Coatings
	<b>1033R</b>	Lunga Long	3-20	3	35°	
	<b>1043R</b>	Extralunga Extra-Long	3-20	3	35°	
	<b>1014R</b>	Talicarb Norm.	3-20	4	35°	
	<b>214RTF</b>	Normale Normal	1,5-20	4	45°	
	<b>1034R</b>	Lunga Long	3-20	4	35°	
	<b>1044R</b>	Extralunga Extra-Long	3-20	4	35°	
	<b>1505</b>	Talicarb Norm.	2.5-16	3/4	*30'	
	<b>1510</b>	Talicarb Norm.	2.5-16	3/4	*1°	
	<b>1515</b>	Talicarb Norm.	2.5-12	3/4	*1° 30'	
	<b>1520</b>	Talicarb Norm.	2.5-12	3/4	*2°	
	<b>1530</b>	Talicarb Norm.	2.5-12	3/4	*3°	
	<b>1540</b>	Talicarb Norm.	2.5-12	3/4	*4°	
	<b>1550</b>	Talicarb Norm.	2.5-12	3/4	*5°	
	<b>1505R</b>	Talicarb Norm.	2.5-12	3/4	*30'	
	<b>1510R</b>	Talicarb Norm.	2.5-12	3/4	*1°	
	<b>1515R</b>	Talicarb Norm.	2.5-12	3/4	*1° 30'	
	<b>1520R</b>	Talicarb Norm.	2.5-12	3/4	*2°	
	<b>1530R</b>	Talicarb Norm.	2.5-12	3/4	*3°	
	<b>1540R</b>	Talicarb Norm.	2.5-12	3/4	*4°	
	<b>1550R</b>	Talicarb Norm.	2.5-12	3/4	*5°	

\* (α/2)

# INDICE ILLUSTRATO

ILLUSTRATED CONTENTS  
ILLUSTRIERT VERZEICHNIS  
INDEX ILLUSTRÉ  
ÍNDICE ILUSTRADO



PAGINA  
Page

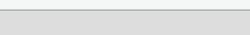
			■	■		●	○	●	○			55
			■	■		●	○	●	○			55
			■	■		●	○	●	○			56
			■	■		●	○	●	○			57
			■	■		●	○	●	○			58
			■	■		●	○	●	○			58
	■	■	■			●	○	●	●			62
	■	■	■			●	○	●	●			62
	■	■	■			●	○	●	●			63
	■	■	■			●	○	●	●			63
	■	■	■			●	○	●	●			64
	■	■	■			●	○	●	●			64
	■	■	■			●	○	●	●			65
			■	■		●	○	●	●			70
			■	■		●	○	●	●			70
			■	■		●	○	●	●			71
			■	■		●	○	●	●			71
			■	■		●	○	●	●			72
			■	■		●	○	●	●			72
			■	■		●	○	●	●			73

RACCOMANDATO - Suggested - Empfohlen - Conseillé - Aconsejado: ●  
 POSSIBILE - Possible - Möglich - Possible - Possible: ○



# INDICE ILLUSTRATO

ILLUSTRATED CONTENTS  
ILLUSTRIERT VERZEICHNIS  
INDEX ILLUSTRÉ  
ÍNDICE ILUSTRADO

		<b>CODICE</b> Item no.	<b>SERIE</b> Series	<b>GAMMA</b> <b>DIAMETRI</b> Diameter Range	<b>NUMERO</b> <b>ELICHE</b> Flute Number	<b>ANGOLO</b> <b>ELICA</b> Flute Angle	<b>RIVESTI-</b> <b>MENTI</b> Coatings
		<b>1011</b>	Talcarb Norm.	3-12	1	25°	<b>CR</b>
		<b>1282</b>	Talcarb Norm.	6-16	2	50°	
		<b>1263</b>	Normale Normal	3-20	2	50°	<b>TFNEW</b> COATING
<b>NEW</b>		<b>1265</b>	Talcarb Norm.	6-20	3	40°	
<b>NEW</b>		<b>1266</b>	Talcarb Norm.	3-20	3	42/45°	
<b>NEW</b>		<b>1318TF</b>	Talcarb Norm.	3-20	4	36/41°	<b>TFNEW</b> COATING
		<b>1320TF</b>	Talcarb Norm.	3-20	4	38/41°	<b>TFNEW</b> COATING
		<b>1321TF</b>	Talcarb Norm.	3-20	4	38/41°	<b>TFNEW</b> COATING
		<b>1374</b>	Normale Normal	6-18	4	45°	
		<b>1376</b>	Normale Normal	6-18	4	45°	
		<b>1314R</b>	Normale Normal	8,12	4	30°	
		<b>1060</b>	Talcarb Norm.	6-20	4/6	30°	<b>TFNEW</b> COATING
		<b>1061TF</b>	Talcarb Norm.	6-20	4	30°	<b>TFNEW</b> COATING
		<b>1062TF</b>	Talcarb Norm.	6-20	3	38°	<b>TFNEW</b> COATING
		<b>1330TF</b>	Talcarb Norm.	3-20	3	40°	<b>TFNEW</b> COATING
		<b>1331TF</b>	Talcarb Norm.	3-20	3	40°	<b>TFNEW</b> COATING
		<b>1340XT</b>	Normale Normal	3-20	6	45°	<b>XT</b>
		<b>1341XT</b>	Normale Normal	3-20	6	45°	<b>XT</b>
		<b>1351XT</b>	Talcarb Norm.	3-20	6	45°	<b>XT</b>
		<b>1352XT</b>	Normale Normal	3-20	6	45°	<b>XT</b>

# INDICE ILLUSTRATO

ILLUSTRATED CONTENTS  
ILLUSTRIERT VERZEICHNIS  
INDEX ILLUSTRÉ  
ÍNDICE ILUSTRADO



PAGINA  
Page

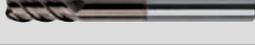
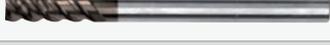
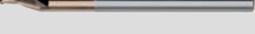
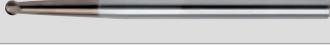
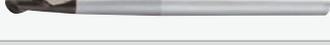
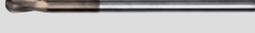
	■	■				○		○	●			78
	■	■	■						●			79
	■	■	■						●			80
	■		■						●			81
	■	■	■						●			82
	■	■	■			○	●	○	○	●	●	86
	■	■	■			●	○	●	○	○	○	87
	■	■	■			●	○	●	○	○	○	88
												90
												91
												92
	■					●	○	●				94
	■					●	●	●		○		95
	■					●	●	●		○		95
	■	■	■			●	●	●		○		101
	■	■	■			●	●	●		○		102
		■				●	●	●		○		103
		■				●	●	●		○		104
		■				●	●	●		○		105
		■				●	●	●		○		106

RACCOMANDATO - Suggested - Empfohlen - Conseillé - Aconsejado: ●  
POSSIBILE - Possible - Möglich - Possible - Possible: ○

# INDICE ILLUSTRATO

ILLUSTRATED CONTENTS  
ILLUSTRIERT VERZEICHNIS  
INDEX ILLUSTRÉ  
ÍNDICE ILUSTRADO

	<b>CODICE</b> Item no.	<b>SERIE</b> Series	<b>GAMMA</b> <b>DIAMETRI</b> Diameter Range	<b>NUMERO</b> <b>ELICHE</b> Flute Number	<b>ANGOLO</b> <b>ELICA</b> Flute Angle	<b>RIVESTI-</b> <b>MENTI</b> Coatings
	<b>1350XT</b>	Normale Normal	3-20	4/6	50°	<b>XT</b>
	<b>1360XT</b>	Lunga Long	3-20	4/6	50°	<b>XT</b>

	<b>CODICE</b> Item no.	<b>SERIE</b> Series	<b>GAMMA</b> <b>DIAMETRI</b> Diameter Range	<b>NUMERO</b> <b>ELICHE</b> Flute Number	<b>ANGOLO</b> <b>ELICA</b> Flute Angle	<b>RIVESTI-</b> <b>MENTI</b> Coatings
	<b>1417XT</b>	Normale Normal	0.3-3	2	30°	<b>XT</b>
	<b>1412XT</b>	Normale Normal	1-25	2	35°	<b>XT</b>
	<b>1432XT</b>	Normale Normal	3-25	2	35°	<b>XT</b>
	<b>1422XT</b>	Lunga Long	3-12	2	30°	<b>XT</b>
	<b>1414XT</b>	Normale Normal	1-25	4	35°	<b>XT</b>
	<b>1434XT</b>	Normale Normal	3-20	4	35°	<b>XT</b>
	<b>1424XT</b>	Lunga Long	3-12	4	30°	<b>XT</b>
	<b>1452XT</b>	Normale Normal	3-20	4	45°	<b>XT</b>
	<b>1451XT</b>	Lunga Long	4-20	4	50°	<b>XT</b>
	<b>417RXT</b>	Normale Normal	0.4-3	2	30°	<b>XT</b>
	<b>412RXT</b>	Normale Normal	1-25	2	35°	<b>XT</b>
	<b>432RXT</b>	Lunga Long	1-10	2	35°	<b>XT</b>
	<b>402RXT</b>	Lunga Long	1-12	2	30°	<b>XT</b>
	<b>497RXT</b>	Normale Normal	3-25	2	35°	<b>XT</b>

# INDICE ILLUSTRATO

ILLUSTRATED CONTENTS  
ILLUSTRIERT VERZEICHNIS  
INDEX ILLUSTRÉ  
ÍNDICE ILUSTRADO



PAGINA  
Page

		■				●	○	●		○		107
		■				○	○	○		○		108



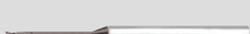
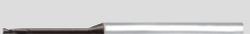
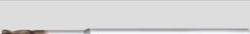
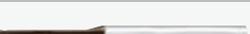
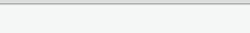
PAGINA  
Page

	■		■			●		●			●	114
	■		■			●		●			●	114
	■		■			●		●			●	115
	■		■			●		●			●	117
	■	■	■			●		●			●	118
	■	■	■			●		●			●	119
	■	■	■			●		●			●	121
	■	■	■			●		●			●	122
	■	■	■			●		●			●	124
			■	■		●		●			●	128
			■	■		●		●			●	128
			■	■		●		●			●	129
			■	■		●		●			●	130
			■	■		●		●			●	131

RACCOMANDATO - Suggested - Empfohlen - Conseillé - Aconsejado: ●  
POSSIBILE - Possible - Möglich - Possible - Possible: ○

# INDICE ILLUSTRATO

ILLUSTRATED CONTENTS  
ILLUSTRIERT VERZEICHNIS  
INDEX ILLUSTRÉ  
ÍNDICE ILUSTRADO

	CODICE Item no.	SERIE Series	GAMMA DIAMETRI Diameter Range	NUMERO ELICHE Flute Number	ANGOLO ELICA Flute Angle	RIVESTI- MENTI Coatings
	<b>416RXT</b>	Normale Normal	1-25	2	30°	<b>XT</b>
	<b>130RXT</b>	Normale Normal	3-12	2	0°	<b>XT</b>
	<b>302RXT</b>	Lunga Long	3-10	2	0°	<b>XT</b>
	<b>493RXT</b>	Normale Normal	2-20	3	30°	<b>XT</b>
	<b>414RXT</b>	Normale Normal	1-25	4	35°	<b>XT</b>
	<b>491HXT</b>	Normale Normal	2-16	3/4	0°	<b>XT</b>
	<b>1450XT</b>	Normale Normal	6-20	6	50°	<b>XT</b>
	<b>1460XT</b>	Lunga Long	6-20	6	50°	<b>XT</b>
	<b>1410XT</b>	Normale Normal	0,5-2,5	2	30°	<b>XT</b>
	<b>1430XT</b>	Normale Normal	0,4-3,0	2	30°	<b>XT</b>
	<b>1431XT</b>	Normale Normal	0,2-6,0	2	30°	<b>XT</b>
	<b>1433XT</b>	Normale Normal	0,5-4,0	2	30°	<b>XT</b>
	<b>1411XT</b>	Normale Normal	3-6	4	30°	<b>XT</b>
	<b>1415XT</b>	Normale Normal	3-6	4	30°	<b>XT</b>
	<b>419RXT</b>	Lunga Long	0,5-6	2	30°	<b>XT</b>
	<b>431RXT</b>	Normale Normal	0,3-5	2	30°	<b>XT</b>
	<b>433RXT</b>	Normale Normal	0,2-6	2	30°	<b>XT</b>
	<b>413RXT</b>	Normale Normal	0,3-6	3	30°	<b>XT</b>

# INDICE ILLUSTRATO

ILLUSTRATED CONTENTS  
 ILLUSTRIERT VERZEICHNIS  
 INDEX ILLUSTRÉ  
 ÍNDICE ILUSTRADO



PAGINA  
Page

			■	■		●		●			●	132
			■	■		●		●			●	133
			■	■		●		●			●	134
			■	■		●		●			●	135
			■	■		●		●			●	136
			■	■		●		●			●	137
		■				●		●			●	142
		■				●		●			●	143
		■	■			●		●			●	150
		■	■			●		●			●	151
		■	■	■		●		●			●	153
				■		●		●			●	159
■	■					●		●			●	162
■	■					●		●			●	162
			■	■		●		●			●	163
			■	■		●		●			●	164
			■	■		●		●			●	167
			■	■		●		●			●	171

RACCOMANDATO - Suggested - Empfohlen - Conseillé - Aconsejado: ●

POSSIBILE - Possible - Möglich - Possible - Posible: ○

# INDICE ILLUSTRATO

ILLUSTRATED CONTENTS  
ILLUSTRIERT VERZEICHNIS  
INDEX ILLUSTRÉ  
ÍNDICE ILUSTRADO

	<b>CODICE</b> Item no.	<b>SERIE</b> Series	<b>GAMMA</b> <b>DIAMETRI</b> Diameter Range	<b>NUMERO</b> <b>ELICHE</b> Flute Number	<b>ANGOLO</b> <b>ELICA</b> Flute Angle	<b>RIVESTI-</b> <b>MENTI</b> Coatings
	<b>1436D</b>	Extralunga Extra-Long	2-12	4	35°	
	<b>1420RD</b>	Lunga Long	1-12	2	30°	
	<b>1421RD</b>	Extralunga Extra-Long	2-12	2	30°	
	<b>1425RD</b>	Lunga Long	3-10	4	35°	
	<b>1437D</b>	Normale Normal	0,2-6,0	2	35°	
	<b>1434RD</b>	Normale Normal	0,2-6,0	2	35°	
	<b>1601DT</b>	Normale Normal	4-10	1	-	
	<b>1602DT</b>	Normale Normal	6-20	2	-	
	<b>602RDT</b>	Normale Normal	4-20	2	-	
	<b>603RDT</b>	Normale Normal	4-20	2	-	

	<b>CODICE</b> Item no.	<b>SERIE</b> Series	<b>GAMMA</b> <b>DIAMETRI</b> Diameter Range	<b>NUMERO</b> <b>ELICHE</b> Flute Number	<b>MATERIALE</b> Material	<b>RIVESTI-</b> <b>MENTI</b> Coatings
	<b>1100</b>	DIN 6539	0,5-20	2	Metallo Duro Solid Carbide	
	<b>1101</b>	Norm	0,5-16	2	Metallo Duro Solid Carbide	
	<b>1099</b>	Norm	1,25-6,3	2	Metallo Duro Solid Carbide	

\* PCD (Con riporto in policristallino) / (Solid carbide with polycrystalline diamond)

# INDICE ILLUSTRATO

ILLUSTRATED CONTENTS  
ILLUSTRIRT VERZEICHNIS  
INDEX ILLUSTRÉ  
ÍNDICE ILUSTRADO



PAGINA  
Page

	■	■	■						●			176
			■	■					●			177
			■	■					●			178
			■	■					●			179
		■	■						●			180
			■	■					●			184
	■		■						●			190
	■	■	■						●			191
	■	■	■	■					●			192
			■	■					●			194



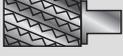
PAGINA  
Page

						●	●	○	●			198
						●	●	○	●	●		200
						●	●	○	●	●		202

RACCOMANDATO - Suggested - Empfohlen - Conseillé - Aconsejado: ●  
POSSIBILE - Possible - Möglich - Possible - Possible: ○

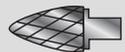
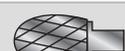
# INDICE ILLUSTRATO

ILLUSTRATED CONTENTS  
ILLUSTRIERT VERZEICHNIS  
INDEX ILLUSTRÉ  
ÍNDICE ILUSTRADO

			<b>CODICE</b> Item no.	<b>SERIE</b> Series	<b>GAMMA</b> <b>DIAMETRI</b> Diameter Range	<b>PAGINA</b> Page
			<b>1092</b>	Norm.	1-12	207
			<b>1091</b>	Norm.	1-12	207
			<b>2400</b>	Norm.	3-12	208
			<b>2401</b>	Norm.	2-12	208
			<b>2402</b>	Norm.	2-12	209
			<b>2403</b>	Norm.	2-12	209
			<b>2001</b>	Norm.	1.5-25	210
			<b>2002</b>	Norm.	1.5-25	210
			<b>2003</b>	Norm.	1.5-25	210
			<b>2004</b>	Norm.	1.5-25	210
			<b>2005</b>	Norm.	1.5-25	210
			<b>2006</b>	Norm.	1.5-25	210
			<b>2001F</b>	Norm.	1.5-25	210
			<b>2002F</b>	Norm.	1.5-25	210
			<b>2003F</b>	Norm.	1.5-25	210
			<b>2011</b>	Norm.	2.5-19	211
			<b>2012</b>	Norm.	2.5-19	211
			<b>2013</b>	Norm.	2.5-19	211
			<b>2014</b>	Norm.	2.5-19	211
			<b>2015</b>	Norm.	2.5-19	211

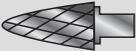
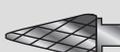
# INDICE ILLUSTRATO

ILLUSTRATED CONTENTS  
ILLUSTRIERT VERZEICHNIS  
INDEX ILLUSTRÉ  
ÍNDICE ILUSTRADO

			<b>CODICE</b> Item no.	<b>SERIE</b> Series	<b>GAMMA</b> <b>DIAMETRI</b> Diameter Range	<b>PAGINA</b> Page
		<b>2016</b>	Norm.	2.5-19	211	
		<b>2021</b>	Norm.	3-19	212	
		<b>2022</b>	Norm.	3-19	212	
		<b>2023</b>	Norm.	3-19	212	
		<b>2024</b>	Norm.	3-19	212	
		<b>2025</b>	Norm.	3-19	212	
		<b>2026</b>	Norm.	3-19	212	
		<b>2031</b>	Norm.	3-19	213	
		<b>2032</b>	Norm.	3-19	213	
		<b>2033</b>	Norm.	3-19	213	
		<b>2034</b>	Norm.	3-19	213	
		<b>2035</b>	Norm.	3-19	213	
		<b>2036</b>	Norm.	3-19	213	
		<b>2041</b>	Norm.	3-19	214	
		<b>2042</b>	Norm.	3-19	214	
		<b>2043</b>	Norm.	3-19	214	
		<b>2044</b>	Norm.	3-19	214	
		<b>2045</b>	Norm.	3-19	214	
		<b>2046</b>	Norm.	3-19	214	
		<b>2051</b>	Norm.	2,3-25,4	215	

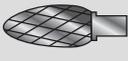
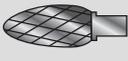
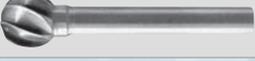
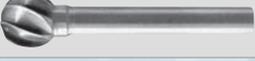
# INDICE ILLUSTRATO

ILLUSTRATED CONTENTS  
ILLUSTRIERT VERZEICHNIS  
INDEX ILLUSTRÉ  
ÍNDICE ILUSTRADO

			<b>CODICE</b> Item no.	<b>SERIE</b> Series	<b>GAMMA</b> <b>DIAMETRI</b> Diameter Range	<b>PAGINA</b> Page
			<b>2052</b>	Norm.	2,3-25	215
			<b>2053</b>	Norm.	2,3-25	215
			<b>2054</b>	Norm.	2,3-25,4	215
			<b>2055</b>	Norm.	2,3-25,4	215
			<b>2056</b>	Norm.	2,3-25,4	215
			<b>2061</b>	Norm.	3-19	216
			<b>2062</b>	Norm.	3-19	216
			<b>2063</b>	Norm.	3-19	216
			<b>2064</b>	Norm.	3-19	216
			<b>2065</b>	Norm.	3-19	216
			<b>2066</b>	Norm.	3-19	216
			<b>2071</b>	Norm.	3-16	217
			<b>2072</b>	Norm.	3-16	217
			<b>2073</b>	Norm.	3-16	217
			<b>2074</b>	Norm.	3-16	217
			<b>2075</b>	Norm.	3-16	217
			<b>2076</b>	Norm.	3-16	217
			<b>2501</b>	Norm.	3-25,4	218
			<b>2503</b>	Norm.	3-25,4	218
			<b>2511</b>	Norm.	3-25,4	218

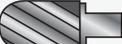
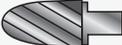
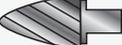
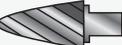
# INDICE ILLUSTRATO

ILLUSTRATED CONTENTS  
ILLUSTRIRT VERZEICHNIS  
INDEX ILLUSTRÉ  
ÍNDICE ILUSTRADO

			<b>CODICE</b> Item no.	<b>SERIE</b> Series	<b>GAMMA</b> <b>DIAMETRI</b> Diameter Range	<b>PAGINA</b> Page
		<b>3</b>	<b>2513</b>	Norm.	3-25,4	218
		<b>1</b>	<b>2081</b>	Norm.	2,3-19	219
		<b>2</b>	<b>2082</b>	Norm.	2,3-19	219
		<b>3</b>	<b>2083</b>	Norm.	2,5-19	219
		<b>4</b>	<b>2084</b>	Norm.	2,3-19	219
		<b>5</b>	<b>2085</b>	Norm.	2,3-19	219
		<b>6</b>	<b>2086</b>	Norm.	2,3-19	219
		<b>1</b>	<b>2081F</b>	Norm.	2,3-19	219
		<b>2</b>	<b>2082F</b>	Norm.	2,3-19	219
		<b>1</b>	<b>2091</b>	Norm.	3-19	220
		<b>2</b>	<b>2092</b>	Norm.	6-19	220
		<b>3</b>	<b>2093</b>	Norm.	3-19	220
		<b>4</b>	<b>2094</b>	Norm.	3-19	220
		<b>5</b>	<b>2095</b>	Norm.	3-19	220
		<b>6</b>	<b>2096</b>	Norm.	3-19	220
		<b>7</b>	<b>2300</b>	Norm.	6-19	221
		<b>7</b>	<b>2310</b>	Norm.	6-19	221
		<b>7</b>	<b>2320</b>	Norm.	6-19	221
		<b>7</b>	<b>2330</b>	Norm.	6-19	222
		<b>7</b>	<b>2340</b>	Norm.	6-19	222

# INDICE ILLUSTRATO

ILLUSTRATED CONTENTS  
ILLUSTRIERT VERZEICHNIS  
INDEX ILLUSTRÉ  
ÍNDICE ILUSTRADO

			<b>CODICE</b> Item no.	<b>SERIE</b> Series	<b>GAMMA</b> <b>DIAMETRI</b> Diameter Range	<b>PAGINA</b> Page
			<b>2350</b>	Norm.	6-19	222
			<b>2101</b>	Lunga/Extralunga Long/Extralong	3-12,7	223
			<b>2201</b>	Lunga/Extralunga Long/Extralong	3-12,7	223
			<b>2101F</b>	Lunga/Extralunga Long/Extralong	3-12,7	223
			<b>2201F</b>	Lunga/Extralunga Long/Extralong	2,3-19	223
			<b>2111</b>	Lunga/Extralunga Long/Extralong	3-12,7	224
			<b>2211</b>	Lunga/Extralunga Long/Extralong	3-12,7	224
			<b>2121</b>	Lunga/Extralunga Long/Extralong	3-12,7	225
			<b>2221</b>	Lunga/Extralunga Long/Extralong	3-12,7	225
			<b>2131</b>	Lunga/Extralunga Long/Extralong	3-12,7	226
			<b>2231</b>	Lunga/Extralunga Long/Extralong	3-12,7	226
			<b>2141</b>	Lunga/Extralunga Long/Extralong	3-12,7	227
			<b>2241</b>	Lunga/Extralunga Long/Extralong	3-12,7	227
			<b>2151</b>	Lunga/Extralunga Long/Extralong	3-12,7	228
			<b>2251</b>	Lunga/Extralunga Long/Extralong	3-12,7	228
			<b>2161</b>	Lunga/Extralunga Long/Extralong	3-12,7	229
			<b>2261</b>	Lunga/Extralunga Long/Extralong	3-12,7	229
			<b>2191</b>	Lunga/Extralunga Long/Extralong	3-12,7	230
			<b>2291</b>	Lunga/Extralunga Long/Extralong	3-12,7	230





angeloghezzi.it

# ISTRUZIONI PER L'USO E LA CONSULTAZIONE DEL LISTINO

PRICE LIST INSTRUCTIONS  
PREIS LISTE ANWEISUNGEN  
INSTRUCTIONS POUR L'UTILISATION DU TARIF  
INSTRUCCIONES PARA EL USO DE LA LISTA PRECIOS

**01**

## FRESE A CANDELA A 2 TAGLI IN METALLO DURO INTEGRALE

SOLID CARBIDE END MILLS - 2 FLUTES  
VOLLHARTMETALL FRÄSER - 2 SCHNEIDEN  
FRAISES EN CARBURE MONOBLOC - 2 DENTS  
FRESAS DE METAL DURO INTEGRAL - 2 DIENTES

**02**

**TALICARB NORM.**

TALICARB NORM.  
TALICARB NORM.  
TALICARB NORM.  
TALICARB NORM.

**03**

**01 DESCRIZIONE PRODOTTO:**

Product description  
Produkt Beschreibung  
Description produit  
Descripción producto

**02 NORMATIVA**

Norm  
Norm  
Norme  
Norma

**03 ICONE DESCRITTIVE**

Descriptive icons  
Beschreibende Symbolen  
Icones descriptives  
Iconos descriptivos

**04**

## 1012 - 1012TF

TFNEW COATING

**05**

06	Ø mm e8	L mm	L <sub>1</sub> mm	d mm	Z	1012 €	1012TF €
	3	38	12	3	2	8,11	12,33

**04 CODICE PRODOTTO**

Item code  
Katalognummer  
Reference produit  
Código referencia

**05 TIPO ATTACCO**

Shank type  
Schaft-typologie  
Typologie de attachement  
Tipo de mango

**06 DIMENSIONI**

Dimensions  
Abmessungen  
Dimensions  
Dimensiones

**07**

**08**

**09**

**07 GRUPPO MATERIALI LAVORABILI**

Group of working material  
Bearbeitungsmaterialien Gruppe  
Groupe de matériaux a usiner  
Grupo de materiales a mecanizar

**08 ESEMPI DI APPLICAZIONE**

Application examples  
Anwendungsbeispiele  
Exemple d'application  
Ejemplos de aplicaciones

**09 DISEGNO**

Drawing  
Zeichnung  
Plano  
Plan

# LEGENDA

KEY TO SYMBOLS  
ZEICHENERKLÄRUNG  
LÉGENDE  
LEYENDA



## SERIE CORTA

Short series  
Kurze Ausführung  
Série courte  
Serie corta



## SERIE NORMALE

Normal series  
Normale Ausführung  
Série normale  
Serie normal



## SERIE NORMALE "codolo scaricato"

Normal series  
"tapered shank"  
Normale Ausführung  
"Verjungter schaft"  
Série normale  
"Queue fuselée"  
Serie normal  
"Mango rabajadi"



## SERIE LUNGA

Long series  
Lange Ausführung  
Série longue  
Serie larga



## SERIE EXTRALUNGA

Extralong series  
Extralange Ausführung  
Série extralongue  
Serie extralarga



## N°1 TAGLIENTE

Number of flute  
Zähnezahl  
Nombre de dent  
Número de Labio



## N°2 TAGLIENTI

Number of flutes  
Zähnezahl  
Nombre de dents  
Número de Labios



## N°3 TAGLIENTI

Number of flutes  
Zähnezahl  
Nombre de dents  
Número de Labios



## N°4 TAGLIENTI

Number of flutes  
Zähnezahl  
Nombre de dents  
Número de Labios



## N°6 TAGLIENTI

Number of flutes  
Zähnezahl  
Nombre de dents  
Número de Labios



## FRESA MULTITAGLIO

Multi-flutes end mills  
Fräser Multi-Schneiden  
Fraises Multi-dents  
Fresas Multi-Labios



## FRESE CILINDRICHE

End mills with cylindrical shank  
Schaftfräser mit zylinderschaft  
Fraise à queue cylindrique  
Fresas de mango cilíndrico



## FRESE TORICHE

Toric end mills  
Torusfräser  
Fraises toriques  
Fresas tóricas



## FRESE SEMISFERICHE

Ball nose end mills  
Radiusfräser  
Fraises hémisphériques  
Fresas de cabeza esférica



## FRESE CONICHE

Taper mills  
Kegelige Gesenkfräser  
Fraises coniques  
Fresas cónicas



## FRESE CONICHE "con testa raggiata"

Taper mills with ball nose  
Kegelige Gesenkfräser mit Radius  
Fraises coniques à bout hémisphérique  
Fresas cónicas de cabeza esférica



## POSSIBILITÀ DI PENETRAZIONE

Penetration possibility  
Senkrecht eindringung Möglichkeit  
Possibilité de pénétration  
Posibilidad de penetración



## TRASLAZIONE LATERALE

Lateral Translation  
Seitlichverschiebung  
Translation latérale  
Traslado lateral



## TRASLAZIONE IN 3D

Tridimensional Translation  
3-D Verschiebung  
Translation en 3D  
Traslado en 3D



### TAGLIO AL CENTRO -Z1

Center Cutting - Z1  
Zentrumschnitt - Z1  
Coupe au centre - Z1  
Corte al centro - Z1



### TAGLIO AL CENTRO -Z2

Center Cutting - Z2  
Zentrumschnitt - Z2  
Coupe au centre - Z2  
Corte al centro - Z2



### TAGLIO AL CENTRO -Z3

Center Cutting - Z3  
Zentrumschnitt - Z3  
Coupe au centre - Z3  
Corte al centro - Z3



### TAGLIO AL CENTRO -Z4

Center Cutting - Z4  
Zentrumschnitt - Z4  
Coupe au centre - Z4  
Corte al centro - Z4



### TAGLIO AL CENTRO -Z6

Center Cutting - Z6  
Zentrumschnitt - Z6  
Coupe au centre - Z6  
Corte al centro - Z6



### ANGOLO ELICA

Helix angle  
Drallwinkel  
Angle d'hélice  
Ángulo de hélice



### ATTACCO DIN 6535 HA

Shank DIN 6535 HA  
Schaft DIN 6535 HA  
Queue DIN 6535 HA  
Mango DIN 6535 HA



### ATTACCO DIN 6535 HB

Shank DIN 6535 HB  
Schaft DIN 6535 HB  
Queue DIN 6535 HB  
Mango DIN 6535 HB



### INFORMAZIONI TECNICHE

Technical instructions  
Technische Hinweise  
Instructions technique  
Informaciones técnicas



### ANGOLO DI INCLINAZIONE

Angle of inclination  
Neigungswinkel  
Angles d'inclinaison  
Ángulo de inclinación



### RIVESTIMENTO TiAlN

Coating TiAlN  
Beschichtung TiAlN  
Revetement TiAlN  
Recubrimiento TiAlN



### RIVESTIMENTO X-TREME

Coating X-Treme  
Beschichtung X-Treme  
Revetement X-Treme  
Recubrimiento X-Treme



### RIVESTIMENTO CrN

Coating CrN  
Beschichtung CrN  
Revetement CrN  
Recubrimiento CrN

### GRUPPO DI MATERIALI

Material Groups  
Material-Beispiele  
Groupes de Matériaux  
Grupos de Materiales



**ACCIAI**  
Steel  
Stahl  
Acier  
Acero



**ACC. INOSSIDABILI**  
Stainless steel  
Rostbeständiger Stahl  
Acier inoxydable  
Acero inoxidable



**GHISA**  
Cast iron  
Guß  
Fonte  
Fundición



**NON FERROSI**  
Non ferrous materials  
Nichteisenmetall  
Métaux non ferreux  
Materiales no férricos



**SUPERLEGHE**  
Superalloys  
Superlegierung  
Superalliages  
Speraleaciones



**ACCIAI TEMPRATI**  
Hardened steel  
Gehärtete Stahl  
Acier trempé  
Acero templado

### ESEMPI D'APPLICAZIONE

Application examples  
Bearbeitungsbeispiele  
Exemple d'application  
Ejemplos de aplicaciones



**SGROSSATURA**  
Roughing  
Schruppen  
Ebauche  
Desbaste



**FINITURA**  
Finishing  
Schlichten  
Finition  
Acabado



**CAVA**  
Slotting  
Schlitz-Bearbeitung  
Rainurage  
Ranura



**COPIATURA**  
Copying  
Kopieren  
Copiage  
Copia

# LEGENDA

KEY TO SYMBOLS  
ZEICHENERKLÄRUNG  
LÉGENDE  
LEYENDA



## SERIE CORTA

Short series  
Kurze Ausführung  
Série courte  
Serie corta



## SERIE NORMALE

Normal series  
Normale Ausführung  
Série normale  
Serie normal



## SERIE LUNGA

Long series  
Lange Ausführung  
Série longue  
Serie larga



## SERIE EXTRALUNGA

Extralong series  
Extralange Ausführung  
Série extralongue  
Serie extralarga



## N°1 TAGLIENTE

Number of flute  
Zähnezahl  
Nombre de dent  
Número de Labio



## N°2 TAGLIENTI

Number of flutes  
Zähnezahl  
Nombre de dents  
Número de Labios



## N°3 TAGLIENTI

Number of flutes  
Zähnezahl  
Nombre de dents  
Número de Labios



## N°4 TAGLIENTI

Number of flutes  
Zähnezahl  
Nombre de dents  
Número de Labios



## N°6 TAGLIENTI

Number of flutes  
Zähnezahl  
Nombre de dents  
Número de Labios



## FRESA MULTITAGLIO

Multi-flutes end mills  
Fräser Multi-Schneiden  
Fraises Multi-dents  
Fresas Multi-Labios



## FRESE CILINDRICHE

End mills with cylindrical shank  
Schaftfräser mit zylinderschaft  
Fraise à queue cylindrique  
Fresas de mango cilíndrico



## FRESE TORICHE

Toric end mills  
Torusräser  
Fraises toriques  
Fresas tóricas



## FRESE SEMISFERICHE

Ball nose end mills  
Radiusfräser  
Fraises hémisphériques  
Fresas de cabeza esférica



## FRESE SEMISFERICHE 220° E 250°

Ball nose end mills 220° and 250°  
Power Radiusfräser 220° und 250°  
Fraises Power hémisphériques 220° et 250°  
Fresas Power esféricas 220° y 250°



## POSSIBILITÀ DI PENETRAZIONE

Penetration possibility  
Senkrechteindringung Möglichkeit  
Possibilité de pénétration  
Posibilidad de penetración



## TRASLAZIONE LATERALE

Lateral Translation  
Seitlichverschiebung  
Translation latérale  
Traslado lateral



## TRASLAZIONE IN 3D

Tridimensional Translation  
3-D Verschiebung  
Translation en 3D  
Traslado en 3D



### TAGLIO AL CENTRO -Z1

Center Cutting - Z1  
Zentrumschnitt - Z1  
Coupe au centre - Z1  
Corte al centro - Z1



### TAGLIO AL CENTRO -Z2

Center Cutting - Z2  
Zentrumschnitt - Z2  
Coupe au centre - Z2  
Corte al centro - Z2



### TAGLIO AL CENTRO -Z3

Center Cutting - Z3  
Zentrumschnitt - Z3  
Coupe au centre - Z3  
Corte al centro - Z3



### TAGLIO AL CENTRO -Z4

Center Cutting - Z4  
Zentrumschnitt - Z4  
Coupe au centre - Z4  
Corte al centro - Z4



### TAGLIO AL CENTRO -Z3/Z4

Center Cutting - Z3/Z4  
Zentrumschnitt - Z3/Z4  
Coupe au centre - Z3/Z4  
Corte al centro - Z3/Z4



### ANGOLO ELICA

Helix angle  
Drallwinkel  
Angle d'hélice  
Ángulo de hélice



### ATTACCO DIN 6535 HA

Shank DIN 6535 HA  
Schaft DIN 6535 HA  
Queue DIN 6535 HA  
Mango DIN 6535 HA



### ATTACCO DIN 6535 HB

Shank DIN 6535 HB  
Schaft DIN 6535 HB  
Queue DIN 6535 HB  
Mango DIN 6535 HB



### RIVESTIMENTO DIAMOND

Diamond coating  
Beschichtung Diamond  
Revêtement Diamond  
Recubrimiento Diamante



### RIVESTIMENTO X-TREME

X-Treme Coating  
X-Treme-Beschichtung  
Revêtement X-Treme  
Recubrimiento X-Treme

### GRUPPO DI MATERIALI

Material Groups  
Material-Beispiele  
Groupes de Matériaux  
Grupos de Materiales



**ACCIAI**  
Steel  
Stahl  
Acier  
Acero



**ACC. INOSSIDABILI**  
Stainless steel  
Rostbeständiger Stahl  
Acier inoxydable  
Acero inoxidable



**GHISA**  
Cast iron  
Guß  
Fonte  
Fundición



**NON FERROSI**  
Non ferrous materials  
Nichteisenmetall  
Métaux non ferreux  
Materiales no férricos



**SUPERLEGHE**  
Superalloys  
Superlegierung  
Superalliajes  
Speraleaciones



**ACCIAI TEMPRATI**  
Hardened steel  
Gehärtete Stahl  
Acier trempé  
Acero templado

### ESEMPI D'APPLICAZIONE

Application examples  
Bearbeitungsbeispiele  
Exemple d'application  
Ejemplos de aplicaciones



**SGROSSATURA**  
Roughing  
Schruppen  
Ebauche  
Desbaste



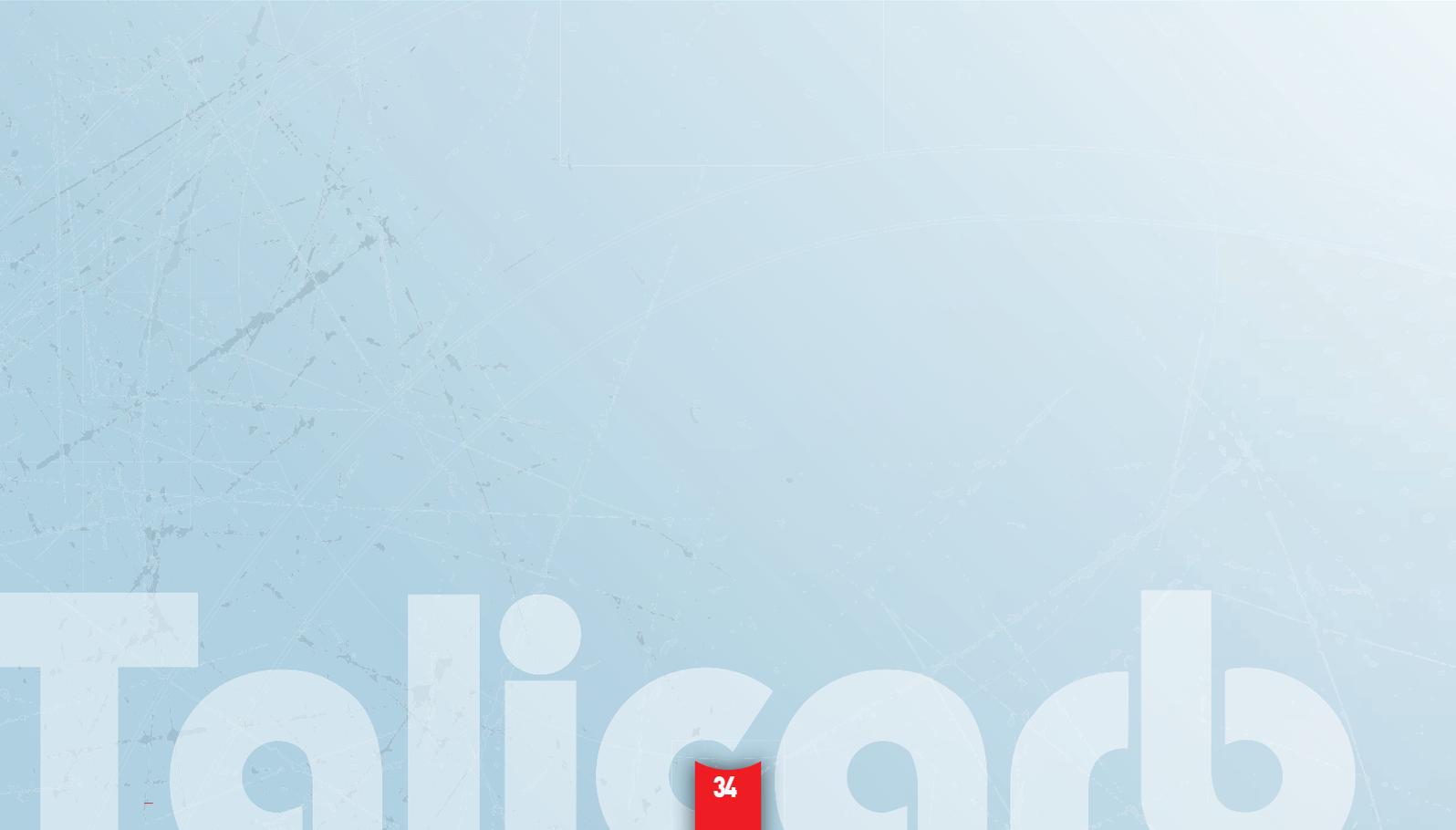
**FINITURA**  
Finishing  
Schlichten  
Finition  
Acabado



**CAVA**  
Slotting  
Schlitz-Bearbeitung  
Rainurage  
Ranura



**COPIATURA**  
Copying  
Kopieren  
Copiage  
Copia



Tajicqdb

# FRESE A CANDELA

per impieghi generici



GENERAL PURPOSE END MILLS



UNIVERSELLEN SCHAFTFRÄSER FÜR ALLGEMEINE ANWENDUNGEN



FRAISE À QUEUE UNIVERSELS



FRESAS DE MANGO CILÍNDRICO PARA EMPLEOS GENERALES



# FRESE A CANDELA A 2 TAGLI IN METALLO DURO INTEGRALE

SOLID CARBIDE END MILLS - 2 FLUTES  
VOLLHARTMETALL FRÄSER - 2 SCHNEIDEN  
FRAISES EN CARBURE MONOBLOC - 2 DENTS  
FRESAS DE METAL DURO INTEGRAL - 2 LABIOS

TALICARB NORM.

TALICARB NORM.  
TALICARB NORM.  
TALICARB NORM.  
TALICARB NORM.

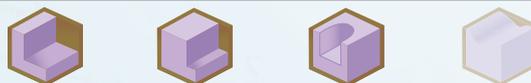


## 1012 - 1012TF

TF<sup>NEW</sup>  
COATING



∅ mm e8	L mm	L <sub>1</sub> mm	d mm	Z	1012 €	1012TF €
3	38	12	3	2	8,11	12,33
3.5	50	14	4	2	13,92	19,35
4	50	14	4	2	12,11	17,55
4.5	50	15	5	2	17,20	22,65
5	63	15	5	2	14,94	22,65
6	63	19	6	2	16,10	23,85
7	63	19	7	2	19,80	28,75
8	63	20	8	2	20,60	29,55
9	63	22	9	2	24,10	33,95
10	63	25	10	2	34,20	42,70
11	76	25	11	2	38,60	54,70
12	76	25	12	2	42,70	59,00
14	88	31	14	2	73,50	90,10
16	88	31	16	2	83,80	106,00
18	100	38	18	2	133,00	156,00
20	100	38	20	2	166,50	193,00
22	100	38	22	2	177,00	207,00
25	100	38	25	2	215,00	263,00





### SERIE NORMALE

NORMAL SERIES  
NORMAL AUSFÜHRUNG  
SÉRIE NORMALE  
SERIE NORMAL

# FRESE A CANDELA A 2 TAGLI IN METALLO DURO INTEGRALE

SOLID CARBIDE END MILLS - 2 FLUTES  
VOLLHARTMETALL FRÄSER - 2 SCHNEIDEN  
FRAISES EN CARBURE MONOBLOC - 2 DENTS  
FRESAS DE METAL DURO INTEGRAL - 2 LABIOS

## 1212TF

TF<sup>NEW</sup>  
COATING



Ø mm e8	L mm	L <sub>1</sub> mm	d mm	Z	1212TF €
1.5	50	4	6	2	18,40
*1.5A	50	4	4	2	12,56
2	50	6	6	2	18,40
*2A	50	6	4	2	12,56
2.5	50	8	6	2	18,40
*2.5A	50	8	4	2	12,56
3	50	8	6	2	18,40
*3A	50	8	4	2	12,56
3.5	50	10	6	2	18,40
4	50	11	6	2	18,40
*4A	50	11	4	2	14,02
4.5	50	11	6	2	14,73
5	50	13	6	2	14,73
5.5	50	13	6	2	16,35
6	50	16	6	2	16,35
6.5	60	16	8	2	26,40
7	60	16	8	2	26,40
7.5	60	19	8	2	26,40
8	60	20	8	2	26,40
8.5	75	20	10	2	39,85
9	75	20	10	2	39,85
9.5	75	25	10	2	39,85
10	75	25	10	2	39,85
11	75	25	12	2	54,50
12	75	30	12	2	54,50
13	83	40	14	2	71,30
14	83	40	14	2	71,30

Ø mm e8	L mm	L <sub>1</sub> mm	d mm	Z	1212TF €
15	92	40	16	2	93,70
16	92	40	16	2	93,70
18	92	40	18	2	140,50
20	104	45	20	2	160,50

\*A d=4

→1-2

→2-2



# FRESE A CANDELA A 2 TAGLI IN METALLO DURO INTEGRALE

SOLID CARBIDE END MILLS - 2 FLUTES  
VOLLHARTMETALL FRÄSER - 2 SCHNEIDEN  
FRAISES EN CARBURE MONOBLOC - 2 DENTS  
FRESAS DE METAL DURO INTEGRAL - 2 LABIOS

## SERIE LUNGA ED EXTRALUNGA

LONG SERIES, EXTRALONG SERIES  
LANGE AUSFÜHRUNG, EXTRALANGE AUSFÜHRUNG  
SÉRIE LONGUE, SÉRIE EXTRALONGUE  
SERIE LARGA, SERIE EXTRALARGA



### 1032-1032TF

TFNEW  
COATING



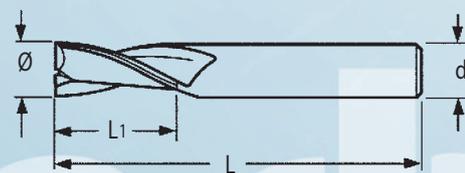
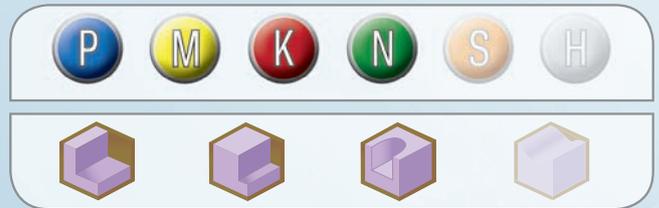
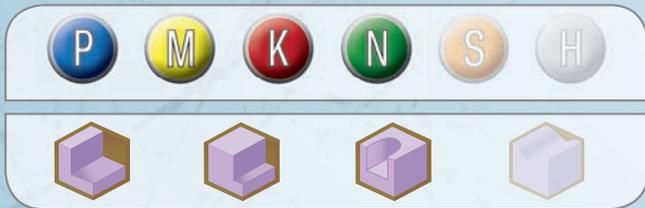
Ø mm e8	L mm	L <sub>1</sub> mm	d mm	Z	1032 €	1032TF €
3	60	19	3	2	13,39	16,75
4	63	19	4	2	15,20	19,00
5	63	19	5	2	19,85	24,80
6	76	31	6	2	21,90	27,40
8	76	31	8	2	26,85	29,50
10	76	31	10	2	45,00	49,60
12	100	50	12	2	59,20	65,20
14	125	57	14	2	110,00	115,50
16	125	57	16	2	125,50	131,50
18	125	57	18	2	197,50	207,00
20	125	57	20	2	220,50	231,50

### 1042-1042TF

TFNEW  
COATING



Ø mm e8	L mm	L <sub>1</sub> mm	d mm	Z	1042 €	1042TF €
3	75	25	3	2	16,15	19,20
4	75	31	4	2	18,10	21,55
5	100	31	5	2	23,95	28,55
6	100	38	6	2	27,00	32,15
8	100	41	8	2	33,30	34,90
10	100	45	10	2	45,00	47,20
12	150	75	12	2	92,60	97,00
14	150	75	14	2	132,00	132,00
16	150	75	16	2	150,50	150,50
18	150	75	18	2	224,00	224,00
20	150	75	20	2	236,00	236,00





## TALICARB NORM.

TALICARB NORM.  
TALICARB NORM.  
TALICARB NORM.  
TALICARB NORM.

# FRESE A CANDELA

## A 3 TAGLI IN METALLO DURO INTEGRALE

SOLID CARBIDE END MILLS - 3 FLUTES  
VOLLHARTMETALL FRÄSER - 3 SCHNEIDEN  
FRAISES EN CARBURE MONOBLOC - 3 DENTS  
FRESAS DE METAL DURO INTEGRAL - 3 LABIOS

## 1013 - 1013TF

TFNEW  
COATING



Ø mm e8	L mm	L <sub>1</sub> mm	d mm	Z	1013 €	1013TF €
3	38	12	3	3	8,11	12,33
3.5	50	14	4	3	13,92	19,35
4	50	14	4	3	12,11	17,55
4.5	50	15	5	3	17,20	22,65
5	63	15	5	3	14,94	22,65
6	63	19	6	3	16,10	23,85
7	63	19	7	3	19,80	28,75
8	63	20	8	3	20,60	29,55
9	63	22	9	3	24,10	33,95
10	63	25	10	3	34,20	42,70
11	76	25	11	3	38,60	54,70
12	76	25	12	3	42,70	59,00
14	88	31	14	3	73,50	90,10
16	88	31	16	3	83,80	106,00
18	100	38	18	3	133,00	156,00
20	100	38	20	3	166,50	193,00
22	100	38	22	3	177,00	207,00
25	100	38	25	3	215,00	263,00



# FRESE A CANDELA

## A 3 TAGLI IN METALLO DURO INTEGRALE

SOLID CARBIDE END MILLS - 3 FLUTES  
VOLLHARTMETALL FRÄSER - 3 SCHNEIDEN  
FRAISES EN CARBURE MONOBLOC - 3 DENTS  
FRESAS DE METAL DURO INTEGRAL - 3 LABIOS

### SERIE NORMALE

NORMAL SERIES  
NORMAL AUSFÜHRUNG  
SÉRIE NORMALE  
SÉRIE NORMAL



## 1213TF

TF **NEW**  
COATING



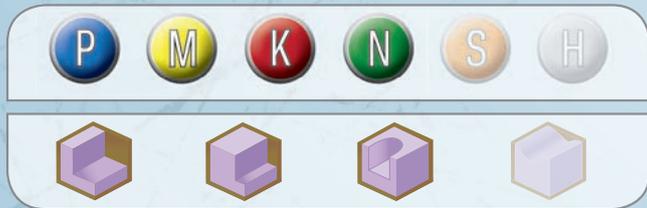
∅ mm e8	L mm	L <sub>1</sub> mm	d mm	Z	1213TF €
1.5	50	4	6	3	18,40
*1.5A	50	4	4	3	12,56
2	50	6	6	3	18,40
*2A	50	6	4	3	12,56
2.5	50	8	6	3	18,40
*2.5A	50	8	4	3	12,56
3	50	8	6	3	18,40
*3A	50	8	4	3	12,56
3.5	50	10	6	3	18,40
4	50	11	6	3	18,40
*4A	50	11	4	3	14,02
4.5	50	11	6	3	14,73
5	50	13	6	3	14,73
5.5	50	13	6	3	16,35
6	50	16	6	3	16,35
6.5	60	16	8	3	26,40
7	60	16	8	3	26,40
7.5	60	19	8	3	26,40
8	60	20	8	3	26,40
8.5	75	20	10	3	39,85
9	75	20	10	3	39,85
9.5	75	25	10	3	39,85
10	75	25	10	3	39,85
11	75	25	12	3	54,50
12	75	30	12	3	54,50
13	83	40	14	3	71,30
14	83	40	14	3	71,30

\*A d=4

→1-2

∅ mm e8	L mm	L <sub>1</sub> mm	d mm	Z	1213TF €
15	92	40	16	3	93,70
16	92	40	16	3	93,70
18	92	40	18	3	140,50
20	104	45	20	3	160,50

→2-2





## SERIE LUNGA ED EXTRALUNGA

LONG SERIES, EXTRALONG SERIES  
 LANGE AUSFÜHRUNG, EXTRALANGE AUSFÜHRUNG  
 SÉRIE LONGUE, SÉRIE EXTRALONGUE  
 SERIE LARGA, SERIE EXTRALARGA

# FRESE A CANDELA A 3 TAGLI IN METALLO DURO INTEGRALE

SOLID CARBIDE END MILLS - 3 FLUTES  
 VOLLHARTMETALL FRÄSER - 3 SCHNEIDEN  
 FRAISES EN CARBURE MONOBLOC - 3 DENTS  
 FRESAS DE METAL DURO INTEGRAL - 3 LABIOS

## 1033 - 1033TF

TFNEW COATING



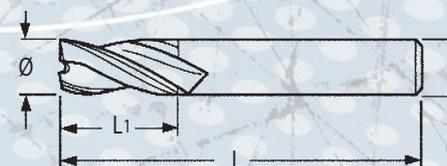
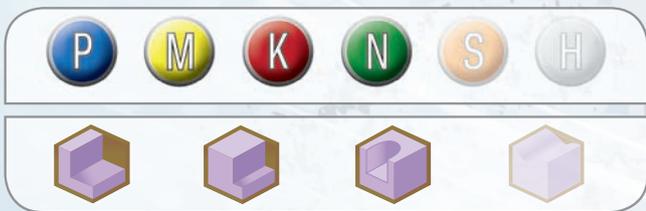
∅ mm e8	L mm	L <sub>1</sub> mm	d mm	Z	1033 €	1033TF €
3	60	19	3	3	13,39	16,75
4	63	19	4	3	15,20	19,00
5	63	19	5	3	19,85	24,80
6	76	31	6	3	21,90	27,40
8	76	31	8	3	26,85	29,50
10	76	31	10	3	45,00	49,60
12	100	50	12	3	59,20	65,20
14	125	57	14	3	110,00	115,50
16	125	57	16	3	125,50	131,50
18	125	57	18	3	197,50	207,00
20	125	57	20	3	220,50	231,50

## 1043-1043TF

TFNEW COATING



∅ mm e8	L mm	L <sub>1</sub> mm	d mm	Z	1043 €	1043TF €
3	75	25	3	3	16,15	19,20
4	75	31	4	3	18,10	21,55
5	100	31	5	3	23,95	28,55
6	100	38	6	3	27,00	32,15
8	100	41	8	3	33,30	34,90
10	100	45	10	3	45,00	47,20
12	150	75	12	3	92,60	97,00
14	150	75	14	3	132,00	132,00
16	150	75	16	3	150,50	150,50
18	150	75	18	3	224,00	224,00
20	150	75	20	3	236,00	236,00







### TALICARB NORM.

TALICARB NORM.  
TALICARB NORM.  
TALICARB NORM.  
TALICARB NORM.

## FRESE A CANDELA A 3 TAGLI IN METALLO DURO INTEGRALE

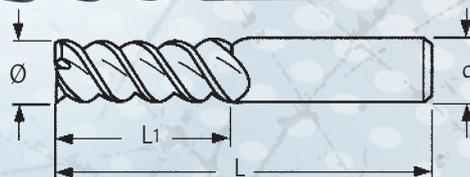
SOLID CARBIDE END MILLS - 3 FLUTES  
VOLLHARTMETALL FRÄSER - 3 SCHNEIDEN  
FRAISES EN CARBURE MONOBLOC - 3 DENTS  
FRESAS DE METAL DURO INTEGRAL - 3 LABIOS

## 1053-1053TF

TF<sup>NEW</sup>  
COATING



∅ mm e8	L mm	L <sub>1</sub> mm	d mm	Z	1053 €	1053TF €
3	38	12	3	3	12,62	17,20
4	50	14	4	3	12,62	17,20
5	50	15	5	3	19,65	23,95
6	63	19	6	3	22,50	26,70
8	63	20	8	3	30,90	36,00
10	63	25	10	3	45,60	51,10
12	76	25	12	3	56,30	62,60
14	88	32	14	3	98,80	104,50
16	88	32	16	3	102,50	121,50
18	100	38	18	3	171,50	196,50
20	100	38	20	3	198,00	224,00



**Talicarb**

# FRESE A CANDELA

## A 4 TAGLI IN METALLO DURO INTEGRALE

SOLID CARBIDE END MILLS - 4 FLUTES  
 VOLLHARTMETALL FRÄSER - 4 SCHNEIDEN  
 FRAISES EN CARBURE MONOBLOC - 4 DENTS  
 FRESAS DE METAL DURO INTEGRAL - 4 LABIOS

### TALICARB NORM.

TALICARB NORM.  
 TALICARB NORM.  
 TALICARB NORM.  
 TALICARB NORM.

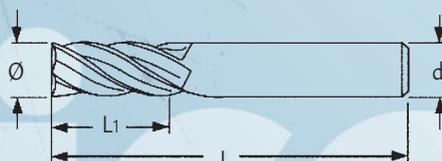
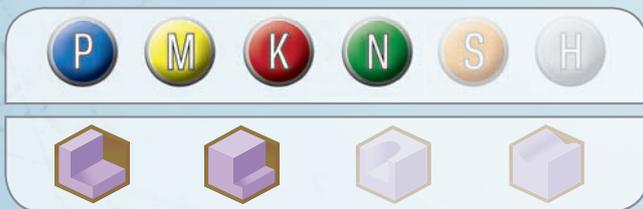


## 1014 - 1014TF

TFNEW COATING



Ø mm e8	L mm	L <sub>1</sub> mm	d mm	Z	1014 €	1014TF €
3	38	12	3	4	8,11	12,33
3.5	50	14	4	4	13,92	19,35
4	50	14	4	4	12,11	17,55
4.5	50	15	5	4	17,20	22,65
5	63	15	5	4	14,94	22,65
6	63	19	6	4	16,10	23,85
7	63	19	7	4	19,80	28,75
8	63	20	8	4	20,60	29,55
9	63	22	9	4	24,10	33,95
10	63	25	10	4	34,20	42,70
11	76	25	11	4	38,60	54,70
12	76	25	12	4	42,70	59,00
14	88	31	14	4	73,50	90,10
16	88	31	16	4	83,80	106,00
18	100	38	18	4	133,00	156,00
20	100	38	20	4	166,50	193,00
22	100	38	22	4	177,00	207,00
25	100	38	25	4	215,00	263,00





## SERIE NORMALE

NORMAL SERIES  
NORMAL AUSFÜHRUNG  
SÉRIE NORMALE  
SERIE NORMAL

# FRESE A CANDELA A 4 TAGLI IN METALLO DURO INTEGRALE

SOLID CARBIDE END MILLS - 4 FLUTES  
VOLLHARTMETALL FRÄSER - 4 SCHNEIDEN  
FRAISES EN CARBURE MONOBLOC - 4 DENTS  
FRESAS DE METAL DURO INTEGRAL - 4 LABIOS

## 1214TF

TFNEW  
COATING



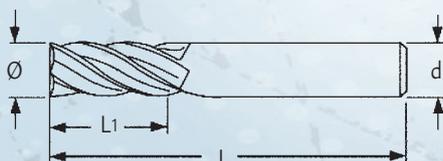
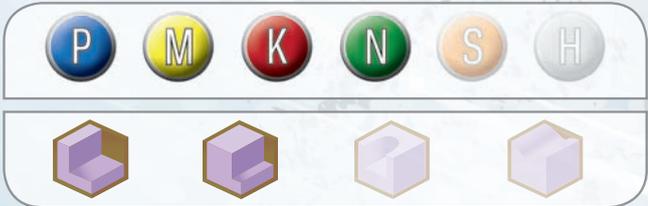
$\varnothing$ mm e8	L mm	L <sub>1</sub> mm	d mm	Z	1214TF €
1.5	50	4	6	4	18,40
*1.5A	50	4	4	4	12,56
2	50	6	6	4	18,40
*2A	50	6	4	4	12,56
2.5	50	8	6	4	18,40
*2.5A	50	8	4	4	12,56
3	50	8	6	4	18,40
*3A	50	8	4	4	12,56
3.5	50	10	6	4	18,40
4	50	11	6	4	18,40
*4A	50	11	4	4	14,02
4.5	50	11	6	4	14,73
5	50	13	6	4	14,73
5.5	50	13	6	4	16,35
6	50	16	6	4	16,35
6.5	60	16	8	4	26,40
7	60	16	8	4	26,40
7.5	60	19	8	4	26,40
8	60	20	8	4	26,40
8.5	75	20	10	4	39,85
9	75	20	10	4	39,85
9.5	75	25	10	4	39,85
10	75	25	10	4	39,85
11	75	25	12	4	54,50
12	75	30	12	4	54,50
13	83	40	14	4	71,30
14	83	40	14	4	71,30

\*A d=4

→1-2

$\varnothing$ mm e8	L mm	L <sub>1</sub> mm	d mm	Z	1214TF €
15	92	40	16	4	93,70
16	92	40	16	4	93,70
18	92	40	18	4	140,50
20	104	45	20	4	160,50

→2-2



# FRESE A CANDELA A 4 TAGLI IN METALLO DURO INTEGRALE

SOLID CARBIDE END MILLS - 4 FLUTES  
VOLLHARTMETALL FRÄSER - 4 SCHNEIDEN  
FRAISES EN CARBURE MONOBLOC - 4 DENTS  
FRESAS DE METAL DURO INTEGRAL - 4 LABIOS

## SERIE LUNGA ED EXTRALUNGA

LONG SERIES, EXTRALONG SERIES  
LANGE AUSFÜHRUNG, EXTRALANGE AUSFÜHRUNG  
SÉRIE LONGUE, SÉRIE EXTRALONGUE  
SERIE LARGA, SERIE EXTRALARGA



### 1034 - 1034TF

TFNEW  
COATING



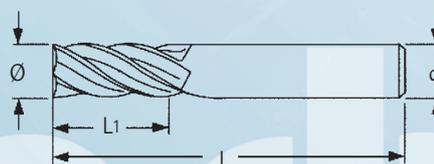
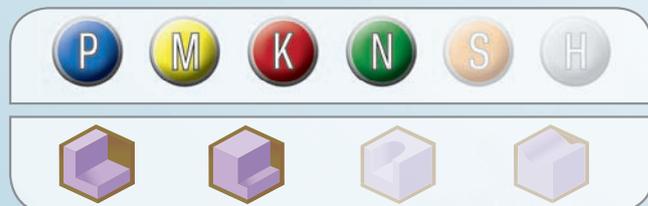
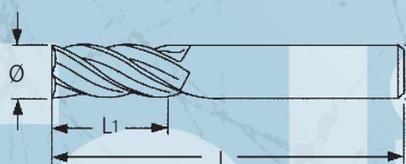
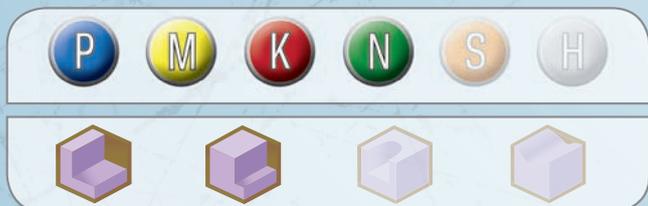
Ø mm e8	L mm	L <sub>1</sub> mm	d mm	Z	1034 €	1034TF €
3	60	19	3	4	13,39	16,75
4	63	19	4	4	15,20	19,00
5	63	19	5	4	19,85	24,80
6	76	31	6	4	21,90	27,40
8	76	31	8	4	26,85	29,50
10	76	31	10	4	45,00	49,60
12	100	50	12	4	59,20	65,20
14	125	57	14	4	110,00	115,50
16	125	57	16	4	125,50	131,50
18	125	57	18	4	197,50	207,00
20	125	57	20	4	220,50	231,50

### 1044-1044TF

TFNEW  
COATING



Ø mm e8	L mm	L <sub>1</sub> mm	d mm	Z	1044 €	1044TF €
3	75	25	3	4	16,15	19,20
4	75	31	4	4	18,10	21,55
5	100	31	5	4	23,95	28,55
6	100	38	6	4	27,00	32,15
8	100	41	8	4	33,30	34,90
10	100	45	10	4	45,00	47,20
12	150	75	12	4	92,60	97,00
14	150	75	14	4	132,00	132,00
16	150	75	16	4	150,50	150,50
18	150	75	18	4	224,00	224,00
20	150	75	20	4	236,00	236,00



## FATTORE DI CORREZIONE FRESE\*

End mills correction factor - Fräser Berichtigungsfaktor  
Facteur de correction fraises - Factor de corrección fresas

### PER FRESE SENZA RIVESTIMENTO = $V_c$ e $F_z$ x 0,8

For end mill without coating - Für Fräser ohne Beschichtung  
Pour fraises sans revêtement - Para fresas sin recubrimiento

## PARAMETRI DI TAGLIO



CUTTING PARAMETERS  
SCHNITTDATEN  
PARAMÈTRES DE COUPE  
PARAMETROS DE CORTE

### FRESE A CANDELA: 2/3/4 Tagli

Solid carbide end mills - Vollhartmetall fräser - Schneiden fraises en carbure monobloc - Fresas de metal duro integral:  
2/3/4 Flutes - Schneiden - Dents - Labios

1032\* =  $V_c$  e  $F_z$  x 0,8

1042\* =  $V_c$  e  $F_z$  x 0,7

### CAVA DAL PIENO: $V_c$ e $F_z$ - 20%

Slotting:  $V_c$  e  $F_z$  - 20%

Bohrnuten:  $V_c$  e  $F_z$  - 20%

Rainurage:  $V_c$  e  $F_z$  - 20%

Ranura:  $V_c$  e  $F_z$  - 20%

GRUPPO MATERIALI Material Groups Material-Beispiele Groupes de Matériaux Grupos de Materiales	ap		ae	VC m/min	Fz [mm] AVANZAMENTO AL DENTE Tooth Feed - Zahnvorschub - Avancement au dent - Avance al Labios												
	ap	ae	ap		2	4	6	8	10	12	14	16	18	20	22	25	
<b>P</b> < 800 N/mm <sup>2</sup>	1x∅	0,5x∅	0,5x∅	80 - 110	0,005 0,010	0,02 0,04	0,04 0,06	0,06 0,08	0,08 0,10	0,10 0,12	0,12 0,14	0,14 0,16	0,16 0,18	0,18 0,20	0,20 0,22	0,22 0,25	
<b>P</b> < 1100 N/mm <sup>2</sup>	1x∅	0,5x∅	0,5x∅	70 - 100	0,005 0,010	0,02 0,04	0,04 0,06	0,06 0,08	0,08 0,10	0,10 0,12	0,12 0,14	0,14 0,16	0,16 0,18	0,18 0,20	0,20 0,22	0,22 0,25	
<b>P</b> < 1300 N/mm <sup>2</sup>	1x∅	0,5x∅	0,5x∅	60 - 90	0,003 0,005	0,005 0,020	0,02 0,04	0,04 0,06	0,06 0,08	0,08 0,10	0,10 0,12	0,12 0,14	0,14 0,16	0,16 0,18	0,18 0,20	0,20 0,22	
<b>M</b> > 800 N/mm <sup>2</sup>	1x∅	0,5x∅	0,5x∅	40 - 60	0,01 0,03	0,03 0,05	0,05 0,07	0,07 0,09	0,09 0,11	0,11 0,13	0,13 0,15	0,15 0,17	0,17 0,19	0,19 0,21	0,21 0,23	0,23 0,25	
<b>K</b> GG	1x∅	0,5x∅	0,5x∅	100 - 140	0,03 0,05	0,05 0,07	0,07 0,09	0,09 0,11	0,11 0,13	0,13 0,15	0,17 0,19	0,19 0,21	0,21 0,23	0,23 0,25	0,25 0,27	0,27 0,30	
<b>K</b> GGG	1x∅	0,5x∅	0,5x∅	80 - 110	0,005 0,01	0,02 0,04	0,04 0,06	0,06 0,08	0,08 0,10	0,10 0,12	0,12 0,14	0,14 0,16	0,16 0,18	0,18 0,20	0,20 0,22	0,22 0,25	
<b>N</b> Alluminio	1x∅	0,5x∅	0,5x∅	110 - 150	0,03 0,05	0,05 0,07	0,07 0,09	0,09 0,11	0,11 0,13	0,13 0,15	0,17 0,19	0,19 0,21	0,21 0,23	0,23 0,25	0,25 0,27	0,27 0,30	
<b>N</b> Non metalli	1x∅	0,5x∅	0,5x∅	110 - 150	0,005 0,010	0,02 0,04	0,04 0,06	0,06 0,08	0,08 0,10	0,10 0,12	0,12 0,14	0,14 0,16	0,16 0,18	0,18 0,20	0,20 0,22	0,22 0,25	
<b>S</b> Titanio	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>S</b> Leghe speciali a base Ni	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>H</b> Temprati 38 / 48 HRC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>H</b> Temprati 48 / 58 HRC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>H</b> Temprati 58 / 68 HRC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	



Tajicaadb

# FRESE A CANDELA

con testa

# SEMISFERICA

per lavorazioni di  
copiatura



BALL NOSE COPY END MILLS



RADIUSKOPIER FRÄSER



FRAISE HÉMISPHERIQUE POUR COPIAGE



FRESAS ÉSFERICAS DE COPIADO



# FRESE SEMISFERICHE

## A 2 TAGLI IN METALLO DURO INTEGRALE

SOLID CARBIDE BALL-NOSE END MILLS - 2 FLUTES  
 VOLLHARTMETALL RADIUSKOPIERFRÄSERR - 2 SCHNEIDEN  
 FRAISES HÉMISPHÉRIQUES EN CARBURE MONOBLOC - 2 DENTS  
 FRESAS DE CABEZA ESFÉRICA DE METAL DURO INTEGRAL - 2 LABIOS

TALICARB NORM.

TALICARB NORM.  
 TALICARB NORM.  
 TALICARB NORM.  
 TALICARB NORM.

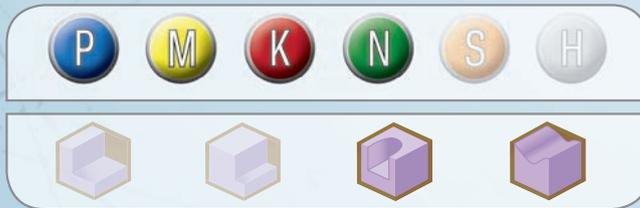


### 1012R - 012RTF

TFNEW  
COATING



$\emptyset$ mm e8	L mm	L <sub>1</sub> mm	d mm	Z	1012R €	012RTF €
3	38	12	3	2	9,22	14,73
3.5	50	14	4	2	16,65	22,05
4	50	14	4	2	14,48	19,90
4.5	50	15	5	2	18,80	24,25
5	63	15	5	2	16,35	24,10
6	63	19	6	2	18,50	26,15
7	63	19	7	2	22,80	31,90
8	63	20	8	2	23,85	32,75
9	63	22	9	2	29,25	37,65
10	63	25	10	2	40,00	48,50
11	76	25	11	2	42,70	60,80
12	76	25	12	2	49,10	65,50
14	88	31	14	2	84,50	101,50
16	88	31	16	2	96,10	118,00
18	100	38	18	2	154,00	176,00
20	100	38	20	2	191,50	217,00





## SERIE NORMALE

NORMAL SERIES  
NORMAL AUSFÜHRUNG  
SÉRIE NORMALE  
SERIE NORMAL

# FRESE SEMISFERICHE A 2 TAGLI IN METALLO DURO INTEGRALE

SOLID CARBIDE BALL-NOSE END MILLS - 2 FLUTES  
VOLLHARTMETALL RADIUSKOPIERFRÄSER - 2 SCHNEIDEN  
FRAISES HÉMISPHERIQUES EN CARBURE MONOBLOC - 2 DENTS  
FRESAS DE CABEZA ESFÉRICA DE METAL DURO INTEGRAL - 2 LABIOS

## 212RTF

TF<sup>NEW</sup>  
COATING



Ø mm h10	L mm	L <sub>1</sub> mm	d mm	Z	212RTF €
1.5	50	3	4	2	15,60
2	50	4	4	2	15,60
2.5	50	5	4	2	15,60
3	50	6	4	2	15,60
3.5	50	7	4	2	16,65
4	50	8	4	2	16,65
4.5	50	9	6	2	17,65
5	50	10	6	2	17,65
5.5	50	11	6	2	19,50
6	50	12	6	2	19,50
7	60	14	8	2	30,25
8	60	16	8	2	29,30
9	75	18	10	2	48,30
10	75	20	10	2	48,30
11	75	22	12	2	62,10
12	75	24	12	2	62,10
13	83	24	14	2	103,00
14	83	28	14	2	103,00
15	92	30	16	2	130,00
16	92	32	16	2	130,00
18	92	36	18	2	195,00
20	104	40	20	2	222,00



**Tallicarb**

# FRESE SEMISFERICHE A 2 TAGLI IN METALLO DURO INTEGRALE

SOLID CARBIDE BALL-NOSE END MILLS - 2 FLUTES  
VOLLHARTMETALL RADIUSKOPIERFRÄSER - 2 SCHNEIDEN  
FRAISES HÉMISPÉRIQUES EN CARBURE MONOBLOC - 2 DENTS  
FRESAS DE CABEZA ESFÉRICA DE METAL DURO INTEGRAL - 2 LABIOS

## SERIE LUNGA ED EXTRALUNGA

LONG SERIES, EXTRALONG SERIES  
LANGE AUSFÜHRUNG, EXTRALANGE AUSFÜHRUNG  
SÉRIE LONGUE, SÉRIE EXTRALONGUE  
SERIE LARGA, SERIE EXTRALARGA



### 1032R-032RTF

TFNEW  
COATING



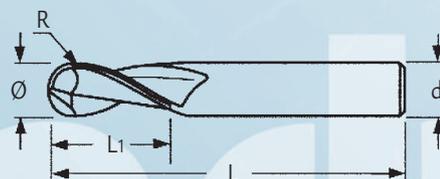
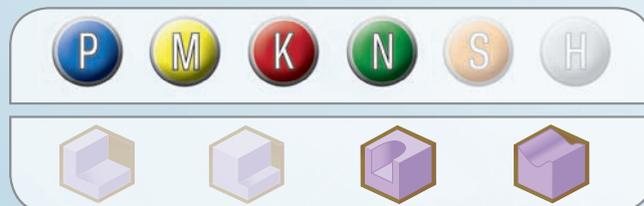
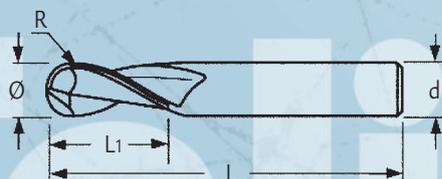
Ø mm e8	L mm	L <sub>1</sub> mm	d mm	Z	1032R €	032RTF €
3	60	19	3	2	14,80	21,20
4	63	19	4	2	17,55	25,30
5	63	19	5	2	22,90	29,55
6	76	31	6	2	25,00	36,20
8	76	31	8	2	34,35	43,80
10	76	31	10	2	51,80	65,50
12	100	50	12	2	76,30	90,80
14	125	57	14	2	131,50	142,00
16	125	57	16	2	144,50	168,50
18	125	57	18	2	230,00	254,50
20	125	57	20	2	259,00	282,00

### 1042R-042RTF

TFNEW  
COATING



Ø mm e8	L mm	L <sub>1</sub> mm	d mm	Z	1042R €	042RTF €
3	75	25	3	2	18,55	22,10
4	75	31	4	2	21,85	26,00
5	100	31	5	2	28,90	34,40
6	100	38	5	2	32,85	39,15
8	100	41	8	2	40,00	41,90
10	100	45	10	2	58,50	61,20
12	150	75	12	2	114,00	119,50
14	150	75	14	2	162,00	162,00
16	150	75	16	2	174,50	174,50
18	150	75	18	2	256,50	256,50
20	150	75	20	2	301,00	301,00





## TALICARB NORM.

TALICARB NORM.  
TALICARB NORM.  
TALICARB NORM.  
TALICARB NORM.

# FRESE SEMISFERICHE A 3 TAGLI IN METALLO DURO INTEGRALE

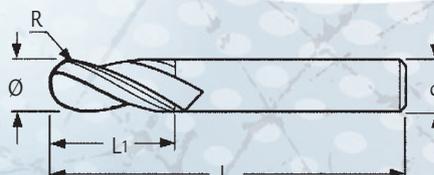
SOLID CARBIDE BALL-NOSE END MILLS - 3 FLUTES  
VOLLHARTMETALL RADIUSKOPIERFRÄSER - 3 SCHNEIDEN  
FRAISES HÉMISPÉRIQUES EN CARBURE MONOBLOC - 3 DENTS  
FRESAS DE CABEZA ESFÉRICA DE METAL DURO INTEGRAL - 3 LABIOS

## 1013R-013RTF

TF<sup>NEW</sup>  
COATING



∅ mm e8	L mm	L <sub>1</sub> mm	d mm	Z	1013R €	013RTF €
3	38	12	3	3	9,22	14,73
3.5	50	14	4	3	16,65	22,05
4	50	14	4	3	14,48	19,90
4.5	50	15	5	3	18,80	24,25
5	63	15	5	3	16,35	24,10
6	63	19	6	3	18,50	26,15
7	63	19	7	3	22,80	31,90
8	63	20	8	3	23,85	32,75
9	63	22	9	3	29,25	37,65
10	63	25	10	3	40,00	48,50
11	76	25	11	3	42,70	60,80
12	76	25	12	3	49,10	65,50
14	88	31	14	3	84,50	101,50
16	88	31	16	3	96,10	118,00
18	100	38	18	3	154,00	176,00
20	100	38	20	3	191,50	217,00



# FRESE SEMISFERICHE A 3 TAGLI IN METALLO DURO INTEGRALE

SOLID CARBIDE BALL-NOSE END MILLS - 3 FLUTES  
VOLLHARTMETALL RADIUSKOPIERFRÄSER - 3 SCHNEIDEN  
FRAISES HÉMISPÉRIQUES EN CARBURE MONOBLOC - 3 DENTS  
FRESAS DE CABEZA ESFÉRICA DE METAL DURO INTEGRAL - 3 LABIOS

## TALICARB NORM.

TALICARB NORM.  
TALICARB NORM.  
TALICARB NORM.  
TALICARB NORM.

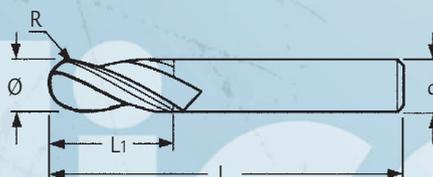
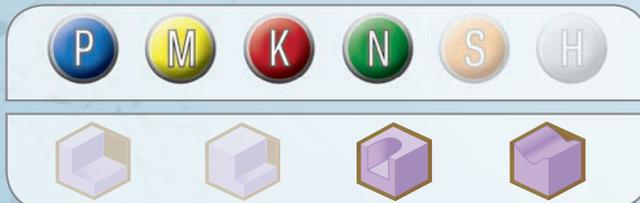


# 213RTF

**TFNEW**  
COATING



$\emptyset$ mm h10	L mm	L <sub>1</sub> mm	d mm	Z	213RTF €
1.5	50	3	4	3	15,60
2	50	4	4	3	15,60
2.5	50	5	4	3	15,60
3	50	6	4	3	15,60
3.5	50	7	4	3	16,65
4	50	8	4	3	16,65
4.5	50	9	6	3	17,65
5	50	10	6	3	17,65
5.5	50	11	6	3	19,50
6	50	12	6	3	19,50
7	60	14	8	3	30,25
8	60	16	8	3	29,30
9	75	18	10	3	48,30
10	75	20	10	3	48,30
11	75	22	12	3	62,10
12	75	24	12	3	62,10
13	83	24	14	3	103,00
14	83	28	14	3	103,00
15	92	30	16	3	130,00
16	92	32	16	3	130,00
18	92	36	18	3	195,00
20	104	40	20	3	222,00





## SERIE LUNGA ED EXTRALUNGA

LONG SERIES, EXTRALONG SERIES  
LANGE AUSFÜHRUNG, EXTRALANGE AUSFÜHRUNG  
SÉRIE LONGUE, SÉRIE EXTRALONGUE  
SERIE LARGA, SERIE EXTRALARGA

# FRESE SEMISFERICHE A 3 TAGLI IN METALLO DURO INTEGRALE

SOLID CARBIDE BALL-NOSE END MILLS - 3 FLUTES  
VOLLHARTMETALL RADIUSKOPIERFRÄSER - 3 SCHNEIDEN  
FRAISES HÉMISPÉRIQUES EN CARBURE MONOBLOC - 3 DENTS  
FRESAS DE CABEZA ESFÉRICA DE METAL DURO INTEGRAL - 3 LABIOS

### 1033R-033RTF

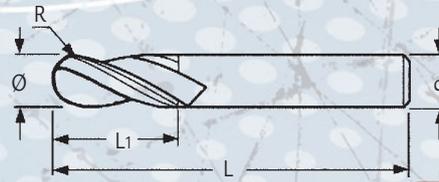
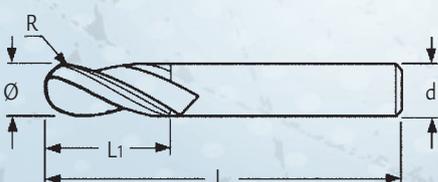
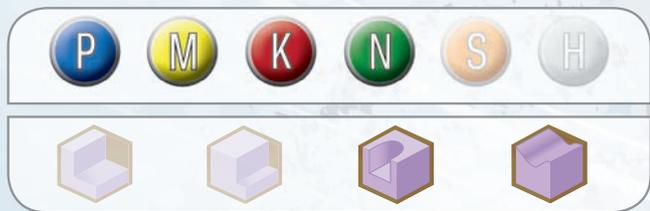


∅ mm e8	L mm	L <sub>1</sub> mm	d mm	Z	1033R €	033RTF €
3	60	19	3	3	14,80	21,20
4	63	19	4	3	17,55	25,30
5	63	19	5	3	22,90	29,55
6	76	31	6	3	25,00	36,20
8	76	31	8	3	34,35	43,80
10	76	31	10	3	51,80	65,50
12	100	50	12	3	76,30	90,80
14	125	57	14	3	131,50	142,00
16	125	57	16	3	144,50	168,50
18	125	57	18	3	230,00	254,50
20	125	57	20	3	259,00	282,00

### 1043R-043RTF



∅ mm e8	L mm	L <sub>1</sub> mm	d mm	Z	1043R €	043RTF €
3	75	25	3	3	18,55	22,10
4	75	31	4	3	21,85	26,00
5	100	31	5	3	28,90	34,40
6	100	38	5	3	32,85	39,15
8	100	41	8	3	40,00	41,90
10	100	45	10	3	58,50	61,20
12	150	75	12	3	114,00	119,50
14	150	75	14	3	162,00	162,00
16	150	75	16	3	174,50	174,50
18	150	75	18	3	256,50	256,50
20	150	75	20	3	301,00	301,00



# FRESE SEMISFERICHE A 4 TAGLI IN METALLO DURO INTEGRALE

SOLID CARBIDE BALL-NOSE END MILLS - 4 FLUTES  
VOLLHARTMETALL RADIUSKOPIERFRÄSER - 4 SCHNEIDEN  
FRAISES HÉMISPÉRIQUES EN CARBURE MONOBLOC - 4 DENTS  
FRESAS DE CABEZA ESFÉRICA DE METAL DURO INTEGRAL - 4 LABIOS

TALICARB NORM.

TALICARB NORM.  
TALICARB NORM.  
TALICARB NORM.  
TALICARB NORM.



## 1014R-014RTF

TF<sup>NEW</sup>  
COATING



Ø mm e8	L mm	L <sub>1</sub> mm	d mm	Z	1014R €	014RTF €
3	38	12	3	4	9,22	14,73
3.5	50	14	4	4	16,65	22,05
4	50	14	4	4	14,48	19,90
4.5	50	15	5	4	18,80	24,25
5	63	15	5	4	16,35	24,10
6	63	19	6	4	18,50	26,15
7	63	19	7	4	22,80	31,90
8	63	20	8	4	23,85	32,75
9	63	22	9	4	29,25	37,65
10	63	25	10	4	40,00	48,50
11	76	25	11	4	42,70	60,80
12	76	25	12	4	49,10	65,50
14	88	31	14	4	84,50	101,50
16	88	31	16	4	96,10	118,00
18	100	38	18	4	154,00	176,00
20	100	38	20	4	191,50	217,00





## SERIE NORMALE

NORMAL SERIES  
NORMAL AUSFÜHRUNG  
SÉRIE NORMALE  
SERIE NORMAL

# FRESE SEMISFERICHE A 4 TAGLI IN METALLO DURO INTEGRALE

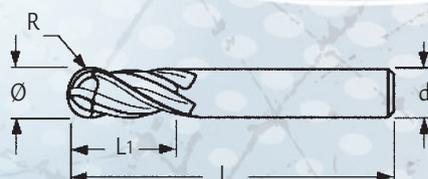
SOLID CARBIDE BALL-NOSE END MILLS - 4 FLUTES  
VOLLHARTMETALL RADIUSKOPIERFRÄSER - 4 SCHNEIDEN  
FRAISES HÉMISPÉRIQUES EN CARBURE MONOBLOC - 4 DENTS  
FRESAS DE CABEZA ESFÉRICA DE METAL DURO INTEGRAL - 4 LABIOS

## 214RTF

TF<sup>NEW</sup>  
COATING



Ø mm h10	L mm	L <sub>1</sub> mm	d mm	Z	214RTF €
1.5	50	3	4	4	15,60
2	50	4	4	4	15,60
2.5	50	5	4	4	15,60
3	50	6	4	4	15,60
3.5	50	7	4	4	16,65
4	50	8	4	4	16,65
4.5	50	9	6	4	17,65
5	50	10	6	4	17,65
5.5	50	11	6	4	19,50
6	50	12	6	4	19,50
7	60	14	8	4	30,25
8	60	16	8	4	29,30
9	75	18	10	4	48,30
10	75	20	10	4	48,30
11	75	22	12	4	62,10
12	75	24	12	4	62,10
13	83	24	14	4	103,00
14	83	28	14	4	103,00
15	92	30	16	4	130,00
16	92	32	16	4	130,00
18	92	36	18	4	195,00
20	104	40	20	4	222,00



Tallicarb

# FRESE SEMISFERICHE A 4 TAGLI IN METALLO DURO INTEGRALE

SOLID CARBIDE BALL-NOSE END MILLS - 4 FLUTES  
VOLLHARTMETALL RADIUSKOPIERFRÄSER - 4 SCHNEIDEN  
FRAISES HÉMISPÉRIQUES EN CARBURE MONOBLOC - 4 DENTS  
FRESAS DE CABEZA ESFÉRICA DE METAL DURO INTEGRAL - 4 LABIOS

## SERIE LUNGA ED EXTRALUNGA

LONG SERIES, EXTRALONG SERIES  
LANGE AUSFÜHRUNG, EXTRALANGE AUSFÜHRUNG  
SÉRIE LONGUE, SÉRIE EXTRALONGUE  
SERIE LARGA, SERIE EXTRALARGA



## 1034R-034RTF

TFNEW  
COATING



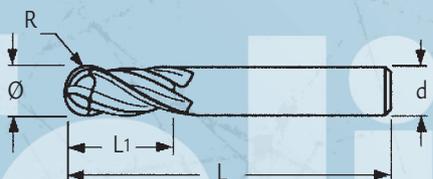
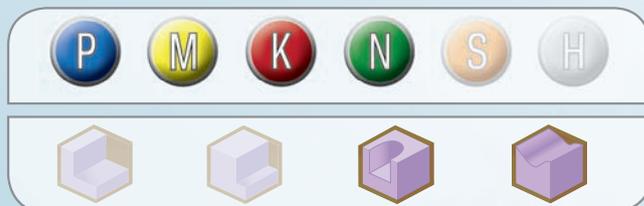
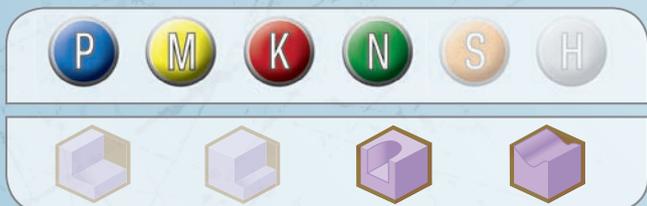
Ø mm e8	L mm	L <sub>1</sub> mm	d mm	Z	1034R €	034RTF €
3	60	19	3	4	14,80	21,20
4	63	19	4	4	17,55	25,30
5	63	19	5	4	22,90	29,55
6	76	31	6	4	25,00	36,20
8	76	31	8	4	32,50	43,80
10	76	31	10	4	51,80	65,50
12	100	50	12	4	76,30	90,80
14	125	57	14	4	131,50	142,00
16	125	57	16	4	144,50	168,50
18	125	57	18	4	230,00	254,50
20	125	57	20	4	259,00	282,00

## 1044R-044RTF

TFNEW  
COATING



Ø mm h10	L mm	L <sub>1</sub> mm	d mm	Z	1044R €	044RTF €
3	75	25	3	4	18,55	22,10
4	75	31	4	4	21,85	26,00
5	100	31	5	4	28,90	34,40
6	100	38	6	4	32,85	39,15
8	100	41	8	4	40,00	41,90
10	100	45	10	4	58,50	61,20
12	150	75	12	4	114,00	119,50
14	150	75	14	4	162,00	162,00
16	150	75	16	4	174,50	174,50
18	150	75	18	4	256,50	256,50
20	150	75	20	4	301,00	301,00



# PARAMETRI DI TAGLIO

## PER FRESE SENZA RIVESTIMENTO = $V_c$ e $F_z$ x 0,8

For end mill without coating - Für Fräser ohne Beschichtung  
 Pour fraises sans revêtement - Para fresas sin recubrimiento



CUTTING PARAMETERS  
 SCHNITTDATEN  
 PARAMÈTRES DE COUPE  
 PARAMETROS DE CORTE

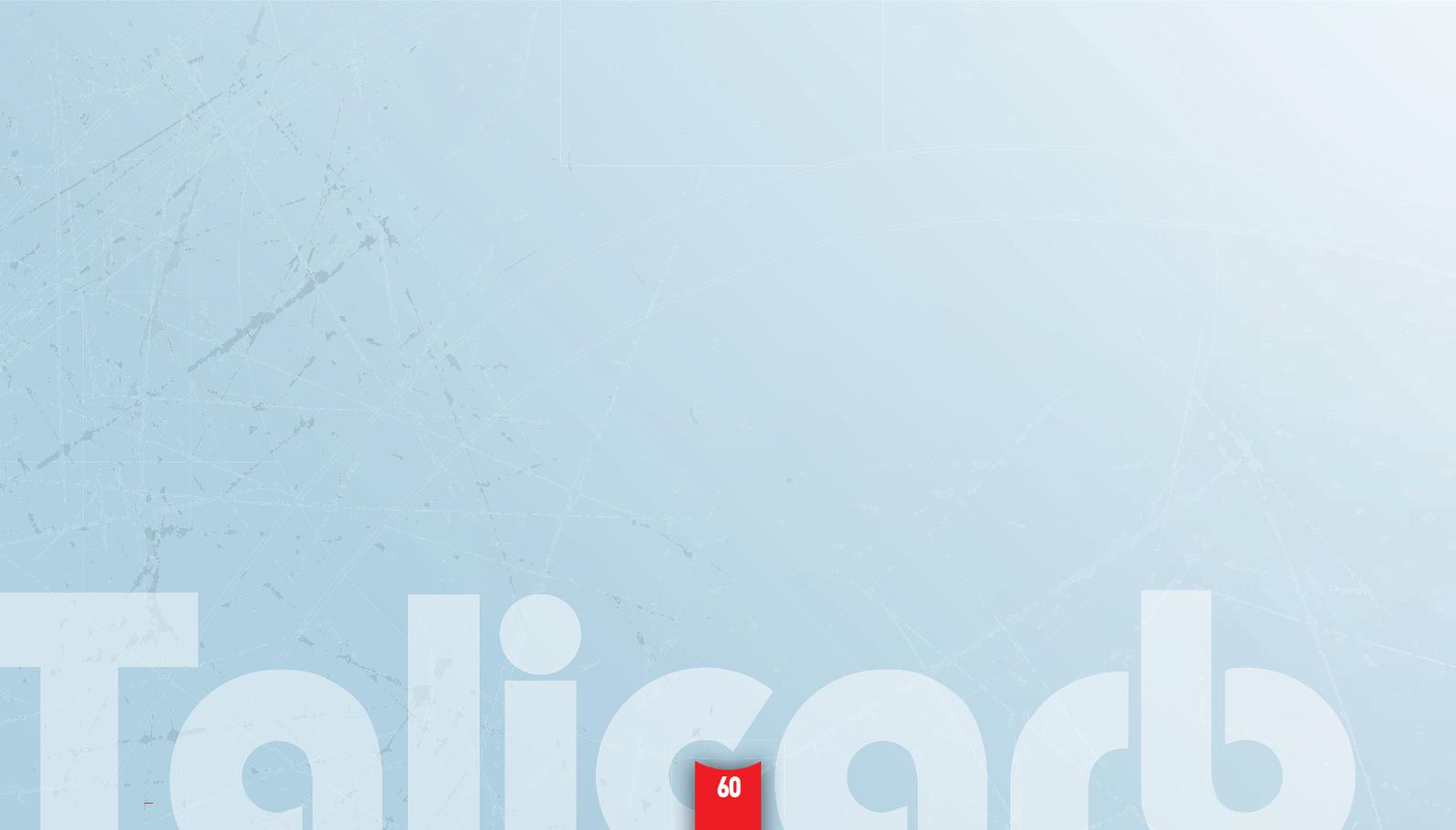
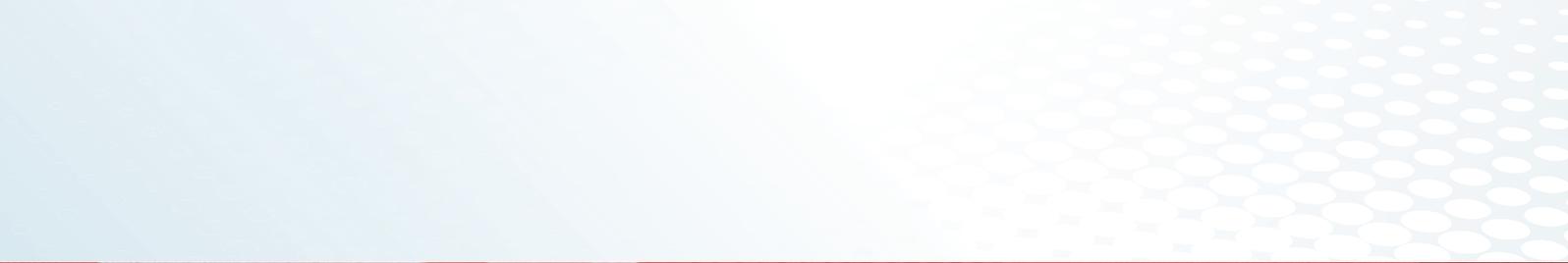
### FRESE SEMISFERICHE: 2/3/4 Tagli

Solid carbide ball-nose end mills - Vollhartmetall radiuskopierfräser - Fraises hémisphériques en carbure monobloc - Fresas de cabeza esférica de metal duro integral:  
 2/3/4 Flutes - Schneiden - Dents - Labios

CAVA DAL PIENO:  $V_c$  e  $F_z$  - 20%

Slotting:  $V_c$  e  $F_z$  - 20%  
 Bohrnuten:  $V_c$  e  $F_z$  - 20%  
 Rainurage:  $V_c$  e  $F_z$  - 20%  
 Ranura:  $V_c$  e  $F_z$  - 20%

GRUPPO MATERIALI Material Groups Material-Beispiele Groupes de Matériaux Grupos de Materiales			VC m/min	 <b>Fz [mm]</b> <b>AVANZAMENTO AL DENTE</b> Tooth Feed - Zahnvorschub - Avancement au dent - Avance al labio												
	ap	ae		ap	2	4	6	8	10	12	14	16	18	20	22	25
	<b>P</b> < 800 N/mm <sup>2</sup>	0,03 0,05 xØ		0,2xØ	-	90 - 130	0,01 0,02	0,02 0,03	0,03 0,04	0,04 0,05	0,05 0,06	0,06 0,07	0,07 0,08	0,08 0,10	0,10 0,12	0,12 0,14
<b>P</b> < 1100 N/mm <sup>2</sup>	0,03 0,05 xØ	0,2xØ	-	80 - 120	0,010 0,015	0,015 0,020	0,02 0,03	0,03 0,04	0,04 0,05	0,05 0,06	0,06 0,07	0,07 0,08	0,08 0,09	0,09 0,10	-	-
<b>P</b> < 1300 N/mm <sup>2</sup>	0,03 0,05 xØ	0,2xØ	-	70 - 110	0,005 0,010	0,010 0,015	0,015 0,020	0,02 0,03	0,03 0,04	0,05 0,06	0,06 0,07	0,07 0,08	0,08 0,09	0,09 0,10	-	-
<b>M</b> > 800 N/mm <sup>2</sup>	0,03 0,05 xØ	0,2xØ	-	50 - 80	0,010 0,015	0,015 0,020	0,02 0,03	0,03 0,04	0,04 0,05	0,05 0,06	0,06 0,07	0,07 0,08	0,08 0,09	0,09 0,10	-	-
<b>K</b> GG	0,03 0,05 xØ	0,2xØ	-	110 - 150	0,005 0,010	0,02 0,04	0,04 0,06	0,06 0,08	0,08 0,10	0,10 0,12	0,12 0,14	0,14 0,16	0,16 0,18	0,18 0,20	-	-
<b>K</b> GGG	0,03 0,05 xØ	0,2xØ	-	90 - 130	0,01 0,02	0,02 0,03	0,03 0,04	0,04 0,05	0,05 0,06	0,06 0,07	0,07 0,08	0,08 0,10	0,10 0,12	0,12 0,14	-	-
<b>N</b> Alluminio	0,03 0,05 xØ	0,2xØ	-	110 - 150	0,02 0,04	0,04 0,06	0,06 0,08	0,08 0,10	0,10 0,12	0,12 0,14	0,14 0,16	0,16 0,18	0,18 0,20	0,20 0,22	-	-
<b>N</b> Non metalli	0,03 0,05 xØ	0,2xØ	-	120 - 160	0,01 0,02	0,02 0,03	0,03 0,04	0,04 0,05	0,05 0,06	0,06 0,07	0,07 0,08	0,08 0,10	0,10 0,12	0,12 0,14	-	-
<b>S</b> Titanio	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>S</b> Leghe speciali a base Ni	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>H</b> Temprati 38 / 48 HRC	0,03 0,05 xØ	0,2xØ	-	40 - 60	0,005 0,010	0,010 0,015	0,015 0,020	0,02 0,03	0,03 0,04	0,05 0,06	0,06 0,07	0,07 0,08	0,08 0,09	0,09 0,10	-	-
<b>H</b> Temprati 48 / 58 HRC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>H</b> Temprati 58 / 68 HRC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Tajicodb

# FRESE CONICHE

## con Testa Piana



TAPER MILLS



KEGELIGE GESENKFRÄSER



FRAISES CONIQUES



FRESAS CÓNICAS



# FRESE CONICHE

IN METALLO DURO INTEGRALE

CONICITÀ  $*(\alpha/2 = 30^\circ \text{ e } \alpha/2 = 1^\circ)$

SOLID CARBIDE TAPER MILLS - INCLINATION\*

VHM KEGELIG GESENKFRÄSER - NEIGUNG\*

FRAISES CONIQUES POUR MATRICES EN CARBURE MONOBLOC - INCLINAISON\*

FRESAS CÓNICAS DE METAL DURO INTEGRAL - INCLINACIÓN\*

## TALICARB NORM.

TALICARB NORM.

TALICARB NORM.

TALICARB NORM.

TALICARB NORM.



## 1505

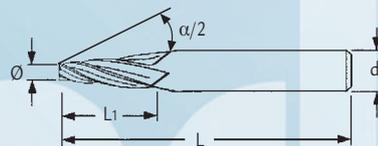
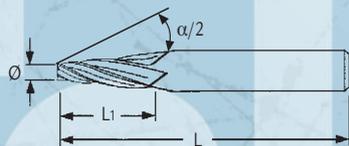
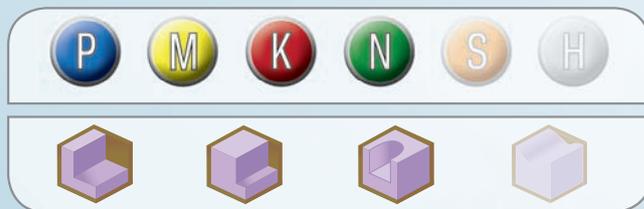
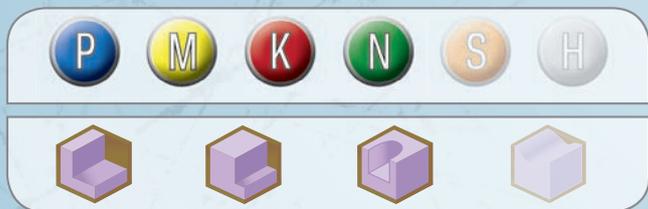


$\emptyset$ mm	L mm	L <sub>1</sub> mm	d mm	Z	1505 €
2.5	63	20	4	3	23,65
3	63	20	4	3	23,65
3.5	63	20	5	3	27,95
4	63	20	5	3	27,95
5	75	30	6	3	33,70
6	75	30	8	3	53,90
8	75	30	10	4	69,00
10	75	30	12	4	85,10
12	100	50	14	4	168,50
16	100	60	18	4	282,00

## 1510



$\emptyset$ mm	L mm	L <sub>1</sub> mm	d mm	Z	1510 €
2.5	63	20	4	3	23,65
3	63	20	4	3	23,65
3.5	63	20	5	3	27,95
4	63	20	5	3	27,95
5	75	30	6	3	34,00
6	75	30	8	3	53,90
8	75	30	10	4	69,00
10	75	30	12	4	85,10
12	100	50	14	4	168,50
16	100	60	18	4	282,00





## TALICARB NORM.

TALICARB NORM.  
TALICARB NORM.  
TALICARB NORM.  
TALICARB NORM.

# FRESE CONICHE

IN METALLO DURO INTEGRALE

CONICITÀ  $(\alpha/2 = 1^\circ 30'$  e  $\alpha/2 = 2^\circ)$

SOLID CARBIDE TAPER MILLS - INCLINATION\*

VHM KEGELIG GESENKFRÄSER - NEIGUNG\*

FRAISES CONIQUES POUR MATRICES EN CARBURE MONOBLOC - INCLINAISON\*

FRESAS CÓNICAS DE METAL DURO INTEGRAL - INCLINACIÓN\*

## 1515

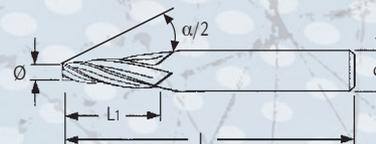
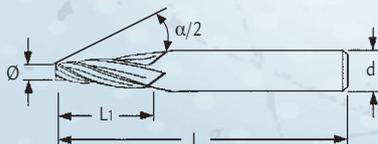
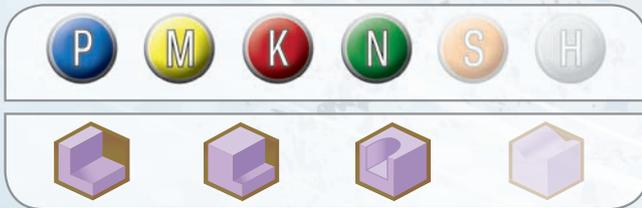


Ø mm	L mm	L <sub>1</sub> mm	d mm	Z	1515 €
2.5	63	20	4	3	23,65
3	63	20	4	3	23,65
3.5	63	20	5	3	27,95
4	63	20	5	3	27,95
5	75	30	6	3	53,90
6	75	30	8	3	53,90
8	75	30	10	4	69,00
10	75	30	12	4	85,10
12	100	30	14	4	168,50

## 1520



Ø mm	L mm	L <sub>1</sub> mm	d mm	Z	1520 €
2.5	63	20	4	3	23,65
3	63	20	5	3	27,95
3.5	63	20	5	3	27,95
4	63	20	6	3	29,10
5	75	30	8	3	53,90
6	75	30	8	3	53,90
8	75	30	10	4	69,00
10	75	30	12	4	85,10
12	100	50	16	4	185,00



# FRESE CONICHE

IN METALLO DURO INTEGRALE

CONICITÀ \* ( $\alpha/2 = 3^\circ$  e  $\alpha/2 = 4^\circ$ )

SOLID CARBIDE TAPER MILLS - INCLINATION \*

VHM KEGELIG GESENKFRÄSER - NEIGUNG \*

FRAISES CONIQUES POUR MATRICES EN CARBURE MONOBLOC - INCLINAISON \*

FRESAS CÓNICAS DE METAL DURO INTEGRAL - INCLINACIÓN \*

## TALICARB NORM.

TALICARB NORM.

TALICARB NORM.

TALICARB NORM.

TALICARB NORM.



## 1530

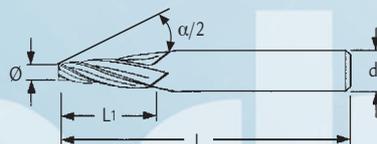
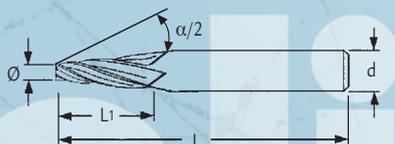
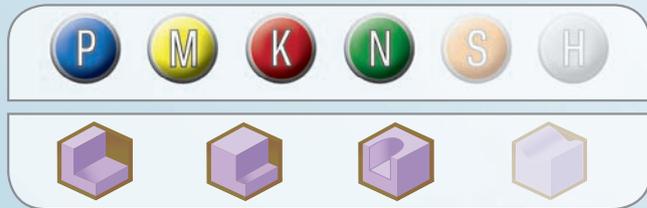
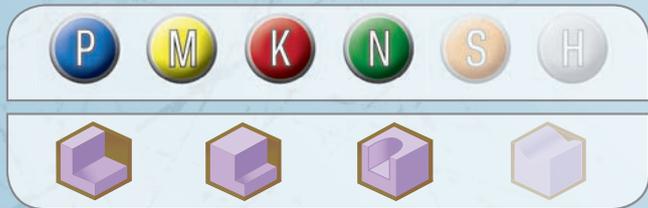


$\emptyset$ mm	L mm	L <sub>1</sub> mm	d mm	Z	1530 €
2.5	63	20	6	3	27,95
3	63	25	6	3	27,95
3.5	75	30	8	3	53,90
4	75	30	8	3	53,90
5	75	40	10	3	69,00
6	100	50	12	3	115,00
8	100	50	14	4	168,50
10	100	50	16	4	185,00
12	100	50	18	4	282,00

## 1540



$\emptyset$ mm	L mm	L <sub>1</sub> mm	d mm	Z	1540 €
2.5	63	20	4	3	29,10
3	63	20	4	3	29,10
3.5	63	20	5	3	38,45
4	63	20	5	3	69,00
5	75	30	6	3	115,00
6	75	30	8	3	185,00
8	75	30	10	4	282,00
10	75	30	12	4	305,00
12	100	50	14	4	428,00





## TALICARB NORM.

TALICARB NORM.  
TALICARB NORM.  
TALICARB NORM.  
TALICARB NORM.

# FRESE CONICHE

IN METALLO DURO INTEGRALE

CONICITÀ  $*(\alpha/2 = 5^\circ)$

SOLID CARBIDE TAPER MILLS - INCLINATION\*

VHM KEGELIG GESENKFRÄSER - NEIGUNG\*

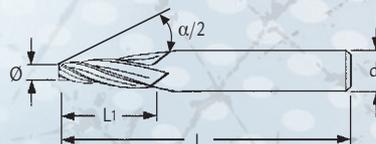
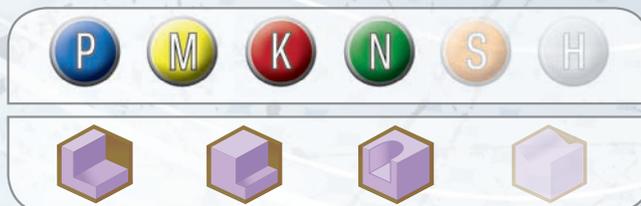
FRAISES CONIQUES POUR MATRICES EN CARBURE MONOBLOC - INCLINAISON\*

FRESAS CÓNICAS DE METAL DURO INTEGRAL - INCLINACIÓN\*

## 1550



$\varnothing$ mm	L mm	L <sub>1</sub> mm	d mm	Z	1550 €
2.5	63	20	6	3	29,10
3	63	25	8	3	38,45
3.5	75	30	10	3	69,00
4	75	30	10	3	69,00
5	100	40	12	3	115,00
6	100	50	16	3	185,00
8	100	50	18	4	282,00
10	100	50	20	4	305,00
12	100	45	20	4	305,00



# PARAMETRI DI TAGLIO

CUTTING PARAMETERS  
SCHNITTDATEN  
PARAMÈTRES DE COUPE  
PARAMETROS DE CORTE



## PER FRESE SENZA RIVESTIMENTO = $V_c$ e $F_z$ x 0,8

For end mill without coating - Für Fräser ohne Beschichtung  
Pour fraises sans revêtement - Para fresas sin recubrimiento

### FRESE CONICHE CON TESTA PIANA : 2/3/4 Tagli

Taper mills - Kegelige gesenkfräser - Fraises coniques - Fresas cónicas:  
2/3/4 Flutes - Schneiden - Dents - Labios

**CAVA DAL PIENO:**  $V_c$  e  $F_z$  : - 20%

Slotting:  $V_c$  e  $F_z$  : - 20%

Bohrnuten:  $V_c$  e  $F_z$  : - 20%

Rainurage:  $V_c$  e  $F_z$  : - 20%

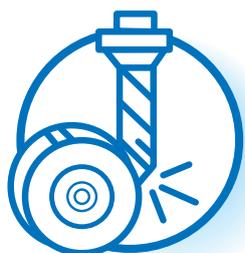
Ranura:  $V_c$  e  $F_z$  : - 20%

GRUPPO MATERIALI Material Groups Material-Beispiele Groupes de Matériaux Grupos de Materiales			VC m/min														
	ap	ae		ap	Fz [mm] AVANZAMENTO AL DENTE Tooth Feed - Zahnvorschub - Avancement au dent - Avance al labio												
	ap	ae		ap	2	4	6	8	10	12	14	16	18	20	22	25	
<b>P</b> < 800 N/mm <sup>2</sup>	1xØ	0,5xØ	0,5xØ	80 - 110	0,005 0,010	0,02 0,04	0,04 0,06	0,06 0,08	0,08 0,10	0,10 0,12	-	0,14 0,16	-	-	-	-	
<b>P</b> < 1100 N/mm <sup>2</sup>	1xØ	0,5xØ	0,5xØ	70 - 100	0,005 0,01	0,02 0,04	0,04 0,06	0,06 0,08	0,08 0,10	0,10 0,12	-	0,14 0,16	-	-	-	-	
<b>P</b> < 1300 N/mm <sup>2</sup>	1xØ	0,5xØ	0,5xØ	60 - 90	0,003 0,005	0,005 0,020	0,02 0,04	0,04 0,06	0,06 0,08	0,08 0,10	-	0,12 0,14	-	-	-	-	
<b>M</b> > 800 N/mm <sup>2</sup>	1xØ	0,5xØ	0,5xØ	40 - 60	0,01 0,03	0,03 0,05	0,05 0,07	0,07 0,09	0,09 0,11	0,11 0,13	-	0,15 0,17	-	-	-	-	
<b>K</b> GG	1xØ	0,5xØ	0,5xØ	100 - 140	0,03 0,05	0,05 0,07	0,07 0,09	0,09 0,11	0,11 0,13	0,13 0,15	-	0,19 0,21	-	-	-	-	
<b>K</b> GGG	1xØ	0,5xØ	0,5xØ	80 - 110	0,005 0,010	0,02 0,04	0,04 0,06	0,06 0,08	0,08 0,10	0,10 0,12	-	0,14 0,16	-	-	-	-	
<b>N</b> Alluminio	1xØ	0,5xØ	0,5xØ	110 - 150	0,03 0,05	0,05 0,07	0,07 0,09	0,09 0,11	0,11 0,13	0,13 0,15	-	0,19 0,21	-	-	-	-	
<b>N</b> Non metalli	1xØ	0,5xØ	0,5xØ	110 - 150	0,005 0,01	0,02 0,04	0,04 0,06	0,06 0,08	0,08 0,10	0,10 0,12	-	0,14 0,16	-	-	-	-	
<b>S</b> Titanio	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>S</b> Leghe speciali a base Ni	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>H</b> Temprati 38 / 48 HRC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>H</b> Temprati 48 / 58 HRC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>H</b> Temprati 58 / 68 HRC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	



## SERVIZIO DI RIAFFILATURA E RIVESTIMENTO

Re-sharpening and coating service  
Nachschleif - und beschichtungservice  
Service de affûtage à nouveau et revêtement  
Servicio de afilado y recubrimiento

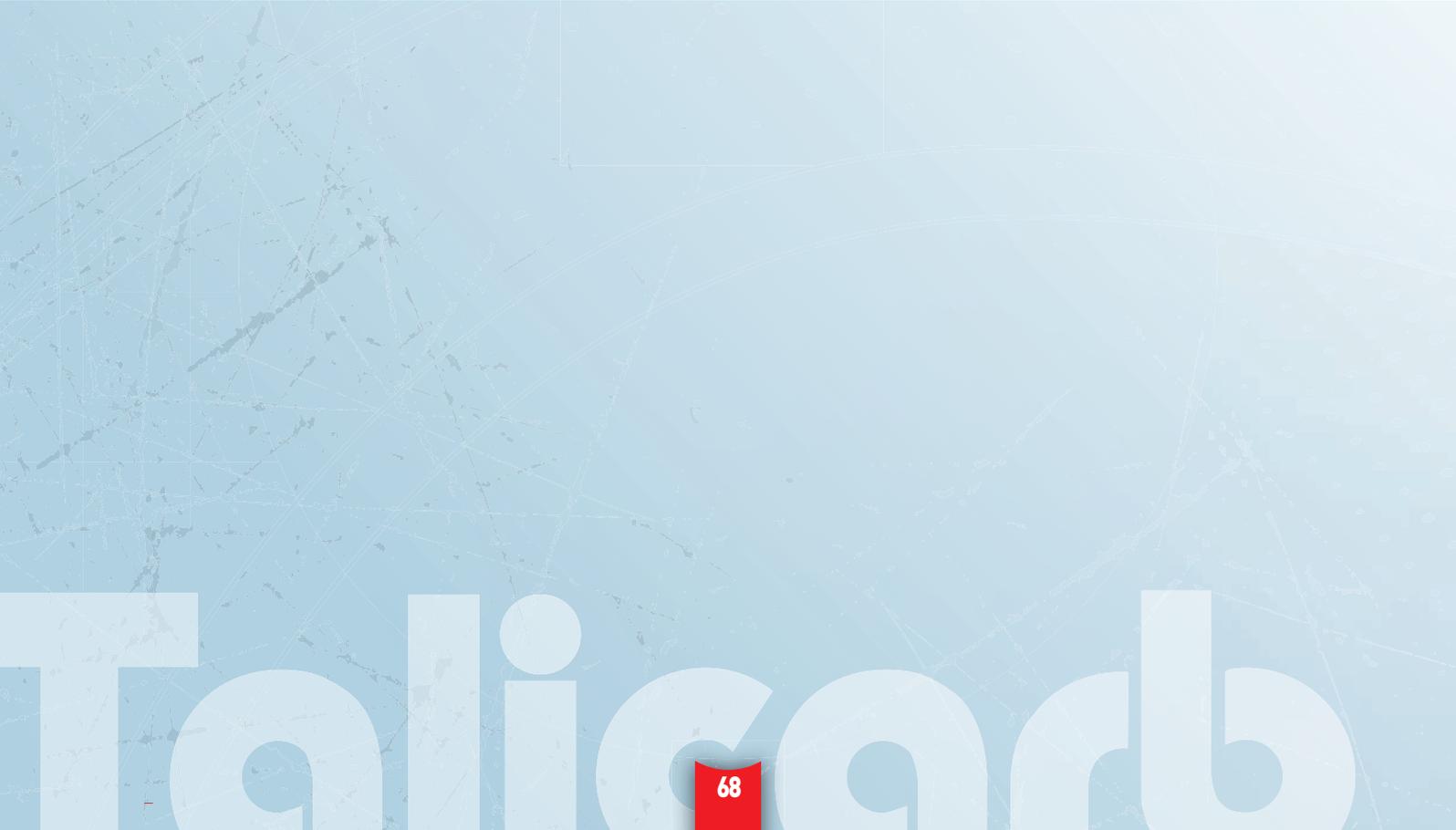


## UTENSILI SPECIALI

Special tools department  
Abteilung für Sonderwerkzeuge  
Outils spéciaux  
Herramientas especiales

# I NOSTRI SERVIZI SEMPRE A DISPOSIZIONE

Our prompt services always ready for you  
Unser prompter Service ist immer für Sie da  
Nos services toujours à votre Disposition  
Nuestro rápido servicio siempre listo para usted



Tajicaadb

# FRESE CONICHE

## con Testa Raggiata



TAPER MILLS WITH BALL NOSE



KEGELIGE GESENKFRÄSER MIT RADIUS



FRAISES CONIQUES BOUT HÉMISPHERIQUE



FRESAS CÓNICAS DE CABEZA ESFÉRICA



# FRESE CONICHE CON TESTA RAGGIATA

IN METALLO DURO INTEGRALE CONICITÀ\* ( $\alpha/2 = 30'$  e  $\alpha/2 = 1^\circ$ )

SOLID CARBIDE TAPER MILLS WITH BALL-NOSE - INCLINATION\*  
 VHM-KEGELIG GESENKFRÄSER MIT RADIUS - NEIGUNG\*  
 FRAISES CONIQUES BOUT HÉMISPHERIQUE EN CARBURE MONOBLOC - INCLINAISON\*  
 FRESAS CÓNICAS DE CABEZA ESFÉRICA DE METAL DURO INTEGRAL - INCLINACIÓN\*

## TALICARB NORM.

TALICARB NORM.  
 TALICARB NORM.  
 TALICARB NORM.  
 TALICARB NORM.



## 1505R

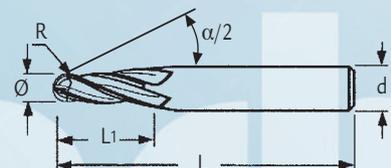
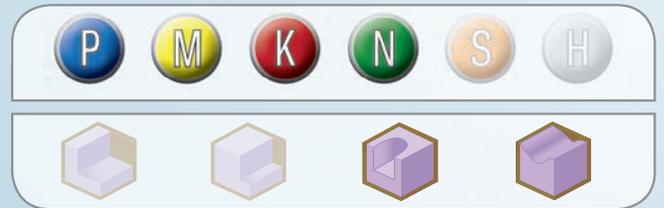
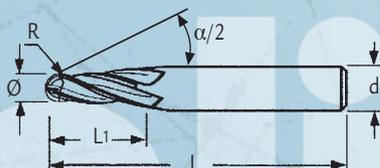
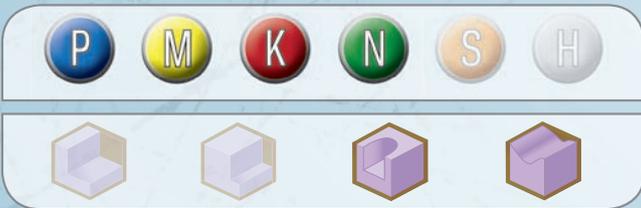


Ø mm	L mm	L <sub>1</sub> mm	d mm	Z	1505R €
2.5	63	20	4	3	27,30
3	63	20	4	3	27,30
3.5	63	20	5	3	32,15
4	63	20	5	3	32,15
5	75	30	6	3	39,10
6	75	30	8	3	62,30
8	75	30	10	4	79,20
10	75	30	12	4	97,40
12	100	50	14	4	196,50
16	100	60	18	4	322,00

## 1510R



Ø mm	L mm	L <sub>1</sub> mm	d mm	Z	1510R €
2.5	63	20	4	3	27,30
3	63	20	4	3	27,30
3.5	63	20	5	3	32,15
4	63	20	5	3	32,15
5	75	30	6	3	39,10
6	75	30	8	3	62,30
8	75	30	10	4	79,20
10	75	30	12	4	97,40
12	100	50	14	4	196,50
16	100	60	18	4	322,00





## TALICARB NORM.

TALICARB NORM.  
TALICARB NORM.  
TALICARB NORM.  
TALICARB NORM.

# FRESE CONICHE CON TESTA RAGGIATA

IN METALLO DURO INTEGRALE CONICITÀ\* ( $\alpha/2 = 1^\circ 30'$  e  $\alpha/2 = 2^\circ$ )

SOLID CARBIDE TAPER MILLS WITH BALL-NOSE - INCLINATION\*  
VHM-KEGELIG GESENKFRÄSER MIT RADIUS - NEIGUNG\*  
FRAISES CONIQUES BOUT HÉMISPHERIQUE EN CARBURE MONOBLOC - INCLINAISON\*  
FRESAS CÓNICAS DE CABEZA ESFÉRICA DE METAL DURO INTEGRAL - INCLINACIÓN\*

## 1515R

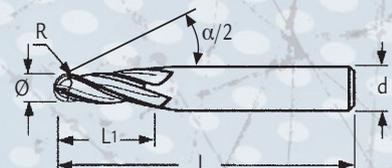
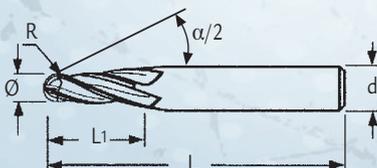


Ø mm	L mm	L <sub>1</sub> mm	d mm	Z	1515R €
2.5	63	20	4	3	27,30
3	63	20	4	3	27,30
3.5	63	20	5	3	32,15
4	63	20	5	3	32,15
5	75	30	6	3	62,30
6	75	30	10	3	62,30
8	75	30	10	4	79,20
10	75	30	12	4	97,40
12	100	30	14	4	196,50

## 1520R



Ø mm	L mm	L <sub>1</sub> mm	d mm	Z	1520R €
2.5	63	20	4	3	27,30
3	63	20	4	3	32,15
3.5	63	20	5	3	32,15
4	63	20	5	3	33,30
5	75	30	6	3	62,30
6	75	30	8	3	62,30
8	75	30	10	4	79,20
10	75	30	12	4	97,40
12	100	50	14	4	212,00



**Talicarb**

# FRESE CONICHE CON TESTA RAGGIATA

IN METALLO DURO INTEGRALE CONICITÀ\* ( $\alpha/2 = 3^\circ$  e  $\alpha/2 = 4^\circ$ )

SOLID CARBIDE TAPER MILLS WITH BALL-NOSE - INCLINATION\*  
 VHM-KEGELIG GESENKFRÄSER MIT RADIUS - NEIGUNG\*  
 FRAISES CONIQUES BOUT HÉMISPHERIQUE EN CARBURE MONOBLOC - INCLINAISON\*  
 FRESAS CÓNICAS DE CABEZA ESFÉRICA DE METAL DURO INTEGRAL - INCLINACIÓN\*

## TALICARB NORM.

TALICARB NORM.  
 TALICARB NORM.  
 TALICARB NORM.  
 TALICARB NORM.



## 1530R

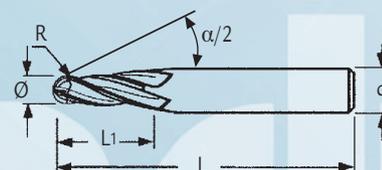
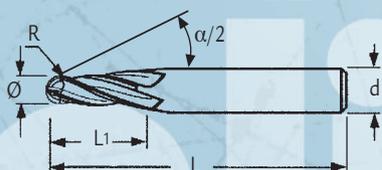
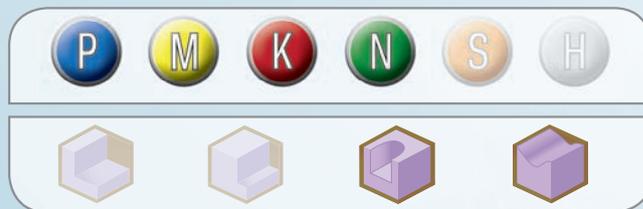


$\emptyset$ mm	L mm	L <sub>1</sub> mm	d mm	Z	1530R €
2.5	63	20	6	3	32,15
3	63	25	6	3	32,15
3.5	75	30	8	3	62,30
4	75	30	8	3	62,30
5	75	40	10	3	79,20
6	100	50	12	3	132,50
8	100	50	14	4	196,50
10	100	50	16	4	212,00
12	100	50	18	4	322,00

## 1540R



$\emptyset$ mm	L mm	L <sub>1</sub> mm	d mm	Z	1540R €
2.5	63	20	6	3	33,30
3	63	20	6	3	33,30
3.5	63	25	8	3	43,80
4	75	30	10	3	79,20
5	100	40	12	3	132,50
6	100	50	16	3	212,00
8	100	50	18	4	322,00
10	100	50	20	4	351,00
12	150	60	20	4	496,00





## TALICARB NORM.

TALICARB NORM.  
TALICARB NORM.  
TALICARB NORM.  
TALICARB NORM.

# FRESE CONICHE CON TESTA RAGGIATA

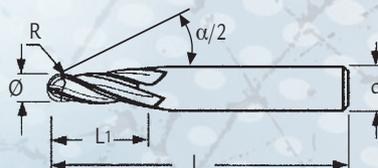
IN METALLO DURO INTEGRALE CONICITÀ\* ( $\alpha/2 = 5^\circ$ )

SOLID CARBIDE TAPER MILLS WITH BALL-NOSE - INCLINATION\*  
VHM-KEGELIG GESENKFRÄSER MIT RADIUS - NEIGUNG\*  
FRAISES CONIQUES BOUT HÉMISPHERIQUE EN CARBURE MONOBLOC - INCLINAISON\*  
FRESAS CÓNICAS DE CABEZA ESFÉRICA DE METAL DURO INTEGRAL - INCLINACIÓN\*

## 1550R



$\varnothing$ mm	L mm	L <sub>1</sub> mm	d mm	Z	1550R €
2.5	63	20	6	3	33,30
3	63	25	8	3	43,80
3.5	75	30	10	3	79,20
4	75	30	10	3	79,20
5	100	40	12	3	132,50
6	100	50	16	3	212,00
8	100	50	18	4	322,00
10	100	50	20	4	351,00
12	100	45	20	4	351,00



# PARAMETRI DI TAGLIO

CUTTING PARAMETERS  
SCHNITTDATEN  
PARAMÈTRES DE COUPE  
PARAMETROS DE CORTE



## PER FRESE SENZA RIVESTIMENTO = $V_c$ e $F_z \times 0,8$

For end mill without coating - Für Fräser ohne Beschichtung  
Pour fraises sans revêtement - Para fresas sin recubrimiento

### FRESE CONICHE CON TESTA RAGIATA : 2/3/4 Tagli

Taper mills with ball nose - Kegelige gesenkfräser mit radius - Fraises coniques bout hémisphérique  
Fresas cónicas de cabeza esférica: 2/3/4 Flutes - Schneiden - Dents - Labios

**CAVA DAL PIENO:**  $V_c$  e  $F_z$ : - 20%

Slotting:  $V_c$  e  $F_z$ : - 20%

Bohrnuten:  $V_c$  e  $F_z$ : - 20%

Rainurage:  $V_c$  e  $F_z$ : - 20%

Ranura:  $V_c$  e  $F_z$ : - 20%

GRUPPO MATERIALI Material Groups Material-Beispiele Groupes de Matériaux Grupos de Materiales			VC m/min														
	ap	ae		ap	Fz [mm] AVANZAMENTO AL DENTE Tooth Feed - Zahnvorschub - Avancement au dent - Avance al labio												
					2	4	6	8	10	12	14	16	18	20	22	25	
<b>P</b> < 800 N/mm <sup>2</sup>	0,03 0,05 xØ	0,2xØ	90 - 130	0,01 0,02	0,02 0,03	0,03 0,04	0,04 0,05	0,05 0,06	0,06 0,07	-	0,08 0,10	-	-	-	-		
<b>P</b> < 1100 N/mm <sup>2</sup>	0,03 0,05 xØ	0,2xØ	80 - 120	0,010 0,015	0,015 0,02	0,02 0,03	0,03 0,04	0,04 0,05	0,05 0,06	-	0,07 0,08	-	-	-	-		
<b>P</b> < 1300 N/mm <sup>2</sup>	0,03 0,05 xØ	0,2xØ	70 - 110	0,005 0,010	0,010 0,015	0,015 0,02	0,02 0,03	0,03 0,04	0,05 0,06	-	0,07 0,08	-	-	-	-		
<b>M</b> > 800 N/mm <sup>2</sup>	0,03 0,05 xØ	0,2xØ	50 - 80	0,010 0,015	0,015 0,02	0,02 0,03	0,03 0,04	0,04 0,05	0,05 0,06	-	0,07 0,08	-	-	-	-		
<b>K</b> GG	0,03 0,05 xØ	0,2xØ	110 - 150	0,005 0,010	0,02 0,04	0,04 0,06	0,06 0,08	0,08 0,10	0,10 0,12	-	0,14 0,16	-	-	-	-		
<b>K</b> GGG	0,03 0,05 xØ	0,2xØ	90 - 130	0,01 0,02	0,02 0,03	0,03 0,04	0,04 0,05	0,05 0,06	0,06 0,07	-	0,08 0,10	-	-	-	-		
<b>N</b> Alluminio	0,03 0,05 xØ	0,2xØ	110 - 150	0,02 0,04	0,04 0,06	0,06 0,08	0,08 0,10	0,10 0,12	0,12 0,14	-	0,16 0,18	-	-	-	-		
<b>N</b> Non metalli	0,03 0,05 xØ	0,2xØ	120 - 160	0,01 0,02	0,02 0,03	0,03 0,04	0,04 0,05	0,05 0,06	0,06 0,07	-	0,08 0,10	-	-	-	-		
<b>S</b> Titanio	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
<b>S</b> Leghe speciali a base Ni	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
<b>H</b> Temprati 38 / 48 HRC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
<b>H</b> Temprati 48 / 58 HRC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
<b>H</b> Temprati 58 / 68 HRC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		



## SERVIZIO TECNICO

Technical Help  
Technische Hilfe  
Service technique  
Ayuda técnica

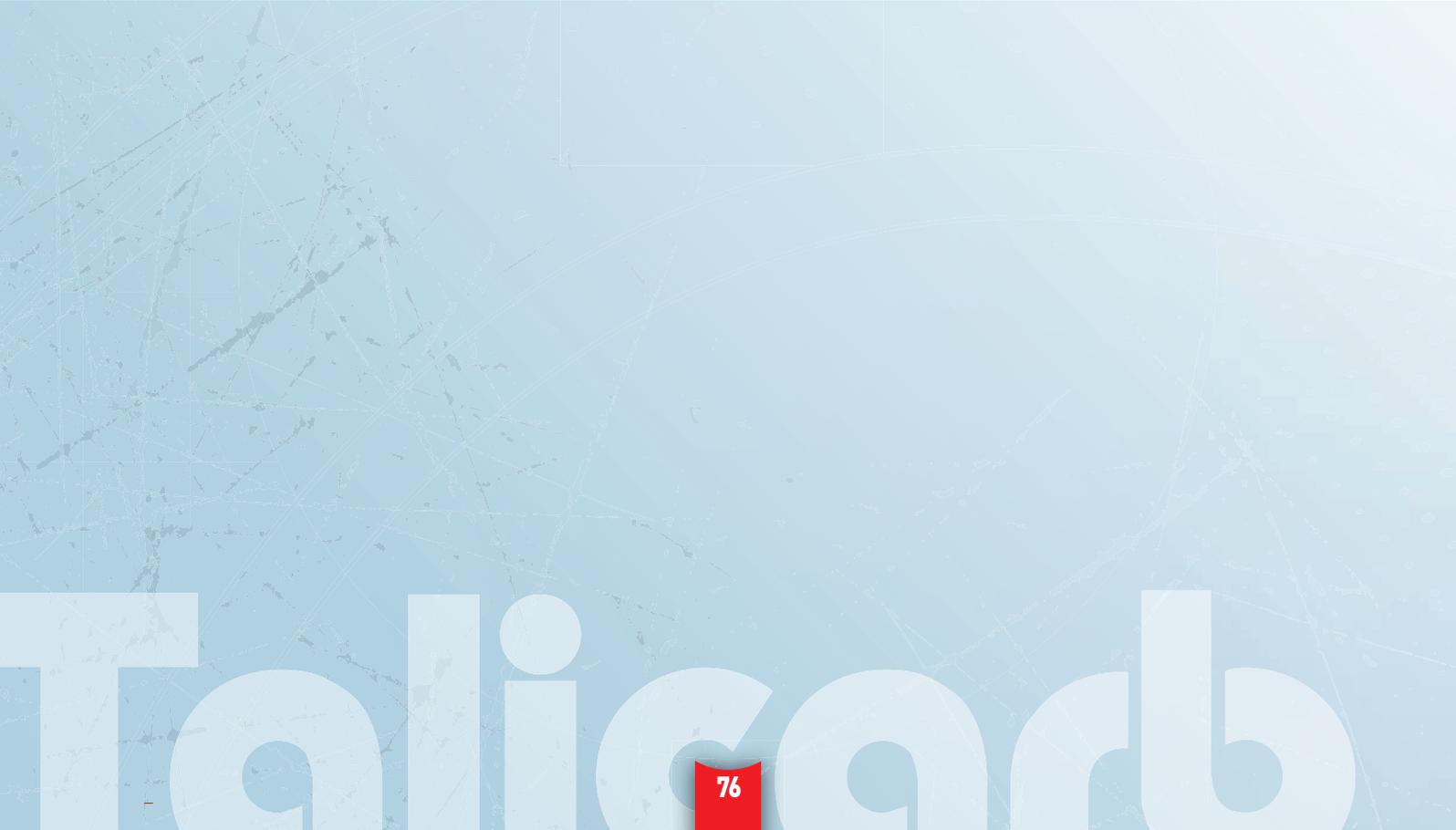


## E-COMMERCE

[www.angeloghezzi.it](http://www.angeloghezzi.it)

# I NOSTRI SERVIZI SEMPRE A DISPOSIZIONE

Our prompt services always ready for you  
Unser prompter Service ist immer für Sie da  
Nos services toujours à votre Disposition  
Nuestro rápido servicio siempre listo para usted



Tajicqdb

# FRESE A CANDELA

specifiche per

# ALLUMINIO



END MILLS FOR ALUMINIUM



FRÄSER FÜR ALUMINIUM



FRAISES POUR L'USINAGE DE L' ALUMINIUM



FRESAS PARA ALUMINIO



# FRESE A CANDELA

**MONO TAGLIO** IN METALLO DURO INTEGRALE

SOLID CARBIDE END MILLS - 1 FLUTE  
 VOLLHARTMETALL FRÄSER - 1 SCHNEID  
 FRAISES EN CARBURE MONOBLOC - 1 DENT  
 FRESAS DE METAL DURO INTEGRAL - 1 LABIO

**TALICARB NORM.**

TALICARB NORM.  
 TALICARB NORM.  
 TALICARB NORM.  
 TALICARB NORM.



## 1011

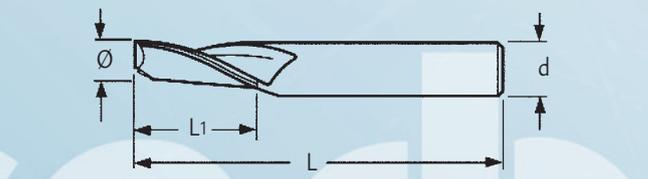


Ø mm h10	L mm	L <sub>1</sub> mm	d mm	Z	1011 €
3	40	12	3	1	19,55
4	40	15	4	1	22,85
5	50	16	5	1	25,25
6	60	20	6	1	28,05
8	63	22	8	1	43,90
10	72	25	10	1	64,30
12	83	30	12	1	87,30

## 1011CR



Ø mm h10	L mm	L <sub>1</sub> mm	d mm	Z	1011CR €
3	40	12	3	1	28,70
4	40	15	4	1	34,00
5	50	16	5	1	34,70
6	60	20	6	1	38,45
8	63	22	8	1	56,60
10	72	25	10	1	81,30
12	83	30	12	1	106,50





TALICARB NORM.

TALICARB NORM.  
TALICARB NORM.  
TALICARB NORM.  
TALICARB NORM.

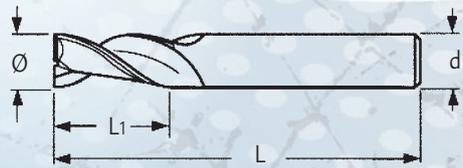
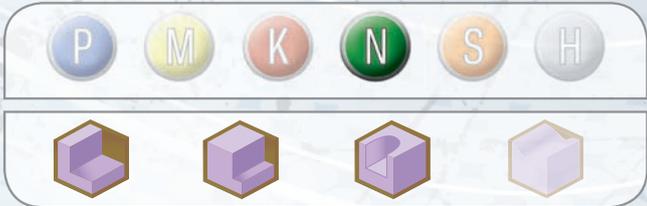
# FRESE A CANDELA A 2 TAGLI IN METALLO DURO INTEGRALE

SOLID CARBIDE END MILLS - 2 FLUTES  
VOLLHARTMETALL FRÄSER - 2 SCHNEIDEN  
FRAISES EN CARBURE MONOBLOC - 2 DENTS  
FRESAS DE METAL DURO INTEGRAL - 2 LABIOS

## 1282



Ø mm	L mm	L <sub>1</sub> mm	d mm	Z	1282 €
6	63	19	6	2	47,90
8	63	21	8	2	47,70
10	70	25	10	2	55,60
12	76	26	12	2	91,20
16	89	32	16	2	136,00



# FRESE A CANDELA A 2 TAGLI IN METALLO DURO INTEGRALE

SOLID CARBIDE END MILLS - 2 FLUTES  
VOLLHARTMETALL FRÄSER - 2 SCHNEIDEN  
FRAISES EN CARBURE MONOBLOC - 2 DENTS  
FRESAS DE METAL DURO INTEGRAL - 2 LABIOS

## SERIE NORMALE

NORMAL SERIES  
NORMAL AUSFÜHRUNG  
SÉRIE NORMALE  
SERIE NORMAL



## 1263-1263TF

TF<sup>NEW</sup>  
COATING

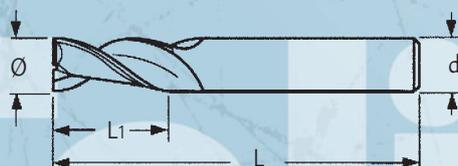
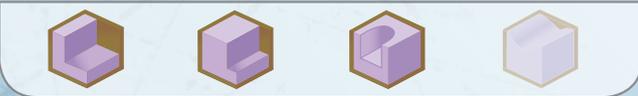


Ø mm h10	L mm	L <sub>1</sub> mm	d mm	Z	1263 €	1263TF €
3	57	7	6	2	22,10	27,60
3.5	57	7	6	2	22,10	27,60
4	57	8	6	2	22,10	27,60
4.5	57	8	6	2	22,10	27,60
4.8	57	6	6	2	22,10	27,60
5	57	10	6	2	22,10	27,60
5.5	57	10	6	2	22,10	27,60
5.75	57	7	6	2	22,10	27,60
6	57	10	6	2	22,10	27,60
6.5	63	13	8	2	30,55	33,60
7	63	13	8	2	30,55	33,60
7.5	63	16	8	2	30,55	33,60
7.75	63	9	8	2	30,55	33,60
8	63	16	8	2	30,55	33,60
8.5	72	16	10	2	52,50	57,70
9	72	16	10	2	52,50	57,70
9.5	72	19	10	2	52,50	57,70
9.75	72	11	10	2	52,50	57,70
10	72	19	10	2	47,20	52,00
11	83	22	12	2	70,50	77,60
11.7	83	12	12	2	70,50	77,60
12	83	22	12	2	64,40	70,80
13	83	22	14	2	113,00	118,50
13.7	83	14	14	2	113,00	118,50
14	83	22	14	2	102,50	108,00
15	92	26	16	2	139,50	146,50
15.7	92	16	16	2	139,50	146,50

→1-2

Ø mm h10	L mm	L <sub>1</sub> mm	d mm	Z	1263 €	1263TF €
16	92	26	16	2	126,50	133,00
17.7	92	18	18	2	215,50	226,50
18	92	26	18	2	196,50	206,50
19.7	104	20	20	2	249,00	262,00
20	104	32	20	2	227,00	238,50

→2-2





## TALICARB NORM.

TALICARB NORM.  
TALICARB NORM.  
TALICARB NORM.  
TALICARB NORM.

## FRESE A CANDELA A 3 TAGLI CON ROMPITRUCIOLO IN MET. DURO INTEG.

SOLID CARBIDE END MILLS WITH CHIPBREAKER - 3 FLUTES  
VOLLHARTMETALL FRÄSER UND SPANBRECHER - 3 SCHNEIDEN  
FRAISES EN CARBURE MONOBLOC AVEC BRISE COPEAUX - 3 DENTS  
FRESAS DE METAL DURO INTEGRAL CON ROMPEVIRUTAS - 3 LABIOS



# 1265



Ø mm h10	L mm	L <sub>1</sub> mm	d mm	Z	1265 €
6	57	13	6	3	33,35
8	63	19	8	3	51,10
10	72	22	10	3	79,20
12	83	26	12	3	107,50
16	92	32	16	3	203,50
20	104	38	20	3	323,00



# FRESE A CANDELA A 3 TAGLI

PASSO VARIABILE IN METALLO DURO INTEGRALE

SOLID CARBIDE VARIABLE PITCH END MILLS - 3 FLUTES  
 VHM FRÄSER MIT VARIABLER STEIGUNG - 3 SCHNEIDEN  
 FRAISES CARBURE À PAS VARIABLE - 3 DENTS  
 FRESAS DE METAL DURO INTEGRAL HÉLICE VARIABLE - 3 LABIOS

**TALICARB NORM.**

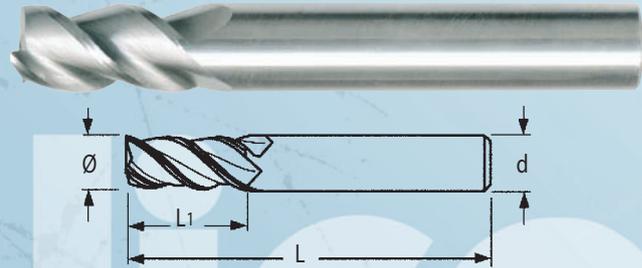
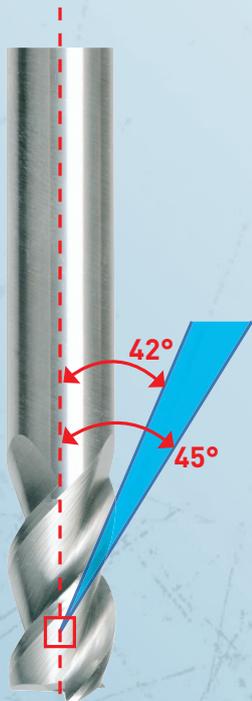
TALICARB NORM.  
 TALICARB NORM.  
 TALICARB NORM.  
 TALICARB NORM.



## 1266



Ø mm h10	L mm	L <sub>1</sub> mm	d mm	Z	1266 €
3	57	8	6	3	25,40
4	57	11	6	3	25,40
5	57	13	6	3	25,40
6	57	13	6	3	25,40
8	63	19	8	3	37,60
10	72	22	10	3	62,20
12	83	26	12	3	86,80
16	92	32	16	3	167,00
20	104	38	20	3	269,00



# PARAMETRI DI TAGLIO



CUTTING PARAMETERS  
SCHNITTDATEN  
PARAMÈTRES DE COUPE  
PARAMETROS DE CORTE

## PER FRESE SENZA RIVESTIMENTO = $V_c$ e $F_z \times 0,8$

For end mill without coating - Für Fräser ohne Beschichtung  
Pour fraises sans revêtement - Para fresas sin recubrimiento

### FRESE A CANDELA SPECIFICHE PER ALLUMINIO : 1/2/3 Tagli

End mills for aluminium - Fräser für aluminium - Fraises pour l'usinage de l'aluminium  
Fresas para aluminio: 1/2/3 Flutes - Schneiden - Dents - Labios

**CAVA DAL PIENO:  $V_c$  e  $F_z$  : - 20%**

Slotting:  $V_c$  e  $F_z$  : - 20%

Bohrnuten:  $V_c$  e  $F_z$  : - 20%

Rainurage:  $V_c$  e  $F_z$  : - 20%

Ranura:  $V_c$  e  $F_z$  : - 20%

GRUPPO MATERIALI Material Groups Material-Beispiele Groupes de Matériaux Grupos de Materiales	ap		ae	VC m/min	Fz [mm] AVANZAMENTO AL DENTE Tooth Feed - Zahnvorschub - Avancement au dent - Avance al labio												
	ap	ae	ap		2	4	6	8	10	12	14	16	18	20	22	25	



### 1011CR-1263TF

	Alluminio	1,5xØ	0,5xØ	1xØ	110 - 140	0,02 0,04	0,04 0,06	0,06 0,08	0,08 0,10	0,10 0,12	0,12 0,14	0,14 0,16	0,16 0,18	0,18 0,20	0,20 0,22	-	-
	Non metalli	1,5xØ	0,5xØ	1xØ	80 - 120	0,01 0,02	0,02 0,03	0,03 0,04	0,04 0,05	0,05 0,06	0,06 0,07	0,07 0,08	0,08 0,10	0,10 0,12	0,12 0,14	-	-



### 1265

	Alluminio	1,5xØ	0,5xØ	1xØ	180 - 250	-	-	0,08 0,10	0,10 0,13	0,13 0,16	0,16 0,19	-	0,22 0,25	-	0,20 0,22	-	-
	Non metalli	1,5xØ	0,5xØ	1xØ	140 - 200	-	-	0,04 0,06	0,06 0,08	0,08 0,10	0,10 0,12	-	0,14 0,16	-	0,12 0,14	-	-



### 1266

	Alluminio	1,5xØ	0,5xØ	1xØ	300 - 400	0,02 0,04	0,04 0,06	0,06 0,08	0,08 0,1	0,1 0,12	0,12 0,14	-	0,16 0,18	-	0,20 0,22	-	-
	Non metalli	1,5xØ	0,5xØ	1xØ	200 - 300	0,01 0,02	0,02 0,03	0,03 0,04	0,04 0,05	0,05 0,06	0,06 0,07	-	0,08 0,10	-	0,12 0,14	-	-



## **SERVIZIO TECNICO**

Technical Help  
Technische Hilfe  
Service technique  
Ayuda técnica

## **PER ULTERIORI INFORMAZIONI CONTATTATECI**

For more information please contact us  
Für weitere Informationen bitten wir um Kontaktaufnahme  
Pour tout renseignement contactez-nous  
Para más informaciones llámenos

# FRESE A PASSO VARIABILE

VARIABLE PITCH END MILLS  
FRÄSER MIT VARIABLE STEIGUNG  
FRAISES À PAS VARIABLE  
FRESAS DE HÉLICE VARIABLE

## FRESE A PASSO VARIABILE

Le frese a passo variabile, dedicate alle lavorazioni senza vibrazioni e ad alte prestazioni, consentono un ottimo rendimento e possono essere usate su una vasta gamma di materiali.

## VARIABLE PITCH END MILLS

Variable pitch end mills, dedicated to vibration free and high performance works, lead on good results and can be used on a great variety of materials.

## FRÄSER MIT VARIABLE STEIGUNG

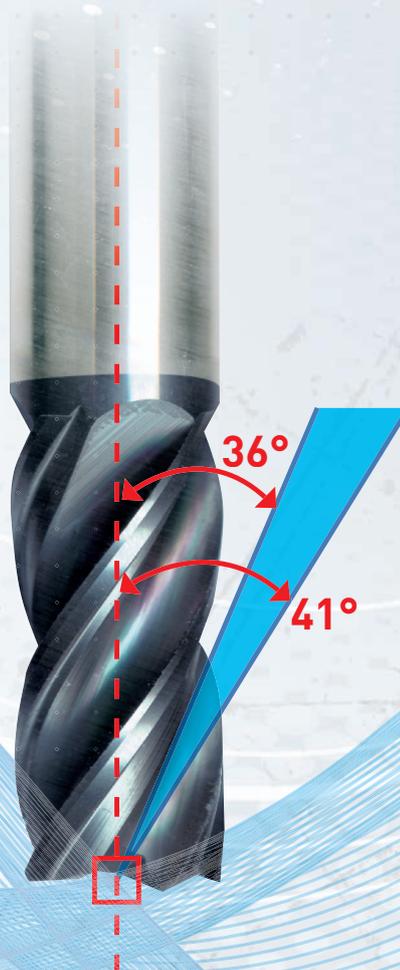
Die ungleiche Schneidreihenteilung Fräser, für Vibrationsfreie- und Hochleistungsbearbeitungen verwendet, erlauben hohe Leistungen und für eine ganze Reihe von Materialien anwendet.

## FRAISES À PAS VARIABLE

Les fraises a pas variable, utilises pour usinages sans vibrations et hautes performances, permettent une tres bonne performance et on peut les utiliser sur une vaste gamme de materiaux.

## FRESAS DE HÉLICE VARIABLE

Las fresas de hélice variable, dedicadas a los trabajos sin vibraciones y de alto rendimiento, permiten conseguir resultados excelentes y pueden utilizarse con una gran variedad de materiales.



# FRESE A CANDELA A 4 TAGLI

PASSO VARIABILE IN METALLO DURO INTEGRALE

SOLID CARBIDE VARIABLE PITCH END MILLS - 4 FLUTES  
 VHM FRÄSER MIT VARIABLE STEIGUNG - 4 SCHNEIDEN  
 FRAISES CARBURE À PAS VARIABLE - 4 DENTS  
 FRESAS DE METAL DURO INTEGRAL HÉLICE VARIABLE - 4 LABIOS

## TALICARB NORM.

TALICARB NORM.  
 TALICARB NORM.  
 TALICARB NORM.  
 TALICARB NORM.

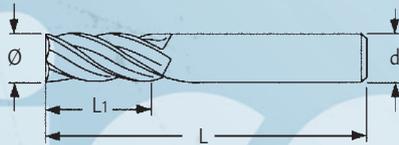
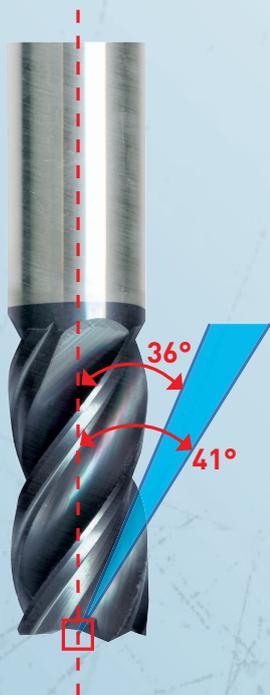


### 1318TF

**TFNEW**  
COATING



Ø mm h10	L mm	L <sub>1</sub> mm	d mm	Z	1318TF €
3	50	8	6	4	16,30
4	50	11	6	4	16,30
5	50	13	6	4	16,30
6	50	16	6	4	16,30
8	60	20	8	4	28,65
10	72	22	10	4	42,70
12	75	26	12	4	59,40
16	100	36	16	4	119,00
20	100	38	20	4	206,50





## SERIE NORMALE

NORMAL SERIES  
 NORMAL AUSFÜHRUNG  
 SÉRIE NORMALE  
 SERIE NORMAL

# FRESE A CANDELA A 4 TAGLI

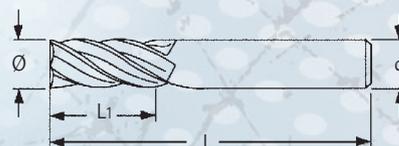
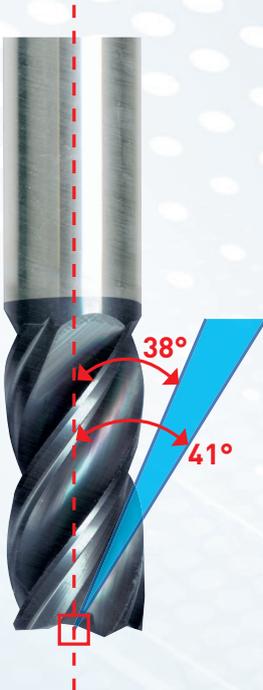
## PASSO VARIABILE IN METALLO DURO INTEGRALE

SOLID CARBIDE VARIABLE PITCH END MILLS - 4 FLUTES  
 VHM FRÄSER MIT VARIABLER STEIGUNG - 4 SCHNEIDEN  
 FRAISES CARBURE À PAS VARIABLE - 4 DENTS  
 FRESAS DE METAL DURO INTEGRAL HÉLICE VARIABLE - 4 LABIOS

### 1320TF



Ø mm h10	L mm	L <sub>1</sub> mm	d mm	Z	1320TF €
3	38	8	3	4	23,45
4	50	11	4	4	32,50
5	50	13	5	4	34,30
6	57	13	6	4	41,50
8	63	19	8	4	51,90
10	72	22	10	4	65,20
12	83	26	12	4	102,50
16	92	32	16	4	214,50
20	104	38	20	4	306,00



# FRESE TORICHE A 4 TAGLI

## PASSO VARIABILE IN METALLO DURO INTEGRALE

TORIC VARIABLE PITCH END MILLS - 4 FLUTES  
 VHM TORUSFRÄSER MIT VARIABLE STEIGUNG - 4 SCHNEIDEN  
 FRAISES TORIQUES HELICOIDALES À PAS VARIABLE - 4 DENTS  
 FRESAS TÓRICAS DE METAL DURO INTEGRAL HÉLICE VARIABLE - 4 LABIOS

### SERIE NORMALE

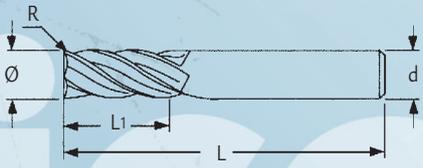
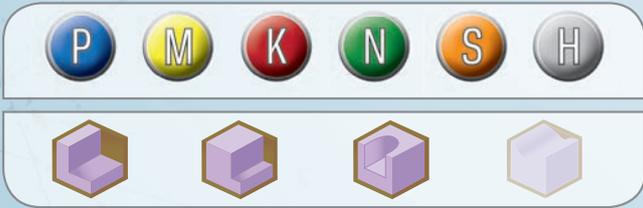
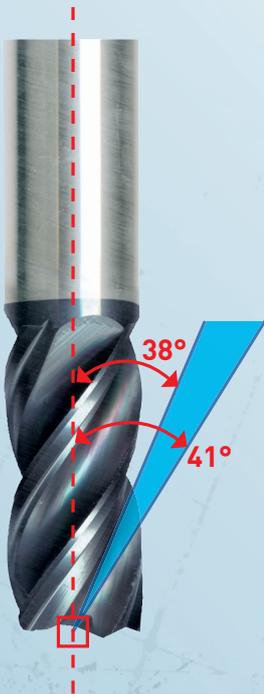
NORMAL SERIES  
 NORMAL AUSFÜHRUNG  
 SÉRIE NORMALE  
 SERIE NORMAL



## 1321TF



Ø mm h10	d mm	L mm	L <sub>1</sub> mm	R	Z	1321TF €
3	3	38	8	0.3	4	23,95
4	4	50	11	0.3	4	33,60
5	5	50	13	0.3	4	35,25
6	6	57	13	0.3	4	43,30
8	8	63	19	0.5	4	54,30
10	10	72	22	0.5	4	68,10
12	12	83	26	1.0	4	107,00
16	16	92	32	1.0	4	223,50
20	20	104	38	1.0	4	318,00



# PARAMETRI DI TAGLIO



CUTTING PARAMETERS  
SCHNITTDATEN  
PARAMÈTRES DE COUPE  
PARAMETROS DE CORTE

## PER FRESE SENZA RIVESTIMENTO = $V_c$ e $F_z$ x 0,8

For end mill without coating - Für Fräser ohne Beschichtung  
Pour fraises sans revêtement - Para fresas sin recubrimiento

### FRESE A PASSO VARIABILE:

Variable pitch end mills - Fräser mit variabler steigung - Fraises à pas variable - Fresas hélice variable

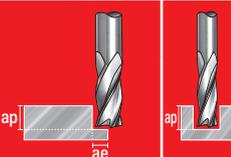
**CAVA DAL PIENO:**  $V_c$  e  $F_z$ : - 20%

Slotting:  $V_c$  e  $F_z$ : - 20%

Bohrnuten:  $V_c$  e  $F_z$ : - 20%

Rainurage:  $V_c$  e  $F_z$ : - 20%

Ranura:  $V_c$  e  $F_z$ : - 20%

GRUPPO MATERIALI Material Groups Material-Beispiele Groupes de Matériaux Grupos de Materiales			VC m/min	 <b>Fz [mm]</b> <b>AVANZAMENTO AL DENTE</b> Tooth Feed - Zahnvorschub - Avancement au dent - Avance al labio													
	ap	ae		ap	3	4	6	8	10	12	14	16	18	20	22	25	
	<b>P</b>	< 800 N/mm <sup>2</sup>		1,5 x Ø	0,5xØ	-	100 - 150	0,015	0,015 0,030	0,03 0,04	0,05 0,06	0,07 0,08	0,08 0,09	-	0,10 0,12	-	0,14 0,15
<b>P</b>	< 1100 N/mm <sup>2</sup>	1,5 x Ø	0,5xØ	0,5xØ	90 - 140	0,015	0,015 0,030	0,03 0,04	0,05 0,06	0,07 0,08	0,08 0,09	-	0,10 0,12	-	0,14 0,15	-	-
<b>P</b>	< 1300 N/mm <sup>2</sup>	1,5 x Ø	0,5xØ	0,5xØ	80 - 130	0,01	0,01 0,02	0,02 0,03	0,03 0,04	0,04 0,05	0,05 0,06	-	0,08 0,09	-	0,11 0,12	-	-
<b>M</b>	> 800 N/mm <sup>2</sup>	1,5 x Ø	0,3xØ	0,3xØ	80 - 120	0,015	0,015 0,030	0,03 0,04	0,05 0,06	0,07 0,08	0,08 0,09	-	0,10 0,12	-	0,14 0,15	-	-
<b>K</b>	GG	1,5 x Ø	0,5xØ	0,5xØ	110 - 170	0,03	0,03 0,05	0,05 0,07	0,07 0,09	0,09 0,11	0,11 0,13	-	0,17 0,19	-	0,21 0,22	-	-
<b>K</b>	GGG	1,5 x Ø	0,5xØ	0,5xØ	90 - 140	0,01	0,01 0,02	0,02 0,03	0,03 0,04	0,04 0,05	0,05 0,06	-	0,08 0,09	-	0,11 0,12	0,14 0,16	0,16 0,18
<b>N</b>	Alluminio	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>N</b>	Non metalli	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>S</b>	Titanio	1,5 x Ø	0,3xØ	0,3xØ	50 - 60	0,01	0,01 0,02	0,02 0,03	0,03 0,04	0,04 0,05	0,05 0,06	-	0,08 0,09	0,09 0,10	0,11 0,12	-	-
<b>S</b>	Leghe speciali a base Ni	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>H</b>	Temprati 38 / 48 HRC	1,5 x Ø	0,2xØ	0,2xØ	20 - 35	0,015	0,015 0,030	0,03 0,04	0,05 0,06	0,07 0,08	0,08 0,09	-	0,10 0,12	0,12 0,14	0,14 0,15	-	-
<b>H</b>	Temprati 48 / 58 HRC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>H</b>	Temprati 58 / 68 HRC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

# FRESE A CANDELA

## A 4 TAGLI IN CERMET

CERMET END MILLS - 4 FLUTES  
 CERMET-FRÄSER - 4 SCHNEIDEN  
 FRAISES CERMET - 4 DENTS  
 FRESAS DE CERMET - 4 LABIOS

### SERIE NORMALE

NORMAL SERIES  
 NORMAL AUSFÜHRUNG  
 SÉRIE NORMALE  
 SERIE NORMAL



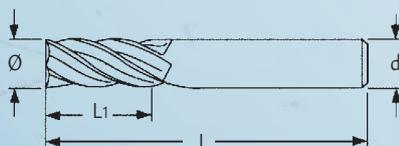
# 1374



CERMET

Ø mm e8	L mm	L <sub>1</sub> mm	d mm	Z	1374 €
6	57	13	6	4	56,70 ■
8	63	19	8	4	73,00 ■
12	83	26	12	4	137,00 ■
18	92	32	18	4	296,00 ■

■ **Ad esaurimento scorte** - Subject to availability until sold out - Solange der vorrat reicht - Jusqu'à Épuisement de stock - Hasta agotamiento del stock





## SERIE NORMALE

NORMAL SERIES  
NORMAL AUSFÜHRUNG  
SÉRIE NORMALE  
SERIE NORMAL

# FRESE A CANDELA

## MULTITAGLIENTE CERMET

CERMET END MILLS - MULTI-FLUTES  
CERMET FRÄSER - MULTI-SCHNEIDEN  
FRAISES CERMET - MULTI-DENTS  
FRESAS DE CERMET - LABIOS MÚLTIPLES

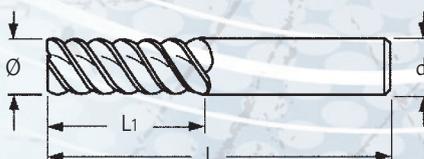
# 1376



CERMET

Ø mm e8	L mm	L <sub>1</sub> mm	d h6	Z	1376 €
6	57	13	6	6	56,70 ■
8	63	19	8	6	73,00 ■
9	72	19	10	6	106,00 ■
12	83	26	12	6	137,00 ■
18	92	32	18	8	296,00 ■

■ Ad esaurimento scorte - Subject to availability until sold out - Solange der vorrat reicht - Jusqu'à Épuisement de stock - Hasta agotamiento del stock



# FRESE A CANDELA A 4 TAGLI IN CERMET

CERMET END MILLS - 4 FLUTES  
CERMET-FRÄSER - 4 SCHNEIDEN  
FRAISES CERMET- 4 DENTS  
FRESAS DE CERMET - 4 LABIOS

## SERIE NORMALE

NORMAL SERIES  
NORMAL AUSFÜHRUNG  
SÉRIE NORMALE  
SERIE NORMAL



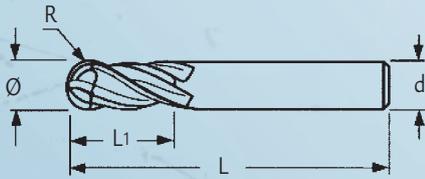
# 1314R



CERMET

Ø mm e8	L mm	L <sub>1</sub> mm	d mm	R	Z	1314R €
8	58	12	8	4	4	145,00 ■
12	73	16	12	6	4	193,50 ■

■ Ad esaurimento scorte - Subject to availability until sold out - Solange der vorrat reicht - Jusqu'à Épuisement de stock - Hasta agotamiento del stock



# FRESE A CANDELA "CON ROMPITRUCIOLO" A SGROSSARE

ROUGHING END MILLS WITH CHEAP BREAKER  
SCHRUPPFÄSER MIT SPANBRECHER  
FRAISES D'EBAUCHE AVEC BRISE-COPEAUX  
FRESAS PARA DESBASTE CON ROMPEVIRUTAS



## FRESE CON ROMPITRUCIOLO A SGROSSARE

Le frese di sgrossatura sono progettate per asportare un elevato volume di truciolo.



## ROUGHING END MILLS WITH CHEAP BREAKER

Roughing end mills are designed for removing a big cheap volume.



## SCHRUPPFÄSER MIT SPANBRECHER

Die Schrumpfenfräser entworfen für die Entfernung von einer großen Menge von Span.



## FRAISES D'EBAUCHE AVEC BRISE-COPEAUX

Fraises d'ebauche projetes pour enlevement d'un volume élevé de copeau.



## FRESAS PARA DESBASTE CON ROMPEVIRUTAS

Fresas para desbaste proyectadas para quitar una elevada cantidad de viruta.



# FRESE A CANDELA CON ROMPITRUCIOLO IN METALLO DURO INTEGRALE

SOLID CARBIDE END MILLS WITH CHIP BREAKER  
VHM FRAESER MIT SPANBRECHER  
FRAISES AVEC BRISE-COPEAU EN CARBURE MONOBLOC  
FRESAS DE METAL DURO INTEGRAL CON ROMPEVIRUTAS

## TALICARB NORM.

TALICARB NORM.  
TALICARB NORM.  
TALICARB NORM.  
TALICARB NORM.

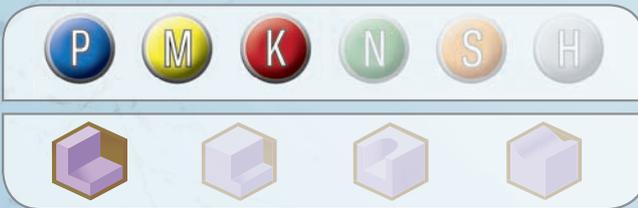


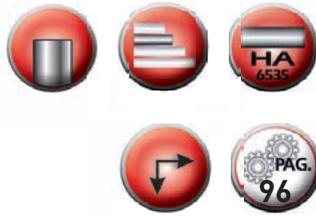
## 1060 - 1060TF

TF<sup>NEW</sup>  
COATING



Ø mm h10	L mm	L <sub>1</sub> mm	d mm	Z	1060 €	1060TF €
6	50	19	6	4	50,60	55,60
8	63	20	8	4	58,40	64,30
10	63	19	10	6	70,30	77,40
12	75	25	12	6	84,10	92,50
16	88	32	16	6	128,00	134,50
18	100	38	18	6	186,50	196,00
20	100	38	20	6	226,50	237,50





## TALICARB NORM.

TALICARB NORM.  
TALICARB NORM.  
TALICARB NORM.  
TALICARB NORM.

# FRESE A CANDELA CON ROMPITRUCIOLO IN METALLO DURO INTEGRALE

SOLID CARBIDE END MILLS WITH CHIP BREAKER  
VHM FRAESER MIT SPANBRECHER  
FRAISES AVEC BRISE-COPEAU EN CARBURE MONOBLOC  
FRESAS DE METAL DURO INTEGRAL CON ROMPEVIRUTAS

## 1061TF



Ø mm h10	L mm	L <sub>1</sub> mm	d mm	Z	1061TF €
6	57	13	6	4	101,00
8	63	19	8	4	125,50
10	72	22	10	4	137,50
12	83	26	12	4	180,50
14	83	26	14	4	287,00
16	92	32	16	4	289,00
18	92	32	18	4	393,00
20	104	38	20	4	406,00

## 1062TF



Ø mm h10	L mm	L <sub>1</sub> mm	d mm	Z	1062TF €
6	57	13	6	3	101,00
8	63	19	8	3	125,50
10	72	22	10	3	137,50
12	72	22	10	3	180,50
14	83	26	12	3	287,00
16	92	32	16	3	289,00
18	92	32	16	3	393,00
20	104	38	20	3	406,00



# PARAMETRI DI TAGLIO

CUTTING PARAMETERS  
SCHNITTDATEN  
PARAMÈTRES DE COUPE  
PARAMETROS DE CORTE



## PER FRESE SENZA RIVESTIMENTO = $V_c$ e $F_z$ x 0,8

For end mill without coating - Für Fräser ohne Beschichtung  
Pour fraises sans revêtement - Para fresas sin recubrimiento

### FRESE A SGROSSARE CON ROMPI TRUCIOLO:

Roughing end mills with cheap breaker - Schruppfräser mit Spanbrecher - Fraises d'ébauche avec brise-copeaux - Fresas para desbaste con rompevirutas

**CAVA DAL PIENO:**  $V_c$  e  $F_z$ : - 20%

Slotting:  $V_c$  e  $F_z$ : - 20%

Bohrnuten:  $V_c$  e  $F_z$ : - 20%

Rainurage:  $V_c$  e  $F_z$ : - 20%

Ranura:  $V_c$  e  $F_z$ : - 20%

GRUPPO MATERIALI Material Groups Material-Beispiele Groupes de Matériaux Grupos de Materiales			VC m/min													
				<b>Fz [mm]</b> <b>AVANZAMENTO AL DENTE</b> Tooth Feed - Zahnvorschub - Avancement au dent - Avance al labio												
	ap	ae		ap	2	4	6	8	10	12	14	16	18	20	22	25
<b>P</b> < 800 N/mm <sup>2</sup>	1,5xØ	0,2xØ	-	90 - 130	-	0,02 0,03	0,03 0,04	0,04 0,05	0,05 0,06	0,06 0,07	0,07 0,08	0,08 0,10	0,10 0,12	0,12 0,14	-	-
<b>P</b> < 1100 N/mm <sup>2</sup>	1,5xØ	0,2xØ	-	80 - 120	-	0,015 0,02	0,02 0,03	0,03 0,04	0,04 0,05	0,05 0,06	0,06 0,07	0,07 0,08	0,08 0,09	0,09 0,10	-	-
<b>P</b> < 1300 N/mm <sup>2</sup>	1,0xØ	0,2xØ	-	70 - 110	-	0,010 0,015	0,015 0,02	0,02 0,03	0,03 0,04	0,05 0,06	0,06 0,07	0,07 0,08	0,08 0,09	0,09 0,10	-	-
<b>M</b> > 800 N/mm <sup>2</sup>	1,0xØ	0,2xØ	-	50 - 80	-	0,015 0,02	0,02 0,03	0,03 0,04	0,04 0,05	0,05 0,06	0,06 0,07	0,07 0,08	0,08 0,09	0,09 0,10	-	-
<b>K</b> GG	1,0xØ	0,2xØ	-	110 - 150	-	0,02 0,04	0,04 0,06	0,06 0,08	0,08 0,10	0,10 0,12	0,12 0,14	0,14 0,16	0,16 0,18	0,18 0,20	-	-
<b>K</b> GGG	1,0xØ	0,2xØ	-	90 - 130	-	0,02 0,03	0,03 0,04	0,04 0,05	0,05 0,06	0,06 0,07	0,07 0,08	0,08 0,10	0,10 0,12	0,12 0,14	-	-
<b>N</b> Alluminio	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>N</b> Non metalli	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>S</b> Titanio	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>S</b> Leghe speciali a base Ni	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>H</b> Temprati 38 / 48 HRC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>H</b> Temprati 48 / 58 HRC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>H</b> Temprati 58 / 68 HRC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



### CATALOGO PRODOTTI

Angelo Ghezzi Spa propone la **più ampia gamma di utensili di precisione** selezionati tra i principali produttori mondiali.



**ILIX Precision** è una gamma storica di utensili evoluti per lavorazioni meccaniche di alta precisione.

Il programma ILIX comprende un ventaglio di soluzioni per attività di foratura, maschiatura alesatura e svasatura in HSS, HSS-Co, HSS-Co-PM.

### I NOSTRI MIGLIORI RIVENDITORI IN ITALIA

Angelo Ghezzi Spa opera su tutto il territorio nazionale. I rivenditori con i quali il gruppo ha un forte rapporto commerciale sono chiamati Sales Leader. Questi soggetti autonomi altamente specializzati offrono agli utilizzatori la gamma completa di prodotti Angelo Ghezzi.



[Maggiori dettagli](#)

### AREA RISERVATA

Riservato ai Sales Leader ed ai clienti registrati.

Login

Password

[Ho dimenticato la password](#)

#### DOWNLOAD

Scarica le nostre brochure in formato PDF.

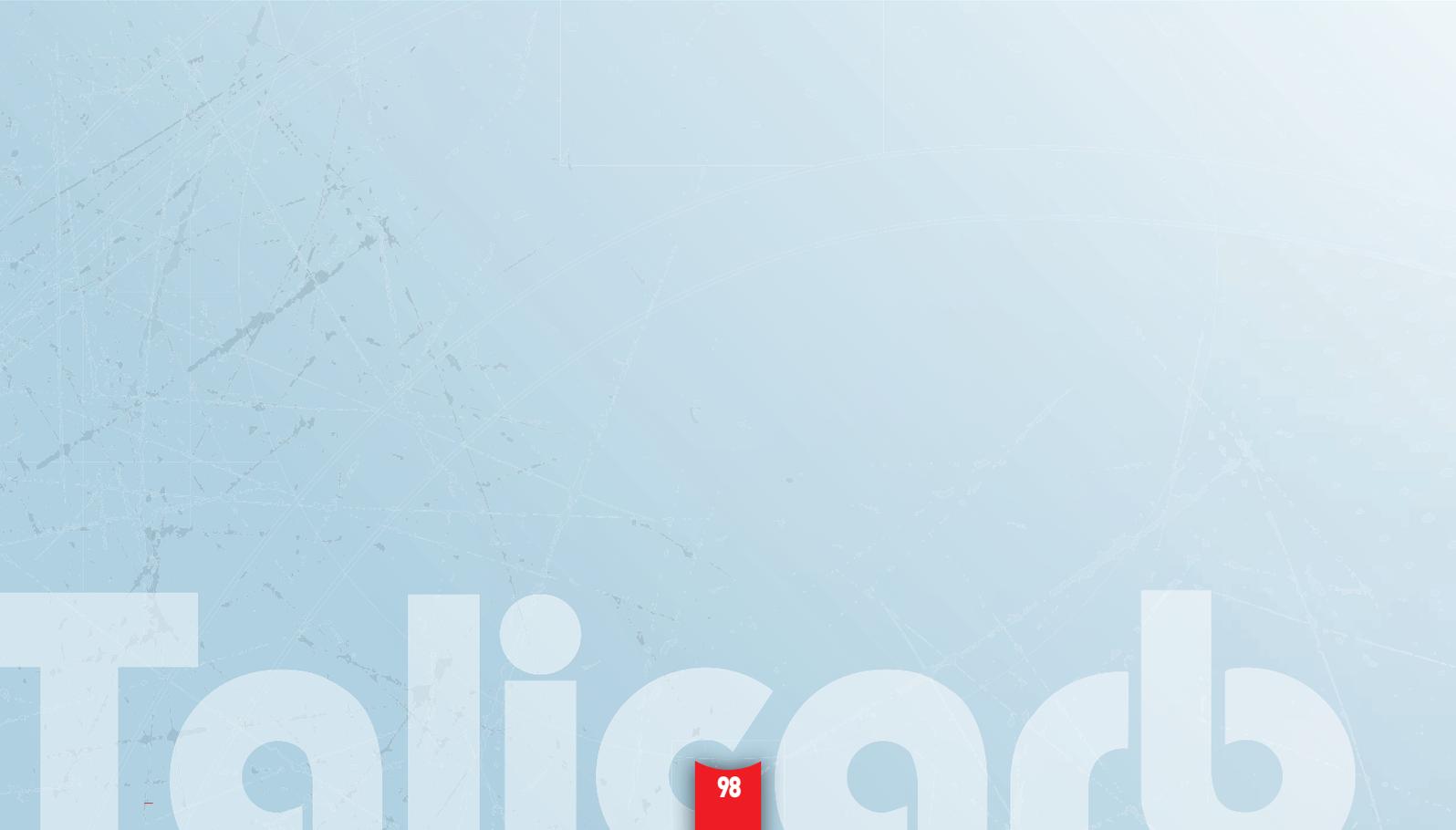


#### GUIDA ALL'ACQUISTO ONLINE

Termini di utilizzo del sito internet.



angeloghezzi.it



Tajicaadb

# FRESE A CANDELA

## con Testa Piana e Toriche



END MILLS FOR SPECIAL APPLICATIONS, FLAT HEAD OR WITH RADIUS



FRÄSER FÜR SPEZIELLE ANWENDUNGEN MIT FLACHER STIRNSCHNEIDE  
ODER MIT RADIUS



FRAISES POUR APPLICATIONS SPÉCIFIQUES À BOUT PLAT OU AVEC RAYON  
HEMISPHERIQUE



FRESAS PARA APLICACIONES ESPECÍFICAS DE CABEZA LLANA O TÓRICAS



# FRESE DI FINITURA IN METALLO DURO A ELEVATE PRESTAZIONI

SOLID CARBIDE END MILLS FOR FINISHING WITH HIGH PERFORMANCES

HOCHLEISTUNGS-SCHLICHTFRÄSER

FRAISES CARBURE MONOBLOC, HAUTE PERFORMANCES POUR LA FINITION

FRESAS DE ACABADO DE METAL DURO INTEGRAL, ALTO RENDIMIENTO

## FRESE DI FINITURA IN METALLO DURO A ELEVATE PRESTAZIONI

Le frese a candela e le frese toriche Talicarb in metallo duro offrono prestazioni superiori, affidabili e mirate.

- Geometrie specifiche per acciaio, acciaio inossidabile, leghe resistenti al calore.
- Tagliente standard, lungo, extra lungo ed extra corto per lavorazioni su fondo tasche.
- Design specifici con elevato numero di taglienti per applicazioni di finitura eccellenti.

## SOLID CARBIDE END MILLS FOR FINISHING WITH HIGH PERFORMANCES

Talicarb solid carbide end mills and toric end mills offer advanced, reliable and focused performances.

- Specific geometries for steel, stainless steel, high-temperature alloys.
- Standard cutting edge, long and extra-long series, stub length series for pocketing.
- Special design with a high number of flutes for excellent finishing applications.

## HOCHLEISTUNGS-SCHLICHTFRÄSER

Die Talicarb vhm und torusfräser bieten höhere, zuverlässige und genaue Leistungen.

- Bestimme Geometrie für Stahl, rostbeständiger Stahl, wärmebeständige Legierungen.
- Standard Schneiden, lange und extra-lange Ausführung. Extra-kurze Ausführung für Taschenfräsen.

## FRAISES CARBURE MONOBLOC, HAUTE PERFORMANCES POUR LA FINITION

Les fraises carbure monobloc et fraises toriques Talicarb présentent d'excellentes performances de façon fiable et régulière.

- Geometries spécifiques pour l'acier, l'inox, les alliages réfractaires.
- Taille standard, disponibles en série longue, extra-longue. Extra courte pour usinage en poche.
- Design spécifiques avec un élevé numero de tailles pour applications de finition.

## FRESAS DE ACABADO DE METAL DURO INTEGRAL, ALTO RENDIMIENTO

Las fresas de metal duro integral y fresas tóricas de Talicarb ofrecen un rendimiento superior, específico y fiable.

- Geometrías específicas diseñadas para aceros, aceros inoxidables, aleaciones a altas temperaturas.
- Longitud estándar, larga, extralarga y extra corta para fresado de cajera.
- Diseños especiales con más labios para un acabado perfecto.





## TALICARB NORM.

TALICARB NORM.  
TALICARB NORM.  
TALICARB NORM.  
TALICARB NORM.

# FRESE A CANDELA A 3 TAGLI IN METALLO DURO INTEGRALE

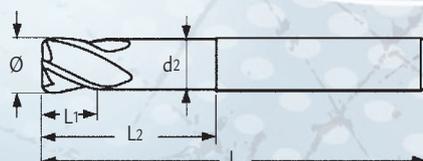
SOLID CARBIDE END MILLS - 3 FLUTES  
VOLLHARTMETALL FRÄSER - 3 SCHNEIDEN  
FRAISES EN CARBURE MONOBLOC - 3 DENTS  
FRESAS DE METAL DURO INTEGRALE - 3 LABIOS

## 1330TF



Ø mm h10	d mm	L mm	L <sub>1</sub> mm	L <sub>2</sub> mm	d <sub>2</sub> mm	Z	1330TF €
3	3	38	6	12	2.8	3	29,60
4	4	50	7	13	3.8	3	32,95
5	5	50	8	14	4.7	3	33,10
6	6	57	9	20	5.4	3	38,75
8	8	63	11	26	7.2	3	50,90
10	10	72	13	31	9.0	3	61,90
12	12	83	15	37	10.8	3	88,50
16	16	92	20	41	14.4	3	169,00 ■
20	20	104	24	47	18.0	3	251,00 ■

■ Ad esaurimento scorte - Subject to availability until sold out - Solange der vorrat reicht - Jusqu'à Épuisement de stock - Hasta agotamiento del stock



# FRESE TORICHE

## A 3 TAGLI IN METALLO DURO INTEGRALE

SOLID CARBIDE TORIC END MILLS - 3 FLUTES  
 VOLLHARTMETALL TORUSFRÄSER - 3 SCHNEIDEN  
 FRAISES TORIQUES EN CARBURE MONOBLOC - 3 DENTS  
 FRESAS TÓRICAS DE METAL DURO INTEGRAL - 3 LABIOS

TALICARB NORM.

TALICARB NORM.  
 TALICARB NORM.  
 TALICARB NORM.  
 TALICARB NORM.

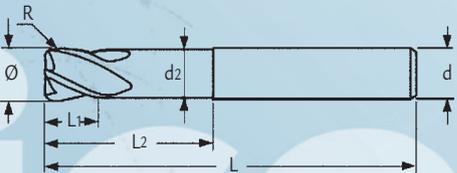
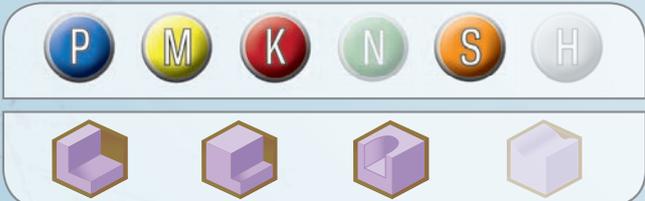


## 1331TF



Ø mm h10	d mm	L mm	L <sub>1</sub> mm	L <sub>2</sub> mm	d <sub>2</sub> mm	R	Z	1331TF €
3	3	38	6	12	2.8	0.3	3	33,55
4	4	50	7	13	3.8	0.3	3	36,75
5	5	50	8	14	4.7	0.3	3	36,90
6	6	57	9	20	5.4	0.3	3	43,40
8	8	63	11	26	7.2	0.5	3	56,10
10	10	72	13	31	9.0	0.3	3	61,50 ■
10	10	72	13	31	9.0	0.5	3	67,70
12	12	83	15	37	10.8	1.0	3	97,00
16	16	92	20	41	14.4	1.0	3	182,00 ■
20	20	104	24	47	18.0	1.0	3	270,00 ■

■ Ad esaurimento scorte - Subject to availability until sold out - Solange der vorrat reicht - Jusqu'à épuisement de stock - Hasta agotamiento del stock





## SERIE NORMALE

NORMAL SERIES  
 NORMAL AUSFÜHRUNG  
 SÉRIE NORMALE  
 SERIE NORMAL

# FRESE A CANDELA

## A 6 TAGLI IN METALLO DURO INTEGRALE

SOLID CARBIDE END MILLS - 6 FLUTES  
 VOLLHARTMETALL FRÄSER - 6 SCHNEIDEN  
 FRAISES EN CARBURE MONOBLOC - 6 DENTS  
 FRESAS DE METAL DURO INTEGRAL - 6 LABIOS

## 1340XT



Ø mm f8	L mm	L <sub>1</sub> mm	L <sub>2</sub> mm	d mm	d <sub>2</sub>	Z	1340XT €
3	38	6	12	3	2.8	6	35,05
4	50	7	13	4	3.8	6	38,60
5	50	8	14	5	4.7	6	39,10
6	57	9	20	6	5.4	6	45,30
8	63	11	26	8	7.2	6	57,80
10	72	13	31	10	9.0	6	66,40
12	83	15	37	12	10.8	6	93,70
16	92	20	41	16	14.4	6	186,00
20	104	24	47	20	18.0	6	277,00



# FRESE TORICHE

A 6 TAGLI IN METALLO DURO INTEGRALE

SOLID CARBIDE TORIC END MILLS - 6 FLUTES  
 VOLLHARTMETALL TORUSFRÄSER - 6 SCHNEIDEN  
 FRAISES TORIQUES EN CARBURE MONOBLOC - 6 DENTS  
 FRESAS TÓRICAS DE METAL DURO INTEGRAL - 6 LABIOS

## SERIE NORMALE

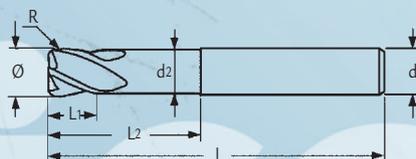
NORMAL SERIES  
 NORMAL AUSFÜHRUNG  
 SÉRIE NORMALE  
 SERIE NORMAL



# 1341XT



Ø mm f8	L mm	L <sub>1</sub> mm	L <sub>2</sub> mm	d mm	d <sub>2</sub>	R	Z	1341XT €
3	38	6	12	3	2.8	0.3	6	39,70
4	50	7	13	4	3.8	0.3	6	43,30
5	50	8	14	5	4.7	0.3	6	43,70
6	57	9	20	6	5.4	0.5	6	51,00
8	63	11	26	8	7.2	0.5	6	64,30
10	72	13	31	10	9.0	0.5	6	73,50
12	83	15	37	12	10.8	1.0	6	104,00
16	92	20	41	16	14.4	1.0	6	203,50
20	104	24	47	20	18.0	1.0	6	303,00





## SERIE NORMALE

NORMAL SERIES  
NORMAL AUSFÜHRUNG  
SÉRIE NORMALE  
SÉRIE NORMAL

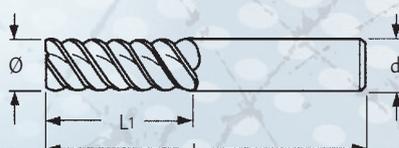
# FRESE A CANDELA A 6 TAGLI IN METALLO DURO INTEGRALE

SOLID CARBIDE END MILLS - 6 FLUTES  
VOLLHARTMETALL FRÄSER - 6 SCHNEIDEN  
FRAISES EN CARBURE MONOBLOC - 6 DENTS  
FRESAS DE METAL DURO INTEGRAL - 6 LABIOS

## 1351XT



$\emptyset$ mm f8	L mm	L <sub>1</sub> mm	d mm	Z	1351XT €
3	57	8	6	6	43,40
4	57	11	6	6	43,40
5	57	13	6	6	40,20
6	57	13	6	6	45,70
8	63	19	8	6	52,40
10	72	22	10	6	89,90
12	83	26	12	6	122,00
16	92	32	16	6	217,50
20	104	38	20	6	317,00



# FRESE TORICHE

## A 6 TAGLI IN METALLO DURO INTEGRALE

SOLID CARBIDE TORIC END MILLS - 6 FLUTES  
VOLLHARTMETALL TORUSFRÄSER - 6 SCHNEIDEN  
FRAISES TORIQUES EN CARBURE MONOBLOC - 6 DENTS  
FRESAS TÓRICAS DE METAL DURO INTEGRAL - 6 LABIOS

### SERIE NORMALE

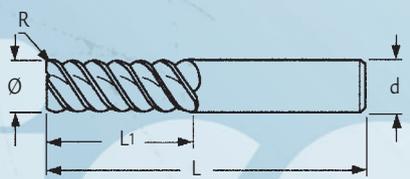
NORMAL SERIES  
NORMAL AUSFÜHRUNG  
SÉRIE NORMALE  
SERIE NORMAL



# 1352XT



$\emptyset$ mm f8	L mm	L <sub>1</sub> mm	d mm	R	Z	1352XT €
3	57	8	6	0.3	6	49,90
4	57	11	6	0.3	6	49,90
5	57	13	6	0.3	6	46,20
6	57	13	6	0.5	6	52,50
8	63	19	8	0.5	6	60,30
10	72	22	10	0.5	6	103,50
12	83	26	12	1.0	6	140,50
16	92	32	16	1.0	6	250,00
20	104	38	20	1.0	6	364,00





## SERIE NORMALE

NORMAL SERIES  
 NORMAL AUSFÜHRUNG  
 SÉRIE NORMALE  
 SERIE NORMAL

# FRESE A CANDELA

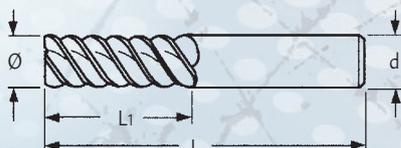
## MULTITAGLIENTE IN METALLO DURO INTEGRALE

SOLID CARBIDE END MILLS - MULTI-FLUTES  
 VOLLHARTMETALL FRÄSER - MULTI-SCHNEIDEN  
 FRAISES EN CARBURE MONOBLOC - MULTI-DENTS  
 FRESAS DE METAL DURO INTEGRAL - LABIOS MÚLTIPLES

## 1350XT



Ø mm f8	L mm	L <sub>2</sub> mm	d mm	Z	1350XT €
3	57	8	6	6	45,40
4	57	11	6	6	45,40
5	57	13	6	6	42,10
6	57	13	6	6	47,70
8	63	19	8	6	54,80
10	72	22	10	6	94,00
12	83	26	12	6	127,50
14	83	26	14	6	166,00
16	92	32	16	8	227,00
18	92	32	18	8	255,50
20	104	38	20	8	332,00



# FRESE A CANDELA MULTITAGLIENTE IN METALLO DURO INTEGRALE

SOLID CARBIDE END MILLS - MULTI-FLUTES  
VOLLHARTMETALL FRÄSER - MULTI-SCHNEIDEN  
FRAISES EN CARBURE MONOBLOC - MULTI-DENTS  
FRESAS DE METAL DURO INTEGRAL - LABIOS MÚLTIPLES

## SERIE LUNGA

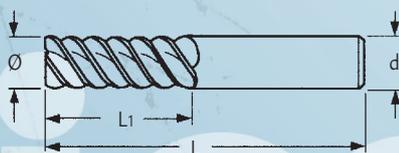
LONG SERIES  
LANGE AUSFÜHRUNG  
SÉRIE LONGUE  
SERIE LARGASERIE LUNGA



## 1360XT



Ø mm f8	L mm	L <sub>2</sub> mm	d mm	Z	1360XT €
3	62	12	6	6	49,10
4	62	16	6	6	49,10
5	62	18	6	6	47,40
6	62	18	6	6	52,70
8	68	24	8	6	59,50
10	80	30	10	6	106,00
12	93	36	12	6	144,00
14	99	42	14	6	200,50
16	108	48	16	8	275,00
18	114	54	18	8	321,00
20	126	60	20	8	414,00



# PARAMETRI DI TAGLIO

## PER FRESE SENZA RIVESTIMENTO = $V_c$ e $F_z \times 0,8$

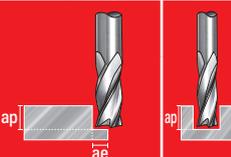
For end mill without coating - Für Fräser ohne Beschichtung  
 Pour fraises sans revêtement - Para fresas sin recubrimiento



CUTTING PARAMETERS  
 SCHNITTDATEN  
 PARAMÈTRES DE COUPE  
 PARAMETROS DE CORTE

### FRESE A CANDELA CON TESTA PIANA E TORICHE: 3/6 TAGLI

End mills with flat head and with radius - Fräser mit flacher Stirnschneide oder mit Radius - Fraises à bout plat ou avec rayon semisphérique  
 Fresas de cabeza llana o tóricas: 3/6 Flutes - Schneiden - Dents - Labios

GRUPPO MATERIALI Material Groups Material-Beispiele Groupes de Matériaux Grupos de Materiales			VC m/min	 <b>Fz [mm]</b> <b>AVANZAMENTO AL DENTE</b> Tooth Feed - Zahnvorschub - Avancement au dent - Avance al labio												
	ap	ae		ap	2	4	6	8	10	12	14	16	18	20	22	25
	<b>P</b> < 800 N/mm <sup>2</sup>	1,25xØ		0,3xØ	-	90 - 130	0,015	0,015 0,030	0,03 0,04	0,05 0,06	0,07 0,08	0,08 0,09	0,09 0,10	0,10 0,12	0,12 0,14	0,14 0,15
<b>P</b> < 1100 N/mm <sup>2</sup>	1,25xØ	0,2xØ	-	80 - 120	0,005 0,010	0,02 0,04	0,04 0,06	0,06 0,08	0,08 0,10	0,10 0,12	0,12 0,14	0,14 0,16	0,16 0,18	0,18 0,20	-	-
<b>P</b> < 1300 N/mm <sup>2</sup>	1,25xØ	0,2xØ	-	70 - 100	0,003 0,005	0,005 0,020	0,02 0,04	0,04 0,06	0,06 0,08	0,08 0,10	0,10 0,12	0,12 0,14	0,14 0,16	0,16 0,18	-	-
<b>M</b> > 800 N/mm <sup>2</sup>	1xØ	0,25xØ	-	60 - 80	0,01	0,01 0,02	0,02 0,03	0,03 0,04	0,04 0,05	0,05 0,06	0,07 0,08	0,08 0,09	0,09 0,10	0,11 0,12	-	-
<b>K</b> GG	1,5xØ	0,3xØ	-	90 - 130	0,015	0,015 0,030	0,03 0,04	0,05 0,06	0,07 0,08	0,08 0,09	0,09 0,1	0,10 0,12	0,12 0,14	0,14 0,15	-	-
<b>K</b> GGG	1,25xØ	0,3xØ	-	80 - 110	0,01	0,01 0,02	0,02 0,03	0,03 0,04	0,04 0,05	0,05 0,06	0,07 0,08	0,08 0,09	0,09 0,10	0,11 0,12	-	-
<b>N</b> Alluminio	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>N</b> Non metalli	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>S</b> Titanio	1xØ	0,25xØ	-	40 - 60	0,01	0,01 0,02	0,02 0,03	0,03 0,04	0,04 0,05	0,05 0,06	0,07 0,08	0,08 0,09	0,09 0,1	0,11 0,12	-	-
<b>S</b> Leghe speciali a base Ni	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>H</b> Temprati 38 / 48 HRC	1xd	0,25xd	-	15 - 40	0,005 0,01	0,02 0,04	0,04 0,06	0,06 0,08	0,08 0,1	0,1 0,12	0,12 0,14	0,14 0,16	0,16 0,18	0,18 0,2	-	-
<b>H</b> Temprati 48 / 58 HRC	1,5xd	0,2xd	-	20 - 50	0,01	0,01	0,02	0,03	0,04	0,05	0,07	0,08	0,09	0,11	-	-
<b>H</b> Temprati 58 / 68 HRC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

**FRESE POWER:** 

- Ridurre il numero di utensili necessari
- Offrire un'eccellente evacuazione dei trucioli
- Ottenere la massima produttività
- Aumentare i volumi di trucioli asportati
- Aumentare la velocità di taglio
- Garantire precisione
- Ridurre i costi di produzione
- Fornire una lunga durata dell'utensile

**POWER END MILLS:** 

- Reducing the number of necessary tools
- Offering an excellent chip evacuation
- Obtaining maximum productivity
- Increasing the volumes of eliminated chips
- Increasing cutting speed
- Guaranteeing precision
- Reducing production costs
- Allowing a long tool life

**POWER FRÄSER:** 

- Reduziert die Anzahl der benötigten Werkzeuge
- Bietet eine ausgezeichnete Spababfuhr
- Erhalten Sie die maximale Produktivität
- Erhöhung die Volumens der Spababfuhr
- Erhöhung der Schnittgeschwindigkeit
- Gewährleistung der Genauigkeit
- Reduzierung der Produktionskosten
- Ermöglichen eine lange Lebensdauer

**FRAISES POWER:** 

- Réduire le numéro des outils pas nécessaires
- Offrir une très bonne évacuation du copeau
- Obtenir la meilleure productivité
- Augmenter les volumes du copeau évacué
- Augmenter la vitesse de coupe

- Assurer précision
- Réduire le coût de production
- Permettre une longue durée de vie l'outil

**FRESAS POWER:** 

- Reducir el numero de herramientas innecesarias
- Ofrecer una excelente evacuación de virutas
- Obtener la máxima productividad
- Incrementar el volumen de evacuación de virutas
- Incrementar (aumentando) la velocidad de corte
- Asegurar precisión
- Reducir los costes de producción
- Permitir una larga vida de herramienta

# Frese Power



2015



Tajicodb

# FRESE A CANDELA POWER con testa Piana e Toriche



POWER END MILLS WITH FLAT HEAD OR TORIC



POWER FRÄSER MIT FLACHER STIRNSCHNEIDE ODER TORUS



FRAISES POWER À BOUT PLAT OU TORIQUES



FRESAS POWER DE CABEZA LLANA O TÓRICAS



# FRESE POWER A CANDELA

## A 2 TAGLI IN MICROGRANA ULTRAFINE

POWER END MILLS - 2 FLUTES - SUB-MICROGRAIN  
 POWER FRÄSER - 2 NUTEN - HARTMETALLQUALITÄT: ULTRA-FEINSTKORN  
 FRAISES POWER - 2 DENTS - MICRO-GRAIN ULTRAFIN  
 FRESAS POWER - 2 LABIOS - SUB-MICROGRANO

### SERIE NORMALE

NORMAL SERIES  
 NORMAL AUSFÜHRUNG  
 SÉRIE NORMALE  
 SERIE NORMAL



## 1417XT

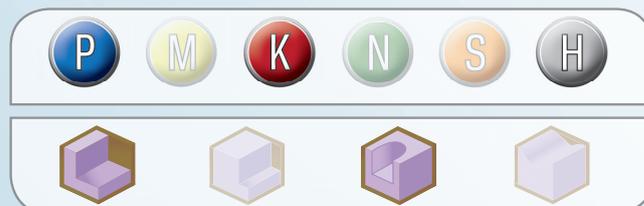
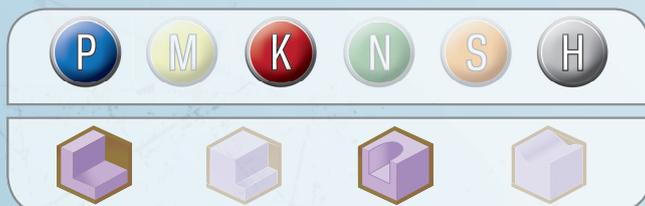


Ø mm	L mm	L <sub>1</sub> mm	d mm	Z	1417XT €
0.3	38	1	3	2	23,65
0.4	38	2.5	3	2	23,65
0.5	38	2.5	3	2	23,65
0.6	38	3	3	2	23,65
0.8	38	4	3	2	23,65
1	38	5	3	2	23,65
1.2	38	5	3	2	23,65
1.5	38	5	3	2	23,65
1.6	38	6	3	2	23,65
1.8	38	6	3	2	23,65
2	38	9	3	2	23,65
2.4	38	10	3	2	23,65
2.5	38	10	3	2	23,65
2.8	38	10	3	2	23,65
3	38	12	3	2	23,65

## 1412XT



Ø mm	L mm	L <sub>1</sub> mm	d mm	Z	1412XT €
1	39	3	3	2	18,85
1.5	39	5	3	2	17,40
2	39	7	3	2	17,40
2.5	39	8	3	2	17,40
3	39	10	3	2	17,40
4	51	14	6	2	23,20
5	51	16	6	2	25,60
6	64	19	6	2	33,45
7	64	19	8	2	43,10
8	64	21	8	2	47,20
9	70	22	10	2	64,70
10	70	25	10	2	64,70
12	76	25	12	2	89,40
14	89	30	14	2	121,50
16	89	32	16	2	140,00
18	102	35	18	2	198,00
20	102	38	20	2	238,50
22	102	38	22	2	301,00
25	102	38	25	2	347,00



**Rivestimento X-Treme**  
 X-Treme coating  
 X-Treme-Beschichtung  
 Revêtement X-Treme  
 Recubrimiento X-Treme

### TOLLERANZA - TOLERANCE - TOLERANZ - TOLÉRANCE - TOLERANCIA

Diametri Diameters	Tolleranza del diametro Diameter tolerance	Tolleranza del gambo Shank tolerance
da 1 mm a 3 mm	+0.00 mm -0.025 mm	+0.00 mm -0.013 mm
da 4 mm a 25 mm	+0.00 mm -0.038 mm	+0.00 mm -0.013 mm



## SERIE NORMALE

NORMAL SERIES  
NORMAL AUSFÜHRUNG  
SÉRIE NORMALE  
SERIE NORMAL

# FRESE POWER TORICHE

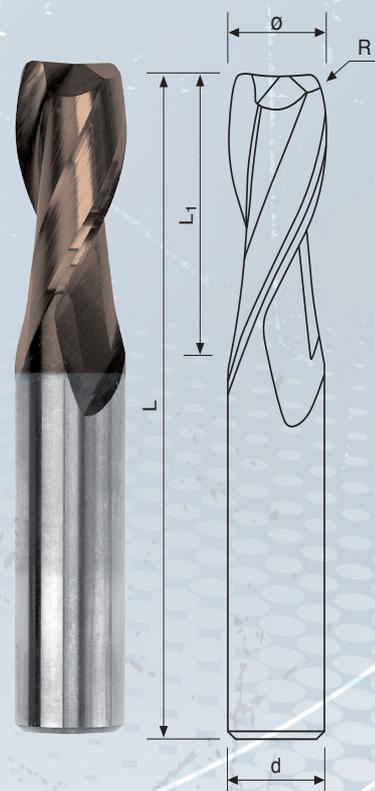
## A 2 TAGLI IN MICROGRANA ULTRAFINE

POWER TORIC END MILLS - 2 FLUTES - SUB-MICROGRAIN  
POWER TORUSFRÄSER - 2 NUTEN - HARTMETALLQUALITÄT: ULTRA-FEINSTKORN  
FRAISES POWER TORIQUE À 2 DENTS - MICRO-GRAIN ULTRAFIN  
FRESAS POWER TÓRICAS - 2 LABIOS - SUB-MICROGRANO

## 1432XT



Ø mm	R	L mm	L <sub>1</sub> mm	d mm	Z	1432XT €
3	0.2	39	10	3	2	23,25
3	0.5	39	10	3	2	23,25
4	0.2	51	14	6	2	30,95
4	0.5	51	14	6	2	30,95
4	1	51	14	6	2	30,95
5	0.2	51	16	6	2	34,15
5	0.5	51	16	6	2	34,15
5	1	51	16	6	2	34,15
6	0.2	64	19	6	2	44,50
6	0.5	64	19	6	2	44,50
6	1	64	19	6	2	44,50
6	1.5	64	19	6	2	44,50
6	2	64	19	6	2	44,50
8	0.5	64	21	8	2	62,90
8	1	64	21	8	2	62,90
8	1.5	64	21	8	2	62,90
8	2	64	21	8	2	62,90
10	0.5	70	25	10	2	86,20
10	1	70	25	10	2	86,20
10	1.5	70	25	10	2	86,20
10	2	70	25	10	2	86,20
10	3	70	25	10	2	86,20
12	0.5	76	25	12	2	119,50
12	1	76	25	12	2	119,50
12	1.5	76	25	12	2	119,50
12	2	76	25	12	2	119,50



→1-2



### Rivestimento X-Treme

X-Treme coating  
X-Treme-Beschichtung  
Revêtement X-Treme  
Recubrimiento X-Treme



### TOLLERANZA - TOLERANCE - TOLERANZ - TOLÉRANCE - TOLERANCIA

Diametri Diameters	Tolleranza del diametro Diameter tolerance	Tolleranza del gambo Shank tolerance
da 3 mm a 25 mm	+0.000 mm -0.038 mm	+0.000 mm -0.013 mm

# FRESE POWER TORICHE

A 2 TAGLI IN MICROGRANA ULTRAFINE

POWER TORIC END MILLS - 2 FLUTES - SUB-MICROGRAIN  
 POWER TORUSFRÄSER - 2 NUTEN - HARTMETALLQUALITÄT: ULTRA-FEINSTKORN  
 FRAISES POWER TORIQUE À 2 DENTS - MICRO-GRAIN ULTRAFIN  
 FRESAS POWER TÓRICAS - 2 LABIOS - SUB-MICROGRANO

## SERIE NORMALE

NORMAL SERIES  
 NORMAL AUSFÜHRUNG  
 SÉRIE NORMALE  
 SERIE NORMAL

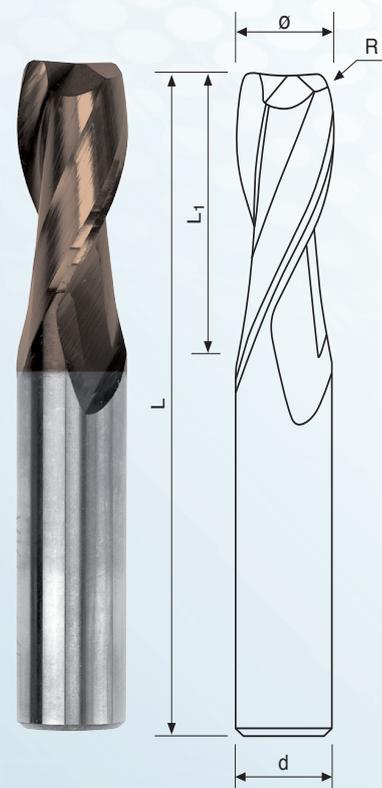


## 1432XT



Ø mm	R	L mm	L <sub>1</sub> mm	d mm	Z	1432XT €
12	3	76	25	12	2	119,50
14	0.5	89	30	14	2	162,00
14	1	89	30	14	2	162,00
14	1.5	89	30	14	2	162,00
14	2	89	30	14	2	162,00
16	0.5	89	32	16	2	186,50
16	1	89	32	16	2	186,50
16	1.5	89	32	16	2	186,50
16	2	89	32	16	2	186,50
18	0.5	102	35	18	2	264,00
18	1	102	35	18	2	264,00
18	1.5	102	35	18	2	264,00
18	2	102	35	18	2	264,00
20	0.5	102	38	20	2	318,00
20	1	102	38	20	2	318,00
20	1.5	102	38	20	2	318,00
20	2	102	38	20	2	318,00
22	0.5	102	38	22	2	400,00
22	1	102	38	22	2	400,00
22	1.5	102	38	22	2	400,00
22	2	102	38	22	2	400,00
25	0.5	102	38	25	2	463,00
25	1	102	38	25	2	463,00
25	1.5	102	38	25	2	463,00
25	2	102	38	25	2	463,00

→2-2



### Rivestimento X-Treme

X-Treme coating  
 X-Treme-Beschichtung  
 Revêtement X-Treme  
 Recubrimiento X-Treme



### TOLLERANZA - TOLERANCE - TOLERANZ - TOLÉRANCE - TOLERANCIA

Diametri Diameters	Tolleranza del diametro Diameter tolerance	Tolleranza del gambo Shank tolerance
da 3 mm a 25 mm	+0.000 mm -0.038 mm	+0.000 mm -0.013 mm



## SERIE LUNGA

LONG SERIES  
LANGE AUSFÜHRUNG  
SÉRIE LONGUE  
SERIE LARGA



# FRESE POWER TORICHE

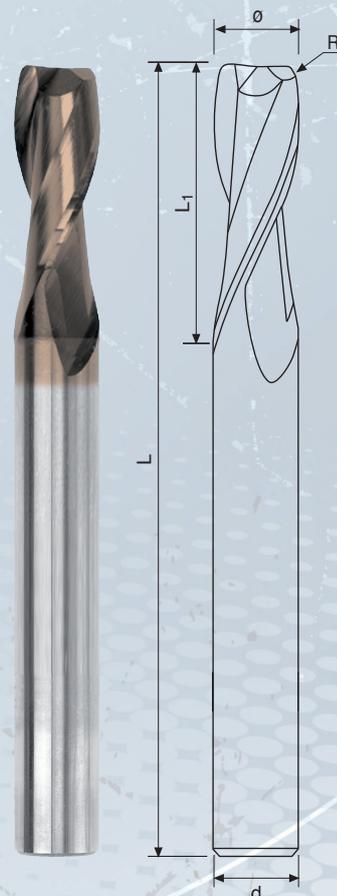
## A 2 TAGLI IN MICROGRANA ULTRAFINE

POWER TORIC END MILLS - 2 FLUTES - SUB-MICROGRAIN  
POWER TORUSFRÄSER - 2 NUTEN - HARTMETALLQUALITÄT: ULTRA-FEINSTKORN  
FRAISES POWER TORIQUE À 2 DENTS - MICRO-GRAIN ULTRAFIN  
FRESAS POWER TÓRICAS - 2 LABIOS - SUB-MICROGRANO

## 1422XT



Ø mm	R	L mm	L <sub>1</sub> mm	d mm	Z	1422XT €
3	0.2	60	8	6	2	26,25
3	0.5	60	8	6	2	26,25
4	0.2	70	11	6	2	33,95
4	0.5	70	11	6	2	33,95
4	1	70	11	6	2	33,95
5	0.2	80	13	6	2	37,80
5	0.5	80	13	6	2	37,80
5	1	80	13	6	2	37,80
6	0.2	90	20	6	2	48,20
6	0.5	90	20	6	2	48,20
6	1	90	20	6	2	48,20
6	1.5	90	20	6	2	48,20
6	2	90	20	6	2	48,20
8	0.5	100	28	8	2	68,80
8	1	100	28	8	2	68,80
8	1.5	100	28	8	2	68,80
8	2	100	28	8	2	68,80
10	0.5	100	34	10	2	94,00
10	1	100	34	10	2	94,00
10	1.5	100	34	10	2	94,00
10	2	100	34	10	2	94,00
12	0.5	110	40	12	2	128,00
12	1	110	40	12	2	128,00
12	1.5	110	40	12	2	128,00
12	2	110	40	12	2	128,00
12	3	110	40	12	2	128,00



**Rivestimento X-Treme**  
X-Treme coating  
X-Treme-Beschichtung  
Revêtement X-Treme  
Recubrimiento X-Treme

### TOLLERANZA - TOLERANCE - TOLERANZ - TOLÉRANCE - TOLERANCIA

Diametri Diameters	Tolleranza del diametro Diameter tolerance	Tolleranza del gambo Shank tolerance
da 3 mm a 12 mm	+0.000 mm -0.038 mm	+0.000 mm -0.013 mm

# FRESE POWER A CANDELA

A 4 TAGLI IN MICROGRANA ULTRAFINE

POWER END MILLS - 4 FLUTES - SUB-MICROGRAIN  
POWER FRÄSER - 4 NUTEN - HARTMETALLQUALITÄT: ULTRA-FEINSTKORN  
FRAISES POWER - 4 DENTS - MICRO-GRAIN ULTRAFIN  
FRESAS POWER - 4 LABIOS - SUB-MICROGRANO

## SERIE NORMALE

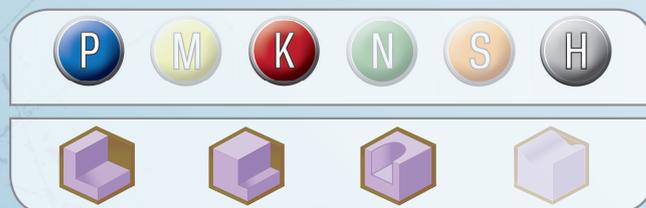
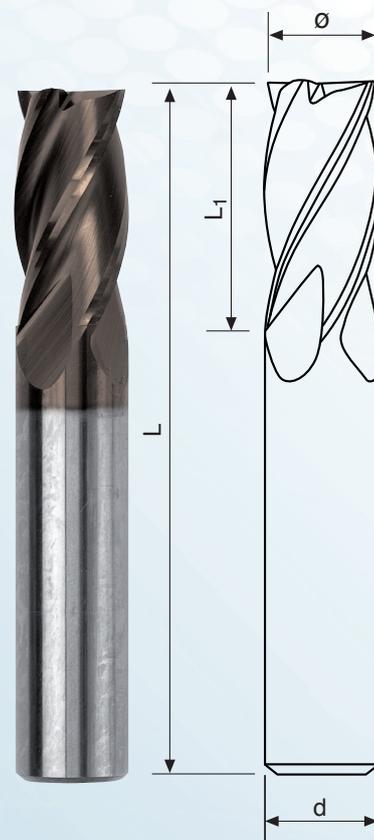
NORMAL SERIES  
NORMAL AUSFÜHRUNG  
SÉRIE NORMALE  
SERIE NORMAL



## 1414XT



∅ mm	L mm	L <sub>1</sub> mm	d mm	Z	1414XT €
1	39	3	3	4	18,85
2	39	7	3	4	17,40
3	39	10	3	4	17,40
4	51	14	6	4	23,20
5	51	16	6	4	25,60
6	64	19	6	4	33,45
7	64	19	8	4	43,10
8	64	21	8	4	47,20
9	70	22	10	4	64,70
10	70	25	10	4	64,70
12	76	25	12	4	89,40
14	89	30	14	4	121,50
16	89	32	16	4	140,00
18	102	35	18	4	198,00
20	102	38	20	4	238,50
22	102	38	22	4	301,00
25	102	38	25	4	347,00



### Rivestimento X-Treme

X-Treme coating  
X-Treme-Beschichtung  
Revêtement X-Treme  
Recubrimiento X-Treme



### TOLLERANZA - TOLERANCE - TOLERANZ - TOLÉRANCE - TOLERANCIA

Diametri Diameters	Tolleranza del diametro Diameter tolerance	Tolleranza del gambo Shank tolerance
da 1 mm a 3 mm	+ .000 mm - .025 mm	+ .000 mm - .013 mm
da 4 mm a 25 mm	+ .000 mm - .038 mm	+ .000 mm - .013 mm



## SERIE NORMALE

NORMAL SERIES  
NORMAL AUSFÜHRUNG  
SÉRIE NORMALE  
SERIE NORMAL

# FRESE POWER TORICHE

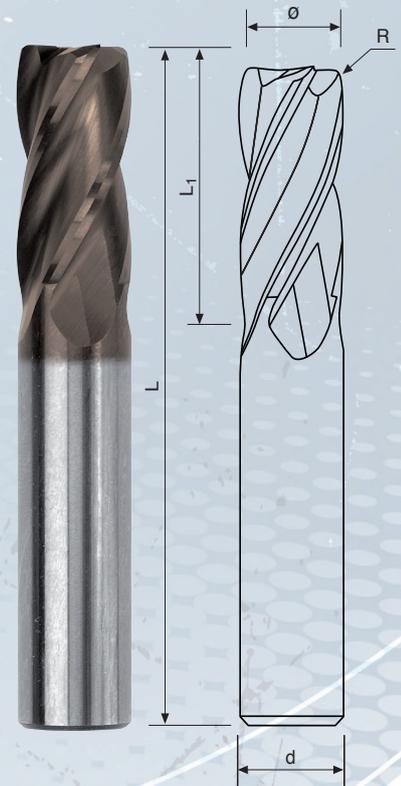
## A 4 TAGLI IN MICROGRANA ULTRAFINE

POWER TORIC END MILLS - 4 FLUTES - SUB-MICROGRAIN  
POWER TORUSFRÄSER - 4 NUTEN - HARTMETALLQUALITÄT: ULTRA-FEINSTKORN  
FRAISES POWER TORIQUE À 4 DENTS - MICRO-GRAIN ULTRAFIN  
FRESAS POWER TÓRICAS - 4 LABIOS - SUB-MICROGRANO

## 1434XT



Ø mm	R	L mm	L <sub>1</sub> mm	d mm	Z	1434XT €
3	0.2	39	10	3	4	23,25
3	0.5	39	10	3	4	23,25
4	0.2	51	14	6	4	30,95
4	0.5	51	14	6	4	30,95
4	1	51	14	6	4	30,95
5	0.2	51	16	6	4	34,15
5	0.5	51	16	6	4	34,15
5	1	51	16	6	4	34,15
6	0.2	64	19	6	4	44,50
6	0.5	64	19	6	4	44,50
6	1	64	19	6	4	44,50
6	1.5	64	19	6	4	44,50
6	2	64	19	6	4	44,50
8	0.5	64	21	8	4	62,90
8	1	64	21	8	4	62,90
8	1.5	64	21	8	4	62,90
8	2	64	21	8	4	62,90
10	0.5	70	25	10	4	86,20
10	1	70	25	10	4	86,20
10	1.5	70	25	10	4	86,20
10	2	70	25	10	4	86,20
10	3	70	25	10	4	86,20
12	0.5	76	25	12	4	119,50
12	1	76	25	12	4	119,50
12	1.5	76	25	12	4	119,50
12	2	76	25	12	4	119,50



→1-2



**Rivestimento X-Treme**  
X-Treme coating  
X-Treme-Beschichtung  
Revêtement X-Treme  
Recubrimiento X-Treme

### TOLLERANZA - TOLERANCE - TOLERANZ - TOLÉRANCE - TOLERANCIA

Diametri Diameters	Tolleranza del diametro Diameter tolerance	Tolleranza del gambo Shank tolerance
da 3 mm a 25 mm	+0.000 mm -0.038 mm	+0.000 mm -0.013 mm

# FRESE POWER TORICHE

## A 4 TAGLI IN MICROGRANA ULTRAFINE

POWER TORIC END MILLS - 4 FLUTES - SUB-MICROGRAIN  
 POWER TORUSFRÄSER - 4 NUTEN - HARTMETALLQUALITÄT: ULTRA-FEINSTKORN  
 FRAISES POWER TORIQUE À 4 DENTS - MICRO-GRAIN ULTRAFIN  
 FRESAS POWER TÓRICAS - 4 LABIOS - SUB-MICROGRANO

### SERIE NORMALE

NORMAL SERIES  
 NORMAL AUSFÜHRUNG  
 SÉRIE NORMALE  
 SERIE NORMAL

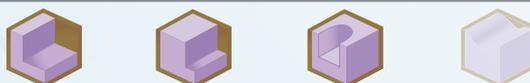
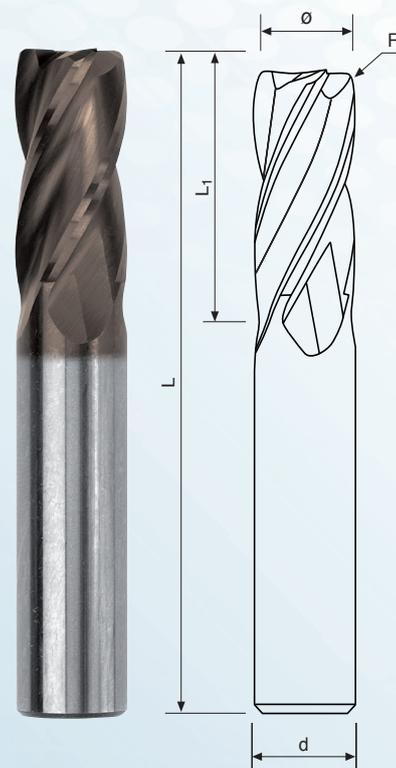


## 1434XT



Ø mm	R	L mm	L <sub>1</sub> mm	d mm	Z	1434XT €
12	3	76	25	12	4	119,50
14	0.5	89	30	14	4	162,00
14	1	89	30	14	4	162,00
14	1.5	89	30	14	4	162,00
14	2	89	30	14	4	162,00
16	0.5	89	32	16	4	186,50
16	1	89	32	16	4	186,50
16	1.5	89	32	16	4	186,50
16	2	89	32	16	4	186,50
18	0.5	102	35	18	4	264,00
18	1	102	35	18	4	264,00
18	1.5	102	35	18	4	264,00
18	2	102	35	18	4	264,00
20	0.5	102	38	20	4	318,00
20	1	102	38	20	4	318,00
20	1.5	102	38	20	4	318,00
20	2	102	38	20	4	318,00

→2-2



**Rivestimento X-Treme**  
 X-Treme coating  
 X-Treme-Beschichtung  
 Revêtement X-Treme  
 Recubrimiento X-Treme



### TOLLERANZA - TOLERANCE - TOLERANZ - TOLÉRANCE - TOLERANCIA

Diametri Diameters	Tolleranza del diametro Diameter tolerance	Tolleranza del gambo Shank tolerance
da 3 mm a 25 mm	+0.000 mm -0.038 mm	+0.000 mm -0.013 mm



## SERIE LUNGA

EXTENDED LENGTH  
SÉRIE LONGUE  
ÜBERLÄNGE  
SERIE LARGA



# FRESE POWER TORICHE

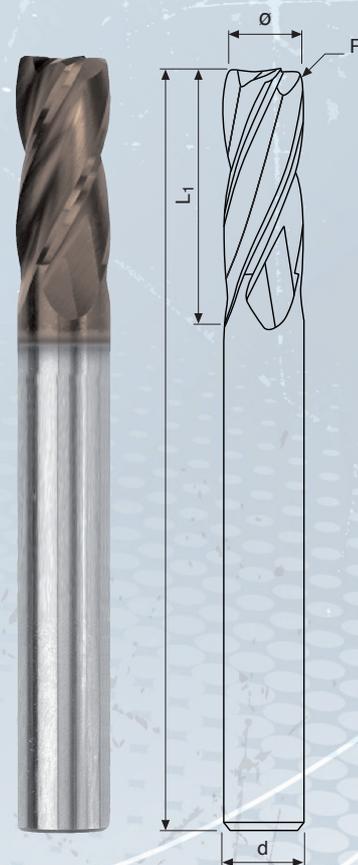
## A 4 TAGLI IN MICROGRANA ULTRAFINE

POWER TORIC END MILLS - 4 FLUTES - SUB-MICROGRAIN  
POWER TORUSFRÄSER - 4 NUTEN - HARTMETALLQUALITÄT: ULTRA-FEINSTKORN  
FRAISES POWER TORIQUE À 4 DENTS - MICRO-GRAIN ULTRAFIN  
FRESAS POWER TÓRICAS - 4 LABIOS - SUB-MICROGRANO

## 1424XT



Ø mm	R	L mm	L <sub>1</sub> mm	d mm	Z	1424XT €
3	0.2	60	8	6	4	26,25
3	0.5	60	8	6	4	26,25
4	0.2	70	11	6	4	33,95
4	0.5	70	11	6	4	33,95
4	1	70	11	6	4	33,95
5	0.2	80	13	6	4	37,80
5	0.5	80	13	6	4	37,80
5	1	80	13	6	4	37,80
6	0.2	90	20	6	4	47,50
6	0.5	90	20	6	4	47,50
6	1	90	20	6	4	47,50
6	1.5	90	20	6	4	47,50
6	2	90	20	6	4	47,50
8	0.5	100	28	8	4	68,80
8	1	100	28	8	4	68,80
8	1.5	100	28	8	4	68,80
8	2	100	28	8	4	68,80
10	0.5	100	34	10	4	94,00
10	1	100	34	10	4	94,00
10	1.5	100	34	10	4	94,00
10	2	100	34	10	4	94,00
10	3	100	34	10	4	94,00
12	0.5	110	40	12	4	128,00
12	1	110	40	12	4	122,00
12	1.5	110	40	12	4	128,00
12	2	110	40	12	4	128,00
12	3	110	40	12	4	128,00



**Rivestimento X-Treme**  
X-Treme coating  
X-Treme-Beschichtung  
Revêtement X-Treme  
Recubrimiento X-Treme

### TOLLERANZA - TOLERANCE - TOLERANZ - TOLÉRANCE - TOLERANCIA

Diametri Diameters	Tolleranza del diametro Diameter tolerance	Tolleranza del gambo Shank tolerance
da 3 mm a 12 mm	+0.000 mm -0.038 mm	+0.000 mm -0.013 mm

# FRESE POWER TORICHE

A 4 TAGLI IN MICROGRANA ULTRAFINE

POWER TORIC END MILLS - 4 FLUTES - SUB-MICROGRAIN  
 POWER TORUSFRÄSER - 4 NUTEN - HARTMETALLQUALITÄT: ULTRA-FEINSTKORN  
 FRAISES POWER TORIQUE À 4 DENTS - MICRO-GRAIN ULTRAFIN  
 FRESAS POWER TÓRICAS - 4 LABIOS - SUB-MICROGRANO

## SERIE LUNGA

LONG SERIES  
 LANGE AUSFÜHRUNG  
 SÉRIE LONGUE  
 SERIE LARGA

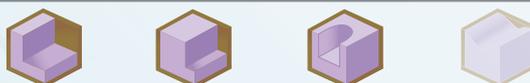
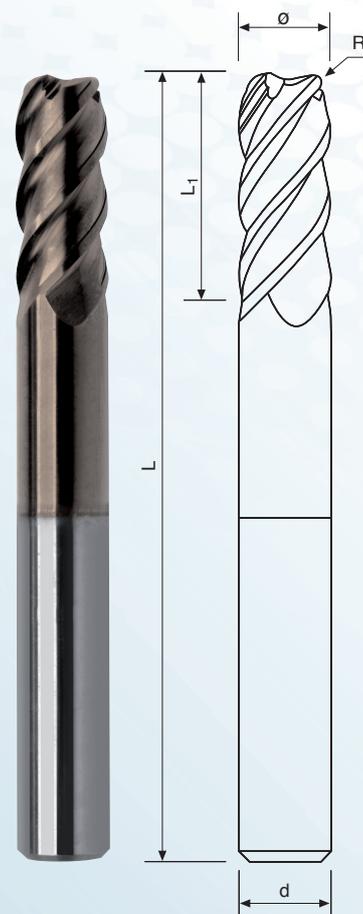


## 1452XT



Ø mm	R	L mm	L <sub>1</sub> mm	d mm	Z	1452XT €
3	0.2	60	8	6	4	77,70
3	0.5	60	8	6	4	77,70
4	0.2	60	11	6	4	77,40
4	0.5	60	11	6	4	77,70
4	1	60	11	6	4	77,70
5	0.2	60	13	6	4	77,70
5	0.5	60	13	6	4	77,70
5	1	60	13	6	4	77,70
6	0.3	60	13	6	4	77,70
6	0.5	60	13	6	4	77,40
6	1	60	13	6	4	77,70
8	0.3	80	19	8	4	105,00
8	0.5	80	19	8	4	105,00
8	1	80	19	8	4	105,00
8	1.5	80	19	8	4	105,00
8	2	80	19	8	4	105,00
10	0.3	80	22	10	4	143,00
10	0.5	80	22	10	4	143,00
10	1	80	22	10	4	143,00
10	1.5	80	22	10	4	143,00
10	2	80	22	10	4	143,00
10	3	80	22	10	4	143,00
12	0.5	100	26	12	4	190,00
12	1	100	26	12	4	190,00
12	1.5	100	26	12	4	190,00

→1-2



### Rivestimento X-Treme

X-Treme coating  
 X-Treme-Beschichtung  
 Revêtement X-Treme  
 Recubrimiento X-Treme



### TOLLERANZA - TOLERANCE - TOLERANZ - TOLÉRANCE - TOLERANCIA

Diametri Diameters	Tolleranza del diametro Diameter tolerance	Tolleranza del gambo Shank tolerance
da 3 mm a 20 mm	+ .000 mm - .038 mm	+ .000 mm - .013 mm



## SERIE LUNGA

LONG SERIES  
LANGE AUSFÜHRUNG  
SÉRIE LONGUE  
SERIE LARGA



# FRESE POWER TORICHE

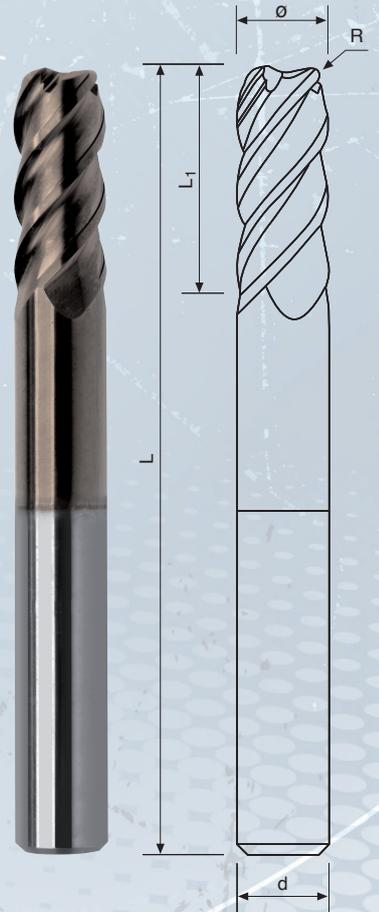
## A 4 TAGLI IN MICROGRANA ULTRAFINE

POWER TORIC END MILLS - 4 FLUTES - SUB-MICROGRAIN  
POWER TORUSFRÄSER - 4 NUTEN - HARTMETALLQUALITÄT: ULTRA-FEINSTKORN  
FRAISES POWER TORIQUE À 4 DENTS - MICRO-GRAIN ULTRAFIN  
FRESAS POWER TÓRICAS - 4 LABIOS - SUB-MICROGRANO

## 1452XT



Ø mm	R	L mm	L <sub>1</sub> mm	d mm	Z	1452XT €
12	2	100	26	12	4	190,00
12	3	100	26	12	4	190,00
16	1	115	32	16	4	280,00
16	1.5	115	32	16	4	280,00
16	2	115	32	16	4	280,00
16	3	115	32	16	4	280,00
20	1	125	38	20	4	412,00
20	1.5	125	38	20	4	412,00
20	2	125	38	20	4	412,00
20	3	125	38	20	4	412,00



→2-2



**Rivestimento X-Treme**  
X-Treme coating  
X-Treme-Beschichtung  
Revêtement X-Treme  
Recubrimiento X-Treme

### TOLLERANZA - TOLERANCE - TOLERANZ - TOLÉRANCE - TOLERANCIA

Diametri Diameters	Tolleranza del diametro Diameter tolerance	Tolleranza del gambo Shank tolerance
da 3 mm a 20 mm	+0.000 mm -0.038 mm	+0.000 mm -0.013 mm

# FRESE POWER A CANDELA

## A 4 TAGLI IN MICROGRANA ULTRAFINE

POWER END MILLS - 4 FLUTES - SUB-MICROGRAIN  
 POWER FRÄSER - 4 NUTEN - HARTMETALLQUALITÄT: ULTRA-FEINSTKORN  
 FRAISES POWER À 4 DENTS - MICRO-GRAIN ULTRAFIN  
 FRESAS POWER - 4 LABIOS - SUB-MICROGRANO

### SERIE LUNGA

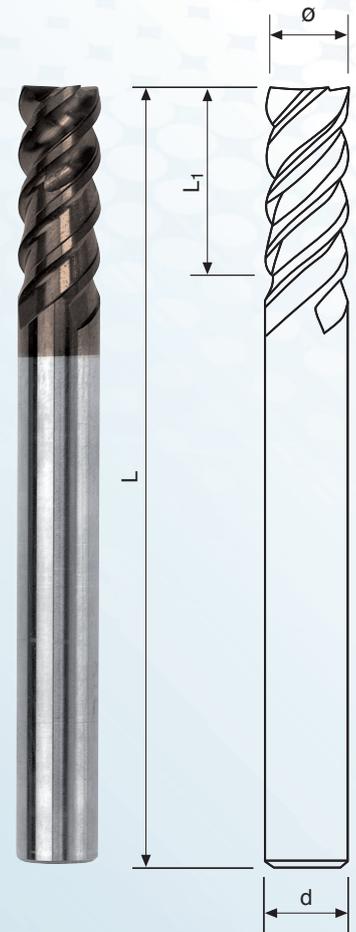
EXTENDED LENGTH  
 SÉRIE LONGUE  
 ÜBERLÄNGE  
 SERIE LARGA



## 1451XT



Ø mm	L mm	L <sub>1</sub> mm	d mm	Z	1451XT €
4	60	12	6	4	59,70
6	60	15	6	4	62,70
8	75	20	8	4	72,50
10	80	25	10	4	123,50
12	102	30	12	4	168,00
16	110	40	16	4	314,00
20	125	45	20	4	464,00



**Rivestimento X-Treme**  
 X-Treme coating  
 X-Treme-Beschichtung  
 Revêtement X-Treme  
 Recubrimiento X-Treme

### TOLLERANZA - TOLERANCE - TOLERANZ - TOLÉRANCE - TOLERANCIA

Diametri Diameters	Tolleranza del diametro Diameter tolerance	Tolleranza del gambo Shank tolerance
da 4 mm a 20 mm	+ .000 mm - .038 mm	+ .000 mm - .013 mm

# PARAMETRI DI TAGLIO



CUTTING PARAMETERS  
SCHNITTDATEN  
PARAMÈTRES DE COUPE  
PARAMETROS DE CORTE

## FRESE POWER A CANDELA CON TESTA PIANA E TORICHE: 2/4 TAGLI

Power end mills with flat head or toric - Power fräser mit flacher stirnschneide oder torus - Fraises power à bout plat ou toriques - Fresas power de cabeza llana o tóricas: 2/4 Flutes - Schneiden - Dents - Labios

**CAVA DAL PIENO:** Vc e Fz: - 20%

Slotting: Vc e Fz: - 20%

Bohrnuten: Vc e Fz: - 20%

Rainurage: Vc e Fz: - 20%

Ranura: Vc e Fz: - 20%

GRUPPO MATERIALI Material Groups Material-Beispiele Groupes de Matériaux Grupos de Materiales				VC m/min	 Fz [mm] AVANZAMENTO AL DENTE Tooth Feed - Zahnvorschub - Avancement au dent - Avance al labio													
	ap	ae	ap		1	2	4	6	8	10	12	14	16	18	20	22	25	
	<b>P</b> < 800 N/mm <sup>2</sup>	1xØ	0,5xØ		0,5xØ	100 - 130	0,003 0,005	0,005 0,010	0,02 0,04	0,04 0,06	0,06 0,08	0,08 0,10	0,10 0,12	0,12 0,14	0,14 0,16	0,16 0,18	0,18 0,20	0,20 0,22
<b>P</b> < 1100 N/mm <sup>2</sup>	1xØ	0,5xØ	0,5xØ	100 - 130	0,003 0,005	0,005 0,010	0,02 0,04	0,04 0,06	0,06 0,08	0,08 0,10	0,10 0,12	0,12 0,14	0,14 0,16	0,16 0,18	0,18 0,20	0,20 0,22	0,22 0,25	
<b>P</b> < 1300 N/mm <sup>2</sup>	1xØ	0,5xØ	0,5xØ	80 - 100	0,0015 0,0030	0,003 0,005	0,005 0,020	0,02 0,04	0,04 0,06	0,06 0,08	0,08 0,10	0,10 0,12	0,12 0,14	0,14 0,16	0,16 0,18	0,18 0,20	0,20 0,22	
<b>M</b> > 800 N/mm <sup>2</sup>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>K</b> GG	1xØ	0,5xØ	0,5xØ	120 - 150	-	0,03 0,05	0,05 0,07	0,07 0,09	0,09 0,11	0,11 0,13	0,13 0,15	0,17 0,19	0,19 0,21	0,21 0,23	0,23 0,25	0,25 0,27	0,27 0,3	
<b>K</b> GGG	1xØ	0,5xØ	0,5xØ	100 - 130	-	0,005 0,010	0,02 0,04	0,04 0,06	0,06 0,08	0,08 0,10	0,10 0,12	0,12 0,14	0,14 0,16	0,16 0,18	0,18 0,20	0,20 0,22	0,22 0,25	
<b>N</b> Alluminio	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>N</b> Non metalli	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>S</b> Titanio	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>S</b> Leghe speciali a base Ni	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>H</b> Temprati 38 / 48 HRC	1xØ	0,2 X Ø	-	40 - 60	0,0015 0,0030	0,003 0,005	0,005 0,02	0,02 0,04	0,04 0,06	0,06 0,08	0,08 0,10	0,10 0,12	0,12 0,14	0,14 0,16	0,16 0,18	0,18 0,20	0,20 0,22	
<b>H</b> Temprati 48 / 58 HRC	1xØ	0,2xØ	-	25 - 40	0,0015 0,0030	0,003 0,005	0,005 0,020	0,02 0,04	0,04 0,06	0,06 0,08	0,08 0,10	0,10 0,12	0,12 0,14	0,14 0,16	0,16 0,18	0,18 0,20	0,20 0,22	
<b>H</b> Temprati 58 / 68 HRC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	



Tajicodb

# FRESE POWER SEMISFERICHE



POWER BALL NOSE END MILLS



POWER RADIUSFRÄSER



FRAISES POWER HÉMISPHERIQUES



FRESAS POWER ESFÉRICAS



# FRESE POWER SEMISFERICHE

## A 2 TAGLI IN MICROGRANA ULTRAFINE

POWER BALL NOSE END MILLS - 2 FLUTES - SUB-MICROGRAIN  
 POWER RADIUSFRÄSER - 2 NUTEN - HARTMETALLQUALITÄT: ULTRA-FEINSTKORN  
 FRAISES POWER HÉMISPHERIQUES À 2 DENTS - MICRO-GRAIN ULTRAFIN  
 FRESAS POWER ESFÉRICAS - 2 LABIOS - SUB-MICROGRANO

### SERIE NORMALE & LUNGA

NORMAL/LONG SERIES  
 NORMAL/LANGE AUSFÜHRUNG  
 SÉRIE NORMALE/LONGUE  
 SERIE NORMAL/LARGA



## 417RXT

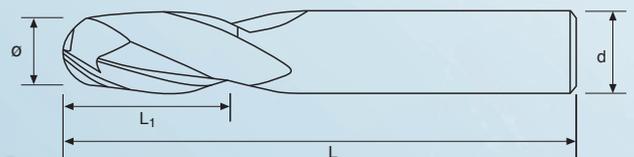
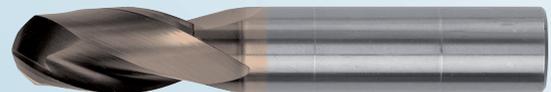
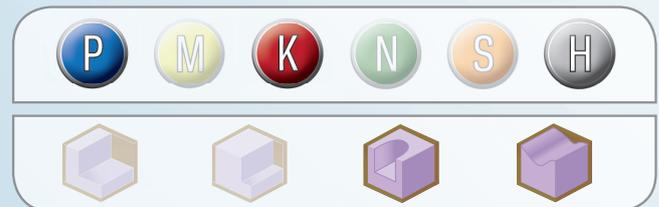
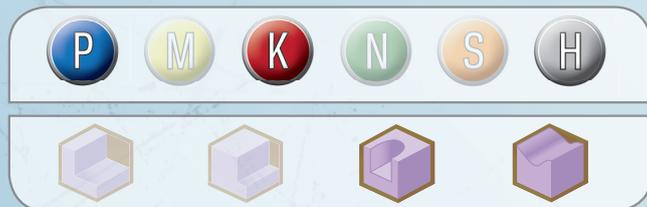


Ø mm	L mm	L <sub>1</sub> mm	d mm	Z	417RXT €
0.4	38	2	3	2	47,90
0.5	38	2	3	2	41,50
0.6	38	2	3	2	41,50
0.8	38	2	3	2	41,50
1	38	3	3	2	38,85
1.5	38	3	3	2	38,85
2	57	3	6	2	45,20
2.5	57	3	6	2	45,20
3	57	4	6	2	45,20

## 412RXT



Ø mm	L mm	L <sub>1</sub> mm	d mm	Z	412RXT €
1	39	3	3	2	24,05
1.5	39	5	3	2	22,20
2	39	7	3	2	22,20
2.5	39	8	3	2	22,20
3	39	10	3	2	22,20
4	51	14	6	2	29,60
5	51	16	6	2	32,80
6	64	19	6	2	42,80
7	64	19	8	2	55,10
8	64	21	8	2	60,30
9	70	22	10	2	82,70
10	70	25	10	2	82,70
12	76	25	12	2	114,50
14	89	30	14	2	155,50
16	89	32	16	2	179,00
18	102	35	18	2	252,50
20	102	38	20	2	305,00
22	102	38	22	2	394,00
25	102	38	25	2	455,00



#### Rivestimento X-Treme

X-Treme coating  
 X-Treme-Beschichtung  
 Revêtement X-Treme  
 Recubrimiento X-Treme



#### TOLLERANZA - TOLERANCE - TOLERANZ - TOLÉRANCE - TOLERANCIA

Diametri Diameters	Tolleranza del diametro Diameter tolerance	Tolleranza del gambo Shank tolerance
da 1 mm a 3 mm	+0.00 mm -0.025 mm	+0.000 mm -0.013 mm
da 4 mm a 25 mm	+0.000 mm -0.038 mm	+0.000 mm -0.013 mm



## SERIE LUNGA

EXTENDED LENGTH  
SÉRIE LONGUE  
ÜBERLÄNGE  
SERIE LARGA

# FRESE POWER SEMISFERICHE

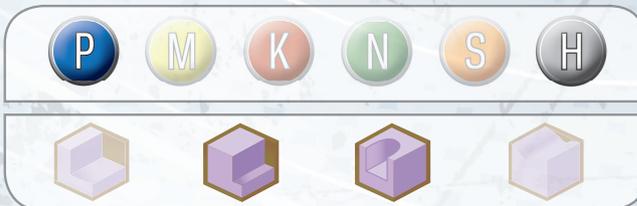
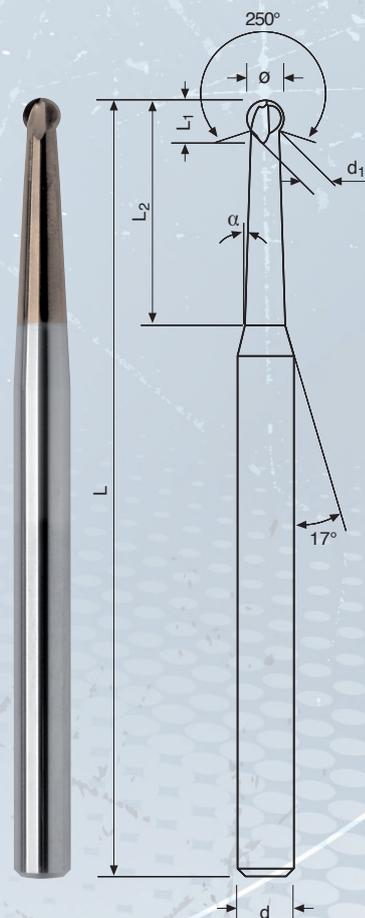
## 250° A 2 TAGLI IN MICROGRANA ULTRAFINE

BALL NOSE 250° POWER END MILLS - 2 FLUTES - SUB-MICROGRAIN  
POWER RADIUSFRÄSER 250° - 2 NUTEN - HARTMETALLQUALITÄT: ULTRA-FEINKORN  
FRAISES POWER HÉMISPÉRIQUES 250° À 2 DENTS - MICRO-GRAIN ULTRAFIN  
FRESAS POWER ESFÉRICAS 250° - 2 LABIOS - SUB-MICROGRANO

## 432RXT



$\emptyset$ mm	d <sub>1</sub> mm	L mm	L <sub>1</sub> mm	L <sub>2</sub> mm	$\alpha$	d mm	Z	432RXT €
1	0.7	80	0.7	20	1°30'	6	2	87,50
2	1.4	80	1.35	20	1°30'	6	2	85,80
3	2.1	80	2	30	1°30'	6	2	85,80
4	3.3	80	2.7	30	3°	6	2	84,50
5	4.1	90	3.4	40	1°	6	2	87,50
6	4.7	100	4.05	45	-	6	2	93,60
8	6.5	100	5.4	45	1°	8	2	128,50
10	8.2	100	6.75	45	1°	10	2	175,00



**Rivestimento X-Treme**  
X-Treme coating  
X-Treme-Beschichtung  
Revêtement X-Treme  
Recubrimiento X-Treme

### TOLLERANZA - TOLERANCE - TOLERANZ - TOLÉRANCE - TOLERANCIA

Diametri Diameters	Tolleranza del diametro Diameter tolerance	Tolleranza del gambo Shank tolerance
da 1 mm a 10 mm	f8	h6

# FRESE POWER SEMISFERICHE A 2 TAGLI IN MICROGRANA ULTRAFINE

BALL NOSE POWER END MILLS - 2 FLUTES - SUB-MICROGRAIN  
POWER RADIUSFRÄSER - 2 NUTEN - HARTMETALLQUALITÄT: ULTRA-FEINSTKORN  
FRAISES POWER HÉMISPHERIQUES À 2 DENTS - MICRO-GRAIN ULTRAFIN  
FRESAS POWER ESFÉRICAS - 2 LABIOS - SUB-MICROGRANO

## SERIE LUNGA & EXTRA LUNGA

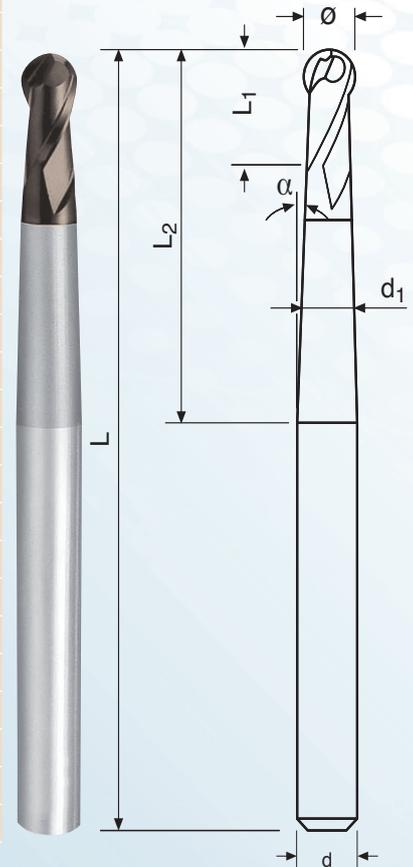
LONG/EXTRALONG SERIES  
LANGE/EXTRALANGE AUSFÜHRUNG  
SÉRIE LONGUE/EXTRALONGUE  
SERIE LARGA/EXTRALARGA



## 402RXT



Ø mm	d <sub>1</sub> mm	L mm	L <sub>1</sub> mm	L <sub>2</sub> mm	α	d mm	Z	402RXT €
1	3.8	60	2.5	20	5°	6	2	51,10
1	4.8	80	2.5	40	3°	6	2	54,40
2	4.3	60	5	20	5°	6	2	51,10
2	5.5	80	5	40	3°	6	2	54,40
3	5	70	8	30	3°	6	2	52,70
3	5.1	90	8	50	1°30'	6	2	55,90
4	6	70	8	28	3°	6	2	52,50
4	6	90	8	48	1°30'	6	2	55,80
5	8	90	10	40	3°	8	2	67,20
5	7.5	110	10	60	1°30'	8	2	71,00
6	8	90	12	33.5	3°	8	2	70,30
6	8	110	12	52	1°30'	8	2	74,20
8	10	100	14	35.5	3°	10	2	91,20
8	10	120	14	54.5	1°30'	10	2	97,20
10	12	110	18	39.5	3°	12	2	113,00
10	12	130	18	58.5	1°30'	12	2	119,00
12	16	140	22	60	3°	16	2	169,00
12	14.9	160	22	80	1°30'	16	2	184,50



**Rivestimento X-Treme**  
X-Treme coating  
X-Treme-Beschichtung  
Revêtement X-Treme  
Recubrimiento X-Treme

### TOLLERANZA - TOLERANCE - TOLERANZ - TOLÉRANCE - TOLERANCIA

Diametri Diameters	Tolleranza del diametro Diameter tolerance	Tolleranza del gambo Shank tolerance
da 1 mm a 3 mm	+0.000 mm -0.025 mm	+0.000 mm -0.013 mm
da 4 mm a 12 mm	+0.000 mm -0.038 mm	+0.000 mm -0.013 mm



## SERIE NORMALE

NORMAL SERIES  
NORMAL AUSFÜHRUNG  
SÉRIE NORMALE  
SERIE NORMAL

# FRESE POWER SEMISFERICHE

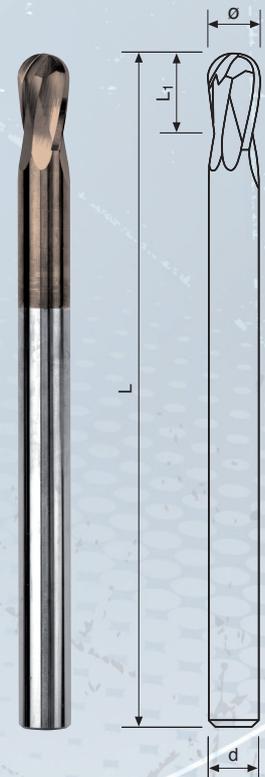
## A 2 TAGLI IN MICROGRANA ULTRAFINE

BALL NOSE POWER END MILLS 2 FLUTES - SUB-MICROGRAIN  
POWER RADIUSFRÄSER - 2 NUTEN - HARTMETALLQUALITÄT: ULTRA-FEINSTKORN  
FRAISES POWER HÉMISPÉRIQUES À 2 DENTS - MICRO-GRAIN ULTRAFIN  
FRESAS POWER ESFÉRICAS - 2 LABIOS - SUB-MICROGRANO

## 497RXT



Ø mm	L mm	L <sub>1</sub> mm	d mm	Z	497RXT €
3	64	4.5	3	2	34,85
4	64	6	4	2	45,80
5	64	7.5	5	2	51,40
6	102	9	6	2	58,00
8	102	12	8	2	80,60
10	102	15	10	2	94,30
11	127	16.5	11	2	158,50
12	127	18	12	2	190,50
14	127	21	14	2	257,50
16	153	24	16	2	311,00
18	153	27	18	2	352,00
20	153	30	20	2	390,00
22	153	33	22	2	441,00
25	153	37.5	25	2	568,00



**Rivestimento X-Treme**  
X-Treme coating  
X-Treme-Beschichtung  
Revêtement X-Treme  
Recubrimiento X-Treme

### TOLLERANZA - TOLERANCE - TOLERANZ - TOLÉRANCE - TOLERANCIA

Diametri Diameters	Tolleranza del diametro Diameter tolerance	Tolleranza del gambo Shank tolerance
da 3 mm a 25 mm	+0.000 mm -0.038 mm	+0.000 mm -0.013 mm

# FRESE POWER SEMISFERICHE

## A 2 TAGLI IN MICROGRANA ULTRAFINE

BALL NOSE POWER END MILLS - 2 FLUTES - SUB-MICROGRAIN  
 POWER RADIUSFRÄSER - 2 NUTEN - HARTMETALLQUALITÄT: ULTRA-FEINSTKORN  
 FRAISES POWER HÉMISPHERIQUES À 2 DENTS - MICRO-GRAIN ULTRAFIN  
 FRESAS POWER ESFÉRICAS - 2 LABIOS - SUB-MICROGRANO

### SERIE LUNGA

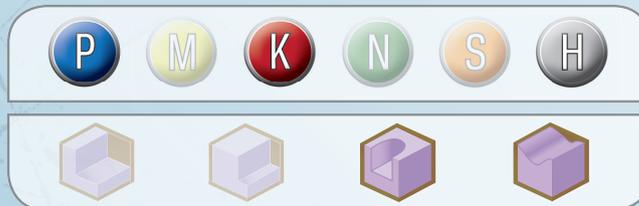
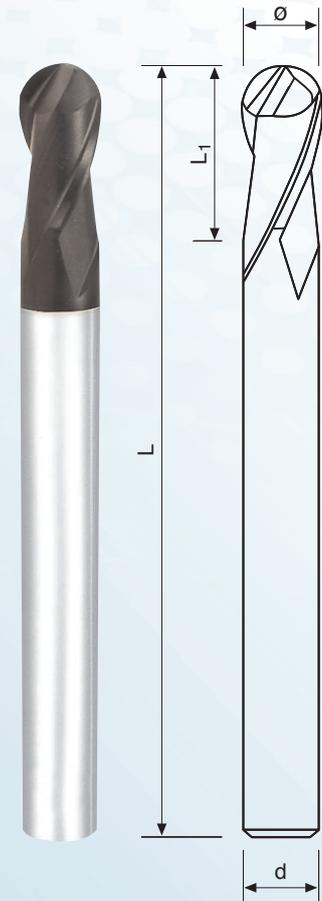
LONG SERIES  
 LANGE AUSFÜHRUNG  
 SÉRIE LONGUE  
 SERIE LARGA



## 416RXT



Ø mm	L mm	L <sub>1</sub> mm	d mm	Z	416RXT €
1	50	2.5	4	2	46,00
1.2	50	3	4	2	48,90
1.4	50	3.5	4	2	48,90
1.5	50	4	4	2	48,90
1.6	50	4	4	2	48,90
1.8	50	4.5	4	2	48,90
2	50	5	6	2	43,90
2.5	60	6	6	2	53,50
3	60	8	6	2	44,80
4	60	8	4	2	44,50
4	70	8	6	2	44,80
5	80	10	6	2	52,30
6	90	12	6	2	50,60
7	90	14	6	2	67,40
8	100	14	8	2	66,20
9	100	18	10	2	96,10
10	100	18	10	2	83,80
12	110	22	12	2	109,00
13	110	26	12	2	133,50
14	110	26	12	2	186,50
15	110	30	12	2	190,50
16	140	30	16	2	243,00
18	140	34	16	2	304,00
20	160	38	20	2	380,00
25	180	50	25	2	705,00



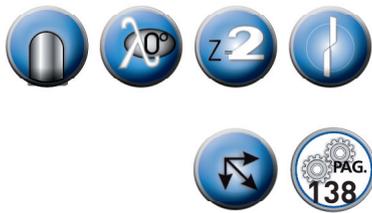
### Rivestimento X-Treme

X-Treme coating  
 X-Treme-Beschichtung  
 Revêtement X-Treme  
 Recubrimiento X-Treme



### TOLLERANZA - TOLERANCE - TOLERANZ - TOLÉRANCE - TOLERANCIA

Diametri Diameters	Tolleranza del diametro Diameter tolerance	Tolleranza del gambo Shank tolerance
da 1 mm a 3 mm	+0.00 mm -0.025 mm	+0.00 mm -0.013 mm
da 4 mm a 25 mm	+0.00 mm -0.038 mm	+0.00 mm -0.013 mm



## SERIE NORMALE

NORMAL SERIES  
NORMAL AUSFÜHRUNG  
SÉRIE NORMALE  
SERIE NORMAL

# FRESE POWER SEMISFERICHE

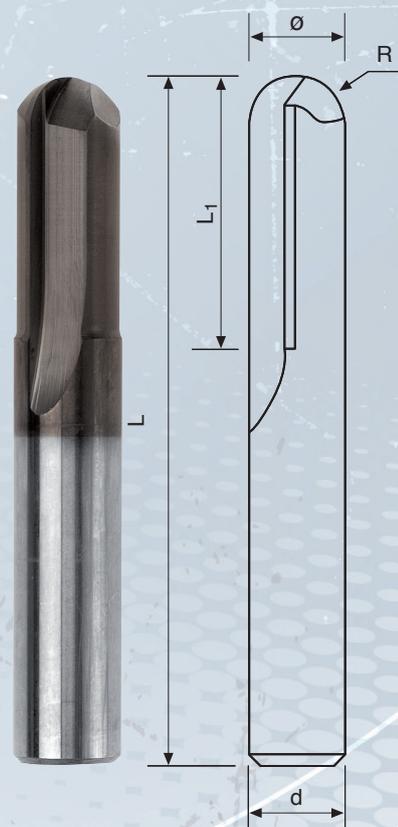
A 2 TAGLI PER COPIATURA IN MICROGRANA ULTRAFINE

POWER BALL NOSE COPY END MILLS - 2 FLUTES - SUB-MICROGRAIN  
POWER RADIUSKOPIERFRÄSER - 2 NUTEN - HARTMETALLQUALITÄT: ULTRA-FEINSTKORN  
FRAISES POWER HÉMISPHERIQUES À 2 DENTS POUR COPIAGE - MICRO-GRAIN ULTRAFIN  
FRESAS POWER ESFÉRICAS DE COPIADO - 2 LABIOS - SUB-MICROGRANO

## 130RXT



Ø mm	R	L mm	L <sub>1</sub> mm	d mm	Z	130RXT €
3	1.5	50	8	6	2	66,90
4	2	50	10	6	2	66,90
5	2.5	50	12	6	2	66,90
6	3	50	18	6	2	58,30
8	4	60	22	8	2	71,00
10	5	60	26	10	2	86,90
12	6	70	30	12	2	123,50



### Rivestimento X-Treme

X-Treme coating  
X-Treme-Beschichtung  
Revêtement X-Treme  
Recubrimiento X-Treme

### TOLLERANZA - TOLERANCE - TOLERANZ - TOLÉRANCE - TOLERANCIA

Diametri Diameters	Tolleranza del diametro Diameter tolerance	Tolleranza del gambo Shank tolerance
da 3 mm a 6 mm	+0.010 mm -0.028 mm	+0.000 mm -0.008 mm
da 6 mm a 12 mm	+0.013 mm -0.035 mm	+0.000 mm -0.009 mm

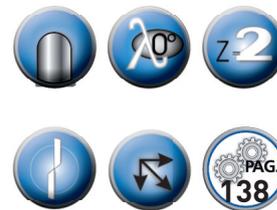
# FRESE POWER SEMISFERICHE

## A 2 TAGLI PER COPIATURA IN MICROGRANA ULTRAFINE

POWER BALL NOSE COPY END MILLS - 2 FLUTES - SUB-MICROGRAIN  
 POWER RADIUSKOPIERFRÄSER - 2 NUTEN - HARTMETALLQUALITÄT: ULTRA-FEINSTKORN  
 FRAISES POWER HÉMISPHERIQUES À 2 DENTS POUR COPIAGE - MICRO-GRAIN ULTRAFIN  
 FRESAS POWER ESFÉRICAS DE COPIADO - 2 LABIOS - SUB-MICROGRANO

### SERIE LUNGA & EXTRA LUNGA

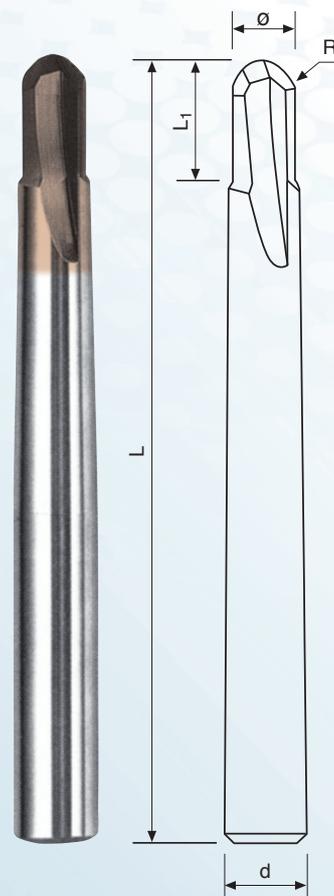
LONG/EXTRALONG SERIES  
 LANGE/EXTRALANGE AUSFÜHRUNG  
 SÉRIE LONGUE/EXTRALONGUE  
 SERIE LARGA/EXTRALARGA



## 302RXT



∅ mm	R	L mm	L <sub>1</sub> mm	d mm	Z	302RXT €
3	1.5	75	4	6	2	86,90
3	1.5	100	4	6	2	90,80
4	2	75	5	6	2	86,90
4	2	100	6	6	2	90,80
5	2.5	75	6	6	2	86,90
5	2.5	100	6	6	2	90,80
6	3	75	8	10	2	106,50
6	3	100	8	10	2	111,00
8	4	85	12	10	2	114,50
8	4	110	12	10	2	127,50
8	4	140	12	10	2	139,00
10	5	110	15	12	2	141,50
10	5	150	15	12	2	155,50



**Rivestimento X-Treme**  
 X-Treme coating  
 X-Treme-Beschichtung  
 Revêtement X-Treme  
 Recubrimiento X-Treme

### TOLLERANZA - TOLERANCE - TOLERANZ - TOLÉRANCE - TOLERANCIA

Diametri Diameters	Tolleranza del diametro Diameter tolerance	Tolleranza del gambo Shank tolerance
da 3 mm a 6 mm	+0.000 mm -0.018 mm	+0.000 mm -0.008 mm
da 6 mm a 10 mm	+0.000 mm -0.035 mm	+0.000 mm -0.009 mm



## SERIE NORMALE

NORMAL SERIES  
NORMAL AUSFÜHRUNG  
SÉRIE NORMALE  
SERIE NORMAL

# FRESE POWER SEMISFERICHE

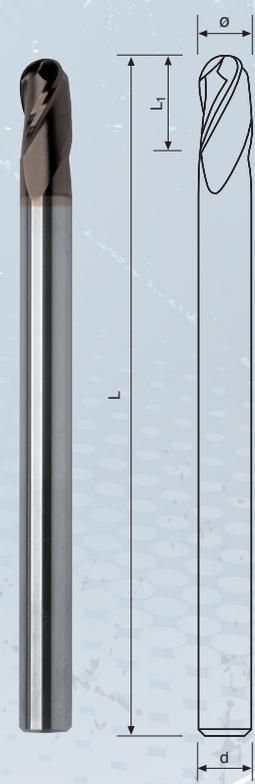
A 3 TAGLI IN MICROGRANA ULTRAFINE

POWER BALL NOSE END MILLS - 3 FLUTES - SUB-MICROGRAIN  
POWER RADIUSFRÄSER - 3 NUTEN - HARTMETALLQUALITÄT: ULTRA-FEINSTKORN  
FRAISES POWER HÉMISPÉRIQUES À 3 DENTS - MICRO-GRAIN ULTRAFIN  
FRESAS POWER ESFÉRICAS - 3 LABIOS - SUB-MICROGRANO

## 493RXT



Ø mm	L mm	L <sub>1</sub> mm	d mm	Z	493RXT €
2	50	5	6	3	47,50
3	60	8	6	3	47,50
4	70	8	6	3	47,50
5	80	10	6	3	50,80
6	90	12	6	3	50,80
6	140	12	6	3	80,40
8	100	14	8	3	68,30
8	160	14	8	3	112,50
10	100	18	10	3	91,20
10	180	18	10	3	153,00
12	110	22	12	3	119,50
12	200	22	12	3	200,00
16	140	30	16	3	230,50
16	220	30	16	3	288,00
20	160	38	20	3	282,00
20	250	38	20	3	383,00



**Rivestimento X-Treme**  
X-Treme coating  
X-Treme-Beschichtung  
Revêtement X-Treme  
Recubrimiento X-Treme

### TOLLERANZA - TOLERANCE - TOLERANZ - TOLÉRANCE - TOLERANCIA

Diametri Diameters	Tolleranza del diametro Diameter tolerance	Tolleranza del gambo Shank tolerance
da 2 mm a 20 mm	f8	h6

# FRESE POWER SEMISFERICHE

## A 4 TAGLI IN MICROGRANA ULTRAFINE

POWER BALL NOSE END MILLS - 4 FLUTES - SUB-MICROGRAIN  
 POWER RADIUSFRÄSER - 4 NUTEN - HARTMETALLQUALITÄT: ULTRA-FEINSTKORN  
 FRAISES POWER HÉMISPHERIQUES À 4 DENTS - MICRO-GRAIN ULTRAFIN  
 FRESAS POWER ESFÉRICAS - 4 LABIOS - SUB-MICROGRANO

### SERIE NORMALE

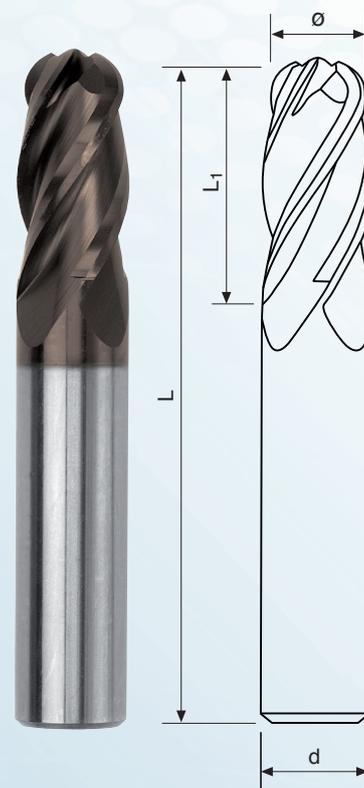
NORMAL SERIES  
 NORMAL AUSFÜHRUNG  
 SÉRIE NORMALE  
 SERIE NORMAL



## 414RXT



Ø mm	L mm	L <sub>1</sub> mm	d mm	Z	414RXT €
1	39	3	3	4	24,05
2	39	7	3	4	22,20
3	39	10	3	4	22,20
4	51	14	6	4	29,60
5	51	16	6	4	32,80
6	64	19	6	4	42,80
7	64	19	8	4	55,10
8	64	21	8	4	60,30
9	70	22	10	4	82,70
10	70	25	10	4	82,70
12	76	25	12	4	114,50
14	89	30	14	4	155,50
16	89	32	16	4	179,00
18	102	35	18	4	252,50
20	102	38	20	4	305,00
22	102	38	22	4	394,00
25	102	38	25	4	455,00



#### Rivestimento X-Treme

X-Treme coating  
 X-Treme-Beschichtung  
 Revêtement X-Treme  
 Recubrimiento X-Treme



#### TOLLERANZA - TOLERANCE - TOLERANZ - TOLÉRANCE - TOLERANCIA

Diametri Diameters	Tolleranza del diametro Diameter tolerance	Tolleranza del gambo Shank tolerance
da 1 mm a 3 mm	+0.000 mm -0.025 mm	+0.000 mm -0.013 mm
da 4 mm a 25 mm	+0.000 mm -0.038 mm	+0.000 mm -0.013 mm



## SERIE NORMALE

NORMAL SERIES  
NORMAL AUSFÜHRUNG  
SÉRIE NORMALE  
SERIE NORMAL

# FRESE POWER TORICHE

## A 3/4 TAGLI IN MICROGRANA ULTRAFINE

POWER TORIC END MILLS 3/4 FLUTES - SUB-MICROGRAIN  
POWER TORUSFRÄSER 3/4 NUTEN - HARTMETALLQUALITÄT: ULTRA-FEINSTKORN  
FRAISES POWER TORIQUES À 3/4 DENTS - MICRO-GRAIN ULTRAFIN  
FRESAS POWER TÓRICAS - 3/4 LABIOS - SUB-MICROGRANO

## 491HXT



Ø/R mm	d <sub>1</sub> mm	L mm	L <sub>1</sub> mm	L <sub>2</sub> mm	d mm	Z	491HXT €
2/0.5	1.8	60	0.8	5	6	3	64,90
3/0.75	2.7	60	1.2	7.5	6	4	64,90
4/1	3.6	70	1.6	10	6	4	66,90
5/1.2	4.5	80	2	12.5	6	4	66,90
6/1.5	5.4	90	2.5	12	6	4	92,50
7/1.5	—	90	3	—	6	4	101,00
8/2	7.2	104	3.5	32	8	4	108,50
9/2	—	104	4	—	8	4	123,50
10/2	9	104	4	40	10	4	134,00
11/2	—	104	4.5	—	10	4	149,00
12/3	11	104	5	48	12	4	159,50
13/3	—	104	5.5	—	12	4	176,00
16/4	14	104	6.5	28	16	4	217,00



**Rivestimento X-Treme**  
X-Treme coating  
X-Treme-Beschichtung  
Revêtement X-Treme  
Recubrimiento X-Treme

### TOLLERANZA - TOLERANCE - TOLERANZ - TOLÉRANCE - TOLERANCIA

Diametri Diameters	Tolleranza del diametro Diameter tolerance	Tolleranza del gambo Shank tolerance
da 2 mm a 16 mm	e8	h6

# PARAMETRI DI TAGLIO

CUTTING PARAMETERS  
SCHNITTDATEN  
PARAMÈTRES DE COUPE  
PARAMETROS DE CORTE



## FRESE POWER SEMISFERICHE: 2/3/4 TAGLI

Power ball nose end mills - Power radiusfräser - Fraises power hémisphériques -  
Fresas power esféricas: 2/3/4 Flutes - Schneiden - Dents - Labios

**CAVA DAL PIENO:** Vc e Fz: - 20%

Slotting: Vc e Fz: - 20%

Bohrnuten: Vc e Fz: - 20%

Rainurage: Vc e Fz: - 20%

Ranura: Vc e Fz: - 20%

GRUPPO MATERIALI Material Groups Material-Beispiele Groupes de Matériaux Grupos de Materiales	ap		ae	VC m/min	Fz [mm] AVANZAMENTO AL DENTE Tooth Feed - Zahnvorschub - Avancement au dent - Avance al labio												
	ap	ae	ap		1	2	4	6	8	10	12	14	16	18	20	22	25
	<b>P</b> < 800 N/mm <sup>2</sup>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>P</b> < 1100 N/mm <sup>2</sup>	0,03xd	0,2xd	0,2xd	100 - 140	0,02 0,03	0,05 0,06	0,07 0,08	0,08 0,09	0,09 0,10	0,11 0,12	0,13 0,14	0,15 0,17	0,17 0,18	0,18 0,19	0,20 0,21	0,21 0,22	0,22 0,25
<b>P</b> < 1300 N/mm <sup>2</sup>	-	-	-	80 - 120	0,02 0,03	0,05 0,06	0,07 0,08	0,08 0,09	0,09 0,10	0,11 0,12	0,13 0,14	0,15 0,17	0,17 0,18	0,18 0,19	0,20 0,21	-	-
<b>M</b> > 800 N/mm <sup>2</sup>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>K</b> GG	0,03xd	0,2xd	0,2xd	120 - 160	0,03 0,04	0,06 0,08	0,10 0,12	0,14 0,16	0,18 0,19	0,20 0,21	0,22 0,23	0,23 0,24	0,24 0,25	0,26 0,27	0,27 0,28	0,29 0,30	0,31 0,32
<b>K</b> GGG	0,03xd	0,2xd	0,2xd	80 - 120	0,02 0,03	0,05 0,06	0,07 0,08	0,08 0,09	0,09 0,10	0,11 0,12	0,13 0,14	0,15 0,17	0,17 0,18	0,18 0,19	0,20 0,21	0,22 0,23	0,24 0,25
<b>N</b> Alluminio	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>N</b> Non metalli	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>S</b> Titanio	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>S</b> Leghe speciali a base Ni	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>H</b> Temprati 38 / 48 HRC	0,03xd	0,2 X d	0,2xd	60 - 100	0,01 0,02	0,02 0,03	0,03 0,04	0,04 0,05	0,05 0,06	0,06 0,07	0,07 0,08	0,09 0,10	0,11 0,12	0,12 0,13	0,14 0,15	0,16 0,17	0,18 0,19
<b>H</b> Temprati 48 / 58 HRC	1xØ	0,2xØ	-	25 - 40	0,0015 0,0030	0,003 0,005	0,005 0,020	0,02 0,04	0,04 0,06	0,06 0,08	0,08 0,10	0,10 0,12	0,12 0,14	0,14 0,16	0,16 0,18	0,18 0,20	0,20 0,22
<b>H</b> Temprati 58 / 68 HRC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



## SERVIZIO DI RIAFFILATURA E RIVESTIMENTO

Re-sharpening and coating service  
Nachschleif - und beschichtungservice  
Service de affûtage à nouveau et revêtement  
Servicio de afilado y recubrimiento



## UTENSILI SPECIALI

Special tools department  
Abteilung für Sonderwerkzeuge  
Outils spéciaux  
Herramientas especiales

# I NOSTRI SERVIZI SEMPRE A DISPOSIZIONE

Our prompt services always ready for you  
Unser prompter Service ist immer für Sie da  
Nos services toujours à votre Disposition  
Nuestro rápido servicio siempre listo para usted



Tajicardb

# FRESE POWER TORICHE



POWER TORIC MULTI-FLUTES END MILLS



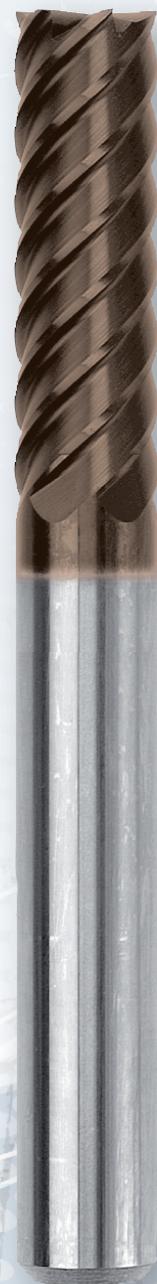
POWER TORUSFRÄSER MEHRSCHEIDEN



FRAISES POWER TORIQUES MULTICOUPES



FRESAS POWER TÓRICAS MULTILABIO



## Multitagli

# FRESE POWER TORICHE

## MULTITAGLI IN MICROGRANA ULTRAFINE

POWER MULTI-FLUTES TORIC END MILLS - SUB-MICROGRAIN  
 POWER MEHRNUTIGE TORUSFRÄSER - HARTMETALLQUALITÄT: ULTRA-FEINSTKORN  
 FRAISES POWER TORIQUES MULTICOUPEES - MICRO-GRAIN ULTRAFIN  
 FRESAS POWER TÓRICAS MULTILABIOS - SUB-MICROGRANO

### SERIE NORMALE

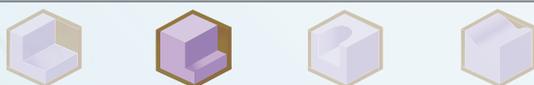
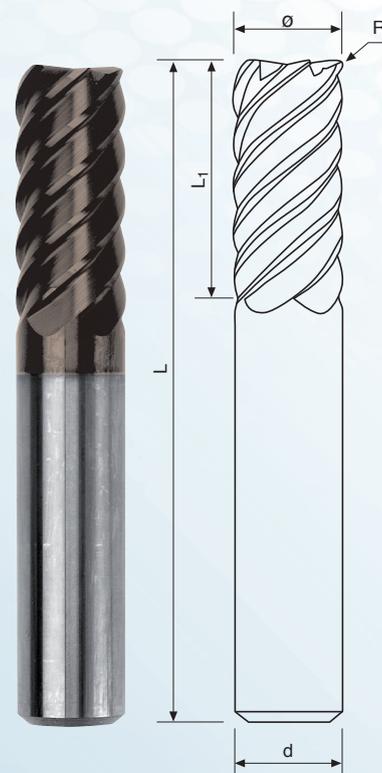
NORMAL SERIES  
 NORMAL AUSFÜHRUNG  
 SÉRIE NORMALE  
 SERIE NORMAL



## 1450XT



Ø mm	R	L mm	L <sub>1</sub> mm	d mm	Z	1450XT €
6	0.5	57	13	6	6	51,50
6	1	57	13	6	6	51,50
8	0.5	63	19	8	6	71,40
8	1	63	19	8	6	71,40
10	0.5	72	22	10	6	108,50
10	1	72	22	10	6	108,50
10	1.5	72	22	10	6	108,50
12	0.5	83	26	12	6	137,50
12	1	83	26	12	6	137,50
12	1.5	83	26	12	6	137,50
14	1	83	26	14	6	179,00
14	2	83	26	14	6	179,00
16	1	92	32	16	6	239,00
16	2	92	32	16	6	239,00
20	1	104	38	20	6	349,00
20	2	104	38	20	6	349,00



#### Rivestimento X-Treme

X-Treme coating  
 X-Treme-Beschichtung  
 Revêtement X-Treme  
 Recubrimiento X-Treme



#### TOLLERANZA - TOLERANCE - TOLERANZ - TOLÉRANCE - TOLERANCIA

Diametri Diameters	Tolleranza del diametro Diameter tolerance	Tolleranza del gambo Shank tolerance
da 6 mm a 10 mm	+0.000 mm -0.022 mm	+0.000 mm -0.009 mm
da 10 mm a 18 mm	+0.000 mm -0.027 mm	+0.000 mm -0.011 mm
da 18 mm a 20 mm	+0.000 mm -0.033 mm	+0.000 mm -0.013 mm



## SERIE LUNGA

EXTENDED LENGTH  
SÉRIE LONGUE  
ÜBERLÄNGE  
SERIE LARGA



# FRESE POWER TORICHE

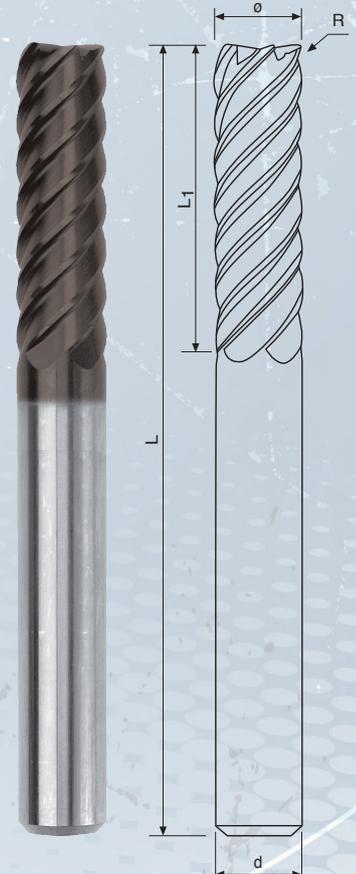
## MULTITAGLI IN MICROGRANA ULTRAFINE

POWER MULTI-FLUTES TORIC END MILLS - SUB-MICROGRAIN  
POWER MEHRNUTIGE TORUSFRÄSER - HARTMETALLQUALITÄT: ULTRA-FEINSTKORN  
FRAISES POWER TORIQUES MULTICOUPES - MICRO-GRAIN ULTRAFIN  
FRESAS POWER TÓRICAS MULTILABIOS - SUB-MICROGRANO

## 1460XT



Ø mm	R	L mm	L <sub>1</sub> mm	d mm	Z	1460XT €
6	0.5	62	18	6	6	57,80
6	1	62	18	6	6	57,80
8	0.5	68	24	8	6	79,80
8	1	68	24	8	6	79,80
10	0.5	80	30	10	6	116,00
10	1	80	30	10	6	116,00
10	1.5	80	30	10	6	116,00
12	0.5	93	36	12	6	161,00
12	1	93	36	12	6	161,00
12	1.5	93	36	12	6	161,00
14	1	99	42	14	6	221,00
14	2	99	42	14	6	221,00
16	1	108	48	16	6	286,00
16	2	108	48	16	6	286,00
18	1	114	54	18	6	356,00
18	2	114	54	18	6	356,00
20	1	125	60	20	6	449,00
20	2	125	60	20	6	449,00



**Rivestimento X-Treme**  
X-Treme coating  
X-Treme-Beschichtung  
Revêtement X-Treme  
Recubrimiento X-Treme

### TOLLERANZA - TOLERANCE - TOLERANZ - TOLÉRANCE - TOLERANCIA

Diametri Diameters	Tolleranza del diametro Diameter tolerance	Tolleranza del gambo Shank tolerance
da 6 mm a 10 mm	+0.00 mm -0.022 mm	+0.00 mm -0.009 mm
da 10 mm a 18 mm	+0.00 mm -0.027 mm	+0.00 mm -0.011 mm
da 18 mm a 20 mm	+0.00 mm -0.033 mm	+0.00 mm -0.013 mm

# PARAMETRI DI TAGLIO

CUTTING PARAMETERS  
SCHNITTDATEN  
PARAMÈTRES DE COUPE  
PARAMETROS DE CORTE



## FRESE POWER CON TESTA TORICHE: MULTITAGLI

Power end mills multi flutes with flat head and toric - Power mehrnutzige fräser mit flacher stirnschneide oder torus - Fraises power multicoupees à bout plat ou toriques - Fresas power multilabios de cabeza llana o tóricas: Multi flutes - Mehrnutzige - Multicoupees - Multilabios

GRUPPO MATERIALI Material Groups Material-Beispiele Groupes de Matériaux Grupos de Materiales			VC m/min													
	ap	ae		ap	<b>Fz [mm]</b> AVANZAMENTO AL DENTE Tooth Feed - Zahnvorschub - Avancement au dent - Avance al labio											
	ap	ae	ap	3	4	6	8	10	12	14	16	18	20	22	24	26
<b>P</b> < 800 N/mm <sup>2</sup>	1xØ	0,5xØ	0,5xØ	100 - 130	-	-	-	-	-	-	-	-	-	-	-	-
<b>P</b> < 1100 N/mm <sup>2</sup>	1xØ	0,5xØ	0,5xØ	100 - 130	-	-	-	-	-	-	-	-	-	-	-	-
<b>P</b> < 1300 N/mm <sup>2</sup>	0,03xd	0,2xd	-	90 - 100	-	-	0,05 0,06	0,07 0,08	0,09 0,10	0,10 0,11	0,12 0,13	0,14 0,15	0,12 0,14	0,14 0,16	-	-
<b>M</b> > 800 N/mm <sup>2</sup>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>K</b> GG	0,03xd	0,2xd	-	120 - 180	-	-	0,05 0,06	0,06 0,07	0,08 0,09	0,09 0,10	0,11 0,12	0,12 0,13	0,19 0,21	0,21 0,23	-	-
<b>K</b> GGG	0,03xd	0,2xd	-	90 - 110	-	-	0,05 0,06	0,07 0,08	0,09 0,10	0,10 0,11	0,12 0,13	0,14 0,15	0,14 0,16	0,16 0,18	-	-
<b>N</b> Alluminio	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>N</b> Non metalli	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>S</b> Titanio	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>S</b> Leghe speciali a base Ni	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>H</b> Temprati 38 / 48 HRC	0,03xd	0,2 X d	-	60 - 100	-	-	0,05 0,06	0,07 0,08	0,09 0,10	0,10 0,11	0,12 0,13	0,14 0,15	0,12 0,14	0,14 0,16	-	-
<b>H</b> Temprati 48 / 58 HRC	0,03xd	0,2xd	-	60 - 100	-	-	0,05 0,06	0,07 0,08	0,09 0,10	0,10 0,11	0,12 0,13	0,14 0,15	0,12 0,14	0,14 0,16	-	-
<b>H</b> Temprati 58 / 68 HRC	0,02xd	0,2xd	-	30 - 60	-	-	0,007 0,009	0,009 0,010	0,010 0,012	0,012 0,014	0,014 0,016	0,016 0,018	0,018 0,020	0,020 0,022	-	-



[angeloghezzi.it](http://angeloghezzi.it)

# Frese Power



## FRESE POWER:

- Ridurre il numero di utensili necessari
- Offrire un'eccellente evacuazione dei trucioli
- Ottenere la massima produttività
- Aumentare i volumi di trucioli asportati
- Aumentare la velocità di taglio
- Garantire precisione
- Ridurre i costi di produzione
- Fornire una lunga durata dell'utensile

## POWER END MILLS:

- Reducing the number of necessary tools
- Offering an excellent chip evacuation
- Obtaining maximum productivity
- Increasing the volumes of eliminated chips
- Increasing cutting speed
- Guaranteeing precision
- Reducing production costs
- Allowing a long tool life

## POWER FRÄSER:

- Reduziert die Anzahl der benötigten Werkzeuge
- Bietet eine ausgezeichnete Spabfuhr
- Erhalten Sie die maximale Produktivität
- Erhöhung die Volumens der Spabfuhr
- Erhöhung der Schnittgeschwindigkeit
- Gewährleistung der Genauigkeit
- Reduzierung der Produktionskosten
- Ermöglichen eine lange Lebensdauer

## FRAISES POWER:

- Réduire le numéro des outils pas nécessaires
- Offrir une très bonne évacuation du copeau
- Obtenir la meilleure productivité
- Augmenter les volumes du copeau évacué
- Augmenter la vitesse de coupe

- Assurer précision
- Réduire le coût de production
- Permettre une longue durée de vie l'outil

## FRESAS POWER:

- Reducir el numero de herramientas innecesarias
- Ofrecer una excelente evacuación de virutas
- Obtener la máxima productividad
- Incrementar el volumen de evacuación de virutas
- Incrementar (aumentando) la velocidad de corte
- Asegurar precisión
- Reducir los costes de producción
- Permitir una larga vida de herramienta



## **SERVIZIO TECNICO**

Technical Help  
Technische Hilfe  
Service technique  
Ayuda técnica



## **E-COMMERCE**

[www.angeloghezzi.it](http://www.angeloghezzi.it)

# **I NOSTRI SERVIZI SEMPRE A DISPOSIZIONE**

Our prompt services always ready for you  
Unser prompter Service ist immer für Sie da  
Nos services toujours à votre Disposition  
Nuestro rápido servicio siempre listo para usted



# Tajicodb

# MICRO POWER HPM-HCM



MICRO POWER HPM-HCM



MICRO POWER HPM-HCM



FRAISES MICRO POWER HPM-HCM



FRESAS POWER MICRO HPM-HCM



# FRESE MICRO POWER A CANDELA A 2 TAGLI IN MICROGRANA ULTRAFINE

MICRO POWER END MILLS - 2 FLUTES - SUB-MICROGRAIN  
 MICRO POWER FRÄSER - 2 NUTEN - HARTMETALLQUALITÄT: ULTRA-FEINSTKORN  
 FRAISES MICRO POWER - 2 DENTS - MICRO-GRAIN ULTRAFIN  
 FRESAS POWER MICRO - 2 LABIOS - SUB-MICROGRANO

## SERIE NORMALE

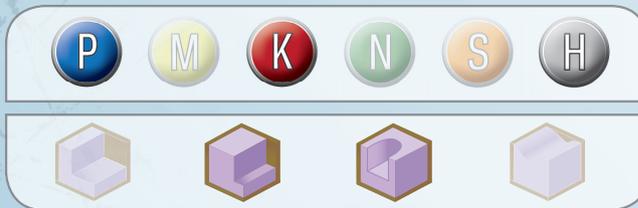
NORMAL SERIES  
 NORMAL AUSFÜHRUNG  
 SÉRIE NORMALE  
 SERIE NORMAL



## 1410XT



∅ mm	d <sub>1</sub> mm	L mm	L <sub>1</sub> mm	L <sub>2</sub> mm	d mm	Z	1410XT €
0.5	0.45	60	0.7	2.5	6	2	35,00
0.6	0.55	60	0.9	3	6	2	35,00
0.8	0.75	60	1.2	4	6	2	34,50
1	0.95	60	1.5	5	6	2	30,25
1.2	1.15	60	1.8	6	6	2	33,95
1.4	1.35	60	2.1	7	6	2	34,35
1.5	1.45	60	2.3	7.5	6	2	30,45
1.6	1.55	60	2.4	8	6	2	34,35
1.8	1.75	60	2.7	9	6	2	34,35
2	1.95	60	3	10	6	2	28,25
2.5	2.4	60	3.7	12.5	6	2	28,80



**Rivestimento X-Treme**  
 X-Treme coating  
 Revêtement X-Treme  
 X-Treme-Beschichtung  
 Recubrimiento X-Treme

### TOLLERANZA - TOLERANCE - TOLERANZ - TOLÉRANCE - TOLERANCIA

Diametri Diameters	Tolleranza del diametro Diameter tolerance	Tolleranza del gambo Shank tolerance
da 0.5 mm a 2.5 mm	+0.00 mm -0.025 mm	+0.00 mm -0.013 mm



## SERIE NORMALE & LUNGA

NORMAL/EXTENDED SERIES  
 NORMAL/ÜBERLÄNGE AUSFÜHRUNG  
 SÉRIE NORMALE/LONGUE  
 SERIE NORMAL/LARGA

# FRESE MICRO POWER A CANDELA A 2 TAGLI IN MICROGRANA ULTRAFINE

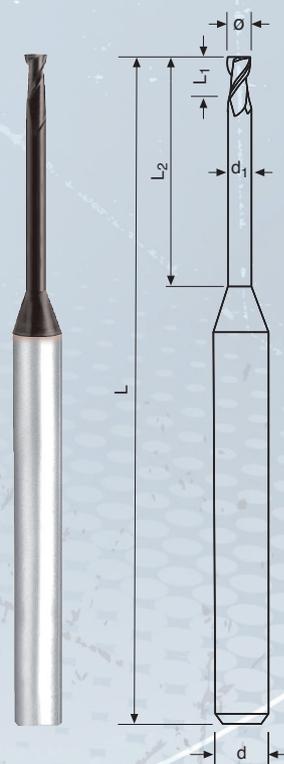
MICRO POWER END MILLS - 2 FLUTES - SUB-MICROGRAIN  
 MICRO POWER FRÄSER - 2 NUTEN - HARTMETALLQUALITÄT: ULTRA-FEINSTKORN  
 FRAISES MICRO POWER - 2 DENTS - MICRO-GRAIN ULTRAFIN  
 FRESAS POWER MICRO - 2 LABIOS - SUB-MICROGRANO

## 1430XT



Ø mm	d <sub>1</sub> mm	L mm	L <sub>1</sub> mm	L <sub>2</sub> mm	d mm	Z	1430XT €
0.4	0.36	35	0.6	4	3	2	48,30
0.5	0.45	35	0.7	6	3	2	45,20
0.6	0.55	35	0.9	6	3	2	45,20
0.7	0.65	45	1	6	4	2	45,20
0.8	0.75	45	1.2	8	4	2	45,20
0.9	0.85	45	1.35	10	4	2	45,20
1	0.97	45	1.5	6	4	2	45,20
1	0.95	45	1.5	8	4	2	45,20
1	0.93	45	1.5	12	4	2	45,20
1.2	1.15	45	1.8	8	4	2	45,20
1.2	1.13	45	1.8	12	4	2	45,20
1.4	1.33	45	2.1	12	4	2	45,20
1.4	1.31	50	2.1	16	4	2	45,20
1.5	1.45	45	2.3	8	4	2	45,20
1.5	1.45	45	2.3	10	4	2	45,20
1.5	1.43	45	2.3	12	4	2	45,20
1.5	1.41	50	2.3	16	4	2	45,20
1.5	1.39	55	2.3	20	4	2	45,20
1.6	1.53	45	2.4	12	4	2	45,20
1.6	1.49	55	2.4	20	4	2	45,20
1.7	1.64	45	2.6	8	4	2	45,20
1.7	1.63	45	2.6	12	4	2	45,20
1.7	1.59	55	2.6	20	4	2	45,20
1.8	1.73	45	2.7	12	4	2	45,20
1.8	1.69	55	2.7	20	4	2	45,20
1.9	1.85	45	2.8	8	4	2	45,20

→1-2



### Rivestimento X-Treme

X-Treme coating  
 X-Treme-Beschichtung  
 Revêtement X-Treme  
 Recubrimiento X-Treme



### TOLLERANZA - TOLERANCE - TOLERANZ - TOLÉRANCE - TOLERANCIA

Diametri Diameters	Tolleranza del diametro Diameter tolerance	Tolleranza del gambo Shank tolerance
da 0.4 mm a 3 mm	+0.000 mm -0.025 mm	+0.000 mm -0.013 mm





## SERIE NORMALE

NORMAL SERIES  
NORMAL AUSFÜHRUNG  
SÉRIE NORMALE  
SERIE NORMAL



# FRESE MICRO POWER TORICHE A 2 TAGLI IN MICROGRANA ULTRAFINE

MICRO POWER TORIC END MILLS - 2 FLUTES - SUB-MICROGRAIN  
MICRO POWER TORUSFRÄSER - 2 NUTEN - HARTMETALLQUALITÄT: ULTRA-FEINSTKORN  
FRAISES MICRO POWER TORIQUES - 2 DENTS - MICRO-GRAIN ULTRAFIN  
FRESAS POWER MICRO TÓRICAS - 2 LABIOS - SUB-MICROGRANO

## 1431XT

**NEW** Ø



Ø/R mm	d <sub>1</sub> mm	L mm	L <sub>1</sub> mm	L <sub>2</sub> mm	d mm	Z	1431XT €
0.2/0.05	0.18	45	0.3	0.5	4	2	70,70
0.2/0.05	0.18	45	0.3	1	4	2	70,70 ■
0.2/0.05	0.18	45	0.3	1.5	4	2	70,70
0.3/0.05	0.28	45	0.45	1	4	2	70,70
0.3/0.05	0.28	45	0.45	2	4	2	70,70 ■
0.3/0.05	0.28	45	0.45	3	4	2	70,70
0.4/0.05	0.37	45	0.6	2	4	2	70,70 ■
0.4/0.1	0.37	45	0.6	2	4	2	70,70
0.4/0.1	0.37	45	0.6	3	4	2	70,70

>>1-6

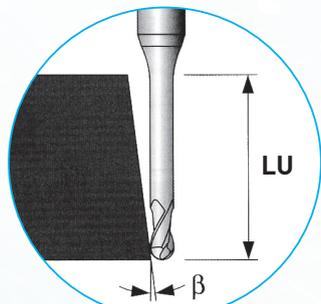
Ø/R mm	L <sub>2</sub> mm	β					
		0.5°	1°	1° 30'	2°	2° 30'	3°
LU							
0.2/0.05	0.5	1.09	1.27	1.45	1.62	1.8	1.97
0.2/0.05	1	1.52	1.79	2.02	2.24	2.45	2.65
0.2/0.05	1.5	1.93	2.3	2.59	2.84	3.07	3.30
0.3/0.05	1	1.58	1.83	2.06	2.27	2.48	2.68
0.3/0.05	2	2.42	2.86	3.18	3.46	3.71	3.95
0.3/0.05	3	2.72	3.88	4.29	4.62	4.91	5.18
0.4/0.05	2	2.57	2.94	3.24	3.51	3.76	3.99
0.4/0.1	2	2.60	2.96	3.25	3.51	3.76	3.99
0.4/0.1	3	3.44	3.98	4.35	4.67	4.95	5.22

→1-6

## INFORMAZIONI TECNICHE

### ANGOLO DI COLLISIONE β

TECHNICAL DATA - INCLINED ANGLE β  
TECHNISCHE HILFE - NEIGUNGSWINKEL β  
SERVICE TECHNIQUE - ANGLE DE COLLISION β  
INFORMACIÓN TÉCNICA - ANGULO INCLINADO β



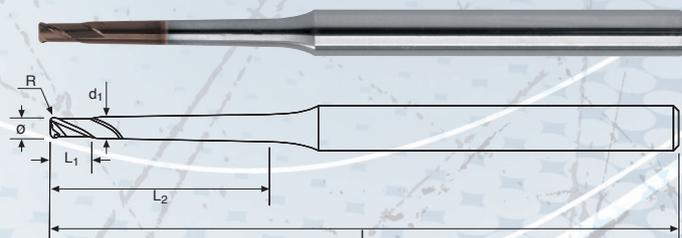
### Effettiva lunghezza utile di lavoro legata all'inclinazione β del pezzo da lavorare

Effective machining depth depending on inclined angle β of workpiece  
Die effektive Arbeitstiefe hängt vom Neigungswinkel β des Werkstückes ab  
Longueur utile effective d'usinage liée à l'inclinaison β de la pièce à usiner  
Largo útil de trabajo depende del ángulo de inclinación de la pieza



■ **Ad esaurimento scorte** - Subject to availability until sold out - Solange der vorrat reicht - Jusqu'à Épuisement de stock - Hasta agotamiento del stock

**GAMBO RASTREMATO**  
TAPERED SHANK  
VERJÜNGTER SCHAFT  
QUEUE FUSELÉE  
MANGO REBAJADO



**L2 = LUNGHEZZA UTILE DI LAVORO**  
L2 = MACHINING DEPTH  
L2 = ARBEITSTIEFE  
L2 = LONGUEUR UTILE  
L2 = LARGO ÚTIL DE TRABAJO

### Rivestimento X-Treme

X-Treme coating  
X-Treme-Beschichtung  
Revêtement X-Treme  
Recubrimiento X-Treme



### TOLLERANZA - TOLERANCE - TOLERANZ - TOLÉRANCE - TOLERANCIA

Diametri Diameters	Tolleranza del diametro Diameter tolerance	Tolleranza del gambo Shank tolerance
da 0.2 mm a 6 mm	+0.000 mm -0.001 mm	h6

# FRESE MICRO POWER TORICHE A 2 TAGLI IN MICROGRANA ULTRAFINE

MICRO POWER TORIC END MILLS - 2 FLUTES - SUB-MICROGRAIN  
 MICRO POWER TORUSFRÄSER - 2 NUTEN - HARTMETALLQUALITÄT: ULTRA-FEINSTKORN  
 FRAISES MICRO POWER TORIQUES - 2 DENTS - MICRO-GRAIN ULTRAFIN  
 FRESAS POWER MICRO TÓRICAS - 2 LABIOS - SUB-MICROGRANO

## SERIE NORMALE

NORMAL SERIES  
 NORMAL AUSFÜHRUNG  
 SÉRIE NORMALE  
 SERIE NORMAL



## 1431XT

**NEW** Ø



Ø/R mm	d <sub>1</sub> mm	L mm	L <sub>1</sub> mm	L <sub>2</sub> mm	d mm	Z	1431XT €
0.4/0.1	0.37	45	0.6	4	4	2	70,70
0.5/0.05	0.45	45	0.7	2	4	2	70,70 ■
0.5/0.1	0.45	45	0.7	2	4	2	70,70
0.5/0.1	0.45	45	0.7	4	4	2	70,70
0.5/0.1	0.45	45	0.7	6	4	2	70,70
0.5/0.1	0.45	45	0.7	8	4	2	70,70
0.6/0.06	0.55	45	0.9	2	4	2	70,70 ■
0.6/0.1	0.55	45	0.9	2	4	2	70,70
0.6/0.1	0.55	45	0.9	4	4	2	70,70
0.6/0.1	0.55	45	0.9	6	4	2	70,70
0.6/0.1	0.55	45	0.9	8	4	2	70,70
0.6/0.1	0.55	45	0.9	10	4	2	70,70
0.7/0.07	0.65	45	1	2	4	2	70,70 ■
0.7/0.1	0.65	45	1	2	4	2	70,70
0.7/0.1	0.65	45	1	4	4	2	70,70
0.7/0.1	0.65	45	1	6	4	2	70,70
0.7/0.1	0.65	45	1	8	4	2	70,70
0.7/0.1	0.65	45	1	10	4	2	70,70
0.8/0.08	0.75	45	1.2	4	4	2	70,70 ■
0.8/0.1	0.75	45	1.2	4	4	2	70,70
0.8/0.1	0.75	45	1.2	6	4	2	70,70
0.8/0.1	0.75	45	1.2	8	4	2	70,70
0.8/0.1	0.75	45	1.2	10	4	2	70,70
0.8/0.1	0.75	45	1.2	12	4	2	70,70
0.9/0.2	0.85	45	1.35	6	4	2	70,70
0.9/0.2	0.85	45	1.35	8	4	2	70,70
0.9/0.2	0.85	45	1.35	10	4	2	70,70
0.9/0.2	0.85	50	1.35	15	4	2	70,70
1.0/0.2	0.95	45	1.5	6	4	2	65,00
1.0/0.1	0.95	45	1.5	8	4	2	65,00 ■
1.0/0.1	0.95	45	1.5	10	4	2	65,00 ■
1.0/0.2	0.95	45	1.5	8	4	2	65,00
1.0/0.2	0.95	45	1.5	10	4	2	65,00
1.0/0.2	0.95	45	1.5	12	4	2	65,00
1.0/0.2	0.95	50	1.5	14	4	2	65,00
1.0/0.1	0.95	50	1.5	16	4	2	65,00 ■

→2-6

Ø/R mm	L <sub>2</sub> mm	β					
		0.5°	1°	1° 30'	2°	2° 30'	3°
0.4/0.1	4	3.82	5	5.44	5.8	6.12	6.41
0.5/0.05	2	2.79	3.1	3.37	3.62	3.86	4.08
0.5/0.1	2	2.81	3.11	3.38	3.62	3.85	4.07
0.5/0.1	4	4.58	5.15	5.55	5.89	6.2	6.48
0.5/0.1	6	5.71	7.18	7.7	8.12	8.48	8.81
0.5/0.1	8	5.71	9.22	9.84	10.32	10.73	11.1
0.6/0.06	2	2.84	3.14	3.4	3.64	3.88	4.1
0.6/0.1	2	2.85	3.14	3.4	3.64	3.87	4.09
0.6/0.1	4	4.64	5.18	5.57	5.91	6.21	6.49
0.6/0.1	6	6.26	7.21	7.72	8.13	8.49	8.82
0.6/0.1	8	6.16	9.24	9.86	10.33	10.74	11.11
0.6/0.1	10	6.16	11.28	11.98	12.51	12.96	13.36
0.7/0.07	2	2.88	3.17	3.43	3.67	3.9	4.12
0.7/0.1	2	2.89	3.17	3.43	3.67	3.9	4.11
0.7/0.1	4	4.7	5.21	5.6	5.93	6.23	6.51
0.7/0.1	6	6.39	7.24	7.74	8.15	8.51	8.84
0.7/0.1	8	6.61	9.27	9.87	10.35	10.75	11.12
0.7/0.1	10	6.61	11.3	12	12.52	12.97	13.37
0.8/0.08	4	4.68	5.2	5.2	5.93	6.23	6.51
0.8/0.1	4	4.73	5.22	5.6	5.93	6.22	6.5
0.8/0.1	6	6.46	7.25	7.75	8.15	8.5	8.83
0.8/0.1	8	6.93	9.29	9.88	10.34	10.75	11.11
0.8/0.1	10	6.93	11.32	12	12.52	12.97	13.36
0.8/0.1	12	6.93	13.35	14.11	14.69	15.17	15.59
0.9/0.2	6	6.53	7.28	7.77	8.16	8.52	8.84
0.9/0.2	8	7.38	9.31	9.9	10.36	10.76	11.12
0.9/0.2	10	7.38	11.34	12.02	12.54	12.98	13.37
0.9/0.2	15	7.38	16.42	17.29	17.92	18.45	18.92
1.0/0.2	6	6.6	7.31	7.79	8.18	8.53	8.85
1.1/0.1	8	6.76	9.26	9.26	10.34	10.75	11.12
1.1/0.1	10	6.76	11.26	11.26	12.5	12.96	13.36
1.0/0.2	8	7.83	9.34	9.92	10.37	10.77	11.13
1.0/0.2	10	7.83	11.37	12.03	12.55	12.99	13.38
1.0/0.2	12	7.83	13.4	14.15	14.71	15.19	15.61
1.0/0.2	14	7.83	15.43	16.25	16.86	17.37	17.82
1.1/0.1	16	6.76	17.26	18.25	18.93	19.49	19.97

→2-6

■ Ad esaurimento scorte - Subject to availability until sold out - Solange der vorrat reicht - Jusqu'à Épuisement de stock - Hasta agotamiento del stock



## SERIE NORMALE

NORMAL SERIES  
NORMAL AUSFÜHRUNG  
SÉRIE NORMALE  
SERIE NORMAL



# FRESE MICRO POWER TORICHE A 2 TAGLI IN MICROGRANA ULTRAFINE

MICRO POWER TORIC END MILLS - 2 FLUTES - SUB-MICROGRAIN  
MICRO POWER TORUSFRÄSER - 2 NUTEN - HARTMETALLQUALITÄT: ULTRA-FEINSTKORN  
FRAISES MICRO POWER TORIQUES - 2 DENTS - MICRO-GRAIN ULTRAFIN  
FRESAS POWER MICRO TÓRICAS - 2 LABIOS - SUB-MICROGRANO

## 1431XT

**NEW** Ø



Ø/R mm	d <sub>1</sub> mm	L mm	L <sub>1</sub> mm	L <sub>2</sub> mm	d mm	Z	1431XT €
1.0/0.2	0.95	50	1.5	16	4	2	65,00
1.2/0.2	1.15	45	1.8	6	4	2	65,00
1.2/0.2	1.15	45	1.8	8	4	2	65,00
1.2/0.2	1.15	45	1.8	10	4	2	65,00
1.2/0.2	1.15	45	1.8	12	4	2	65,00
1.4/0.14	1.35	45	2.1	6	4	2	65,00 ■
1.4/0.2	1.35	45	2.1	6	4	2	65,00
1.4/0.2	1.35	45	2.1	8	4	2	65,00
1.4/0.2	1.35	45	2.1	10	4	2	65,00
1.4/0.2	1.35	45	2.1	12	4	2	65,00
1.4/0.2	1.35	50	2.1	14	4	2	65,00
1.4/0.2	1.35	50	2.1	16	4	2	65,00
1.5/0.2	1.45	45	2.3	6	4	2	65,00
1.5/0.2	1.45	45	2.3	8	4	2	65,00
1.5/0.15	1.45	45	2.3	10	4	2	65,00 ■
1.5/0.15	1.45	45	2.3	12	4	2	65,00 ■
1.5/0.2	1.45	45	2.3	10	4	2	65,00
1.5/0.2	1.45	45	2.3	12	4	2	65,00
1.5/0.2	1.45	50	2.3	14	4	2	65,00
1.5/0.15	1.45	50	2.3	16	4	2	65,00 ■
1.5/0.2	1.45	50	2.3	16	4	2	65,00
1.5/0.2	1.45	55	2.3	18	4	2	65,00
1.5/0.15	1.45	55	2.3	20	4	2	65,00 ■
1.6/0.15	1.55	45	2.4	6	4	2	65,00 ■
1.5/0.2	1.45	55	2.3	20	4	2	65,00
1.6/0.2	1.55	45	2.4	6	4	2	65,00
1.6/0.2	1.55	45	2.4	8	4	2	65,00
1.6/0.2	1.55	45	2.4	10	4	2	65,00
1.6/0.2	1.55	45	2.4	12	4	2	65,00
1.6/0.2	1.55	50	2.4	14	4	2	65,00
1.6/0.2	1.55	50	2.4	16	4	2	65,00
1.6/0.2	1.55	55	2.4	18	4	2	65,00
1.6/0.2	1.55	55	2.4	20	4	2	65,00
1.6/0.18	1.75	45	2.7	6	4	2	65,00 ■
1.8/0.2	1.75	45	2.7	6	4	2	65,00
1.8/0.2	1.75	45	2.7	8	4	2	65,00

→3-6

Ø/R mm	L <sub>2</sub> mm	R					
		0.5°	1°	1° 30'	2°	2° 30'	3°
LU							
1.0/0.2	16	7.83	17.45	18.35	19	19.55	20.02
1.2/0.2	6	6.71	7.36	7.83	8.31	8.56	8.88
1.2/0.2	8	8.42	9.39	9.95	10.4	10.8	11.16
1.2/0.2	10	8.73	11.42	12.07	12.58	13.01	13.38
1.2/0.2	12	8.73	13.45	14.18	14.74	15.21	15.63
1.4/0.14	6	6.73	7.38	7.84	8.23	8.58	8.89
1.4/0.2	6	6.8	7.42	7.86	8.25	8.59	8.9
1.4/0.2	8	8.57	9.44	9.99	10.43	10.82	11.18
1.4/0.2	10	9.63	11.47	12.1	12.6	13.04	13.43
1.4/0.2	12	9.63	13.5	14.21	14.76	15.23	15.65
1.4/0.2	14	9.63	15.52	16.31	16.91	17.41	17.86
1.4/0.2	16	9.63	17.55	18.41	19.05	19.58	20.05
1.5/0.2	6	6.85	7.44	7.88	8.26	8.6	8.92
1.5/0.2	8	8.63	9.47	10.01	10.45	10.84	11.19
1.5/0.15	10	8.71	11.41	12.06	12.57	13.01	13.4
1.5/0.15	12	8.71	13.41	14.15	14.72	15.2	15.62
1.5/0.2	10	10.22	11.49	12.12	12.62	13.05	13.44
1.5/0.2	12	10.08	13.52	14.23	14.77	15.24	15.66
1.5/0.2	14	10.08	15.54	16.33	16.92	17.42	17.87
1.5/0.15	16	8.71	17.41	18.32	18.98	19.53	20.01
1.5/0.2	16	10.08	17.57	18.42	19.06	19.59	20.06
1.5/0.2	18	10.08	19.59	20.51	21.19	21.75	22.24
1.5/0.15	20	8.71	21.41	22.48	23.22	23.83	-
1.6/0.16	6	6.83	7.43	7.88	8.26	8.6	8.92
1.5/0.2	20	10.08	21.62	22.6	23.31	23.9	-
1.6/0.2	6	6.89	7.46	7.9	8.28	8.62	8.93
1.6/0.2	8	8.69	9.49	10.02	10.46	10.85	11.2
1.6/0.2	10	10.37	11.52	12.14	12.63	13.06	13.45
1.6/0.2	12	10.53	13.54	14.24	14.79	15.25	15.67
1.6/0.2	14	10.53	15.57	16.34	16.93	17.43	17.88
1.6/0.2	16	10.53	17.59	18.44	19.07	19.6	20.07
1.6/0.2	18	10.53	19.62	20.53	21.2	21.76	22.25
1.6/0.2	20	10.53	21.64	22.62	23.32	23.91	-
1.8/0.18	6	6.91	7.48	7.92	8.29	8.63	8.94
1.8/0.2	6	6.96	7.51	7.94	8.31	8.64	8.95
1.8/0.2	8	8.78	9.54	10.06	10.49	10.87	11.22

→3-6

■ Ad esaurimento scorte - Subject to availability until sold out - Solange der vorrat reicht - Jusqu'à Épuisement de stock - Hasta agotamiento del stock

# FRESE MICRO POWER TORICHE A 2 TAGLI IN MICROGRANA ULTRAFINE

MICRO POWER TORIC END MILLS - 2 FLUTES - SUB-MICROGRAIN  
 MICRO POWER TORUSFRÄSER - 2 NUTEN - HARTMETALLQUALITÄT: ULTRA-FEINSTKORN  
 FRAISES MICRO POWER TORIQUES - 2 DENTS - MICRO-GRAIN ULTRAFIN  
 FRESAS POWER MICRO TÓRICAS - 2 LABIOS - SUB-MICROGRANO

## SERIE NORMALE

NORMAL SERIES  
 NORMAL AUSFÜHRUNG  
 SÉRIE NORMALE  
 SERIE NORMAL



# 1431XT

**NEW** Ø



Ø/R mm	d <sub>1</sub> mm	L mm	L <sub>1</sub> mm	L <sub>2</sub> mm	d mm	Z	1431XT €
1.8/0.2	1.75	45	2.7	10	4	2	65,00
1.8/0.2	1.75	45	2.7	12	4	2	65,00
1.8/0.2	1.75	50	2.7	14	4	2	65,00
1.8/0.2	1.75	50	2.7	16	4	2	65,00
1.8/0.2	1.75	55	2.7	18	4	2	65,00
1.8/0.2	1.75	55	2.7	20	4	2	65,00
2.0/0.2	1.95	45	3	6	4	2	60,50 ■
2.0/0.2	1.95	45	3	8	4	2	60,50 ■
2.0/0.2	1.95	45	3	10	4	2	60,50 ■
2.0/0.2	1.95	45	3	12	4	2	60,50 ■
2.0/0.2	1.95	50	3	14	4	2	60,50 ■
2.0/0.2	1.95	50	3	16	4	2	60,50
2.0/0.2	1.95	55	3	18	4	2	60,50
2.0/0.2	1.95	55	3	20	4	2	60,50 ■
2.0/0.2	1.95	60	3	25	4	2	60,50
2.0/0.2	1.95	70	3	30	4	2	60,50 ■
2.0/0.5	1.95	45	3	6	4	2	60,50
2.0/0.5	1.95	45	3	8	4	2	60,50
2.0/0.5	1.95	45	3	10	4	2	60,50
2.0/0.5	1.95	45	3	12	4	2	60,50
2.0/0.5	1.95	50	3	14	4	2	60,50
2.0/0.5	1.95	50	3	16	4	2	60,50
2.0/0.5	1.95	55	3	18	4	2	60,50
2.0/0.5	1.95	55	3	20	4	2	60,50
2.0/0.5	1.95	60	3	25	4	2	60,50
2.0/0.5	1.95	70	3	30	4	2	60,50
2.5/0.25	2.4	45	3.7	8	4	2	60,50 ■
2.5/0.25	2.4	45	1.2	10	4	2	60,50
2.5/0.25	2.4	45	1.2	12	4	2	60,50
2.5/0.25	2.4	50	1.2	14	4	2	60,50
2.5/0.25	2.4	55	1.35	16	4	2	60,50
2.5/0.25	2.4	55	1.35	18	4	2	60,50
2.5/0.25	2.4	60	1.35	20	4	2	60,50
2.5/0.25	2.4	70	1.35	25	4	2	60,50
2.5/0.25	2.4	80	1.5	30	4	2	60,50
3.0/0.2	2.85	45	4.5	8	6	2	60,50

→4-6

Ø/R mm	L <sub>2</sub> mm	β					
		0.5°	1°	1° 30'	2°	2° 30'	3°
LU							
1.8/0.2	10	10.54	11.56	12.17	12.66	13.08	13.47
1.8/0.2	12	11.43	13.59	14.27	14.81	15.27	15.69
1.8/0.2	14	11.43	15.61	16.37	16.96	17.45	17.89
1.8/0.2	16	11.43	17.63	18.46	19.09	19.62	20.08
1.8/0.2	18	11.43	19.66	20.55	21.22	21.78	-
1.8/0.2	20	11.43	21.68	22.64	23.4	23.93	-
2.0/0.2	6	7.03	7.56	7.98	8.34	8.67	8.98
2.0/0.2	8	8.87	9.58	10.09	10.52	10.9	11.24
2.0/0.2	10	10.66	11.61	12.2	12.68	13.1	13.49
2.0/0.2	12	12.32	13.63	14.3	14.84	15.29	15.71
2.0/0.2	14	12.33	15.65	16.4	16.98	17.47	17.91
2.0/0.2	16	12.33	17.68	18.49	19.11	19.64	-
2.0/0.2	18	12.33	19.7	20.58	21.24	21.79	-
2.0/0.2	20	12.33	21.72	22.67	23.36	-	-
2.0/0.2	25	12.33	26.78	27.87	28.65	-	-
2.0/0.2	30	12.33	31.83	33.05	-	-	-
2.0/0.5	6	7	7.52	7.93	8.29	8.61	8.92
2.0/0.5	8	8.83	9.54	10.05	10.47	10.85	11.19
2.0/0.5	10	10.62	11.57	12.16	12.64	13.06	13.44
2.0/0.5	12	12.12	13.59	14.26	14.79	15.25	15.66
2.0/0.5	14	11.95	15.62	16.36	16.94	17.43	17.87
2.0/0.5	16	11.95	17.64	18.46	19.08	19.6	-
2.0/0.5	18	11.95	19.67	20.55	21.21	21.76	-
2.0/0.5	20	11.95	21.69	22.63	23.33	-	-
2.0/0.5	25	12.33	26.78	27.87	28.65	-	-
2.0/0.5	30	12.33	31.83	33.05	-	-	-
2.5/0.25	8	9.28	9.84	10.29	10.69	11.04	11.37
2.5/0.25	10	11.15	11.86	12.39	12.84	13.24	13.6
2.5/0.25	12	13.01	13.88	14.48	14.98	15.42	-
2.5/0.25	14	14.85	15.9	16.57	17.12	-	-
2.5/0.25	16	16.64	17.92	18.66	19.24	-	-
2.5/0.25	18	18.23	19.94	20.74	21.36	-	-
2.5/0.25	20	18.1	21.96	22.82	-	-	-
2.5/0.25	25	18.1	27	28.01	-	-	-
2.5/0.25	30	18.1	32.05	-	-	-	-
3.0/0.2	8	9.58	10.07	10.48	10.85	11.19	11.51

→4-6

■ **Ad esaurimento scorte** - Subject to availability until sold out - Solange der vorrat reicht - Jusqu'à Épuisement de stock - Hasta agotamiento del stock



## SERIE NORMALE

NORMAL SERIES  
NORMAL AUSFÜHRUNG  
SÉRIE NORMALE  
SERIE NORMAL



# FRESE MICRO POWER TORICHE A 2 TAGLI IN MICROGRANA ULTRAFINE

MICRO POWER TORIC END MILLS - 2 FLUTES - SUB-MICROGRAIN  
MICRO POWER TORUSFRÄSER - 2 NUTEN - HARTMETALLQUALITÄT: ULTRA-FEINSTKORN  
FRAISES MICRO POWER TORIQUES - 2 DENTS - MICRO-GRAIN ULTRAFIN  
FRESAS POWER MICRO TÓRICAS - 2 LABIOS - SUB-MICROGRANO

## 1431XT

**NEW** Ø



Ø/R mm	d <sub>1</sub> mm	L mm	L <sub>1</sub> mm	L <sub>2</sub> mm	d mm	Z	1431XT €
3.0/0.2	2.85	45	4.5	10	6	2	60,50
3.0/0.2	2.85	45	4.5	12	6	2	60,50
3.0/0.2	2.85	50	4.5	14	6	2	60,50
3.0/0.3	2.85	55	4.5	16	6	2	60,50 ■
3.0/0.2	2.85	55	4.5	16	6	2	60,50
3.0/0.2	2.85	55	4.5	18	6	2	60,50
3.0/0.3	2.85	60	4.5	20	6	2	60,50 ■
3.0/0.2	2.85	60	4.5	20	6	2	60,50
3.0/0.2	2.85	65	4.5	25	6	2	60,50
3.0/0.2	2.85	80	4.5	30	6	2	60,50
3.0/0.2	2.85	90	4.5	35	6	2	60,50
3.0/0.2	2.85	90	4.5	40	6	2	60,50
3.0/0.5	2.85	45	4.5	8	6	2	60,50
3.0/0.5	2.85	45	4.5	10	6	2	60,50
3.0/0.5	2.85	45	4.5	12	6	2	60,50
3.0/0.5	2.85	45	4.5	14	6	2	60,50
3.0/0.5	2.85	50	4.5	16	6	2	60,50
3.0/0.5	2.85	55	4.5	18	6	2	60,50
3.0/0.5	2.85	55	4.5	20	6	2	60,50
3.0/0.5	2.85	60	4.5	25	6	2	60,50
3.0/0.5	2.85	65	4.5	30	6	2	60,50
3.0/0.5	2.85	80	4.5	35	6	2	60,50
3.0/0.5	2.85	90	4.5	40	6	2	60,50
4.0/0.5	3.85	50	6	12	6	2	65,00
4.0/0.5	3.85	60	6	16	6	2	65,00
4.0/0.5	3.85	60	6	20	6	2	65,00
4.0/0.5	3.85	70	6	25	6	2	65,00
4.0/0.5	3.85	80	6	30	6	2	65,00
4.0/0.5	3.85	90	6	35	6	2	65,00
4.0/0.5	3.85	90	6	40	6	2	65,00
4.0/0.5	3.85	100	6	45	6	2	65,00
4.0/0.5	3.85	100	6	50	6	2	65,00
5.0/0.5	4.85	60	7,5	16	6	2	65,00
5.0/0.5	4.85	70	7,5	25	6	2	65,00 ■
5.0/0.5	4.85	90	7,5	35	6	2	65,00 ■
5.0/0.5	4.85	110	7,5	50	6	2	65,00

→5-6

Ø/R mm	L <sub>2</sub> mm	R					
		0.5°	1°	1° 30'	2°	2° 30'	3°
LU							
3.0/0.2	10	11.48	12.08	12.57	12.99	13.38	13.73
3.0/0.2	12	13.38	14.1	14.66	15.13	15.55	15.93
3.0/0.2	14	15.27	16.12	16.74	17.26	17.71	18.12
3.0/0.3	16	16.94	18.02	18.72	19.29	19.78	20.22
3.0/0.2	16	17.15	18.14	18.82	19.38	19.86	20.3
3.0/0.2	18	19	20.15	20.9	21.49	22.01	22.47
3.0/0.3	20	20.24	22.02	22.85	23.5	24.06	24.54
3.0/0.2	20	20.84	22.17	22.97	23.6	24.15	24.63
3.0/0.2	25	23.99	27.21	28.15	28.87	29.47	-
3.0/0.2	30	23.99	32.25	33.31	34.11	-	-
3.0/0.2	35	23.99	37.3	38.47	39.33	-	-
3.0/0.2	40	23.99	42.33	43.62	-	-	-
3.0/0.5	8	9.56	10.04	10.45	10.81	11.15	11.46
3.0/0.5	10	11.46	12.06	12.54	12.96	13.34	13.64
3.0/0.5	12	13.36	14.08	14.62	15.09	15.51	15.89
3.0/0.5	14	15.25	16.09	16.71	17.22	17.67	18.08
3.0/0.5	16	17.12	18.11	18.79	19.34	19.83	20.26
3.0/0.5	18	18.95	20.13	20.87	21.46	21.98	22.43
3.0/0.5	20	20.08	22.15	22.94	23.57	24.12	24.59
3.0/0.5	25	23.62	27.19	28.12	28.84	29.44	-
3.0/0.5	30	23.62	32.23	33.29	34.08	34.74	-
3.0/0.5	35	23.62	37.27	38.45	39.31	-	-
3.0/0.5	40	23.62	42.31	43.6	-	-	-
4.0/0.5	12	13.58	14.23	14.75	15.2	15.6	15.97
4.0/0.5	16	17.39	18.26	18.91	19.44	19.91	-
4.0/0.5	20	21.15	22.3	23.05	23.66	-	-
4.0/0.5	25	25.75	27.33	28.22	22.92	-	-
4.0/0.5	30	28.12	32.37	33.39	-	-	-
4.0/0.5	35	28.12	37.41	38.54	-	-	-
4.0/0.5	40	28.12	42.45	-	-	-	-
4.0/0.5	45	28.12	47.49	-	-	-	-
4.0/0.5	50	28.12	52.52	-	-	-	-
5.0/0.5	16	17.61	18.4	19.02	-	-	-
5.0/0.5	25	26.12	27.47	-	-	-	-
5.0/0.5	35	32.61	-	-	-	-	-
5.0/0.5	50	32.61	-	-	-	-	-

→5-6

■ Ad esaurimento scorte - Subject to availability until sold out - Solange der vorrat reicht - Jusqu'à Épuisement de stock - Hasta agotamiento del stock

# FRESE MICRO POWER TORICHE A 2 TAGLI IN MICROGRANA ULTRAFINE

MICRO POWER TORIC END MILLS - 2 FLUTES - SUB-MICROGRAIN  
 MICRO POWER TORUSFRÄSER - 2 NUTEN - HARTMETALLQUALITÄT: ULTRA-FEINSTKORN  
 FRAISES MICRO POWER TORIQUES - 2 DENTS - MICRO-GRAIN ULTRAFIN  
 FRESAS POWER MICRO TÓRICAS - 2 LABIOS - SUB-MICROGRANO

## SERIE NORMALE

NORMAL SERIES  
 NORMAL AUSFÜHRUNG  
 SÉRIE NORMALE  
 SERIE NORMAL



## 1431XT

**NEW** Ø



Ø/R mm	d <sub>1</sub> mm	L mm	L <sub>1</sub> mm	L <sub>2</sub> mm	d mm	Z	1431XT €
6.0/0.5	5,9	65	8,5	10	6	2	65,00
6.0/0.5	5,9	65	8,5	20	6	2	65,00
6.0/0.5	5,9	75	8,5	30	6	2	65,00
6.0/0.5	5,9	90	8,5	40	6	2	65,00
6.0/0.5	5,9	110	8,5	50	6	2	65,00

→6-6

Ø/R mm	L <sub>2</sub> mm	β					
		0.5°	1°	1° 30'	2°	2° 30'	3°
6.0/0.5	10	-	-	-	-	-	-
6.0/0.5	20	-	-	-	-	-	-
6.0/0.5	30	-	-	-	-	-	-
6.0/0.5	40	-	-	-	-	-	-
6.0/0.5	50	-	-	-	-	-	-

→6-6



## SERIE NORMALE & LUNGA

NORMAL/EXTENDED SERIES  
 NORMAL/ÜBERLÄNGE AUSFÜHRUNG  
 SÉRIE NORMALE/LONGUE  
 SERIE NORMAL/LARGA

# FRESE MICRO POWER TORICHE A 2 TAGLI IN MICROGRANA ULTRAFINE

MICRO POWER TORIC END MILLS - 2 FLUTES - SUB-MICROGRAIN  
 MICRO POWER TORUSFRÄSER - 2 NUTEN - HARTMETALLQUALITÄT: ULTRA-FEINSTKORN  
 FRAISES MICRO POWER TORIQUES - 2 DENTS - MICRO-GRAIN ULTRAFIN  
 FRESAS POWER MICRO TÓRICAS - 2 LABIOS - SUB-MICROGRANO

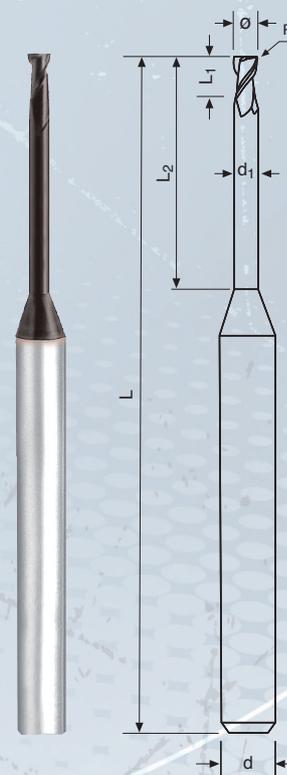


## 1433XT



Ø/R mm	d <sub>1</sub> mm	L mm	L <sub>1</sub> mm	L <sub>2</sub> mm	d mm	Z	1433XT €
0.5/0.1	0.45	50	0.4	2	4	2	37,50
0.5/0.1	0.45	50	0.4	4	4	2	37,50
0.5/0.1	0.45	50	0.4	6	4	2	37,50
0.6/0.1	0.55	50	0.5	2	4	2	37,50
0.6/0.1	0.55	50	0.5	4	4	2	37,50
0.6/0.1	0.55	50	0.5	6	4	2	37,50
0.8/0.1	0.75	50	0.65	4	4	2	37,50
0.8/0.1	0.75	50	0.65	6	4	2	37,50
0.8/0.1	0.75	50	0.65	8	4	2	29,15
1.0/0.2	0.95	50	0.8	4	4	2	29,15
1.0/0.2	0.95	50	0.8	6	4	2	29,15
1.0/0.2	0.95	50	0.8	8	4	2	29,15
1.0/0.2	0.95	50	0.8	10	4	2	29,15
1.0/0.2	0.95	50	0.8	12	4	2	29,15
1.2/0.2	1.15	50	1	6	4	2	29,15
1.2/0.2	1.15	50	1	10	4	2	29,15
1.5/0.2	1.45	50	1.2	4	4	2	29,15
1.5/0.2	1.45	50	1.2	6	4	2	29,15
1.5/0.2	1.45	50	1.2	8	4	2	29,15
1.5/0.2	1.45	50	1.2	10	4	2	29,15
1.5/0.2	1.45	50	1.2	12	4	2	29,15
1.5/0.2	1.45	50	1.2	16	4	2	29,15
2.0/0.2	1.95	50	1.6	6	4	2	29,15
2.0/0.2	1.95	50	1.6	8	4	2	29,15
2.0/0.2	1.95	50	1.6	10	4	2	29,15
2.0/0.2	1.95	50	1.6	12	4	2	29,15

→1-3



### Rivestimento X-Treme

X-Treme coating  
 X-Treme-Beschichtung  
 Revêtement X-Treme  
 Recubrimiento X-Treme



### TOLLERANZA - TOLERANCE - TOLERANZ - TOLÉRANCE - TOLERANCIA

Diametri Diameters	Tolleranza del diametro Diameter tolerance	Tolleranza del gambo Shank tolerance
da 0.4 mm a 4 mm	+0.000 mm -0.025 mm	+0.000 mm -0.013 mm

# FRESE MICRO POWER TORICHE A 2 TAGLI IN MICROGRANA ULTRAFINE

MICRO POWER TORIC END MILLS - 2 FLUTES - SUB-MICROGRAIN  
 MICRO POWER TORUSFRÄSER - 2 NUTEN - HARTMETALLQUALITÄT: ULTRA-FEINSTKORN  
 FRAISES MICRO POWER TORIQUES - 2 DENTS - MICRO-GRAIN ULTRAFIN  
 FRESAS POWER MICRO TÓRICAS - 2 LABIOS - SUB-MICROGRANO

## SERIE NORMALE & LUNGA

NORMAL/EXTENDED SERIES  
 NORMAL/ÜBERLÄNGE AUSFÜHRUNG  
 SÉRIE NORMALE/LONGUE  
 SERIE NORMAL/ LARGA

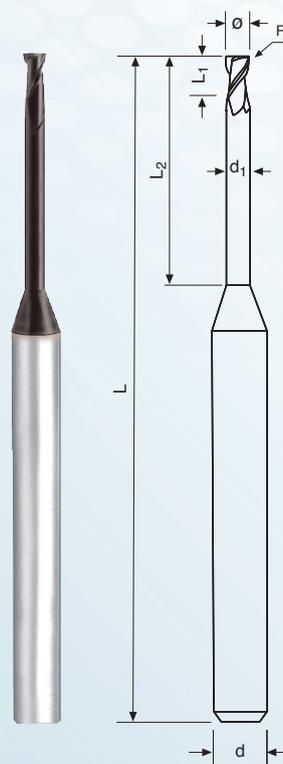


## 1433XT



∅ mm	d <sub>1</sub> mm	L mm	L <sub>1</sub> mm	L <sub>2</sub> mm	d mm	Z	1433XT €
2.0/0.2	1.95	50	1.6	16	4	2	29,15
2.0/0.2	1.95	60	1.6	20	4	2	33,35
2.0/0.5	1.95	50	1.6	6	4	2	29,15
2.0/0.5	1.95	50	1.6	8	4	2	29,15
2.0/0.5	1.95	50	1.6	10	4	2	29,15
2.0/0.5	1.95	50	1.6	12	4	2	29,15
2.0/0.5	1.95	50	1.6	16	4	2	29,15
2.0/0.5	2.85	60	1.6	20	4	2	33,35
3.0/0.2	2.85	50	2.5	8	6	2	37,50
3.0/0.2	2.85	50	2.5	12	6	2	37,50
3.0/0.2	2.85	60	2.5	16	6	2	39,60
3.0/0.2	2.85	60	2.5	20	6	2	39,60
3.0/0.2	2.85	70	2.5	25	6	2	43,80
3.0/0.2	2.85	70	2.5	30	6	2	43,80
3.0/0.5	2.85	50	2.5	8	6	2	37,50
3.0/0.5	2.85	50	2.5	12	6	2	37,50
3.0/0.5	2.85	60	2.5	16	6	2	39,60
3.0/0.5	2.85	60	2.5	20	6	2	39,60
3.0/0.5	2.85	70	2.5	25	6	2	43,80
3.0/0.5	2.85	70	2.5	30	6	2	43,80
4.0/0.2	3.85	60	4	12	6	2	39,60
4.0/0.2	3.85	60	4	16	6	2	39,60
4.0/0.2	3.85	70	4	20	6	2	43,80
4.0/0.2	3.85	70	4	25	6	2	43,80
4.0/0.2	3.85	80	4	30	6	2	47,90
4.0/0.2	3.85	90	4	40	6	2	56,30

→2-3



### Rivestimento X-Treme

X-Treme coating  
 X-Treme-Beschichtung  
 Revêtement X-Treme  
 Recubrimiento X-Treme



### TOLLERANZA - TOLERANCE - TOLERANZ - TOLÉRANCE - TOLERANCIA

Diametri Diameters	Tolleranza del diametro Diameter tolerance	Tolleranza del gambo Shank tolerance
da 0.4 mm a 4 mm	+0.00 mm -0.025 mm	+0.00 mm -0.013 mm



# FRESE POWER A CANDELA E TORICHE A 4 TAGLI IN MICROGRANA ULTRAFINE

POWER TWIST AND TORIC END MILLS - 4 FLUTES - SUB-MICROGRAIN  
POWER DRALLNUTIGE UND TORUS-FRÄSER - 4 NUTEN - HARTMETALLQUALITÄT: ULTRA-FEINSTKORN  
FRAISES POWER HÉLICOÏDALES ET TORIQUES À 4 DENTS - MICRO-GRAIN ULTRAFIN  
FRESAS POWER HELICOIDALES Y TÓRICAS - 4 LABIOS - SUB-MICROGRANO

## SERIE NORMALE

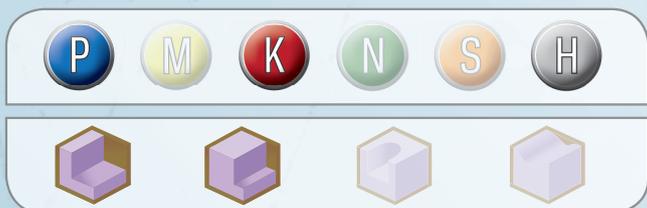
NORMAL SERIES  
NORMAL AUSFÜHRUNG  
SÉRIE NORMALE  
SERIE NORMAL



## 1411XT



Ø mm	d <sub>1</sub> mm	L mm	L <sub>1</sub> mm	L <sub>2</sub> mm	d mm	Z	1411XT €
3	2.85	70	4.5	15	6	4	39,45
3.5	3.35	70	5.3	17.5	6	4	41,60
4	3.85	70	6	20	6	4	40,80
5	4.85	80	7.5	25	6	4	43,90
6	5.85	90	9	30	6	4	45,80

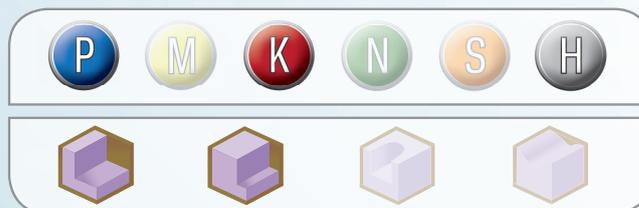


## 1411XT

## 1415XT



Ø mm	R	d <sub>1</sub> mm	L mm	L <sub>1</sub> mm	L <sub>2</sub> mm	d mm	Z	1415XT €
3	0.5	2.85	70	4.5	15	6	4	42,60
3.5	0.5	3.35	70	5.3	17.5	6	4	45,00
4	0.5	3.85	70	6	20	6	4	44,10
5	0.5	4.85	80	7.5	25	6	4	47,40
6	0.5	5.85	90	9	30	6	4	49,40



## 1415XT

### Rivestimento X-Treme

X-Treme coating  
X-Treme-Beschichtung  
Revêtement X-Treme  
Recubrimiento X-Treme



### TOLLERANZA - TOLERANCE - TOLERANZ - TOLÉRANCE - TOLERANCIA

Diametri Diameters	Tolleranza del diametro Diameter tolerance	Tolleranza del gambo Shank tolerance
da 3 mm a 6 mm	+0.00 mm -0.025 mm	+0.00 mm -0.013 mm

### Rivestimento X-Treme

X-Treme coating  
X-Treme-Beschichtung  
Revêtement X-Treme  
Recubrimiento X-Treme



### TOLLERANZA - TOLERANCE - TOLERANZ - TOLÉRANCE - TOLERANCIA

Diametri Diameters	Tolleranza del diametro Diameter tolerance	Tolleranza del gambo Shank tolerance
da 3 mm a 6 mm	+0.00 mm -0.025 mm	+0.00 mm -0.013 mm



## SERIE LUNGA

EXTENDED LENGTH  
SÉRIE LONGUE  
ÜBERLÄNGE  
SERIE LARGA

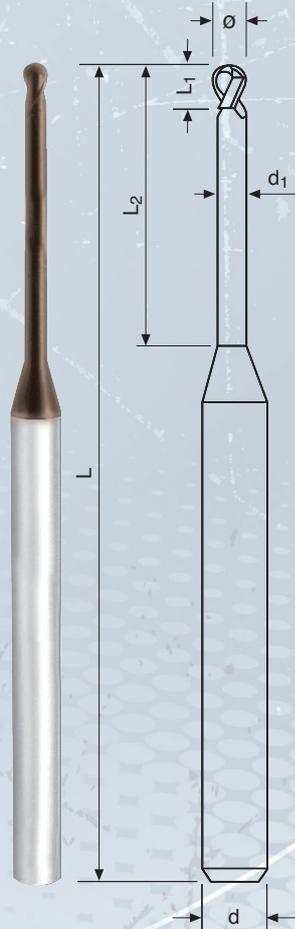
# FRESE MICRO POWER SEMISFERICHE A 2 TAGLI IN MICROGRANA ULTRAFINE

MICRO POWER BALL NOSE END MILLS - 2 FLUTES - SUB-MICROGRAIN  
MICRO POWER RADIUSFRÄSER - 2 NUTEN - HARTMETALLQUALITÄT: ULTRA-FEINSTKORN  
FRAISES MICRO POWER HÉMISPHERIQUES À 2 DENTS - MICRO-GRAIN ULTRAFIN  
FRESAS MICRO POWER ESFÉRICAS - 2 LABIOS - SUB-MICROGRANO

## 419RXT



Ø mm	d <sub>1</sub> mm	L mm	L <sub>1</sub> mm	L <sub>2</sub> mm	d mm	Z	419RXT €
0.5	0.45	60	0.5	2.5	6	2	45,80
0.6	0.55	60	0.6	3	6	2	45,80
0.8	0.75	60	0.8	4	6	2	45,80
1	0.95	60	1	5	6	2	41,60
1.2	1.15	60	1.2	6	6	2	41,60
1.4	1.35	60	1.4	7	6	2	49,00
1.5	1.45	60	1.5	7.5	6	2	51,50
1.6	1.55	60	1.6	8	6	2	49,00
1.8	1.75	60	1.8	9	6	2	49,00
2	1.95	60	2	10	6	2	43,70
2.5	2.4	60	2.5	12.5	6	2	46,80
3	2.85	70	3	15	6	2	46,80
3.5	3.35	70	3.5	17.5	6	2	51,60
4	3.85	70	4	20	6	2	46,80
5	4.85	80	5	25	6	2	49,80
6	5.85	90	6	30	6	2	52,80



### Rivestimento X-Treme

X-Treme coating  
X-Treme-Beschichtung  
Revêtement X-Treme  
Recubrimiento X-Treme



### TOLLERANZA - TOLERANCE - TOLERANZ - TOLÉRANCE - TOLERANCIA

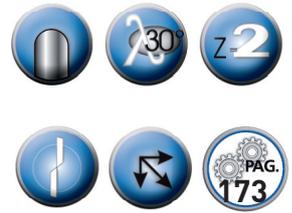
Diametri Diameters	Tolleranza del diametro Diameter tolerance	Tolleranza del gambo Shank tolerance
da 0.5 mm a 3 mm	+0.000 mm -0.025 mm	+0.000 mm -0.013 mm
da 3.5 mm a 6 mm	+0.000 mm -0.038 mm	+0.000 mm -0.013 mm

# FRESE MICRO POWER SEMISFERICHE A 2 TAGLI IN MICROGRANA ULTRAFINE

MICRO POWER BALL NOSE END MILLS - 2 FLUTES - SUB-MICROGRAIN  
 MICRO POWER RADIUSFRÄSER - 2 NUTEN - HARTMETALLQUALITÄT: ULTRA-FEINSTKORN  
 FRAISES MICRO POWER HÉMISPHERIQUES À 2 DENTS - MICRO-GRAIN ULTRAFIN  
 FRESAS MICRO POWER ESFÉRICAS - 2 LABIOS - SUB-MICROGRANO

## SERIE NORMALE LUNGA & EXTRA L.

NORMAL/LONG/EXTRALONG SERIES  
 NORMAL/LANGE/EXTRALANGE AUSFÜHRUNG  
 SÉRIE NORMALE/LONGUE/EXTRALONGUE  
 SERIE NORMAL/LARGA/EXTRALARGA



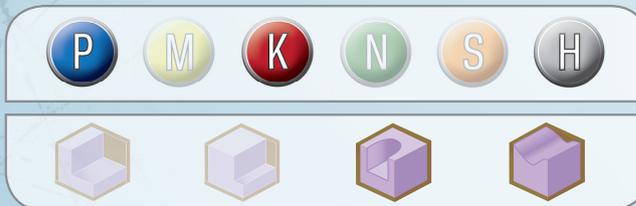
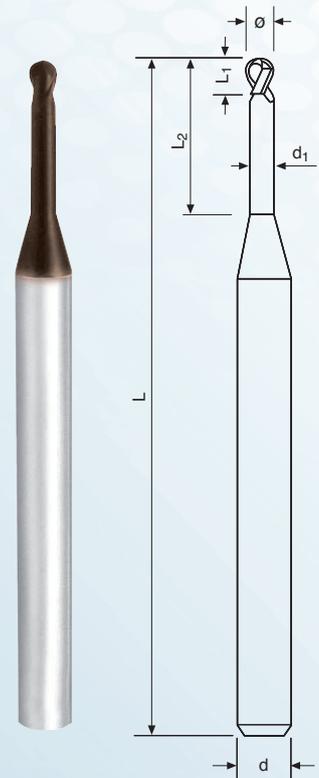
### 431RXT

**NEW** Ø



Ø mm	d <sub>1</sub> mm	L mm	L <sub>1</sub> mm	L <sub>2</sub> mm	d mm	Z	431RXT €
0.3	0.27	50	0.24	1	4	2	71,00
0.3	0.27	50	0.24	2	4	2	71,00
0.3	0.27	50	0.24	3	4	2	71,00
0.4	0.37	50	0.3	1	4	2	62,10
0.4	0.37	50	0.3	2	4	2	62,10
0.4	0.37	50	0.3	3	4	2	62,10
0.4	0.37	50	0.3	4	4	2	62,10
0.4	0.37	50	0.3	5	4	2	73,90
0.5	0.45	50	0.4	2	4	2	50,30
0.5	0.45	50	0.4	3	4	2	50,30
0.5	0.45	50	0.4	4	4	2	50,30
0.5	0.45	50	0.4	5	4	2	50,30
0.5	0.45	50	0.4	6	4	2	50,30
0.5	0.45	50	0.4	8	4	2	62,10
0.6	0.55	50	0.5	2	4	2	50,30
0.6	0.55	50	0.5	3	4	2	50,30
0.6	0.55	50	0.5	4	4	2	50,30
0.6	0.55	50	0.5	5	4	2	50,30
0.6	0.55	50	0.5	6	4	2	50,30
0.6	0.55	50	0.5	8	4	2	62,10
0.8	0.75	50	0.6	2	4	2	50,30
0.8	0.75	50	0.6	3	4	2	50,30
0.8	0.75	50	0.6	4	4	2	50,30
0.8	0.75	50	0.6	5	4	2	50,30
0.8	0.75	50	0.6	6	4	2	50,30
0.8	0.75	50	0.6	8	4	2	50,30

→1-3



#### Rivestimento X-Treme

X-Treme coating  
 X-Treme-Beschichtung  
 Revêtement X-Treme  
 Recubrimiento X-Treme



#### TOLLERANZA - TOLERANCE - TOLERANZ - TOLÉRANCE - TOLERANCIA

Diametri Diameters	Tolleranza del diametro Diameter tolerance	Tolleranza del gambo Shank tolerance
da 0.3 mm a 3 mm	+0.000 mm -0.025 mm	+0.000 mm -0.013 mm
da 3.5 mm a 6 mm	+0.000 mm -0.038 mm	+0.000 mm -0.013 mm



## SERIE NORMALE LUNGA & EXTRA L.

NORMAL/LONG/EXTRALONG SERIES  
NORMAL/LANGE/EXTRALANGE AUSFÜHRUNG  
SÉRIE NORMALE/LONGUE/EXTRALONGUE  
SERIE NORMAL/LARGA/EXTRALARGA

# FRESE MICRO POWER SEMISFERICHE A 2 TAGLI IN MICROGRANA ULTRAFINE

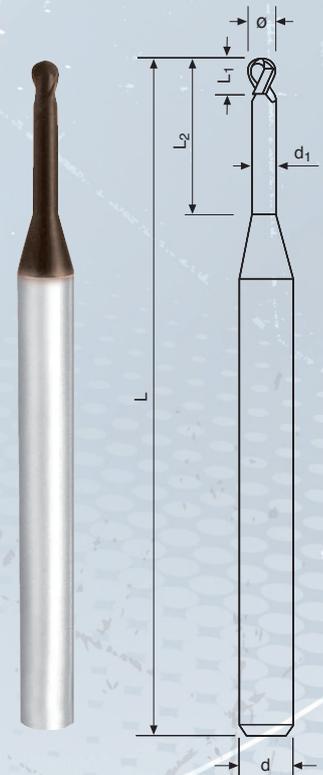
MICRO POWER BALL NOSE END MILLS - 2 FLUTES - SUB-MICROGRAIN  
MICRO POWER RADIUSFRÄSER - 2 NUTEN - HARTMETALLQUALITÄT: ULTRA-FEINSTKORN  
FRAISES MICRO POWER HÉMISPHERIQUES À 2 DENTS - MICRO-GRAIN ULTRAFIN  
FRESAS MICRO POWER ESFÉRICAS - 2 LABIOS - SUB-MICROGRANO

## 431RXT

**NEW** Ø



Ø mm	d <sub>1</sub> mm	L mm	L <sub>1</sub> mm	L <sub>2</sub> mm	d mm	Z	431RXT €
0.8	0.75	50	0.6	10	4	2	62,10
1.0	0.95	50	0.8	3	4	2	50,30
1.0	0.95	50	0.8	4	4	2	50,30
1.0	0.95	50	0.8	5	4	2	50,30
1.0	0.95	50	0.8	6	4	2	50,30
1.0	0.95	50	0.8	8	4	2	50,30
1.0	0.95	50	0.8	10	4	2	50,30
1.0	0.95	50	0.8	12	4	2	50,30
1.0	0.95	50	0.8	16	4	2	62,80
1.0	0.95	60	0.8	20	4	2	83,70
1.2	1.15	50	1.0	4	4	2	50,30
1.2	1.15	50	1.0	6	4	2	50,30
1.2	1.15	50	1.0	8	4	2	50,30
1.2	1.15	50	1.0	10	4	2	50,30
1.2	1.15	50	1.0	12	4	2	50,30
1.4	1.33	45	2.1	12	4	2	50,30
1.5	1.45	50	1.2	4	4	2	50,30
1.5	1.45	50	1.2	6	4	2	50,30
1.5	1.45	50	1.2	8	4	2	50,30
1.5	1.45	50	1.2	10	4	2	50,30
1.5	1.45	50	1.2	12	4	2	50,30
1.5	1.45	50	1.2	16	4	2	50,30
1.5	1.45	60	1.2	20	4	2	50,30
1.6	1.51	50	2.4	16	4	2	63,90
1.8	2.71	50	2.7	16	4	2	73,50
2.0	1.95	50	1.6	4	4	2	62,80



→2-3



### Rivestimento X-Treme

X-Treme coating  
X-Treme-Beschichtung  
Revêtement X-Treme  
Recubrimiento X-Treme



### TOLLERANZA - TOLERANCE - TOLERANZ - TOLÉRANCE - TOLERANCIA

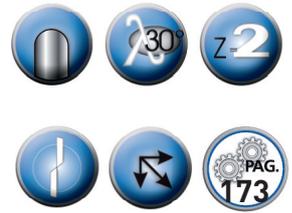
Diametri Diameters	Tolleranza del diametro Diameter tolerance	Tolleranza del gambo Shank tolerance
da 0.3 mm a 3 mm	+0.000 mm -0.025 mm	+0.000 mm -0.013 mm
da 3.5 mm a 6 mm	+0.000 mm -0.038 mm	+0.000 mm -0.013 mm

# FRESE MICRO POWER SEMISFERICHE A 2 TAGLI IN MICROGRANA ULTRAFINE

MICRO POWER BALL NOSE END MILLS - 2 FLUTES - SUB-MICROGRAIN  
 MICRO POWER RADIUSFRÄSER - 2 NUTEN - HARTMETALLQUALITÄT: ULTRA-FEINSTKORN  
 FRAISES MICRO POWER HÉMISPHERIQUES À 2 DENTS - MICRO-GRAIN ULTRAFIN  
 FRESAS MICRO POWER ESFÉRICAS - 2 LABIOS - SUB-MICROGRANO

## SERIE NORMALE LUNGA & EXTRA L.

NORMAL/LONG/EXTRALONG SERIES  
 NORMAL/LANGE/EXTRALANGE AUSFÜHRUNG  
 SÉRIE NORMALE/LONGUE/EXTRALONGUE  
 SERIE NORMAL/LARGA/EXTRALARGA



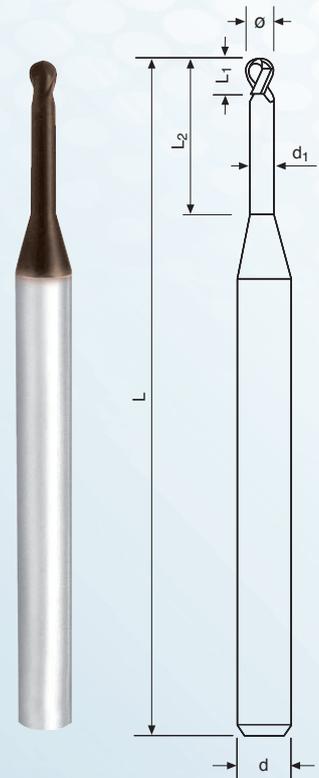
### 431RXT

**NEW** Ø



Ø mm	d <sub>1</sub> mm	L mm	L <sub>1</sub> mm	L <sub>2</sub> mm	d mm	Z	431RXT €
2.0	1.95	50	1.6	6	4	2	50,30
2.0	1.95	50	1.6	8	4	2	50,30
2.0	1.95	50	1.6	10	4	2	50,30
2.0	1.95	50	1.6	12	4	2	50,30
2.0	1.95	50	1.6	16	4	2	50,30
2.0	1.95	60	1.6	20	4	2	50,30
2.0	1.95	60	1.6	25	4	2	50,30
2.0	1.95	70	1.6	30	4	2	50,30
3.0	2.85	50	2.4	6	6	2	48,00
3.0	2.85	50	2.4	8	6	2	51,20
3.0	2.85	50	2.4	10	6	2	54,40
3.0	2.85	50	2.4	12	6	2	54,40
3.0	2.85	60	2.4	16	6	2	54,40
3.0	2.85	60	2.4	20	6	2	54,40
3.0	2.85	70	2.4	25	6	2	57,60
3.0	2.85	70	2.4	30	6	2	57,60
3.0	2.85	80	2.4	35	6	2	63,90
4.0	3.85	60	3.2	8	6	2	57,60
4.0	3.85	60	3.2	10	6	2	57,60
4.0	3.85	60	3.2	12	6	2	57,60
4.0	3.85	60	3.2	16	6	2	57,60
4.0	3.85	70	3.2	20	6	2	57,60
4.0	3.85	70	3.2	25	6	2	57,60
4.0	3.85	80	3.2	30	6	2	73,50
4.0	3.85	80	3.2	35	6	2	73,50
4.0	3.85	90	3.2	40	6	2	83,10
4.0	3.85	100	3.2	45	6	2	99,10
4.0	3.85	100	3.2	50	6	2	99,10
5.0	4.85	70	5	25	6	2	137,00

→3-3



#### Rivestimento X-Treme

X-Treme coating  
 X-Treme-Beschichtung  
 Revêtement X-Treme  
 Recubrimiento X-Treme



#### TOLLERANZA - TOLERANCE - TOLERANZ - TOLÉRANCE - TOLERANCIA

Diametri Diameters	Tolleranza del diametro Diameter tolerance	Tolleranza del gambo Shank tolerance
da 0.3 mm a 3 mm	+0.000 mm -0.025 mm	+0.000 mm -0.013 mm
da 3.5 mm a 6 mm	+0.000 mm -0.038 mm	+0.000 mm -0.013 mm



## SERIE CORTA NORMALE & LUNGA

SHORT /NORMAL/ LONG SERIES  
KURZE /NORMAL/ LANGE AUSFÜHRUNG  
SÉRIE COURTE /NORMALE/ LONGUE  
SERIE CORTA /NORMAL/ LARGA



# FRESE MICRO POWER SEMISFERICHE A 2 TAGLI IN MICROGRANA ULTRAFINE

MICRO POWER BALL NOSE END MILLS - 2 FLUTES - SUB-MICROGRAIN  
MICRO POWER RADIUSFRÄSER - 2 NUTEN - HARTMETALLQUALITÄT: ULTRA-FEINSTKORN  
FRAISES MICRO POWER HÉMISPHERIQUES À 2 DENTS - MICRO-GRAIN ULTRAFIN  
FRESAS MICRO POWER ESFÉRICAS - 2 LABIOS - SUB-MICROGRANO

## 433RXT



Ø/R mm	d <sub>1</sub> mm	L mm	L <sub>1</sub> mm	L <sub>2</sub> mm	d mm	Z	433RXT €
0.2	0.18	45	0.16	0.5	4	2	62,60
0.2	0.18	45	0.16	1	4	2	62,60
0.2	0.18	45	0.16	1.5	4	2	62,60
0.3	0.28	45	0.24	1	4	2	62,60
0.3	0.28	45	0.24	1.5	4	2	62,60
0.3	0.28	45	0.24	2	4	2	62,60
0.4	0.37	45	0.3	1	4	2	62,60
0.4	0.37	45	0.3	1.5	4	2	62,60
0.4	0.37	45	0.3	2	4	2	62,60

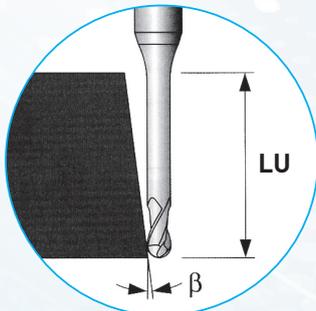
→1-4

Ø/R mm	L <sub>2</sub> mm	β					
		0.5°	1°	1°30'	2°	2°30'	3°
LU							
0.2	0.5	1.08	1.25	1.43	1.6	1.77	1.94
0.2	1	1.48	1.75	1.99	2.21	2.41	2.62
0.2	1.5	1.85	2.25	2.55	2.8	3.04	3.26
0.3	1	1.55	1.8	2.02	2.23	2.43	2.62
0.3	1.5	1.95	2.3	2.57	2.82	3.05	3.27
0.3	2	2.29	2.8	3.12	3.41	3.66	3.9
0.4	1	1.70	1.91	2.11	2.30	2.49	2.67
0.4	1.5	2.13	2.41	2.66	2.89	3.10	3.31
0.4	2	2.54	2.91	3.2	3.47	3.71	3.94

→1-4

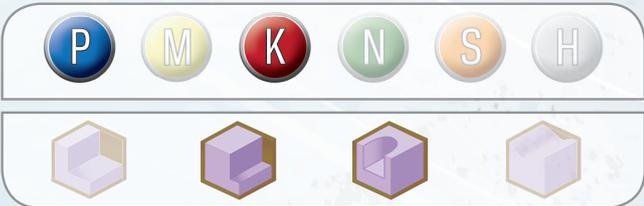
## INFORMAZIONI TECNICHE ANGOLO DI COLLISIONE β

TECHNICAL DATA - INCLINED ANGLE β  
TECHNISCHE HILFE - NEIGUNGSWINKEL β  
SERVICE TECHNIQUE - ANGLE DE COLLISION β  
INFORMACIÓN TÉCNICA - ANGULO INCLINADO β

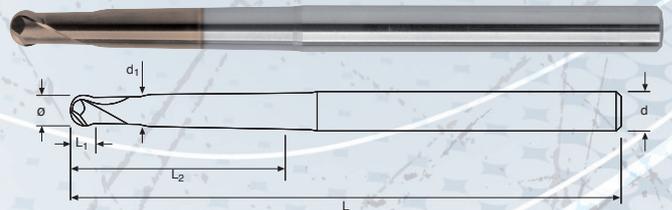


### Effettiva lunghezza utile di lavoro legata all'inclinazione β del pezzo da lavorare

Effective machining depth depending on inclined angle β of workpiece  
Die effektive Arbeitstiefe hängt vom Neigungswinkel β des Werkstückes ab  
Longueur utile effective d'usinage liée à l'inclinaison β de la pièce à usiner  
Largo útil de trabajo depende del ángulo de inclinación de la pieza



**GAMBO RASTREMATO**  
TAPERED SHANK  
VERJÜNGTER SCHAFT  
QUEUE FUSELÉE  
MANGO REBAJADO



**L2 = LUNGHEZZA UTILE DI LAVORO**  
L2 = MACHINING DEPTH  
L2 = ARBEITSTIEFE  
L2 = LONGUEUR UTILE  
L2 = LARGO ÚTIL DE TRABAJO



**Rivestimento X-Treme**  
X-Treme coating  
X-Treme-Beschichtung  
Revêtement X-Treme  
Recubrimiento X-Treme

### TOLLERANZA - TOLERANCE - TOLERANZ - TOLÉRANCE - TOLERANCIA

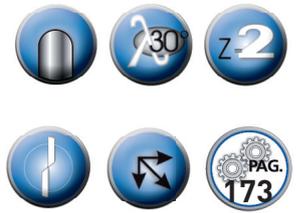
Diametri Diameters	Tolleranza del diametro Diameter tolerance	Tolleranza del gambo Shank tolerance
da 0.2 mm a 6 mm	+0.000 mm -0.001 mm	h6

# FRESE MICRO POWER SEMISFERICHE A 2 TAGLI IN MICROGRANA ULTRAFINE

MICRO POWER BALL NOSE END MILLS - 2 FLUTES - SUB-MICROGRAIN  
 MICRO POWER RADIUSFRÄSER - 2 NUTEN - HARTMETALLQUALITÄT: ULTRA-FEINKORN  
 FRAISES MICRO POWER HÉMISPHERIQUES À 2 DENTS - MICRO-GRAIN ULTRAFIN  
 FRESAS MICRO POWER ESFÉRICAS - 2 LABIOS - SUB-MICROGRANO

## SERIE CORTA NORMALE & LUNGA

SHORT /NORMAL/LONG SERIES  
 KURZE /NORMAL/LANGE AUSFÜHRUNG  
 SÉRIE COURTE /NORMALE/LONGUE  
 SERIE CORTA /NORMAL/LARGA



## 433RXT



Ø/R mm	d <sub>1</sub> mm	L mm	L <sub>1</sub> mm	L <sub>2</sub> mm	d mm	Z	433RXT €
0.4	0.37	45	0.3	2.5	4	2	62,60
0.4	0.37	45	0.3	3	4	2	62,60
0.5	0.45	45	0.4	2	4	2	62,60
0.5	0.45	45	0.4	3	4	2	62,60
0.5	0.45	45	0.4	4	4	2	62,60
0.5	0.45	45	0.4	5	4	2	62,60
0.5	0.45	45	0.4	6	4	2	62,60
0.5	0.45	45	0.4	8	4	2	62,60
0.6	0.55	45	0.5	2	4	2	62,60
0.6	0.55	45	0.5	3	4	2	62,60
0.6	0.55	45	0.5	4	4	2	62,60
0.6	0.55	45	0.5	5	4	2	62,60
0.6	0.55	45	0.5	6	4	2	62,60
0.6	0.55	45	0.5	8	4	2	62,60
0.8	0.75	45	0.6	2	4	2	62,60
0.8	0.75	45	0.6	4	4	2	62,60
0.8	0.75	45	0.6	5	4	2	62,60
0.8	0.75	45	0.6	6	4	2	62,60
0.8	0.75	45	0.6	7	4	2	62,60
0.8	0.75	45	0.6	8	4	2	62,60
0.8	0.75	45	0.6	10	4	2	62,60
1	0.95	45	0.8	3	4	2	57,80
1	0.85	45	0.8	4	4	2	57,80
1	0.95	45	0.8	5	4	2	57,80
1	0.95	45	0.8	6	4	2	57,80
1	0.95	45	0.8	7	4	2	57,80
1	0.95	45	0.8	8	4	2	57,80
1	0.95	45	0.8	9	4	2	57,80
1	0.95	45	0.8	10	4	2	57,80
1	0.95	45	0.8	12	4	2	57,80
1	0.95	50	0.8	14	4	2	57,80
1	0.95	50	0.8	16	4	2	57,80
1	0.95	55	0.8	20	4	2	57,80
1.2	1.15	45	1	6	4	2	57,80
1.2	1.15	45	1	8	4	2	57,80
1.2	1.15	45	1	10	4	2	57,80

→2-4

Ø/R mm	L <sub>2</sub> mm	β					
		0.5°	1°	1°30'	2°	2°30'	3°
LU							
0.4	2.5	2.93	3.41	3.75	4.04	4.31	4.56
0.4	3	3.26	3.91	4.29	4.61	4.9	5.16
0.5	2	2.77	3.06	3.32	3.57	3.79	4.01
0.5	3	3.62	4.06	4.4	4.7	4.97	5.23
0.5	4	4.43	5.06	5.48	5.82	6.13	6.51
0.5	5	4.61	6.06	6.54	6.93	7.27	7.75
0.5	6	4.61	7.06	7.61	8.04	8.41	8.99
0.5	8	4.61	9.06	9.73	10.23	10.65	11.23
0.6	2	2.81	3.09	3.34	3.58	3.8	4.02
0.6	3	3.68	4.09	4.42	4.71	4.98	5.23
0.6	4	4.51	5.09	5.49	5.83	6.14	6.42
0.6	5	5.12	6.09	6.56	6.94	7.28	7.59
0.6	6	4.96	7.09	7.63	8.05	8.41	8.74
0.6	8	4.96	9.09	9.75	10.24	10.65	11.02
0.8	2	2.89	3.15	3.38	3.61	3.82	4.03
0.8	4	4.63	5.15	5.53	5.86	6.15	6.43
0.8	5	5.44	6.15	6.59	6.96	7.29	7.6
0.8	6	5.66	7.15	7.66	8.07	8.43	8.75
0.8	7	5.66	8.15	8.72	9.16	9.55	9.9
0.8	8	5.66	9.15	9.77	10.25	10.66	11.03
0.8	10	5.66	11.15	11.88	12.42	12.88	13.28
1	3	3.86	4.2	4.49	4.76	5.01	5.25
1	4	4.74	5.2	5.56	5.88	6.17	6.44
1	5	5.58	6.2	6.63	6.63	7.31	7.6
1	6	6.35	7.2	7.69	7.69	8.44	8.76
1	7	6.36	8.2	8.75	8.75	9.56	9.9
1	8	6.36	9.2	9.8	9.8	10.68	11.04
1	9	6.36	10.2	10.86	10.86	11.78	12.17
1	10	6.36	11.2	11.91	11.91	12.89	13.29
1	12	6.36	13.2	14.01	14.01	15.08	15.51
1	14	6.36	15.2	16.11	16.11	17.26	17.72
1	16	6.36	17.2	18.2	18.2	19.43	19.91
1	20	6.36	21.2	22.36	22.36	23.74	24.27
1.2	6	6.53	7.25	7.72	7.72	8.45	8.77
1.2	8	7.06	9.25	9.83	9.83	10.69	11.04
1.2	10	7.06	11.25	11.94	11.94	12.9	13.29

→2-4



## SERIE CORTA NORMALE & LUNGA

SHORT /NORMAL/LONG SERIES  
KURZE /NORMAL/LANGE AUSFÜHRUNG  
SÉRIE COURTE /NORMALE/LONGUE  
SERIE CORTA /NORMAL/LARGA



# FRESE MICRO POWER SEMISFERICHE A 2 TAGLI IN MICROGRANA ULTRAFINE

MICRO POWER BALL NOSE END MILLS - 2 FLUTES - SUB-MICROGRAIN  
MICRO POWER RADIUSFRÄSER - 2 NUTEN - HARTMETALLQUALITÄT: ULTRA-FEINSTKORN  
FRAISES MICRO POWER HÉMISPHERIQUES À 2 DENTS - MICRO-GRAIN ULTRAFIN  
FRESAS MICRO POWER ESFÉRICAS - 2 LABIOS - SUB-MICROGRANO

## 433RXT



Ø/R mm	d <sub>1</sub> mm	L mm	L <sub>1</sub> mm	L <sub>2</sub> mm	d mm	Z	433RXT €
1.2	1.15	45	1	12	4	2	57,80
1.4	1.35	45	1.1	8	4	2	57,80
1.4	1.35	45	1.1	12	4	2	57,80
1.4	1.35	50	1.1	16	4	2	57,80
1.5	1.45	45	1.2	8	4	2	57,80
1.5	1.45	45	1.2	12	4	2	57,80
1.5	1.45	50	1.2	16	4	2	57,80
1.5	1.45	55	1.2	20	4	2	57,80
1.6	1.55	45	1.3	8	4	2	57,80
1.6	1.55	45	1.3	12	4	2	57,80
1.6	1.55	50	1.3	16	4	2	57,80
1.6	1.55	55	1.3	20	4	2	57,80
1.8	1.75	45	1.4	8	4	2	57,80
1.8	1.75	45	1.4	12	4	2	57,80
1.8	1.75	50	1.4	16	4	2	57,80
1.8	1.95	55	1.4	20	4	2	57,80
2	1.95	45	1.6	6	4	2	55,40
2	1.95	45	1.6	8	4	2	55,40
2	1.95	45	1.6	10	4	2	55,40
2	1.95	45	1.6	12	4	2	55,40
2	1.95	50	1.6	14	4	2	55,40
2	1.95	50	1.6	16	4	2	55,40
2	1.95	55	1.6	18	4	2	55,40
2	1.95	55	1.6	20	4	2	55,40
2	1.95	60	1.6	22	4	2	55,40
2	1.95	65	1.6	25	4	2	55,40
2	1.95	70	1.6	30	4	2	55,40
3	2.85	50	2.4	8	6	2	55,40
3	2.85	50	2.4	10	6	2	55,40
3	2.85	55	2.4	16	6	2	55,40
3	2.85	60	2.4	20	6	2	55,40
3	2.85	65	2.4	25	6	2	55,40
3	2.85	70	2.4	30	6	2	55,40
3	2.85	80	2.4	35	6	2	55,40
4	3.85	60	3.2	10	6	2	57,80
4	3.85	60	3.2	16	6	2	57,80

→3-4

Ø/R mm	L <sub>2</sub> mm	R					
		0.5°	1°	1°30'	2°	2°30'	3°
LU							
1.2	12	7.06	13.25	14.03	14.61	15.09	15.52
1.4	8	7.76	9.3	9.86	10.31	10.7	11.05
1.4	12	7.76	13.3	14.06	14.63	15.1	15.52
1.4	16	7.76	17.3	18.24	18.9	19.45	19.92
1.5	8	8.25	9.32	9.87	10.32	10.7	11.05
1.5	12	8.11	13.32	14.07	14.63	15.11	15.53
1.5	16	8.11	17.32	18.25	18.91	19.45	19.93
1.5	20	8.11	21.32	22.41	23.15	23.76	24.38
1.6	8	8.38	9.34	9.88	10.32	10.71	11.06
1.6	12	8.46	13.34	14.08	14.64	15.11	15.53
1.6	16	8.46	17.34	18.26	18.91	19.46	19.93
1.6	20	8.46	21.34	22.42	23.16	23.76	-
1.8	8	8.55	9.38	9.91	10.34	10.72	11.06
1.8	12	9.16	13.38	14.11	14.65	15.12	15.53
1.8	16	9.16	17.38	18.28	18.93	19.46	19.93
1.8	20	9.16	21.38	22.44	23.17	23.77	-
2	6	6.91	7.43	7.83	8.18	8.5	8.8
2	8	8.66	9.43	9.94	10.36	10.73	11.07
2	10	9.86	11.43	12.03	12.52	12.94	13.32
2	12	9.86	13.43	14.13	14.67	15.13	15.54
2	14	9.86	15.43	16.22	16.81	17.31	17.75
2	16	9.86	17.43	18.3	18.94	19.47	19.94
2	18	9.86	19.43	20.38	21.07	21.63	-
2	20	9.86	21.43	22.46	23.18	23.78	-
2	22	9.86	23.43	24.54	25.3	-	-
2	25	9.86	26.43	27.65	28.46	-	-
2	30	9.86	31.43	32.81	-	-	-
3	8	9.48	9.93	10.31	10.66	10.98	11.28
3	10	11.35	11.93	12.39	12.8	13.17	13.5
3	16	16.83	17.93	18.62	19.18	19.66	20.09
3	20	19.09	21.93	22.76	23.4	23.94	24.42
3	25	19.09	26.93	27.92	28.65	29.27	29.8
3	30	19.09	31.93	33.07	33.89	34.56	-
3	35	19.09	36.93	38.21	39.11	-	-
4	10	11.57	12.07	12.49	12.87	13.21	13.53
4	16	17.16	18.07	18.7	19.23	19.7	20.11

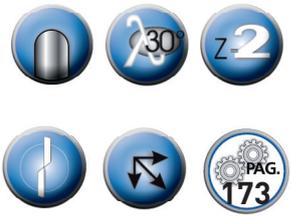
→3-4

# FRESE MICRO POWER SEMISFERICHE A 2 TAGLI IN MICROGRANA ULTRAFINE

MICRO POWER BALL NOSE END MILLS - 2 FLUTES - SUB-MICROGRAIN  
 MICRO POWER RADIUSFRÄSER - 2 NUTEN - HARTMETALLQUALITÄT: ULTRA-FEINSTKORN  
 FRAISES MICRO POWER HÉMISPHERIQUES À 2 DENTS - MICRO-GRAIN ULTRAFIN  
 FRESAS MICRO POWER ESFÉRICAS - 2 LABIOS - SUB-MICROGRANO

## SERIE CORTA NORMALE & LUNGA

SHORT /NORMAL/LONG SERIES  
 KURZE /NORMAL/LANGE AUSFÜHRUNG  
 SÉRIE COURTE /NORMALE/LONGUE  
 SERIE CORTA /NORMAL/LARGA



## 433RXT



Ø/R mm	d <sub>1</sub> mm	L mm	L <sub>1</sub> mm	L <sub>2</sub> mm	d mm	Z	433RXT €
4	3.85	65	3.2	20	6	2	57,80
4	3.85	70	3.2	25	6	2	57,80
4	3.85	80	3.2	30	6	2	57,80
4	3.85	80	3.2	35	6	2	57,80
4	3.85	90	3.2	40	6	2	57,80
4	3.85	90	3.2	45	6	2	57,80
4	3.85	100	3.2	50	6	2	57,80
5	4.85	70	4	20	6	2	57,80
5	4.85	70	4	25	6	2	57,80
5	4.85	80	4	30	6	2	57,80
5	4.85	80	4	35	6	2	57,80
6	5.85	80	4.8	30	8	2	80,40
6	5.85	120	4.8	50	8	2	93,20

→4-4

Ø/R mm	L <sub>2</sub> mm	β					
		0.5°	1°	1°30'	2°	2°30'	3°
LU							
4	20	20.76	22.07	22.84	23.45	23.98	-
4	25	22.59	27.07	27.99	28.7	-	-
4	30	22.59	32.07	33.14	-	-	-
4	35	22.59	37.07	38.28	-	-	-
4	40	22.59	42.07	-	-	-	-
4	45	22.59	47.07	-	-	-	-
4	50	22.59	52.07	-	-	-	-
5	20	21.12	22.2	-	-	-	-
5	25	25.53	27.2	-	-	-	-
5	30	26.09	-	-	-	-	-
5	35	26.09	-	-	-	-	-
6	30	29.59	32.32	33.28	-	-	-
6	50	29.59	52.32	-	-	-	-

→4-4



## SERIE NORMALE

NORMAL SERIES  
NORMAL AUSFÜHRUNG  
SÉRIE NORMALE  
SERIE NORMAL

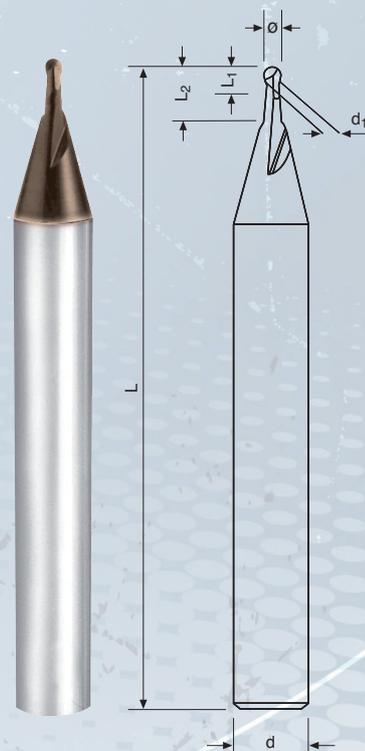
# FRESE MICRO POWER SEMISFERICHE A 2 TAGLI IN MICROGRANA ULTRAFINE

MICRO POWER BALL NOSE END MILLS - 2 FLUTES - SUB-MICROGRAIN  
MICRO POWER RADIUSFRÄSER - 2 NUTEN - HARTMETALLQUALITÄT: ULTRA-FEINSTKORN  
FRAISES MICRO POWER HÉMISPÉRIQUES À 2 DENTS - MICRO-GRAIN ULTRAFIN  
FRESAS MICRO POWER ESFÉRICAS - 2 LABIOS - SUB-MICROGRANO

## 413RXT



Ø mm	d <sub>1</sub> mm	L mm	L <sub>1</sub> mm	L <sub>2</sub> mm	d mm	Z	413RXT €
0.3	~ 0.1	50	0.3	0.6	6	2	51,40
0.4	~ 0.1	50	0.4	0.8	6	2	51,40
0.6	~ 0.1	50	0.6	1.2	6	2	51,40
0.8	~ 0.1	50	0.8	1.6	6	2	51,40
1	0.95	50	1	2.5	6	2	42,00
1.2	1.15	50	1.2	3	6	2	42,00
1.4	1.35	50	1.4	7	6	2	49,10
1.5	1.45	50	1.6	3.8	6	2	43,90
1.6	1.55	50	1.8	4	6	2	49,10
1.8	1.75	50	2	4.5	6	2	49,10
2	1.95	50	2.5	5	6	2	43,90
2.5	2.4	50	3	5	6	2	46,90
3	2.85	50	4	6	6	2	46,90
3.5	3.35	50	5	6	6	2	51,80
4	3.85	50	6	6	6	2	46,80
5	4.85	50	5	7.5	6	2	50,00
6	5.85	50	6	9	6	2	53,00



### Rivestimento X-Treme

X-Treme coating  
X-Treme-Beschichtung  
Revêtement X-Treme  
Recubrimiento X-Treme

### TOLLERANZA - TOLERANCE - TOLERANZ - TOLÉRANCE - TOLERANCIA

Diametri Diameters	Tolleranza del diametro Diameter tolerance	Tolleranza del gambo Shank tolerance
da 0.3 mm a 3 mm	+0.000 mm -0.025 mm	+0.000 mm -0.013 mm
da 3.5 mm a 6 mm	+0.000 mm -0.038 mm	+0.000 mm -0.013 mm

# PARAMETRI DI TAGLIO

CUTTING PARAMETERS  
SCHNITTDATEN  
PARAMÈTRES DE COUPE  
PARAMETROS DE CORTE



## FRESE MICRO POWER A CANDELA: 2/4 TAGLI

Micro power end mills, Micro power Fräser, Fraises micro power, Fresas power micro: 2/4 Flutes - Schneiden - Dents - Labios

**CAVA DAL PIENO:** Vc e Fz: - 20%  
Slotting: Vc e Fz: - 20%  
Bohrnuten: Vc e Fz: - 20%  
Rainurage: Vc e Fz: - 20%  
Ranura: Vc e Fz: - 20%

GRUPPO MATERIALI Material Groups Material-Beispiele Groupes de Matériaux Grupos de Materiales	ap		ae	ap	VC m/min	Fz [mm] AVANZAMENTO AL DENTE Tooth Feed - Zahnvorschub - Avancement au dent - Avance al labio												
	ap	ae				ap	0.5	1	1.5	2	2.5	3	3.5	4	5	6		
	<b>P</b> < 800 N/mm <sup>2</sup>	1xD	0,5xD	0,2	60 - 80	0,005 0,007	0,007 0,009	0,009 0,011	0,011 0,013	0,013 0,014	0,014 0,016	0,016 0,018	0,018 0,020	0,20 0,22	0,22 0,24	-	-	-
<b>P</b> < 1100 N/mm <sup>2</sup>	1xD	0,5xD	0,2	60-80	0,003 0,005	0,005 0,007	0,007 0,009	0,009 0,010	0,010 0,012	0,012 0,014	0,014 0,016	0,016 0,018	0,18 0,20	0,20 0,22	-	-	-	
<b>P</b> < 1300 N/mm <sup>2</sup>	1xD	0,5xD	0,2	50- 60	0,003 0,005	0,005 0,007	0,007 0,009	0,009 0,010	0,010 0,012	0,012 0,014	0,014 0,016	0,016 0,018	0,18 0,20	0,20 0,22	-	-	-	
<b>M</b> > 800 N/mm <sup>2</sup>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>K</b> GG	1xD	0,5xD	0,2	-	0,005 0,007	0,007 0,009	0,009 0,011	0,011 0,013	0,013 0,014	0,014 0,016	0,016 0,018	0,018 0,02	0,020 0,022	0,022 0,024	-	-	-	
<b>K</b> GGG	1xD	0,5xD	0,2	80 - 100	0,003 0,005	0,005 0,007	0,007 0,009	0,009 0,010	0,010 0,012	0,012 0,014	0,014 0,016	0,016 0,018	0,018 0,020	0,020 0,024	-	-	-	
<b>N</b> Alluminio	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>N</b> Non metalli	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>S</b> Titanio	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>S</b> Leghe speciali a base Ni	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>H</b> Temprati 38 / 48 HRC	0,5xd	0,2 X d	0,2	40 - 50	0,005 0,007	0,007 0,009	0,009 0,011	0,011 0,013	0,013 0,014	0,014 0,016	0,016 0,018	0,018 0,020	0,020 0,022	0,022 0,024	-	-	-	
<b>H</b> Temprati 48 / 58 HRC	0,5xd	0,2xd	0,2	30 - 50	0,003 0,005	0,005 0,007	0,007 0,009	0,009 0,010	0,010 0,012	0,012 0,014	0,014 0,016	0,016 0,018	0,018 0,020	0,020 0,022	-	-	-	
<b>H</b> Temprati 58 / 68 HRC	0,5xd	0,2xd	0,2	30 - 40	0,003 0,005	0,005 0,007	0,007 0,009	0,009 0,010	0,010 0,012	0,012 0,014	0,014 0,016	0,016 0,018	0,018 0,020	0,020 0,022	-	-	-	

# PARAMETRI DI TAGLIO



CUTTING PARAMETERS  
SCHNITTDATEN  
PARAMÈTRES DE COUPE  
PARAMETROS DE CORTE

## FRESE MICRO POWER SEMISFERICHE: 2/4 TAGLI

Micro power ball nose end mills, Micro power Radiusfräser, Fraises micro power HÉMISPHERIQUES, Fresas micro power esféricas: 2/4 Flutes - Schneiden - Dents - Labios

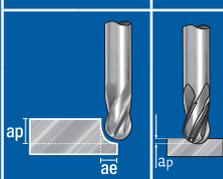
**CAVA DAL PIENO: Vc e Fz: - 20%**

Slotting: Vc e Fz: - 20%

Bohrnuten: Vc e Fz: - 20%

Rainurage: Vc e Fz: - 20%

Ranura: Vc e Fz: - 20%

GRUPPO MATERIALI Material Groups Material-Beispiele Groupes de Matériaux Grupos de Materiales				VC m/min	 <b>Fz [mm]</b> <b>AVANZAMENTO AL DENTE</b> Tooth Feed - Zahnvorschub - Avancement au dent - Avance al labio													
	ap	ae	ap		0.5	1	1.5	2	2.5	3	3.5	4	5	6				
	<b>P</b> < 800 N/mm <sup>2</sup>	0,03xd	0,2xd		0,2xd	50 - 60	0,005 0,007	0,007 0,009	0,009 0,011	0,011 0,013	0,013 0,014	0,014 0,016	0,016 0,018	0,018 0,020	0,20 0,22	0,22 0,24	-	-
<b>P</b> < 1100 N/mm <sup>2</sup>	0,03xd	0,2xd	0,2xd	50 - 60	0,003 0,005	0,005 0,007	0,007 0,009	0,009 0,010	0,010 0,012	0,012 0,014	0,014 0,016	0,016 0,018	0,18 0,20	0,20 0,22	-	-	-	
<b>P</b> < 1300 N/mm <sup>2</sup>	0,03xd	0,2xd	0,2xd	40 - 60	0,003 0,005	0,005 0,007	0,007 0,009	0,009 0,010	0,010 0,012	0,012 0,014	0,014 0,016	0,016 0,018	0,18 0,20	0,20 0,22	-	-	-	
<b>M</b> > 800 N/mm <sup>2</sup>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>K</b> GG	0,03xd	0,2xd	0,2xd	50 - 60	0,005 0,007	0,007 0,009	0,009 0,011	0,011 0,013	0,013 0,014	0,014 0,016	0,016 0,018	0,018 0,02	0,020 0,022	0,022 0,024	-	-	-	
<b>K</b> GGG	0,03xd	0,2xd	0,2xd	40 - 60	0,003 0,005	0,005 0,007	0,007 0,009	0,009 0,01	0,01 0,012	0,012 0,014	0,014 0,016	0,016 0,018	0,018 0,020	0,020 0,022	-	-	-	
<b>N</b> Alluminio	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>N</b> Non metalli	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>S</b> Titanio	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>S</b> Leghe speciali a base Ni	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>H</b> Temprati 38 / 48 HRC	0,03xd	0,2 X d	0,2xd	40 - 50	0,005 0,007	0,007 0,009	0,009 0,011	0,011 0,013	0,013 0,014	0,014 0,016	0,016 0,018	0,018 0,020	0,020 0,022	0,022 0,024	-	-	-	
<b>H</b> Temprati 48 / 58 HRC	0,03xd	0,2xd	0,2xd	30 - 50	0,003 0,005	0,005 0,007	0,007 0,009	0,009 0,01	0,01 0,012	0,012 0,014	0,014 0,016	0,016 0,018	0,018 0,020	0,020 0,022	-	-	-	
<b>H</b> Temprati 58 / 68 HRC	0,02xd	0,2xd	0,2xd	30 - 40	0,003 0,005	0,005 0,007	0,007 0,009	0,009 0,01	0,01 0,012	0,012 0,014	0,014 0,016	0,016 0,018	0,018 0,020	0,020 0,022	-	-	-	



Tajicodb

# FRESE POWER GRAPHITE

 POWER GRAPHITE END MILLS

 POWER GRAPHIT FRÄSER

 FRAISES POWER GRAPHITE

 FRESAS POWER GRAFITO











# FRESE POWER GRAPHITE TORICHE A 2 TAGLI IN MICROGRANA ULTRAFINE

POWER GRAPHITE TORIC END MILLS - 2 FLUTES - SUB-MICROGRAIN  
 POWER GRAPHIT TORUSFRÄSER - 2 NUTEN - HARTMETALLQUALITÄT: ULTRA-FEINSTKORN  
 FRAISES POWER GRAPHITE TORIQUES À 2 DENTS - MICRO-GRAIN ULTRAFIN  
 FRESAS POWER GRAFITO TÓRICAS - 2 LABIOS - SUB-MICROGRANO

## SERIE NORMALE LUNGA & EXTRA L.

NORMAL/LONG/EXTRALONG SERIES  
 NORMAL/LANGE/EXTRALANGE AUSFÜHRUNG  
 SÉRIE NORMALE/LONGUE/EXTRALONGUE  
 SERIE NORMAL/LARGA/EXTRALARGA



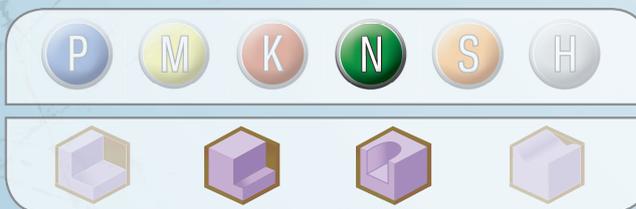
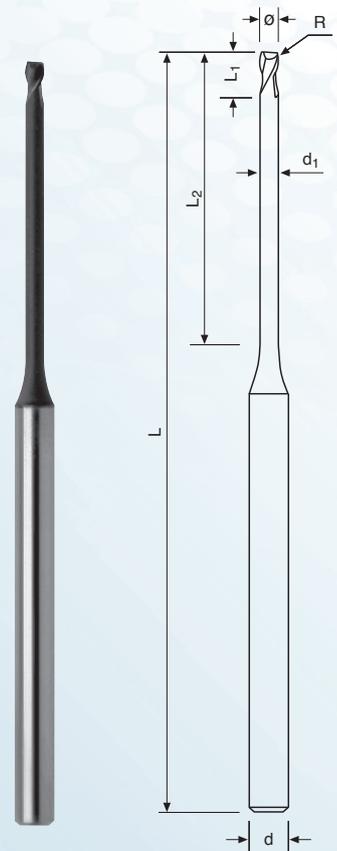
### 1437D

**NEW** Ø



Ø/R mm	d <sub>1</sub> mm	L mm	L <sub>1</sub> mm	L <sub>2</sub> mm	d mm	Z	1437D €
0.2/0.05	0.18	55	0.3	0.5	4	2	101,00
0.2/0.05	0.18	55	0.3	1	4	2	101,00
0.2/0.05	0.18	55	0.3	1.5	4	2	101,00
0.3/0.05	0.28	55	0.45	1	4	2	101,00
0.3/0.05	0.28	55	0.45	2	4	2	101,00
0.3/0.05	0.28	55	0.45	2	4	2	101,00
0.4/0.1	0.37	55	0.6	2	4	2	101,00
0.4/0.1	0.37	55	0.6	3	4	2	101,00
0.4/0.1	0.37	55	0.6	4	4	2	101,00
0.5/0.1	0.47	55	0.7	3	4	2	101,00
0.5/0.1	0.47	55	0.7	5	4	2	101,00
0.5/0.1	0.47	55	0.7	8	4	2	101,00
0.6/0.1	0.57	55	0.9	3	4	2	101,00
0.6/0.1	0.57	55	0.9	5	4	2	101,00
0.6/0.1	0.57	55	0.9	8	4	2	101,00
0.8/0.2	0.76	55	1.1	4	4	2	101,00
0.8/0.2	0.76	55	1.1	6	4	2	101,00
0.8/0.2	0.76	55	1.1	8	4	2	101,00
0.8/0.2	0.76	55	1.1	10	4	2	101,00
1/0.1	0.95	55	1.5	18	4	2	101,00
1/0.2	0.95	55	1.5	6	4	2	101,00
1/0.2	0.95	55	1.5	10	4	2	101,00
1/0.2	0.95	55	1.5	14	4	2	101,00
1/0.2	0.95	55	1.5	18	4	2	101,00
1/0.2	0.95	60	1.5	24	4	2	101,00
1.2/0.2	1.15	55	1.6	6	4	2	101,00

→1-3



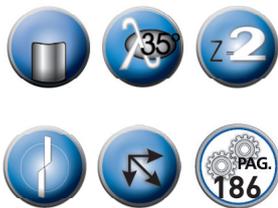
#### Rivestimento Diamond

Diamond coating  
 Beschichtung Diamond  
 Revêtement Diamond  
 Recubrimiento Diamante



#### TOLLERANZA - TOLERANCE - TOLERANZ - TOLÉRANCE - TOLERANCIA

Diametri Diameters	Tolleranza del diametro Diameter tolerance	Tolleranza del gambo Shank tolerance
da 0.2 mm a 6.0 mm	+0.000 mm -0.01 mm	h6



## SERIE NORMALE LUNGA & EXTRA L.

NORMAL/LONG/EXTRALONG SERIES  
NORMAL/LANGE/EXTRALANGE AUSFÜHRUNG  
SÉRIE NORMALE/LONGUE/EXTRALONGUE  
SERIE NORMAL/LARGA/EXTRALARGA

# FRESE POWER GRAPHITE TORICHE A 2 TAGLI IN MICROGRANA ULTRAFINE

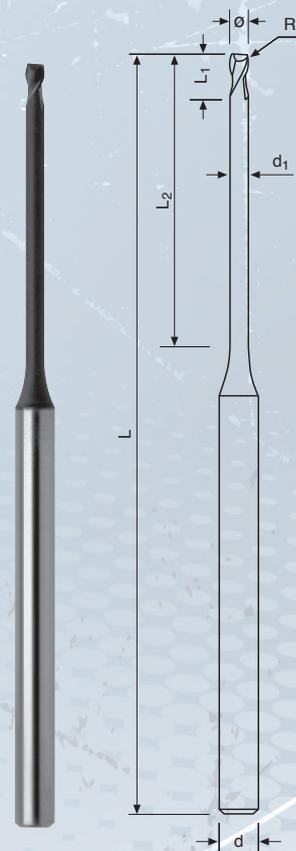
POWER GRAPHITE TORIC END MILLS - 2 FLUTES - SUB-MICROGRAIN  
POWER GRAPHIT TORUSFRÄSER - 2 NUTEN - HARTMETALLQUALITÄT: ULTRA-FEINSTKORN  
FRAISES POWER GRAPHITE TORIQUES À 2 DENTS - MICRO-GRAIN ULTRAFIN  
FRESAS POWER GRAFITO TÓRICAS - 2 LABIOS - SUB-MICROGRANO

## 1437D

**NEW** Ø



Ø/R mm	d <sub>1</sub> mm	L mm	L <sub>1</sub> mm	L <sub>2</sub> mm	d mm	Z	1437D €
1.2/0.2	1.15	55	1.6	10	4	2	101,00
1.2/0.2	1.15	55	1.6	14	4	2	101,00
1.2/0.2	1.15	55	1.6	18	4	2	101,00
1.2/0.2	1.15	60	1.6	24	4	2	101,00
1.2/0.2	1.44	55	2	6	4	2	101,00
1.5/0.2	1.44	55	2	10	4	2	101,00
1.5/0.2	1.44	55	2	14	4	2	101,00
1.5/0.2	1.44	55	2	18	4	2	101,00
1.5/0.2	1.44	60	2	24	4	2	101,00
2/0.2	1.92	65	2.5	6	4	2	101,00
2/0.2	1.92	65	2.5	10	4	2	101,00
2/0.2	1.92	65	2.5	14	4	2	101,00
2/0.2	1.92	65	2.5	18	4	2	101,00
2/0.2	1.92	75	2.5	24	4	2	101,00
2/0.2	1.92	75	2.5	30	4	2	101,00
2/0.5	1.92	65	2.5	6	4	2	101,00
2/0.5	1.92	65	2.5	10	4	2	101,00
2/0.5	1.92	65	2.5	14	4	2	101,00
2/0.5	1.92	65	2.5	18	4	2	101,00
2/0.5	1.92	75	2.5	24	4	2	101,00
2/0.5	1.92	75	2.5	30	4	2	101,00
2.5/0.25	2.4	65	3.5	10	4	2	101,00
2.5/0.25	2.4	65	3.5	20	4	2	101,00
2.5/0.25	2.4	75	3.5	30	4	2	101,00
3/0.2	2.9	65	5	6	4	2	101,00
3/0.2	2.9	65	5	10	4	2	101,00
3/0.2	2.9	65	5	14	4	2	101,00
3/0.2	2.9	65	5	18	4	2	101,00
3/0.2	2.9	75	5	24	4	2	101,00
3/0.2	2.9	75	5	30	4	2	101,00
3.0/0.5	2.9	65	5	6	4	2	101,00
3.0/0.5	2.9	65	5	10	4	2	101,00
3.0/0.5	2.9	65	5	14	4	2	101,00
3.0/0.5	2.9	65	5	18	4	2	101,00
3.0/0.5	2.9	75	5	24	4	2	101,00
3.0/0.5	2.9	75	5	30	4	2	101,00
4/0.5	3.9	65	6	10	4	2	108,50



→2-3





**Angelo Ghezzi & C SpA**

ACQUISTI ON-LINE

Home | Azienda | Ufficio vendite | Assistenza tecnica | Info

CERCA (brand/codice articolo)

### CATALOGO PRODOTTI

Angelo Ghezzi Spa propone la **più ampia gamma di utensili di precisione** selezionati tra i principali produttori mondiali.

**ILIX PRECISION**

**ILIX Precision** è una gamma storica di utensili evoluti per lavorazioni meccaniche di alta precisione. Il programma ILIX comprende un ventaglio di soluzioni per attività di foratura, maschiatura alesatura e svasatura in HSS, HSS-Co, HSS-Co-PM.

**JBO**

**SALES LEADER**  
Angelo Ghezzi & C SpA

Maggiori dettagli

### AREA RISERVATA

Riservato ai Sales Leader ed ai clienti registrati.

Login  Password

[Ho dimenticato la password](#)

**DOWNLOAD**  
Scarica le nostre brochure in formato PDF.

**GUIDA ALL'ACQUISTO ONLINE**  
Termini di utilizzo del sito internet.

© Copyright Angelo Ghezzi & C S.p.a. 2007 - 2013 - P.IVA: 00688370964 | Home | Azienda | Ufficio vendite | Assistenza tecnica | Info | Credits

angeloghezzi.it

# FRESE POWER GRAPHITE SEMISFERICHE A 2 TAGLI IN MICROGRANA ULTRAFINE

POWER GRAPHITE BALL NOSE END MILLS - 2 FLUTES - SUB-MICROGRAIN  
 POWER GRAPHIT RADIUSFRÄSER - 2 NUTEN - HARTMETALLQUALITÄT: ULTRA-FEINSTKORN  
 FRAISES POWER GRAPHITE HÉMISPHERIQUES À 2 DENTS - MICRO-GRAIN ULTRAFIN  
 FRESAS POWER GRAFITO ESFÉRICA 2 LABIOS - SUB-MICROGRANO

## SERIE NORMALE LUNGA & EXTRA L.

NORMAL/LONG/EXTRALONG SERIES  
 NORMAL/LANGE/EXTRALANGE AUSFÜHRUNG  
 SÉRIE NORMALE/LONGUE/EXTRALONGUE  
 SERIE NORMAL/LARGA/EXTRALARGA

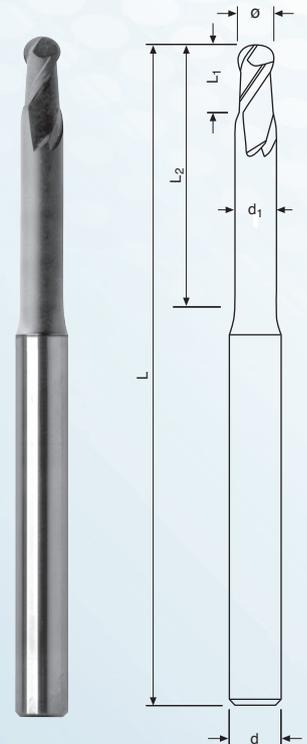


## 1434RD



Ø mm	d <sub>1</sub> mm	L mm	L <sub>1</sub> mm	L <sub>2</sub> mm	d mm	Z	1434RD €
0.2	0.18	55	0.3	0.5	4	2	121,50
0.2	0.18	55	0.3	1	4	2	121,50
0.2	0.18	55	0.3	1.5	4	2	121,50
0.3	0.28	55	0.45	1	4	2	121,50
0.3	0.28	55	0.45	2	4	2	121,50
0.3	0.28	55	0.45	3	4	2	121,50
0.4	0.37	55	0.6	2	4	2	121,50
0.4	0.37	55	0.6	3	4	2	121,50
0.4	0.37	55	0.6	4	4	2	121,50
0.5	0.47	55	0.7	3	4	2	121,50
0.5	0.47	55	0.7	5	4	2	121,50
0.5	0.47	55	0.7	8	4	2	121,50
0.6	0.57	55	0.9	3	4	2	121,50
0.6	0.57	55	0.9	5	4	2	121,50
0.6	0.57	55	0.9	8	4	2	121,50
0.8	0.76	55	1.1	4	4	2	121,50
0.8	0.76	55	1.1	6	4	2	121,50
0.8	0.76	55	1.1	8	4	2	121,50
0.8	0.76	55	1.1	10	4	2	121,50
1	0.95	55	1.5	6	4	2	121,50
1	0.95	55	1.5	10	4	2	121,50
1	0.95	55	1.5	14	4	2	121,50
1	0.95	55	1.5	18	4	2	121,50
1	0.95	60	1.5	24	4	2	121,50
1.2	1.15	55	1.6	6	4	2	121,50
1.2	1.15	55	1.6	10	4	2	121,50

→1-2



### Rivestimento Diamond

Diamond coating  
 Beschichtung Diamond  
 Revêtement Diamond  
 Recubrimiento Diamante



### TOLLERANZA - TOLERANCE - TOLERANZ - TOLÉRANCE - TOLERANCIA

Diametri Diameters	Tolleranza del diametro Diameter tolerance	Tolleranza del gambo Shank tolerance
da 0.2 mm a 6.0 mm	+0.000 mm -0.010 mm	h6



## SERIE NORMALE LUNGA & EXTRA L.

NORMAL/LONG/EXTRALONG SERIES  
NORMAL/LANGE/EXTRALANGE AUSFÜHRUNG  
SÉRIE NORMALE/LONGUE/EXTRALONGUE  
SERIE NORMAL/LARGA/EXTRALARGA

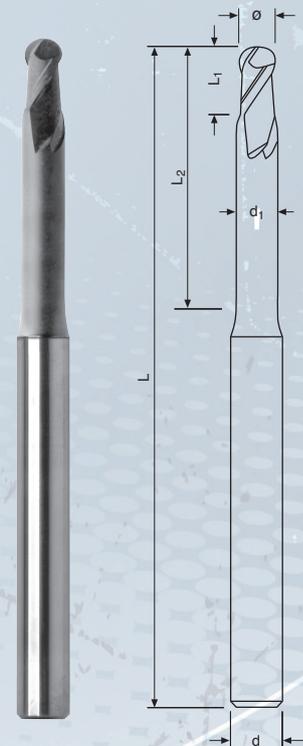
# FRESE POWER GRAPHITE SEMISFERICHE A 2 TAGLI IN MICROGRANA ULTRAFINE

POWER GRAPHITE BALL NOSE END MILLS - 2 FLUTES - SUB-MICROGRAIN  
POWER GRAPHIT RADIUSFRÄSER - 2 NUTEN - HARTMETALLQUALITÄT: ULTRA-FEINSTKORN  
FRAISES POWER GRAPHITE HÉMISPHERIQUES À 2 DENTS - MICRO-GRAIN ULTRAFIN  
FRESAS POWER GRAFITO ESFÉRICA 2 LABIOS - SUB-MICROGRANO

## 1434RD



Ø mm	d <sub>1</sub> mm	L mm	L <sub>1</sub> mm	L <sub>2</sub> mm	d mm	Z	1434RD €
1.2	1.15	55	1.6	14	4	2	121,50
1.2	1.15	55	1.6	18	4	2	121,50
1.2	1.15	60	1.6	24	4	2	121,50
1.5	1.44	55	2	6	4	2	121,50
1.5	1.44	55	2	10	4	2	121,50
1.5	1.44	55	2	14	4	2	121,50
1.5	1.44	55	2	18	4	2	121,50
1.5	1.44	60	2	24	4	2	121,50
2	1.92	65	2.5	6	4	2	121,50
2	1.92	65	2.5	10	4	2	121,50
2	1.92	65	2.5	14	4	2	121,50
2	1.92	65	2.5	18	4	2	121,50
2	1.92	75	2.5	24	4	2	121,50
2	1.92	75	2.5	30	4	2	121,50
2.5	2.4	65	3.5	10	4	2	121,50
2.5	2.4	65	3.5	20	4	2	121,50
2.5	2.4	75	3.5	30	4	2	121,50
3	2.9	65	5	6	4	2	121,50
3	2.9	65	5	10	4	2	121,50
3	2.9	65	5	14	4	2	121,50
3	2.9	65	5	18	4	2	121,50
3	2.9	75	5	24	4	2	121,50
3	2.9	75	5	30	4	2	121,50
4	3.9	65	6	10	6	2	130,50
4	3.9	65	6	14	6	2	130,50
4	3.9	65	6	18	6	2	130,50
4	3.9	75	6	24	6	2	130,50
4	3.9	75	6	30	6	2	130,50
5	4.9	65	7.5	10	6	2	143,00
5	4.9	65	7.5	20	6	2	143,00
5	4.9	75	7.5	30	6	2	143,00
5	4.9	90	7.5	40	6	2	143,00
6	5.9	65	10	10	6	2	148,00
6	5.9	65	10	20	6	2	148,00
6	5.9	75	10	30	6	2	148,00
6	5.9	90	10	40	6	2	148,00
6	5.9	90	10	50	6	2	148,00



→2-2

# PARAMETRI DI TAGLIO

CUTTING PARAMETERS  
 SCHNITTDATEN  
 PARAMÈTRES DE COUPE  
 PARAMETROS DE CORTE



## FRESE POWER GRAPHITE: 2/4 TAGLI

Power graphite end mills - Power graphit fräser - Fraises power graphite - Fresas power grafito:  
 2/4 Flutes - Schneiden - Dents - Labios

**CAVA DAL PIENO:** Vc e Fz: - 20%  
 Slotting: Vc e Fz: - 20%  
 Bohrnuten: Vc e Fz: - 20%  
 Rainurage: Vc e Fz: - 20%  
 Ranura: Vc e Fz: - 20%

GRUPPO MATERIALI Material Groups Material-Beispiele Groupes de Matériaux Grupos de Materiales	ap		ae	VC m/min	Fz [mm] AVANZAMENTO AL DENTE Tooth Feed - Zahnvorschub - Avancement au dent - Avance al labio													
	ap	ae	ap		1	2	3	4	6	8	10	12						
	<b>P</b> < 800 N/mm <sup>2</sup>	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>P</b> < 1100 N/mm <sup>2</sup>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
<b>P</b> < 1300 N/mm <sup>2</sup>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
<b>M</b> > 800 N/mm <sup>2</sup>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
<b>K</b> GG	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
<b>K</b> GGG	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
<b>N</b> Si >12%	1,2xØ	0,5 X Ø	1 X Ø	400-750	0,010	0,013	0,015	0,020	0,029	0,039	0,049	0,059	-	-	-	-		
<b>N</b> Si >14%	1,2xØ	0,5 X Ø	1 X Ø	750-1200	0,015	0,018	0,021	0,028	0,042	0,056	0,070	0,084	-	-	-	-		
<b>S</b> Titanio	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
<b>S</b> Leghe speciali a base Ni	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
<b>H</b> Temprati 38 / 48 HRC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
<b>H</b> Temprati 48 / 58 HRC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
<b>H</b> Temprati 58 / 68 HRC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		



### **SERVIZIO TECNICO**

Technical Help  
Technische Hilfe  
Service technique  
Ayuda técnica

## **PER ULTERIORI INFORMAZIONI CONTATTATECI**

For more information please contact us  
Für weitere Informationen bitten wir um Kontaktaufnahme  
Pour tout renseignement contactez-nous  
Para más informaciones llámenos



# Tajicodb

# FRESE POWER BRASATE in PCD



PCD BRAZED POWER END MILLS



PKD BESTÜCKTE POWER FRÄSER



FRAISES POWER PCD BRASÉES



FRESAS POWER DE PCD SOLDADO





# FRESE POWER PCD

A 2 TAGLI

POWER PCD END MILLS - 2 FLUTES  
 POWER PCD FRÄSER - 2 NUTEN  
 FRAISES POWER PKD - 2 DENTS  
 FRESAS POWER PCD - 2 LABIOS

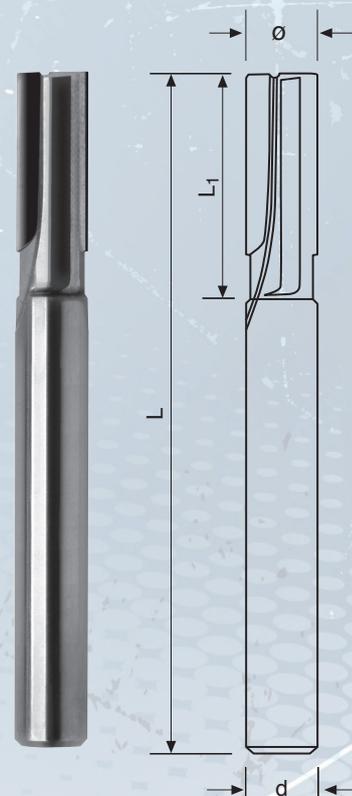


**CON RIPORTO IN  
 POLICRISTALLINO**  
 SOLID CARBIDE WITH POLYCRYSTALLINE DIAMOND  
 VOLLHARTMETALL PKD  
 AVEC RECHARGEMENT EN POLYCRISTALLIN  
 METAL DURO PCD

## 1602DT



Ø mm	L mm	L <sub>1</sub> mm	d mm	Z	1602DT €
6	54	7	6	2	424,00
6	54	15	6	2	584,00
6	54	20	6	2	684,00
8	58	7	8	2	440,00
8	58	15	8	2	601,00
8	58	20	8	2	708,00
10	66	7	10	2	481,00
10	66	15	10	2	652,00
10	66	20	10	2	765,00
12	73	7	12	2	506,00
12	73	15	12	2	673,00
12	73	20	12	2	796,00
14	75	15	14	2	730,00
14	75	20	14	2	864,00
16	82	15	16	2	757,00
16	82	20	16	2	897,00
18	88	15	18	2	818,00
18	88	20	18	2	956,00
20	92	15	20	2	845,00
20	92	20	20	2	995,00



**CORPO IN MICROGRANA ULTRAFINE**  
 SUB-MICROGRAIN BODY  
 ULTRA FEINSTKORN KÖRPER  
 CORPS EN MICRO-GRAIN ULTRAFIN  
 CUERPO DE SUB-MICROGRANO

**TOLLERANZA - TOLERANCE - TOLERANZ - TOLÉRANCE - TOLERANCIA**

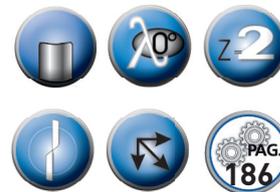
Diametri Diameters	Tolleranza del diametro Diameter tolerance	Tolleranza del gambo Shank tolerance
da 4 mm a 20 mm	h10	h6

# FRESE POWER PCD TORICHE A 2 TAGLI

POWER TORIC PCD END MILLS 2 FLUTES  
POWER PCD TORUSFRÄSER - 2 NUTEN  
FRAISES POWER PDK TORIQUES À 2 DENTS  
FRESAS POWER TÓRICAS PCD - 2 LABIOS

CON RIPORTO IN  
POLICRISTALLINO

SOLID CARBIDE WITH POLYCRYSTALLINE DIAMOND  
AVEC RECHARGEMENT EN POLYCRISTALLIN  
VOLLHARTMETALL PCD  
METAL DURO PCD

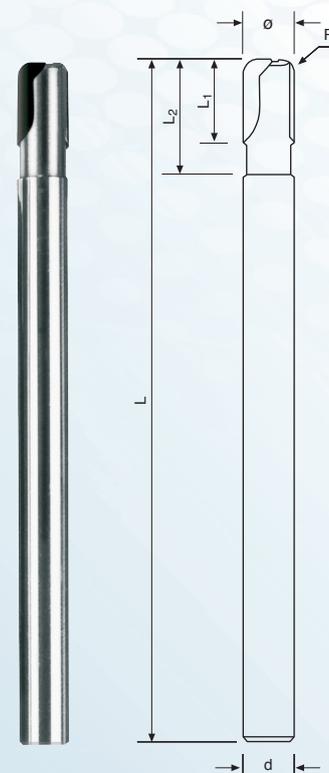


## 602RDT



Ø / R mm	L mm	L <sub>1</sub> mm	L <sub>2</sub> mm	d mm	Z	602RDT €
4/0.3	75	2.5	12	6	2	431,00
4/0.3	75	2.5	20	6	2	431,00
4/0.3	75	2.5	28	6	2	431,00
4/0.3	75	2.5	35	6	2	431,00
4/0.5	75	2.5	20	6	2	431,00
5/0.3	75	3	15	6	2	431,00
5/0.3	75	3	25	6	2	431,00
5/0.3	75	3	35	6	2	431,00
5/0.5	75	3	25	6	2	431,00
6/0.5	100	6	18	6	2	431,00
6/0.5	100	6	30	6	2	431,00
6/0.5	100	6	42	6	2	431,00
6/1	100	6	18	6	2	431,00
8/0.5	100	7	24	8	2	481,00
8/0.5	100	7	40	8	2	481,00
8/1	100	7	24	8	2	481,00
8/1	100	7	40	8	2	481,00
8/2	100	7	40	8	2	481,00
10/0.5	100	8	30	10	2	541,00
10/0.5	100	8	50	10	2	541,00
10/1	100	8	30	10	2	541,00
10/1	100	8	50	10	2	541,00
10/1.5	100	8	30	10	2	541,00
10/1.5	100	8	50	10	2	541,00
10/2	100	8	30	10	2	541,00

→1-2



**CORPO IN MICROGRANA ULTRAFINE**  
SUB-MICROGRAIN BODY  
ULTRA FEINSTKORN KÖRPER  
CORPS EN MICRO-GRAIN ULTRAFIN  
CUERPO DE SUB-MICROGRANO

**TOLLERANZA - TOLERANCE - TOLERANZ - TOLÉRANCE - TOLERANCIA**

Diametri Diameters	Tolleranza del diametro Diameter tolerance	Tolleranza del gambo Shank tolerance
da 4 mm a 20 mm	f8	h6

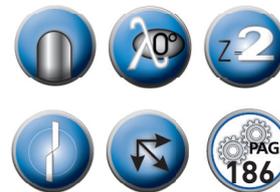


# FRESE POWER PCD SEMISFERICHE A 2 TAGLI

POWER BALL NOSE PCD END MILLS - 2 FLUTES  
 POWER PKD RADIUSFRÄSER - 2 NUTEN  
 FRAISES POWER PCD HÉMISPÉRIQUES À 2 DENTS  
 FRESAS POWER ESFÉRICAS PCD - 2 LABIOS

CON RIPORTO IN  
 POLICRISTALLINO

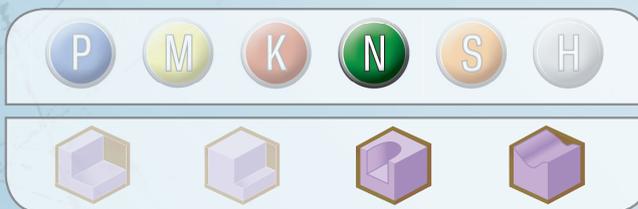
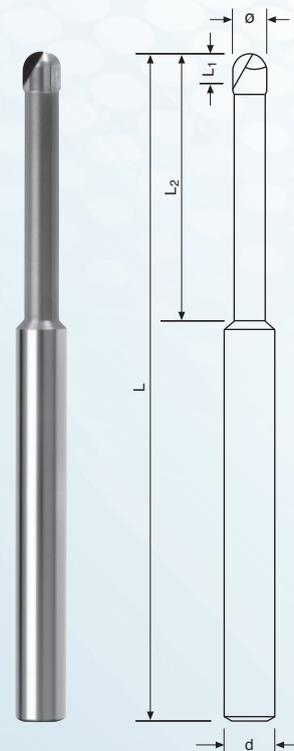
SOLID CARBIDE WITH POLYCRYSTALLINE DIAMOND  
 AVEC RECHARGEMENT EN POLYCRISTALLIN  
 VOLLHARTMETALL PCD  
 METAL DURO PCD



## 603RDT



Ø mm	L mm	L <sub>1</sub> mm	L <sub>2</sub> mm	d mm	Z	603RDT €
4	75	2.5	12	6	2	431,00
4	75	2.5	20	6	2	431,00
4	75	2.5	28	6	2	431,00
4	75	2.5	35	6	2	431,00
5	75	3	15	6	2	431,00
5	75	3	25	6	2	431,00
5	75	3	35	6	2	431,00
6	100	6	18	6	2	431,00
6	100	6	30	6	2	431,00
6	100	6	42	6	2	431,00
8	100	7	24	8	2	481,00
8	100	7	40	8	2	481,00
10	100	8	30	10	2	541,00
10	100	8	50	10	2	541,00
12	105	9	36	12	2	607,00
12	105	9	60	12	2	607,00
16	130	11	50	16	2	744,00
20	160	13	60	20	2	923,00



**CORPO IN MICROGRANA ULTRAFINE**  
 SUB-MICROGRAIN BODY  
 ULTRA FEINSTKORN KÖRPER  
 CORPS EN MICRO-GRAIN ULTRAFIN  
 CUERPO DE SUB-MICROGRANO

**TOLLERANZA - TOLERANCE - TOLERANZ - TOLÉRANCE - TOLERANCIA**

Diametri Diameters	Tolleranza del diametro Diameter tolerance	Tolleranza del gambo Shank tolerance
da 4 mm a 20 mm	f8	h6

# PARAMETRI DI TAGLIO



CUTTING PARAMETERS  
SCHNITTDATEN  
PARAMÈTRES DE COUPE  
PARAMETROS DE CORTE

## FRESE POWER PKD: 1/2 TAGLI

Pcd brazed power end mills - Pkd bestückte power fräser - Fraises power pcd brasées - Fresas power de pcd soldado: 1/2 Flutes - Schneiden - Dents - Labios

**CAVA DAL PIENO: Vc e Fz: - 20%**

Slotting: Vc e Fz: - 20%  
Bohrnuten: Vc e Fz: - 20%  
Rainurage: Vc e Fz: - 20%  
Ranura: Vc e Fz: - 20%

GRUPPO MATERIALI Material Groups Material-Beispiele Groupes de Matériaux Grupos de Materiales			VC m/min															
	ap	ae		ap	Fz [mm] AVANZAMENTO AL DENTE Tooth Feed - Zahnvorschub - Avancement au dent - Avance al labio													
					3	4	6	8	10	12	16	20						
<b>P</b> < 800 N/mm <sup>2</sup>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>P</b> < 1100 N/mm <sup>2</sup>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>P</b> < 1300 N/mm <sup>2</sup>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>M</b> > 800 N/mm <sup>2</sup>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>K</b> GG	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>K</b> GGG	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>N</b> Si >12%	1xØ	0,5 X Ø	0,7 X Ø	500-3000	0,055	0,075	0,095	0,100	0,130	0,150	0,180	0,200	-	-	-	-	-	-
<b>N</b> Si >14%	1xØ	0,5 X Ø	0,7 X Ø	400-800	0,055	0,075	0,095	0,100	0,130	0,150	0,180	0,200	-	-	-	-	-	-
<b>S</b> Titanio	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>S</b> Leghe speciali a base NI	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>H</b> Temprati 38 / 48 HRC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>H</b> Temprati 48 / 58 HRC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>H</b> Temprati 58 / 68 HRC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Tajicodb

# PUNTE ELICOIDALI TIPO N in metallo duro integrale



SOLID CARBIDE TWIST DRILLS - TYPE N



HARTMETALL SPIRALBOHRER - TYP N



FORETS HÉLICOÏDAUX EN CARBURE MONOBLOC - TYPE N



BROCAS HELICOIDALES DE METAL DURO INTEGRAL - TIPOLOGIA N



# PUNTE ELICOIDALI

## IN METALLO DURO INTEGRALE

SOLID CARBIDE TWIST DRILLS  
VHM SPIRALBOHRER  
FORETS HÉLICOÏDAUX EN CARBURE MONOBLOC  
BROCAS HELICOIDALES DE METAL DURO INTEGRAL

### DIN 6539

SIMILARE A 1897 - SERIE EXTRA CORTA

DIN 6539 - SIMILAR TO DIN 1897 - EXTRA SHORT SERIES  
DIN 6539 - ÄHNLICH DIN 1897 - EXTRA KURZE AUSFÜHRUNG  
DIN 6539 - SIMILAIRE DIN 1897 - SÉRIE EXTRA COURTE  
DIN 6539 - SIMILAR A DIN 1897 - SERIE EXTRA CORTA

## 1100 - 1100TN - 1100TF



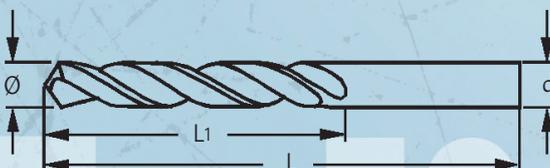
Ø mm h7	L mm	L <sub>1</sub> mm	d mm h6	1100 €	1100TN €	1100TF €
0.5	20	3	0.5	4,91	8,33*	9,68*
0.6	21	3.5	0.6	4,91	8,33*	9,68*
0.7	23	4.5	0.7	4,91	8,33*	9,68*
0.8	24	5	0.8	4,91	8,33*	9,68*
0.9	25	5.5	0.9	4,91	8,33*	9,68*
1.0	26	6	1.0	4,91	8,33*	9,68*
1.1	28	7	1.1	4,91	8,33*	9,68*
1.2	30	8	1.2	4,91	8,33*	9,68*
1.3	30	8	1.3	4,91	8,33*	9,68*
1.4	32	9	1.4	4,91	8,33*	9,68*
1.5	32	9	1.5	4,91	8,33*	9,68*
1.6	34	10	1.6	4,91	8,33*	9,68*
1.7	34	10	1.7	4,91	8,33*	9,68*
1.8	36	11	1.8	4,91	8,33*	9,68*
1.9	36	11	1.9	4,91	8,33*	9,68*
2.0	38	12	2.0	4,91	7,31*	8,29*
2.1	38	12	2.1	5,44	7,85*	8,80*
2.2	40	13	2.2	5,44	7,85*	8,80*
2.3	40	13	2.3	5,44	7,85*	8,80*
2.4	43	14	2.4	5,44	7,85*	8,80*
2.5	43	14	2.5	5,44	7,85*	8,80*
2.6	43	14	2.6	5,44	7,85*	8,80*
2.7	46	16	2.7	7,25	9,68*	10,67*
2.8	46	16	2.8	7,25	9,68*	10,67*
2.9	46	16	2.9	7,25	9,68*	10,67*
3.0	46	16	3.0	7,25	9,68*	10,67*
3.1	49	18	3.1	8,29	10,74*	11,70*

Ø mm h7	L mm	L <sub>1</sub> mm	d mm h6	1100 €	1100TN €	1100TF €
3.2	49	18	3.2	8,29	10,74*	11,70*
3.3	49	18*	3.3	8,29	11,46*	12,69*
3.4	52	20	3.4	8,89	12,01*	13,28*
3.5	52	20	3.5	8,89	12,01*	13,28*
3.6	52	20	3.6	9,80	12,97*	14,20*
3.7	52	20	3.7	9,80	12,97*	14,20*
3.8	55	22	3.8	10,60	13,72*	14,99*
3.9	55	22	3.9	10,60	13,72*	14,99*
4.0	55	22	4.0	10,64	13,76*	14,99*
4.1	55	22	4.1	11,18	14,48*	15,80*
4.2	55	22	4.2	11,18	14,48*	15,80*
4.3	58	24	4.3	11,84	15,15*	16,50*
4.4	58	24	4.4	11,84	15,15*	16,50*
4.5	58	24	4.5	11,84	15,15*	16,50*
4.6	58	24	4.6	11,84	15,15*	16,50*
4.7	58	24	4.7	12,76	16,05*	17,40*
4.8	62	26	4.8	12,76	16,05*	17,40*
4.9	62	26	4.9	12,76	16,05*	17,40*
5.0	62	26	5.0	12,76	16,05*	17,40*
5.1	62	26	5.1	12,76	16,05*	17,40*
5.2	62	26	5.2	16,65	19,90*	21,25*
5.3	62	26	5.3	16,65	19,90*	21,25*
5.4	66	28	5.4	16,65	19,90*	21,25*
5.5	66	28	5.5	16,65	19,90*	21,25*
5.6	66	28	5.6	17,70	21,00*	22,30*
5.7	66	28	5.7	17,70	21,00*	22,30*
5.8	66	28	5.8	17,70	21,00*	22,30*

\* A richiesta - On Request - Auf Anfrage - Sur Demande - A Pedido

→1-4

→2-4



## DIN 6539

SIMILARE A 1897 - SERIE EXTRA CORTA  
 DIN 6539 - SIMILAR TO DIN 1897 - EXTRA SHORT SERIES  
 DIN 6539 - ÄHNLICH DIN 1897 - EXTRA KURZE AUSFÜHRUNG  
 DIN 6539 - SIMILAIRE DIN 1897 - SÉRIE EXTRA COURTE  
 DIN 6539 - SIMILAR A DIN 1897 - SERIE EXTRA CORTA

# PUNTE ELICOIDALI

## IN METALLO DURO INTEGRALE

SOLID CARBIDE TWIST DRILLS  
 VHM SPIRALBOHRER  
 FORETS HÉLICOÏDAUX EN CARBURE MONOBLOC  
 BROCAS HELICOIDALES DE METAL DURO INTEGRAL

## 1100 - 1100TN - 1100TF



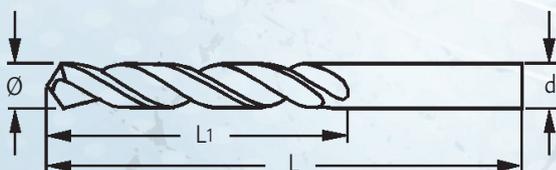
Ø mm h7	L mm	L <sub>1</sub> mm	d mm h6	1100 €	1100TN €	1100TF €
5.9	66	28	5.9	17,70	21,00*	22,30*
6.0	66	28	6.0	17,70	21,00*	22,30*
6.1	70	31	6.1	22,05	26,50*	28,25*
6.2	70	31	6.2	22,05	26,50*	28,25*
6.3	70	31	6.3	22,05	26,50*	28,25*
6.4	70	31	6.4	22,05	26,50*	28,25*
6.5	70	31	6.5	21,40	25,80*	27,55*
6.6	70	31	6.6	26,05	30,40*	32,30*
6.7	70	31	6.7	26,05	30,40*	32,30*
6.8	74	34	6.8	26,05	30,40*	32,30*
6.9	74	34	6.9	26,05	30,40*	32,30*
7.0	74	34	7.0	25,75	30,30*	31,95*
7.1	74	34	7.1	31,20	35,65*	37,65*
7.2	74	34	7.2	31,20	35,65*	37,65*
7.3	74	34	7.3	31,20	35,65*	37,65*
7.4	74	34	7.4	31,20	35,65*	37,65*
7.5	74	34	7.5	31,05	35,45*	37,30*
7.6	79	37	7.6	35,25	40,30*	42,10*
7.7	79	37	7.7	35,25	40,30*	42,10*
7.8	79	37	7.8	35,25	40,30*	42,10*
7.9	79	37	7.9	35,25	40,30*	42,10*
8.0	79	37	8.0	34,70	39,90*	41,70*
8.1	79	37	8.1	43,20	48,70*	51,00*
8.2	79	37	8.2	43,20	48,70*	51,00*
8.3	79	37	8.3	43,20	48,70*	51,00*
8.4	79	37	8.4	43,20	48,70*	51,00*
8.5	79	37	8.5	44,00	49,50*	51,60*

Ø mm h7	L mm	L <sub>1</sub> mm	d mm h6	1100 €	1100TN €	1100TF €
8.6	84	40	8.6	46,90	52,40*	54,60*
8.7	84	40	8.7	46,90	52,40*	54,60*
8.8	84	40	8.8	46,90	52,40*	54,60*
8.9	84	40	8.9	46,90	52,40*	54,60*
9.0	84	40	9.0	44,30	49,80*	52,10*
9.1	84	40	9.1	51,30	56,80*	59,10*
9.2	84	40	9.2	51,30	56,80*	59,10*
9.3	84	40	9.3	51,30	56,80*	59,10*
9.4	84	40	9.4	51,30	56,80*	59,10*
9.5	84	40	9.5	49,10	54,60*	56,80*
9.6	89	43	9.6	52,70	58,30*	60,50*
9.7	89	43	9.7	52,70	58,30*	60,50*
9.8	89	43	9.8	52,70	58,30*	60,50*
9.9	89	43	9.9	52,70	58,30*	60,50*
10.0	89	43	10.0	50,60	56,10*	58,30*
10.2	89	43	10.2	59,80	66,40*	69,00*
10.5	89	43	10.5	59,80	66,40*	69,00*
11.0	95	47	11.0	66,40	73,10*	75,90*
11.5	95	47	11.5	77,90	84,40*	87,20*
12.0	102	51	12.0	77,90	84,40*	87,20*
13.0	102	51	13.0	94,40	102,00*	104,00*
14.0	107	54	14.0	125,50	132,50*	135,00*
15.0	111	56	15.0	137,00	145,50*	148,50*
16.0	115	58	16.0	155,50	163,50*	167,00*
18.0	123	62	18.0	214,50	226,00*	230,00*
20.0	131	66	20.0	287,00	300,00*	304,00*

\* A richiesta - On Request - Auf Anfrage - Sur Demande - A Pedido

→3-4

→4-4



# PUNTE ELICOIDALI

## IN METALLO DURO INTEGRALE

SOLID CARBIDE TWIST DRILLS  
VHM SPIRALBOHRER  
FORETS HÉLICOÏDAUX EN CARBURE MONOBLOC  
BROCAS HELICOIDALES DE METAL DURO INTEGRAL

### TALICARB NORM

SIMILARE A DIN 338 - SERIE CORTA

TALICARB NORM - SIMILAR TO DIN 338 - SHORT SERIES  
TALICARB NORM - ÄHNLICH DIN 338 - KURZE AUSFÜHRUNG  
TALICARB NORM - SIMILAIRE DIN 338 - SERIE COURTE  
TALICARB NORM - SIMILAR A DIN 338 - SERIE CORTA

## 1101 - 1101 TN - 1101 TF

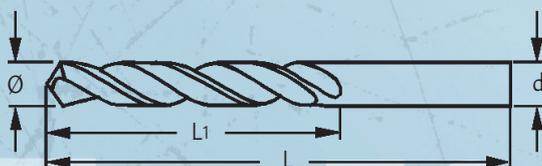
Ø mm h7	L mm	L <sub>1</sub> mm	d mm h6	1101 €	1101TN €	1101TF €
0.5	22	6	0.5	4,63	8,07*	9,42*
0.6	24	7	0.6	4,63	8,07*	9,42*
0.7	28	9	0.7	4,63	8,07*	9,42*
0.8	30	10	0.8	4,63	8,07*	9,42*
0.9	32	11	0.9	4,63	8,07*	9,42*
1.0	34	12	1.0	4,63	8,07*	9,42*
1.1	36	14	1.1	5,28	8,41*	9,66*
1.2	38	16	1.2	5,28	8,41*	9,66*
1.3	38	16	1.3	5,28	8,41*	9,66*
1.4	40	18	1.4	5,28	8,41*	9,66*
1.5	40	18	1.5	5,28	8,41*	9,66*
1.6	43	20	1.6	5,28	8,41*	9,66*
1.7	43	20	1.7	5,92	8,89*	9,33*
1.8	46	22	1.8	6,42	9,36*	9,80*
1.9	46	22	1.9	6,42	9,36*	9,80*
2.0	49	24	2.0	6,42	9,36*	9,80*
2.1	49	24	2.1	7,55	10,50*	10,91*
2.2	53	27	2.2	8,21	10,88*	11,94*
2.3	53	27	2.3	8,21	10,88*	11,94*
2.4	57	30	2.4	8,21	10,88*	11,94*
2.5	57	30	2.5	8,07	10,74*	11,80*
2.6	57	30	2.6	9,33	11,97*	13,04*
2.7	61	33	2.7	10,84	13,48*	14,58*
2.8	61	33	2.8	11,46	14,10*	15,15*
2.9	61	33	2.9	11,46	14,10*	15,15*
3.0	61	33	3.0	10,53	13,21*	14,27*
3.1	65	36	3.1	11,94	14,62*	15,70*

Ø mm h7	L mm	L <sub>1</sub> mm	d mm h6	1101 €	1101TN €	1101TF €
3.2	65	36	3.2	11,94	14,62*	15,70*
3.3	65	36	3.3	12,11	15,25*	16,55*
3.4	70	39	3.4	13,41	16,55*	17,85*
3.5	70	39	3.5	13,17	16,30*	17,55*
3.6	70	39	3.6	14,17	17,30*	18,55*
3.7	70	39	3.7	14,17	17,30*	18,55*
3.8	75	43	3.8	14,99	18,80*	19,40*
3.9	75	43	3.9	14,99	18,80*	19,40*
4.0	75	43	4.0	14,86	18,65*	19,25*
4.1	75	43	4.1	15,35	18,60*	19,90*
4.2	75	43	4.2	15,35	18,60*	19,90*
4.3	80	47	4.3	20,25	24,20*	25,75*
4.4	80	47	4.4	20,25	24,20*	25,75*
4.5	80	47	4.5	18,40	22,35*	23,95*
4.6	80	47	4.6	21,05	25,00*	26,55*
4.7	80	47	4.7	21,05	25,00*	26,55*
4.8	86	52	4.8	21,70	25,65*	27,25*
4.9	86	52	4.9	21,70	25,65*	27,25*
5.0	86	52	5.0	20,20	24,15*	25,70*
5.1	86	52	5.1	24,40	28,45*	30,10*
5.2	86	52	5.2	24,40	28,45*	30,10*
5.3	86	52	5.3	24,40	28,45*	30,10*
5.4	93	57	5.4	27,90	31,95*	33,60*
5.5	93	57	5.5	26,70	30,65*	32,30*
5.6	93	57	5.6	29,20	33,25*	34,70*
5.7	93	57	5.7	29,20	33,25*	34,70*
5.8	93	57	5.8	29,20	33,25*	34,70*

\* A richiesta - On Request - Auf Anfrage - Sur Demande - A Pedido

→1-4

→2-4



## TALICARB NORM SIMILARE A DIN 338 - SERIE CORTA

TALICARB NORM - SIMILAR TO DIN 338 - SHORT SERIES  
TALICARB NORM - ÄHNLICH DIN 338 - KURZE AUSFÜHRUNG  
TALICARB NORM - SIMILAIRE DIN 338 - SERIE COURTE  
TALICARB NORM - SIMILAR A DIN 338 - SERIE CORTA

## PUNTE ELICOIDALI IN METALLO DURO INTEGRALE

SOLID CARBIDE TWIST DRILLS  
VHM SPIRALBOHRER  
FORETS HÉLICOÏDAUX EN CARBURE MONOBLOC  
BROCAS HELICOIDALES DE METAL DURO INTEGRAL

### 1101 - 1101 TN - 1101 TF

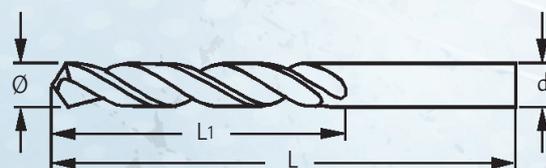
Ø mm h7	L mm	L <sub>1</sub> mm	d mm h6	1101 €	1101TN €	1101TF €
5.9	93	57	5.9	29,20	33,25*	34,70*
6.0	93	57	6.0	28,45	32,50*	34,15*
6.1	101	63	6.1	36,20	42,50*	44,70*
6.2	101	63	6.2	36,20	42,50*	44,70*
6.3	101	63	6.3	36,20	42,50*	44,70*
6.4	101	63	6.4	36,20	42,50*	44,70*
6.5	101	63	6.5	35,10	41,40*	43,60*
6.6	101	63	6.6	42,50	48,70*	51,00*
6.7	101	63	6.7	42,50	48,70*	51,00*
6.8	109	69	6.8	42,50	48,70*	51,00*
6.9	109	69	6.9	42,10	48,40*	50,60*
7.0	109	69	7.0	42,10	48,40*	50,60*
7.1	109	69	7.1	44,70	51,00*	53,20*
7.2	109	69	7.2	44,70	51,00*	53,20*
7.3	109	69	7.3	44,70	51,00*	53,20*
7.4	109	69	7.4	44,70	51,00*	53,20*
7.5	109	69	7.5	44,70	51,00*	53,20*
7.6	117	75	7.6	49,80	56,10*	58,30*
7.7	117	75	7.7	49,80	56,10*	58,30*
7.8	117	75	7.8	49,80	56,10*	58,30*
7.9	117	75	7.9	49,80	56,10*	58,30*
8.0	117	75	8.0	49,80	56,10*	58,30*
8.1	117	75	8.1	58,30	64,60*	67,20*
8.2	117	75	8.2	58,30	64,60*	67,20*
8.3	117	75	8.3	58,30	64,60*	67,20*
8.4	117	75	8.4	58,30	64,60*	67,20*
8.5	117	75	8.5	58,30	64,60*	67,20*

Ø mm h7	L mm	L <sub>1</sub> mm	d mm h6	1101 €	1101TN €	1101TF €
8.6	125	81	8.6	62,70	71,40*	74,50*
8.7	125	81	8.7	62,70	71,40*	74,50*
8.8	125	81	8.8	62,70	71,40*	74,50*
8.9	125	81	8.9	62,70	71,40*	74,50*
9.0	125	81	9.0	62,70	71,40*	74,50*
9.1	125	81	9.1	69,70	78,30*	81,70*
9.2	125	81	9.2	69,70	78,30*	81,70*
9.3	125	81	9.3	69,70	78,30*	81,70*
9.4	125	81	9.4	69,70	78,30*	81,70*
9.5	125	81	9.5	69,70	78,30*	81,70*
9.6	133	87	9.6	73,50	82,00*	85,50*
9.7	133	87	9.7	73,50	82,00*	85,50*
9.8	133	87	9.8	73,50	82,00*	85,50*
9.9	133	87	9.9	73,50	82,00*	85,50*
10.0	133	87	10.0	73,50	82,00*	85,50*
10.2	133	87	10.2	88,90	97,10*	101,00*
10.5	133	87	10.5	89,30	97,50*	101,00*
10.8	142	94	10.8	110,50	119,50*	123,50*
11.0	142	94	11.0	110,50	119,50*	123,50*
11.2	142	94	11.2	118,50	128,00*	131,50*
11.5	142	94	11.5	118,50	128,00*	131,50*
11.8	142	94	11.8	128,00	137,00*	141,00*
12.0	151	101	12.0	128,00	137,00*	141,00*
13.0	151	101	13.0	153,50	163,00*	167,50*
14.0	160	108	14.0	165,00	174,50*	178,50*
16.0	178	120	16.0	225,50	240,50*	246,00*

\* A richiesta - On Request - Auf Anfrage - Sur Demande - A Pedido

→3-4

→4-4







### CATALOGO PRODOTTI

Angelo Ghezzi Spa propone la **più ampia gamma di utensili di precisione** selezionati tra i principali produttori mondiali.



**ILIX Precision** è una gamma storica di utensili evoluti per lavorazioni meccaniche di alta precisione. Il programma ILIX comprende un ventaglio di soluzioni per attività di foratura, maschiatura alesatura e svasatura in HSS, HSS-Co, HSS-Co-PM.

### I NOSTRI MIGLIORI RIVENDITORI IN ITALIA

Angelo Ghezzi Spa opera su tutto il territorio nazionale. I rivenditori con i quali il gruppo ha un forte rapporto commerciale sono chiamati Sales Leader. Questi soggetti autonomi altamente specializzati offrono agli utilizzatori la gamma completa di prodotti Angelo Ghezzi.



[Maggiori dettagli](#)

### AREA RISERVATA

Riservato ai Sales Leader ed ai clienti registrati.

Login

Password

[Ho dimenticato la password](#)

#### DOWNLOAD

Scarica le nostre brochure in formato PDF.

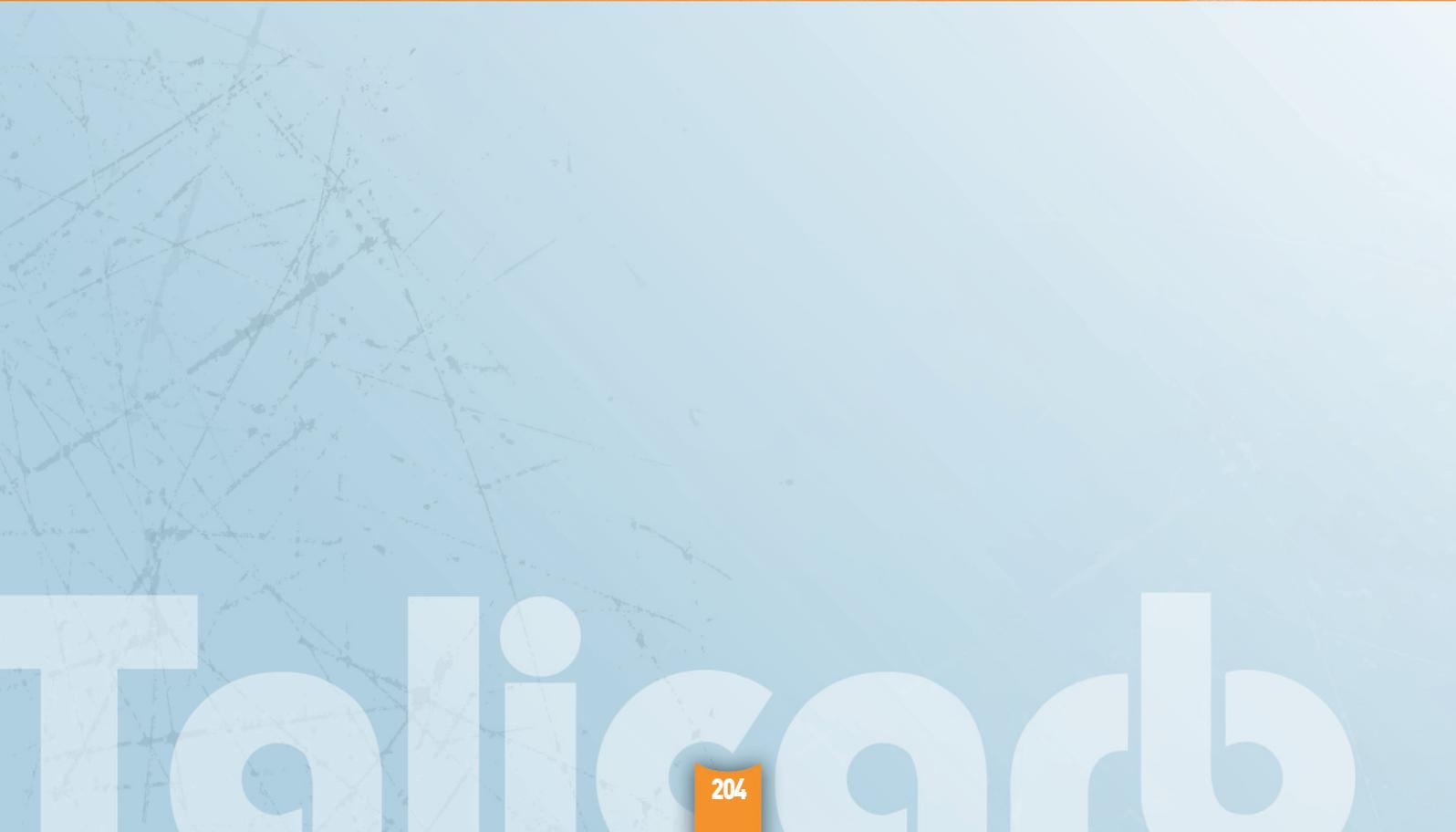


#### GUIDA ALL'ACQUISTO ONLINE

Termini di utilizzo del sito internet.



angeloghezzi.it



Tajicardb

# LIME ROTATIVE

## in metallo duro integrale



CARBIDE BURRS



HARTMETALL-ROTIERFRÄSER



FRAISES ROTATIVES EN CARBURE



LIMAS ROTATIVAS DE METAL DURO INTEGRAL



# LEGENDA

KEY TO SYMBOLS  
ZEICHENERKLÄRUNG  
LÉGENDE  
LEYENDA

## TALICARB NORM.

TALICARB NORM.  
TALICARB NORM.  
TALICARB NORM.  
TALICARB NORM.



1

### Taglio 1 - Standard

La geometria del tagliente è adatta per lavorazioni di ferro, ferro saldato, acciaio comune. E' la lima di uso universale.

### Cut # 1 - Standard

The geometry of this flute pattern is designed for use on iron, wrought iron and steel. It is a worldwide burr.

### Schnitt # 1 - Standard

Die Schneidegeometrie ist für die Bearbeitung vom Eisen, Luppeneisen und Massenstahl geeignet. Das ist den Allzweckbenutzung Rotierfräser.

### Coupe # 1 - Standard

La géométrie du coupant est conseillé pour usinages du fer, fer soudé, acier commun. Elle est la lime d'emploi universel.

### Dentado 1 - Estándar

Esta geometría de labio se utiliza para trabajar hierro, hierro soldado y acero común. Es una lima rotativa de uso universal



2

### Taglio 2 - Diamante

L'utensile è specifico per lavorazioni di acciaio altamente legato, acciaio al cromo-nichel, acciaio inossidabile, ghise grigie e sferoidali.

### Cut # 2 - Diamond

This type of tool is recommended for use on steel, highly alloyed steel, chrome-nickel steel, stainless steel, grey and spheroidal cast iron.

### Schnitt # 2 - Diamant

Das Werkzeug ist für die Bearbeitung der hochlegierter Stahl, Chromonickelstahl, rostfreier Stahl, Grauguss und Sphäroguss geeignet.

### Coupe # 2 - Diamant

Cet outil est spécifique pour usinages d'acier hautement lié, acier au chrome-nickel, acier inoxydable, fonte grise et sphéroïdale

### Dentado 2 - Diamante

Esta herramienta es específica para trabajar acero muy aleado, acero al cromo-nichel, acero inoxidable, fusión gris y nodular



3

### Taglio 3 - Incrociato

E' il tagliente idoneo ad un vasto campo di materiali, ferrosi e non ferrosi. La particolare affilatura evita l'incollamento del materiale.

### Cut # 3 - Double cut

The double cut is suitable for a wide range of ferrous and non-ferrous materials. The flute geometry avoids the sticking of chips to the cutting edge.

### Schnitt # 3 - Kreuzhieb

Das ist der geeignete Schnitt an einem weiten Eisen und Nichteisen Werkstoffbereich. Die eigene Anschliff vermeidet den Festfressen dem Span auf dem Schneidteil.

### Coupe # 3 - Croisé

Le coupe croisé est adaptable à une très vaste gamme de matériaux, ferreux et non ferreux. L'affutage particulier permet de éviter le collage du matériel.

### Dentado 3 - Cruzado

Este labio es idoneo para varios tipos de materiales, ferrosos y no ferrosos. Su particular picadura evita el encolamiento de material.



4

### Taglio 4 - Rompitruciolo

L'esecuzione del rompitruciolo consente di produrre trucioli più corti con un miglior controllo dell'utensile.

### Cut # 4 - Chip breaker

The chip breaker cut produce small chips allowing easier tool handling and good finishing quality.

### Schnitt # 4 - Spanbrecher

Die Spanbrecherschnitt Ausführung erlaubt Kurzspan zusammen mit ein besser Werkzeugsteuerung.

### Coupe # 4 - Brise-copeau

L'utilisation du brise-copeau permet de produire copeaux plus courts avec une meilleure maîtrise de l'outil.

### Dentado 4 - Rompevirutas

Esta ejecución de rompevirutas permite de producir virutas más cortas y un mejor control de la lima



5

### Taglio 5 - Fine

Il taglio fine è specifico per materiali temprati, per acciaio altamente legato, in fusioni, stampato. E' idoneo per ghise dure e saldature di materiali tecnici.

### Cut # 5 - Fine cut

The fine cut is specifically designed for use on hardened materials, highly alloyed steel, cast steel and pressed steel. It is also suitable to machine hard cast iron and welds on tough materials.

### Schnitt # 5 - Fein

Das Feinschnitt ist für die gehärtete Werkstoffen, für hochlegierter Stahl, Stahlguss und Gesenkstahl gezeichnet. Es ist fuer Starkguss und technische Werkstoff-Schweißen geeignet.

### Coupe # 5 - Mince

Le coupe mince est spécifique pour aciers trempés, pour acier hautement liés, en fusions, imprimé. Il est conseillé pour fontes dures et soudages de matériaux.

### Dentado 5 - Fin

El labio fin es específico para materiales templados, para acero altamente aleado, en fusión y moldeado. Es idóneo para fundición duras y soldaduras de materiales técnicos



6

### Taglio 6 - Grosso

E' la fresa intermedia tra il taglio tipo Alluminio e Standard. Ha un'ottima evacuazione del truciolo dovuta alle gole ampie ed un maggior rendimento ad un numero di giri elevato.

### Cut # 6 - Coarse Cut

It is the intermediate burr between Aluminium and Standard cut burrs. Thanks to the deep flutes, quick chip removal is achieved.

### Schnitt # 6 - Groß

Das ist den Zwischen-Aluminium und Standard Schnitt Fräser. Dank an dem breiten Nuten, es hat ein gut Späneentsorgung und höhere Leistung zu höhere Drehzahl.

### Coupe # 6 - Coupe gros

Est la fraise intermédiaire parmi le coupe Aluminium et Standard. Elle a une très bonne évacuation du copeau due aux vastes rainures et une remarquable performance à nr de tours élevés.

### Dentado 6 - Grueso

Es una fresa intermedia entre el labio de tipo aluminio y estándar. Tiene una perfecta evacuación de la viruta gracias a ranuras anchas y permite un mayor rendimiento a número de vueltas elevado.



7

### Taglio - Alluminio

E' la fresa specifica per lavorazioni su materiali con truciolo molto lungo come alluminio dolce, zama, magnesio, plastiche, gomme dure, legno.

### Aluminium Cut

The Aluminium cut burr is indicated to machine materials that produce long chips such as soft aluminium, zinc-aluminium alloys, magnesium, plastics, hard rubber, wood.

### Aluminium Schnitt

Das ist den geeignete Fräser für die Bearbeitung auf Werkstoffen die sehr lange Span erzeugt wie Weichaluminium, Zamak, Magnesium, Kunststoffen, hart Acrylkautschuk, Holz.

### Coupe Aluminium

Cette fraise est spécifique pour usinages sur matériaux avec un copeau très long tel que aluminium doux, zamak, magnésium, plastiques, gomme dure, bois.

### Dentado - Aluminio

Es una fresa específica para empleos sobre materiales con viruta muy larga como aluminio dulce, aleación de cinc, aluminio, magnesio y cobre, plásticas, magnesio, gomas duras y madera.



Con taglienti in testa  
Burr End Cut  
Stirverzahnung  
Denture en bout  
Con labios frontales



Fresa a forare con 2 taglienti in testa  
End Mill End Cut  
Mit Stirnschneiden  
Taille de fraise en bout  
Fresas para taladrar con 2 labios



Fresa a forare con angolo 135°  
135° Drill Point  
135° Bohrspitze  
Poite de foret de 135°  
Fresas para taladrar con ángulo de 135°

## TALICARB NORM.

TALICARB NORM.  
TALICARB NORM.  
TALICARB NORM.  
TALICARB NORM.

# FRESA PER RETTIFICA DI INTERNI IN METALLO DURO

SOLID CARBIDE GRINDING-IN TOOLS  
VOLLHARTMETALL-INNENSCHLEIFFRÄSER  
FRAISES POUR RECTIFICATION INTÉRIEURE EN CARBURE MONOBLOC  
FRESAS PARA RECTIFICADO INTERIOR DE METAL DURO INTEGRAL

## 1092



Ø mm	L <sub>1</sub> mm	L mm	L <sub>2</sub> mm	d mm	1092 €
1x3x3	3	38	9.5	3	20,15 ■
4x4x6	4	50	19	6	29,50 ■
5x5x6	5	50	19	6	32,80 ■
6x6x6	6	50	19	6	25,75 ■
7x7x6	7	63	-	6	43,10 ■
9x9x6	9	63	-	6	54,90 ■
10x10x6	10	63	-	6	62,90 ■
11x11x6	11	63	-	6	73,00 ■
12x12x6	12	63	-	6	90,50 ■

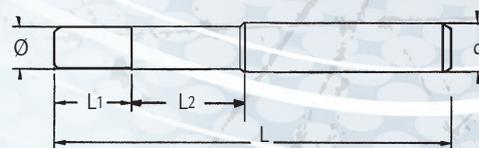


■ **Ad esaurimento scorte** - Subject to availability until sold out -  
Solange der vorrat reicht - Jusqu'à Épuisement de stock -  
Hasta agotamiento del stock

**A richiesta**  
On Request  
Auf Anfrage  
Sur Demande  
A Pedido



1091 □



# FRESA PER FIBRE DI VETRO

IN METALLO DURO INTEGRALE

SOLIDE CARBIDE FIBERGLASS ROUTERS  
FRÄSER FÜR GFK  
FRAISES POUR USINAGE DE LA FIBRE DE VERRE  
FRESAS DE METAL DURO INTEGRAL PARA FIBRA DE VIDRIO

TALICARB NORM.

TALICARB NORM.  
TALICARB NORM.  
TALICARB NORM.  
TALICARB NORM.

## 2400



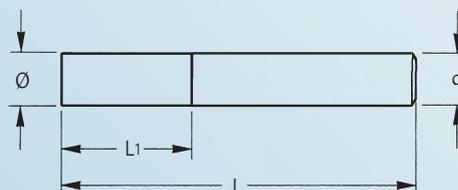
Ø mm	L <sub>1</sub> mm	L mm	d mm	2400 €
3x12x3	12	38	3	9,44
4x16x4	16	50	4	15,20
6x25x6	25	63	6	17,35
6x25x6	25	76	6	22,05
8x25x8	25	63	8	34,15
10x25x10	25	70	10	42,40
12x25x12	25	76	12	59,70

## 2401



Ø mm	L <sub>1</sub> mm	L mm	d mm	2401 €
2x6x3	6	38	3	10,97
3x12x3	12	38	3	10,49
4x16x4	16	50	4	16,80
6x25x6	25	63	6	19,65
6x25x6	25	76	6	23,95
8x25x8	25	63	8	36,40
10x25x10	25	70	10	46,20
12x25x12	25	76	12	65,70

■ **Ad esaurimento scorte** - Subject to availability until sold out - Solange der vorrat reicht - Jusqu'à Épuisement de stock - Hasta agotamiento del stock



## TALICARB NORM.

TALICARB NORM.  
TALICARB NORM.  
TALICARB NORM.  
TALICARB NORM.

# FRESA PER FIBRE DI VETRO

IN METALLO DURO INTEGRALE

SOLIDE CARBIDE FIBERGLASS ROUTERS  
FRÄSER FÜR GFK  
FRAISES POUR USINAGE DE LA FIBRE DE VERRE  
FRESAS DE METAL DURO INTEGRAL PARA FIBRA DE VIDRIO

## 2402



$\emptyset$ mm	L <sub>1</sub> mm	L mm	d mm	2402 €
2x6x3	6	38	3	11,87
3x12x3	12	38	3	11,44
4x16x4	16	50	4	18,35
6x25x6	25	63	6	20,70
6x25x6	25	76	6	25,10
8x25x8	25	63	8	37,75
10x25x10	25	70	10	47,90
12x25x12	25	76	12	68,80

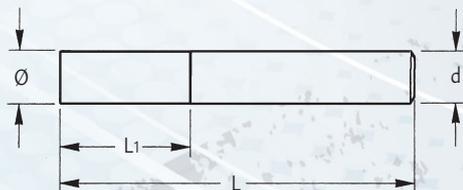
## 2403



$\emptyset$ mm	L <sub>1</sub> mm	L mm	d mm	2403 €
2x6x3	6	38	3	12,55
3x12x3	12	38	3	12,11
4x16x4	16	50	4	19,05
6x25x6	25	63	6	21,45
6x25x6	25	76	6	25,95
8x25x8	25	63	8	38,85
10x25x10	25	70	10	49,80
12x25x12	25	76	12	72,10

■ **Ad esaurimento scorte** - Subject to availability until sold out - Solange der vorrat reicht - Jusqu'à Épuisement de stock - Hasta agotamiento del stock

■ **Ad esaurimento scorte** - Subject to availability until sold out - Solange der vorrat reicht - Jusqu'à Épuisement de stock - Hasta agotamiento del stock



# FRESA CILINDRICA

IN METALLO DURO

CARBIDE CYLINDRICAL BURRS  
HARTMETALLZYLINDERFRÄSER  
FRAISE CYLINDRIQUE EN CARBURE  
FRESAS CILÍNDRICA DE METAL DURO

TALICARB NORM.

TALICARB NORM.  
TALICARB NORM.  
TALICARB NORM.  
TALICARB NORM.

## 2001



Ø mm	L <sub>1</sub> mm	L mm	d mm	2001 €
1.5X6X3	6	38	3	7,65
2.5X11X3	11	38	3	7,65
3X14X3	14	38	3	7,65
4.7x16x6	16	50	6	14,13
6x16x6	16	50	6	14,13
8x20x6	20	63	6	17,80
9.5x19x6	19	63	6	18,55
12.7X25X6	25	68	6	28,40
16X25X6	25	68	6	37,25
16X25X8	25	76	8	41,40
19X25X6	25	68	6	55,40
19X25X8	25	76	8	56,40
25X25X6	25	68	6	78,10
25X25X8	25	76	8	77,70

## 2002



Ø mm	L <sub>1</sub> mm	L mm	d mm	2002 €
1.5X6X3	6	38	3	9,19
2.5X11X3	11	38	3	9,19
3X14X3	14	38	3	9,19
4.7x16x6	16	50	6	17,00
6.3x12x3	12	50	3	15,30
6x16x6	16	50	6	17,00
8x20x6	20	63	6	21,35
9.5x19x6	19	63	6	22,20
12.7X25X6	25	68	6	34,20
16X25X6	25	68	6	44,80
16X25X8	25	76	8	47,10
19X25X6	25	68	6	63,30
19X25X8	25	76	8	67,30
25X25X6	25	68	6	89,20
25X25X8	25	76	8	93,60

## 2003



Ø mm	L <sub>1</sub> mm	L mm	d mm	2003 €
1.5X6X3	6	38	3	7,65
2.5X11X3	11	38	3	7,65
3X14X3	14	38	3	7,65
4.7x16x6	16	50	6	14,13
6.3X5X3	5	43	3	10,21
6.3x12.7x3	12.7	50	3	12,71
6x16x6	16	50	6	14,13
8x20x6	20	63	6	17,80
9.5x19x6	19	63	6	18,55
12.7X25X6	25	68	6	28,40
16X25X6	25	68	6	37,25
16X25X8	25	76	8	39,45
19X25X6	25	68	6	55,40
19X25X8	25	76	8	56,40
25.4x25x6	25	68	6	78,10
25X25X8	25	76	8	77,70

**A richiesta**  
On Request  
Auf Anfrage  
Sur Demande  
A Pedido



### 2004

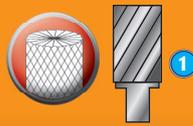


### 2005

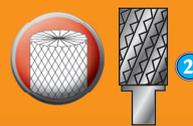


### 2006

**A richiesta**  
On Request  
Auf Anfrage  
Sur Demande  
A Pedido



### 2001F



### 2002F



### 2003F

**Ad esaurimento scorte** - Subject to availability until sold out  
- Solange der vorrat reicht - Jusqu'au Épuisement de stock - Hasta agotamiento del stock



## TALICARB NORM.

TALICARB NORM.  
TALICARB NORM.  
TALICARB NORM.  
TALICARB NORM.

# FRESA CILINDRICA

IN METALLO DURO

CARBIDE CYLINDRICAL BURRS  
HARTMETALLZYLINDERFRÄSER  
FRAISE CYLINDRIQUE EN CARBURE  
FRESAS CILINDRICA DE METAL DURO

## 2011



Ø mm	L <sub>1</sub> mm	L mm	d mm	2011 €
2.5X11X3	11	38	3	7,65
3X14X3	14	38	3	7,65
4.7X16X6	16	50	6	16,10
6.3X12.7X3	12.7	50	3	12,71
6X16X6	16	50	6	16,10
8X20X6	20	63	6	20,45
9.5X19X6	19	63	6	21,00
12.7X25X6	25	68	6	32,85
16X25X6	25	68	6	42,20
16X25X8	25	76	8	45,60
19X25X6	25	68	6	61,10
19X25X8	25	76	8	61,90 ■

## 2012



Ø mm	L <sub>1</sub> mm	L mm	d mm	2012 €
2.5X11X3	11	38	3	9,19
3X14X3	14	38	3	9,19
4.7X16X6	16	50	6	19,25
6.3X12.7X3	12.7	50	3	15,30
6X16X6	16	50	6	19,25
8X20X6	20	63	6	24,55
9.5X19X6	19	63	6	25,15
12.7X25X6	25	68	6	39,50
19X25X6	25	68	6	73,50
19X25X8	25	76	8	74,00 ■

## 2013



Ø mm	L <sub>1</sub> mm	L mm	d mm	2013 €
2.5X11X3	11	38	3	7,65
3X14X3	14	38	3	7,65
4.7X16X6	16	50	6	16,10
6.3X12.7X3	12.7	50	3	12,71
6X16X6	16	50	6	16,10
8X20X6	20	63	6	20,45
9.5X19X6	19	63	6	21,00
12.7X25X6	25	68	6	32,85
16X25X6	25	68	6	42,20
16X25X8	25	76	8	43,40 ■
19X25X6	25	68	6	61,10
19X25X8	25	76	8	61,90 ■

**A richiesta**  
On Request  
Auf Anfrage  
Sur Demande  
A Pedido



## 2014 ■

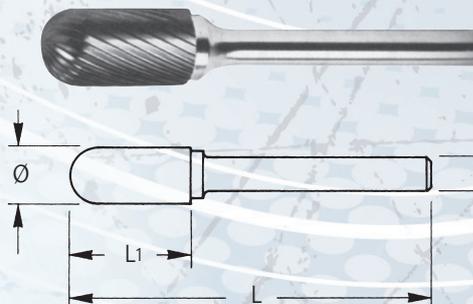


## 2015



## 2016

■ **Ad esaurimento scorte** - Subject to availability until sold out - Solange der vorrat reicht - Jusqu'à Épuisement de stock - Hasta agotamiento del stock



# FRESA OGIVA

CON TESTA SFERICA IN METALLO DURO

CARBIDE OGIVAL BURR - BALL NOSE  
HARTMETALLSPITZBOGENFRÄSER - STIRNRADIUS  
FRAISE OGIVE EN CARBURE - BOUT HÉMISPHERIQUE  
FRESAS EN FORMA DE ÁRBOL CON CABEZA ESFÉRICA DE METAL DURO

## TALICARB NORM.

TALICARB NORM.  
TALICARB NORM.  
TALICARB NORM.  
TALICARB NORM.

### 2021



Ø mm	L <sub>1</sub> mm	L mm	d mm	2021 €
3X6.3X3	6.3	38	3	7,65
3X13X3	13	38	3	7,65
6.3X13X3	13	50	3	12,71
6X19X6	19	50	6	17,30
9.5X19X6	19	63	6	19,75
12.7X25X6	25	68	6	30,05
16X25X6	25	68	6	44,10
16X25X8	25	76	8	45,30
19X32X6	32	76	6	69,60
19X32X8	32	82	8	71,00 ■
19X38X6	38	82	6	82,30
19X38X8	38	89	8	81,40 ■

### 2022



Ø mm	L <sub>1</sub> mm	L mm	d mm	2022 €
3X12X3	13	38	3	9,19
6.3X13X3	13	50	3	15,30
6X19X6	19	50	6	20,70
9.5X19X6	19	63	6	23,70
12.7X25X6	25	68	6	35,90
16X25X6	25	68	6	52,80
16X25X8	25	76	8	54,60 ■
19X32X6	32	76	6	80,10 ■
19X32X8	32	82	8	85,50 ■
19X38X6	38	82	6	93,60 ■
19X38X8	38	89	8	102,50

### 2023



Ø mm	L <sub>1</sub> mm	L mm	d mm	2023 €
3X6.3X3	6.3	38	3	7,65
3X13X3	13	38	3	7,65
6.3X13X3	13	50	3	12,71
6X19X6	19	50	6	17,30
9.5X19X6	19	63	6	19,75
12.7X25X6	25	68	6	30,05
16X25X6	25	68	6	44,10
16X25X8	25	76	8	45,30 ■
19X32X6	32	76	6	69,60
19X32X8	32	82	8	71,00 ■
19X38X6	38	82	6	82,30
19X38X8	38	89	8	85,50

**A richiesta**  
On Request  
Auf Anfrage  
Sur Demande  
A Pedido



### 2024 ■

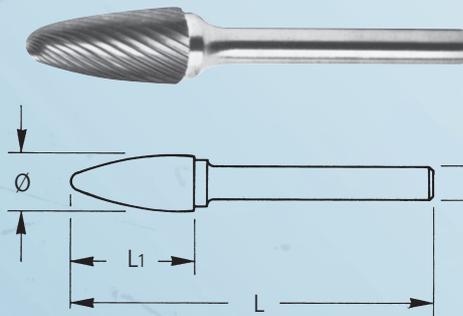


### 2025



### 2026

■ **Ad esaurimento scorte** - Subject to availability until sold out - Solange der vorrat reicht - Jusqu'à Épuisement de stock - Hasta agotamiento del stock



## TALICARB NORM.

TALICARB NORM.  
TALICARB NORM.  
TALICARB NORM.  
TALICARB NORM.

# FRESA OGIVA

A PUNTA IN METALLO DURO

CARBIDE OGIVAL BURR - POINTED NOSE  
HARTMETALLSPITZBOGENFRÄSER - STIRNRADIUS  
FRAISE OGIVE EN CARBURE - BOUT POINTU  
FRESAS DE FORMA OJIVAL DE METAL DURO

## 2031



Ø mm	L <sub>1</sub> mm	L mm	d mm	2031 €
3x6.3x3	6.3	38	3	7,65
3x9.5x3	9.5	38	3	7,65
3x13x3	13	38	3	7,65
6.3x13x3	13	50	3	12,71
6x19x6	19	50	6	17,30
8X19X6	19	63	6	19,00
9.5x19x6	19	63	6	20,30
12.7X25X6	25	68	6	30,05
16X25X6	25	68	6	41,80
16X25X8	25	76	8	43,10 ■
19X38X6	38	82	6	82,30
19X38X8	38	89	8	81,40 ■

## 2032



Ø mm	L <sub>1</sub> mm	L mm	d mm	2032 €
3x6.3x3	6.3	38	3	9,19
3x9.5x3	9.5	38	3	9,19
3x13x3	13	38	3	8,75 ■
6.3x13x3	13	50	3	15,30
6x19x6	19	50	6	20,70
8X19X6	19	63	6	22,85
9.5x19x6	19	63	6	24,35
12.7X25X6	25	68	6	35,90
16X25X6	25	68	6	50,10
19X38X6	38	82	6	93,60 ■
19X38X8	38	89	8	97,30 ■

## 2033



Ø mm	L <sub>1</sub> mm	L mm	d mm	2033 €
3x6.3x3	6.3	38	3	7,65
3x9.5x3	9.5	38	3	7,65
3x13x3	13	38	3	7,65
6.3x13x3	13	50	3	12,71
6x19x6	19	50	6	17,30
8x19x6	19	63	6	19,00
9.5x19x6	19	63	6	20,30
12.7x25x6	25	68	6	30,05
16X25X6	25	68	6	41,80
16X25X8	25	76	8	43,10 ■
19X38X6	38	82	6	82,30
19X38X8	38	89	8	81,40 ■

**A richiesta**  
On Request  
Auf Anfrage  
Sur Demande  
A Pedido



## 2034 ■

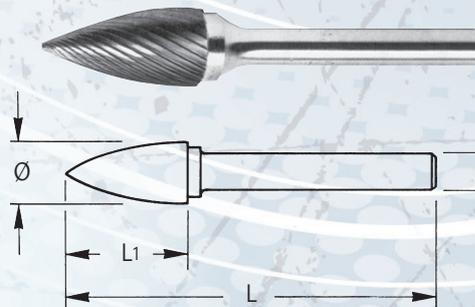


## 2035



## 2036

■ **Ad esaurimento scorte** - Subject to availability until sold out - Solange der vorrat reicht - Jusqu'à Épuisement de stock - Hasta agotamiento del stock





## TALICARB NORM.

TALICARB NORM.  
TALICARB NORM.  
TALICARB NORM.  
TALICARB NORM.

# FRESA SFERICA

IN METALLO DURO

CARBIDE BALL BURR  
VHM KUGELFRÄSER  
FRAISE CARBURE À BOUT SPHÉRIQUE  
FRESAS ESFÉRICA DE METAL DURO

## 2051



Ø mm	L <sub>1</sub> mm	L mm	d mm	2051 €
2.3X2X3	2	38	3	7,65
3X2X3	2	38	3	7,65
4.7X4.5X6	4.5	50	6	14,94
6.3X5X3	5	43	3	12,71
6x5x6	5	50	6	14,94
8x7x6	7	50	6	15,70
9.5x8x6	8	52	6	17,30
12.7x11x6	11	54	6	22,50
16x14x6	14	58	6	28,40
16x14x8	14	66	8	32,30
19x16x6	16	60	6	40,70
19x17x8	17	70	8	44,10
25.4x24x6	24	68	6	66,40

## 2052



Ø mm	L <sub>1</sub> mm	L mm	d mm	2052 €
2.3X2X3	2	38	3	9,19
3X2X3	2	38	3	9,19
4.7X4.5X6	4.5	50	6	17,95
6.3X5X3	5	45	3	15,30
6x5x6	5	50	6	17,95
8x7x6	7	50	6	18,85
9.5x8x6	8	52	6	20,70
12.7X11X6	11	54	6	26,95
16X14X6	14	58	6	34,20
16X14X8	14	66	8	36,90
25X24X8	24	76	8	80,40

## 2053



Ø mm	L <sub>1</sub> mm	L mm	d mm	2053 €
2.3X2X3	2	38	3	7,65
3X3X3	2	38	3	7,65
4.7X4.5X6	4.5	50	6	14,94
6.3X5X3	5	45	3	12,71
6x5x6	5	50	6	14,94
8x7x6	7	50	6	15,70
9.5x8x6	8	52	6	17,30
12.7X11X6	11	54	6	22,50
16X14X6	14	58	6	28,40
16X14X8	14	66	8	30,75
19X17X6	16	60	6	40,70
19X17X8	17	70	8	42,00
25X24X6	24	68	6	66,40

**A richiesta**  
On Request  
Auf Anfrage  
Sur Demande  
A Pedido



## 2054

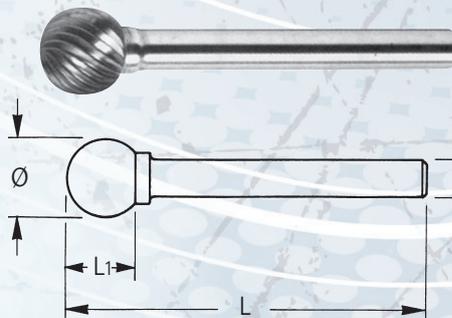


## 2055



## 2056

■ **Ad esaurimento scorte** - Subject to availability until sold out - Solange der vorrat reicht - Jusqu'à Épuisement de stock - Hasta agotamiento del stock





## TALICARB NORM.

TALICARB NORM.  
TALICARB NORM.  
TALICARB NORM.  
TALICARB NORM.

# FRESA SFERICA

IN METALLO DURO

CARBIDE BALL BURR  
VHM KUGELFRÄSER  
FRAISE CARBURE À BOUT SPHÉRIQUE  
FRESAS ESFÉRICA DE METAL DURO

## 2071



$\emptyset$ mm	L <sub>1</sub> mm	L mm	d mm	2071 €
3X8.7X3	8.7	38	3	7,65
3X11X3	11	38	3	7,65
3X16X3	16	38	3	7,65
6.3X12.7X3	12.7	50	3	12,71
6X12.7X6	12.7	50	6	16,65
6X18X6	18	50	6	17,60
6X25X6	25	50	6	18,75
9.5X16X6	16	60	6	23,15
12.7X22X6	22	66	6	30,05
16X25X6	25	68	6	43,70
16X25X8	25	76	8	45,30 ■

## 2072

$\emptyset$ mm	L <sub>1</sub> mm	L mm	d mm	2072 €
3X8.7X3	8.7	38	3	9,19
3X11X3	11	38	3	9,19
3X16X3	16	38	3	9,19
6.3X12.7X3	12.7	50	3	15,30
6X12.7X6	12.7	50	6	19,95
6X18X6	18	50	6	21,10
6X25X6	25	50	6	22,50
9.5X16X6	16	60	6	27,70
12.7X22X6	22	66	6	35,90
16X25X6	25	68	6	52,50
16X25X8	25	76	8	54,30 ■

## 2073

$\emptyset$ mm	L <sub>1</sub> mm	L mm	d mm	2073 €
3X8.7X3	8.7	38	3	7,65
3X11X3	11	38	3	7,65
3X16X3	16	38	3	7,65
6.3X12.7X3	12.7	50	3	12,71
6X12.7X6	12.7	50	6	16,65
6X18X6	18	50	6	17,60
6X25X6	25	50	6	18,75
9.5X16X6	16	60	6	23,15
12.7X22X6	22	66	6	30,05
16X25X6	25	68	6	43,70
16X25X8	25	76	8	45,30 ■

**A richiesta**  
On Request  
Auf Anfrage  
Sur Demande  
A Pedido



2074 ■

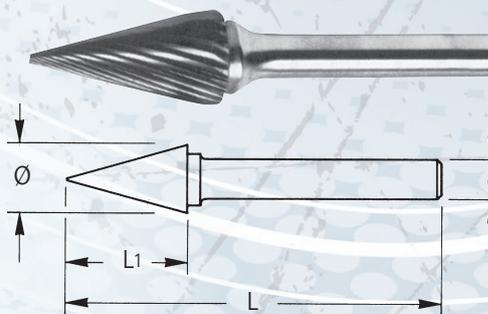


2075



2076

■ **Ad esaurimento scorte** - Subject to availability until sold out - Solange der vorrat reicht - Jusqu'à Épuisement de stock - Hasta agotamiento del stock



# FRESA CONICA A 14°

CON TESTA SFERICA IN METALLO DURO

CARBIDE 14° TAPER BURR - BALL NOSE  
 14° VHM FRÄSER - STIRNRADIUS  
 FRAISE CONIQUE 14° EN CARBURE - BOUT SPHÉRIQUE  
 FRESAS CÓNICA A 14° CON CABEZA ESFÉRICA DE METAL DURO

TALICARB NORM.

TALICARB NORM.  
 TALICARB NORM.  
 TALICARB NORM.  
 TALICARB NORM.

## 2501/2503

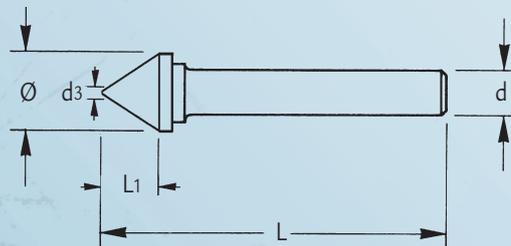


Ø mm	L <sub>1</sub> mm	L mm	d mm	d <sub>3</sub> mm	60°	
					2501 €	2503 €
3x2x3	2	38	3	To point	7,65	7,65
6x5x6	5	50	6	To point	15,20	15,20
9.5x8x6	8	55	6	1	18,45	18,45
12.7x11x6	11	58	6	1	24,80	24,80
16x14x6	14	60	6	1.5	32,30	32,30
19x16x6	16	64	6	1.5	41,00	41,00
25.4x23x6	23	68	6	3	66,10	66,10

## 2511/2513



Ø mm	L <sub>1</sub> mm	L mm	d mm	d <sub>3</sub> mm	90°	
					2511 €	2513 €
3x1x3	1	38	3	To point	7,65	7,65
6x3x6	3	50	6	To point	15,20	15,20
9.5x4.7x6	4.7	52	6	1	18,45	18,45
12.7x6.3x6	6.3	52	6	1	24,80	24,80
16x8x6	8	56	6	1.5	32,30	32,30
19x9x6	9	58	6	1.5	41,00	41,00
25.4x12.7x6	12.7	60	6	3	66,10	66,10



TALICARB NORM.

TALICARB NORM.  
TALICARB NORM.  
TALICARB NORM.  
TALICARB NORM.

# FRESE A CONO INVERTITO

IN METALLO DURO

CARBIDE INVERTED CONE BURR  
VERKEHRT KONISCHE VHM FRÄSER  
FRAISE À CÔNE INVERSÉ EN CARBURE  
FRESAS CÓNICA INVERTIDA DE METAL DURO

2081



2082



2083



Ø mm	L <sub>1</sub> mm	L mm	d mm	Angolo Angle Winkel Angle Ángulo	2081 €
2.3X3X3	3	38	3	10	7,65
3X5X3	5	38	3	10	7,65
6.3X6.3X6	6.3	44	3	10	12,71
6X8X6	8	50	6	10	15,50
9.5X9.5X6	9.5	52	6	13	23,35
12.7X12.7X6	12.7	56	6	16	29,60
16X16X6	16	60	6	19	39,15
16X16X8	16	70	8	19	41,30
19X19X6	19	63	6	21	50,60
19X19X8	19	66	8	21	51,40

Ø mm	L <sub>1</sub> mm	L mm	d mm	Angolo Angle Winkel Angle Ángulo	2082 €
2.5X3X3	3	38	3	10	8,75
3X5X3	5	38	3	10	9,19
6.3x6.3x6	6	44	6	10	15,30
6x8x6	8	50	6	10	18,55
9.5x9.5x6	9.5	52	6	13	23,70
12.7x12.7x6	12.7	56	6	16	33,80
16X16X8	16	70	8	19	49,20
19X19X6	19	63	6	21	57,50
19X19X8	19	66	8	21	61,90

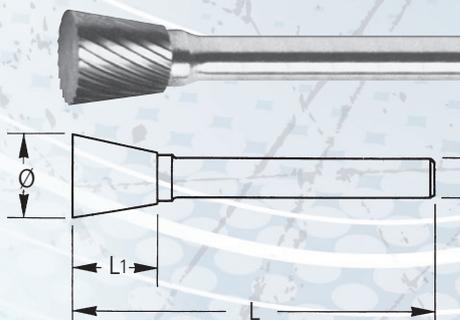
Ø mm	L <sub>1</sub> mm	L mm	d mm	Angolo Angle Winkel Angle Ángulo	2083 €
2.5X3X3	3	38	3	10	7,65
3X5X3	5	38	3	10	7,65
6.3x6.3x6	6.3	44	3	10	12,71
6.3X8X6	8	50	6	10	15,50
9.5x9.5x6	9.5	52	6	13	19,75
12.7x12.7x6	12.7	56	6	16	29,60
16x16x6	16	60	6	19	39,15
16x16x8	16	70	8	19	41,30
19X19X6	19	63	6	21	50,60
19X19X8	19	66	8	21	51,40

**A richiesta**  
On Request  
Auf Anfrage  
Sur Demande  
A Pedido



2084  2085  2086  2081F  2082F

**Ad esaurimento scorte** - Subject to availability until sold out - Solange der vorrat reicht - Jusqu'à Épuisement de stock - Hasta agotamiento del stock



# FRESE A FIAMMA

IN METALLO DURO

CARBIDE BURR FLAME SHAPE  
 FLAMMEFORME VHM FRÄSER  
 FRAISE FORME DE FLAMME CARBURE MONOBLOC  
 FRESAS EN FORMA DE LLAMA DE METAL DURO

TALICARB NORM.

TALICARB NORM.  
 TALICARB NORM.  
 TALICARB NORM.  
 TALICARB NORM.

## 2091



Ø mm	L <sub>1</sub> mm	L mm	d mm	2091 €
3X6X3	6	38	3	7,65
6X16X6	16	50	6	18,55
8X19X6	19	63	6	19,90
12.7X32X6	32	75	6	43,30
16X36X6	36	79	6	61,90
16X36X8	36	87	8	62,60
19X41X6	41	84	6	84,80
19X41X8	41	92	8	84,50

## 2092



Ø mm	L <sub>1</sub> mm	L mm	d mm	2092 €
6X16X6	16	50	6	21,15
8X19X6	19	63	6	23,95
12.7X32X6	32	75	6	52,00
16X36X6	36	79	6	71,00
16X36X8	36	87	8	75,10
19X41X6	41	84	6	96,60
19X41X8	41	92	8	101,00

## 2093



Ø mm	L <sub>1</sub> mm	L mm	d mm	2093 €
3X6X3	6	38	3	7,65
6X16X6	16	50	6	18,55
8X19X6	19	63	6	19,90
12.7X32X6	32	75	6	43,30
16X36X6	36	79	6	61,90
16X36X8	36	84	8	62,60
19X41X6	41	86	6	84,80
19X41X8	41	92	8	84,50

**A richiesta**  
 On Request  
 Auf Anfrage  
 Sur Demande  
 A Pedido



## 2094

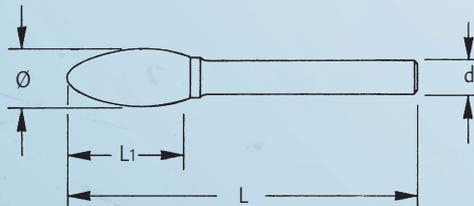


## 2095



## 2096

■ **Ad esaurimento scorte** - Subject to availability until sold out - Solange der vorrat reicht - Jusqu'au Épuisement de stock - Hasta agotamiento del stock



## TALICARB NORM.

TALICARB NORM.  
TALICARB NORM.  
TALICARB NORM.  
TALICARB NORM.

# FRESE PER LEGHE LEGGERE

IN METALLO DURO

CARBIDE BURR FOR LIGHT ALLOYS  
VHM FRÄSER FÜR LEICHTMETALL  
FRAISES EN CARBURE POUR ALLIAGES LÉGERS  
FRESAS PARA ALEACIONES LIGERAS

## 2300



$\emptyset$ mm	L <sub>1</sub> mm	L mm	d mm	2300 €
6X19X6	19	50	6	18,55
9.5X19X6	19	63	6	27,70
12.7X25X6	25	68	6	40,60
16X25X6	25	68	6	49,90
19X25X6	25	68	6	68,40

## 2310



$\emptyset$ mm	L <sub>1</sub> mm	L mm	d mm	2310 €
6X19X6	19	50	6	18,85
9.5X19X6	19	63	6	25,25
12.7X25X6	25	68	6	37,25
16X25X6	25	68	6	57,00
19X25X6	25	68	6	77,70

## 2320



$\emptyset$ mm	L <sub>1</sub> mm	L mm	d mm	2320 €
6X19X6	19	50	6	21,40
9.5X19X6	19	63	6	26,70
12.7X25X6	25	68	6	37,60
16X25X6	25	68	6	53,90
19X25X6	32	68	6	75,60

### FRESA CILINDRICA

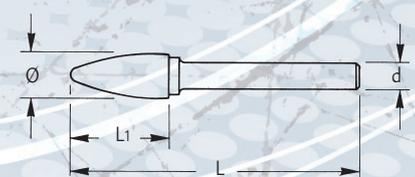
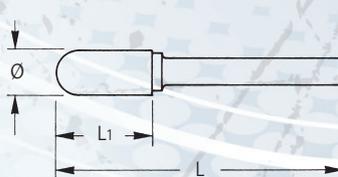
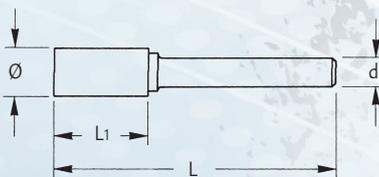
CYLINDRICAL BURR  
ZYLINDERFRÄSER  
FRAISE CYLINDRIQUE  
FRESA CILÍNDRICA

### FRESA CILINDRICA CON TESTA SFERICA

CYLINDRICAL BURR - BALL NOSE  
ZYLINDERFRÄSER - STIRNRADIUS  
FRAISE CYLINDRIQUE - BOUT HÉMISPHERIQUE  
FRESA CILÍNDRICA CON CABEZA ESFÉRICA

### FRESA OGIVA CON TESTA SFERICA

OGIVAL BURR - BALL NOSE  
SPITZBOGENFRÄSER - STIRNRADIUS  
FRAISE OGIVE - BOUT HÉMISPHERIQUE  
FRESA EN FORMA DE ÁRBOL CON CABEZA ESFÉRICA



# FRESA PER LEGHE LEGGERE

IN METALLO DURO

CARBIDE BURRS - LIGHT ALLOYS  
HARTMETALLFRÄSER - LEICHTMETALL  
FRAISES EN CARBURE POUR ALLIAGES LÉGERS  
FRESAS DE METAL DURO PARA ALEACIONES LIGERAS

TALICARB NORM.

TALICARB NORM.  
TALICARB NORM.  
TALICARB NORM.  
TALICARB NORM.

## 2330



Ø mm	L <sub>1</sub> mm	L mm	d mm	2330 €
6X10X6	10	50	6	24,45
9.5X16X6	16	60	6	27,35
12.7X22X6	22	66	6	33,80
16X25X6	25	68	6	60,80
19X25X6	25	68	6	81,30

## 2340



Ø mm	L <sub>1</sub> mm	L mm	d mm	2340 €
6X5X6	5	50	6	18,65
9.5X8X6	8	52	6	20,75
12.7X11X6	11	54	6	29,85
16X14X6	14	58	6	53,90
19X16X6	16	60	6	91,20

## 2350



Ø mm	L <sub>1</sub> mm	L mm	d mm	2350 €
6X16X6	16	50	6	22,20
9.5X27X6	27	71	6	34,40
12.7X28X6	28	72	6	47,50
16X30X6	30	76	6	78,10
19X38X6	38	82	6	101,50

### FRESA OVALE

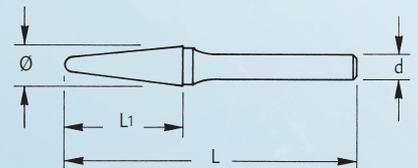
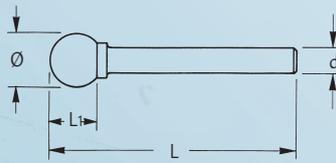
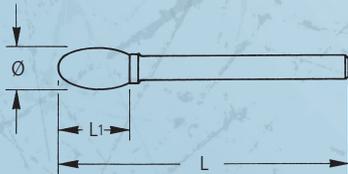
OVAL BURR  
TROPFFENFRÄSER  
FRAISE OVALE  
FRESA DE FORMA OVALADA

### FRESA SFERICA

BALL BURR  
KUGELFRÄSER  
FRAISE Á BOUT SPHÉRIQUE  
FRESA ESFÉRICA

### FRESA CONICA A 14° CON TESTA SFERICA

14° TAPER BURR - BALL NOSE  
14° KONISCHFRÄSER - STIRNRADIUS  
FRAISE CONIQUE 14°- BOUT SPHÉRIQUE  
FRESA CÓNICA A 14° CON CABEZA ESFÉRICA



## TALICARB NORM.

TALICARB NORM.  
TALICARB NORM.  
TALICARB NORM.  
TALICARB NORM.

# FRESE SERIE LUNGA ed EXTRALUNGA IN METALLO DURO

CARBIDE BURRS - LONG AND EXTRALONG SEIRES  
HARTMETALLFRÄSER LANGE - EXTRALANGE AUSFÜHRUNG  
FRAISES EN CARBURE - SÉRIE LONGUE - EXTRALONGUE  
FRESAS DE METAL DURO - SERIE LARGA - EXTRALARGA

## 2101



Ø mm	L <sub>1</sub> mm	L mm	d mm	2101 €
3X14X3	14	50	3	10,19
6X12.7X6	12.7	114	6	16,60
9.5X19X6	19	120	6	23,35
12.7X25X6	25	127	6	37,25

## 2201



Ø mm	L <sub>1</sub> mm	L mm	d mm	2201 €
3X14X3	14	76	3	12,71
6X12.7X6	12.7	163	6	20,25
9.5X19X6	19	171	6	28,25
12.7X25X6	25	177	6	39,50

**A richiesta**  
On Request  
Auf Anfrage  
Sur Demande  
A Pedido



## 2101F



## 2201F

## FRESA CILINDRICA

CYLINDRICAL BURR - ZYLINDERFRÄSER  
FRAISE CYLINDRIQUE - FRESA CILÍNDRICA



# FRESE SERIE LUNGA ed EXTRALUNGA IN METALLO DURO

CARBIDE BURRS - LONG AND EXTRALONG SEIRES  
 VHM FRÄSER LANGE - EXTRALANGE AUSFÜHRUNG  
 FRAISES EN CARBURE - SÉRIE LONGUE - EXTRALONGUE  
 FRESAS DE METAL DURO - SERIE LARGA - EXTRALARGA

## TALICARB NORM.

TALICARB NORM.  
 TALICARB NORM.  
 TALICARB NORM.  
 TALICARB NORM.

### 2111



$\emptyset$ mm	L <sub>1</sub> mm	L mm	d mm	2111 €
3X14X3	14	50	3	10,19
6.3X12.7X6	12.7	114	6	16,60
9.5X19X6	19	120	6	27,35
12.7X25X6	25	127	6	43,70

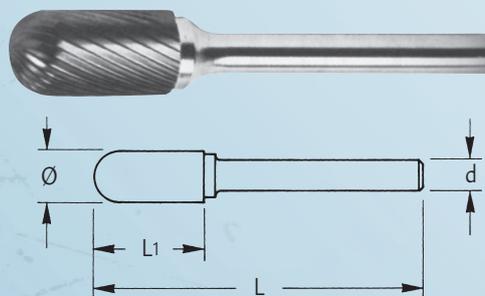
### 2211



$\emptyset$ mm	L <sub>1</sub> mm	L mm	d mm	2211 €
3X14X3	14	76	3	12,71
6.3X12.7X6	12.7	165	6	19,65
9.5X19X6	19	171	6	28,85
12.7X25X6	25	177	6	42,60

## FRESA CILINDRICA CON TESTA SFERICA

CYLINDRICAL BURR - BALL NOSE - ZYLINDERFRÄSER - STIRNRADIUS  
 FRAISE CYLINDRIQUE - BOUT HÉMISPHERIQUE - FRESA CILÍNDRICA CON CABEZA ESFÉRICA



## TALICARB NORM.

TALICARB NORM.  
TALICARB NORM.  
TALICARB NORM.  
TALICARB NORM.

# FRESE SERIE LUNGA ed EXTRALUNGA IN METALLO DURO

CARBIDE BURRS - LONG AND EXTRALONG SEIRES  
VHM FRÄSER LANGE - EXTRALANGE AUSFÜHRUNG  
FRAISES EN CARBURE - SÉRIE LONGUE - EXTRALONGUE  
FRESAS DE METAL DURO - SERIE LARGA - EXTRALARGA

### 2121



$\varnothing$ mm	L <sub>1</sub> mm	L mm	d mm	2121 €
3X13X3	13	50	3	10,19
6X13X6	13	114	6	16,60
9.5X19X6	19	120	6	25,80
12.7X25X6	25	127	6	37,25

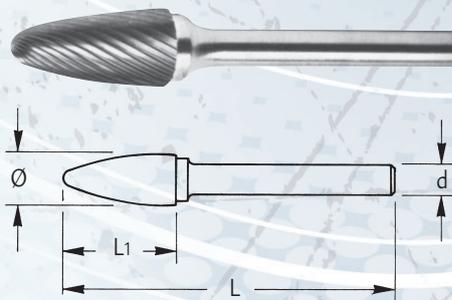
### 2221



$\varnothing$ mm	L <sub>1</sub> mm	L mm	d mm	2221 €
3X13X3	13	76	3	12,71
6X13X6	13	163	6	20,25
9.5X19X6	19	171	6	29,85
12.7X25X6	25	177	6	46,00

## FRESA OGIVA CON TESTA SFERICA

CARBIDE OGIVAL BURR - BALL NOSE - VHM SPITZBOGENFRÄSER - STIRNRADIUS  
FRAISE OGIVE EN CARBURE - BOUT HÉMISPHERIQUE - FRESA EN FORMA DE LLAMA DE METAL DURO



# FRESE SERIE LUNGA ed EXTRALUNGA IN METALLO DURO

CARBIDE BURRS - LONG AND EXTRALONG SEIRES  
 VHM FRÄSER LANGE - EXTRALANGE AUSFÜHRUNG  
 FRAISES EN CARBURE - SÉRIE LONGUE - EXTRALONGUE  
 FRESAS DE METAL DURO - SERIE LARGA - EXTRALARGA

TALICARB NORM.

TALICARB NORM.  
 TALICARB NORM.  
 TALICARB NORM.  
 TALICARB NORM.

## 2131



Ø mm	L <sub>1</sub> mm	L mm	d mm	2131 €
3X13X3	13	50	3	10,19
6X13X6	13	114	6	16,60
9.5X19X6	19	120	6	25,80
12.7X25X6	25	127	6	37,25

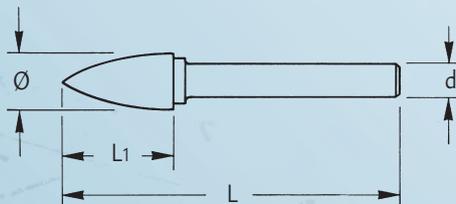
## 2231



Ø mm	L <sub>1</sub> mm	L mm	d mm	2231 €
3X13X3	13	76	3	12,71
6X13X6	13	163	6	20,25
9.5X19X6	19	171	6	28,25
12.7X25X6	25	177	6	39,50

## FRESA OGIVA A PUNTA

OGIVAL BURR - POINTED NOSE - SPITZBOGENFRÄSER - STIRNRADIUS  
 FRAISE OGIVE - BOUT POINTU - FRESA DE FORMA OJIVAL



## TALICARB NORM.

TALICARB NORM.  
TALICARB NORM.  
TALICARB NORM.  
TALICARB NORM.

# FRESE SERIE LUNGA ed EXTRALUNGA IN METALLO DURO

CARBIDE BURRS - LONG AND EXTRALONG SEIRES  
VHM FRÄSER LANGE - EXTRALANGE AUSFÜHRUNG  
FRAISES EN CARBURE - SÉRIE LONGUE - EXTRALONGUE  
FRESAS DE METAL DURO - SERIE LARGA - EXTRALARGA

## 2141



## 2241

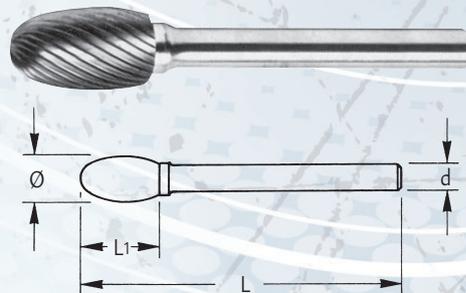


$\emptyset$ mm	L <sub>1</sub> mm	L mm	d mm	2141 €
3X5X3	5	50	3	10,19
6.3X10X6	10	111	6	16,60
9.5X16X6	16	117	6	25,95
12.7X22X6	22	123	6	38,75

$\emptyset$ mm	L <sub>1</sub> mm	L mm	d mm	2241 €
3X5X3	5	76	3	12,71
6.3X10X6	10	163	6	20,25
9.5X16X6	16	168	6	28,40
12.7X22X6	22	177	6	41,40

## FRESA OVALE

OVAL BURR - TROPFENFRÄSER  
FRAISE OVALE - FRESA DE FORMA OVALADA



# FRESE SERIE LUNGA ed EXTRALUNGA IN METALLO DURO

CARBIDE BURRS - LONG AND EXTRALONG SEIRES  
VHM FRÄSER LANGE - EXTRALANGE AUSFÜHRUNG  
FRAISES EN CARBURE - SÉRIE LONGUE - EXTRALONGUE  
FRESAS DE METAL DURO - SERIE LARGA - EXTRALARGA

## TALICARB NORM.

TALICARB NORM.  
TALICARB NORM.  
TALICARB NORM.  
TALICARB NORM.

### 2151



$\emptyset$ mm	L <sub>1</sub> mm	L mm	d mm	2151 €
3X2X3	2	50	3	10,19
6.3X5X6	5	107	6	16,60
9.5X8X6	8	108	6	21,00
12.7X11X6	11	111	6	28,50

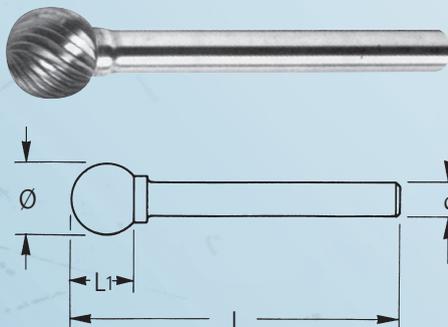
### 2251



$\emptyset$ mm	L <sub>1</sub> mm	L mm	d mm	2251 €
3X2X3	2	76	3	12,71
6.3X5X6	5	157	6	20,25
9.5X8X6	8	161	6	23,45
12.7X11X6	11	164	6	31,20

## FRESA SFERICA

BALL BURR - KUGELFRÄSER  
FRAISE À BOUT SPHÉRIQUE - FRESA ESFÉRICA



## TALICARB NORM.

TALICARB NORM.  
TALICARB NORM.  
TALICARB NORM.  
TALICARB NORM.

# FRESE SERIE LUNGA ed EXTRALUNGA IN METALLO DURO

CARBIDE BURRS - LONG AND EXTRALONG SEIRES  
VHM FRÄSER LANGE - EXTRALANGE AUSFÜHRUNG  
FRAISES EN CARBURE - SÉRIE LONGUE - EXTRALONGUE  
FRESAS DE METAL DURO - SERIE LARGA - EXTRALARGA

### 2161



Ø mm	L <sub>1</sub> mm	L mm	d mm	2161 €
3X12X3	12	50	3	10,19
6X16X6	16	117	6	16,60
9.5X27X6	9.5	127	6	34,80
12.7X28X6	28	125	6	41,40

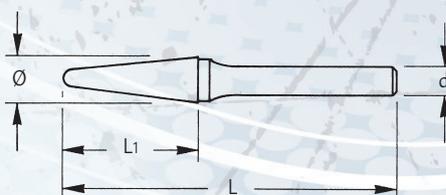
### 2261



Ø mm	L <sub>1</sub> mm	L mm	d mm	2261 €
3X12X3	12	76	3	12,71
6X16X6	16	168	6	20,25
9.5X27X6	27	179	6	37,25
12.7X28X6	28	180	6	43,70

## FRESA CONICA A 14° CON TESTA SFERICA

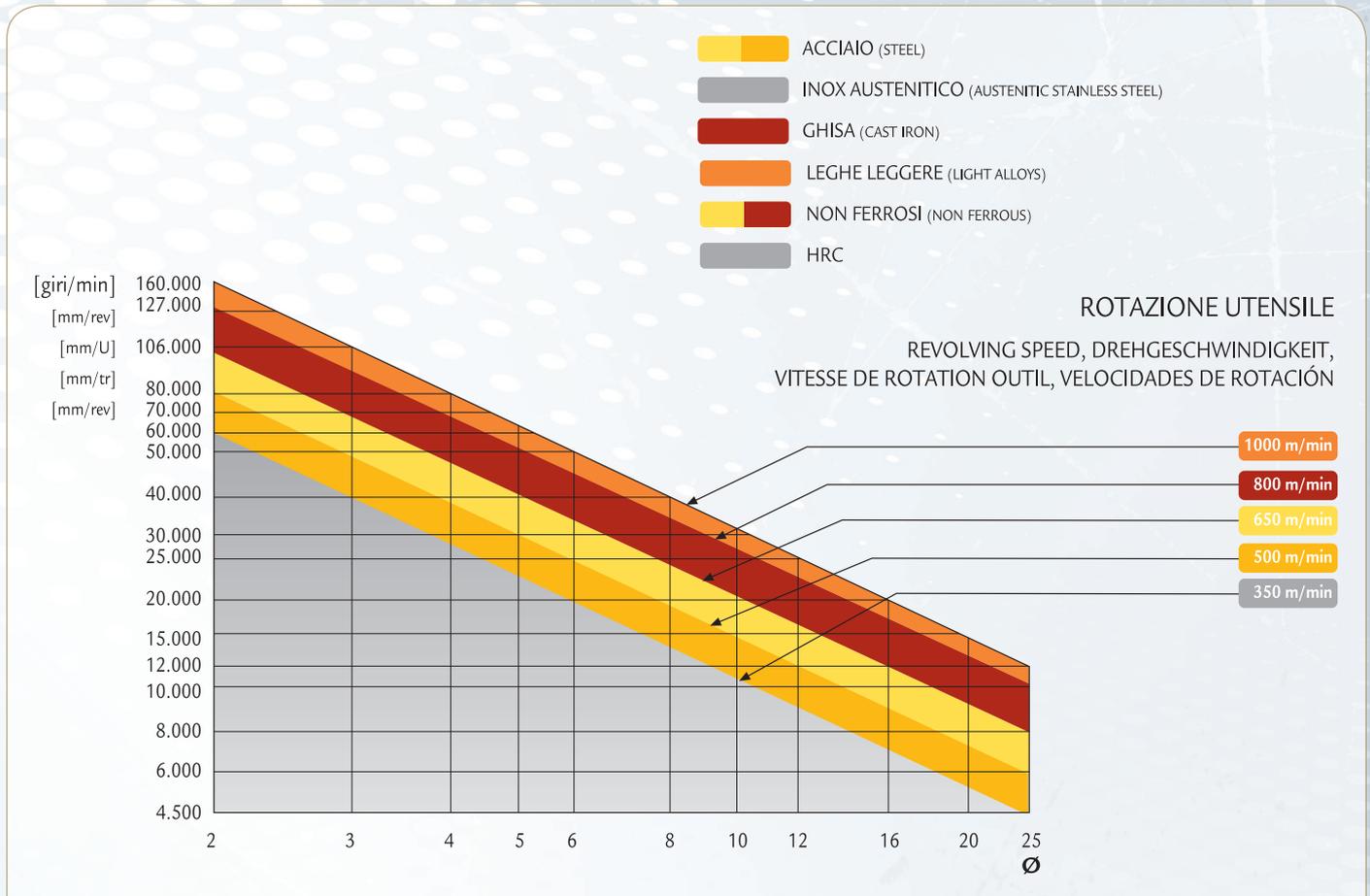
14° TAPER BURR - BALL NOSE - 14° KONISCHFRÄSER - STIRNRADIUS  
FRAISE CONIQUE 14° - BOUT HÉMISPHERIQUE - FRESA CÓNICA A 14° CON CABEZA ESFÉRICA





# INFORMAZIONI TECNICHE:

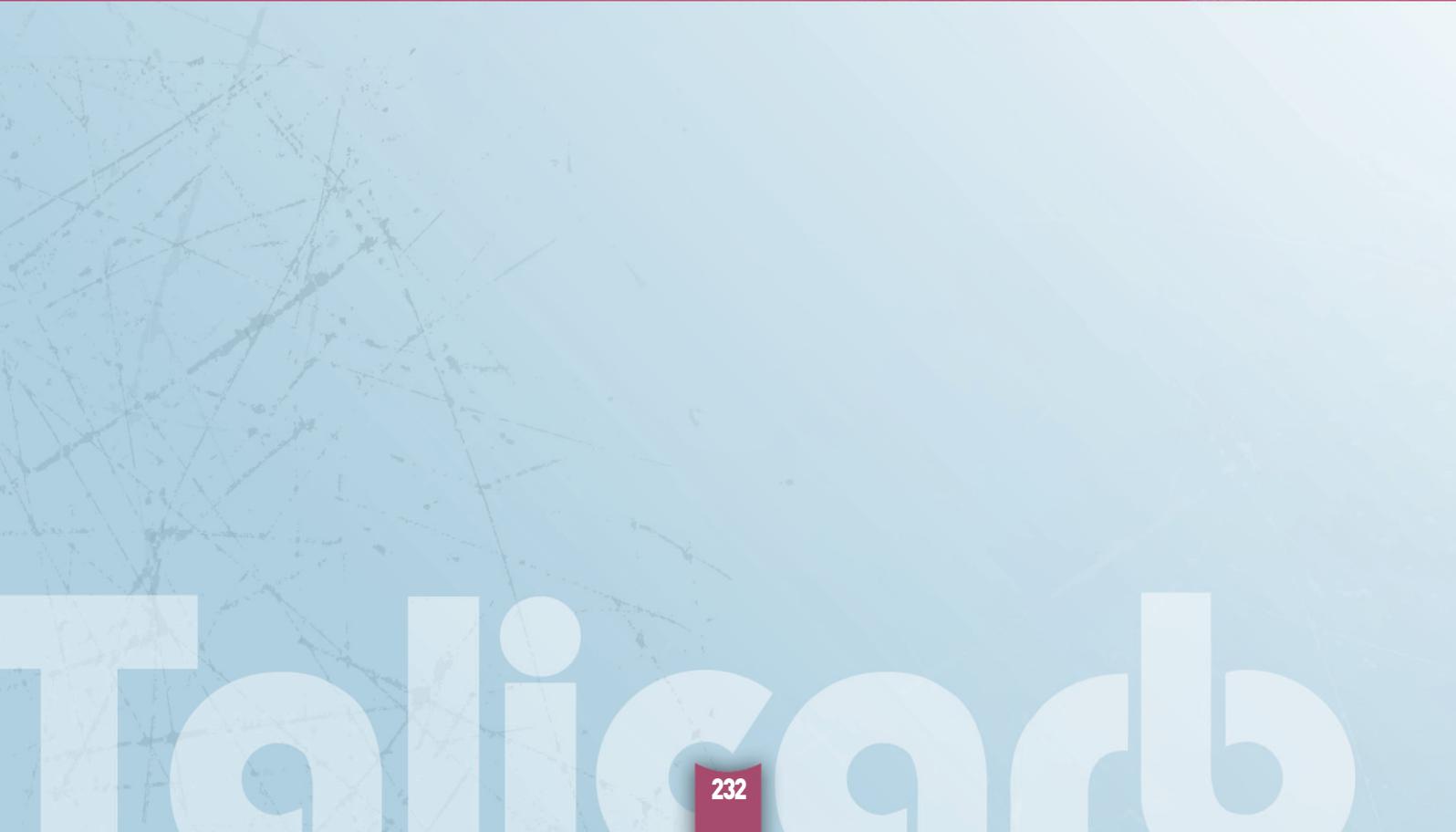
Technical instructions  
 Instructions techniques  
 Technische Hinweise  
 Informaciones técnicas



## TAGLIO Vc (m/min)

Cut, schnitt, coupe, dentado

	<b>TAGLIO - Alluminio</b> Aluminium Cut Aluminium Schnitt Coupe Aluminium Dentado - Aluminio	<b>800 ÷ 1000</b>
	<b>TAGLIO 6 - Grosso</b> Cut # 6 - Coarse Cut Schnitt # 6 - Groß Coupe # 6 - Coupe gros Dentado 6 - Grueso	<b>650 ÷ 800</b>
	<b>TAGLIO 1 - Standard</b> Cut # 1 - Standard Schnitt # 1 - Standard Coupe # 1 - Standard Dentado 1 - Estandar	<b>500 ÷ 650</b>
	<b>TAGLIO 4 - Rompitruciolo</b> Cut # 4 - Chip breaker Schnitt # 4 - Spanbrecher Coupe # 4 - Brise-copeau Dentado 4 - Rompevirutas	
	<b>TAGLIO 5 - Fine</b> Cut # 5 - Fine cut Schnitt # 5 - Fein Coupe # 5 - Mince Dentado 5 - Fin	<b>500 ÷ 650</b>
	<b>TAGLIO 2 - Diamante</b> Cut # 2 - Diamond Schnitt # 2 - Diamant Coupe # 2 - Diamant Dentado 2 - Diamante	<b>500 ÷ 800</b>
	<b>TAGLIO 3 - Incrociato</b> Cut # 3 - Double cut Schnitt # 3 - Kreuzhieb Coupe # 3 - Croisé Dentado 3 - Cruzado	



Tajicardb

# BARRETTE RETTIFICATE/BULINO

in metallo duro integrale



SOLID CARBIDE RODS / ENGRAVING CUTTER



VHM - WERKZEUGE / GRAVIERSTICHEL



OUTILS EN CARBURE MONOBLOC / FRAISES À GRAVER



HERRAMIENTAS DE METAL DURO INTEGRAL / FRESAS DE GRABADO



# BARRETTE RETTIFICATE

IN METALLO DURO

SOLID CARBIDE RODS  
VHM-RUNDSTÄBE  
BARREAUX CYLINDRIQUES EN CARBURE MONOBLOC  
BARRAS DE METAL DURO INTEGRAL

TALICARB NORM.

TALICARB NORM.  
TALICARB NORM.  
TALICARB NORM.  
TALICARB NORM.

## 1085

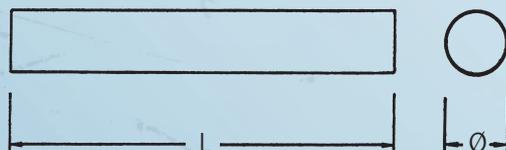


Ø mm h7	L mm	1085 €
1.5	100	5,76
1.5	200	11,55
1.5	320	14,70 ■
1.5	330	17,35
2.0	100	6,06
2.2	200	12,15
2.0	320	15,40 ■
2.0	330	18,30
2.5	100	7,16
2.5	200	14,30
2.5	320	18,35 ■
2.5	330	21,50
3.0	100	7,69
3.0	200	15,40
3.0	330	23,10
3.5	100	8,58
3.5	200	17,15
3.5	320	16,35 ■
3.5	330	25,75
4.0	100	9,48
4.0	200	18,90
4.0	330	28,35
4.5	100	10,81
4.5	200	21,55
4.5	310	27,10 ■
4.5	330	32,50

Ø mm h7	L mm	1085 €
5.0	100	11,83
5.0	200	23,70
5.0	330	35,50
6.0	100	15,15
6.0	200	30,40
6.0	330	45,60
7.0	100	18,90
7.0	200	37,80
7.0	330	57,00
8.0	100	22,20
8.0	200	44,80
8.0	330	67,20
9.0	100	26,45
9.0	200	53,20
10.0	100	30,75
10.0	200	61,60
10.0	330	92,20
11.0	100	36,25
11.0	200	72,80
12.0	100	42,20
12.0	200	84,10
12.0	330	126,00
13.0	100	49,80
13.0	200	99,30
14.0	100	57,30
14.0	200	114,50

Ø mm h7	L mm	1085 €
15.0	100	64,20
15.0	200	129,00
16.0	100	73,50
16.0	200	146,50
17.0	100	81,60
17.0	200	163,00
18.0	100	90,80
18.0	200	181,50
19.0	100	102,50
19.0	200	208,00
20.0	100	113,50
20.0	200	229,00

■ Ad esaurimento scorte - Subject to availability until sold out - Solange der vorrat reicht - Jusqu'à Épuisement de stock - Hasta agotamiento del stock









## SERVIZIO DI RIAFFILATURA E RIVESTIMENTO

Re-sharpening and coating service  
Nachschleif - und beschichtungservice  
Service de affûtage à nouveau et revêtement  
Servicio de afilado y recubrimiento

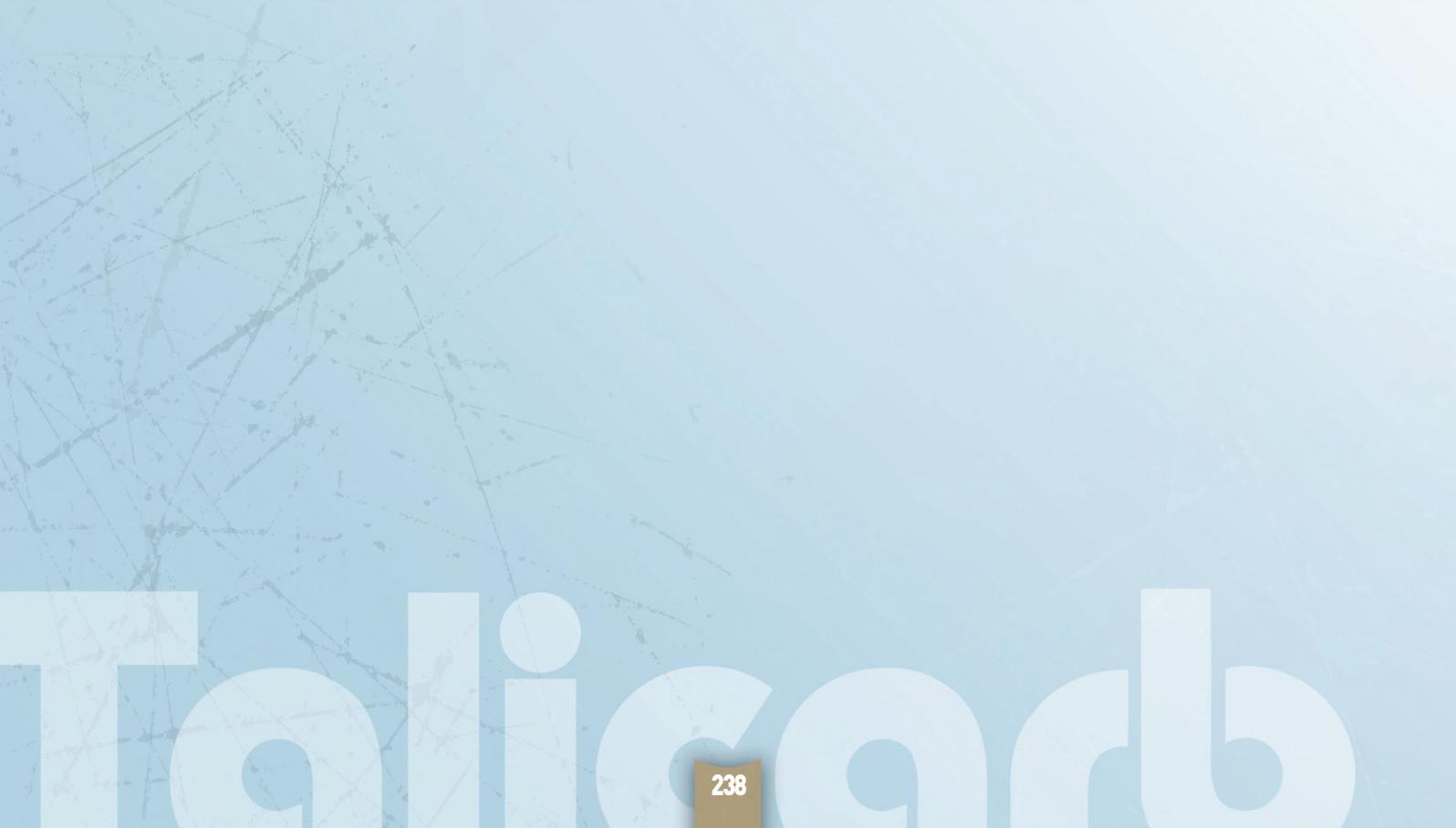


## UTENSILI SPECIALI

Special tools department  
Abteilung für Sonderwerkzeuge  
Outils spéciaux  
Herramientas especiales

# I NOSTRI SERVIZI SEMPRE A DISPOSIZIONE

Our prompt services always ready for you  
Unser prompter Service ist immer für Sie da  
Nos services toujours à votre Disposition  
Nuestro rápido servicio siempre listo para usted



# Talicaadb

# INFORMAZIONI TECNICHE



TECHNICAL INSTRUCTIONS



TECHNISCHE HINWEISE



INSTRUCTIONS TECHNIQUES



INFORMACIONES TÉCNICAS





## SERVIZIO TECNICO

Technical Help  
Technische Hilfe  
Service technique  
Ayuda técnica



## E-COMMERCE

[www.angeloghezzi.it](http://www.angeloghezzi.it)

# I NOSTRI SERVIZI SEMPRE A DISPOSIZIONE

Our prompt services always ready for you  
Unser prompter Service ist immer für Sie da  
Nos services toujours à votre Disposition  
Nuestro rápido servicio siempre listo para usted

## Vc

### VELOCITÀ DI TAGLIO [M/MIN]

Cutting speed [m/min]  
Schnittgeschwindigkeit [m/min]  
Vitesse de coupe [m/min]  
Velocidad de corte [m/min]

## f

### AVANZAMENTO AL GIRO [MM/GIRO]

Feed [mm/rev]  
Vorschub [mm/U]  
Avance [mm/tr]  
Avances [mm/rev]

## Fz [mm]

### AVANZAMENTO AL DENTE

Tooth Feed  
Zahnvorschub  
Avancement au dent  
Avance al LABIOS

## Vf [mm]

### VELOCITÀ DI AVANZAMENTO

Feed rate  
Vorschubgeschwindigkeit  
Vitesse d'avance  
Factor de avance

## Vfm [mm/min]

### VELOCITÀ DI AVANZAMENTO MODIFICATA

Modified feed rate  
Veraenderte  
Vorschubgeschwindigkeit  
Vitesse d'avance modifiée  
Factor de avance modificado

## FCF

### FATTORE DI CORREZIONE AVANZAMENTO

Correction Feed Factor  
Vorschubberichtigungsfaktor  
Facteur de correction  
avancement  
Factor de corrección avance

## N/mm<sup>2</sup> [R]

### RESISTENZA ALLA TRAZIONE

Resistance to Tensile Stress  
Antriebsstandfestigkeit  
Resistance à la traction  
Resistencia a la tracción

## Øe

### DIAMETRO EFFETTIVO DI LAVORO

Actual Working Diameter  
Tatsächliche  
Arbeitsdurchmesser  
Diamètre effectif de usinage  
Diámetro efectivo de trabajo

## HB

### DUREZZA BRINELL

Brinell Hardness  
Brinellhärte  
Dureté Brinell  
Dureza Brinell

## Z

### NUMERO DEI TAGLIANTI

Cutting Edges Number  
Schneidenzahl  
Numéros des coupants  
Número de los labios

## Ø

### DIAMETRO UTENSILE

Tool's diameter  
Werkzeugsdurchmesser  
Diamètre de l'outil  
Diámetro herramienta

## VcF

### FATTORE DI CORREZIONE VELOCITÀ DI TAGLIO RIVESTIMENTI

Coating correction cutting speed factor  
Berichtigungsfaktor der Schnittgeschwindigkeit Beschichtungen  
Facteur de correction vitesse de coupe revêtements  
Factor de corrección des corte de recubrimientos

## ap

### PROFONDITÀ ASSIALE

Axial Depth  
Axiale Tiefe  
Profondeur axial  
Profundidad axial

## ae

### PROFONDITÀ RADIALE

Radial Depth  
Radiale Tiefe  
Profondeur radiale  
Profundidad radial

# PARAMETRI DI TAGLIO

## FRESATURA CILINDRICA FRONTALE

CUTTING PARAMETER - FACE MILLING  
 SCHNITTEDATEN - WALZSTIRNFRÄSEN  
 PARAMÈTRES DE COUPE - FRAISAGE CYLINDRIQUE FRONTALE  
 PARÁMETROS DE CORTE - FRESADO CILÍNDRICO FRONTAL

# INFORMAZIONI

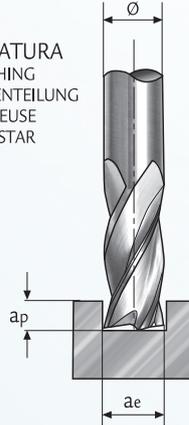
Technical instructions  
 Instructions techniques

## FCF

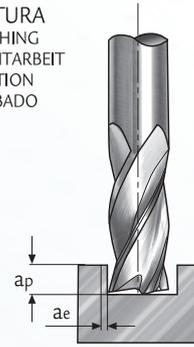
FORATURA  
 DRILLING  
 BOHRUNG  
 PERCER  
 TALADRO



SGROSSATURA  
 ROUGHING  
 GROBE RILLENTILUNG  
 RAVAGEUSE  
 DESBASTAR



FINITURA  
 FINISHING  
 SCHLICHTARBEIT  
 FINITION  
 ACABADO



Z=2

Z=3

Z=4

[FCF] = 0,3  
 $f_{zFCF} = 0,3 \times f_z$

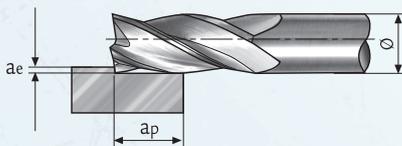
$ae = 1,0 \times \varnothing$   
 $ap = 0,5 \times \varnothing$  [FCF] = 1,0  
 $f_{zFCF} = 1,0 \times f_z$

$ae = 0,1 \times \varnothing$   
 $ap = 0,5 \times \varnothing$  [FCF] = 2,0  
 $f_{zFCF} = 2,0 \times f_z$

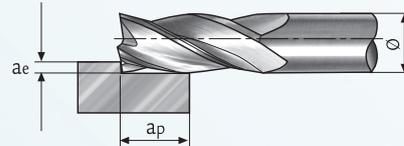
### FATTORE DI CORREZIONE:

End mills correction factor - Fräser Berichtigungsfaktor - Facteur de correction fraises - Factor de corrección fresas

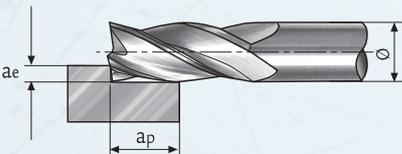
$ae = 0,1 \text{ mm}$   
 $ap = 1,5 \times \varnothing$  [FCF] = 2,0  $f_{zFCF} = 2,0 \times f_z$



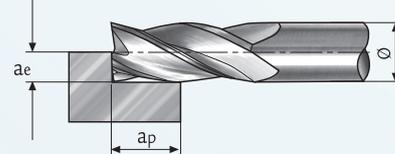
$ae = 0,15 \times \varnothing$   
 $ap = 1,5 \times \varnothing$  [FCF] = 1,5  $f_{zFCF} = 1,5 \times f_z$



$ae = 0,2 \times \varnothing$   
 $ap = 1,0 \times \varnothing$  [FCF] = 1,0  $f_{zFCF} = 1,0 \times f_z$



$ae = 0,3 \times \varnothing$   
 $ap = 1,0 \times \varnothing$  [FCF] = 0,7  $f_{zFCF} = 0,7 \times f_z$



Z=3

Z=4

MULTI

### FATTORE DI CORREZIONE:

End mills correction factor - Fräser Berichtigungsfaktor - Facteur de correction fraises - Factor de corrección fresas

CUTTING PARAMETER - STRAIGHT END MILLS - SOLID CARBIDE  
 SCHNITTEDATEN - ZYLINDRISCHEN SCHAFTFRÄSERN - VHM  
 PARAMÈTRES DE COUPE - FRAISES CYLINDRIQUES FRONTALES - CARBURE MONOBLOC  
 PARÁMETROS DE CORTE - FRESAS FRONTALES DE MANGO CILÍNDRICO - METAL DURO INTEGRAL

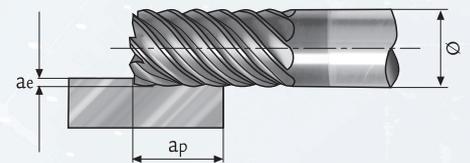
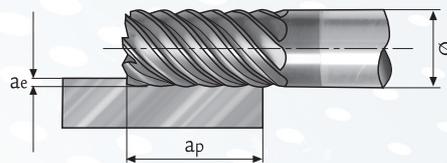
### Impegno utensile per fresatura laterale (ae)

Operating conditions of the tools when extent milling (ae)

Einsatzbedingungen der Werkzeuge beim Umfangsfräsen (ae)

Engagement outil pour fraisage latéral (ae)

Empeño herramienta para fresadura lateral (ae)



	~35HRc	~45HRc	~55HRc	~65HRc
ae =	0,08 x Ø	0,05 x Ø	0,02 x Ø	0,01 x Ø
ap =	1,5 x Ø	1,0 x Ø	1,0 x Ø	1,0 x Ø

### FRESATURA LATERALE:

Extent milling, umfangsfräsen, fraisage latéral, fresado lateral

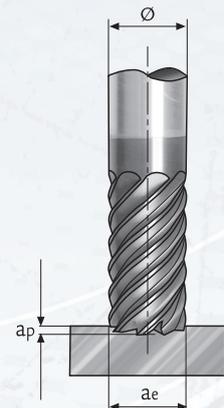
### Impegno utensile per fresatura frontale

Operating conditions of the tools with front milling

Einsatzbedingungen der Werkzeuge beim Stirnfräsen

Engagement outil pour fraisage en bout

Empeño herramienta para fresadura frontal



	45 ~ 65HRc
ae =	1,0 x Ø
ap =	0,05 x Ø

### FRESATURA FRONTALE:

Front milling, Stirnfräsen, fraisage en bout, fresado frontal

# PARAMETRI DI TAGLIO

## Frese semisferiche e toriche - MATERIALI DURI

CUTTING PARAMETERS - Ball-nose and toric end mills - Hard materials  
 SCHNITTDATEN - Radiuskopierfräser und torusfräser - Hartstoffe  
 PARAMÈTRES DE COUPE - Fraise hémisphérique et fraise torique - Matières dures  
 PARÁMETROS DE CORTE - Fresas hemisféricas y tóricas - Materiales duros

# INFORMAZIONI

## Technical instructions Instructions techniques

### Valori per frese ragiate per operazioni standard

Values for taper mills with ball nose for standard applications  
 Anfangswert für Radiusfräser bei Standard Anwendungen  
 Valeurs pour fraises avec rayon pour opérations standard  
 Valores para fresas de cabeza esférica para empleos estándar

Z2

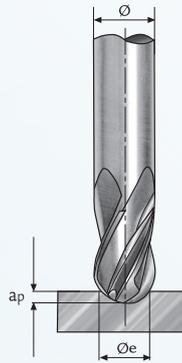
Z3

Z4

$$Z2 \ a_p = < 0,03 \times \varnothing$$

$$Z3 \ a_p = < 0,02 \times \varnothing$$

$$Z4 \ a_p = < 0,015 \times \varnothing$$



#### CALCOLO DEL DIAMETRO EFFETTIVO (Øe) FRESA SEMISFERICA

$$\varnothing_e = 2 \sqrt{a_p (\varnothing - a_p)}$$

Calculation of the effective cutting diameter (Øe) for ball-nose end mill  
 Berechnung des effektiven Schneidendurchmessers (Øe) für Radiuskopierfräser  
 Estimation du diamètre effectif (Øe) fraise hémisphérique  
 Cálculo de diámetro efectivo (Øe) para fresa hemisférica

### FRESATURA CON TESTA SEMISFERICA:

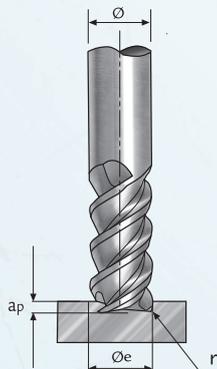
Front milling with ball-nose end mill, Stirnfräsen für Radiuskopierfräser, fraise en bout fraise hémisphérique, fresado frontal de fresa esférica

### Valori per frese toriche per operazioni standard

Values for toric end mills for standard applications  
 Anfangswert für Torusfräser bei Standard Anwendungen  
 Valeurs pour fraises torique pour opérations standard  
 Valores para fresas tóricas para empleos estándar

$$a_p = 0,02 \times \varnothing$$

- r = Raggio fresa  
End mill radius
- Ø = Diametro fresa  
End mill diameter
- Øe = Diametro effettivo fresa  
Real end mill diameter



#### CALCOLO DEL DIAMETRO EFFETTIVO (Øe) FRESA TORICA

$$\varnothing_e = (\varnothing - 2r) + 2 \sqrt{a_p (2r - a_p)}$$

Calculation of the effective cutting diameter (Øe) for end mills with corner radius  
 Berechnung des effektiven Schneidendurchmessers (Øe) für Schafffräser mit Eckenradius  
 Estimation du diamètre effectif (Øe) fraise torique  
 Cálculo de diámetro efectivo (Øe) para fresa tórica

### FRESATURA CON TESTA TORICA:

Front milling with toric end mills, Stirnfräsen für Torusfräser, fraise en bout fraise torique, fresado frontal con fresa tórica

# TECNICHE:

Technische Hinweise  
Informaciones técnicas

# PARAMETRI DI TAGLIO CERMET

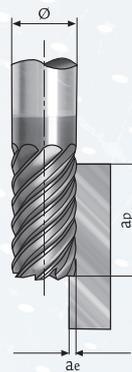
CUTTING PARAMETERS - CERMET  
SCHNITTDATEN - CERMET  
PARAMÈTRES DE COUPE - CERMET  
PARAMETROS DE CORTE - CERMET

Z4

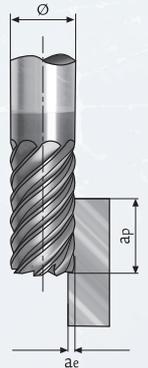
multi

## Impegno utensile per fresatura laterale

Operating conditions of the tools when extent milling  
Einsatzbedingungen der Werkzeuge beim Umfangsfräsen  
Engagement outil our fraisage latéral  
Empeño herramienta para fresadura lateral



$$\text{multi} \quad \begin{array}{l} a_e = 0,25 \text{ mm} \\ a_p = 1,5 \times \varnothing \end{array}$$



$$\text{Z4} \quad \begin{array}{l} a_e = 0,05 \text{ mm} \times \varnothing \\ a_p = 1,5 \times \varnothing \end{array}$$

## FRESATURA LATERALE:

Extent milling, Umfangsfräsen, fraisage latéral, fresado lateral

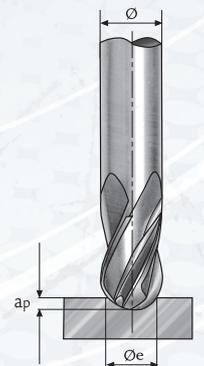
## Impegno utensile per fresatura frontale

Operating conditions of the tools with front milling  
Einsatzbedingungen der Werkzeuge beim Stirnfräsen  
Engagement outil pour fraisage en bout  
Empeño herramienta para fresadura frontal

Z4

$$\text{Z4 } a_p < 0,15 \times \varnothing$$

$$\varnothing_e = 2 \sqrt{a_p (\varnothing - a_p)}$$



## FRESATURA CON TESTA SEMISFERICA:

Front milling with ball-nose end mill, Stirnfräsen für Radiuskopierfräser, fraisage en bout fraise hémisphérique, fresado frontal de fresa esférica

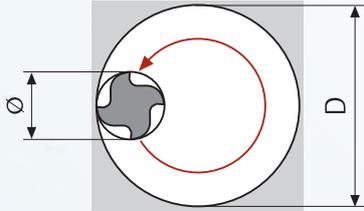
# PARAMETRI DI TAGLIO

## INFORMAZIONI GENERALI

CUTTING PARAMETERS - General Information  
 SCHNITTDATEN - Allgemeine Informationen  
 PARAMÈTRES DE COUPE - Informations générales  
 PARAMETROS DE CORTE - Informaciones generales

# INFORMAZIONI

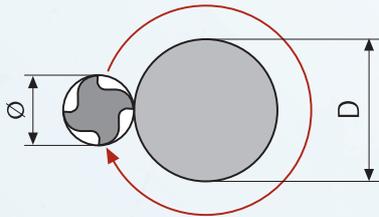
Technical instructions  
 Instructions techniques



$$V_{fM} = \frac{V_f \times (D - \varnothing)}{D} \text{ [mm/min]}$$

### CONTORNATURA INTERNA:

Internal contour, Innenkontour, contournage intérieur, interpolación interior



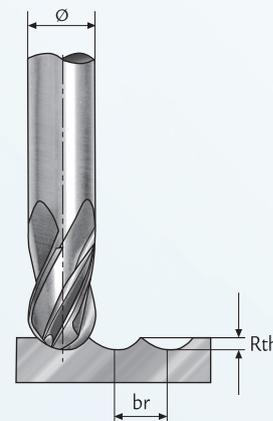
$$V_{fM} = \frac{V_f \times (D + \varnothing)}{D} \text{ [mm/min]}$$

### CONTORNATURA ESTERNA:

External contour, Außenkontour, contournage extérieur, interpolación exterior

$$R_{th} = \frac{\varnothing}{2} \sqrt{\frac{\varnothing^2 - br^2}{4}}$$

$$br = 2 \sqrt{R_{th} (\varnothing - R_{th})}$$



[Rth] = rugosità ottenuta in mm  
 Depth of roughness (mm), Rautiefe in mm, rugosité obtenue en mm, rugosidad obtenida en mm

[br] = passo o ampiezza tra i solchi  
 Line offset (mm), Zeilensprung in mm, pas ou amplitude entre les rainures, división o amplitud entre las ranuras

### CALCOLO DELLA RUGOSITÀ [RTH]:

Calculation of roughness depth, Berechnung der Rautiefe, calcul de la rugosité (Rth), cálculo de la rugosidad







# Talicaarb

## UFFICIO COMMERCIALE

Sales department • Verkaufsabteilung  
Bureau des ventes • Despacho comercial

**N° VERDE 800-018130**



**Angelo Ghezzi & C SpA**

Via Privata Gorlich, 1  
I-20037 Paderno Dugnano (MI) • ITALY  
Tel. +39 02 9189 314 • Fax +39 02 99 041 403

[www.angeloghezzi.it](http://www.angeloghezzi.it)  [info@angeloghezzi.it](mailto:info@angeloghezzi.it)