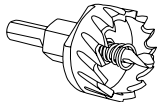
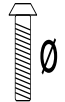
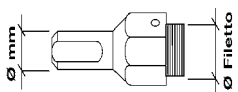
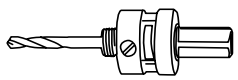
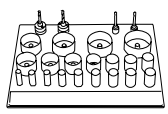
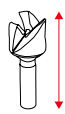
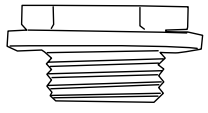
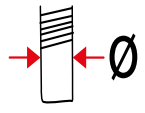
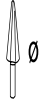
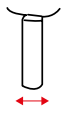
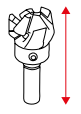
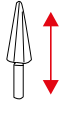
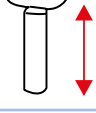
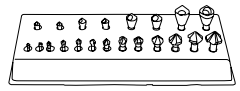
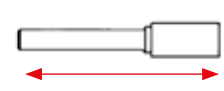
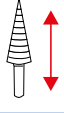
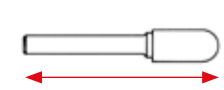
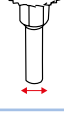
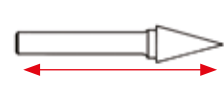
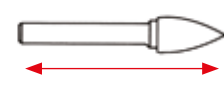
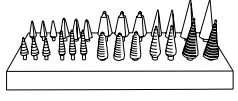
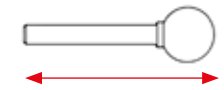
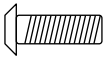
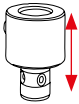
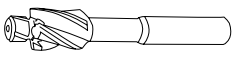
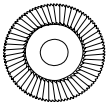
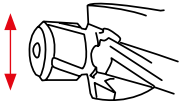
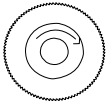
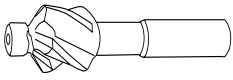
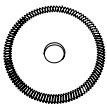
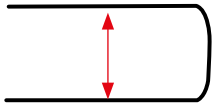
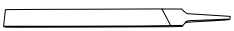
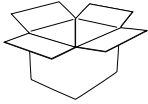
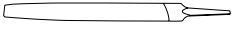
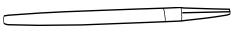
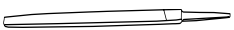
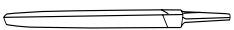




FRESE - ALESATORI - UTENSILI CONICI - LIME PER MECCANICA

MILLING CUTTERS - REAMERS - TAPERED BITS - FILES FOR MACHINING - FRESAS Y BROCAS - ESCARIADORES - BROCAS CÓNICAS - LIMAS DE TALLER

	Diametro fresa Milling cutter diameter Diámetro de fresa		Per viti For screws Para tornillos
	Attacco Fitting Vástago		Diametro gambo Leg diameter Diámetro de vástago
	Lunghezza punta pilota Pilot bit length Longitud de broca pilota		Altezza Height Altura
	Attacco alberino Shaft fitting Vástago roscado		Diametro gambo Leg diameter Diámetro de vástago
	Composizione Composition Composición		Altezza Height Altura
	Codice adattatore Adapter code Código de adaptador		Diametro gambo Leg diameter Diámetro de vástago
	Diametro fresa Milling cutter diameter Diámetro de fresa		Diametro gambo Leg diameter Diámetro de vástago
	Diametro codolo Shank diameter Diámetro de espiga		Altezza Height Altura
	Altezza totale Total height Altura total		Composizione Composition Composición
	Altezza codolo Shank height Altura de espiga		Composizione Composition Composición
	Diametro fresa Milling cutter diameter Diámetro de fresa		Lunghezza Length Longitud
	Altezza totale Total height Altura total		Lunghezza Length Longitud
	Diametro codolo Shank diameter Diámetro de espiga		Lunghezza Length Longitud
	Diametro fresa Milling cutter diameter Diámetro de fresa		Lunghezza Length Longitud
	Composizione Composition Composición		Lunghezza Length Longitud

	Diametro fresa Milling cutter diameter Diámetro de fresa		Misure Measurements Medidas
	Diametro fresa Milling cutter diameter Diámetro de fresa		Misure Measurements Medidas
	Dimensione espulsore Ejector dimension Dimensiones de expulsor		Per viti For screws Para tornillos
	Altezza Height Altura		Diametro fresa Milling cutter diameter Diámetro de fresa
	Dimensione Dimensions Dimensiones		Diametro testa Head diameter Diámetro de cabeza
	Dimensione Dimensions Dimensiones		Diametro fresa Milling cutter diameter Diámetro de fresa
	Dimensione Dimensions Dimensiones		Diametro codolo Shank diameter Diámetro de espiga
	Misure Measurements Medidas		
	Confezioni Packaging Embalaje		
	Tipo manico Handle type Tipo mango		
	Misure Measurements Medidas		
	Misure Measurements Medidas		
	Misure Measurements Medidas		
	Misure Measurements Medidas		
	Misure Measurements Medidas		

ART. 030/031

Con scarico laterale e da diametro 20mm molla di espulsione
Profondità di foratura 8mm - 031.01 profondità taglio 5mm

With lateral discharge and ejector spring - 8mm boring depth - 031.01 5 mm cutting depth

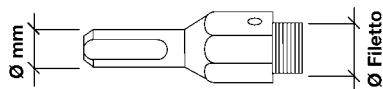
Con descarga lateral y resorte de expulsión - Profundidad de perforación: 8 mm

031.01 profundidad de corte: 5 mm

Ø										
	030.01 HSS	€	030.10 HSS+Co5%	€	030.40 HSS+TIN	€	030.20 HSS+TIAIN	€	031.01 T.C.T.	€
	durezza al dente HRC 64 idonee per la foratura di acciaio, ferro, materiali metallici fino a 750 N/mm2		durezza al dente HRC 64 idonee per la foratura di acciaio inox, ferro, leghe leggere, materiali metallici fino a 1.300 N/mm2		durezza al dente HRC 66 idonee per la foratura di acciaio inox, ferro, alluminio, materiali abrasivi, materiali metallici fino a 1.150 N/mm2		durezza al dente HRC 66 idonee per la foratura di acciaio inox, acciai duri e pastosi, ferro, alluminio, materiali fortemente abrasivi, materiali metallici fino a 1.300 N/mm2		durezza al dente HRC 66 idonee per la foratura di acciaio inox, acciai duri trattati, ferro, materiali fortemente abrasivi, materiali metallici fino a 1.300 N/mm2	
12,00	030.0101200		030.1001200		030.4001200		030.2001200			
13,00	030.0101300		030.1001300		030.4001300		030.2001300			
14,00	030.0101400		030.1001400		030.4001400		030.2001400			
15,00	030.0101500		030.1001500		030.4001500		030.2001500		031.0101500	
16,00	030.0101600		030.1001600		030.4001600		030.2001600		031.0101600	
17,00	030.0101700		030.1001700		030.4001700		030.2001700		031.0101700	
18,00	030.0101800		030.1001800		030.4001800		030.2001800		031.0101800	
19,00	030.0101900		030.1001900		030.4001900		030.2001900		031.0101900	
20,00	030.0102000		030.1002000		030.4002000		030.2002000		031.0102000	
21,00	030.0102100		030.1002100		030.4002100		030.2002100		031.0102100	
22,00	030.0102200		030.1002200		030.4002200		030.2002200		031.0102200	
23,00	030.0102300		030.1002300		030.4002300		030.2002300		031.0102300	
24,00	030.0102400		030.1002400		030.4002400		030.2002400		031.0102400	
25,00	030.0102500		030.1002500		030.4002500		030.2002500		031.0102500	
26,00	030.0102600		030.1002600		030.4002600		030.2002600		031.0102600	
27,00	030.0102700		030.1002700		030.4002700		030.2002700		031.0102700	
28,00	030.0102800		030.1002800		030.4002800		030.2002800		031.0102800	
29,00	030.0102900		030.1002900		030.4002900		030.2002900		031.0102900	
30,00	030.0103000		030.1003000		030.4003000		030.2003000		031.0103000	
31,00	030.0103100		030.1003100		030.4003100		030.2003100		031.0103100	
32,00	030.0103200		030.1003200		030.4003200		030.2003200		031.0103200	
33,00	030.0103300		030.1003300		030.4003300		030.2003300		031.0103300	
34,00	030.0103400		030.1003400		030.4003400		030.2003400		031.0103400	
35,00	030.0103500		030.1003500		030.4003500		030.2003500		031.0103500	
36,00	030.0103600		030.1003600		030.4003600		030.2003600		031.0103600	
37,00	030.0103700		030.1003700		030.4003700		030.2003700		031.0103700	
38,00	030.0103800		030.1003800		030.4003800		030.2003800		031.0103800	
39,00	030.0103900		030.1003900		030.4003900		030.2003900		031.0103900	
40,00	030.0104000		030.1004000		030.4004000		030.2004000		031.0104000	
41,00	030.0104100		030.1004100		030.4004100		030.2004100		031.0104100	
42,00	030.0104200		030.1004200		030.4004200		030.2004200		031.0104200	
43,00	030.0104300		030.1004300		030.4004300		030.2004300		031.0104300	
44,00	030.0104400		030.1004400		030.4004400		030.2004400		031.0104400	
45,00	030.0104500		030.1004500		030.4004500		030.2004500		031.0104500	
46,00	030.0104600		030.1004600		030.4004600		030.2004600		031.0104600	
47,00	030.0104700		030.1004700		030.4004700		030.2004700		031.0104700	
48,00	030.0104800		030.1004800		030.4004800		030.2004800		031.0104800	
49,00	030.0104900		030.1004900		030.4004900		030.2004900		031.0104900	
50,00	030.0105000		030.1005000		030.4005000		030.2005000		031.0105000	
51,00	030.0105100				030.4005100		030.2005100		031.0105100	
52,00	030.0105200				030.4005200		030.2005200		031.0105200	
53,00	030.0105300				030.4005300		030.2005300		031.0105300	
54,00	030.0105400				030.4005400		030.2005400		031.0105400	
55,00	030.0105500		030.1005500		030.4005500		030.2005500		031.0105500	
56,00	030.0105600				030.4005600		030.2005600		031.0105600	
57,00	030.0105700				030.4005700		030.2005700		031.0105700	
58,00	030.0105800				030.4005800		030.2005800		031.0105800	
59,00	030.0105900				030.4005900		030.2005900		031.0105900	
60,00	030.0106000		030.1006000		030.4006000		030.2006000		031.0106000	
65,00	030.0106500		030.1006500						031.0106500	
70,00	030.0107000		030.1007000						031.0107000	
75,00	030.0107500								031.0107500	
80,00	030.0108000		030.1008000						031.0108000	
85,00	030.0108500								031.0108500	
90,00	030.0109000								031.0109000	
95,00	030.0109500								031.0109500	
100,00	030.0110000								031.0110000	
105,00									031.0110500	
110,00									031.0111000	
115,00									031.0111500	
120,00									031.0112000	

GAMBO

SHANK - VÁSTAGO



cod.	Ø	Ø			€
030.020800	12 - 14	8	10 x 1,25	030.01 - 030.10 030.40 - 030.20	
030.021000	15 - 34	10	12 x 1,25		
030.023550	35 - 50	10	14 x 1,5		
030.031200	51 - 100	12	16 x 1,5		
031.041521	15 - 21	10	12 x 1,5	TCT 031.01	
031.042238	22 - 38	10	14 x 1,5		
031.0439100	39 - 100	13	14 x 1,5		

PUNTA PILOTA HSS

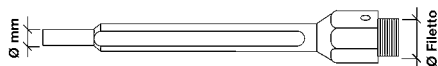
HSS PILOT BIT - BROCA PILOTO HSS



cod.	Ø	Ø	mm		€
030.040600	12 - 100	6	50	030.01	
030.110600	12 - 80	6	50	030.10 030.40 030.20	
031.020600	15 - 95	6	60	TCT 031.01	
031.030800	100 - 120	8	64		

PROLUNGA L = 400 mm

EXTENSION L = 400 mm - PROLONGACIÓN L = 400 mm



cod.	Ø	Ø			€
030.061550	15 - 34	13	12 x 1,25	030.01 - 030.10 030.40 - 030.20	
030.063550	35 - 50	13	14 x 1,5		
030.075100	51 - 100	13	16 x 1,5		

ASSORTIMENTI FRESE PERFORATRICI A TAZZA IN HSS

ASSORTMENT OF HOLE CUTTER BITS IN HSS
SURTIDO DE BROCAS DE CORONA PERFORADORAS HSS

ART. 030.88/031.88



cod.	Ø		pcs	€
030.880100	da 12 a 50	Hss	39	
030.880101	da 12 a 40 + 45 e 50	Hss	31	
030.880104	da 12 a 50	Hss + Co 5%	39	
030.880105	da 12 a 40 + 45 e 50	Hss + Co 5%	31	
030.880102	da 12 a 50	Hss + Tin	39	
030.880103	da 12 a 40 + 45 e 50	Hss + Tin	31	
030.880106	da 12 a 50	Hss + Tialn	39	
030.880107	da 12 a 40 + 45 e 50	Hss + Tialn	31	
031.880100	da 15 a 40 + 45 e 50	TCT	28	
031.880101	da 18 a 35 + 36-38-40	TCT	21	

ART. 032



HSS - bimetal

HSS - bi-metal - HSS - bimetálicas
Profondità di foratura 30 mm
30 mm boring depth - Profundidad de perforación: 30 mm
idonee per foratura di materiali a spessore sottile come:
acciaio, alluminio, rame, bronzo, ottone, legno, fibra di
vetro, resine sintetiche, plastica e cartongesso



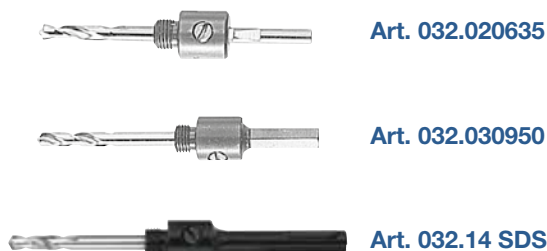
HSS - bimetal + co 8%

HSS - bi-metal + co 8% - HSS - bimetálicas + Co 8 %
Profondità di foratura 45 mm
45 mm boring depth - Profundidad de perforación: 45 mm
idonee per foratura di materiali come: acciaio inox, ghisa,
alluminio, rame, bronzo, ottone, fibra di vetro, resine
sintetiche, laminati plastici

Ø		cod.	€	cod.	€
14	032.020635 032.030950 032.14SDS	032.0101400		032.3001400	
16		032.0101600		032.3001600	
17		032.0101700		032.3001700	
19		032.0101900		032.3001900	
20		032.0102000		032.3002000	
21		032.0102100		032.3002100	
22		032.0102200		032.3002200	
24		032.0102400		032.3002400	
25		032.0102500		032.3002500	
27		032.0102700		032.3002700	
29		032.0102900		032.3002900	
30		032.0103000		032.3003000	
32	032.040950 032.071100 032.081600 032.15SDS	032.0103200		032.3003200	
33		032.0103300		032.3003300	
35		032.0103500		032.3003500	
37		032.0103700		032.3003700	
38		032.0103800		032.3003800	
40		032.0104000		032.3004000	
41		032.0104100		032.3004100	
43		032.0104300		032.3004300	
44		032.0104400		032.3004400	
46		032.0104600		032.3004600	
48		032.0104800		032.3004800	
51		032.0105100		032.3005100	
52		032.0105200		032.3005200	
54		032.0105400		032.3005400	
57		032.0105700		032.3005700	
59		032.0105900		032.3005900	
60		032.0106000		032.3006000	
64		032.0106400		032.3006400	
65		032.0106500		032.3006500	
67		032.0106700		032.3006700	
68		032.0106800		032.3006800	
70		032.0107000		032.3007000	
73		032.0107300		032.3007300	
76		032.0107600		032.3007600	
79		032.0107900		032.3007900	
83		032.0108300		032.3008300	
86		032.0108600		032.3008600	
89		032.0108900		032.3008900	
92		032.0109200		032.3009200	
95		032.0109500		032.3009500	
98		032.0109800		032.3009800	
102		032.0110200		032.3010200	
105		032.0110500		032.3010500	
108		032.0110800		032.3010800	
111		032.0111100		032.3011100	
114		032.0111400		032.3011400	
121		032.0112100		032.3012100	
127		032.0112700		032.3012700	
140		032.0114000		032.3014000	
152		032.0115200		032.3015200	
160		032.0116000			
168		032.0116800			
177		032.0117700			
210		032.0121000			

ALBERI PER SEGHE BIMETAL DA Ø 14÷30

SHAFTS FOR BI-METAL SAW BITS FROM Ø 14÷30
 HUSILLOS PARA CORONAS BIMETÁLICAS DE Ø 14÷30



cod.		€
032.020635	6,35mm	
032.030950	esag. 8,5mm	
032.14SDS	sds-plus	

ALBERI PER SEGHE BIMETAL DA Ø 32÷210

SHAFTS FOR SAW BITS FROM Ø 32÷210
 HUSILLOS PARA CORONAS DE Ø 32÷210

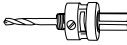


cod.		€
032.040950	9,5mm	
032.071100	esag. 11mm	
032.081600	esag. 16mm	
032.15SDS	sds-plus	

PUNTA PILOTA

PILOT BIT
 BROCA PILOTO



cod.	Ø		€
032.0901	6,35 X 100	032.020635 032.071100 032.081600	
032.0902	6,35 X 80	032.15SDS 032.030950 032.040950 032.14SDS	

ADATTATORE

Da applicare su alberi 032.02 - 032.03
 su frese Ø 32 mm a 210 mm



ADAPTER
 ADAPTADOR

cod.	€
032.1100	

**PROLUNGA
 Per Esag 11 mm**

EXTENSION
 PROLONGACIÓN



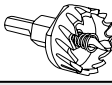
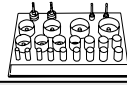
cod.	€
032.1300	

ART. 032.880100/104

ASSORTIMENTO 24 PEZZI FRESE BIMETALLICHE

ASSORTMENT OF 24 PIECES BI-METAL MILLING CUTTERS

SURTIDO DE 24 UNIDADES DE FRESAS BIMETÁLICAS

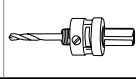
cod.			€
032.880100	Hss - bimetal	1 x 16-19-20-22-25-27-29-30-32-35-38-40-44-51-54-60-64-70-76-83 2 x 032.030950 2 x 032.040950	
032.880104	Hss + Co 8% bimetal	1 x 16-19-20-22-25-27-29-30-32-35-38-40-44-51-54-60-64-70-76-83 2 x 032.030950 2 x 032.040950	

ART. 032.880201/202

ASSORTIMENTO PER ELETTRICISTI

ELECTRICIAN'S KIT

SURTIDO ELECTRICISTA

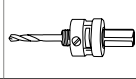
cod.				€
032.880201	22 - 29 - 35 44 - 51 - 54	032.030950 032.040950	032.1100	
032.880202	16 - 20 - 25 32 - 40 - 51	032.030950 032.040950		

ART. 032.880203

ASSORTIMENTO PER FABBRI

LOCKSMITH'S KIT

SURTIDO CERRAJERO

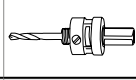
cod.				€
032.880203	22 - 25 - 32 38 - 44 - 54	032.030950 032.040950	032.1100	

ART. 032.880204

ASSORTIMENTO PER IDRAULICI

PLUMBER'S KIT

SURTIDO FONTANERO

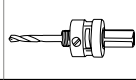
cod.				€
032.880204	19 - 22 - 29 38 - 44 - 57	032.030950 032.040950	032.1100	

ART. 032.880205

ASSORTIMENTO PER INSTALLATORI

INSTALLER'S KIT

SURTIDO INSTALADOR

cod.				€
032.880205	19 - 22 - 29 35 - 38 - 44 51 - 57 - 64	032.030950 032.040950	032.1100	

ART. 033.01

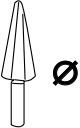
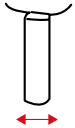
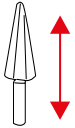
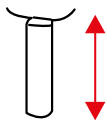
Per forare ed allargare fori su lamiere, tubi, profilati in acciaio, leghe leggere e plastica

For boring and widening holes on sheet metal, pipes, steel profiles, lightweight alloys and plastic

Para perforar o ampliar orificios en láminas, tubos, acero, aleaciones ligeras y plástico



HSS-G

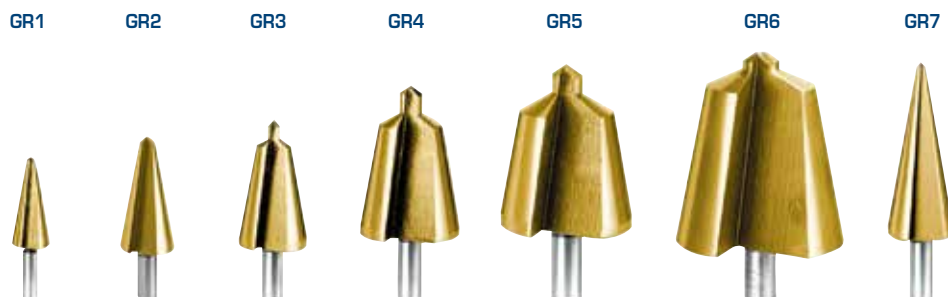
cod.	GR					€
033.01G1	1	3 - 14	6	58	21	
033.01G2	2	6 - 20	8	63	21	
033.01G3	3	16 - 30	10	79	25	
033.01G4	4	26 - 40	10	86	27	
033.01G5	5	36 - 50	13	90	27	
033.01G6	6	40 - 61	13	97	28	
033.01G7	7	3 - 31	10	102	21	
033.01G8	8	3 - 22,5	8	80	21	

ART. 033.02

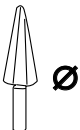
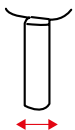
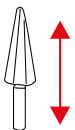
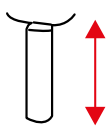
Per forare ed allargare fori su lamiere, tubi, profilati in acciaio inox, leghe leggere e plastica

For boring and widening holes on sheet metal, pipes, stainless steel profiles, lightweight alloys and plastic

Para perforar o ampliar orificios en láminas, tubos, acero inoxidable, aleaciones ligeras y plástico



HSS-G + TIN

cod.	GR					€
033.02G1	1	3 - 14	6	58	21	
033.02G2	2	6 - 20	8	63	21	
033.02G3	3	16 - 30	10	79	25	
033.02G4	4	26 - 40	10	86	27	
033.02G5	5	36 - 50	13	90	27	
033.02G6	6	40 - 61	13	97	28	
033.02G7	7	3 - 31	10	102	21	

ART. 034.01
HSS-G

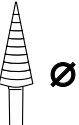
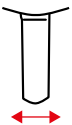
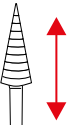
Per forare ed allargare fori su lamiera, tubi, profilati in acciaio, leghe leggere e plastica

For boring and widening holes on sheet metal, pipes, steel profiles, lightweight alloys and plastic

Para perforar o ampliar orificios en láminas, tubos, acero, aleaciones ligeras y plástico

GR1 GR2 GR3 GR4 GR5 GR6 GR7 GR8 GR9 GR10



cod.	GR	PROGR				€
034.01G01	1	2	4 - 12 (5 gradini)	6	55	
034.01G02	2	1	4 - 12 (9 gradini)	6	55	
034.01G03	3	1	12 - 20	10	85	
034.01G04	4	2	4 - 20	10	85	
034.01G05	5	1	20 - 30	10	97	
034.01G06	6	2	4 - 30	10	97	
034.01G07	7	1	30 - 40	13	97	
034.01G08	8	1	40 - 50	13	100	
034.01G09	9	3	6 - 36	10	90	
034.01G10	10	3	10 - 25 - 58	12	90	
034.01G31	31 PG	-	6,3 - 26,75	10	91	
034.01G32	32 PG	-	6,3 - 12,5 - 30,5	10	85	
034.01G33	33 PG	-	6,3 - 12,5 - 37	10	85	
034.01G34	34	-	6 - 38	10	96	

ART. 034.02
HSS-G + TIN

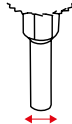
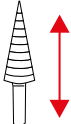
Per forare ed allargare fori su lamiera, tubi, profilati in acciaio inox, leghe leggere e plastica

For boring and widening holes on sheet metal, pipes, stainless steel profiles, lightweight alloys and plastic

Para perforar o ampliar orificios en láminas, tubos, acero inoxidable, aleaciones ligeras y plástico

GR1 GR2 GR3 GR4 GR5 GR6 GR7 GR8 GR9 GR10



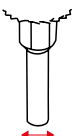
cod.	GR	PROGR				€
034.02G01	1	2	4 - 12 (5 gradini)	6	55	
034.02G02	2	1	4 - 12 (9 gradini)	6	55	
034.02G03	3	1	12 - 20	10	85	
034.02G04	4	2	4 - 20	10	85	
034.02G05	5	1	20 - 30	10	97	
034.02G06	6	2	4 - 30	10	97	
034.02G07	7	1	30 - 40	13	97	
034.02G08	8	1	40 - 50	13	100	
034.02G09	9	3	6 - 36	10	90	
034.02G10	10	3	10 - 25 - 58	12	90	
034.02G31	31 PG	-	6,3 - 26,75	10	91	
034.02G32	32 PG	-	6,3 - 12,5 - 30,5	10	85	
034.02G33	33 PG	-	6,3 - 12,5 - 37	10	85	
034.02G34	34	-	6 - 38	10	96	

ART. 039



Idonea per lattonieri, meccanici, elettrauti e carrozzieri

Suitable for sheet metal workers, mechanics, car electricians and body shops
Ideal para chapistas, mecánicos y personal eléctrico y de montaje de vehículos

cod.				€
039.012540	HSS	25 x 40	8	
039.013250	HSS	32 x 50	8	
039.014560	HSS	45 x 60	8	
039.022540	Chrome	25 x 40	8	

ASSORTIMENTI UTENSILI CONICI
ASSORTMENT OF TAPERED BITS
SURTIDO DE BROCAS CÓNICAS

ART. 033.880250



ASSORTIMENTO UTENSILI CONICI HSS-G

ASSORTMENT OF TAPERED BITS HSS-G
SURTIDO DE BROCAS CÓNICAS HSS-G

cod.	GR	€
033.880250	1 - 2 - 3	

ART. 033.880252



ASSORTIMENTO UTENSILI CONICI HSS-G + TIN

ASSORTMENT OF TAPERED BITS HSS-G + TIN
SURTIDO DE BROCAS CÓNICAS HSS-G + TIN

cod.	GR	€
033.880252	1 - 2 - 3	

ART. 034.880250 - 034.880253



ASSORTIMENTO UTENSILI A GRADINO HSS-G

ASSORTMENT OF STEP BITS HSS-G
SURTIDO DE BROCAS ESCALONADAS HSS-G

cod.	GR	€
034.880250	2 - 3 - 5	
034.880253	2 - 4 - 6	

ART. 034.880254



ASSORTIMENTO UTENSILI GRADINO **HSS-G + TIN**

ASSORTMENT OF STEP BITS HSS-G + TIN
SURTIDO DE BROCAS ESCALONADAS HSS-G + TIN

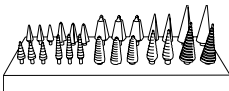
cod.	GR	€
034.880254	2 - 4 - 6	

ART. 033.880101



ASSORTIMENTO MISTO 26 PEZZI **HSS-G** UTENSILI CONICI UTENSILI CONICI A GRADINO

MIXED ASSORTMENT OF 26 PIECES
TAPERED BITS HSS-G
STEP BITS HSS-G
SURTIDO MIXTO DE 26 UNIDADES
BROCAS CÓNICAS HSS-G
BROCAS CÓNICAS ESCALONADAS HSS-G

cod.		€
033.880101	033.01: 3 x GR 1-2-3 2 x GR7-8 034.01: 3 x GR 1-2-3 2 x GR 4-6	

ART. 035.01



3 taglienti a 90°
DIN 334 c
HSS-G

3 flutes at 90°

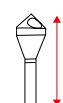
DIN 334 c

HSS-G

3 dientes de 90°

DIN 334 c

HSS-G

cod.	GR	Ø	 Ø	 Ø		€
035.01G01	1	4,3	2	4	44	
035.01G02	2	5,3	2,6	4	44	
035.01G03	3	6,3	3	5	44	
035.01G04	4	7,3	3,5	6	44	
035.01G05	5	8,3	4	6	50	
035.01G06	6	9,4	4,5	6	50	
035.01G07	7	10,4	5	6	54	
035.01G08	8	12,4	6	8	54	
035.01G09	9	15	7	10	56	
035.01G10	10	16,5	8	10	60	
035.01G11	11	20,5	10	10	63	
035.01G12	12	25	12	10	66	
035.01G13	13	28	14	13	71	
035.01G14	14	31	16	13	71	

ART. 035.02



3 taglienti a 90°
DIN 334 c
HSS + TIN

3 flutes at 90°

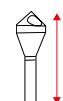
DIN 334 c

HSS + TIN

3 dientes de 90°

DIN 334 c

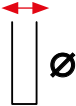
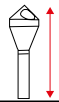
HSS + TIN

cod.	GR	Ø	 Ø	 Ø		€
035.02G01	1	4,3	2	4	44	
035.02G02	2	5,3	2,6	4	44	
035.02G03	3	6,3	3	5	44	
035.02G04	4	7,3	3,5	6	44	
035.02G05	5	8,3	4	6	50	
035.02G06	6	9,4	4,5	6	50	
035.02G07	7	10,4	5	6	54	
035.02G08	8	12,4	6	8	54	
035.02G09	9	15	7	10	56	
035.02G10	10	16,5	8	10	60	
035.02G11	11	20,5	10	10	63	
035.02G12	12	25	12	10	66	
035.02G13	13	28	14	13	71	
035.02G14	14	31	16	13	71	

ART. 036.01

**90°
HSS-G**

 90°
HSS-G
90°
HSS-G

cod.	GR	Ø	 Ø	 Ø	€
036.01G1	1	2 - 5	6	45	
036.01G2	2	5 - 10	8	48	
036.01G3	3	10 - 15	10	65	
036.01G4	4	15 - 20	12	85	
036.01G5	5	20 - 25	15	102	
036.01G6	6	25 - 30	15	115	
036.01G7	7	30 - 35	15	127	
036.01G8	8	35 - 40	15	136	
036.01G9	9	40 - 50	20	166	

FRESE A SVASARE IN HSS

COUNTERSINK BITS IN HSS

FRESAS PARA AVELLANAR HSS

ART. 041.01 - 041.02

**3 taglienti
HSS-G**

 3 flutes
HSS
3 dientes
HSS

Art. 041.01 - 90°					
cod.	Ø	 Ø	 Ø	€	
041.010400	4 - 12	8	55		
041.010600	6 - 20	10	60		
041.010800	8 - 28	14	65		
041.011000	10 - 40	CM2	125		
041.011500	15 - 50	CM3	130		
Art. 041.02 - 60°					
cod.	Ø	 Ø	 Ø	€	
041.020300	3 - 8	8	55		
041.020400	4 - 15	10	60		
041.021000	10 - 28	14	75		

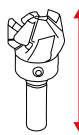
ART. 041.03



3 taglienti
HSS-G

3 flutes
 HSS-G
 3 dientes
 HSS-G

HSS-G

cod.					€
041.031000	10	4	6	45	
041.031600	16	6	10	60	
041.033000	30	16	12	80	
041.034000	40	25	16	100	
041.037200	72	50	CM3	120	

ASSORTIMENTI FRESE AD INCASSARE E SBAVARE

ASSORTMENT OF DEBURRING BITS
 SURTIDOS DE FRESAS PARA AVELLANAR

ART. 035.880250



HSS-G

HSS-G
 HSS-G

cod.		€
035.880250	GR 3-5-7-8-10-11	

ART. 035.880251



HSS-G + TIN

HSS-G + TIN
 HSS-G + TIN

cod.		€
035.880251	GR 3-5-7-8-10-11	

ART. 036.880250



HSS-G

ASSORTMENT OF COUNTERSINK AND DEBURRING BITS WITH HOLE
 HSS
 SURTIDO DE FRESAS PARA AVELLANAR CON ORIFICIO
 HSS

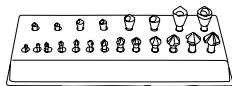
cod.		€
036.880250	GR 1 - 2 - 3 - 4	

ART. 035.880100



ASSORTIMENTO MISTO 21 PEZZI FRESE A INCASSARE E SBAVARE E FRESE A SVASARE E SBAVARE CON FORO HSS-G

MIXED ASSORTMENT OF 21 PIECES OF DEBURRING BITS AND DEBURRING BITS WITH HOLE
 SURTIDO MIXTO DE 21 UNIDADES DE FRESAS DE AVELLANAR Y DE FRESAS DE AVELLANAR CON ORIFICIO

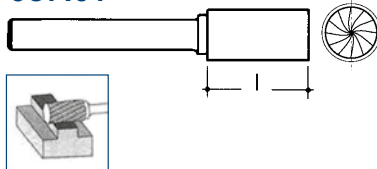
cod.		€
035.880100	035.01: 1 pcs da 2 a 14 036.01: 2 pcs da 1 a 4	

ART. 037

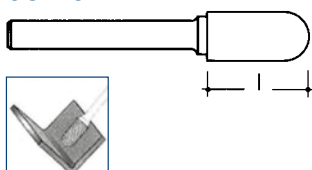


Codolo 6 mm

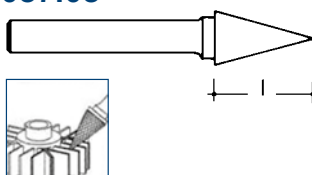
037.01



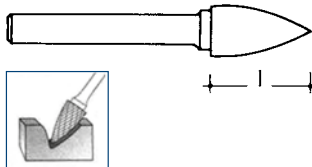
037.02



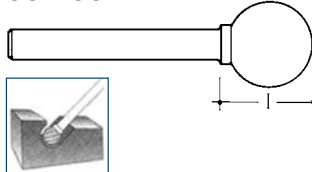
037.03



037.04



037.05



Z2 = TAGLIO BASTARDO

Per leghe leggere, rame, ottone, bronzo, acciaio dolce
Velocità consigliata: 200 - 250 m/min

Z2 = BASTARD CUT

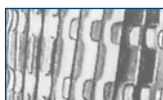
For lightweight alloys, copper, brass, bronze, soft steel

Recommended speed: 200 - 250 m/min

Z2 = CORTE BASTARDO

Para aleaciones ligeras, cobre, bronce, latón y acero dulce

Velocidad recomendada: 200 - 250 m/min



Z3 = TAGLIO MEZZO DOLCE

Per acciai, ghisa
Velocità consigliata: 60 - 180 m/min

Z3 = SECOND CUT

for steels, cast iron

Recommended speed: 60 - 180 m/min

Z3 = CORTE MEDIO DULCE

Para aceros y hierro fundido

Velocidad recomendada: 60 - 180 m/min

CILINDRICA FRONTALE - CYLINDRICAL FRONT - CILÍNDRICA FRONTAL

Z2 bastardo	Z3 mezzo dolce	Ø L		€
037.01Z206	037.01Z306	6 x 20	60	
037.01Z208	037.01Z308	8 x 30	70	
037.01Z210	037.01Z310	10 x 30	70	
037.01Z212	037.01Z312	12 x 30	70	
037.01Z215	037.01Z315	15 x 30	70	

SEMISFERICA - HEMISPHERICAL - SEMIESFÉRICA

Z2 bastardo	Z3 mezzo dolce	Ø L		€
037.02Z206	037.02Z306	6 x 20	60	
037.02Z208	037.02Z308	8 x 30	70	
037.02Z210	037.02Z310	10 x 30	70	
037.02Z212	037.02Z312	12 x 30	70	
037.02Z215	037.02Z315	15 x 30	70	

PUNTA - POINT - PUNTA

Z2 bastardo	Z3 mezzo dolce	Ø L		€
037.03Z206	037.03Z306	6 x 20	60	
037.03Z208	037.03Z308	8 x 30	70	
037.03Z210	037.03Z310	10 x 30	70	
037.03Z212	037.03Z312	12 x 30	70	
037.03Z215	037.03Z315	15 x 30	70	

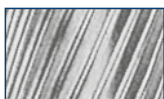
FIAMMA - FLAME - PICA

Z2 bastardo	Z3 mezzo dolce	Ø L		€
037.04Z206	037.04Z306	6 x 20	60	
037.04Z208	037.04Z308	8 x 30	70	
037.04Z210	037.04Z310	10 x 30	70	
037.04Z212	037.04Z312	12 x 30	70	
037.04Z215	037.04Z315	15 x 30	70	

SFERICA - SPHERICAL - ESFÉRICA

Z2 bastardo	Z3 mezzo dolce	Ø L		€
037.05Z206	037.05Z306	6	50	
037.05Z208	037.05Z308	8	52	
037.05Z210	037.05Z310	10	54	
037.05Z212	037.05Z312	12	55	
037.05Z215	037.05Z315	15	59	

ART. 038



T1 = TAGLIO BASTARDO

Per acciaio, acciaio temperato, saldatura, ghisa, materiali metallici in genere

Velocità di taglio consigliata : 400 - 600 m/min

T1 = BASTARD CUT

For steel, hardened steel, welds, cast iron, metallic materials in general

Recommended cutting speed: 400 - 600 m/min

T1 = CORTE BASTARDO

Para acero, acero templado, soldaduras, hierro fundido y materiales metálicos en general

Velocidad de corte recomendada: 400 - 600 m/min



T2 = TAGLIO INCROCIATO

Per acciaio inox, acciaio trattato, materiali metallici in genere

Velocità di taglio consigliata : 400 - 600 m/min

T2 = CROSS CUT

For stainless steel, treated steel, metallic materials in general

Recommended cutting speed: 400 - 600 m/min

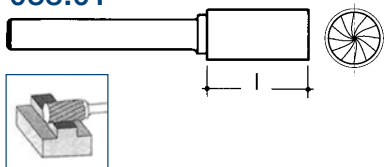
T2 = CORTE CRUZADO

Para acero inoxidable, acero tratado y materiales metálicos en general

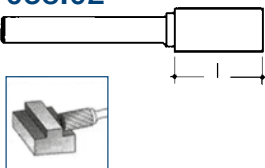
Velocidad de corte recomendada: 400 - 600 m/min

Codolo 6 mm

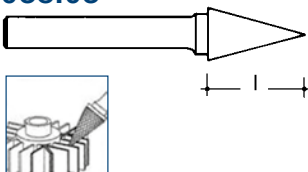
038.01



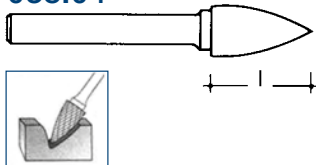
038.02



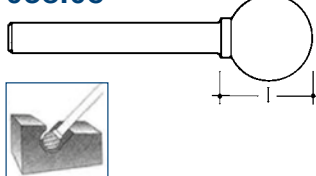
038.03



038.04



038.05



CILINDRICA - CYLINDRICAL - CILÍNDRICA

Ø L	cod. T1 bastardo	€	cod. T2 incrociato	€
6 x 18	038.01T106	15,53	038.01T206	
8 x 18	038.01T108	18,77	038.01T208	
10 x 20	038.01T110	21,47	038.01T210	
12 x 25	038.01T112	28,44	038.01T212	
16 x 25	038.01T115	40,28	038.01T215	

CILINDRICA FRONTALE - CYLINDRICAL FRONT - CILÍNDRICA FRONTAL

Ø L	cod. T1 bastardo	€	cod. T2 incrociato	€
6 x 18	038.02T106	17,15	038.02T206	
8 x 18	038.02T108	20,39	038.02T208	
10 x 20	038.02T110	23,36	038.02T210	
12 x 25	038.02T112	31,14	038.02T212	
16 x 25	038.02T115	44,03	038.02T215	

PUNTA - POINT - PUNTA

Ø L	cod. T1 bastardo	€	cod. T2 incrociato	€
6 x 20	038.03T106	16,62	038.03T206	
8 x 22	038.03T108	17,70	038.03T208	
10 x 25	038.03T110	20,39	038.03T210	
12 x 25	038.03T112	24,77	038.03T212	
16 x 30	038.03T115	33,53	038.03T215	

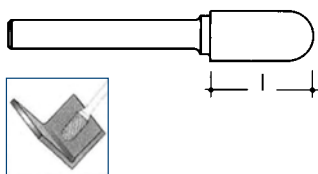
FIAMMA - FLAME - PICA

Ø L	cod. T1 bastardo	€	cod. T2 incrociato	€
6 x 20	038.04T106	19,31	038.04T206	
8 x 22	038.04T108	19,84	038.04T208	
10 x 25	038.04T110	23,46	038.04T210	
12 x 25	038.04T112	27,36	038.04T212	
16 x 30	038.04T115	40,80	038.04T215	

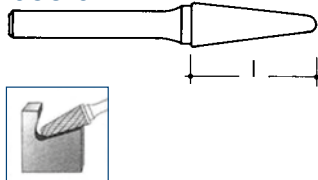
SFERICA - SPHERICAL - ESFÉRICA

Ø L	cod. T1 bastardo	€	cod. T2 incrociato	€
6 x 5	038.05T106	17,15	038.05T206	
8 x 7	038.05T108	17,70	038.05T208	
10 x 9	038.05T110	20,39	038.05T210	
12 x 11	038.05T112	24,68	038.05T212	
16 x 14	038.05T115	35,43	038.05T215	

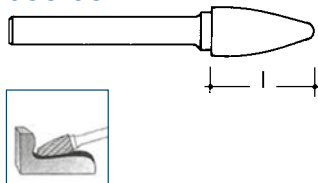
038.06



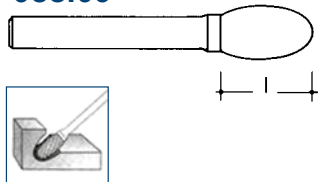
038.07



038.08



038.09



SEMISFERICA - HEMISPHERICAL - SEMIESFÉRICA

Ø L	cod. T1 bastardo	€	cod. T2 incrociato	€
6 x 18	038.06T106	17,15	038.06T206	
8 x 18	038.06T108	21,50	038.06T208	
10 x 20	038.06T110	24,68	038.06T210	
12 x 25	038.06T112	34,90	038.06T212	
16 x 25	038.06T115	45,35	038.06T215	

CONICA CON TESTA A SFERA - CONICAL WITH SPHERICAL HEAD - CÓNICA CON CABEZA REDONDA

Ø L	cod. T1 bastardo	€	cod. T2 incrociato	€
6 x 18	038.07T106	18,23	038.07T206	
8 x 18	038.07T108	23,62	038.07T208	
10 x 20	038.07T110	28,69	038.07T210	
12 x 25	038.07T112	34,90	038.07T212	
16 x 25	038.07T115	52,59	038.07T215	

RAGGIO - RAY - RAYO

Ø L	cod. T1 bastardo	€	cod. T2 incrociato	€
6 x 9	038.08T106	19,84	038.08T206	
8 x 14	038.08T108	20,39	038.08T208	
10 x 16	038.08T110	24,68	038.08T210	
12 x 25	038.08T112	29,76	038.08T212	
16 x 25	038.08T115	39,49	038.08T215	

GOCCIA - DROP - GOTA

Ø L	cod. T1 bastardo	€	cod. T2 incrociato	€
6 x 9	038.09T106	17,70	038.09T206	
8 x 14	038.09T108	19,54	038.09T208	
10 x 16	038.09T110	23,36	038.09T210	
12 x 20	038.09T112	27,91	038.09T212	
16 x 25	038.09T115	40,80	038.09T215	

ASSORTIMENTI FRESE ROTATIVE
ASSORTMENT OF ROTARY FILE BITS
SURTIDOS DE FRESAS GIRATORIAS

ART. 037.880100



50 pezzi

Tutte le geometrie

50 pieces - All geometries

50 unidades - De todas las formas

HSS

cod.	Ø	Z	€
037.880100	6 - 8 - 10 - 12 - 15	2 - 3	

ART. 038.880100



45 pezzi

Tutte le geometrie

45 pieces - All geometries

45 unidades - De todas las formas

METALLO DURO - CARBIDE - METAL DURO

cod.	Ø	T	€
038.880100	6 - 8 - 10 - 12 - 16	2	

ART. 042

Per trapani con base magnetica
Attacco Weldon 19mm

For drills with magnetic base - 19 mm Weldon connection

Para taladros con base magnética - Vástago Weldon



042.01



042.02



042.06



042.07



042.08

Ø	HSS	€	HSS	€	TIALN	€	TIALN	€	MD	€
	serie corta 30mm		serie lunga 50mm		serie corta 30mm		serie lunga 50mm		serie lunga 50mm	
12,00	042.011200		042.021200		042.061200		042.071200			
13,00	042.011300		042.021300		042.061300		042.071300			
14,00	042.011400		042.021400		042.061400		042.071400		042.0801400	
15,00	042.011500		042.021500		042.061500		042.071500		042.0801500	
16,00	042.011600		042.021600		042.061600		042.071600		042.0801600	
17,00	042.011700		042.021700		042.061700		042.071700		042.0801700	
18,00	042.011800		042.021800		042.061800		042.071800		042.0801800	
19,00	042.011900		042.021900		042.061900		042.071900		042.0801900	
20,00	042.012000		042.022000		042.062000		042.072000		042.0802000	
21,00	042.012100		042.022100		042.062100		042.072100		042.0802100	
22,00	042.012200		042.022200		042.062200		042.072200		042.0802200	
23,00	042.012300		042.022300		042.062300		042.072300		042.0802300	
24,00	042.012400		042.022400		042.062400		042.072400		042.0802400	
25,00	042.012500		042.022500		042.062500		042.072500		042.0802500	
26,00	042.012600		042.022600		042.062600		042.072600		042.0802600	
27,00	042.012700		042.022700		042.062700		042.072700		042.0802700	
28,00	042.012800		042.022800		042.062800		042.072800		042.0802800	
29,00	042.012900		042.022900		042.062900		042.072900		042.0802900	
30,00	042.013000		042.023000		042.063000		042.073000		042.0803000	
31,00	042.013100		042.023100		042.063100		042.073100		042.0803100	
32,00	042.013200		042.023200		042.063200		042.073200		042.0803200	
33,00	042.013300		042.023300		042.063300		042.073300		042.0803300	
34,00	042.013400		042.023400		042.063400		042.073400		042.0803400	
35,00	042.013500		042.023500		042.063500		042.073500		042.0803500	
36,00	042.013600		042.023600		042.063600		042.073600		042.0803600	
37,00	042.013700		042.023700		042.063700		042.073700		042.0803700	
38,00	042.013800		042.023800		042.063800		042.073800		042.0803800	
39,00	042.013900		042.023900		042.063900		042.073900		042.0803900	
40,00	042.014000		042.024000		042.064000		042.074000		042.0804000	
41,00	042.014100		042.024100		042.064100		042.074100		042.0804100	
42,00	042.014200		042.024200		042.064200		042.074200		042.0804200	
43,00	042.014300		042.024300		042.064300		042.074300		042.0804300	
44,00	042.014400		042.024400		042.064400		042.074400		042.0804400	
45,00	042.014500		042.024500		042.064500		042.074500		042.0804500	
46,00	042.014600		042.024600		042.064600		042.074600		042.0804600	
47,00	042.014700		042.024700		042.064700		042.074700		042.0804700	
48,00	042.014800		042.024800		042.064800		042.074800		042.0804800	
49,00	042.014900		042.024900		042.064900		042.074900		042.0804900	
50,00	042.015000		042.025000		042.065000		042.075000		042.0805000	
51,00	042.015100		042.025100						042.0805100	
52,00	042.015200		042.025200						042.0805200	
53,00	042.015300		042.025300						042.0805300	
54,00	042.015400		042.025400						042.0805400	
55,00	042.015500		042.025500		042.065500		042.075500		042.0805500	
56,00									042.0805600	
57,00									042.0805700	
58,00									042.0805800	
59,00									042.0805900	
60,00	042.016000		042.026000		042.066000		042.076000		042.0806000	
65,00									042.0806500	
70,00									042.0807000	
75,00									042.0807500	
80,00									042.0808000	

ART. 042.03



MANDRINO SENZA LUBRIFICAZIONE

CHUCK WITHOUT LUBRICATION
 MANDRIL SIN LUBRICACIÓN

cod.	CM		Weldon	€
042.03CM2	2,00	12 - 80	19,00	
042.03CM3	3,00	12 - 80	19,00	

ART. 042.04



MANDRINO CON LUBRIFICAZIONE

Traduzione in inglese
 Traduzione in spagnolo

cod.	CM		Weldon	€
042.04CM2	2,00	12 - 80	19,00	
042.04CM3	3,00	12 - 80	19,00	

ART. 042.05



ESPULSORI /PUNTE DI CENTRAGGIO

CHUCK WITH LUBRICATION
 MANDRIL CON LUBRICACIÓN

cod.			€
042.0501	6,35 x 77	042.01 e 042.06	
042.0502	6,35 x 102	042.02 - 042.07 042.08 042.10 e c/adatt. 042.01 042.06	
042.0503	6,35 x 123	con adattatore 042.02 - 042.07 - 042.08 042.10 - 042.08	
042.0505	7,98 x 105	042.08 da 18 a 80 mm	
042.0506	7,10 x 112	042.08 da 14 a 17 mm	

ART. 042.0504



ADATTATORE QUICK-IN WELDON 19MM Attacco maschio da 18mm

EJECTORS/CENTRING BITS - 19 MM WELDON QUICK-IN ADAPTOR - 18 mm male connection
 EXPULSORES / PUNTAS DE CENTRADO - ADAPTADOR QUICK-IN WELDON 19 MM
 Vástago macho de 18 mm

cod.			€
042.0504	52,00	tutte + 042.08 da ø1 a 17mm	
042.0504/A	52,00	042.08 da ø18 a 80mm	

ART. 042.09 - 042.10

Profondità di taglio 50mm

50mm cutting depth

Profundidad de corte: 50 mm



Ø	042.09 HSS + Co 5%	€	042.10 Metallo Duro	€
12,00	042.0901200		042.1001200	
13,00	042.0901300		042.1001300	
14,00	042.0901400		042.1001400	
15,00	042.0901500		042.1001500	
16,00	042.0901600		042.1001600	
17,00	042.0901700		042.1001700	
18,00	042.0901800		042.1001800	
19,00	042.0901900		042.1001900	
20,00	042.0902000		042.1002000	
21,00	042.0902100		042.1002100	
22,00	042.0902200		042.1002200	
23,00	042.0902300		042.1002300	
24,00	042.0902400		042.1002400	
25,00	042.0902500		042.1002500	
26,00	042.0902600		042.1002600	
27,00	042.0902700		042.1002700	
28,00	042.0902800		042.1002800	
29,00	042.0902900		042.1002900	
30,00	042.0903000		042.1003000	
31,00	042.0903100		042.1003100	
32,00	042.0903200		042.1003200	
33,00	042.0903300		042.1003300	
34,00	042.0903400		042.1003400	
35,00	042.0903500		042.1003500	
36,00	042.0903600		042.1003600	
37,00	042.0903700		042.1003700	
38,00	042.0903800		042.1003800	
39,00	042.0903900		042.1003900	
40,00	042.0904000		042.1004000	
41,00	042.0904100		042.1004100	
42,00	042.0904200		042.1004200	
43,00	042.0904300		042.1004300	
44,00	042.0904400		042.1004400	
45,00	042.0904500		042.1004500	
46,00	042.0904600		042.1004600	
47,00	042.0904700		042.1004700	
48,00	042.0904800		042.1004800	
49,00	042.0904900		042.1004900	
50,00	042.0905000		042.1005000	
55,00			042.1005500	
60,00			042.1006000	

ART. 040.01 - 040.21



FRESA A 3 TAGLI

Per macchine: **GT40 B-C-D-TARGA - TARGA 2000/2000 P
 MODULAR IV - OPERA IV - SERENISSIMA
 SUPER DAR**

3 CUT MILLING CUTTER

For machines:

GT40 B-C-D-TARGA - TARGA 2000/2000 P

MODULAR IV - OPERA IV - SERENISSIMA

SUPER DAR

FRESA DE 3 CORTES

Para máquinas:

GT40 B-C-D-TARGA - TARGA 2000/2000 P

MODULAR IV - OPERA IV - SERENISSIMA

SUPER DAR

cod.		Z	materiale	€
040.0180x15	80 x 1,5 x 22	100	HSS + Co	
040.2180x15	80 x 1,5 x 22	100	MD	

ART. 040.02 - 040.22



FRESA A TAGLIO PERIFERICO

Per macchine: **GT40 B-C-D-TARGA - TARGA 2000/2000 P
 MODULAR IV - OPERA IV - SERENISSIMA
 SUPER DAR**

PERIPHERAL CUT MILLING CUTTER

For machines:

GT40 B-C-D-TARGA - TARGA 2000/2000 P

MODULAR IV - OPERA IV - SERENISSIMA

SUPER DAR

FRESA DE CORTE PERIFÉRICO

Para máquinas:

GT40 B-C-D-TARGA - TARGA 2000/2000 P

MODULAR IV - OPERA IV - SERENISSIMA

SUPER DAR

cod.		Z	materiale	€
040.0280x15	80 x 1,5 x 22	100	HSS + Co	
040.2280x15	80 x 1,5 x 22	100	MD	

ART. 040.03 - 040.23



FRESA BICONICA

Per macchine: **SPECIAL SUPER / MASTER
 BRAVO SUPER / MASTER
 RECORD / PLUS / 2000
 EUROPA - POKER - S**

BICONICAL CUTTER

For machines:

SPECIAL SUPER / MASTER

BRAVO SUPER / MASTER

RECORD / PLUS / 2000

EUROPA - POKER - S

FRESA BICÓNICA

Para máquinas:

SPECIAL SUPER / MASTER

BRAVO SUPER / MASTER

RECORD / PLUS / 2000

EUROPA - POKER - S

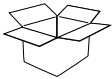
cod.		Z	materiale	€
040.0380x05	80 x 5 x 22	110	HSS + Co	
040.2380x05	80 x 5 x 22	80	MD	

ART. 043.01

LIMA PIATTA

FLAT FILE
LIMA PLANA



cod.	taglio			 ART. 043.50	€
043.01T1100*	bastardo	100 / 4"	12	GR2	
043.01T1150*	bastardo	150 / 6"	12	GR3	
043.01T1200*	bastardo	200 / 8"	12	GR4	
043.01T1250*	bastardo	250 / 10"	12	GR4	
043.01T1300*	bastardo	300 / 12"	6	GR4	
043.01T2100*	mezzo dolce	100 / 4"	12	GR2	
043.01T2150*	mezzo dolce	150 / 6"	12	GR3	
043.01T2200*	mezzo dolce	200 / 8"	12	GR4	
043.01T2250*	mezzo dolce	250 / 10"	12	GR4	
043.01T2300*	mezzo dolce	300 / 12"	6	GR4	
043.01T3100*	dolce	100 / 4"	12	GR2	
043.01T3150*	dolce	150 / 6"	12	GR3	
043.01T3200*	dolce	200 / 8"	12	GR4	
043.01T3250*	dolce	250 / 10"	12	GR4	
043.01T3300*	dolce	300 / 12"	6	GR4	

ART. 043.02

LIMA MEZZA TONDA

HALF-ROUND FILE
LIMA DE MEDIA CAÑA



cod.	taglio			 ART. 043.50	€
043.02T1100*	bastardo	100 / 4"	12	GR2	
043.02T1150*	bastardo	150 / 6"	12	GR3	
043.02T1200*	bastardo	200 / 8"	12	GR4	
043.02T1250*	bastardo	250 / 10"	12	GR4	
043.02T1300*	bastardo	300 / 12"	6	GR4	
043.02T2100*	mezzo dolce	100 / 4"	12	GR2	
043.02T2150*	mezzo dolce	150 / 6"	12	GR3	
043.02T2200*	mezzo dolce	200 / 8"	12	GR4	
043.02T2250*	mezzo dolce	250 / 10"	12	GR4	
043.02T2300*	mezzo dolce	300 / 12"	6	GR4	
043.02T3100*	dolce	100 / 4"	12	GR2	
043.02T3150*	dolce	150 / 6"	12	GR3	
043.02T3200*	dolce	200 / 8"	12	GR4	
043.02T3250*	dolce	250 / 10"	12	GR4	
043.02T3300*	dolce	300 / 12"	6	GR4	

*IN ESAURIMENTO

ART. 043.03

LIMA TONDA

ROUND FILE
LIMA REDONDA



cod.	taglio			 ART. 043.50	€
043.03T1100*	bastardo	100 / 4"	12	GR1	
043.03T1150*	bastardo	150 / 6"	12	GR2	
043.03T1200*	bastardo	200 / 8"	12	GR3	
043.03T1250*	bastardo	250 / 10"	12	GR4	
043.03T1300*	bastardo	300 / 12"	6	GR4	
043.03T2100*	mezzo dolce	100 / 4"	12	GR1	
043.03T2150*	mezzo dolce	150 / 6"	12	GR2	
043.03T2200*	mezzo dolce	200 / 8"	12	GR3	
043.03T2250*	mezzo dolce	250 / 10"	12	GR4	
043.03T2300*	mezzo dolce	300 / 12"	6	GR4	
043.03T3100*	dolce	100 / 4"	12	GR1	
043.03T3150*	dolce	150 / 6"	12	GR2	
043.03T3200*	dolce	200 / 8"	12	GR3	
043.03T3250*	dolce	250 / 10"	12	GR4	
043.03T3300*	dolce	300 / 12"	6	GR4	

ART. 043.04

LIMA QUADRA

SQUARE FILE
LIMA CUADRADA



cod.	taglio			 ART. 043.50	€
043.04T1100*	bastardo	100 / 4"	12	GR1	
043.04T1150*	bastardo	150 / 6"	12	GR2	
043.04T1200*	bastardo	200 / 8"	12	GR3	
043.04T1250*	bastardo	250 / 10"	12	GR4	
043.04T1300*	bastardo	300 / 12"	6	GR4	
043.04T2100*	mezzo dolce	100 / 4"	12	GR1	
043.04T2150*	mezzo dolce	150 / 6"	12	GR2	
043.04T2200*	mezzo dolce	200 / 8"	12	GR3	
043.04T2250*	mezzo dolce	250 / 10"	12	GR4	
043.04T2300*	mezzo dolce	300 / 12"	6	GR4	
043.04T3100*	dolce	100 / 4"	12	GR1	
043.04T3150*	dolce	150 / 6"	12	GR2	
043.04T3200*	dolce	200 / 8"	12	GR3	
043.04T3250*	dolce	250 / 10"	12	GR4	
043.04T3300*	dolce	300 / 12"	6	GR4	

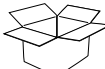
*IN ESAURIMENTO

ART. 043.05

LIMA TRIANGOLARE

TRIANGULAR FILE
LIMA TRIANGULAR



cod.	taglio			 ART. 043.50	€
043.05T1100*	bastardo	100 / 4"	12	GR1	
043.05T1150*	bastardo	150 / 6"	12	GR3	
043.05T1200*	bastardo	200 / 8"	12	GR4	
043.05T1250*	bastardo	250 / 10"	12	GR4	
043.05T1300*	bastardo	300 / 12"	6	GR4	
043.05T2100*	mezzo dolce	100 / 4"	12	GR1	
043.05T2150*	mezzo dolce	150 / 6"	12	GR3	
043.05T2200*	mezzo dolce	200 / 8"	12	GR4	
043.05T2250*	mezzo dolce	250 / 10"	12	GR4	
043.05T2300*	mezzo dolce	300 / 12"	6	GR4	
043.05T3100*	dolce	100 / 4"	12	GR1	
043.05T3150*	dolce	150 / 6"	12	GR3	
043.05T3200*	dolce	200 / 8"	12	GR4	
043.05T3250*	dolce	250 / 10"	12	GR4	
043.05T3300*	dolce	300 / 12"	6	GR4	

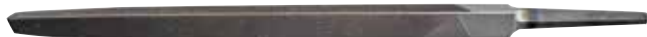
LIME PER CATENA MOTOSEGA

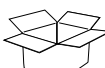
FILES FOR CHAINSAW CHAINS
LIMAS PARA CADENA DE MOTOSIERRA

ART. 043.06

LIMA TRIANGOLARE

TRIANGULAR FILE
LIMA TRIANGULAR



cod.	taglio			 ART. 043.50	€
043.06T2100*	mezzo dolce	100 / 4"	12	GR1	
043.06T2112*	mezzo dolce	112 / 4,5"	12	GR2	
043.06T2125*	mezzo dolce	125 / 5"	12	GR2	
043.06T2150*	mezzo dolce	150 / 6"	12	GR3	
043.06T2175*	mezzo dolce	175 / 7"	12	GR3	
043.06T2200*	mezzo dolce	220 / 7"	12	GR3	
043.06T2225*	mezzo dolce	225 / 9"	12	GR4	
043.06T2250*	mezzo dolce	250 / 10"	12	GR4	
043.06T3100*	sottile / m.dolce	100 / 4"	12	GR1	
043.06T3112*	sottile / m.dolce	112 / 4,5"	12	GR2	
043.06T3125*	sottile / m.dolce	125 / 6"	12	GR3	
043.06T3150*	sottile / m.dolce	150 / 6"	12	GR3	
043.06T3175*	sottile / m.dolce	175 / 7"	12	GR3	
043.06T3200*	sottile / m.dolce	200 / 8"	12	GR4	
043.06T3225*	sottile / m.dolce	225 / 9"	12	GR4	
043.06T3250*	sottile / m.dolce	250 / 10"	12	GR4	

ART. 043.07

LIMA TONDA Passi catena diversi

ROUND FILE - Different chain pitches
LIMA REDONDA - Diferentes pasos de cadena



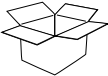
cod.	taglio			 ART. 043.50	€
043.07T2100*	extra sottile / m.dolce	150 - 5/32	12	GR1	
043.07T2112*	extra sottile / m.dolce	150 - 11/64	12	GR1	
043.07T2125*	extra sottile / m.dolce	200 - 7/32	12	GR2	
043.07T2150*	extra sottile / m.dolce	200 - 1/4	12	GR2	
043.07T2175*	extra sottile / m.dolce	200 - 5/16	12	GR3	
043.07T2200*	extra sottile / m.dolce	200 - 3/8	12	GR3	

ART. 043.08



RASPA PIATTA

FLAT RASP
ESCOFINA PLANA

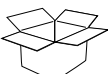
cod.	taglio			 ART. 043.50	€
043.08T1150*	bastardo	150 / 6"	12	GR3	
046.08T1200*	bastardo	200 / 8"	12	GR4	
046.08T1250*	bastardo	250 / 10"	12	GR4	
046.08T1300*	bastardo	300 / 12"	6	GR4	
046.08T2150*	mezzo dolce	150 / 6"	12	GR3	
046.08T2200*	mezzo dolce	200 / 8"	12	GR4	
046.08T2250*	mezzo dolce	250 / 10"	12	GR4	
046.08T2300*	mezzo dolce	300 / 12"	6	GR4	
046.08T3150*	dolce	150 / 6"	12	GR3	
046.08T3200*	dolce	200 / 8"	12	GR4	
046.08T3250*	dolce	250 / 10"	12	GR4	
046.08T3300*	dolce	300 / 12"	6	GR4	

ART. 043.09



RASPA MEZZO TONDA

HALF-ROUND RASP
ESCOFINA DE MEDIA CAÑA

cod.	taglio			 ART. 043.50	€
043.09T1150*	bastardo	150 / 6"	12	GR3	
046.09T1200*	bastardo	200 / 8"	12	GR4	
046.09T1250*	bastardo	250 / 10"	12	GR4	
046.09T1300*	bastardo	300 / 12"	6	GR4	
046.09T2150*	mezzo dolce	150 / 6"	12	GR3	
046.09T2200*	mezzo dolce	200 / 8"	12	GR4	
046.09T2250*	mezzo dolce	250 / 10"	12	GR4	
046.09T2300*	mezzo dolce	300 / 12"	6	GR4	
046.09T3150*	dolce	150 / 6"	12	GR3	
046.09T3200*	dolce	200 / 8"	12	GR4	
046.09T3250*	dolce	250 / 10"	12	GR4	
046.09T3300*	dolce	300 / 12"	6	GR4	

MANICI IN LEGNO PER LIME E RASPE

WOOD HANDLES FOR FILES AND RASPS
MANGOS DE MADERA PARA LIMAS Y ESCOFINAS

ART. 043.50

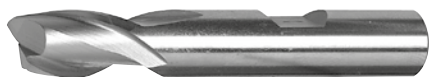


cod.		€
043.5001*	GR1	
043.5002*	GR2	
043.5003*	GR3	
043.5004*	GR4	

*IN ESAURIMENTO

ART. 050.01 - 051.01

050.01



051.01



PER CAVE
SERIE CORTA
Due taglienti
Attacco Weldon
Tagliente al centro
Elica a 30°
DIN 327 D

FOR CAVITIES - SHORT SERIES - Two flutes - Weldon connection - Flute at centre - 30° helix
DIN 327 D
PARA HUECOS - SERIE CORTA - Dos dientes
Vástago Weldon - Diente en el centro - Hélice de 30°
DIN 327 D

Ø	d	L1	L2	Z	Hss + Co 8%	€	Hss + Co 8% + TiCN	€
2,00	6,00	48,00	4,00	2	050.010200	10,67	051.010200	
2,50	6,00	49,00	5,00	2	050.010250	10,67	051.010250	
3,00	6,00	49,00	5,00	2	050.010300	10,67	051.010300	
3,50	6,00	51,00	7,00	2	050.010350	12,52	051.010350	
4,00	6,00	51,00	7,00	2	050.010400	11,13	051.010400	
4,50	6,00	52,00	8,00	2	050.010450	12,52	051.010450	
5,00	6,00	52,00	8,00	2	050.010500	11,13	051.010500	
5,50	6,00	52,00	8,00	2	050.010550	12,52	051.010550	
6,00	6,00	52,00	8,00	2	050.010600	11,13	051.010600	
6,50	10,00	60,00	10,00	2	050.010650	15,51	051.010650	
7,00	10,00	60,00	10,00	2	050.010700	15,51	051.010700	
7,50	10,00	61,00	11,00	2	050.010750	15,51	051.010750	
8,00	10,00	61,00	11,00	2	050.010800	15,73	051.010800	
8,50	10,00	61,00	11,00	2	050.010850	15,95	051.010850	
9,00	10,00	61,00	11,00	2	050.010900	15,95	051.010900	
9,50	10,00	63,00	13,00	2	050.010950	17,37	051.010950	
10,00	10,00	63,00	13,00	2	050.011000	17,77	051.011000	
11,00	12,00	73,00	16,00	2	050.011100	20,57	051.011100	
12,00	12,00	73,00	16,00	2	050.011200	21,40	051.011200	
13,00	12,00	73,00	16,00	2	050.011300	41,21	051.011300	
14,00	12,00	73,00	16,00	2	050.011400	42,08	051.011400	
15,00	12,00	79,00	19,00	2	050.011500	44,55	051.011500	
16,00	16,00	79,00	19,00	2	050.011600	45,27	051.011600	
18,00	16,00	79,00	19,00	2	050.011800	46,81	051.011800	
20,00	20,00	88,00	22,00	2	050.012000	49,17	051.012000	

d = diametro gambo

d = shank diameter
d = diámetro del vástago

L1 = lunghezza totale

L1 = total length
L1 = longitud total

L2 = lunghezza elica

L2 = helix length
L2 = longitud espiral

ART. 050.02 - 051.02

050.02



051.02



PER CAVE
SERIE LUNGA
Due taglienti
Attacco Weldon
Tagliente al centro
Elica a 30°
DIN 844 B

FOR CAVITIES - LONG SERIES - Two flutes
Weldon connection - Flute at centre - 30° helix
DIN 844 B
PARA HUECOS - SERIE LARGA - Dos dientes
Vástago Weldon - Diente en el centro - Hélice de 30°
DIN 844 B

Ø	d	L1	L2	Z	Hss + Co 8%	€	Hss + Co 8% + TiCN	€
3,00	6,00	56,00	12,00	2	050.020300	16,23	051.020300	
4,00	6,00	63,00	19,00	2	050.020400	16,23	051.020400	
5,00	6,00	68,00	24,00	2	050.020500	16,23	051.020500	
6,00	6,00	68,00	24,00	2	050.020600	16,23	051.020600	
7,00	10,00	80,00	30,00	2	050.020700*	15,50	051.020700*	
8,00	10,00	88,00	38,00	2	050.020800	22,88	051.020800	
9,00	10,00	88,00	38,00	2	050.020900*	27,00	051.020900*	
10,00	10,00	95,00	45,00	2	050.021000	22,88	051.021000	
12,00	12,00	110,00	53,00	2	050.021200	30,36	051.021200	
14,00	12,00	110,00	53,00	2	050.021400	47,48	051.021400	
16,00	16,00	123,00	63,00	2	050.021600	64,30	051.021600	
18,00	16,00	123,00	63,00	2	050.021800	75,58	051.021800	
20,00	20,00	141,00	75,00	2	050.022000*	98,00	051.022000*	
22,00	20,00	141,00	75,00	2	050.022200*	103,50	051.022200*	
25,00	25,00	166,00	90,00	2	050.022500*	105,50	051.022500*	
28,00	25,00	166,00	90,00	2	050.022800*	112,50	051.022800*	
32,00	32,00	166,00	55,00	2	050.023200*	214,00	N.D.	

d = diametro gambo

d = shank diameter
d = diámetro del vástago

L1 = lunghezza totale

L1 = total length
L1 = longitud total

L2 = lunghezza elica

L2 = helix length
L2 = longitud espiral

*IN ESAURIMENTO

ART. 050.04 - 051.04

050.04



051.04



TESTA SEMISFERICA
SERIE LUNGA
ISO 1641/1
Attacco Weldon
Tagliente al centro

HEMISPHERICAL HEAD
LONG SERIES

Weldon connection

Flute at centre

CABEZA SEMIESFÉRICA

SERIE LARGA

Vástago Weldon

Diente en el centro

Due taglienti
Elica 30°

Two flutes

30° Helix

Dos dientes

Hélice de 30°

Ø	d	L1	L2	Z	Hss + Co 8%	€	Hss + Co 8% + TiCN	€
4,00	6,00	63,00	19,00	2	050.040400	29,50	051.040400*	
5,00	6,00	68,00	24,00	2	050.040500	20,80	051.040500*	
6,00	6,00	68,00	24,00	2	050.040600	31,80	051.040600*	
8,00	10,00	88,00	38,00	2	050.040800	28,70	051.040800*	
10,00	10,00	95,00	45,00	2	050.041000	41,00	051.041000*	
12,00	12,00	110,00	53,00	2	050.041200	40,50	051.041200*	
14,00	12,00	110,00	53,00	2	050.041400	66,70	051.041400*	
16,00	16,00	123,00	63,00	2	050.041600	73,60	051.041600*	
18,00	16,00	123,00	63,00	2	050.041800	93,60	N.D.	
20,00	16,00	141,00	75,00	2	050.042000	115,40	N.D.	

d = diametro gambo

d = shank diameter

d = diámetro del vástago

L1 = lunghezza totale

L1 = total length

L1 = longitud total

L2 = lunghezza elica

L2 = helix length

L2 = longitud espiral



ART. 050.05 - 051.05

050.05



051.05



SERIE CORTA
Tre taglienti
Attacco Weldon
Tagliente al centro
Elica a 30°
DIN 844 A

SHORT SERIES
Three flutes
Weldon connection
Flute at centre
30° helix
DIN 844 A

SERIE CORTA
Tres dientes
Vástago Weldon
Diente en el centro
Hélice de 30°
DIN 844 A

Ø	d	L1	L2	Z	Hss + Co 8%	€	Hss + Co 8% + TiCN	€
6,00	5,00	57,00	13,00	3	050.050600	12,49	051.050600	20,12
8,00	10,00	69,00	19,00	3	050.050800	16,94	051.050800	27,41
10,00	10,00	72,00	22,00	3	050.051000	25,06	051.051000	36,91
12,00	12,00	83,00	22,00	3	050.051200	29,03	051.051200	42,45
14,00	12,00	83,00	26,00	3	050.051400	42,75	051.051400	59,44
16,00	16,00	92,00	32,00	3	050.051600	42,75	051.051600	67,98
18,00	16,00	92,00	32,00	3	050.051800	53,01	051.051800	80,88
20,00	20,00	104,00	38,00	3	050.052000	64,38	051.052000	92,27
22,00	20,00	104,00	38,00	3	050.052200	132,22	051.052200	160,27
25,00	25,00	121,00	45,00	3	050.052500*	142,00	051.052500*	185,00

d = diametro gambo

d = shank diameter

d = diámetro del vástago

L1 = lunghezza totale

L1 = total length

L1 = longitud total

L2 = lunghezza elica

L2 = helix length

L2 = longitud espiral

ART. 050.06 - 051.06

050.06



051.06



SERIE LUNGA
Tre taglienti
Attacco Weldon
Tagliente al centro
Elica a 30°
DIN 844 B

LONG SERIES
Three flutes
Weldon connection
Flute at centre
30° helix
DIN 844 B

SERIE LARGA
Tres dientes
Vástago Weldon
Diente en el centro
Hélice de 30°
DIN 844 B

Ø	d	L1	L2	Z	Hss + Co 8%	€	Hss + Co 8% + TiCN	€
6,00	6,00	68,00	24,00	3	050.060600	17,14	051.060600	
8,00	10,00	88,00	38,00	3	050.060800	22,83	051.060800	
10,00	10,00	95,00	45,00	3	050.061000	25,06	051.061000	
12,00	12,00	110,00	53,00	3	050.061200	30,36	051.061200	
14,00	12,00	110,00	53,00	3	050.061400	34,71	051.061400	
16,00	16,00	123,00	63,00	3	050.061600	42,75	051.061600	
18,00	16,00	123,00	63,00	3	050.061800	52,42	051.061800	
20,00	20,00	141,00	75,00	3	050.062000	62,65	051.062000	
22,00	20,00	141,00	75,00	3	050.062200*	72,00	051.062200*	
25,00	25,00	166,00	90,00	3	050.062500*	90,50	051.062500*	
30,00	25,00	166,00	90,00	3	N.D.		051.063000*	

d = diametro gambo

d = shank diameter

d = diámetro del vástago

L1 = lunghezza totale

L1 = total length

L1 = longitud total

L2 = lunghezza elica

L2 = helix length

L2 = longitud espiral

*IN ESAURIMENTO

ART. 050.07 - 051.07

050.07



051.07



SERIE CORTA
Quattro taglienti
ø 22 mm 6 taglienti
Attacco Weldon
Tagliente al centro
Elica a 30°
DIN 844 B

SHORT SERIES
Four flutes
ø 22 mm 6 flutes
Weldon connection
Flute at centre
30° helix
DIN 844 B

SERIE CORTA
Cuatro dientes
ø 22 mm, 6 dientes
Vástago Weldon
Diente en el centro
Hélice de 30°
DIN 844 B

Ø	d	L1	L2	Z	Hss + Co 8%	€	Hss + Co 8% + TICN	€
3,00	6,00	52,00	8,00	4	050.070300	12,78	051.070300	
4,00	6,00	55,00	11,00	4	050.070400	12,78	051.070400	
5,00	6,00	57,00	13,00	4	050.070500	12,78	051.070500	
6,00	6,00	57,00	13,00	4	050.070600	13,27	051.070600	
7,00	10,00	66,00	16,00	4	050.070700	18,21	051.070700	
8,00	10,00	69,00	19,00	4	050.070800	18,43	051.070800	
9,00	10,00	69,00	19,00	4	050.070900	18,76	051.070900	
10,00	10,00	72,00	22,00	4	050.071000	18,92	051.071000	
12,00	12,00	83,00	26,00	4	050.071200	23,65	051.071200	
14,00	12,00	83,00	26,00	4	050.071400	32,20	051.071400	
16,00	16,00	92,00	32,00	4	050.071600	32,20	051.071600	
18,00	16,00	92,00	32,00	4	050.071800	46,18	051.071800	
20,00	20,00	104,00	38,00	4	050.072000	46,18	051.072000	
22,00	20,00	104,00	38,00	6	050.072200	63,90	051.072200	

d = diametro gambo

d = shank diameter

d = diámetro del vástago

L1 = lunghezza totale

L1 = total length

L1 = longitud total

L2 = lunghezza elica

L2 = helix length

L2 = longitud espiral

ART. 050.08 - 051.08

050.08



051.08



SERIE LUNGA
Quattro taglienti
Attacco Weldon
Tagliente al centro
Elica a 30°
DIN 844 B

LONG SERIES
Four flutes
Weldon connection
Flute at centre
30° helix
DIN 844 B

SERIE LARGA
Cuatro dientes
Vástago Weldon
Diente en el centro
Hélice de 30°
DIN 844 B

Ø	d	L1	L2	Z	Hss + Co 8%	€	Hss + Co 8% + TICN	€
4,00	6,00	63,00	19,00	4	050.080400	18,59	051.080400	
5,00	6,00	68,00	24,00	4	050.080500	18,59	051.080500	
6,00	6,00	68,00	24,00	4	050.080600	18,59	051.080600	
8,00	10,00	88,00	38,00	4	050.080800	22,83	051.080800	
10,00	10,00	95,00	45,00	4	050.081000	26,77	051.081000	
12,00	12,00	110,00	53,00	4	050.081200	31,23	051.081200	
14,00	12,00	110,00	53,00	4	050.081400	48,64	051.081400	
16,00	16,00	123,00	63,00	4	050.081600	49,72	051.081600	
18,00	16,00	123,00	63,00	4	050.081800	55,97	051.081800	
20,00	20,00	141,00	75,00	4	050.082000	65,67	051.082000	

d = diametro gambo

d = shank diameter

d = diámetro del vástago

L1 = lunghezza totale

L1 = total length

L1 = longitud total

L2 = lunghezza elica

L2 = helix length

L2 = longitud espiral



ART. 050.09



SERIE CORTA
Quattro taglienti
Attacco Weldon
Semisferica
Elica a 30°
ISO 164/1

SHORT SERIES
Four flutes
Weldon connection
Hemispherical
30° helix
SERIE CORTA
Cuatro dientes
Vástago Weldon
Semiesférica
Hélice de 30°

Ø	d	L1	L2	Z	Hss + Co 8%	€
6,00	6,00	67,00	13,00	4	050.090600*	
8,00	10,00	69,00	19,00	4	050.090800*	
10,00	10,00	72,00	22,00	4	050.091000*	
12,00	12,00	83,00	26,00	4	050.091200*	
14,00	12,00	83,00	26,00	4	050.091400*	
16,00	16,00	92,00	32,00	4	050.091600*	
18,00	16,00	92,00	32,00	4	050.091800*	
20,00	20,00	104,00	38,00	4	050.092000*	

d = diametro gambo

d = shank diameter

d = diámetro del vástago

L1 = lunghezza totale

L1 = total length

L1 = longitud total

L2 = lunghezza elica

L2 = helix length

L2 = longitud espiral

ART. 050.10



SERIE LUNGA
Quattro taglienti
Attacco Weldon
Semisferica
Elica a 30°
ISO 164/1

LONG SERIES
Four flutes
Weldon connection
Hemispherical
30° helix
SERIE LARGA
Cuatro dientes
Vástago Weldon
Semiesférica
Hélice de 30°

Ø	d	L1	L2	Z	Hss + Co 8%	€
6,00	6,00	68,00	24,00	4	050.100600*	
8,00	10,00	88,00	38,00	4	050.100800*	
10,00	10,00	95,00	45,00	4	050.101600*	
12,00	12,00	110,00	53,00	4	050.101200*	
14,00	12,00	110,00	53,00	4	050.101400*	
16,00	16,00	123,00	63,00	4	050.101600*	
18,00	16,00	123,00	63,00	4	050.101800*	
20,00	20,00	141,00	75,00	4	050.102000+	

d = diametro gambo

d = shank diameter

d = diámetro del vástago

L1 = lunghezza totale

L1 = total length

L1 = longitud total

L2 = lunghezza elica

L2 = helix length

L2 = longitud espiral

*IN ESAURIMENTO

ART. 050.13 - 051.13

050.13



051.13



SERIE CORTA

Quattro taglienti

Attacco Weldon

Tagliente al centro

Elica a 30°

PER SGROSSARE

ROMPITRUCCILO SPOGLIATO RETTIFICATO

PROFILO TONDO FINE

DIN 844 B

SHORT SERIES - Four flutes - Weldon connection - Flute at centre

30° helix - FOR ROUGH-HEWING - RELIEF GROUND CHIP BREAKER

FINE ROUND PROFILE

DIN 844 B

SERIE CORTA - Cuatro dientes - Vástago Weldon - Diente en el centro

Hélice de 30° - PARA DESBASTAR - ROMPEVIRUTAS RECTIFICADO

REDONDO FINO

DIN 844 B

Ø	d	L1	L2	Z	Hss + Co 8%	€	Hss + Co 8% + TICN	€
6,00	8,00	57,00	13,00	4	050.130600	27,72	051.130600	
8,00	10,00	69,00	19,00	4	050.130800	30,91	051.130800	
10,00	10,00	72,00	22,00	4	050.131000	30,91	051.131000	
12,00	12,00	83,00	26,00	4	050.131200	39,05	051.131200	
14,00	12,00	83,00	26,00	4	050.131400	44,88	051.131400	
16,00	16,00	92,00	32,00	4	050.131600	51,21	051.131600	
18,00	16,00	92,00	32,00	4	050.131800	56,98	051.131800	
20,00	20,00	104,00	38,00	4	050.132000	70,95	051.132000	

d = diametro gambo

d = shank diameter

d = diámetro del vástago

L1 = lunghezza totale

L1 = total length

L1 = longitud total

L2 = lunghezza elica

L2 = helix length

L2 = longitud espiral

ART. 050.14 - 051.14

050.14



051.14



SERIE LUNGA

Attacco Weldon

Tagliente al centro

Elica a 30°

PER SGROSSARE

ROMPITRUCCILO SPOGLIATO RETTIFICATO

PROFILO TONDO FINE

LONG SERIES - Weldon connection - Flute at centre - 30° helix

FOR ROUGH-HEWING - RELIEF GROUND CHIP BREAKER

FINE ROUND PROFILE

SERIE LARGA - Vástago Weldon - Diente en el centro

Hélice de 30° - PARA DESBASTAR - ROMPEVIRUTAS RECTIFICADO

REDONDO FINO

Ø	d	L1	L2	Z	Hss + Co 8%	€	Hss + Co 8% + TICN	€
10,00	10,00	95,00	45,00	4	050.141000	42,57	051.141000	
12,00	12,00	110,00	53,00	4	050.141200	56,98	051.141200	
14,00	12,00	110,00	53,00	4	050.141400	56,98	051.141400	
16,00	16,00	123,00	63,00	4	050.141600	72,11	051.141600	
18,00	16,00	123,00	63,00	4	050.141800	118,92	051.141800	
20,00	20,00	141,00	75,00	4	050.142000	130,14	051.142000	
22,00	20,00	141,00	75,00	5	050.142200	175,78	051.142200	
25,00	25,00	166,00	90,00	5	050.142500	209,94	051.142500	
28,00	25,00	166,00	90,00	5	050.142800	241,67	051.142800	

d = diametro gambo

d = shank diameter

d = diámetro del vástago

L1 = lunghezza totale

L1 = total length

L1 = longitud total

L2 = lunghezza elica

L2 = helix length

L2 = longitud espiral



ART. 050.15



SERIE CORTA
Tre/Quattro taglienti
Attacco Weldon
Semiferica
Elica a 30°
PER SGROSSARE
DIN 844 B

SHORT SERIES
Three/Four flutes
Weldon connection
Hemispherical
30° helix
FOR ROUGH-HEWING
SERIE CORTA
Tres/cuatro dientes
Vástago Weldon
Semiesférica
Hélice de 30°
PARA DESBASTAR

Ø	d	L1	L2	Z	Hss + Co 8%	€
8,00	10,00	69,00	19,00	3	050.150800*	
10,00	10,00	72,00	22,00	4	050.151000*	
12,00	12,00	83,00	26,00	4	050.151200*	
16,00	16,00	92,00	32,00	4	050.151600*	
20,00	20,00	104,00	38,00	4	050.152000*	

d = diametro gambo

d = shank diameter
d = diámetro del vástago

L1 = lunghezza totale

L1 = total length
L1 = longitud total

L2 = lunghezza elica

L2 = helix length
L2 = longitud espiral

ART. 050.16



SERIE LUNGA
Tre/Quattro taglienti
Attacco Weldon
Semiferica
Elica a 30°
PER SGROSSARE
DIN 844 B

LONG SERIES
Three/Four flutes
Weldon connection
Hemispherical
30° helix
FOR ROUGH-HEWING
SERIE LARGA
Tres/cuatro dientes
Vástago Weldon
Semiesférica
Hélice de 30°
PARA DESBASTAR

Ø	d	L1	L2	Z	Hss + Co 8%	€
10,00	10,00	96,00	46,00	3	050.161000*	
12,00	12,00	110,00	53,00	4	050.161200*	
16,00	16,00	123,00	63,00	4	050.161600*	
20,00	20,00	141,00	75,00	4	050.162000*	

d = diametro gambo

d = shank diameter
d = diámetro del vástago

L1 = lunghezza totale

L1 = total length
L1 = longitud total

L2 = lunghezza elica

L2 = helix length
L2 = longitud espiral

ART. 050.19



SERIE CORTA
Tre/Quattro taglienti
Attacco cono morse
Conica
Elica a 45°
DIN 845 B

SHORT SERIES
Three/Four flutes
Morse taper connection
Tapered
45° helix
SERIE CORTA
Tres/cuatro dientes
Vástago de cono de apriete
Cónica
Hélice de 45°

Ø	cm	L1	L2	Z	Hss + Co 8%	€
18,00	3	120,00	40,00	4	050.191800*	
20,00	3	145,00	45,00	4	050.192000*	
22,00	3	145,00	45,00	4	050.192200*	
25,00	4	150,00	50,00	4	050.192500*	
28,00	4	155,00	56,00	4	050.192800*	
30,00	4	165,00	63,00	4	050.193000*	
32,00	4	185,00	63,00	4	050.193200*	
35,00	4	195,00	70,00	4	050.193500*	

L1 = lunghezza totale

L1 = total length
L1 = longitud total

L2 = lunghezza elica

L2 = helix length
L2 = longitud espiral

ART. 050.20



SERIE CORTA
Tre/Quattro taglienti
Attacco cono morse
Conica
Elica a 45°
DIN 845 B

SHORT SERIES
Three/Four flutes
Morse taper connection
Tapered
45° helix
SERIE CORTA
Tres/cuatro dientes
Vástago de cono de apriete
Cónica
Hélice de 45°

Ø	cm	L1	L2	Z	Hss + Co 8%	€
25,00	4	180,00	80,00	4	050.202500*	
28,00	4	215,00	90,00	4	050.202800*	
30,00	4	215,00	90,00	4	050.203000*	

d = diametro gambo

d = shank diameter
d = diámetro del vástago

L1 = lunghezza totale

L1 = total length
L1 = longitud total

L2 = lunghezza elica

L2 = helix length
L2 = longitud espiral



ART. 050.23
SERIE CORTA
Elica a 30°

SHORT SERIES

30° helix

SERIE CORTA

Hélice de 30°


HSS- G

cod.	Ø	d	L1	L2	€
050.230400	4,00	8,00	60,00	16,00	
050.230500	5,00	8,00	60,00	17,00	
050.230600	6,00	8,00	60,00	18,00	
050.230800	8,00	8,00	80,00	18,00	
050.231000	10,00	10,00	80,00	18,00	

d = diametro gambo

d = shank diameter

d = diámetro del vástago

L1 = lunghezza totale

L1 = total length

L1 = longitud total

L2 = lunghezza elica

L2 = helix length

L2 = longitud espiral

ART. 050.24
SERIE LUNGA
Elica a 30°

LONG SERIES

30° helix

SERIE LARGA

Hélice de 30°


HSS- G

cod.	Ø	d	L1	L2	€
050.240400	4,00	8,00	80,00	25,00	
050.240500	5,00	8,00	80,00	25,00	
050.240600	6,00	8,00	80,00	25,00	
050.240800	8,00	8,00	100,00	40,00	

d = diametro gambo

d = shank diameter

d = diámetro del vástago

L1 = lunghezza totale

L1 = total length

L1 = longitud total

L2 = lunghezza elica

L2 = helix length

L2 = longitud espiral

ART. 050.26

DIN 373

**PER SEDI VITI A TESTA
CILINDRICA**
4 taglienti

HSS + Co



FOR CYLINDRICAL HEAD SCREW
SEATS
4 flutes
PARA ORIFICIOS DE TORNILLOS
DE CABEZA
CILÍNDRICA
4 dientes

cod.	per M	Ø	Ø	Ø	L1	L2	€
050.260300	3,00	5,90	3,20	6,00	71,00	14,00	
050.260400	4,00	7,40	4,30	6,00	71,00	14,00	
050.260500	5,00	8,90	5,30	8,00	80,00	18,00	
050.260600	6,00	11,00	6,40	8,00	80,00	18,00	
050.260800	8,00	15,00	8,40	12,00	100,00	22,00	
050.261000	10,00	18,00	10,50	12,00	100,00	22,00	
050.261200	12,00	19,00	13,00	12,00	100,00	22,00	
050.261400	14,00	22,00	15,00	16,00	130,00	30,00	

d = diametro gambo

d = shank diameter

d = diámetro del vástago

L1 = lunghezza totale

L1 = total length

L1 = longitud total

L2 = lunghezza elica

L2 = helix length

L2 = longitud espiral

ART. 050.27

DIN 1866

**PER SEDI VITI A TESTA
SVASATA**
4 taglienti

HSS + Co



FOR COUNTERSUNK HEAD SCREW
SEATS
4 flutes
PARA ORIFICIOS DE TORNILLOS
DE CABEZA
AVELLANADA
4 dientes

cod.	per M	Ø	Ø	Ø	L1	L2	€
050.270300	3,00	6,30	3,20	6,00	71,00	14,00	
050.270400	4,00	8,30	4,30	8,00	71,00	14,00	
050.270500	5,00	10,40	5,30	10,00	80,00	18,00	
050.270600	6,00	12,40	6,40	10,00	80,00	18,00	
050.270800	8,00	16,50	8,40	12,00	100,00	22,00	
050.271000	10,00	20,50	10,50	12,00	100,00	22,00	

d = diametro gambo

d = shank diameter

d = diámetro del vástago

L1 = lunghezza totale

L1 = total length

L1 = longitud total

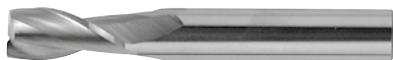
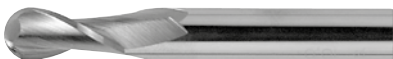
L2 = lunghezza elica

L2 = helix length

L2 = longitud espiral

ART. 052.01 - 052.03

052.01


 052.03
Raggiata


Serie corta
 Due taglienti
 Micrograna K20
 Tagliente al centro
 Elica a 30°

Short series
 Two flutes
 Micrograin K20
 Flute at centre
 30° helix
 Serie corta
 Dos dientes
 Metal duro micrograno K20
 Diente en el centro
 Hélice de 30°

Ø	d	L1	L2	Z	cod.	€	cod.	€
3,00	3,00	38,00	12,00	2	052.010300	13,67	052.030300	
4,00	4,00	40,00	12,00	2	052.010400	15,63	052.030400	
5,00	5,00	50,00	14,00	2	052.010500	19,54	052.030500	
6,00	6,00	50,00	16,00	2	052.010600	24,90	052.030600	
8,00	8,00	63,00	20,00	2	052.010800	37,00	052.030800	
10,00	10,00	72,00	22,00	2	052.011000	62,20	052.031000	
12,00	12,00	73,00	22,00	2	052.011200	90,50	052.031200	
14,00	14,00	75,00	25,00	2	052.011400	117,22	052.031400	
16,00	16,00	82,00	28,00	2	052.011600	156,29	052.031600	

d = diametro gambo
d = shank diameter
d = diámetro del vástago
L1 = lunghezza totale
L1 = total length
L1 = longitud total
L2 = lunghezza elica
L2 = helix length
L2 = longitud espiral
ART. 052.02


Serie lunga
 Due taglienti
 Micrograna K20
 Tagliente al centro
 Elica a 30°

Long series
 Two flutes
 Micrograin K20
 Flute at centre
 30° helix
 Serie larga
 Dos dientes
 Metal duro micrograno K20
 Diente en el centro
 Hélice de 30°

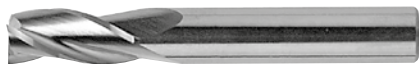
Ø	d	L1	L2	Z	cod.	€
2,00	2,00	50,00	20,00	2	052.020200	
3,00	3,00	60,00	25,00	2	052.020300	
4,00	4,00	60,00	25,00	2	052.020400	
5,00	5,00	70,00	30,00	2	052.020500	
6,00	6,00	70,00	30,00	2	052.020600	
8,00	8,00	80,00	35,00	2	052.020800	
10,00	10,00	100,00	45,00	2	052.021000	
12,00	12,00	100,00	45,00	2	052.021200	
14,00	14,00	100,00	45,00	2	052.021400	
16,00	16,00	100,00	45,00	2	052.021600	

d = diametro gambo
d = shank diameter
d = diámetro del vástago
L1 = lunghezza totale
L1 = total length
L1 = longitud total
L2 = lunghezza elica
L2 = helix length
L2 = longitud espiral

ART. 052.05

Serie corta
Tre taglienti
Micrograna K20
Tagliente al centro
Elica a 30°

Short series
Three flutes
Micrograin K20
Flute at centre
30° helix
Serie corta
Tres dientes
Metal duro micrograno K20
Diente en el centro
Hélice de 30°



Ø	d	L1	L2	Z	cod.	€
3,00	3,00	38,00	12,00	3	052.050300	
4,00	4,00	40,00	12,00	3	052.050400	
5,00	5,00	50,00	14,00	3	052.050500	
6,00	6,00	50,00	16,00	3	052.050600	
8,00	8,00	63,00	20,00	3	052.050800	
10,00	10,00	72,00	22,00	3	052.051000	
12,00	12,00	73,00	22,00	3	052.051200	
14,00	14,00	75,00	25,00	3	052.051400	
16,00	16,00	82,00	28,00	3	052.051600	

d = diametro gambo

d = shank diameter

d = diámetro del vástago

L1 = lunghezza totale

L1 = total length

L1 = longitud total

L2 = lunghezza elica

L2 = helix length

L2 = longitud espiral

ART. 052.06

Serie lunga
Tre taglienti
Micrograna K20
Tagliente al centro
Elica a 30°

Long series
Three flutes
Micrograin K20
Flute at centre
30° helix
Serie lunga
Tres dientes
Metal duro micrograno K20
Diente en el centro
Hélice de 30°



Ø	d	L1	L2	Z	cod.	€
2,00	2,00	50,00	20,00	3	052.060200	
3,00	3,00	60,00	25,00	3	052.060300	
4,00	4,00	60,00	25,00	3	052.060400	
5,00	5,00	70,00	30,00	3	052.060500	
6,00	6,00	70,00	30,00	3	052.060600	
8,00	8,00	80,00	35,00	3	052.060800	
10,00	10,00	100,00	45,00	3	052.061000	
12,00	12,00	100,00	45,00	3	052.061200	
14,00	14,00	100,00	45,00	3	052.061400	
16,00	16,00	100,00	45,00	3	052.061600	

d = diametro gambo

d = shank diameter

d = diámetro del vástago

L1 = lunghezza totale

L1 = total length

L1 = longitud total

L2 = lunghezza elica

L2 = helix length

L2 = longitud espiral



ART. 052.09



Serie corta
Quattro taglienti
Micrograna K20
Tagliente al centro
Elica a 30°

Short series - Four flutes - Micrograin K20 - Flute at centre - 30° helix
Serie corta- Cuatro dientes Metal duro micrograno K20
Diente en el centro - Hélice de 30°

Ø	d	L1	L2	Z	cod.	€
3,00	3,00	38,00	12,00	4	052.090300	
4,00	4,00	40,00	12,00	4	052.090400	
5,00	5,00	50,00	14,00	4	052.090500	
6,00	6,00	50,00	16,00	4	052.090600	
8,00	8,00	63,00	20,00	4	052.090800	
10,00	10,00	72,00	22,00	4	052.091000	
12,00	12,00	73,00	22,00	4	052.091200	
14,00	14,00	75,00	25,00	4	052.091400	
16,00	16,00	82,00	28,00	4	052.091600	

d = diametro gambo

d = shank diameter

d = diámetro del vástago

L1 = lunghezza totale

L1 = total length

L1 = longitud total

L2 = lunghezza elica

L2 = helix length

L2 = longitud espiral

ART. 052.10



Serie lunga
Micrograna K20
Tagliente al centro
Elica a 30°

Long series - Micrograin K20
Flute at centre - 30° helix
Serie larga
Metal duro micrograno K20
Diente en el centro - Hélice de 30°

Ø	d	L1	L2	Z	cod.	€
2,00	2,00	50,00	20,00	4	052.100200	
3,00	3,00	60,00	25,00	4	052.100300	
4,00	4,00	60,00	25,00	4	052.100400	
5,00	5,00	70,00	30,00	4	052.100500	
6,00	6,00	70,00	30,00	4	052.100600	
8,00	8,00	80,00	35,00	4	052.100800	
10,00	10,00	100,00	45,00	4	052.101000	
12,00	12,00	100,00	45,00	4	052.101200	
14,00	14,00	100,00	45,00	4	052.101400	
16,00	16,00	100,00	45,00	4	052.101600	

d = diametro gambo

d = shank diameter

d = diámetro del vástago

L1 = lunghezza totale

L1 = total length

L1 = longitud total

L2 = lunghezza elica

L2 = helix length

L2 = longitud espiral

ART. 052.15



MONOTAGLIANTE PER ALLUMINIO
Micrograna K20
Elica a 30°

SINGLE FLUTE FOR - ALUMINIUM
Micrograin K20 - 30° helix
DE UN DIENTE PARA - ALUMINIO
Metal duro micrograno K20
Hélice de 30°

Ø	d	L1	L2	cod.	€
2,00	3,00	38,00	10,00	052.150200	
2,50	3,00	38,00	12,00	052.150250	
3,00	3,00	38,00	12,00	052.150300	
4,00	4,00	40,00	15,00	052.150400	
5,00	5,00	50,00	16,00	052.150500	
6,00	6,00	50,00	18,00	052.150600	

d = diametro gambo

d = shank diameter

d = diámetro del vástago

L1 = lunghezza totale

L1 = total length

L1 = longitud total

L2 = lunghezza elica

L2 = helix length

L2 = longitud espiral

ART. 052.18



2 taglienti - serie corta
Gambo rinforzato da 3mm
Tolleranza fresa h 10
Tolleranza gambo h 6

Lunghezza totale 38mm

Micrograna K 20

2 flutes - short series- 3mm reinforced shank
Mill cutter tolerance h 10 - Shank tolerance h 6
2 dientes - serie corta- Vástago reforzado de 3 mm
Tolerancia fresa h 10- Tolerancia vástago h 6

Total length 38mm
Longitud total 38 mm

Micrograno K 20
Micrograin K 20

cod.	Ø mm	L1	€
052.180040*	0,40	1,50	
052.180050*	0,50	1,50	
052.180060*	0,60	2,00	
052.180070*	0,70	3,00	
052.180080*	0,80	3,00	
052.180090*	0,90	3,00	
052.180100*	1,00	4,00	
052.180110*	1,10	4,00	
052.180120*	1,20	4,00	
052.180130*	1,30	4,00	
052.180140*	1,40	4,00	
052.180150*	1,50	5,00	
052.180160*	1,60	5,00	
052.180180*	1,80	5,00	
052.180200*	2,00	5,00	
052.180250*	2,50	7,00	
052.180300*	3,00	8,00	

L1 = lunghezza elica - L1 = helix length - L1 = longitud espiral

ART. 052.19



3 taglienti - serie corta
Gambo rinforzato da 3mm
Tolleranza fresa h 10
Tolleranza gambo h 6

Lunghezza totale 38mm

Micrograna K 20

3 flutes - short series- 3mm reinforced shank
Mill cutter tolerance h 10 - Shank tolerance h 6
3 dientes - serie corta- Vástago reforzado de 3 mm
Tolerancia fresa h 10- Tolerancia vástago h 6

Total length 38mm
Longitud total 38 mm

Micrograno K 20
Micrograin K 20

cod.	Ø mm	L1	€
052.190100*	1,00	4,00	
052.190150*	1,50	5,00	
052.190200*	2,00	6,00	
052.190250*	2,50	7,00	
052.190300*	3,00	8,00	

L1 = lunghezza elica - L1 = helix length - L1 = longitud espiral

ART. 052.20



4 taglienti - serie corta
Gambo rinforzato da 3mm
Tolleranza fresa h 10
Tolleranza gambo h 6

Lunghezza totale 38mm

Micrograna K 20

4 flutes - short series- 3mm reinforced shank
Mill cutter tolerance h 10 - Shank tolerance h 6
4 dientes - serie corta- Vástago reforzado de 3 mm
Tolerancia fresa h 10- Tolerancia vástago h 6

Total length 38mm
Longitud total 38 mm

Micrograno K 20
Micrograin K 20

cod.	Ø mm	L1	€
052.200100*	1,00	4,00	
052.200150*	1,50	5,00	
052.200200*	2,00	6,00	
052.200250*	2,50	7,00	
052.200300*	3,00	8,00	

L1 = lunghezza elica - L1 = helix length - L1 = longitud espiral

* IN ESAURIMENTO



ART. 052.21

Raggiata
2 taglienti - serie corta
Gambo rinforzato da 3mm
Tolleranza fresa h 10
Tolleranza gambo h 6

Bevelled
2 flutes - short series- 3mm reinforced shank
Mill cutter tolerance h 10 - Shank tolerance h 6
Rallada 2 dientes - serie corta- Vástago reforzado de 3 mm
Tolerancia fresa h 10- Tolerancia vástago h 6

Lunghezza totale 38mm

Total length 38mm
Longitud total 38 mm


Micrograna K 20

Micrograno K 20
Micrograin K 20

cod.	Ø	L1	€
052.210040*	0,40	1,50	
052.210050*	0,50	1,50	
052.210060*	0,60	2,00	
052.210070*	0,70	3,00	
052.210080*	0,80	3,00	
052.210090*	0,90	3,00	
052.210100*	1,00	4,00	
052.210110*	1,10	4,00	
052.210120*	1,20	4,00	
052.210130*	1,30	4,00	
052.210140*	1,40	4,00	
052.210150*	1,50	5,00	
052.210160*	1,60	5,00	
052.210180*	1,80	5,00	
052.210200*	2,00	6,00	
052.210250*	2,50	7,00	
052.210300*	3,00	8,00	

L1 = lunghezza elica
L1 = helix length
L1 = longitud espiral
ART. 052.22
PER FIBRE DI VETRO - PLASTICA - GOMMA DURA
Taglienti a 30°
Tolleranza fresa h 10
Tolleranza gambo h 6
FOR FIBREGLASS - PLASTIC HARD RUBBER
30° flutes
Mill cutter tolerance h 10
Shank tolerance h 6
PARA FIBRAS DE VIDRIO - PLÁSTICO - GOMA DURA
Dientes de 30°
Tolerancia fresa h 10
Tolerancia vástago h 6


cod.	Ø	D	L1	L2	€
052.220200*	2,00	2,00	38,00	10,00	
052.220300*	2,00	3,00	38,00	12,00	
052.220400*	4,00	4,00	40,00	15,00	
052.220500*	5,00	5,00	50,00	16,00	
052.220600*	6,00	6,00	50,00	18,00	
052.220800*	8,00	8,00	63,00	25,00	
052.221000*	10,00	10,00	72,00	30,00	

L1 = lunghezza totale
L1 = total length
L1 = longitud total
L2 = lunghezza elica
L2 = helix length
L2 = longitud espiral
D = diametro gambo
d = shank diameter
d = diámetro del vástago

* IN ESAURIMENTO

ART. 069.01

DIN 1412 E

**PER ASPORTAZIONE
PUNTI DI SALDATURA**

DIN 1412 E
FOR REMOVAL
WELD POINTS
DIN 1412 E
PARA EXTRACCIÓN DE
PUNTOS DE SOLDADURA



HSS - Co

cod.	Ø	d	L	€
069.010650	6,50	8,00	40,00	
069.010800	8,00	8,00	40,00	
069.010800VA	8,00	8,00	44,00	

d = diametro gambo

d = shank diameter
d = diámetro del vástago

L1 = lunghezza totale

L1 = total length
L1 = longitud total

ART. 069.03

DIN 1412 E

**PER ASPORTAZIONE
PUNTI DI SALDATURA**

DIN 1412 E
FOR REMOVAL
WELD POINTS
DIN 1412 E
PARA EXTRACCIÓN DE
PUNTOS DE SOLDADURA



HSS - Co + TIN

cod.	Ø	d	L	€
069.030650	6,50	8,00	40,00	
069.030800	8,00	8,00	40,00	
069.030800VA	8,00	8,00	44,00	

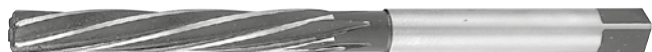
d = diametro gambo

d = shank diameter
d = diámetro del vástago

L1 = lunghezza totale

L1 = total length
L1 = longitud total



ART. 045.01
DIN 206 B
**A mano
taglienti elicoidali sinistri**

*Hand
left-hand twist flutes
A mano
dientes helicoidales izquierda*
HSS

cod.	Ø	Ø	L1	L2	€
045.010400	4,00	3,15	76,00	38,00	
045.010500	5,00	4,00	87,00	44,00	
045.010600	6,00	4,50	93,00	47,00	
045.010700	7,00	5,60	107,00	54,00	
045.010800	8,00	6,30	115,00	58,00	
045.010900	9,00	7,10	124,00	62,00	
045.011000	10,00	8,00	133,00	66,00	
045.011100	11,00	9,00	142,00	71,00	
045.011200	12,00	10,00	152,00	76,00	
045.011300	13,00	10,00	152,00	76,00	
045.011400	14,00	11,20	163,00	81,00	
045.011500	15,00	11,20	163,00	81,00	
045.011600	16,00	12,50	177,00	87,00	
045.011700	17,00	12,50	177,00	87,00	
045.011800	18,00	14,00	188,00	93,00	
045.011900	19,00	14,00	188,00	93,00	
045.012000	20,00	16,00	201,00	100,00	
045.012100	21,00	16,00	201,00	100,00	
045.012200	22,00	18,00	215,00	107,00	
045.012300	23,00	18,00	215,00	107,00	
045.012400	24,00	20,00	231,00	115,00	
045.012500	25,00	20,00	231,00	115,00	
045.012600	26,00	20,00	231,00	115,00	
045.012700	27,00	22,40	247,00	124,00	
045.012800	28,00	22,40	247,00	124,00	
045.013000	30,00	22,40	247,00	124,00	
045.013200	32,00	25,00	265,00	133,00	
045.013400	34,00	28,00	284,00	142,00	
045.013500	35,00	28,00	284,00	142,00	
045.013600	36,00	28,00	284,00	142,00	
045.013800	38,00	31,50	305,00	152,00	
045.014000	40,00	31,50	305,00	152,00	

L1 = lunghezza totale
*L1 = total length
L1 = longitud total*
L2 = lunghezza fresa
*L2 = miller length
L2 = longitud de fresa*
ART. 045.04
DIN 9/B
**A mano - taglienti elicoidali sinistri
PER FORI DI SPINE - CONICHE
conicità 1 - 50**

*Hand - left-hand twist flutes - FOR CONICAL SPINE
HOLES - taper 1 - 50*
*A mano - dientes helicoidales izquierda
PARA ORIFICIOS DE CLAVIJAS - CÓNICOS - Conicidad 1 - 50*
HSS

cod.	Ø	Ø min.	Ø max.	Ø	L1	L2	€
045.040400	4,00	3,90	5,25	4,00	93,00	68,00	
045.040500	5,00	4,90	6,36	5,00	100,00	73,00	
045.040600	6,00	5,90	8,00	6,30	135,00	105,00	
045.040800	8,00	7,90	10,80	8,00	180,00	145,00	
045.041000	10,00	9,90	13,40	10,00	215,00	175,00	
045.041200	12,00	11,80	16,00	11,20	280,00	210,00	
045.041600	16,00	15,80	20,40	14,00	280,00	230,00	
045.042000	20,00	19,80	24,80	18,00	310,00	250,00	

L1 = lunghezza totale
*L1 = total length
L1 = longitud total*
L2 = lunghezza fresa
*L2 = miller length
L2 = longitud de fresa*

ART. 045.02

DIN 208 B

A MACCHINA CONICI
taglienti elicoidali sinistri
IMBOCCO A 45°



CONICAL CHUCKING - left-hand twist flutes - 45° ENTRY
DIN 208 B - A MÁQUINA CÓNICOS
Dientes helicoidales izquierda - BOCA DE 45°

HSS

cod.	Ø	CM	L1	L2	€
045.020500	5,00	1	133,00	23,00	
045.020600	6,00	1	138,00	26,00	
045.020700	7,00	1	150,00	31,00	
045.020800	8,00	1	156,00	33,00	
045.020900	9,00	1	162,00	36,00	
045.021000	10,00	1	168,00	38,00	
045.021100	11,00	1	175,00	41,00	
045.021200	12,00	1	182,00	44,00	
045.021300	13,00	1	182,00	44,00	
045.021400	14,00	1	189,00	47,00	
045.021500	15,00	2	204,00	50,00	
045.021600	16,00	2	210,00	52,00	
045.021700	17,00	2	214,00	54,00	
045.021800	18,00	2	219,00	56,00	
045.021900	19,00	2	223,00	58,00	
045.022000	20,00	2	228,00	60,00	
045.022100	21,00	2	232,00	62,00	
045.022200	22,00	2	237,00	64,00	
045.022300	23,00	2	241,00	66,00	
045.022400	24,00	3	268,00	68,00	
045.022500	25,00	3	268,00	68,00	
045.022600	26,00	3	273,00	70,00	
045.022700	27,00	3	277,00	71,00	
045.022800	28,00	3	277,00	71,00	
045.023000	30,00	3	281,00	73,00	
045.023100	31,00	3	285,00	75,00	
045.023200	32,00	4	317,00	77,00	
045.023400	34,00	4	321,00	78,00	
045.023500	35,00	4	321,00	78,00	
045.023600	36,00	4	325,00	79,00	
045.023800	38,00	4	329,00	81,00	
045.024000	40,00	4	329,00	81,00	

L1 = lunghezza totale

L1 = total length
L1 = longitud total

L2 = lunghezza fresa

L2 = miller length
L2 = longitud de fresa



ART. 045.03



DIN 219 B

Traduzione in inglese
Traduzione in spagnolo

A MANICOTTO taglienti elicoidali sinistri CONICITA' 1-30 IMBOCCO A 45°

DIN 219 B
SHELL
left-hand twist flutes
1-30 TAPER
45° ENTRY
A MANGUITO
Dientes helicoidales izquierda
CONICIDAD 1-30
BOCA DE 45°

HSS

cod.	Ø	Ø foro	L1	L2	€
045.033000	30,00	16,00	45,00	32,00	
045.033200	32,00	16,00	50,00	36,00	
045.033400	34,00	16,00	50,00	36,00	
045.033500	35,00	16,00	50,00	36,00	
045.033600	36,00	19,00	56,00	40,00	
045.033800	38,00	19,00	56,00	40,00	
045.034000	40,00	19,00	56,00	40,00	
045.034200	42,00	19,00	56,00	40,00	
045.034500	45,00	22,00	63,00	45,00	
045.034600	46,00	22,00	63,00	45,00	
045.034800	48,00	22,00	63,00	45,00	
045.035000	50,00	22,00	63,00	45,00	
045.035200	52,00	27,00	71,00	50,00	
045.035500	55,00	27,00	71,00	50,00	
045.035800	58,00	27,00	71,00	50,00	
045.036000	60,00	27,00	71,00	50,00	

L1 = lunghezza totale

L1 = total length
L1 = longitud total

L2 = lunghezza fresa

L2 = miller length
L2 = longitud de fresa



MANDRINO PORTA ALESATORE A MANICOTTO CON ESTRATTORE

E-Z EJECT SHELL REAMER ARBOURS

MANDRIL PORTAESCARIADORES CON MANGUITO CON EXTRACTOR

ART. 045.08



DIN 217

Attacco conico

Tapered connection
Vástago cónico

cod.	CM	Ø foro	L1	€
045.08210	2	10,00	165,00	
045.08313	3	13,00	250,00	
045.08316	3	16,00	261,00	
045.08322*	3	22,00	278,00	
045.08419	4	19,00	298,00	
045.08422	4	22,00	312,00	
045.08427	4	27,00	325,00	

L1 = lunghezza totale

L1 = total length
L1 = longitud total

ART. 045.05



HSS + Co

**DIN 208 B A MACCHINA CONICI - attacco conico
taglienti elicoidali sinistri - IMBOCCO A 45°**

CONICAL CHUCKING - tapered connection - left-hand twist flutes
45° ENTRY

A MÁQUINA CÓNICOS - Vástago cónico

Dientes helicoidales izquierda - BOCA DE 45°

cod.	Ø	CM	L1	L2	€
045.050500	5,00	1	133,00	23,00	
045.050600	6,00	1	138,00	26,00	
045.050700	7,00	1	150,00	31,00	
045.050800	8,00	1	156,00	33,00	
045.050900	9,00	1	162,00	36,00	
045.051000	10,00	1	168,00	38,00	
045.051100	11,00	1	175,00	41,00	
045.051200	12,00	1	182,00	44,00	
045.051300	13,00	1	182,00	44,00	
045.051400	14,00	1	189,00	47,00	
045.051500	15,00	2	204,00	50,00	
045.051600	16,00	2	210,00	52,00	
045.051700	17,00	2	214,00	54,00	
045.051800	18,00	2	219,00	56,00	
045.051900	19,00	2	223,00	58,00	
045.052000	20,00	2	228,00	60,00	
045.052100	21,00	2	232,00	62,00	
045.052200	22,00	2	237,00	64,00	
045.052300	23,00	2	241,00	66,00	
045.052400	24,00	3	268,00	68,00	
045.052500	25,00	3	268,00	68,00	
045.052600	26,00	3	273,00	70,00	
045.052700	27,00	3	277,00	71,00	
045.052800	28,00	3	277,00	71,00	
045.053000	30,00	3	281,00	73,00	
045.053200	32,00	4	317,00	77,00	
045.053400	34,00	4	321,00	78,00	
045.053500	35,00	4	321,00	78,00	
045.053600	36,00	4	325,00	79,00	
045.053800	38,00	4	329,00	81,00	
045.054000	40,00	4	329,00	81,00	

L1 = lunghezza totale

L1 = total length

L1 = longitud total

L2 = lunghezza taglienti

L2 = miller flutes

L2 = longitud de diertes

ART. 045.06



HSS + Co

**DIN 212 A MACCHINA
taglienti elicoidali sinistri
IMBOCCO A 45°**

CHUCKING - left-hand twist flutes - 45° ENTRY

A MÁQUINA - Dientes helicoidales izquierda - BOCA DE 45°

cod.	Ø	Ø 	L1	L2	€
045.060200*	2,00	2,00	49,00	11,00	
045.060300	3,00	3,00	61,00	15,00	
045.060400	4,00	4,00	75,00	19,00	
045.060500	5,00	5,00	86,00	23,00	
045.060600	6,00	6,00	93,00	26,00	
045.060700	7,00	7,00	109,00	30,00	
045.060800	8,00	8,00	117,00	32,00	
045.060900	9,00	9,00	125,00	36,00	
045.061000	10,00	10,00	133,00	38,00	
045.061100	11,00	10,00	142,00	41,00	
045.061200	12,00	10,00	151,00	44,00	
045.061300	13,00	10,00	151,00	44,00	
045.061400	14,00	12,50	160,00	47,00	
045.061500	15,00	12,50	162,00	50,00	
045.061600	16,00	12,50	170,00	52,00	
045.061700	17,00	14,00	175,00	54,00	
045.061800	18,00	14,00	182,00	56,00	
045.061900	19,00	16,00	189,00	58,00	
045.062000	20,00	16,00	195,00	60,00	

L1 = lunghezza totale L1 = total length L1 = longitud total **L2 = lunghezza taglienti** L2 = longitud de diertes L2 = miller flutes



*IN ESAURIMENTO

ART. 045.07



DIN 212 E A MACCHINA - taglienti elicoidali sinistri
IMBOCCO A 45° - A FORTE TORSIONE

CHUCKING - left-hand twist flutes - 45° ENTRY
STRONG TORSION

A MÁQUINA - Dientes helicoidales izquierda
BOCA DE 45° - DE FUERTE TORSIÓN

HSS + Co

cod.	Ø		L1	L2	€
045.070300	3,00	3,00	61,00	15,00	
045.070400	4,00	4,00	75,00	19,00	
045.070500	5,00	5,00	86,00	23,00	
045.070600	6,00	6,00	93,00	26,00	
045.070700	7,00	7,00	109,00	31,00	
045.070800	8,00	8,00	117,00	33,00	
045.070900	9,00	9,00	125,00	36,00	
045.071000	10,00	10,00	133,00	38,00	
045.071100	11,00	11,00	142,00	41,00	
045.071200	12,00	12,00	151,00	44,00	
045.071300	13,00	13,00	151,00	44,00	
045.071400	14,00	14,00	160,00	47,00	
045.071500	15,00	15,00	162,00	50,00	
045.071600	16,00	16,00	170,00	52,00	

L1 = lunghezza totale

L1 = total length
L1 = longitud total

L2 = lunghezza fresa

L2 = miller length
L2 = longitud de fresa

ART. 045.11



DIN 208 C A MACCHINA CONICI
taglienti elicoidali sinistri
IMBOCCO A 45° - A FORTE TORSIONE

CONICAL CHUCKING - left-hand twist flutes
45° ENTRY - STRONG TORSION

A MÁQUINA CÓNICOS - Dientes helicoidales izquierda
BOCA DE 45° - DE FUERTE TORSIÓN

HSS + Co

cod.	Ø	CM	L1	L2	€
045.110500	5,00	1	133,00	23,00	
045.110600	6,00	1	138,00	26,00	
045.110700	7,00	1	150,00	31,00	
045.110800	8,00	1	156,00	33,00	
045.110900	9,00	1	162,00	36,00	
045.111000	10,00	1	168,00	38,00	
045.111100	11,00	1	175,00	41,00	
045.111200	12,00	1	182,00	44,00	
045.111300	13,00	1	182,00	44,00	
045.111400	14,00	1	189,00	47,00	
045.111500	15,00	2	204,00	50,00	
045.111600	16,00	2	210,00	52,00	
045.111700	17,00	2	214,00	54,00	
045.111800	18,00	2	219,00	56,00	
045.111900	19,00	2	223,00	58,00	
045.112000	20,00	2	228,00	60,00	
045.112100	21,00	2	232,00	62,00	
045.112200	22,00	2	237,00	68,00	
045.112300	23,00	2	241,00	68,00	
045.112400	24,00	3	268,00	68,00	
045.112500	25,00	3	268,00	68,00	
045.112600	26,00	3	273,00	70,00	
045.112700	27,00	3	277,00	71,00	
045.112800	28,00	3	277,00	72,00	
045.112900	29,00	3	281,00	73,00	
045.113000	30,00	3	281,00	73,00	

L1 = lunghezza totale

L1 = total length
L1 = longitud total

L2 = lunghezza fresa

L2 = miller length
L2 = longitud de fresa

ART. 045.09



DIN 219

Traduzione in inglese

Traduzione in spagnolo

A MANICOTTO
taglienti elicoidali sinistri
IMBOCCO A 45°
A FORTE TORSIONE
conicità 1 - 30

SHELL - left-hand twist flutes - 45° ENTRY

STRONG TORSION - taper 1 - 30

A MANGUITO - Dientes helicoidales izquierda

BOCA DE 45° - DE FUERTE TORSIÓN

Conicidad 1 - 30

HSS + Co

cod.	Ø	Ø foro	L1	L2	€
045.092400*	24,00	13,00	45,00	32,00	
045.092600*	26,00	13,00	45,00	32,00	
045.092700*	27,00	13,00	45,00	32,00	
045.093000*	30,00	13,00	45,00	32,00	
045.093100*	31,00	16,00	50,00	36,00	
045.093200*	32,00	16,00	50,00	36,00	
045.093400*	34,00	16,00	50,00	36,00	
045.093500*	35,00	16,00	50,00	36,00	
045.093600*	36,00	19,00	56,00	40,00	
045.093700*	37,00	19,00	56,00	40,00	
045.093800*	38,00	19,00	56,00	40,00	
045.094600*	46,00	22,00	63,00	45,00	

L1 = lunghezza totale

L1 = total length

L1 = longitud total

L2 = lunghezza fresa

L2 = miller length

L2 = longitud de fresa



ART. 045.10

DIN 859

**A MANO A PICCOLA
ESPANSIONE
taglienti elicoidali sinistri**



HSS

*SMALL HAND
EXPANSION
left-hand twist flutes
A MANO DE POCA
EXPANSIÓN
Dientes helicoidales izquierda*

cod.	Ø	∅	L1	L2	espansione	€
045.100500	5,00	4,00	87,00	30,00	0,10	
045.100600	6,00	4,50	93,00	33,00	0,10	
045.100700	7,00	5,60	107,00	38,00	0,10	
045.100800	8,00	6,30	115,00	42,00	0,10	
045.100900	9,00	7,10	124,00	46,00	0,10	
045.101000	10,00	8,00	133,00	50,00	0,10	
045.101100	11,00	9,00	142,00	51,00	0,15	
045.101200	12,00	10,00	152,00	56,00	0,15	
045.101300	13,00	10,00	152,00	56,00	0,15	
045.101400	14,00	11,20	163,00	61,00	0,15	
045.101500	15,00	11,20	163,00	61,00	0,15	
045.101600	16,00	12,50	177,00	67,00	0,20	
045.101700	17,00	12,50	177,00	67,00	0,20	
045.101800	18,00	14,00	188,00	68,00	0,20	
045.101900	19,00	14,00	188,00	68,00	0,20	
045.102000	20,00	16,00	201,00	75,00	0,20	
045.102100	21,00	16,00	201,00	75,00	0,20	
045.102200	22,00	18,00	215,00	82,00	0,20	
045.102300	23,00	18,00	215,00	82,00	0,20	
045.102400	24,00	20,00	231,00	85,00	0,20	
045.102500	25,00	20,00	231,00	85,00	0,20	
045.102600	26,00	20,00	231,00	85,00	0,25	
045.102700	27,00	22,40	247,00	94,00	0,25	
045.102800	28,00	22,40	247,00	94,00	0,25	
045.102900	29,00	22,40	247,00	94,00	0,25	
045.103000	30,00	22,40	247,00	94,00	0,25	
045.103100	31,00	25,00	265,00	99,00	0,30	
045.103200	32,00	25,00	265,00	99,00	0,30	
045.103300	33,00	28,00	265,00	99,00	0,30	
045.103400	34,00	28,00	284,00	108,00	0,30	
045.103500	35,00	28,00	284,00	108,00	0,30	
045.103600	36,00	28,00	284,00	108,00	0,30	
045.103700	37,00	31,50	284,00	108,00	0,30	
045.103800	38,00	31,50	305,00	111,00	0,30	
045.103900	39,00	31,50	305,00	111,00	0,30	
045.104000	40,00	31,50	305,00	111,00	0,30	
045.104200	42,00	31,50	305,00	111,00	0,30	
045.104500	45,00	35,50	326,00	120,00	0,30	
045.105000	50,00	40,00	347,00	131,00	0,30	

L1 = lunghezza totale

*L1 = total length
L1 = longitud total*

L2 = lunghezza fresa

*L2 = miller length
L2 = longitud de fresa*

ART. 045.12



A GRANDE ESPANSIONE
LAME CORTE
LAME DIRITTE
SPOGLIA AD ARCO

taglienti non equidistanti antivibrazione

WIDE EXPANSION - SHORT BLADE - STRAIGHT BLADES

ARCED RAKE - non-equidistant vibration damping flutes

DE GRAN EXPANSIÓN - HOJAS CORTAS

HOJAS RECTAS - ÁNGULO DE DESAHOGO EN ARCO

Dientes no equidistantes antivibración

HSS

cod.	Ø	Z	L1	L2	€
045.120720*	7,2 - 8	4	110,00	38,00	
045.120800	8 - 9	4	110,00	38,00	
045.120900	9 - 10	5	120,00	40,00	
045.121000	10 - 11	5	130,00	46,00	
045.121100	11 - 12	5	130,00	48,00	
045.121200	12 - 13,5	5	140,00	50,00	
045.121350	13,5 - 15,5	5	155,00	55,00	
045.121550	15,5 - 18	5	170,00	66,00	
045.121800	18 - 21	5	180,00	66,00	
045.122100	21 - 24	5	200,00	77,00	
045.122400	24 - 27,5	5	225,00	88,00	
045.122750	27,5 - 31,5	5	243,00	88,00	
045.123150	31,5 - 37	5	277,00	106,00	
045.123700	37 - 45	5	303,00	106,00	
045.124500	45 - 55	6	338,00	130,00	
045.125500	55 - 65	6	350,00	130,00	

L1 = lunghezza totale

L1 = total length
L1 = longitud total

L2 = lunghezza fresa

L2 = miller length
L2 = longitud de fresa

ART. 045.13



A GRANDE ESPANSIONE
LAME LUNGHE
LAME DIRITTE
SPOGLIA AD ARCO

taglienti non equidistanti antivibrazione

WIDE EXPANSION - LONG BLADES - STRAIGHT BLADES

ARCED RAKE

non-equidistant vibration damping flutes DE GRAN EXPANSIÓN

HOJAS LARGAS - HOJAS RECTAS - ÁNGULO DE DESAHOGO EN ARCO

Dientes no equidistantes antivibración

HSS

cod.	Ø	Z	L1	L2	€
045.131050	10,5 - 12	5	170,00	64,00	
045.131200	12 - 13,5	5	180,00	70,00	
045.131350	13,5 - 15,5	5	200,00	82,00	
045.131550	15,5 - 17,5	5	220,00	92,00	
045.131750	17,5 - 19,5	5	235,00	100,00	
045.131950	19,5 - 21,5	5	245,00	112,00	
045.132150	21,5 - 24,5	5	265,00	122,00	
045.132450	24,5 - 27,5	5	285,00	132,00	
045.132750	27,5 - 31,5	5	315,00	142,00	
045.133150	31,5 - 37	5	335,00	152,00	
045.133700	37 - 45	5	375,00	167,00	
045.134500	45 - 55	6	425,00	182,00	
045.135500	55 - 65	6	425,00	182,00	

L1 = lunghezza totale

L1 = total length
L1 = longitud total

L2 = lunghezza fresa

L2 = miller length
L2 = longitud de fresa



*IN ESAURIMENTO

ART. 045.14



HSS

**A GRANDE ESPANSIONE UNIVERSALI
LAME DIRITTE
SPOGLIA AD ARCO
taglienti non equidistanti antivibrazione**

UNIVERSAL WIDE EXPANSION

STRAIGHT BLADES

ARCED RAKE

non-equidistant vibration damping flutes

UNIVERSALES DE GRAN EXPANSIÓN

HOJAS RECTAS

ÁNGULO DE DESAHOGO EN ARCO

Dientes no equidistantes antivibración

cod.	Ø	Z	L1	L2	€
045.141000	10 - 11	5	190,00	46,00	
045.141100	11 - 12	5	208,00	48,00	
045.141200	12 - 13,5	5	230,00	50,00	
045.141350	13,5 - 15,5	5	265,00	55,00	
045.141550	15,5 - 18	5	310,00	66,00	
045.141800	18 - 21	5	340,00	66,00	
045.142100	21 - 24	5	365,00	77,00	
045.142400	24 - 27,5	5	405,00	88,00	
045.142750	27,5 - 31,5	5	445,00	88,00	
045.143150	31,5 - 37	5	475,00	106,00	
045.143700	37 - 45	5	500,00	106,00	
045.144500	45 - 55	6	560,00	130,00	
045.145500	55 - 65	6	600,00	130,00	

L1 = lunghezza totale

L1 = total length

L1 = longitud total

L2 = lunghezza fresa

L2 = miller length

L2 = longitud de fresa

