



COMERCIAL SPV, S.L.

Escariado >
Alésage
Reaming

Escariadores de mano / Alésoids à main / Hand reamers									
4101	HSS	DIN 206		Form. B	8°	Tol. H7	ISO 236	P, K, N	283
4102	HSS	DIN 9		Form. B	8°	2%	ISO 3465	P, K, N	284
4119	HSS			Form. B	8°		C. 1:16 (NPT-BSPT)	P, K, N	284
Escariadores de máquina / Alésoids machine / Machine reamers									
4118	HM-MD	DIN 212		Form. B-D	8°	Tol. H7	ISO 521	P, M, K, N, S, H	285
4104	HSSCO	DIN 212		Form. B	8°	Tol. H7	ISO 521	P, M, K, N, S	286
4105	HSSCO	DIN 212		Form. E	45°	Tol. H7	ISO 521	P, N	287
4103	HSSCO	DIN 2179		Form. E	45°	2%	ISO 3466	P, K, N	288
4106	HSSCO	DIN 208		Form. B	8°	Tol. H7	ISO 521	P, M, K, N, S	288
4107	HSSCO	DIN 208		Form. C	45°	Tol. H7	ISO 521	P, N	289
4108	HSS	DIN 311			25°		ISO 2238	P, K, N	289
Escariadores de máquina entrada cónica / Alésoids machine pour goupilles coniques / Machine reamers for taper holes									
4115	HSSCO	DIN 212			45°	5%		P, K, N	290
4116	HSSCO	DIN 212			45°	8%		P, K, N	290
4117	HSSCO	DIN 212			45°	10%		P, K, N	291
Escariadores huecos / Alésoids creux finisseurs à machine / Hole machine reamers									
4109	HSS	DIN 219		Form. B	8°	Tol. H7	ISO 2402	P, M, K, N, S	291
4114	HSS								292
Escariadores extensibles / Alésoids extenseibles / Extendable reamers									
4110	HSS			Form. A			REFORZ. RENFORC. RENFORC.	P, K, N	292
4111	HSS			Form. A				P, K, N	293

FORMULARIO ESCARIADORES / AVELLANADORES ESPECIALES
FICHE TECHNIQUE ALESOIRS ET FRAISES A TROU SPECIAUX
TECHNICAL ENQUIRY FOR SPECIAL REAMERS AND COUNTERSINK CUTTERS

Fecha / Date:

Empresa / Entreprise / Company: Contacto / Contact:

Dirección / Adresse / Address: Población / Ville / Town:

Tel / Fax: E-mail:

TRABAJO A REALIZAR / TRAVAIL DEMANDE / REQUESTED WORK

Material / Matière / Material Norma / Norme / Norm:

Dureza / Durété / Hardness HB HRc Resistencia / Résistance / Resistance N/mm²

Tipo viruta: Corta Larga Polvo
 Type copeau Courte Longue Poussière
 Shaving Short Long Powder

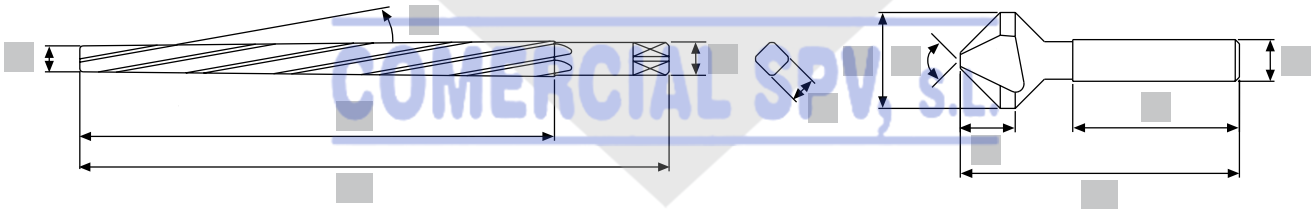
Máquina / Machine Refrigerante / Réfrigérant / Coolant

Posición / Position Horizontal Vertical V. Corte V. avance
 V. Coupe Avance
 Cutting Speed Feed

HERRAMIENTA / OUTIL / TOOL

Descripción / Description Tolerancia / Tolérance / Tolerance

Cantidad / Quantité / Quantity Número ranuras / Rainures / Grooves



Mango: Cilíndrico Weldon Cónico Rebajado
 Queue: Cylindrique Weldon Conique Réduite
 Shank: Straight Weldon Taper Reduced

Material / Matière / Material: HSS HSSE HM HSS-HM

Superficie / Surface: Brillante Negra Recubrimiento
 Brillant Noire Revêtement
 Brilliant Black Coating

COMENTARIOS / COMMENTAIRES/ COMMENTS:

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TABLA DE APLICACIONES GUIDE D'APPLICATION / APPLICATION GUIDE



$$r.p.m. = \frac{V_c \times 1.000}{\pi \times \phi}$$

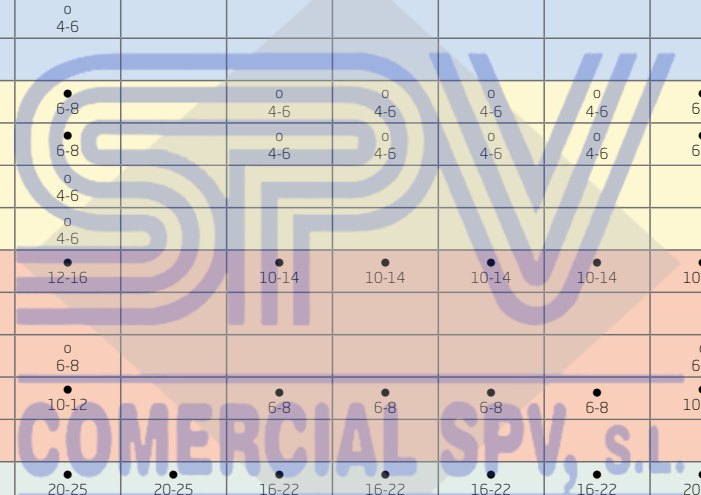
Ref./ Réf. / Ref.	4118	4104
Form.	B	B
Hel./Hél./Spiral	8°	8°
Mat.	HM	HSSCO
Rec./Rev./Coating		
DIN	212	212
Tol.	H7	H7
Gama/Gamme/Range	2-12	1-20
Pag.	285	286

Mat.	Avance/Feed (mm/rpm)																		Vc (m/min)		
	Ø2	Ø5	Ø10	Ø15	Ø20	Ø25	Ø30	Ø35	Ø40	Ø2	Ø5	Ø10	Ø15	Ø20	Ø25	Ø30	Ø35	Ø40	●	○	
P.1	<600	0.05	0.1	0.2	0.26	0.33	0.4	0.45	0.5	0.55	0.08	0.16	0.3	0.4	0.5	0.6	0.7	0.75	0.8	●	●
P.2	<800	0.05	0.1	0.2	0.26	0.33	0.4	0.45	0.5	0.55	0.08	0.16	0.3	0.4	0.5	0.6	0.7	0.75	0.8	●	●
P.3	<1000	0.04	0.08	0.16	0.2	0.25	0.32	0.36	0.4	0.43	0.63	0.12	0.25	0.3	0.4	0.5	0.53	0.56	0.6	●	●
P.4	<1200	0.03	0.06	0.12	0.16	0.2	0.25	0.28	0.32	0.35	0.05	0.1	0.2	0.26	0.33	0.4	0.45	0.5	0.55	○	○
P.5	<1400										0.04	0.08	0.16	0.2	0.25	0.32	0.36	0.4	0.43	●	●
M.1	<950	0.03	0.06	0.12	0.16	0.2	0.25	0.28	0.32	0.35	0.03	0.06	0.12	0.16	0.2	0.25	0.28	0.32	0.35	●	●
M.2		0.03	0.06	0.12	0.16	0.2	0.25	0.28	0.32	0.35	0.03	0.06	0.12	0.16	0.2	0.25	0.28	0.32	0.35	●	●
M.3	<1200	0.02	0.05	0.1	0.12	0.16	0.2	0.23	0.25	0.27	0.02	0.05	0.1	0.12	0.16	0.2	0.23	0.25	0.27	○	○
M.4		0.02	0.05	0.1	0.12	0.16	0.2	0.23	0.25	0.27	0.02	0.05	0.1	0.12	0.16	0.2	0.23	0.25	0.27	○	○
K.1	<500	0.05	0.1	0.2	0.26	0.33	0.4	0.45	0.5	0.55	0.08	0.16	0.3	0.4	0.5	0.6	0.7	0.75	0.8	●	●
K.2																				●	●
K.3	<800	0.04	0.08	0.16	0.2	0.25	0.32	0.36	0.4	0.43	0.04	0.08	0.16	0.2	0.25	0.32	0.36	0.4	0.43	○	○
K.4.1		0.04	0.08	0.16	0.2	0.25	0.32	0.36	0.4	0.43	0.63	0.12	0.25	0.3	0.4	0.5	0.53	0.56	0.6	●	●
K.4.2	<1400										0.04	0.08	0.16	0.2	0.25	0.32	0.36	0.4	0.43	○	○
N.1.1	Al	0.08	0.16	0.3	0.4	0.5	0.6	0.7	0.75	0.8	0.1	0.2	0.4	0.5	0.65	0.8	0.9	0.95	1	●	●
N.1.2		0.63	0.12	0.25	0.3	0.4	0.5	0.53	0.56	0.6	0.1	0.2	0.4	0.5	0.65	0.8	0.9	0.95	1	●	●
N.1.3		0.63	0.12	0.25	0.3	0.4	0.5	0.53	0.56	0.6	0.1	0.2	0.4	0.5	0.65	0.8	0.9	0.95	1	●	●
N.2.1	Cu	0.63	0.12	0.25	0.3	0.4	0.5	0.53	0.56	0.6	0.08	0.16	0.3	0.4	0.5	0.6	0.7	0.75	0.8	●	●
N.2.2		0.63	0.12	0.25	0.3	0.4	0.5	0.53	0.56	0.6	0.1	0.2	0.4	0.5	0.65	0.8	0.9	0.95	1	●	●
N.2.3		0.63	0.12	0.25	0.3	0.4	0.5	0.53	0.56	0.6	0.08	0.16	0.3	0.4	0.5	0.6	0.7	0.75	0.8	●	●
N.2.4																				●	●
N.3.1	Mg/Zn	0.63	0.12	0.25	0.3	0.4	0.5	0.53	0.56	0.6	0.1	0.2	0.4	0.5	0.65	0.8	0.9	0.95	1	○	○
N.4.1	Plastic	0.1	0.2	0.4	0.5	0.65	0.8	0.9	0.95	1	0.1	0.2	0.4	0.5	0.65	0.8	0.9	0.95	1	●	●
N.4.2		0.08	0.16	0.3	0.4	0.5	0.6	0.7	0.75	0.8	0.1	0.2	0.4	0.5	0.65	0.8	0.9	0.95	1	●	●
N.4.3																					●
S.1.1	Ni	0.04	0.08	0.16	0.2	0.25	0.32	0.36	0.4	0.43	0.05	0.1	0.2	0.26	0.33	0.4	0.45	0.5	0.55	●	○
S.1.2		0.03	0.06	0.12	0.16	0.2	0.25	0.28	0.32	0.35	0.04	0.08	0.16	0.2	0.25	0.32	0.36	0.4	0.43	●	○
S.2.1	Ti	0.04	0.08	0.16	0.2	0.25	0.32	0.36	0.4	0.43	0.05	0.1	0.2	0.26	0.33	0.4	0.45	0.5	0.55	●	●
S.2.2		0.04	0.08	0.16	0.2	0.25	0.32	0.36	0.4	0.43	0.05	0.1	0.2	0.26	0.33	0.4	0.45	0.5	0.55	○	○
S.2.3		0.03	0.06	0.12	0.16	0.2	0.25	0.28	0.32	0.35	0.04	0.08	0.16	0.2	0.25	0.32	0.36	0.4	0.43	○	○
H.1	50 HRC										0.03	0.06	0.12	0.16	0.2	0.25	0.28	0.32	0.35	●	●
H.2	55 HRC										0.03	0.06	0.12	0.16	0.2	0.25	0.28	0.32	0.35	●	●
H.3	60 HRC										0.02	0.05	0.1	0.12	0.16	0.2	0.23	0.25	0.27	○	○

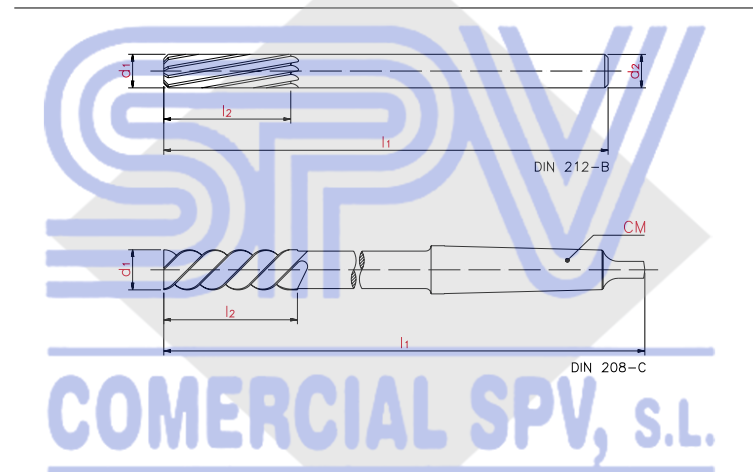
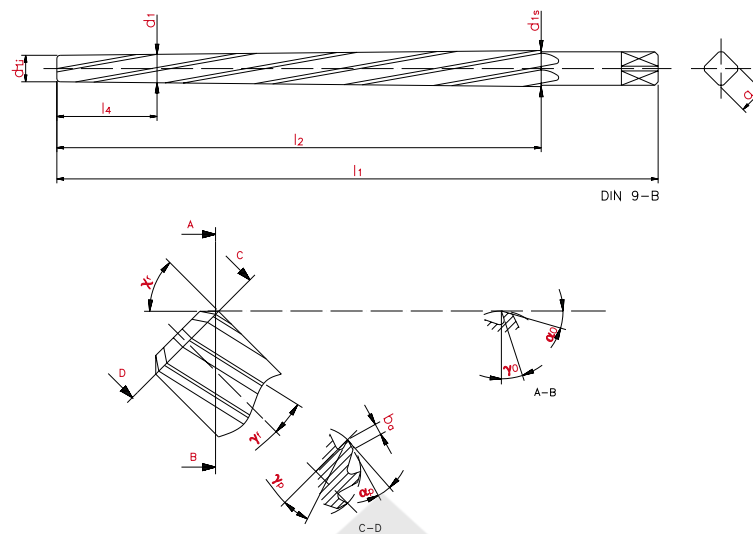
● Optima / Optimun ○ Alternativo / Alternative



4105	4103	4106	4107	4108	4115	4116	4117	4109
E	E	B	C					B
45°	45°	8°	45°	25°	45°	46°	47°	8°
HSSCO	HSSCO	HSSCO	HSSCO	HSSCO	HSSCO	HSSCO	HSSCO	HSS
212	2179	208	208	311	212	212	212	219
H7		H7	H7					H7
3-16	3-10	4-40	5-29	10-37	3-7	3-6	2-6	32-80
287	288	288	289	289	290	290	291	291
• 12-16	• 8-12	• 10-14	• 12-16	• 8-12	• 8-12	• 8-12	• 8-12	• 10-14
• 10-14	• 6-12	• 8-12	• 10-14	• 6-12	• 6-12	• 6-12	• 6-12	• 8-12
	○ 4-6	• 6-8		○ 4-6	○ 4-6	○ 4-6	○ 4-6	○ 6-8
		○ 4-6						
	○ 4-6	• 6-8		○ 4-6	○ 4-6	○ 4-6	○ 4-6	• 6-8
	○ 4-6	• 6-8		○ 4-6	○ 4-6	○ 4-6	○ 4-6	• 6-8
		○ 4-6						
	○ 4-6	○ 4-6						
	• 10-14	• 12-16		• 10-14	• 10-14	• 10-14	• 10-14	• 10-14
		○ 6-8						○ 6-8
	• 6-8	• 10-12		• 6-8	• 6-8	• 6-8	• 6-8	• 10-12
• 20-25	• 16-22	• 20-25	• 20-25	• 16-22	• 16-22	• 16-22	• 16-22	• 20-25
• 16-22	• 14-20	• 16-22	• 16-22	• 14-20	• 14-20	• 14-20	• 14-20	• 16-22
• 14-20	• 8-12	• 14-20	• 14-20	• 8-12	• 8-12	• 8-12	• 8-12	• 14-20
	• 10-16	• 12-20		• 10-16	• 10-16	• 10-16	• 10-16	• 12-20
	• 16-22	• 20-25		• 16-22	• 16-22	• 16-22	• 16-22	• 20-25
• 14-20	• 12-18	• 16-22	• 14-20	• 12-18	• 12-18	• 12-18	• 12-18	• 16-22
		○ 12-16						○ 12-16
• 12-16	• 16-22	• 10-14	• 12-16	• 16-22	• 16-22	• 16-22	• 16-22	• 10-14
• 10-14	• 14-20	• 8-10	• 10-14	• 14-20	• 14-20	• 14-20	• 14-20	• 8-10
		○ 1-3						○ 1-3
		○ 1-3						
	○ 4-6	• 6-8		○ 4-6	○ 4-6	○ 4-6	○ 4-6	• 6-8
		○ 2-6						○ 2-6
		○ 2-6						



● Optima / Optimun ○ Alternativo / Alternative



COMERCIAL SPV, S.L.

l1	Longitud total / Longueur totale / Total length
l2	Longitud de corte / Longueur de coupe / Length of cut
l4	Longitud hasta el diámetro nominal / Longueur jusqu'au diamètre nominal / Length to the nominal diameter
a	Cuadrado / Carré / Square
ba	Ancho de fase / Largeur de phase / Phase width
d1	Diámetro nominal / Diamètre nominal / Nominal diameter
d1i	Diámetro inferior / Diamètre inférieur / Inferior diameter
d1s	Diámetro superior / Diamètre supérieur / Superior diameter
d2	Diámetro de mango / Diamètre de queue / Shank diameter
di	Diámetro interior / Diamètre intérieur / Interior diameter
CM	Tamaño del cono morse / Taille du cône morse / Morse taper size
α0	Ángulo de destalonado / Angle de détalonnage / Relief angle
απ	Ángulo de destalonado del corte seco / Angle de détalonnage de la coupe sèche / Dry cut relief angle
γ0	Ángulo corte ortogonal / Angle coupe orthogonale / Orthogonal cut angle
γφ	Ángulo de corte lateral / Angle de coupe latérale / Lateral cut angle
γπ	Ángulo corte posterior / Angle coupe postérieure / Rear cut angle
χρ	Ángulo de posición / Angle de position / Angle of position

4101 HSS DIN ≈ 206

Form.
B



Tol.
H7

ISO
236

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
•						•	•		•	•		•					

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



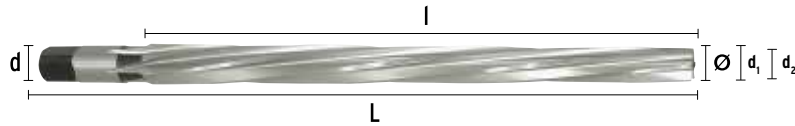
Ø mm	€	L mm	l mm	📦	Ø mm	€	L mm	l mm	📦
1,50	76,18	41	20	1	12,50	44,99	152	76	1
2,00	21,43	50	25	1	13,00	44,99	152	76	1
2,25	23,56	54	27	1	13,50	126,35	163	81	1
2,50	21,43	58	29	1	14,00	48,05	163	81	1
2,75	23,56	62	31	1	14,50	126,35	163	81	1
3,00	21,43	62	31	1	15,00	52,50	163	81	1
3,25	61,11	66	33	1	15,50	126,35	175	87	1
3,50	21,43	71	35	1	16,00	57,11	175	87	1
3,75	61,11	71	35	1	16,50	126,35	175	87	1
4,00	21,43	76	38	1	17,00	68,76	175	87	1
4,25	61,11	76	38	1	17,50	126,35	188	93	1
4,50	22,40	81	41	1	18,00	82,44	188	93	1
4,75	61,11	81	41	1	18,50	126,35	188	93	1
5,00	22,40	87	44	1	19,00	82,44	188	93	1
5,25	61,11	87	44	1	19,50	181,97	201	100	1
5,50	22,40	93	47	1	20,00	89,18	201	100	1
5,75	61,11	93	47	1	20,50	178,46	201	100	1
6,00	22,40	93	47	1	21,00	112,00	201	100	1
6,25	61,11	100	50	1	21,50	162,95	215	107	1
6,50	22,40	100	50	1	22,00	116,05	215	107	1
6,75	61,11	107	54	1	22,50	188,43	215	107	1
7,00	22,40	107	54	1	23,00	121,21	215	107	1
7,25	61,82	107	54	1	23,50	207,79	215	107	1
7,50	23,63	107	54	1	24,00	133,85	231	115	1
7,75	61,82	115	58	1	24,50	220,52	231	115	1
8,00	23,63	115	58	1	25,00	142,05	231	115	1
8,25	61,82	115	58	1	25,50	345,60	231	115	1
8,50	24,83	115	58	1	26,00	155,22	231	115	1
8,75	61,82	124	62	1	26,50	290,29	231	115	1
9,00	24,83	124	62	1	27,00	169,22	247	124	1
9,25	61,82	124	62	1	27,50	297,25	247	124	1
9,50	25,87	124	62	1	28,00	175,19	247	124	1
9,75	118,48	133	66	1	28,50	312,57	247	124	1
10,00	25,87	133	66	1	29,00	248,40	247	124	1
10,25	118,48	133	66	1	29,50	347,03	247	124	1
10,50	32,79	133	66	1	30,00	222,96	247	124	1
10,75	118,48	142	71	1	32,00	258,32	265	133	1
11,00	32,79	142	71	1	34,00	270,90	284	142	1
11,25	118,48	142	71	1	36,00	305,54	284	142	1
11,50	118,48	142	71	1	38,00	354,25	305	152	1
11,75	126,35	142	71	1	40,00	354,25	305	152	1
12,00	35,24	152	76	1					

4102 HSS DIN 9

Form. **B**   ISO **3465**

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
•						•	•		•	•		•					


Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



Ø Nom.	d ₁ mm	d ₂ mm	d mm	∠ mm	€	L mm	I mm	∅	Ø Nom.	d ₁ mm	d ₂ mm	d mm	∠ mm	€	L mm	I mm	∅
*1,50	2,14	1,40	3,15	2,40	50,07	57	37	1	6,00	8,00	5,90	8,00	6,20	28,35	135	105	1
2,00	2,86	1,90	3,15	2,40	38,55	68	48	1	*6,50	8,50	6,40	8,00	6,20	39,38	135	105	1
2,50	3,36	2,40	3,15	2,40	38,55	68	48	1	7,00	9,00	6,90	8,00	6,20	32,71	135	105	1
3,00	4,06	2,90	4,00	3,00	38,55	80	58	1	8,00	10,80	7,90	10,00	8,00	44,02	180	145	1
*3,50	4,56	3,40	4,50	3,00	42,32	87	63	1	10,00	13,40	9,90	12,50	10,00	54,62	215	175	1
4,00	5,26	3,90	5,00	3,80	23,32	93	68	1	12,00	16,00	11,80	14,00	11,00	73,46	255	210	1
*4,50	5,76	4,40	6,00	3,80	30,27	93	68	1	14,00	18,30	13,80	16,00	12,00	103,04	270	225	1
5,00	6,36	4,90	6,30	4,90	23,98	100	73	1	16,00	20,40	15,80	18,00	14,50	114,16	280	230	1
*5,50	7,18	5,40	6,30	4,90	37,99	118	89	1	20,00	24,80	19,80	22,40	18,00	157,15	310	250	1

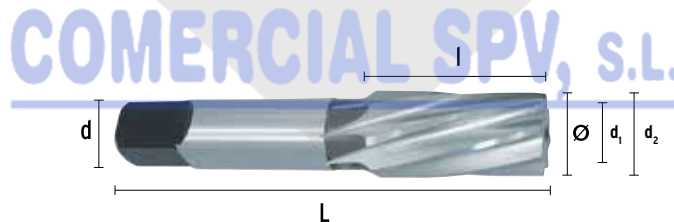
*(Hasta fin de existencias / Jusqu'à épuisement des stocks / While supplies last)

4119 HSS

Form. **B**  C. 1:16 (NPTBSP1)

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
•						•	•		•	•		•					

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



Ø Nom.	d ₁ mm	d ₂ mm	d mm	∠ mm	€	L mm	I mm	∅	Ø Nom.	d ₁ mm	d ₂ mm	d mm	∠ mm	€	L mm	I mm	∅
1/16	5,91	6,98	6	4,90	142,30	70	17	1	1/2	16,91	19,10	16	12,00	173,20	95	35	1
1/8	8,92	9,08	7	5,50	144,15	70	17	1	3/4	22,29	24,42	20	16,00	226,10	105	35	1
1/4	10,28	11,97	11	9,00	151,45	80	27	1	1"	27,97	30,66	25	20,00	287,95	130	43	1
3/8	13,70	15,39	12	9,00	157,65	85	27	1									

4118

HM-MD DIN 212

Form.
B-D

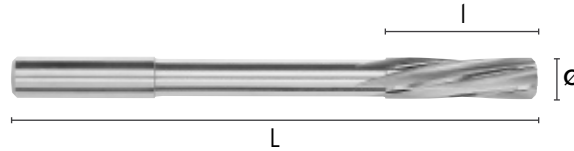


Tol.
H7

ISO
521

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○
12-18	10-14	6-10	4-6	8-12	6-10	25-30	8-18	6-10	20-35	20-35	20-25	12-20	4-6	6-12	3-4	3-4	3-4

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



Ø mm	€	L mm	l mm	Icon	Ø mm	€	L mm	l mm	Icon
1,00	111,64	38	7	1	4,00	77,91	75	19	1
1,10	116,09	40	10	1	4,10	118,32	75	19	1
1,20	116,09	40	10	1	4,20	118,32	75	19	1
1,30	116,09	40	10	1	4,30	133,95	80	21	1
1,40	116,09	40	10	1	4,40	133,95	80	21	1
1,50	116,09	40	10	1	4,50	89,59	80	21	1
1,60	111,64	43	11	1	4,60	133,95	80	21	1
1,70	111,64	43	11	1	4,70	133,95	80	21	1
1,80	109,36	49	12	1	4,80	129,50	86	23	1
1,90	109,36	49	12	1	4,90	129,50	86	23	1
2,00	67,23	49	12	1	5,00	82,50	86	23	1
2,10	109,36	49	12	1	5,10	129,50	86	23	1
2,20	109,36	49	12	1	5,20	129,50	86	23	1
2,30	109,36	49	12	1	5,30	129,50	86	23	1
2,40	107,18	57	18	1	5,40	145,09	93	26	1
2,50	77,27	57	18	1	5,50	100,27	93	26	1
2,60	107,18	57	18	1	5,60	145,09	93	26	1
2,70	107,18	57	18	1	5,70	145,09	93	26	1
2,80	107,18	57	18	1	5,80	145,09	93	26	1
2,90	107,18	57	18	1	5,90	140,64	101	28	1
3,00	73,32	57	18	1	6,00	99,27	101	28	1
3,10	107,18	57	18	1	6,50	121,77	101	28	1
3,20	107,18	57	18	1	7,00	128,36	109	31	1
3,30	107,18	57	18	1	8,00	146,68	117	33	1
3,40	107,18	57	18	1	8,50	168,68	117	33	1
3,50	82,18	57	18	1	9,00	168,05	125	36	1
3,60	107,18	57	18	1	10,00	186,41	133	38	11
3,70	107,18	57	18	1	11,00	278,05	133	38	1
3,80	118,32	75	19	1	12,00	293,36	151	44	1
3,90	118,32	75	19	1					

4104

HSSCO DIN 212

Form. **B**
Ø ≤ 3,70

Form. **D**
Ø > 3,70

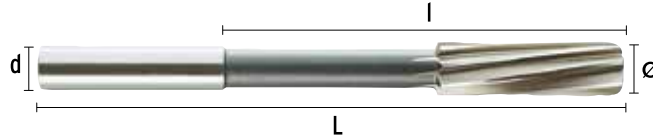


Tol. **H7**

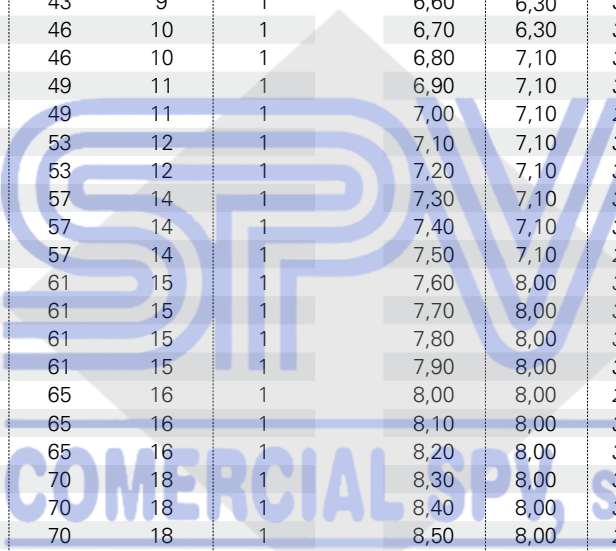
ISO **521**

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
●	●	○		●	○	●	●		●	●	○	●	○	●			
8-14	6-8	4-6		6-8	4-6	12-16	6-12		14-25	12-25	12-16	8-14	1-3	2-8			

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative




Ø mm	d mm	€	L mm	l mm	📦	Ø mm	d mm	€	L mm	l mm	📦
1,00	1,00	38,63	34	7	1	6,20	6,30	30,23	101	28	1
1,20	1,20	38,63	34	7	1	6,30	6,30	30,23	101	28	1
1,40	1,40	34,63	40	8	1	6,40	6,30	30,23	101	28	1
1,50	1,50	34,63	40	8	1	6,50	6,30	23,31	101	28	1
1,60	1,60	34,63	43	9	1	6,60	6,30	30,23	101	28	1
1,80	1,80	34,63	46	10	1	6,70	6,30	30,23	101	28	1
1,90	1,90	34,63	46	10	1	6,80	7,10	30,23	109	31	1
2,00	2,00	34,63	49	11	1	6,90	7,10	30,23	109	31	1
2,10	2,10	34,63	49	11	1	7,00	7,10	23,31	109	31	1
2,20	2,20	34,63	53	12	1	7,10	7,10	30,23	109	31	1
2,30	2,30	34,63	53	12	1	7,20	7,10	30,23	109	31	1
2,40	2,40	30,58	57	14	1	7,30	7,10	30,23	109	31	1
2,50	2,50	30,58	57	14	1	7,40	7,10	30,23	109	31	1
2,60	2,60	30,58	57	14	1	7,50	7,10	25,28	109	31	1
2,70	2,70	28,29	61	15	1	7,60	8,00	33,40	117	33	1
2,80	2,80	28,29	61	15	1	7,70	8,00	33,40	117	33	1
2,90	2,90	28,29	61	15	1	7,80	8,00	33,40	117	33	1
3,00	3,00	21,25	61	15	1	7,90	8,00	33,40	117	33	1
3,10	3,10	27,52	65	16	1	8,00	8,00	25,77	117	33	1
3,20	3,20	27,52	65	16	1	8,10	8,00	38,40	117	33	1
3,30	3,30	27,52	65	16	1	8,20	8,00	38,40	117	33	1
3,40	3,40	27,52	70	18	1	8,30	8,00	38,40	117	33	1
3,50	3,50	21,25	70	18	1	8,40	8,00	38,40	117	33	1
3,60	3,60	27,52	70	18	1	8,50	8,00	28,21	117	33	1
3,70	3,70	27,52	70	18	1	8,60	9,00	38,40	125	36	1
3,80	4,00	27,52	75	19	1	8,70	9,00	38,40	125	36	1
3,90	4,00	27,52	75	19	1	8,80	9,00	38,40	125	19	1
4,00	4,00	21,25	75	19	1	8,90	9,00	38,40	125	36	1
4,10	4,00	27,52	75	19	1	9,00	9,00	31,02	125	36	1
4,20	4,00	27,52	75	19	1	9,10	9,00	38,40	125	36	1
4,30	4,50	27,52	80	21	1	9,20	9,00	38,40	125	36	1
4,40	4,40	27,52	80	21	1	9,30	9,00	38,40	125	36	1
4,50	4,50	21,25	80	21	1	9,40	9,00	38,40	125	36	1
4,60	4,50	27,52	80	21	1	9,50	9,00	31,51	125	36	1
4,70	4,50	27,52	80	21	1	9,60	10,00	42,22	133	38	1
4,80	5,00	27,52	86	23	1	9,70	10,00	42,22	133	38	1
4,90	5,00	27,52	86	23	1	9,80	10,00	42,22	133	38	1
5,00	5,00	21,25	86	23	1	9,90	10,00	42,22	133	38	1
5,10	5,00	27,52	86	23	1	10,00	10,00	31,51	133	38	1
5,20	5,00	27,52	86	23	1	11,00	10,00	37,23	142	41	1
5,30	5,00	27,52	86	23	1	12,00	10,00	36,39	151	44	1
5,40	5,60	27,52	93	26	1	13,00	10,00	62,56	151	44	1
5,50	5,60	21,25	93	26	1	14,00	12,50	59,82	160	47	1
5,60	5,60	27,52	93	26	1	15,00	12,50	65,32	162	50	1
5,70	5,60	27,52	93	26	1	16,00	12,50	69,92	170	52	1
5,80	5,60	27,52	93	26	1	17,00	14,00	80,63	175	54	1
5,90	5,60	27,52	93	26	1	18,00	14,00	84,07	182	56	1
6,00	5,60	23,31	93	26	1	19,00	16,00	89,32	189	58	1
6,10	6,30	30,23	101	28	1	20,00	16,00	89,95	195	60	1





4104/1

HSSCO DIN 212

Form. B Ø ≤ 3,70	Form. D Ø > 3,70		ISO 521
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P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
●	●	○		●	○	●	●		●	●	○	●	○	●			
8-14	6-8	4-6		6-8	4-6	12-16	6-12		14-25	12-25	12-16	8-14	1-3	2-8			

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

Ø mm	€	L mm	l mm		Ø mm	€	L mm	l mm	
0,95 - 1,31	40,73	34	5-7	1	7,30 - 7,55	41,97	109	32	1
1,32 - 1,54	36,52	40	8	1	7,56 - 8,50	41,97	117	33	1
1,55 - 1,70	36,52	43	9	1	8,51 - 9,25	47,40	125	36	1
1,71 - 1,90	36,52	46	10	1	9,26 - 9,50	54,10	125	36	1
1,91 - 2,12	36,52	49	11	1	9,51 - 10,64	52,04	133	38	1
2,13 - 2,36	36,52	53	12	1	10,65 - 11,25	61,10	142	41	1
2,37 - 2,66	32,25	57	14	1	11,26 - 11,80	62,74	142	41	1
2,67 - 3,05	29,86	61	15	1	11,81 - 12,02	62,74	151	44	1
3,06 - 3,35	29,86	65	16	1	12,03 - 13,02	86,27	151	44	1
3,36 - 3,75	33,53	70	18	1	13,21 - 14,00	104,87	160	47	1
3,76 - 4,25	33,53	75	19	1	14,01 - 14,02	104,87	162	50	1
4,26 - 4,75	32,68	80	21	1	14,03 - 15,00	127,90	162	50	1
4,76 - 5,30	32,68	86	23	1	15,01 - 15,02	127,90	170	52	1
5,31 - 5,95	33,08	93	26	1	15,03 - 16,00	136,92	170	52	1
5,96 - 6,00	33,89	93	26	1	16,01 - 16,02	136,92	175	54	1
6,01 - 6,70	33,89	101	28	1					
6,71 - 7,29	37,34	109	31	1					

4105



HSSCO DIN 212

Form. E		ToL. H7	ISO 521
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P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
●									●	●		●					
10-16									14-25	14-20		10-16					

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



Ø mm	d mm	€	L mm	l mm		Ø mm	d mm	€	L mm	l mm	
3,00	3,00	29,15	61	15	1	8,50	8,00	39,08	117	33	1
3,50	3,50	29,15	70	18	1	9,00	9,00	34,20	125	36	1
4,00	4,00	29,15	75	19	1	9,50	9,00	39,08	125	36	1
4,50	4,50	29,69	80	21	1	10,00	10,00	34,20	133	38	1
5,00	5,00	29,69	86	23	1	11,00	10,00	52,68	142	41	1
5,50	5,60	29,69	93	26	1	12,00	10,00	50,72	151	44	1
6,00	5,60	29,69	93	26	1	13,00	10,00	59,63	151	44	1
6,50	6,30	34,51	101	28	1	14,00	12,50	64,17	160	47	1
7,00	7,10	30,20	109	31	1	15,00	12,50	86,24	162	50	1
7,50	7,10	35,16	109	31	1	16,00	12,50	107,30	170	52	1
8,00	8,00	30,77	117	33	1						

4103

HSSCO DIN 2179

Form.

E

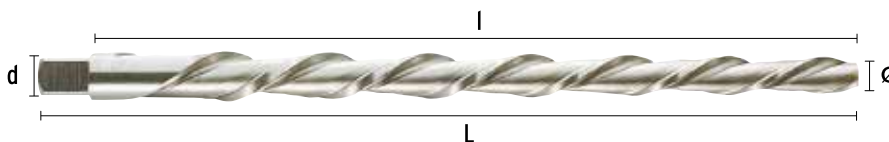


ISO

3466

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 6-12	○ 4-6			○ 4-6		● 10-14	● 6-8		● 8-22	● 10-22		● 14-22		○ 4-6			

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



Ø Nom.	D mm	d mm	€	L mm	l mm	Icon	Ø Nom.	D mm	d mm	€	L mm	l mm	Icon
3,00	4,06	2,90	27,56	100	58	1	6,00	8,00	5,90	49,57	160	105	1
4,00	5,26	3,90	44,80	112	68	1	8,00	10,80	7,90	79,59	207	145	1
5,00	6,36	4,90	42,70	122	73	1	10,00	13,40	9,90	157,93	245	175	1

4106

HSSCO DIN 208

Form.

B



Tol.

H7

ISO

521

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 8-14	● 6-8	○ 4-6		● 6-8	○ 4-6	● 12-16	● 6-12		● 14-25	● 12-25	● 12-16	● 8-14	○ 1-3	○ 2-8			

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



Icon	Ø mm	€	L mm	l mm	Icon	Icon	Ø mm	€	L mm	l mm	Icon
1	4,00	53,54	129	19	1	2	16,00	63,77	210	52	1
1	5,00	38,80	133	23	1	2	16,50	84,36	214	54	1
1	5,50	47,68	138	26	1	2	17,00	71,28	214	54	1
1	6,00	39,36	138	26	1	2	18,00	75,75	219	56	1
1	6,50	48,62	144	28	1	2	19,00	79,29	223	58	1
1	7,00	40,04	150	31	1	2	20,00	82,32	228	60	1
1	7,50	33,02	150	31	1	2	21,00	102,13	232	62	1
1	8,00	40,99	156	33	1	2	22,00	108,65	237	64	1
1	8,50	52,73	156	33	1	2	23,00	113,49	241	66	1
1	9,00	43,84	162	36	1	3	24,00	137,55	268	68	1
1	9,50	53,23	162	36	1	3	25,00	140,29	268	68	1
1	10,00	41,59	168	38	1	3	26,00	146,92	273	70	1
1	10,50	53,94	168	38	1	3	27,00	169,05	277	71	1
1	11,00	42,14	175	41	1	3	28,00	169,05	277	71	1
1	11,50	56,84	175	41	1	3	29,00	184,18	281	73	1
1	12,00	42,14	182	44	1	3	30,00	184,18	281	73	1
1	12,50	66,64	182	44	1	3	31,00	235,25	285	75	1
1	13,00	55,29	182	44	1	4	32,00	220,44	317	77	1
1	13,50	68,62	189	47	1	4	34,00	231,57	321	78	1
1	14,00	56,85	189	47	1	4	35,00	266,73	321	78	1
2	14,50	72,25	204	50	1	4	36,00	342,71	325	79	1
2	15,00	58,57	204	50	1	4	38,00	364,91	329	81	1
2	15,50	75,92	210	52	1	4	40,00	372,32	329	81	1

4107

HSSCO DIN 208

Form. **C**



Tol. **H7**

ISO **521**

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
●									●	●		●					
10-16									14-25	14-20		10-16					

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



▶	△	Ø mm	€	L mm	l mm	📦	▶	△	Ø mm	€	L mm	l mm	📦
	1	5,00	65,70	133	23	1		2	17,00	125,92	214	54	1
	1	6,00	65,70	138	26	1		2	18,00	133,77	219	56	1
	1	7,00	65,70	150	31	1		2	19,00	141,91	223	58	1
	1	8,00	65,70	156	33	1		2	20,00	149,19	228	60	1
	1	9,00	63,29	162	36	1		2	21,00	161,23	232	62	1
	1	10,00	63,29	168	38	1		2	22,00	172,07	237	64	1
	1	11,00	66,08	175	41	1		2	23,00	184,53	241	66	1
	1	12,00	66,08	182	44	1		3	24,00	194,64	268	68	1
	1	13,00	98,30	182	44	1		3	25,00	206,62	268	68	1
	1	14,00	101,36	189	47	1		3	26,00	218,05	273	70	1
	2	15,00	110,97	204	50	1		3	28,00	241,06	277	71	1
	2	16,00	116,35	210	52	1		3	29,00	253,66	281	73	1

4108

HSS DIN 311

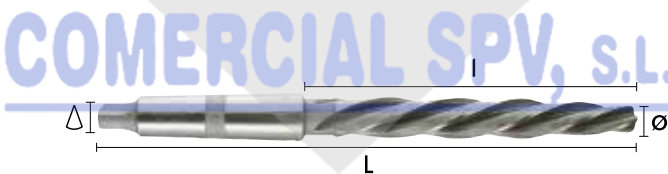


ISO **2238**

△ **1:10**

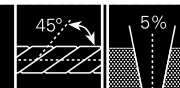
P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
●	○			○		●	○		●	○		●		○			
6-12	4-6			4-6		10-14	6-8		8-22	10-22		14-22		4-6			

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



▶	△	Ø mm	€	L mm	l mm	📦	▶	△	Ø mm	€	L mm	l mm	📦
	1	10,00	62,22	171	95	1		3	24,00	161,46	296	180	1
	1	11,00	63,92	176	100	1		3	25,00	172,11	296	180	1
	2	12,00	66,20	199	105	1		3	26,00	187,94	296	180	1
	2	13,00	72,09	199	105	1		3	27,00	201,75	311	195	1
	2	14,00	79,41	209	115	1		3	28,00	220,40	311	195	1
	2	15,00	83,42	219	125	1		3	29,00	236,54	311	195	1
	2	16,00	87,58	229	135	1		3	30,00	236,99	311	195	1
	3	17,00	113,12	251	135	1		3	31,00	240,95	326	210	1
	3	18,00	117,04	261	145	1		4	32,00	262,29	354	210	1
	3	19,00	120,38	261	145	1		4	33,00	350,10	364	220	1
	3	20,00	122,56	271	155	1		4	34,00	370,01	364	220	1
	3	21,00	134,87	271	155	1		4	35,00	389,03	364	220	1
	3	22,00	140,75	281	165	1		4	36,00	452,10	364	220	1
	3	23,00	150,92	281	165	1		4	37,00	472,00	364	220	1

4115 HSSCO 5%



P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 6-12	○ 4-6			○ 4-6		● 10-14	● 6-8		● 8-22	● 10-22		● 14-22		○ 4-6			

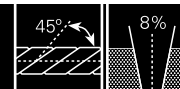
Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



Ø Nom.	€	D mm	d mm	L mm	l mm	
3,00	103,66	3	6	110	60	1
4,00	139,59	4	8	130	80	1
5,00	171,36	5	10	155	100	1

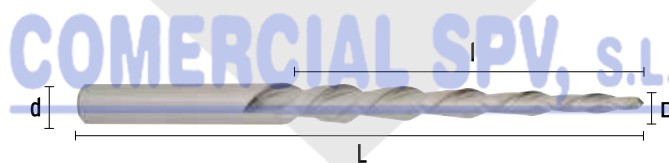
Ø Nom.	€	D mm	d mm	L mm	l mm	
6,00	211,09	6	12	180	120	1
7,00	271,77	7	14	200	140	1

4116 HSSCO 8%



P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 6-12	○ 4-6			○ 4-6		● 10-14	● 6-8		● 8-22	● 10-22		● 14-22		○ 4-6			

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

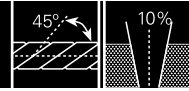


Ø Nom.	€	D mm	d mm	L mm	l mm	
3,00	85,91	3	8	110	62	1
4,00	105,63	4	10	130	75	1

Ø Nom.	€	D mm	d mm	L mm	l mm	
5,00	139,22	5	12	150	90	1
6,00	159,60	6	14	160	100	1

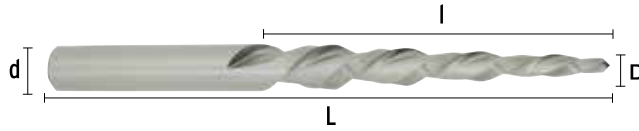
COMERCIAL SPV, S.L.

4117 HSSCO 10%



P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 6-12	○ 4-6			○ 4-6		● 10-14	● 6-8		● 8-22	● 10-22		● 14-22		○ 4-6			

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



Ø Nom.	€	D mm	d mm	L mm	l mm	
2,00	81,48	2	6	90	40	1
3,00	101,20	3	8	100	50	1
4,00	127,08	4	10	115	60	1

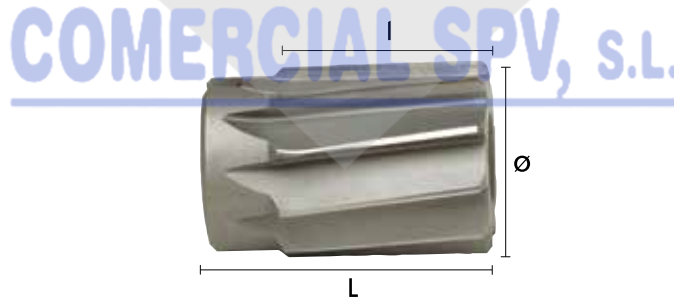
Ø Nom.	€	D mm	d mm	L mm	l mm	
5,00	128,17	5	12	130	70	1
6,00	224,65	6	14	140	80	1

4109 HSS DIN 219

Form. B		Tol. H7	ISO 2402
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P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 8-14	○ 6-8			● 6-8		● 12-16	● 6-12		● 14-25	● 16-25	○ 12-16	● 8-14	○ 1-3	● 2-8			

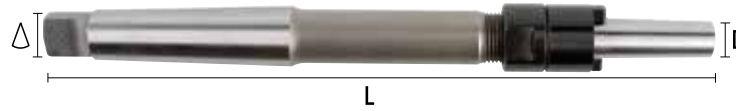
Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



Ø mm	Ø int.	€	L mm	l mm	
32,00	16,00	101,33	50	36	1
34,00	16,00	112,35	50	36	1
36,00	19,00	128,63	56	40	1
38,00	19,00	137,03	56	40	1
42,00	19,00	155,93	56	40	1
45,00	22,00	183,23	63	45	1
47,00	22,00	194,25	63	45	1
48,00	22,00	205,80	63	45	1
52,00	27,00	249,90	71	50	1

Ø mm	Ø int.	€	L mm	l mm	
55,00	27,00	277,20	71	50	1
58,00	27,00	292,43	71	50	1
62,00	32,00	356,48	80	56	1
65,00	32,00	392,70	80	56	1
70,00	32,00	430,50	80	56	1
72,00	40,00	495,60	90	63	1
75,00	40,00	539,70	90	63	1
80,00	40,00	587,48	90	63	1

4114 Mandrino / Mandrin / Mandrel



Form.	∅ mm	D mm	€	L mm	J. UCILLAS J.LAMES/SET OF BLADES
3	31,00 - 35,00	16	226,10	260	1
4	36,00 - 42,00	19	261,44	298	1
4	43,00 - 50,00	22	332,08	310	1

Form.	∅ mm	D mm	€	L mm	J. UCILLAS J.LAMES/SET OF BLADES
5	51,00 - 60,00	27	491,06	325	1
5	61,00 - 71,00	32	589,98	376	1
5	72,00 - 85,00	40	748,99	396	1

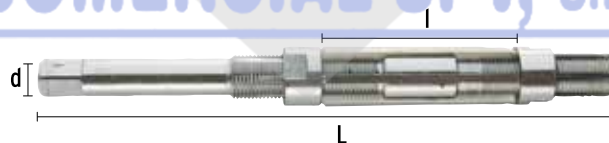
4110 Extensible / Extendible

Form. **A** REFORZ.
REINFORC.
REINFORC.

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
•						•	•		•	•		•					

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

COMERCIAL SPV, S.L.



∅ mm	d mm	€	L mm	l mm	J. UCILLAS J.LAMES/SET OF BLADES	€ J. UCILLAS J.LAMES/SET OF BLADES
8,00-9,00	4,50	118,14	100	35	1	74,53
9,00-10,00	5,50	118,14	120	39	1	74,53
10,00-11,00	5,90	118,14	125	40	1	74,53
11,00-12,00	6,50	118,14	130	43	1	74,53
12,00-13,50	7,50	118,14	135	46	1	74,53
13,50-15,50	8,00	118,14	140	51	1	74,53
15,50-18,00	9,50	125,71	165	61	1	78,04
18,00-21,00	12,00	130,13	185	66	1	82,26

∅ mm	d mm	€	L mm	l mm	J. UCILLAS J.LAMES/SET OF BLADES	€ J. UCILLAS J.LAMES/SET OF BLADES
21,00-24,00	13,50	151,40	195	70	1	94,69
24,00-27,50	15,00	164,85	215	83	1	99,70
27,50-31,50	18,50	180,27	240	88	1	109,64
31,50-37,00	21,00	234,99	265	91	1	134,88
37,00-45,00	25,00	350,37	310	110	1	208,76
45,00-55,00	32,00	504,09	380	128	1	321,05
55,00-67,00	42,00	916,60	440	150	1	486,48
67,00-80,00	45,00	1.389,81	490	170	1	739,20

4111

Extensible guía / Extensible guide / Extendible guide

Form.
A

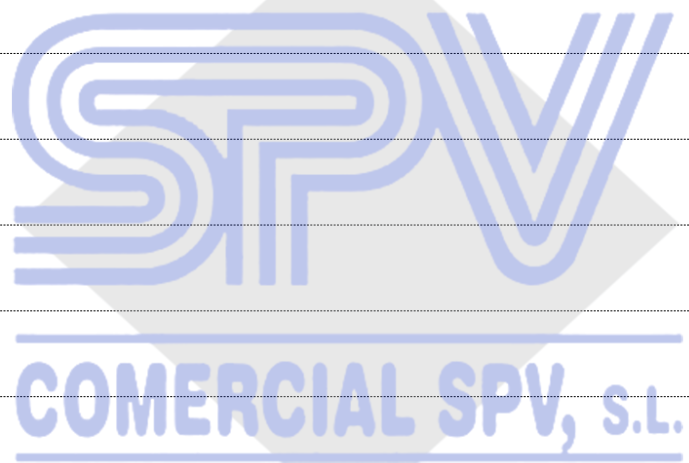
P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
•						•	•		•	•		•					

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



∅ mm	d mm	€	L mm	l mm	J.CUCHILLAS J.LAMES/SET OF BLADES	∅ mm	d mm	€	L mm	l mm	J.CUCHILLAS J.LAMES/SET OF BLADES
8,00-9,00	4,50	151,83	175	35	1 74,53	21,00-24,00	13,50	168,60	320	70	1 94,69
9,00-10,00	5,50	151,83	185	35	1 74,53	24,00-27,50	15,00	179,25	350	83	1 99,70
10,00-11,00	5,90	151,83	195	40	1 74,53	27,50-31,50	18,50	229,45	385	88	1 109,64
11,00-12,00	6,50	151,83	200	41	1 74,53	31,50-37,00	21,00	342,42	424	91	1 134,88
12,00-13,50	7,50	151,83	220	44	1 74,53	37,00-45,00	25,00	498,57	490	110	1 208,76
13,50-15,50	8,00	151,83	243	53	1 74,53	45,00-55,00	32,00	714,58	600	128	1 321,05
15,50-18,00	9,50	160,94	274	61	1 78,04	55,00-67,00	42,00	1.140,10	740	150	1 486,48
18,00-21,00	12,00	160,94	300	66	1 82,26	67,00-80,00	45,00	1.568,49	830	170	1 739,20





Brocas avellanadoras / Fraises coniques / Counterbore drill-bits

5101	HSS						303
5102	HSSCO						303
5103	HSS		TIALN				304

Brocas escalonadas / Fraises étagées / Step drill-bits







5157	HSS						305
5158	HSS		TIALN				305
5105	HSS						306
5106	HSS		TIALN				306
5160	HSS	MULTI					307
5109	HSS						307
5112	HSS						308

Avellanadores / Fraises à trou et à chanfreiner / Countersink cutters

5159	HM-MD		TIALN				309
5116	HSS	DIN 335 C					309
5117	HSSCO	DIN 335 C					310
5118	HSS	DIN 335 C	TIALN				310
5119	HSSCO	DIN 335 C	TIALN				311
1505	HSS	DIN 335 C					311
5120	HSS	DIN 335 C					312

5121	HSS	DIN 335 C			3z	<table border="1"><tr><td>P</td><td>K</td></tr><tr><td>N</td><td></td></tr></table>	P	K	N		312
P	K										
N											
5122	HSS	DIN 335 C			3z	<table border="1"><tr><td>P</td><td>K</td></tr><tr><td>N</td><td></td></tr></table>	P	K	N		313
P	K										
N											
5123	HSS	DIN 334 C			3z	<table border="1"><tr><td>P</td><td>K</td></tr><tr><td>N</td><td></td></tr></table>	P	K	N		313
P	K										
N											
5124	HSS	DIN 335 C			3z	<table border="1"><tr><td>P</td><td>K</td></tr><tr><td>N</td><td></td></tr></table>	P	K	N		314
P	K										
N											
5161	HSS				3z	<table border="1"><tr><td>P</td><td>K</td></tr><tr><td>N</td><td></td></tr></table>	P	K	N		314
P	K										
N											
5125	HSS	DIN 335 C			1z	<table border="1"><tr><td>P</td><td>K</td></tr><tr><td>N</td><td></td></tr></table>	P	K	N		315
P	K										
N											
5126	HSS	DIN 334 A			$z \geq 4$	<table border="1"><tr><td>P</td><td>K</td></tr><tr><td>N</td><td></td></tr></table>	P	K	N		315
P	K										
N											
5127	HSS	DIN 335 A			$z \geq 4$	<table border="1"><tr><td>P</td><td>K</td></tr><tr><td>N</td><td></td></tr></table>	P	K	N		316
P	K										
N											
5129	HSS	DIN 335 D			3z	<table border="1"><tr><td>P</td><td>K</td></tr><tr><td>N</td><td></td></tr></table>	P	K	N		316
P	K										
N											
5130	HSS	DIN 334 D			3z	<table border="1"><tr><td>P</td><td>K</td></tr><tr><td>N</td><td></td></tr></table>	P	K	N		317
P	K										
N											
5132	HSS	DIN 334 D			3z	<table border="1"><tr><td>P</td><td>K</td></tr><tr><td>N</td><td></td></tr></table>	P	K	N		317
P	K										
N											

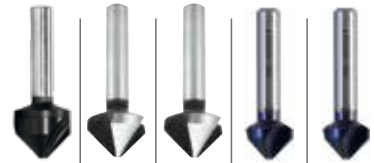
Avellanadores con agujero / Fraises à trou et à chanfreiner / Countersink cutters

5133	HSS					<table border="1"><tr><td>P</td><td>K</td></tr><tr><td>N</td><td></td></tr></table>	P	K	N		318
P	K										
N											
5134	HSSCO					<table border="1"><tr><td>P</td><td>M</td></tr><tr><td>K</td><td>N</td></tr></table>	P	M	K	N	318
P	M										
K	N										
5135	HSS					<table border="1"><tr><td>P</td><td>K</td></tr><tr><td>N</td><td></td></tr></table>	P	K	N		319
P	K										
N											

Avellanadores Allen / Fraises à trou et à chanfreiner / Countersink cutters

5136	HSS	DIN 373			ALLEN ISO 4206	<table border="1"><tr><td>P</td><td>K</td></tr><tr><td>N</td><td></td></tr></table>	P	K	N		320
P	K										
N											
5137	HSS	DIN 375			ALLEN	<table border="1"><tr><td>P</td><td>K</td></tr><tr><td>N</td><td></td></tr></table>	P	K	N		320
P	K										
N											
Estuches / Coffrets / Sets							321				

TABLA DE APLICACIONES GUIDE D'APPLICATION / APPLICATION GUIDE



$$r.p.m. = \frac{V_c \times 1.000}{\pi \times \phi}$$

Ref./ Réf. / Ref.	5159	5116	5117	5118	5119
Z	3	3	3	3	3
Punta/Poin/Point	90°	90°	90°	90°	90°
Mat.	HM	HSS	HSSCo	HSS	HSSCo
Rec./Rev./Coat.				TIALN	TIALN
DIN	335	335	335	335	335
Form.	C	C	C	C	C
Gama/Gamme/Range	6,30-31	4,30-40	6-40	4,30-40	6,30-30
Pag.	309	309	310	310	311

Mat.		Avance/Feed (mm/rpm) HSS/HSSCo - HM=x1,5									Vc (m/min)				
Ø2	Ø5	Ø10	Ø15	Ø20	Ø25	Ø30	Ø35	Ø40							
P.1	<600	0,05	0,08	0,12	0,14	0,16	0,20	0,20	0,25	0,25	• 40-80	• 25-30	• 25-30	• 30-35	• 30-35
P.2	<800	0,04	0,07	0,10	0,12	0,14	0,18	0,20	0,22	0,22	• 35-60	• 20-25	• 20-25	• 25-30	• 25-30
P.3	<1000	0,03	0,04	0,05	0,06	0,08	0,10	0,10	0,12	0,12	• 30-40	• 12-18	• 12-18	• 15-20	• 15-20
P.4	<1200	0,03	0,04	0,05	0,06	0,08	0,10	0,10	0,12	0,12	• 15-25	• 4-8	• 4-8	• 6-10	• 6-10
P.5	<1400	0,01	0,03	0,03	0,06	0,08	0,10	0,12	0,14	0,16	• 10-15				
M.1	<950	0,04	0,05	0,06	0,07	0,08	0,09	0,10	0,11	0,12	• 20-30	• 4-10	• 4-10	• 6-12	• 6-12
M.2		0,04	0,05	0,06	0,07	0,08	0,09	0,10	0,11	0,12	• 20-30	• 4-10	• 4-10	• 6-12	• 6-12
M.3	<1200	0,01	0,03	0,03	0,06	0,08	0,10	0,12	0,14	0,16	• 15-25				• 4-6
M.4		0,01	0,03	0,03	0,06	0,08	0,10	0,12	0,14	0,16	• 15-25				• 4-6
K.1	<500	0,08	0,10	0,12	0,16	0,20	0,25	0,25	0,30	0,30	• 40-70	• 15-24	• 15-24	• 20-30	• 20-30
K.2															
K.3	<800	0,06	0,07	0,08	0,12	0,16	0,20	0,20	0,25	0,25	• 25-35	• 9-13	• 9-13	• 12-16	• 12-16
K.4.1		0,06	0,07	0,08	0,12	0,16	0,20	0,20	0,25	0,25	• 25-35	• 9-13	• 9-13	• 12-16	• 12-16
K.4.2	<1400	0,02	0,04	0,04	0,08	0,12	0,16	0,18	0,20	0,22	• 20-30				• 6-10
N.1.1	Al	0,10	0,12	0,14	0,18	0,20	0,24	0,30	0,35	0,40	• 60-120	• 50-80	• 50-80	• 65-100	• 65-100
N.1.2		0,08	0,10	0,12	0,16	0,20	0,25	0,25	0,30	0,30	• 50-90	• 30-50	• 30-50	• 40-65	• 40-65
N.1.3		0,08	0,10	0,12	0,16	0,20	0,25	0,25	0,30	0,30	• 40-80	• 15-30	• 15-30	• 20-40	• 20-40
N.2.1	Cu	0,06	0,07	0,08	0,12	0,16	0,20	0,20	0,25	0,25	• 40-80	• 25-35	• 25-35	• 30-45	• 30-45
N.2.2		0,10	0,12	0,14	0,18	0,20	0,24	0,30	0,35	0,40	• 60-100	• 40-60	• 40-60	• 50-75	• 50-75
N.2.3		0,10	0,12	0,14	0,18	0,20	0,24	0,30	0,35	0,40	• 50-90	• 30-50	• 30-50	• 40-65	• 40-65
N.2.4															
N.3.1	Mg/Zn	0,10	0,13	0,16	0,20	0,25	0,30	0,30	0,35	0,35	• 80-140	• 60-90	• 60-90	• 75-115	• 75-115
N.4.1	Plastic	0,10	0,12	0,14	0,18	0,20	0,24	0,30	0,35	0,40	• 60-100	• 35-70	• 35-70	• 45-90	• 45-90
N.4.2		0,04	0,06	0,08	0,10	0,12	0,16	0,20	0,20	0,25	• 30-60	• 12-24	• 12-24	• 15-30	• 15-30
N.4.3															
S.1.1	Ni	0,04	0,07	0,1	0,12	0,14	0,18	0,2	0,22	0,22	• 15-25	• 4-6	• 4-6	• 6-8	• 6-8
S.1.2		0,03	0,04	0,05	0,06	0,08	0,1	0,1	0,12	0,12	• 10-15	• 2-5	• 2-5	• 3-6	• 3-6
S.2.1	Ti	0,04	0,07	0,1	0,12	0,14	0,18	0,2	0,22	0,22	• 20-30	• 4-10	• 6-10	• 8-12	• 8-12
S.2.2		0,04	0,07	0,1	0,12	0,14	0,18	0,2	0,22	0,22	• 15-25	• 4-6	• 4-6	• 6-8	• 6-8
S.2.3		0,03	0,04	0,05	0,06	0,08	0,1	0,1	0,12	0,12	• 10-15	• 2-5	• 2-5	• 3-6	• 3-6
H.1	50 HRC	0,01	0,03	0,03	0,06	0,08	0,10	0,12	0,14	0,16	• 6-10				
H.2	55 HRC	0,01	0,03	0,03	0,06	0,08	0,10	0,12	0,14	0,16	• 6-10				
H.3	60 HRC	0,01	0,03	0,03	0,06	0,08	0,10	0,12	0,14	0,16	• 4-8				

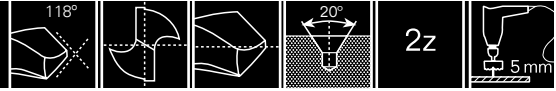
● Optima / Optimun ○ Alternativo / Alternative

5105	5106	5160	5109
2	2	2	4
118°	118°	118°	118°
HSS	HSS	HSS	HSS
	TiAIN		
4-12 - 50-60	4-12 - 30-40	M8-M40	9-36 - 25-58
306	306	307	307
Vc (m/min)			
● 20-25	● 30-35	● 25-30	● 25-30
● 20-25	● 25-30	● 20-25	● 20-25
○ 12-18	○ 15-20	○ 12-18	○ 12-18
○ 4-10	○ 6-12	○ 4-10	○ 4-10
○ 4-10	○ 6-12	○ 4-10	○ 4-10
● 15-24	● 20-30	● 15-24	● 15-24
○ 9-13	○ 12-16	○ 9-13	○ 9-13
● 9-13	● 12-16	● 9-13	● 9-13
● 40-60	● 50-70	● 40-60	● 40-60
● 25-40	● 30-50	● 25-40	● 25-40
● 15-30	● 20-40	● 15-30	● 15-30
● 25-35	● 30-40	● 25-35	● 25-35
● 35-45	● 40-60	● 35-45	● 35-45
● 25-35	● 30-50	● 25-35	● 25-35
● 40-60	● 60-80	● 40-60	● 40-60
● 30-50	● 35-50	● 30-50	● 30-50
● 12-24	● 15-30	● 12-24	● 12-24
○ 4-10	○ 8-12	○ 4-10	○ 4-10



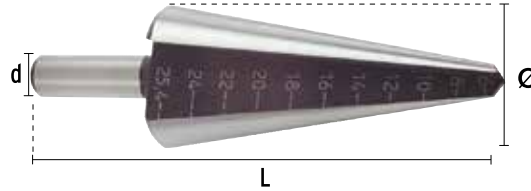
● Optima / Optimun ○ Alternativo / Alternative

5101 HSS



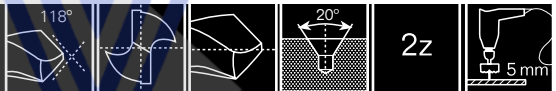
P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
●	○			○		●	●		●	●	●	●		○			
20-30	12-18			4-10		15-24	9-13		15-60	25-45	40-60	12-50		4-10			

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



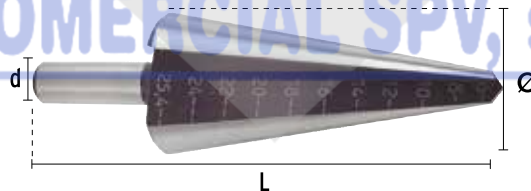
∅ mm	d mm	€	L mm	Icon	∅ mm	d mm	€	L mm	Icon
3,00 - 14,00	6	20,04	62	1	46,00 - 60,00	13	361,12	94	1
6,00 - 20,00	8	27,97	70	1	6,00 - 30,00	10	69,95	106	1
16,00 - 30,00	10	56,92	78	1	6,00 - 22,50	8	50,53	80	1
26,00 - 40,00	12	120,49	86	1	6,00 - 25,40	8	56,39	84	1
36,00 - 50,00	12	185,61	90	1					

5102 HSSCO



P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
●	○	○		○		●	●		●	●	●	●		○			
20-30	12-18	4-8		4-10		15-24	9-13		15-60	25-45	40-60	12-50		6-10			

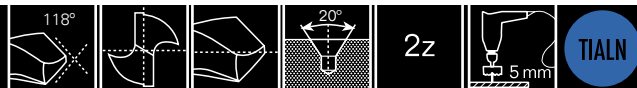
Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



∅ mm	d mm	€	L mm	Icon	∅ mm	d mm	€	L mm	Icon
3,00 - 14,00	6	28,18	62	1	16,00 - 30,00	10	70,37	78	1
6,00 - 20,00	8	36,72	70	1	26,00 - 40,00	12	144,62	86	1

5103

HSS

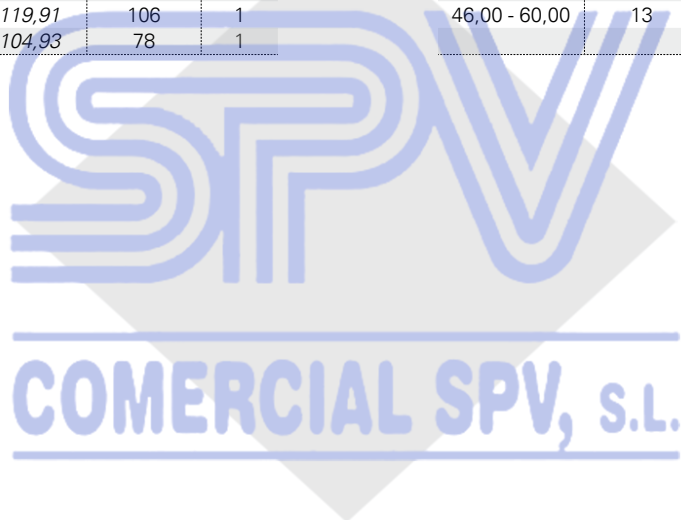


P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
●	○			○		●	●		●	●	●	●		○			
25-35	15-20			6-12		20-30	12-16		20-70	30-60	60-80	15-50		4-10			

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



Ø mm	d mm	€	L mm	Icon	Ø mm	d mm	€	L mm	Icon
3,00 - 14,00	6	55,00	62	1	26,00 - 40,00	12	185,82	86	1
6,00 - 20,00	8	65,29	70	1	36,00 - 50,00	12	264,69	90	1
6,00 - 30,00	10	119,91	106	1	46,00 - 60,00	13	455,93	94	1
16,00 - 30,00	10	104,93	78	1					



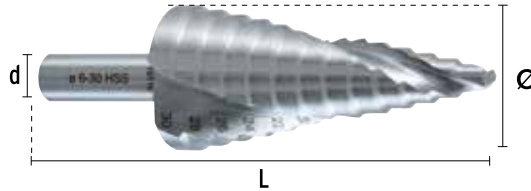
5157

HSS



P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
●	○			○		●	●		●	●	●	●		○			
20-30	12-18			4-10		15-24	9-13		15-60	25-45	40-60	12-50		4-10			

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



Ø mm	d mm	Grad. mm	€	L mm	Icon	Ø mm	d mm	Grad. mm	€	L mm	Icon
4,00 - 12,00	6	1	59,79	70	1	6,00 - 30,00	10	2	122,31	98	1
4,00 - 20,00	8	2	87,75	77	1	6,00 - 37,00	10	PG	190,81	100	1

5158

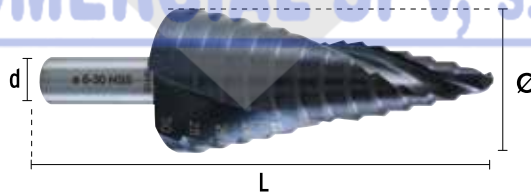
HSS



P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
●	○			○		●	●		●	●	●	●		○			
25-35	15-20			6-12		20-30	12-16		20-70	30-60	60-80	15-50		8-12			

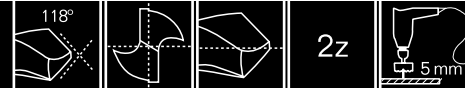
Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

COMERCIAL SPV, S.L.



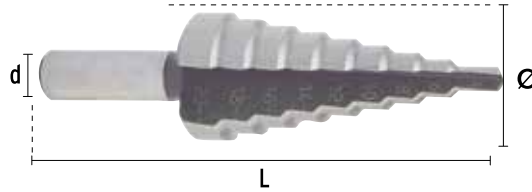
Ø mm	d mm	Grad. mm	€	L mm	Icon	Ø mm	d mm	Grad. mm	€	L mm	Icon
4,00 - 12,00	6	1	89,69	70	1	6,00 - 30,00	10	2	183,47	98	1
4,00 - 20,00	8	2	131,61	77	1						

5105 HSS



P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
●	○			○		●	●		●	●	●	●		○			
20-30	12-18			4-10		15-24	9-13		15-60	25-45	40-60	12-50		4-10			

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



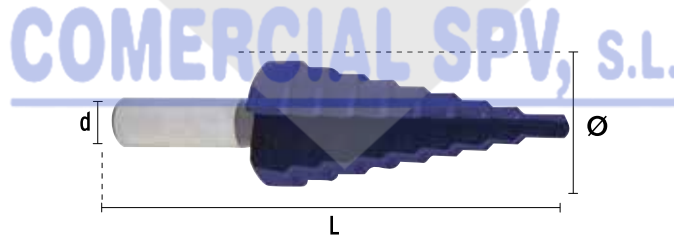
Ø mm	d mm	Grad. mm	€	L mm	Icon	Ø mm	d mm	Grad. mm	€	L mm	Icon
4,00 - 12,00	6	1	41,01	69	1	20,00 - 30,00	12	1	105,24	93	1
4,00 - 12,00	6	2	42,84	69	1	30,00 - 40,00	12	1	190,55	93	1
4,00 - 20,00	8	2	55,34	75	1	40,00 - 50,00	12	1	276,29	97	1
6,00 - 30,00	10	2	84,05	95	1	50,00 - 60,00	13	1	402,02	97	1
12,00 - 20,00	9	1	75,60	75	1						

5106 HSS



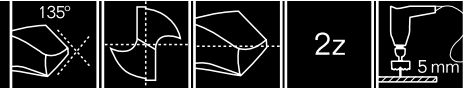
P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
●	○			○		●	●		●	●	●	●		○			
25-35	15-20			6-12		20-30	12-16		20-70	30-60	60-80	15-50		8-12			

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



Ø mm	d mm	Grad. mm	€	L mm	Icon	Ø mm	d mm	Grad. mm	€	L mm	Icon
4,00 - 12,00	6	1	96,53	69	1	12,00 - 20,00	9	1	114,78	75	1
4,00 - 12,00	6	2	99,95	69	1	20,00 - 30,00	12	1	170,91	93	1
4,00 - 20,00	8	2	126,97	75	1	30,00 - 40,00	12	1	309,57	93	1
6,00 - 30,00	10	2	182,35	95	1						

5160 HSS MULTI



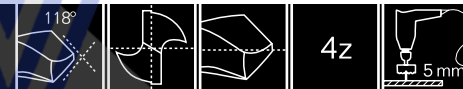
P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
●	○			○		●	●		●	●	●	●		○			
20-30	12-18			4-10		15-24	9-13		15-60	25-45	40-60	12-50		4-10			

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



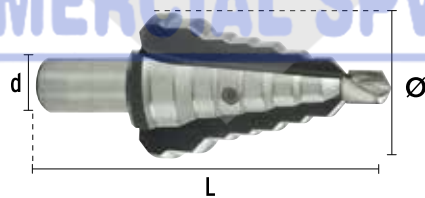
M	Ciego Borgne Bling	Pasante Debouchant Bushing	d mm	€	L mm	Icon
M8	-	Ø 8,5	12		97	
M10	Ø 8,5	Ø 10,5	12		97	
M12	Ø 10,5	Ø 12,5	12		97	
M16	Ø 14,5	Ø 16,5	12	176,4	97	1
M20	Ø 18,5	Ø 20,5	12		97	
M25	Ø 23,5	Ø 25,5	12		97	
M32	Ø 30,5	Ø 32,5	12		97	
M40	Ø 38,5	Ø 40,5	12		97	

5109 HSS



P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
●	○			○		●	●		●	●	●	●		○			
20-30	12-18			4-10		15-24	9-13		15-60	25-45	40-60	12-50		4-10			

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative




Ø mm	d mm	€	L mm	Icon
9,00 - 36,00	10	220,40	88	1
25,00 - 58,00	10	540,76	91	1

* (Hasta fin de existencias / Jusqu'à épuisement des stocks / While supplies last)

5112 Broca piloto / Foret pilote / Pilot drill-bit



Ø mm	d mm	€	L mm	
7,00	4	36,30	40	1

*(Hasta fin de existencias / Jusqu'à épuisement des stocks / While supplies last)



5159 HM-MD DIN335C



3z

TIALN

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 35-80	● 30-40	● 15-25	● 10-15	○ 20-30	● 15-25	● 40-70	● 25-35	● 20-30	● 40-120	● 40-100	● 80-140	● 30-100	● 10-25	● 10-30	● 6-10	● 6-10	○ 4-8

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



Ø mm	d mm	€	L mm	Icon	Ø mm	d mm	€	L mm	Icon
6,30	6	76,65	50	1	16,50	10	105,84	60	1
8,30	6	84,61	50	1	20,50	10	116,51	60	1
10,40	8	88,35	50	1	25,00	10	159,37	67	1
12,40	8	95,10	50	1	31,00	12	215,17	71	1

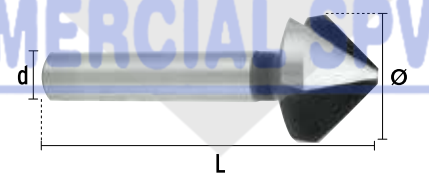
5116 HSS DIN 335 C



3z

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
● 20-30	○ 12-18			○ 4-10		● 15-24	● 9-13		● 15-80	● 25-60	● 60-90	● 12-70		○ 4-10			

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



Ø mm	d mm	€	L mm	Icon	Ø mm	d mm	€	L mm	Icon
4,30	4	16,84	40	1	12,40	8	16,80	56	1
5,00	4	16,84	40	1	13,40	8	21,34	56	1
5,30	4	16,84	40	1	15,00	10	27,09	60	1
5,80	5	16,84	45	1	16,50	10	23,09	60	1
6,00	5	15,04	45	1	19,00	10	39,89	63	1
6,30	5	14,81	45	1	20,50	10	33,97	63	1
7,00	6	16,84	50	1	23,00	10	49,08	67	1
7,30	6	16,84	50	1	25,00	10	42,86	67	1
8,00	6	16,84	50	1	26,00	10	58,23	67	1
8,30	6	14,37	50	1	28,00	12	71,65	71	1
9,40	6	19,64	50	1	30,00	12	53,30	71	1
10,00	6	17,02	50	1	31,00	12	98,19	71	1
10,40	6	16,71	50	1	40,00	13	113,65	80	1
11,50	8	19,74	56	1					

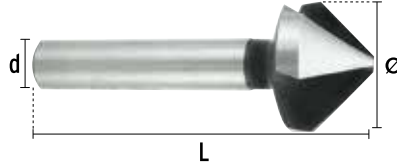
5117 HSSCO DIN 335 C



3z

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
●	●	○		●		●	●		●	●	●	●	○	●			
20-30	12-18	4-8		4-10		15-24	9-13		15-80	25-60	60-90	12-70	2-6	2-10			

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



Ø mm	d mm	€	L mm	Icon	Ø mm	d mm	€	L mm	Icon
6,00	5	15,69	45	1	15,00	10	38,20	60	1
6,30	5	15,69	45	1	16,50	10	38,21	60	1
8,00	6	21,68	50	1	19,00	10	56,26	63	1
8,30	6	21,69	50	1	20,50	10	56,26	63	1
9,40	6	25,34	50	1	25,00	10	71,07	57	1
10,00	6	25,34	50	1	30,00	12	107,37	71	1
10,40	6	25,34	50	1	31,00	12	114,45	71	1
11,50	8	27,92	56	1	40,00	13	140,10	80	1
12,40	8	27,92	56	1					

5118 HSS DIN 335 C

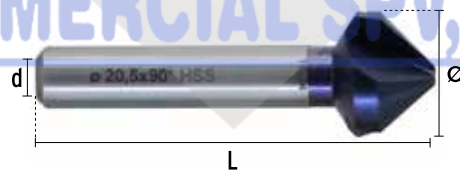


3z

TIALN

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
●	○			○		●	●		●	●	●	●	○	○			
25-35	15-20			6-12		20-30	12-16		20-100	30-75	75-115	15-90		8-12			

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



Ø mm	d mm	€	L mm	Icon	Ø mm	d mm	€	L mm	Icon
4,30	4	33,35	40	1	12,40	8	45,73	56	1
5,00	4	33,35	40	1	13,40	8	47,24	56	1
5,30	4	33,35	40	1	15,00	10	63,48	60	1
5,80	5	29,31	45	1	16,50	10	65,21	60	1
6,00	5	28,65	45	1	19,00	10	79,55	63	1
6,30	5	28,65	45	1	20,50	10	81,24	63	1
7,00	6	38,24	50	1	23,00	10	92,56	67	1
7,30	6	38,24	50	1	25,00	10	93,85	67	1
8,00	6	38,24	50	1	26,00	12	101,78	71	1
8,30	6	38,24	50	1	28,00	12	119,29	71	1
9,40	6	43,19	50	1	30,00	12	123,77	71	1
10,00	6	43,19	50	1	31,00	12	128,29	71	1
10,40	6	43,19	50	1	40,00	13	195,83	80	1
11,50	8	45,73	56	1					

COMERCIAL SPV, S.L.

5119 HSSCO DIN 335 C



3z

TIALN

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
●	●	○		●	○	●	●	○	●	●	●	●	●	●			
25-35	15-20	6-10		6-12	4-6	20-30	12-16	6-10	20-100	30-75	75-115	15-90	3-8	3-12			

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



Ø mm	d mm	€	L mm	Icon
6,30	5	32,21	45	1
8,30	6	43,19	50	1
10,40	6	49,17	50	1
12,40	8	53,92	56	1

Ø mm	d mm	€	L mm	Icon
16,50	10	76,46	60	1
20,50	10	97,71	63	1
25,00	10	114,68	67	1
30,00	12	155,04	71	1

1505 HSS DIN 335 C Hex.



1/4"

3z

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
●	○			○		●	●		●	●	●	●	●	○			
20-30	12-18			4-10		15-24	9-13		15-80	25-60	60-90	12-70		4-10			

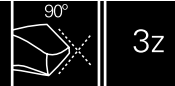
Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



Ø mm	L mm	€	Icon
6,30	31	9,80	1
8,30	32	11,33	1
10,40	34	13,47	1

Ø mm	L mm	€	Icon
12,40	36	15,88	1
16,50	40	23,46	1
20,50	43	28,40	1

5120 HSS DIN 335 C



P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
●	○			○		●	●		●	●	●	●		○			

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

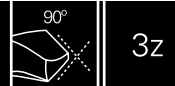


Ø mm	L mm	€	Icon
12,00	120	19,47	1
12,40	130	25,08	1
15,00	150	33,87	1
16,00	150	25,98	1

Ø mm	L mm	€	Icon
16,50	150	34,71	1
19,00	150	47,57	1
20,50	150	47,57	1
25,00	150	57,65	1

*(Hasta fin de existencias / Jusqu'à épuisement des stocks / While supplies last)

5121 HSS DIN 335 C EL



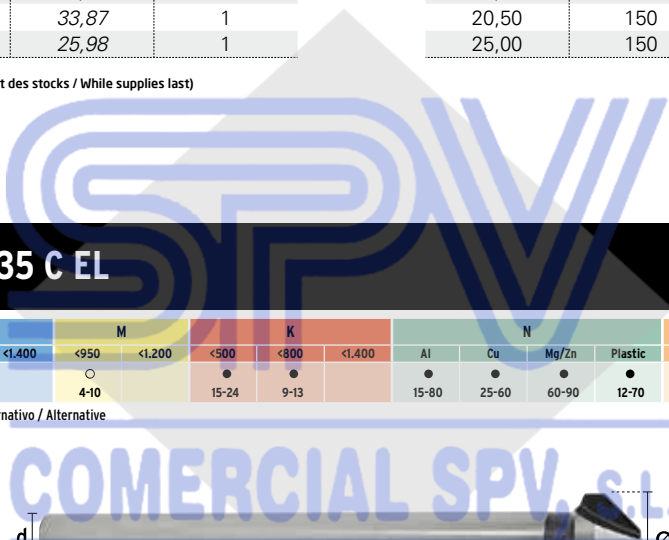
P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
20-30	12-18			4-10		15-24	9-13		15-80	25-60	60-90	12-70		4-10			

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



Ø mm	d mm	€	L mm	Icon
10,40	6	64,00	112	1
12,40	8	78,03	120	1
16,50	10	94,03	120	1

Ø mm	d mm	€	L mm	Icon
20,50	10	126,05	124	1
25,00	10	152,04	128	1
31,00	12	178,08	133	1



5122 HSS DIN 335 C



P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
●	○			○		●	●		●	●	●	●		○			
20-30	12-18			4-10		15-24	9-13		15-80	25-60	60-90	12-70		4-10			

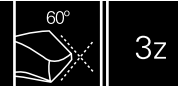
Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



Ø mm	d mm	€	L mm	Icon
6,30	5	16,74	45	1
8,30	6	23,07	50	1
10,40	6	26,93	50	1
12,40	8	32,25	56	1

Ø mm	d mm	€	L mm	Icon
16,50	10	40,81	60	1
20,50	10	60,21	63	1
25,00	10	75,92	71	1

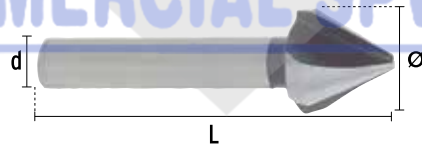
5123 HSS DIN 334 C



P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
●	○			○		●	●		●	●	●	●		○			
20-30	12-18			4-10		15-24	9-13		15-80	25-60	60-90	12-70		4-10			

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

COMERCIAL SPV, S.L.



Ø mm	d mm	€	L mm	Icon
6,30	5	20,41	45	1
8,00	6	22,45	50	1
10,00	6	24,49	53	1
12,50	8	27,13	56	1

Ø mm	d mm	€	L mm	Icon
16,00	10	34,71	63	1
20,00	10	48,97	67	1
25,00	10	68,36	71	1

5124 HSS DIN 335 C



3z

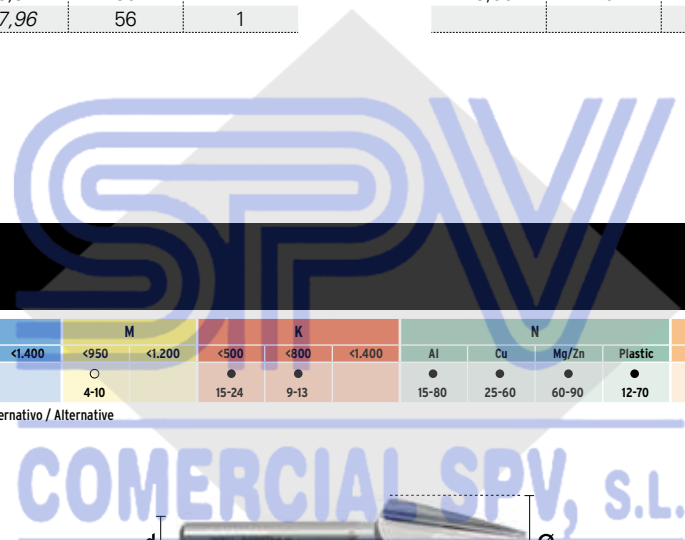
P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
●	○			○		●	●		●	●	●	●		○			
20-30	12-18			4-10		15-24	9-13		15-80	25-60	60-90	12-70		4-10			

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



Ø mm	d mm	€	L mm	
6,30	5	15,71	45	1
8,30	6	21,42	50	1
10,40	6	25,32	50	1
12,40	8	27,96	56	1

Ø mm	d mm	€	L mm	
16,50	10	35,08	60	1
20,50	10	51,63	63	1
25,00	10	65,08	67	1



5161 HSS



3z

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
●	○			○		●	●		●	●	●	●		○			
20-30	12-18			4-10		15-24	9-13		15-80	25-60	60-90	12-70		4-10			

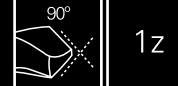
Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



Ø mm	d mm	€	L mm	
6,30	5	36,75	50	1
12,40	8	51,45	65	1
16,50	10	62,48	73	1

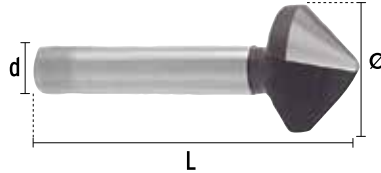
Ø mm	d mm	€	L mm	
20,50	10	84,53	83	1
25,00	10	113,93	90	1
31,00	12	161,70	98	1

5125 HSS DIN 335 C



P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
●	○			○		●	●		●	●	●	●		○			
20-30	12-18			4-10		15-24	9-13		15-80	25-60	60-90	12-70		4-10			

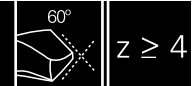
Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



∅ mm	d mm	€	L mm	Box
10,00	8	13,20	46	1
12,00	8	14,61	46	1
16,00	8	20,00	47	1
20,00	8	30,61	47	1

∅ mm	d mm	€	L mm	Box
25,00	10	42,04	50	1
30,00	12	71,43	71	1
31,00	12	75,62	71	1

5126 HSS DIN 334 A



P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
●	○			○		●	●		●	●	●	●		○			
20-30	12-18			4-10		15-24	9-13		15-80	25-60	60-90	12-70		4-10			

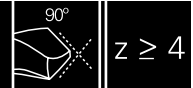
Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



∅ mm	d mm	€	L mm	Box
12,50	8	24,73	50	1
16,00	10	41,51	60	1

∅ mm	d mm	€	L mm	Box
20,00	10	53,54	60	1
25,00	10	74,92	65	1

5127 HSS DIN 335 A



P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
●	○			○		●	●		●	●	●	●		○			
20-30	12-18			4-10		15-24	9-13		15-80	25-60	60-90	12-70		4-10			

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



∅ mm	d mm	€	L mm	📦
8,00	8	13,51	48	1
12,50	8	19,78	48	1
16,00	10	33,26	56	1

∅ mm	d mm	€	L mm	📦
20,00	10	42,83	60	1
25,00	10	59,98	65	1

5129 HSS DIN 335 D



P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
●	○			○		●	●		●	●	●	●		○			
20-30	12-18			4-10		15-24	9-13		15-80	25-60	60-90	12-70		4-10			

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

COMERCIAL SPV, S.L.



△	∅ mm	€	L mm	📦
2	20,50*	102,05	100	1
2	23,00*	106,04	106	1
2	25,00	106,04	106	1
2	26,00	106,04	106	1
2	28,00	108,03	112	1
2	30,00	114,04	112	1
2	31,00	118,04	112	1

△	∅ mm	€	L mm	📦
2	34,00	124,04	118	1
2	37,00	136,04	118	1
3	40,00	170,06	140	1
3	50,00	214,06	150	1
4	63,00	346,11	180	1
4	80,00	592,21	190	1

*(Hasta fin de existencias / Jusqu'à épuisement des stocks / While supplies last)

5130 HSS DIN 334 D



3z

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
●	○			○		●	●		●	●	●	●		○			
20-30	12-18			4-10		15-24	9-13		15-80	25-60	60-90	12-70		4-10			

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



▲	Ø mm	€	L mm	📦
3	40,00	218,25	150	1
3	50,00	311,82	160	1
4	63,00	491,07	190	1

5132 HSS DIN 334 D



3z

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
●	○			○		●	●		●	●	●	●		○			
20-30	12-18			4-10		15-24	9-13		15-80	25-60	60-90	12-70		4-10			

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



▲	Ø mm	€	L mm	📦
3	40,00	187,07	134	1
3	50,00	241,66	142	1
4	63,00	394,55	178	1

5133 HSS DIN 335 D



P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
●	○			○		●	●		●	●	●	●		○			
20-30	12-18			4-10		15-24	9-13		15-80	25-60	60-90	12-70		4-10			

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



∅ mm	d mm	€	L mm	Icon
2,00 - 5,00	6	17,15	45	1
5,00 - 10,00	8	21,42	48	1
10,00 - 15,00	10	38,38	65	1

∅ mm	d mm	€	L mm	Icon
15,00 - 20,00	12	68,55	85	1
20,00 - 25,00	15	115,70	95	1
25,00 - 30,00	15	177,72	100	1

5134 HSSCO



P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
●	○	○		○		●	●		●	●	●	●	○	○			
20-30	12-18	4-8		4-10		15-24	9-13		15-80	25-60	60-90	12-70	2-6	2-10			

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative

COMERCIAL SPV, S.L.



∅ mm	d mm	€	L mm	Icon
2,00 - 5,00	6	20,41	45	1
5,00 - 10,00	8	25,53	48	1

∅ mm	d mm	€	L mm	Icon
10,00 - 15,00	10	45,54	65	1
15,00 - 20,00	12	81,63	85	1

5135

HSS



P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
●	○			○		●	●		●	●	●	●		○			
20-30	12-18			4-10		15-24	9-13		15-80	25-60	60-90	12-70		4-10			

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



Ø mm	d mm	€	L mm	
2,00 - 5,00	6	20,41	45	1
5,00 - 10,00	8	25,53	48	1
10,00 - 15,00	10	45,71	65	1



5136

HSS DIN 373

ALLEN

ISO
4206

P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
●	○			○		●	●		●	●	●	●		○			
20-30	12-18			4-10		15-24	9-13		15-80	25-60	60-90	12-70		4-10			

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



M	Ø mm	P mm	€	L mm	Icon
M3	6,00	3,20	23,88	71	1
M4	8,00	4,30	24,98	71	1
M5	10,00	5,30	24,11	80	1
M6	11,00	6,40	25,47	80	1

M	Ø mm	P mm	€	L mm	Icon
M8	15,00	8,40	33,29	100	1
M10	18,00	10,50	43,42	100	1
M12	20,00	13,00	54,02	100	1

5137

HSS DIN 375

ALLEN

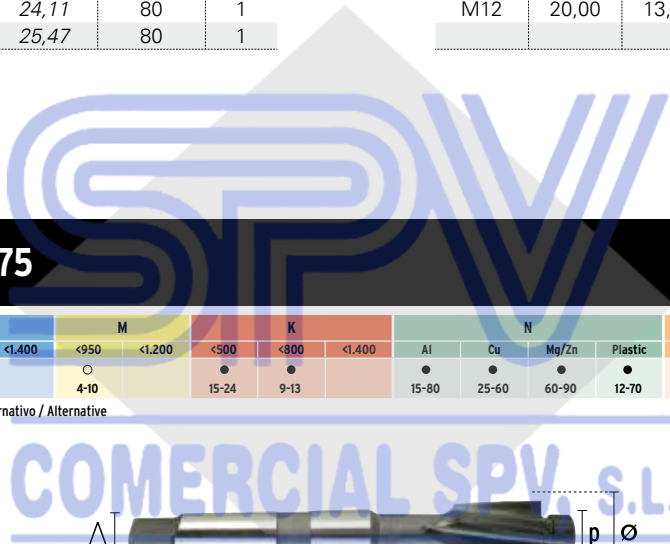
P				M		K			N				S		H		
<800	<1.000	<1.200	<1.400	<950	<1.200	<500	<800	<1.400	Al	Cu	Mg/Zn	Plastic	Ni	Ti	50 HRC	55 HRC	60 HRC
●	○			○		●	●		●	●	●	●		○			
20-30	12-18			4-10		15-24	9-13		15-80	25-60	60-90	12-70		4-10			

Vc (m/min). ● Optima / Optimun ○ Alternativo / Alternative



Icon	M	Ø mm	P mm	€	L mm	Icon
△	M10	18,00	10,50	60,28	140	1
△	M12	20,00	13,00	73,22	140	1
△	M14	24,00	15,00	95,99	150	1
△	M16	26,00	17,00	115,76	180	1

Icon	M	Ø mm	P mm	€	L mm	Icon
△	M18	30,00	19,00	124,82	1	1
△	M20	33,00	21,00	159,18	1	1
△	M22	36,00	23,00	178,95	1	1
△	M24	40,00	25,00	197,28	1	1



JUEGOS DE AVELLANADORES
JEUX DE FRAISES À TROU ET À CHANFREINER / COUNTERSINK CUTTER SETS

5142 > Ø 6 a 19 mm

Ø
 mm
 6 - 8 - 10 - 11,5 - 15 - 19

6

>HSS

>HSS CO

>HSS TIALN



REF.	€
HSS	142,99
HSS CO	189,82
HSS TIALN	285,61



5143 > Ø 6,3 a 20,5 mm

Ø
 mm
 6,3 - 8,3 - 10,4 - 12,4 - 16,5 - 20,5

6

>HSS

>HSS CO

>HSS TIALN



REF.	€
HSS	132,52
HSS CO	192,32
HSS TIALN	304,95



5151 > Ø 2-5 a 10-20 mm

∅
mm
2-5/5-10/10-15/15-20



>HSS



REF.	€	
HSS	173,85	4

5155 > M3 - M10

∅
mm
M3/M4/M5/M6/M8/M10



>HSS



REF.	€	
HSS	236,05	6



5138 > Ø 3 a 14 / 6 a 20 / 16 a 30 mm

∅
mm
3-14,6-20,16-30


3

>HSS

>HSS CO

>HSS TIALN



REF.	€
HSS	118,30
HSS CO	148,63
HSS TIALN	253,55

5139 > Ø 4 a 12 / 12 a 20 / 20 a 30 mm

∅
mm
4-12,12-20,20-30

X
mm
1


3

>HSS

>HSS TIALN



REF.	€
HSS	246,97
HSS TIALN	396,24

COMERCIAL SPV, S.L.



5140 > Ø 4 a 12 / 4 a 20 / 6 a 30 mm

Ø
mm
4-12,4,20,6-30

X
mm
2

3

>HSS

>HSS TIALN

>HSS (35°)

>HSS TIALN (35°)



REF.

€

HSS	205,73
HSS TIALN	423,32
HSS (35°)	283,90
HSS TIALN (35°)	418,81

5141 > Ø 4 a 20 / 6 a 30 mm

Ø
mm
4-20,6-30

X
mm
2

2

>HSS

>HSS TIALN



REF.

€

HSS	160,85
HSS TIALN	323,37

